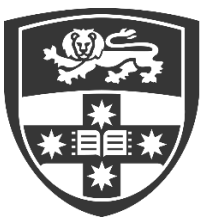
More than a Hill to Die on: a GIS-based reassessment of the Diachronic Transformations and Economic Significance of Early English Castles

Jason Tamas

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Abstract:

Medieval English castles have remained focal points of wonder, dread, and admiration in the minds of their beholders from when they were first prolifically built after the Norman Conquest of 1066 CE to the present day. Their architectural capacity to withstand and shape events of military violence, and their rich accompanying martial history, have influenced academic interest and research since the late nineteenth century. What has developed into the integrative sub-discipline of castle studies originally envisaged and categorised archaeological castle sites within a framework of military architecture. More recently, the recognition of extra-military capacities and functions at castle sites have been gradually theorised, demonstrated, and integrated within the general comprehension and scholarly definition of what the 'castle' was historically. In consequence, lordly administrative and residential functions, architectural display of conspicuous consumption and prestige, spatial delineation of hierarchical power structures, and orientation within the complex and intricately ordered social and built landscapes are now commonly recognised in castle interpretation.

Crucially, within the last two decades, a few key works have further proposed that economic orientation and functions should be integrated into our assessment of castles, as reciprocally influential structural elements of a sophisticated manorial economy. This thesis aims to expand on the recently theorised economic capacities of castles through analysis of the broader settlement network within which they functioned. The aim is to identify and measure the ways these castle and settlement patterns influenced each other between the 11th and 14th century CE. The nature and degree of economic influence is assessed, and statistically quantified, through comparative analysis of a broadly indexed pattern of early English castles alongside the shifting settlement pattern into which they were introduced and which they influenced. The underlying technical procedure of this research is to employ GIS as a digital mapping platform to combine archaeological site data, historical population data, and modern environmental data, to generate new findings from existing resources, in order to better understand the role and function of early castles.

Three datasets were compiled and mapped into a GIS model and analysed to assess the relative proximity of settlement and castle locations to each other, and to elements of the natural landscape. The analyses demonstrate not only that the eleventh century settlement pattern impacted the subsequent distribution pattern and typological nature of introduced castles, but also that this newly established pattern of castle sites went on to structure significant aspects of the twelfth and thirteenth century settlement distribution, producing a uniquely English urban network arrangement. The results further suggest that the locational choice, usage dates, and site plans of early castles need to be understood in the context of the underlying economic landscape within which they were constructed and then went on to reorient and manipulate. Finally, as the findings indicate that castle sites and local settlements were frequently involved in shared and reciprocally developing seigneurial enterprises, the proposition that economic functionality should be integrated into our developing general definition of castles historically, especially for early sites, appears to be robust and broadly applicable.

Declaration of Authorship:

I certify that the content of this thesis is the product of my own research. To the best of my knowledge, this thesis constitutes an original intellectual contribution, and the intellectual content of others has been fully acknowledged where appropriate. No part of this thesis has been submitted for any other degree of for any other purposes, and all assistance received in preparing this thesis has been acknowledged.

J. Tamas

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Glossary of Disciplinary Terminology:

Medieval - root Latin *medium aevum* i.e., 'Middle Ages'. For the purposes of this thesis, the term 'medieval' follows the conventional use in English history as referring to the years 1066—1500 CE. This can be differentiated from the preceding 'early medieval' period of 410—1066, and the overlapping 'Viking Age' of 793—1066. Late-Saxon England is briefly discussed, but only so far as to highlight structural dissimilarities with the Norman and later phases.

Feudalism - r. Latin *feudum* held 'in fee' (fealty) - pertaining to property held in benefice (service owed), shared root with 'fee' and 'fief' (tenurial land holdings). Introduced into England by the Normans in 1066, this was a system in which all land was legally owned by the king and held by tenant vassals in his stead. In return for the benefits of this vassal management, the tenants owed the king several dues, depending on their tenure type, most significantly including military service quotas.

Manorialism - r. Old French *manoir* i.e., manor or dwelling place. The *manor* itself was a territorial unit of land tenure, the system around which rendered peasant classes dependant on set lands and landholders. Manors consisted of smaller parcels of land which were governed from a *manorial seat*, or *caput*, often the site of a manor house, which was sometimes fortified. Reference to the 'manorial landscape' is intended to relate to the broader social and economic arrangement of manors.

Seigneurial - r. French *seignor* i.e., seignior, or manorial landowning lord - the owner of a *seigneurie*, an equivalent to manor. Relating to lordship or lordly land tenure arrangements and obligations. The term 'seigneurial' is widely used in medieval scholarship to specifically denote manorial lordship, in contrast to 'feudal', which holds broader socio-economic structural connotations.

Demesne - r. Old French *demaine* cognate Latin *domus* - domain, direct feudal territorial holdings. In the feudal system, land was either directly held as 'demesne land', or enfeoffed to tenants or sub-tenants through vassalage. The demesne of the English monarch was referred to as 'crown land'.

Castellology - r. Latin *castellum* i.e., *fortress* - study of castles. A sub-discipline that integrates resources from historical, archaeological, and architectural scholarship.



The half-buried 12th century gatehouse of Wigmore Castle in Herefordshire, viewed from the south-east approach where the old town bailey once stood (photograph by author).

~ End of Front Matter ~

1.0..... Chapter One: Castles, Settlements, & Economy

1.0.1..... Introduction

Castellology, or castle studies, is a sub-discipline of both medieval archaeology and history.[1] Within the considerable body of publications specifically addressing English castle studies, architectural analysis of preserved features,[2] historical documentation of site use,[3] and site excavations have comprised the main contexts of discussion.[4] The historical function of castle sites, an area of increasing sophistication in our collective comprehension, constitutes perhaps the largest ongoing dialogue in the sub-discipline, along with the associated matter of semantic definition,[5] and English castles are no exception.[6] Early writers focused on military architecture and historical site origins, with initial martial concerns remaining a popular theme to the present.[7] Over time, however, publications have also demonstrated ulterior motivations for castle construction, layout, and maintenance, including; control of local populations; planned colonisation of unstable frontiers; seigneurial residential capacity; spatial differentiation of status; and display of conspicuous consumption, among others.[8] Only within recent decades has the postulation that castles were sophisticated multi-functional hubs, inextricably integrated within a complex feudal economy and shifting developed landscape, been discussed more thoroughly.[9] Crucially, that economic exploitation of the manorial landscape was a major factor in influencing castle location, site layouts, and continuity of use has recently been demonstrated.[10] However, this sort of economic functionality, indicated by castle location and design relative to adjacent built features, or through the analysis of archaeologically preserved intramural site components, has only been recognised and discussed in isolated and pronounced castle-settlement arrangements; with castle baileys for example, identified as the origins of subsequently developing towns in several cases.[11]

The relative influence of planned, or perhaps inadvertently adopted, economic functions within the hierarchy of considerations related to castle construction and development across the total distribution of 'early' (<1300 CE) English castles remains unclear. While it is apparent that some castles catalysed adjacent and local settlement development, expanding in scale and complexity to accommodate growing local communities, the regularity that castles were involved in such alteration remains speculative. Furthermore, medievalist researchers have tended to specialise in either settlement studies or castle studies, and an opportunity to approach these built landscape elements simultaneously through a holistic 'structural network' or 'built landscape' perspective presents multiple novel research avenues. This thesis therefore aims to assess the broader pattern of early castles, in the few centuries following their introduction to England, relative to the developing manorial landscape. Procedurally, a set of digital mapping analyses are carried out, with the intent of identifying the degree of influence settlement patterns had on castle location, design, and continuous use, and vice versa. The study is limited geographically to the eleventh century Kingdom of England and temporally to the period of 1000—1300 CE. This introductory chapter first elaborates on the academic knowledge gap around economic castle functions, qualifies the research aims and issues more precisely, then follows with an outline of the scope and rationale of research, and concludes with an overview of the thesis structure and content.

[1] Coulson 1996.
[2] Platt 1982; Thompson 1991; McNeill 1992.
[3] Toy 1939; Pounds 1990.
[4] Various; See Literature Review (Ch. Two).
[5] Mercer 2006; Coulson 1996.
[6] Kenyon 2010.
[7] Clark 1912; Mackenzie 1896; see Kenyon 2010.
[8] Pounds 1990; See Ch. Two for a full discussion.
[9] Creighton 2005; 2013.
[10] Creighton 2013.
[11] Beresford 1967; Higham and Barker 1992.

1.1 ..... Knowledge Gap, Aims, and Scope

1.1.1 ..... Background and Research Issue

The historical functions of medieval English castles, especially beyond their more well-documented role in warfare and the (typically later modified) well-preserved masonry examples, was gradually forgotten and largely unknown in the early modern period and has since been rediscovered and re-established within the developing medieval archaeological narrative. A few seminal nineteenth century publications, especially those of Clark and Mackenzie, founded the academic roots of English castellology with an engineering-oriented focus on military architecture.[12] Strikingly, Clark argued that early castle mottes (round earthwork mounds) were of Saxon origin, not Norman; a historiographical detail which highlights the initial absence of certainty around earthwork castle forms and origins.[13] Following these works, the early twentieth century included the influential publications of Armitage, who studied a set of eighty-four early English castles and established that mottes in fact had a Norman origin, and of Thompson, who continued the military focus through the employment of a deterministic 'arms-race' progressive development theory between castle site forms across time.[14] In the latter half of the twentieth century, within an environment of increasing site excavations, Brown, King, and Pounds were foremost among a growing body of scholars who developed the sub-discipline more thoroughly, with a recognition of castles' residential and status functionality becoming widely accepted alongside military capacities.[15] The initial academic inclination to define castles through the most militarily impressive surviving examples has produced a body of publications in which a statistically small masonry subset constitutes the expectational model of what was historically an extremely varied distribution of fortified site types. Indeed, as one castellologist put it in 2017, the critical issue of defining castles is rooted in the fact that there is '…such variety in form and function between the thousands of examples in the British Isles alone, and the perception of what constitutes a castle changed within the medieval period, as well as within modern scholarship.'[16] The early efforts of researchers to define 'the castle' intramurally also inadvertently isolated castles from their wider social and economic contexts. As Creighton noted in 2002 in reference to nineteenth and twentieth century publications:

> *'A number of deeply rooted historiographical traditions within castle studies have combined to ensure that the academic writings of castellologists have tended to sever castles from the landscapes within which they were built and functioned.' —Creighton 2002, p.5.*

The early twenty-first century has thus seen the calculated emergence of inter-disciplinary and integrative analyses of castle sites with Speight, Liddiard, Wheatley, and Creighton being notable among many others in discussing more abstract and conceptual castle theory relating to power, symbolism, landscape position, religion, community orientation, meaning and literary reference, and connection with everyday life.[17] The critical consideration of more complex castle site functions has thus begun to exceed those most obviously related to surviving archaeological and still-standing architectural forms. This deliberate modern alteration of trajectory was a justified response to what Coulson has described retrospectively as 'the pervasive and stunning influence of the battering-rams and boiling-oil brigade' of military-oriented academic approaches, which he assessed as 'largely to blame' for the lack of more integrative and interdisciplinary perspectives and findings in early castle studies publications.[18] Coulson further criticises that some of the attempts to classify early castles as

[12] Clark 1912; Mackenzie 1896.
[13] Kenyon 2010, p.6.
[14] Armitage 1912.
[15] Brown 1962; Pounds 1990; King 1983.
[16] Nevell 2017, p.13.
[17] Liddiard 2005; Wheatley 2004; Creighton 2002; Speight 2004a.
[18] Coulson 1996, p.201.

private lordly residences 'distorted the archaeology' anachronistically, and that instead we should recognise early castle sites as more 'communal' enterprises in comparison to their later medieval counterparts.[19] Recent publications are congruous with this view, in recognising that early English castle sites facilitated a range of residential components, situationally dependant in layout and scale, catering to both seigneurial needs and those of lower social classes.[20] In assessing functionality, Speight has further warned against setting up rigid dichotomies between public and private, secular and sacred, and military and domestic spaces in castle studies to the detriment of historical complexity.[21] Moreover, she postulates that many of the rigid debates between residential and military architecture have ignored everyday social and economic functionality, contesting that:

> *'The castle is to be understood as a way of life. It is a venue for life at all social and economic levels. It offers employment to some, comfort and status to others. It is an adaptable form and one that demonstrates flexibility rather than rigidity in its spatial design.' –Speight 2004, p.2.*

Integrating the discipline of landscape studies with castle studies, Creighton has observed that medieval English villages,[22] churches,[23] and monasteries[24] had been studied within the context of their wider local landscapes, greatly improving our comprehension of their role as enmeshed network components, and he consequently endeavoured to assess castles in the same way.[25] In what constitutes a major conceptual foundation for the present thesis, Creighton's 2002 study identified a range of extra-military implications of castle planning and landscape orientation, with those directly relating to economic patterns including: the impact which the imposed Norman castles had on Saxon town plans, including an implication of centralised planning and deliberate population repression; that eleventh century newly emergent or 'planted' settlements were widely associated with castle sites; that castle-adjacent settlements often shared a 'symbiotic' relationship, with both built components receiving benefits; that seigneurial overseers regularly relocated markets to castle sites; and that an overall deliberate reorganisation of the developing feudal landscape was overseen by the baronial class, whose caput castles comprised key hubs for the catalysation of pattern change at both the rural and urban level.[26] Supporting this emergent economic perspective, Mcalister's 2016 study assessed the direct relationships between a set of early castles and villages, identifying 'subservient' and 'associated' settlement-castle relationships.[27] Several recent digital analyses have also tested GIS mapping of castle sites, relative to their broader landscape contexts, and demonstrated local level preference patterns of castle builders in siting priority.[28] A paradigm shift in how scholars approach castles archaeologically and conceptually has thus begun, with economic and social considerations at the forefront of research. These recent theorisations and situational demonstrations of economic functionality at early English castle sites are a crucial addition to our understanding of English castles. Early castles especially, might have been of marked significance in influencing structural patterns beyond initial military considerations.

Thanks to these recent integrative works, situationally flexible planned seigneurial economic functions, necessarily oriented within the developing manorial economy, can be confidently added to the well-recognised list of functions historically occurring within early English castle sites. Encouragingly, most recent publications are harmonious in their recognition that castle function was multifaceted and complex, including some economic factors.[29] However, while these recent pivotal works have highlighted situational examples of market orientation and growth catalysation at castle sites, the

[19] Coulson 1996.
[20] Morris 2017; Green 2022.
[21] Speight 2004a, p.2-7.
[22] Rowley 1978.
[23] Morris 1989.
[24] Aston 2000.
[25] Creighton 2002.
[26] *Ibid*, p.135; 137; 153; 165; 222.
[27] Mcalister 2016.
[28] Lowerre 2007; McManama-Kearin 2013; Immich 2014.
[29] Kenyon 2010; Mcalister 2016; Higham 2010; Jamieson 2019.

relative significance of economic functionality within the total structural system of early medieval England remains unclear. This is the case both for the proportional number of castles which were substantially influenced by economic factors in foundation orientation and continuous use, and in the impact their foundation location had on overall population and network node distribution diachronically. Accordingly, Speight has critiqued that the study of castles in isolation has reinforced older military stereotypes, and that 'attempts to explore castles on a bigger canvas' would constitute an appropriate antidote leading to a more accurate theoretical synthesis.[30]

English castles have been typically assessed in isolation or as typological or regional subsets of the total distribution, but there have been some total-system-oriented compilations. As early as 1973 Renn composed a list of all 'Norman' castles built in the British Isles from 1066—1216, for which he recorded some 800 entries.[31] However, while this particular work thoroughly deconstructs the various design principles and construction methods of these early castles, 'the social and topographic setting of castles …is not considered at all.'[32] In 1983 King published an index of all castles built in England and Wales from 1052—1547.[33] This index, which lists several thousand entries, also including walled towns and monasteries, is widely regarded as the foundation of all subsequent systematic studies of English castles.[34] However, King focused principally on categorisation and description, and while he does discuss castle functionality in the opening chapters, consideration of economic interaction with contemporary settlements is unsystematic.[35] On the other hand, Creighton's Landscape analysis has been invaluable in establishing the theoretical basis for assessing castle-settlement relationships economically, but does not itself delve into broad systematic indexation and mapping to test proportional applicability of identified relationships, preferring the approach of detailed discussion of case studies for each theoretical premise.[36] Thus, English castle studies, especially in this tentative area of castles' economic functions, ought to benefit from further research that is both broad in its inclusion of early castle variation, such that the total distribution of sites is as completely accounted for as is reasonably possible, and which contextualises castle sites against elements of the manorial social framework, which previous research has identified as fundamentally related to their design and use.

1.1.2..... Thesis Rationale

To carry out this research, a broad 'structural network' perspective is necessary, incorporating a wide and detailed index of castle site locations and types, with an integrative landscape analysis oriented to test for economic functionality, especially with consideration of settlements (both directly adjacent and within local hinterlands), environmental elements, and terrain. Moreover, there is a significant impetus for attempting as much. In his discussion of required further research, Creighton identified carefully oriented excavation, exploitation of a variety of intramural and extramural castle data, especially with integration of settlement studies (which have often incorrectly treated castles as operating 'above and beyond settlement patterns') in combination with assessment of the physical properties of castle sites, as the 'key ingredients' to progressing the sub-discipline of castellology.[37] Speight further adds that 'fieldwork is time-consuming and expensive… and Castellologists comprise both those who conduct fieldwork (usually confined to one monument at a time) and those who utilise the results of fieldwork to construct their theories.'[38] This present study therefore aims to carry out the latter. While excavation is beyond the resource scope of this research project, application of GIS software (having been recently

[30] Speight 2004a, p.24.
[31] Renn 1973.
[32] Bu'Lock 2014.
[33] King 1983.
[34] Kenyon 2010; Coulson 1996.
[35] Renn 1984, p.278.
[36] Creighton 2002.
[37] Creighton 2002, p.225.
[38] Speight 2004a, p.5.

tested in castle landscape analyses) for the broader systematic digital mapping of castle sites and testing of their spatial pattern, relative to various elements of contemporary settlement patterns, does constitute a viable and novel option which is provisionally employed in this research. Creighton has further posited that 'plan analysis of failed [adjacent settlement] plantations can tell us much about the early phases of other more successful castle towns.'[39] Therefore, application of recently published LIDAR data[40] is used here as a basis for providing an updated digitised areal mapping of early English castle site plans, to utilise for further analysis and discussion, especially recognising that component of the bailey. The data analysed therefore comprises of a calculated mix of historical (documentary), archaeological, and modern reference material integrated through digital mapping.

The principal intent of this research is to expand on the existing theoretical groundwork for castle and settlement economic relationships through a GIS-based spatial analysis of these two site types. The underlying thesis is that the spatial analysis of the broader early medieval structural network will clarify the nature and degree of economic functionality at 'early' castle sites across England from 1000—1300 CE. The generation of new information through the reassessment of existing resources with new digital tools is employed to contribute to the long-standing definitional and functional debates which remain at the centre of the English castle studies dialogue. Caution is taken in not designating 'prime mover' status to either settlements or castles, and the potential influence each broader built pattern had on the other is theorised and tested for. Caution is also taken to avoid presumption of castle builder intentions, and analysis of pattern outcomes forms the basis of the proposed models of economic functionality.

1.1.3..... Research Aims

The following three research aims constitute the overarching objectives of this thesis. A set of eight more narrowly detailed research issues which the proposed analysis methods may be able to contribute to is detailed later in Section 2.5.1 at the conclusion of the literature review chapter in which they are contextualised and respondent to. In that section, these eight issues have been deconstructed into component research questions, to which the study findings are presented in an integrated discussion in Chapter Seven. The following three broader research aims are tested throughout the study, with an associated theoretical model of economic function at castle sites developing gradually, and a direct assessment of the findings and conclusions pertaining to these aims is offered in Chapter Eight:

Aim A. Site Indexation. To generate an updated digital 'total system' resource for early English castle sites. An extensive index of English and Welsh castles (*Castellarium Anglicanum*) was produced by King in 1984, which has remained the foundational index referred to by subsequent wider pattern analyses. Some more recent works have utilised aerial photography as a resource in categorisation and layout assessment. However, the major potential of LIDAR DTMs and online publication of local historical resources constitute invaluable new resources for expansion of this established record. An initial key objective then, is to utilise a portion of research time and resources to generate a single mappable digital resource for the early (limited to 1300 CE) English castle, which can be refined and expanded on and hopefully utilised for further research in the sub-discipline of castle studies.

Aim B. Digital Mapping. The underlying technical aim of this research is to utilise digital mapping as a tool for non-intrusive measurement and spatial comparison of archaeological sites. For the present research the focus is on medieval castle and settlement locations, but the methods tested may be more

[39] Creighton 2002, p.167.

[40] UK Environment Agency 2019;2022.

widely applicable for similar built landscape entities. More precisely, using the ArcGIS Pro software from ESRI, data of several medieval English natural and built landscape elements in combination with modern LIDAR digital terrain models (DTMs) are to be collected and mapped. These mapped elements are to then be measured and analysed using GIS polygon and spatial proximity functions, and the output results are to be contextualised within ongoing debates. The objective is thus to test this method of digital research in its technical capacity for generating new information from existing archaeological resources to contribute to the ongoing archaeological discourse without a requirement for time-heavy or expensive new excavations.

Aim C. Economic Assessment. To test for economic influence at early English castles. Fundamentally, the theoretical premise of the current research is that early medieval English castles were built and developed with substantial consideration of the complex manorial economic landscape, rather than in ignorance of it or with overwhelming preference for location defensibility or status display potential. As much has been argued occasionally by others in castle studies, but further evidence would help clarify the ongoing debate about the degree of economic orientation and impact the castle had on patterns diachronically. A key objective in this study is to employ settlement size and pattern as an indicative metric of economic behaviour and resources, with the theoretical premise that the analysis of the castle distribution pattern alongside the settlement pattern would generate such additional information, which might then be used to assess the degree of castles economic influence.

1.1.4..... Scope

Geographically, this research is limited to the Kingdom of England as demarcated by the county boundaries of the 1086 CE Domesday Books (further detail on Domesday Books in Chapters' Two and Five, see Figure 1.1.4 for an outline). Notably, this excludes portions of the northern English counties. The kings of England held territory across the study period on the continent in France as well as in Wales, Ireland, and in the Mediterranean. Castles were rapidly introduced to England only after 1066 CE (see Chapter Two) and were built and utilised for centuries thereafter. King William I ruled principally from his caput seat in Normandy, with England's governance initially predominantly managed by trusted feudatories in the early Norman period (outside of the military campaigns William oversaw personally), and the Normans did build consecutive waves of castles in all these locations across the study period, all of which provide unique insights into the early use of English castles. However, detailed mapping of all these areas would exceed the time constraints of this thesis, and England alone has been chosen as an initial test area for the economic functionality models proposed. Moreover, as the Domesday Books constitute one of the two key settlement datasets for England (the other being the 1377 Poll Tax) the territories they surveyed constitute a usefully limited but still substantial areal zone.

Temporally, the 'study period' includes castle foundations within the range from 1000—1300 CE, with Dataset 1. (containing the castle data) limited to 1300, but the analyses further utilise settlement data from 1086 and 1377, navigable river data from pre-1348 sources, and modern LIDAR terrain data (2019-2022). The data for settlements are entirely historical in nature, relying on what were essentially tax records from which medievalist scholars have extrapolated population estimates for historic locations. Notably, the 1377 data source stretches across the fourteenth century, with ramifications related to demographic shift and population decline caused by climatic shifts and the infamous 'Black Death' bubonic plague, but no alternative settlement data source close to the 1300 date was identified (see Chapter Six for a discussion of implications). Archaeologically, this research is limited in scope to assessing those fortifications comprising the 'early medieval English castles' including primarily

'ringworks', 'motte and baileys', and 'enclosures' (see Chapter Five for a full typological assessment). In the later medieval period (beyond 1300 CE) the 'tower house' castle and 'star fort' artillery castle forms emerged, alongside more extravagant palatial and private residential enclosure castle sites. There is no exact delineation that can be drawn in the shift between these and the earlier socially integrated administrative castles of the study period, and thus 1300 CE is taken as a reasonable 'end date' to reflect the end of the 'early' medieval English castle forms. The number of early castle sites identified within these parameters came to a total of 861 (see Appendix I and Dataset 1. for a full list).

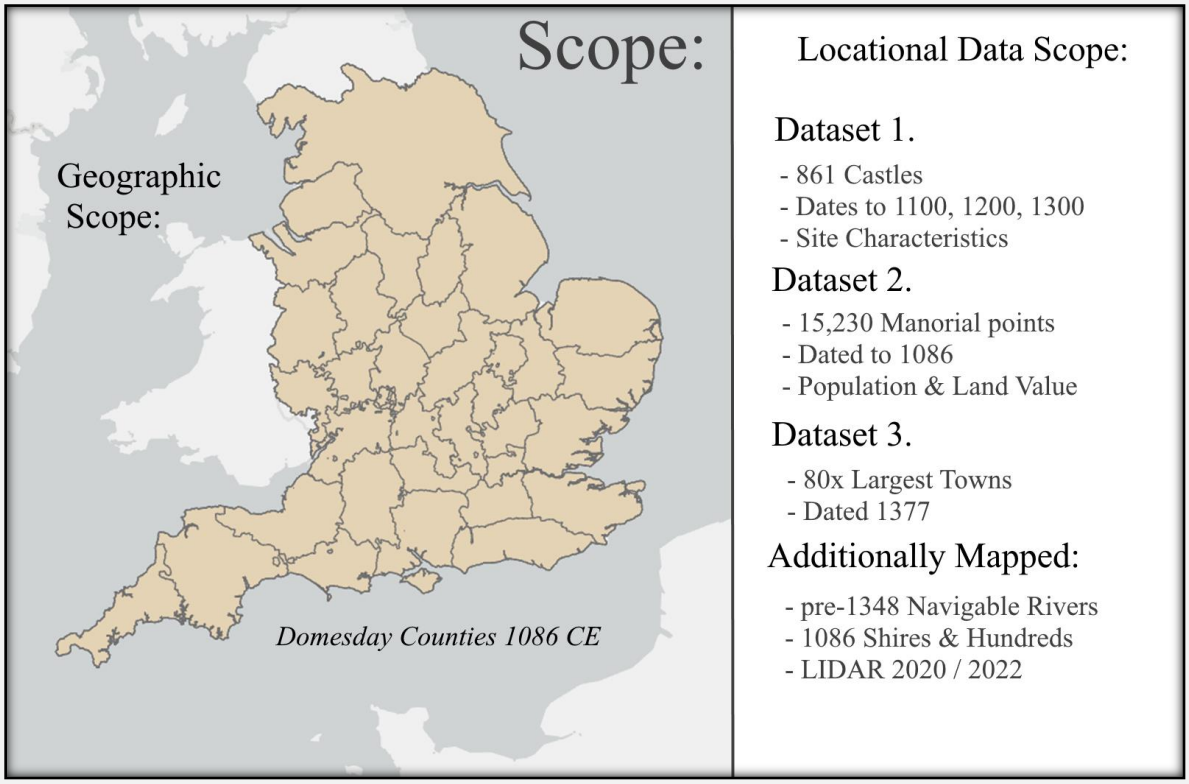


Figure 1.1.4. *Study scope. Left: Borders of the Domesday Book Counties.* (Modified from Brookes 2020.) *Right: Summary of the three locational datasets and their contents.*

1.2..... Structural Outline

1.2.1..... Summary of Components and Method

To begin with, three datasets were compiled for analysis. The first (Dataset 1.) is a list of 861 English castles built from 1066—1300 (see Chapter Four for a full breakdown of site characteristics). The second (Dataset 2.) is a high-resolution eleventh century population distribution set based on the Domesday Books, with some key alterations (see Chapters' Three and Five). The third (Dataset 3.) is a record of population shift from 1086 and 1377 which focuses more narrowly on the larger urban centres, with data from 1377 coming from the Poll Tax records (see Chapter Six). To support initial findings and analysis, observational fieldwork was also conducted in 2022 (see Appendix III). The data from the main three sets were combined with additional spatial resources for terrain, rivers, and modern overlays in a GIS in which analysis was executed. The analyses were separated across three chapters with areal analysis based on LIDAR terrain (Chapter Four), local nearness analysis of castles and eleventh century population (Chapter Five), and a settlement shift analysis measuring nearness of castles to known town growth and contraction (Chapter Six). The key outputs of the thesis were the analysis findings, which

are discussed in detail in Chapter Seven, a full topographic record of the 861 castle sites (Appendix I), a similar record of the LIDAR areal analysis of site components (Appendix II), and the extensive compilation of castle site and local settlement nearness statistics (Dataset 1.). A more thorough procedural breakdown is available in the methodology chapter (Chapter Three).

1.2.2 ..... Chapter Content Outlines

Chapter One: Castles, Settlements, & Economy. The first chapter briefly presents the research background, issue, scope, and justifications. Three broad overarching research aims are outlined, with the more detailed research questions contextualised in the literature afterwards.

Chapter Two: Context and Literature. The literature review chapter introduces the broader range of scholarly foci within publications from the late nineteenth century to 2022. The origins and development of English castles are discussed, including various social and political influences on design and location. A brief overview of the eleventh century Saxon landscape into which the early castles were introduced is given. The role of the baronial and knightly class in entrenching manorial feudalism is explored, especially with regard to economic planning and exploitation. The necessary historiography and discussion of well-established military- and status-oriented castle functionality is summarised. The chapter concludes with a simple theoretical model of castle economic functionality which is expanded upon in subsequent chapters. The eight issues, each with subsets of research questions, at the end of Chapter Two are contextualised within the literature review building on identified knowledge gaps observed in the initial research process.

Chapter Three: Methodology – Mapping the Kingdom. The technical processes of assembling the three key datasets are first described, particularly for the castle dataset (Dataset 1.) which was largely an original work of compilation. Discussion of the various digital sources of castle site information is given, along with comparison of their benefits and limitations. The GIS mapping and analysis processes follow this, explaining: the background layer components including rivers; the procedure of the LIDAR DTM site area measurement analysis; the 5km radial proximity analysis; the Thiessen polygon analysis; and the settlement pattern shift analysis. Justification for specific parameters and design choices is explained and the chapter is technical in nature with results presented later.

Chapter Four: Castle Site Characteristics. The fourth chapter deals firstly with the reporting of the statistical findings generated through construction of the castle sites dataset (Dataset 1.), and their initial mapping in the GIS, including: areal distribution pattern; altitude and terrain preference; nearness to rivers; pre-Norman site use; foundation and continued use patterns; and timber and masonry castle proportionality. The latter half of the chapter introduces the LIDAR DTM areal analysis of fortified site components, with a discussion of mottes, ringworks, enclosures, and anomalous forms. A critical evaluation of the terminology and nomenclature within castle studies is offered in response to the disconformity of the results to some existing categorical rulings on typology. The chapter is wrapped up with a discussion of the bailey component of castle sites, including a brief section on the implications of early church nearness to fortified elements, and closed with an assessment of the bailey's potential roles and proportionality in scale and frequency of occurrence across the study period.

Chapter Five: Spatial Proximity Analyses: The 1086 CE Domesday Books were a key existing resource introduced within this chapter for comparative spatial analysis. A discussion of the medieval manorial English tenure system vividly elucidated by the Domesday data begins the chapter. Particular focus is given to the basic demographic elements and regional variation within the early agriculturally subsistent rural settlement pattern. The theoretical model of castle functionality as an integrated element

of this developing feudal landscape is further expanded, especially with the premise that the castles may have been commonly reciprocally related to their adjacent settled populations. The chapter then discusses the radial and Thiessen polygonal analyses; in essence the objective of which is to identify the degree of influence the eleventh century settlement pattern had on the subsequent distribution of early castle sites, and to test whether high local populations correlated with castle scale, type, usage dates, and masonry upgrade. For this earlier settlement analysis, the settlement data are included across the complete spectrum of sizes from isolated hamlets to large towns.

Chapter Six: The Castle Town Enterprise. In combination with the 1086 settlement data, the sixth chapter brings in the Poll Tax data for 1377 CE to observe urban settlement pattern shift. While Chapter Five focused on the total range of settlements from isolated farmsteads to market towns synchronically, Chapter Six focuses more narrowly on the major market towns diachronically from 1086—1377. The chapter opens with a discussion of the shifting economic role of English towns across the study period. The issue of population decline in the fourteenth century is considered as to its potential implications and limitations for shift observations. The nearness of castle sites to instances of town expansion, emergence, and contraction (following Dyer's 1377—1525 CE study as a model) is afterward assessed to identify the degree of correlation of castle siting with adjacent urban growth.

Chapter Seven: Castle—Settlement Interrelatedness. The discussion chapter relates the research issues summarised in the literature review to the results of the analyses of Chapters' Four, Five, and Six. The chapter begins with a thorough overview of the findings directly related to the economic functionality of the castle sites, especially the settlement proximity and bailey area, closed with a finalised castle-settlement relational model and assessment. This is followed with a broader discussion of secondary research issues including: pre-Norman site use; early timber sites; issues of dating and typology; implications for status and military oriented functionality; the potential role of warhorses in castle design; and of the post-Roman urban trajectory in Britain relative to the European subcontinent.

Chapter Eight: Conclusions – Reciprocal Continuity. Chapter Eight responds to the initial aims and objectives set out in Chapter One with an assessment of research outcomes. The research contributions and limitations are considered. The broader implications of the findings for future research opportunities, both with and without excavation requirements, and the general application of spatial proximity analysis and GIS as an analytical tool to be applied more broadly for archaeological applications are discussed, with some recommendations offered.

1.3..... Conclusions

The medieval academic sub-discipline of English castle studies has, especially in recent decades, produced a body of publications following a trajectory of recognising an increasingly sophisticated set of castle functions. Theoretical or conceptual identification of potential castle site functions has been followed by broader acknowledgement and definitional integration of these functions. Problematically, when the total body of early castles is considered, as opposed to the most well-preserved and militarily impressive outliers, simple and small timber castle forms constituted the majority, especially in the eleventh and twelfth centuries. This fact is often ignored or brushed over before later masonry examples take pre-eminence in functional and definitional discussions within academic and public publications. Moreover, the evidence of actual military violence at such sites relative to evidence for everyday administrative concerns might imply less dramatic and more practical behaviour patterns oriented around early castles than castellologists have traditionally given proportional account. Nevertheless, military functionality, peace-time residential capacity, and locational orientation have been the most

thoroughly argued and are consequently well-accepted by disciplinary authorities, with publications concerning military architecture especially remaining popular into the present. The high-status residential function of castles is similarly oriented around surviving architectural evidence, and is broadly applicable to most early castle layouts, with the possible exception of some smaller minor military or observational motte sites. Several ulterior elements, including deliberate visibility, social and symbolic meaning, legal, and administrative, and also economic functions, are among those which are more situationally occurrent or visible, and are only partially integrated into the common perception of castles.

The early 'castle' has thus conceptually transformed from a mere earthwork stronghold to a lordly household; to a centre of colonisation; to an administrative social and legal seat; and now to an integrated multi-class economic hub, as will be further evidenced in the following literature review chapter. Deliberate seigneurial planning and expansion of the bailey component and its equivalents, relocation of markets, the apparent catalysation of growth at adjacent settlements, development of specialist crafts around and within castle sites, and the broader seigneurial reorientation of the manorial landscape to support the complex feudal enterprise of the castle site constitute an 'economic' functionality that has recently joined this ongoing functional and definitional evolution (a more thorough breakdown of castles' economic roles will be given in chapters Five—Seven). Castles were anything but isolated from the economic developments within their lords' demesne, upon which they relied on. The written indexation of early English castle sites has been thoroughly achieved in prior works, as has the recent effort to recognise economic functionality in several localised rural and urban castle-adjacent settlements. What remains however, is to test the broader applicability of such castle-settlement relational economic functionality across the wider medieval English built manorial network, including a thorough indexed set of early castles. The relative influence that such relationships had on the overall pattern and character of both settlements and castles diachronically is presently largely a matter of conceptual speculation. The identification of statistical evidence around such castle-settlement relationships in the form of proximity-based pattern outcomes ought to help ascertain the appropriate relative place of economic functionality within the hierarchy of castle builders' considerations.

2.0..... Chapter Two: Context & Literature

2.0.1..... Introduction

The framework of this thesis involves the concurrent analysis of early medieval English castles and settlements. These components are generally studied in isolation from each other, with a few notable exceptions. Settlements were a continuously shifting element of the built landscape, existing before and after the era within which castles were prolifically founded and utilised. Castles were an introduced element that influenced and were influenced by the settlement pattern. While this chapter focuses principally on the castle sites, the nature and statistics of the settlement sites are more thoroughly detailed in Chapter Five in the introduction to the Domesday Books data and Chapter Six with an overview of larger towns up to 1300 CE. This present chapter first lays out the historical context within which these site types existed, and then proceeds to discuss the ways in which the emergence and role of the castle has been conceptualised and practically studied in the existing body of scholarship.

2.1..... The Saxon—Norman Transition

As this thesis focuses only on the earlier medieval castles within the Kingdom of England, it is necessary to first describe the conditions within which they were established. The dating limitations of 1000—1300 CE were chosen after initial research for several reasons: The architectural and functional shift castles underwent in the later medieval period indicated a date of roughly 1300 was appropriate to end an analysis of their 'early' use; The 1086 date of the Domesday survey data and the known use of castles during the Norman Conquest necessitated the inclusion of at least the end of the eleventh century. Liddiard notes that, in the established historical narrative, after c.1300, 'castles still reflected a concern to deter the more aggressive forms of local violence, but that the fortified residence of the military magnate was slowly giving way to the country house'.[1] An earlier starting date was also considered in order to track the diachronic distribution of the Saxon burhs and defensive earthworks and compare them to the Norman castles, but ultimately the focus shifted to the eleventh century when it became clear that the nature of the burh fortification was fundamentally different to that of the early Norman castle fortification types. Thus, the relevant historical and archaeological narrative requiring summary

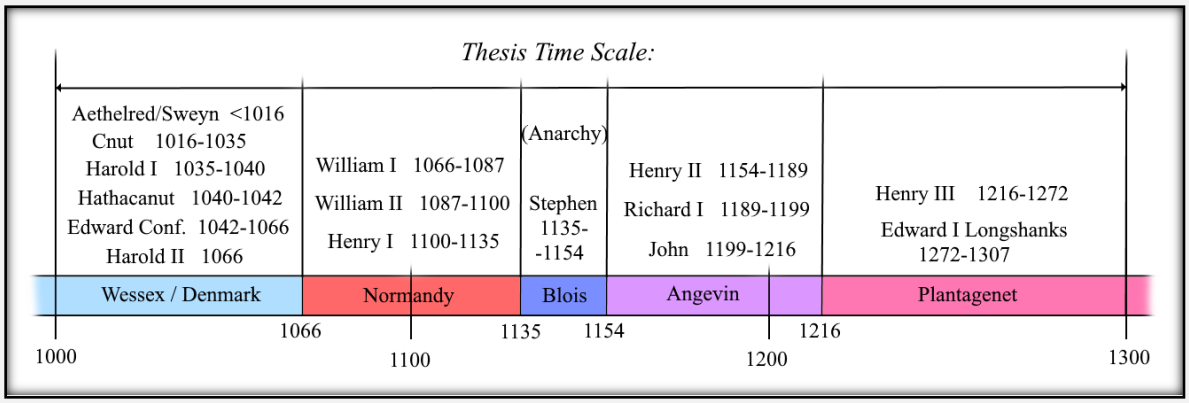


Figure 2.1 *Thesis time scale detailing the kings and dynasties across the 1000—1300 research period.*

[1] Liddiard 2005.

here begins in the eleventh century, with what was fundamentally a Saxon cultural landscape; it spans the Norman, Blois, and Angevin dynasties; and ends in roughly 1300 during the rule of Edward I in the middle of the Plantagenet era (see Figure 2.1).

2.1.1 ..... The Late Saxon Developed Landscape

When the Normans began prolifically introducing castles in England in the late eleventh century, it was into an essentially late Saxon built landscape. Socio-politically, eleventh century England has been described as 'Anglo-Saxon' or simply 'Saxon', although some recently scholars have preferred 'Anglo-Dane' or 'Anglo-Scandinavian'.[2] The population consisted of a Saxon and Scandinavian social elite which had genetically and culturally assimilated with the majority Romano-Celtic population from 400—1000 CE.[3] Anglo-Saxon society was 'strongly hierarchical and marked by inequalities in wealth.'[4] The Saxon built landscape primarily included small, dispersed villages, scattered monastic establishments, and larger nucleated burhs, managed under various regional landholding conventions.[5] Chief among these, the Saxon burh has been described as a forerunner of the medieval town in England.[6] First appearing in Wessex, burhs were essentially fortified townships. They physically embodied the Saxon social order of tribal aristocratic kinship and were very much unlike the Norman private residence fortifications that replaced them.[7] The closest Saxon structure to the Norman motte has been identified as the Thengal palisaded manor.[8] Carver notes that burhs were community fortifications, primarily concerned with defence of the governed populace against seaborne Scandinavian harrying, but they were also used as bases in proactive military campaigns.[9] The tenth century *Burghal Hidage* details 33 such fortified places, with each having a list of hides (Anglo-Saxon land divisions designated for taxation) which would supply armed men to each burh location in times of need.[10] Barlow posits that several burhs had become serious towns by 1066 CE with some 20 having populations above 1,000; 'well beyond any notion of mere fortified administrative stations'.[11] There may well have also been more common, and smaller, rural burh-like forms, as is indicated by historical accounts of *burh-geats* (thought to be entrance towers) at rural Saxon nobles' residences.[12]

Social order was oriented principally around an agricultural peasantry base which supported an aristocracy of clergy and lay hereditary nobles.[13] By the eleventh century the English parish system had become largely established, with almost every village having a church.[14] Secular early medieval settlement outside of burhs in ninth—eleventh century England primarily took the form of small nucleated agriculturally subsistent villages and dispersed hamlets oriented around manorial estates.[15] Buildings were made almost entirely of timber and earth. Houses were typically small rectangular structures built on sunken or raised platforms containing a central pit, collectively known as 'Sunken Feature Buildings' (SFBs). These were typically built in small clusters around a larger hall, a pattern which is argued to represent the basic social structure of elite and subservient classes (see Figure 2.1.1 for an early example).[16] Anglo-Danish halls were built in timber with one large ground floor room, generally featuring only a beaten earth floor and cut hearth.[17] The most common evidence of Saxon settlements comprises post-holes, beam-slots, and ephemeral traces of pits.[18] Extending well beyond simple hovels, Saxon builders often produced large and sophisticated structures.[19] Arnold cites burial evidence to demonstrate that while the Saxons preferred timber and earthwork techniques to masonry,

[2] Gravett 2003: Reynolds 1999.
[3] Collins 1999, p.177; Dark 2000, p.228.
[4] Gardiner et al. 2011. p.198.
[5] Reynolds 1999.
[6] Carver 1999, p.26.
[7] *Ibid*, p.40.
[8] Gravett 2003, p.4
[9] Carver 1999, p.42.
[10] Hill & Rumble 1996, p.1.
[11] Barlow 1988, p.25.
[12] Liddiard 2005, p.15.
[13] Barlow 1988, p.6.
[14] *Ibid*, p.28.
[15] Carver 1999, p.46.
[16] Speed 2013, p.335.
[17] Gravett 2003, p.34.
[18] Speed 2013, p.21.
[19] Arnold 1997, p.73.

this made them expert carpenters.[20] The rural settlement system was largely shaped by geographical determinants and the growing medieval road network which incorporated and expanded upon the Roman road system.[21] The Kingdom of England at this time was also very decentralised, such that to the inhabitants the village was more important than the shire or the kingdom.[22] Barlow further observes that economic exports were minimal, both internally and outside the kingdom.[23]



Figure 2.1.1 *Reconstruction of the Anglo-Saxon village excavated at Cowdery's Down, Hampshire*. (Reconstruction by M. Codd.)

Saxon England did have regionally diverse feudal landholding elements. Through the granting of land, either as fiefs (land over which the lord maintained ownership but the vassal utilised the fruits), or book-land (land granted through vulgar law that could not be resumed by the king/lord), a great number of clerical and secular lords became responsible for the maintenance of quotas of armed men.[24] However, feudalism was not yet entrenched to the degree that it would soon be under the Norman administration. The landholding lords of Saxon England in the tenth century formed a highly socially inter-related class, with a network of alliances linking several key families. These royal kindreds occupied most of the seats of power, dominating both lay and clergy titles.[25] With the shift in power to Danish kings in the eleventh century, the closely knit ealdorman families were replaced with several powerful earls, most of which were un-allied by marriage to the kingly line of Cnut, with the notable exception the Godwinsons.[26] Fleming argues that this shift also profoundly affected the coordination of the kingdom of England on a religious level, with the ruling earls no longer sharing interests in the same ecclesiastical foundations and alliances. By the year 1065, the power and authority of the English monarch was considerably diminished. The Godwinson family held a greater portion of land than did the king, and the land normally set aside for the endowment of royal officials was slowly incorporated into the familial holdings of the earls. Edward the Confessor, owing his throne to his vassals, was rendered a weak king, 'pushed and bullied by a family of highly competent and slightly unscrupulous earls.'[27]

[20] Arnold 1997, p.75.
[21] Brookes and Huynh 2018, p.478.
[22] Barlow 1988, p.6.
[23] *Ibid*, p.24.
[24] *Ibid*, p.9.
[25] Fleming 1991, p.25-30.
[26] *Ibid*, p.45-51.
[27] *Ibid*, p. 103.

2.1.2..... The Norman Conquest and the First Castles

Famously, in 1066 CE, Duke William of Normandy led his campaign to secure the throne of England. William had long considered himself the rightful claimant to the English throne and made several attempts to establish his legitimacy, including sending an envoy to the Papacy prior to his expedition to secure theocratic authority and approval.[28] The Norman army, comprised of knights from a Norman core but also several north-western European households beyond the duchy of Normandy, landed in Pevensey with some 3,000 vessels loaded with men, each equipped with a helmet, arms, and hauberk.[29] As is emphasised on the Bayeux Tapestry, William transported large numbers of warhorses for his mounted knights across the channel, which were instrumental in his victory at Hastings (see Figure 2.1.2). Cavalry warfare was to be favoured by the Normans continuously, granting them an edge in conflicts for over a century. Sources debate on whether it was William's skilful manoeuvring in Sussex or Harold's rush south from his earlier conflict with Hardrada in the north; however, it is agreed that the English king did not have his full army present at the battle of Hastings.[30] After a long day of close fighting, William came out with victory, and shortly thereafter the duke became King William I. Goulding notes that immediately after the victory at Hastings, William rushed to secure the ceremonial, ecclesiastical, and commercial 'capitals' of England, these being Winchester, Canterbury, and London.[31] At the time of the conquest, the kingdom made up some 44,000 square miles, 250,000 peasant households, 14,000 settlements of various proportions, and 500,000 ploughing livestock.[32] The development of the land included thousands of mills, fisheries, churches, vineyards, orchards, but much of the countryside was still wooded. William had promised vast stretches of this land and wealth to his loyal retainers who in turn had won him his crown, and thus began his subinfeudation of territory.

However, King William I was faced with several years of opposition and rebellion in England before his conquest was truly secure. In the late 1060s several small rebellions broke out in Essex, Sussex, Kent, and Mercia, with a larger revolt occurring in York. The Normans greatly devastated the countryside of York and Northumbria in response. In what has come to be known as the 'Harrying of the North', the destruction of crops and property was so great that thousands perished from famine and the countryside became desolate.[33] Goulding writes that disorder was widespread until around 1070, when the military phase of the conquest could reasonably be said to have concluded.[34] It is during these early campaigns that many of the first Norman 'English' castles were founded. Wherever rebellion stirred, new castles were established in response. Edwin and Morcar's Rebellion of 1068 for example, invoked a defensive response from the king. He fortified the sites of Warwick and Nottingham with substantial castles; and these, it seems, were instrumental in containing the unrest.[35] The rebellion capitulated, fearing the build-up of Norman strength, and William thereafter fortified a castle in York which was the core of the discontent. After the king had retired from the north, he founded castles in Lincoln, Huntingdon, and Cambridge on his way south and 'fortified them strongly'.[36] Brown has noted that William's repeated use of castles in military campaigns had begun much earlier than this. As Duke of Normandy, William lost his father at a young age, and was forced to take up the role of military commander to preserve his own demesne and titles. Several of his Norman vassals raised fortifications in rebellion against him, which he overthrew and utilised -no doubt giving him a strong grasp of their strategic value which he would come to exploit prolifically.[37] Goulding posits that the rebellious factions against the Normans in England, along with the Scandinavian claimant factions, had more than enough power to crush William's early tenuous rule. However, due to their failure to coordinate, the

[28] Goulding 1994, p.30.
[29] Brown 1998, p.15.
[30] Goulding 1994, p.31.
[31] *Ibid*, p.33.
[32] Fleming 1991, p.108.
[33] Morris 2017, p.27.
[34] Goulding 1994, p.39-41.
[35] Brown 1998, p.101.
[36] Brown 1998, p.102.
[37] *Ibid*, p.9.

Normans were able to skilfully divide and conquer them.[38] Nevertheless, Norman and Saxon accounts both concur that the conquest was unnecessarily prolonged and brutal, and that were the Saxons to have submitted earlier, the Norman spoilation of the country would have been much more limited.[39]

The role of castles in King William I's initial campaigns has been widely posited as two-fold: to act as bases of operation from which to maintain supply and avoid over-extension during proactive campaigns; and thereafter to act as defensive strongpoints to isolate and contain potentially rebellious districts.[40] Morris notes that those castles built by William in the early years of rebellion were almost exclusively adjacent to large settlements, clearly supporting this intent to pacify.[41] It is also apparent that many of these early castles were intended to centralise monarchical control. However, the rapid rate of their simultaneous adoption and construction by William's tenant barons indicates the beginning of a decentralisation of power at the elite level. Morris estimates that of the total number of castles built in England, some 500 of them were built during the early reign of the conqueror.[42] Liddiard similarly notes that there were perhaps 500-600 'active' castle sites in the late eleventh century.[43] This was thus an unprecedented building campaign in its contemporary setting. Accounts from the end of William's rule detail that he was an ardent commander, temperate with all indulgence, but ambitious such that he would 'never refuse those things which had to be accomplished on account of the labour or danger involved'.[44] The construction of Norman castles in established urban settings infamously saw the demolition of local dwellings, with the position of the castle on the best defensible ground being a higher priority than any loss in economic value caused by the destruction. For example, in Lincoln 160 houses were recorded to have been demolished and 113 in Norwich.[45] Many cases are also known where William had a castle built for a campaign, only to then enfeoff it to a vassal when unrest settled. Tuulse argues that the intention of William in establishing a network of castles in England was to centralise his



Figure 2.1.2 *Chapter 13, Scene 2, Bayeux Tapestry*. Circa 1070 CE. Tapestry. Musée de la Tapisserie de Bayeux, Bayeux, France. (After the Museum of Reading online).

[38] Goulding 1994, p.35.
[39] *Ibid*, p.34.
[40] Creighton 2005, p.37.
[41] Morris 2017, p.25.
[42] *Ibid*, p.37.
[43] Liddiard 2005, p.17.
[44] Brown 1998, p.49.
[45] Burke 1992, p.15.

own power 'in spite of the introduction of the feudal system'.[46] However, the general consensus is that castle building only more deeply entrenched the feudal system.[47] It seems William was content in distributing a large portion of his powerbase among his followers. Further supporting an initial intent to enforce royal authority however, the pattern of royal castle siting appears far more spatially consistent than baronial castles. These royal fortifications follow a roughly even distribution across the shires of England, generally being placed in the principal Saxon settlement of each shire. Creighton posits that the role of royal castles was to supress the larger nucleated populations, function as direct seats of governance, and to control the important overland transport routes that had grown between these population nodes.[48] After the initial unrest had settled down, the castle had proven itself an invaluable military tool, but was further becoming an integral element of the Norman administrative machine.

2.1.3..... Pre-Norman Fortified Space and Castle Origins

The Normans began a prolific era of castle construction in England which continued for several centuries, albeit most prolifically in the eleventh and twelfth centuries. The military nature of the origins of these early English castles firmly cements the intentions of their builders; to construct defensive and pacifying fortifications. However, it must be stressed that this was not their only role. An initial 'arms-race' militaristic assumption widely shared by early theorists was that the Norman English castle was simply a natural development within a contiguous chronology of fortified forms in Britain, following on from precursor Saxon timber burhs and thengal palisades; these after Roman garrison forts; and earlier Iron-Age hillforts; and followed by gunpowder bastions and star-forts of the late medieval era, within a shared chronology of defensive progression.[49] It was reasonably assumed that the early English castle shared broadly similar social, military, and economic functions and architectural and defensive principles to such sites. However, a closer inspection of early castle sites alongside the historical comparison of broader fortification trends clearly highlights that while many elements of these site types' military ethos are shared, the early English castle was a novel and unique form in multiple ways -one which cannot be understood in isolation from the socio-political institutions and developed landscape within which it arose. In addition to being a functionally defensive tool, it was a symbolic structural arrangement, a social hub, seigneurial residence, and indeed, an economic centre.

The basic desire for self-preservation of the individual and kin-group is intrinsic to the act of fortification. While fortified sites universally share this protective element, it is generally their ulterior functions, in addition to their material architectural components, that differentiate their unique total forms. Defensive masonry and timber fortifications have been constructed in Eurasia since at least 3,000 BCE.[50] Early Eurasian fortification of space typically entailed the defence of palatial space (either of governmental or religious nature), or the defence of entire populations in a defined intramural urban space.[51] When resources were insufficient to fortify entire settlements, preference for naturally defendable terrain elements, such as rocky bluffs and river convergences, have always been favoured by fortress builders.[52] The Iron-Age fortification builders of Britain exploited natural terrain elements with scarping and mound building to establish vast earthwork hillforts.[53] These were designed to defend entire communities, and were often constructed on a vast scale. Hillforts feature less exclusivity of defended space than would the later Norman castle. Replacing hillforts, the Roman administration established a network of several hundred relatively uniform rectilinear forts in Britain, often originally built as earthwork and timber structures, with mortared masonry walls and consecutive ditches added

[46] Tuulse 1958, p.25.
[47] Brown 1998; Morris 2017.
[48] Creighton 2005, p.36-37.
[49] Thompson 1912.
[50] Tuulse 1958, p.7
[51] *Ibid*, p.6-9.
[52] Tuulse 1985, p.10.
[53] Cunliffe 2000.

in such cases where the fort became a permanent fixture.[54] The Roman military machine was responsible not just for conquest and garrison, but also the construction of extensive roads and settlement infrastructure. The Roman fort had to facilitate the safe housing of soldier-workforces of hundreds—thousands of men, alongside ample room for storage of supplies and horses, and therefore tended to adopt large flat rectangular plans. In the post-Roman era fortification use became more diverse, but by the end of the Viking Age the burh appears to have been the most recognisable form.

Both the hillfort and the Roman garrison fort were introduced by external cultures, with the prior from the Belgic Celts, and the latter by the Roman Empire. In this respect at least, the castle is consistent; having its earliest true forms in northern Europe and becoming enforced upon and then emulated by the English. When the Carolingian Franks took up the mantle of claiming centralised rule in the ninth century, the architecture they utilised was strongly influenced by Roman style. However, their fortifications were of a simpler earth and timber design than the late-Roman garrison fort (Despite the Carolingians demonstrating a mastery of masonry in their palaces).[55] It was the feudal structure that the Franks adopted and entrenched however, that is thought to have given rise to the impetus for individual landed lords to build private residential forts of a new kind. Possibly having its origins in the tenth century within the German Rhineland or the Anjou valley, the 'motte and bailey' type castle quickly became a widespread north-western European early medieval castle form, comprising: 'an artificially constructed earthen motte, surrounded by a ditch, with an adjoining separately defined enclosure known as a bailey.'[56] While the Franks were responsible for some of the earliest feudal private fortified constructions, Tuulse contends that it was Scandinavian settlers who intermarried with the Carolingians in the lands of Neustria (later Normandy) that were the real pioneers of this newly developing fortified form.[57] Morris gives an account from an eleventh century French clergyman that the common timber castle at that time was built as a tall earthen mound atop which a ringed timber wall, towers, and a central timber hall were built, '..in order to protect themselves from their enemies.. and subdue those weaker, of raising.'[58] By the eleventh century, this small timber castle form was rapidly spreading in north-western Europe, and the first masonry halls were appearing atop mottes.[59]



Figure 2.1.3 *A: Thetford Motte. (Photograph by author). B: Reconstruction of an early motte and bailey at Terra Maris Museum, Zeeland.* (Accessed online at https://nl.terramaris.nl/.)

[54] Tuulse 1958, p.12.
[55] *Ibid*, p.16-20
[56] Darvill 2008, p.137.
[57] Tuulse 1958, p.21.
[58] Morris 2017, p.9.
[59] *Ibid*, p.9-10.

There has been much debate as to whether pre-Norman England featured 'castle' forms, but the consensus today is that on the substantive social level, the English did not utilise them prior to 1066.[60] Goulding raises issue that the origins of the English castle are muddied by the fact that there were different forms of timber castle performing different roles (the ringwork, standalone motte, enclosure, and mott-and-bailey), and that some of these forms are extremely similar to Saxon sites.[61] In practice, it is known that many Saxon sites were re-used and altered to form eleventh century Norman motte and bailey and ringwork castles, and some degree of site continuity certainly occurred. Liddiard notes that ringwork defences, or very similar forms, were used by the Anglo-Saxons, as were intramural towers that denoted social rank, and so some early Norman castles might have been quite similar to existing Saxon Thengal arrangements.[62] He stresses, however, that no pre-Norman motte and bailey forms are known archaeologically. Tuulse notes that there was a considerable degree of reuse of existing fortified sites by new Norman castles, but that the degree of preference for unused sites indicates that this was principally in order to exploit the same defensibility as previous constructions, rather than implying a broad deliberate re-use of Saxon fortified places for ulterior reasons.[63] The Normans mostly constructed earthwork and timber castles in England in the eleventh and early twelfth centuries CE, although there are several notable exceptions of early important sites being fortified in masonry.[64] In northern France too, it was far more common for tenth and eleventh century castles to be built in timber than stone.[65] The motte and bailey form occurred most commonly at this early phase in the late eleventh and early-twelfth centuries in England, but was also popular in later expansions such as Henry II's invasion of Ireland in 1169.[66] Figure 2.1.3 demonstrates an early earthen motte mound in Thetford, along-side a fine reconstruction of what the motte-and-bailey motte tower is speculated to have looked like. There were relatively few new castles established beyond the thirteenth century in England.[67] For those that were already established, they fell out of favour militarily during the fifteenth century and were practically redundant by the sixteenth.[68]

2.2..... Socio-Political Influences on Castle Distribution

2.2.1..... Knight Service, Barony, and Feudal Tenure

Castles are often divided by scholars into those that were 'royal' (held directly by the king), and those that were 'baronial' (held by the king's tenants).[69] By 1070 CE, King William I held secure rule over the Kingdom of England, and by 1090 his seneschals had completed an account of his newly established system of vassals in the Domesday Books, with full detail of all his lands and the conditions of those lands. By this time, almost all of England was ruled by French-speaking Norman knights, with very few remaining Saxon baronial vassals. Although, as Liddiard reminds us, the generation born at the time of the conquest were adults by the time of the Domesday surveys and would likely have little collective social recollection of earlier Saxon administrations.[70] The feat of transferring such a vast amount of land and property from the disorganised Saxon aristocracy to a new Norman aristocracy in the space of less than 20 years from the start of the conquest has been described as an administrative feat in itself.[71] The process is understood to have been complex, featuring elements of continuity and legitimacy, as well as introduced elements and homogenisations of regional tenure structures. Under the Norman administration, all land in England was held by the king, who bestowed it in the form of fiefs to various

[60] *Ibid*, p.5.
[61] Goulding 1994, p.129.
[62] Liddiard 2018, p.112.
[63] Tuulse 1958, p.14.
[64] *Ibid*, p.26-27.
[65] Morris 2017, p.9.
[66] Gravett 2003, p.6.
[67] Braun 1963, p.86.
[68] Muir 1990, p.184.
[69] Strickland 1992, p.210.
[70] Liddiard 2018, p.125.
[71] Fleming 1991, p.109.

feudatories in return for taxes and military service.[72] Fiefs consisted of parcels of land called manors. The 'manor' was an institution used to equalise the various English landholding measures, having its etymological and legal origins in France. The typical manor consisted of a village, lord's demesne land, and manor house (more on manorial tenure in Chapter Five).[73] Following these systems, landed knights (often sub-tenants) would hold various manors 'by barony' (a form of feudal contract) from a *caput baroniae* (seat of title).

King William I fostered a system of land tenure and knight service that stabilised the economy and did not strain the generosity of his vassals in those small conflicts that occurred over the decades following the conquest.[74] Each tenant and sub-tenant baron was granted land to rule over in the king's stead, taking a portion of earnings for his own betterment. The tenants-in-chief (those direct vassals of the king) of England were required to meet quotas of knights to serve in their demesne.[75] These quotas could be reached by various means of direct service, service in-stead, and delegation to sub-tenant vassals. Holt has argued that these numbers were originally only sufficient to, and intended to, suffice to maintain the king's hold over the land, and not to be utilised for continental military campaign, as was later demanded.[76] Prestwich emphasises that the early Norman kings were thereby able to rely on this system of professional military 'service owed', as opposed to the frequently hired elite soldiery and peasant levies of the earlier Saxon and Danish kings.[77] Reynolds argues further that while twelfth century English tenants owed military service and taxes to the king (directly or indirectly), roughly proportionate to the amount of land and wealth they had, these were not legally causally linked in the way has sometimes been assumed in early accounts of feudalism.[78] Nevertheless, the lay nobility and their sub-tenant knights sought to demonstrate their service rank through the establishment of ever more castles, and in this manner feudalism as an institution became entrenched within the social and built landscapes.[79] In the period directly following the conquest, William had a number of tenants-in-chief who were responsible for raising substantial numbers of knights for service. However, over time it became the preference of both these chief lords and their knights that the individual knights would be subinfeudated with their own parcels of land.[80] The transition to heritable titles combined with this subinfeudation produced a landscape of tenants both legally intricate and geographically complex.

This system of greater and lesser landed lords produced a substantial economy built around sustaining knights and their households. Brown gives a fine account of the expenses involved in being a Norman knight: that of paying for attendants and potentially additional knights serving below him; that of equipping oneself with a full chain hauberk, lance, shield and other armaments; that of acquiring and maintaining at least one warhorse; and those of maintaining a high status household.[81] He also offers much critique of scholars who suggest the early Norman knight was essentially a mercenary horseman; arguing that these were young men of important lineage trained in the etiquette of courtly conduct and the practice of war. Brown also offers much discussion of the importance of Norman knights as cavalrymen. He emphasises that these were men trained as horsemen from a very young age, who considered mastery of horsemanship as paramount in their conduct of war, and a life-long pursuit.[82] Brown contends that it was the introduction of the growing class of expensively maintained mounted knights, driven by the timely adoption of riding technologies including the stirrup (permitting the charge with couched lance among other tactics), that in part, led to the social system of feudalism itself, rather than feudalism leading to new hosts of knights. Various examples are identifiable in which the Norman cavalry charge achieved victory against overwhelming odds, validating a continued investment in the arms-race toward superior cavalry.[83] Interestingly, Brown goes so far as to call upon medieval scholars to consider the role of the horse in social and economic theory more carefully, positing that sadly

[72] Braun 1963, p.58.
[73] Rowley 1983, p.60.
[74] Prestwich 1992, p.60.
[75] Holt 1992, p.57.
[76] *Ibid*, p58.
[77] Prestwich 1992, p.61.
[78] Reynolds 1994, p.448.
[79] *Ibid*, p.82.
[80] Prestwich 1992, p.65.
[81] Brown 1992, p.135-138.
[82] *Ibid*, p.140.
[83] Brown 1992, p.140-141.

academia acknowledges the role of the warhorse insufficiently, with scholars seldom being 'horsey' people.[84] It may well be that the degree to which the physical designs and siting of castles was influenced by this new social elite and their warhorses is of greater significance than is generally recognised.

William was generous in distributing manors among his retainers, but also cautious. Due to the long history of Saxon kindred inheritance, a single Saxon magnate often held territory across multiple shires or counties. When William was distributing land, even to his trusted magnates, he delineated holdings by shire borders, with tenure maps showing a strong intention of keeping the land of any one baron, albeit sometimes divided into exclaves, within the confines of a single county. In this fashion, various local forms of differing tenure law could be conglomerated under Norman magnates, to form clearly defined local fees.[85] Importantly, many of the larger collections of landholdings under the prior tenure of a single Saxon lord were divided up under two or more Norman holders. The indication here is that although William generally preserved the established Saxon parcels of fees (presumably to preserve continuity of local arrangements), he was also very much aware of the danger of subinfeudating too much territory to any single individual.[86] Subsequent English kings would continuously attempt to limit the power of their barons in such ways. Preservation of existing and disconnected ancestral land parcels was also far less common in those regions where security was paramount. In southern Lancashire, Cheshire, and Shropshire, large swathes of land were swiftly re-organised under new Norman lordships to secure the Welsh marches.[87] Similarly, on the southern coast in Sussex, Kent, and Cornwall, large swathes of land were given out on the basis of natural territorial division with less regard for holding boundaries, and elsewhere fees were constructed from hundreds and wapentakes (the northern equivalent of a hundred) regardless of which land parcels overlapped these territories in Saxon times.

Reynolds critiques that eleventh century documents do not support any notion of the king technically owning all lands and 'merely' freely handing them to tenants or reassigning them at will; rather, that while the process appears as of one of violent expropriation, the king gave to his followers only that which he could legally confiscate.[88] The rights of the tenants and their sub-tenants were technically protected by law throughout the whole process. Fleming goes on to note that many of the fees given down to Norman nobles were in accordance with the existing systems of inheritance. Accordingly, a Norman lord was named the rightful successor to an existing parcel of land, and the Saxon lord was dispossessed of it, legally passing it down.[89] This practice of listing the antecessor was so well recorded in the Domesday accounts, that it was noted where exceptions and divisions of existing allotments occurred. Sawyer argues in his assessment of the Saxon-Norman tenurial transition that despite the dissolution of some of the larger Saxon Earldoms, the structure of the individual fiefs was largely the same across the transition, and that almost all landed Norman lords had a listed Saxon antecessor.[90] Fleming contests further however, that when the total account of titles and antecessors are taken into account, the number of new titles far outweighs the number of antecessors; suggesting that the recording of Saxon antecessors on Norman lordly titles was a deliberate attempt to solidify their legitimacy.[91] Furthermore, Fleming demonstrates a swathe of examples where contemporary written evidence marks 1060—1080 as a period of 'jarring and violent tenurial discontinuity.'[92] Moreover, while the Saxon systems of landholding were regionally nuanced, Fleming posits that they were generally based on kindred groups. Formerly, were a Saxon lord to be dispossessed of a holding, the members of his household kin could expect to take up some of the lost titles.[93] Unfortunately for the Saxons, not only did the Norman system revoke kindred group land and split it among unrelated Norman knights; Norman commendation law (voluntary bonds of fealty and subjugation) encouraged vast numbers of lower Saxon landholders to swear allegiance to newly seated Norman lords (even in such cases where

[84] *Ibid*, p.141.
[85] Fleming 1991, p.150.
[86] *Ibid*, p.116.
[87] Fleming 1991, p.114.
[88] Reynolds 1994, p.360.
[89] *Ibid*, p.110.
[90] Sawyer 1985.
[91] Fleming 1991, p.112.
[92] Fleming 1991, p.184.
[93] *Ibid*, p.144.

their old Saxon overlords yet survived). Given this evidence, it appears that a general attempt to maintain legal continuity was occurring, while simultaneously elements of the land tenure system were being altered to accommodate new enfeoffments. Importantly, what was produced was a legally solid established framework of fiefs, which would play a key role in the siting of castles in the following centuries.

2.2.2..... The Welsh and Scottish Borderlands

The density of castles dramatically increases along the Welsh and Scottish borders. Wales at the time of the conquest was divided into a series of petty-kingdoms including Gwynedd, Powys, Deheubarth, Brycheiniog, and Morgannwg.[94] The English had every intention of annexing the Welsh petty-kings and had incorporated most of the Welsh heartland by 1300. The nature of Welsh politics meant that the territorial threat to English lands in the interim was largely limited to guerrilla skirmishing inside contested borderlands.[95] Rowley notes that while the English had little difficulty in annexing Welsh territory from the offset, the Welsh revolts of 1075, 1088, and 1100 give evidence that securing political stability was more difficult.[96] In response, the Normans set up 'marcher' lordships in Hereford and Shropshire managed by Walter de Lacy and William Fitz Osbern, among others. These lords and their successors had more liberties than regular baronial lords and oversaw the defence and expansion of the English territorial border with the Welsh.[97] The English over time established various settlements within Welsh borders and heavily fortified the marches.[98] Several of William's powerful regent lords also quickly erected handfuls of castles when William returned to Normandy. William Fitz Osbern, newly made Earl of Hereford, constructed several in the Severn Valley prior to 1070 for example.[99] It is well documented that Roger of Montgomery also subinfeudated his vast marcher lands of Shropshire to numerous loyal retainers, and between them they so heavily fortified the area by 1080 that it constituted one of the most prolifically fortified regions of the kingdom.[100]

The Welsh border also hosts some of the highest densities of free-standing motte castles in Britain (that is, without an adjacent bailey). This is most often explained by some of the smaller mottes representing watch-tower sites (rather than full functioning residential or administrative castles) or the result of large numbers of sub-tenant castles (representing comparatively smaller pools of wealth expenditure). The highland areas of Britain (Devon, Cornwall, Wales, and the North) offer comparatively higher rainfall and lower soil quality than the lowlands.[101] These areas naturally host lower populations, and in combination with the defensive impetus, the lower rate of adjacent bailey enclosures may well be partially environmental. Many of the finest early medieval English castles were built in the Welsh borderlands, not least because of the ongoing military threat. Platt notes that Edward I's castle building campaign in Wales 1277-1295 represented a peak in English castle architecture with Edward's military experience from crusading and campaigning across Europe and in Wales strongly influencing the defensive sophistication of his new fortresses at Rhuddlan, Flint, Conway, Caernarvon, Harlech, and Beaumaris.[102] Moreover, the deliberate integration of castle and settlement was planned in their siting and design, following inspiration from developing citadels visited by Edward such as Carcassonne in France, where the castle and settlement each justify the other. The density and nature of castle sites on the Welsh border must thus be carefully considered in any systematic analysis of relativity to settlement patterns, especially due to the large number of anomalous small and possibly temporary castle forms.

[94] Walker 1995, p.49.
[95] Strickland 1992, p.208.
[96] Rowley 1983, p.160.
[97] Walker 1995, p.52.
[98] *Ibid*, p66-72.
[99] Morris 2017, p.26.
[100] Morris 2017, p.35.
[101] Sitwell 1981, p.29.
[102] Platt 1982, p.63.

In the early Medieval period, the Kingdom of Scotland represented a conglomeration of feudalistic and clan factions which had openly adopted several Norman institutions and technologies.[103] Militarily, the Scots were always at a substantial disadvantage in terms of raw manpower and economic wealth compared to their southern neighbour, and a peaceful status quo was a norm enforced upon Scotland whenever the English kingdom was stable and managed by a moderate king.[104] During times of cooperative peace, Scottish kings are posited to have even encouraged the establishment of 'Norman' castles to control unruly areas, such as occurred in Galloway.[105] However, the Scots did come into open war with the English several times in the twelfth and thirteenth centuries, almost always in coincidence with English internal strife. Examples of such include the Scottish offensive in 1138 during the English Anarchy under king Stephen, and in 1173 during the revolt against Henry II.[106] In Strickland's analysis of twelfth century Anglo-Scottish warfare, he suggests that the majority of smaller English northern border castles (for example Bothal, Bolam, Bellingham, Gunnerton, and Haltwhistle) were only of sufficient scale to interfere with small scale raiding, and would likely have been easily abandoned if necessary. Moreover, they offered little strategic gain to the Scots, who generally focussed their efforts on the few larger strategic fortresses like Newcastle, Wark, and Norham.[107]

The Scottish kings also sought out support from the lords of Northumbria and York, who on occasion, sympathised with them and avoided conflict (or sometimes even defected), not least because they were most likely to suffer from border conflicts.[108] For example, in 1173 the Scottish incursion was ignored by the Bishop of Durham, leaving his key strongholds of Durham and Norham free for the Scots to pass. Strickland notes that in the occurrences of open Anglo-Scottish warfare in the eleventh and twelfth centuries, the Scots also often ignored the network of castles and pillaged the countryside. He posits that castles still played a role as bases from which English knights sallied out and conducted counter-raids on Scottish supply lines, but critiques that this was statistically an uncommonly used tactic.[109] The role of the castles on England's northern border over the study period appears to have never been intended to be as stand-alone bastions capable of holding back invasion, but as tools of delay; permitting the superiority of the English forces to relieve any attempted siege. One such example of the success of this strategy is identifiable in Malcolm III's invasion of 1091 which was halted at Durham Castle by a swiftly raised English host.[110] The Scottish border should thus be treated with the same caution as the Welsh with relation to settlement proximity analysis, and even more so for the fourteenth century and beyond, when the 'tower-house' castle type became prolific in the borderlands area.[111]

2.2.3..... Crusader Castles in England

An additional historical occurrence widely cited in castellology as noticeably impacting castle siting and design in England was the crusades. The first major eight crusades all occurred within the scope of this study (i.e., 1000—1300) from 1095—1291 CE. The degree to which eastern architecture influenced the returned crusader kings is matter of dispute. Tuulse posits that a critical exchange of military ideas occurred over 200 years in the Holy Land from 1096 CE.[112] The impact of involvement in military campaigns in the east certainly had some apparent effects on western European castle building thereafter. Monumental fortifications like the walls at Antioch, Constantinople, and Krak Des Chevaliers reportedly helped inspire western castle builders to develop grand projecting towers and concentric walls (as at Dover for example).[113] Kennedy posits that the advantages of round towers were

[103] Strickland 1992, p.209.
[104] *Ibid*, p.210.
[105] Gravett 2003, p.6.
[106] Strickland 1992, p.209-210.
[107] Strickland 1992, p.213.
[108] *Ibid*, p.214.
[109] *Ibid*, p.215.
[110] *Ibid*, p.218.
[111] Mcalister 2016, p.631.
[112] Tuulse 1958, p.48.
[113] *Ibid*, p.48-49.

proven through trial-by-combat in the Crusader States, leading to their adoption as the norm in England.[114] Creighton observes that the advanced polygonal towers, dominant central tower and banded masonry of Caernarvon Castle constitute a deliberate emulation of Byzantine Constantinople, providing an impressive icon of royal power and quasi-imperial authority.[115] Tuulse has observed an increase in post-Crusade construction of wall galleries, hoardings, exploitation of natural bedrock for foundations, and an increased overlap of enfilading fire points.[116] Several famous crusader castles held supplies for extended sieges. Margat Castle for example held food for five years siege.[117] Access to water was also a critical element. Krak des Chevaliers in the Levant had a system of flat rooves that fed rainwater into nine internal cisterns.[118] Exceptionally deep wells in highly defensible English castles such as Beeston may suggest a desire to reflect this defensive robustness achieved at famous crusader sites. English kings also became exposed to a great variety of siege weapons used in the east and bolstered the thickness of royal keep walls in response.[119] Pelerin Castle, near Jerusalem, which was a sea-side fortress which could house some 4,000 Hospitallers, was considered impervious to assault or siege, so long as it could be accessed by sea.[120] Exposure to these near-impenetrable fortresses inspired several new phases of English royal castle building. Religious practice was also prioritised in crusader fortifications, with chapels built into the structures. These often prioritised ease of access near a gatehouse, so that the garrison, lord, and guests could utilise them for prayer upon entry to the castle.[121] Wheatley asserts that crusader castles stood as monuments of faith, as well as of aggression.[122] She further argues that back in England the crusaders attempted to reconstruct elements from the fortresses of biblical tradition, even emulating non-military architectural components.[123] The presence of chapels in often the most defensible locations of English castles leaves little question as to the centrality of the Christian faith in everyday castle life.[124] The influence of the exposure to eastern fortification and technology via the crusades is difficult to differentiate from the broader European internal advancements within warfare and architecture, but a moderate degree of influence is apparent.

2.3..... The Historiography of English Castellology

2.3.1..... Early Publications and Excavations

The earliest detailed studies of British castles, including works such as Clark's 1884 *Mediaeval Military Architecture in England* and Armitage's 1912 *The Early Norman Castles of the British Isles*, established the theory that early castles (as evidenced by earthwork mottes) were essentially Norman (c.1066 CE +) in origin (despite discussion of potential Saxon origins), and strongly grounded the discipline in a militaristic orientation.[125] Hamilton's 1912 *Military Architecture in England During the Middle Ages* is another example cited by castellology historiographers of this military trajectory.[126] The historical analysis of castles began with those still standing in stone, and gradually came to more clearly include a number of earthwork types. The earliest scientifically excavated British castles, including ringworks and mottes in Gower (1899) and Kent (1883), were regarded by their excavators as Norman in origin.[127] Several publications from the mid-twentieth century further established these Norman origins and integrated the castle within the socio-economic frameworks of manorialism and feudalism. Brown's 1954 *English Medieval Castles* and Renn's 1968 *Norman Castles in Britain* constitute such examples,

[114] Kennedy 1994, p.188.
[115] Creighton 2005, p.66.
[116] Tuulse 1958, p.49.
[117] Kennedy 1994, p.99.
[118] *Ibid*, p.99.
[119] *Ibid*, p.118.
[120] Kennedy 1994, p.127.
[121] *Ibid*, p.173.
[122] Wheatley 2004, p.86.
[123] *Ibid*, p.88.
[124] Speight 2004.
[125] Clark 1884; Armitage 1912; Kenyon 2010, p.6-7; Higham 2010.
[126] Hamilton 1912.
[127] Pitt Rivers 1883; Morgan 1899.

focusing on broad theory and historical context in castellology.[128] The militaristic view however, was ever an attractive angle of approach, with writers like Armitage being rare exemplars of non-military discussion.[129] Beeler's 1956 *Castles and Strategy in Norman and early Angevin England* has been criticised as setting a long-standing trend of viewing the form, function, and siting of castles as a consequence of purely military determinism; neglecting even their peace-time residential and economic equivalent capacities.[130] Higham noted in a 2010 review of castle studies that by the 1960s, there was a strong emphasis on the contemporaneous political, military, and domestic role of castles; a focus on explaining function, date and evolution through architectural forms; and an emphasis on the totally disparate lived experiences of the late-Anglo-Saxon and early-Norman periods.[131] Higham states that; 'castles were, in everyone's view, the means by which the Normans consolidated their hold on England …the issue of how castles originated, and the forms they originally took, had not been seriously addressed…'[132] In 1969, the British Royal Archaeological Institute undertook a major project to address the questions of castle origins in the British Isles and Normandy. Higham notes that this project highlighted a series of issues around castle dating in Britain, including; the difficulty in identifying early site use and form where later fortification developments were present; difficulty in differentially dating in the range from the 1060s—1090s; and the enormous scale required for accurate assessment of the origins issue.[133]

Late-twentieth-century scholarship appears to have decidedly shifted to regional analyses of castles by local authorities. Creighton identifies some fifteen different regional accounts of castle distribution constrained by county boundaries.[134] These regional studies appear to have propagated after King's 1983 *Castellarium Anglicanum* (one of the most widely cited authorities in all modern accounts), with many published in the late 1980s and 90s.[135] Moreover, Creighton identifies a number of additional regional studies which document the fortifications of natural geographic zones, such as the Vale of Montgomery, Golden Valley, and Lune Valley. In addition to regional analysis, he posits that an 'enduring tradition' within English castle studies has been the desire to categorise and sub-categorise earthwork castles to the detriment of their wider context and local uniqueness.[136] This trend has been traced back to Müller-Wille's 1966 study of German earthwork castles in the Rhineland (which principally used mound height for differentiation), and thereafter strongly effecting the work of King.[137] Archaeologically, there was a substantial period in the 1960s and 1970s during which practice favoured the intrusive excavation of numerous privately and state-owned sites, leading to the eventual publication of much of the present data on early castle forms.[138] Excavations of this date proved instrumental in identifying which mound types were true castle mottes, and in demonstrating the transformation of timber to masonry on single sites.[139] More recently, the British departments in charge of historic sites have favoured non-intrusive conservation, but some site excavation has continued to the present.

2.3.2..... Debating Castle Definitions

To further complicate matters, exactly what 'a castle' comprises archaeologically (or even theoretically) is a matter of debate. From the outset, castles can be roughly divided between those that were built in timber, and those that were built in stone. Those built in stone could be standalone keeps, stone motte and baileys, concentric castles, dry-moated, wet moated, stone ringworks, elements of town defences,

[128] Brown 1954; Renn 1968.
[129] Stocker 1992.
[130] Beeler 1956; Creighton 2005.
[131] Higham 2010, p.2.
[132] Higham 2010.
[133] Higham 2010, p.3, in reference to: Saunders et. al. 1977.
[134] Creighton 2005, p.13.
[135] King 1983.
[136] Creighton 2005, p.6.
[137] Müller-Wille 1966.
[138] Higham 2010, p.6.
[139] Knight and Talbot 1968; Mayres and Butler 1983.

etc. The 'concentric' castle simply had two layers of walls forming a mutually supportive defence.[140] Earthwork and timber castles fall into two main types; mottes, and ringworks.[141] Mottes are more commonly associated with adjacent baileys than ringworks, but both forms are known to have supported one or more baileys situationally. The 'motte' is essentially an artificial (typically circular) mound and ditch, which supported an elevated strongpoint.[142] While a singular enclosed bailey attached to a singular fortified motte was the most common arrangement, there are several examples of mottes with multiple separate baileys, and of stand-alone mottes without any attached settlements.[143] In all, there are thought to be some 750 Norman mottes in England and Wales.[144] Contrastingly, 'ringworks' are essentially palisaded bailey type structures, lacking the distinctive 'Christmas pudding shaped' mound.[145] Ringwork forms are somewhat harder to quantify for the Norman period, as numerous similar pre-Norman earthworks are found among them. Outliers to both categories include enclosure castles (typically single large, raised areas), and various more tightly compartmentalised forms that don't have strict bailey delineation. Most scholars seem reasonably satisfied with utilising these initial categories, although others have emphasised a focus on what castles did rather than focusing on what remains of their sites (a critique of earthwork categorisation is presented in Chapter Four).[146]

Morris has asserted that a 'real castle' is one in which 'a fortress and a stately home are rolled into one', whereby first and foremost it is the residence of an aristocratic landholder and his family, qualified by its fortified architecture.[147] Painter argues that all early medieval English castles were 'purely military', and a necessary and successful method of achieving geographical control.[148] For the earliest wave of



Figure 2.3.2 *Reconstruction of a small dining room at Dover castle.* (Photograph by author).

[140] Thompson 1991, p.115.
[141] Kenyon 2005, p.3.
[142] *Ibid*, p.3.
[143] Kenyon 2005, p.4.
[144] *Ibid*, p.5.
[145] *Ibid*, p.7.
[146] Speight 2004; Creighton 2005.
[147] Morris 2017, p.vi.
[148] Painter 1953, p.322.

castles, this view holds the strongest. There is no doubt that some castles were built as a direct response to local unrest or revolt in the late eleventh century.[149] Goulding describes the Norman castle as at once the most potent instrument and symbol of domination and oppression.[150] However, closer analysis demonstrates castle functions were much less clear cut. Creighton rebuffs that in addition to military functionality all early castles were built to serve as high status residences and estate centres to some degree.[151] Pounds argues that the role of the castle was essentially threefold: firstly it was a home for a lord and his kin; secondly it was a defensible seat that could hold out with few defenders; and third it was an administrative locus on the landscape.[152] He stresses that very few castles prior to the fourteenth century were utilised for a solely military purpose, with almost all early sites serving roles in administration and hospitality.[153] Other roles facilitated by castle sites were that of: manorial and honorial court; royal armoury; treasury and mint; jail or prison; centre of social and economic activity; deliberate displays and spatial delineators of status; and as an apparatus of seigneurial power and territorial control.[154] Burke notes that socially, the castle functioned as a location for the administration of law, with matters of inheritance, deaths, marriages, land disputes, and family quarrels taken to the manorial lord for judgement.[155] And if it is the architects' intent on which we focus, the display of power is ever present; while defensibility fell second to comfort in the late medieval period, the symbolism of castle architecture as demanding of respect and denoting high socio-economic status was maintained.[156]

There is also the matter of diachronic change. Most English castles were occupied in the late-eleventh and twelfth centuries, with only a portion continuing to be utilised in the thirteenth century.[157] The number of English castles at the beginning of the thirteenth century was, according to one scholar, only around 230.[158] Creighton emphasises that the set of roles performed by any one castle might not be the same across time or when compared regionally and situationally.[159] There is likely also some modern experiential bias, as the only castle forms still visitable in the modern era are of a constrained set of masonry types which generally survived past the thirteenth century and transformed beyond their eleventh century roles. The military aspects especially of such sites tend to be exploited for their display as public museums (see Figure 2.3.2). Beyond extremely rare timber reconstructions, it is near impossible to visit a genuine eleventh century Norman castle arrangement. Wheatley has argued further that castles existed concurrently as lordly residences and non-residential town defences at different locations, and emphasised that some modern attempts to isolate a set castle definition do not mesh with the medieval literary and linguistic evidence.[160] Marshall has observed that some early Norman keep interiors were more palatial and ceremonial in design and layout than they were residential.[161] One can reasonably find examples of licenced medieval castles which served practically no military role beyond symbolic displays, or others which were never residential in nature, and others again which were entirely private and had little social or economic interaction with their surrounds (albeit being rare in early circumstances). Creighton summarised in 2013 that castle research has shifted from perceiving castles as military artefacts to other lenses including as: manorial houses; estate centres; enmeshed within their landscapes; icons of lordship; literary symbols; and compartmentalised domestic arenas reflecting society.[162] Any attempt to define castles then, must be cognisant of their varied nature, while simultaneously recognising statistical norms in site composition.

[149] Rowley 1983, p36.
[150] Goulding 1994, p.127.
[151] Creighton 2005, p.1.
[152] Pounds 1990, p.184.
[153] Pounds 1990, p.184.
[154] Creighton 2005, p.1.
[155] Burke 1992, p.34.
[156] Morris 2017, p.viii.
[157] Kenyon 2005, p.8.
[158] Painter 1953, p.322.
[159] Creighton 2005, p.7.
[160] Wheatley 2004, p.147.
[161] Marshall 2016, p.166.
[162] Creighton 2013, p.11.

2.3.3..... Architectural Features and Functions

A substantial proportion of castellology scholarship is devoted to descriptive analysis of built features. Hislop's 2016 *Castle Builders* for example, meticulously details the various architectural and technical methods employed in the construction of castle earthworks, timber castles, and masonry castles.[163] Colvin et al.'s 1982 *The History of the King's Works: The Middle Ages* is another key architectural publication noted by Gerrard, describing in detail the royal castles of England in particular.[164] All castles contained earthwork elements, and these can be addressed first. Rowley posits that a large local force of diggers and carpenters could construct a formidable earth and timber motte and bailey fortification within the space of a month.[165] This is juxtaposed to the masonry castle, the fastest of which were built within years, and the slowest taking several decades. Few motte and bailey earthworks were of extraordinary size in England and Wales, with the majority less than five metres high from ground-level to the top.[166] Being built of earth and rubble, mottes could be situated in a wide variety of terrain types, and sites were typically chosen to provide a vantage point over surrounding lands.[167] Hislop suggests a motte might have been constructed by building the ditch and mound in tandem, so that the volume of the ditch excavation might determine the height of the mound.[168] Excavation of motte mounds has indicated that they were often constructed in courses, each consolidated by a layer of turf for stability.[169] One such excavation found that an initial earth mound was consolidated with a thick layer of turf, followed by layers of clayed soil and gravel.[170] Another contained a cairn of stones built over an existing glacial mound covered with layers of turf and clay.[171] Excavations at Durham Castle and Hastings Castle found fourteenth century foundations built deep into the twelfth century mottes to support the weight of new masonry castles.[172] Earthworks were widely reused and expanded in this fashion. Kenyon cites several examples of ringworks which were extended with a motte to form a motte and bailey.[173] Excavation at Helmsley and Framlingham has indicated that timber—masonry conversion did not necessitate complete deconstruction of timber elements, with timber baileys coinciding with masonry enclosures.[174] The qualities and role of the bailey are much less well understood than that of the motte mounds.[175] Excavations of one bailey has identified 'thickly planted' and substantially sized buildings.[176] Some masonry castles were founded in stone and had no timber precursor. Several were built on the foundations of pre-Norman fortifications, and incorporated elements of Roman walls or Iron Age hillforts for example. However, the great majority were adapted from existing timber castles, which had timber elements gradually replaced in stone.[177]

Timber castles varied widely in form, as noted above, but some useful generalisations can be observed. Written accounts describing early timber keeps suggest that they were often of several storeys, with the topmost story being slightly cantilevered 'as though suspended in the air' to provide view downward.[178] The quality of the carpentry in several examples is also highly praised by contemporary accounts. Four castles are depicted on the Bayeux Tapestry (Dol, Rennes, Dinan, and Bayeux) which appear to be made of timber, as is implied by two knights attempting to set one alight with torches.[179] These castles give hints that 'flying bridges' gave access to the upper defences, rather than a path up the motte, for which a similar structure has been evidenced by the excavations at Hen Domen Castle.[180] The bailey and tower were walled-in by palisades, which would have been quick to erect with skilled carpenters. The complete loss of such structures to time makes reconstruction difficult. Hislop argues a compelling case that carpenters would have been highly prized throughout the early medieval period. In the eleventh

[163] Hislop 2016.
[164] Colvin et al 1982.
[165] Rowley 1983, p.44.
[166] King 1972, p.101.
[167] Kenyon 2005, p.5.
[168] Hislop 2016, p.11.
[169] Kenyon 2005, p.10; Hislop 2016, p.13.
[170] Musson and Cain 1982.
[171] Hague and Warhurst 1966, p.117.
[172] Simpson and Hatfield 1953, p.58-59; Barker and Barton 1977, p.88.
[173] Kenyon 1990, p.29.
[174] Platt 1982, p.20.
[175] Kenyon 1990, p.38.
[176] Morris 2017, p.32.
[177] Gravett 2003, p.10.
[178] Kenyon 1990, p.12.
[179] Morris 2017, p.10.
[180] *Ibid*, p.30.

and early twelfth centuries they would have had a monopoly on the construction fortifications, halls, siege engines, and buildings generally; with several elements transitioning to the expertise of stonemasons in the twelfth—fourteenth centuries.[181] Hislop demonstrates that there were still always various elements of masonry castles that needed to be built in timber, such as floor beams, hoardings, roof timbers, drawbridges, and doors (see Figure 2.3.3 for the example of putlog holes and floor beams).[182] Among the household and production buildings of the bailey, Morris argues a large timber hall would also have been present in smaller early castles. While the towers atop the motte would have been sufficient in scale to house the lord and his family, a larger hall in the bailey might have been required for the lord to host his whole retinue of men-at-arms, servants, and any guests.[183]



Figure 2.3.3 *Examples of putlogs and putlog holes. A: Reconstruction at Dover Castle. B: Putlog holes at Wigmore Castle.* (Photographs by author).

Masonry castle quality varies with relation to available resources, date of construction, and wealth of the castle benefactor. Many twelfth century masonry castles consist of high quality ashlar quoins, lintels, arches, and edge-work, with rough cut stone facades.[184] As builders became more experimental over time, keep shape varied from rectangular tower, and circular shell, to polygonal and multi-tower designs.[185] The walls of even the stoutest English masonry castles were made by constructing rungs of ashlar facing and infilling the interior with limestone mortar and rough cut local stone.[186] Arrow loops in mural towers and keeps were uncommon in early designs but appeared commonly in late twelfth century castles.[187] The minimum clearance for the gatehouse entrance was two—three metres, sufficient for a horse and cart to enter with the food, fuel or supplies that were constantly needed.[188] Occasionally, small postern-gates permitted the defenders to send out sorties to harass attackers, destroy siege equipment, or escape the castle.[189] The base of the castle wall was often 'battered' out at an angle. This made the base of the wall thicker and forced sappers or miners to be further from the wall and easier to shoot.[190] Corner and mural towers were built outstanding to provide enfilading fire.[191] The means of travelling between floors of the keep and defences was generally of spiralling stairwells (vices) built

[181] Hislop 2016, p.29.
[182] *Ibid*, p.35-40.
[183] Morris 2017, p.13.
[184] Hislop 2016, p.60.
[185] Gravett 2003, p.8.
[186] *Ibid*, p.21.
[187] *Ibid*, p.32.
[188] Thompson 1991, p.101.
[189] Kennedy 1994, p.111.
[190] Tabraham 1986, p.21.
[191] Pounds 1990, p.109.

into the corner thickness of the walls, with occasional straight staircases in the length of the wall or ladders with hatches internally.[192] There are innumerable preserved examples of domed vaulting, barrel vaulting, ribbed vaulting, and more simple 'V' shaped passage vaulting documented in the architectural scholarship (see also Appendix III for sample examples).[193]

Lead sheeting was employed in the roofing and guttering of many masonry castles, favoured for its longevity and fire resistance.[194] Juxtaposed to their current rough and drab state, the interior and exterior walls of masonry castles are thought to have been plastered and whitewashed.[195] Water-fed moats were uncommon in early Norman castles, becoming more popular in the fourteenth century (primarily as a defence against tunnelling.)[196] Situationally, an external secondary gate-house called a 'barbican' or 'pickering' was constructed, with a drawbridge connecting to the interior wall gate.[197] Machicolation (generally not common until the late-thirteenth century) was a defensive feature whereby the crenelations were extended outside the parapet by means of supportive masonry extensions.[198] Thompson posits that machicolation was originally a purely military component, allowing the defenders to shoot missiles vertically, but later became popular as an aesthetic martial feature.[199]

Over time, the bailey shifted from an external enclosure to part of the inner enclosure, but the role of the buildings within it stayed roughly the same. Depending on the wealth and status of the builder, such structures included a kitchen, buttery, pantry, private apartments, gardens, a brewhouse, granary, armoury, chapel, workshop, stable, and other functional structures.[200] Thompson posits that most English castles (especially those rebuilt in masonry) featured internal chapels. Piety was paramount to their medieval inhabitants, who began and ended their day with prayer at mass. Many chapels were constructed alongside the gatehouse for ease of use when returning from daily journeys.[201] A castle was also rarely without some form of prison, as law and order were the responsibility of the lord over his barony demesne.[202] Butteries are thought to have contained large stocks of weak ale and cider, consumed by the general inhabitants, alongside lesser quantities of French and English wine or mead reserved for the seigneurial household.[203] Kitchens and storerooms were essential as the lord's income was often paid in kind, not cash, and it needed to be safely kept.[204] Payment preference to coin increased toward 1300. Gravett offers argument that warehouse space for a large number of carts and wagons, of the kind needed for military campaign, was often required of the larger castles.[205] In the keep, rooms consisted of a solar, great chamber, apartments, chapel, and other small rooms. The private great chamber replaced the hall as the most important room in the castle in the later medieval period following alterations in the social primacy of entertaining and privacy.[206] Gilchrest describes this marked shift in the design of great halls in English castles across the eleventh—fourteenth centuries; that initially, administrative, ceremonial, and communal activities all took place in the main hall, but over time a separation occurred between a lord's 'private chamber' and the more public 'great chamber'.[207]

2.3.4..... Military Capacity and Orientation

Multiple elements of castle design were at least partially militarily orientated. Walls were designed to maximise scaling difficulty and optimise functionality as defensive platforms.[208] The distance between

[192] Gravett 2003, p.16.
[193] Hislop 2016, p.50-75.
[194] Pounds 1990, p.127.
[195] *Ibid*, p.128.
[196] Braun 1963, p.90.
[197] Thompson 1991, p.115; Gravett 2003, p.26.
[198] Platt 1982, p.112.
[199] Thompson 1991, p.168.
[200] Pounds 1990, p.185; Ghilcrest 1999, p.126.
[201] Thompson 1991, p.131.
[202] Tabaraham 1986, p.13.
[203] Gravett 2003, p.35.
[204] Tabraham 1986, p.12.
[205] Gravett 2003, p.36.
[206] Tabraham 1986, p.12.
[207] Gilchrest 1999, p.122.
[208] Thompson 1991, p.89.

wall towers was governed by the effective range of projectile weaponry.[209] A clear space (*lists*) was demarcated outside the walls of the castle for clarity of vision during a potential siege.[210] Keeps were as strong of a residence a lord could feasibly build for himself. Royal castles were often required to maintain enough space (both intramurally and cleared locally) for campaign armies.[211] Some were large enough to house several thousand men for a short time.[212] The same is also plainly apparent for military strategy. The castle functioned as a means of delay. If an invader were to arrive, the defenders could hold-up in their castles until a relief force was raised. They gave attackers the choice between lengthy and resource-sapping sieges or bypassing them. If the castles were bypassed, the defenders could reform and hit the rear supply lines of the invader.[213] Morris suggests that the tenth century proliferation of castles alongside the adoption of mounted knight warfare was not a coincidence. The motte was an apt defence against cavalier horsemen, and offered a base of operations for patrols and sallies.[214] There are a number of excellent accounts of castle sieges where, despite extensive barrage, the castle walls and keep held out sufficiently long that the inhabitants were either relieved or starved into submission (e.g. Kenilworth castle in 1266).[215] Hammond notes that several of the more substantial masonry castles were built so stalwartly in defence against siege weaponry, that they were considered by their contemporaries as invulnerable to any means of attack bar full storm assault.[216] Figure 2.3.4 demonstrates the superbly fortified Goodrich castle built into the bedrock as a fine example of such robustness. The huge cost of castles meant that their owners would not have arbitrarily built them. Indeed, in the eleventh and twelfth centuries, the expenses of the English treasury pertaining to defence far outweighed all other expenses.[217] Military considerations plainly played a huge role in the site choice of castles, both in relation to population hubs, and naturally defensible landscape elements.



Figure 2.3.4 *View of Goodrich Castle highlighting the formidable south-eastern tower built into the bedrock with the stout tower keep behind.* (Photograph by author).

[209] Phillips 2008, p.49.
[210] Braun 1963, p.89.
[211] Burke 1992, p.88.
[212] Anderson 1984, p.80.
[213] Painter 1953, p.324.
[214] Morris 2017, p.15.
[215] Hammond 1963, p.52.
[216] Hammond 1963, p.28.
[217] Prestwich 1992, p.60.

Castles were an essential component of the total Norman military apparatus. Braun posits that the predominant reason the Normans built castles in England was to subjugate the populace and control them with a relatively small force of garrisoned men.[218] Gillingham critiques that despite cavalry tactics correlating with exciting and 'newsworthy' accounts of victory, most early medieval English internal warfare consisted of slow drawn-out campaigns of attrition, with resource and fortification control being the pivotal elements.[219] Military orientation also helps explain many of the outlying castle types. Short-lived campaign castles are widely suggested to explain small outlier sites.[220] Rowley suggests that many small ringworks were built during the Anarchy due to the swiftness with which this form could be constructed.[221] Temporary siege castles are also documented from the campaigns of King William I.[222] Henry II razed some twenty castles his barons had quickly erected against him.[223] A substantial portion of early English castles (both of temporary and of long-term occupation) can be placed as having their origins in open military campaigns. Most scholars concur that there was little danger of serious civil revolt threatening the Normans' holding of England after about 1070.[224] Yet castles continued to be prolifically built well into the thirteenth century, and occasionally thereafter, including in times of relative peace and stability. There are several military reasons why castle builders appear to have constructed castles outside of instances of open war. Early border castles greatly reduced the effectiveness of raiding outside military campaigns. Late-eleventh century accounts verify Welsh raiders repeatedly withdrew after suffering casualties from defenders who had retreated into their motte towers.[225] A string of coastal castles like Queensborough were built in defence against potential seaborne invaders from the south.[226] Having an advantageously fortified border also appears to have been a powerful diplomatic pretext. Examples of negotiations between England and her neighbours detail the mandated removal of specific castles and dictate that no new castles were to be built.[227]

As mentioned earlier, military determinism has been a popular model in early castellology theory. Creighton critiques that many early public and academic publications have given a sort of Darwinian account of castle evolution.[228] Most formative works prior to 1950 focussed on military architecture and models of progressive fortification development.[229] The evidence for such a perspective is compelling, if considered in isolation. Burke argues that castle architecture was fundamentally the result of an 'arms-race' against the means of siege and assault available to the attacker: better siege engines necessitated thicker and taller walls and keeps; the easily burned stockade, gate, and timber roof were replaced by the iron portcullis, lead roof, and stone battlement; and tunnelling necessitated rounded towers.[230] Pounds has related different elements of castle brattices, parapets, and loopholes to developments in crossbow technology.[231] The introduction of gunpowder artillery in the fifteenth century is widely postulated to have catalysed rapid alterations and thereafter abandonment of the medieval castle.[232] Kenyon has critiqued that Brown's *English Castles* series, still constituting a seminal source for castle scholars, has maintained the focus on military architecture to the present, albeit with included emphasis on a necessary residential function.[233] Several authors are also entirely aware of the broadening scope of castellology but eager to return the focus to military capacity. O'Neil has contested that 'in spite of the anti-militaristic route which some scholars have endeavoured to steer castle studies down …castles were first and foremost fortresses.'[234] The recent focus on extra-military interests such as origins, landscape context, architectural symbolism, and local history may have only occurred as the

[218] Braun 1963, p.87.
[219] Gillingham 1992, p.206.
[220] Brown and Johnson, 1985.
[221] Rowley 1983, p.44.
[222] Brown 1998, p.10; Morris 2017, p.16.
[223] Painter 1953, p.322.
[224] Gravett 2003, p.5.
[225] Kenyon 2005, p.5.
[226] Platt 1982, p.110.
[227] Coulson 2003, p.150.
[228] Creighton 2005, p.5.
[229] Thompson 1912; Toy 1939.
[230] Burke 1992, p.70-74.
[231] (Pounds 1990, p.109.)
[232] Pounds 1990, p.250.
[233] Brown 1976; Kenyon 2010, p.9.
[234] Kenyon 2010, p.8.

military capacity 'has been so thoroughly demonstrated that no new matters of principle were left to be established.'[235] However, military interests have steadfastly remained in recent scholarship, albeit with authors emphasising the need to question old assumptions. Coulson's 2003 *Castles in Medieval Society*, Eales 1990 *Royal Power and Castles in Norman England*, and Speight's 2000 *Castle Warfare in the Gesta Stephani*, are examples of such.[236] While a degree of military determinism in design seems very reasonable to acknowledge, the principal pitfall to avoid is the treatment of military architecture of castles as focally exclusive to other elements in explanation of siting, definition, and functionality; with military technology changing across time out of necessity in fulfilling defensive requirements.

2.3.5..... Display of Seigneurial Status

Much has been written in English castellology about symbolic power of the castle, standing tall in the early medieval landscape such that it was only contested by the cathedral. To the medieval mind, God was firmly at the highest position in the feudal schema. Under God were kings, lay nobility, bishops and their churches and castles, governing over an equally religious peasantry.[237] Castles were held not only by secular baronial lords, but also by powerful prince-bishops, representing a competitive realm of conspicuous display into which the entire social elite could funnel wealth.[238] Castle designs, especially of later foundations and re-builds, were often deliberately 'nostalgic' toward the military prowess of earlier examples in their use of symbolic architecture.[239] Royal tower keeps have been assessed as enforcing an 'iconography of kingship'.[240] Shell keeps like that at Totness (Figure 2.3.5) have been described as appearing as 'crown-like' symbols of authority solidified. Creighton argues that European castles, as opposed to earlier European fortified forms, came to embody a radically different form of power, whereby 'an aristocratic authority that was highly personal in nature, glaringly visible



Figure 2.3.5 *View of the shell keep of Totness Castle.* (Photograph by author).

[235] Higham 2010, p.8.
[236] Eales 1990; Speight 2000; Coulson 2003; as discussed by Higham 2019.
[237] Wheatley 2004, p.92.
[238] Hammond 1963, p.22; Thompson 1991, p.13.
[239] Liddiard 2005, p.9.
[240] Gilchrest 1999, p.119.

in its presence, and enforceable through violence, both threatened and real.'[241] Marshall notes that, in the context of post-Conquest Brittain, the novelty of the masonry tower-keep (*donjon*) castle form would have amplified its psychological impact.[242] Castle gatehouses regularly featured multi-tiered battlements adorned with heraldry and statuettes as a public exhibition of power, militarism and chivalric symbolism.[243] Many castles were lime-washed on the exterior to improve lightness, aesthetics and sanitation, and thus would have appeared as white or off-white bastions in a landscape dominated by brown and green.[244] Ornamental stonework has been widely observed in places where it has no practical military or stabilising function, representing an artistic expression paid for by the wealth of its benefactor beyond pragmatic expense.[245] Impressive turrets, machicolation, and exaggerated crenelations contributed to the ostentation and chivalric monumentality of castles.[246] Moreover, the practical maintenance of a great household was a demonstration of largesse, being an important element of the conspicuous consumption that was demanded by high rank.[247]

In the eleventh and early twelfth centuries, it is thought that the founding of castles was widely practiced at the leisure and need of local magnates. As the stability of Norman England increased, so did the specificity of who could hold or construct castles. By the thirteenth century, licenses to crenelate (royal permission to hold a castle) were in use, with several known examples of illegal or illegitimate castles being dismantled by the king.[248] Archaeological chronologies demonstrate that sites of historic power (Saxon thengal seats, manorial caputs, and moots for example) were often deliberately built over in preference to open land.[249] Creighton also highlights that situational ignorance of rocky outcrops or siting in lowland areas suggests that defensibility was not always at the forefront of the castle architect's mind.[250] He posits moreover, that where elevated land was utilised, it may well have had more to do with the optimisation of seigneurial architectural visibility than defensibility. Morris asserts that the practice of 'showing off' architecturally was already occurring in timber castles, which often would have represented the peak of economically and technically achievable extravagance in their time.[251] Beyond basic defensibility then, castle siting clearly occurred with situational respect to existing built elements and with intent to exploit visibility.

2.3.6..... A Brief Comparison with European Counterparts

In 2013 Creighton noted that prior to his writing, almost all castle scholarship was locally or regionally constrained, with only one text, Anderson's 1970 *Castles of Europe: From Charlemagne to the Renaissance*, addressing the broader European pattern.[252] Most publications cited here have focussed on English castles, but a brief recognition of some broad European castle similarities and deviations to the English pattern are quite informative. In the late eleventh century, the English crown owned substantial lands in southern Italy, where they built numerous castles.[253] By the twelfth century, these Sicilian-Norman fortifications had incorporated Arabian and Byzantine architectural elements.[254] In southern Europe, especially Italy, the integration of a castle tightly within a settlement is so widely observed it is named *incastellamento.*[255] Across Northern Europe, especially in France, Germany, and the lowlands, mottes were most prolifically built from c.1150—1200.[256] In southern Germany and Italy, the large class of lower nobility built phases of tall tower-house castles.[257] Anderson observes that north

[241] Creighton 2013, p.15.
[242] Marshall 2016, p.161.
[243] Creighton 2005, p.66.
[244] Muir 1990, p.105.
[245] Platt 1982, p.119.
[246] *Ibid*, p.133.
[247] Platt 1982, p.96.
[248] Pounds 1990, p.104.
[249] Creighton 2005, p.35.
[250] *Ibid*, p.35.
[251] Morris 2017, p.14.
[252] Creighton 2013, p.11; Anderson 1970.
[253] Tuulse 1958, p.29.
[254] *Ibid*, p.31.
[255] Creighton 2005, p.3.
[256] Liddiard 2018, p.112.
[257] Tuulse 1958, p.30-34.

German castles can be divided into two groups; those that bore a core military role, being non-residential and primarily for the guarding of territory and trade-routes, and those that were seats of aristocratic power, relying on natural terrain advantages for defence of their more palatial architecture.[258] Many German castles held a roll as toll stations, overseeing the trade-routes that ran across central Europe. The Teutons of eastern-Europe built 'conventual castles' which were generally quadrangular structures containing chapter houses, a chapel, dormitory and refectory, these being necessary for the upholding of strict conventual rules and social order.[259] It has been observed that castle architects passed between European kingdoms, and no doubt courtly travel and military campaigns would have exposed English kings to European techniques.

Hungarian castle builders underwent a brutal trial-by-fire with the 1241 Mongol incursions. The few masonry castles that stood prior to the invasion were found to be much more robust than the many timber castles which were swiftly overrun, and subsequently the Hungarian administration increased the number of castles in that kingdom from just 27 to 344 from 1242—1400 CE.[260] Interestingly, Fugedi argues that despite intentions for these castles to defend the citizenry at the outset, the Hungarian castle network eventually ended up bolstering the power of regional magnates and further entrenching the institution of feudalism.[261] The degree of entrenchment of feudalism does appear to correlate to the scale and density of castle sites within a given region and timeframe. The Scandinavian kingdoms have been recorded as having adopted masonry castles in the twelfth century, being principally large fortresses (such as Kalmar, Stockholm, Borgholm) constructed by royal and clergy authorities, with feudalism there taking longer to establish itself socially.[262] Just as in England, licence to build castles was required elsewhere in Western-Europe, mostly to prevent too many castles being built, or the wrong individuals controlling too many.[263] Tuulse has commented that the castles of Spain maintained a serious militaristic character throughout the medieval period, while elsewhere in Europe designs became more palatial.[264] When it came to the introduction of gunpowder technologies, Gillingham argues that English fortification technology was more than capable of 'keeping up', but that the reduction in the number and stoutness of English castles by this time was more due to the relative peacefulness of the country's history compared to some places on the continent where castle use intensified.[265] Gillingham emphasises that English expenditure on fortification prior to 1066 and after the fourteenth century was comparatively little against its European neighbours overall, thus making the English early medieval phase (<1300) of prolific castle building the exception, rather than the rule. For a more exhaustive general historiography, several accounts have been complied on the topic of medieval European archaeology, including the monolithic account of Gilchrest and Reynolds publications withing the period from 1957-2007.[266]

2.4 ..... Recent Developments and Shifting Approaches

2.4.1 ..... Archaeological and Landscape Analysis

Two substantial shifts in twenty-first century castellology have been the critical assessment of landscape context, and a deeper recognition of early timber castle sites. Excavation of castle sites into the twenty-first century has continued (for example the works of Keevill 2004, Poulton 2005, Saunders 2006, Caple 2007), producing new data to sustain and develop castle studies.[267] Archaeological research has also

[258] Anderson 1984, p.153.
[259] Tuulse 1958, p.106.
[260] Fugedi 1986, p.44-47.
[261] *Ibid*, 1986, p.62.
[262] Tuulse 1958, p.44.
[263] Fugedi 1986, p.82.
[264] Tuulse 1958, p.75.
[265] Gillingham 1992, p.206.
[266] Gilchrest and Reynolds 2009.
[267] Keevill 2004; Poulton 2005; Saunders 2006; Caple 2007.

been able to expand the body of knowledge on castle life, with for example, demonstrable variation in the diets of rural and urban castle inhabitants.[268] Environmental archaeology has confirmed the presence of animal fodder at castle sites, and might, in time, become substantive enough to argue Brown's aforementioned case of warhorse significance more robustly.[269] Investigation of early castle sites has increased the total resource base to the degree that Higham and Barker's 2004 *Timber Castles* has been able to focus entirely on these, typically neglected, site types.[270] Their survey of early timber castles was the first to dispel the idea that these sites were 'the poor relation of their masonry counterparts'.[271] Through constructing this historiographical account however, it is clear that early timber castles remain to be a relatively under-represented component of English castellology, despite timber and earth sites constituting a majority of those remnant in the archaeological record, and the overwhelming majority of early English castles in the initial period from c.1086—1150 CE.

Academic publications regarding castle sites have, according to Creighton's assessment, often tended to discuss them in isolation from their surroundings.[272] His 2005 *Castles and Landscapes: Power, Community and Fortification in Medieval England* constitutes a relatively recent shift whereby deliberate focus has been assigned to the broader landscape in which castles were founded and developed.[273] Creighton makes a strong case that the influence of the landscape on castles (with regard to siting, form, scale, and functions) is equally as important as the influence of the castle on the landscape, seen through the relocation of markets and populations and the development of the surrounding cultural and economic hinterland. He suggests the castle would impact its local landscape more specifically through: reorganisation of existing tenurial land holdings; diversion of run-offs or water-courses for use in moating; redirection of roads and tracks in response to nodal centrality; redevelopment of settlements into dense palisaded baileys; and the localised development of religious buildings, fish ponds, dovecotes, mills, deer parks, vineyards, and other economic works.[274] Additional ways in which his landscape analysis approach has been able to expand our comprehension of castles include: the proximal correlation of known forests and isolated castles, and the increased likelihood of their being hunting castles; identification of patterns of lordship; and distribution patterns on differing terrain types.[275] He stresses that, far from operating in isolation, early English castles relied on their centrality within a network of rendered services, rents, and resources which they exploited.[276]

Another example of the advantages of an integrative landscape approach, similarly developing in recent decades, is Liddiard's 2005 *Castles in Context: Power, Symbolism and Landscape, 1066 to 1500*, and several subsequent related works by the same author.[277] Liddiard posits that the Norman conquest and kings, through their introduction of feudalism and extensive architectural programs, had a 'profound effect in shaping the landscape' of England by c.1200 CE.[278] Some key observations presented through his landscape-oriented perspective include: that parkland and fishponds, for the acquisition of fish and game necessitated by high status, were often a concern in castle planning and siting;[279] that 'planned' and 'unplanned' castle-towns, as differentiated by the regularity or orderliness of their boundaries and road layouts, can be used as a means of measuring the historical degree of seigneurial intervention;[280] that castles were built in successive waves across England, for various reasons, rather than following any sort of centralised defensive programme;[281] and that the layout of structural components of castle sites was often influenced by deliberately structured avenues of approach, impacting the way guests and subjects would enter and experience the castle site.[282] Liddiard further discuss the idea that some

[268] Creighton 2005, p.18.
[269] *Ibid*, p.17.
[270] Higham and Barker 1992;2004.
[271] Liddiard 2005, p.9.
[272] Creighton 2005, p.2.
[273] Creighton 2005.
[274] *Ibid*, p.3.
[275] *Ibid*, p.13-185.
[276] *Ibid*, p.1.
[277] Liddiard 2005, 2006, 2018.
[278] Liddiard 2018, p. 105.
[279] Liddiard 2005, p.100.
[280] Liddiard 2018, p.122.
[281] Liddiard 2005, p.22.
[282] *Ibid*, p.141.

local features, which on the surface might be seen as economic, such as wooded parks, fishponds, dovecotes, mills, and even settlements may have been partially planned 'ornamentally' around castle sites to deliberately improve the 'aesthetic' of the key seigneurial residential structures.[283] Additionally, Liddiard suggests the that the introduction of castles in England should be seen as a development in manorial order and fortification design, rather than a fundamentally new or strange concept for the local populations. For example, he notes that there was some diachronic continuity in the significance of halls and towers, in elements of scale and siting, that translated from Saxon to Norman structures.[284] Additionally, he notes that continuity was perhaps most evident in William I's repeated integration of Saxon burh defences with Norman mottes.[285]

In highlighting the benefits of a landscape analysis approach, Creighton criticizes early castellology as setting up the observer to understand early castles 'against the background of what they turned into rather than what they were and what they meant in the context of their own contemporary societies and environments.'[286] To their medieval observers, castles became closely associated with concepts of 'justice, lordship and authority, as well as military might.'[287] Even more recent publications have similarly reinforced the benefits of viewing castles relative to their developed environments. McAlister argued in 2016 that medieval English castles provide an 'unparalleled lens' through which to view the stratified nature of medieval society, by contrasting the lives of the social elite with those who lived around them.[288] She continues by highlighting that while the role of castles as mediums of elite control and identity expression is well studied, the economic roles of castles generally are less well understood.[289] The foundations of an economic connection between castles and their surrounds established by these authors form the bedrock on which the present study aims to build foundations and expand, with both Creighton and McAlister emphasising the need for further work in this economic facet of landscape analysis in castle studies, and Liddiard suggesting castellologists 'make no apology for dealing with themes of form and function', so long as these are braced with theoretical awareness of the broader complexities involved.[290]

2.4.2 ..... Economic Considerations

Early medieval English castles have been recognised as complex and significant nodal participants in a developing network of economic exchange. Castle locations and plans indicate 'some level of compromise between the needs to protect property, administer estates, and generate revenue'.[291] Coulson suggests that the great majority of castles were rarely involved in actual military conflict and were often positioned for the ease of acquisition of money, and thereby power.[292] The common baronial castle was a lord's administrative seat over numerous dispersed manors. Due to subinfeudation, castles of differing size and seigneurial significance attended to linked parcels of land. Many English magnates therefore held land of various agricultural divisions (arable, pasture, rough grazing, park, or managed woodland) in addition to several forms of settlement.[293] It was their prerogative to extract as much wealth as possible from their demesne, to pay for their many knightly expenses and to improve their station. Some castle estates contained fish-ponds or dovecotes to provide an alternate source of protein to red meat.[294] Shrieval castles (those royally owned and run by parish sheriffs) in England generated a small income as jails and administrative centres.[295] Goulding observes additional revues such as toll

[283] Liddiard 2005, p.97.
[284] Liddiard 2018, p.110.
[285] Liddiard 2005, p.17.
[286] Creighton 2013, p.12.
[287] *Ibid*, p.12.
[288] McAlister 2016, p.631.
[289] *Ibid*, p.631.
[290] Liddiard 2005, p.151.
[291] *Ibid*, p.24.
[292] Coulson 2003, p.3.
[293] Creighton 2005, p.4.
[294] Muir 1990, p.104.
[295] Pounds, 1990, p.99.

fare collection at river crossings, direct control of mills, and a high occurrence of oversight over markets.[296] Some castles were deliberately placed overlooking significant roads or thoroughfares over which they collected tolls.[297] Swallow has observed that a subset of castles of Cheshire were clearly involved in controlling the movement of people and trade across the Irish Sea.[298] A full discussion of the economic seigneurial castle enterprise is given in Chapter Five.The castle also functioned as a safe repository of wealth. Several larger castles including Marlborough, Nottingham, Corfe and Bristol castles were utilised as fortified treasuries by English kings.[299] Notably, collected wealth included both coin and goods. In times of conflict, castles functioned as stores for food, drink, armaments, and other supplies.[300] Castle owners also had to upkeep various expenses. Food and goods for the lord and his retainers had to be upkept. Many specialists had to be employed for the construction of a twelfth century stone castle, including carpenters, smiths, mortar specialists, and several kinds of stone mason.[301] After completion, the baron of a castle also had in his employ several permanent specialists, situationally including clerics, stewards, chamberlains, butlers, cooks, porters, smiths, and others.[302] There was sufficient work around the castle to form the basis of small dedicated communities, which could (and did) then expand naturally. In this way, castle sites entailed both income and expenses, and can be viewed and treated as economic loci for analysis. Although the vast variety of roles, resources, and local conditions relating to a castle made its site choice almost unconfinable to any single trend, a general pattern of compromise between proximity to associated caput manorial resources and military considerations has been theorised and locally demonstrated.[303]

Some degree of direct economic relationship between the castle and its demesne settlement has also been established. Mcalister's 2016 study assessed the economic relations between late medieval tower house type castles in Ireland within the settled landscape; concluding that clearly 'subservient' (direct manorial estates) and 'associated' (localised sources of income such as villages and ports) settlement forms were deeply interconnected with castle site location by this time.[304] Bowden has analysed deserted settlements within the proximity of castle ruins, to identify the same.[305] A connection between the construction of castles and the subsequent development of some settlement forms has long been theorised and locally demonstrated.[306] Many English castles were positioned overlooking a town, often serving as the habitation of regional administrative forces.[307] Wheatley has observed that numerous English castles were built and planed with an adjacent or encircled town which came to share a symbiotic relationship with the castle, with each supporting the other.[308] Liddiard comments that the 'hand of lordship' likely did not influence broad settlement pattern outcomes through distinct 'events', but rather through more 'organic' alterations in settlement morphology, constituting one element among 'a myriad of local decisions that were framed by the constraints and opportunities of geography'.[309] Importantly, Creighton has highlighted the fact that the medieval settled landscape was not a set pattern of linear growth, but rather a shifting pattern which included the growth of entirely new settlements.[310] His landscape analysis has recognised that many new town formations in the twelfth century included a castle on their site, and postulates that many of these settlements appear to have been established expressly to maintain the castle.[311] The proportion of castles which were or were not involved in such a direct growth-catalysing role is uncertain as far as the present research can identify, and this constitutes a key interest for analysis. Furthermore, the degree of inverse influence, from the 1086 Saxon settlement distribution pattern on the siting of castles, remains an area open to further statistical assessment.

[296] Goulding 1994, p.130.
[297] Platt p.119.
[298] Swallow 2018, p.127.
[299] Pounds 1990, p.100.
[300] *Ibid*, p.101; Muir 1990, p.103.
[301] Gravett 2003, p.21.
[302] Goulding 1994, p.132.
[303] Creighton 2005, p.36.
[304] Mcalister 2016, p.685.
[305] Bowden 1999, p.78-80.
[306] Beresford 1967.
[307] Painter 1953, p.324.
[308] Wheatley 2004, p.50.
[309] Liddiard 2018, p.123.
[310] Creighton 2005, p.214.
[311] *Ibid*, p.162.

2.4.3..... Application of GIS Analysis in Castellology

Castle Studies scholars have only recently been exposed to the possibility of digital analysis. In summarising recent developments in later medieval archaeology in Britain, generally, Gerrard has noted that emergent digital and theoretical tools, including photogrammetry, DNA analysis, GIS, social practice theory (SPT), and similar methods have been crucial in answering old, and generating new, research questions.[312] Gerrard comments that, unlike some other arenas of archaeology, English medievalists benefit from the advantage of access to both documentary and standing structural evidence, but also cautions that interdisciplinary approaches necessitate higher researcher care, especially when consulting written evidence.[313] For the study of medieval castles, the reinforcement of archaeological material with documentary evidence appears a well-established method, but the addition of emergent digital tools is providing further analytic benefits. Creighton's 2005 landscape-oriented analysis of castle siting, still constituting a recent authority on the total English castle network, employed principally aerial photography.[314] In that work, he noted that markedly little research has been carried out on the siting of castles within the broader landscape. He argues this is partially due to the lack of primary sources detailing the reasons behind site choice, although more potently due to the assumption that military considerations were always at the forefront of the discission of siting.[315]

Since 2005, at least three GIS based works have been published observing castles within the wider landscape as complex integrated elements. One 2007 GIS analysis by Lowerre tested a set of 25 late eleventh century English castles in the South-eastern Midlands, focusing on proximity to navigable rivers, roads, and elevation.[316] Lowerre found that while some seigneurial overseers chose to build their castles on roads, close to rivers, and on natural promontories for defensibility, or to maximally exploit views, there was no clear shared gravitation toward any of these siting priorities.[317] Moreover, even where those sites best fitted a military paradigm, several ulterior explanations for site choice could be offered -strongly convincing Lowerre that the evidence pointed toward conscious trade-offs by castle-builders. Another 2013 GIS analysis utilised viewsheds as tools for studying the siting of early Norman castles in Ireland.[318] The study employed a sample of 20 early sites to determine how substantial the role of visibility was in site choice. A third GIS analysis from 2014, also examining Norman castles in Ireland, from an analysis of 3 early castles sites, found that there appeared to be a marked absence of shared reasoning or planning for even these closely geographically similar sites.[319] Several other archaeological publications have recognised the potential for GIS-based spatial analysis of medieval earthworks, including castle sites specifically; however, at the time of this research, systematic analysis of English sites appears largely incomplete.[320] Moreover, to the best of the authors' knowledge, no similar GIS analysis has explored contemporary settlement data alongside castle sites at the scale of the broader network of early English castles.

Thiessen polygons for testing the proximity of towns and castles for example, might provoke some concerns, given their limitations in accounting for spatial and temporal nuance, and their propensity for crossing of historical tenurial boundaries. However, existing publications indicate they still offer a useful means of preliminary exploration of settlement and castle proximity, which can be explored more carefully in accordance with known tenurial boundaries in further research. To begin with, the intended use of Thiessen polygons is not novel within archaeological research. They have been used for many similar preliminary forms of spatial testing. Also known as Voronoi diagrams, or nearest neighbour tessellation, their use has been applied in archaeological analysis for inferring territorial boundaries

[312] Gerrard 2018, p.987-993.
[313] Gerrard 2018, p.989, 986.
[314] Creighton 2005.
[315] *Ibid*, p.35.
[316] Lowerre 2007, p.239.
[317] *Ibid*, p.251.
[318] McManama-Kearin 2013.
[319] Immich 2014.
[320] Guth 2018; Lock and Stančič 1995; Chapman and Fenwick 2002; Gaffney et al 2022.

from different sorts of structural points as early as 1973 by Renfraw and 1976 by Hodder.[321] In archaeology, their application appears most prolific in prehistoric settlement analysis. In 2005 for example, one study combined Thiessen polygons with viewsheds to delineate and analyse local areas around Iron age hillforts in Iberia, from which they formed inferences about early social and political structures.[322] In a 2019 study, Thiessen polygon analysis was effectively used to determine the regional 'centres' of Neolithic dispersed agricultural and habitation spaces in the Huaibei Plain of East China.[323] Medieval research applications are rarer, but include Danks' 1977 analysis of medieval artefact distribution, and Herzog's 2014 analysis of medieval farmstead and town distribution in the Cologne region of Germany - the latter of which combined least-cost route analysis to manipulate the polygons.[324] The use of Thiessen polygons is appropriate for archaeological research in GIS, so long as their limitations are understood, although they will likely become more useful to the researcher if they are combined with other analytic methods such as least-cost routing and point-to-polygon weighting. The use of settlement-shift analysis in the GIS is also based on previous research, and this will be detailed in Chapter Six.

2.5 ..... Known Contentions and Knowledge Gaps

This review of the existing literature demonstrates several areas which have been thoroughly studied and are now well established in the sub-discipline of castellology. However, this preliminary research has also highlighted that multiple areas are only partially understood and that the application of further research into some of these areas is warranted. There is no question that castles performed multiple roles concurrently, albeit to differing degrees within differing circumstances. Figure 2.5A represents a summary of the three principal functions performed by castles, as identified in the scholarship above. The castle's military function encapsulates both its blatant defensive architecture and its utility as a military supply depot and base of operations in campaigns. Status broadly encapsulates the lordly residential and deliberate positional visibility elements of castle sites. Diachronically for the study period of 1000—1300, this progressed from the simplistic significance of a lord's hall atop an earthen motte to the extravagant heraldic architecture of the thirteenth century masonry castle. The economic function of castles is the least clear, as is noted above, constituting maintenance, exploitation of local resources, support of settlement growth, and relocation of markets, among other features. The existing literature has demonstrated that there were a multitude of functions performed within early medieval castle sites, but this simplified triadic summary reasonably encapsulates these multiple facets into a more easily referenceable key framework with which to discuss theoretical developments in subsequent chapters.

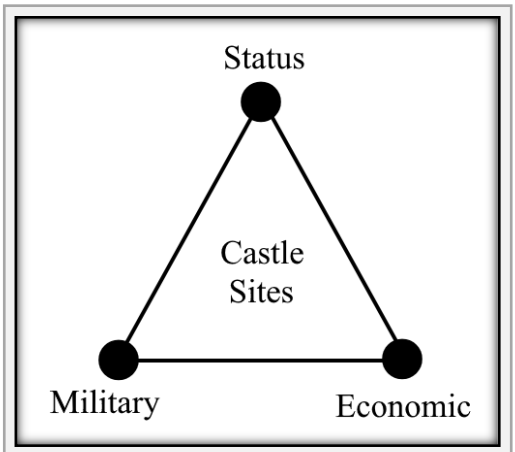


Figure 2.5A *Theoretical model of the core triadic functions of the castle.*

A precedent for the analysis of castles through comparative study with elements of their landscape has been strongly set. Given that castle economics are among the least-well-established elements of castellology scholarship, the key research method adopted in this study is the application of digital proximity mapping of castle and settlement features through GIS. Figure 2.5B demonstrates that the

[321] Renfraw 1973; Hodder 1976.
[322] Dytchwoski et al 2005.
[323] Zhou et al 2019.
[324] Danks 1977: Herzog 2014.

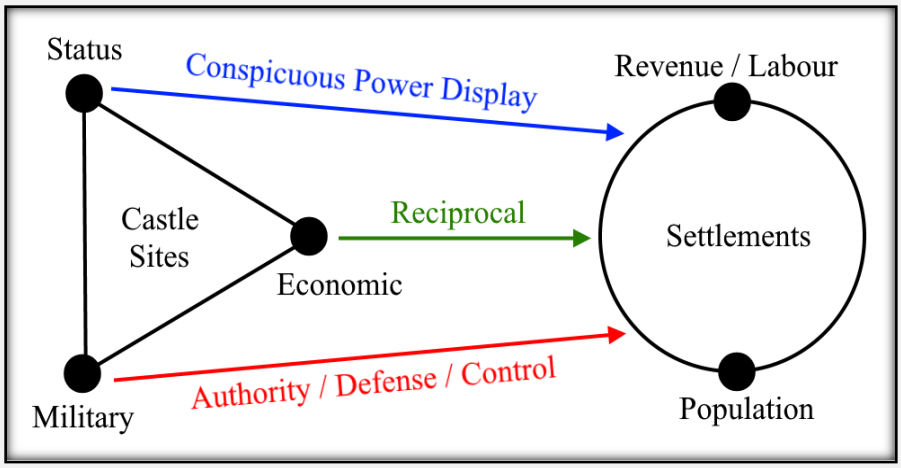


Figure 2.5B *Triadic functions of the castle in relationship to settlements. The present study will focus on the relationship between settlement distribution and castle siting through the economic aspect, indicated in green.*

triadic functions of the castle all entailed complex relationships with the settlements which existed inside their local sphere of influence and grew adjacent to them. It has been widely agreed that castles were constructed situationally to control and defend local populations, and to directly enforce a feudal lordship structure through their physical dominance of adjacent settlements and functionality as manorial administrative centres. However, the degree to which they influenced, and were influenced by, economic landscape factors is less thoroughly or congruously reported. On a basic level, the deliberate siting of castles within urban hubs to exploit revenue streams rather than to 'pacify' or 'supress' might be of greater influence than has been recognised by the broader existing scholarship. Moreover, some castles were sited beyond the established eleventh century population hubs and yet went on to catalyse substantial urban nodes. Others which were sited in wealthy existing settlements fell rapidly into disuse. The scale and pattern of such occurrence has not been systematically assessed within the study period. All three of the castle-settlement relationships highlighted in Figure 5.2B could be studied in detail through various methods of GIS analysis. Visibility for example, has been calculated from surface terrain layers with viewsheds to address the status-defensiveness dichotomy. However, it must be stressed again that this study limits its focus primarily to the economic relationship, as indicated in green as 'reciprocal' (a conceptual point to be expanded further in Chapter Five). Given these limitations of scope, some identified knowledge gaps are more appropriate to pursue further in this study than others. The following section lays out several issues as queries and proceeds to justify how and why digital mapping analysis is capable of improving our understanding of each issue.

2.5.1 ..... Issues Addressable via Digital Mapping Analysis

Castle-Settlement Relationship (Issue One):

- How much of an influence did the established Saxon population distribution in 1086 have on the locational pattern of early castle sites?
- How much of an influence did the location of castle sites have on the shifting settlement network by 1300; did the castle have statistically significant impacts on the overall economic landscape?

Terminology and Typology (Issue Two):

- How much variation is there in castle shape and size; does differing earthwork typology correlate to settlement distribution or other landscape features?

- How adequate are the major earthwork sub-categories of ‘ringwork’ and ‘motte and bailey’ in understanding early castles?

Diachronic Site Use Information (Issue Three):

- To what degree did site characteristics such as masonry upgrade, site size, or foundation date correlate to continuity of site use?
- Is there any pattern in the long-term use of castle sites and other elements of the built network across the early medieval period?

Castle Site Dating (Issue Four):

- How much variation is there in the site use and foundation dates of each type of early English castle?
- Can we reasonably apply known usage or foundation dates from castle sites with strong archaeological records to castle sites with similar features that have weak/no records?

Early English Timber Castles (Issue Five):

- How similar/dissimilar were the roles played by timber castles across the total network?
- Was their proximity to features of the Saxon built landscape systematic?
- Was there a proportionally high/low contiguous reuse of prior fortified landscape elements from previous cultural phases, especially Roman, Saxon, and Iron-Age defences?
- Does the distribution of different earthwork typologies correlate to unique local conditions?
- Does occurrence of long-term timber site use correlate with shared features between locations?

Geology and Altitude (Issue Six):

- Does castle site use and typology correlate to altitude?
- Is there an identifiable correlation between different terrain types and castle density?
- Were certain geological surface stone or soil types deliberately targeted or avoided?

Environmental Economics (Issue Seven):

- What is the spatial correlation of castle sites to navigable rivers?
- What is the correlation of castle sites, especially those without adjacent settlement, to known hunting forests and woodlands?
- What is the correlation of castle sites with Saxon land value (metric for development?) according to the Domesday Books (as opposed to land population)?

2.5.2..... Justification of Selected Issues

The recent debates in castellology around the economic nature of early English castles have established a strong basis on which to pursue statistical evidence through the application of digital mapping analysis. Through the comparison of mapped castle site locational data with fortified internal area data, settlement population statistics, in-situ site observation, underlying environmental elements, and documentary accounts, the eight issues identified here can all be spatially tested to improve our general understanding of early English castles. Several of the issues identified are directly assessable via digital proximity analysis of set features. Others which deal with the theoretical nature of early sites are addressable through dissection of the constructed index datasets, and the comparison of calculated

output elements. Fortified site area for example, can be utilised to identify both typological norms and mapped castle—settlement relational patterns to these types. Not all these issues can be equally investigated due to limitations of time and scope, and Issue One represents the principal focus of research around which other findings are sought out secondarily. This review chapter has recognised several key early works of castellology that attempt this sort of 'total system' analysis (most notably King's *Castellarium Anglicanum*). Scholars such as Creighton and Mcalister have laid out superb groundwork on which to approach the castle-settlement economic relationship theoretically. Lowerre and others have demonstrated GIS analysis of castle sites on a local level can produce informative new data. However, to the best of my knowledge, there has been no attempt to critically evaluate the 'total system' of early medieval English castles through GIS, as is tested here. A full report of the proportional earthwork typologies of castle sites might constitute a useful contribution to the debates around definition. The construction of a complete digital dataset of archaeological castle sites (with the assistance of recent lidar and satellite data) may also be a useful update to King's existing lexicon. Moreover, the diachronic mapping of settlement pattern in relation to castle siting for England from 1000—1300 CE to be carried out here to confront these issues ought to offer novel contributions.

2.6..... Conclusions

English castles were built prolifically after the Norman conquest of 1066 CE, first in timber, and later in masonry. The initial academic analyses of castle sites established a theoretical framework of military orientation of castle forms and functions. Recent studies have recognised a much wider range of castle functions, observing castles through social, landscape, residential, prestige, legal, tenurial, economic and other lenses. There are multiple foci of castle studies that are still subject to ongoing debate. While the military role of the early English castle is well established, the extra-military ambitions of castle builders, and the unforeseen impacts of castle construction on the ever-shifting built landscape, as theorised in recent years, remain to be further grounded with statistical evidence of proportionality. O'Neil has cautioned that too much focus on extra-military functionality may lead to deviation from historical castle site realities.[325] It is necessary then, to approach potential economic relationships and pattern outcomes with a conscious recognition that these formed only part of the multifaceted, castle-building enterprise, alongside military and status considerations as summarised in the triadic model above. Whether the complex economic relationships between castles and settlements were collateral to cautious defensive building policy or a deliberate result of planned exploitation remains to be fully assessed. However, even if the economic functions of the early medieval English castle were subsidiary to initial builders' intent, they should by no means be neglected in our overall understanding and definitions of what early castles became. By focusing on the bi-directional settlement-fortification relationship, this study aims to measure the impact of the rapid adoption of castles on the broader structural network without downplaying the well-established military intentions of the early castle builders. The seven issues identified in section 2.5.1 are all worthy of further research, and GIS based analysis provides a useful tool for conducting such research. Ultimately, analysing the relative position of castles and settlements in the landscape ought to help clarify competing positions on the early English castles' economic significance and contribute to these ongoing debates.

[325] O'Neil 1960: Kenyon 2010, p.8.

3.0..... Chapter Three: Methodology – Mapping the Kingdom

3.0.1..... Introduction

A research rationale along with a list of testable issues, and justification of GIS as a core analysis tool, has been given in Chapter Two. Before presenting the key analysis results in Chapters Four (typology), Five (eleventh century settlement proximity), and Six (settlement shift from 1086—1377), the information sources and analysis methods used in the study are first explained and justified here. This chapter elaborates on the processes of data acquisition and manipulation for analysis. While the end goal is to understand the economic functions and impacts of castles within the landscape more clearly, with a particular focus on their relation to settlement distribution, several initial procedural tasks were necessary prior to beginning analysis. To start with, there is no existing digitised castle dataset for the years 1000—1300 published as a peer-reviewed source, and as such a main dataset was first constructed from the ground up to form a foundation for comparative spatial analysis. Following the completion of the dataset for castle sites, information was sought out and organised into two further datasets for settlements, one for each end of the time range of the study. Once the raw locational information was compiled, a Geographic Information System (GIS) was constructed, including several polygonal and line layers from existing published research, within which several analysis types were tested. Firstly, the topographic spatial area of each castle site was mapped in the GIS with polygons and the areal outputs were recorded and assessed typologically. Second, the eleventh century settlement distribution was compared with castle positioning through several proximity analyses to identify potential influences on castle siting preference. Finally, the larger settlements from each end of the study date range (with sources from 1086 and 1377 CE) were compiled and mapped to observe the broader shift in the settlement pattern across the study. Against this pattern shift, castle nearness was observed to identify potential correlation to instances of expansion or contraction of town populations. All of these analyses were carried out within the GIS, with additional calculations added through the comparison of the outputs in Excel. Data collection constituted a major portion of the total research effort, and several procedural limitations were presented and overcome in order to carry out the three key analyses.

3.1..... Compiling the Locational Site Data

In addition to a background set of useful mapping assets borrowed from the GIS community, three primary datasets were constructed to carry out the areal, settlement shift, and proximity analyses. Dataset 1. contains the full list of the included English castle sites from 1066 to 1300 CE. Dataset 2. contains the eleventh century population distribution data from the primary source of the Domesday Books. Lastly, Dataset 3. contains settlement information for c.1300 from the primary source of the 1377 Poll Tax records. Datasets 2. and 3. contain information which has been published by previous researchers and has been borrowed and adapted for this study. However, Dataset 1. was constructed by the author and represented the larger portion of compilation work and subjective critical evaluation of uncertain information. The date range of the study aims to focus on 1000—1300, as detailed earlier, but was necessarily stretched to 1377 as is explained below. The geographic range covers those counties of the Kingdom of England that were mapped in the Domesday Books (1086) notably excluding Durham, north Westmoreland, Northumbria, Cumberland, and English territory in Wales, Scotland, Normandy and elsewhere (see Figure 3.1). It is important to note that these counties are not the same as the ‘historic’ counties. The following sections details the process of compiling these three datasets.

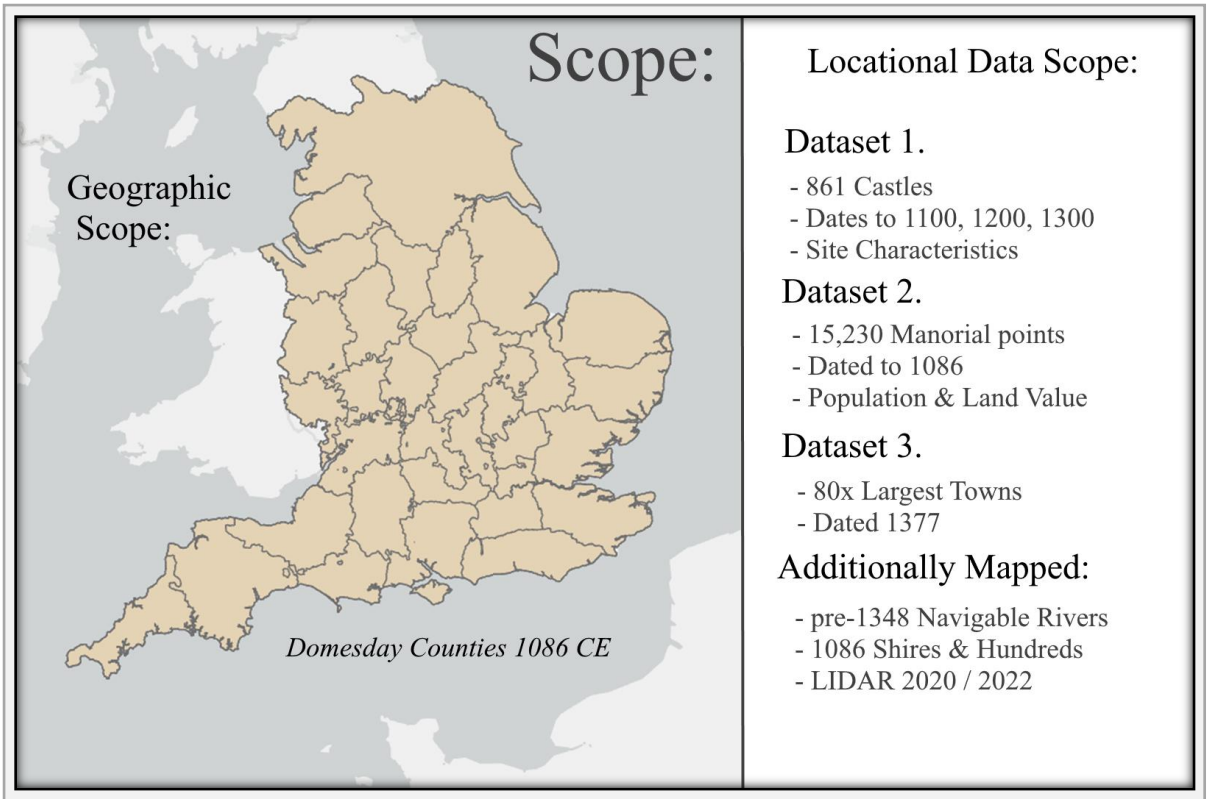


Figure 3.1. *Study scope: Left: Borders of the Domesday Book Counties.* (Modified from Brookes 2020.) *Right: Summary of the three locational datasets and their contents.*

3.1.1 ..... Constructing the Castle Site Dataset

The initial task necessary to progress was to compile a full list of early English castle sites within the chosen time frame and area. Given the impressive extent of the historical and archaeological record in the United Kingdom, one might expect that the total number of English castles would constitute a well-documented and complete digital list. However, upon further analysis, clearly much remains unknown as to the extent and content of this list (even the publicly contributable Wikipedia English castles by counties list is incomplete), and much reference is still made to King's foundational 1983 *Castellarium Anglicarum* from which some outlying sites are also absent. Given the number of uncertain castle sites with no written record, and/or questionable archaeological status, there is also room for a substantial margin of difference between one compilation count and the next. The castle sites of appropriate date and form to this study came to a total of 861. The analysis of castle sites was deliberately limited to 1300 CE in order to delineate their 'early' distribution and use from their later medieval use. The initial research indicated the fourteenth century was a major turning point in warfare and social order, as feudalism declined, and gunpowder weaponry became widespread. Furthermore, the prolific establishment of timber motte and bailey and ringwork fortifications was largely confined to the eleventh and twelfth centuries, with new timber foundations rarely occurring by the end of the latter, and new masonry foundations being fewer in the thirteenth century. Moreover, although there are some examples of thirteenth century castles which performed more of a function as isolated stately homes than defensive and administrative sites, such a shift appears to occur more markedly in the fourteenth century and beyond. As such, a number of post-1300 foundations are absent from Dataset 1. including several of the well-known surviving castles of England.

Initially, a broad search for published catalogues, online archives or existing datasets of English castles was carried out. By its full title, the *Castellarium Anglicanum: an Index and Bibliography of the Castles in England, Wales, and the Islands* remains the principal academic text which has identified and categorised Norman castles on a national scale.[1] There is a collection of additional works that catalogue the known castles for individual counties, and a handful that attempt to assess the total system theoretically (see the literature review herein); However, King's work appears to remain the chief national-scale academic source for English castles. Three key heritage listing resources have digitised the list of known castle sites, and these comprised the principal sources for the data collected. These were: Historic England's 2021 *National Heritage List for England* (hereafter NHLE)[2]; English Heritage Gateway's 2012 *Historic England Research Records* (hereafter HERR)[3]; and Davis' 2017 extensive and well considered personal research, in the form of *The Gatehouse Gazetteer* (Hereafter TGG).[4] As heritage scheduling resources and information repositories, these three online sites all boast the notable benefit of extensive citation of recent and past excavation reports, utility of a broad range of local county fortifications lists, as well as key previous publications, especially of King.

While the HERR is the oldest digitised heritage resource of the three, it often benefits from a less strict exclusion of speculative information. Many of the more dubious potential castle sites observed had a HERR listing, whilst not appearing on the NHLE records. This is noteworthy in that some such sites have been included in the present study based on reinforcement through more recent lidar images which are quite compelling when considered alongside the total body of information about a given site but are absent in earlier NHLE scheduling reports. The NHLE is the 'only official, up-to-date, register of all nationally protected historic buildings and sites' for England.'[5] While the NHLE is an excellent heritage resource, it can be observed after reading several hundred entries that this repository exhibits an occasional tendency to formally designate castle sites with limited information as fitting within one or another categorisation of earthwork; and thereby, also including said sites within certain established typology-based dating ranges. At the beginning of each motte listing entry for example, is a summary of motte castles generally, encompassing a wide range of variation. Albeit reasonable within the functional scope the heritage preservation, this may in fact inadvertently perpetuate established assumptions regarding the dating of early castles (e.g. mottes are mostly eleventh century, or ringworks are mostly twelfth century etc.). While there are observably broad patterns for the occurrence of mottes, ringworks, and baileys, the incidence of well verified outliers makes the conformity to established type-date rules problematic (see Chapter Four for examples and a critical assessment of typology).

For all three data sources the inverse is also often an issue, with some castle sites providing no provisional dates at all. Dates are generally only obtained through archaeological excavation (primarily through ceramics) or historical record of site use, and these are not always available, especially for the smaller and shorter-lived timber castles. Unfortunately, this is far from an easy issue to address, and the present study has sought to clearly differentiate sites with good dating evidence to sites of an assumed dated type to help reduce this inadvertent perpetuation. TGG is the third available national-scale resource widely referenced in the castle studies community, comprising; 'a comprehensive listing of the medieval castles, castle sites, fortified houses, urban and coastal defences and other fortifications of England, Wales, the Channel Isles and the Isle of Man built or in use from 1000 to 1600.'[6] This informal digital index is well referenced, contains extensive county castle lists and bibliographies, and direct links to various heritage information sites. TGG includes a great number of 'possible', 'questionable', and even 'rejected' castle sites, providing an invaluable opportunity for critical assessment (especially with aid of new digital information and tools) and numerous examples of weakly verified or 'false'

[1] King 1983.
[2] Historic England 2021.
[3] Heritage Gateway 2012.
[4] Davis 2017.
[5] Historic England 2021.
[6] Davis 2017.

castle sites providing case studies on what to avoid (such as windmill mounds, 1800s landscaping features, and pre-Norman mounds, that might be easily mistaken as mottes).

Dataset 1.

Nu:	ID:	Castle Name:	Location:	County:	Pre-Norman:	Timber:	Masonry:
229	CHAM14	Merdon Castle	Hursley	Hampshire & Wight	IA/AS fortified	1200 (1129-38)	1300
230	CHAM15	Motleys Castle	Rowlands Castle	Hampshire & Wight	AS fortified	1100	none
231	CHAM16	Place Wood Motte	Southwark and Wi	Hampshire & Wight	none	1100	none
232	CHAM17	Rowlands Castle	Rowlands Castle	Hampshire & Wight	none	e.? 1100	1200
233	CHAM18	Southampton Castle	Southampton	Hampshire & Wight	none	1100	1200 (1187)
234	CHAM19	Winchester Castle	Winchester	Hampshire & Wight	Roman fortifie	1100 (1067)	1200
235	CHER01	Woonton Castle	Almeley	Herefordshire	none	e.? 1100	e.? none
236	CHER02	Wilton Castle	Bridstow	Herefordshire	none	none	1300
237	CHER03	Wigmore Castle	Wigmore	Herefordshire	none	e.? 1100	1200

Abandonment:	C:	Latitude:	Longdit:	Altit:	Description:	Sources:	Info:
1300+ (bishop's p	13+	51.0359	-1.4012	106	motte, bailey-> MC, bishop's	https://hi	The monument includes a sub
1200	12	50.9045	-0.9705	76	ringwork, bailey	http://ww	The monument includes a ring
1200	12	50.8786	-1.0980	54	ringwork, bailey	http://ww	The monument includes a ring
1300+	13+	50.8897	-0.9586	43	motte, bailey-> MC	http://ww	Motte and bailey which has be
1300+	13+	50.9006	-1.4053	14	motte, bailey-> MC, SK	https://en	Southampton Castle was first
1300+	13+	51.0626	-1.3197	64	motte, bailey-> MC, CW, squa	https://hi	Winchester Castle was a mott
e.? 1200	12	52.1663	-2.9415	127	motte	https://ht	The earthwork remains of a sn
1300+	13+	51.9164	-2.5971	38	MC, square, corner keep?	http://ww	Remains of late 13th/early 14
1300+	13+	52.3184	-2.8696	176	motte, bailey-> MC, CW, SK	http://ww	Wigmore Castle lies on the We

Figure 3.1.1A. *Sample from the initial Dataset 1. Several features were added in subsequent records.*

From these resources, and research into additional published and unpublished historical information sources where required, Dataset 1. was constructed. Figure 3.1.1A gives an example of the layout of the dataset in Excel form. A 'long-list' of several thousand potential castle sites was created using the TGG historic county lists as a basis, and 861 castle sites were included as appropriate to the locational, typological, and dating parameters established. For each castle site, an ID was generated, and the location was recorded by place and coordinates. Altitude was calculated and recorded with coordinate elevation surface terrain converter tool. Additionally, a satellite image of location with scale was recorded in an appendix (Figure 3.1.1B. gives an example of such; see Appendix I. for a full list). Information was recorded on site details and sources and bulk compiled into single Excel cells. The typological description of the castle was given according to listing sites, and critically reconsidered later. Typology included motte, bailey, ringwork, enclosure, MC (masonry castle), SK (shell keep), TK (tower keep), CW (curtain wall), and other unique variables. Castles with no known pre-



Figure 3.1.1B. *CDEV14, Holwell Castle, Parracombe, Devonshire.* (Sample from Appendix I.)

masonry timber structure were differentiated. Many times, there was no clear typological categorisation given, and in such cases the site was simple described as ‘timber castle’ or ‘masonry castle’ and later assessed by the author using LIDAR data, where possible. Masonry castle entries were highlighted in blue and use beyond 1300 was highlighted in green. Continuity of use was an important element of interest, and this was carefully researched and recorded. Dating was rounded to century conclusions (by 1100, 1200, or 1300) as this system best matched available information on heritage resources. Many sites however had little dating evidence, and uncertainty was noted where possible with ‘e.?’ denoting estimation. A simplified metric of continuity was listed as ‘C.’ to permit ease of mapping variation in the GIS. A thorough assessment of the final contents and statistics of Dataset 1. can be found in Chapter Four. Castle sites were assigned a castle id e.g., ‘CBED01’ for Bedford Castle, and these are referred to throughout the study, so readers may easily refer to the attached datasets and appendices.

The study seeks to be as comprehensive as possible in assessing the total English castle network, and so inclusion of many anomalous and outlying castle sites was a deliberate outcome. This included the location of some castle sites which have now been completely lost to urban development such as Luton Castle (CBED20) Bedfordshire, Birdport Castle (CDOR04) Dorset, and Ipswich Castle (CSUF16) Suffolk. Others were also included which are partially lost to rural development such as Talsworth Castle (CBED14) Bedfordshire, Berry Mount (CNHA10) Northamptonshire, and Bucknell Motte (CSHR18) Shropshire. Sites were also occasionally included due to heritage listing categorisation as ‘motte’ or ‘certain timber castle’ when on the surface they appeared dubiously close to moated manorial sites or other liminal typological forms. Consequentially, the level of overall confidence of information regarding dating and typology has been slightly reduced for the sake of achieving as total a distribution pattern as possible. Some of the theoretical questions later posed required a more limited but more confidently documented set of castle sites, requiring additional typological subsets. The areal data from the LIDAR analysis for example, achieved much in amending this limitation for typological assessment by including only those sites sufficiently preserved to measure their historic ground-plans. However, as a recommendation for further research, a self-imposed limitation to the best available cases of certain typologies might be appropriate, especially as the known cases of lost castle locations imply a greater set of unknown lost castle locations, rending the mapping of a truly ‘complete’ network of the early English castles as impracticable. Nevertheless, the list produced in Dataset 1. can be considered as highly comprehensive for the foundation date range selected for assessment here.

3.1.2..... Grounding the Findings – Observational Fieldwork

Not long after Dataset 1. was compiled, a plan and funding were established to travel to the United Kingdom to observe some of these sites and communicate with several scholars of castle studies to use feedback on proposed proximity approaches to help direct my early research. However, the Coronavirus pandemic postponed these plans. Work proceeded cautiously and experimentally for the interim via largely online resources, and initial analyses were carried out. In mid-2022, the research expedition once again became practicable, and this opportunity was gladly taken up to redirect the plan and to conduct 5 weeks of observational fieldwork in the UK. 31 relevant castle sites were visited across England from Rochester, to Restormel, to Richmond, along with 3 early Norman cathedrals, a number of early churches, and a selection of medieval museums. Notes and photographs were documented for each location. Around this time, I was also able to discuss my research with a several active academic specialists of English castle studies, who validated several of my theoretical suspicions and offered useful feedback. The process of physically observing and entering many of the fortified sites I had written about and viewed on maps affected my critical perception, constituting a valuable element of

methodology despite occurring later in the process than anticipated. An awareness of the relative scale of earthworks, surrounding landscape forms, and views from keeps was highly informative. An appreciation for how regionally differentiated masonry conformed with local supply and construction methods and of how varied the sites were in scale and investment was achieved that could not have been gained from a writing desk. Appendix III contains the details of this observational fieldwork with castle site observations and histories.

3.1.3..... Preparing the Domesday Settlement Dataset

The population distribution data for the eleventh century came from the Domesday Books (1086 CE). The nature and content of these texts is explored more deeply in Chapter Five on proximity analysis, with the raw data use explained here. Thousands of entries of data from the Domesday Books were translated by Morris in 1975.[7] These volumes were published by Phillimore and are commonly referred to as the 'Phillimore edition'. The translations were digitised by Palmer at Hull University in 2008.[8] Palmer's digitised data have been made publicly accessible at Hull University's *Domesday Project* on the *HYDRA Digital Repository*. Dataset 2. was constructed by refining the population elements from Palmer's data for mapping in the GIS. The population data found in the entries is organised by manors

Dataset 2.

A	B	C	D	E	F	G	H	I	J	K	L	M	N
ManorID	StructIdx	PlaceID	Phillimore	County	Hundred	Vill	MType	Holding	Units	Villagers	Smallholders	Slaves	Female Slaves
M00001	19339	227390	1,61	NFK	Norwich	Norwich	[U]	3	geld	0	480	0	0
M00002	19348	227500	1,70	NFK	Thetford	Thetford	[U]	7	geld	0	5	1	0
M00003	7471	83760	1,15	GLS	Berkeley	Cam	B	17	geld	262	147	136	15
M00004	10639	118800	1,3	LEC	Goscote	Skeffingto	D	12	geld	186	112	0	0
M00005	21357	251350	6,84	SUF	Blything	Dunwich	[U]	1	geld	0	2	0	0
M00006	2	20	D2	KEN	Bewsbury	Dover	U	0	-	0	0	0	0
M00007	4532	51730	2,2	DEV	Crediton	Crediton	M	15	geld	264	73	40	0
M00008	302	3620	5,128	KEN	Folkeston	Folkeston	M	40	geld	230	158	7	0
M00009	86	940	1,3	KEN	Milton	Milton Reg	M	80	geld	309	74	10	0
M00010	8280	93760	1,10a	HEF	Leominste	Leominste	M	60	undivi	224	81	13	12
M00011	3714	41920	2,1	SOM	Taunton	Taunton	[M]	29	geld	80	82	70	0
M00012	19495	229380	1,215	NFK	Forehoe	Wymondh	[M]	14	geld	64	168	8	0
M00013	130	1670	2,41	KEN	Heane	Saltwood	M	7	geld	33	12	2	0
M00014	3685	41390	1,10	SOM	Horethorn	Milborne F	M	51	geld;p	70	18	5	0

O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	A
Freemen	Free Men'	Priests	Cottagers	OtherPop	Burgesses	MiscPop	MiscType	TotalPop	GridID	GridID x6	Latitude	Longditude	
0	0	0	0	0	665	0	-	1145	TG2308	TG235085	52.6282	1.3010	
0	0	0	0	0	720	2	prebendar	728	TL8782	TL875825	52.4084	0.7551	
0	0	0	0	0	0	58	other	618	ST7599	ST755995	51.6937	-2.3559	
204	0	1	0	0	0	0	-	503	SK7402	SK745025	52.6152	-0.9011	
0	0	0	0	0	236	202	other	440	TM4770	TM475705	52.2769	1.6267	
0	0	0	0	0	0	420	men	420	TR3241	TR325415	51.1256	1.3213	
0	0	0	0	30	0	0	-	407	SS8300	SS835005	50.7923	-3.6543	
0	0	0	0	0	0	0	-	395	TR2236	TR225365	51.0846	1.1755	
0	0	0	0	0	0	0	-	393	TQ9065	TQ905655	51.3566	0.7346	
0	0	6	0	0	0	20	other	356	SO4959	SO495595	52.2314	-2.7408	
0	0	0	0	16	64	17	pigmen	329	ST2224	ST225245	51.0146	-3.1062	
87	0	0	0	0	0	0	-	327	TG1101	TG115015	52.5702	1.1195	
0	0	0	0	0	225	0	-	272	TR1535	TR155355	51.0783	1.0752	
0	0	0	0	0	163	0	-	256	ST6718	ST675185	50.9650	-2.4642	

Figure 3.1.3A. *Sample from Dataset 2.* (By author; data modified from Palmer 2008.)

[7] Morris 1975.

[8] Palmer 2008.

(see Figure 3.1.3A for a sample from Dataset 2.). These were given a new 'ManorID' in the dataset, which later identified them in the GIS. Palmer's dataset lists 19,970 Domesday manors, each with data for the different number of household heads by class (villagers, slaves, freemen, burgesses, etc.), from which population is estimated to be multiplied by a factor of around 4-5 persons (see Chapter Five). It is crucial to note that these manors represented 'geld' tax collection points, rather than individual nucleated hubs, and represent a variety of differing settlement forms including scattered farmsteads. Holding value (taxable value in geld) was also recorded and mapped. Holding value is most useful as a tool for analysing the northern counties, which had drastically reduced populations after the late-eleventh century unrest and famine. The unaltered dataset lists a total number of population entries as 278,652 persons. However, not all these entries are mappable for use in GIS. In the creation of a new population distribution dataset, 2,061 manor entries were removed due to having no known modern location or no listed grid location. A further 4,679 manor entries were removed as they had no population listed (typically manors of 'wasteland' or unrecorded population). This resulted in a dataset with a total number of 15,230 manor listings for population points, with a total of 261,684 persons (entailing a total of only 16,968 or 6.1% of total listed unmapped persons), and a separate list for manor holdings value. The population map used is therefore a highly representative, albeit slightly incomplete, indication of the distribution in late eleventh century England.

The locations detailed in Palmer's datasets are defined in accordance with the British Ordnance Survey National Grid Reference system. This system utilises 'Eastings' and 'Northings' numbers combined coded grid squares, originally being utilised for military purposes. Each square with a 2x letter code is

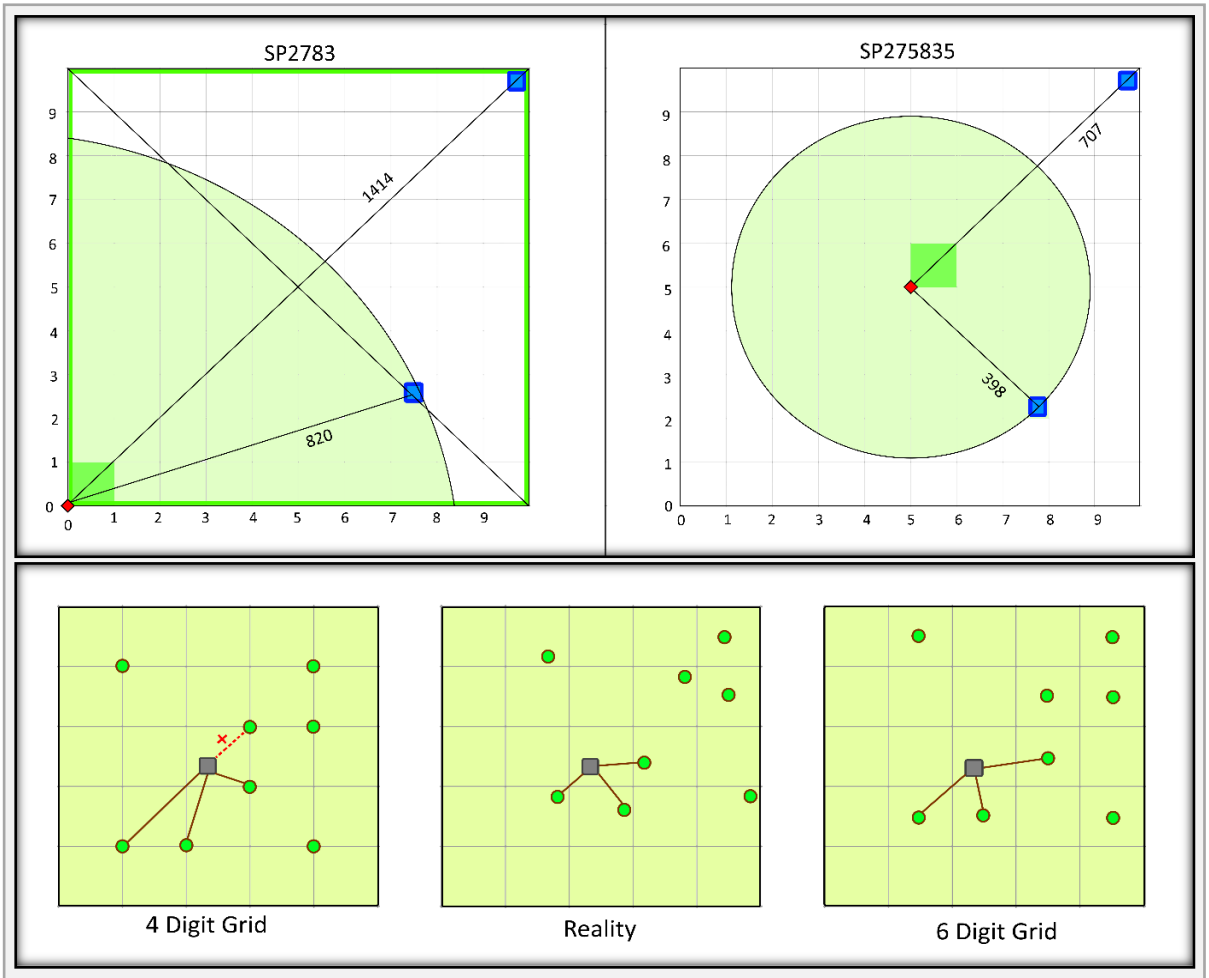


Figure 3.1.3B. *Example of the UK Grid Reference x4 digit and x6 digit point location, highlighting the increased accuracy achieved by 'centring' the points within the grid squares.*

100x100 kilometres in area, and the following numbers indicate the degree of accuracy. Two digits indicate an area of 10x10 kilometres; four indicates an area of 1x1 kilometres, and six indicates an area of 100x100 metres. In the example here (Figure 3.1.3B.) SP2783 identifies a theoretical grid ID in the English midlands of 1x1 kilometres. If the grid ID is used to map the location, or converted to longitude and latitude to be mapped, it will appear as point in the lower left-hand corner of the square. However, as the pertinent castle site may be located anywhere inside the grid square, the inaccuracy in distance can be reduced by using a six-digit code with the third and sixth digits being '5' (SP*xx*5*xx*5) to move the point to the middle of the square. This process was applied for all the four-digit grid IDs of Palmer's Domesday holding and manor locations. Due to the castle site locations being manually recorded to an accuracy of within ten metres, this reduced the proximal inaccuracy substantially. The maximum inaccuracy was reduced from 1414 metres to 707 metres, while the average distance-from-point was reduced from 820 metres to 398 metres. The proximity analyses operate in the order of 5,000 metres, so this represents a tolerable (albeit unavoidable) degree of inaccuracy in results.

3.1.4..... Preparing the Poll Tax Settlement Dataset

The 1086 settlement data was ideal for comparative analysis with the early siting of castles. As the castle site foundation and usage dates were recorded by century (by 1100, 1200, 1300) ideally a source could be found for 1300 to match the roughly 1100 Domesday material for use in a settlement shift analysis across this period. A source of similar nature was sought out for the late-thirteenth or early-fourteenth century; however, no equivalent source (of any substantive scale) could be located. The most comprehensive and temporally close source of information on settlement population size relative to the 1300 date able to be identified is the 1377 'Poll Tax' accounts. A deviation of 77 years was deemed acceptable for the purposes of the analysis type, but this resulted in some careful consideration of the events of the fourteenth century, particularly the Black Death and its effect on population, which is addressed in Chapter Six. The Poll Tax was levied on all English men over 14, and has been used to construct estimates for English settlement sizes by Fenwick and others.[9] In 2000, Dyer used the Poll Tax data from Fenwick alongside a 1525 'Lay Subsidies' equivalent data source to map out urban growth and decline through comparison of the top 80 towns across each period.[10] Dyer posits that 80 Towns is the upper limit applicable to the Poll Tax and Lay Subsidies data, with smaller towns beyond this point being less well recorded or left out. Dyer's work has been instrumental for the present analysis in two ways; in that he has published a list of the most substantial 80 settlements that can be utilised for diachronic analysis here; and that he has demonstrated thoroughly the method and fruitfulness of such a comparative study of a similar date range. Dyer and Fenwick's work is discussed further in Chapter Six.

C13 Top x80 Major Settlements:				
STLID:	Settlement Name:	Pop Estimate:	Latitude:	Longditude:
STL13.01	London	40000	51.5091	-0.0779
STL13.02	York	13770	53.9546	-1.0799
STL13.03	Bristol	12060	51.4561	-2.5883
STL13.04	Coventry	9150	52.4125	-1.5089
STL13.05	Norwich	7510	52.6282	1.3010
STL13.06	Lincoln	6780	53.2279	-0.5404
STL13.07	Salisbury	6410	51.0917	-1.8086
STL13.08	Winchester	6000	51.0618	-1.3168
STL13.09	Lynn	5940	52.7509	0.4015
STL13.10	Colchester	5615	51.8923	0.8979
STL13.11	Boston	5455	52.9780	-0.0282
STL13.12	Newcastle	5320	54.2154	-5.8918
STL13.13	Beverley	5060	53.8414	-0.4285
STL13.14	Canterbury	4890	51.2759	1.0883

Figure 3.1.4. *Sample from Dataset 3. raw 1377 data component.* (After Dyer 2000; after Fenwick 1983.)

[9] Fenwick 1983.

[10] Dyer 2000, p.272.

Following Dyer's example then, Dataset 3. is comprised of: the most substantial 80 settlements from 1086; the equivalent top 80 from 1377; and a composite list of 137 settlements across both dates. London was not included in the Poll Tax and has been re-added with a population estimate of 40,000 for 1377. Figure 3.1.4 lists the largest of these settlements in 1377 as a sample. The location for many settlements was not recorded, and coordinates of the historic town centres of these settlements were recorded in preparation for GIS mapping. The composite list being of 137 settlements meant that for the 1377 CE set, 23 sites were also among the top 80 in 1086, while 57 had grown to prominence within the intervening 291 years. The inverse also means that 57 settlements that were among the top 80 in 1086 had decreased in significance. The basic theoretical premise being explored with this dataset was that the failure or success of these fairly small (albeit major for their contemporary setting) urban settlement economies might have been influenced over time by the adjacent location of castle sites. As this castle-settlement growth has already been situationally demonstrated as the case in the scholarship (see literature review herein) on a local level, the question would be how widespread the occurrence of reciprocal castle-settlement growth was, and if the patterns of its occurrence could be grounded statistically in any other measures of castle location or quality (see Chapter Six for the results). A fairly obvious limitation of this analysis is its constriction to only the upper 80 urban centres, representing only the major market centres within the kingdom by 1377, but this also has permitted the focus of analysis to move to specific case studies within this set.

3.1.5..... Summary of Data Workflow

With the processes of compiling Datasets 1-3 detailed, their intended uses can be more clearly explained. Figure 3.1.5 highlights the key inputs and outputs of the research project. In all, there are three datasets, three analysis chapters, and three appendices. The castle data (Dataset 1.) form the backbone of all analyses, and are used in Chapters Four, Five, and Six. The areal analysis observes both inner fortifications (mottes, ringworks, enclosures) and their bailey area, with consideration of the bailey area as a form of settlement space. The proximity calculation employs several variations of distance relativity analysis to assess nearness of the 1086 settlements to the castle sites (see Chapter Five). Finally, the settlement shift analysis observes the changing pattern in town location across the 1086—1377 period and then critically assesses the relative position of castle sites to instances of growth and contraction (Chapter Six). In this way, all three analyses are focused on the relative size and position of settlements in the Kingdom of England (principally through their known population, but also on bailey areal size) as economic metrics to compare with castle characteristics and positioning.

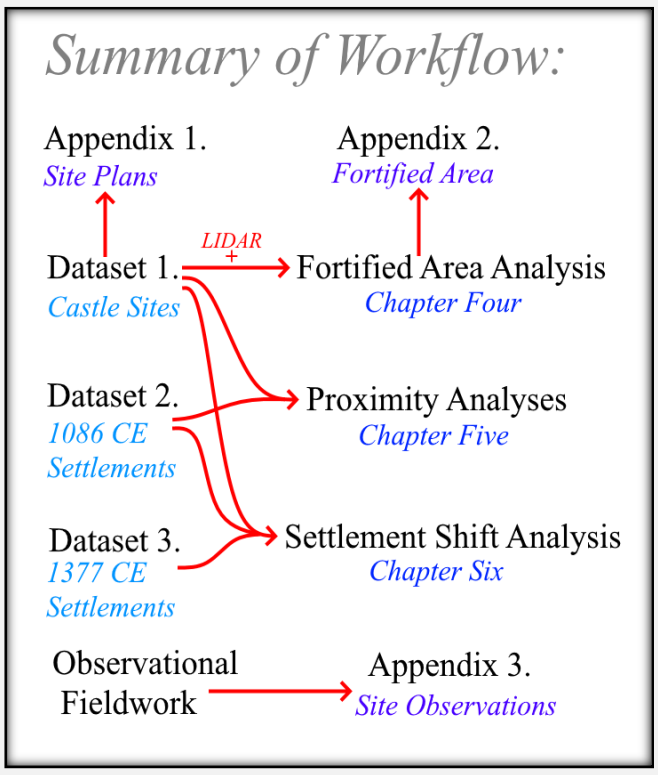


Figure 3.1.5. *Summary of datasets and outputs.*

3.2..... Mapping the Data in the GIS

The process of mapping these three datasets onto the project GIS for analysis through the ESRI's ArcGIS Pro software is summarised in the following sections. Figure 3.2 highlights the primary elements of the map drawing order from the completed GIS. The WGS 1984 Geographic Coordinate System was used as a base. Below the main data layers, several background layers, including the LIDAR, Domesday land boundaries, navigable rivers, and reference maps were added. The castles were initially mapped as a total set, followed by a masonry-only subset for differentiation, and then by four typological classification types (detailed below). The castles, Domesday manors, and Poll Tax settlements were mapped as points; the navigable rivers were mapped as lines; and the radial draw-zones, Domesday land-boundaries, and Thiessen ranges were mapped as polygons. The drawing order was designed to be user-friendly and intuitive, to permit ease of re-use in future research by others if possible. Many of the components utilised in the mapping process were sourced from existing published research and resources (see below). However, the mapped castle sites from Dataset 1, the polygons generated in the areal typology analysis, and the data generated through the conjunctive analysis of the three datasets are all novel information contributions which might be of use in the developing debates within castle studies scholarship. The drawing order was arranged in ascending order in layers, such that individual components can easily be compared while excluding other features.

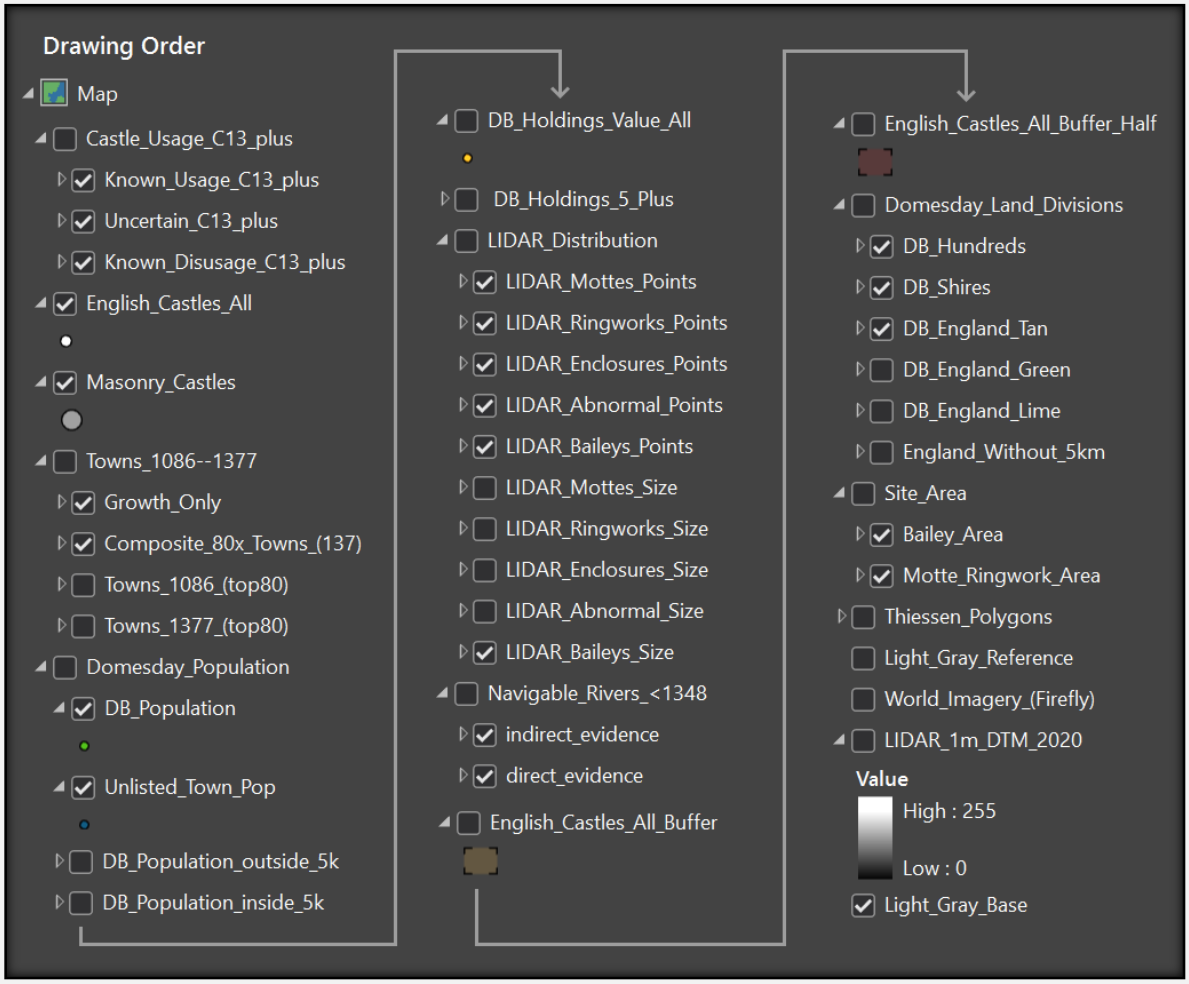


Figure 3.2. *The GIS map drawing order detailing elements of the project (selected sample).*

3.2.1..... Setting up Background Parameters

A number of useful map layers were set up as the background for data mapping and observation (see Figure 3.2.1). Conveniently, the Domesday Shires (later called counties) and Hundreds have already been mapped digitally by Brookes in 2020, providing an excellent geographic perimeter for the GIS.[11] The shires are arranged as adjacent polygons. These polygons were modified to permit the overlapping view of Hundreds and Shires, and a background 'England' polygon was created for use in figure construction and ease of viewing data layers and for calculating area. The 1 metre Digital Terrain Model (DTM) LIDAR was added for use in site observation and typological assessment (public access resource).[12] This 2020 DTM source later became unavailable, and a 2022 terrain model DTM was accessed through the UK DEFRA Data Services (as shown in the top-left of Figure 3.2.1). A Firefly World Imagery satellite photography layer was added to view ground surface where LIDAR was absent. A further layer of medieval navigable rivers was added from Oksanen's 2019 study of pre-1348 river

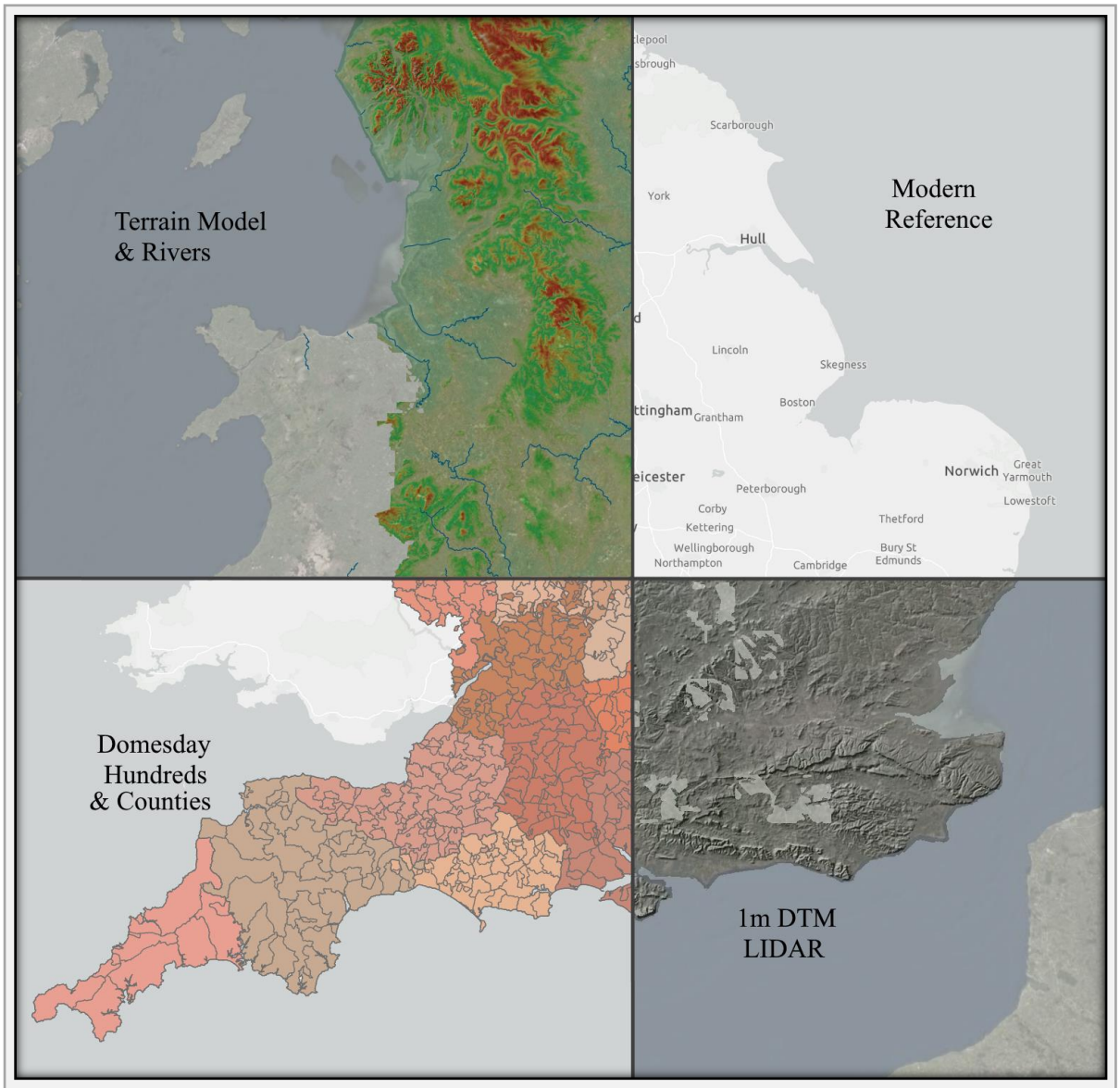


Figure 3.2.1. *Examples of the background layers*. (Modified from Oksanen 2019 & Brookes 2020).

[11] Brookes 2020.

[12] ArcGIS REST Services Directory, 2020.

trade (river adjacence became an unexpectedly critical mapped feature, as discussed in Chapter Six).[13] Polygon and line elements such as counties and rivers can be utilised for both visual reference and spatial analysis in GIS. Notably, no geological reference layer was added for analysis, and this could constitute fine material for future research for an interdisciplinary archaeology-geology specialist. Latitude and longitude coordinates are easily mapped and can be extracted from selected locations within the GIS and have been used as a standard for all datasets.

3.2.2 ..... Mapping the Castle Sites

The 861 castle sites can be differentiated for observation by date of foundation, date of abandonment, earthwork type, timber or masonry construction, elevation, historic county, and Domesday county within the GIS. The analyses carried out produced exportable fields which were added to Dataset 1. for comparative analysis with existing fields in the Excel format, so not every point of differentiation required mapping in the GIS. There are some colour-code rules which are maintained in all subsequent figures. The first set mapped was of all castle sites in plain white points. This layer was used for verification of location and several coordinates were corrected at this stage. A second set of those sites built or re-built in masonry was added below this (grey ring), as seen in the area marked 'A' in Figure 3.2.2. The area marked 'B' demonstrates a third set addressing continuity of use through to 1300 CE in which red points indicated known destruction or abandonment, yellow points indicated uncertain records, and blue points indicated known continued site use beyond 1300. Finally, the castles were mapped by type (abnormal, enclosure, ringwork, motte) as detailed below in the area analysis component. The sites were catalogued by county in accordance with the 'historic counties' of England (for conformity with heritage resources) but are groupable by intersection with Domesday county polygons. Several informative regional patterns in density and typology are observable (as is detailed

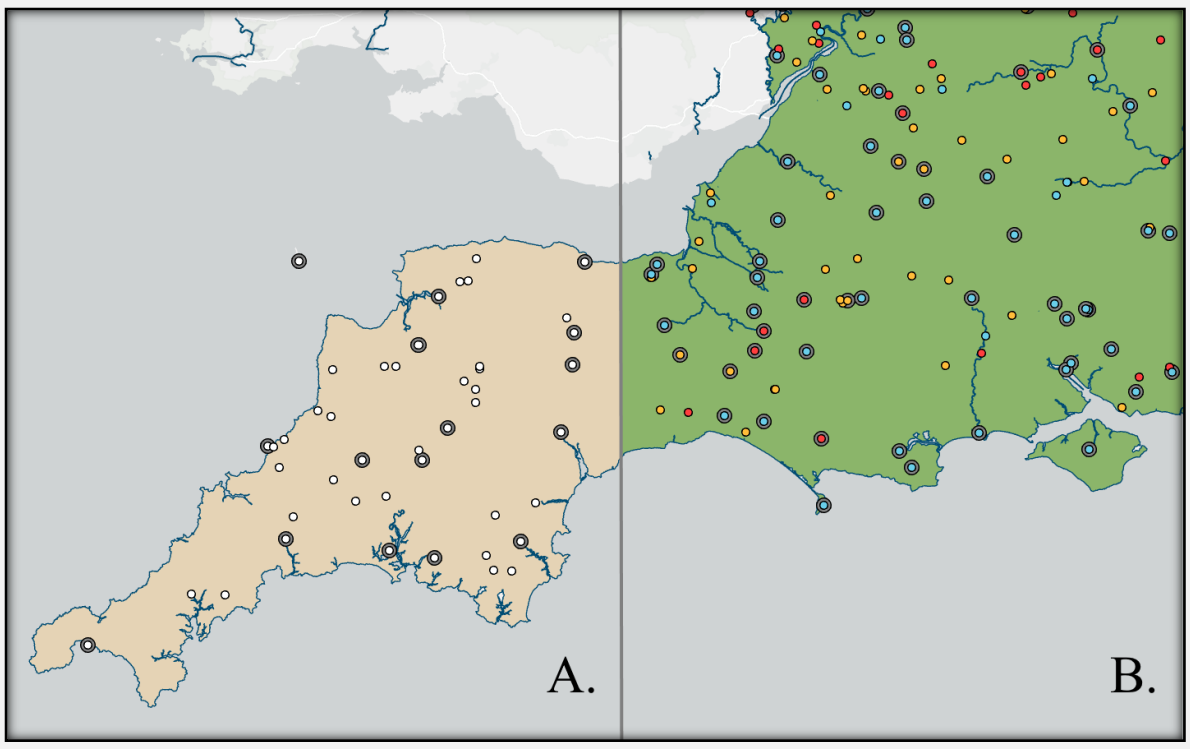


Figure 3.2.2. *A: castle distribution by timber & masonry; B: castle distribution by known use & disuse.*

[13] Oksanen 2019.

in Chapter Four) but it can be posited here that a broad tendency for self-regulated spacing appears to have naturally occurred; such that there is no large area with no castles, nor any (non-border) area of unexpectedly high density. The data demonstrate that in the eleventh—thirteenth centuries, castle sites were truly a ubiquitous built element across the Kingdom of England. This prolific occurrence has further implications for the proximity analyses detailed below, especially with relation to draw-zone overlap and radial distance. With respect to the issue of dubious outlier sites mentioned earlier, almost all of these occurred within the range of sites built in timber that were never upgraded to masonry, with masonry castles having a higher occurrence of documented historic use and more readily verifiable 'castle' type architecture. As such, any mapped site point with a grey ring is of less questionable significance, and more so for any blue point -indicating a masonry castle still in use by 1300 CE.

3.2.3..... Mapping the Settlement Sites

The 15,230 selected Domesday manor locations were mapped with population size indicated by a range of point sizes in green. However, on closer inspection, it was observed that several major settlements including London were missing from the Domesday population distribution set. Upon further research, several scholars have observed this fact and suggested that many larger settlements were separately taxed and therefore excluded from the (primarily rural) Domesday accounts. Winchester, Bristol, and Tamworth for example have been identified by Williams as non-records.[14] Darby notes that the populations of towns or boroughs in the Domesday books are sporadic, with some towns included, some accounting for burgesses and others not, and some towns excluded altogether.[15] Confoundingly, to the best of my knowledge, there is no complete list of missing settlements to utilise. To complicate matters, there are a number of large settlements such as Norwich and Thetford which have 'burgesses' (urban town dwellers) recorded that are present in the Domesday accounts; reducing the clarity of which settlement types were excluded, and why. Table 3.2.3 lists 16 settlements which were re-added to the population map, with estimates taken from academic sources such as Darby 2003.[16] In retrospect, locating unlisted settlements is not a straightforwardly approachable task, and this was achieved by researching significant road hubs and post-medieval settlement locations with seemingly absent Domesday populations to identify any alternate sources indicating an eleventh century population. The locations of these 16 settlements for which information could be found are mapped in Figure 3.2.3A. These all were substantial market towns on major road hubs. Unfortunately, this research process meant that only the most outstanding major towns were identified, and the list may well be incomplete. However, the combination of Palmer's data



Figure 3.2.3A. *Map of the 16 excluded large settlements re-added to the eleventh century population map.*

[14] Erskine & Williams 2003, p.18.

[15] Darby 1977, p.60.

[16] Darby 2003.

(already missing 6.1% of the population, as noted previously) with these 16 included unlisted settlements still constitutes a population distribution map for the eleventh century of tremendous detail -probably unmatchable as a population pattern source until the eighteenth century. Figure 3.2.3B provides a snapshot of the completed mapped result, with London as a blue point, and Palmer's Domesday data as green points. The thirteenth century population, as estimated from the Poll Tax data was comparatively easily mapped, and its use is detailed further below. All 16 of these additional settlements had a clearly associated and generally early founded castle site, with the exception of Manchester that had no identifiable associated castle in its historic centre.

Table 3.2.3. List of Large Settlements Excluded from the Domesday Accounts

N:	Settlement Name:	Est. Pop:	Local Castle:	Castle Site ID:
1.	London	10,000	Tower of London	CLON01
2.	Winchester	6,000	Winchester Castle	CHAM19
3.	York	5,000	York Castle	CYOR90
4.	Lincoln	5,000	Lincoln Castle	CLIN21
5.	Bristol	4,000	Bristol Castle	CGLO07
6.	Oxford	3,000	Oxford Castle	COXF11
7.	Gloucester	3,000	Gloucester Castle	CGLO12
8.	Exeter	2,500	Exeter Castle	CDEV10
9.	Leicester	2,000	Leicester Castle	CLEI10
10.	Stamford	2,000	Stamford Castle	CLIN24
11.	Tamworth	2,000	Tamworth Castle	CSTA14
12.	Cambridge	2,000	Cambridge Castle	CCAM05
13.	Wallingford	2,000	Wallingford Castle	CBER09
14.	Chester	1,500	Chester Castle	CCHE04
15.	Manchester	1,000	*No Known Castle Site*	*n/a*
16.	Shrewsbury	1,000	Shrewsbury Castle	CSHR78

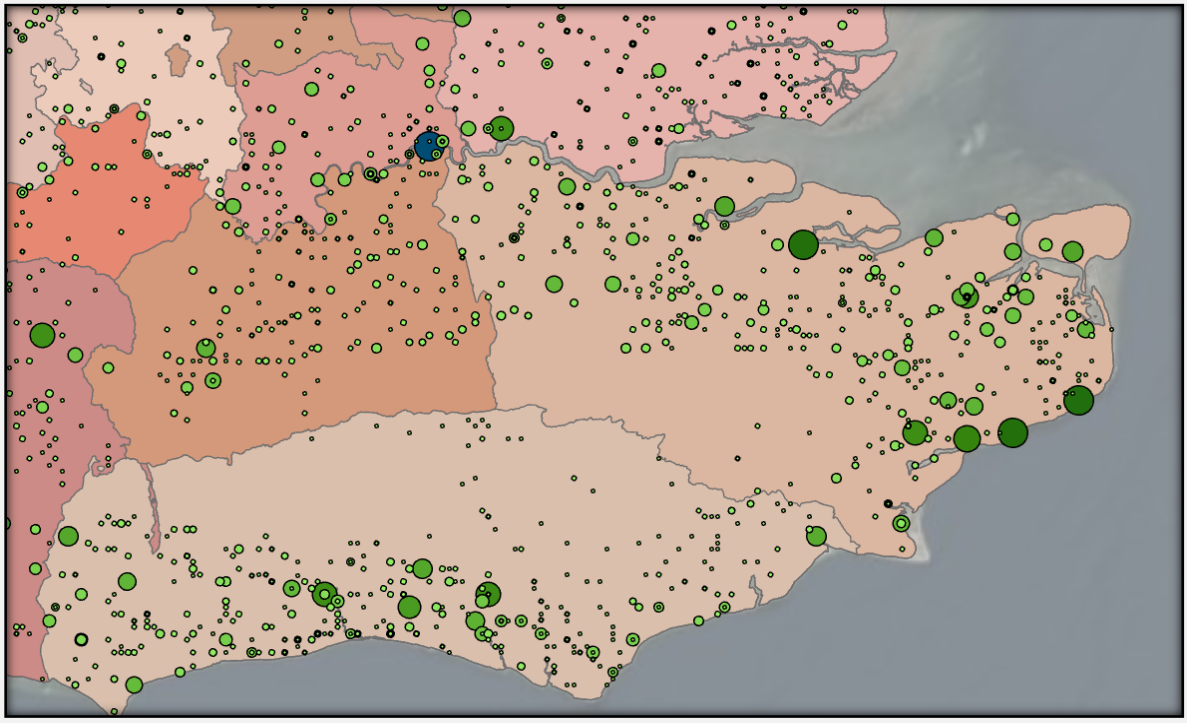


Figure 3.2.3B. *Example of Domesday population data mapped in green over the 1086 Domesday counties.*

3.3..... GIS Analysis Process

Once the castle site points of 1000—1300 and population points for 1086 and 1377 were mapped out, spatial analysis could begin. The three principal castle-settlement relational analyses were conducted to better understand the statistical correlations of the castles to their local settlements. The first of these analyses was an area mapping analysis, carried out in order to better understand the relative size of baileys to castles. Baileys were themselves a form of settlement, and many were of substantial size. They are understood to have begun as essentially fortified villages with strong relationships to their respective castle, typically being planned by the same seigneurial authority that founded the castle site. The second was a proximity analysis and this was conducted in two phases. The first phase was a radial proximity analysis used to calculate the nucleation of castles and local settlements, from which deliberate castle siting in populated zones and some local settlement shift from 1066—1100 might be observed. The second phase entailed a Thiessen polygon map which was used to calculate the division of all population to the respectively closest castle site. Both of these analyses ran into issues relating to manorial tenure boundaries with differing implications for each (see Chapter Five). The third analysis observed the diachronic population shift from roughly 1100—1300 (sources 1086—1377) and the respective positions of castles to this shift, in order to identify when a correlation between castle siting and settlement expansion could be identified. The following sections detail how these processes were implemented in the GIS (see the following three chapters for the analysis results).

3.3.1..... LIDAR Site Area and Type Classification

The areal calculation of castle sites was conducted using two sets of polygons mapped against the backing of the 1m DTM LIDAR layers mentioned above. Figure 3.3.1A shows an example of Heywood Castle in Devonshire. The orange polygon set was used to calculate the area of the 'inner' castle elements. This consisted of those areas which were considered principally functional fortified spaces, such as: the motte in a motte and bailey form; the enclosure and keep in the average masonry form; all strongly fortified enclosed elements in a large concentric form; and the ringwork enclosure in a ringwork and bailey. The green polygon set calculated adjacent bailey area. This was conducted in such a manner to prioritise settled area above other metrics. For example, some sites had two or more separated baileys, while others had only a single bailey, but with a larger area. As such, the total bailey area for a single castle site was recorded as a single polygon, albeit with multiple physical exclaves in some situations. Some of the fortified inner areas also had exclaves, but these by nature were far fewer than sites with multiple baileys. A topographic image of the complete site accompanied by a 100m scale was recorded for all sites with available data and catalogued in Appendix II. (of which the image in Figure 3.3.1A is a sample). The 1m DTM LIDAR map of England utilised had very high coverage, but not all sites were covered. Furthermore, some castle sites with data have been lost to development and were excluded from the area analysis. As such, 573 of the 861

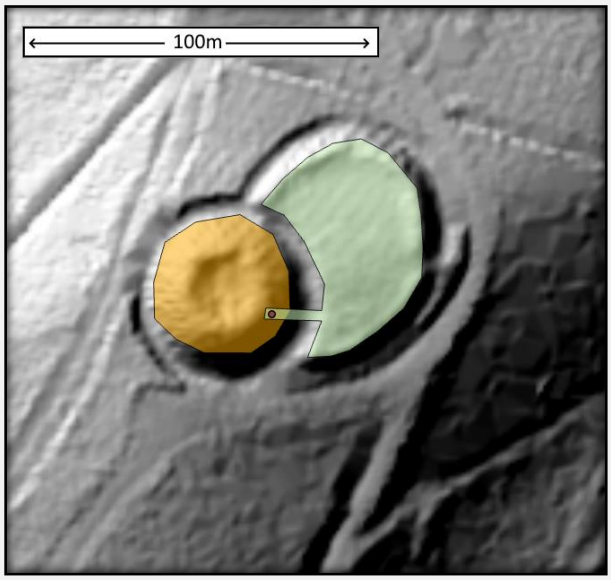


Figure 3.3.1A. *CDEV12, Heywood Castle, Wembworthy, Devonshire.* (Appendix II.)

castle sites were included in this analysis component, with 288 sites having no mappable area data. Moreover, while these 573 sites all had a fortified area recorded, only 321 of these had baileys in mappable preserved condition which were recorded.

Both of these polygon sets deliberately intersected with the castle point, as demonstrated in the sample of Heywood Castle. A small exclave was added to intersect the castle data point, where necessary, in more complex earthwork arrangements. Through this intersection, the area of each polygon was calculated in GIS and exported matching the castle site point ID. These values were recorded in Dataset 1. as 'Fortified Area' and 'Bailey Area' as seen in Figure 3.3.1B. It would be highly problematic to compare the fortified area of a concentric castle with that of an early eleventh century motte, so for each site a 'LIDAR type' value was also assigned, representing my own critical assessment of the castle's form, but following the traditional nomenclature. These critical subjective values were likely of higher accuracy than those initially recorded; partly because by this time I had read hundreds of site descriptions and become aware of several common conflations and subtle differences; and partly because all castle sites in this set were accompanied by LIDAR data, which is significantly more clear than areal detail, and limited the number of questionable earthworks included. In many cases, these values did not correlate to the heritage listing site typologies, and this issue is discussed later (see Chapter Four). The values recorded were 'No Data' (occurring at 288 locations), 'Abnormal' (44), 'Enclosure' (65), 'Motte' (330), and 'Ringwork' (134). These individual sets were then mapped in two ways as demonstrated in Figure 3.3.1C. Section A. shows the different types of castle site with total fortified areas differentiated by point size. Section B. shows the bailey area differentiated by point size, with the castle sites delineated by colour overlapping these. These maps are highly informative for the

Fortif Area:	Bailey Area:	LIDAR Type:
5196.6	8556.8	Motte
3222.3	?	Ringwork
4027.0	?	Enclosure
1236.0	?	Ringwork
889.3	?	Motte
10987.0	9392.7	Enclosure
1752.5	?	Motte
3317.5	9101.2	Motte
2720.6	1608.9	Ringwork
3909.1	12987.6	Motte
2049.2	?	Motte
3556.9	5328.0	Motte
1123.3	?	Abnormal
?	?	No Data
2431.1	5851.3	Ringwork

Figure 3.3.1B. *Sample from Dataset 1. demonstrating the calculated areas recorded through GIS polygons.*

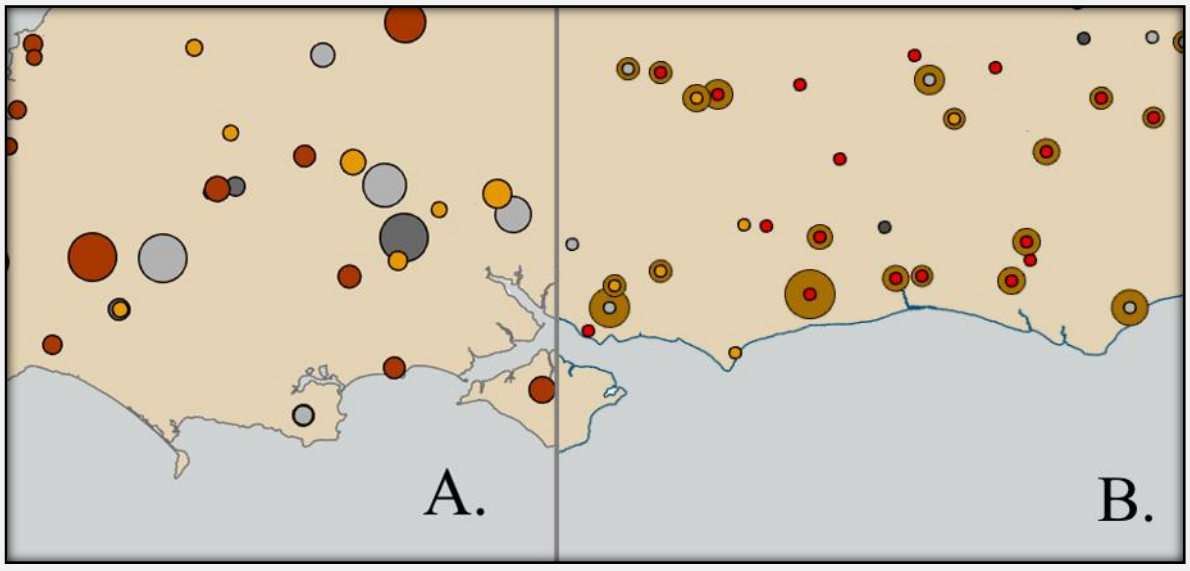


Figure 3.3.1C. *A: variation of castle type with size; B: Site type points displayed over baileys varied by size.*

analysis of (preserved location) typology distribution, and each arrangement illustrates different regional variations. The sets are limited by LIDAR coverage and site preservation, but in this way they are also forcibly limited to displaying only the most clearly congruous typologies. A full assessment of site type and size results can be found in Chapter Four. This form of analysis is also clearly limited in that only the final built 'type' of the castle is assessed, with all earlier iterations having been built over. It is therefore most useful for analysing those early mottes and ringworks which never underwent such transformations. Critically, such single-phase sites still constitute a majority of the total set, are typically of a timber form, and the other multi-phasal sites can easily be separated for analytic clarity.

3.3.2..... Radial Proximity Analysis

The proximity analyses were divided into two components. The first component, a radial proximity analysis, aimed to identify the degree of nucleation of settlements around castle sites within a 'local' economic range. A range of five kilometres was chosen for the outer extent for several reasons, which are explained in Chapter Five, amid a full discussion of the potential economic relationship smaller settlements might have had with castle sites. In Chapter Two it has been established that some castles are known to have interacted economically with local settlements outside their immediate bailey. Put simply here, a five-kilometre radius is well within potential economic interaction range while minimising tenurial overlap issues (elaborated below). Figure 3.2.2A demonstrates that two radii were fitted one within the other to form a 'draw-zone' around each castle site. The inner radius (3.45km) generated a circular zone that had half the area of the outer radius (5km), with 39.27 and 78.54 square kilometres in the inner and outer circles respectively. The basic principle then, was to calculate the number of population data points and the total populations associated with them within each radius and to demonstrate statistically to what degree castles occurred in areas of population concentration, and vice versa to what degree castles ignored the established Saxon settlement pattern in the early castle building phase. Where the inner zone contains a population higher than 50% of the outer zone, the population is designated as 'nucleated'. Whether that population had already nucleated around the castle site by 1086 (potentially being forcibly relocated), or the castle site was placed on an existing point of population is uncertain and this can be addressed situationally. It must be emphasised that this method is not employed in seeking to prove that nucleation was high in the early period, but rather to identify regional and typological patterns of correlation to higher degrees of nucleation. Reinforcing this approach, as the Domesday entries list details about the manor and its inhabitants for both the year 1066 and 1086, the majority of calculated nucleations appear to have been caused by castle siting at existing settlement hubs or clusters. Figure 3.2.2B displays these rings as they appear in the GIS, alongside the data for settlements and castles. Already a strong shared siting distribution between castles

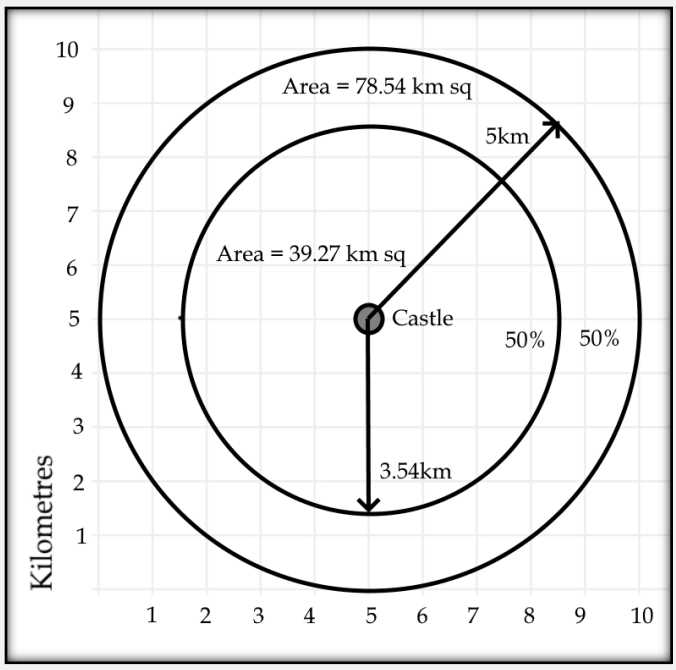


Figure 3.2.2A. *Demonstration of the area of the two zones - the inner radius is 3.54km, the outer 5km.*

and settlements is observable, oriented by terrain, fertility, rivers, castle siting in existing settlement hubs, and other factors; all of which is discussed in detail in Chapter Five.

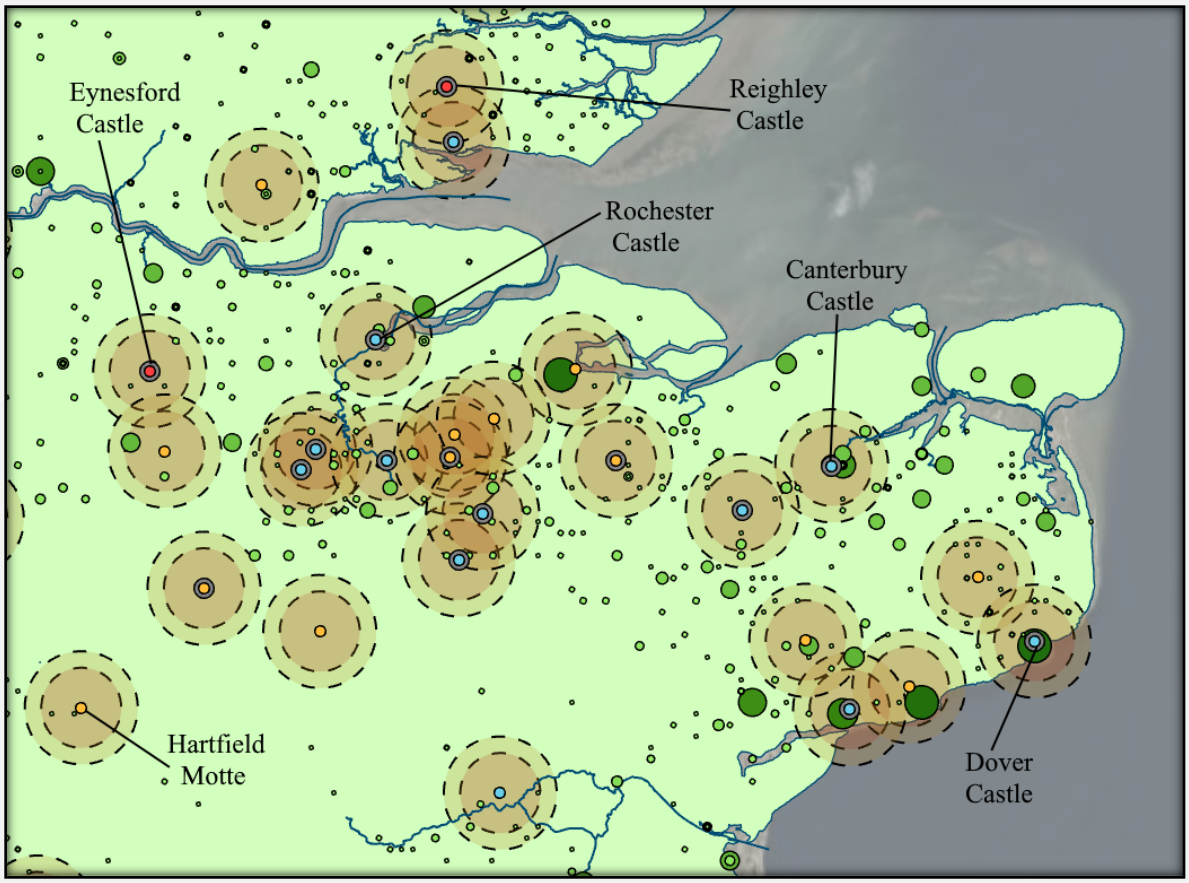


Figure 3.3.2B. *Example of the GIS application of draw-zones used for identifying settlement proximity. Here, the inner ring is half the area (3.54km radius) of the outer ring (5km radius).*

These 5km and 3.45km radii were mapped as polygons and the 1086 CE population points were calculated in accordance with any draw-zone polygons they intercepted. As such, any one settlement point could be intercepted by multiple polygons, representing a potential primary economic relationship with one or another castle, or a shared influence. These totalled population counts were exported to Dataset 1. as seen in Figure 3.3.2C. As explained previously, the Domesday manor population was increased by a magnitude of 5x for each draw-zone population count (along with the Thiessen results covered in the next section, also visible in 3.3.2C) to produce a total 'local' castle population estimate for 1086 CE. If scholarly opinion were to shift on this magnitude, the basal number is still recorded and could be easily corrected. However, as the results are relative only to other estimations from the 1086 set, the implications remain largely unaffected by this academic estimation. Importantly, for the 16 large settlements that were added, these were assigned to a particular castle as listed in Table 3.2.3, as their locational influence was relatively well known. Thus, their populations were added directly to the multiplied result in the dataset (e.g. columns '5xPop 5k', '5xPop 3.45k', and '5xTh Pop'). These results were finally analysed against the usage dates and recorded qualities of the castle sites, and the results are detailed in Chapter Five. The huge quantity of mapped population data has increased the difficulty in accurately observing regionally varied tendencies. However, for the larger population hubs the results are much more clear, and for the smaller units statistical analysis of the broad pattern has been used to calculate average tendencies in castle siting relative to the eleventh century population.

The approach of permitting a single population site to fall under the draw-zone of multiple potential castle economic influence ranges adversely necessitates several limitations. A relatively insignificant motte may inadvertently overlap with a large settlement already likely related to a large masonry castle, for example. Moreover, the complex tenure systems often operated outside of direct local range. The wealth or paucity of one local landscape may have been entirely unrelated to the quality of the local castle, as powerful barons eventually owned multiple disconnected exclaves in which they might generate or expend their wealth elsewhere. Encouragingly, behavioural patterns of deliberate consolidation of lands around a regional caput has been observed (see Chapter Five), and *caput* castles were often established in the best lands of the tenant baron; indicating that the tenurial overlap issue would affect small outlying castle types the most. The relatively constrained 5km radius helps confront both of these issues: minimising the issue of draw-zone overlap; and reducing the likelihood of inaccurately included tenurial space. Moreover, the mapped sample size is substantial enough to observe general statistical patterns despite such potential errors. The complex map of Domesday Hundreds might be used to help address elements of these issues (Brookes has already mapped the polygons), but this would require expert knowledge of Domesday tenure, and falls beyond the scope of this study. A future study, which expertly maps the proximal relationships between demesne and vassal holdings of a tenant-in-chief and their castles, might produce a more precise radial range to apply in a reiteration of the method used here, with the 5km extent being a tentative experimental estimation.

Hol 5k:	Pop 5k:	5xPop 5k:	N.P 5k:	Pop 3.54k:	5xPop 3.54k:	N.P 3.54k:	%Half	Th N.P:	Th Pop:	5xTh Pop:	M.Pop:
35	60	300	4	52	260	2	0.86667	1	46	230	0
40	168	840	7	93	465	4	0.55357	9	230	1150	0
62	98	3490	7	79	3395	4	0.97278	30	1035	8175	3000
70	265	1325	21	199	995	13	0.75094	23	362	1810	0
30	45	225	3	34	170	2	0.75556	8	719	3595	0
46	209	1045	8	93	465	3	0.44498	7	201	1005	0
16	20	100	3	6	30	1	0.3	2	10	50	0
47	222	4110	10	189	3945	7	0.95985	13	309	4545	3000
73	282	1410	13	129	645	6	0.45745	18	372	1860	0
43	123	615	6	67	335	2	0.54472	12	237	1185	0
57	169	845	7	86	430	3	0.50888	11	224	1120	0
44	96	480	4	84	420	3	0.875	6	86	430	0
32	89	445	7	74	370	4	0.83146	9	140	700	0
21	62	310	4	14	70	3	0.22581	0	0	0	0
51	235	1175	16	103	515	5	0.4383	16	314	1570	0
36	96	480	4	96	480	4	1	1	50	250	0

Figure 3.3.2C. *Sample from Dataset 1. demonstrating the 1086 CE population calculation. The two 'M.Pop' locations here are the added towns of Gloucester and Bristol.*

3.3.3..... Thiessen Polygon Proximity

Under that land area contained within the combined 5km draw-zones, some 74,046 square kilometres (62.7% of Domesday land area) was left excluded from the nucleation analysis, including a large number of settlement points beyond the 5km range from castle sites. The second of the proximity analyses was thus designed to assign all known 1086 CE population points to either one castle site or another. The method chosen for this task was to employ Thiessen polygons generated around the castle points. Also known as Voronoi polygons, these are areas formed around a point within which any given location is nearer to that point than any other point. Figure 3.3.3A illustrates the example of these generated polygons around the castles of the Herefordshire area. The castles are denser on the western side toward the Welsh border and thereby 'control' relatively smaller portions of local land. In this way,

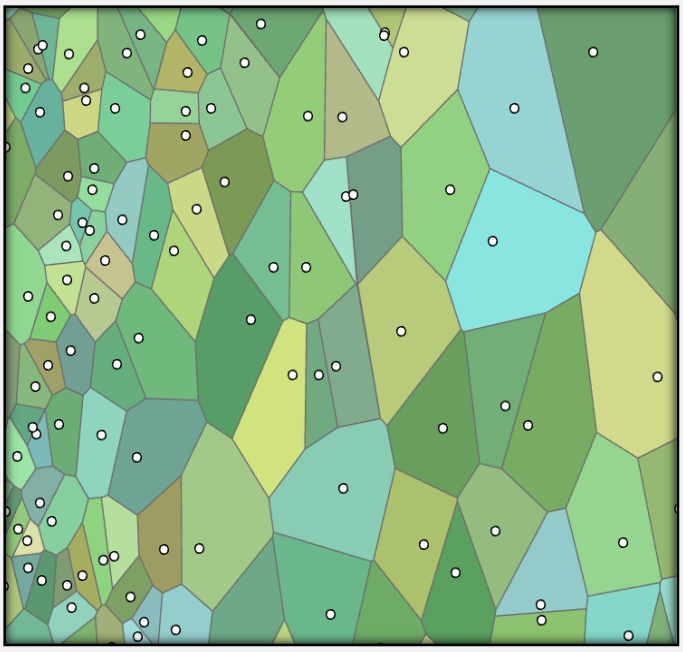


Figure 3.3.3A. *Thiessen Polygon map in Herefordshire area.*

the competitiveness of castle sites for the control of local population-oriented resources should be more accurately measured than through the overlapping radii. To begin with, a background polygon was generated with a border some distance outside of the Domesday England border. Figure 3.3.3B demonstrates how this border extends beyond the natural land boundary in Sussex. This process avoided any sites being 'lost' in an estuary river or on a coastal border (areas imperfectly contained by the county polygons). The space inside of this border was divided into Thiessen polygons formed around the first mapped list of all castle sites, with no preference assigned for continuity of use or masonry upgrade. Calculating the population inside of these polygons was as simple as extracting the intersecting population points stats, multiplying these by a magnitude of 5x and adding the 16 excluded settlements (as is seen in Figure 3.3.2C).

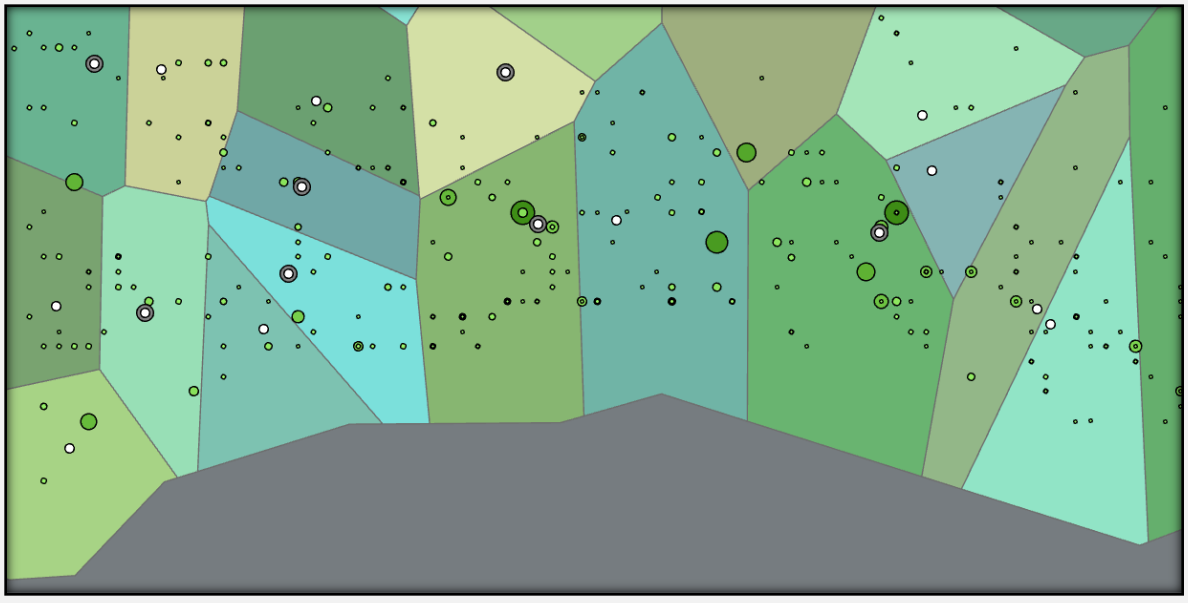


Figure 3.3.3B. *Thiessen Polygon map in Sussex area demonstrating polygons exceeding land territory.*

The resultant map is very useful for visualising castle distribution patterns regionally. The overall spatial pattern is more clearly visible through the mapped polygons than the mapped points alone; clearly highlighting the regional clustering along the Welsh border, along key river valleys, and in the Midlands, amid the widespread and relatively uniform pattern of castle sites across the study area. However, as a tool for associating settlements relative to castle sites, this method likely infringes across numerous historic tenurial demesne boundaries, and the resulting statistics need to be carefully utilised with cognisance of this consideration. This issue is most apparent in those areas with fewest castles. Again, there is the issue of the treatment of all castles as potentially locally economically significant (or

at least requiring locally sourced maintenance) when some were known to have been maintained through external benefactors for reasons of defence or private use (hunting etc.). However, it can be repeated that as a tentative test for economic correlations, the body of data is sufficient in size to work with outliers included and still confirm or contest specific models or theoretical premises within castellology scholarship. As the polygons also treat each castle location equally, potential significance is prioritised in some cases over known historical significance in an attempt to identify if usage and upgrade were related to relative local populations from the offset. For example, a small timber castle with a known early disuse date might encapsulate a number of 1086 population hubs which ended up being more closely associated with a neighbouring castle with known masonry development and continuity of use to 1300. A further component of the Thiessen proximity analysis was to identify the degree of castle proximity to other castles, rather than to settlements alone, was of consequence to their longer-term use, and the results of this enquiry are recorded at the end of Chapter Five.

3.3.4..... Diachronic Settlement Analysis

The basic theoretical principle of the third analysis was to observe the total settlement pattern shift across the study area of Domesday England from 1100—1300 CE to identify growth and decline within town populations, and to then situate the data for castle sites and observe patterns in the mapped relational distribution of these two landscape features diachronically. No data was available for these precise dates, and the datasets used were from 1086 and 1377. Recent landscape castellologists have already identified and discussed a 'vicus' type set of settlements that grew with some degree of symbiotic or reciprocal economic correlation to the castles built on their shared location. The scholarship reviewed in Chapter Two indicated that these settlements ranged from entirely emergent towns at new castle sites to castles built at well-established urban hubs that simply altered and expanded their economies and plans. As some research already discusses this issue, the intended process through which to identify new information was to assess the broad system of both castles and settlements, including those with and without adjacent castles, to determine the degree to which this stabilising effect had influenced settlement shift by 1300 CE. Of particular interest was the issue of whether or not all larger towns simply had castles built at their site, including emergent towns across the study period; and the results discussed in Chapter Six indicate an unexpected and complex answer to this inquiry.

As detailed above, the settlement shift analysis utilised data for largest 80 towns from each end of the date range (by population), forming a composite of 137 settlements. Figure 3.3.4A shows a sample from Dataset 3. displaying the compound list elements. A considerable issue for the deviation in desired usable population data from 1300 date to the Poll Tax population information of 1377 was a substantial reduction in England's total population caused by the occurrence of several waves of the 'Black Death' bubonic plague alongside a cooling climatic shift in the intervening time (see Chapter Six for a full impact assessment). Broadberry et al have established a population of roughly 1.7 million persons in 1086, and 2.5 million in 1377.[17] They have suggested the population reached an excess of 5 million at its peak in the early fourteenth century, before some 40-45% of the population died. This issue must be acknowledged as a significant data availability limitation, in that a dramatic shift occurred prior to the second population set date, but that the data from this date was necessary to utilise nevertheless (confirmed by medieval settlement scholarship as the next good date set after 1086). Even with such a decrease, the collective urban population for 1377 is roughly twice the size of that in 1086, indicating

[17] Broadberry et al. 2011, p.3-15.

Compound Town Population Shift 1086-1377:								
STLID:	Town:	Latitude:	Longditude:	y.1086:	y.1377:	diff:	Change:	Description:
STLCP.81	Aldington	51.0903	0.9617	1265	? <950	decl	Decline	Small Town Contracts
STLCP.82	Allhallows, St Mary a	51.4144	0.5655	985	? <950	decl	Decline	Small Town Contracts
STLCP.73	Banbury	52.0610	-1.3377	535	1010	475	Growth	Small Town Expands
STLCP.49	Barking	51.5319	0.0819	1245	1670	425	Growth	Small Town Expands
STLCP.60	Barnstaple	51.0826	-4.0644	245	1290	1045	Growth	Small Town Expands
STLCP.83	Barton upon Humbe	53.6887	-0.4342	945	? <950	decl	Decline	Small Town Contracts
STLCP.69	Bath	51.3790	-2.3534	770	1080	310	Growth	Small Town Expands
STLCP.53	Beccles	52.4586	1.5680	515	1560	1045	Growth	Small Town Expands
STLCP.84	Beckingham	53.4056	-0.8357	870	? <950	decl	Decline	Small Town Contracts
STLCP.13	Beverley	53.8414	-0.4285	280	5060	4780	Growth	Small Town Expands
STLCP.11	Boston	52.9780	-0.0282	? No DB	5455	5455	Growth	Large Town Emerges
STLCP.85	Bowerchalke and Br	51.0288	-1.9372	830	? <950	decl	Decline	Small Town Contracts
STLCP.45	Bridgnorth	52.5364	-2.4198	? No DB	1710	1710	Growth	Small Town Emerges
STLCP.48	Bridgwater	51.1324	-3.0089	160	1690	1530	Growth	Small Town Expands
STLCP.03	Bristol	51.4561	-2.5883	4000	12060	8060	Growth	Large Town Expands
STLCP.86	Buckenham	52.4823	1.0396	830	? <950	decl	Decline	Small Town Contracts
STLCP.15	Bury st Edmunds	52.2474	0.7158	1035	4650	3615	Growth	Small Town Expands
STLCP.87	Calne	51.4425	-2.0086	1145	? <950	decl	Decline	Small Town Contracts
STLCP.88	Cam	51.6937	-2.3559	3090	? <950	decl	Decline	Large Town Contracts

Figure 3.3.4A. *Sample from Dataset 3. detailing instances of town emergence, expansion, and contraction.*

a substantial increase in the proportion of the total population living in urban settlements occurred (roughly 8% to 11%, depending on what qualifies as 'urban'). The proportion of this shift increases if the more conservative estimates of 1.1—1.3 million total population in 1086 CE are employed. Crucially, a vast shift in the location of the largest 80 settlements occurred across the study period, largely within the first two centuries after 1086, clearly indicating that total population growth was not linear across the landscape. This is important as the stabilising effect theorised by landscape castellologists could be potentially observed through both the positive correlation of castle siting and usage with town growth, and the absence of castle siting with instances of town contraction.

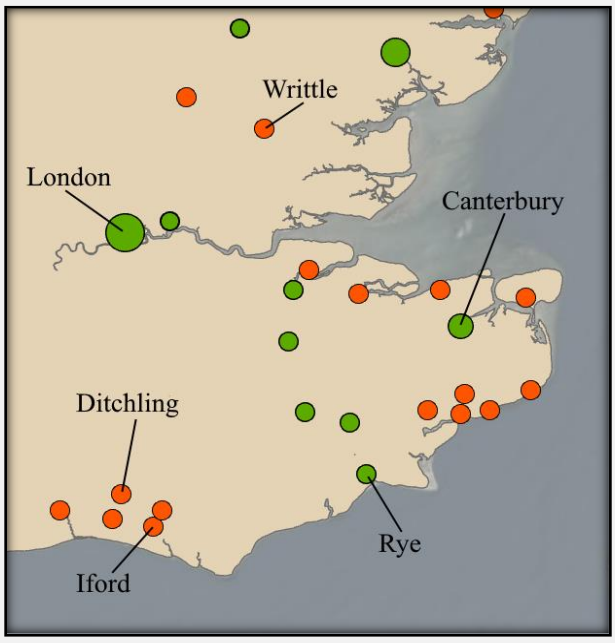


Figure 3.3.4B. *Example of the mapped shift in settlement population 1086—1377 in the southeast.*

Within the composite town list, the smallest of the towns dating to 1377 CE contained a population of 950 persons, while the smallest for 1086 CE contained 830 persons. Therefore, any top listed 1086 towns with populations larger than 950 which did not also have a listing in 1377 are assumed to have contracted. The emphasis on this being an assumption is amplified by the previously described population decline in the fourteenth century. Some of these contractions were substantial, with several town populations declining by 2,000 or more inhabitants -after the fact of the fourteenth century reduction. The great majority of sites that 'contracted' had fewer than 950 inhabitants, with only Dover, Taunton, and Meklesham contracting in size but remaining within the top 80 in 1377. For those settlements listed in the 1377 top 80

which were new additions that had expanded across the study period, and their Domesday manorial population was listed, and a more precise growth margin estimate could be ascribed; for example, Beverley, which grew by 4,780 inhabitants. Some 24 locations from 1377 had no listed Domesday record, and their expansion 'growth' was recorded as their total 1377 population (this is the assumed emergent group mentioned earlier). It is entirely possible that some of these emergent town locations were of the 'added' town subset of boroughs excluded from the Domesday records for uncertain reasons, for which no alternate information source could be identified for the 1086 date by the author, and this represents a further potential limitation of accuracy. Figure 3.3.4A shows a list of categorical descriptions of settlement status by 1377, for which the same logic utilised in Dyer's diachronic shift analysis was followed (elaboration of categories is found in Chapter Six).[18] Figure 3.3.4B illustrates the mapping of these sites in the GIS, with points of decline indicated in orange, and points of growth indicated in green. For each of these 137 sites on the compound list, any occurrence of a local castle was recorded within ranges of 0-1km, 1-5km (<5km), and >5km. The resultant proximity statistics were used to assess several potential influences castle sites may have had on town expansion and contraction, including a shift to coastal and riverine site preference which appears to have been led by castle siting. The results of this analysis are by nature narrower in scope than the proximity analyses regarding total settlement pattern inclusion, providing information on a limited set of castle sites (137 towns compared to 861 castles). However, they do summarise trends for the major urban hubs of England, and if the resultant rates of castle-settlement reciprocal growth observed in Chapter Six can be reasonably assumed to apply to settlements below the top 80 set, the implications are even farther reaching.

3.4..... Conclusions

The endeavour to relate castles and settlements within a broad structural network analysis from 1000—1300 has been divided into its analytic components in this chapter. The three key data resources (Datasets 1-3), Appendices I-III, the GIS construction process, and the analysis procedures of this thesis have now been summarised. The three analyses of site component area, Domesday data proximity, and diachronic pattern shift have had their theoretical premises and limitations examined. There are many limitations to accurately reconstructing the historic situation when it comes to the early medieval English developed landscape, and the archaeological and documentary source parameters have not always precisely matched the expectations of the experiments proposed. Limitations in the dating and typological grouping of castle sites, and in the quality and historic position of settlement data, are confounding and troublesome issues. Nevertheless, solutions and workarounds have been developed and justified. A critic might also contest that cross-examination of the full set of settlements and castles through a geographic correlation tool like GIS would be bound to produce any number of describable distribution patterns, and they would be right to do so. However, the results of the processes detailed here, as will be demonstrated within the following chapters, identify a series of patterns that are statistically significant and informative despite these limitations. And more critically, these statistics can be reasonably employed in order to weigh into recent debates about the degree that castles influenced, and were influenced by, the shifting medieval built landscape. The academically theorised economic relationship between castles and settlements as the key research issue has been approached from each of these three alternate angles of analysis to optimise potential findings. The following three chapters deliver the results of these analyses before a discussion of the finer details, findings, and implications is then synthesised in the discussion and closing chapters.

[18] Dyer 2000.

4.0..... Chapter Four: Castle Site Characteristics

4.0.1..... Introduction

Several initial findings were identified during the construction process of the castle dataset (Dataset 1). Additionally, the results of the areal analysis, and the subsequent generation of Appendix II, provided a wide selection of qualitative and quantitative site information requiring discussion. As such, this first analysis chapter opens the presentation of findings with a simple account of early castle site characteristics. These characteristics are subsequently expanded on through the more theoretically explorative economic relational models tested in the proximal and diachronic shift analyses of Chapters Five and Six. Put more precisely, this chapter utilises the raw descriptive data compiled in Dataset 1. alongside the output results of the LIDAR-based GIS areal analysis to divide the 861 castle sites into more readily definable and assessable component parts. The chapter expands on the earlier field-observational and aerial photographic information-bases of King and Creighton to provide an updated digital set of foundational statistics for early English castles. A range of initial statistics are discussed regarding site use dates, pre-Norman fortified site use, and locational preferences indicated through distribution patterns. For the areal data analysis, the inner fortified elements of the motte, ringwork, and enclosure castle are first presented and discussed, followed by a critical assessment of the current terminology lexicon and nomenclature in castle studies as it relates to the identified spatial typology statistics. For each inner fortified typological subset, frequency, distribution, and area are described and discussed. To complete the castle characteristics analysis, an assessment of adjacent bailey size and distribution is given, in which the complex position of the bailey as both settlement form and fortification is reviewed. The bailey offers several initial insights into the integrated economic functions of the castle which form the basis of the castle-settlement relational framework expanded upon in the subsequent chapters. Baileys were a crucial component of the total castle site, and the recognition of the functions indicated by their frequency of occurrence, areal footprint, and internal built elements are a key basis for several of the theoretical arguments and observations made in subsequent sections.

4.1..... Initial Castle Site Observations

Castle distribution was, in most areas, relatively uniformly spread across the Kingdom of England. Table 4.1 details the proportion of castle sites within each of the included 38 Historic Counties. Herefordshire (74 sites), Shropshire (104 sites), and Yorkshire (90 sites) are highlighted in yellow, as they contained substantially larger quantities of castles than the other 35 counties, the closest of which is Gloucestershire at 33 sites. Yorkshire contained a somewhat crowded network of castles, but its high count is primarily due to its large area relative to the other counties. The Welsh border hosts an excess of 20% of the total number of sites, with most counties containing a portion of <4% of the total. Many of these Welsh border castle sites were small in area and entailed a higher-than-average prioritisation of military factors in their positioning. The ratio of castles built in masonry against those only ever built in timber typically constituted a 40/60 masonry/timber split across England, with some masonry clusters increasing the county proportion above 50%. The column on the right of the table indicates the number of sites per county which were built or rebuilt in masonry, with those sites containing a masonry portion higher than 50% highlighted in blue. Intriguingly, all of the counties within this blue subset were located in the south of England. The northern and western militarised borders all contained primarily timber sites, balancing out the relative masonry/timber totals.

Table 4.1. Total Early English Castle Sites by Historic County (1000-1300)

Historic County:	Total Sites:	% of Total:	Built/Rebuilt in Masonry:
Bedfordshire	29	3.4%	5
Berkshire	13	1.5%	2
Buckinghamshire	18	2.1%	4
Cambridgeshire	12	1.4%	4
Cheshire	15	1.7%	5
Cornwall	16	1.9%	5
Derbyshire	16	1.9%	5
Devonshire	29	3.4%	9
Dorset	11	1.3%	7
Essex	23	2.7%	8
Gloucestershire	33	3.8%	8
Hampshire & Wight	19	2.2%	14
Herefordshire	74	8.6%	36
Hertfordshire	9	1.0%	6
Huntingdonshire	7	0.8%	1
Isles of Scilly	2	0.2%	1
Kent	24	2.8%	14
Lancashire	19	2.2%	5
Leicestershire	16	1.9%	6
Lincolnshire	30	3.5%	13
London & Middlesex	5	0.6%	4
Lundy Island	1	0.1%	1
Norfolk	19	2.2%	7
Northamptonshire	29	3.4%	7
Nottinghamshire	15	1.7%	5
Oxfordshire	14	1.6%	8
Rutland	5	0.6%	2
Shropshire	104	12.1%	28
Somerset	24	2.8%	13
Staffordshire	18	2.1%	14
Suffolk	24	2.8%	6
Surrey	10	1.2%	5
Sussex	23	2.7%	10
Warwickshire	25	2.9%	10
Westmorland (south)	7	0.8%	3
Wiltshire	20	2.3%	11
Worcestershire	13	1.5%	4
Yorkshire	90	10.5%	34
Total:	861		330 (38.3% total)

Highlighted in yellow: counties with >50 castle sites. Note, Shropshire and Herefordshire on the Welsh border. Highlighted in blue: counties with a proportion of >/=50% masonry castles to total.

The locational distribution of the total 861 castle sites mapped in the GIS is presented in Figure 4.1A, with timber and masonry sites differentiated by a grey ring. The castles that appear off the mainland in the south-west corner are Marisco Castle (CLUD01) on Lundy Island, and Mount Holles (CISC01) and Ennor Castle (CISC02) on the Isles of Scilly. Several castles (13 sites) in the historic county of Herefordshire fell outside of Brookes' Domesday County polygon demarcation, but as some of Palmer's population points also occurred in this uncertain boundary zone, these were included in the study. Three eleventh century castles in what is now eastern Westmoreland were also included, lying just outside the Domesday boundary, with this entire northern area being part of the 1086 county of Yorkshire. The Welsh border is the most outstanding dense cluster, although there are some other notable examples. A large central area roughly aligned with modern Buckinghamshire, Bedfordshire and the East Midlands contained a proportionally high number of castle sites. This might be partially explained by the area's geographic centrality, constituting the best place to locate a manorial caput for those tenant-barons whose land was spread across multiple county exclaves. It may also relate to the earlier occurrence of village level nucleations (see Chapter Five). The proliferation of timber castles especially in the south-east this zone may well be explained by a higher degree of subinfeudation here to manage this vast landscape of small villages. The area did not have a particularly high eleventh century population, but it was spread across a multitude of small settlements rather than a few large nucleated centres. TGG

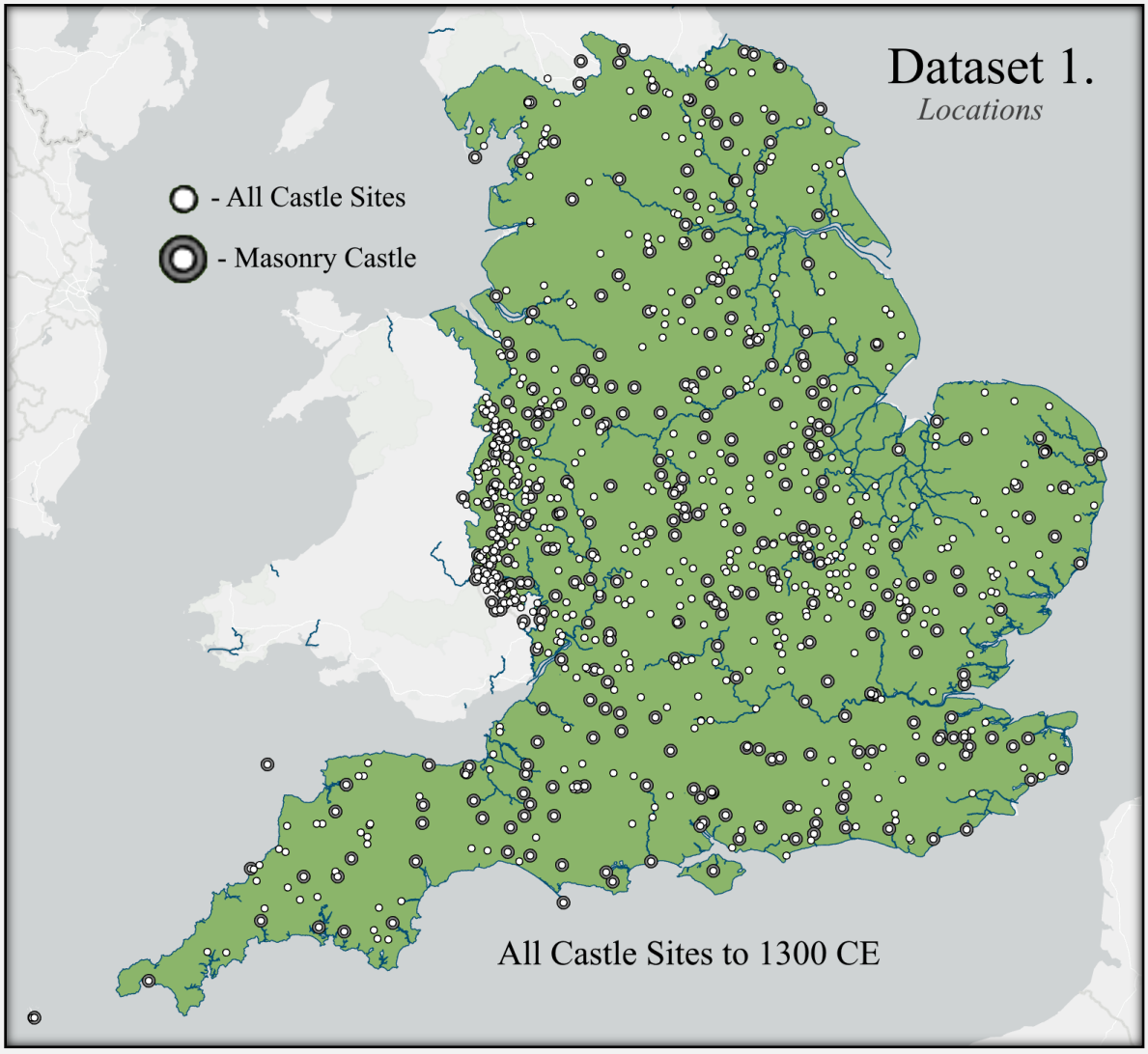


Figure 4.1A. *Distribution of all 861 castle sites of 1000—1300 CE with timber and masonry differentiated.*

also postulates a high rate of adulterine castles in this area utilised temporarily during the Anarchy.[1] East Anglia saw a rapid wave of castle construction in the eleventh century, with fewer twelfth and thirteenth century foundations. The opposite is the case for Yorkshire, which had a proportionally high number of twelfth century foundations, likely correlating to the time needed for the developed landscape to recover after the Harrowing. Coastal castle foundations, especially in the south, were also primarily eleventh century in date, with the inland areas of the south 'filling out' more in the twelfth century.

The density of timber castles and the rate of masonry foundation or site reconstruction was also much higher in some areas. Figure 4.1B highlights the central southern counties of Dorset, Wiltshire, Hampshire, and Somerset; all of which contained a high proportion of masonry upgrade and site continuity into the thirteenth century (all being above 50% masonry in Table 4.1). The lower rate of un-upgraded early timber sites here might reflect a more stable tenurial situation with a lower need for subinfeudation or relate to the relative population sustainable through subsistence agriculture in this zone. This area had a similar population density to the Midlands in the eleventh century, but historically contained more pastureland than arable fields. It must also be considered that the study period falls entirely within the Medieval Warm Phase, and the arable/pasture boundary may have been further west than it was later. The population does appear to have nucleated into slightly larger settlements here (many points in the range of 100—200 household heads, or 500—1000 total) with fewer small villages and required subinfeudation to oversee this pattern may have been lower. Critically, across most of the kingdom, castle sites follow very similar patterns to settlement sites, as will be explored in further detail in the following chapters. However, this likely has much to do with suitability of location for building in general, irrespective of economic castle-settlement relational considerations. Mountains and hill ridges generally, the Fenland from the Great Ouse to Welland rivers, the eastern Weald Basin, known floodplains, and other zones contain similarly low densities of both settlements and castle sites. This observation supports the concern that settlement-castle proximity must be assessed on a spatially local level to support any argument beyond vague similarity in locational preference. Assessing the number of sites lost to more modern development is also difficult, with the region around the Thames for example presenting confoundingly few castle sites relative to its eleventh century population.

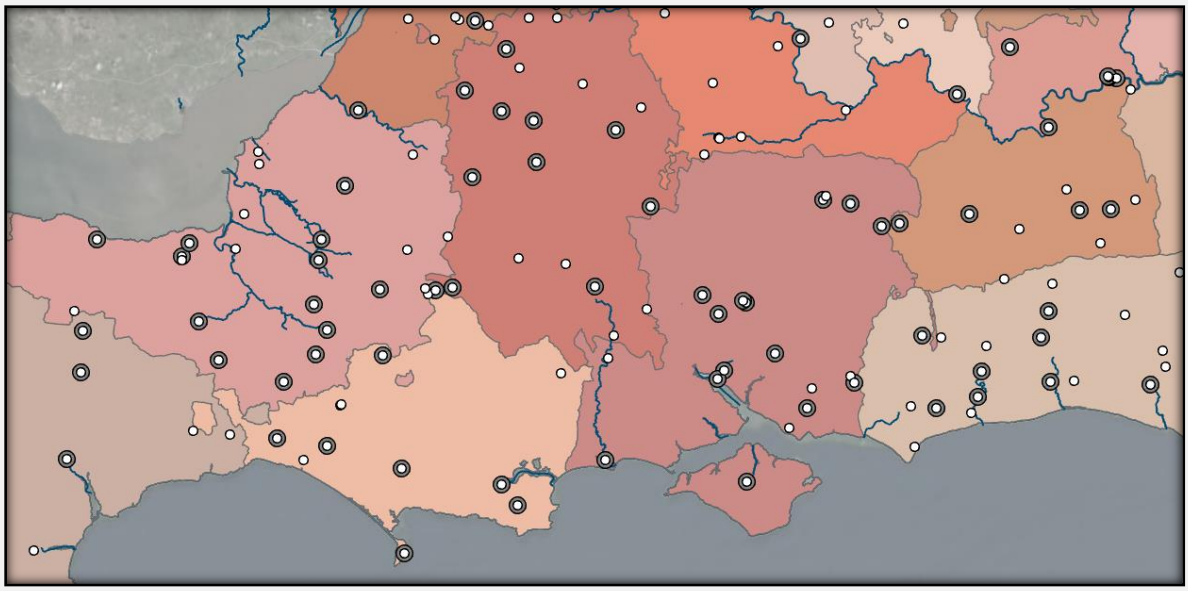


Figure 4.1B. *Sample from Southern England highlighting the high proportion of masonry sites*.

[1] TGG: various.

4.1.1..... Timber and Masonry Castles

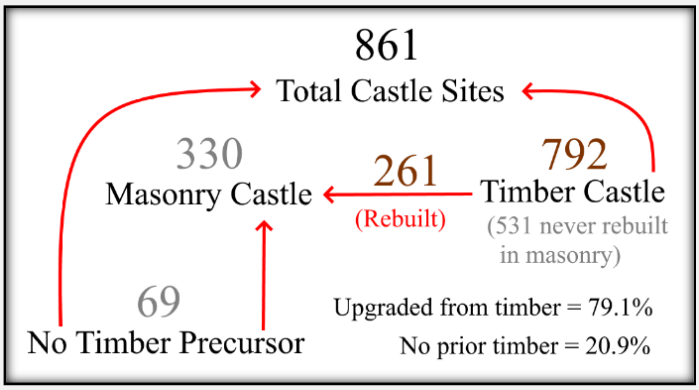


Figure 4.1.1. *The proportions of timber and masonry sites.*

The compiled evidence in Dataset 1. shows that timber castle sites formed a distinct majority of the total number built across the study period. Figure 4.1.1 details that of the 861 castle sites recorded in the study, 792 (92.0%) of these were, in at least their initial stage, a timber fortified form. Some 261 (30.3% of total and 33.0% of timber) of these were rebuilt in the twelfth and thirteenth centuries into masonry castles, but 531 contained no evidence of masonry structures being developed. In many of the publications discussing castle form and architecture, a brief initial section is given on the early timber stages before the preserved masonry 'meat' of the content is given primary attention. This is hardly surprising given the complete absence of preserved timber superstructures to study. However, the historical reality appears to have been that the timber castle constituted the most widely occurrent form, primarily as simple motte and ringwork castles. It is difficult to pin down the use dates for many of these sites, as detailed below, but it is likely the timber castle was more common than the masonry for most of the late-eleventh and early twelfth centuries (perhaps to around 1150), becoming more clearly outnumbered by the thirteenth century as timber sites became more widely disused or replaced. Of those 330 masonry castles included in the study, only 69 of them are thought to have been original foundations with no timber precursor. This observation is sometimes supported by archaeological excavations, sometimes recorded historically (as original masonry castles had a high chance of being important baronial or royal constructions worthy of record), and sometimes assumed due to a complete deviation in typology from any of the common precursor timber site layouts (as at early rectilinear enclosures for example). The opposite is also as likely the case for some sites; that multiple motte and bailey forms with a known masonry phase are presumed to have had a timber precursor without direct archaeological or historical evidence for such, simply because this was the statistical norm. The timber—masonry lineage pattern is so widely exemplified that it is the most probable reality for such instances, but this may be contributing to a reduced account of masonry foundations, such as those of Leeds Castle (CKEN18), Bolingbroke Castle (CLIN01), and Knockin Castle (CSHR47). The divergence in site typology between timber and masonry castles is dissected completely below (see section 4.2).

4.1.2..... Terrain and Altitude

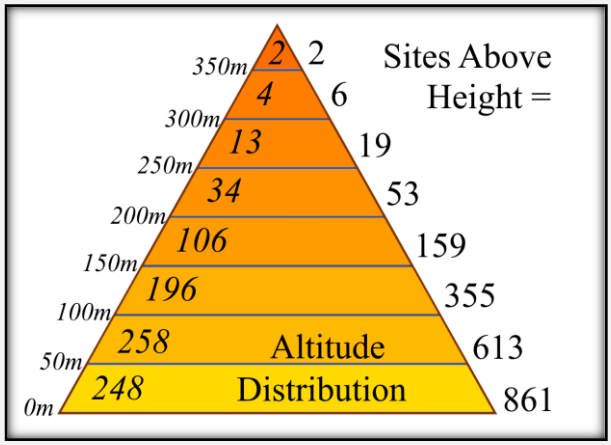


Figure 4.1.2A. *Castle distribution by altitude.*

As established in Chapter Two, there were many reasons behind the choice of site of each castle, with needs and functions differing situationally and across time. Exploitation of elevation was clearly numbered among these considerations. Figure 4.1.2A summarises the occurrence of castle sites at differing altitudes: within the triangle for portions; and on the right for cumulative proportion. As a general rule,

regional castle site altitude was broadly equivalent to regional settlement altitude. Elevation is best exploited militarily by the relative height castle site to surrounding local terrain. In this way, Corfe Castle (CDOR01) masterfully exploits its local elevation while being sited only 40 metres above sea level, while Castle Bryn Amlwg (CSHR20) achieves only a slight elevation advantage at 366 metres ASL. This fact, when combined with a general preference for lowland valleys and the associated benefits of nearness to fertile soil, settlements, and rivers, makes it less surprising that the majority (58.8%) of all castles were sited lower than 100 metres, with only 35.1% occurring between 100—200 metres and 6.1% occurring above 200 metres ASL. Most castle sites above the 100-metre-mark are so because their whole local area was of this range, with exploitation of mountain and hill ridges constituting impressive but rare occurrences (such as Beeston Castle's (CCHE01) exploitation of a

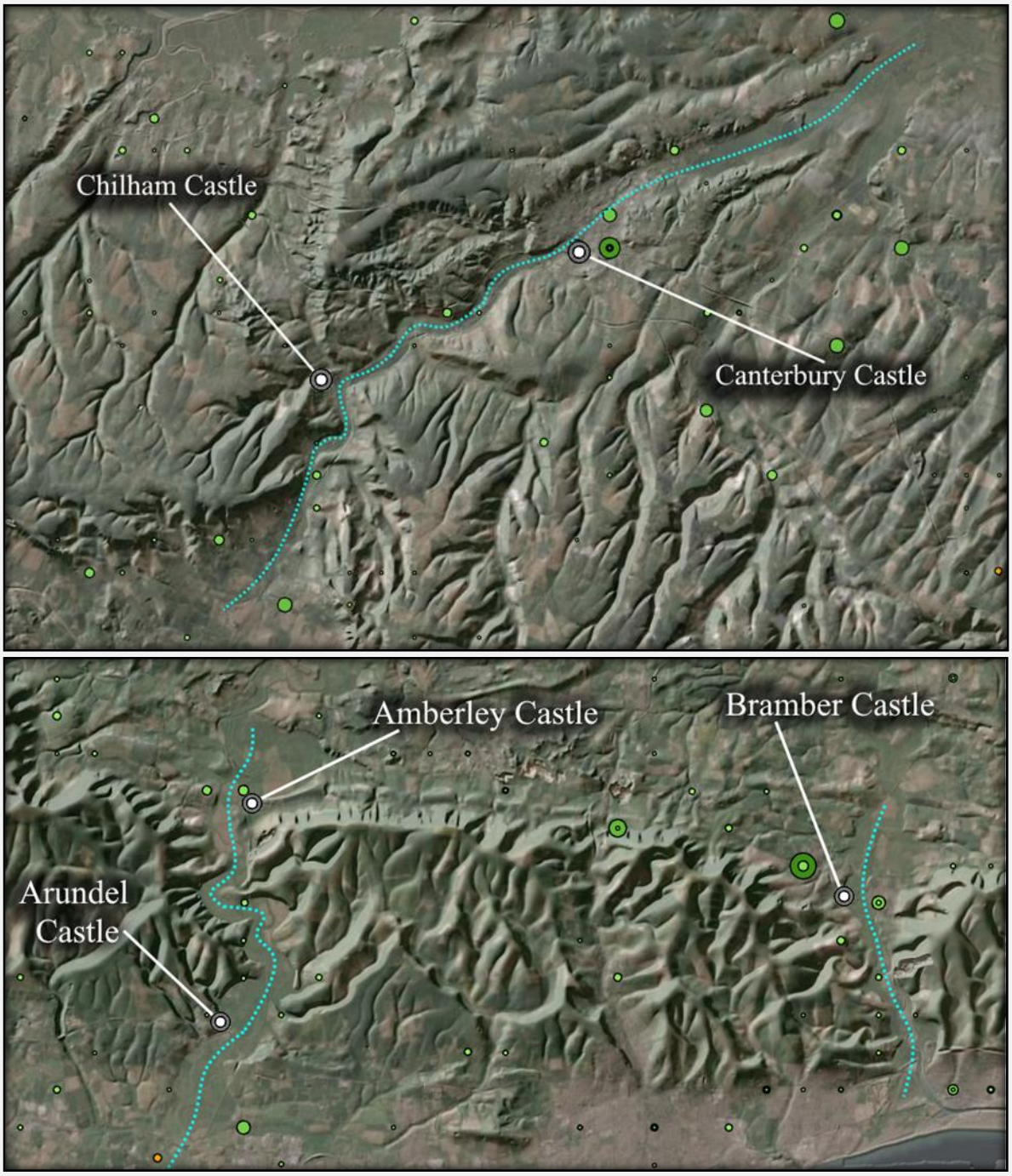


Figure 4.1.2B. *Castle sites overseeing valley passages in the North and South Downs, Sussex, and Kent.*

rocky crag). Control of land and river passages through surrounding rougher terrain was also critical to site choice. Figure 4.1.2B demonstrates three examples of many indicating that castles often appear to have been located in order to oversee major valley passages. Here, Chilham Castle (CKEN12) and Canterbury Castle (CKEN01) oversee the Great Stour river valley; Arundel Castle (CSUS04) and Amberley Castle (CSUS01) oversee the Arun river valley; and Bramber Castle (CSUS16) oversees the River Adur. In these three examples, siting to achieve control of the river passages appears to have reached a locational compromise with proximity to the existing eleventh century settlements of Steying, Wye, Canterbury, and Amberley. Many rivers within broad cut valleys host similar arrangements, including but not limited to the Avon, upper Thames, Kennet, and Coln rivers. Figure 4.1.2C gives the example of castle siting in the Gloucestershire area, showing that in the comparatively level landscape, the Severn and Wye still appear to have had a strong influence both on castle site choice and continuity. Those castles with blue points represent continued use, while those of yellow and red denote uncertainty and failure prior to 1300 respectively. It is possible such a sample represents economic or other competitive advantages achieved through close positioning to these navigable passages (see Chapter Six).

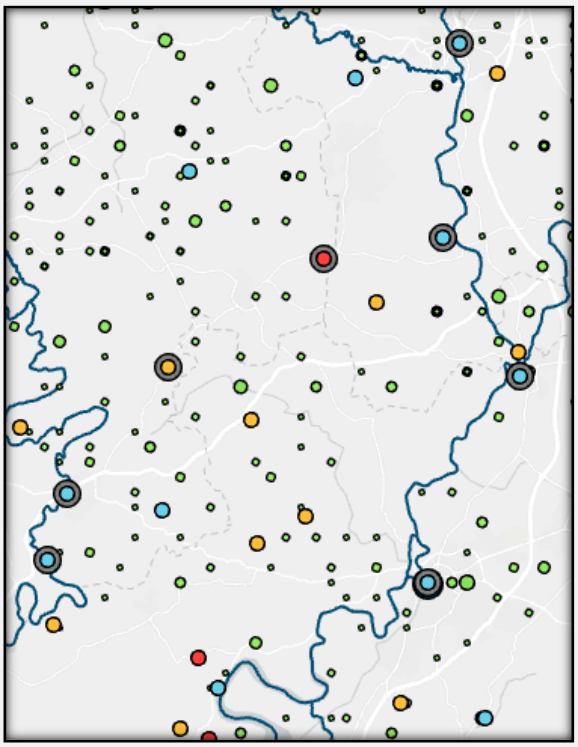


Figure 4.1.2C. *Sample of sites following the rivers Wye (left) and Severn (right) in Gloucestershire.*

The visual density of castles across the total landscape also appears to have self-regulated according to competitive positioning with other castles (this is tested in Chapter Five). Figure 4.1.2D highlights the area around the Shropshire hills as an example. Not only does this location neatly exemplify the preference for slopes and valleys to ridges, but it also appears to indicate a comparatively even spatial distribution between those sites which were known to still be in use in 1300 (blue), and those which are unknown (and likely in disuse by 1300). The relative distribution of sites upgraded into masonry similarly fits this self-regulating spatial rule. Continuity of use is detailed further below, but

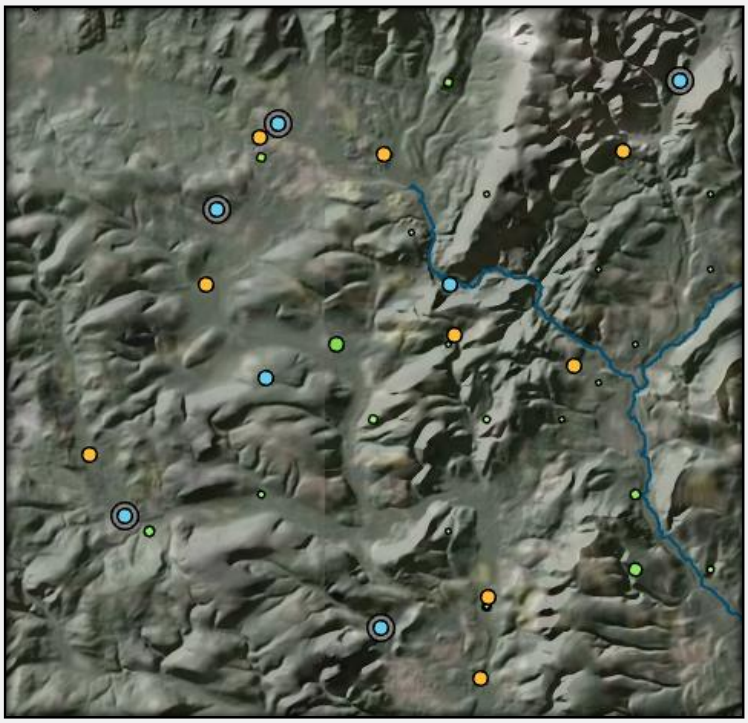


Figure 4.1.2D. S*ample of sites in the Shropshire Hills.*

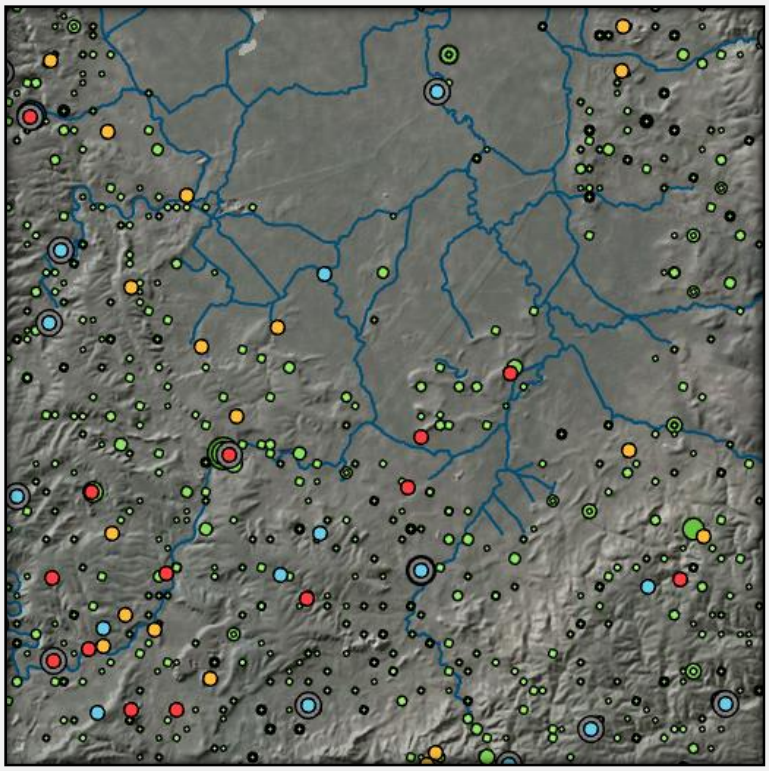


Figure 4.1.2E. *Sample of sites in the Isle of Ely and surrounding area.*

a pattern of prolific early timber sites, followed by selective upgrade and reduction of use of intermediaries appears widely observable. Figure 4.1.2E gives the further example of the Isle of Ely area and the eastern Midlands (noted earlier for its high castle site density despite its distance to the hostile border zones). In this comparatively level and fertile terrain, the density in continued usage of castles decreases by almost 65% from 1100 to 1300. This reduction does not strictly match with the eleventh century population distribution (indicated in green points) but does greatly reduce the average distance between the castle sites. In this second case, the rate of site disuse is much more well recorded. If distance to other castles was a contributing factor in the failure rate of castle sites, one explanation for this would be economic competition over local hinterland economic resources. Consolidation of power under fewer tenant-barons after the initial prolific phase of subinfeudation, or a decreased need for military presence in these border and heartland zones as the kingdom stabilised politically may also have contributed to this spatial thinning. It is likely that the reasons for site abandonment are multi-factorial, with economic considerations playing a prominent role.

4.1.3..... Pre-Norman Site Reuse

One of the site characteristics recorded in Dataset 1. was the re-use of pre-Norman fortifications for castle siting between 1066—1300. Following initial research, multiple examples of deliberate re-use of Iron-Age earthworks and Roman masonry foundations were identified, and the possibility that a higher proportion of fortified location re-use occurred than has been generally recognised was considered, an observation which has been shared by others.[2] To assess this, information indicating pre-Norman fortified (or modified earthwork) locational re-use was compiled in Dataset 1. (Figure 4.1.3A details the results). In total only 144 (16.7% of the total 861 sites) castle sites were identified as having some element of built-up earthwork or lithic foundation, upon which primarily motte but also other castle types were built. Known Iron Age hillforts made up at least 11 examples, with a further 13 recorded Iron Age earthwork fortification without specific categorisation as hillforts. Roman sites of garrison forts, town defences, and temple foundations dating to the fourth century or earlier were used at some 20 (13.8% of re-use subset) castle locations, including early masonry castles. Discussing defensive and non-defensive locational re-use, Jamieson's 2019 analysis of pre-Norman developments at Norman

[2] Jamieson 2019; Creighton 2013.

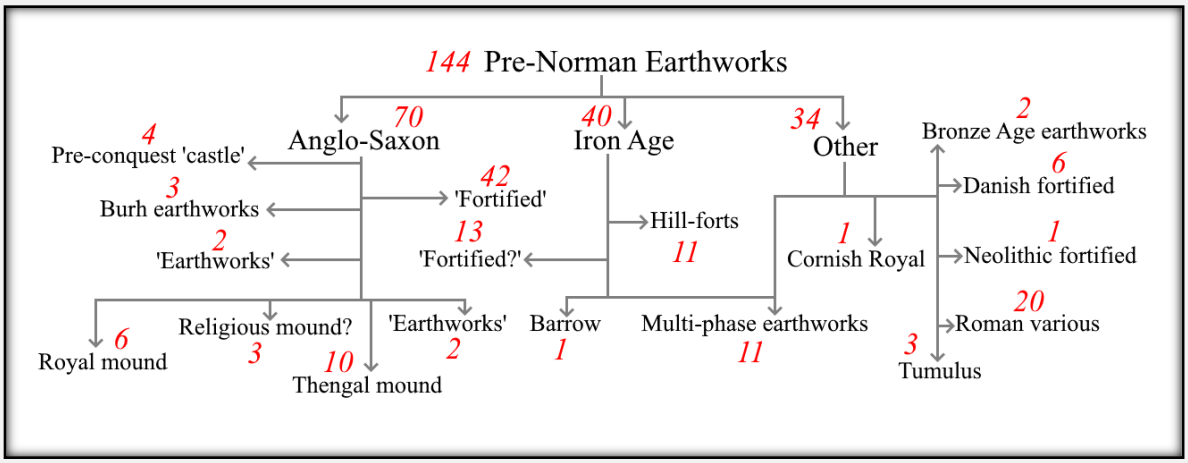


Figure 4.1.3A. *The occurrence of pre-existing earthworks utilised by Norman castle builders.*



Figure 4.1.3B. *CHAM04 Portchester Castle.*

castles identified some 45 shared Norman-Roman locations including forts, villas, settlements, and camps.[3] Figure 4.1.3 gives a well-known surviving example of re-use at the site of Portchester Castle (CHAM04) which was built onto the foundations of a Roman 'shore fort' in the eleventh century, merging Roman rectilinearity with Norman motte—bailey spatial areal articulation. Roman brickwork is also plainly visible within the walls of Colchester Castle (CESS01) and Pevensey Castle (CSUS20) with photographs identifying examples recorded in Appendix III. Many locations like Colchester contain the suffixes 'chester', 'caster', and 'cester', diminutive of Saxon 'caester' and the Roman root 'castrum' or 'castellum' meaning 'fort'. Several Roman forts had already developed vicus adjacent settlements and so their foundations were ideally located for re-use as administrative and population pacifying castles.

The largest subset of re-used earthworks was Saxon mounded sites, principally including ambiguously defined 'fortified' manorial centres (42; 29.2% of set); Royal and Thengal mounds (16; 11.1% of set); a few locations argued to be pre-conquest motte and baileys established by northern French lords who had moved to the island in the eleventh century; and a handful of religious and burh earthwork components. The recent Danish fortified regions primarily in the north and east produced only 6 known Scandinavian re-used sites, although their similarity and simplistic earthwork and timber construction makes their conflation as either Saxon or Norman foundations highly likely. Earlier barrows and tumuli have also been excavated at the heart of some motte mounds. However, these sites were most likely simply exploited for their natural elevation as the beginnings of mound-building projects. It is thus very likely that many pre-Norman site uses remain unknown, particularly in relatively level lowland examples where re-use of mounded earth provided a practical reduction of labour. Despite initial suppositions, it is clear that the Norman castle building phase was highly original in its site locational

[3] Jamieson 2019, p.355.

selection and pattern. Jamieson discusses the degree to which pre-Norman locations were re-used as castle sites was a deliberate link to the past, as opposed to an inadvertent use of available defensible land, and suggests that a significant level of awareness and exploitation of 'important points of reference' in the antecedent landscape occurred.[4] This is most probable for the Saxon manorial mounds, which would have been highly likely to have retained recent traditional significance locally, and which may have been broadly re-used due to their social and legal tenurial significance. As much might also be the case for unfortified manor houses being replaced by Norman motte mounds. However, the fact that less than 20% of the 861 sites from 1086—1300 are known to have been previously used, and that many had been out of use as fortifications for centuries, strongly indicates that the degree of deliberate exploitation was quite low, and the bulk of the pattern in siting was concerned with ulterior motivations.

4.1.4..... Continuity of Site Use 1000—1300 CE

The full set of castles from Dataset 1. were also mapped with respect to their known usage dates: the sites known to continue in use beyond 1300 CE are indicated in blue; sites known to have fallen into

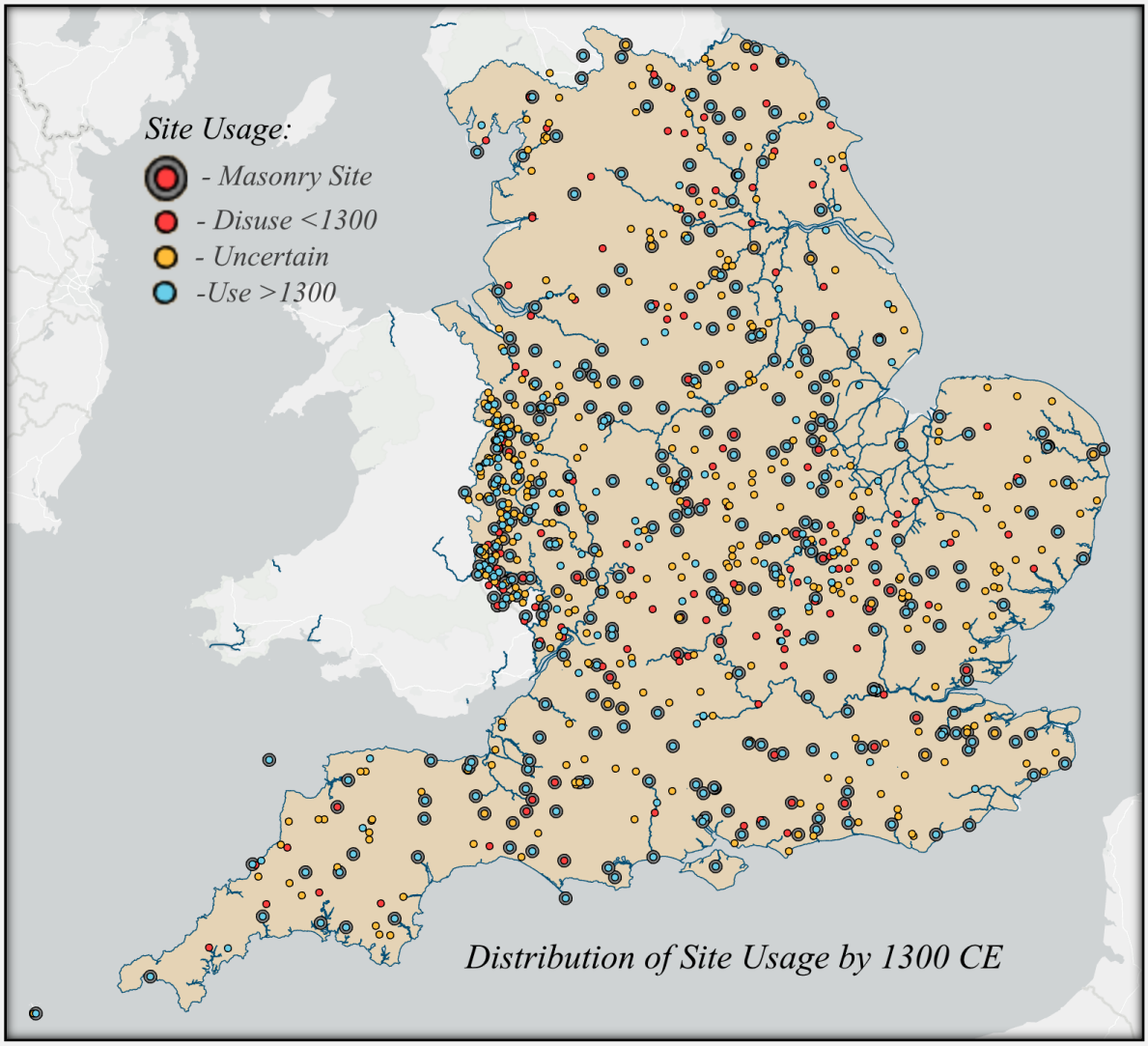


Figure 4.1.4A. *Distribution of all castle sites with known usage by 1300 differentiated by colour.*

[4] Jamieson 2019, p.369.

disuse are red; and sites of uncertainty are yellow (see Figure 4.1.4A.). Sites built or re-built in masonry are indicated with a grey ring. Of the total 861 sites included in the study, 356 (41.4%) were assessed as having reasonable evidence of continued use to the year 1300 CE. Dating of construction and continued use is typically based archaeologically on medieval pottery deposits as well as historical accounts.[5] 58 sites (6.7%) were in a known state of disuse by 1200, and 87 (10.1%) were in disuse by 1300 (with known disuse totalling only 16.8% of total sites), indicating disuse rate increased toward the 1300 date. Records qualifying neither continuity nor abandonment by 1300 were ascribed to 360 (41.8%) of the sites included. Figure 4.1.4B comparatively displays these proportions to highlight that it is largely the early timber sites which exacerbate this total percentage of uncertainty. Of the 531 timber castles that were not later rebuilt in masonry, 336 (63.3% of this subset) could not be reasonably dated through archaeological or historical evidence. There are statistically very few timber castle forms which remained in use into the fourteenth century, and those that did tended to serve minor roles of border-defence, observation, or were small administrative structures serving the less wealthy manorial seats. While the majority of uncertainly dated early medieval timber castle sites would likely have fallen out of use by 1300, some portion of them may well have continued as minor fortified manorial seats. Targeted early castle site excavations would do much to resolve this uncertainty.

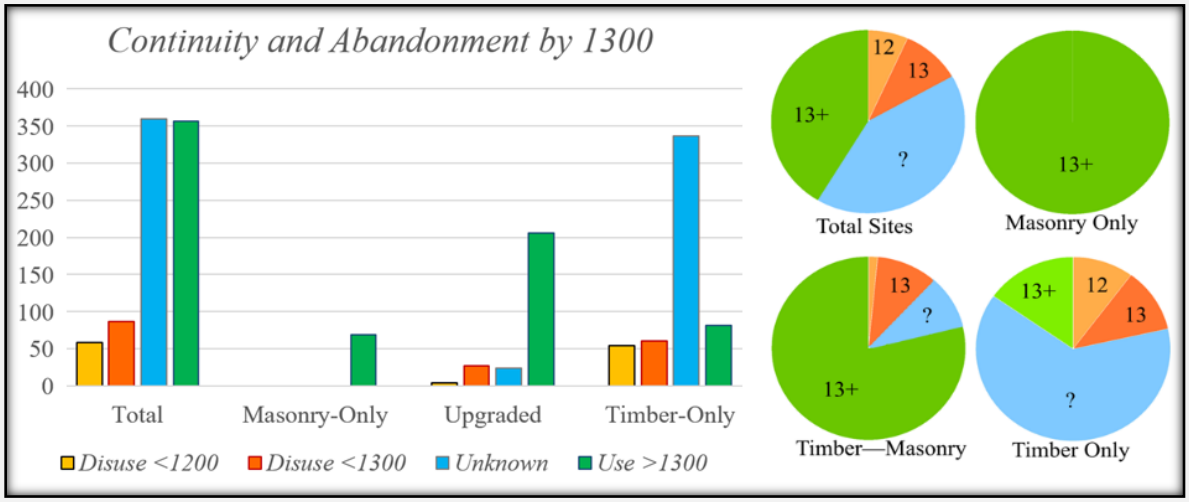


Figure 4.1.4B. *Distribution of continuity of use data by 1300 highlighting the 'timber only' lack of dating.*

Abandonment was assessed on a relatively broad diachronic scale, with many sites experiencing short periods of disuse only to be rebuilt and reused in due time. Multiple sites were partially demolished and then rebuilt in military campaigns for example, while others were inherited by tenants with sufficient wealth to see to their repair. Known examples of permanent disuse included: being dismantled by the crown; historical documentation of being razed or slighted; falling out of use as a lord relocated their manorial caput (mostly locally); having archaeological evidence of burning with no subsequent evidence of construction phases; and transitioning into de-fortified manorial or administrative site forms that no longer reasonably constituted 'castle' categorisation. Presumption of abandonment is widely posited in both the NHLE and HERR, while TGG takes a more cautious 'occupied until proven unoccupied' approach. In some cases, similar local sites with more complete historic records are appealed to by listing descriptions, which might have exacerbated the differentiated rates of certainty on a county-by-county basis. Masonry castles demonstrated a much higher rate of continued use to 1300. Of the 261 timber castles which are known to have been upgraded with masonry defences, 206 (78.9%) were still functional castles in the year 1300 CE. Moreover, all 69 masonry castles constructed

[5] Williams and Roberts 2016.

on sites not previously occupied by timber installations appear to have still been in use up to and beyond 1300. The foundation of stone castles must, therefore, have entailed markedly more forethought and careful site choice than their timber counterparts. The high degree of masonry castle continuity where sites had timber precursors also suggests that selection criteria of which sites to transition to masonry were considerate of long-term use, although apparently less so than masonry foundations on virgin earth. This likely relates in part to the maintaining of traditional caput seats in suboptimal locations. Furthermore, many masonry-only castles were built in the late-twelfth and thirteenth centuries and benefited from the advantageous position in time from which their builders could exploit prior mistakes and replicate proven techniques in construction method and location choice; for example: Hadleigh Castle (CESS02), Beeston Castle (CCHE01), and Stevington Castle(CBED23). Moreover, castles built from the outset in stone in the late-eleventh and early-twelfth centuries, such as Castle Acre (CNOR03), Colchester Castle (CESS01), and Corfe Castle (CDOR01), were almost exclusively the caputs of powerful tenants-in-chief and English kings; being positioned on some of the best sites, and having a higher influence on the development of surrounding lands which might later sustain site continuity.

4.2 ..... Castle Site Size and Typology

The following sections assess the results of the site area analysis of the LIDAR data, as described in Chapter Three. Publications addressing the digital spatial mapping and areal plans of castle sites and site components, especially through the recently available LIDAR terrain resources, were scarcely identifiable in the initial research stages. Thus, while further expanding on the site characteristics established above from Dataset 1., the DTM LIDAR-based areal analysis here may help contribute to

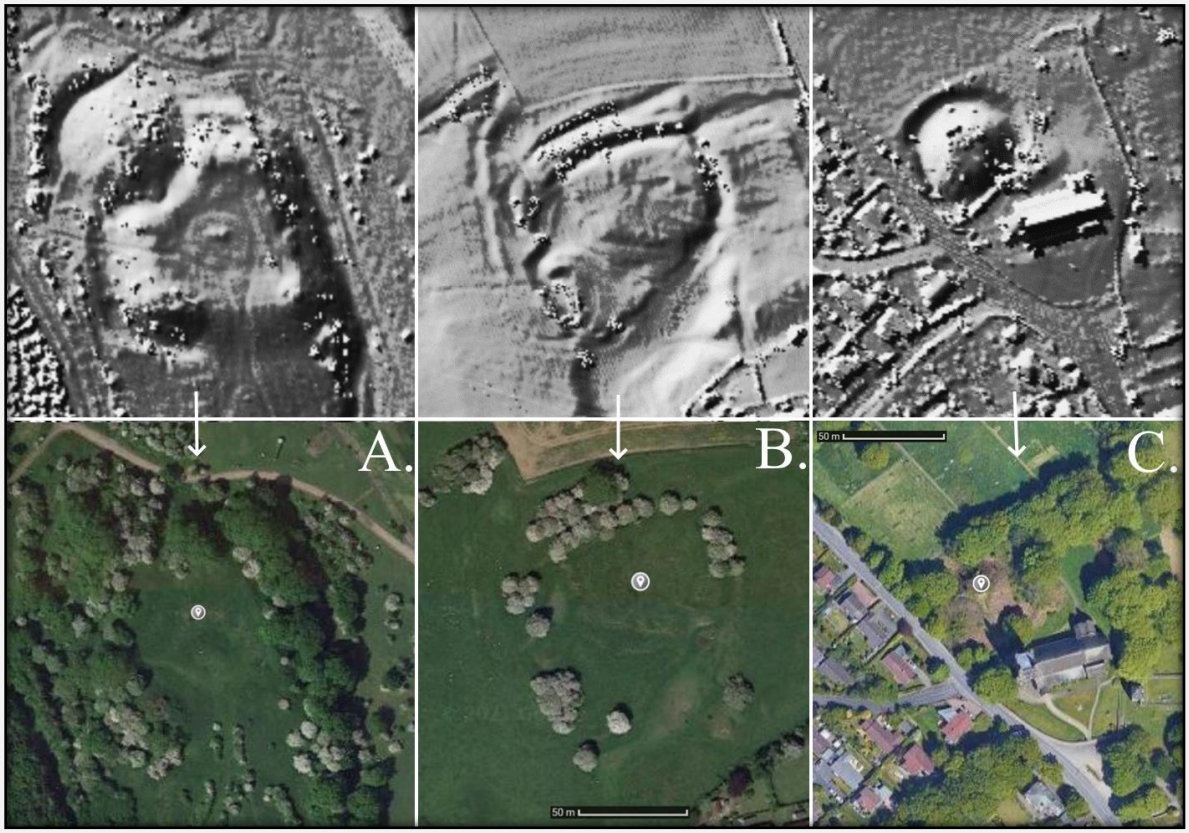


Figure 4.2. *Examples of the increased clarity of mappable information achieved through LIDAR over satellite topographic observation. A: Killerby Castle Hills; B: Hutton Conyers Castle; C:Mirfield Castle Hall Hill.*

this emerging knowledge pool through providing updated statistics for the English castle network. Figure 4.2 provides some examples of the extensive additional detail accessible through the inclusion of the LIDAR layer for the site size analysis. The areal study includes 573 (66.6%) of the 871 total sites for which there was sufficient LIDAR data to map out the site component areas. Appeals were made to heritage listing resources regarding uncertain possible baileys and other details; but wherever possible, categorisation was decided by whichever set of typological qualities the site fitted best. The recorded castle typology categories were limited to 'motte', 'ringwork', 'enclosure', and 'abnormal'. As stressed earlier, the mapped results matched the sites' present condition, and so represent the final stage of building, rather than the earliest Norman castle. These four categories are each addressed below, followed by observations of three additional shared-feature subsets which provide nuanced examples of subcategory complexity. Thereafter, a critical assessment of the typology used in describing early English castle sites is offered. The full list of LIDAR overlaid sites is detailed in Appendix II.

4.2.1 ..... Motte Castle Sites

Mottes are the largest category set from the area analysis with 330 certain mottes and a likely further anomalous handful cautiously categorised as 'abnormal'. Figure 4.2.1A displays a sample of regular mottes. Eastcotts Castle (Example A; CBED05), Wooley Castle (Example B; CBER02), and Overhall Grove (Example C; CCAM10) are of a relatively small size at some 20—25 metres in diameter. Sites of this range are widely distributed and appear to be the most likely subset to occur without an adjacent bailey. Some small examples are also considered as potentially symbolic structures denoting the status of lesser knights.[6] Mottes are generally circular in form, but sometimes take abnormal rounded triangular or rectangular forms. Bothamsall Castle Hill (Example D; CNOT03), Castle Batch (Example E; CSOM06), and Upper Garthlow Motte (Example F; CSHR85) are of slightly greater size at 35—40 metres diameter. Heritage listing sites often further record whether a motte was scarped (cut away from a natural promontory or fill) or if it was piled (simultaneous excavation of a moated ditch and layering of the material inside it to form a tall mound). Figure 4.2.1C highlights the area and distribution of these mottes, indicating most sites fit within a 1,000—2,000 square metre area. An area of 1,000 square metres equates to a diameter of about 35 metres, which can be firmly posited as the average English motte size from the collected data (keeping in mind the data reflect only 66.6% of all sites). Very few motte summits of timber castles have been excavated, and these are thought to have supported a single tower or a gated wall and tower. Typically, an average early timber tower keep is suggested to have been 9—12 metres in height, which matches these average areal proportions well.[7]

Figure 4.2.1B shows a further sample of mottes with accompanying baileys. Ongar Castle (Example A; CESS14), Laughton en-le-Morthen Castle Hill (Example B; CYOR51), Seckington Motte (Example C; CWAR22), and Hallaton Castle Hill Camp (Example D; CLEI07) are of a set commonly described as 'kidney shaped' baileys. These baileys are occur widely and generally permit a palisaded area connected to 30—50% of the motte circumference and extend out within a close distance from the motte, perhaps within missile or voice command range, or just large enough for essential functional structures. The rationale for differentiating the height of these components is uncertain, but likely relates to deliberate display of status via the mound, ease of construction for the bailey, full visibility over the bailey from atop the motte tower, and ease of traffic entry for carts and horses (including warhorses) in the low bailey. Blackdown Rings (Example E; CDEV17), and Pickering Castle (Example F; CYOR63) appear to have at first entailed a 'kidney shaped' bailey, with a second larger bailey added to facilitate

[6] TGG 'West Felton Motte'.

[7] Wyeth 2018, p.153.

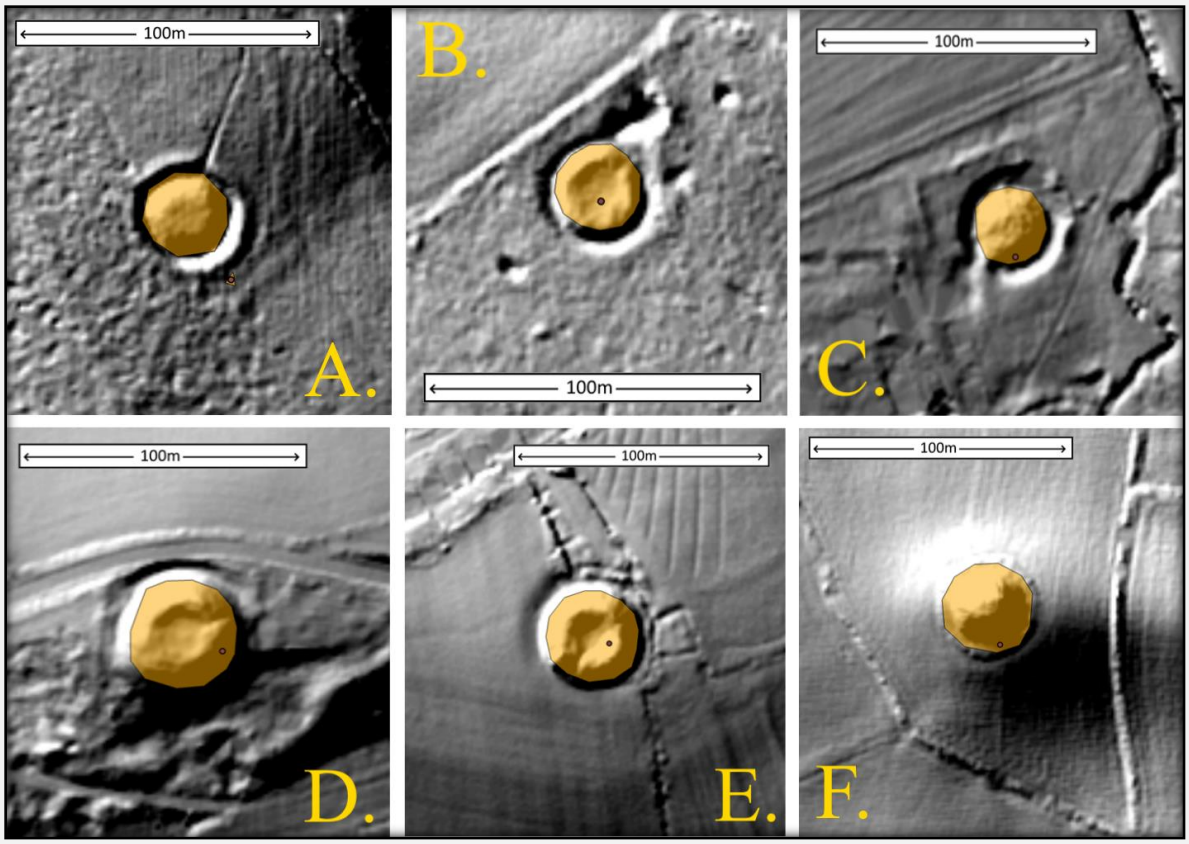


Figure 4.2.1A. *Sample of regular motte sites.* (Sample from Appendix II.)

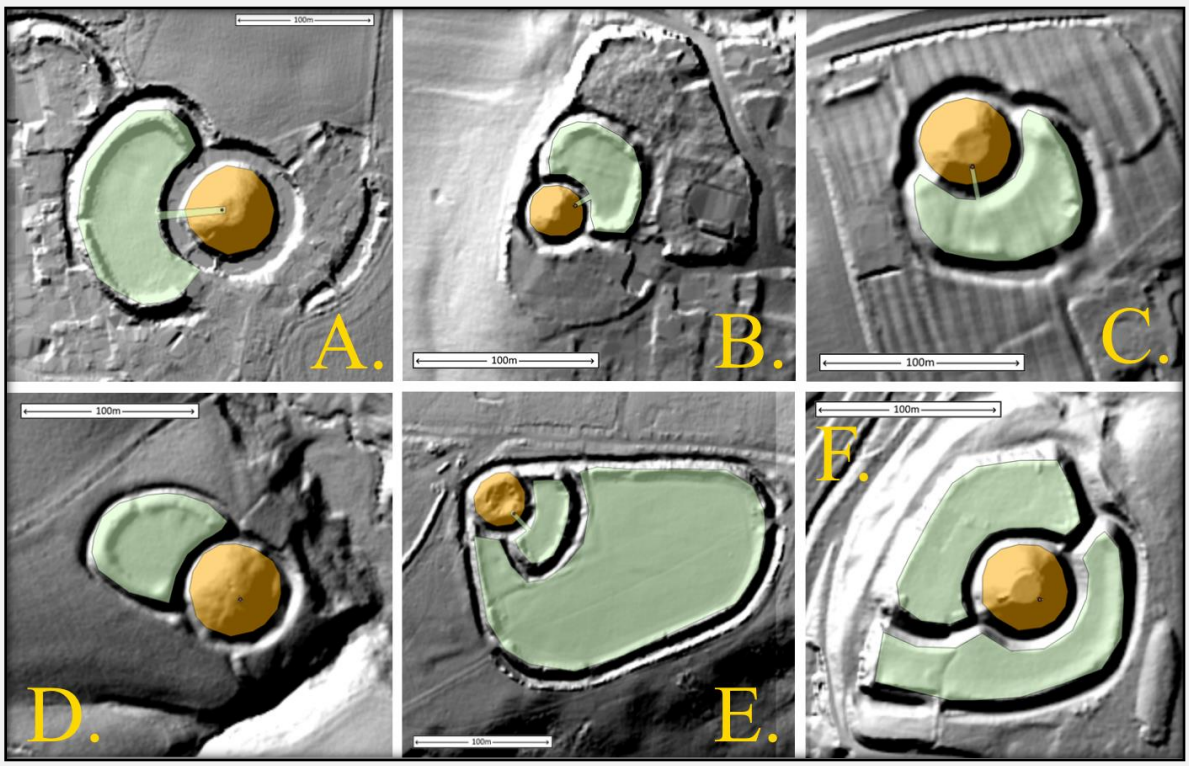


Figure 4.2.1B. *Sample of regular motte sites with baileys.* (Sample from Appendix II.)

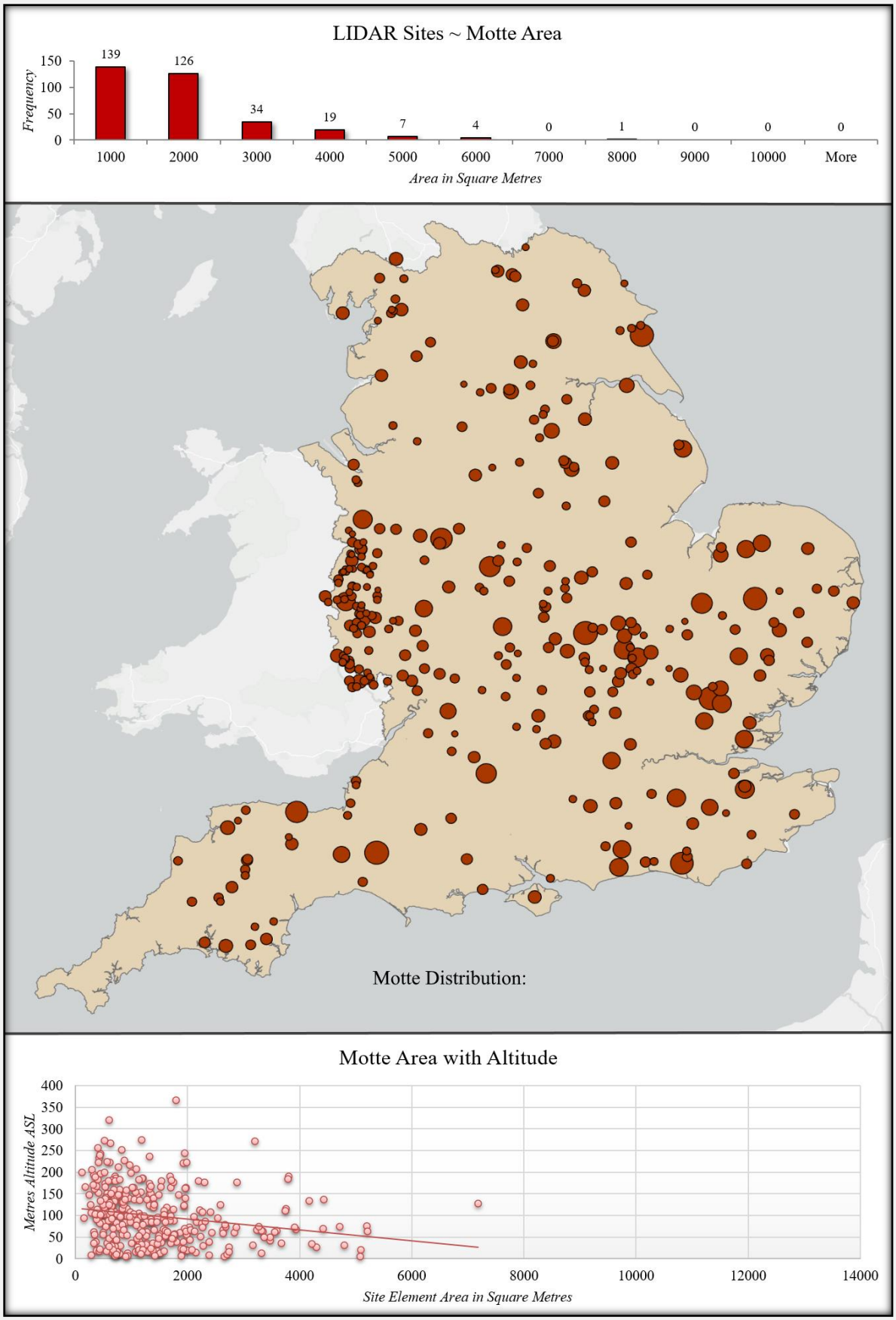


Figure 4.2.1C. *Motte site area and distribution pattern.*

a growing local settlement. Additional baileys or multiple baileys from the offset are commonly occurring. These mottes are substantial in size, with Ongar Castle motte at some 65 metres in diameter. The outer rim of the bailey is slightly raised and would have facilitated a palisade or timber wall, which may then have been upgraded to masonry situationally. The number of baileys at any given site varies, but as mentioned earlier their total area has been calculated as a single polygon to reflect population scale. Where the top plateau of the motte is concave and the rim is raised higher than the platform (for example B., D., and E. in Figure 4.2.1A) these mottes are sometimes termed 'ring-mottes' but are, in the main, simply referred to as mottes (more on this below). Few mottes are larger than 4,000 square metres in area, at which size they were likely enlarged during a transition to masonry architecture. Figure 4.2.1C demonstrates that mottes as a castle form were widespread across England, with the larger examples also being unconstrained to any particular region. With respect to other castle categories, mottes did occur more often and more densely on the Welsh border. The trend-line indicates that the largest of mottes generally occurred at low altitudes, with sites at 150 metres ASL or more mostly being smaller than 2,000 square metres in area.

4.2.2..... Ringwork Castle Sites

The second most frequently recorded typological subset, at 134 usable samples, is the ringwork sites. Figure 4.2.2A presents a sample of regular ringworks without baileys. Littledean Camp (Example A; CGLO18) has been simultaneously described as both a ringwork and ring-motte, and exemplifies a widespread categorisation issue (see below).[8] Stapleford Castle (Example B; CWIL18), Fakenham Magna (Example C; CSUF09), Bramfield Castle Yard (Example D; CSUF02), Castell Brogyntyn (Example E; CSHR19), and Wymondham Moot Hill (Example F; CNOR19) are all more easily delineable as ringworks than ring-mottes or mottes. While ringworks differ in shape, they are generally roughly circular or ovular. These examples range in size from 50—125 metres in diameter. In physical structure, ringworks are considerably similar to baileys and some scholars have suggested they may have situationally functioned as precursors to motte and bailey sites, with mottes set within their footprint.[9] They are essentially large defensible platforms of earth with raised rims which would have supported timber palisades or walls. Reconstructions indicate a watchtower and hall, or multi-functional hall-tower might have been built inside to achieve the lordly residential and observational functions of the motte. The precise implications of the absence of a motte mound, especially if the status differentiation observation is correct, are unclear and would benefit from further research.

Figure 4.2.2B details a further set of ringworks with baileys. Close Hill (Example A; CNAH09), Halls Close (Example B; CWIL02), and Hales Castle (Example C; CSOM16) each have a single adjacent bailey area, not much larger than the ringwork itself. The deliberate delineation of inner fortified space and bailey residential space was still clearly of importance to the medieval English castle builder then, despite the relatively similar defensive qualities of the ringwork and bailey. The depth of defensive ditches around baileys are typically shallower than around the ringwork, allowing for easier identification of components with the LIDAR data. Thunderfield Castle (Example D; CSUR09), Foss Castle (Example E; CYOR34), and Crondall Barley Pound (Example F; CHAM11) each have multiple baileys. As with the motte examples, these baileys appear to have at first been singular, with additional bailey areas added as pressure on settlement capacity increased. A further ditch and mound are observable in Examples F. and D. enclosing all compartments together. These patterns of bailey expansion and inclusion within a larger planned defensive space occur frequently across the ringwork

[8] TGG 'Littledean Camp'; NHLE 'Little Dean Camp'.

[9] Kenyon 2010.

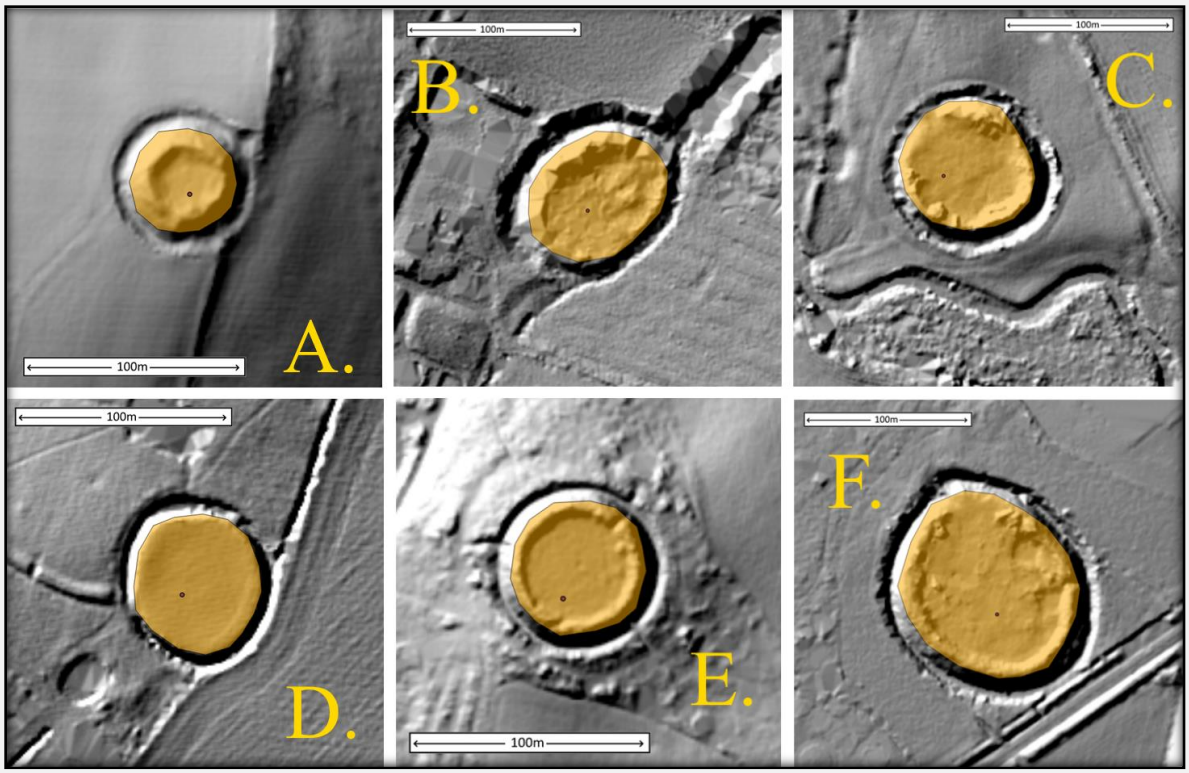


Figure 4.2.2A. *Sample of regular ringwork sites.* (Sample from Appendix II.)

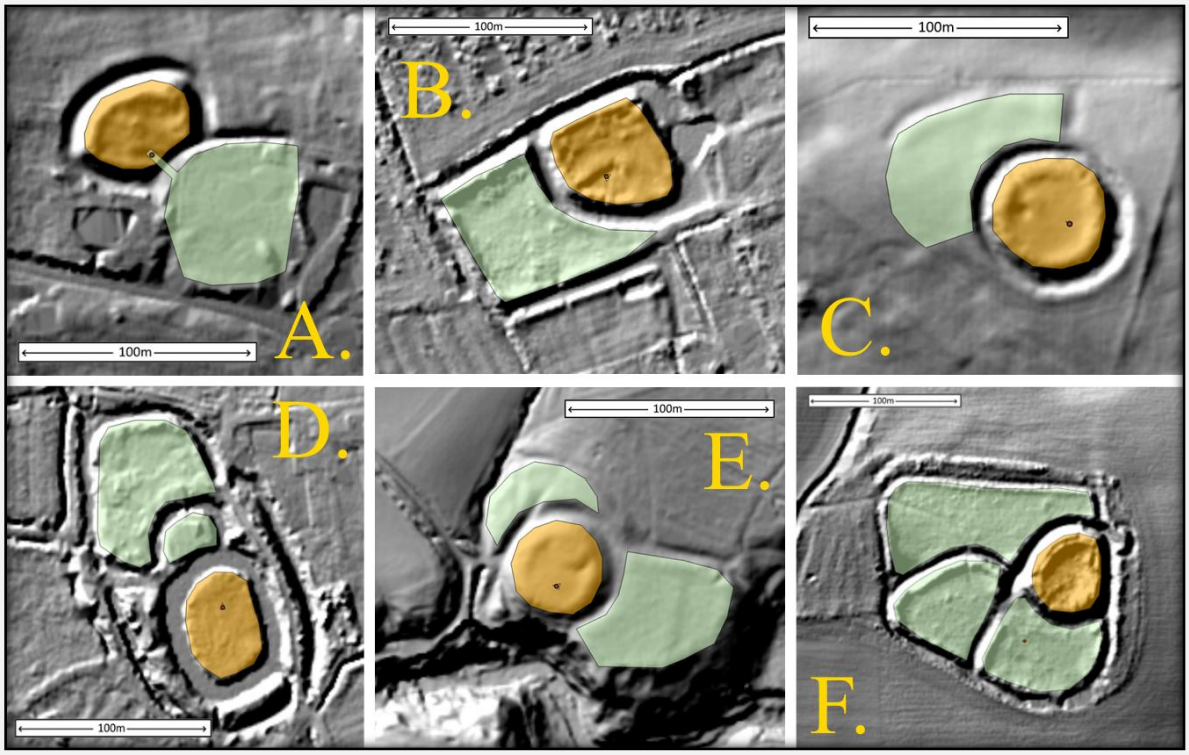


Figure 4.2.2B. *Sample of ringworks with known baileys.* (Sample from Appendix II.)

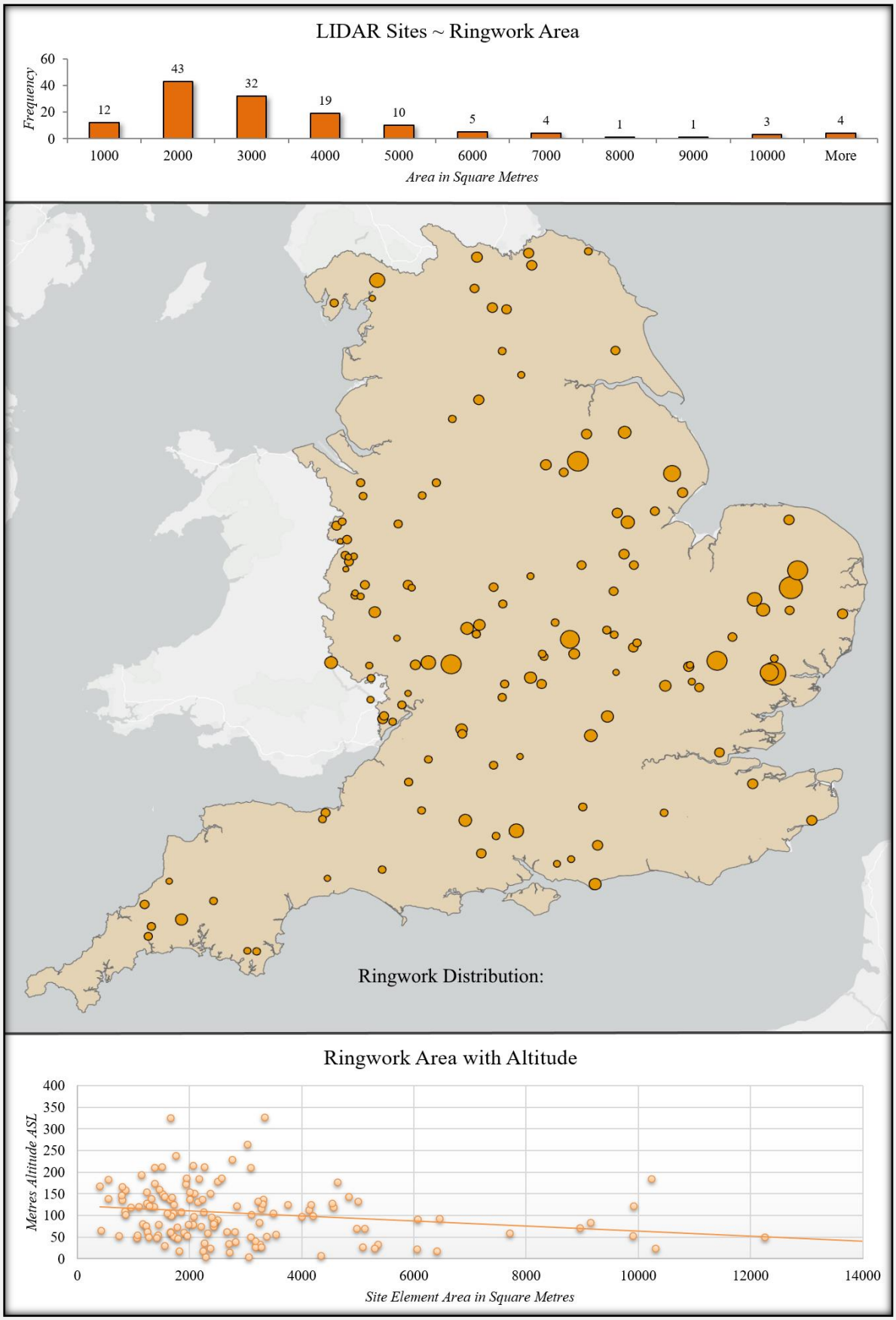


Figure 4.2.2C. *Ringwork area and distribution pattern.*

subset (see Appendix II). Figure 4.2.2C illustrates the distribution and size of the ringworks from the area study sample. While the type is observable across all regions of England, all of the largest ringworks occurred within a cluster in East-Anglia and the Midlands. The ringwork shares some design elements with earlier Scandinavian earthworks as well as Saxon burhs and is less clearly 'Norman' in design than the motte and bailey. The eastern orientation of the typological set might suggest a continued Scandinavian influence on some specific fortification design principles. The majority of ringwork sites from the sample are of less than 4,000 square metres in area, with the average ringwork being around 2,000 square metres in area. This fortified zone is approximately half the surface area of the average motte area, which should further be reduced in considerations of functional defensive space due to mottes' extensive slopes and small summits. As with the motte type, the trend-line indicates a preference for low altitude when siting and planning larger castles. This may well relate to available local labour being higher in such conditions. Again, castle sites of 150 metres ASL are almost entirely on the smaller end of the distribution, below 2,000 square metres in area. There are 65 (48.2% of subset) ringwork sites and 123 (37.3% of subset) motte sites included that had no adjacent bailey. Ringwork sites thereby have a comparable, although slightly lower, occurrence of adjacent baileys than mottes. The discrepancy in bailey occurrence relative to mottes is perhaps explicable by the larger fortified area contained by the ringwork, within which structures such as granaries, smiths, lodgings, stables, and halls might occur, which would otherwise require additional bailey space.

4.2.3..... Enclosure Castle Sites

The third largest category group from the site area analysis is 'enclosure' castle sites, of which 65 were included. Figure 4.2.3A shows a sample of this subset, which includes a wider variety of forms than the motte or ringwork sets. Bishops Waltham Palace (Example A; CHAM01), Lavendon Castle (Example B; CBUC10), Sherborne Castle (Example C; CDOR03), and Benington Castle (Example F; CHRT02) are all fine cases of the most common enclosure castle layout. Enclosure castles consist of walls and towers enclosing an area which would have contained a keep, chapel, and some essential storage and lodging buildings. Where a second layer of walls and towers encloses the first, this is called a 'concentric' castle. Examples are limited in early medieval England. The term 'enclosure' is generally utilised to refer to masonry sites, although there is no obvious reason a substantial timber equivalent should be excluded in sites of uncertain material structure. Nevertheless, the enclosure sites within the areal analysis included known masonry phases almost exclusively. Helmsley Castle (Example D: CYOR40) features a vast double ditch defence of more than 100 metres length on both axes. The double ditch became more common by the end of the study period and was essentially a late medieval design used to increase the difficulty of assaulting the walls during a siege scenario. Bolingbroke Castle (Example E; CLIN01) is a hexagonal enclosure surrounded by a moat which is now a marsh. Square keep and enclosure designs were initially the most common, but pentagonal and hexagonal designs were experimented with in various locations. The 'D' shaped towers at Bolingbroke are a further example of a later medieval defensive development, becoming popular in the late twelfth century. The earthwork defences of enclosure castles constitute some of the largest internal fortified spaces in England and were often developed beyond the thirteenth century; reflecting fashions of defensive warfare which drove extensions in subsequent centuries, such as artillery positions and 'star-fort' type arrangements.

Figure 4.2.3B details a sample of enclosure sites with baileys, all of which are quite large with respect to average total bailey area. Portchester Castle (Example A; CHAM04) utilised the existing Roman foundations to form a castle and bailey plan. Allington Castle (Example B; CKEN07) was originally an adulterine castle built during the anarchy and demolished by Henry II, which was rebuilt with a licence

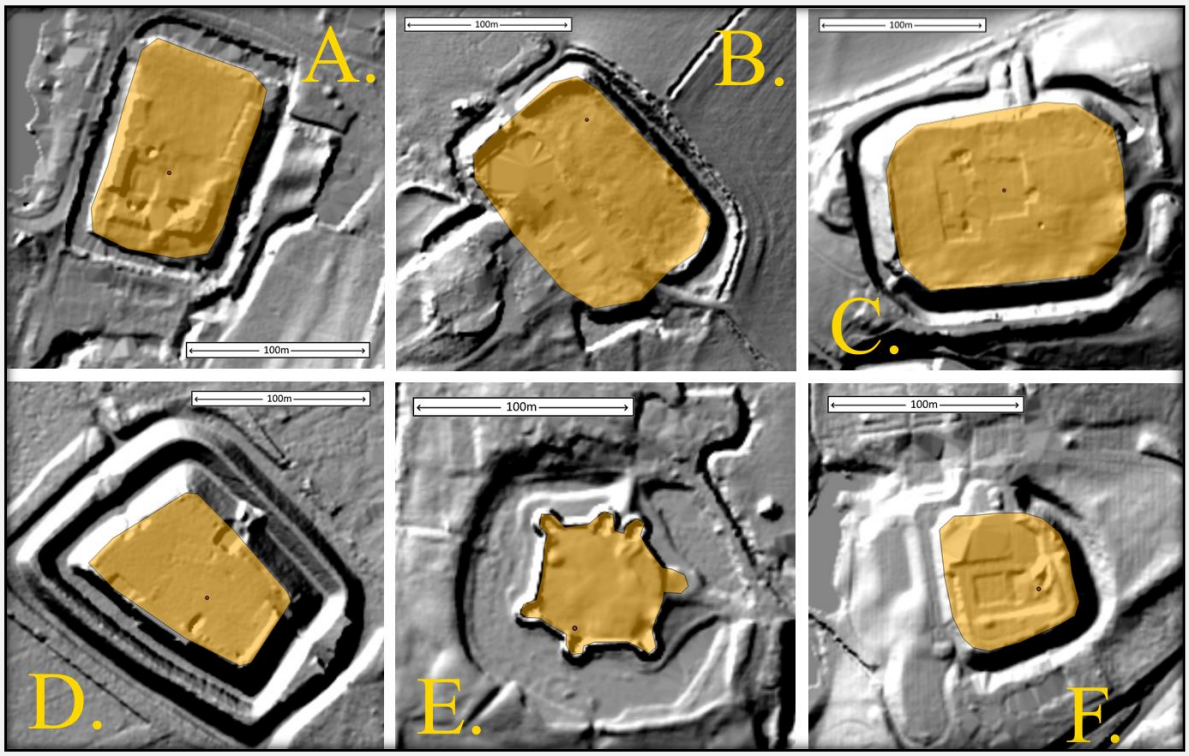


Figure 4.2.3A. *Sample of various enclosure castle sites.* (Sample from Appendix II.)

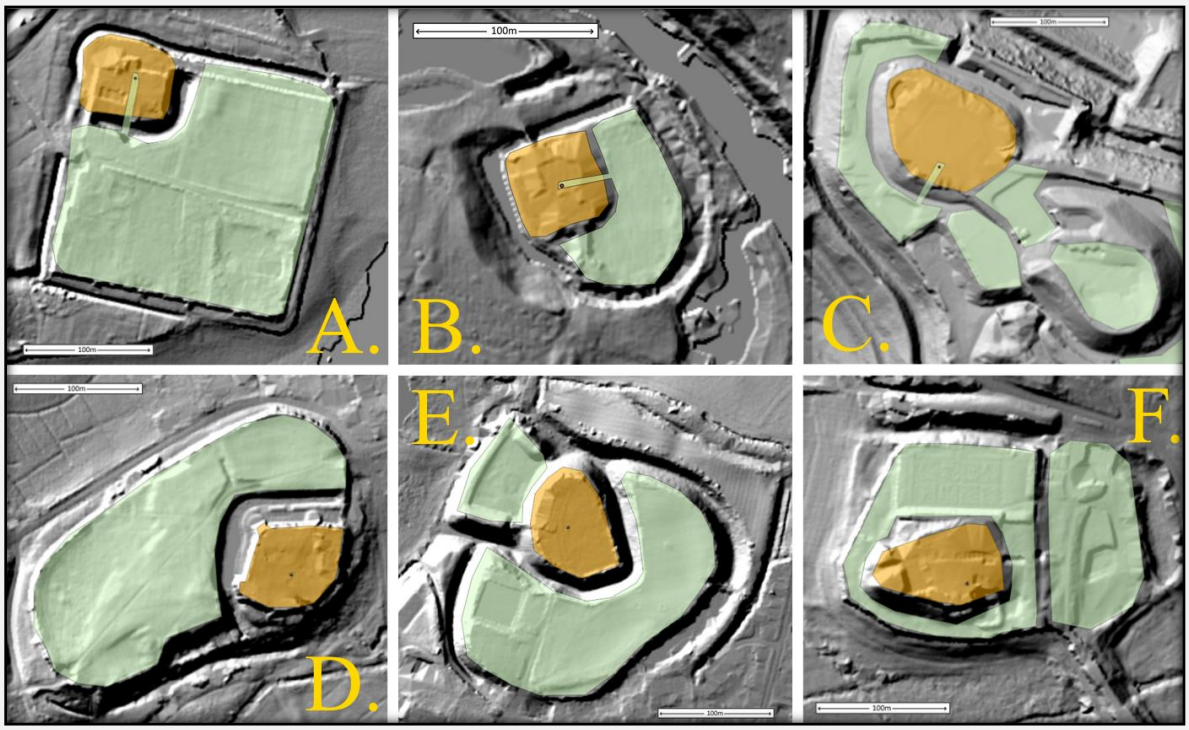


Figure 4.2.3B. *Sample of enclosure castles with baileys.* (Sample from Appendix II.)

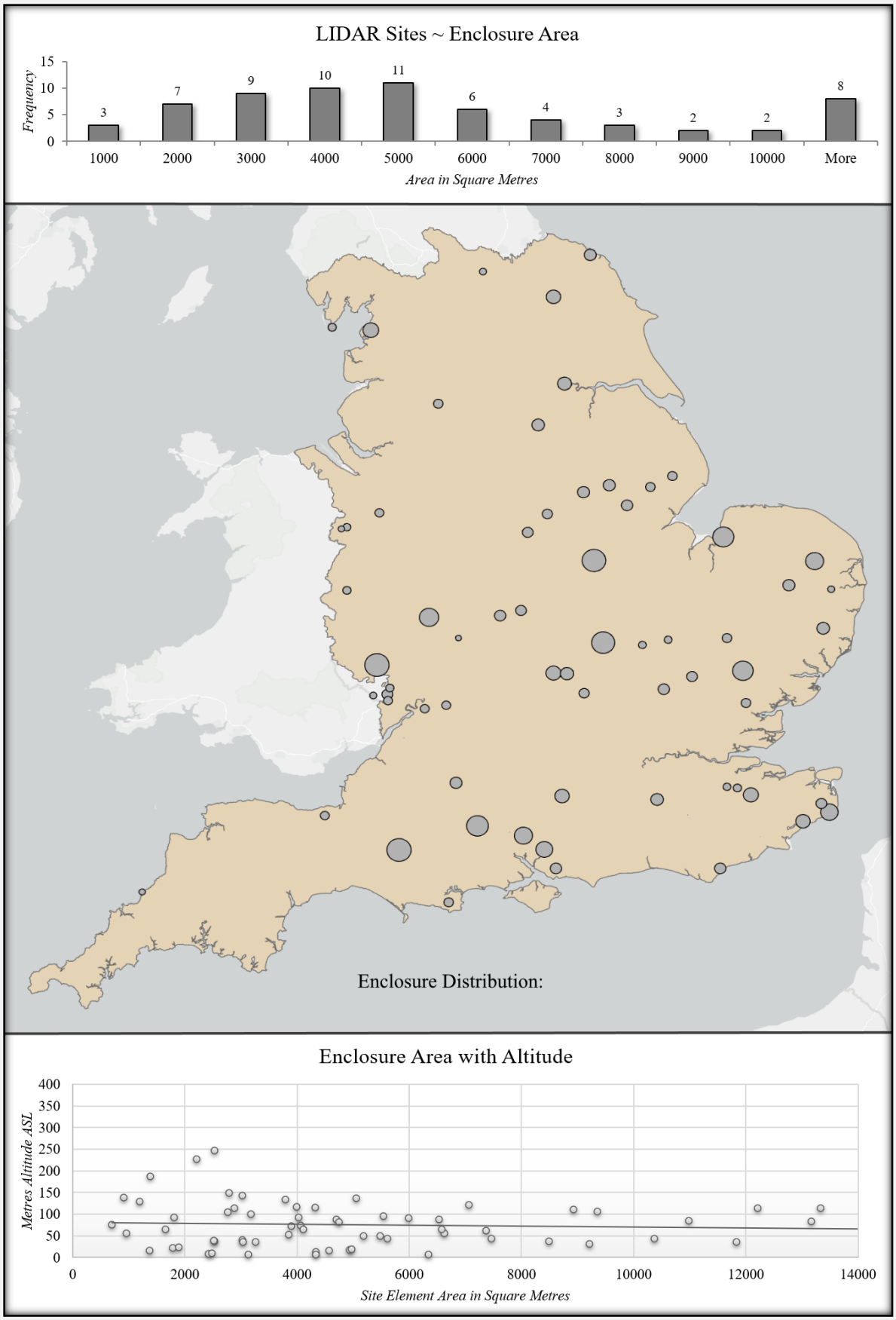


Figure 4.2.3C. *Enclosure castle area and distribution pattern.*

to crenelate at the end of the thirteenth century. Dover Castle (Example C; CKEN14) is a vast concentric castle with double ditching. The bailey complex is divided into sections, with the large hill in the south-east hosting a Saxon church. The earthworks are speculated to have Iron Age origins, explaining their unusual proportions for a medieval castle. Pevensey Castle (Example D; CSUS20) was the first castle occupied by William in 1066 and was rebuilt onto the Roman foundations. As with Portchester, the castle was a Norman addition, while the bailey walls preserved the Roman masonry plan. Framlingham Castle (Example E; CSUF10), and Kenilworth Castle (Example F; CWAR17) were largely enclosed by their adjoining bailey defences, forming concentric-like plans. Figure 4.2.3C demonstrates the distribution and size of the enclosure sites sample (again, limited to those sites with sufficient LIDAR data and site preservation). Almost all of these large castles fell below 150 metres ASL, and the trend-line indicates that altitude had little impact on site area beyond this. The average fortified area of enclosures is roughly 4,500 square metres, with several sites exceeding 10,000. Many motte and ringwork forms were upgraded to a masonry form but kept their rough plan, so the distribution does not represent the entire masonry pattern. Enclosure castles were mostly original foundations, or complete re-workings of timber layouts. It is noteworthy that their density is higher in the south-east and Midlands relative to the total distribution of all castle sites. With masonry examples in the south-west in particular typically constituting upgraded motte and bailey plans that maintained their essential design (Launceston, Totnes, and Restormel for example).

4.2.4..... Anomalous Castle Sites

An additional category was added to account for those sites for which the LIDAR definition of fortified area was clear, but the inclusion within any of the established typological categories of ‘ringwork’, ‘motte’, or ‘enclosure’ was uncertain. Thus, 44 ‘abnormal’ castle sites were included for the purpose of observing fortified area and bailey area. 34 of these had no bailey and 10 had an adjacent bailey. As detailed in Figure 4.2.4A, the abnormal subset matches most clearly with the motte site data, with some ringwork-like outliers. Figure 4.2.4B gives several examples with and without baileys. Swine Castle Hill (Example A; CYOR79), Knepp Castle (Example B; CSUS15), and Damery Old Castle (Example

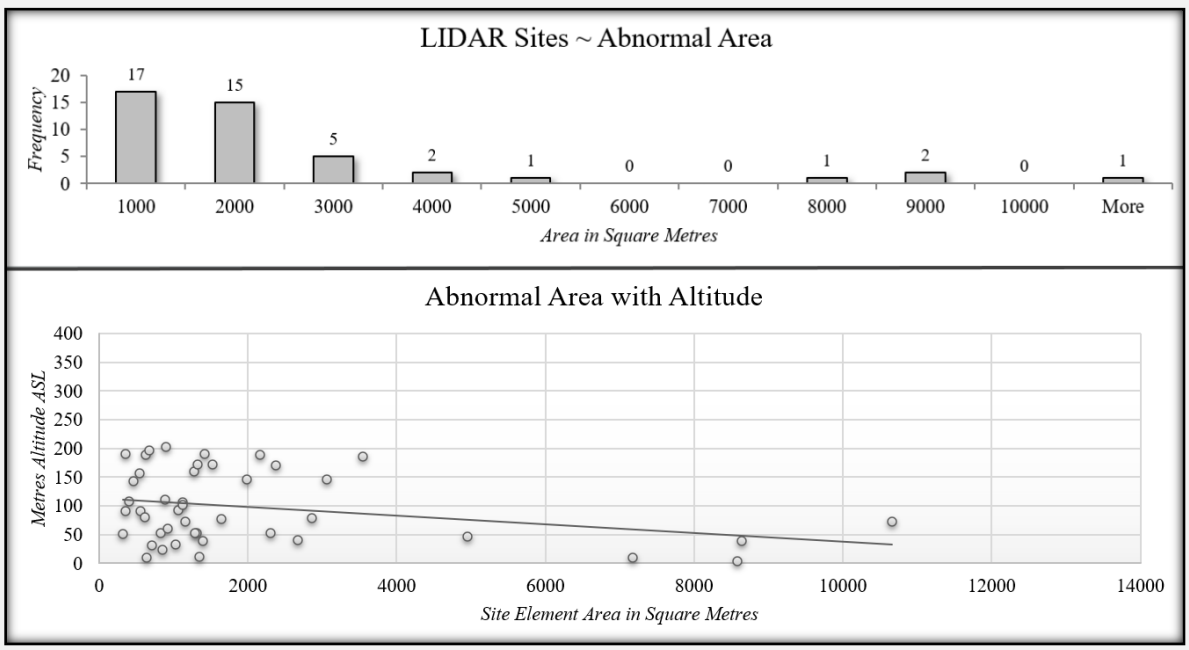


Figure 4.2.4A. *Abnormal castle area and altitude distribution.*

C; CGLO09) are all of large irregular forms, with their shape appearing to exploit their natural settings. These are roughly the average size of ringworks, but the hill at Knepp has been described as a motte, and the site preservation of the others makes it difficult to be certain of their original planned features. The sites of Welton Castle Hill (Example D; CLIN29), Mere Castle Hill (Example E; CWIL01), and Antingham Hall Motte (Example F; CNOR02) provide examples of a series of earthen platforms with a clear motte-like function that deviate from the typical circular 'Christmas pudding' design. Such sites are sometimes listed as mottes by heritage resources but have been excluded in the area analysis to keep the main 'motte' set as consistent as possible. Bardsey Castle Hill (Example G; CYOR11), Cranmers Mound (Example H; CNOT02), and Caxton Moats (Example I; CCAM07) exemplify similar anomalous motte-like features with equally strange adjacent bailey areas. Heritage listing sites sometimes simply refer to these castles as 'medieval moated sites'[10], but they are generally included as qualified 'motte and bailey' castles in listings.

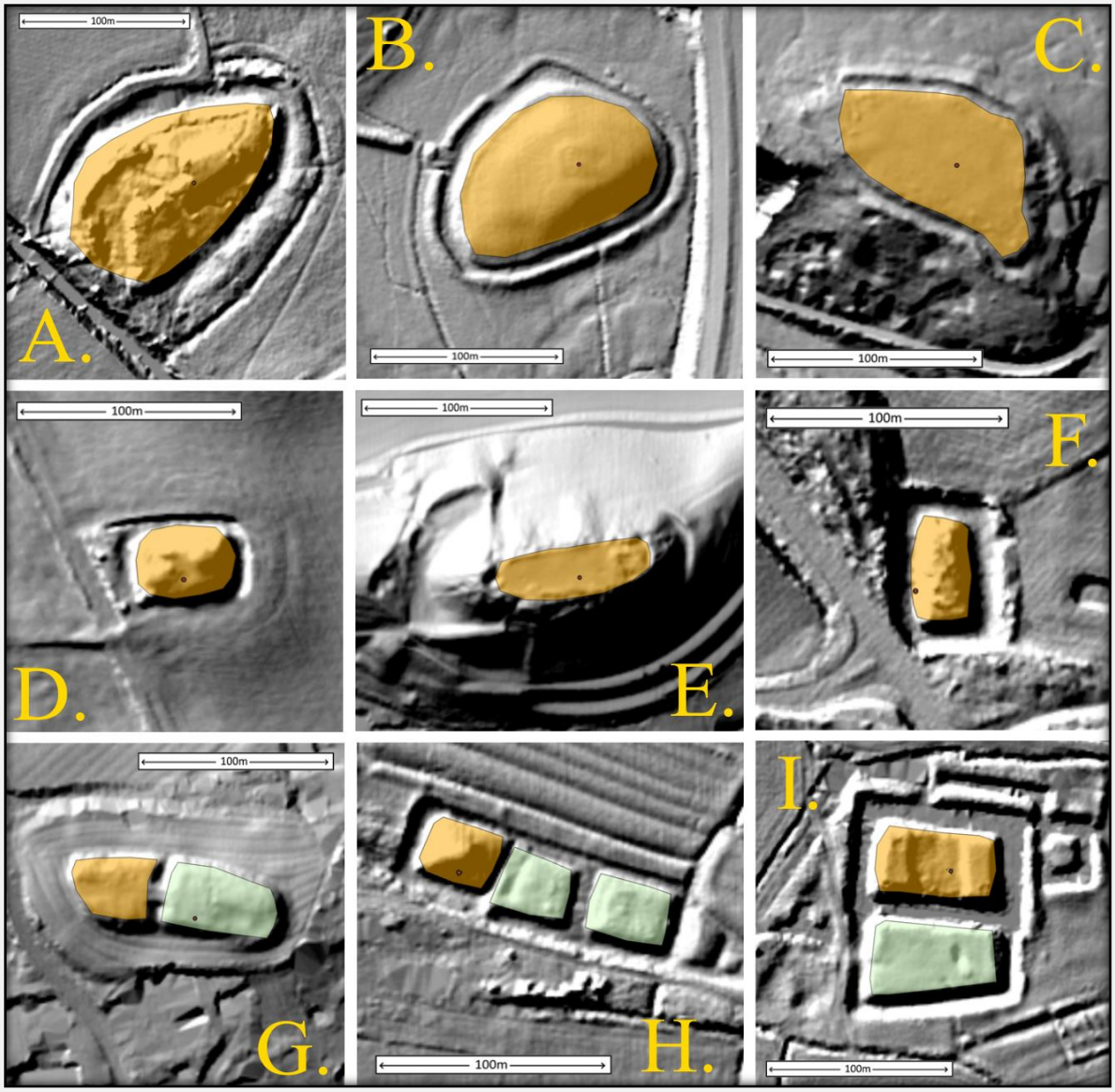


Figure 4.2.4B. *Sample of 'abnormal' castle sites.* (Sample from Appendix II.)

[10] HERR; NHLE: 'Caxton Moats'.

4.2.5..... Additional Patterns in Defensive Typology

In addition to differentiation of the primary fortified types, several reasonably clear groups of castle—bailey (primarily variations of the classic motte and bailey) arrangement were observed in the LIDAR analysis and warrant discussion here, especially as the initial historiographical research into castle studies found little mention of such layouts. The first of these arrangement subsets is that of castles occurring along the length of low ridges, which might be describe as 'ridge-works'. Figure 4.2.5A shows six such examples, although perhaps as many as two dozen can be observed across England. Pulborough Park Mount (Example A; CSUS21), Chartley Castle (Example C; CSTA06), and Beaudesert Castle (Example F; CWAR06) are of the most common arrangement, with a motte at the most defensible high-point of the ridge and several bailey areas leading up to it. Reconstructions of these sites postulate gated palisades with bridges at the crossing into each compartment, presenting a formidable but simple defensive arrangement. Ratley Motte (Example B; CWAR21) has a bailey on either side of the ridgeline, preventing assault of the fort from either direction. Caus Castle (Example E; CSHR22) shows extensive double ditching and manipulation of the south-western ridge where the motte is exposed. Dixton Hill (Example D; CGLO02) includes one large northern bailey, with two smaller baileys leading to the motte. Such sites are all of early Norman origin and represent an intelligent exploitation of natural terrain to achieve the essential functional components of the motte and bailey. The utility of such ridges presents several obvious defensive advantages, and one must consider why this sort of design constituted an outlying siting preference. Hill ridges are anathema to natural water sources to begin with, and consideration of subsistence agriculture was likely an associated limitation.

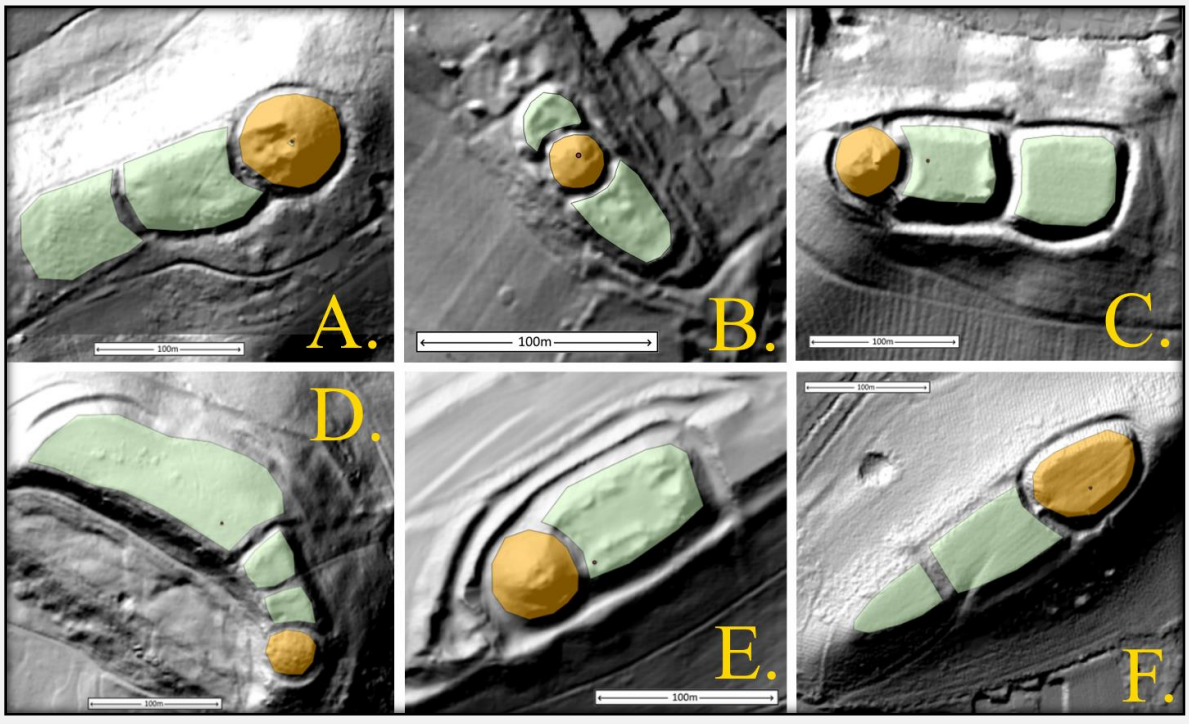


Figure 4.2.5A. *Sample of motte and bailey sites located on low ridges.* (Sample from Appendix II.)

A second noteworthy subset of earthwork arrangements visible through the LIDAR analysis was that of castles built on natural promontories at confluence of two watercourses. The natural erosion on either side of the confluence forms a 'V' shape with steep embankments. This arrangement produces a distinct wedge-like bailey form and well defended motte atop the naturally produced promontory. Some thirty

or so castles with earthworks of this nature exist in England, with many others following similar river-boundary principles on one side but not the other. Figure 4.2.5B gives examples of Binknoll Castle (Example A; CWIL03), Clifford Castle (Example B; CHER21), Uppingham Castle (Example C; CRUT04), Richards Castle (Example D; CHER64), Castle Yard (Example E; CNHA24), and Camp Wood Mound (Example F; CHER72.), all of which have the distinctive 'wedge-like' bailey form, with Richards Castle bailey being the smallest and somewhat kidney-shaped. The combination of the motte and bailey in this arrangement might be subcategorised as 'bell-shaped' for ease of recognition. The motte is always positioned on the point of the promontory with the bailey intercepting access to the sloping access hill left behind from the natural erosion. The slopes of such sites could be easily exacerbated with minimal effort, representing an additional display of intelligent practical site choice by the early Norman castle builders. An initial inspection of such sites suggests they did not typically occur near any significant existing eleventh century population centres. This suggests their builders prioritised building in these defensible conditions and that populations may have been attracted to these new bailey settlements (given their considerable size). The larger proportion of 'bell-shaped' castles to 'ridge-worked' castles identified here may well relate to the nearness of the waterways of the confluence, in supporting the agriculturally subsistent population at the sites.

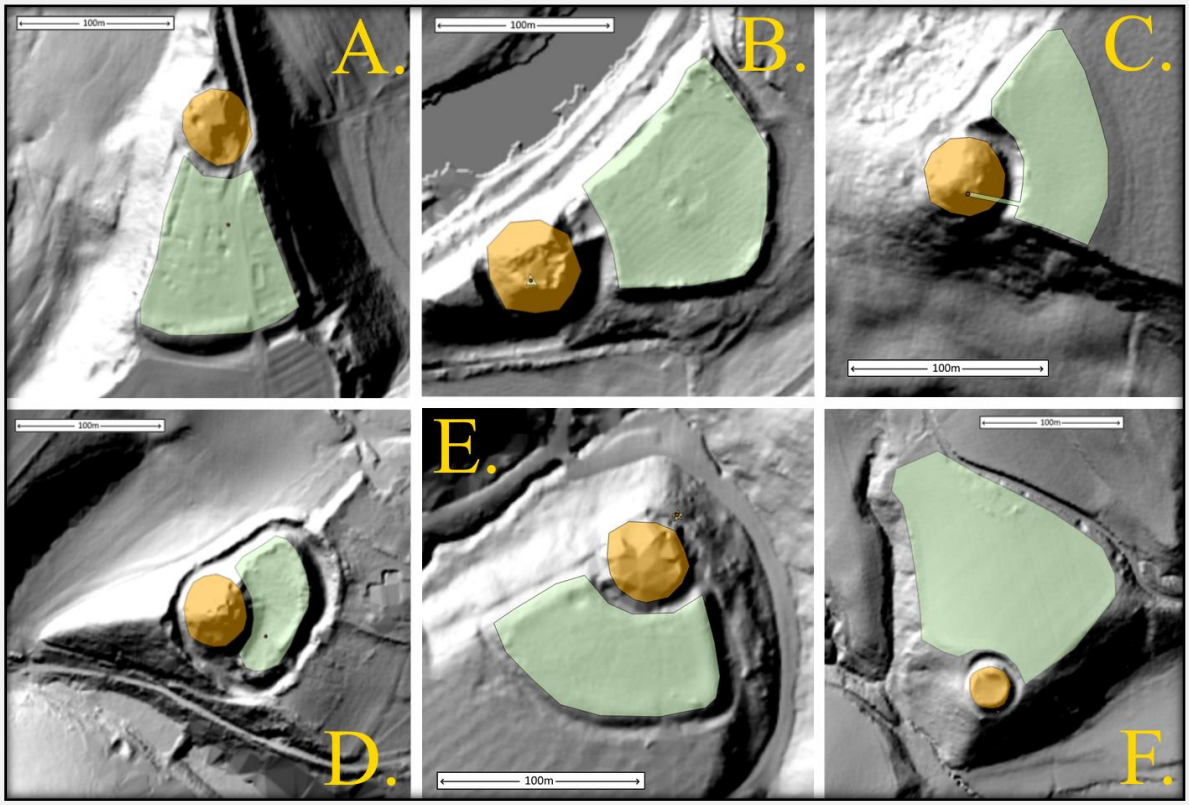


Figure 4.2.5B. *Sample of motte and bailey sites located on the promontories formed by the confluence of two water erosion paths, typically rivers.* (Sample from Appendix II.)

A third and final identified castle—bailey arrangement not generally discussed in the literature is of mottes occurring inside a fully enclosing bailey area, potentially functioning as an early form of concentric wooden defence. Figure 4.2.5C details several examples. Dodleston Castle (Example A; CCHE05) was built in the late eleventh century, perhaps first as a ringwork, and has a strong perimeter moat surrounding the bailey and motte. West Felton Motte (Example B; CSHR87), and Yokleton Mount (Example C; CSHR104) appear to contain small defended baileys with central mottes (although the small motte in West Felton may have been a prospecting mound). Hall Tower Hill (Example D;

CYOR12) is thought to be a motte built within an Iron Age earthwork which was re-used as a bailey. Littywood Moat (Example F; CSTA09) is a double moated motte that appears to have had a narrow bailey, although this may have been initially just a defensive earthwork. Bramber Castle (Example E; CSUS06) began as a timber motte and bailey with a bailey to the south, which was later (twelfth century, possibly in stone) incorporated to form an enclosure castle including the central motte in the design. Although marginal, these sites are significant as they provide a counterpoint to the linear model of motte and bailey forms being replaced by masonry enclosures, and the late popularisation of concentric designs. They are however, much less common than the ridge-works and bell-shaped forms addressed previously. They highlight an obvious weakness of the motte and bailey configuration; in that it separated its motte defensive capacity from its bailey defensive capacity, rather than combining these. Most motte castles have at least 30% of their mound and keep structure fully exposed to potential assault during a siege scenario, while almost all late castle designs have at least one wall surrounding the inner keep. One implication might be that motte functions of physical differentiation of status, visibility or oversight capacity, or replication of traditional features, may have taken precedence over defensibility.

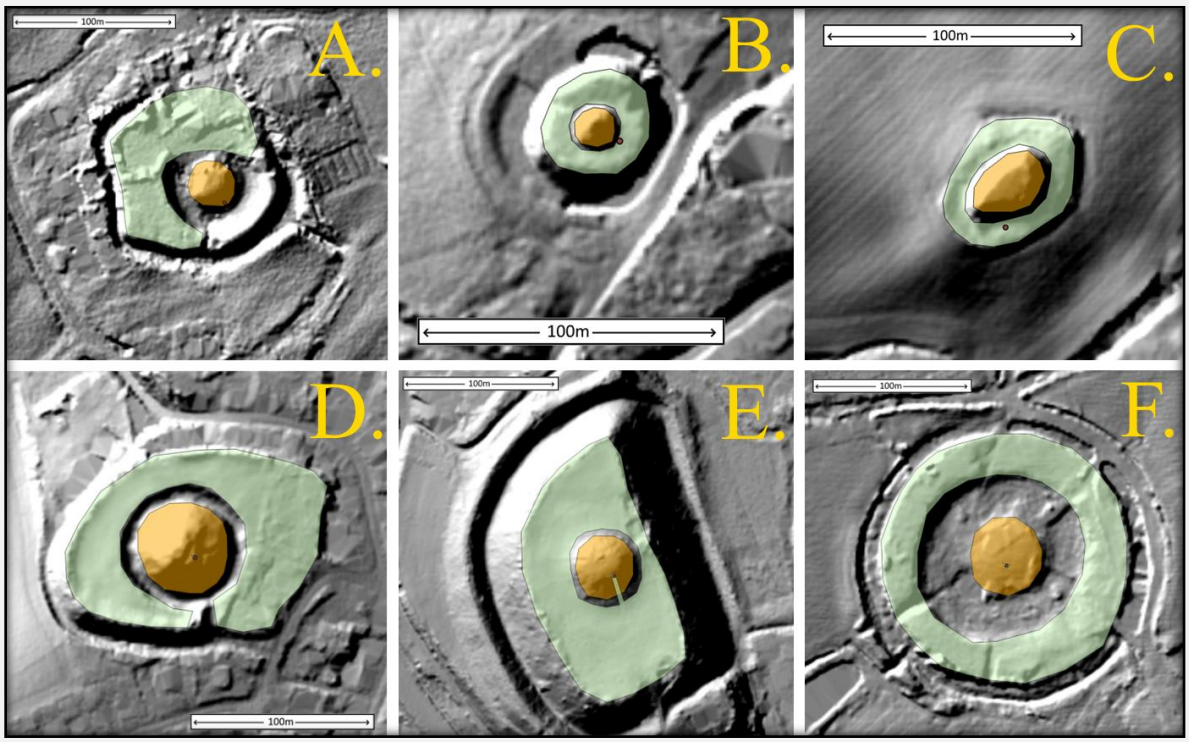


Figure 4.2.5C. *Sample of mottes located within enclosing baileys.* (Sample from Appendix II.)

4.2.6..... Critical Evaluation of Early Castle Typology

Comparison of the range of areal extent of each type of site highlights the markedly consistent variations between the three main groups of motte, ringwork, and enclosure; with the majority of each set being smaller than 2,000m square, 4,000m square, and 6,000m square respectively (see Figure 4.2.6A). The relative proportions of known inner fortified area and bailey area for these ringworks, mottes, enclosures, and anomalous sites are summarised in Table 4.2.6. Within the GIS LIDAR areal site set, occurrence of recognisable baileys at castles was roughly 50—60% across all site types. However, 123 mottes, 65 ringworks, 30 enclosures, and 34 abnormal castles had no bailey area identified. This number was almost certainly lower historically, given the reduced likelihood of bailey survival archaeologically.

Factors impacting bailey preservation include their being rough enclosures that were altered temporally with respect to their growing populations; their towns often expanding well beyond their initial confines and veiling their boundaries; and their being physically less substantial earthwork components compared to mottes and ringworks. The point that the percentages of castle type and bailey occurrence are roughly comparable across the landscape indicates that all castle types utilised or functioned without bailey areas situationally at similar rates. Mottes had a slightly higher association, partially due to their lack of internal space for necessary functional structures, but not a proportionally overwhelming association with known baileys. Additionally, many of the basic elements of defensibility are common between different site types, including exploitation of natural terrain; enclosing outer moats and ditches around grouped castle compartments; and position of the ringwork or motte on the most elevated natural terrain relative to the bailey level.

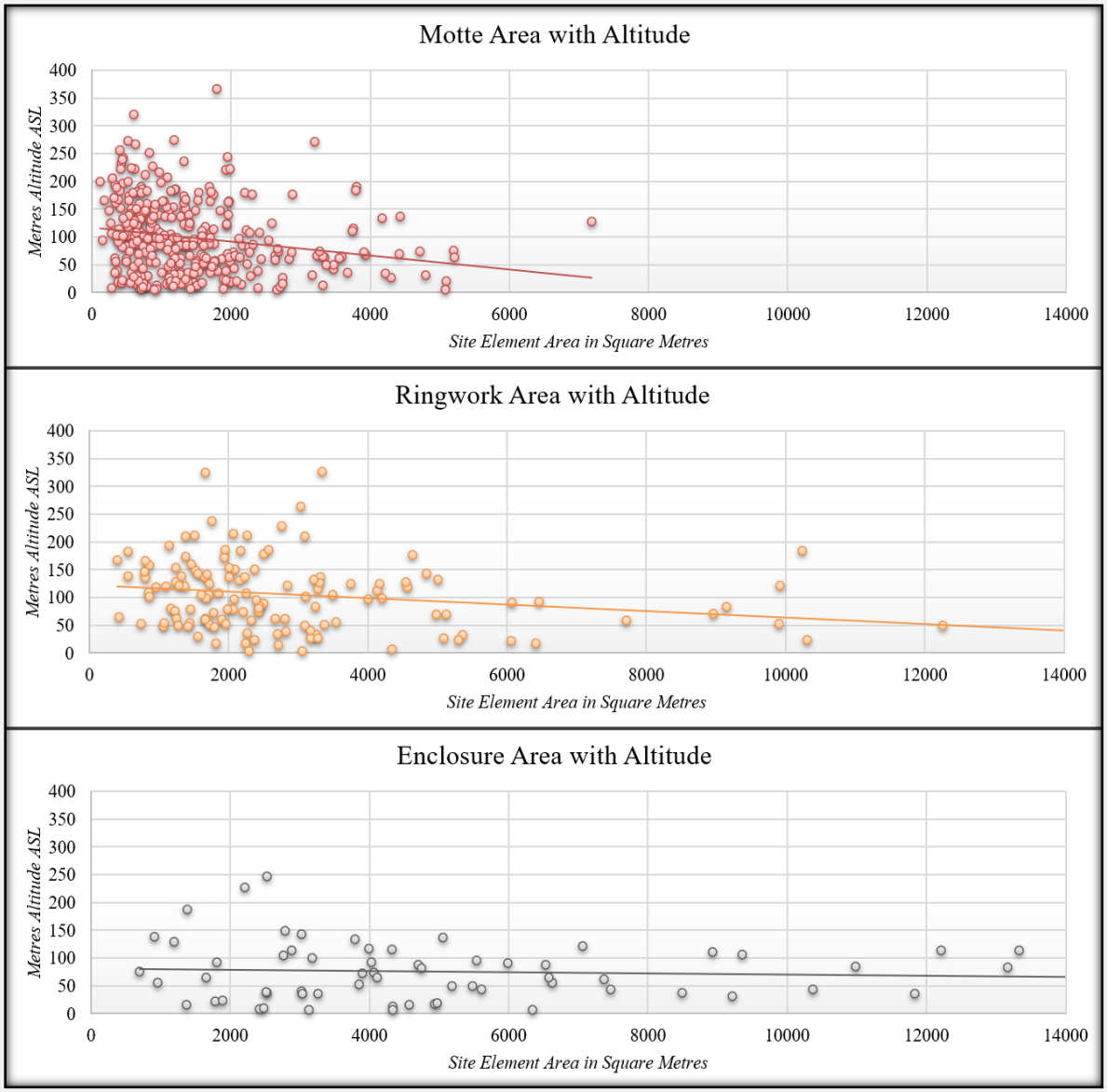


Figure 4.2.6A. *Comparative areal footprint size of castle site types by altitudinal occurrence.*

Table 4.2.6 Typology Calculation Results				
Type:	LIDAR Categorisation:	Percentage of known set (573 tot):	Visible bailey known (321 tot):	Percentage of known bailey set:
No Data:	288	*nil*	*nil*	*nil*
Abnormal:	44	7.7%	10	3.1%
Enclosure:	65	11.3%	35	10.9%
Motte:	330	57.6%	207	64.5%
Ringwork:	134	23.4%	69	21.5%

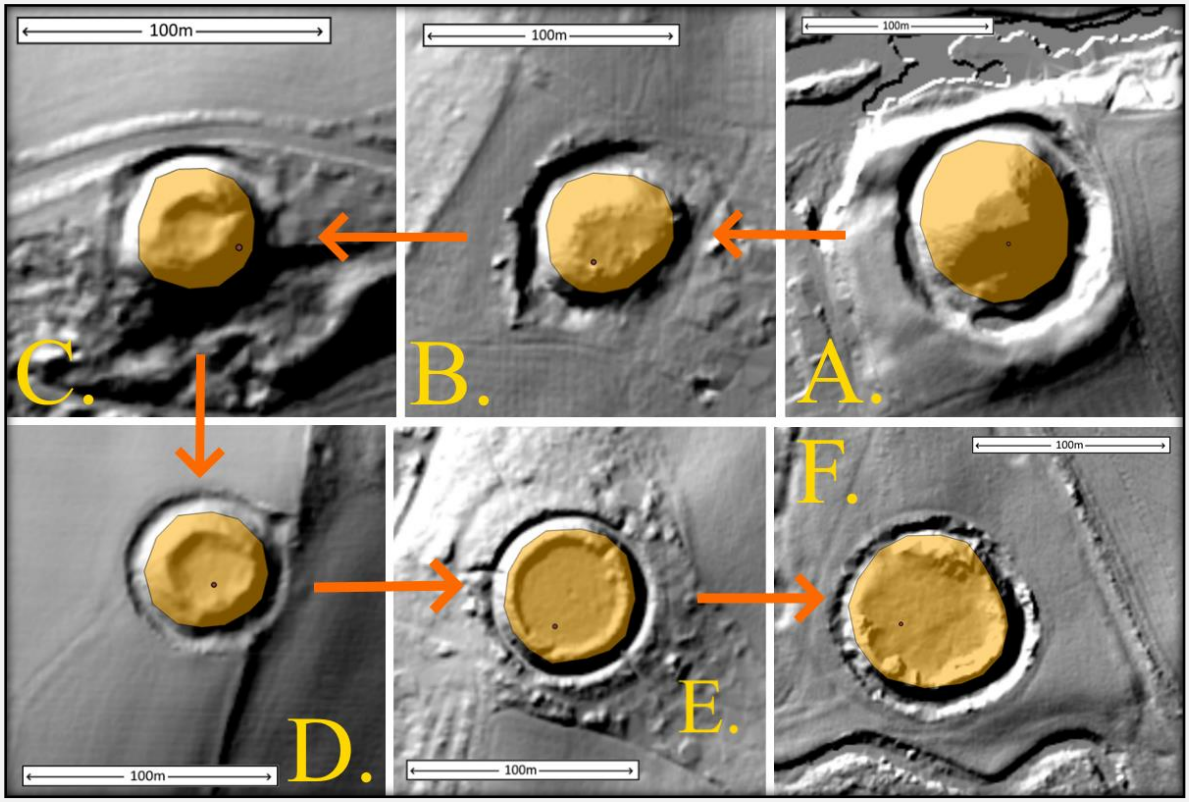


Figure 4.2.6B. *Layout similarity and variance between mottes and ringworks.* (Sample from Appendix II.)

An important element of the areal analysis was the critical categorisation of sites within the four types according to their physical qualities. In some cases, this meant deviating from heritage listing account categorisations or descriptions previously recorded in Dataset 1. For some of the LIDAR samples, this merely reflected that the initial phase recorded in Dataset 1. Did not match up with the final archaeological form of the site which represented the final building phase. However, in other places the discrepancy appears instead to be the result of a conflation of site variations under umbrella terms, especially of 'motte and bailey', as the majority subset. The starkest deviation in results related to ringworks, with 43 sites initially recorded as 'motte' appearing more technically commensurate to ringworks (especially with regard to mound height and width) that were accordingly categorised as 'ringwork' in the LIDAR result (at a stark 32.1% discrepancy). Conversely, only 13 sites initially recorded as 'ringwork' (potentially named as such due to their absence of a bailey) appeared more like mottes and were categorised as 'motte' in the LIDAR result (a more reasonable 3.9% discrepancy). Some of these instances may actually represent discrepancies between 'ring-mottes' and mottes, not ringworks, but the term ring-motte is not universally applied in the literature or the heritage scheduling

resources. Furthermore, all 44 ‘abnormal’ LIDAR types were given initial categorisation as mottes, ringworks, or enclosures by the heritage listing sources, with archaeological uncertainty meshing poorly with required formal designation of historical significance. Of the 65 ‘enclosure’ LIDAR sites, 6 were initially recorded as ‘ringwork’ and 4 were recorded as ‘motte’. The enclosure sites can be excused entirely, as many began as either motte and bailey sites or as ringwork and bailey sites, only to develop into masonry enclosures. However, this markedly high occurrence of discrepancy between sites listed as mottes, and appearing as ringworks in the LIDAR study cannot be ignored.

Figure 4.2.6B may offer some additional insight into the potential roots of this issue. The six castle sites of Little Houghton Motte (Example A; CNHA16), Binbury Castle (Example B; CKEN08), Bothamsall Castle Hill (Example C; CNOT03), Littledean Camp (Example D; CGLO18), Castell Brogyntyn (Example E; CSHR19), and Fakenham Magna (Example F; CSUF09), collectively make up a sliding-scale of typology from a clear motte, to a form equating to a ring-motte, to a definitive ringwork. Any one of these sites could be reasonably grouped typologically to the site before or after it. The functions and relational pattern to adjacent baileys was similarly shared across variations. Additionally, half of all ringworks have no preserved bailey, and the description of ‘motte and bailey’ is more widely known than ‘ringwork and bailey’, despite their now known substantial occurrence at the minority subset of ringworks. As the suitable description of ‘ring-motte’ to describe the intermediary sites is seldom used, even academically, many ringworks (especially those with baileys) are listed as ‘mottes’ by heritage authorities. These authorities are widely referred to by all manner of informal information sources (and new castellology students), and so the issue has been exacerbated. One such example is Kings Hill (CLIN30) shown in Figure 4.2.6C. Here, what appears to be a smaller ringwork and bailey is described in the National Heritage List for England (NHLE) official monument scheduling as: ‘…the remains of a motte and bailey castle which served as the centre of a local manor… …a large earthen mound of approximately circular plan, measuring about 60m in diameter and standing about 2m above the surrounding ground level…’[11] A height of 2m is much more closely aligned to the typical ringwork and other ringworks of 60m diameter are recorded, yet the site is named a motte. Appendix II includes similar examples of ringwork-like ‘mottes’ at CYOR54, CLIN25, CSTA04, CLEI04, CCOR16, and many other sites.

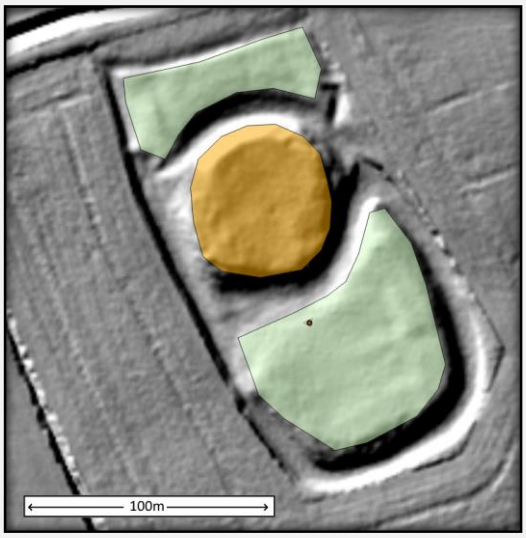


Figure 4.2.6C. *CLIN30; Kings Hill, Wrangle.*

This issue would be less problematic if all early castles were referred to as mottes, for which the motte type could be sub-categorised as a conical-motte, ring-motte, or ringwork-motte. Within such a framework, it might also be easier to integrate the identified forms of ridge-works and bell-shaped plans alongside more well-known examples of kidney-shaped and ovular baileys. However, the convention has been to delineate ringworks and mottes as alternative forms such that either one or the other is used by heritage listing resources. Historic England has published its own guide on the matter, describing ringworks as ‘simple enclosures with an outer ditch and inner bank’ generally of 20—50 metres diameter, with mottes as ‘flat topped circular mounds’, and with baileys also being ‘enclosed by a bank and ditch’ but being subsidiary areas.[12] This terminology conforms closely with TGG’s critical

[11] NHLE; ‘King’s Hill’.

[12] Historic England 2018, p.2.

assessments, and the scholarly definitions detailed in Chapter Two. It would appear then that the official scheduling authorities are trapped by the same issues of terminology, as they themselves rely on deference to existing accounts and excavation reports for reference. Both the ringworks and motte castles are reported to have served similar roles as administrative manorial centres, military bases, and lordly residences. Thus, the conflation of ringworks and motte castles is entrenched within castle studies, and it highlights the complexity and lack of definitional clarity around this body of early timber castle sites in England. Ultimately, unless further excavation reveals a fundamental difference in the functions of the motte and ringwork, the issue remains largely academic semantics in its implications for the current study. Given these shared functions, the focus of the following proximity and town-shift analyses is largely limited to the division of early timber and later masonry architecture.

4.3 ..... Observations on Castle Baileys

As this thesis focuses primarily on the economic influence and role of castles, it must be emphasised that the bailey can be viewed as more than just a component of a compartmentalised fortification arrangement. The baileys observed in the area analysis are of sufficient scale to suggest most castles supported substantial directly adjacent populations relative to the total landed population of England at the time. The function of the bailey is less disputed than the enclosure, motte, or ringwork compartments, and might be more readily compared in character to the Saxon burh; in that it was built to contain and protect the dwellings and craft-spaces of the local population and preserve material goods and inhabitants. Baileys comprised palisaded platforms which are thought to have contained residences of specialists and garrisons working in the employ of the lord, alongside storehouses, kitchens, blacksmiths, stables, and other production and storage facilities. Where bailey walls were re-built in stone, foundation ditches were cut through the surface clays to compacted gravel or bedrock where possible.[13] No doubt the larger observed baileys contained higher populations, probably including a higher proportion of unskilled and non-military inhabitants than in small baileys. In Chapter Two, several scholars' observations were noted that castles catalysed the growth of new settlements, but that the extent of this stabilising influence has been conjectural. The bailey appears to have formed an important element of an unofficially standardised Norman town-plan that was enforced as a built standard across England in the eleventh and twelfth centuries by tenant barons. As addressed below, the castle and church were central to the plan, and the bailey or baileys (as growth pressure required) provided defensible enclosures for settlement and expansion. The following section focuses on bailey area as a measurable component of the LIDAR castle site data and offers some consideration on how the castle economy operated holistically through these component parts.

4.3.1 ..... Bailey Area Results

Figure 4.3.1A shows the size and distribution of the 321 LIDAR study castles with baileys. The histogram shows that around half (54.5%) of these baileys had an area of 6,000 square metres or less. This positions the average bailey area as roughly equivalent to the average enclosure castle; 33% larger than an average ringwork; and three times the size of the typical motte. The larger 50% of bailey areas vary vastly in scale from 7,000—30,000 square meters, with only 6 sites exceeding 30,000 square metres. Bailey location indicates a slight preference for lowland areas, but examples can be found of baileys across nearly all altitudes including some larger, highly elevated outliers. Castles sometimes

[13] Cannel and Tabraham 1984.

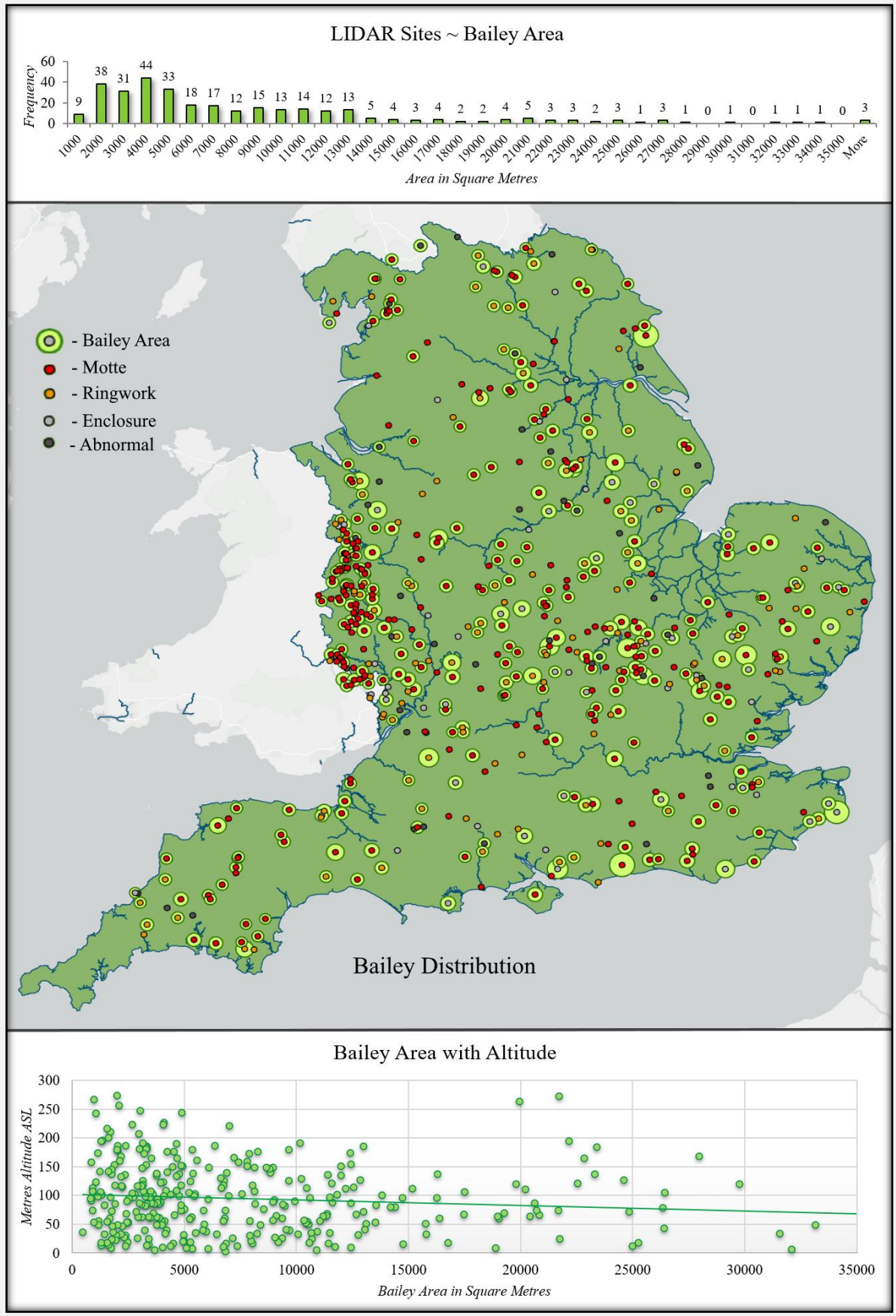


Figure 4.3.1A. *Distribution of castles by typology - highlighting associated bailey area by size.*



Figure 4.3.1B. *A: Reconstruction of Totnes Castle by I. Lamper. B: LIDAR overview of Totnes. C. The area included as certain bailey area in Appendix II.* (After Historic England, accessed online at: <https://historicengland.org.uk/services-skills/education/educational-images/totnes-castle-totnes-9674>)

had multiple ephemeral baileys beyond the typically more well-preserved inner bailey (often keeping its kidney shaped form). While most castles had the one bailey, some had two, and others more than two. Several castles from the study were observed with their bailey area spread over three compartments, as at Cainhoe Castle (CBED03), Yieldon Castle (CBED17), Crondall Barley Pound (CHAM11), Kilpeck Castle (CHER44), Barrows Castle (CLIN05), and Whorlton Castle (CYOR87). Very few have more than three delineated bailey compartments, but Edwyn Ralph Motte (CHER36), Mileham Castle (CNOR10), The Lindsey Mounts (CSUF18), and Castle Combe (CWIL05) offer example of arrangements of four or more. Figure 4.3.1C compares the size of castle area with adjacent bailey area on sites with both features and the result is a visibly marked positive correlation. Therefore, the larger baileys typically occurred at the sites of substantial castles, regardless of typology, and vice versa for small baileys and mottes. Given that larger castles were generally constructed by the more powerful tenants-in-chief and the king, the influence these individuals held over the planned and inadvertent growth of new castle-adjacent settlements within the kingdom appears impressive from the bailey size evidence alone, reinforcing that such correlations were probably more deliberately intended than is sometimes credited.

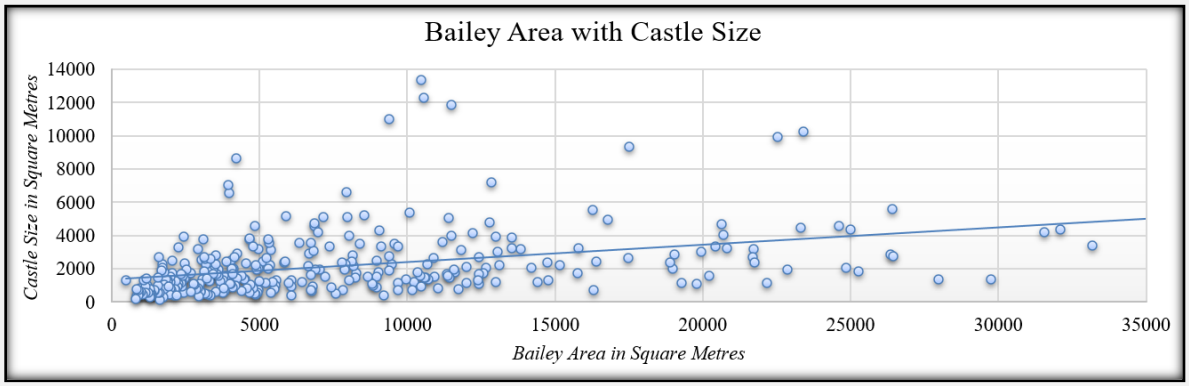


Figure 4.3.1C. *Relative size of bailey area to 'inner fortified' castle area.*

To complicate the association of town success with bailey size, some of the best-preserved baileys represent settlement locations that ultimately failed as permanent, established population hubs - thus resulting in 'green field' preservation. These must have succeeded for some time (long enough to warrant construction of a bailey beyond just a ringwork or motte), but were not built over by later medieval, early industrial, or modern continuations. It is those mottes enmeshed within modern towns and cities (or which have been entirely lost to development) that represent long-term success in catalysing growth. To illustrate the potential negative effects this might have on the collected data, Figure 4.3.1B highlights the example of Totnes Castle (CDEV26). Component A. shows a reconstruction by Historic England based on the medieval street plan and path of the old town wall. Component B. shows the LIDAR layer of the GIS with this information overlaid. Component C. details the record of bailey area for Totnes in Appendix II. It is almost certain that the large south-eastern extent of the medieval town comprised an original or expanded bailey. However, due to the growth of the settlement beyond these constraints, only the old 'inner bailey' of the castle was preserved as a green space. As the study was limited in scope to mapping well-preserved earthworks, sites like Totnes inevitably generated unrealistically small bailey area calculations. While it has already been acknowledged that many of the baileys were in too poor a state to include (without an extremely extensive survey into the historic plans of each location), a further implication is that many of the larger castle sites without baileys that do have some modern form of adjacent settlement likely fall into this 'lost-bailey' category. Critically, the broader state of bailey preservation seems of sufficient quality to

maintain the utility of the study sample, and at most larger castle sites at least some portion of the earthworks have remained intact. Nevertheless, the utility of the data is thus most accurate when considering 'inner bailey' area of castle sites, likely being an appropriate approximation of initial local settlement size. In line with Creighton's assessment that the settlement landscape was ever shifting, the bailey data are perhaps also best considered in their relevance to the eleventh and twelfth centuries.

4.3.2..... Relative Size to Castles and Local Populations

If the area of the castle bailey is utilised as an estimative measure for of its medieval population, the statistical utility of the bailey area size dataset can be strengthened by calculating their correlation to the 1086 population distribution. If these new bailey sites were populated by nearby settlements, areas of higher population ought to have nucleated more readily to newly established castle sites under the Norman administration. The great majority of castle sites were founded from 1066—1150 CE. The results of the radial and Thiessen proximity analyses (detailed further in Chapter Five) can be used to observe any correlation between local late Saxon population distribution around castle sites and the bailey size that was developed in (typically) the late-eleventh and early-twelfth centuries. Figure 4.3.2 shows the results of comparing the population from within 5 kilometres of each castle site (top graph) and of settlements closer to the site of the associated castle bailey than any other castle site (bottom graph). The result is a positive correlation in both instances, indicating that those areas which had a higher local hinterland population in 1086 correlated with larger castle baileys. This argument could be reduced by critiquing that large castles were merely built on large population hubs, which were then transitioned into bailey defences; or, that larger castles and thus larger baileys simply occurred in those areas best suited to settlement and were thus already the most settled in 1086.

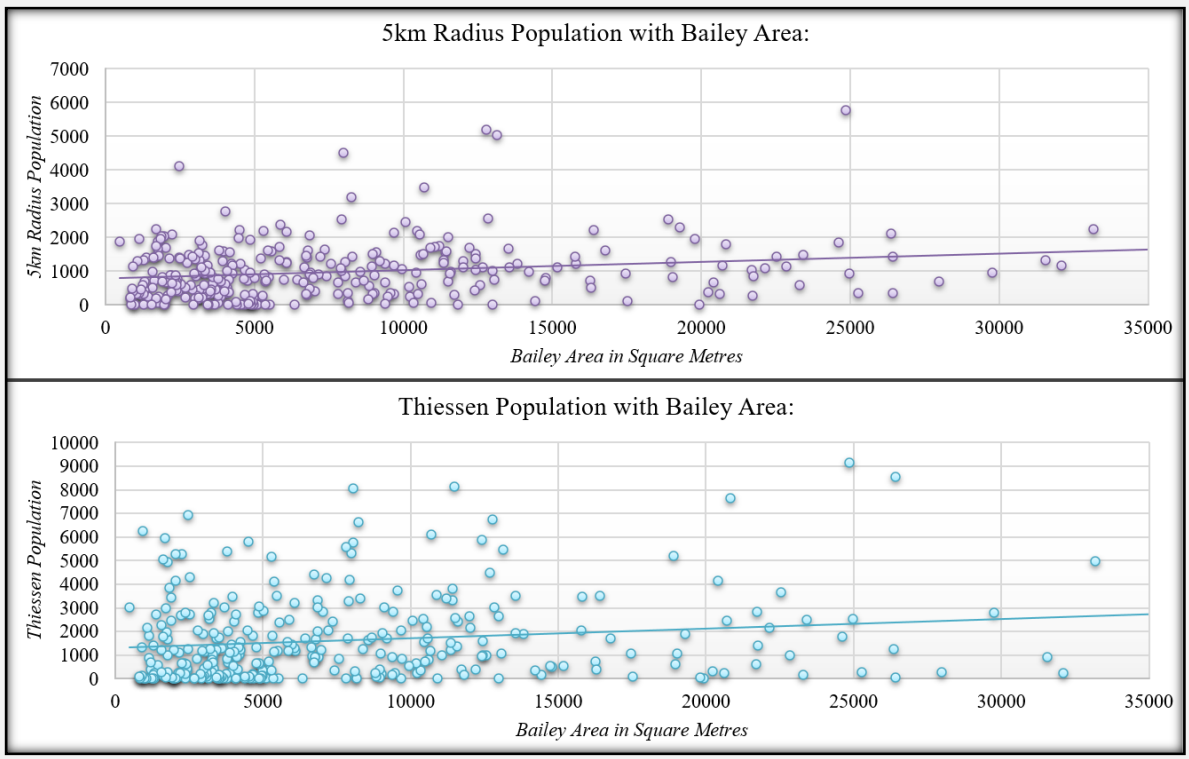


Figure 4.3.2. *Relative size of bailey area to local hinterland populations (Thiessen & 5km radial).*

However, while it is known that some castles were indeed built on Saxon population hubs, many others were built on previously unsettled ground, as is clearly indicated by the 1086 population data (see Chapter Five). More specifically, early castles at sites like Castle Combe (CWIL05), Elmley Castle (CWOR07), and Merdon Castle (CHAM14), were built in largely unsettled locations, but all had recorded eleventh century populations in their local hinterlands, and all went on to develop substantial castle baileys. Furthermore, it is not necessarily problematic to confirm that eleventh century Saxon population hubs situationally correlated with subsequently established castles with large baileys. This appears to be the case at many castles such as Dover Castle (CKEN14), Lincoln Castle (CLIN21), and Shrewsbury Castly (CSHR78), among others. Indeed, this was the typical outcome for a majority of the major Saxon towns. However, there are various substantially sized Saxon population hubs that have no known castle site; showing that castle siting was not correlated solely with the eleventh century population distribution. In summary, it can be reasonably argued that while the eleventh century settlement pattern did shift in subsequent centuries, locally it had a measurable impact on early castle layout though the element of bailey size. Moreover, as bailey size correlated positively with castle size, the 1086 population pattern indirectly influenced the scale of subsequent 'inner' castle elements.

4.3.3..... Churches in Castle Baileys

A further preserved element of castle sites offering insights into their function within the medieval landscape is that of churches and chapels. The Normans built many more churches in England than they built castles (some 7,000 in the century following 1066).[14] The frequency that churches surviving from the eleventh—thirteenth century date occur in close proximity to castle sites is high enough that church position is often employed by castellologists to justify the inclusion of related earthworks as having a Norman date.[15] Figure 4.3.3 gives several examples of castle sites with adjacent Norman churches.



Figure 4.3.3. *Position of early Norman churches and early castle sites.* (Base images from Appendix I.)

[14] Barlow 1979.

[15] TGG: various.

Castle Thorpe in Buckinghamshire (CBUC05) shares the site with the twelfth century Church of St Simon and St Jude. The church here is clearly contained within the original inner bailey. Wymondley Castle in Hertfordshire (CHRT09) is located alongside the Norman Church of St Mary the Virgin. The layout here is more complex, as the castle appears to have included several baileys. More visible in LIDAR, the church might have had its own small bailey extending north-westward. Lydford Castle in Devonshire (CDEV01) is similarly alongside the eleventh century St Petroc's Church. A Norman ringwork existed to the west, on the bailey the church now sits in. The new castle was built with the keep entrance close to the church, as shown. Laysters Motte in Herefordshire (CHER47) is adjacent to the twelfth century Church of St Andrew. A bailey is less visible here on the LIDAR layer, and the church may have freely stood adjacent to the motte and castle. Bicknor Castle in Gloucestershire (CGLO11) shares the hill with the eleventh century Church of St Mary the Virgin. This is a fine example of a ringwork and bailey with the church enclosed within the bailey. Some larger ringworks had a church inside the ringwork boundary. Finally, Almeley Castle in Herefordshire (CHER10) is sited alongside St Mary's Church which dates to the twelfth century. The earthworks here are too degraded to tell where the bailey outline passed the church, but the castle and church were again very close in proximity. All of these churches were oriented roughly eastward to the Holy Land, a detail which must have had implications for total castle design, especially within more complicated naturally defensible landscapes.

This practice of including a church in the inner bailey appears in many other castle sites, including but not limited to Wolverton Castle (CBUC16), Berkley Castle (CGLO04), Whittington Motte (CLAN19), Benefield Castle (CNHA04), and Swerford Castle (COXF14). Sites where the bailey boundaries are unclear, but the proximity of the castle and church is very close are even more common, as can be seen in the examples of South Moreton Castle (CBER08), Long Crendon Castle (CBUC12), Maplas Castle (CCHER08), Anstey Castle (CHRT01), Mirfield Castle Hill (CYOR58), and Gilmorton Motte (CLEI04) (see Appendix I for a full overview). The dating evidence shows that castles were often built adjacent to existing church sites, and that churches were often also built next to or inside of castle sites, including in the centuries after known castle disuse. This pattern suggests deliberate cooperation of institutional power between clerical and secular lords within the emerging Norman castle-town enterprises. The centralisation of Christendom around the seat of the bishop of Rome had increased in the eleventh century, from a regionally fractured Christianity in prior centuries.[16] The Norman kings had gained a reputation as aggressors in their conquests in England, Italy, and the Holy Land, and thereafter made deliberate efforts to improve relations with the pope and to strengthen their image as 'sons of the church' in the twelfth century.[17]

Under Norman administration, monastic orders expanded (especially in the north where they had been virtually eradicated), clerical marriage was abolished, most of the major cathedrals and sees were re-established, and clerical power was centralised around Canterbury.[18] The rising Norman aristocracy and clerical powers of England sought simultaneously to bolster their developing positions of institutional authority, and this appears to be manifested archaeologically in this close church-castle site layout. Speight has observed that occurrence of at least one church or chapel within the total castle plan was nearly ubiquitous.[19] The practical contemporaneity of this built adjacency seems to go beyond the mere necessary occurrence of a church building in a small compact castle settlement. The church would have provided a locus of religious activity and authority, propagated social stability through moral law, and supported monarchical centralised order.[20] The castle would have protected these functions with the inclusion of the physical church inside its palisade, and later curtain walls, while secular lords supported clerical and monastic productive enterprises in their demesne. The physical occurrence of these two

[16] Green 2022, p.160-165.
[17] *Ibid*, 164.
[18] Green 2022, p.165-170; Barlow 1979, p.65,177.
[19] Speight 2004, p.275.
[20] Barlow 1979, p.53.

monuments of authority and order side-by-side on such a recurrent basis in the preserved record appears highly deliberate and was likely a standard expectation in planned early castle locations. Speight's observation that chapel location often shifted from the more public bailey to the keep, where it served as a private seigneurial functional space close to the lord's residence, as castles developed over time, indicates that the physical integration of these two forms intensified over time.[21]

4.3.4..... Discussion of the Role of Baileys

The elements discussed above indicate that the bailey was, as has generally been presumed, an important component of the castle enterprise. Baileys are thought to have been established as simple initial defensive enclosures, connected to the motte via a palisade. One excavated Norman castle indicated the bailey was constructed prior to the motte and keep.[22] Excavation of earth and gravel from bailey ditches may have been used for the construction of the motte mound.[23] It is likely that the construction of 'inner' fortification and settlement earthworks occurred simultaneously across castle forms. The bailey also typically contained essential supplies and personnel, with retreat to the motte likely being a last resort. Portchester Castle is one of many excavated examples of an inner bailey containing a well for drinking water.[24] Wells were only later enclosed within keeps as a result of competitive siege warfare. Kitchens and granaries have also been identified in bailey excavations, reinforcing their importance in supporting the noble household. The observations of correlation to local population size and church siting help highlight the non-bellicose qualities of the castle bailey. As is discussed in Chapter Two, Norman authority in England was well established by 1080 CE, and the seigneurial builders of the many castles founded and expanded after this date may well have focussed castle siting location and planning considerations on social order and control of and agricultural surplus and market production economies



Figure 4.3.4. *Reconstruction of Skipsea Castle.* (After Historic England 2018; after P. Dunn.)

[21] Speight 2004, p.276.
[22] Waterman 1955, p.87.
[23] Brown and Soden 2007, p.29.
[24] Cunliffe and Munby 1987.

as much as they focused on potential architectural and topographic defensibility and viability of presentation of status and authority. Bailey populations were either encouraged or coerced into living in new Norman castle-towns across England, resulting in the wide occurrence of arrangements of the sort envisioned in Dun's reconstruction of Skipsea Castle (Figure 4.3.4) across England.

It was the seigneurial prerogative of the lord to redirect local economic exchange within the sphere of the castle's influence, including the common establishment of fishponds and orchards, relocation of markets and fairs to castles, and siting at important crossroads and river crossings. Planning of individual built elements of the bailey, especially including preserved chapels, further indicate that everyday functionality often 'overrode security concerns.'[25] The argument that castles, as a whole, were substantially influenced by economic connections and concerns can be framed largely with respect to the development of the bailey; as that archaeologically element of the castle plan which indicates its historical local success as a developing enterprise, alongside its monumental defensive architecture which constituted a massive expense for its tenurial lord. Maintenance and expansion of the combined castle-town project was only achieved through skilful and deliberate exploitation of wealth and labour from within a primarily agricultural feudal economy, a point which is expended in the following two chapters. The wide-open green spaces of preserved castle baileys shift our attention to the still-standing architectural elements of walls and keeps, but in their prime, the bailey would have been filled with a range of structures serving the castle's multifunctional requirements, including economic functions.

4.4..... Conclusions

The main castle dataset (Dataset 1.) produced a range of initial findings from which we can assess some of the common characteristics of castle size, location, and use across the study period of 1000—1300 CE. Foundation and site use dates indicate that the vast majority of early castle siting and building, especially of timber construction, occurred under the three Norman kings (William I, William II, & Henry I) and Stephen of Blois (1066—1154 CE), with some early masonry design experimentation eventually giving way to a transition to a majority of masonry castles under the Angevin and Plantagenet kings. The data for continued site use up to 1300 has revealed a massive dearth in the available information on especially early timber sites compared to their relatively well documented masonry counterparts. Some degree of pre-Norman site fortification was observable at important antecedent castle locations, but the overwhelming bulk of Norman castle sites were original foundations. The mapping of the castle sites within the natural landscape indicated that they were often built in valleys, especially where rivers were known to be navigable, and seldom built on ridges or highland areas (beyond a few key outliers and border zones). The application of LIDAR terrain models in analysing typology has successfully generated novel findings, alongside the output of Appendix II, which itself expands upon the limited but developing use of this digital asset in castle studies. It is critical to reemphasise that these LIDAR statistics and site plans will inevitably be inferior to carefully compiled archaeological surveys of the monuments. Additionally, it is clear that a large number of castle sites have already been lost to agricultural and structural development over time, and only extensive and careful survey will provide evidence for the more ephemeral elements of castle plans, such as additional baileys which have been built over. Nevertheless, given the national scale of analysis attempted here, and the limited scope and resources of this research, the LIDAR areal plans do provide useful data for the general scale and location of inner and outer fortified site components that will be discussed further alongside other extramural landscape data in subsequent chapters.

[25] Speight 2004, p.276.

Mottes and ringworks constituted the primary early castle types, with mottes comprising a key subset of more militarily oriented outliers in the Welsh marches. The categories of motte, ringwork, and enclosure, as well as outliers, have been thoroughly assessed, with the findings demonstrating statistically clear size groupings and a shared low altitude preference. The critique of the terminological orthodoxy within castle studies has raised an important potential issue regarding the conflation of ringwork castles as mottes, especially in heritage records, but also in many academic publications. This might be best addressed with further excavation of ringwork castles, but for the purposes of this study suggests scrutiny should focus on differentiating timber and masonry sites, with masonry phases constituting an important indication of perceived value by castle overseers, regardless of specific site layout. An analysis of castle baileys has identified a positive correlation between local hinterland population and bailey area, upon which economic considerations of castle siting have been posited, as one element within a range of seigneurial concerns. This framework of the castle site, as a holistic feudal enterprise, will represent a base of further theoretical exploration as the following chapters proceed to explore the spatial relationship of castles to nearby settlements located within their economic demesne hinterlands and commercial spheres.

5.0..... Chapter Five: Spatial Proximity Analyses

5.0.1..... Introduction

The Domesday Book records provide the medievalist researcher with remarkably extensive data for the population of England in 1086 CE. As the distinct majority of castles in England across the 1000—1300 study period were founded from 1066—1150[1], analysis of the relative spatial proximity of the 1086 population, by manorial location, alongside the introduced castle sites, should highlight statistical correlations which clarify the economic role and influence of the castles. Therefore, the two proximity analyses which spatially mapped the relationships between the castle and settlement sites from Datasets 1. and 2. are outlined in this chapter. Again, it must be emphasised that the manorial points in Dataset 2. represent locations of geld taxation of populations within a local tenurial area and were not always singular nucleations. To initialise, a thorough introduction to the Domesday Books data and their contributions in the existing scholarship is given. This is incorporated into a set of propositions about the nature of the early medieval English economy and the measurements appropriate for assessing its component parts. The role of the castle as a built element, influencing and influenced by the developing settlement landscape, is theorised. An economic model of castle function with parameters testable through proximity is developed, and then tested through the two proximity analyses. The first analysis method examines the frequency of settlement occurrence within a 5-kilometre radius of each castle site, to identify nucleation rates and settlement-adjacent preference in castle siting. The second method relates all settlements from the Domesday data to one or another castle site with Thiessen polygons, to identify how regional castle density might have affected the degree of influence settlements had on castle use. Building on the framework established in Chapter Four, the intent is to assess the degree of influence that the eleventh century manorial population distribution, representing a mappable metric for the feudal agricultural economy, had on the siting, long-term use, and masonry development of early castles across England. A small degree of inverse influence may have also occurred from 1066—1086, under William I, with castles already affecting population location shift.

5.1..... The Eleventh Century Population and Economy

5.1.1..... The Domesday Book Data

The eleventh century data for these analyses came from the Domesday Book (see section 3.1.3). The Domesday Book is a record (*gewrit*) compiled by order of King William I, which was complete in 1086 and initially kept in Winchester (originally titled *The Book of Winchester*). The text itself is composed of two separate documents which represent two sets of English counties. The larger book deals with 32 counties and is known as the 'Greater Domesday' book. The king's seneschals (*legati*) composed this record through six circuits of counties, as detailed in Figure 5.1.1. The smaller covers the three counties of Essex, Suffolk, and Norfolk and is known as the 'Little Domesday' book and is sometimes considered as the seventh circuit.[2] Information was collected by the king's officials at the county court with attendants from the manor in question – including (recently relocated) French and English tenants.[3] The works were given the 'Domesday' name by eleventh century chroniclers not because they passed judgement, but because like the decisions of the Last Judgement, they could not be contradicted by

[1] See Chapter Two and Dataset 1. for castle foundation dates.

[2] Erskine & Williams 2003, p.1-3.

[3] McDonald and Snooks 1992.

appeal.[4] The Anglo-Saxon Chronicle exclaims that King William I sent his men to every shire to count the number of hides, and their value, and what value he himself was owed.[5] In short, the Domesday Book made an account of all the taxable land of England and broke down the assets into categories and types. In addition to the size of land plots, the number of local resources, and the quantity and status of people was also recorded. Many of the inhabitants were happy to cooperate with the commissioners, as the record also guaranteed their rights and position within the manorial feudal structure King William was solidifying.[6]

The Domesday commissioners are recorded as people of 'the highest rank and authority' and were deliberately sent to survey lands where they themselves did not hold manors.[7] These assessors recorded details in accordance with manorial boundaries, noting more precisely: who held the land under King Edward; who held it under King William; how many hides of land there were; how many ploughs and plough-hands; how many villains, cottars, slaves, freemen, and sokemen there were; how much woodland there was; how many mills and fisheries; what lands had been added or removed from the estate; and what rents and taxes could be collected.[8] Modern scholars have noted that there are a range of inaccuracies, inconsistencies, and conflations in the Domesday records. It is also difficult to compare the Domesday entries to earlier Saxon landholding records, as the different metrics and terminologies that occur regionally are agglomerated under the 'hide' metric. Domesday scholars agree however, that the data are still extremely detailed and useful when it is understood that the record collators were often roughly estimating and approximating rather than giving exact numbers and names.[9] 19,970 manor listings were translated by Morris in 1975 and digitised by Palmer in 2008, of which 15,230 were used in the study (with 6.1% of the population being unmappable).[10] As detailed in the methodology, manorial geld value (holding value) and total population were both recorded in Dataset. 2. and then mapped.

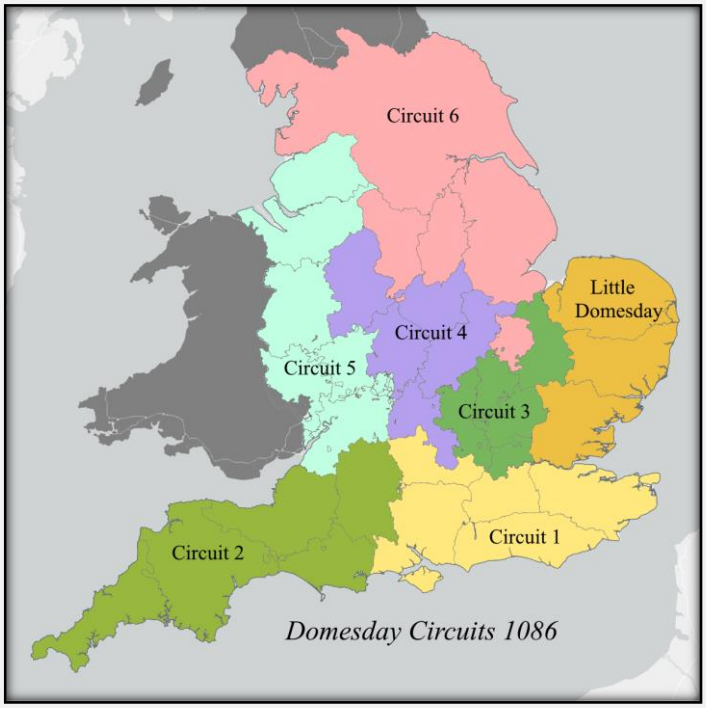


Figure 5.1.1. *The c.1086 Domesday circuits and Little Domesday.* (With counties modified from Brookes 2020.)

5.1.2..... The Population Data Distribution

The population of eleventh century England was primarily agricultural, with peasant classes ranging from freedmen to slaves, and intermediaries of villains, bordars, cottars, and others.[11] The total number of individuals recorded amounts to some 270,000. However, this number has been assessed as counting only the heads of households and must be multiplied by some factor to achieve a population estimate

[4] Fleming 1991.
[5] The Anglo-Saxon Chronicle.
[6] Erskine & Williams 2003, p.3.
Ibid, p.5-6.
[8] Erskine & Williams 2003, p.6.
[9] Fleming 1991, p.14-16.
[10] Morris 1975; Palmer 2008.
[11] Darby 2003, p.31-32.

for 1086. Darby, in reviewing early estimates, has suggested a number in the range of 1.3—1.5 million, with a household average of 4-5 persons.[12] Hinton suggests caveat alterations to account for mission portions of the population might have brought it to around 2.5 million.[13] The population of England grew dramatically from 1086—1340 CE from some 1.5—5 million, indicating widespread stability across most of the study period.[14] Population growth and its calculation are discussed further in Chapter Six, but the figure of 1.3—2.5 million is now generally accepted in scholarship.[15] The majority of records list only plough-hands, freedmen, and slaves, but unusual population elements are also recorded regionally. For example, mounted riders (*radknights*) were recorded on the border of Wales, a variant of freedmen (*coliberti*) in the north, with situational inclusion of professions such as shepherds, smiths, or carpenters also recorded.[16] Slaves amount to some 10% of the total listings, and it has been suggested that they may have been listed as individuals, rather than household heads. However, Darby has noted that this would not substantially affect the general patterns of distribution, and that slavery is thought to have rapidly declined under the Norman system.[17] As is established in section 3.2.3, 16 eleventh century settlements which were excluded from the primarily rural Domesday accounts have been re-added for this population analysis. As such, the total population of mapped persons in this study for 1086 CE came 1,362,421 individuals, following Darby's five-fold manorial multiplication and matching his estimation. Some further portion of the population can be expected to be absent from this count, given the known absences mentioned, but the population data remains substantial enough to permit detailed local analysis.

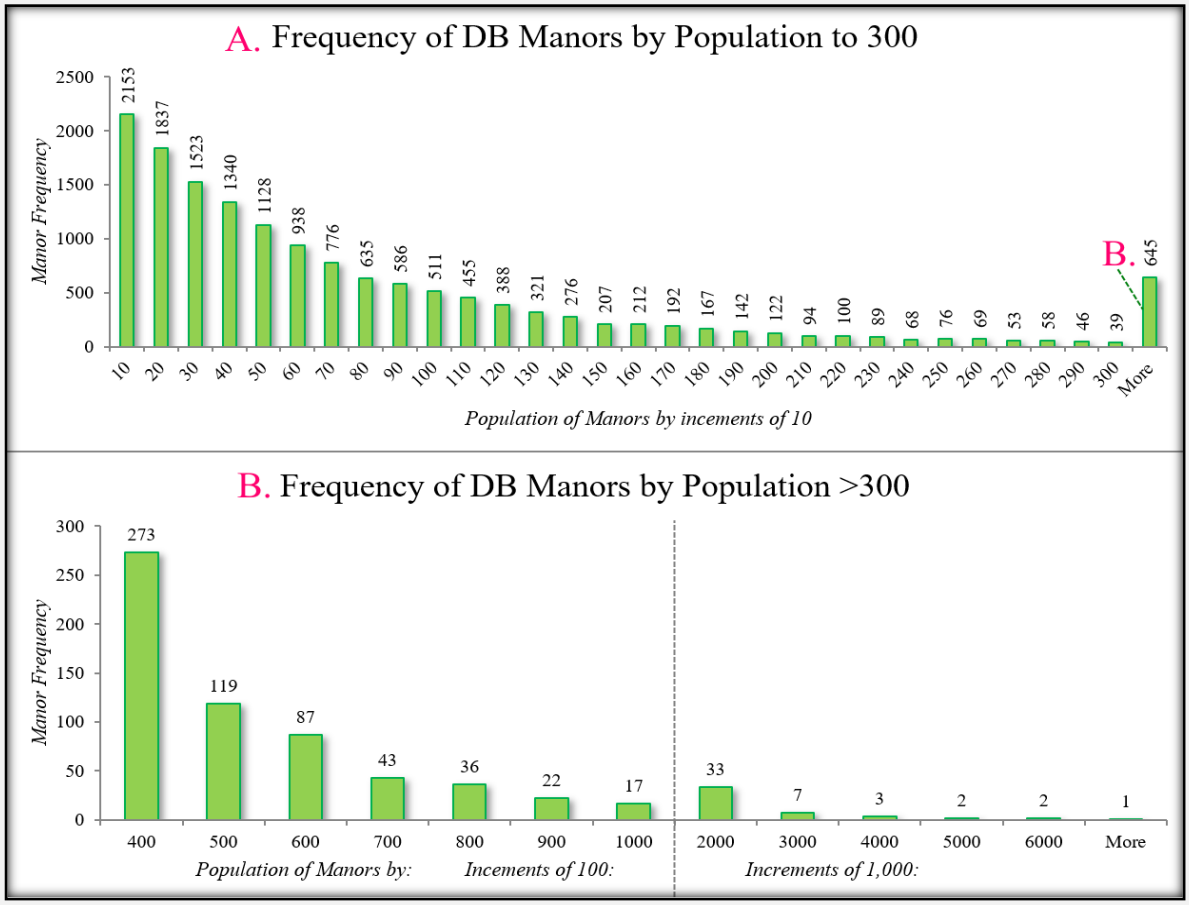


Figure 5.1.2A. *Domesday Book data for population differentiated by manor size frequency.*

[12] *Ibid*, p.32.
[13] Hinton 2013.
[14] Wood 1987, p.189.
[15] Moore 1996.
[16] Erskine & Williams 2003, p.15.
[17] Darby 2003, p.33.

A total of 15,246 manorial population points were mapped in the GIS, ranging in population size from 5 persons in Claydon Winston manor (M15219) to 10,000 in London. Figure 5.1.2A shows the frequency of manorial settlement sizes by population increments 10, then 100, then 1,000. 7,981 or 52.4% of manors contained a population of 50 persons or less but constituted only 14.2% of the total population. Some 14.1% of all manorial points had a population of only 10 persons or less. These low brackets encapsulate the dispersed farmsteads and hamlets (discussed further below), forming half of all known points. At the other end of the spectrum, 2,067 or 13.4% of manors contained a population of 160 or more but constituted 50.1% of the total population. These ratios are almost perfectly juxtaposed, forming a pareto power law distribution. At the extreme end, the 52 sites of greater than 1,000 persons comprise 0.3% of sites, but 8.1% of the total population. One existing study identified a population of 300 as the minimum end of the 'small market town' capacity.[18] For sites greater than 300 then, there are 645 points or 4.2% of sites, comprising an impressive 28.8% of the total population. By

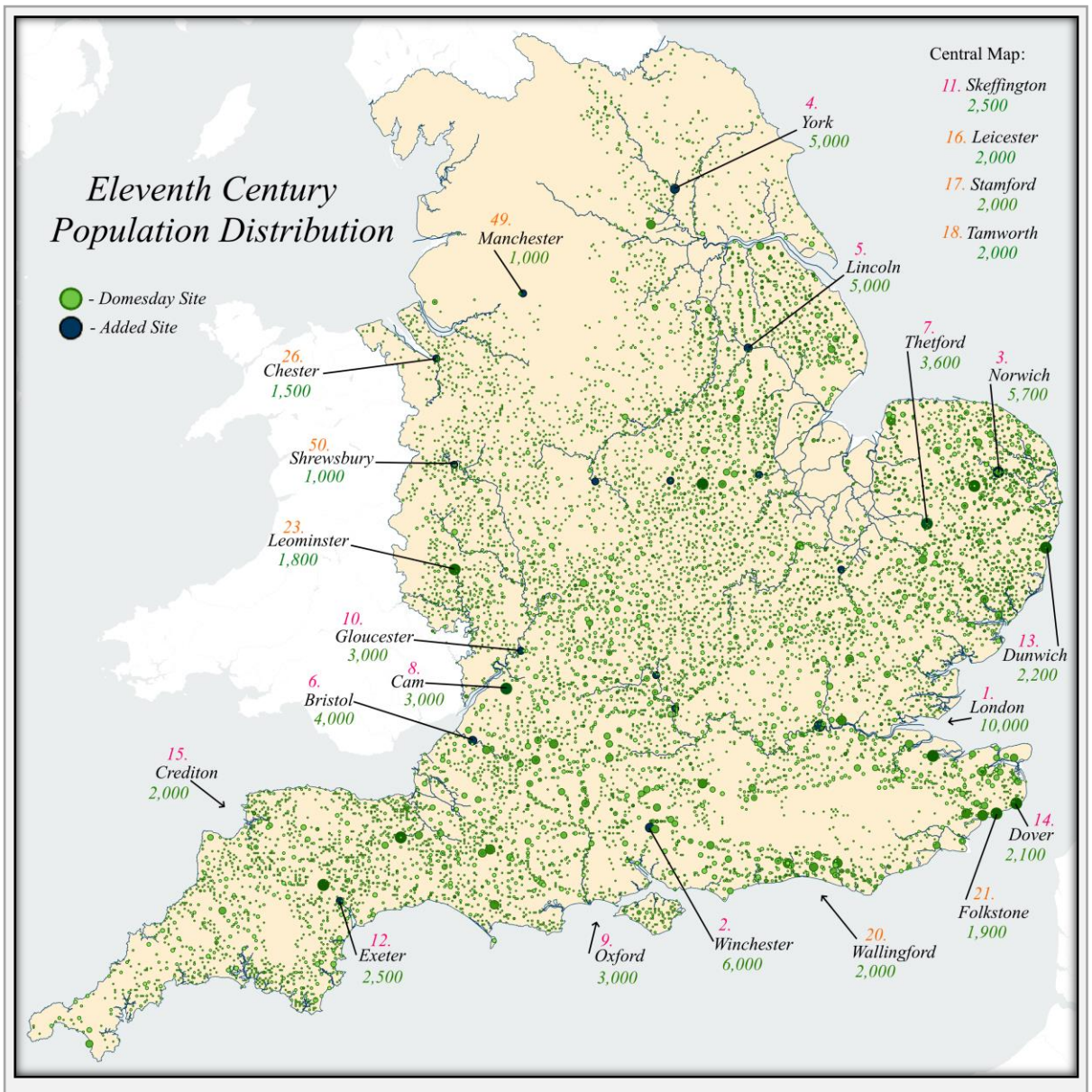


Figure 5.1.2B. *Eleventh century population distribution. Largest 15x settlements listed in violet, selected additional regional towns listed in orange. Domesday data in green with 're-added' settlements in dark blue.*

[18] Dyer 1996.

that measure, nearly a third of the population would have inhabited 'small towns' or larger hubs, but the actuality is slightly more complex, as not all these manorial listings represent individual nucleated hubs. It is difficult to establish a percentage of rural and urban population, given the gradual scale of increase. However, some degree >8.1% can be firmly argued (this issue is assessed further in Chapter Six) if a population of 1,000 is taken to indicate at least some existence of local commercial activity and extra-agricultural professions. Even the larger towns with recorded burgesses (town dwellers) also contained peasants more closely associated with agricultural labour, so no absolute functional urban-rural divide is present, but rather only an increased degree of 'urban functionality' at towns dominated by agricultural subsistence activity. In the following centuries, market commerce, secondary industry and crafts, and the goods export economy became substantial enough to produce a more marked divide between rural and urban settlements. However, the scholarship on medieval settlement indicates that the 1086 pattern constituted predominantly agriculturally oriented hubs, with many perhaps more akin to large villages than the later equivalent-sized dedicated market towns.

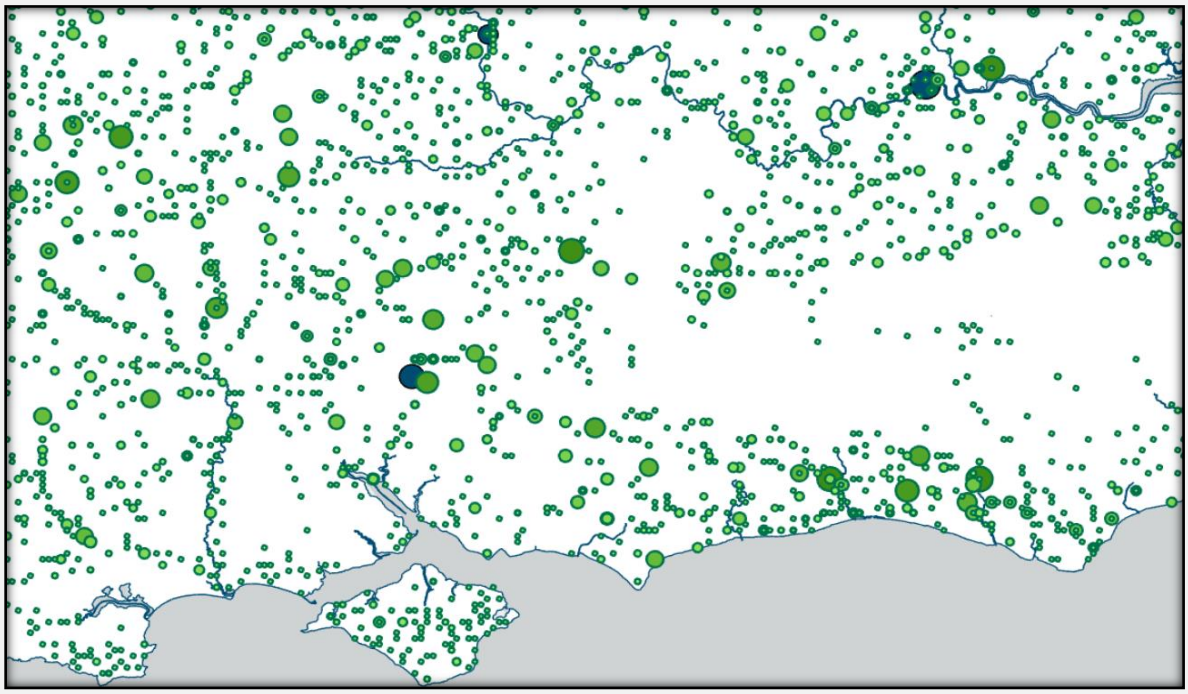


Figure 5.1.2C. *Close-up of the area around Winchester and London indicating river and valley preference.*

The 1086 population data as mapped with GIS highlight several elements of site population size and density distribution (see Figure 5.1.2B). The northern zone around Lancashire and Yorkshire contains a substantially reduced population than in prior and subsequent phases. This is partially due to lack of recording, especially in the west, and partially due to the 'Harrowing of the North' rebellion and conflict which resulted in famine and great violence briefly prior to the survey (visible in the north and east of Yorkshire). The Domesday commissioners refer to land which was once productive but had become unproductive as 'waste'. The distribution of lands wholly or largely comprising of waste clearly correlates most strongly to these northern areas but was also recorded to a lesser extent elsewhere.[19] The Welsh border and some other local areas which saw conflict or threat of conflict are also visibly delineable through the occurrence of waste land.[20] East-Anglia by contrast, was very highly populated in 1086 CE relative to its proportionate population within England in the following centuries. Larger 'town' nucleations also existed most commonly in East-Anglia, the northern-midlands, and the (inland) south, with few larger towns in the south-midlands, Welsh marches, or the north. This pattern would

[19] Erskine and Williams 2003.

[20] Darby 2003, p.44.

shift dramatically by 1300 (see Chapter Six). The 'central province' referred to by settlement geographers, a band from Somerset to Lincolnshire, was evenly scattered with small, village scale settlements. The distribution of settlements in many places, for example the former Wessex area, was clearly influenced by a locational preference for river valleys, with Figure 5.1.2C indicating a general concentration along navigable rivers and in smaller riverine valleys being apparent. As with castle sites, the Weald between the South and North Downs, the Great Ouse Fenland, and the north-western uplands are sparsely populated, with highlands, moors, and floodplains being uniformly avoided.

5.1.3..... The Manorial Landscape

Economically, England in 1086 CE remained, as it had been, an essentially a late-Saxon agricultural economy; albeit one functioning under a new Norman aristocracy that was rapidly restructuring the built landscape to fit its seigneurial needs (see section 2.1.1 and 7.1.2). The Normans established a thoroughly entrenched feudal system of owed military service, tenure by barony, and encouraged a self-perpetuating social order of hierarchical subinfeudation.[21] This shared developing Saxo-Norman economic system is expanded in the following sections. By the time the Domesday accounts were compiled, King William I had enfeoffed most of England to his loyal followers, but he himself directly retained enough land to make him the largest secular landholder in England.[22] Of the 180 major tenants-in-chief who possessed enough land to raise an annual income of £100, only 2 were Saxon 'English' in 1086, while the rest were Norman or northern Continental followers of William. Of the 1,400 lesser tenants-in-chief, only some 100 were English, while of the 6,000 sub-tenants many more were English.[23] For clerical landholders, only one of sixteen bishops was English, and the archbishop was a trusted Norman advisor of William. However, the vast majority of the 1.3m peasantry majority population of England was native Saxon English, with the notable exception of recently migrated 'French quarters' of Norman burgesses in some towns. The Normans themselves would become 'English' in time, but this degree of replacement of titles within the first two decades after 1066 is extraordinary. With the conquest also came a solidification of primogeniture tenure, and an end of sale of land titles for money.[24] Additionally, the large class of 'freemen' in eastern England was in swift decline under Norman rule. England in 1086 was, therefore, shifting to become more rigid in its peasantry and knight-tenant class structure than the tenth century Saxon system had been.

The Anglo-Scandinavian systems of hundreds and shires managed by shire-reeves, or sheriffs, had also only been widely established in the tenth century, and was readily adopted by the 'recently Latinised Norsemen' of Normandy who integrated it with the French county system.[25] The land was thus divided into counties, hundreds, vills, and hides, with manors (titular) being composed of numbers of hides. A 'hide' was notionally sufficient land to support one family, and was typically roughly 120 acres in area.[26] It has been estimated that England as a whole contained some 70,000 hides (or rough equivalents regionally where hidage was not utilised) of land in 1086.[27] However, each hide cannot be understood as economically equivalent in assessment. There were many manors which were exempt from local secular or royal taxation and much Church land was exempt altogether. The Domesday Books provide plentiful examples of the flexibility of the taxation system. Structurally, these hides of land and their occupants were administered from manorial caputs where a manor house (or situationally a castle equivalent) was maintained. Austin describes the landscape as one of dispersed hamlets and villages overseeing enclosed arable fields and permanent pastures.[28] Austin is quite critical of assertions that

[21] Brown 1976.
[22] Williams 2003, p.50.
[23] Woods 1987, p.159.
[24] Williamson 2012, p.124.
[25] Martin 2003, p.84.
[26] Greirson 2003, p.121.
[27] Erskine & Williams 2003, p.14.
[28] Austin 2003, p.68.

Domesday manorial listings would each represent singular nucleations, with non-nucleated farms, hamlets, and small villages administered from a manorial seat appearing commonly as a single Domesday 'manor' entry.[29] It is important therefore to measure correlation of castle siting to local population counts, rather than the count of manors (see analysis below).

English manorialism was strongly founded on an agricultural peasant class. Eleventh century English agriculture relied primarily on wheat, barley, oats, rye, and legumes.[30] Vast numbers of ploughs used for preparing fields and mills for processing grains were recorded in the Domesday accounts. Pigs for meat, sheep primarily for wool (especially castrate males), and cattle for traction of ploughs and carts (two thirds of found bones are of castrate males indicating traction use) were the most common domestic animals.[31] Several vineyards were recorded, but these have been assessed as 'largely if not entirely novelties' run by Norman lords (although English wine production by 1300 was sufficient to supply continental export).[32] Darby has demonstrated that the geographic distribution of plough-teams and total population suggests a high degree of regional diversity of agriculture, with those areas of high manpower-to-plough ratios likely relying more heavily on fisheries and livestock, rather than the typical basis of grain.[33] This assessment is reinforced by the fact that resources such as woodland and meadow were calculated as to how many pigs could forage in them or how much grass fodder they could produce.[34] Research into the agricultural system of early medieval England is frequently founded on Domesday statistics, and the manorial entries are widely considered as a valid source for mapped spatial analysis.[35] This system largely remained intact as tenurial institution across the 1100—1300 period, but the degree of settlement shift observed diachronically indicates that the 1086 settlement pattern data are best assessed with relation to other locational data within a temporally local frame. As such, the population data is principally used in the analyses below to identify early influence on castle siting preference, as the majority of castle sites were founded in the late-eleventh and early-twelfth centuries.

5.1.4..... Regional Differences in Nucleation

In terms of regional cultural factors associated with nucleation density and form, Wood describes the west of eleventh century England as more essentially Celtic and archaic in its preference for pastoralism and preservation of slaves as a social class; the central belt as an open field dependant arrangement of peasantry classes, with an earlier and broader adoption of village-level nucleation; and the east as the most influenced by Scandinavian settlement, containing the richest counties of Suffolk, Norfolk, and Lincoln, and having the highest percentages of 'free' peasantry classes.[36] Roberts and Wrathmell's analysis of the total pattern of English rural settlement identified: a 'central province' from Somerset to the north-east which came to host a markedly denser distribution of villages than the west and south-east; a higher occurrence of medieval moated sites and isolated farms outside of this central band; and a higher place-name association with grazing also in the south-east and western uplands.[37] Williamson is critical of attempts to explain population density distribution in terms of broad cultural models, arguing that consideration of climate, geology, geography, and complex socio-cultural shifts leave very few broad homogeneous patterns.[38] He suggests, moreover, that the social adoption of the institution of manorialism itself had much to do with the nucleation patterns of Saxo-Norman rural landscape. Rippon and Wainwright have demonstrated through archaeobotanical analysis that rainfall and soil type had a measurable influence on cereal and livestock preference regionally, with, for example, wheat occurring

[29] Austin 2003.
[30] Clarke 2003, p.61.
[31] *Ibid*, p.65-66.
[32] Greirson 2003, p.121.
[33] Darby 2003, p.33.
[34] Erskine and Williams 2003.
[35] Dyer 1996: Austin 2003.
[36] Wood 1987, p.167.
[37] Roberts and Wrathmell 2000.
[38] Williamson 2012, p.146.

mostly in heavy soils, and sheep on lighter soils, and this would subsequently correlate with differing settlement densities appropriate in scale to managing each agricultural practice preference.[39]

The two most commonly described early medieval English village structures are of 'agglomerated' type villages, whereby a relatively dense arrangement of dwellings is positioned around a central hub, and elongated 'row' villages, which were typically stretched along two sides of a road with dwellings fronting both sides and backing on narrow stretches of farmland on either side.[40] The latter form is also known as 'tofts and crofts' and can be exemplified through the site of Wharram Percy shown in Figure 5.1.4, occurring very commonly at the smaller end of the population distribution range of manors, with several larger known examples.[41] Village nucleation had not occurred everywhere in England by 1100 and had only quite recently become widespread in the 'central province' in the late Saxon era.[42] Gosden and Harkel have argued that village level nucleation is not axiomatic with stable population growth, and that attempts to categorise small settlements from 'dispersed' to 'hamlets' to 'villages' to 'towns' have been imprecise and often fail to acknowledge locally different forms of nucleation.[43] The mapped data for 1086 indicate that the occurrence of smaller population points was widely similar across much of the kingdom in habitable zones, with substantially more regional variation occurring in the distribution of medium—large settlements.

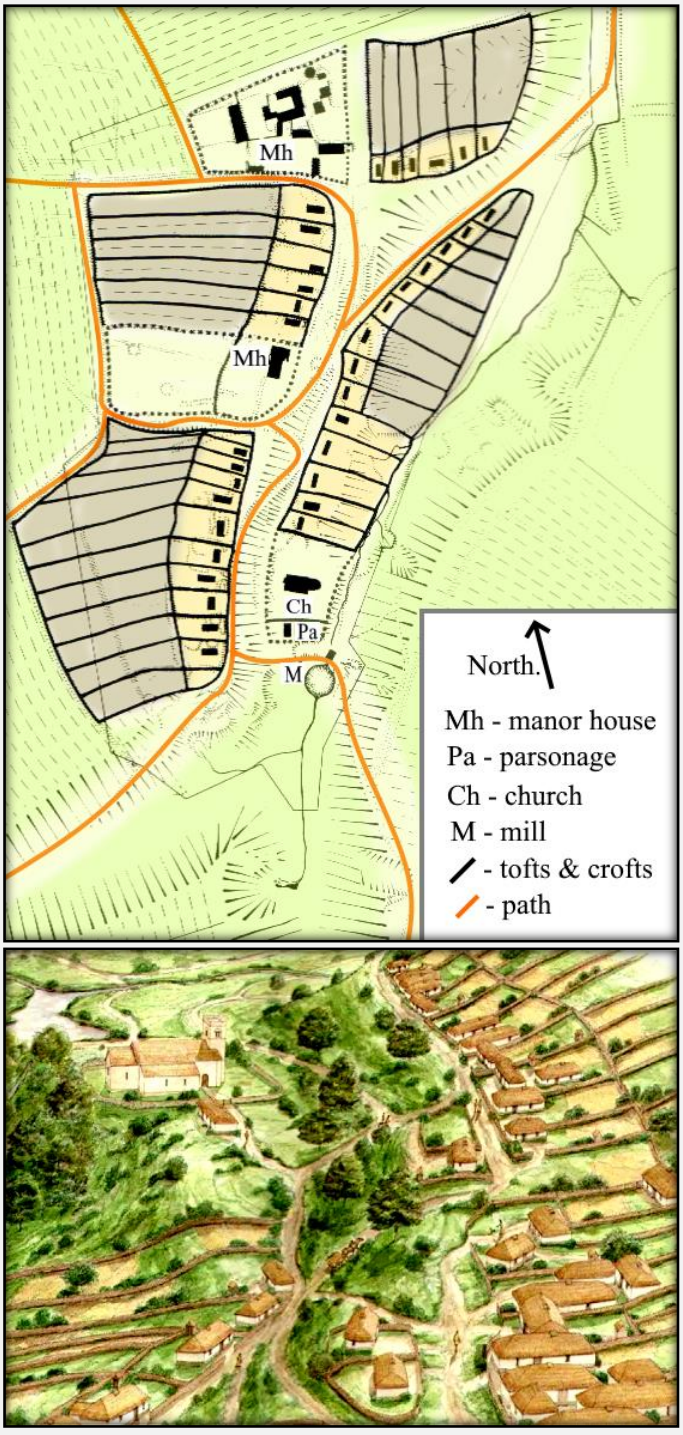


Figure 5.1.4. *Layout and reconstruction of thirteenth century Wharram Percy showing tofts and crofts.* (Top: modified from Beresford 1990. Bottom after Flatman and Herring 2018.

The situation for the larger towns is equally complex. The Old English *burh* and Norman *bourg* had originally denoted a fortification, but by the eleventh century had transformed into a

[39] Rippon and Wainwright 2014, p.244.
[40] Flatman and Herring 2018, p.4.
[41] Williamson 2003.
[42] Gosden and Harkel 2011, p.4.
[43] Gosden and Harkel 2011, p.6.

form referring to a town as a 'borough' (*burgi*).[44] The Domesday Book differentiates boroughs as having an official civil quality, but also market settlements as *tuns* and *vills*, and some larger 'cities' as *civitas*. Martin has studied such nomenclature within the settlement records and suggests some 10% of the population lived in larger 'urban' towns.[45] Martin focuses on the differentiated status of recorded burgesses who as town-dwelling craftsmen, specialists, and traders gave their habitations the character and status of urban centres. The presence of mints has also been considered as of some importance here.[46] Many of the boroughs were royal boroughs still held by the king in 1086, and only later became managed by regional powerful baronial tenants, especially earls. Dyer critiques that the ascription of 'borough' categorisation also does not necessarily equate to urban functionality, as many such sites failed to gain market functions or other 'urban qualities'.[47] Oksanen further posits that in the early fourteenth century, the 20% of boroughs located on navigable rivers accounted for nearly 50% of the total wealth of all boroughs.[48] River and canal navigation were highly influential for settlement success and fundamentally important for the transportation of goods and for travel in the early medieval period, with travel by ship being half as expensive and substantially faster than overland roads.[49] Importantly, for the purposes of the current study, the population recorded in 1086 is regarded as a rough indicative metric of economic potential. The precise nature or qualities of any given settlement are less important than its potential capacity to function as a market contributor, tax base, and labour force; and thus, issues of categorisation for settlements may be of little consequence. It also follows that the precise sources of local agricultural subsistence may not lead to methodological issues, so long as they fit within a model of: income generation through surplus sale; labour-time availability; and local expandability (especially given a purported population growth to 5 million by 1300), which they all appear to. Nevertheless, these considerations of socially recognised and legally categorised larger 'market towns' are not ignored and will be addressed more thoroughly in Chapter Six.

5.1.5..... The Developing Seigneurial Economy

From the Norman Conquest to 1300 CE the newly established class of English baronial tenants sought to improve their share of income generated from within their demesne holdings.[50] The establishment of vineyards, fishponds, orchards, gardens, and livestock enclosures adjacent to castle sites represented one element of this deliberately nurtured seigneurial income. Outside of castle sites, known non-agricultural economic enterprises in medieval English settlement studies include iron, tin, and silver mining, pottery production, fishing, salt production, textile manufacture, metal-smithing, and other simple goods manufacture.[51] The rents of demesne inhabitants represented another revenue pool, and the deliberate relocation, establishment, and tolling of markets was a further source. While designated markets existed in 1100, by 1300 self-sufficient agricultural practice was substantially replaced by agricultural specialisation and market dependency across England, with large numbers of peasants buying small lots of low-value perishable goods with standardised silver denars (pennies).[52] Of the 60 markets described in the Domesday Books, only 19 occurred in locations given the title of 'borough'.[53] This detail may suggest that local and regional oversight of markets was largely uninhibited by locational restrictions in the early Norman period. Martin critiques that the location of markets and the qualifying of towns as boroughs as opposed to rural villages were not set elements of the Domesday commissioners' briefs, leading to their sporadic attestation. The Domesday Books are also quite casual

[44] Martin 2003, p.81.
[45] *Ibid*, p.80-86.
[46] Astill 1991.
[47] Dyer 1996, p.19.
[48] Oksanen 2018, p.2.
[49] *Ibid*, p.2.
[50] Barlow 1988.
[51] Rippon and Morton 2020, p.7.
[52] Davis 2011, p.277: Greirson 2003, p.112.
[53] Martin 2003, p.86

in their reference to castles, and it is clear that their detail and enumeration were similarly not prioritised or systematised.[54] However, by 1300 there were some 600 market towns in England, and these provided the main point of contact with the world of commerce for the peasant population.[55]

Davis discusses thirteenth century Newmarket and Clare, Suffolk, as examples of small medieval English market towns.[56] Newmarket had a population of around 400, and traded in meat, leather, clothes, shoes, metal, and minor luxuries. The administrative centre was a toll house run by a single bailiff. Clare, with a population around 700, sat at the heart of the Suffolk cloth industry, hosting stalls from spinners, dyers, weavers, and other crafts. Both towns held weekly markets, as was common. Davis found that the majority of economic travel (identified through court rolls) for both towns occurred within less than 20 kilometres.[57] Distance in the eleventh century was measured in furlongs of 186m (roughly the length an ox team could plough a furrow before stopping and turning), statute miles of 1,609m, and leagues of 2,414m, from which standard kilometres are calculated.[58] This 20 kilometre average was a distance travelled for the sale of goods, and presumably the typical distance travelled for purchase was smaller. Dyer has observed a terrain-oriented medieval trade pattern in Alcester where a northern woodland zone sold predominantly timber, fuel, cattle, cheese, and hides in exchange with a southern lowland surplus of wheat, barley, sheep, and wool.[59] Recognising, encouraging, and exploiting these sorts of resource flows was a further prerogative of the medieval lord. Dyer notes that most simple markets functioned around exchange of surplus agricultural goods for: other agricultural goods; simple processed goods like bread, cloth, and leather; services; and manufactured goods like plough shares, tools, and shoes. By 1300 the high demand for exported English wool had led to an substantial increase in the wealth and size of several market towns, and their seigneurial overseers.[60] Dyer has confirmed, through assessing market town trade across 13 fourteenth century settlements, that the median distance between the market and sellers' villages was 8—12.5 kilometres.[61] Both Dyer's and Davis' calculations were based off sales, often of prepared goods like ale. It is difficult to calculate how far people travelled on a regular basis for economic activity, but assuming sellers would travel less frequently and longer distances than buyers, a range in the order of 10 kilometres seems reasonable for regular local trade.

A further indication of the value of the manors of England is the 'geld' land tax, which was a small tax applied to all the king's lands when he needed additional income. Largely unique among contemporary kingdoms which taxed only their direct demesne, the English geld tax was collected for almost a century after the conquest, still being collected in 1162.[62] The geld was applied immediately after the conquest in 1067, and 1068 for example.[63] Macdonald and Snooks conducted an economic analysis of manorial production and geld value in 2003 and found that: first, arable land equated to the highest productivity outputs; and secondly, that villains and slaves produced a higher output than bordars and freemen.[64] Figure 5.1.5 shows the GIS mapped distribution of geld holding value for the manors in 1086. The distribution of value here is reasonably similar to that of population, with the marked exception of several absent larger settlements and the northern counties. The hides were assessed by their potential value, not their actual expected value for geld in 1086, and so Yorkshire and Lancashire give an indication of the 'pre-Harrowing' population map and most habitable lands. The larger points are understood as indicating royal boroughs, settlements the king ruled and taxed directly, rather than enfeoffing to his tenants, and are most dense in the former Wessex area around Winchester (still the treasury location in 1086, and for some time after). The geld data provides interesting insights into the perceived potential value of the land, but its orientation toward the king makes population mapping a

[54] Brown 2003.
[55] Dyer 1996, p.19.
[56] Davis 2011, p.280.
[57] *Ibid*, p.281.
[58] Greirson 2003, p.123.
[59] Dyer 1996, p.26.
[60] Painter 2020, p.195.
[61] Dyer 1996, p.14.
[62] McDonald and Snooks 2003, p.131.
[63] Wood 1987, p.161.
[64] Macdonald and Snooks 2013, p.136.

more useful measure against castle location. Almost all of the royal castles maintained by the king remained in use to 1300, indicating that their perceived continued value was worth their ongoing expense, and that the feudal system was more than sufficient to support this considerable expense. The geld data could be used to estimate relative local baronial incomes, but this falls well beyond the scope of the present research, and manorial population has been chosen as a prioritised focus here.



Figure 5.1.5. *Distribution of geld value by manor sites; the estimated tax the king could collect in 1086.*

Expanding on the brief introduction to feudal tenure given in section 2.2.1, Painter's 2020 (reprinted edition) study of English barony from 1160—1220 CE provides limited but informative detail on baronial income and expense.[65] To give an idea of expenses, an annual income of about £15 was required in 1200 to maintain one knight for a year.[66] Painter suggests there is no evidence at all as to the cost of timber castles, but that a small baronial masonry castle would cost a minimum of about £350 in 1160, based on the examples of Wark and Chilham castles.[67] Knight service was also expected, and regulated by knights fees, depending on the quantity of land held. A knight's fee was roughly equivalent to a manor and was considered sufficient land in hides to maintain one knight. To give an example, in

[65] Painter 2020.

[66] Painter 2020, p.172.

[67] Painter 2020, p.173.

1166 Roger de Kentwell owed the king the service of 10 knights, for which he subinfeudated 5 knights fees and raised 5 knights from his demesne.[68] Barons chose whether to provide knights from their demesne, subinfeudate their land to vassal knights, or to pay for mercenary knights. Many lords chose to opt for the latter. Payment was not easily kept up, and in 1230 some 80 (60% of total) tenant-in-chief barons were in debt to the crown.[69] Then there is the matter of known baronial incomes. On the extreme end, Earl William of Gloucester (a baron by tenure) earned some £700 annually and held 300 knight's fees.[70] In 1160 the average baron, of which there were some 160 of rank, received an annual income of around £200, while the median income was some £115.[71] The cost of a masonry castle then would take many years savings, even for these higher status tenants. By 1320, the average was some £668, while the median was £339. Painter posits that baron-tenants gained income through performance of essential public functions, dues owed by vassals, rents paid by villains and free tenants, profits from cultivation, profits from commerce, and exploitation of demesne resources.[72] Barons also occasionally accepted scutage, that is payment in place of knight service, from their knight-tenants.[73] However, most tenant-lords gained by far the largest portion of their income from demesne manors, comprised primarily of feudal rents, sale of grain and livestock, and mill fees.[74] It can reasonably be posited that considerations and planning of castle siting and expansion (which included maintenance costs) were among the most major financially oriented baronial concerns, with judgements being at least partially oriented around maintaining these considerable annual incomes and expenses.

5.1.6..... The Function of the Castle in the Seigneurial Economy

The previous sections have shown that by 1086 CE when the Domesday Books were completed, the Normans had thoroughly established a feudal manorial structure to govern their English subjects. This system was overseen by the king and his tenants-in-chief who organised the land through enfeoffment and subinfeudation of manorial titles. The manorial system had a predominantly agricultural base, with the sale of surplus grain, livestock, and secondary goods by a majority peasant class forming the basis of the economy. Over time by 1300, market commerce became a more important component, especially in the production and export of wool. Coinciding with the expansion of a minority merchant and guildsmen class, the villein serf class became more indentured to their manorial lands (more on this in Chapter Six). The barons and their tenant-knights sought to exploit all available avenues of income through agricultural surplus, justice, rents, commerce, and feudal dues. As it was principally the barons and king who established the early medieval castle network in England and proceeded to manage their estates and livelihoods around these structures, it can be reasonably argued that the castle (through its location and plan) played an important role in this effort to organise economic control and revenue optimisation, physically manifesting the ambitions and intents of its seigneurial tenant overseer.

A model of the most apparent ways the castle site may have been involved economically in this feudal system is presented in Figure 5.1.6. Even in its early timber forms, the castle provided protection for the bailey inhabitants and for travellers to conduct commerce safely. The siting of an important castle would sometimes occur on an existing nodal hub, and where new land was chosen the site might catalyse new roads and re-direct old ones. The coordination with the institution of the church through the construction or re-construction of a local parish church within the castle defences would provide the basis for a religious community necessary to make the place a socio-economic hub with all the customs of eleventh century peasant life. In many cases, the manorial caput was chosen for the castle site, already

[68] Painter 2020, p.182.
[69] *Ibid*, p.188.
[70] *Ibid*, p.171.
[71] Painter 2020, p.170.
[72] *Ibid*, p.91.
[73] *Ibid*, p.192.
[74] Painter 2020, p.152.

holding this social locational significance. And as the economy around the castle grew, and with demands for upkept soldiers, carpentry, masonry, and all the requirements of a lordly household, specialist work would have become available within the castle bailey/town and the local hinterland. As such, many economic components affected by a successful castle enterprise might have existed well beyond the castle site itself. As the seigneurial income streams flowed from sources far and near, assessment of the castle economy must focus on more than the fortified area and immediate bailey. A major premise for the following analyses then, is that the density of local hinterland population ought to relate to the likelihood of castle use and development, not just the directly adjacent bailey/town.

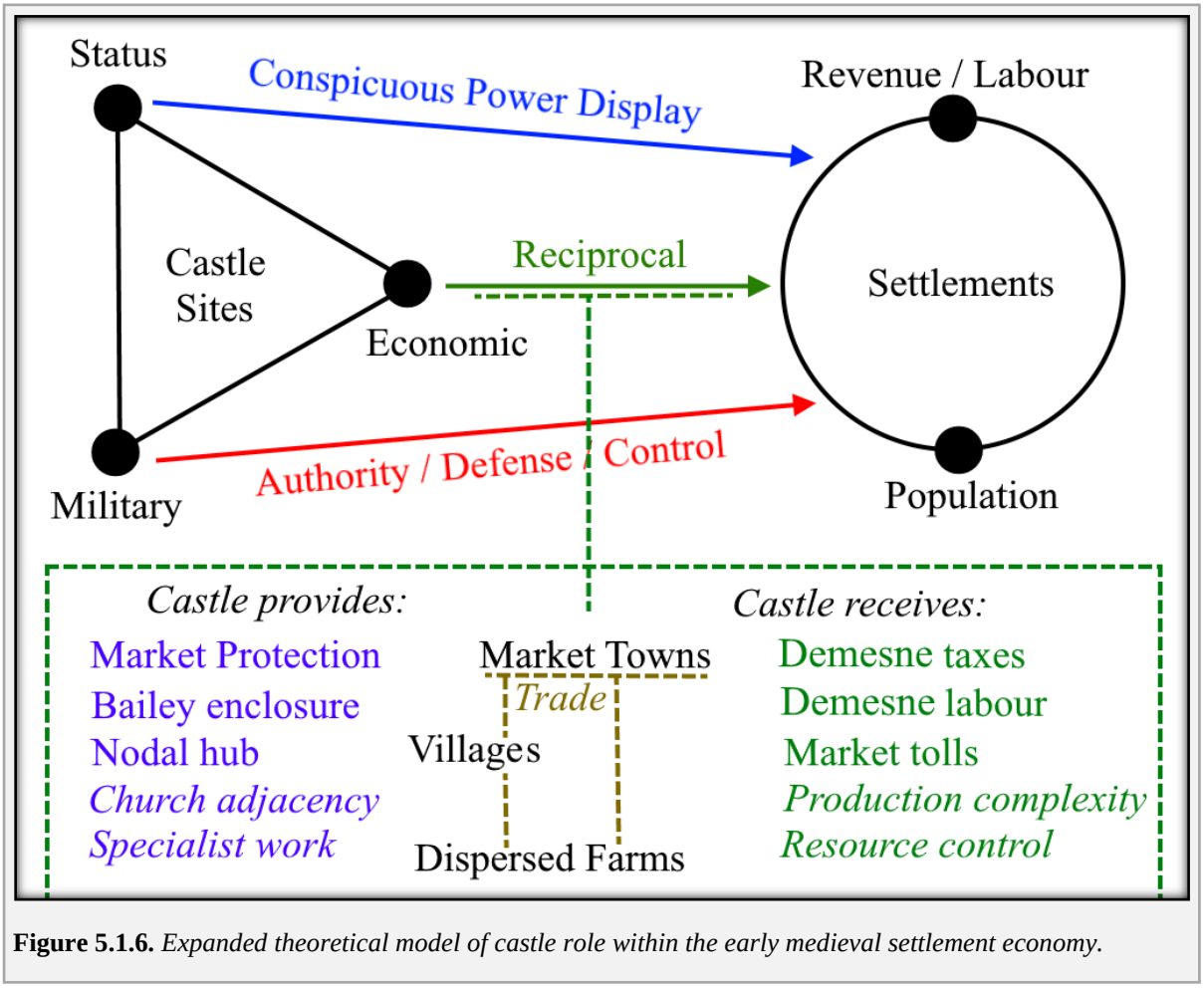


Figure 5.1.6. *Expanded theoretical model of castle role within the early medieval settlement economy.*

In return for these safeguarding functions, the castle owner could utilise the site to host regular markets and impose tolls on them for income. The tenants of the lord owed some portion of their time to work his lands, from which he would reap the profits. The grain from the local inhabitants' own lands was ground to flour in the lord's mill (principally water-fed mills, with windmills only becoming widespread in the twelfth century), for which additional fees were charged. Land fees and feudal dues from vassals and tenants in his hinterland could be collected, and manorial courts could be held at the site of the castle-gate. Indeed, the castle site took on all the economic and administrative roles already centred around the manor-house in the Saxon model. In such a way, the relationship of the castle site as a physical seat of the local lord's power and control and the adjacent and surrounding settlements could be viewed as a reciprocal one. The increased prosperity of a lord's demesne might be expected to correlate with the increase in scale, masonry upgrade, and continuous use to 1300 of the caput castle. As much has been posited by other scholars of castle studies in discussion of castle-adjacent settlements. However, the aim of the following analyses is to statistically quantify the degree to which the settlement pattern influenced castles across the total network, including within local hinterlands.

5.2..... Radial Proximity Analysis

That some castles were sited on existing settlements is well known, especially as is documented in the destruction of large numbers of houses to make way for motte mounds in the larger towns.[75] What is also known is that many castles were sited on previously unsettled locations (see Dataset 1. and Chapter Four). Additionally, castles were sometimes associated with settlement growth, as has been identified by Creighton and reinforced by the bailey areal analysis. The first aim of proximity analyses then, is to identify the degree of influence the existing English settlement pattern had on the subsequent distribution of castle sites. Most timber castles were founded in the late eleventh and early twelfth centuries, and so the population map for 1086 is a reasonable dataset for assessing this early stage. Theoretically, deliberate preference for castle construction at existing settlement hubs can be identified through calculating the percentage of settlements close to castle sites and the percentage further away and calculating for nucleation or density centrality. Note that 'nucleation' in this sense does not imply migration of population to castle sites from 1066—1086, but this may already have occurred occasionally. More often than not, the locational conjunction of a settled population and castle sites represents deliberate castle siting on locations which are known to have existed for some time. Section 3.3.2 of the methodology details the use of two 3.5- and 5-kilometre radii around the castle sites, with the inner zone containing half the area of the outer. The above sections have demonstrated that commercial activity drew from a hinterland of perhaps 10 kilometres. However, a radius of 5 kilometres was used for the larger zone to minimise site overlap and conform more accurately with the tenurial boundary areas of the county hundreds, as shown in Figure 5.2.1. By conforming roughly with the areal

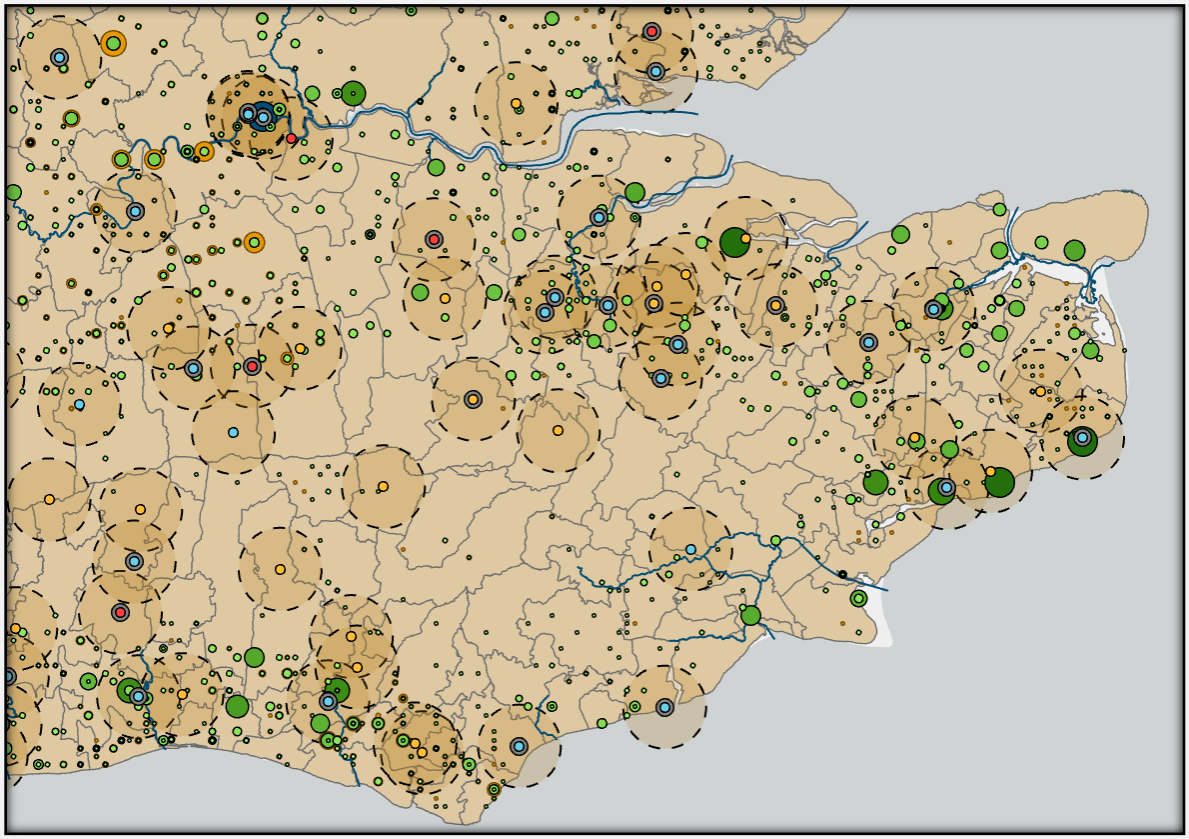


Figure 5.2.1. *Analysis sample from the GIS model in the area of Kent, Sussex, and Middlesex highlighting the rough parity between the 5km radii and the hundreds.*

[75] Creighton 2013.

size of hundreds, the likelihood that local manors were associated with the same baronial tenant as the castle site is increased. Painter has posited many examples of the complexity of manorial landowning, with the lands of any given baron often spread across multiple counties.[76] However, it is also known that shift occurred within land ownership patterns and that barons and tenant-knights attempted to centralise their holdings and castles around their manorial caput over time. As such, the results of this analysis must be considered cautiously, and represent a tentative inspection that can in future be enhanced with additional study of tenurial ownership.

5.2.1 ..... Castle Siting at Established Settlement Locations

Of the 861 castles from the study, some 57 of them had no population recorded within 5 kilometres. The chief portion of these lie in the north of Yorkshire, Lancashire, and southern Westmoorland where the population was scant or unrecorded after the Harrowing of the North, but a few others are scattered across the kingdom such as Brenchley Castle Hill (CKEN09) in Kent, Sedgwick Castle (CSUS23) in Sussex, and Tempeston Motte (CSHR82) in Shrewsbury. Where such sites are known to be eleventh century in date, but had no local manorial populations, a higher degree of military orientation might be reasonable assumed. Occasional outliers might also include hunting castles or other deliberately isolated forms. A handful of lords were responsible for the control of several castles and oversaw vast tracts of land to generate the necessary income to do so. It is likely that such arrangements of feudal income and expenditure explain the low-local-population outliers, especially in zones like the Welsh marches. The assessment of the site plans of such outliers would constitute a useful future study. However, the great majority (94%) of sites did contain recorded populations within the 5-kilometre radius. The total local population counts from the 1086 data within 5 kilometres of each castle site are shown in Figure 5.2.1A. If the 57 sites with no population are excluded, only 136 or 15.8% of sites had a 5km population of

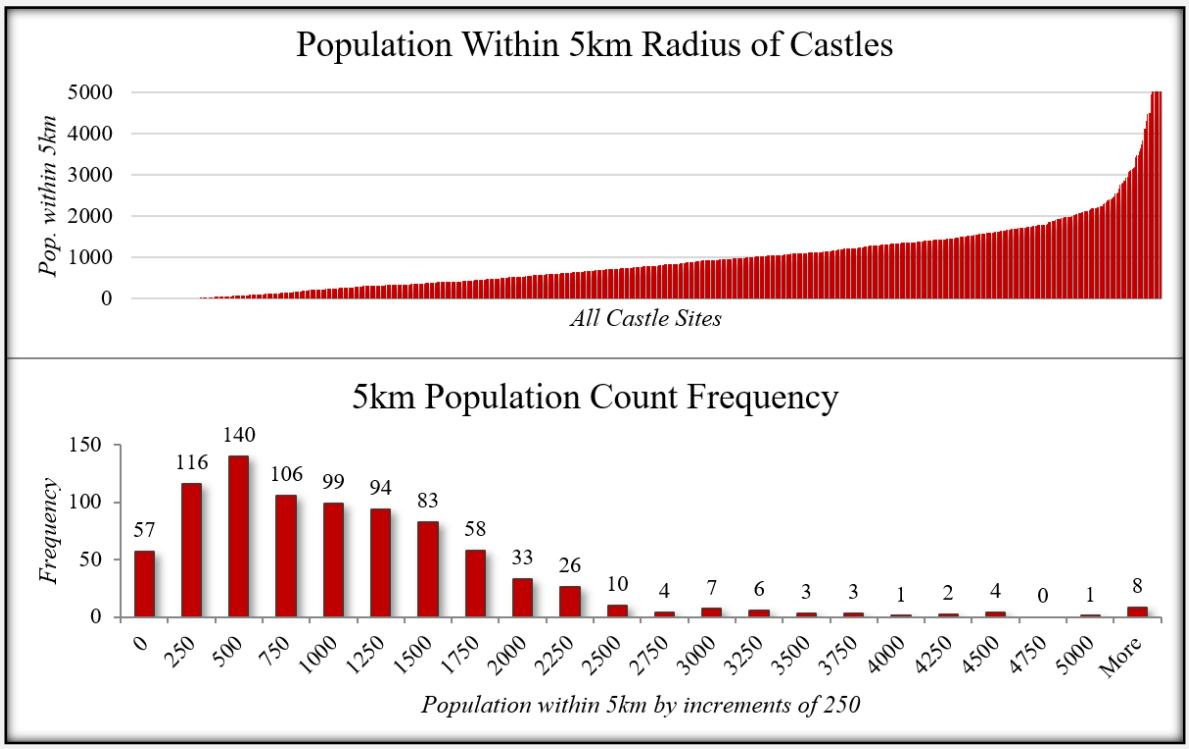


Figure 5.2.1A. *Population within 5km radius of castle sites as graph and frequency.*

[76] Painter 2020.

lower than 300 in their local hinterland. 323 or 37.5% of sites had a moderate local 5km population count of 300—1000, and 345 or 40.1% of castles had a population of 1,000 or greater within <5km. Only 8 castle sites had a 5km local population of more than 5,000 and the Tower of London (CLON01) was the largest at 12,305. Initially then, it would appear that the great majority of castles were sited in locations with sufficient local manorial populations to catalyse the reciprocal economic functions described in section 5.1.6.

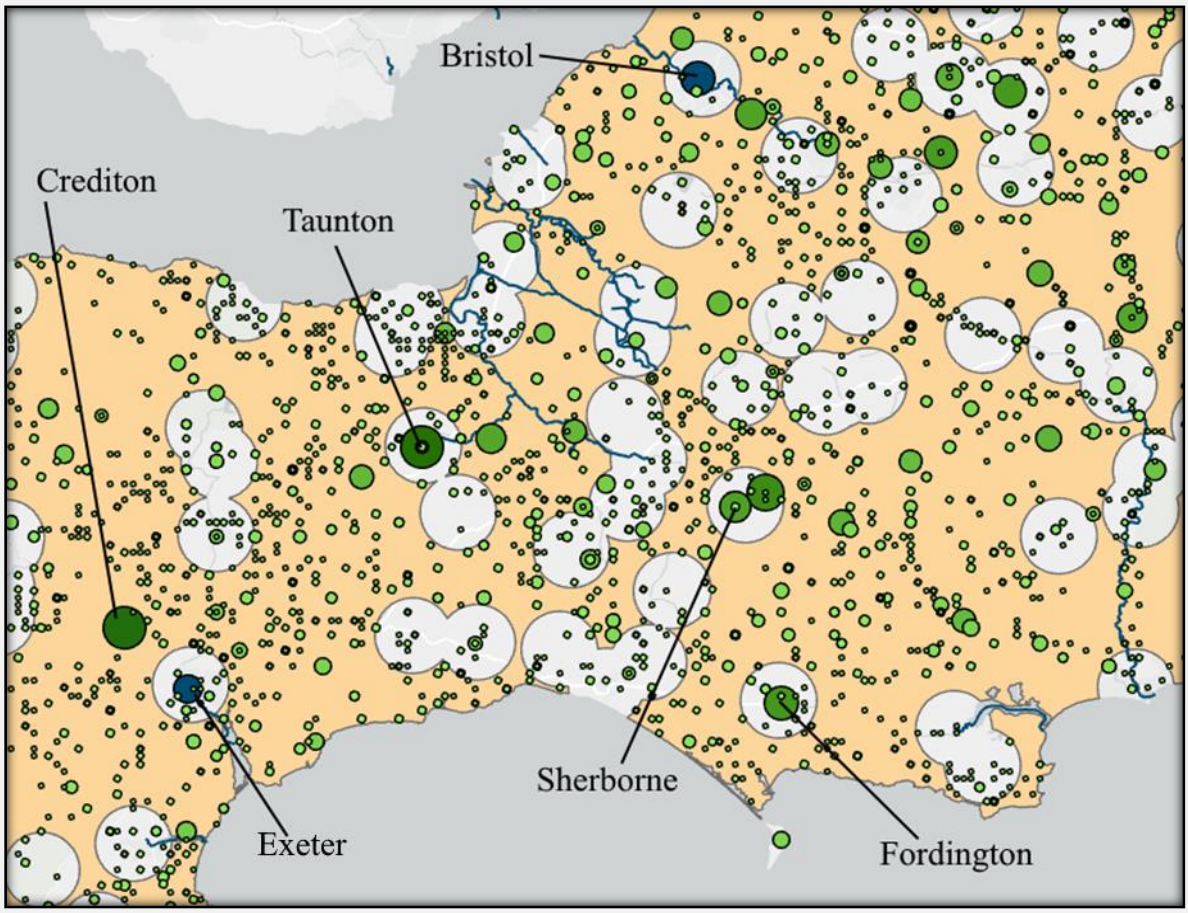


Figure 5.2.1B. *Sample from the Devon, Dorset, and Somerset area demonstrating the high inclusion of larger towns within the 5km radii alongside more widespread smaller settlements (including outside these zones).*

Castle siting preference at settlement hubs can be assessed in several ways. The total area of the Domesday Counties of England is 118,105 square kilometres (smaller than the modern 130,279 square kilometres due to the exclusion of the northern territories from the surveys), while the total population mapped onto the Domesday counties polygon in the GIS was 1,362,421. The area inside the 5km radii made up 44,053 square kilometres or 37.3% of the total area. However, the population inside the 5km radii made up 606,000 or 44.5% of the total. This indicates a preference for previously settled locations in decisions of castle siting, albeit a slight one. The 7.2% difference is closer to 10% if the lowly populated and highly castled Welsh marches are excluded from the calculation. Notably, this leaves a substantial 55.5% of the population existing beyond the 5km radii. Figure 5.2.1B shows that the proportion of small village scale population points is widely scattered with little obvious relation to castle sites, but that a significant proportion the larger towns had castle sites established at them, with some notable outliers. The settlements of Manchester, Crediton, Aldington, Skeffington, Cam, Leominster, and Blything are among a curious set of settlements which ought to have had castles with respect to their size, but no such castles are known in available records. It is possible that these sites had timber castles that have not lasted, especially given the high rates of uncertain castle remains and

known old locations now lost to development, but their categorisation as potentially castle-less sites is intriguing, and this matter is explored further in Chapter Six. Nevertheless, the regular occurrence of castles at larger established population hubs is clearly visible.

The internal percentages within the 3.45km (inner-radius) and 5km (full-radius) can also be assessed to identify preference for locations with existing settlements. On a site-by-site basis the percentage inside the inner radius against the total within the 5km radius was calculated to assess nucleation or centrality, and the average nucleation of all inner radii was 55.7%. The average percentage of nucleation for the sites with the largest 100 counts within the full 5km was 61.3% and for the 30 largest counts it was 74.5%. This confirms that many of the high counts are caused by siting at substantial towns rather than densely clustered villages. However, this 55.7% average percentage is slightly thrown off on the negative end by castles in low population zones being assessed with a nucleation value of '0' when their outer zone had one or more small points and the inner zone had none. Accordingly, the sum of all population counts within 5km came to 839,145 persons, with some double counting of population points between castles. The sum of sites falling in the 0—3.45km zone was 490,380 or 58.4%, while the sum of sites falling within 3.45—5km was 348,756 or 41.6%. This further suggests a general preference to be sited closer to settlement hubs on a local level. The probability of population points being double-counted within the outer 3.45—5km portion of the radii was substantially higher, given the self-regulated spacing of the castle sites (see Figure 5.2.1C). As such, the total degree of centrality for non-shared demesne settlements is probably closer to around 65% instead of 58.4%.

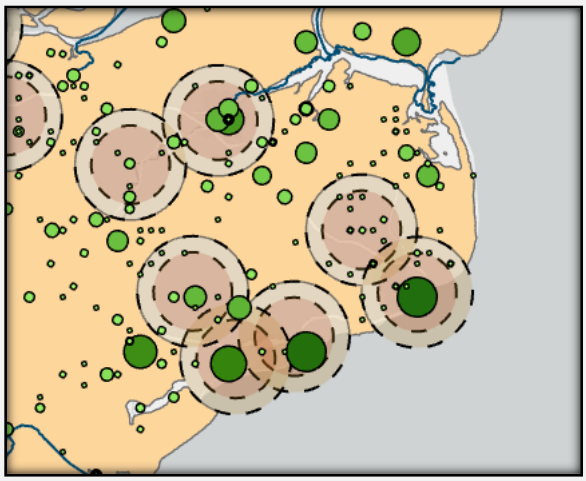


Figure 5.2.1C. *Sample from the Dover area demonstrating the higher likelihood of double-counting in the outer radial zone.*

In any case, what these statistics indicate is a more observable degree of settlement influence on castle siting where existing settlements were larger to begin with. The same is not the case for the medium established towns of the eleventh century, many of which never saw the construction of a local castle, at least according to the collected dataset. Moreover, such a preference appears to have had very little influence on the village level landscape, with the castles outside of larger settlements occurring with little apparent consideration of local population centrality around their site. Following the model in Figure 5.1.3, this likely indicates deliberate exploitation of established economies where the cost of settlement relocation would be higher, while for castle siting outside of these clearer population centres, only a slight degree of nucleation is observable. Therefore, the siting of these many low-local-population castles was probably more strongly influenced by ulterior motivations such as manorial caput location, easily exploitable terrain types, and other factors, with subsequent development of larger baileys occurring due to population relocation to the castle site.

5.2.2..... Radial Population Counts and Castle Continuity

If the 57 castles with no local population are removed due to their being mostly outliers (see Figure 5.2.2), the total average population within the 5km radii is 1,045. If masonry upgrade and site use beyond 1300 can be used as a measure of a 'successful' and long-lived castle enterprise, and the economic model detailed in section 5.1.6 is accurate, the populations correlating with these data

elements should be proportionally high. The average population for castle sites for which there is known disuse or no known use beyond 1300 CE is 978, while for the average site with known continuity beyond 1300 it is 1,139 or 8.9% above total average. The average population of sites without evidence for masonry construction was 978, while for sites with masonry evidence it was 1,248 or 19.4% above the total average. The veracity of the underlying assumptions of castle exploitation of existing manors appears to increase with consideration of castle foundation date. The average population within 5km radii for eleventh century foundations was 1,172, while for the twelfth century it was 855, and for the thirteenth it was 874. For eleventh century castles with known disuse or no known use beyond 1300 the average population was 969, while for known continuity it was 1,451 or 38.9% above the total average. The average for eleventh century sites with no masonry evidence was 1,029, while for sites with masonry it was 1,400. Finally, for eleventh century castle sites with known use beyond 1300 CE and masonry evidence, the average population was 1,495 or 43.1% above total average. These results strongly suggest that the 1086 CE population data are most accurate in assessing eleventh century foundations (more on this below) but they also indicate a positive correlation between the existing population distribution and the site characteristics associated with continuous investment and usage.

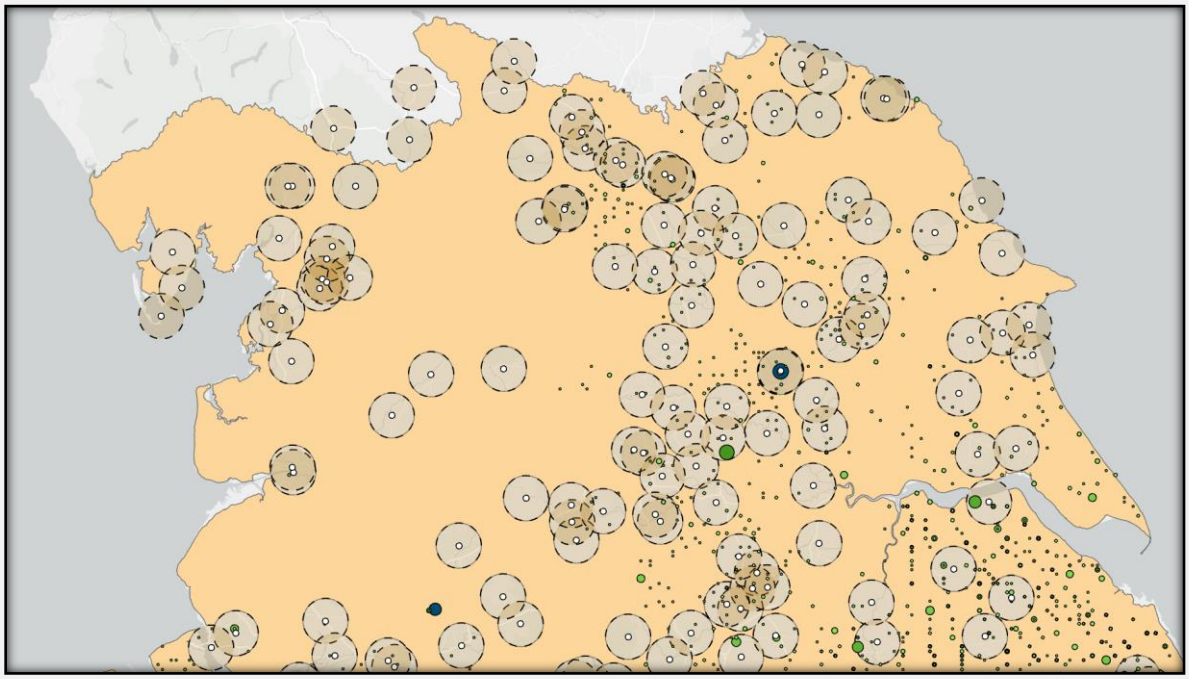


Figure 5.2.2. *Sample from the northern Domesday counties demonstrating the absence of population data in some areas. GIS database available for examination on request.*

5.3..... Thiessen Proximity Analysis

The complete Thiessen polygon layer from the GIS is shown in Figure 5.3A. The intent in utilising these polygons was to distribute all population points within the local vicinity of one castle site or another (as detailed further in section 3.3.3 of the methodology). The difference in areal coverage between the 5km radii (37.3% territory coverage) and the Thiessen polygon zones (100% territory coverage) is quite marked in nature and extent (see Figure 5.3B). In this way, the inclusion of all 1086 CE population sites has been achieved as intended, with many settlements up to the appropriate 10km range being associated with a local castle without the issue of double-counting points, but this has also introduced several limitations for analysis. The most concerning limitation of this approach is the

previously noted increased likelihood of transgressing historic tenurial associations. A more thorough equivalent might also seek to limit the polygons by rivers and include potential terrain influences with least-cost-route calculation. Unfortunately, historically precise results could only be extracted through extremely thorough correlation of Domesday tenurial records with known holders for each population point, falling well beyond the scope of this thesis, and likely being regionally limited in potential. However, in consideration of hinterland commerce (which appears to have operated beyond tenurial boundaries), and with diachronic tenurial shift in mind, mapping the 1086 population through Thiessen polygons serves as a useful tentative approach for identifying broader economic influence patterns.

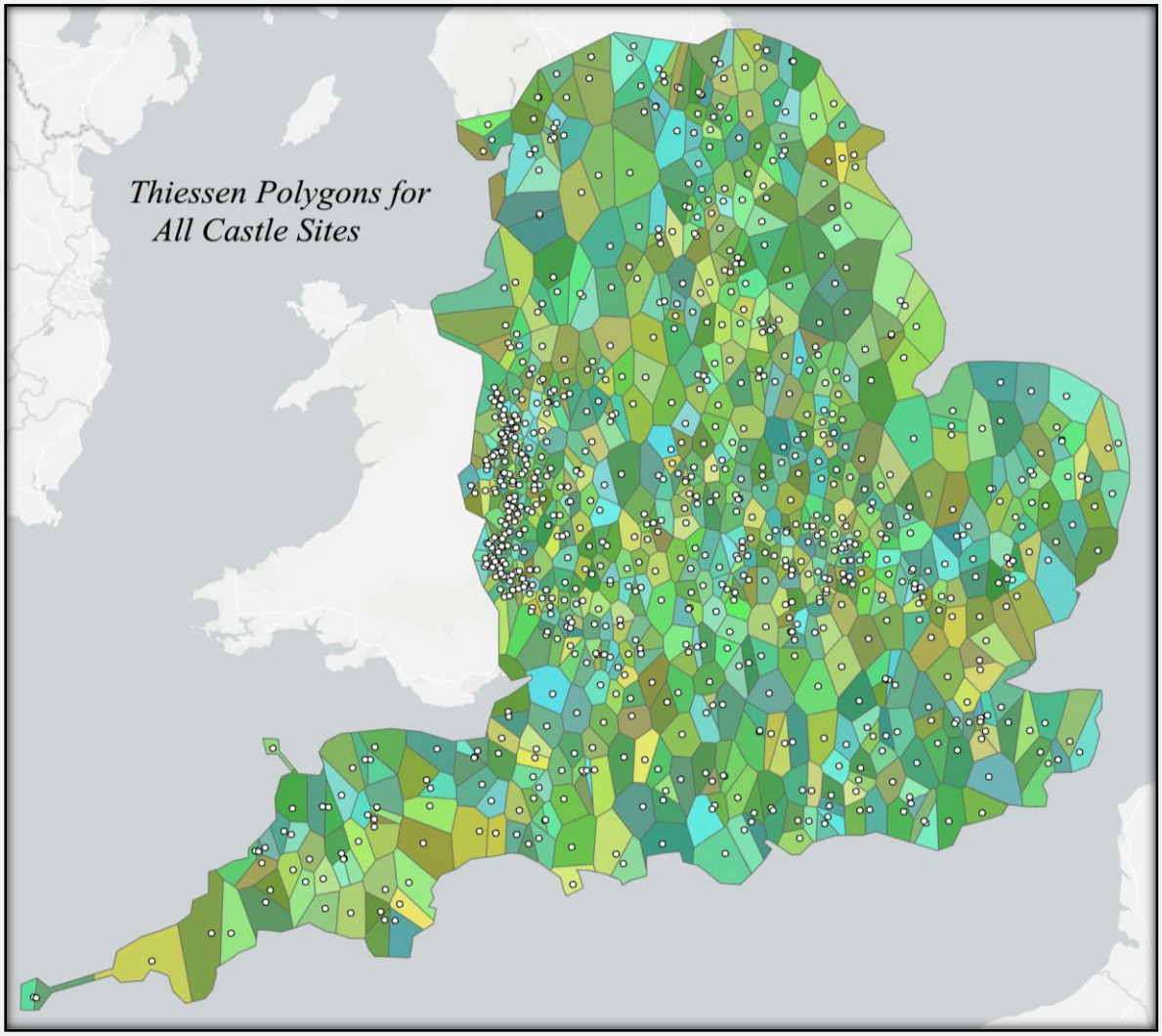


Figure 5.3A. *Complete map of Thiessen polygons for all castle sites 1000-1300 CE.* Note: the projection in the GIS may adversely alter the visualisation, giving a 'stretched' appearance (via WGS 1984).

Additionally, the Thiessen polygons were generated irrespective of known castle size, characteristics, or historical usage timeframe. Thus, there are some examples of small timber castles with known early disuse potentially interfering with polygon size (and thus local population counts) of adjacent larger castles which were rebuilt in masonry and/or used beyond 1300, such as in the case of Deptford Castle (CKEN02) encroaching on the zone of the Tower of London (CLON01); Dewy Hill (CLIN13) encroaching on Bolingbroke Castle (CLIN01) of which it may have been a precursor site; or Old Buckenham Castle (CNOR14) encroaching on the zone of New Buckenham Castle (CNOR11) which replaced it. There are also small timber castles that likely had little influence over their hinterland but were in areas of low castle density and, thereby, generated polygons encompassing high populations;

as at Antingham Hall Moat (CNOR02), Truro Castle Hill (CCOR13), and Goltho Manor (CLIN15). From the standpoint of visual observation, there are multiple sites with known masonry upgrade and continuous use with large and well-populated polygons, matching with the predictive model. However, the pattern for known abandonment and uncertain use is less clear and requires discussion.

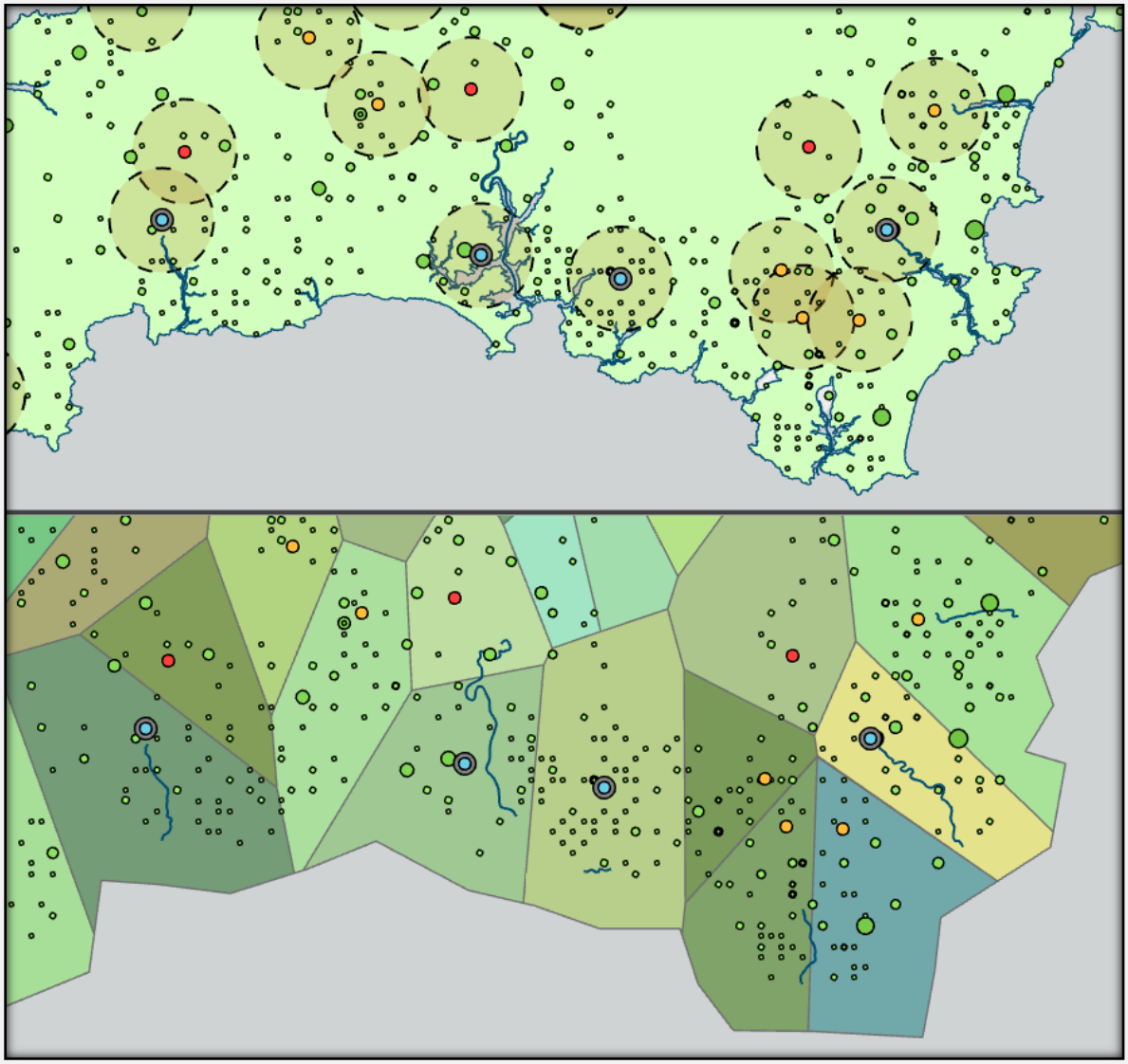


Figure 5.3B. *Sample from the GIS distributions in Cornwall and south Devon highlighting the different areal coverage of the 5km radii and the Thiessen polygons.*

5.3.1 ..... Thiessen Polygon Population Counts

Intriguingly, when compared with the 5km radii population counts for which the totalled population was 839,145 including overlaps, the Thiessen polygons included a further 523,276 persons, but the resultant distribution was not a flat reduction of small local counts and an increase in large local counts. Figure 5.3.1 shows the 1086 population within the Thiessen polygons as a curve distribution and histogram. Here, the number of castles with no settlements in their local area went from 57 with the 5km polygons to 90 with the Thiessen polygons. This is due to those areas with high castle density and few settlements, like the Welsh marches, splitting local settlement association inclusion instead of

simultaneously counting it. Most such castles had an unusually high probability of purely military functionality, and, together with the northern castles with no population data, are excluded from the statistics in the following sections. Again, due to site density, the number of castles for which the very low local population count was 1—250 increased from 116 in the radial area to 153 in the Thiessen area, despite the 38.4% increase in total population (comparison of Figure 5.2.1A and Figure 5.3.1). For the middle brackets from 500—2,000 the Thiessen counts all have lower frequencies than the radial counts. However, for the brackets from 2,250—5,000+ the Thiessen counts are all higher than the radial counts. In this way, the Thiessen polygon population counts consist both of more proportionally high local populations and more small populations than the radial counts. As such, they function as a useful tool to assess if castle density was a statistically significant factor for the continued use of sites; or put another way, whether castles were diachronically self-regulating in relation to distribution density.

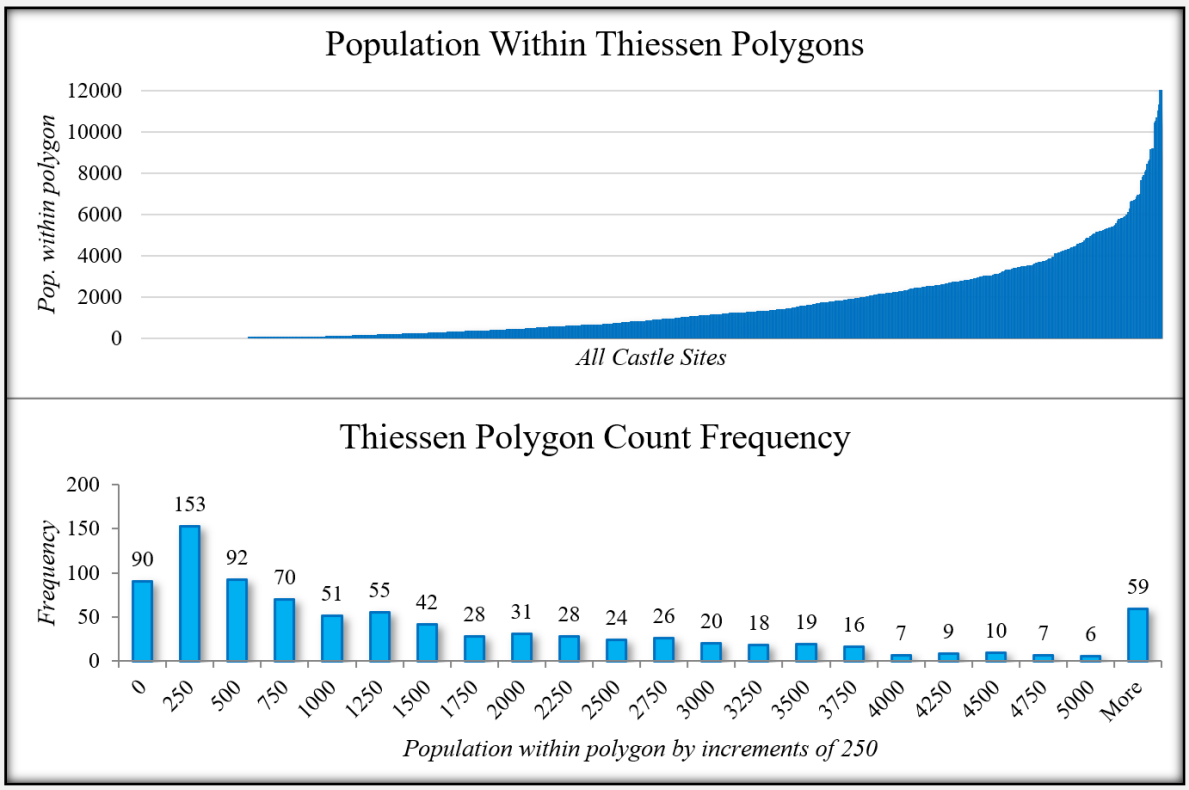


Figure 5.3.1. *Population within Thiessen polygons on castle sites shown with graph and frequency.*

5.3.2..... Castle Density and Continuity

Again, it might be supposed that castle sites with a large and highly populated zone-of-control would have had higher chances of being associated with local wealth generation sufficient to justify their upgrade to masonry, or continued use to 1300 CE. If the outlying site zones with no internal population count are excluded, the total average area of Thiessen polygons around castle sites is 152 square kilometres. For those castles which had known disuse or no known usage in 1300, the average area was 145 square kilometres or 4.6% below total average. For those sites with known site use dates beyond 1300, the average area was 167 square kilometres or 9.9% above total average. For the 100 smallest Thiessen polygons from the uncertain and disused group, the average was 22 square kilometres (many of the known disuse dates fall within this subset), while from the 100 smallest from the known continuity group it was 37 square kilometres or 40.1% greater between the smaller ends of each subset.

The averages are almost identical for sites upgraded to masonry when compared to their Thiessen area, while the sites which were rebuilt in masonry and had known usage by 1300 had an average area of 175 square kilometres or 15.1% larger than total average. If foundation date is considered and limited, the average polygon area of castles founded by 1100 CE is 171 square kilometres, while for castles founded by 1100 with evidence of continuity and masonry structures it is 177 square kilometres or 16.5% larger than total average. The closer correlation of sites with high populations and large polygons and eleventh century foundations indicates that the data may again be most accurate in their bearing with the most closely dated sites.

Similar results are observable for the Thiessen population counts. The average count for polygons, excluding the 90 sites with no population, is 1,578. For castle sites with known disuse or no known use by 1300, the average population is 1,470 or 6.8% lower than total average. For all castles with known continued use, the average population is 1,734 or 9.9% larger than average. Again, the results are amplified for the smallest subsets. Of the 100 lowest population counts from the disuse group, the average population was 110. Of the 100 lowest populations from the known usage group, the average was 240. Moreover, of those 248 castle sites which were both masonry and had known use beyond 1300, the average had a local population of 2,099 or a substantial 33% above total average. The results are once more amplified further when limited by castle foundation date. For the eleventh century, the average population was 1,986, with 1,445 for the twelfth, and 1,374 for the thirteenth centuries respectively. For the 151 sites built by 1100 CE with both masonry upgrade and use to 1300 the average population was 2,382 or an impressive 51.0% higher than the total average. This result reinforces the local result of the 5km radial analysis, suggesting that high local eleventh century population was a significant factor in diachronic castle use and development across the study period.

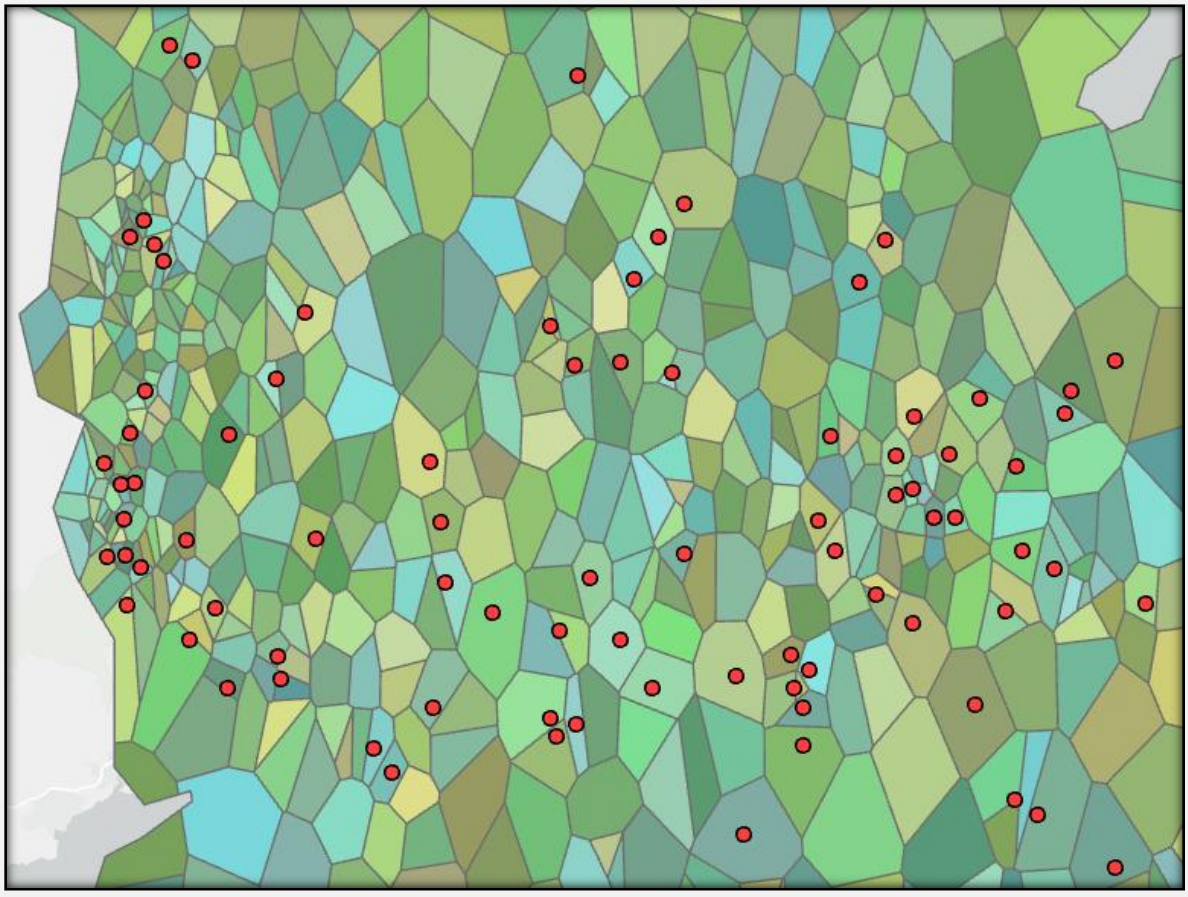


Figure 5.3.2. *Castle disuse <1300 mapped onto the Midlands and Welsh marches over the Thiessen polygons.*

These statistics may not be dramatic individually, but they are consistent in their implications. They indicate that regional castle density was a considerable factor in the short-term success of castle enterprises, as indicated positively by masonry upgrading, and negatively by known abandonment, and in the longer term, as indicated by the use dates. The distribution of known disuse in the Midlands and Welsh marches highlights the visible correlation of density and site failure from the total dating range (see Figure 5.3.2). Unexpectedly, castle nearness to other castles appears to have been an equivalent (if not more substantial) metric of estimating long-term use than local eleventh century population counts. Moreover, when population is considered relatively to castle density, large local area (i.e high associated population) correlates neatly with the expected outcomes of masonry upgrade and long-term site use. This is especially the case for those sites founded in the eleventh century, which indicates that if twelfth and thirteenth century population distribution equivalents to the Domesday Books data could be acquired they would likely match the respectively dated castle foundations. The results also indicate that 300 years might be too long of a timespan to stretch a synchronic settlement dataset in a spatial analysis of a structural network, bolstering the need for the subsequent settlement shift analysis (see Chapter Six). These results represent only an initial approximation of seigneurial and manorial economic influence and constitute a general outline which can be improved on as a model by further research and utilised to identify and understand significant outliers.

5.4..... Conclusions

The early medieval English seigneurial economy was built around a complex tenurial system of manorial land division supported by a predominantly agricultural peasant base. A model has been outlined here in which the castle operated reciprocally with its directly adjacent and locally surrounding manorial settlements as part of a multi-component economic enterprise, alongside its other more well-known and academically established military and status functions. This model has been tested through two proximity analyses which utilise the, cautiously refined and amended, population data for 1086 CE. The first method, the 5km radial analysis, produced two key findings: first, that the castle builders appear to have sited castles with some preference for existing settlement locations; and secondly, that the total local population around castle sites had a marked correlation with their short- and long-term development and use. Critically, the data here indicate that preference for existing settlement locations was limited to the larger established towns, with small towns and dispersed villages having a much less clear impact on subsequent foundations. The second method, the Thiessen polygon analysis, also demonstrated two key findings: first, that castle density, in of itself, affected the likelihood of long-term use and development; and secondly, that population mapped by castle density (castle—castle spatial nearness) demonstrates a positive correlation of high population counts with subsequent use and development, particularly in relation to eleventh century foundations. Chapter Five has also raised three intriguing elements specifically regarding the relationship between castles and larger settlements: first, that larger Saxon settlements were a common location for eleventh and twelfth century castle foundations; secondly, that a small subset of these Saxon population hubs appear to have never had castle sites planted within them; and thirdly, that many castles were sited in new locations but still developed large bailey and fortified areas, suggesting that they were part of the subset that catalysed thriving adjacent settlements, of the sort described by Creighton.[77] An assessment of the influence that settlement pattern had on castle distribution has been given here, and in the following chapter an assessment of the influence that the castle pattern had on settlement distribution will be given.

[77] Creighton 2005, p.162.

6.0..... Chapter Six: The Castle Town Enterprise

6.0.1..... Introduction

The distribution of early English castles forms the background pattern of the following analysis, with the shift in the spatial arrangement of larger towns across the study period of 1000—1300 forming a basis for comparative spatial analysis. The nearness of castle sites to towns where growth and decline occurred across this period is mapped to assess the degree of influence this had on the overall distribution pattern and long-term use of individual towns. As the castle site foundation and use dates were recorded by century ('abandoned by 1200' etc.) the 1086 Domesday data covers the large town subset for the start of the study period, or roughly 'by 1100' CE. Castle use dates were documented to 1300 at the latest. However, no system-wide settlement data could be found for 1300 or within the thirteenth century, as is discussed in section 3.1.4 of the methodology. As such, the 1377 Poll Tax data are used as the closest available dataset. This chapter first discusses the existing literature on the growth and decline of larger medieval English towns, with attention given especially to the problematic fourteenth century in which several plague and famine events occurred. The Poll Tax data is discussed alongside a summary of Dyer's study of settlement shift from 1377—1525, which has been used as a procedural basis for the approach used here. This is followed by presentation of the results from the GIS settlement shift analysis and a critical discussion of the role which castles may have played across this duration. The influence castle and settlement locations had on each other appears to have been bilateral across the 1000—1300 period, and care has been taken to avoid ascribing one or the other as 'prime mover' in analysis design. Chapter Five highlighted a positive correlation of the settlement pattern with the introduced element of castles, but recognised that the degree of influence was low, and that many castle siting decisions appear to have been strongly influenced by other factors. Here then, the castle sites are considered as a potential influence in relation to the sifting settlement pattern, aiming to identify the absence or presence (and degree) of system stabilisation and growth catalysation at associated urban hubs. The result is a complex body of statistics indicating that the castle network was a more substantial influence over settlement location than vice versa, at least at the level of larger towns.

6.1..... English Town Growth and Decline 1000—1300

The broader agricultural and manorial economy has been discussed (see section 5.1.5) and the following section is limited to the larger settlements categorised as towns. By 1300, some 80-90% of the population lived in small villages and dispersed farming hamlets, while the remaining 10-20% lived in towns of various sizes.[1] Many authors insist on the use of the term 'borough' which is appropriate to the period; however, as this diachronic study includes data from the Domesday Books for which the nomenclature is incongruous in relation to urban hubs (see section 5.1.4), the general term 'town' is used here. Functional terminology is discussed below, but broadly speaking the medieval settlement literature includes settlements with populations of more than 300 as 'small towns', with population thresholds of 500 or 1,000 or larger being more typical (and more likely market centres). The smallest towns mapped in the settlement shift analysis are of an estimated 830 persons for 1086 CE and 950 for 1377 CE. Needless to say, most towns in England were small when compared to contemporary western Europe, with only London (e. 40,000) being comparable in magnitude to the large towns of the

[1] Hilton 2014, p.20.

Lowlands, Northern Italy, Paris (e. 228,000)[2], Constantinople (e. 100,000), Seville (e. 90,000), and other continental capitals.[3] However, these top 80 towns in England for 1086 and 1377 were still important commercial hubs within their local pattern, and their use for assessment of diachronic growth and decline remains a valid and worthwhile, despite their relatively small scale.

6.1.1..... Town Characteristics and Urban Economies

Medieval English 'towns' are notoriously difficult to differentiate from smaller settlement forms, and this study follows the approach of Britnell in which they can be delineated as proportionally dense settlement hubs which generated an income through the sale of manufactures and services to people beyond their built extent.[4] Holt and Rosser note that it is useful to differentiate English towns from villages as having a substantial proportion of non-agricultural professions.[5] Hilton further highlights that towns produced comparatively more complex degrees of division of labour and craft skills than villages.[6] Britnell's analysis of town occupations suggests the overall thirteenth century urban working population was comprised of about 20% food and drink related professions, 15-20% textile production, 10-20% leatherworking, and 40-50% other services in metalworking, building, long-distance trade, and transportation.[7] Miller notes that in 1100, many crafts were still practiced by rural farming households alongside agricultural goods production, including the manufacture of textiles and ceramics, while many burgesses in towns were still partially occupied with agriculture.[8] Some goods like charcoal, pottery, and tiles were primarily produced in rural areas in this period. However, between 1000 and 1300 a widespread shift from generalised agricultural and crafts occurring across all settlement types to specialised agricultural practice at the village and hamlet scale and specialised crafts and commerce at the town scale is observable. Thus, the qualities of a 'town', across even these few centuries, were temporally dependent and malleable, with further demographic and functional shifts occurring in later centuries. For this reason, the focus of this study is given to population threshold, with the premise that high population roughly equates to urban quality and functionality propensity.

The quality of life of the peasantry also appears to have improved by the end of this period (by 1300), with an increase in demand for cloth, leather, salt, tar, pottery, iron, and fish more than proportionate to population growth.[9] As such, the proliferation of market commerce was an increasingly significant factor in urban economics. Miller has posited that the rate of development of market-oriented foundations of new towns was most prolific in the late eleventh and twelfth centuries and slowed down in the thirteenth (with some notable thirteenth century coastal commercial growth), and that the quantity of market centres was 'at capacity' relative to agricultural demand over distance by about 1250, despite the continuous growth of these hubs in the late thirteenth century.[10] Nicholas further postulates that most thirteenth century towns were more commercial than industrial in nature.[11] Official recognition and status differentiation of towns as market centres reinforces this claim. Between 1200 and 1349, several thousand market grants were issued by the Crown.[12] Bailey has posited that in 1300, 'seignorial demand for non-essential and luxury goods was the main driver behind commerce.'[13] With the establishment of settlements as market centres, the lay nobility granted burgess status to chosen inhabitants expressly to enhance economic exchange. The shift in economic power to interregional and overseas commercial trade was markedly weighted toward the late twelfth and thirteenth centuries, with the eleventh and early twelfth centuries town patterns entailing more locally oriented commodity

[2] Chandler 1987.
[3] Holt and Rosser 2014, p.6.
[4] Britnell 2000, p.106.
[5] Holt and Rosser 2014, p.4.
[6] Hilton 2014, p.28.
[7] Britnell 2000, p.122.
[8] Miller 1995, p.52.
[9] Britnell 2000, p.10.
[10] Miller 1995, p.274.
[11] Nicholas 1992, p.297.
[12] Holt and Rosser 2014, p.5.
[13] Bailey 2021, p.327.

markets. It has been estimated that England's overseas trade expanded at least three-fold betwene 1204 and 1309 (principally of wool, hides, and tin), and that this was a substantial stimulus for riverine and coastal urban growth.[14] The ease of access provided through navigable rivers to inland agricultural zones facilitated the bulk export of English goods, most notably of wool. Nicholas has noted that towns were distributed along navigable rivers at roughly 20–30-kilometre intervals, matching approximately the distance merchant vessels would travel in a day between ports.[15] He suggests further than merchants' families comprised a substantial portion of urban inhabitants while the merchants themselves often were traveling for much of the year. The increase in market exchange was a major factor in town population growth across the period, with merchants among the growing specialist (primarily craftsman) population contributing to an increasing division between urban and rural life and status.

The burgess populations of towns had some rights and privileges not afforded to the increasingly land-indentured majority, the villein peasantry. There is some indication that town-dweller identity and economic self-organisation was transcending the rigid feudal structure by 1300, but this social shift only fully developed in the fourteenth century with the vastly increased freedoms of both the burghers and peasantry classes. However, there were still some elements of towns which suggest an early departure from complete seignorial oversight. Street names in larger towns indicate some deliberate delineation of professions, which became organised as guilds or 'gilds'.[16] Groups of powerful merchants from the burgess class formed such guilds primarily in the fourteenth century, but some examples existed in the thirteenth.[17] The quarters of Oxford, for example, were apportioned as occupational zones for the drapers, cordwainers, skinners, cobblers, butchers, spicers, goldsmiths, mercers, vinters, cutlers, and armourers.[18] The clergy also held substantial sway over some urban economies, especially in relation to maintenance of monasteries. Britnell notes that the establishment of Norman monasteries by the clergy authorities led to the 'colonisation' of adjacent settlements, many of which grew to a town level, in much the same way the lay nobility had established castle towns.[19] The larger towns also maintained the integration of lay and church authority (detailed previously in section 4.3.3), with numerous parish churches within the expanding urban layouts. By 1300, London had over 100 parish churches, York had about 50, Lincoln 46, and smaller towns like Gloucester, Bristol, and Leicester had 10 or fewer.[20] Just as these churches were essential in encouraging bailey growth, they were critical in regulating social order in the growing urban hubs. By 1300 then, towns shared many features with villages in their religious and feudal sociality but differed primarily in their commercial urban functionality. The distribution of an estimated 500 towns with populations of 500—5,000 in 1300 indicates the vast majority of the rural population lived within a few miles of an urban centre.[21] Despite granting slightly greater social freedoms, control and planned development at these important self-regulating economic hubs remained a seigneurial priority across the 1000—1300 study period, with towns persisting as major revenue sources.

6.1.2..... Town Growth to 1300

The time-span from the tenth through to the thirteenth centuries constituted a 'sustained period of efflorescence and expansion' in England and across continental Europe coinciding with the Medieval Warm Phase, and resulted in an unprecedented increase in population and economic wealth.[22] Britnell postulates that the growth of urban hubs in particular toward 1300 was partly due to an increased population of carpenters and masons in towns employed by rural landholders to expand their demesne

[14] Britnell 2000, p.13.
[15] Nicholas 1992, p.297.
[16] Hinton 2000, p.241.
[17] Holt and Rosser 2014, p.9.
[18] Miller 1995, p.260.
[19] Britnell 2000, p.107.
[20] Hilton 2014, p.27.
[21] Holt and Rosser 2014, p.6.
[22] Bailey 2021, p.1.

development, increasing their landed income and available expenditure in a self-sustaining growth spiral.[23] The appeal of towns as an alternative to the increasingly constrained lot of the land-tied peasantry may have also played some role. Astill describes a period of particularly rapid and widespread town growth in England from around 1180 to 1250 with coinciding evidence for an increase town self-governance and craft regulation.[24] Fagan explains that the Medieval Warm Phase was inextricably related to the English population growth from around 900—1300.[25] He details that this 'unqualified blessing for the rural poor and small farmers' principally entailing warmer summers, higher rainfall, and milder winters provided a number of agricultural benefits. These included: practically eliminated the May frosts detrimental to grain harvesting; improving the viability of vineyards such that English wine was widely exported; permitted the use of more marginal soils as arable; and grazing lands being exposed for longer periods of the year for livestock.[26] Importantly, town growth within this period is thought to have been based primarily on migration from rural populations rather than internal growth, with some towns relying on commercial centrality to attract migration and others offering enticing burgess rights.[27] Many of the towns which grew were already existing villages or established towns in 1086, but others such as Kings Lynn and Boston, which were founded after the Domesday surveys, also saw great economic success and population growth in the twelfth and thirteenth centuries.[28] Britnell notes that estuary rivers and coastal ports, in particular, were widely established and expanded in the eleventh and twelfth centuries, with most medieval ports founded prior to 1200 and nine out of the twenty wealthiest towns in 1334 being seaports or estuary ports.[29] Town growth occurred in all regions of the Kingdom of England, and the relative proportions of urban to rural inhabitants increased slightly, though not dramatically relative to the 5 million estimated total population.

Astill posits that the origins and functionality of many towns around stimulating castle and cathedral sites is clear in the eleventh and twelfth centuries, but that in the thirteenth century 'the balance of consumption has swung from the aristocracy to the artisan and rural populations' with new foundations occurring independently of these monumental seigneurial structures.[30] This shift is further epitomised by the relocation of markets from castle-gates to peripheral town road intersections as occurred at Hereford, Northampton, and Oxford.[31] Later planned towns such as that at Woodstock are also well understood as deliberately market-oriented urban locations.[32] Astill postulates that thirteenth century town siting and growth had little to do with parochial or feudal considerations with towns oriented more by commerce and nodality.[33] However, while consumption may have shifted increasingly to the artisan and peasant populations and while commercial activity clearly increased, town planning and revenue extraction was still very much a seigneurial enterprise in 1300. Bailey has argued that manorialism and seigneurial control of commerce through market intervention was still quite entrenched even in the thirteenth century, only markedly shifting in the fourteenth.[34] Britnell argues that the establishment of settlements in the twelfth and thirteenth centuries often related more to deliberate seigneurial 'estate development' aimed at monetary gain 'quite unrelated to the requirements of a lordly household or administrative centre', as evidenced with the example of the 1196 foundation of Stratford-on-Avon.[35] Moreover, Britnell further contends that whether the siting was related to lordly caputs or not, 'at every stage in this period the fortunes of towns were shaped to a large degree by the decisions of landlords rather than entrepreneurial choices of townsmen'.[36] The debate between these two positions can be tested, as examples of town expansions and new town emergences are known in the twelfth and thirteenth centuries within and beyond the direct influence of physical castle oversight.

[23] Britnell 2000, p.110.
[24] Astill 2000, p.46.
[25] Fagan 2000, p.17.
[26] *Ibid*, p.15-18.
[27] Britnell 2000, p.115.
[28] Miller 1995, p.272.
[29] Britnell 2000, p.113-124.
[30] Astill 2000, p.47-48.
[31] *Ibid*, p.48.
[32] Miller 1995, p.270.
[33] Astill 2000, p.49.
[34] Bailey 2021, p.326.
[35] Britnell 2000, p.111.
[36] *Ibid*, p.123.

6.1.3..... Castles as Growth Catalysts

If commercial considerations were the principal guiding force behind town growth, what then was the potential role of the castle site on this aspect of the settlement pattern? Settlement growth has been documented at the sites of some Norman castles. Britnell refers to an observable growth of settlements adjacent to castle sites at Newcastle-upon-Tyne, Alnwick, Barnard Castle, Kendal, Morpeth and Richmond, postulating that 'Norman colonisation' in areas with little prior urbanisation often led to 'urban development in a feudal pattern'.[37] Astill similarly notes that the role of castles in establishing urban centres was most apparent in those areas which had 'little pre-Norman notion of towns', with Wales for example having 78% of its new urban developments occurring adjacent to castles.[38] It would seem quite likely that castles were most influential as catalysts of adjacent settlement growth leading to fully fledged towns in the eleventh and twelfth centuries. National stability was sufficient in the thirteenth for the chief baronial lords to freely develop settlements within their demesne beyond the direct control of castle bailey defences. There is a notable reciprocal paradox in those towns which were established prior to the Norman conquest which went on to have castles built at their site and to then continue to expand as important hubs. Miller discusses one such example at Bristol (see Figure 6.1.3) where the Saxon borough was enclosed within a Norman bailey, after which the town expanded to three times its earlier extent. Would such towns have enjoyed such nodal significance and growth were they not the seats of caput castles? In addressing such instances, a study of the rate of local castle presence and absence alongside settlement growth and decline should help to clarify the probability that these settlements would have expanded, whether or not castle fortifications were historically ever established, as is discussed below.

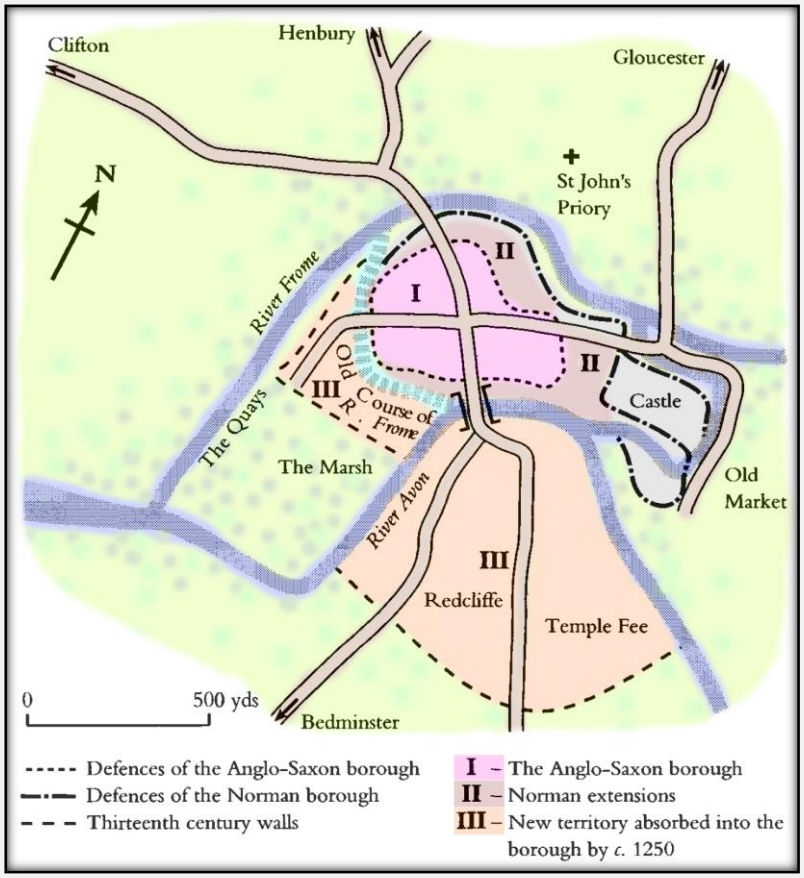


Figure 6.1.3. *The expansion of the castle town of Bristol from 1066—1250.* (Modified with colour by author; after Miller 1995.)

The impetus for English barons to establish and foster growth within towns is clear. While towns developed a different character to rural villages, by 1300 they still tended to be directly held by secular lords as demesne estates (with nearly 70% of all towns held by lay nobility) and thus generated substantial feudal incomes primarily through tolls and rents.[39] Hilton suggests that the medieval castle would have represented a 'universalising landscape feature' familiar to both rural and town-dwelling

[37] Britnell 2000, p.107.
[38] Astill 2000, p.44.
[39] Hilton 2014, p.21.

populations, perhaps extending the time needed for urban identities to transcend the feudal social order.[40] Less feudal regions of Europe had experienced much more rapid and larger scale urban development across the same period (the Lowlands and northern Italy especially, for example). Many English shire capitals were held by the crown as 'royal boroughs' and governed by sheriffs. These also often contained familiar castle structures, not of the nobility but of the state. However, even shire capitals were often held by lay nobility, as with the earls of Leicester holding the town of Leicester, the duke of Lancaster holding the town of Lancaster, and other lords holding substantial portions of towns, such as the Berkley's industrial quarter of Bristol.[41] Miller has tallied the foundations of early medieval towns in Gloucestershire, Warwickshire, and Worcestershire and found that 51% of new foundations within these counties were begun by barons, with 32% associated with monasteries, and the remainder by bishops, lesser tenants, and the crown.[42] Miller concludes that while percentages would differ regionally, in aggregate the importance of baronial seigneurial patronage in urban development was very clear. The castle site might thus be viewed again as part of the castle-settlement feudal enterprise through which the baronial tenant would intervene in town planning, local and regional economic pattern formation, and population distribution, while he simultaneously enforced his personal security within and his authority over the surrounding lands. What remains is to analyse whether the imposition of castles was statistically a boon or a bane to adjacent settlement growth across the total system.

6.1.4..... Later Medieval Settlement Shift

The 1377 Poll Tax was levied on all English men over 14 and has been used to construct estimates for English settlement sizes for by Fenwick and others.[43] Dyer used the 1377 Poll Tax data alongside a 1525 'Lay Subsidies' equivalent data source to map out urban growth and decline through comparison of the top 80 towns across each period (see Figure 6.1.4).[44] This approach has been used as a model for the present study. Dyer produced population estimates for the 1377 English settlements by multiplying the total number of taxpayers recorded at each location by a factor of 1.9 (indicated as the accepted estimative multiplier for the Poll Tax documents).[45] Hilton notes that earlier studies used a multiplier of 1.5, but suggests a number nearer to 2 more accurately conforms to the percentage of the population beyond taxed males.[46] Dyer postulates that 80 towns is the upper limit applicable to the Poll Tax and Lay Subsidies data, with smaller towns beyond this point being less well recorded or left out. His analysis was able to show that some 'urbanisation' (increased population percentage within towns) had taken place despite earlier suggestions to the contrary, with the total population of the largest 80 settlements increasing proportionately against an estimated slight decline in the total population of the Kingdom of England by 1525 (a reduction of about 18%).[47] Using the top 80 towns as a metric of urbanised population, Dyer has demonstrated that some 9.6% of the population in 1377 and 10.7% of the population in 1525 were living in larger 'urban' towns.[48] As the precise boundary between rural and urban centres is unclear, this metric is only a rough estimation. Following this metric, the 'urban' population of the Domesday data would be some 9.9% in 1086 CE, while the total population of the top 80 towns increased from 134,842 in 1086 to 267,665 in 1377, almost exactly doubling.

As shown for the period from 1377—1525 (Figure 1.6.4), Dyer observed a general pattern of town growth in the south and west of the kingdom, and a reduction in the north-east; indicating a general southward shift of the economic centre.[49] This map also interestingly suggests the trend toward coastal

[40] Hilton 2014, p.25.
[41] *Ibid*, p.26.
[42] Miller 1995, p.271.
[43] Fenwick 1983.
[44] Dyer 2000, p.272.
[45] *Ibid*, p.266,272.
[46] Hilton 2014, p.22.
[47] Dyer 2000, p.281.
[48] Dyer 2000, p.281.
[49] *Ibid*, p.282.

commercial preference continued from the thirteenth century. Dyer's study indicated that the rate of growth and decline was inextricably bound up with the change of regional economies. He suggests that there was, in this later medieval period, a decline in the total number of village scale markets and an increase in the commercial power of the limited number of remaining market towns. Moreover, Dyer stresses that previously inaccurate assessments have been produced through the reference to the decline of individual towns, without acknowledgement of these locations being elements of a holistic system.[50] As such, in attempting to replicate Dyer's level of accuracy, the 80 largest towns from 1086 and 1377 are used in the present study. Again, the Domesday data indicate a clear gradual increase across the range from the largest market towns to the village level, and there is no obvious reason why 'urban' categorisation can be clearly delineated at that date; with simple manufactured goods production and also market function, not yet being as clearly socially delineated from agricultural subsistence in town composition. This is partly because the Domesday towns were very small in scale, with 35% having a population <1,000, and only 6.25% having a population of 5,000 or greater. Critically however, whether or not the 1086 towns fit within any chosen definition of 'urban' or not is secondary to the rates at which the populations of these locations expanded or contracted over the study period. The key feature emulated from Dyer's late medieval settlement shift is thus proportionality, with the analysis then focusing further on the proximity of castle sites to population changes.

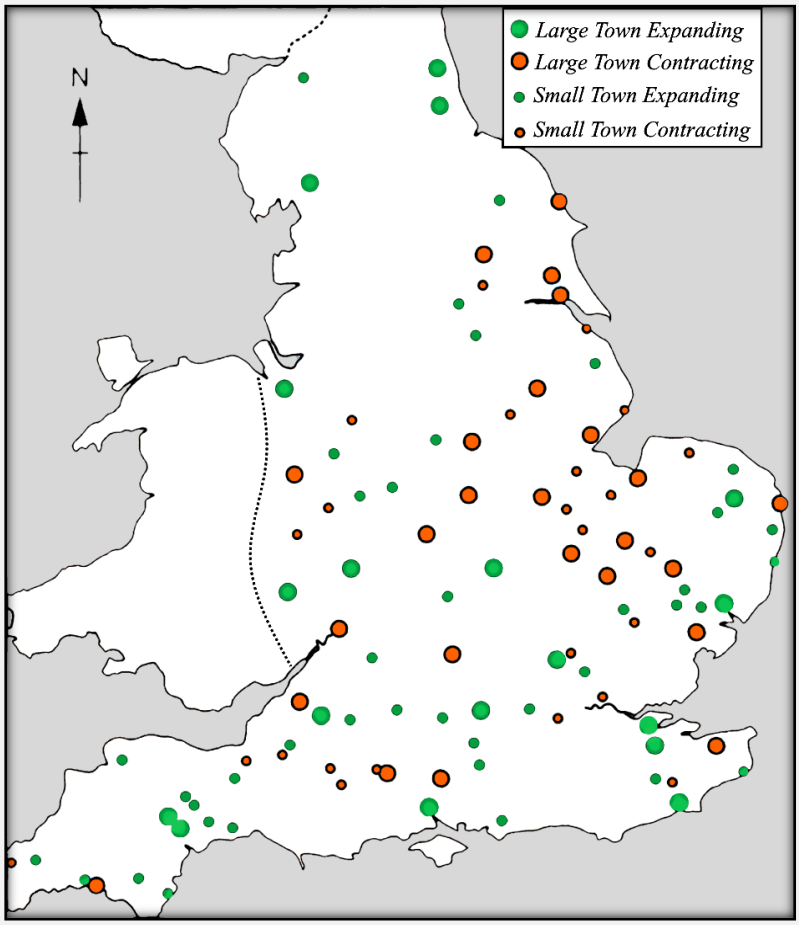


Figure 6.1.4. *Dyer's 1377—1525 settlement shift map with 108 towns.* (Modified by author; after Dyer 2000.)

6.1.5..... The Troublesome Fourteenth Century

Before proceeding to the results of the analysis of the 1086—1377 settlement shift, a serious issue of data accuracy must be discussed. While the data from 1377 are used as an estimative metric for the associated 1300 castle dates, a dramatic decline in the general population of England occurred across this 1300—1377 interim. The late thirteenth century had seen the height of town prosperity and population size in England across the medieval period.[51] However, this growth is thought to have reached its potential limits, and by the early fourteenth century some urban populations are recorded as

[50] Dyer 2000, p.266.

[51] Martin 2014, p.29.

struggling to acquire sufficient grain.[52] A population for 1300 of 5—6 million is postulated as the practical limit which could be supported by the contemporary English agricultural technology and the available landmass.[53] Population growth across Europe slowed by around 1285 CE.[54] The real trouble only began in the 1300s. Torrential rain in 1315 saw much of the western European grain harvest destroyed, leading to widespread famine in England and a minor plague in 1316—1317.[55] Fagan describes the brutal cycle of supply problems created by years of bad weather related to climatic cooling in the early fourteenth century, leading to crop and livestock losses and increased food costs.[56] Just as the population and economy had spiralled upward to around 1285-1300, the shortages of 1315 onward led to the inverse, with a depleted number of oxen ploughing a reduced acreage of fields; reduced wool yields for export; reduced hay and grain harvests to feed the labourers and oxen, and so on.[57]

Disastrously, the bubonic plague known as the 'Black Death' arrived in England in 1348, after the defined study period (1000—1300) but prior to the 1377 data.[58] Moreover, England suffered several additional waves of plague in 1361, 1369, 1371, and 1375, which further reduced the population.[59] What does this mean for population distribution estimates for this study? In their 2011 study of the English medieval population shift over time, Broadberry et al have confirmed 1086 and 1377 as the key early historic dates for which we can deduce a benchmark population.[60] They observed population estimates from various pre-2011 publications and produced estimate ranges of 1.4—2 million in 1086 CE (with difference primarily dependant on: multiplication of slaves; the order of magnitude of multiplication for household heads; and the rate of omission in the Domesday books), and estimate ranges of 2.2—3.2 million in 1377 (dependant on factors of multiplication of taxed males).[61] Wood posits that from 1086 to 1349 (pre-plague) the population of England grew from roughly 1.5 to 5 million, before decreasing by 40-50% by the 1370s.[62] This degree of growth was not unusual for Medieval Warm Phase, with France's population increasing from 6.2 to 17.6 million from c.1100—1300 CE.[63] Bailey summarises that the combination of climatic shift, bubonic plague, and famine of the fourteenth century saw a population decline in England from some 5 million to 2.25 million by 1377, not recovering to pre-plague levels until the early eighteenth century.[64] These key population points across the study period are shown in Figure 6.1.5.

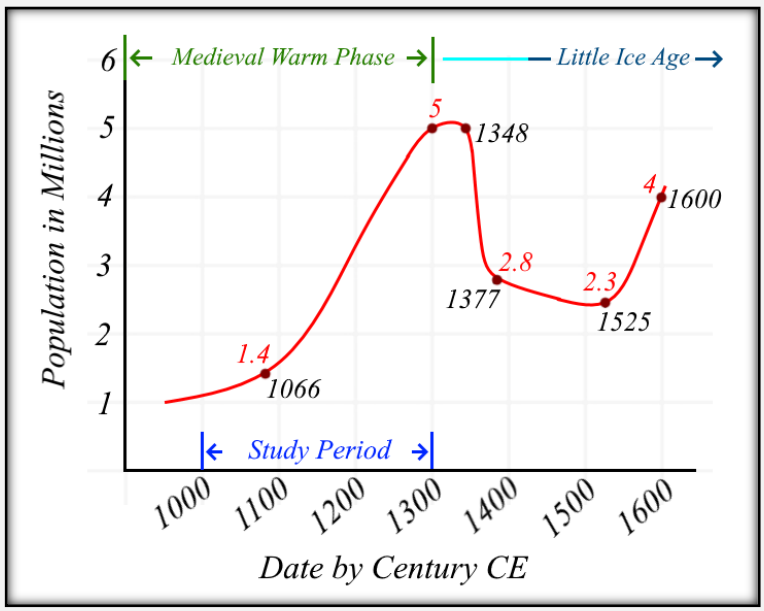


Figure 6.1.5. *The population curve during and after the study period.* (By author; data from Broadberry et al. 2011).

As the settlement shift analysis seeks to assess the relative size of the largest 80 settlements for each end of the 1100—1300 period, this reduction of population may not be problematic to mapping the overall pattern; however, this proposition relies on the distribution from 1300—1377 not

[52] Britnell 2000, p.116.
[53] Broadberry et al. 2011, p.3.
[54] Fagan 2000, p.33.
[55] Nicholas 1992, p.403.
[56] Fagan 2000, p.32,40.
[57] Fagen 2000, p.40.
[58] Dobson 2000, p.276.
[59] Wood 1987, p.189; Tuchman 1979.
[60] Broadberry et al. 2011, p.3.
[61] Broadberry et al. 2011, p.5-9.
[62] Wood 1987, p.189.
[63] Fagan 2000, p.33.
[64] Bailey 2021, p.1-5.

entailing drastic alterations in population proportionality between towns. There is good reason to suggest that population decline occurred universally across the kingdom. While plague is normally followed by a population rebound, the repeated waves of death and famine had a longer-term impact on the population recovery.[65] These repeated waves of plague and famine likely had an 'averaging effect' on the overall distribution of population loss. Dobson has noted that rates of death appear to have been particularly high in urban settlements.[66] Again, this is not necessarily problematic for mapping pattern shift, so long as the proportion of deaths between towns was roughly consistent. Encouragingly, Holt and Rosser note that many villages were lost entirely to the years of plague, but that almost all of the larger settlements remained from 1300—1500, albeit with significantly lower populations.[67] There is also some indication that social change may have been sufficient to adversely affect the proportionate distribution of rural and urban populations from 1300 to 1377. The Black Death led to dramatic shifts in social order in the late fourteenth century, including the lord-peasant relationship shifting to be more economic or 'proto-capitalist' than feudal, and an increase in the status and skilled roles of the peasant workforce, especially including women.[68] The English form of indentured serfdom, villeinage, had become much less entrenched in the social hierarchy, with paid peasant labour becoming normalised.[69] While feudalism appears to have remained a substantial social force in 1300, its decline might have seen impactful changes in the proportionality of population centres. Indeed, Dyer observed a longer-term reduction of smaller towns with an increase in the power of a limited set of larger towns. However, it is unlikely that these social alterations had an immediate effect sufficient to invalidate the study, with resultant shifts more impactful towards the fifteenth and sixteenth century patterns. Dobson argues that there is good evidence to argue town growth stagnated across the kingdom from 1300—1525, and it is thus unlikely that towns altered their inter-relative rank-size through expansion prior to 1377.[70]

Critically, most of the observable decline of formerly significant Saxon towns appears to have occurred substantially prior to the 1300 date. This often correlated with relative regional settlement shifts such that the failure of one settlement was related to the success of others in the vicinity. With the chaos of the fourteenth century, it seems likely that the general stagnation of growth would have limited this relational decline. For example, Hinton describes shifts in local settlement predominance as with the replacement of Wallingford by Reading and of Northampton by Coventry.[71] Winchester declined in significance after its role as a royal administrative centre moved to London.[72] Environmental problems and social conflict within towns caused by domestic overcrowding and industrial activity have been cited as contributing factors in thirteenth century town decline.[73] Miller details that towns like Buckingham and Old Sarum had become 'rotten boroughs' scarcely larger than villages by 1300 despite former prosperity.[74] Climatic and environmental factors also played some role. For an extreme example, Dunwich was 'lost to the sea' in the thirteenth century when severe storms altered the coastline.[75] Furthermore, not all new foundations succeeded either, with the optimistically named Newborough in Staffordshire, Newtown in Hampshire , and Warenmouth in Northumberland not going on to become substantial urban centres.[76] If it is the case that the pattern in 1300 and 1377 are sufficiently similar in proportionality, despite the known population loss, and that most pattern shift occurred in the earlier half of the study period, the greater issue then becomes one of identifying 'growth' and 'decline' when the 1377 dataset is roughly half the estimated size of the 1300 reality. There is little that can be done to correct for this deviation, beyond blind estimation, but it can be acknowledged that the historic 1300 pattern would have entailed higher numbers of expanding settlements, with some of the 'contractions'

[65] Broadberry et al. 2011, p.9.
[66] Dobson 2000, p.276; Nicholas 1992, p.405.
[67] Holt and Rosser 2014, p.6.
[68] Bailey 2021, p.8.
[69] Bailey 2021, p.326.
[70] Dobson 2000, p.277.
[71] Hinton 2000, p.243.
[72] *Ibid*, p.241.
[73] Holt and Rosser 2014, p.18.
[74] Miller 1995, p.272.
[75] Hinton 2000, p.242.
[76] Miller 1995, p.273.

observed representing merely slower rates of growth than definite contractions. Nevertheless, the mapped shift is accurate in its depiction of distribution shift from 1086—1377, and if growth catalysation is principally related to castle siting and not continued castle use, as is discussed below, the ramifications of the population loss quandary are further reduced.

6.2..... Settlement Shift from 1086—1377

Working within these limitations then, the 80 largest towns from Dyer's 1377 list (with London added with a population estimate of 40,000) and the largest 80 towns from the 1086 dataset (including all 16 'added' absent Domesday settlements) were separately recorded and then compiled into a compound list of 137 towns (see Dataset 3.). The total population for 1086 came to 134,842 while for 1377 it was 267,665. If the population loss from 1300—1377 was 50%, an estimate for the 1300 top 80 town population would be 535,330, and if the loss was 40% it would be 446,108. These estimates are assuming the ratio of urban and rural populations would have declined at a similar rate and may have been higher given Dobson's suggestion that towns faced a particularly high degree of plague and famine related population loss. From 1086 to 1300 then, the population of towns increased by at least 231-297% before declining from that peak by 40-50% to the 1377 level. Put more simply, the population from 1086 roughly tripled by 1300, then halved by 1377. Figure 6.2 displays the population sizes of the towns for each of the dataset end dates. On the smaller end of the town size scale, 28 (35%) of the 80 towns from 1086 had populations of below 1,000 and 32 (40%) had populations of 1,000-2,000, while for the 80 towns from 1377 only 6 (7.5%) had populations below 1,000 and 35 (43.8%) had populations from 1,000-2,000; presenting a roughly similar middle 1,000-2,000 subset between eras with fewer <1,000 towns included in the top 80 for 1377. However, on the larger end of the town scale 10 (12.5%) of the 1086 towns compared to 24 (30%) of the 1377 towns had populations exceeding 3,000 inhabitants. If the number of towns with 3,000 persons or higher is estimated for 1300 it would be in the order of 55 or 68.8% of the set of 80. Tables 6.2A and 6.2B give a full summary of the top 80 towns for each date and the accompanying population estimates used for the study (the composite list and other collected town data details are accessible in Dataset 3.).

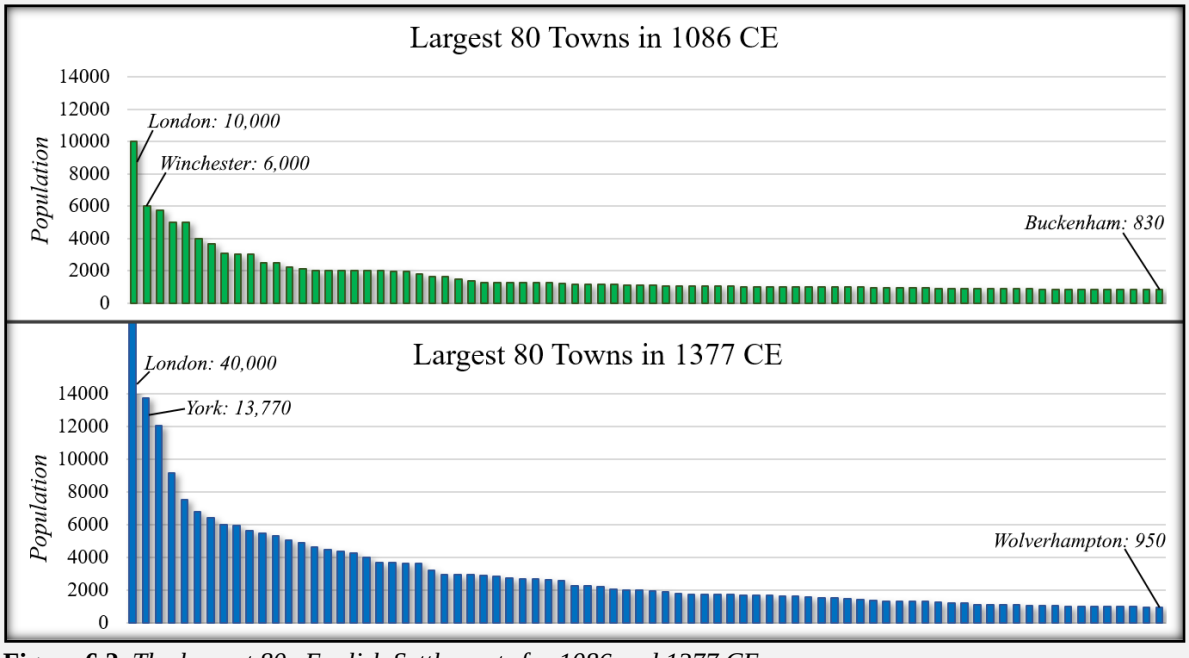


Figure 6.2. *The largest 80x English Settlements for 1086 and 1377 CE.*

Table 6.2A. The Largest 80x Settlements in 1086 CE

N#.	Settlement:	1086 Pop:	N#.	Settlement:	1086 Pop:
1.	London	10,000	41.	Huntingdon	1,080
2.	Winchester	6,000	42.	Chilcomb	1,065
3.	Norwich	5,725	43.	Sherborne	1,055
4.	York	5,000	44.	Ipswich	1,050
5.	Lincoln	5,000	45.	Keynsham	1,045
6.	Bristol	4,000	46.	Sawbridgeworth	1,045
7.	Thetford	3,640	47.	Bury st Edmunds	1,035
8.	Cam	3,090	48.	Minster	1,005
9.	Oxford	3,000	49.	Manchester	1,000
10.	Gloucester	3,000	50.	Shrewsbury	1,000
11.	Skeffington	2,515	51.	North Curry	1,000
12.	Exeter	2,500	52.	Ridlington	1,000
13.	Dunwich	2,200	53.	Great/Little Cheverell	990
14.	Dover	2,100	54.	Allhallows, St Mary	985
15.	Crediton	2,035	55.	Great/Little Bedwyn	985
16.	Leicester	2,000	56.	East/West/South Harting	980
17.	Stamford	2,000	67.	Ditchling	980
18.	Tamworth	2,000	58.	Rye	945
19.	Cambridge	2,000	59.	Micheldever	945
20.	Wallingford	2,000	60.	Barton upon Humber	945
21.	Folkestone	1,975	61.	Werrington	930
22.	Milton Regis	1,965	62.	Winnianton	930
23.	Leominster	1,780	63.	Grantham	915
24.	Taunton	1,645	64.	Langton	910
25.	Wymondham	1,635	65.	Welford on Avon	905
26.	Chester	1,500	66.	Iford	875
27.	Saltwood	1,360	67.	Guildford	875
28.	Milborne Port	1,280	68.	Chippenham	875
29.	South Malling	1,270	69.	Beckingham	870
30.	Aldington	1,265	70.	Cawston	867
31.	Steyning	1,250	71.	Colber	860
32.	Barking	1,245	72.	Caythorpe	860
33.	Odiham	1,240	73.	Lyminge	850
34.	Snettisham	1,230	74.	Shotley	850
35.	Fordington	1,175	75.	Evingar	845
36.	Sherburn in Elmet	1,165	76.	Whitchurch	835
37.	Canterbury	1,155	77.	Whitstable	830
38.	Calne	1,145	78.	Bower/Broad Chalke	830
39.	Patcham	1,130	79.	Writtle	830
40.	Melksham	1,120	80.	Buckenham	830

The total urbanised population in these settlements amounts to 134,842. 16 locations are not included in the Domesday Books data; and have been added by the author.

Table 6.2B. The Largest 80x Settlements in 1377 CE

N#.	Settlement:	1377 Pop:	N#.	Settlement:	1377 Pop:
1.	London	40,000	41.	Litchfield	1,950
2.	York	13,770	42.	Newbury	1,900
3.	Bristol	12,060	43.	Durham	1,800
4.	Coventry	9,150	44.	Hadleigh	1,740
5.	Norwich	7,510	45.	Bridgnorth	1,710
6.	Lincoln	6,780	46.	Reading	1,710
7.	Salisbury	6,410	47.	Wells	1,710
8.	Winchester	6,000	48.	Bridgwater	1,690
9.	Lynn	5,940	49.	Barking	1,670
10.	Colchester	5,615	50.	Chichester	1,650
11.	Boston	5,455	51.	Peterborough	1,615
12.	Newcastle	5,320	52.	Maidstone	1,600
13.	Beverley	5,060	53.	Beccles	1,560
14.	Canterbury	4,890	54.	Doncaster	1,520
15.	Bury st Edmunds	4,650	55.	Dover	1,500
16.	Oxford	4,480	56.	St Germans	1,455
17.	Leicester	4,370	67.	Cirencester	1,420
18.	Gloucester	4,250	58.	Grimsby	1,330
19.	Chester	4,000	59.	Louth	1,300
20.	Great Yarmouth	3,690	60.	Barnstaple	1,290
21.	Shrewsbury	3,670	61.	Carlisle	1,290
22.	Hereford	3,620	62.	Wainfleet	1,290
23.	Cambridge	3,610	63.	Thaxted	1,270
24.	Exeter	3,220	64.	Whitby	1,220
25.	Worcester	2,960	65.	Wilton	1,210
26.	Hull	2,960	66.	Selby	1,110
27.	Plymouth	2,940	67.	Cranbrook	1,090
28.	Ipswich	2,860	68.	Rochester	1,080
29.	Northampton	2,810	69.	Bath	1,080
30.	Nottingham	2,750	70.	Newcastle under Lyme	1,045
31.	Ely	2,650	71.	Tenterden	1,040
32.	Scarborough	2,650	72.	Taunton	1,020
33.	Huntingdon	2,630	73.	Banbury	1,010
34.	Stamford	2,550	74.	Kendal	1,000
35.	Newark	2,240	75.	Mildenhall	980
36.	Ludlow	2,230	76.	Melksham	970
37.	Southampton	2,190	77.	Kirkby Moorside	970
38.	Pontefract	2,060	78.	Eccleshall	970
39.	Rye	2,000	79.	Dartmouth	960
40.	Derby	1,990	80.	Wolverhampton	950

Data after Dyer, A. 2000; after Fenwick, C. 1983; translated from the 1377 Poll Tax. Note, London has been added by the author, due to its exclusion from the tax record. Total urban population: 267,665.

6.2.1..... Settlement Shift Results

The GIS mapped settlement shift from 1086—1377 highlights several structural alterations (see in Figure 6.2.1A). No maps covering this transition were found in the research process, despite some works discussing town growth for this period, and this may constitute a useful contribution for future settlement research. The results were displayed with a similar design and legend to Dyer's later dating transition maps for use of comparison. Note that Durham, Carlisle, and Newcastle were among Dyer's top 80 English towns, but fall beyond the scope of the 1086 Domesday borders and thus have no equivalent data point (indicated in blue). Across the 1086—1377 period, the northern and western stretches of the kingdom saw the foundation and expansion of around 20 key frontier towns including Ludlow, Kendal, Chester, Hereford, and Newcastle under Lyme. These areas had relatively sparse populations in 1086, so the presence of these towns likely indicates a combination of local growth and migration. In the south, many formerly significant Saxon boroughs contracted in size and local prominence including Thetford, Crediton, Taunton, Guildford, Odiham, and the former capital of

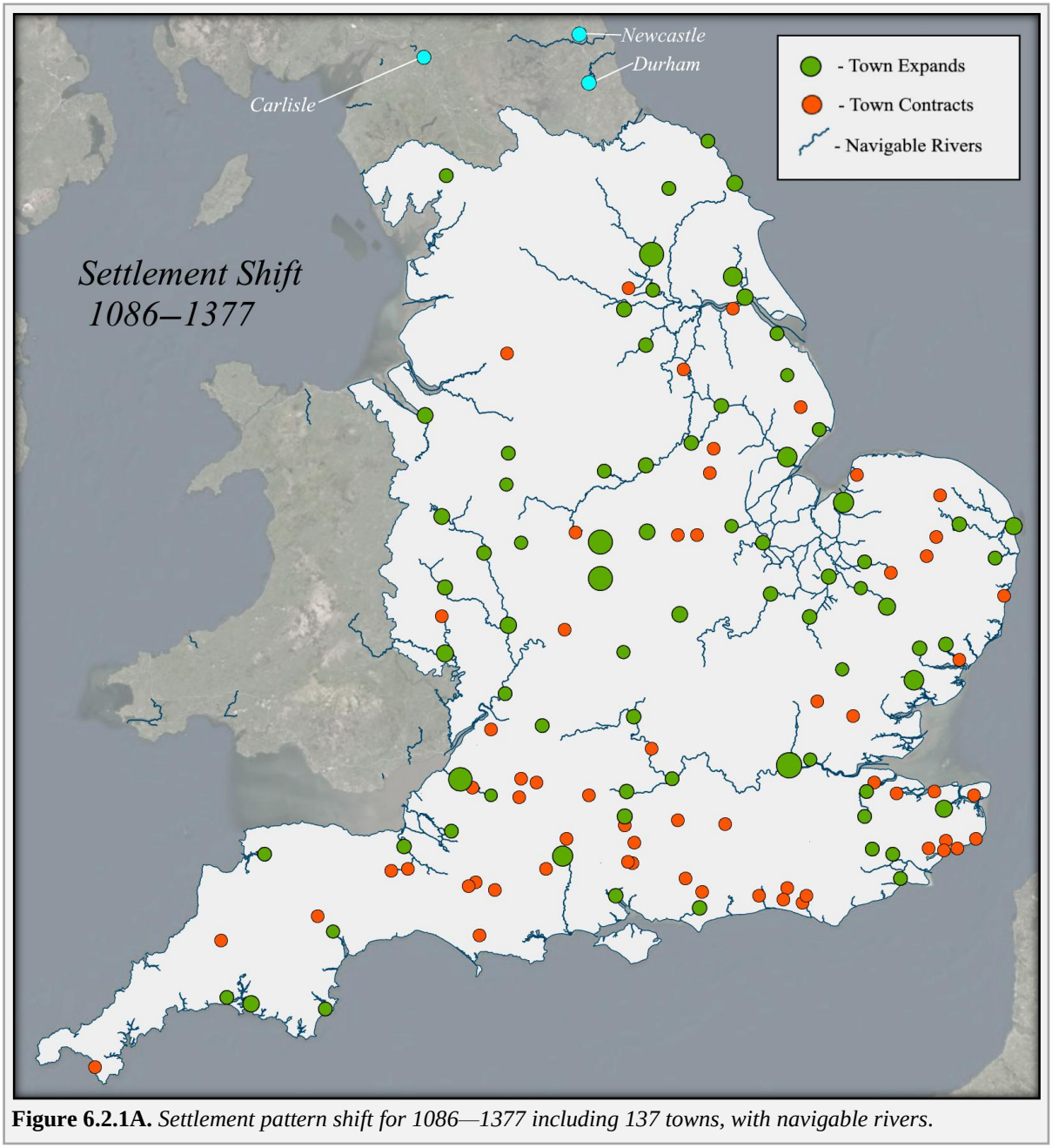


Figure 6.2.1A. *Settlement pattern shift for 1086—1377 including 137 towns, with navigable rivers.*

Winchester. The ‘economic centre’ shifted northward from the south-east, with regional expansion and contraction producing a network of major towns that was geographically more evenly spaced than had existed in the eleventh century. This is perhaps most visible with adjacent comparison of the distributions for each date (see Figure 6.2.1B). Dyer’s 1377—1525 observations demonstrated a later decline of the north-easterly cluster of towns from Lincolnshire to Yorkshire, which indicates that the area saw an urban peak in the 1200s. In both Dyer’s study and the present analysis, coastal towns typically showed greater numbers of town expansions than contractions, with seaports becoming important land-sea hubs. Several zones had no major towns across the period including the central and western Weald, the Chiltern Hills, Exmoor and Dartmoor, the Yorkshire Dales, and Lancashire coast.

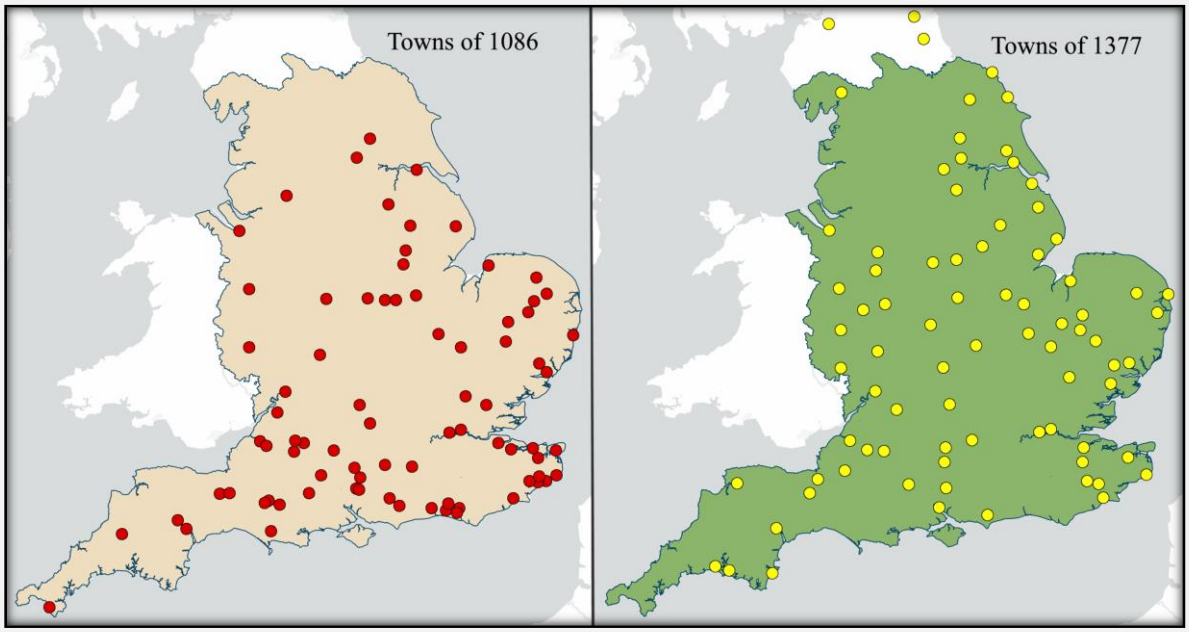


Figure 6.2.1B. *Comparative patterns of the largest 80x towns from 1086 & 1377 CE.*

One significant pattern in town distribution from 1086—1377 is the preference for proximity to navigable rivers toward the latter date, as demonstrated in Figure 6.2.1A. For example, in the Anglian River Basin, there are 19 towns adjacent to medieval navigable rivers which expanded in population. These include the towns of Lynn and Huntingdon on the Great Ouse, Bury St Edmunds and Mildenhall on the River Lark, Cambridge on the Cam, Boston on the Witham, and Colchester on the Colne. By Contrast, only Shotley, Thetford, and Snettisham were situated on or near navigable rivers within this basin but contracted in size regardless. Of the towns within the Anglian Basin not on navigable rivers, Thaxted, Northampton, and Louth expanded in size, demonstrating growth was possible beyond the major rivers. However, Writtle, Dunwich, Buckenham, Wymondham, Cawston, Ridlington, Grantham, Caythorpe, and Langton all were distant to navigable rivers and contracted, indicating that river access was a marked correlate of expansion probability for larger towns across the study period. Such a pattern is also statistically apparent across other major basins, including the Severn, Thames, Humber, and Dee.

The contraction of towns on navigable rivers is statistically uncommon, and in all observable cases a nearby growing town (and likely site of population transfer via internal migration) is identifiable. One notable exception to the pattern of growth in correlation with navigable rivers is the central Midlands where Coventry, Banbury, Leicester, and several towns in Northamptonshire, appear to have expanded without major river access. A second such exception is Staffordshire, where Wolverhampton, Eccleshall, and Newcastle under Lyme expanded. A third is the northern outlying towns of Kendal and Kirkby Moorside. All of these places appear to have had little local settlement competition. Where the

highest numbers of town decline occur in the south-east and south-west, the lack of navigable river adjacency strongly reinforces this observation. While all towns had access to fresh water from streams and small rivers, the desirability of riverine vessel utility for trade and transport appears high, matching with the scholarly consensus of increased waterborne commercialisation of towns toward 1300.[77]

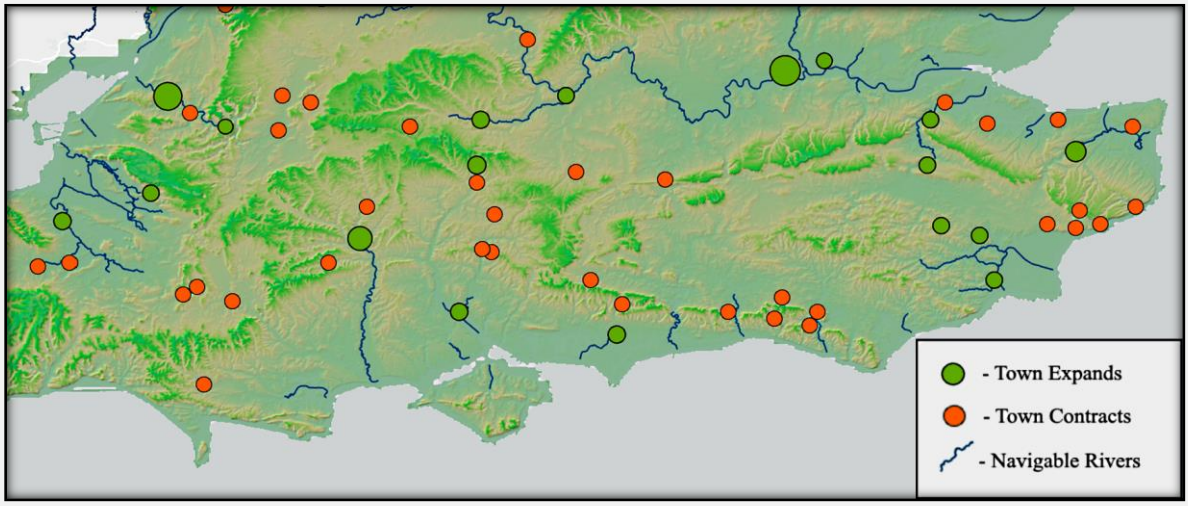


Figure 6.2.1C. *Sample from the south and south-east highlighting town contraction and local terrain.*

In most cases of contraction, the exact population loss is not known (as the 1377 dataset frum Dyer does not list the counts for locations beyond the top 80 towns). It can be noted that Dover contracted from 2,100 to 1,500 and Taunton from 1,645 to 1,020, from 1086—1377, but for most cases the Domesday town simply does not occur in the 1377 top 80 count and is assumed to have been smaller than the smallest listed town of 950 persons. As such, the towns which saw the population loss of 1,000 or more (or more than 50%) in total inhabitants were Skeffington, Cam, Thetford, Crediton, Dunwich, Folkstone, Milton Regis, Wallingford, and Tamworth. Of the total 137 composite towns, 61 (44.5%) had contracted in size across the study period, while 76 (55.5%) had expanded or emerged as major towns. Keep in mind these results would have leaned more markedly toward expansion for the 1300 date. The south and south-east saw the highest rates of town contraction with some 35 or 57.4% of all contractions occurring in only the seven counties of Kent, Sussex, Surrey, Hampshire, Wiltshire, Dorset, and Somerset (see Figure 6.2.1C), most of which were inland hubs.

Many of these contracted settlements were sited in the hill ranges including the North and South Downs, which juxtapose to the general twelfth and thirteenth century preference for lowland towns. Indeed, the overall average altitude of major towns decreased by 1377. On the other hand, the growth of towns is differentiated by those that had a 1086 record or estimate and those that did not. For example, Norwich grew from 5,725 to 7,510, Bury St Edmunds from 1,035 to 4,650, and Coventry from a lowly 345 to an impressive 9,150. Sites with no 1086 records were recorded as ‘emerging’ but this may well be the result of incomplete records. Such towns include Doncaster which grew to 1,520, Ludlow at 2,230, Pontefract at 2,060, and Newcastle at 5,320. To provide a useful measure in discussing proportional shift, categorisation of towns was divided into small (less than 2,500 inhabitants) and large (greater than 2,500 inhabitants) with contraction, expansion, and emergence (in such cases where a town was in the top 80 in 1377 without any 1086 record). As such, from 1086—1377: four large towns contracted at Cam, Skeffington, Thetford, and Winchester; 57 small towns contracted; 9 large towns emerged at Boston, Great Yarmouth, Hereford, Hull, Lynn, Newcastle, Plymouth, Scarborough, and Worcester; 8 large towns expanded, 15 small towns emerged, and 44 small towns expanded.

[77] Nicholas 1992.

6.2.2..... Castle Location and Town Growth Patterns

The results of analysing castle nearness to town expansion and contraction from 1086—1377 produced decidedly more cogent correlations than had the proximity analyses of eleventh century settlement pattern influence on castle site choice (discussed in Chapter Five). The distance from each of the 137 composite towns to the nearest castle site was calculated and recorded in Dataset 3. To be consistent with the proximity analyses, detection range from the town point was limited to 5 kilometres. Where there was no castle site within 5 kilometres, a value of '>5km' was recorded. The average distance from the town to castle for observed relationships <5km was 1.12 kilometres, with many clearly associated castles within only several hundred metres of the historic town centre. As such, a further differentiation was made between towns with a castle from 0-1km (the majority) and 1-5km distance from their centre (a minority of castle sites which likely included coincidental spatial nearness). Figure 6.2.2A details the results of these three divisions of towns, showing that: 3 (2.2%) of the towns were outside the study parameters as mentioned previously; 55 (40.2%) had no local castles within 5 kilometres; 25 (18.3) towns had castles from 1-5 kilometres; and 54 (39.4%) had a closely associated castle site with an almost certain probability of being historically related to the town and its seigneurial or crown administrators. Already then, there is a notably high occurrence of castle sites at important towns for the combined periods, despite the congruous scholarly observation that much thirteenth century town growth was commercially driven and unrelated to established feudal structures. It cannot be ignored that some 40% of all towns never had any (known) local <5km castle site, and this speaks to the variation of the feudal English built landscape; but encouragingly for the proposed model, this subset also appears to have the lowest rates of 'success' in terms of town expansion.

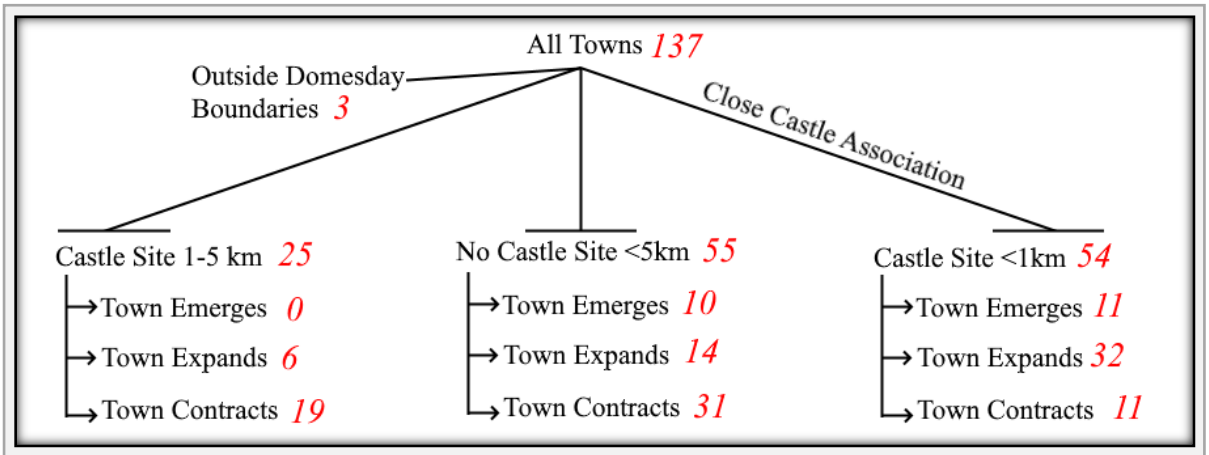


Figure 6.2.2A. *The rates of town emergence, expansion, and contraction sorted by castle nearness.*

For those 55 towns with no castle within <5km, 10 (18.2% of subset) were emergent towns, 14 (25.5%) were expanding towns, and the majority of 55 (56.4%) were contracting towns. These sites clearly demonstrate that town growth occurred in various circumstances, including in many places where there was never a castle site; but more importantly, that the majority of towns from 1086 that never had a castle built at their shared location went on to contract in subsequent centuries. For the 25 towns that had a castle within 1-5km, none were emergent towns, 6 (24%) were expanding towns, and the majority of 19 (76%) were contracting towns. Closer examination of these suggests many of the castles were coincidentally within the detection range and likely unrelated to town administration, with the majority beyond 2 kilometres away. Crucially however, for the 54 towns for which there was a castle site within <1km, only 11 (20.4%) were contracting towns, while 11 others (20.4%) were emergent towns, and an impressive 32 (59.2%) were expanding towns over the study period. This means that 79.6% of the major

towns with castles built at their shared location were either emergent or expanded in population. The proximity of castles also matched positively on the hyper-local level. The average distance between castles and towns was within 5 kilometres where the town contracted was 1.64 while for towns which expanded it was 0.8 kilometres. The argument could be contested that castles might have just been built at these settlements by powerful lords as they grew to become significant hubs, and that the correlation of castle siting with growth is merely illusory. However, the foundation dates of the 54 adjacent castle sites suggest otherwise. Only 2 were founded in the thirteenth century (both with high likelihood of undocumented prior timber precursors), while 7 were founded prior to 1200, and 43 were founded prior to 1100. Therefore, the great majority of town emergence and expansion at these locations occurred after the castles were built. These relative sets of statistics indicate a strong correlation between early medieval castle construction and an increased likelihood of local settlement growth (see Figure 6.2.2B for a particularly clear mapped example). The inverse is also the case, with early towns lacking castle sites having a markedly lower chance of long-term growth.

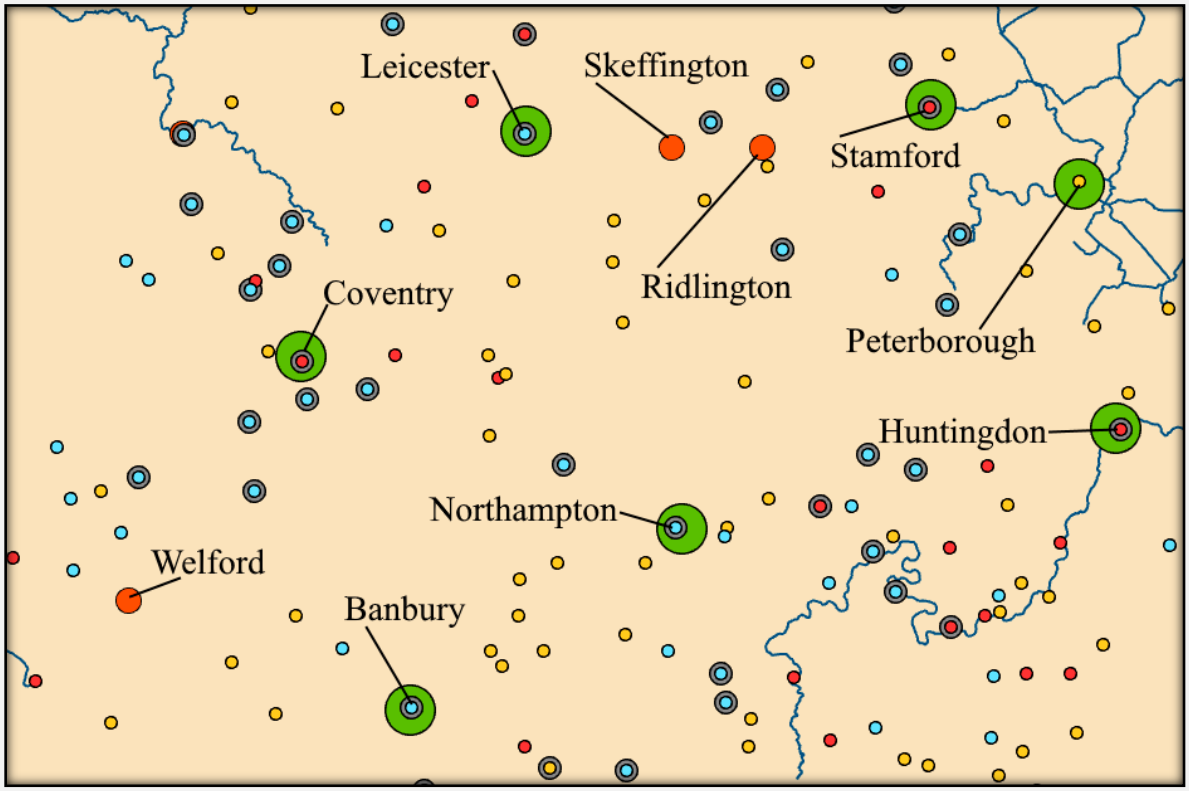


Figure 6.2.2B. *Sample from the Midlands identifying a particularly clear pattern of town growth at castle sites and contraction without castles. Green: expansion/emergence. Orange: contraction.*

6.2.3..... Riverine and Coastal Town Viability

One of the resulting quandaries is why the shift to riverine and coastal settlement locations occurred in the eleventh and twelfth centuries and not earlier, and whether castles played a role in this preference shift, in particular for town siting and growth. The kings and many of their chief tenants held land in both England and France in different locations across the Norman-Angevin dynasties prior to 1214 (Normandy, Aquitaine, Gascony, Anjou), and it was their prerogative to construct coastal fortifications and ports and to develop their naval military capacities to ensure continuous access between these

holdings.[78] Prior to 1066, the threat of seaborne invasion and raiding clearly appears to have had a widespread influence on the siting of Saxon boroughs, with most of the water-accessible settlements and monasteries providing easy targets, and a high proportion of non-water-accessible boroughs among the largest 80 towns of the Saxon Domesday pattern. The mapped data for castle sites from Dataset 1. suggest that the early Norman cultural landscape reorganisation included an introduced preference for fortified water-accessible caput seats (see Figure 2.6.3), some of which grew to facilitate commercial towns, particularly with the increase in trade towards 1300. Roughly 65 castles from the 861 included in the study were located within 5 kilometres of the coast, while 31 were directly adjacent to the coast. The majority of these were founded in the eleventh century. Furthermore, at least 144 castles were sited directly adjacent to navigable rivers, with many more within a 5km range. The great majority of these castles adjacent to navigable waterways were established prior to 1100, well before the emergent settlement shift toward rivers and coasts. It would not seem unreasonable to suggest then that the early Norman castles of the eleventh and early-twelfth centuries, which were often sited deliberately to control river-mouths, crossings, and to defend key ports, might have sufficiently stabilised the formerly perilous riverine and coastal shores to make settlement growth in the subsequent centuries substantially more viable than it had been previously (or might otherwise have continued to be).

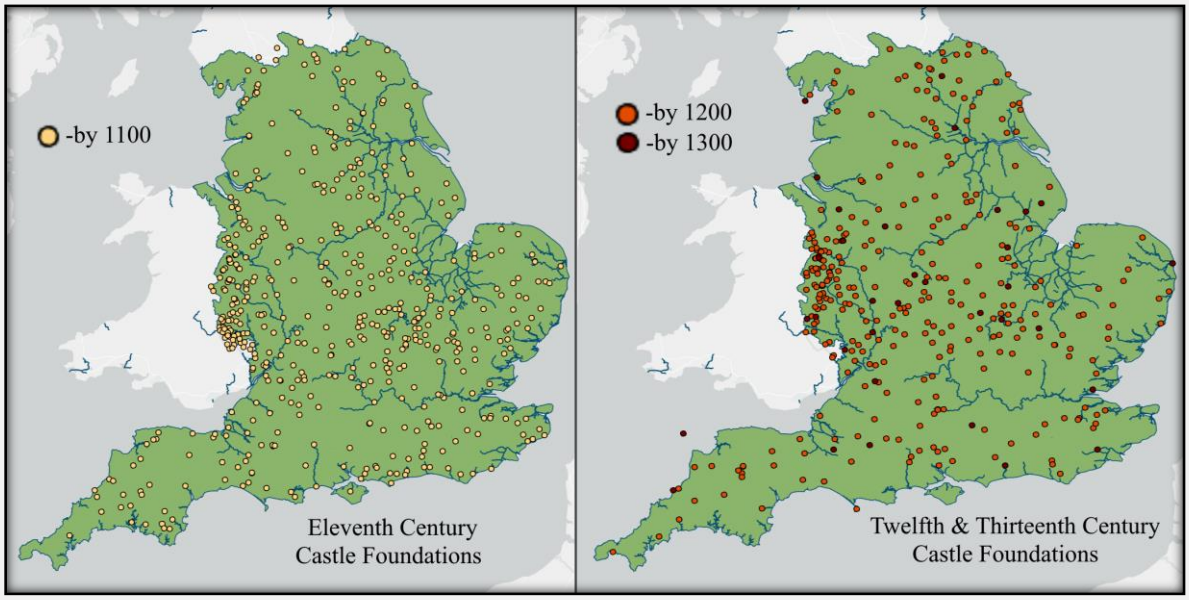


Figure 6.2.3. *Castle distribution by foundation date. Left: early castles. Right: later castles.*

The 'Viking age' is often posited to have lasted from 793—1066 CE, and the subsequent reduction in Scandinavian raiding and conquest is sometimes taken for granted in the construction of the archaeological and historical narrative. However, there is reason to suggest that the shift toward port-towns in England was partly a pro-active response to ongoing maritime threats, rather than a passive opportunistic reaction to the known end of the Viking impact. With Harald Hardrada's considerable invasion attempt in 1066, the early Normans would likely not have assumed that such a threat had ceased; and as part-Scandinavian descendants themselves they were also aware of the advantages of establishing riverine and maritime hegemony.[79] There is also evidence that naval threats were ongoing beyond 1066. A Danish army landed in England soon after the conquest in 1069 to support the northern English rebellion.[80] Ships were further recorded as being needed for logistics in campaigns against the Irish, French, and Scots; to protect against raids and piracy (particularly on the route from Bordeaux to

[78] Rose 2013, p.10.
[79] Rose 2013, p.9-11.
[80] Downham 2008, p.347.

Kent); and to access the Mediterranean for crusades and to reach the Norman exclaves there.[81] The Normans did not finish their campaign against the Muslims of Sicily until 1091, in which ships played a vital strategic role.[82] The twelfth century charters of the Cinque Ports of the south-east dictated that they supply 57 ships each manned by 21 men; by the thirteenth century these were supplemented by the king's galleys (numbering 52 in 1205); but by far the majority of the English medieval navy was formed by 'arrested' mercantile ships in times of need.[83] By the end of the study period, English ports were considered as key targets in military operations and are recorded to have been blockaded in the Second Barons' war in 1264—1267 by the Earl of Leicester's forces to great effect, and in the early fourteenth century by the French (in 1337, before they were defeated).[84] From 1066—1300 then, the English maintained a small but proportionally strong maritime presence in north-western Europe, primarily comprised of ships which in peace-time operated as merchant vessels, but that had been a necessary military asset on multiple occasions.

It is not obvious whether the English would have developed this substantial naval mercantile port-town enterprise if it were not for the Norman cultural overseas influence, and certainly not in the same pattern or pace, given the 1086 Saxon pattern preference for interior settlement locations. There are a string of important coastal and riverine castles that demonstrate this deliberate Norman safeguarding of waterways, highlighting the significance of the correlation with subsequent town expansion at such locations. London was the largest settlement for the study and was key a town on the River Thames. William I established the Tower of London (CLON01) along with Baynard's Castle (CLON02) and Montfitchet Castle (CLON03) to control the port-town and the river. The population of London grew from 10,000 in 1086 to at least 40,000 in 1377, with some estimates being even higher. In Yorkshire, Scarborough Castle (CYOR72) provided strategic control of the coastline and defended the port of Scarborough, which was a large emergent town in the settlement shift analysis with a population of 2,650 in 1377 and no recorded population in 1086. In Norfolk, the aptly named castle of Great Yarmouth (CNOR01) oversaw the emergent port-town which grew to 3,690 by 1377 at the mouth of the Yare River. In Hampshire, Portchester Castle (CHAM04) guarded over the town of Portsmouth, which was a key port in the south, albeit not one of the largest 80 by population. The Castle of Colchester (CESS01) in Essex oversaw the river Colne and the river-port of Colchester which also expanded substantially to 5,540 by 1377. Originally a Saxon fortification in Kent, the Normans expanded Dover Castle (CKEN14) to defend the port of Dover, which was one of a string of well-positioned castles positioned along the English Chanel, often sited strategically to visually or actually repel potential invaders. The port-town of Dover contracted slightly from 1086—1377, but later grew in significance once more according to Dyer's analysis. Rochester Castle (CKEN20) oversaw the mouth of the River Medway and the port-town of Rochester which grew into a small town of 1,020 by 1377. Gloucester Castle (CGLO12), Southampton Castle (CHAM18), Wisbech Castle (CCAM12), and many other castles can be observed in similar arrangements with rivers and ports. The evidence from the shift analysis thus repeatedly supports the argument that castle sites related to riverine and coastal control were an important subset of those correlated with town growth across the study period.

6.2.4..... Town Expansion and Castle Use Dates

A further observation which was not anticipated was that castle use need not be continuous from 1066—1300 for town growth to have been positively correlated. Or, put another way, that castles appear to have initially catalysed growth in many locations only to become redundant prior to 1300. The town of

[81] Theotokis 2010; Rose 2013, p.30-39.
[82] Theotokis 2010, p.381-401.
[83] Rose 2013, p.43-44.
[84] Morris 2015.

Reading is situated on a river convergence between the upper Thames and Kennet in Berkshire and grew from 425 to 1,710 by 1377. Reading Castle (CBER07) was built at the site in the eleventh century but was demolished circa 1153.[85] Huntingdon Castle (CHUN04) was founded in 1068 in the Saxon town of Huntingdon on the Great Ouse River in Huntingdonshire which had a population of 1,080 which grew to 2,630 in 1377. The Castle was slighted (deliberately partially dismantled) in 1173 and there is no mention of its use in 1300 despite the town's continued growth. The castle appears to have been later rebuilt with evidence of re-use in the fourteenth century.[86] The town of Ipswich on the River Orwell in Suffolk expanded from 1,050 in 1086 to 2,860 in 1377. A castle (CSUF16) was built at Ipswich shortly after the conquest but was demolished by Henry II as punishment for a rebellious baronial tenant in 1176 and never rebuilt. Again, by 1300 the town of Iswich appears to have been prospering regardless. The town of Ely expanded from a minor population of 440 in the Domesday record to regional significance in Cambridgeshire with 2,660 inhabitants in 1377. A timber castle at a site now called Cherry Hill (CCAM08) was built in 1070 in Ely which appears to have fallen into decay in the twelfth century and not been rebuilt in stone.[87] Chichester Castle (CSUS08) in Sussex was founded in the eleventh century. The town of Chichester had no Domesday record and is listed as 'emergent' with a population of 1,650 in 1377. The castle was ordered to be destroyed in 1217 by Henry III after its capture by the French in 1216. In all of these cases, the settlements adjacent to the castle sites grew across the study period, despite the disuse of the castle site prior to 1300. These examples are outliers, and the great majority of castle-town-expansion examples involved continued fortification maintenance beyond 1300. However, the point remains that the growth-catalysing capacity of English castles on the settlement pattern likely occurred largely in the eleventh and twelfth centuries, with the thirteenth century containing most outlying usage examples and new commercially based foundations with no local castle site. These combined outlier patterns indicate that castle foundation and early use was of greater significance to town growth potential across the study period than continuous use of castles to 1300. Moreover, they support the argument that it was early seigneurial intervention in encouraging town growth around their castle-town enterprises that influenced the later pattern, regardless of whether the castle components in such arrangements failed.

Conversely, it can also be posited that castle construction was not a guarantee of urban enterprise success, but only a positively correlated factor. The study identified 11 examples of towns <1km and 19 examples of towns 1-5km from castle sites which contracted. Again, at most of these sites the castles continued in use across the study period. Many of these contracting towns with active castle use were located in the southern cluster of contracting towns detailed in section 6.2.1. For example, Clane Castle (CWIL04) at the town of Clane, Chippenham Motte (CWIL07) at Chippenham, Taunton Castle (CSOM24) at Taunton, and Saltwood Castle (CKEN21) at the town of Saltwood fall within this area. Winchester was the former political and economic heart of this southern region, and it retained an estimated 6,000 persons for both periods, failing to maintain the relative growth of other regional capitals like York and London, despite the construction and continuous maintenance of Winchester Castle (CHAM19). There are also outlying examples of settlement contraction alongside castle disuse such as at Dorchester Castle (CDOR06) in the town of Fordington which contracted from 1,175 to below the 1377 '<950' threshold. There is some indication that masonry upgrade was a further measure of town growth potential. Milton Regis contracted from 1,965 to <950, Thetford from 36,40 to <950, and Wymondham from 1,635 to <950 from 1086 to 1377 CE with all three having only eleventh century timber castles which were never upgraded to masonry. There are at least 12 such examples of contracting towns which only ever had a timber castle, constituting a much higher rate than at town

[85] Davis TGG, 'Reading Castle Hill'.

[86] NHLE 'Huntingdon Castle'.

[87] HERR 'Ely Castle'.

expansions. Critically, more than half of all town contractions from 1086—1377 occurred in locations with no castle was ever built within <5km. Those castle sites in towns which did not correlate to longer-term urban growth were part of a complex arrangement of variables and competitive local and regional patterns that ultimately resulted in situational contraction despite the investment of castle construction, but they were a statistical minority. The lack of masonry upgrade in some of these towns indicates that their seigneurial administrators may well have observed or anticipated an early urban decline. For others, the return on maintenance appears to have been sufficient to maintain their continued use despite a proportional reduction of population removing them from the top 80 towns subset.

6.2.5..... Town Emergence and Growth without Castles

A final group to discuss is those towns which expanded without any close castle locations. Of the 137 towns from composite list which had no castle site within <5km, 24 emerged or expanded. Many of these have unclear foundation dates, but their rates of growth and other details indicate they were mostly late-twelfth or thirteenth century additions to the top 80 list for 1377. Figure 6.2.5 presents a sample of the eastern English coast with Lynn in Norfolk, Boston, Wainfleet, Louth, and Grimsby in Lincolnshire, and Hull, Beverley, and Selby in Yorkshire for a total subset of 8 examples of expanding towns without castles (constituting one third of all such examples). The locations indicated as A-G are all towns with castles within <1km, while H. (Newark) has a castle <5km. Lynn, Boston, Grimsby, Selby, and Hull have no Domesday records. Lynn grew to 5,940, Boston to 5,455, and Hull to 2,960, and these were recorded as being 'large emergent' towns. Grimsby grew to 1,330 and Selby to 1,110 and they were recorded as a 'small emergent' towns. Boston appears to have already been a large port in 1204, with pipe roll records of trade levies ranking it second only to London at £780 to London's £837.[88] Rigby has suggested it grew very rapidly and was probably a fully-fledged town by 1150, continuing to expand in size toward 1300.[89] The Great Ouse River was redirected from the Wellstream past Lynn in the thirteenth century, after which the town became an important port (noted as among the most important ports of the fourteenth century). Hull was founded as a pre-planned relocation of the settlement of Wyke in the 1260s, and its population grew extremely rapidly from 1275-1347 by which time it had a substantial town wall built.[90] Beverley also expanded dramatically from 280 in 1086 CE to 5,060 in 1377

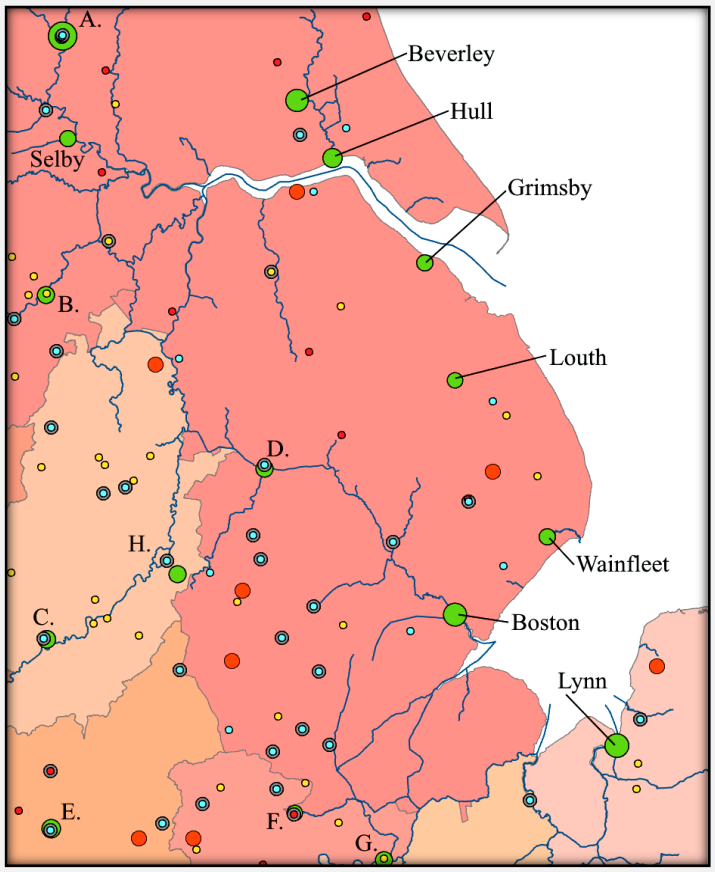


Figure 6.2.5. *Sample from the Lincolnshire area detailing examples of expanding towns with and without castle sites.*

[88] Rigby 2017, p.3.

[89] Rigby 2017, p.7.

[90] Evans 2018, p.88.

and is also thereby practically an emergent large town. Similarly, Wainfleet grew from a Domesday population size record of 30 to 1,290 and is practically an emergent small town. Louth was the only town of this subset in the area to have had a Domesday population >500 at 620 inhabitants which expanded to 1,300 by 1377. This sizable subset of expanding towns absent castle sites confirms the argument established by the medieval settlement studies literature (see section 6.1.2); that a rapid commercially oriented proliferation of town growth occurred in the latter half of the study period and continued into the fourteenth century. That many of these towns were practically non-existent in the great castle building era of the late-eleventh and early-twelfth centuries, does much to explain their deviation from the castle-town growth arrangement identifiable elsewhere. Future research into the feudal tenurial ownership of the land in which these emergent towns were located might help clarify the debate around the degree to which these emergent mercantile hubs remained seigneurial enterprises.

6.3..... Conclusions

The major towns of England at the time of the Domesday surveys in 1086 were clustered predominantly in the south and east of the kingdom. These ranged in size from around 1,000 inhabitants in two thirds of the regional towns up to 10,000 in London, with less than a third of the top 80 towns larger than 2,000 inhabitants. The position of these eleventh century, essentially Saxon, towns within the landscape was often somewhat inland from the navigable rivers and coastlines in the west and south, and more coastally oriented in the east, likely denoting a structurally entrenched reminder of the nearness of the Scandinavian golden age of raiding and colonisation. The Norman, Angevin, and early-Plantagenet kings of England and their feudal tenants deliberately exploited the incomes generated at these urban hubs across the study period toward 1300. The Medieval Warm Phase from c.900—1300 saw a rapid and widespread increase in the population and economic capacity of the Kingdom of England, including the expansion of towns. A key finding of the settlement shift analysis was that the early castles established by the Normans had a high correlation with stable town growth. Towns at which castles were established had much higher rates of expansion and towns which never saw castle architecture included an inversely high number of contractions. The Norman castle network thus appears to have functioned as a node-stabilising and growth-catalysing network influence over the developing town distribution pattern.

The thirteenth century saw a rapid increase in the export of English goods, especially of wool, and the lay nobility established a new wave of towns to exploit this revenue stream, with these later towns often founded beyond castle protection. The fourteenth century brought catastrophic population decline through famine and plague which appears to have stagnated town growth and proportionately reduced the size of towns by as much as 50%. The towns of 1377, representing the closest dataset to 1300, ranged in size from 1,000 to 40,000, with about half being larger than 2,000 and 20 or so being larger than 4,000 in total inhabitants. The overall pattern of the largest 80 towns had shifted drastically to favour riverine and coastal locations, with many of the inland eleventh century towns contracting in population and network significance. New regional towns appeared in the north and west, almost exclusively associated with castle sites, and the eleventh century town cluster on the south-east became more evenly distributed. A key implication of the shift analysis was that the Normans' necessary exploitation of ships and ports, due to their presence on the continent, and the prerogative to bolster their naval trade and defensive capacity, resulted in their early enforcement of control over waterways through strategically placed riverine and coastal castles. A large number of these castles, alongside their inland counterparts, went on to support the emergence or growth of reciprocally beneficial towns, distributed in a fundamentally Norman English pattern.

7.0..... Chapter Seven: Castle—Settlement Interrelatedness

7.0.1..... Introduction

The implications of the analysis findings can now be discussed in response to the research questions, which in turn each relate to identified knowledge gaps, within existing castle studies publications, as described in Chapter One. A range of statistical correlations have been presented in the previous three analyses chapters, some of which were more profound than others in their implications. It appears that the eleventh century settlement network had a minor measurable degree of influence over the subsequent phases of castle building, especially for the most closely dated castle foundations, but that this influence was largely limited to a subset of the more substantially sized towns. However, even for these larger former Saxon towns, a considerable portion of them had no recorded castles built at their location. Castle siting pattern outcomes across the study period also suggest a significant degree of deliberate ignorance of smaller existing settlement hubs by castle builders, with many castle sites being founded on previously undeveloped and unfortified locations, especially in coastal and riverine domains. In contrast, when settlement shift is observed, the spatial nearness of local castles to instances of town expansion and contraction indicates a strong influence of castle siting on early medieval town success and failure diachronically for the study period. Moreover, castles not only fostered growth in existing settlements, but generated important new emergent settlement hubs. Thus, it can be reasonably postulated that for at least the larger sites, while influence was bilateral in nature, the influence of the castle distribution pattern on the shifting settlement patten was more substantial than vice versa. A targeted discussion of the primary research issue of economic functionality is first presented here, with the chapter then expanding the discussion to include a range of additional implications and points of scholarly contention raised in the literature review. The degree to which these theorised and observed bilateral settlement-castle relationships were widespread among the total set of castle sites, and the appropriate relative proportion of influence economic considerations had on castle siting and development, are further discussed and integrated within the established scholarly narrative.

7.0.2..... Responding to Research Issues

The seven key issues summarised at the end of literature review in Chapter Two are re-stated below for ease of reference within this chapter, with these issue topics being used as a framework for orienting discussion responses to the existing debates within castellology (see section 2.5.1). To reiterate, these eight issues represent an inexhaustive range of topic areas related to various incongruous ongoing discussions within castle studies, each of which was deemed appropriate as an area that might benefit from digital mapping within a GIS based spatial analysis approach. Issue One is the most critical research issue and is closest in nature to the primary Research Aim (see Chapter One). Issues Two through to Seven are subsidiary research issues, and the second half of the chapter is oriented around answering various overlapping components from each of these. Following the natural course of research, and the focus on economic considerations in orienting analysis direction and form, some of these issues were more completely addressed than others, and much work remains to be carried out through a GIS spatial-relational analysis approach. The results relating to economic function are integrated and grounded within the well-established military and status considerations of castle orientation at the end of the chapter, with the intent of eliminating any concerns that the postulated significance of economic functions could be mutually exclusive to either of these core castle elements.

Research Issues:

Castle-Settlement Relationship (Issue One):

- How much of an influence did the established Saxon population distribution in 1086 have on the locational pattern of early castle sites?
- How much of an influence did the location of castle sites have on the shifting settlement network by 1300; did the castle have statistically significant impacts on the overall economic landscape?

Terminology and Typology (Issue Two):

- How much variation is there in castle shape and size; does differing earthwork typology correlate to settlement distribution or other landscape features?
- How adequate are the major earthwork sub-categories of 'ringwork' and 'motte and bailey' in understanding early castles?

Diachronic Site Use Information (Issue Three):

- To what degree did site characteristics such as masonry upgrade, site size, or foundation date correlate to continuity of site use?
- Is there any pattern in the long-term use of castle sites and other elements of the built network across the early medieval period?

Castle Site Dating (Issue Four):

- How much variation is there in the site use and foundation dates of each type of early English castle?
- Can we reasonably apply known usage or foundation dates from castle sites with strong archaeological records to castle sites with similar features that have weak/no records?

Early English Timber Castles (Issue Five):

- How similar/dissimilar were the roles played by timber castles across the total network?
- Was their proximity to features of the Saxon built landscape systematic?
- Was there a proportionally high/low contiguous reuse of prior fortified landscape elements from previous cultural phases, especially Roman, Saxon, and Iron-Age defences?
- Does the distribution of different earthwork typologies correlate to unique local conditions?
- Does occurrence of long-term timber site use correlate with shared features between locations?

Geology and Altitude (Issue Six):

- Does castle site use and typology correlate to altitude?
- Is there an identifiable correlation between different terrain types and castle density?
- Were certain geological surface stone or soil types deliberately targeted or avoided?

Environmental Economics (Issue Seven):

- What is the spatial correlation of castle sites to navigable rivers?
- What is the correlation of castle sites, especially those without adjacent settlement, to known hunting forests and woodlands?
- What is the correlation of castle sites with Saxon land value (metric for development?) according to the Domesday Books (as opposed to land population)?

7.1 ..... The Economic Functions of Castles in the Manorial Landscape

7.1.1 ..... Basis for Settlement-Oriented Analyses

The principal issue around which other subsidiary issues have been aligned in this thesis has been the economic function of the castle; for which, population patterns have been used as a form of pragmatic provisional metric. All three of the analyses carried out in this study have related different aspects of settlements which might be used to indicate probable economic support or even economic reciprocity, to the foundation and continued use of directly adjacent and nearby castle sites. Some description of economic functionality has already been put forward within castle studies, but no existing publications were identified as having assessed the statistical degree to which this was the case for the total system of early castles in England. Put more precisely, the fact that castles were situationally the catalyst of urban growth and that they were often built deliberately to oversee existing settlements has been previously acknowledged and discussed theoretically within the literature, especially through recent landscape integrative perspectives, as detailed in section 2.4.2. Creighton, for example, posits that castles constituted sophisticated integrated elements of the settled landscape, often related to instances of town growth at existing settlements, origin sites of new urban occurrences, and centres for a range of efforts aimed at controlling local revenue streams (as well as centres for a range of military and status related functions).[1] The contribution of the current study to this theoretical discussion is to introduce additional evidence of such settlement-castle economic spatial relationships, and to test for these in the hinterland area beyond directly adjacent castle-towns, and to then weigh in on their significance relative to the overall archaeologically based narrative around early castle functionality. Furthermore, the observation of individual settlements as having 'subservient' and 'associated' relationships with local castles (both inside of and outside of direct tenurial demesne) discussed by McAlister, situates the current study within an appropriate methodological basis, on which it has expanded to test the broader English system of castles and settlements for such spatially identifiable economic relationships.[2]

Critically, these economics-minded scholarly perspectives represent a minority within castellology, with military and status considerations (especially through architectural and typological analysis) taking precedence in the vast majority of publications, including in the past two decades (see section 2.3.1 and 3.1.3).[3] From Beeler in 1956, to Coulson in 2003, and many publications in-between, military functionality has been a dominating focus, sometimes to the exclusion of other functions.[4] As noted at the conclusion of Chapter Two, O'Neil has contended that 'the anti-militaristic route which some scholars have endeavoured to steer castle studies down' may be deviating from historical realities.[5] Figure 7.1.1, which is presented as a reference resource for the following theoretical sections, details a summary of these scholarly foci comparatively (indicated by the green A.). In recent years, economic castle functions have become increasingly considered, with digital analysis providing an emergent basis for spatial comparison to expand on the groundwork laid out landscape castellologists. Section 2.4.3 of the literature review identified that at least three publications have utilised GIS as a tool for assessing castle spatial nearness to other landscape features since 2007.[6] In their thorough systematic studies of English castles, King based many of his observations through on-site assessment, and Creighton from largely aerial photography.[7] However, the combination of a large scale systematic castle analysis with digital mapping through GIS, especially when combined with consideration of terrain, rivers, and settlements (adjacent and extramural), ought to provide further contributions to this debate, and this objective has been the primary aim of the present study. Of the specific research issues summarised in

[1] Creighton 2005; 2013.
[2] Mcalister 2016.
[3] Higham 2010.
[4] Beeler 1956; Coulson 2003.
[5] O'Neil, in Kenyon 2010, p.8.
[6] Lowerre 2007; Immich 2014; McManama-Kearin 2013.
[7] King 1983; Creighton 2005.

Chapter Two (reiterated above), the discussion of economic findings contributing to these debates are principally pertinent to the bilateral relationship between castle and settlement spatial nearness (Issue One), as well as considerations of continuity of usage (Issue Three) and environmental economics, especially with regard to navigable rivers (Issue Seven).

7.1.2..... Reciprocal Model of Castle-Settlement Economics

Multiple sections throughout this study have established and expanded on a theoretical framework of the feudal manorial economy into which the castle was an introduced element. A series of ways in which the castle site facilitated reciprocal economic benefits to its local population, culminating in the theoretical model re-exhibited here (as part B. in Figure 7.1.1) are discussed in section 5.1.6. This ongoing theoretical basis for the proximity analyses carried out within this study can be reiterated concisely here, beginning with observations of the tenth—thirteenth century rural and urban settled landscape, and followed with the theoretical economic role of castle sites within it. The premises are presented in this section, with the related findings in the following section (7.1.3). Location-specific populations and settlement areal size have been used interchangeably in the study as rough metrics of associated economic activity and raw manpower, against which castle location can be compared spatially. The contributions of Barlow and others have solidified our comprehension of the late-Saxon population as a primarily agricultural, subsistence peasant majority supporting a powerful land-holding, lay nobility minority (see section 2.1.1).[8] The complex system of land transfer from the Saxon to Norman lay nobility and clergy and simultaneous reorganisation of fiefs has been described by Fleming and Strickland (see section 2.2.1 for a summary).[9] Almost the entire upper strata of the (former Saxon) English land-holding class was replaced by Norman lords by 1086 CE, while a large proportion of the sub-tenants remained English (see section 5.1.3 for tenure and manorialism). The study initially deals with data from what was essentially a Saxon English population distribution in 1086, with analysis focusing on how the location selection of introduced castles was influenced relative to the established eleventh century settlement pattern. The key theoretical premise here is that castle sites would have a statistically significant correlation with settlement location, and this could be measurable in the GIS.

The Norman kingdom was divided into counties/shires, hundreds, vills, and hides (of which there were some 70,000 in 1086), with parcels of land distributed as fiefs to tenants-in-chief, who further subinfeudated smaller fiefs to their own vassals (see section 5.1.3). The peasantry majority in the eleventh century consisted of some 1.5 million English subjects with differing degrees of freedom ranging from slaves to villeins to freedmen (see section 5.1.2 for a full breakdown of the Domesday population). Of the 15,246 eleventh century manorial locations mapped in the GIS, roughly 600 (4%) contained ‘large village’ scale populations of 300—1000 inhabitants (after calculating for household multiplication), while the 52 manorial points with 1,000 or more inhabitants were more certainly ‘town-like’ hubs -representing only 0.3% of the manors but an impressive 8% of the total population (see section 5.1.2). Of the remaining 95.7% of manorial points, around half contained populations of fewer than 50 persons which often represented dispersed farmsteads and hamlets rather than nucleated hubs, and the remainder were of 50—300 inhabitants in size. The 52,000 estimated inhabitants from the 16 ‘added’ towns excluded from the Domesday survey are included, for a total mapped eleventh century population of 1,362,421 individuals (tentatively representing an historical population of around 1.5 million). The resultant rural/urban division was somewhere in the order of 90%/10% in 1100 CE. In addition to this extensive population data, the study of the larger towns is of particular interest due to

[8] Barlow 1988; Arnold 1997.

[9] Fleming 1991; Strickland 1992.

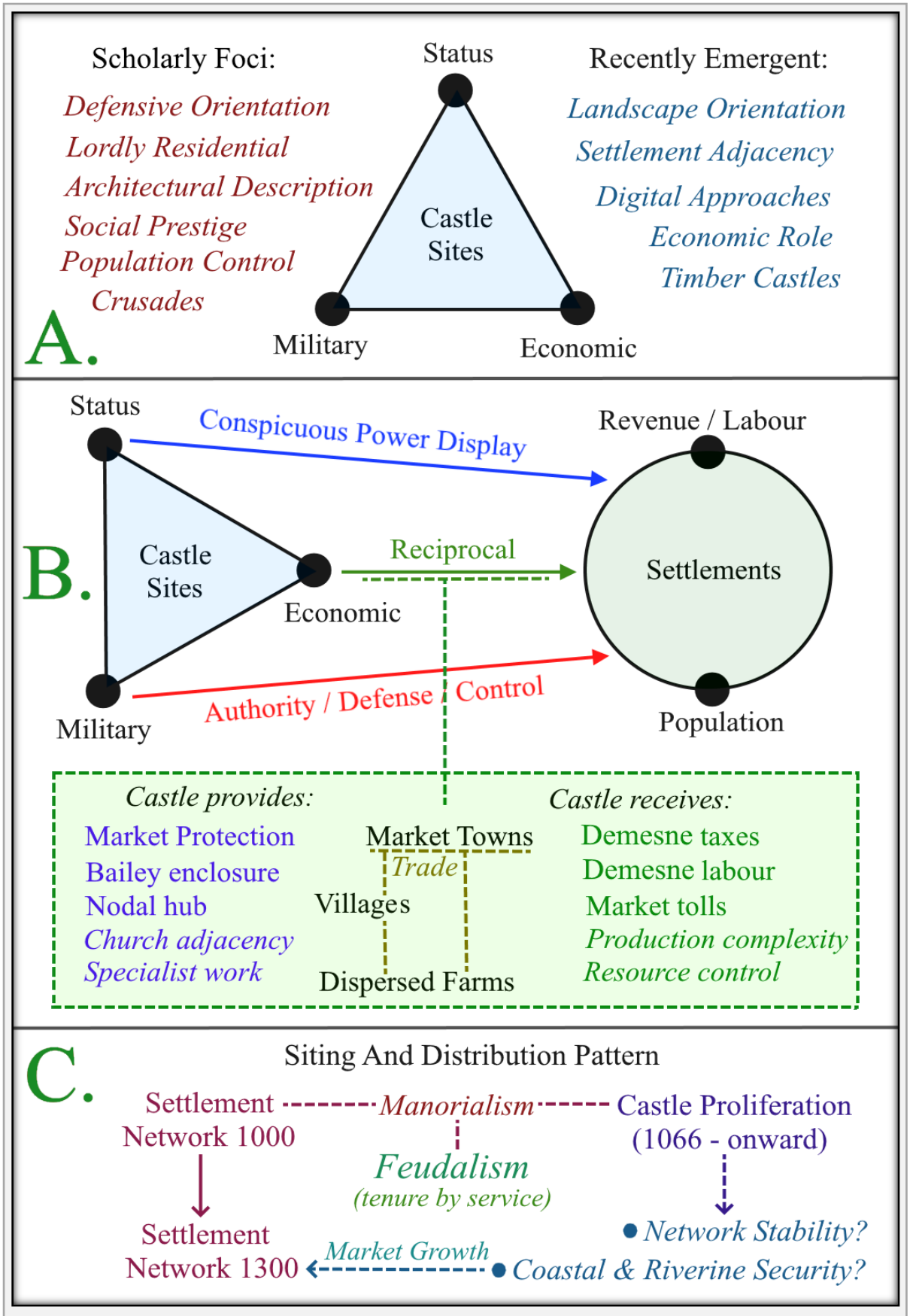


Figure 7.1.1. *Summary of theoretical premises. A: Established and emergent literature. B: Theoretical economic relationship between settlements & castles. C: Summary of castle impact on settlement pattern shift.*

availability of the later 1377 equivalent dataset to compare with the towns of 1086. Alongside the direct population estimates, bailey size was used as an indication of directly adjacent population within castle superstructures. Section 4.3.4 details that the fortified area of the bailey was a component of the castle and simultaneously a metric of population, as all baileys are thought to have contained a small population necessary to maintain the lord's household, with larger baileys built as required to facilitate expanding populations or re-situate already established populations. Therefore, analysis of castle-settlement spatial relatedness, from which the arguments about economic patterns are inferred, were divided into three variations: bailey area; total local population in 1086; and diachronic town nearness for 1086—1377; with the premise of optimising potential findings regarding economic functionality.

The distribution of this settled population was widely dispersed across the kingdom, with the exception of the north (due to the pre-Domesday rebellions and 'Harrowing of the North'), the Ouse Fenland, the Weald, and a few smaller highland and floodplain regions. There were some regional differences in subsistence agricultural specifics, which impacted the spatial arrangement of settlements, including for example, a preference for pastoralism in the west and an earlier proliferation in the village level nucleation in the 'central belt' (see section 5.1.4 for regional details).[10] Village nucleations most commonly occurred as 'agglomerated' settlements (clustered residences around a central hub) and 'row' settlements or 'tofts and crofts' (rows of residences following a road with strips of farmland behind).[11] Austin has criticised the assumption that Domesday manorial populations were single nucleations, and it is thus important to measure 1086 castle-settlement relationships via total population rather than total manors.[12] Section 5.1.4 presents the debate around village and town variation and agricultural resources, with the important implication being that, ultimately, population is a reasonably stable metric of manorial economic exchange across the kingdom, despite local variation in specifics. With such a high volume of population distribution data available from the 1086 Domesday dataset, much of which comprised of farmsteads, hamlets, and small villages, rather than just the larger towns, it is possible to assess a unique degree of local population spatial nearness around castle sites. The key premise was that population might correlate across the board with castle siting, including beyond directly related castle-towns, but the historical reality indicated by the results was informatively less simple.

Across the period from 1000—1300, several major social and economic changes occurred, including: a manyfold increase in scale and importance of market commerce (including internationally, especially of wool)[13]; a shift in generalised agricultural peasant skillsets to narrower agricultural, and non-agricultural specialisations, including a growth in crafts specialisation leading to the earliest guilds (or gilds); and a transition from payment in knight-service to payment for mercenary knights and scutage.[14] This period, coinciding with long phases of internal stability before the end of the Medieval Warm Phase, saw widespread prosperity and settlement growth and emergence.[15] By around 1300, the population had grown to 5 million with as many as 20% of English subjects living in towns (see section 6.1).[16] The growth of new towns, especially along navigable watercourses, is thought to have been directly related to the increased importance of commerce (see section 6.1.2). Critically, some scholars have suggested the growth of new towns (especially at sites where there was no castle) represented a shift away from direct feudal oversight in urban network structure, with commerce and guilds leading the growth of new coastal towns.[17] However, this perspective has been criticised by Britnell, who acknowledges the deviation from the castle-town plan, but emphasises that feudalism was still heavily entrenched in English society in 1300, and that these new towns were the product of powerful

[10] Wood 1987; Roberts and Wrathmell 2000.
[11] Flatman and Herring 2018.
[12] Austin 2003, p.68.
[13] Dyer 1996, p.19; Painter 2020, p.195.
[14] Painter 2020.
[15] Fagan 2000, p.17; Hilton 2014, p.27.
[16] Hilton 2014.
[17] Astill 2000.

landholders, rather than ambitious burghers.[18] The discussion of castles as town-growth catalysts highlights that a great number (perhaps 50% or more) of new town foundations from across the study period were planned and funded by secular lords, with the remainder associated with monasteries and royal planning (see section 6.1.3). In 1300, most towns (around 70%) were still directly held by secular baronial tenants (as opposed to clergy or sheriffs representing the king) and constituted a major source of income for their respective lords.[19] The aim of measuring the shift in the diachronic growth and contraction of these towns comprised the third analysis. Problematic population decline occurred in the fourteenth century, generating a discussion of the usefulness of the 1377 town dataset, but this ultimately was assessed as having been a uniform systematic population reduction and urban stagnation unlikely to invalidate the comparison of the overall town distribution pattern to the 1086 equivalent (see section 6.1.5 for a full discussion). The key premise of the urban pattern shift analysis was thus that seigneurial intervention and planning of town growth was substantial and measurable. And more critically, that the likelihood this planned growth was related to deliberate orientation around baronial caput castles was also measurable; with castle location potentially constituting a significant driving force of overall structural network pattern outcomes.

Ultimately, the general premise being asserted in these three analyses is that castle sites, as behavioural indicators of calculated seigneurial intent, represent a medium for measuring potentially deliberate integration and exploitation of settlements as raw economic and manpower sources. Furthermore, that castle sites were not haphazardly distributed, nor solely distributed for military or status requirements alone; but that they were also partially deliberately sited and developed to exploit and encourage growth within carefully managed population hubs, and that the degree of this influence is measurable. As Coulson has put it, castles were rarely involved in actual military conflict, despite their planned physical capacity to stand against contemporary siege warfare, and their locational positioning for the ease of acquisition of money and power might have been a principal interest of castle builders.[20] Brown discusses in detail the way in which the new Norman feudal network in England led to a proliferation of castles in the eleventh and twelfth centuries, around which a substantial (if not the majority) portion of the economic system geared itself toward the maintenance of knightly households.[21] These positions can arguably be supported by the integrative analysis of castle and settlement spatial proximity. As part B. of Figure 7.1.2 sums up, the benefit of integrating castle and settlement sites at shared locations was reciprocal: with the market function, church, residences, and specialist workers being protected, and with nodal centrality on transport and communication networks increased, benefiting the settlement; while market tolls, centrality of resource storage, and access to production complexity benefited the castle administrators.

Both during the many years of construction at castle sites, and in the years after completion, a skilled set of workers would have been kept on or near the site to maintain masonry and carpentry components, as well as full host of specialists maintaining the many domestic and military needs of the lordly household (see section 2.4.2). Tenant-barons gained income through a variety of revenue streams, including scutage, private enterprises, market tolls, and legal fees, but by far the largest components were feudal rents, sale of surplus grain and livestock, and mill fees.[22] The protection and expansion of the agricultural enterprises of the lord's demesne and tenants (including beyond the immediate vicinity of his caput castle) were his main path to power. Inter-regional commerce did not constitute a major component of the economy in eleventh century England, and power was organised largely around control of populations from which military service was owed through tenure. This system became self-perpetuating with feudalism reaching its peak historical state of entrenchment as an organisational

[18] Britnell 2000, p.136.
[19] Hilton 2014, p.21.
[20] Coulson 2003, p.3.
[21] Brown 1992.
[22] Painter 2020.

institution in English society across the study period.[23] As commercial activity increased, so did the nodal significance of many market towns, including some beyond castle oversight, yet the overall pattern of major settlement hubs appears very much related to seigneurial land management, including around and within castle forms.

7.1.3..... Implications of the GIS Spatial Analyses Results

Radial Proximity Analysis. Two proximity analyses were conducted with the 1086 CE data, one through radial polygons and one with Thiessen polygons, to assess castle-settlement spatial nearness at the local hinterland level. For the radial proximity analysis, a radius of 5km was found to be an appropriate compromise between the potential extent within which local settlements might participate in market exchange, and of Domesday hundred boundaries indicating the likelihood of direct shared demesne tenure (see section 5.2), a detail which may be useful for the generation of future models. It can be reiterated that the tenurial system was complex, with individual lords holding exclaves and discontinuous parcels of territory, but the scale of the study remains appropriate for identifying overall patterns. The findings showed that majority of early English castles were founded in locations of moderate population, with: 57 castles (6.6%) having no listed population within <5km, mostly outliers in the north due to the Harrowing; 136 castles (15.8%) with up to 300 local inhabitants <5km; 323 castles (37.5%) with 300—1,000 inhabitants within <5km; and 345 castles (40.1%) with 1,000 or more inhabitants within <5km (see section 5.2.1). Thus, most castles were positioned with the local hinterland manpower resources necessary to consolidate into castle-town enterprises, were this to be desired by their overseers, especially when data is limited to those early known foundations from 1066—1100. Interestingly, the proportion of total population within and outside of the 5km radii relative to the percentage of land area available indicated only a slight preference for castle siting at eleventh century populated locations (around 10% if the Welsh border area is considered a military outlier). Whether this correlation was related to castle builder intent to control potential revenue streams, or simply to supress population unrest, requires further evidence, but the outcomes regarding subsequent pattern alteration remain the critical concern.

Nucleation within the immediate area around castles was also identified across the system though comparison of the 5km radial area and the inner 50% of that area through a 3.45km radial area; with an estimated 65% of the inhabitants living within the inner half (adjusting for overlap counts), stretching to as many as 74.5% for the largest 30 population counts. This statistical curve of high local count and high nucleation, along with visual observation of landscape patterns, highlights that castles were built at many of the larger Saxon settlements, although not all of them. The relative local 1086 CE population count of castles was also found to correlate with indicators of longer-term success, for example: the population of castles which went on to be rebuilt in masonry was 19.4% higher than average; for castles founded in the eleventh century with known use in 1300 the population count was 38.9% higher than average; and of that set, sites also upgraded to masonry had population counts 43.1% higher than average. Thus, local population in 1086 was a useful indicator of continued use, but mostly for the closely temporally founded castles (see section 5.2.2 for more examples). Given the higher positive correlation of population counts to early foundation, local population might be reasonably utilised as a tool to help estimate foundation dating likelihood for the vast set of timber castles which are presently merely estimative in origin, providing some closure to question two of Issue Four. The key finding of the radial analysis was thus that many, but certainly not all, larger settlements of the 1086 date had

[23] Prestwich, 1992.

castles built at their site. However, for the smaller scale of settlements, while castle siting did indicate a slight preference for existing population clusters, sites overall were chosen with little obvious systemic correlation to existing village distribution, potentially favouring military or status considerations of site choice in rural areas.

Thiessen Polygonal Analysis. Because the 5km radii covered only 37.3% of the study area, the Thiessen polygon analysis was utilised to tentatively assign all population points to one castle site or another. This format of spatial division produced 'local areas' around each castle site proportional to their density to other castle sites; both increasing the number of low population counts and high population counts compared to the radial counts (see section 5.3.1). When the area of Thiessen polygons alone is assessed, the average is 152 square kilometres around the castle site. When tested against expected positive outcomes such as known continuity or masonry upgrade, these correlate positively to increased area, and the degree of increase further correlates to early foundation date. Eleventh century foundations which were rebuilt in masonry, for example, were 177 square kilometres in area or 16.5% larger on average. Instances of known disuse ranked lower than average overall. When population was counted within Thiessen polygons, the correlation to potential site 'success' outcomes of continuity use and masonry upgrade was similarly positive, with: an average of 1,578 'local' hinterland inhabitants; 6.8% below this for known disuse locations; 9.9% larger for known use by 1300; for locations with known continuity and masonry it was 33% larger; and for sites founded by 1100 with continuous usage to 1300 and masonry upgrade (151 examples) the population count average was 2,382 or 51% higher than the total site average count. Again, the higher positive match of the pre-1100 foundations with the outcomes of successful long-term use indicates that if distributions of equivalent detail could be attained for the population patterns by 1200 or by 1300, these would match more closely with the predictive model. The findings of the Thiessen proximity analysis reinforce those of the radial analysis, indicating that local population density was a positive indicator of medium and long-term castle enterprise use and growth. Furthermore, 'competitive' nature of the polygons demonstrated that castle density or nearness to other castles was another indicator of the likelihood of success, with high castle density resulting in a reduction in the local number of castles over time (see section 5.3.2).

Bailey area LIDAR Analysis. At this stage, the findings of bailey area from the typological analysis can be introduced with comparison to the proximity population counts. Despite the fact that many of the larger well-preserved baileys often represent sites which ultimately failed as castle-adjacent settlements (see section 4.3.2), the findings of the LIDAR areal analysis identified a positive correlation between the eleventh century Domesday population counts within 'local' castle proximity (Thiessen and 5km radial) and with the relative physical areal size of the bailey at the shared castle location (see section 4.3.2). Put another way, castles with larger baileys had larger observed local hinterland population counts, especially when limited to eleventh century foundations. Moreover, large baileys were also found to correlate to larger castles, and so it can be firmly posited that the eleventh century population pattern had some influence not just on the siting of castles, but on the scale of castle size. Additionally, an analysis of the position and role of early church buildings inside of and adjacent to castle baileys indicated a strong cooperation between lay and ecclesiastic authorities in the planning and control of English castle-towns (see section 4.3.3). This spatial relationship helps elucidate an image of the feudal enterprise of castle building from a seigneurial perspective; as one of organising daily life and the lives of subjects within a hierarchical Christian comprehension of the world manifest in the built components and delineation of space within the castle-town plan. Further indicating economic orientation, all castle types were distributed such that the largest fortifications were at lower altitudes and the highest altitude outliers were all of small size within their typological set (see section 4.2.6). This matches a general pattern of results indicating that the overall larger scale of the castle-settlement enterprise correlated with lowland, especially riverine and coastal, location choices.

Diachronic Town Pattern Shift Analysis. When the analysis of potential influence was reversed and the overall castle pattern from the study period was used as a basis on which to map settlement pattern shift, the findings were much clearer. Population estimates were produced for the largest 80 towns of 1086 and 1377 CE using multiple sources, constituting the best available data for the respective ends of the 1000—1300 study period (see section 6.2). The overall population was roughly twice as large in 1377, and a substantial shift in the regional distribution of towns had resulted in a largely different pattern, with a compound map of 137 towns across both dates, including locations of contraction, growth, and emergence. The sum of the largest 80 town populations was 134,842 for 1086 CE and 267,665 for 1377 CE. The overall pattern shift of town location included a number of new frontier towns in the north and west, a reduction of the dense south-eastern inland clustering, and a marked increase in the number of major riverine and coastal towns (see section 6.2.1 for a full assessment). The observed pattern shift matched well with the assessment reached in medieval settlement studies; that commercial activity in towns increased manyfold in the thirteenth century, and that agriculturally subsistent population was near-capacity, resulting in a more uniform town pattern across the kingdom.[24] An initial key finding was that some 40% of all major towns from the study period never had a castle founded at their site, as far as our records are aware. This statistic would have been higher for the smaller towns, judging by relative proportions.

When castle proximity to instances of town growth and contraction was assessed, an unexpectedly clear correlation between castle siting and town expansion, and the inverse of castle absence and town contraction, was identified (see section 6.2.2). Of the subset of 55 towns with no castle within <5km of their centre, 31 (56%) contracted, 10 emerged, and 14 expanded across the study period. Juxtaposed to these rates, of the 54 towns with a clearly associated castle site within <1km, only 11 contracted, while 11 emerged, and 32 (59%) expanded. Of these 54 closely associated castle sites, only 2 were founded in the thirteenth century, with 7 in the twelfth, and 43 in the eleventh. As such, in the 11 instances of town emergence and the many other instances of substantial growth, castles were not built reactively after-the-fact, but as antecedents to, and catalysts of, this growth (see section 6.2.4). Additionally, the subset of expansions occurring without castles was found to be highly comprised of towns founded in the thirteenth century, indicating that the growth-catalysing activity occurred primarily in the earlier half of the study period. Section 6.2.3 further identified that castle siting in riverine and coastal locations appears to have constituted a necessary component of the Norman and Angevin overseas administrative structure, stabilising these formally perilous and under-settled areas and facilitating urban and port growth. These findings indicate a substantial degree of positively associated town growth associated with castle sites, bolstering the argument that seigneurial intervention and planning occurred around strategically chosen nodal hubs at which castles were core elements of the total economic enterprise.

7.1.4..... Assessment of Economic Castle Functionality

To directly respond to the research questions of Issue One (castle-settlement spatial nearness), it can be concluded that the degree of influence of the 1086 Domesday population distribution on the siting of the introduced wave of castles was observable but not systematic or uniform. A portion of the larger towns had castles founded at their site, many of which are traceable to William I's early campaigns in England, but many other larger towns contained no record of early castles. As for the small towns and smaller rural settlements, only a slight preference for castle positioning around existing population clusters was observed statistically, implying a higher degree of consideration of ulterior motivations of

[24] Britnell 2000; Hilton 2014.

site choice, likely including manorial tenurial location, military defensibility, visibility, and prospective planning ambitions, among other factors. Only 35 (4%) of the 861 castles included in the analysis were built in the thirteenth century, with 96% built earlier in the eleventh (59.5%) and twelfth (36.5%) centuries. Thus, the statistical majority of castle foundations appear to have taken place in a short period from 1066—1150, though many of the important masonry developments occurred later. Over time, the proportional eleventh century local populations, along with nearness to other castle sites, correlated positively (where population was high and nearness low) with the maintenance and development of castles (regardless of whether the castles themselves were located directly at an urban hub), as is suggested by masonry reconstruction rates, site size, and known use dates. As for the influence of castle siting on the shifting settlement pattern by 1300, the degree of influence was more pronounced. A subset of castles founded at eleventh century towns cogently correlated with the stable growth of these shared locations as important socio-economic nodal hubs, while the absence of such castles was indicative of declining locational importance and settlement contraction. Moreover, the emergence of new towns in the twelfth century was almost entirely associated with pre-existing castles, despite some thirteenth century town emergences being distant from castle locations. Both these observations were especially apparent in lowland coastal and riverine settings. The key implication for the overall trajectory of the developing medieval English landscape being that the degree to which the eleventh century settlement pattern went on to affect the locational choices of castle builders in the subsequent century and a half was lesser than the degree to which the subsequently emergent castle pattern would go on to shape the map of key settlement hubs by 1300 CE.

With regard to the overall percentage of castles involved in catalysing or promoting existing settlement growth, the implications are less straightforward. The total set of castles assessed in this thesis is 861. For the 137 large towns included in the settlement shift analysis, the subset with a closely associated castle within <1km of its respective town comprised only 54 or 39.4% of the towns. While this proportional result may reflect some missing archaeological data for early castle sites at some towns, as it stands, it implies that a majority of total large settlements operated beyond direct castle adjacency, albeit with the majority of these consisting of contracting former Saxon towns. Some of these larger towns were shreival or royal, but most were controlled by tenant-barons (including several of the rank of Earl).[25] As such, it cannot have been seen as optimal to have built castles at all their major demesne hubs, and the percentage indicates a necessary compromise between baronial feudal incomes and expenditure. Furthermore, of the 573 castle sites mapped in the LIDAR areal analysis, 321 or 56.0% included baileys (with an average area of some 6,000 square metres), indicative of a castle-settlement arrangement of some extent (see section 4.3.1). However, these existed amid a network of tens-of-thousands of smaller settlements ranging from dispersed farmsteads to small-towns. Of course, the absence of a defined bailey does not rule out a local settlement-castle economic arrangement, and many of the baileys were in a poor state of preservation, suggesting the historical rate of association might be significantly higher. Nevertheless, combining these two statistical ranges and extrapolating, we can reasonably conclude that the majority of early English castle sites were involved in some form of direct local relationship with a settled population, albeit for a minority of the total set of settlements, for which a conservative estimate can be offered of perhaps 70% of all castles from 1000—1300.

Suffice to say, the castles had no agency of their own, but structurally embodied the intents of their administrative seigneurial masters. The lay nobility, clergy, and crown were able to redirect revenue streams from a complex tenurial network in such a way that the generated wealth could support a range of castle expenses, alongside a vast array of other household expenses, including at locations beyond the direct sources of those revenue streams. At the sites of castle-towns, this involved a more reciprocal

[25] Morris 2015.

exchange of castle protection of the market, church, residences, and specialist craftsmen, in exchange for market tolls, rents, production complexity, and a centralised resource-base and nodal-hub within the transport and communication network (see Figure 7.1.1). The manorial revenue structure also supported castles beyond this reciprocal model, or at least which were less directly involved within it. Dedicated hunting castles in woodlands, isolated military mottes on the borders, and some rare early examples of more privately functioning residential castles comprise this group, being largely disengaged from market control, tolls, and rent collection, and likely the prerogative of only the wealthier class of tenants-in-chief who oversaw a variety of castles performing different functions. Such locations would still have employed staffs and garrisons who would have spent their wages locally, but the degree of exchange is vastly more one-sided than at the typical castle-town arrangement. In any case, the high occurrence of baileys indicates settlement adjacency was the statistical norm, with the aforementioned economic structures integrated within even the smallest castle baileys.

Feudalism as an institution diminished in the fourteenth and fifteenth centuries, and with it the influentially intermeshed economic role of the castle network receded in significance. Beyond this point, a shift in functional capacity as military bastions and private palatial residences surpassed the relative significance of protected market-towns within castle baileys. Markets had already begun to shift away from castle-gates in the thirteenth century, and the divide between private military fortified space and public town space only widened over time. The prolific wave of early castles was both an integral component of the stabilisation and development process of the English navigable waterways and coast, and a self-entrenching driver of the institutions of manorialism and feudalism; both of which contributed to the nature of thirteenth century economic behaviour, as well as the shape the settlement pattern had taken by the year 1300 (see Part C. of Figure 7.1.1 for a logical breakdown of this postulation). The planned and necessary efforts of the early Norman administration to both secure the waterways and fortify their grasp of the interior resulted in an arguably swifter transition toward internal stability and pattern uniformity, commercial growth (despite the increase of villeinage serfdom and baronial power), urbanisation, and maritime presence than might have occurred if Duke William never intervened in 1066, stirring up the Saxon English structural system. Castle location was inextricably linked to the prerogatives of the ruling elite, and much of the evidence observed here is in line with Coulson's claim that the 'acquisition of money and power' was chief among these prerogatives. While the castle necessarily functioned as a defensive and residential fortress, it simultaneously functioned as a base from which the lord reoriented the manorial economy. In sum, an economic function at early English castles was not only measurably present, but crucial and deeply influential on the form and distribution of both the castles themselves and their surrounding developing landscapes.

7.1.5..... Theoretical Considerations of Castle Nodality

Some additional economic speculation can be offered with relation to pattern outcomes. The following section, including the model in Figure 7.1.5, is entirely theoretical in content. It intends to illustrate some of the general observed patterns that have been identified and described previously within a single reference frame, and to extrapolate the possible implications and affects that castle introduction into the eleventh century had on the nature of the broader village level developed network by 1300 CE. Section A. gives the fictitious example of a typical section of eleventh century English landscape, with a major settlement located on a navigable river, and several inland settlement hubs. Section B. theorises what the pattern may have developed to look like if the settlements were simply exposed to gradual population increase and growth. Section C. theorises the same distribution of emergent small settlements, but the differing potential outcome of larger town growths if castles are introduced as a

functional influence. The general observable patterns associated with castle introduction include reorientation of the major commercial settlement hubs, and associated contraction of formerly significant hubs, and relocation of major settlements to riverine valleys with navigable watercourses. In this example, two new emergent urban hubs have occurred at the confluence of a castle site and navigable river. The planned growth of these two locations limited the growth within the already established pattern. Many castles were positioned in previously un-settled locations, and only a handful of these generated substantial settlements. However, all of the castle sites required ongoing garrison upkeep, maintenance work, and domestic workers to support the household, and the majority had at least small adjacent planned bailey settlements. Regular access to local market centres and administration of demesne manors further necessitated increased connectivity. As such, it is reasonable to suggest that the castle as an introduced extra-settlement landscape component would likely have intensified the connectivity between smaller settlement hubs. As much is the case at the largest castle-towns, with medieval roadways reoriented in adaptation to shifting urban significance, and there is no reason to doubt that less dramatically impactful castle sites would not have also generated new connective roadways. The seigneurial prerogative to expand and improve the revenue capacity of the castle-town in combination with the defensive and unrest stabilising capacity of castles generally, suggests that their potential intensification of inter-nodal connectivity within the broader developing

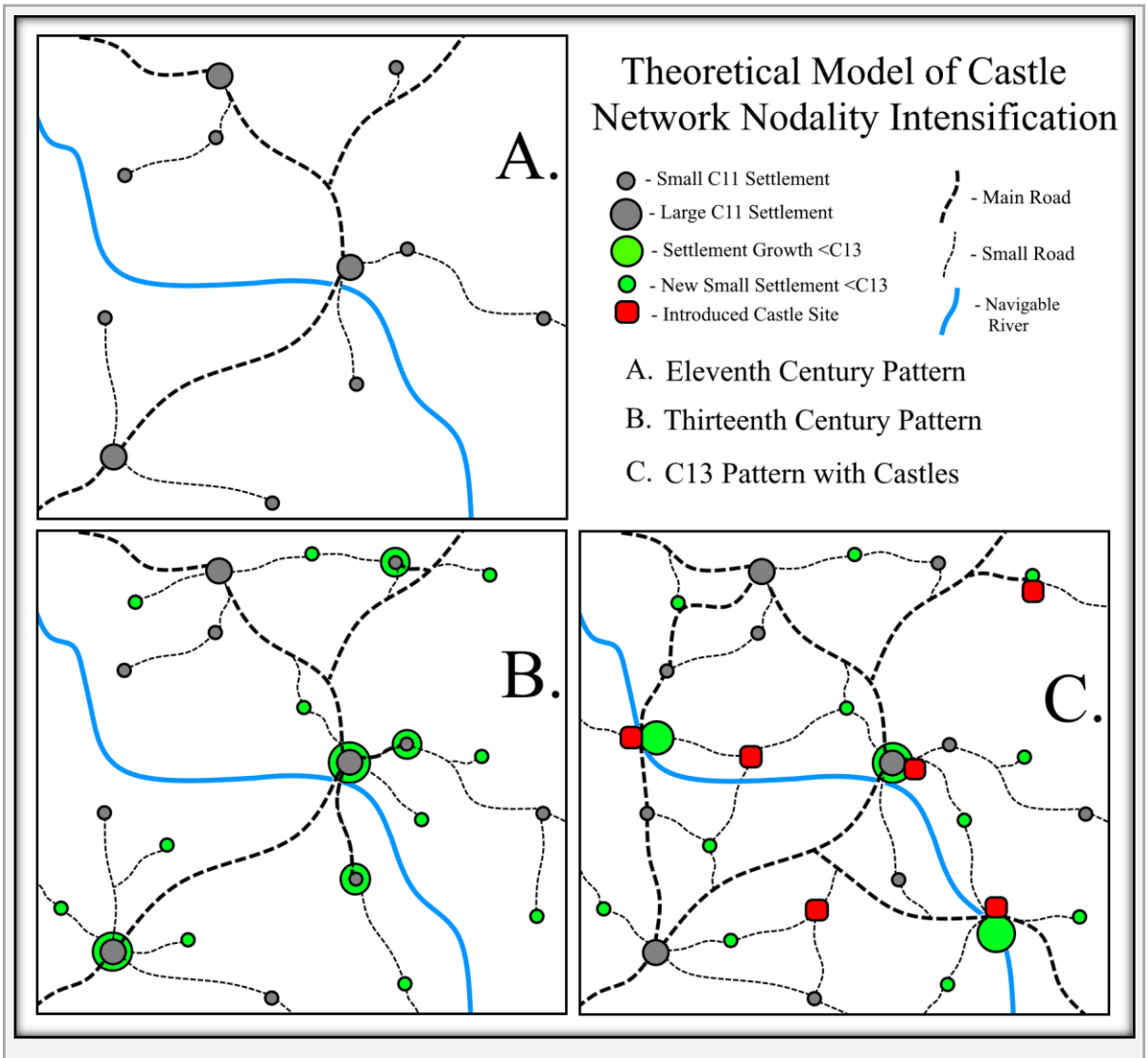


Figure 7.1.5. *Theoretical model of the effects of introducing castles into the manorial landscape pattern.*

network might have generated a fundamentally different village level landscape pattern by 1300 than would have existed without their entrenchment (as a structural component of feudalism) within the manorial economy. A GIS model designed to demonstrate such significant nodal intensification would require broad datasets for the medieval road network at multiple dates (by-1100 and by-1300) and for village level settlement pattern by 1300 and is thus well beyond the scope of this thesis. However, given that this has been observed at the large town scale (see Chapter Six), it is not unreasonable to assume some degree of comparative influence at smaller scales. Moreover, the recognition of economic functionality at early English castle sites, and therein the high probability of associated alterations in pattern outcomes, ought to inform our general theoretical understanding of the known historical pattern at all scales of medieval built development analysis.

7.1.6..... Comparison with post-Roman European Settlement Shifts

Some analysis of the broader European medieval settlement pattern shift has been conducted, the English elements of which can be compared with the castle locational findings to provide further insights into the nature of early medieval settlement pattern. Dalgaard et. al. have identified a broadly high correlation between early pre-industrial European landscape infrastructure development distribution (especially of Roman roads) and the subsequent persistence of economic activity at nodal hubs, with the further associated finding that the paths between the urban hubs which formed the pattern were extremely robust and situationally more persistent than the settlement development at the nodal hubs themselves.[26] Brookes and Huynh's 2018 analysis of the impact of the Roman road pattern on the medieval period reinforces this observation, with the additional finding that inclusion of navigable waterways demonstrates a high correlation between mapped nodal centrality (or high connectivity to other nodes) and historical instances of medieval town growth.[27] In 2018 Michaels and Rauch investigated the divergence in post-Roman settlement pattern distribution in France and Britain, focusing on the settlement pattern re-emergence after the temporary urban decline of the fifth century.[28] They found that from the period of 700—1700 CE only 2 of the largest 20 settlements in Britain matched the Roman town distribution, while 16 of 20 matched in France, suggesting a much higher degree of long-term post-Roman town pattern continuity on the European subcontinent. They argued that during the medieval period the decline in the quality of overland road networks and the increase in the technology and utilisation of maritime and riverine transportation was a driving factor on the emergent town pattern in medieval Britain, which had deviated in nature from the surviving Roman pattern in France, with the notable exception of Northern France, which was more akin to the Britain pattern. An interesting addition raised in their report is the significance of medieval canals, which from around 1200 CE were increasingly built in France and Britain -further highlighting the importance of water-access.[29]

Furthermore, Michaels and Rauch demonstrated that the pattern deviation was not determined by 'negative' and 'positive' terrain availability, including nearness to mountains, rivers, plains, and coast. Moreover, that the reorientation of the British pattern to water-accessible locations granted an economic advantage, with a substantial overall faster growth rate observed above inland towns to 1700.[30] That study does not appear to recognise a unique early Norman influence, with the statement that 'by 1086—1200, however, over three-quarters of British towns had coastal access, while in France still only about

[26] Dalgaard et. al. 2022, p.915.
[27] Brookes and Huynh 2018.
[28] Michaels and Raunch 2018, p.380.
[29] Blair 2007; Pinon 1996.
[30] Michaels and Raunch 2018, p.381-382.

half did'[31] indicating a conflation of the early medieval English settlement phase. The data from this study suggests that the settlement patterns of 1086 and 1200 were markedly different, with the Saxon pattern still containing a higher number of ex-Roman urban hubs. Indeed, further research into the post-Roman urban pattern of re-use has indicated multiple stages of pattern shift across the broader Roman-medieval period.[32] However, a major implication of these studies for the English castle-led pattern of eleventh and twelfth century riverine and coastal development is that it likely indirectly affected the relative future population capacity and growth rate of England. Thus, adding to the observations around navigable waterway stabilisation, the early medieval English transition toward a more coastal settlement distribution was unique from the more Romanised regions of Europe, with castle location potentially playing a more substantial pattern altering role in England than elsewhere.

7.2 ..... Implications for Associated Research Issues

7.2.1 ..... Definitions and Typology

The following sections discuss a series of 'subsidiary' research issues roughly aligning with the research questions order. To reiterate, the research focus has been on the utility of GIS as an analytical tool in observing castle sites, and so some facets of each issue can be responded to in more detail than others, particularly those where the spatial and typological findings offer new insights. To begin with, the nomenclature and categorisation practice of earthwork forms has a long history in castellology (see section 2.3.1).[33] Creighton has criticised the tendency within the sub-discipline to categorise and define castle types to the detriment to individual castles' regional and local uniqueness.[34] While this is holds true, there are still benefits to accurate comprehension of historical norms, so long as we don't impose exclusionary definitions on outlier sites. Section 2.3.2 has also summarised the ongoing debate within castellology of the academic definition of a 'castle'. Opinions on the matter typically focus on historic functionality, with some scholars emphasising military capacity, others integrating lordly residential functions, and others again introducing more subtle elements of power display, symbolism, legal and social functions, and recently also economic considerations.[35] The pertinent research issues to respond to here are principally Issue Two, which queries degree of typological variation as well as the adequacy of the established terminology, and also Issue Five (timber usage) in that a large portion of the typological study set was comprised of 'timber-only' sites without masonry upgrade. The findings of the areal typology analysis provide a number of small potential contributions toward observational understanding of each primary typological set, through their utility of recent LIDAR data. Moreover, the dialogue between my subjective categorisation as a researcher exercising judgement (following conventional academic definitions) and the official public heritage listing of typological categorisation (and some academic publications) indicates a potential semantic definitional conflation issue, in response to which some disciplinary reassessment of terminology is arguably warranted.

First, the site observed typological variations can be outlined. To summarise the findings on 'motte' castles (from 330 certain samples), it can be posited that these comprised of typically circular, but occasionally irregular, conical mounds surrounded by a ditch (see section 4.2.1 for a complete breakdown). They occasionally feature indented summits or embanked rims at their top, but typically featured level summits. The average areal footprint of the early English motte was of about 1,000 metres

[31] Michaels and Raunch 2018, p.401.
[32] Dark 2000; Rogers 2011; Speed 2013.
[33] Müller-Wille 1966; King 1983.
[34] Creighton 2005, p.6.
[35] Kenyon 2005; Creighton 2005; Pounds 1990; Morris 2017; Wheatley 2004.

square and about 35 metres in diameter, with only a few examples larger than 4,000 metres square. They typically are of 9—12 metres in height.[36] Mottes were distributed across England, appearing most sparsely in the central south and most densely on the Welsh border. Section 4.2.2 summarises the 'ringwork' castle type (from 134 samples) which can be differentiated by its broader, flatter inner fortified space which featured an encompassing ditch and embanked rim. Ringworks are generally substantially larger in footprint than mottes but vary greatly in scale from 50—125 metres in diameter, with an average area of around 2,000 square metres. Ringworks were also distributed in all regions, but most densely in the Midlands and East-Anglia. The typological study conforms with the established position that these were both highly reoccurring plans. Both mottes and ringworks existed as stand-alone fortifications, with some 48.2% of ringworks and 37.3% of mottes included in the study having no known adjacent bailey area (see section 4.2.2). As detailed above, it is likely that these percentages represent a high probability of loss of the more ephemeral bailey earthworks. Critically, the typological analysis has also confirmed an often-under-emphasised implication; that of all the early castles of England, it was simple (often timber) forms including stand-alone mottes and basic palisaded ringworks that constituted the overall majority of castles. Grand and complexly planned masonry castles did not come to comprise the majority until the latter half of the study period.

Beyond the main subsets of ringworks and mottes are a range of outliers, including the well-known masonry enclosures (with a sample size of 65), most of which have survived in some form to the present. The terminology of 'enclosure' castles is generally limited to masonry plans in the literature. A wide variety of enclosure layouts exist, with an average area of 4,500 square metres from the sample. The term 'concentric' is also typically limited to more complex masonry forms, although section 4.2.5 indicates the same double-layer defensive logic was employed in some early timber sites that featured contiguous baileys that fully surrounded their respective motte. The areal analysis also identified at least two timber castle subsets for which scant discussion could be identified in the scholarship. The first of these was a 'bell-shaped' motte and bailey form occurring on promontories formed by the confluence of two watercourses, of which some thirty or so examples can be found within the study period and parameters. The motte was positioned in this way at the point of the promontory, with the bailey covering the only path of approach with a wedge shape (see section 4.2.5). Similarly, the 'ridge-worked' motte and bailey form was also a popular minor subset, with a motte and one—four baileys scarped into the length of a gentle hill ridge. Around two dozen such forms were identified with different arrangements including a bailey on either side of a central motte. The attempt to classify all the measurable earthwork forms in the areal analysis resulted in ascription of 44 anomalous plans as 'abnormal', not clearly matching one definition or another. Importantly, these sites occurred in all regions and often represented complex responsive adaptation by castle builders to limitations imposed by defensible natural locations.

The categorisation process and findings aligned strongly with Creighton's observations, with issues relating to castle category variation and the responsive over-simplification in indexation. The 861 sites from the study did comprise of some clear major subsets, but also included anomalous typologies of which there may have only ever been a handful of examples. Furthermore, even among the two major forms of ringwork and motte, the findings highlighted a potential conflation issue between the strict academic definition of form of sites followed by the LIDAR analysis and their official record as archaeological heritage locations by listing sites like the NHLE and HERR. Perhaps related to the term of phrase 'motte and bailey' and its implied correlation, ringworks with baileys thus appear to be very often conflated as motte and baileys (see section 4.2.6 for a full analysis). For the same reason, some small low-lying standalone forms without baileys identified as mottes in the LIDAR study have been

[36] Wyeth 2018, p.153.

previously listed as ringworks. Anomalous forms including a bailey area are most often also included as motte and baileys, and this can be concluded as the main area of discrepancy. This issue is exacerbated by the situational use of embanked rims on some motte summits, on which a palisade would have been built around the tower, which have presumably given rise to the little-used but potentially useful term of 'ring-motte' -used in some listing reports, but rarely in publications. The problem does not appear limited to archive resources either, with estimative counts of English 'motte and bailey' castles varying widely with dependence on what precisely they are including.

A potential solution to this issue might be to treat all 'inner' fortified elements as mottes, and all 'outer' elements as baileys. In such a way, castle type could be differentiated by conical-motte, ring-motte, or ringwork-motte, or perhaps shallow-motte -as after all, even ringworks are slightly elevated above their local terrain, and represented a similar juxtaposition to adjacent bailey space. There is also an argument to maintain the differentiation, as ringworks contained substantially larger interior fortified areas than mottes on average, and did not perform the primary role as elevated observation-posts assigned to some sites on the English borders. The lack of recognition of clear subsets within the motte and bailey super-set could also benefit from inclusion in common description, with the 'ridge-works' and 'bell-shaped' plans identified above included for example. Creighton has stressed that over-subcategorization may also be an issue, and the correct response might relate to a more accurate understanding of the differing functions of ringwork and motte inner fortified spaces, which will be achieved in time through archaeological investigation. Ultimately, the issue remains present in English castle analysis, and some form of reassessment of categorical terminology might well benefit new students of castellology. It must be emphasised in sum, that all forms of early English castle appear to have situationally been planned with and without adjacent baileys, and the use of a bailey in categorisation must be highly cautious. As for the definition debate in section 2.3.2, the findings of this thesis strongly support situationally varied multi-functionality, within which economic functions can certainly be numbered in many instances. Moreover, while a limited set of recognisable earthwork plans and architectural features are more readily includable, the findings support the notion that which functions comprised an active 'castle' changed diachronically along with broader social and economic shifts.

7.2.2..... Castles at Pre-Norman Fortified Sites

The origins of the early English Castle form are now firmly established as Norman, despite the discussion of similarities in Saxon and Norman fortified forms and a handful of 'pre-Norman castles' belonging to the Confessor's continental favourites (see section 2.1.3). However, the debate over the degree of influence played by pre-Norman fortifications is one which has continued to the present. Tuulse suggested the re-use of Saxon and earlier fortified locations was largely out of purely military practicality.[37] Recently in 2019, Jamieson assessed re-use of pre-Norman fortifications at Norman castle sites and concluded that there must have been a significant level awareness of important places of reference in the antecedent landscape.[38] The findings here indicated that the 144 (16.7% of the 861 total) known examples of pre-Norman fortification at subsequently re-fortified castle locations were about half (70) Anglo-Saxon in origin and half (74) Roman, Iron-Age, or earlier (see section 4.1.3). The re-use of Thengal mounds (10 examples known), 'royal' mounds (6 examples known), and other Saxon fortified mounds (at least 40 others) might imply a degree of deliberate re-use of manorial seats, which were known as important legal and social loci in the landscape. It may well be that these known cases are indicative of a higher degree of castle siting at manorial caputs (both fortified and unfortified) within

[37] Tuulse 1958.

[38] Jamieson 2019.

the Saxon tenurial landscape. It is well known that the most premium ground in towns was occasionally cleared of Saxon residences to make way for castles during the campaigns of William I, and the same may have occurred at the village level for the manor house. For the earlier dated sites, further analysis is required (of a highly detailed degree beyond the scope of this study), but there is no strong reason to disagree with Tuulse's suggestion that they were simply re-used for practical reasons -especially the robust Roman masonry foundations. In responding to the research question of pre-Norman fortification re-use (Issue Five, point three), the fact that occurrence of such represented as a small a percentage of the known total body of castle foundations as they did indicates that the re-use pattern was not of sufficient scale, or observably targeted enough to a single fortification type, to indicate any broader deliberate intent or pattern on an administrative level. When compared with the other indications of site choice preference, population hubs and even religious buildings appear of greater importance for the overall castle pattern than existing fortified locations.

7.2.3..... Timber Castles: Heyday and Decline

The difficulty of locating archaeological and historical assessments (especially pertaining to use dates) of timber castles, when compared to the relative ease of finding equivalent information on masonry castles, has led to their careful consideration as a subset in the current study. Research Issue Five (early timber castles) raises a series of questions with regard to: similarity of function between timber castles; site characteristic correlation to long-term use; correlates to masonry upgrade; and typological similarity. Typology is addressed separately below (7.2.2), but the findings did clarify some of these remaining concerns. To begin with, timber castles constituted a clear majority of the sites assessed, with 792 of the 861 from the study period having an earthwork and timber phase. The findings demonstrated that 61.7% (532) of castles from the study period were built in timber and never later upgraded to masonry castles (see section 4.1.1). Of the 330 masonry castles observed in the study, 261 (79.1%) were upgraded timber sites, with only 69 (20.9%) thought to be masonry foundations.. Across the total study period, of the 38 Historic Counties for which castle counts were recorded in Dataset 1., the majority had a roughly 40/60 timber/masonry composition, with 12 counties all in the south of the kingdom having more than 50% masonry castle sites (see section 4.1). The importance of these early timber castles, especially with respect to their comprising the great majority of locational choices for the later subset of masonry castles rebuilt over them, cannot be overstated.

The highly influential motte and bailey plan was tested first in timber before it was adapted in stone, and thus all of the economic relationships addressed above have their origins in timber, especially baileys. Timber castles were most prolific in the Welsh Marches and the northern counties, with Shropshire for example having a ratio of 76/28 timber/masonry composition. Given the high rates of similarity in site plan of eleventh century timber castles which were not later rebuilt, especially the main subsets of motte and bailey and ringwork castles, a degree of shared function at these sites appears quite high. Deviation and experimentation form these simple designs occurred primarily in the twelfth and thirteenth centuries, with some notable exceptions (see typology below). All of these sites likely performed a set of functions including military and status related functions, but also economic functions, especially through their associated baileys. For the substantial portion of ringworks and mottes with no known bailey, especially in border zones, a higher degree of military orientation can reasonably be assigned. As for the correlation with typology and terrain preference, little can be added without further assessment of geology and surface soil expertise, beyond the clear occurrence of smaller mottes in elevated hills and the largest mottes and ringworks all occurring in lowlands.

Confoundingly, no good evidence of continued use or known abandonment could be identified for 63% (336) of the 531 timber castles which were never upgraded to masonry -clearly comprising one of the largest knowledge gaps for the castle dating chronology. It is commonly assumed that the bulk of these sites would not have still constituted active timber castles by 1300, but good evidence for known disuse or abandonment was only identifiable for 60 such sites (see section 4.1.4). Indeed it was quite surprising to find that some 81 (9.4% of the total) timber castles, that is castles with no documented masonry reconstruction, were still known to be in use in the year 1300 CE. When compared to masonry castle continued use by 1300, for which the rate was 100% for the 69 masonry foundations and 78.9% for the 261 upgraded subset, the known examples of timber castle continuity are, together, still substantially lower than we might expect if timber castles were still commonly in use at this time. It is difficult to speculate on the number of timber castles that may have existed coincidingly with masonry counterparts in 1300, but an estimate in the ballpark of 150 does not seem unreasonable given the large subset of sites with no known evidence of abandonment by this time; so long as the lack of known masonry in structures at locations for which continuity of use is based on documentary evidence truly represented timber castles. With respect to research Issue Four (site dating), the findings of the present study indicate that some site factors such as eleventh century local population density and relative nearness to other castle sites might be used to help predict the likelihood that a given timber castle with no known use dates went on to be used in the thirteenth century or beyond. Unfortunately, this remains highly speculative, especially considering many of the known instances of disuse relate to sudden and unpredictable events such as fires or deliberate razing by the crown, and ultimately this issue will only be solved with additional excavation of early timber castle earthworks.

7.2.4..... Norman Cavalry and Early Castle Layout

Section 2.2.1 touched on the niche subject of the critical role played by the emergent social class of knights in early medieval England; a class which has been posited as having entrenched feudalism, and around which much of the economy and social order was oriented. Brown especially has been a major proponent of the importance of horsemanship and warhorses in the early medieval English world, criticising medieval scholars in general for neglecting the role and impact of a mounted military ruling class.[39] From the beginning, within the 3,000 ships brought by William in 1066 were a great many warhorses - and their impact in many early Norman victories is well known.[40] In responding, the economic data collected here support Brown's thesis that the lay nobility were very much engaged with deliberate manipulation of their demesne for revenue optimisation, of which the upkeep of horses and knights would have been among the top expenses after castle construction. Moreover, ever since reading Brown's discussion of the issue, a lingering sense that warhorses might have played a more significant role in castle distribution and design influenced my observations and considerations, particularly regarding the Norman and Angevin periods. Warhorses would have been used in daily patrols, campaigns, for hunting, and for general transportation of the social elite. If the suggestion has been posited elsewhere, it was not identified in the literature research phase here; but in essence, it could be postulated that the lowland siting and levelness and proportional height of the bailey area, particularly at those castles where the baily was only of small scale, might have been designed with some direct consideration for the regular use of warhorses and associated upkeep and protection means via stables and warehouses. The LIDAR data indicated that the kidney-shaped motte and bailey with a small, attached bailey was the single most commonly identified early castle type in England. Additionally, observation by Kenyon that ringworks may have situationally been established as temporary

[39] Brown 1992.

[40] Brown 1998.

fortifications which transitioned into motte and bailey forms would support the notion that the priority was to construct a level fortified area before the motte mound.[41] To rid an opponent of their warhorses in prolonged campaigns via theft or culling would constitute a real threat. With respect to Brown's request to consider the warhorse, it might have been the case that the motte, with its flying-bridge and steep slopes, was fundamentally the domain of the infantryman, while the bailey was, at least partially, a deliberately low-lying defensive protective element for the knight's invaluable steeds. Discussion of this matter with active castellologists has led to the conclusion that while it is a reasonable postulation, without further archaeological analysis of small baileys, it is highly difficult to avoid speculation.

7.2.5..... Military Considerations

The impressive body of literature addressing the military orientation and defensive capacities of early English castles has been fleshed out in section 2.3.4., highlighting that military functions of castles were many, and are well documented. The site plans, surrounding earthworks and cleared lists, and architectural components of the castle clearly were built in preparation for anti-siege defensive uses.[42] Burke has discussed how the developments of castle architecture are closely related to the chronology of improvements in siege weaponry.[43] The early and influential work of Tuulse situated the castle within a chronology of fortified forms, through which he naturally gravitated to highlighting the castle's defensive elements -as would many others.[44] The military threat of castles was both implied and real, used both in sieges in campaigns and to deter revolts from occurring to begin with. It is known that at least 30 or so castles were established during William I's initial campaigns to control the kingdom, with suppression of population hubs being a repeated factor, as posited from Morris in section 2.1.2.[45] The Normans were well acquainted with this sort of castle use, having utilised it Normandy prior to the conquest.[46] The architectural literature assessed in section 2.3.3 clearly focuses on the defensive capacities of each component of the castles' structure, with some further discussion of how the rooms of keeps shifted simultaneously with social expectations, and how palatial and heraldic elements eventually replaced pragmatic functional elements.[47] Castles were also notably denser with correlation to potential threats. The Welsh border in particular hosted a number of highly militarily oriented castles sited and designed specifically to deter raiding (see section 2.2.2).[48] The Norman and Angevin presence in Europe, including in their overseas territories in France and the Mediterranean, necessitated their military culture, within which castles were a practical military tool. The English involvement in crusades had a marked impact on castle architecture and site plans within England (see section 2.2.3). Castle siting and design was thus clearly oriented with consideration of military needs.

Coulson, Kenyon, Creighton, and Liddiard among others, have done much to improve the breadth of the discussion of castle functionality.[49] In responding to the ongoing militarily oriented castle studies literature, a position espoused by these integrative perspectives can be reemphasised; that the castle was not just its keep and towers - those elements which have most often survived to the present and constitute the meat of architectural analyses. The bailey defences and their contents including the well, storerooms, stables, market square, church, and professional craft-spaces and military apparatus were just as integral to the feudal enterprise of a castle. A militaristic counterargument to the suggested economic functions argued in this thesis might be that the castles were built with the express intention

[41] Kenyon 1990.
[42] Phillips 2008; Hammond 1963; Thompson 1991.
[43] Burke 1992.
[44] Tuulse 1958.
[45] Morris 2017.
[46] Brown 1998.
[47] Hislop 2016; Kenyon 2005; Platt 1982.
[48] Rowley 1983.
[49] Kenyon 2010; Creighton 2013; Coulson 2003.

to enforce crown rule, supress revolt, and defend a military elite; and that the growth of economic systems around them was merely a by-product beyond initial intent. This may well be the case for some sites, and more-so for the earliest wave of castles. However, the early foundation of baileys and their chronology of planned expansions, the relocation of markets to castle sites, the storage of goods and resources, and the shift in baronial service to prefer monetary payment to knight-service, are among the indications that purely military origins did not equate to continuous purely military functionality among seigneurial concerns. The construction of Dataset 1. elucidated that while instances of military violence associated with castle sites were high overall, the rate of occurrence across the total system was negligible; for a study period of nearly 300 years, many sites entailed little or no direct military involvement, while many others were besieged but not subsequently slighted or razed. For most castle sites in most years, activity was more likely oriented to pressing concerns around feudal and manorial resource manipulation and management. Additionally, the findings from altitude and terrain calculation conform with Creighton's assessment that siting often ignored the most defensible elevated rocky outcrops which one might expect them to be perched upon were defensibility the primary consideration. Instead, an observable pattern of preference for lowland areas, especially near coasts and navigable rivers, often at existing settlements or around clusters of dispersed populations was identified -albeit always on the locally most elevated sections of land (see section 4.1.2). This is apparent even at locations with no existing settlement, indicating the intention to develop adjacent bailey settlements close to water and arable land was a priority. Military capacity was plainly a key consideration, but the findings of this study indicate that this was, more often than not, as a capacity to defend a local population beyond the lord and his household. The areal analysis results for the relative footprint of the average motte (1,000 metres square, of which the majority was filled by its sloped banks) and the average equivalent bailey (6,000 metres square) reinforce this position.

7.2.6..... Prestige and Visibility

A more recent development within castle studies also related principally to architectural analysis has been the consideration of status display (see section 2.3.5 for a summary). Morris has asserted that the scale of timber castle earthworks, along with what little we know about the towers which were built atop their summits, is indicative of a seigneurial culture of 'showing off' prior to masonry castles.[50] Motte mounds, especially the smaller subsets with no bailey, have been suggested as deliberate built indicators of knightly rank.[51] The features of keeps have been described as 'crown-like' and as enforcing an 'iconography of kingship' alongside grand gatehouses, towers, and curtain walls embellished with heraldic and ornamental stonework -expenses and upkeeps well beyond practical necessity.[52] Platt adds that the ability to maintain the massive expenses of a lordly household were a demonstration of largesse and conspicuous consumption demanded by high rank.[53] Examination of keeps in the observational fieldwork component highlighted numerous architectural facades and interior details which would have been surpassed as awe-inspiring built spaces only by the great cathedrals. Creighton and Liddiard, in their landscape castellology analyses, have expanded on these symbolic and site plan elements, observing that the position of castles within the landscape has occasionally been chosen with deliberate intent to optimise visibility over defensibility.[54] The observations of terrain and typology here support this view, with the caveat that it is often difficult to differentiate maximal defence-oriented view range from within the castle and maximal prestige-oriented visibility from without. Even if a viewshed

[50] Morris 2017.
[51] TGG, various.
[52] Muir 1990; Platt 1982; Wheatley 2004.
[53] Platt 1982.
[54] Creighton 2013, p.15, Liddiard 2005.

analysis were able to differentiate the relative quantity of population points visible to the relative total land surface visible at castle and non-castle locations, the conclusion that this was the intent of the builder would remain speculative. The precise reason mottes were elevated above their bailey, instead of a single evenly elevated raised platform containing differentiated internal space, is a matter of dispute, for which the reason likely varied situationally. Defensibility, observational optimisation, physical separation and delineation of status, and the need for ease of access to the bailey constitute some contending factors. As with many elements of castle design, it might be assessed as a compromise between status display and military practicality, with economic functionality being observable in the bailey component through its residences, craft-spaces, storage-areas, and low-lying accessibility facilitating cumbersome drawn carts and mounted riders.

7.3..... Conclusions

The findings summarised here contribute to existing economics-minded positions within the developing body of scholarly research around early English castles, aiming to help clarify the historic place and role of castles in the medieval world. The simultaneous consideration of castles and settlements has offered some insights into how each influenced the other, both in their changing distribution patterns and their economic interactions, as shared components of seigneurial feudal enterprises, enmeshed within the manorial landscape. The capacity for settlement growth catalysation and stabilisation of existing hubs, as identified among many castles within the prolific early wave in the eleventh and twelfth centuries, was unexpectedly marked. Moreso when compared to the apparent lack of robustness of the late-Saxon population pattern, the layout of which shifted significantly across the study period to the year 1300. The alteration in pattern was especially pronounced in the shift toward coasts and navigable watercourses, where castles that were initially sited to control key river-mouths and crossings developed expansive emergent towns. The typological LIDAR results have proved invaluable in highlighting a number of limitations, and supporting a range of theoretical arguments, especially with regard to the timber castle majority subset. For example, some early castles layouts may also have been more substantially influenced by the need for warhorse facilitation and deliberate visibility than is commonly acknowledged in military architectural accounts. Not all of the research issues could be given equal time or satisfactory answers, and the deliberate focus on economic considerations has meant some areas, such as geological considerations, fell beyond the scope of this discussion chapter. Unsurprisingly, the answer to many of these quandaries lies in further research and excavation, and the concluding chapter of this thesis will integrate these considerations and opportunities into a summary of broader research implications.

8.0..... Chapter Eight: Conclusions – Reciprocal Continuity

8.0.1..... Introduction

Early English castles, when indexed and assessed as individual parts of an extensive castle network, were, demonstrably, places of continuous structural alteration and functional adaptation which emerged and developed in accordance with a hierarchy of seigneurial requirements and expectations. Economic functionality is only one of the many functions of castle sites that could be measured through spatial analysis, and the data assessed here indicate that it was a component of crucial significance in influencing castle site design, use dates, and scale. Moreover, when castle sites are analysed together with the simultaneously changing patterns of the manorial landscape, they clearly appear to have been partially influenced by, and partially influential towards, the overall developing settlement network of early medieval England. Even within the designated time frame that an 'early' castle has been assessed here, roughly from 1000—1300 CE, it is apparent that the nature of economic functionality observable through castle and settlement proximity was different across time and between regional parameters. Encouragingly, variation between castle sites appears more clearly explicable when situated in a context mapped out in accordance with a predictive economic model. Despite a range of differences in scale and layout, several recurrent subsets of spatial arrangements and behavioural patterns were identified across the total indexed set of sites. While further excavations and research is required, some the key implications of this study will be summarised here. Perhaps the most significant is that castles, albeit framed by intricate historical circumstances, played a key role in shaping the uniquely English settlement network.

While Chapter Seven has integrated the total body of analysis findings with the research questions and associated ongoing scholarly debates from Chapter Two, this final chapter will further summarise the crucial findings and address the broader implications these have for further research in castle studies, for digital and interdisciplinary approaches, and for archaeological research generally. To begin with, an outcome assessment is given in response to the three overarching research aims outlined in Chapter One. The major technical and resource limitations of the thesis are acknowledged, with situational adaptation explained and justification provided. The contributions of the findings to castle studies are then summarised, both with respect to ongoing theoretical dialogues, and including those outputs generated as resources for future digital castle analysis. A summary of potentially beneficial further research pathways highlighted by the methods, results, and unaddressed knowledge-gaps identified in this study is then provided. Some recommendations are offered for definitional alteration and perspective shift in relation to castle studies theory, and indexation specifically. Lastly, the key implications and conclusions are summarised in a synthesis of the research.

8.1..... Aims, Justifications, and Adaptations

8.1.1..... Fulfillment of Research Aims

The following section reiterates the three overarching research aims which were first outlined in Chapter One before responding to each with an assessment of outcomes. Overall, the study achieved its provisional objective of testing for spatially describable castle-settlement economic relationships, especially with observation of the developmental fate of the larger towns, however, much work remains to be carried out at the small town and village level scale of analysis in future projects.

Aim A. Site Indexation. To generate an updated digital 'total system' resource for early English castle sites. An extensive index of English and Welsh castles (*Castellarium Anglicanum*) was produced by King in 1984, which has remained the foundational index referred to by subsequent wider pattern analyses. Some more recent works have utilised aerial photography as a resource in categorisation and layout assessment. However, the major potential of LIDAR DTMs and online publication of local historical resources constitute invaluable new resources for expansion of this established record. An initial key objective then, is to utilise a portion of research time and resources to generate a single mappable digital resource for the early (limited to 1300 CE) English castle, which can be refined and expanded on and hopefully utilised for further research in the sub-discipline of castle studies.

Outcome Assessment A. King's *Castellarium Anglicanum* remains the seminal work of reference, constituting the compilation of decades of field observations of castle sites. However, the generation of Dataset 1. (the main castle location dataset) can be assessed as a moderate success. The dataset contains 861 English castles built between 1000 and 1300 CE and is as, or more, exhaustive than other identified published distribution maps for the period. The addition of LIDAR areal calculations where possible constitutes a novel resource addition, as does the calculation of local populations (both listed in the dataset for each castle site). The extremely complex nature of categorisation and usage dating means the dataset has maintained the tradition of estimation and approximation in many cases. The utilisation of a substantial portion of research time to compiling the dataset was ultimately worthwhile; both in that it was required to achieve a thorough spatial network analysis of medieval England, and in that the assessment of many hundreds of 'potential' castle sites in the process of compilation was invaluable in informing the qualities and inclusion of outlier castle forms.

Aim B. Digital Mapping. The underlying technical aim of this research is to utilise digital mapping as a tool for non-intrusive measurement and spatial comparison of archaeological sites. For the present research the focus is on medieval castle and settlement locations, but the methods tested may be more widely applicable for similar built landscape entities. More precisely, using the ArcGIS Pro software from ESRI, data of several medieval English natural and built landscape elements in combination with modern LIDAR digital terrain models (DTMs) are to be collected and mapped. These mapped elements are to then be measured and analysed using GIS polygon and spatial proximity functions, and the output results are to be contextualised within ongoing debates. The objective is thus to test this method of digital research in its technical capacity for generating new information from existing archaeological resources to contribute to the ongoing archaeological discourse without a requirement for time-heavy or expensive new excavations.

Outcome Assessment B. The utility of GIS was invaluable for attempting an analysis of this scale. With hundreds of castle locations and thousands of settlement locations, this sort of broad spatial network research is only really possible thanks to the digitisation of locational data. The utility of LIDAR was unexpectedly informative, with a resolution of data for bailey area in particular generated beyond what was identified in existing publications. Similarly, while the 5km radial analysis produced some useful indicative findings, the Thiessen polygonal analysis produced unexpectedly informative results, especially in the observation that castle proximity to other castles appears to have been a highly consequential factor in their long-term usage and masonry upgrade rate. The previous work of Brooks, Oksanen, Dyer, and Palmer in assembling the Domesday manors, medieval navigable rivers, Poll Tax settlements, and county boundary locations permitted the scale of analysis achieved here, which would otherwise have been beyond the scope of a single thesis. It is hoped the resources generated here will permit the further development of this GIS-based research trajectory by others. Ultimately, ESRI's ArcGIS Pro proved a highly useful platform for assessment, with multiple findings generated from the existing body of archaeological data. As far as testing and utilisation for archaeological analysis

generally, a recommendation can be offered for employing 'shotgun analysis', or the tentative trial of multiple digital relational analysis methods, with the 'correct' method for comparison of any given datasets potentially being unexpected, as were several key findings here.

Aim C. Economic Assessment. To test for economic influence at early English castles. Fundamentally, the theoretical premise of the current research is that early medieval English castles were built and developed with substantial consideration of the complex manorial economic landscape, rather than in ignorance of it or with overwhelming preference for location defensibility or status display potential. As much has been argued occasionally by others in castle studies, but further evidence would help clarify the ongoing debate about the degree of economic orientation and impact the castle had on patterns diachronically. A key objective in this study is to employ settlement size and pattern as an indicative metric of economic behaviour and resources, with the theoretical premise that the analysis of the castle distribution pattern alongside the settlement pattern would generate such additional information, which might then be used to assess the degree of castles economic influence.

Outcome Assessment C. The mapping of settlements of various forms and sizes relative to castle location produced patterns which broadly conformed with natural landscape boundaries and elevation limitations, with the distribution of populations and fortifications following roughly shared locational rules. The consistent spatial relational nearness of both forms across the broader landscape matched expectations set through prior observation of castle-town case studies, following regional rules, albeit with many intricate outliers from both sets. These patterns suggest that the proposed utility of settlements as an indicative economic metric was justified. An important observation was that castle manipulation and exploitation of populations through planned bailey settlement development was of greater significance to the overall shape of the developing spatial network than the existing eleventh century manorial pattern was on early castle foundation location. As is highlighted above, an economic influence was identified statistically, with results integrated within several ongoing academic debates in the discussion chapter. It must be emphasised that economic functionality was not universal in extent or specific nature, with some castles still performing primary isolated roles as hunting bases, border watches, or route defences. However, these capacities did not exist beyond the limits of the manorial system, with feudal magnates sustaining their maintenance from extensive demesne profits, and more importantly, they constituted an outlying minority. No castle existed in true isolation, and all were maintained at considerable expense – with justification for this maintenance, and manorial income sources, coming from somewhere, and someone.

8.1.2..... Justifications and Contributions

The need to expand on the current archaeological understanding of medieval English castles through integrative analytic methods, particularly through the interdisciplinary consideration of settlements known via historical data and the use of GIS for digital mapping of the broader landscape, has been established in Chapters One and Two. This effort has been pioneered by the recent publications of landscape castellologists (see section 2.4.2). With reflection on research gaps in castle studies, it can be noted that this thesis has addressed a few chosen gaps and highlighted several others. First, the economic functionality of the sort theorised by those few refreshing recent integrative publications and expanded in the models here has been tested for and identified on a broad level. Secondly, the identified pattens and their implications have been integrated within ongoing debates around typological definition, early timber castle use, relativity to military and status considerations, implications of cavalry warfare, pre-Norman site use, and relative post-Roman settlement shifts in Europe. Thirdly, the theoretical role of castles as influential internodes within the manorial network has been modelled, although further

research will be required to test the broad applicability of these observations. GIS is a relatively recent development in the grander scheme of many long-standing sub-disciplines, and the methods tested here can be positioned within an emerging set of studies which will hopefully encourage the further development of digital approaches to archaeology. Furthermore, it is hoped that the research outputs of Appendices I-III, Datasets 1.-3. (especially the castle dataset), and the GIS project compiled for this study will contribute to further research by the author and others within castle studies. Additionally, research gaps relating to environmental siting, settlement orientation at the village level, the equivalent location of churches and monasteries, and archaeological knowledge of early castle sites were identified. Further research recommendations derived from these are offered below.

8.1.3..... Adaptations and Limitations

While the research process has produced a series of statistically based observations to contribute to the multifaceted discussion of castle functionality, throughout this process a number of setbacks and limitations were encountered which can be summarised here. To begin with, as a researcher-in-training I experienced some degree of 'researcher-bias' and was limited by a lack of background expertise. For example, an initial premise to be tested through the creation of the castle dataset was that early English castle forms may have included a higher proportion of pre-Norman prior fortified site development than is typically observed (a position justified by some existing theoretical publications in initial research). However, it soon became clear that the majority of Norman foundations were original in both design and foundation location choice. A further example is the extent of the literature review; in that there are hundreds of publications in this field, including a much broader archaeological grey literature than could be covered in the available research time. A final example is language; as many of the works in French, Dutch, and German castle studies which address the origins of castles in western Europe were beyond my capacity to integrate as an English writer/speaker. In response, the literature included was broad in topic coverage but selective in quantity and was focused principally on England.

On a technical level, use of the ArcGIS Pro software needed to be learned from scratch and on several occasions the key English LIDAR data servers were unavailable. Thankfully, the USyd Archaeology research facility provided resources for acquiring a GIS skillset, and the UK environment Agency generously facilitated a personal copy of the DTM LIDAR data. The data collection process for Dataset 1. faced a series of minor compilation issues including: a lack of known foundation dates, especially for timber-only sites; disagreement between heritage listing sites on inclusion of anomalous outlying castle forms; a high occurrence of estimation of pre-masonry typology without direct evidence; and an even worse lack of known disuse dates (see section 3.1.1). The issues of dating remain largely unavoidable without further strategic excavation of the subset of early timber castles, especially with intent to temporally differentiate the ringwork and motte forms. Outlying sites were included in the study despite their potential for dilution of pattern accuracy but were treated as a separate subset rather than forcibly assigned to one or another limited category. Methodologically, the observational fieldwork was originally intended to include more dialogues with active castellologist to discuss research approaches, but it was substantially delayed and disrupted by the COVID pandemic. The post-COVID re-emergence of this research opportunity was thus reoriented toward observational fieldwork after initial analysis, which resulted in the production of Appendix III (see section 3.1.2).

The process of mapping the polygons for fortified area calculation acknowledges that only 573 of the 861 (missing 288 or 33.5%) could be included due to available site preservation and LIDAR coverage. This percentage may be reduced by further expansion of the UK LIDAR resources. However, the

reduction in the size of this subset has actually increased the accuracy of the calculated characteristic quality (see section 3.3.1). The settlement population data for 1086 CE was missing a subset of larger towns (see section 3.1.3) and some 6.1% of the population (4,679 manors) could not be mapped due to having no known landscape location. The missing subset was re-added, although it is likely incomplete, and ultimately the low proportion of missing manorial population was arguably not sufficient to invalidate the tentative pattern observations. The Poll Tax data for 1377 is a set which was also limited in size when compared to the 1086 set. Given Dyer's argument that population estimates beyond the top 80x towns of the Poll Tax account are prone to inaccuracy, this limit will likely not be exceeded (see section 3.3.4). This meant that the pattern shift was limited to 137 composite towns, but this appears to have been a large enough subset to have produced meaningful patterns and statistics.

The radial and Thiessen proximity analyses were used to tentatively assess local population distribution around castle sites. Section 3.2.2 and Chapter Five openly acknowledge that the complex reality of local manorial tenure patterns around hundreds, hides, knights' fees, fiefs, and especially deliberately distributed exclaves, indicate a much more sophisticated local level tenurial system. However, the observations in the scholarship that tenant barons tended to nucleate their holdings where possible, that William I re-grouped some local parcels of land despite dividing major conglomerations, when put alongside the fact that baronial caputs were often chosen in the pertinent tenant's demesne heartland reduce these concerns. Further, justifying the tentative results put forward, a 5km radius was found to drastically limit the number of Domesday Hundred boundaries that were overlapped by the polygons, increasing the likelihood of 'true' demesne tenurial correlation. Moreover, some economic revenue streams such as market exchange may have occurred across these tenurial boundaries.

The research method aimed to produce broad scale spatial analysis which simultaneously granted the benefits of observing large regional shifts across a substantial timespan while also limiting the focal detail of local analysis, with thesis space and time parameters being insufficient to further provide in-depth case studies of all identified patterns. A lack of high-resolution settlement distribution data for the end of the study period (1300 CE) also prevented an equivalent comparison of small-town and village level analysis which could have been compared to the 1086 CE pattern at the 1300 date. The selection of analyses utilised was thus designed to include multiple formats, including bailey area calculation; 'within' proximity calculation; and diachronic pattern shift observation; with the premise that if multiple methods achieve congruous results this tentative method will have been justified, and this appears to have been the case. Many of the conclusions are based on implied economic functionality, and archaeological excavation targeting specific castle sites would support these theories and models, as is suggested below. This list of limitations is not exhaustive, but accounts for the set of the most significant issues that were encountered and managed.

8.2 ..... Further Research and Recommendations

8.2.1 ..... Further Digital Mapping Analysis

Points, Lines, and Polygons. One research sphere for which the present thesis can provide some feedback is the general use of GIS in archaeology. GIS as a mapping platform has a long-standing analytic research history and is growing popularity in the Archaeological community, especially for modelling large landscape datasets, least cost route pathing, and viewsheds. The methods employed here were technically basic, but their generation of findings is encouraging for future equivalent archaeological GIS based studies. A key insight has been the usefulness of interdisciplinary resources, with the medieval navigable river extents, county boundaries, and manorial settlement locations in this

study all having partially or completely historical documentary origins; all of which were highly informative when spatially orientated alongside the archaeologically based castle site data. A further key insight (particularly pertaining to this historical period) was that river location was of greater significance to the overall pattern shift than was initially expected, a point which has subsequently been confirmed to correlate with medieval settlement studies, primarily relating to commerce. Therefore, inclusion of rivers can be highly recommended for any similar future GIS research. Finally, the excellent LIDAR resources of the UK were highly informative for comprehension of castle plans and component areas, and future research into LIDAR based analysis of European castle plan equivalents might produce comparable findings, which when enough studies have been conducted, will greatly benefit our understanding of regional European castle variations, and potentially also inform on design origins.

8.2.2..... Further Castle Studies Research

Village Level Diachronic Analysis. To continue directly where this thesis has left off, further research is required into the village and small-town level equivalents of the diachronic large-town 1086—1377 pattern analysis. Ideally, as this information would have to be compiled from varied county record resources (with no large tax records viable for broad system population mapping), the dating of these settlements could be identified as close as possible to the 1300 date, rather than the 1377 date, to avoid the fourteenth century demographic alterations. The question remains unanswered as to whether it was only the major instances of settlement growth which were measurably oriented around the location of fortifications, or whether this pattern was contiguous at all scales -although the bailey areal results suggest it would have been to at least some extent. Additionally, given the quality of the 1086 Domesday settlement distribution data, a more flexible proximity analysis of the kind tested here would benefit from integration with precise tenurial boundaries and demesne ownership records.

Environmental Considerations. An area that was tentatively explored but then deliberately excluded from this thesis is the overlap of the patterns of settlements and fortifications with the underlying environment. Future research could, for example, identify whether the geological subsurface correlated with the form and scale of castle types, as stone availability clearly had an impact on local castle architectural design, especially for those smaller baronial castles whose tenants could likely not justify the import of luxurious Caen sandstone or other regional equivalents. Identification of medieval quarries would be appropriate here. A further example is the relative distribution of forests and woods. The research into the Domesday data revealed some currently ongoing reconstruction efforts to establish a map of the eleventh century forested landscape. It would be highly worthwhile testing to see whether known early castle locations existing in isolation from settlement patterns had a higher probability of location within forests, potentially serving as hunting retreats (of which we know a few certain examples) and explaining their deviation from the castle-settlement relational expectation.

Churches and Monasteries. An important functional element of the medieval built landscape which was only briefly addressed in this thesis is the church (see section 4.3.3). Inclusion of churches, cathedrals, and monasteries in combination with the castles and settlements mapped in GIS would be thoroughly worthwhile and informative. It could, for example, help clarify the degree of aristocratic cooperation between the clergy and lay lords, or perhaps further highlight regional differentiation in manorial holdings dominated by one or the other. Monasteries were also described as constituting an influential growth-catalyser for emergent towns across the early medieval period in England, and the identification of the relative degree to which this occurred with respect to castle-town equivalents would also be worth researching.

Early Timber Castles. In the case of expanding our comprehension and knowledge base around early timber castles, perhaps the most useful research would be further archaeological excavation. Excavation constitutes the most expensive avenue and therefore in need of most justification, but this justification is readily apparent. Despite the overwhelming focus on masonry castle architecture, timber castles made up the majority of all castle sites for the study period, being especially widespread from 1066—1150, but also represented the largest knowledge gaps with respect to known foundation, known functionality, and known abandonment. Targeted excavation is required to resolve these knowledge gaps, with components aimed at: excavation of early ringwork and motte sites to improve our understanding of the variations in the built interiors of these 'inner' fortification components within differing forms; identification of the location of stables within the medieval castle-town layout, for use in responding to the theoretical early role of Norman cavalry; and critically, excavation of baileys to increase the body of data from which we can confidently establish functionality and structural nature, especially in the smaller castle baileys. Efforts to achieve any or all of these objectives through excavation would be well worth the work and expense, comprising a key under-developed component of the English historical narrative.

European and Global Equivalents. Several elements of this thesis indicate that the historical nature and functions of the included castles were uniquely English, alongside the associated Norman reorganisation of the social and political landscape and development of the coastal and riverine zones. The French, for example, saw a much higher post-Roman town distribution continuity, the Hungarians experienced a much later wave of castle proliferation in relation to the threat of steppe nomad incursions, and the Baltic states experienced a uniquely theocratic castle architectural design with conventual castles. What does seem fundamental to the 'castle' fortified form, when compared to burhs, star-forts, Roman garrison forts, and other forms is its combined seigneurial administrative and military nature. This appears to occur when a high level of stratification of landholding coincides with a military elite favouring defensive architecture (observable in feudal societies globally from France to Japan). The Saxons had a sophisticated manorial system, but a less stratified power structure with fewer fortifications, as did the Hungarian magnates before the Mongol invasion. Moreover, once castles are introduced alongside militaristic feudalism, they also appear to proliferate and to entrench that social institution. However, it is not obvious that this 'vicus' style settlement growth was universal or uniform in other regions and periods. Thus, it would be really worthwhile applying similar methods to those applied here to equivalent feudal and non-feudal patterns to test for similarity and difference.

8.2.3..... Recommendations for Castle Studies

One recommendation, building on these findings and implications, would be for students and scholars to consider the complex functionality of the manorial land tenure system when initiating any castle-specific research, especially for the early phase of castles in England. As much is likely the case for castles across Europe, although temporally differentiated by the local peak of feudalism as an institution, and potentially in other fortification-settlement cultural equivalents globally. These extents have not, however, been covered within this study. While some of the more complex influences on castle design, including deliberate siting for visibility and architectural symbolism, can be situationally critical, this research indicates that the consideration of economic functions would be beneficial to fully comprehending most early castle sites. Military function remains a crucial research area in castle site analysis, particularly if the study is limited to castle keeps, preserved masonry architecture, or historical instances of violence; but if the work aims to expand on the general role and use of castles, especially in qualifying castle definitions, the socio-economic systems of feudalism and manorialism within they

existed, and the seigneurial administrative prerogatives of design and construction, especially with respect to the component of the bailey, ought to be incorporated.

A second recommendation relates to definition and categorisation. The areal analysis presented in Chapter Four highlighted a categorisation issue, especially apparent in the heritage listing resources, but also observable in some academic publications (see section 4.2.6). This relates principally to the assessment of 'ringworks with baileys' as 'motte and baileys' and occasional misidentification of stand-alone mottes as ringworks. The issue is complicated and includes a nomenclature that is incongruously agreed upon in the potentially useful use of 'ring-motte' categorisation and a wide variety of variations in earthwork preservation and original form. Furthermore, attempts to place complex or anomalous earthwork designs under limiting definitions has generated a conflation pattern, with sources referencing other, slightly inaccurate, descriptions. The broader enterprise of English castle studies, including its heritage and scheduling outputs, might benefit from a broader categorisation of early medieval castle earthwork forms, with individual listings going into detail about which commonly occurring features are present at each site. The LIDAR analysis recognised a series of groupable earthwork design subsets including 'bell-shaped' and 'ridge-worked' motte and bailey designs, and these could be incorporated into such listing resources, without the limitations of the either/or of motte/ringwork delineation. In any case, the recommendation for castle studies researchers, with respect to the present situation, is to be highly cautious of categorisation, and to employ site plans - especially with LIDAR, where possible.

8.3 ..... Implications

8.3.1 ..... Castles and Settlements — Interconnected Development

Overarching Castle-Settlement Relational Observations. The three core analysis chapters have highlighted multiple strains of evidence which, taken together, support the sort of economic functionality of castle sites postulated in Chapter One and expanded on theoretically in simplified economic models throughout (see section 1.1.3). Settlement location, population, and area have been used as provisional indicators of economic activity, with this premise being reinforced by the discussion of the literature on the market systems, feudal agricultural economics, and land tenure mechanisms of medieval England (see sections 5.1, 6.1, and especially 7.1.2). The calculation of spatial nearness of castle sites to patterns of population distribution, along with LIDAR-based mapping of the size of castle baileys, suggests a significant degree of planned integration and reorientation by seigneurial administrators between castle and settlement locations. These changes occurred within, and subsequently influenced the development of, the manorial network pattern. The reorientation of a significant portion of the peasantry majority population around seigneurial castle centres, as is indicated by the correlation of local hinterland populations with subsequent bailey area extents, suggests that castle builders and overseers were actively carrying out localised manipulation of the established population distribution as it was in the eleventh century (see section 4.3.2). While the exploitation of existing local clusters of high rural population was not universally associated with new castle site selection, this pattern was widespread, especially for a subset of the larger nucleated hubs (section 5.2).

This roughly 1100 CE level of rural landscape detail was not assessable for the 1200 and 1300 dates, given the unusually high resolution of the Domesday documents. However, the statistically closer association between castles and settlements at known eleventh century locations indicates that, were equivalent high resolution rural settlement patterns available for these later dates, they would similarly correlate with a measurable degree of castle siting preference within denser population clusters, and

vice versa for new castle foundations influencing settlement growth after these dates. In any case, when the large-scale town pattern shift outcomes, for which we do have available settlement pattern data (i.e., 1086—1377), were tested, a strong association between instances of alteration in towns, of both contraction and growth, and castle proximity to these towns was identified (see section 6.2.2). The details and implications of these spatial associations and alterations are expanded on below. Crucially, these findings support the recognition of, and integration of, economic administrative capacity into the multi-functional general academic understanding and definition of castles, reinforcing the integrative economic landscape observations of other castellologists in recent publications (see section 2.4.2).

Early Castle-Settlement Influences. The findings of the LIDAR DTM areal analysis demonstrated that the statistical majority of castles founded from 1000—1300 CE included a bailey component, the area of which correlated positively with the size of the local hinterland population. This was the case both within a flat local 5km radius, and as limited relatively to other castle locations, to avoid settlement association overlap. Larger bailey area also correlated positively with the larger size of inner fortified earthwork elements of the associated castle superstructure (see section 4.3.2). The LIDAR areal results indicate that the established eleventh century manorial population pattern was thus an important influence on the scale and design of emerging castle sites, especially in the county capitals and larger market towns, albeit with some notable exceptions (see section 7.1.3). The largest castles were found to be uniformly located in lowland locations across all subsets (mottes, ringworks, and enclosures), although still generally occurring at the highest local-area terrain point (section 4.1). Castles were only occasionally built on ridges and peaks in England, with requirements for supplies, farmland, water, and nearness to (typically lowland) market centres driving down the average altitudinal location.

The proximity analyses demonstrated that early castle builders sometimes founded castle sites in previously undeveloped locations, notwithstanding a proportionally small subset of pre-Norman fortified locations being re-utilised for reasons of defensive practicality (section 4.1.3). A further important finding of the proximity analyses was that the distance between castle sites was a useful indicator of longer-term continuity of use, and of masonry upgrade rate, with many areas of high castle density seeing a diachronic self-regulation in continuity of use (see section 5.3). While the eleventh century (essentially Saxon) population pattern clearly had some influence on location choice, the observed lack of castles at many medium towns, and a few larger towns, indicates a deliberate ignorance of some existing settlements. This finding suggests that castle foundation location preferences of defensibility, demesne centrality, or deliberate isolationism might have taken precedence in such locations. However, the total pattern of castles did show a modest but consistent positive preference for foundation within existing settlement clusters, and at larger single nucleations. Put another way, castles built in the most prolific wave from 1066—1150 were typically founded at existing settlements or within highly populated areas of dispersed manorial settlement, but a not insignificant subset were also built beyond the existing eleventh century population pattern, demonstrating the seigneurial capacity and apparent desire to establish entirely original feudal structural enterprises.

Diachronic Castle-Settlement Pattern Outcomes. The significance of these castles, built in locations which, otherwise, appeared disconnected from the eleventh century manorial population pattern, was partially revealed through analysis of subsequent settlement shifts. The analysis of town locations from 1086—1377 CE, which measured the proximity of castle sites to instances of expansion or contraction of larger towns (section 6.2), highlighted several important castle-settlement pattern associations. The results showed that inland hubs of the eleventh century Saxon town pattern that never saw local castle architecture mostly fell from significance, while existing and emergent towns where castles were founded broadly correlated with urban growth and increased nodal significance within the overall network (see section 6.2.2). In short, when the total sets of major towns for each period were combined

and mapped out alongside the castles, a distinct majority of towns which had closely associated castles, within <1km of their centre, exhibited population growth, while the majority of those that were not near any castles (none within than 5km) contracted in population. The key implication, as supported by the discussion of the English seigneurial economy (section 7.1.2), is that town development within and beyond castle baileys was closely associated with seigneurial prerogatives to reorient the manorial landscape, to optimise control of manpower and revenue streams at these important castle-towns. There were some recognised outliers in these observed patterns, especially with thirteenth century commercial towns expanding within seigneurial ambitions but beyond the crenelated confines of the familiar bailey. However, the degree of positive correlation with castle sites, especially considering that most of these were very early foundations, indicates that they, as core elements of integrated castle-town lordly enterprises, played an important growth encouraging, or even growth catalysing role, within the developing English settlement pattern.

Castle-Settlement Inextricable Interrelatedness. The components of research which addressed the literature covering medieval settlement use and land tenure systems, when considered alongside the equivalent publications within castle studies, highlight that these two major structural elements of the medieval English developed landscape have largely been discussed in isolation from each other. In contrast, much of the evidence identified here indicates an inextricable interrelatedness between these features (to which might further be added the location and role of churches and other ecclesiastical institutions). The evidence reviewed here has supported the emerging theoretical models of castle reciprocity and reliance on the broader economic network, as well as the seigneurial prerogatives of achieving demesne development and stability, situating these in proportional significance to population suppression and military operation capacity. That eleventh century castle plans were proportional to the relative size of the settlements into which they were planted, and with the local extramural hinterland population around them, and that their masonry development and long-term use correlated with population density and the success of related planned settlement enterprises, suggests that we should not define castle sites in isolation from the broader manorial landscape. When we look beyond the marvellous military architecture and historic instances of political violence at castle sites, many aspects of their plans, location, and usage appear highly commensurate with peace-time economic management capacities. The assessment of castle economic functionality given in the discussion section, which integrated various findings from the three analysis methods, concluded that somewhere in the order of 70% of all early English castle sites appear to have been deeply spatially integrated and engaged within these sorts of economically oriented and functionally reciprocal castle-settlement arrangements, while the remainder might have been more one-sided seigneurial investments, planned for defensive and leisure requirements (section 7.1.4). The degree to which this remained the case for subsequent phases of English history is problematic, requiring further analysis and consideration of the declining role of feudalism as a socio-structural institution. In closing this section, what can be proposed is that, for at least the period within 1000—1300 CE, early English castles can usefully be examined within the broader feudal economic and social superstructure, in which they played several central roles, and the structural pattern of which is fundamental to explaining their initial distribution.

8.3.2..... The Shifting Structural Network — A Uniquely English Pattern

Navigable Waterways and Pattern Stabilisation. To the above observations, which are grounded in the statistical findings of the spatial GIS analyses, can be added a further theoretical comment on the implications of the mapped pattern outcomes for our broader understanding of early medieval England. To begin with, the discussion of the settlement pattern shift highlights that the development of the post-

Roman town pattern in England was clearly different in nature from that of the continental neighbouring regions of France, Iberia, Germany, and Italy (see section 7.1.6). The combination of the declining Roman transport and urban network and the introduced migratory and colonisation influences from north-west Europe and Scandinavia produced a pattern in England that, by the time of the Norman Conquest, featured a proportionally high number of inland locations of major towns, within a relatively decentralised Saxon English kingdom (see section 2.1.1). The introduction of Norman kingship and administration, which included the swift reorganisation of the manorial fief structure around a more deeply entrenched military feudal order, and an increase in wealth centralisation, initiated the most prolific wave of castle construction from 1066—1150 (see section 2.2.1). Subsequent sections of the thesis also identified an apparent pattern in the early and deliberate foundation of castles in locations with access to navigable waterways, albeit with preference for existing populated riverine locations, but also many examples of castle foundations in largely unsettled locations.

The Norman preference, or perhaps necessity, to control navigable waterways appears to have led to their enforcing the stabilisation of the riverine and coastal peripheries, which, under the Angevin and Plantagenet kings, developed reciprocally with adjacent populations into strategically important and wealthy castle-towns (see section 6.2.3). Were the post-Roman urban pattern to have held out longer, or Harald Godwinson to have prevailed in 1066 over the Normans, it is likely the town pattern which occurred by 1300, as it has been described in Chapter Six, would have been entirely different. Without the castle builders, the pattern of key coastal and riverine towns may not have emerged when it did, nor perhaps would the key castle-towns of the more dangerous northern and western borders. The observation of Michaels and Raunch (section 7.1.6) that the developing medieval English settlement patten was vastly more coastally oriented than the neighbouring French pattern, compared to their previous Roman era patterns, and their postulation that this resulted in much greater rates of English population growth, suggests that this observation may be of significant consequence in understanding the development of English historical demographics and geography more generally.

Castle Sites as Internodes. Within this discussion, a comment is required on the role of castle sites as introduced internodes. A theoretical point has been explored in the discussion section that castles, as seigneurial administrative centres around which their overseers reorganised their hinterland manorial demesne, may well have intensified and stabilised the development of the overall landscape at the small-town and village level, just as has been observed at the large-town level (see section 7.1.5). While it is acknowledged that testing of this hypothesis would require much larger village-level settlement datasets for 1300 CE, and ideally much higher-resolution data for the medieval road pattern from 1000—1300, the arrangements of castle-settlement relationships which have been identified here for the major castles and towns can be extrapolated more broadly, to present a general point. The majority of early castle enterprises necessitated road access to market centres around which much of the 'knightly economy' revolved, as has been posited in castle studies since the early works of Painter and Brown (section 2.2.1). The wide occurrence of castles baileys also indicates many subsequently or concurrently developed substantial adjacent settlements. The data from the settlement shift analysis further highlights the diachronic decline of formerly important settlement hubs, with seigneurial oversight reorienting the nodal significant market centres outside their castle gates.

The important caveat is that a key subset of the early castle locations identified in this study appears to have been positioned in previously unoccupied locations, albeit within locally populated zones. There are outliers juxtaposed to this pattern, including the forced implantation of castles within Saxon urban hubs, and the broad visible preference for smaller established settlements. However, this only accounts for a portion of the 861 early castle locations included in the study. The not insignificant remainder of castles established independently from pre-existing settlement hubs, some of which nonetheless went

on to develop substantial baileys, often reached the status of market towns and demonstrated a significant capacity for overall structural network alteration. It seems reasonable then, to conclude with some probability that castles functioned broadly as internodes within the established settlement pattern, with individual castle hubs reorienting the roadways and resituating the points of nodal significance across the manorial network, just as occurred at the large-town level of analysis (section 6.2). The consideration of which pre-existing small towns did and did not have castles built at their site likely also has further implications for broad diachronic population shifts in individual locations. When this proposition is combined with the major pattern shift toward navigable waterways, the overarching implication is that castle sites played an intricate but crucially influential role in shaping the overall structural network.

8.4..... Conclusions

That castles were economically dependent on, and reciprocally related to, the developing manorial and market-hub patterns of settlement in medieval England, is neither an entirely ground-breaking nor recent proposal. When the English castellology 'revisionists' of the past three decades introduced new ways of perceiving and analysing castle sites, especially with consideration of landscape, symbology, visibility, and 'threatened' military capacities, this was partially reappraising an existing body of assumptions and evidence concerning military, social, and economic functions at castle sites (see section 2.4.2). While military and residential architecture constituted the heart of the earliest waves of castle theory, upon which the revisionists expanded, some early recognition of administrative castle capacities nevertheless entailed assumptions about the relativity of castle locations to other economic factors of medieval life. The impact of Norman castles on reorienting life in the towns in which they were planted, for example, has long been a point of discussion in castle studies. Suffice to say, that castles were built largely through a combination of unskilled peasant labour and professional craftsmen, and they re-situated substantial portions of local economies within their baileys. However, it has only been within recent decades that the ongoing economic nature of castle sites, as functional features within a complex developing landscape, has been more thoroughly theorised by several scholars, such as Creighton. Moreover, academic arguments about the nature of economic functions at castle sites have often been justified by selective case-study examples, across differing contexts and time parameters. Furthermore, identification and discussion of economic capacity or design elements has not constituted a major concern of those few castellologists who have focused on broad scale indexed compilation of castle sites. How generalisable specific economic propositions were, especially regarding early castles, has remained statistically speculative. This research has therefore sought to contribute to this uncertain component of English castle studies, through the testing of economic functionality across a broad index of early castle sites and contemporary settlements, over multiple scales and dates.

A provisionally modelled and statistically measurable economic function at early medieval English castle sites has thus been theorised and tested in this study, with the results integrated within ongoing academic dialogues. The findings of this process have built on the theoretical foundations of prior publications to both reinforce existing positions regarding the significance of economic functions generally, and to further test the broader applicability of individual economic premises across the total set of early castles. The relative locations of castles and settlements within the developing medieval structural network were spatially analysed, with the outputs verifying that a GIS-based digital mapping approach can generate new findings from existing documentary and archaeological resources. Overall, the findings support the argument that the location choices, use dates, and designs of early English castles were intricately related to the underlying eleventh century manorial social fabric. These castles

often shared spatially defined relationships with local settlements, that were, at least in part, economic in nature. A subset of early castle sites facilitated border defence, reconnaissance, or high-status leisure functions more exclusively, beyond directly visible association with settlements. However, the majority of castles were, it appears, administrative components of feudal enterprises, functionally integrated with bailey and local hinterland populations. For some settlements, the converse is also the case, with examples at all scales operating beyond the immediate local proximity of known castle sites, but with the great majority nonetheless funding the seigneurial coffers that maintained the castle component of the feudal enterprise. Both built-forms, castles and towns, should thus be considered within their shared tenurial and seigneurial contexts, especially within this period of medieval English history. Furthermore, while the eleventh century settlement pattern had impacted the distribution of the earliest castles, the subsequent legacy of those castles in their alteration of the overall developing landscape was even more substantial. Many of the major towns of England by the year 1300 CE had developed around earlier castle foundations, including in several places where the site population in 1066 had been negligible. The impact of eleventh century castle construction in stabilising the coastal and riverine zones of England, as well as the inland frontiers in the north and west, and the opening of these areas to subsequent phases of urban growth in the Angevin and early-Plantagenet eras, appears to have been crucial in shaping the overall characteristics and pattern of major towns by 1300. The broad distribution of castles as internodes within the eleventh and early-twelfth century manorial landscape intensified connectivity, promoted new development, and relocated local centres of economic and social activity. The long-term trajectories of use across both castle and settlement sites markedly correlated with proximity to the other and this appears to have been a widely significant factor in shaping the emergent settlement patterns in the following two centuries.

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Appendix I.

Complete Catalogue of English Castles 1000—1300 CE

(Satellite topographic images from Google Maps; limited to those sites within the Domesday counties boundaries)

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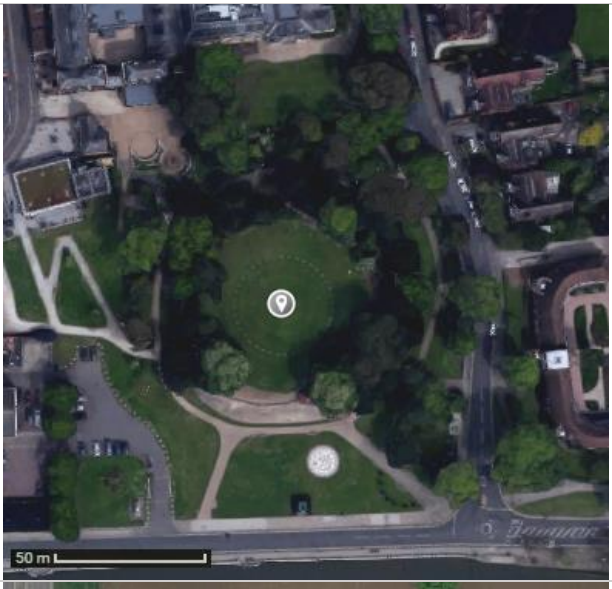
Student Email: jtam2895@uni.sydney.edu.au

Personal Email: Jason.tamas@iinet.net.au

~ Castle sites of 1000—1300 England in their modern place ~

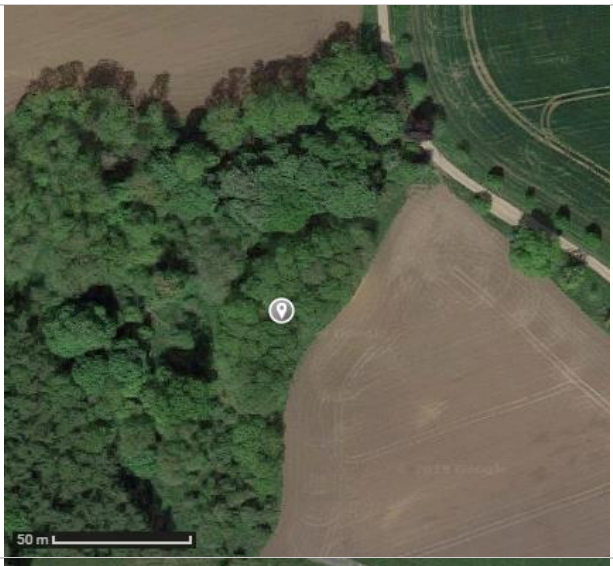


Conjectural drawing of the Norman castle at Bury St Edmunds, Suffolk (Accessed online via <https://ipswichhistory.com/2011/03/08/the-missing-castle/>)

Site ID:	Name:	Location:	Historic County:	
CBED01	Bedford Castle	Bedford	Bedfordshire	
CBED02	Biggleswade Castle	Biggleswade	Bedfordshire	
CBED03	Cainhoe Castle	Clophill	Bedfordshire	

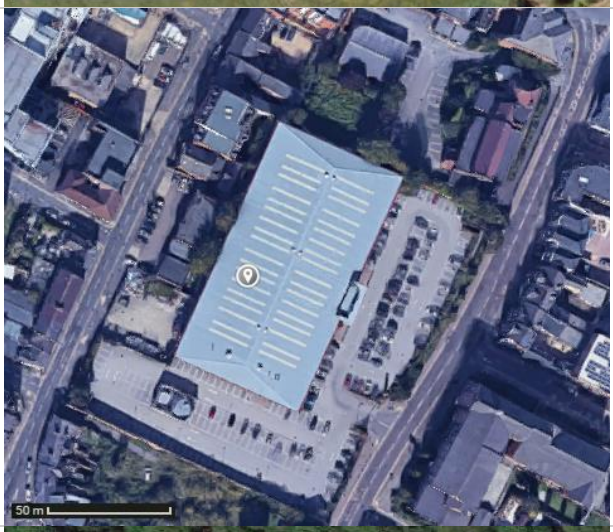
CBED04	Chalgrave Castle	Toddington	Bedfordshire	
CBED05	Eastcotts Castle	Exeter Wood	Bedfordshire	
CBED06	Entonbury Castle	Arlesey	Bedfordshire	

CBED07	Flitwick Castle	Flitwick	Bedfordshire	
CBED08	Higham Gobion Castle	Higham Gobion	Bedfordshire	
CBED09	Odell Castle	Odell	Bedfordshire	

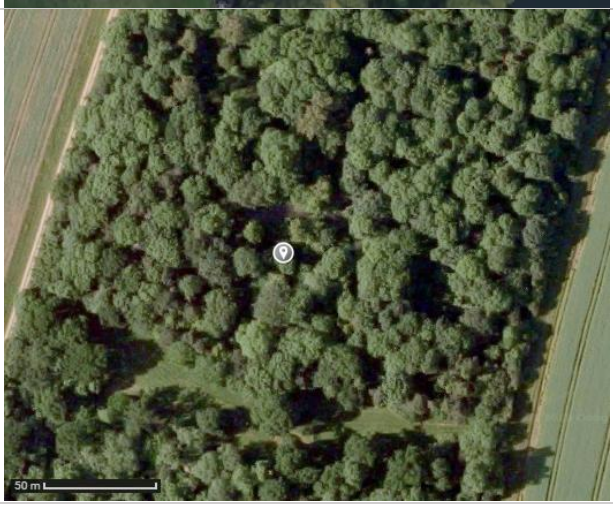
CBED10	Old Warden Castle	Old Warden	Bedfordshire	
CBED11	Poddington Castle	Poddington	Bedfordshire	
CBED12	Renhold Castle	Renhold	Bedfordshire	

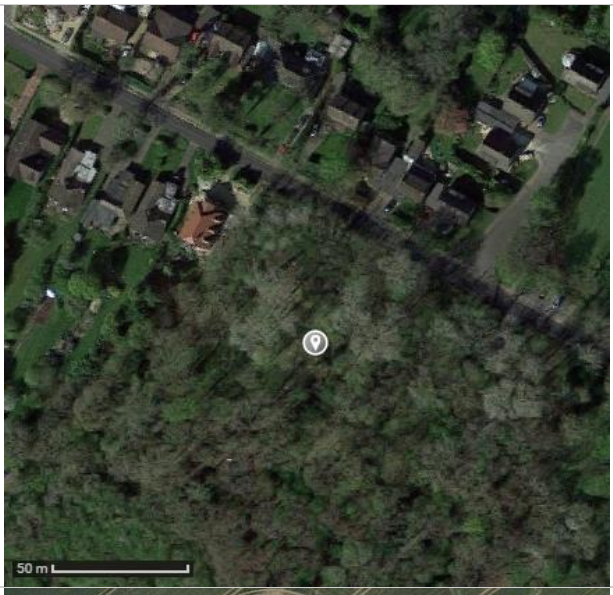
CBED13	Thruleigh Castle	Thruleigh	Bedfordshire	
CBED14	Talsworth Castle	Talisworth	Bedfordshire	
CBED15	Toddington Castle	Toddington	Bedfordshire	

CBED16	Totternhoe Castle	Totternhoe	Bedfordshire	
CBED17	Yielden Castle	Yielden	Bedfordshire	
CBED18	Gannocks Castle	Tempsford	Bedfordshire	

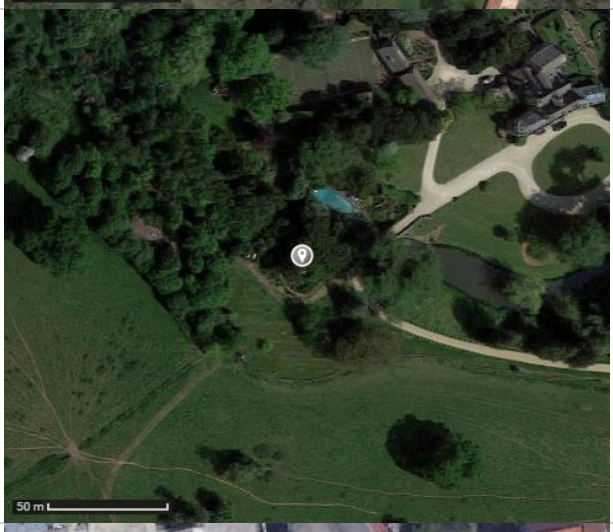
CBED19	Great Barford Castle	Great Barford	Bedfordshire	
CBED20	Luton Castle	Luton	Bedfordshire	
CBED21	Rugemont Castle	Ridgmont	Bedfordshire	

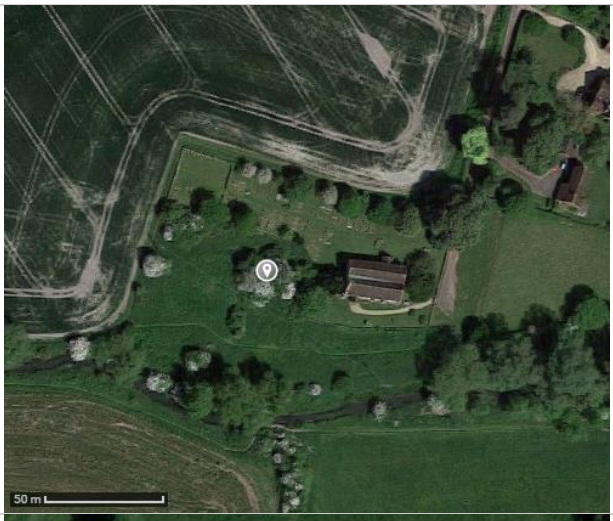
CBED22	Meppershall Castle	Meppershall	Bedfordshire	
CBED23	Stevington Castle	Stevington	Bedfordshire	
CBED24	Eaton Socon Castle	St Neots	Bedfordshire	

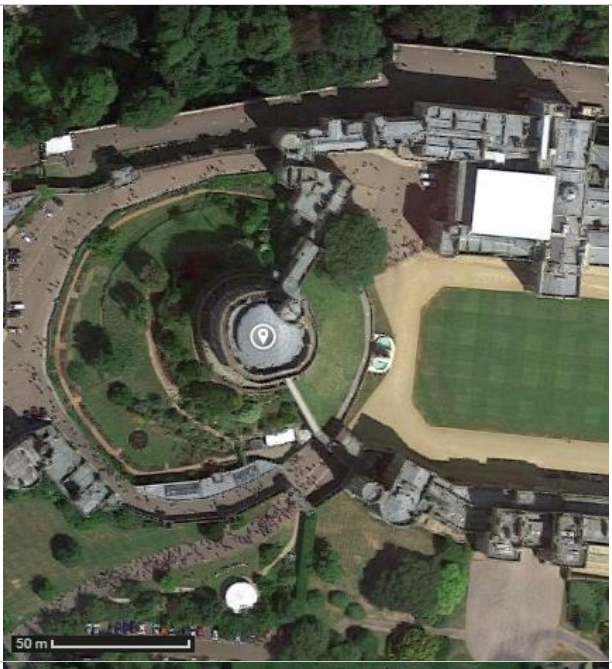
CBED25	John O'Gaunt's Hill	Sutton	Bedfordshire	
CBED26	Risinghoe Castle	Bedford	Bedfordshire	
CBED27	Palaceyard Wood	Roxton	Bedfordshire	

CBED28	Castle Close	Sharnbrook	Bedfordshire	
CBED29	Seymor's Mount	Steppingley	Bedfordshire	
CBER01	Buckland Castle	Buckland	Berkshire	

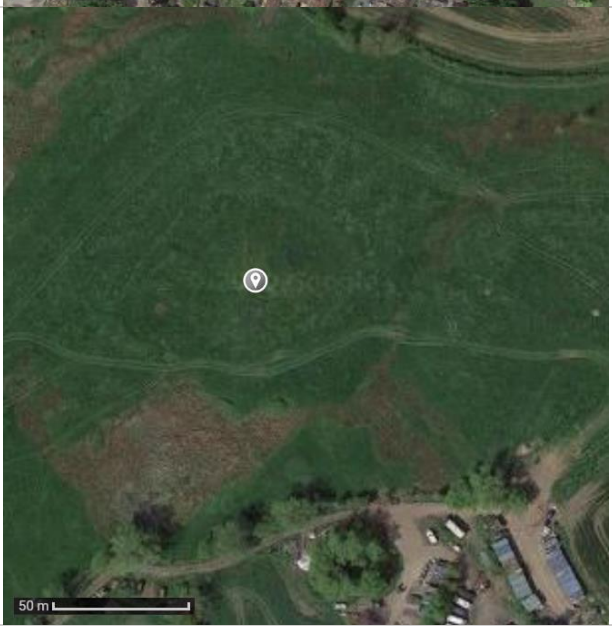
CBER02	Wooley Castle	Chaddleworth	Berkshire	
CBER03	Faringdon Castle	Great Faringdon	Berkshire	
CBER04	Fitzharris	Abingdon	Berkshire	

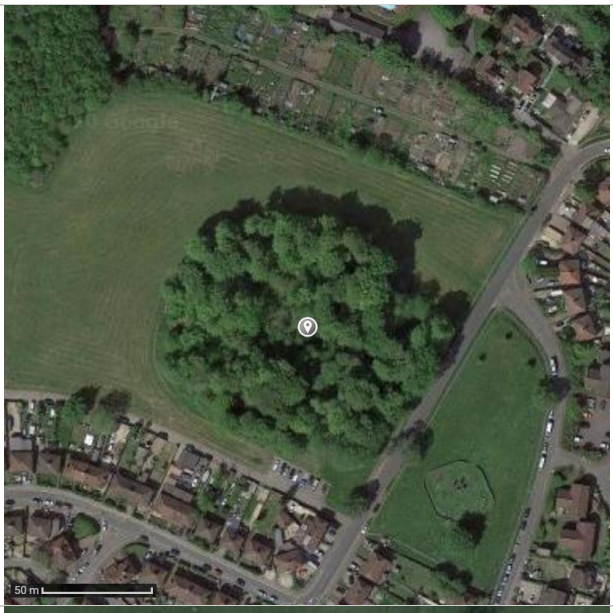
CBER05	Newbury Castle	Hamstead Marshall	Berkshire	
CBER06	The Mount	Hinton Waldrist	Berkshire	
CBER07	Reading Castle	Reading	Berkshire	

CBER08	South Moreton Castle	South Moreton	Berkshire	
CBER09	Wallingford Castle	Wallingford	Berkshire	
CBER10	West Woodhay Motte	West Woodhay	Berkshire	

CBER11	Windsor Castle	Windsor	Berkshire	
CBER12	Hamstead Marshal 2	Hamstead Marshall	Berkshire	
CBER13	Newbury Castle	Newbury	Berkshire	

CBUC01	Aylesbury Castle	Aylesbury	Buckinghamshire	
CBUC02	Bolebec Castle	Whitchurch	Buckinghamshire	
CBUC03	Bradwell Motte	Bradwell	Buckinghamshire	

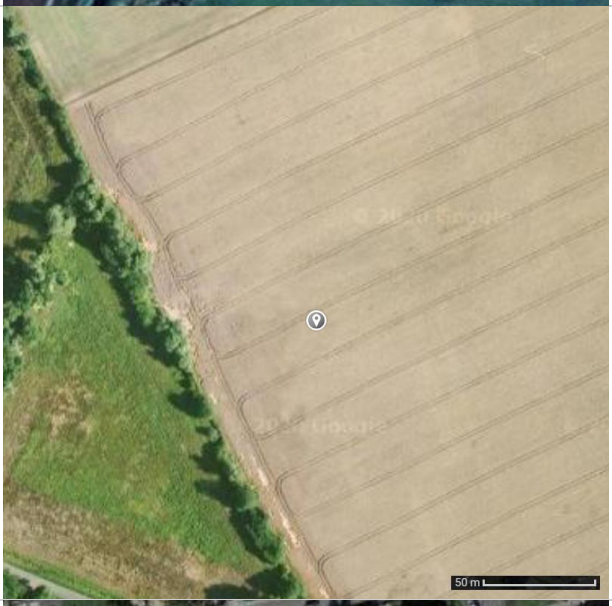
CBUC04	Buckingham Castle	Buckingham	Buckinghamshire	
CBUC05	Castle Thorpe	Castlethorpe	Buckinghamshire	
CBUC06	The Beacon	Cublington	Buckinghamshire	

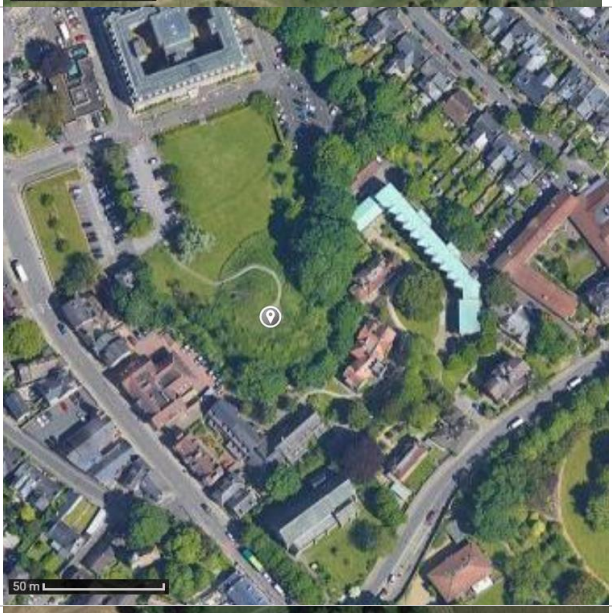
CBUC07	Desborough Castle	High Wycombe	Buckinghamshire	
CBUC08	Hampden Danes Camp	Little Hampden	Buckinghamshire	
CBUC09	Harwidge Court	Cholesbury	Buckinghamshire	

CBUC10	Lavendon Castle	Lavendon	Buckinghamshire	
CBUC11	Little Kimble Castle	Little Kimble	Buckinghamshire	
CBUC12	Long Crendon Castle	Long Crendon	Buckinghamshire	

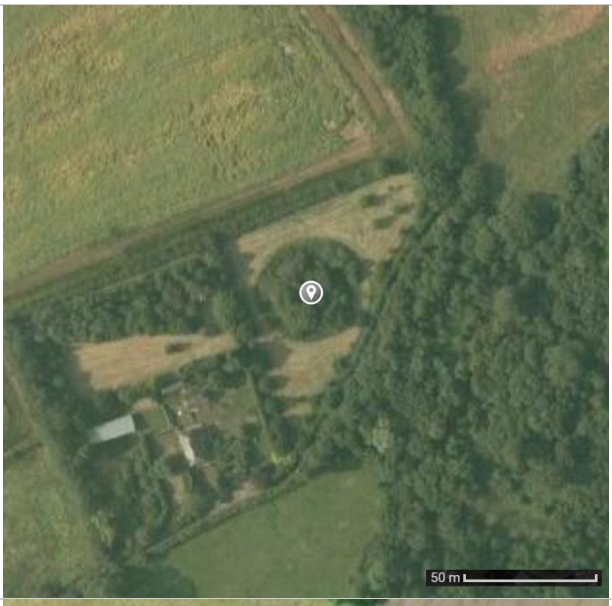
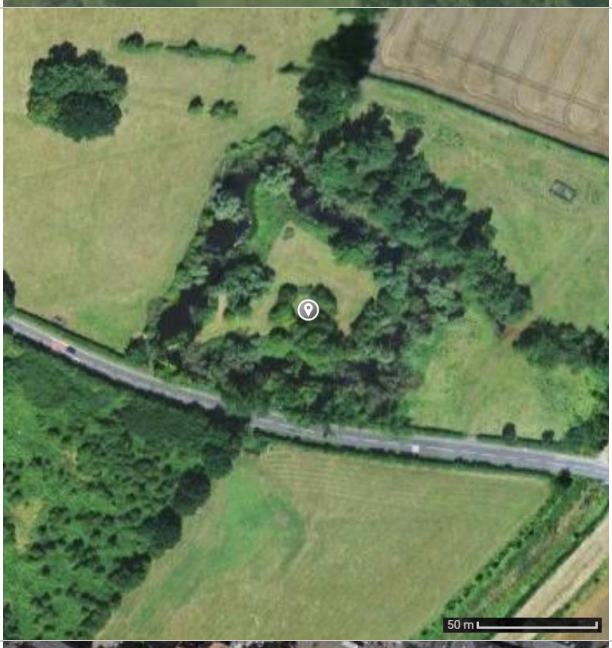
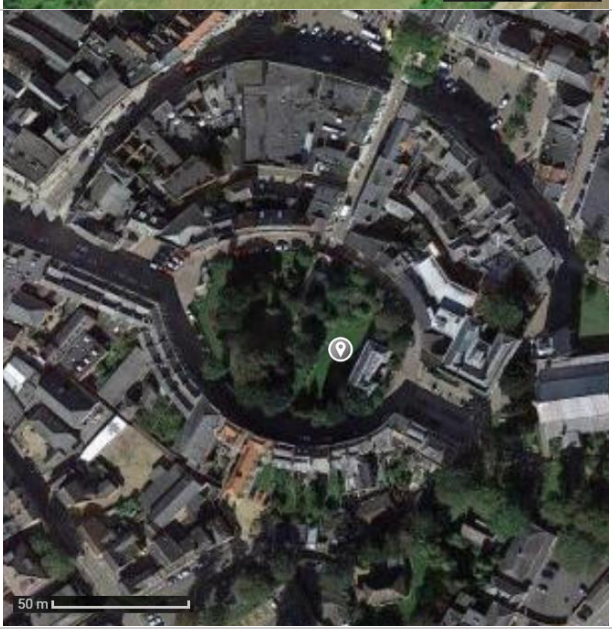
CBUC13	The Battery	Newport Pagnell	Buckinghamshire	
CBUC14	The Toot	Shenley Church End	Buckinghamshire	
CBUC15	The Mount	Weston Turville	Buckinghamshire	

CBUC16	Wolverton Castle	Milton Keynes	Buckinghamshire	
CBUC17	Wavendon Castle	Wavendon	Buckinghamshire	
CBUC18	Cymbeline's Castle	Beacon Hill	Buckinghamshire	

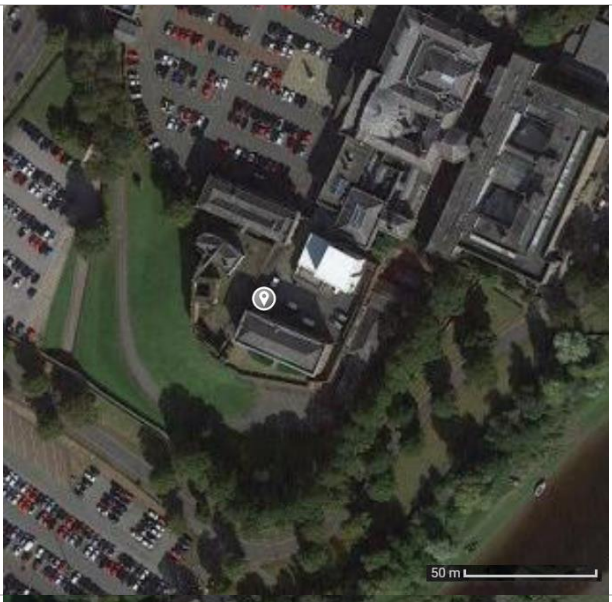
CCAM01	Aldreth	Haddenham	Cambridgeshire	
CCAM02	John O'Gaunt's House	Bassingbourne	Cambridgeshire	
CCAM03	Benwick Castle	Benwick	Cambridgeshire	

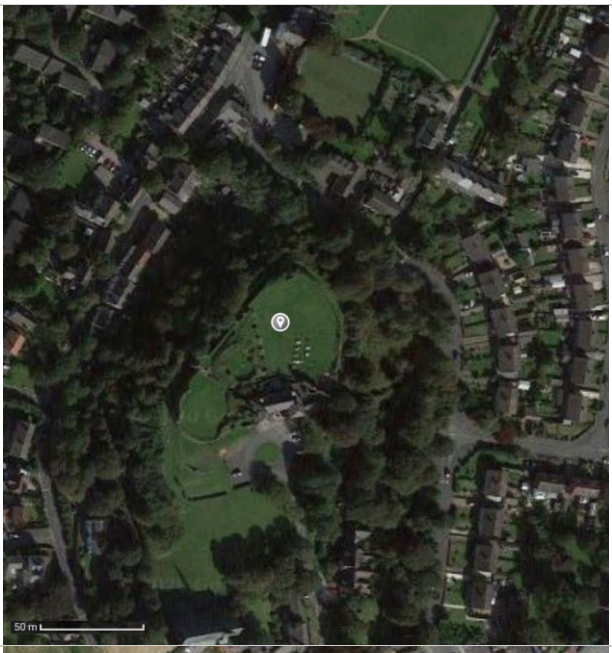
CCAM04	Bourn Hall	Bourn	Cambridgeshire	
CCAM05	Cambridge Castle	Cambridge	Cambridgeshire	
CCAM06	Castle Camps	Castle Camps	Cambridgeshire	

CCAM07	Caxton Moats	Caxton	Cambridgeshire	
CCAM08	Cherry Hill	Ely	Cambridgeshire	
CCAM09	Kirtling Towers	Kirtling	Cambridgeshire	

CCAM10	Overhall Grove	Boxworth	Cambridgeshire	
CCAM11	Giants Hill	Rampton	Cambridgeshire	
CCAM12	Wisbech Castle	Wisbech	Cambridgeshire	

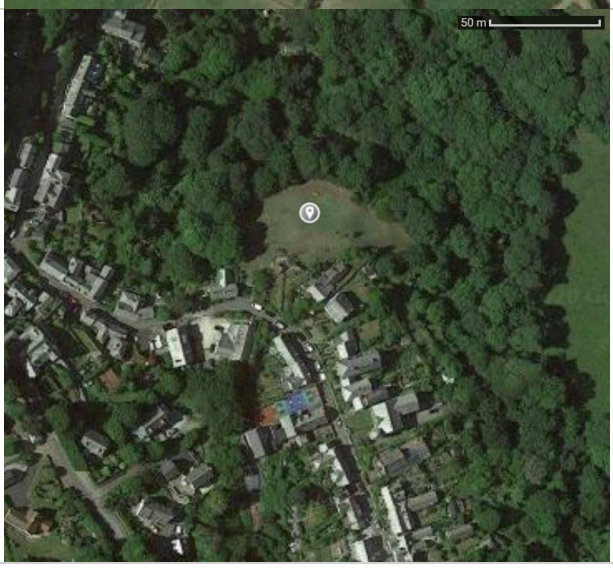
CCHE01	Beeston Castle	Beeston	Cheshire	
CCHE02	Blobb Hill	Alford	Cheshire	
CCHE03	Watch Hill	Altrincham	Cheshire	

CCHE04	Chester Castle	Chester	Cheshire	
CCHE05	Dodleston Castle	Dodleston	Cheshire	
CCHE06	The Mount	Dunham Massey	Cheshire	

CCHE07	Halton Castle	Runcorn	Cheshire	
CCHE08	Maplas Castle	Maplas	Cheshire	
CCHE09	Nantwich Castle	Nantwich	Cheshire	

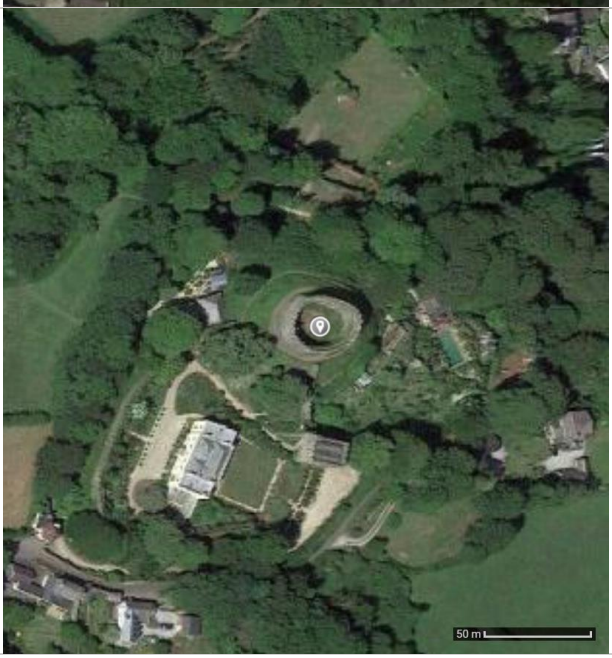
CCHE10	Castle Hill	Oldcastle	Cheshire	
CCHE11	Pullford Castle	Pullford	Cheshire	
CCHE12	Shocklach Castle	Caldecott	Cheshire	

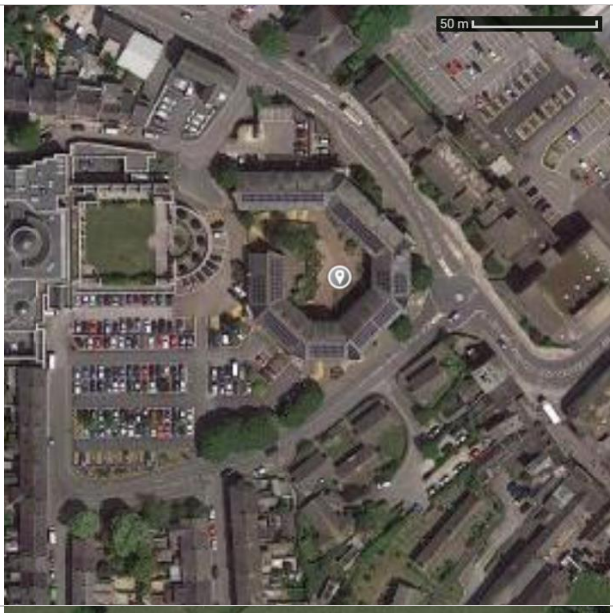
CCHE13	Shotwick Castle	Shotwick Park	Cheshire	
CCHE14	Frodsham Castle	Frodsham	Cheshire	
CCHE15	Stockport Castle	Stockport	Cheshire	

CCOR01	Tintagel Castle	Tintagel	Cornwall	
CCOR02	Bossiney Castle	Tintagel	Cornwall	
CCOR03	Bottereaux Castle	Forrabury & Minster	Cornwall	

CCOR04	Cardinham Castle	Cardinham	Cornwall	
CCOR05	Castle Goff	Camelford	Cornwall	
CCOR06	Launceston Castle	Launceston	Cornwall	

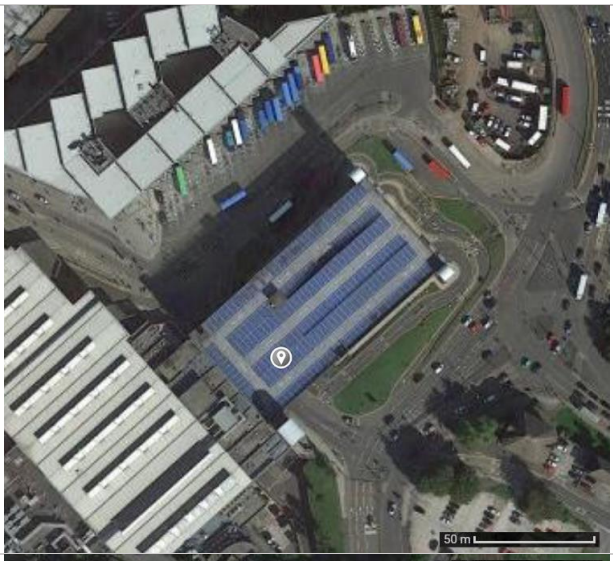
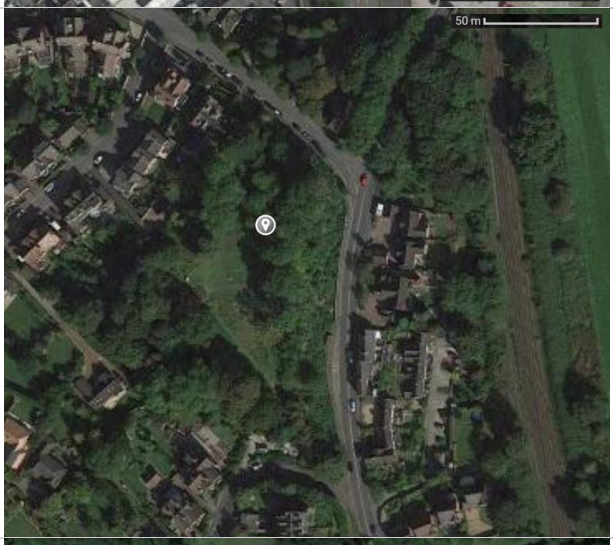
CCOR07	Penstowe Castle	Kilkhampton	Cornwall	
CCOR08	Poundstock Castle	Poundstock	Cornwall	
CCOR09	Rostormel Castle	Lostwithiel	Cornwall	

CCOR10	St Michael's Mount	St Michael's Mount	Cornwall	
CCOR11	Tregoney Castle	Tregoney	Cornwall	
CCOR12	Trematon Castle	Saltash	Cornwall	

CCOR13	Truro Castle Hill	Truro	Cornwall	
CCOR14	Upton Castle	Lewannick	Cornwall	
CCOR15	Week St Mary Hill	Week St Mary	Cornwall	

CCOR16	Roundbury	Linkinhorne	Cornwall	
CDER01	Pervil Castle	Castleton	Derbyshire	
CDER02	Bakewell Castle	Bakewell	Derbyshire	

CDER03	Bolsover Castle	Old Bolsover	Derbyshire	
CDER04	Castle Gresley	Castle Gresley	Derbyshire	
CDER05	Condor Castle	Aldercar Langley	Derbyshire	

CDER06	Cockpit Hill	Derby	Derbyshire	
CDER07	Duffield Castle	Duffield	Derbyshire	
CDER08	Camp Green	Hathersage	Derbyshire	

CDER09	Castle Hill	Holmesfield	Derbyshire	
CDER10	Hope Motte	Hope	Derbyshire	
CDER11	Horsley Castle	Horsley	Derbyshire	

CDER12	Moor Mound	Morley	Derbyshire	
CDER13	Mouselow Castle	Glossop	Derbyshire	
CDER14	Pilsbury Castle	Hartington Town	Derbyshire	

CDER15	Unnamed Hill	Stoney Middleton	Derbyshire	
CDER16	Tapton motte	Chesterfield	Derbyshire	
CDEV01	Lydford Castle	Lydford	Devonshire	

CDEV02	unnamed castle site	Axminster	Devonshire	
CDEV03	The Motte	Bampton	Devonshire	
CDEV04	Barnstaple Castle	Barnstaple	Devonshire	

CDEV05	unnamed castle site	Bratton Flemming	Devonshire	
CDEV06	Burley Wood	Bridestowe	Devonshire	
CDEV07	Castle Roborough	Loxhore	Devonshire	

CDEV08	Derpley Castle	Shebbear	Devonshire	
CDEV09	Eggsford Castle	Wembworthy	Devonshire	
CDEV10	Exeter Castle	Exeter	Devonshire	

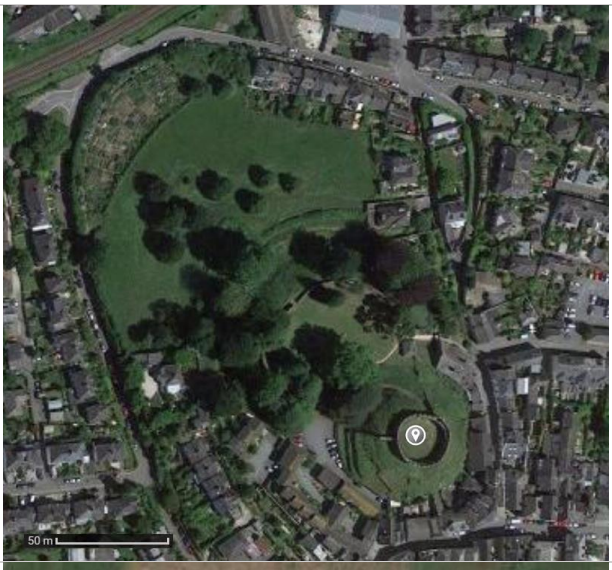
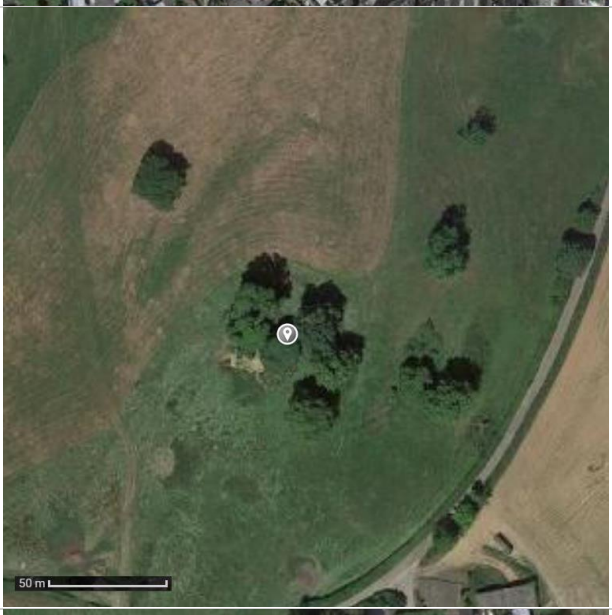
CDEV11	Hembury Castle	West Buckfastleigh	Devonshire	
CDEV12	Heywood Castle	Wembworthy	Devonshire	
CDEV13	Highweek Castle Dyke	Newton Abbot	Devonshire	

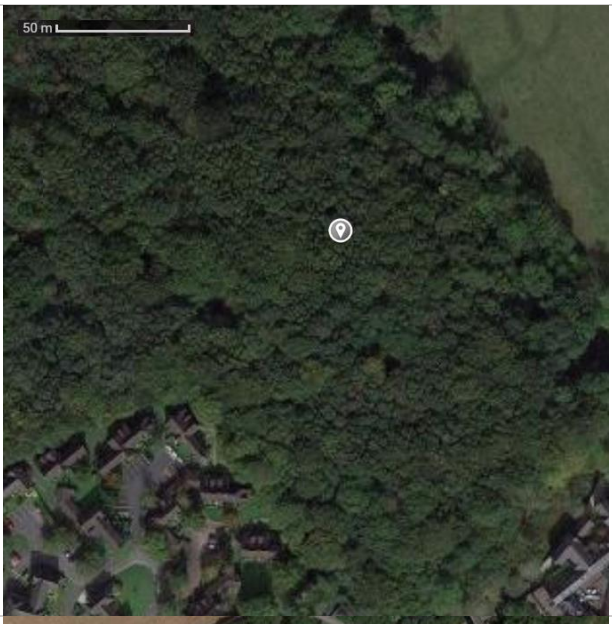
CDEV14	Holwell Castle	Parracombe	Devonshire	
CDEV15	Lamerton motte	Sydenham Damerel	Devonshire	
CDEV16	Langford Barton	Upborough	Devonshire	

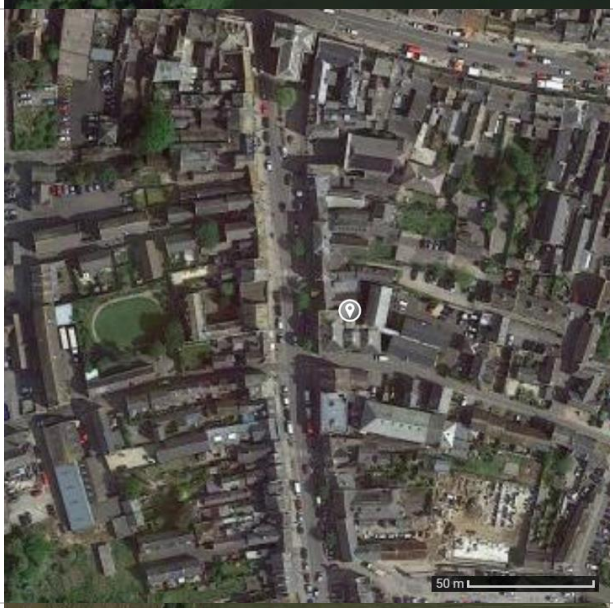
CDEV17	Blackdown Rings	Loddiswell	Devonshire	
CDEV18	Norman Ringwork	Lydford	Devonshire	
CDEV19	Millsome Castle	Coldridge	Devonshire	

CDEV20	Castle Court	North Tawton	Devonshire	
CDEV21	Okehampton Castle	Okehampton	Devonshire	
CDEV22	Plympton Castle	Plymouth	Devonshire	

CDEV23	Stanborough Motte	Halwell & Moreleigh	Devonshire	
CDEV24	Tiverton Castle	Tiverton	Devonshire	
CDEV25	Torrington Castle	Great Torrington	Devonshire	

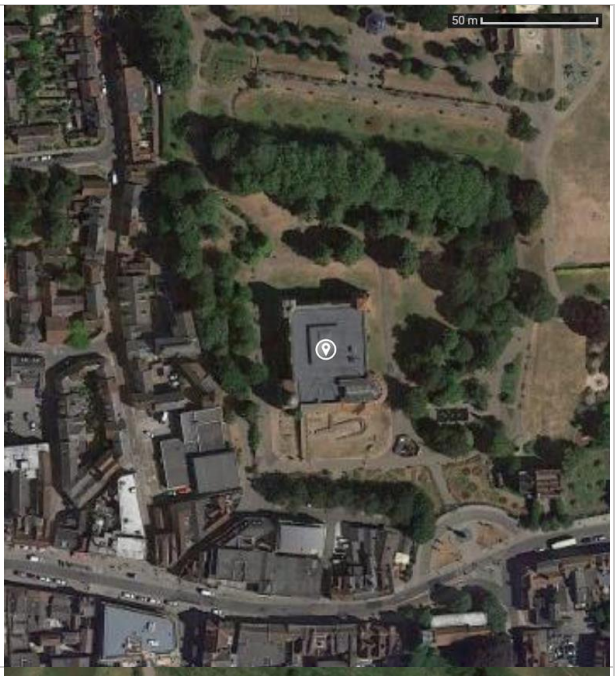
CDEV26	Totnes Castle	Totnes	Devonshire	
CDEV27	Castle Hill	Widworthy	Devonshire	
CDEV28	Winkleigh Court	Winkleigh	Devonshire	

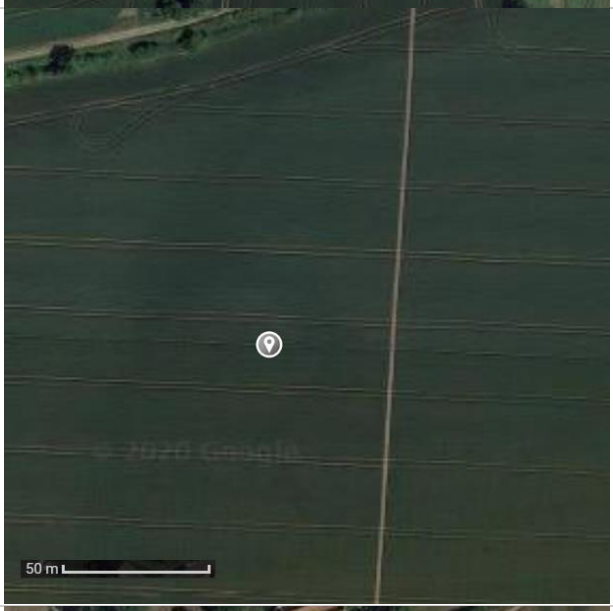
CDEV29	Woodford Motte	Milton Damerel	Devonshire	
CDOR01	Corfe Castle	Corfe Castle	Dorset	
CDOR02	Rufus Castle	Portland	Dorset	

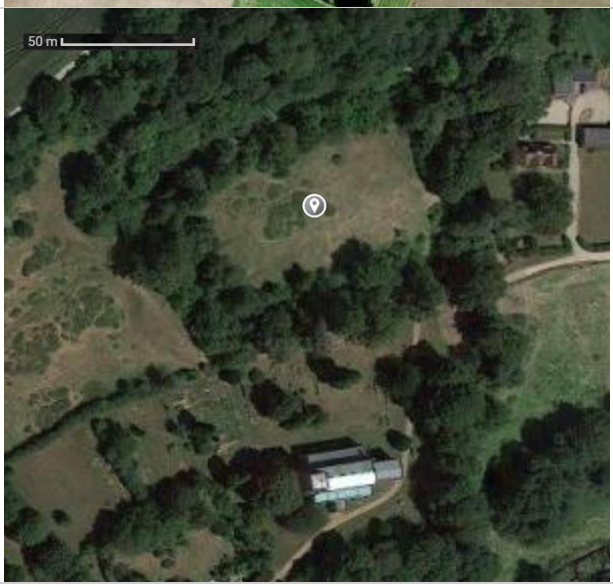
CDOR03	Sherborne Castle	Castleton	Dorset	
CDOR04	Bridport Castle	Bridport	Dorset	
CDOR05	unnamed castle site	Cranborne	Dorset	

CDOR06	Dorchester Castle	Dorchester	Dorset	
CDOR07	unnamed castle site	East Chelborough	Dorset	
CDOR08	Stake Farm	East Chelborough	Dorset	

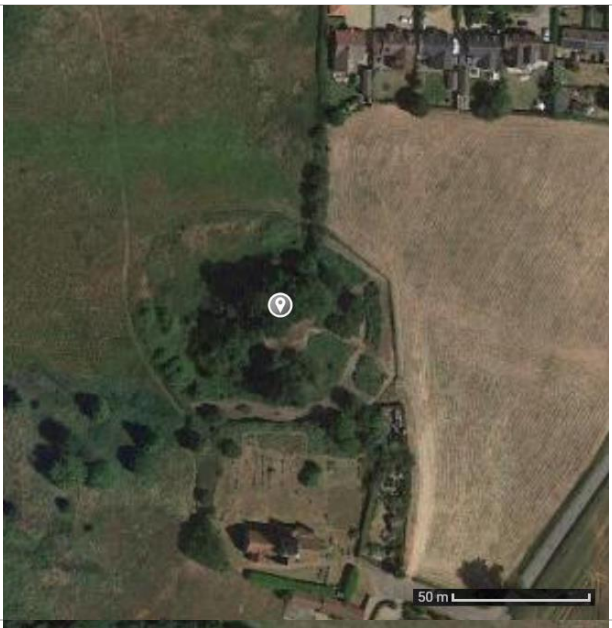
CDOR09	Marshwood Castle	Marshwood	Dorset	
CDOR10	Powerstock Castle	Powerstock	Dorset	
CDOR11	Wareham Castle	Wareham Town	Dorset	

CESS01	Colchester Castle	Colchester	Essex	
CESS02	Hadleigh Castle	Hadleigh	Essex	
CESS03	Saffron Walden Castle	Saffron Walden	Essex	

CESS04	The Crump	Berden	Essex	
CESS05	The Rookery	Berden	Essex	
CESS06	Birch Castle	Birch	Essex	

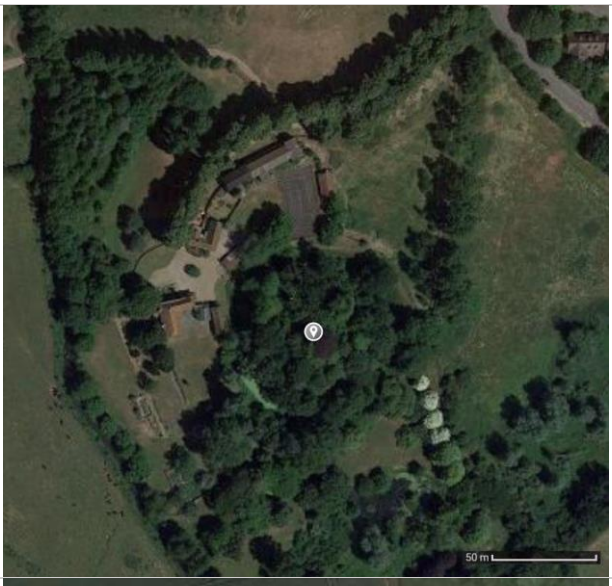
CESS07	Canfield Castle	Great Canfield	Essex	
CESS08	Park Wood	Chrishall	Essex	
CESS09	Clavering Castle	Clavering	Essex	

CESS10	Castle Grove	Elmdon	Essex	
CESS11	Great Easton Castle	Great Easton	Essex	
CESS12	Hedingham Castle	Castle Hedingham	Essex	

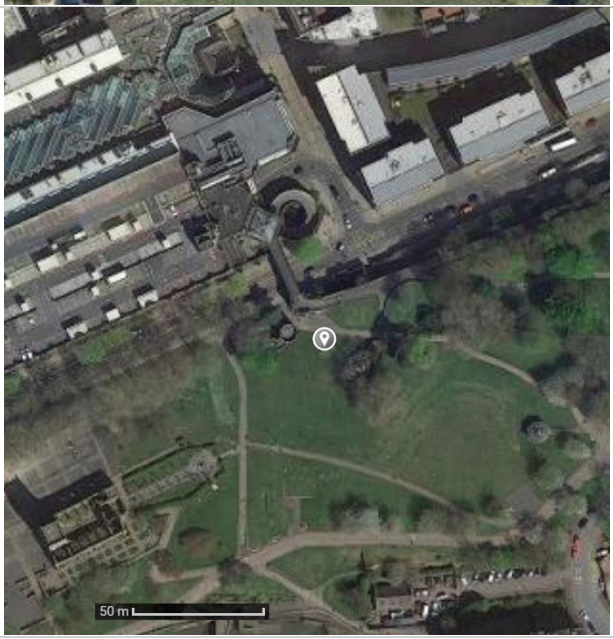
CESS13	Mount Bures	Mount Bures	Essex	
CESS14	Onager Castle	Onager	Essex	
CESS15	Bishop Bonners Palace	Orsett	Essex	

CESS16	Pleshey Castle	Pleshey	Essex	
CESS17	Purleigh Mount	Purleigh	Essex	
CESS18	Rayleigh Castle	Rayleigh	Essex	

CESS19	Rickling Hall Motte	Quendon & Rickling	Essex	
CESS20	Sheering Hall	Sheering	Essex	
CESS21	Mountfitchet Castle	Stanstead Mountfitchet	Essex	

CESS22	The Mount	Stebbing	Essex	
CESS23	Blunts Hall	Witham	Essex	
CGLO01	Beverstone Castle	Beverstone	Gloucestershire	

CGLO02	Dixton Hill	Alderton	Gloucestershire	
CGLO03	Cern Hill	Newnham	Gloucestershire	
CGLO04	Berkeley Castle	Berkeley	Gloucestershire	

CGLO05	Bledisloe Tump	Awre	Gloucestershire	
CGLO06	Brimpsfield Castle	Brimpsfield	Gloucestershire	
CGLO07	Bristol Castle	Bristol	Gloucestershire	

CGLO08	Cirencester Castle	Cirencester	Gloucestershire	
CGLO09	Damery Old Castle	Alkington	Gloucestershire	
CGLO10	Dymock Castle Tump	Dymock	Gloucestershire	

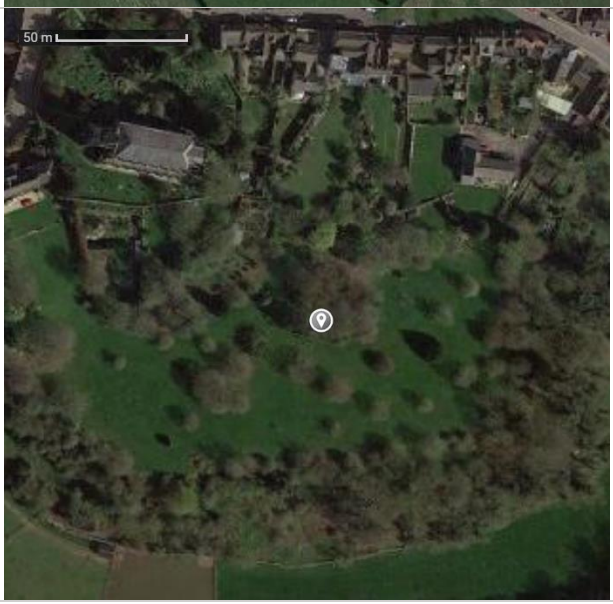
CGLO11	Bicknor Castle	English Bicknor	Gloucestershire	
CGLO12	Gloucester Castle	Gloucester	Gloucestershire	
CGLO13	Hailes Castle	Stanway	Gloucestershire	

CGLO14	Haresfield Mount	Haresfield	Gloucestershire	
CGLO15	Hillesley Ringwork	Hillesley and Tresham	Gloucestershire	
CGLO16	Lasborough Motte	Westonbirt Lasborough	Gloucestershire	

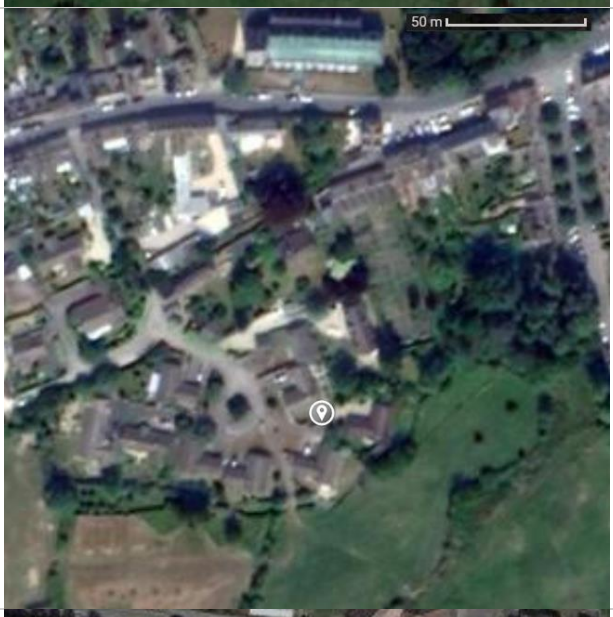
CGLO17	Little Camp Hill	Lidney	Gloucestershire	
CGLO18	Littledean Camp	Littledean	Gloucestershire	
CGLO19	Miserden Castle	Miserden	Gloucestershire	

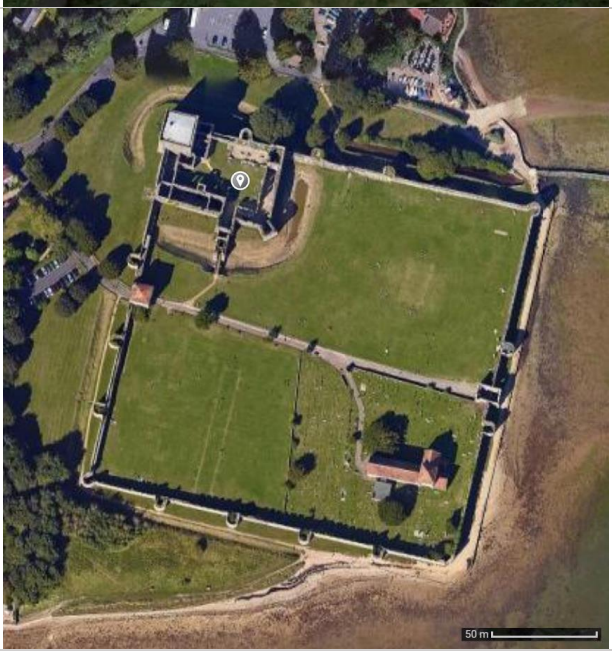
CGLO20	Newington Motte	Kingscote	Gloucestershire	
CGLO21	Newington on Severn	Newnham	Gloucestershire	
CGLO22	Castle Hale	Painswick	Gloucestershire	

CGLO23	South Cerney Castle	South Cerney	Gloucestershire	
CGLO24	St Briavels Castle	St Briavels	Gloucestershire	
CGLO25	Stow Green	St Briavels	Gloucestershire	

CGLO26	Taynton Castle Wood	Taynton	Gloucestershire	
CGLO27	Taynton Parva	Taynton	Gloucestershire	
CGLO28	Tetbury Castle	Tetbury	Gloucestershire	

CGLO29	Holme Castle	Tewkesbury	Gloucestershire	
CGLO30	The Myrtle Tute	Tewkesbury	Gloucestershire	
CGLO31	Upper Slaughter Castle	Upper Slaughter	Gloucestershire	

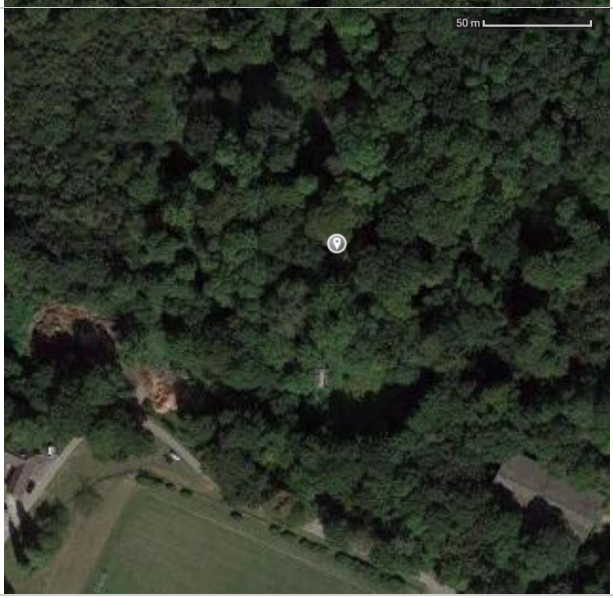
CGLO32	Weston Park	Saintbury	Gloucestershire	
CGLO33	Winchcombe Castle	Winchcombe	Gloucestershire	
CHAM01	Bishops Waltham Palace	Bishops Waltham	Hampshire & Wight	

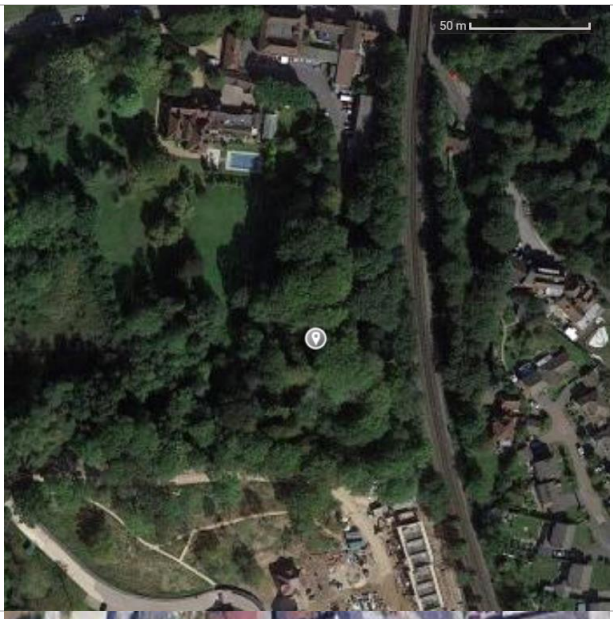
CHAM02	Bitterne Bishops Castle	Southampton	Hampshire & Wight	
CHAM03	Odiham Castle	Odiham	Hampshire & Wight	
CHAM04	Portchester Castle	Fareham	Hampshire & Wight	

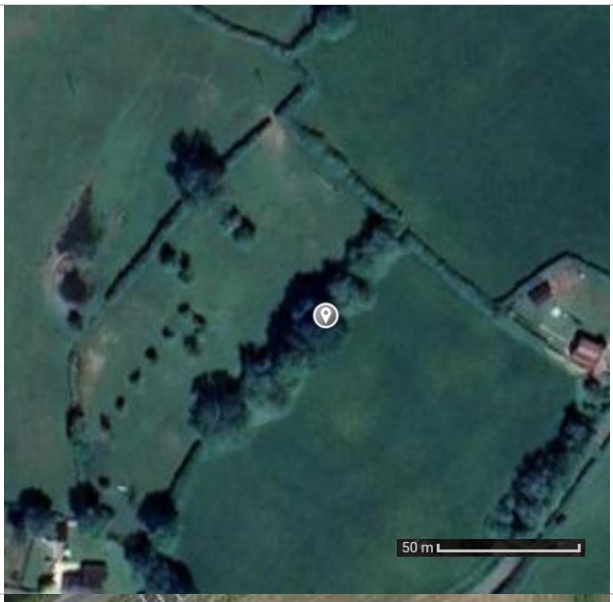
CHAM05	Wolvesey Castle	Winchester	Hampshire & Wight	
CHAM06	Alverstoke Motte	Gosport	Hampshire & Wight	
CHAM07	Basing House	Old Basing	Hampshire & Wight	

CHAM08	Basing Old Castle	Old Basing	Hampshire & Wight	
CHAM09	Carisbrooke Castle	Newport	Hampshire & Wight	
CHAM10	Christchurch Castle	Christchurch	Hampshire & Wight	

CHAM11	Crondall Barley Pound	Crondall	Hampshire & Wight	
CHAM12	Ashley Castle	Ashley	Hampshire & Wight	
CHAM13	Godshill Castle Hill	Woodgreen	Hampshire & Wight	

CHAM14	Merdon Castle	Hursley	Hampshire & Wight	
CHAM15	Motleys Castle	Rowlands Castle	Hampshire & Wight	
CHAM16	Place Wood Motte	Southwark and Widley	Hampshire & Wight	

CHAM17	Rowlands Castle	Rowlands Castle	Hampshire & Wight	
CHAM18	Southampton Castle	Southampton	Hampshire & Wight	
CHAM19	Winchester Castle	Winchester	Hampshire & Wight	

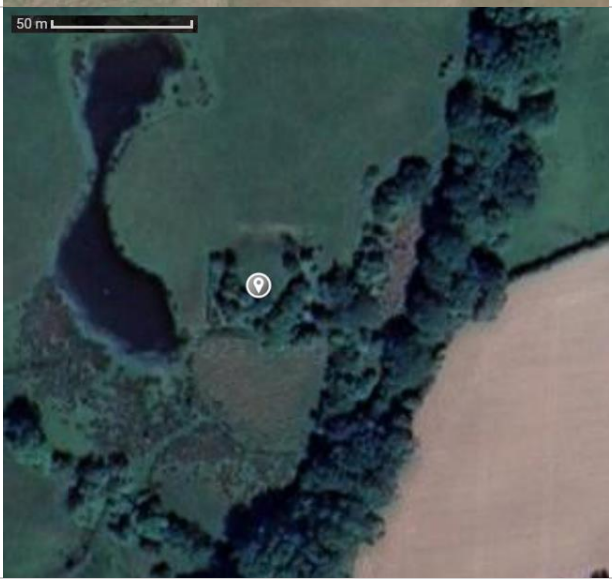
CHER01	Woonton Castle	Almeley	Herefordshire	
CHER02	Wilton Castle	Bridstow	Herefordshire	
CHER03	Wigmore Castle	Wigmore	Herefordshire	

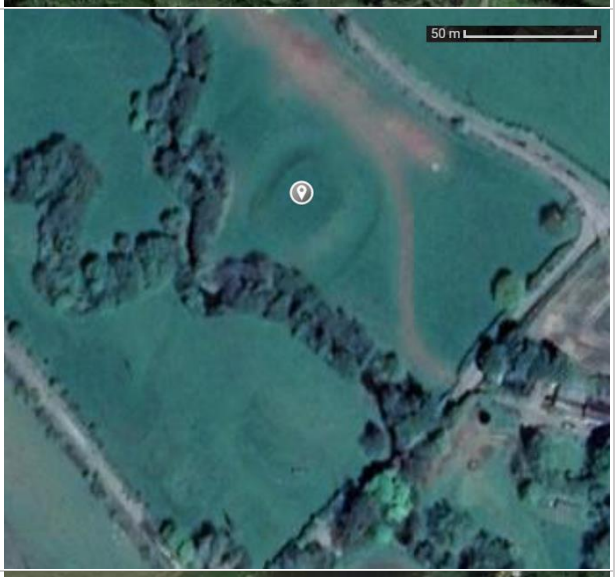
CHER04	Whitney Castle	Whitney on Wye	Herefordshire	
CHER05	Whitehouse Camp	Michaelchurch Escley	Herefordshire	
CHER06	Weobley Castle	Weobly	Herefordshire	

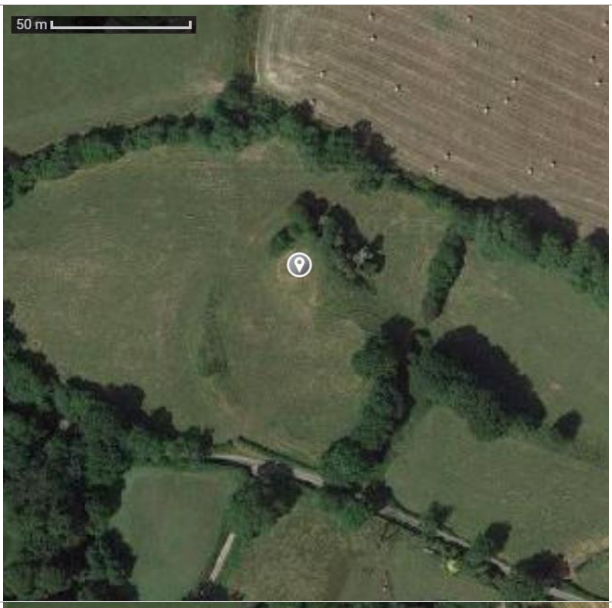
CHER07	Walterstone Motte	Walterstone	Herefordshire	
CHER08	Walford Motte	Walford, Letton and Newton	Herefordshire	
CHER09	Wacton; The Court	Wacton	Herefordshire	

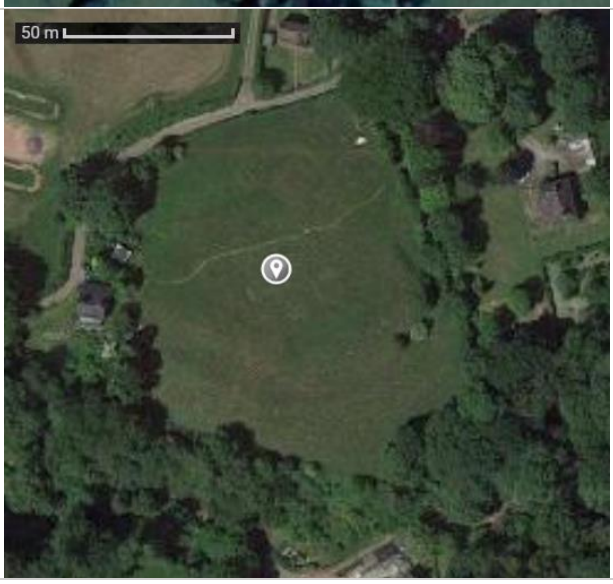
CHER10	Almeley Castle	Almeley	Herefordshire	
CHER11	Goodrich Castle	Goodrich	Herefordshire	
CHER12	Pembridge Castle	Welsh Newton	Herefordshire	

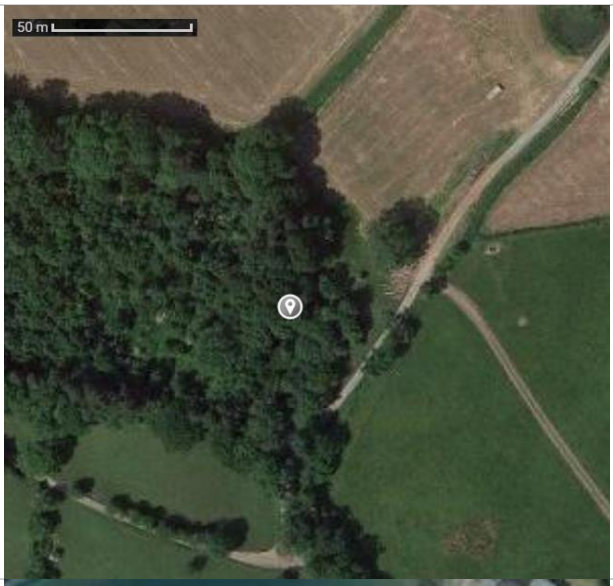
CHER13	Oldcastle Twt	Almeley	Herefordshire	
CHER14	Bredwardine Oldcastle	Bredwardine	Herefordshire	
CHER15	Breinton Moat	Breinton	Herefordshire	

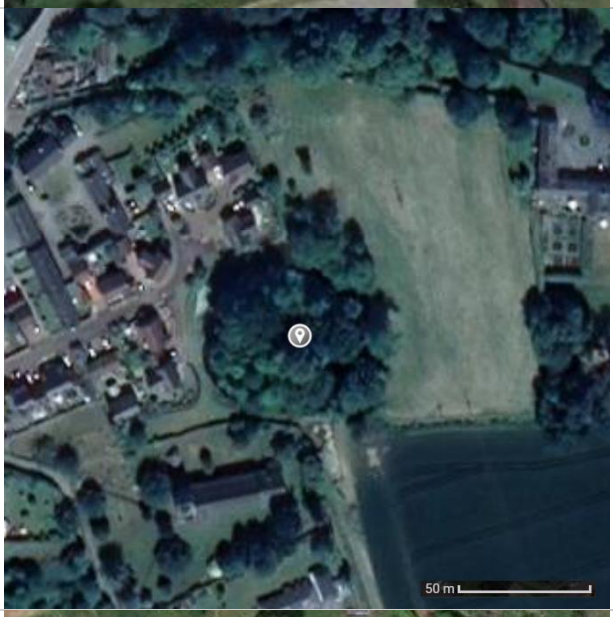
CHER16	Butthouse Motte	Kings Pyon	Herefordshire	
CHER17	Caple Tump	Kings Caple	Herefordshire	
CHER18	Cabal Tump	Pembridge	Herefordshire	

CHER19	Castle Frome Castle	Castle Frome	Herefordshire	
CHER20	Chanstone Tumps	Vowchurch	Herefordshire	
CHER21	Clifford Castle	Clifford	Herefordshire	

CHER22	Old Castleton	Clifford	Herefordshire	
CHER23	The Bage	Clifford	Herefordshire	
CHER24	Combe Motte	Combe	Herefordshire	

CHER25	Cothill Tump	Turnastone	Herefordshire	
CHER26	Cublington Castle Farm	Madley	Herefordshire	
CHER27	Cusop Castle	Cusop	Herefordshire	

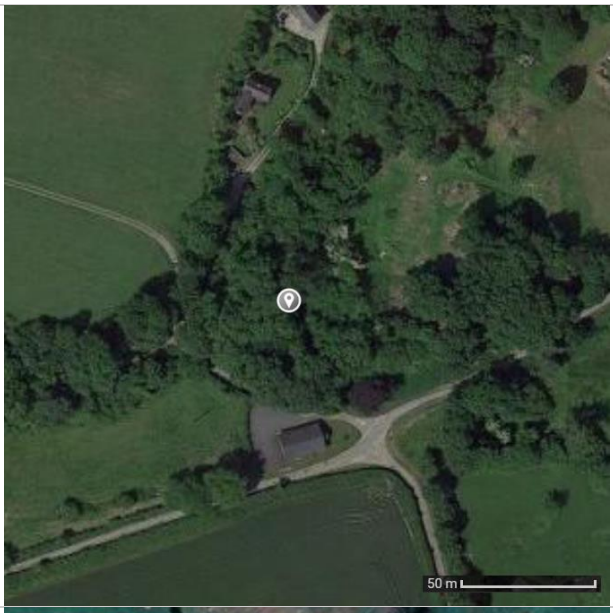
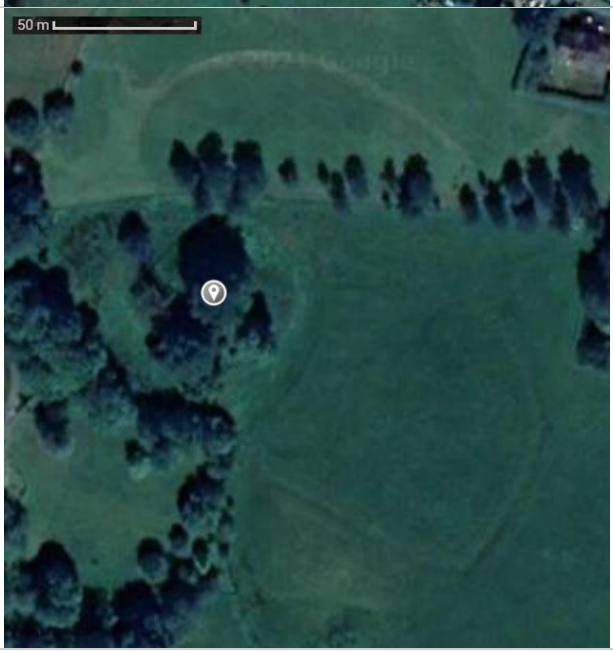
CHER28	Cwmma Tump	Brilley	Herefordshire	
CHER29	Didley Court Motte	St Devereux	Herefordshire	
CHER30	Dorstone Castle	Dorstone	Herefordshire	

CHER31	Downton on the Rock	Downton	Herefordshire	
CHER32	Eardisland Castle	Eardisland	Herefordshire	
CHER33	Eardisley Castle	Eardisley	Herefordshire	

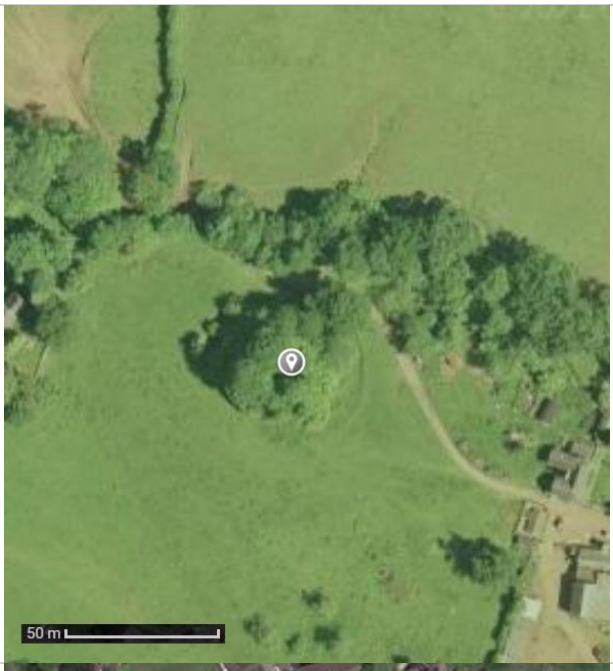
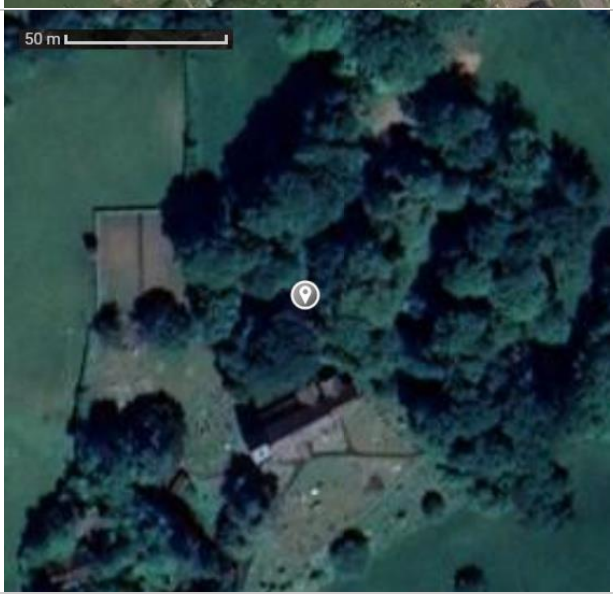
CHER34	Eccleswell Castle	Linton	Herefordshire	
CHER35	Edvin Loach Ringwork	Edvin Loach and Saltmarsh	Herefordshire	
CHER36	Edwyn Ralph Motte	Edwyn Ralph	Herefordshire	

CHER37	Ewyas Harold Castle	Ewyas Harold	Herefordshire	
CHER38	Hentland Chapel Tump	Hentland	Herefordshire	
CHER39	Hereford Castle	Hereford	Herefordshire	

CHER40	Herefordshire Beacon	Colwall	Herefordshire	
CHER41	Hergest Castle	Kington Rural	Herefordshire	
CHER42	Howton Farm Mound	Kenderchurch	Herefordshire	

CHER43	Huntington Castle	Huntington	Herefordshire	
CHER44	Kilpeck Castle	Kilpeck	Herefordshire	
CHER45	Kingsland Castle	Kingsland	Herefordshire	

CHER46	Kington Castle Hill	Kington	Herefordshire	
CHER47	Laysters Motte	Laysters	Herefordshire	
CHER48	Lingen Castle	Lingen	Herefordshire	

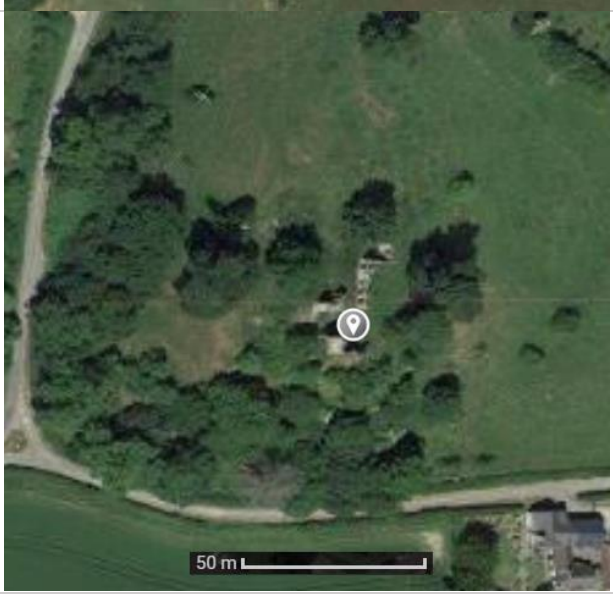
CHER49	Llancillo Castle	Llancillo	Herefordshire	
CHER50	Longtown Castle	Longtown	Herefordshire	
CHER51	Lyonshall Castle	Lyonshall	Herefordshire	

CHER52	Madley Castle	Madley	Herefordshire	
CHER53	Moccas Castle	Moccas	Herefordshire	
CHER54	Monnington Court	Vowchurch	Herefordshire	

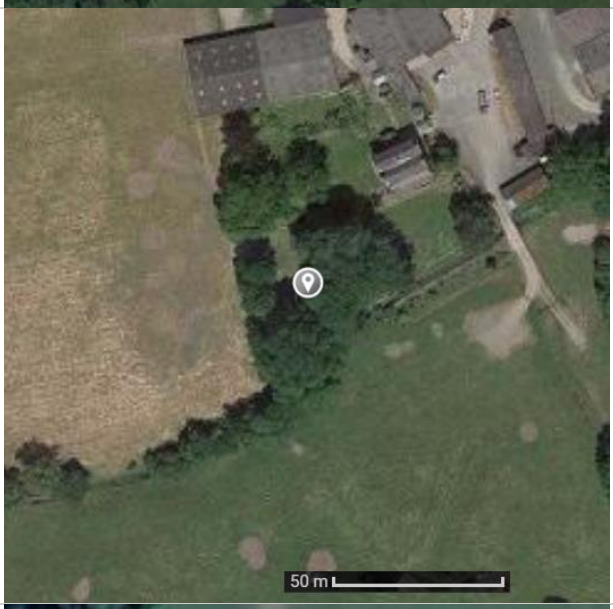
CHER55	Mortimers Castle	Much Marcle	Herefordshire	
CHER56	Mouse Castle	Cusop	Herefordshire	
CHER57	The Camp	Much Dewich	Herefordshire	

CHER58	Mynyddbryd d Tump	Dorstone	Herefordshire	
CHER59	Nant-y-bar	Dorstone	Herefordshire	
CHER60	Newcourt Tump	Bacton	Herefordshire	

CHER61	Newton Tump	Clifford	Herefordshire	
CHER62	Orcop Castle	Orcop	Herefordshire	
CHER63	Pipe Aston Tump	Pipe Aston	Herefordshire	

CHER64	Richards Castle	Richards Castle	Herefordshire	
CHER65	Snodhill Castle	Peterschurch	Herefordshire	
CHER66	Stapleton Castle	Stapleton	Herefordshire	

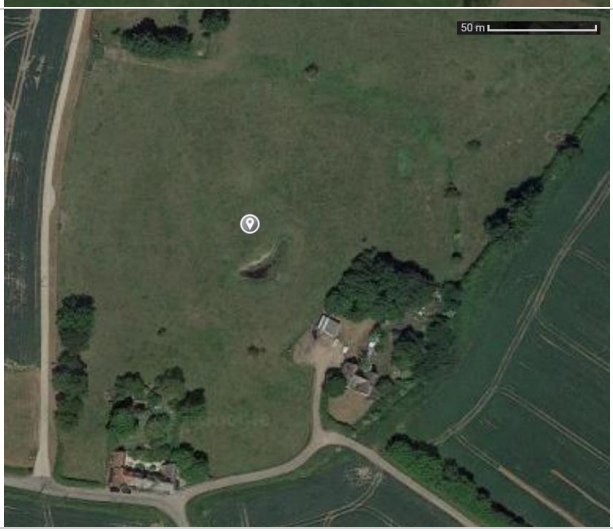
CHER67	Staunton Motte	Staunton on Arrow	Herefordshire	
CHER68	Thruxton Court	Thruxton	Herefordshire	
CHER69	Tregate Castle	Llanrothal	Herefordshire	

CHER70	Turret Castle	Huntington	Herefordshire	
CHER71	Buckton Motte	Buckton and Coxall	Herefordshire	
CHER72	Camp Wood Mound	Aymestrey	Herefordshire	

CHER73	Upper Pedwarine Motte	Brampton Bryan	Herefordshire	
CHER74	Urishay Castle	Peterchurch	Herefordshire	
CHRT01	Anstey Castle	Anstey	Hertfordshire	

CHRT02	Benington Castle	Benington	Hertfordshire	
CHRT03	Berkhamsted Castle	Berkhamsted	Hertfordshire	
CHRT04	Hertford Castle	Hertford	Hertfordshire	

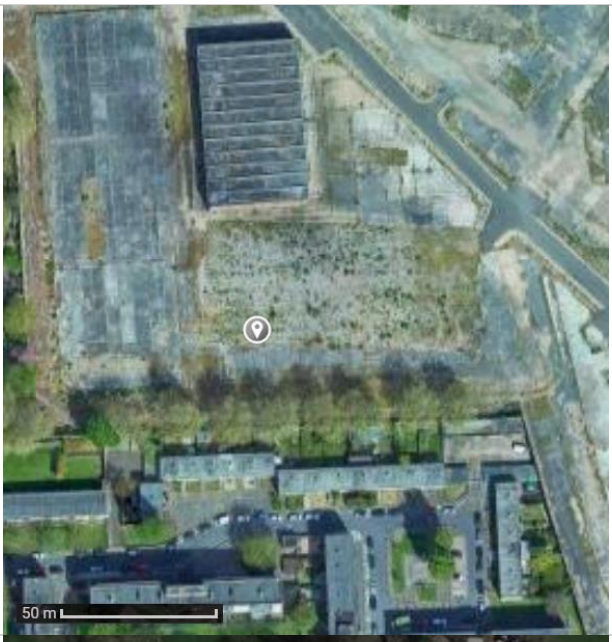
CHRT05	Pirton Toot Hill	Pirton	Hertfordshire	
CHRT06	Therford Castle	Therford	Hertfordshire	
CHRT07	Walkern Bury	Walkern	Hertfordshire	

CHRT08	Waytemore Castle	Bishops Stortford	Hertfordshire	
CHRT09	Wymondley Castle	Wymondley	Hertfordshire	
CHUN01	Wood Walton Castle	Wood Walton	Huntingdonshire	

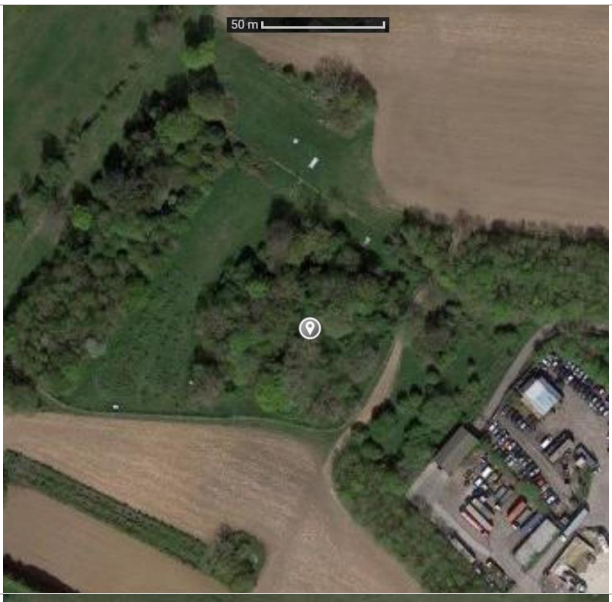
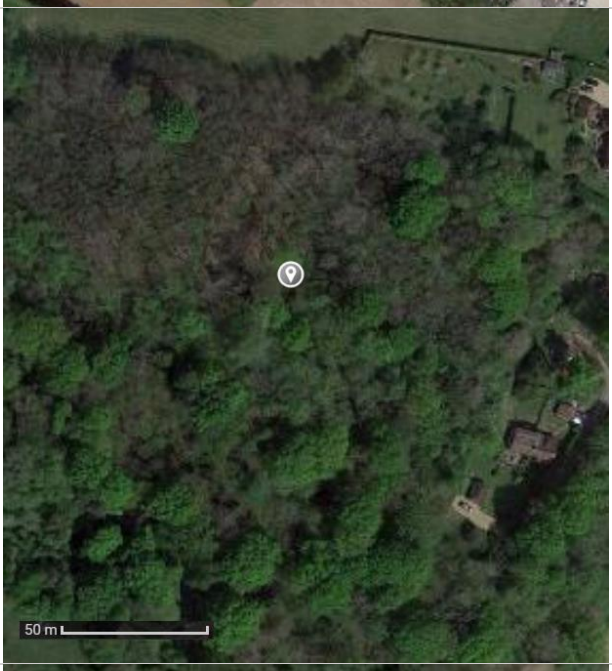
CHUN02	The Old Manor House	Great Staughton	Huntingdonshire	
CHUN03	The Mount	Kings Ripton	Huntingdonshire	
CHUN04	Huntingdon Castle	Huntingdon	Huntingdonshire	

CHUN05	Kimbolton; The Mound	Kimbolton	Huntingdonshire	
CHUN06	Ramsay Booths Hill	Ramsay	Huntingdonshire	
CHUN07	Washingley Hall Farm	Folksworth and Washingley	Huntingdonshire	

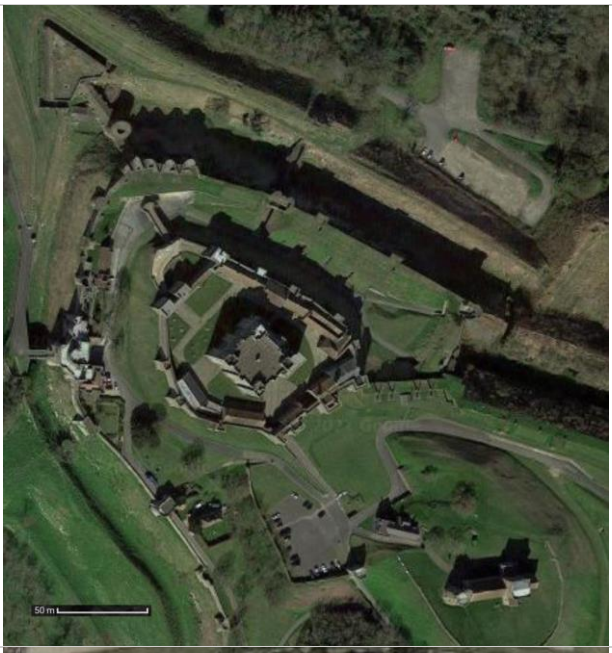
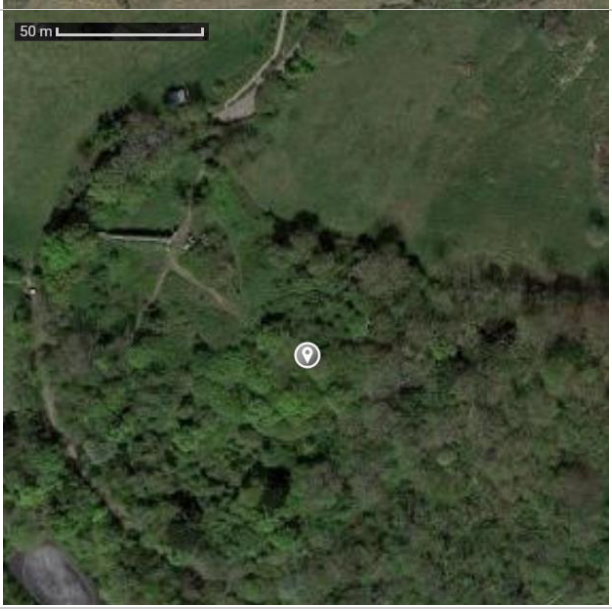
CISC01	Mount Holles	St Marys	Isles of Scilly	
CISC02	Ennor Castle	St Marys	Isles of Scilly	
CKEN01	Cantebury Castle	Cantebury	Kent	

CKEN02	Deptfort Castle	Lewisham	Kent	
CKEN03	Eynesford Castle	Eynesford	Kent	
CKEN04	Leybourne Castle	Leybourne	Kent	

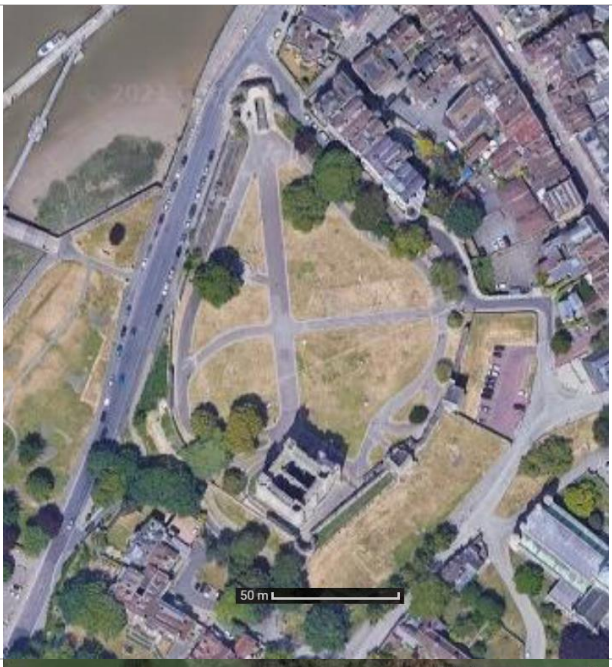
CKEN05	St Leonards Tower	West Malling	Kent	
CKEN06	Sutton Valence Castle	Sutton Valance	Kent	
CKEN07	Allington Castle	Maidstone	Kent	

CKEN08	Binbury Castle	Turnham	Kent	
CKEN09	Brenchley Castl Hill	Brenchley	Kent	
CKEN10	Castle Rough	Sittingbourne	Kent	

CKEN11	Castle Toll	Newenden	Kent	
CKEN12	Chilham Castle	Chilham	Kent	
CKEN13	Coldred Court	Coldred	Kent	

CKEN14	Dover Castle	Kent	Kent	
CKEN15	Castle Hill	Folkstone	Kent	
CKEN16	Godards Castle	Thurnham	Kent	

CKEN17	Castle Bank	Kemsing	Kent	
CKEN18	Leeds Castle	Broomfield And Kingswood	Kent	
CKEN19	Newham Castle	Newham	Kent	

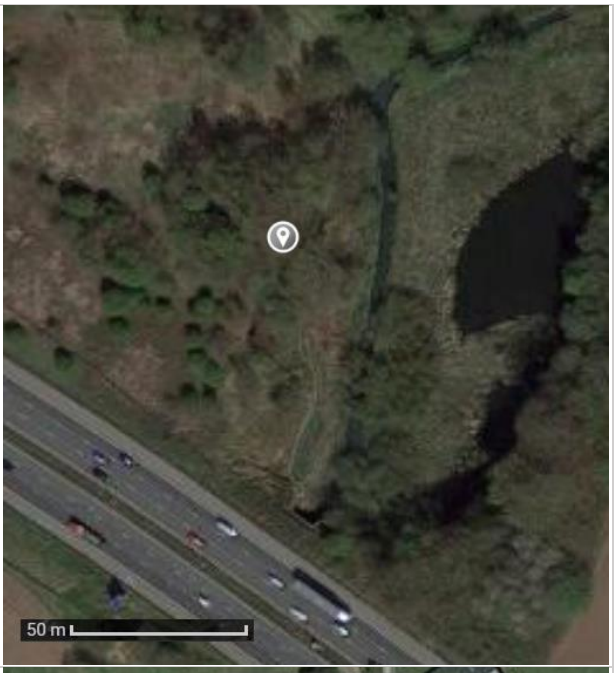
CKEN20	Rochester Castle	Rochester	Kent	
CKEN21	Saltwood Castle	Saltwood	Kent	
CKEN22	Stockbury Castle	Stockbury	Kent	

CKEN23	Stowing Castle	Stowing	Kent	
CKEN24	Tonbridge Castle	Tonbridge	Kent	
CLAN01	Clitheroe Castle	Clithroe	Lancashire	

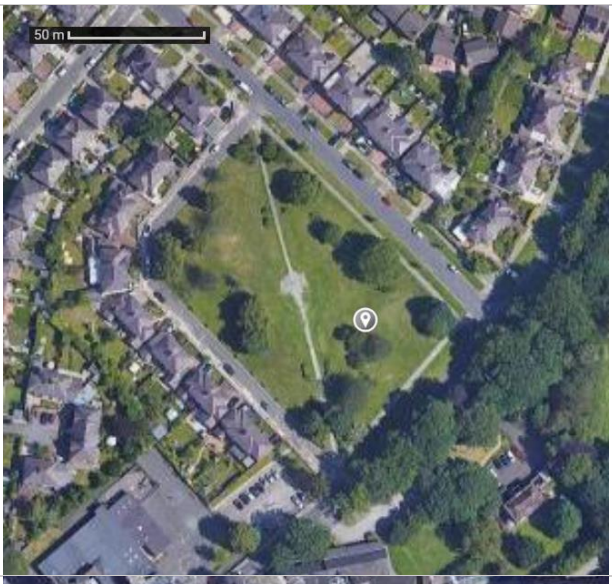
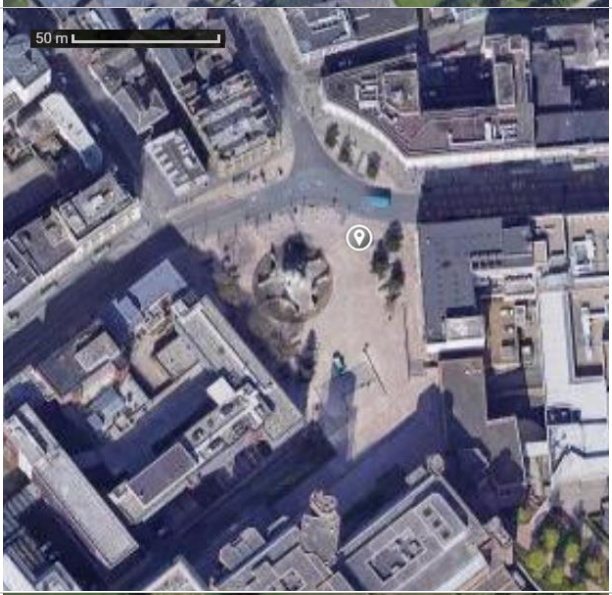
CLAN02	Piel Castle	Barrow In Furness	Lancashire	
CLAN03	Aldingham Motte	Aldingham	Lancashire	
CLAN04	Chapel Hill	Arkholme with Cawood	Lancashire	

CLAN05	Buckton Castle	Mossley	Lancashire	
CLAN06	Dolphinholme Castle Hill	Ellel	Lancashire	
CLAN07	Halton Castle Hill	Halton With Aughton	Lancashire	

CLAN08	Hornby Castlestede	Hornby with Farleton	Lancashire	
CLAN09	Lancaster Castle	Lancaster	Lancashire	
CLAN10	Castle Mount	Melling with Wrayton	Lancashire	

CLAN11	Castle Hill	Newton Le Willows	Lancashire	
CLAN12	Castle Hill	Pennington	Lancashire	
CLAN13	Castle Hill	Penwortham	Lancashire	

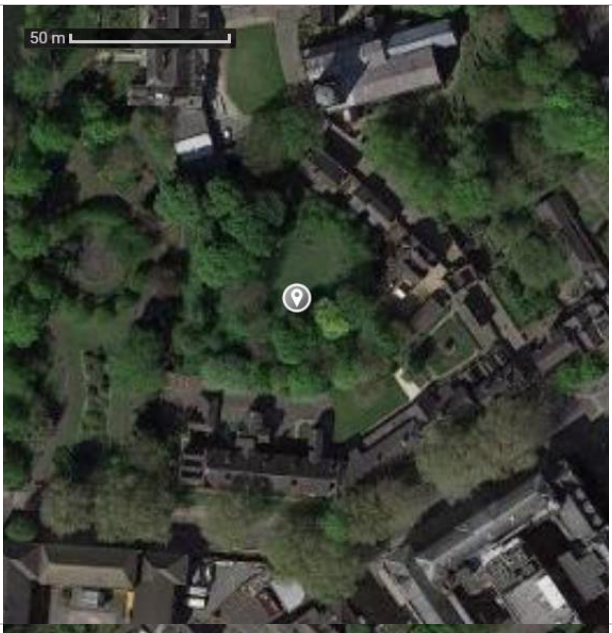
CLAN14	Preston Castle	Preston	Lancashire	
CLAN15	Rochdale Castle	Rochdale	Lancashire	
CLAN16	Warrington Motte Hill	Warrington	Lancashire	

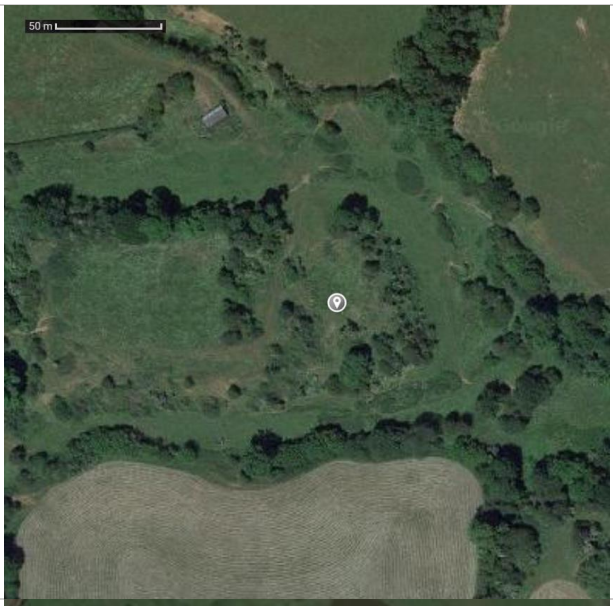
CLAN17	West Derby Castle	Liverpool	Lancashire	
CLAN18	Liverpool Castle	Liverpool	Lancashire	
CLAN19	Whittington Motte	Whittington	Lancashire	

CLEI01	Belvoir Castle	Belvoir	Leicestershire	
CLEI02	Castle Donington	Donington	Leicestershire	
CLEI03	Earl Shilton Castle Yard	Hinckley	Leicestershire	

CLEI04	Gilmorton motte	Gilmorten	Leicestershire	
CLEI05	Groby Castle Hill	Groby	Leicestershire	
CLEI06	Cat Gruff	Glumley	Leicestershire	

CLEI07	Hallaton Castle Hill Camp	Hallaton	Leicestershire	
CLEI08	Hinckley Castle Hill	Hinckley	Leicestershire	
CLEI09	The Munt	Kibworth Harcourt	Leicestershire	

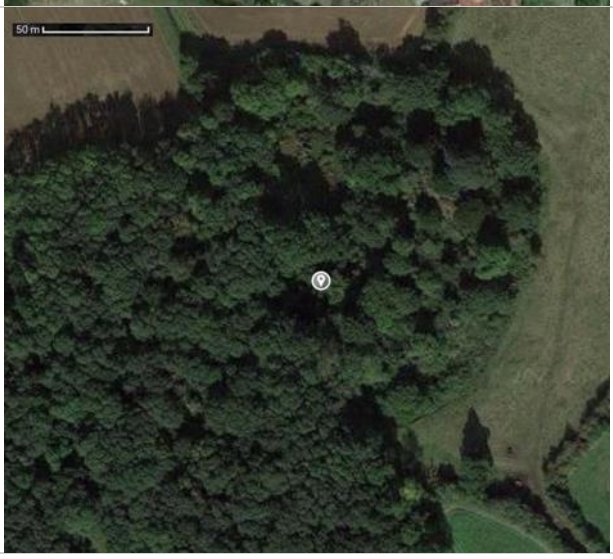
CLEI10	Leicester Castle	Leicester	Leicestershire	
CLEI11	Mountsorrel Castle	Mountsorrel	Leicestershire	
CLEI12	Sapcote Castle	Sapcote	Leicestershire	

CLEI13	Sauvey Castle	Withcote	Leicestershire	
CLEI14	Shackerstone Motte	Shackerstone	Leicestershire	
CLEI15	Catthorpe	Shawell	Leicestershire	

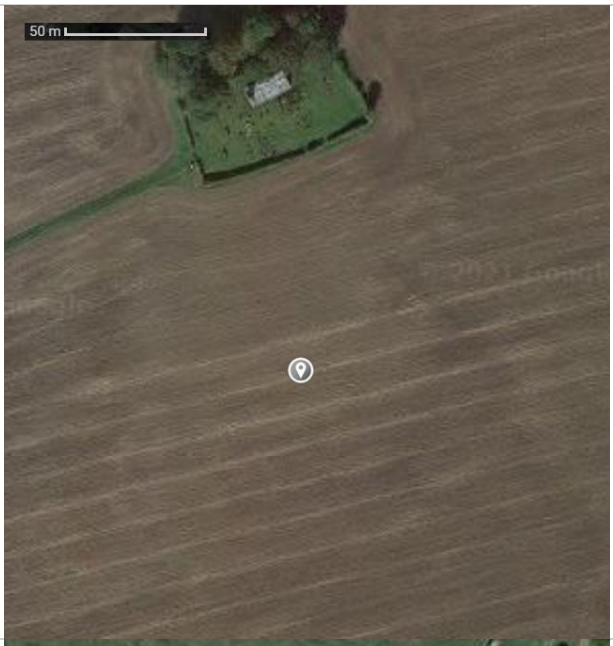
CLEI16	Whitwick Castle	Coalville	Leicestershire	
CLIN01	Bolingbroke Castle	Bolingbroke	Lincolnshire	
CLIN02	Grimsthorpe Castle	Edenham	Lincolnshire	

CLIN03	Somerton Castle	Boothby Graffoe	Lincolnshire	
CLIN04	Tattershall Castle	Tattershall	Lincolnshire	
CLIN05	Barrows Castle	Barrow upon Humber	Lincolnshire	

CLIN06	Bourne Castle	Bourne		
CLIN07	Catlethorpe	Broughton	Lincolnshire	
CLIN08	Burton Pedwardine Motte	Burton Pedwardine	Lincolnshire	

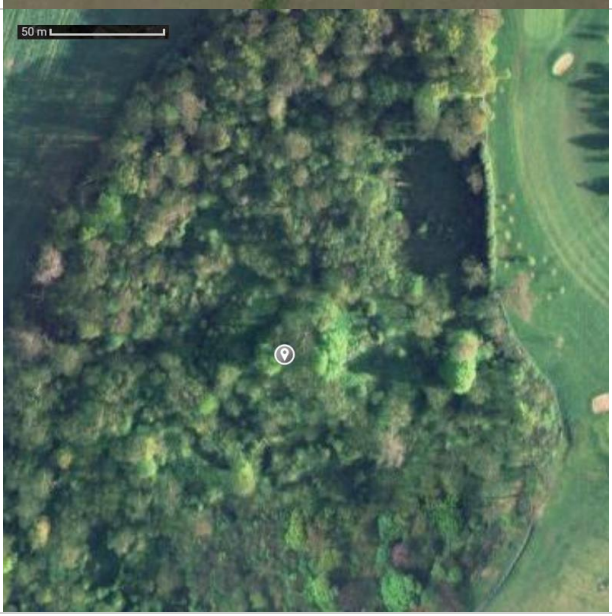
CLIN09	Caistor Castle Hill	Caistor	Lincolnshire	
CLIN10	Castle Bytham	Castle Bytham	Lincolnshire	
CLIN11	Castle Carlton	Reston	Lincolnshire	

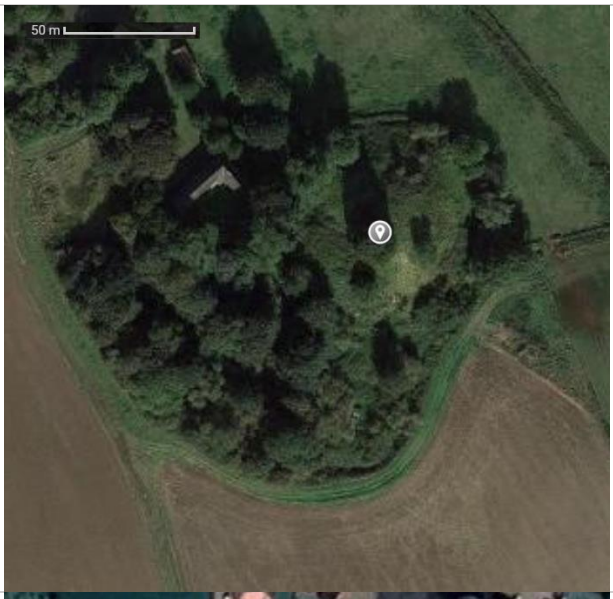
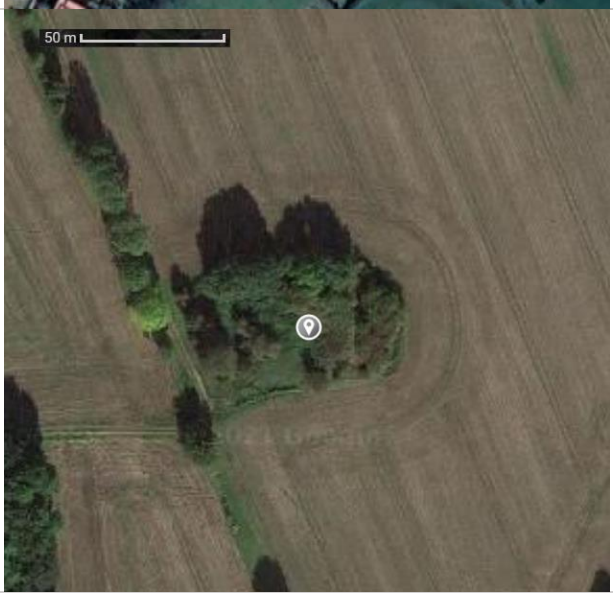
CLIN12	Corby Glen Motte	Corby Glen	Lincolnshire	
CLIN13	Dewy Hill	Bolingbroke	Lincolnshire	
CLIN14	Folkingham Castle	Folkingham	Lincolnshire	

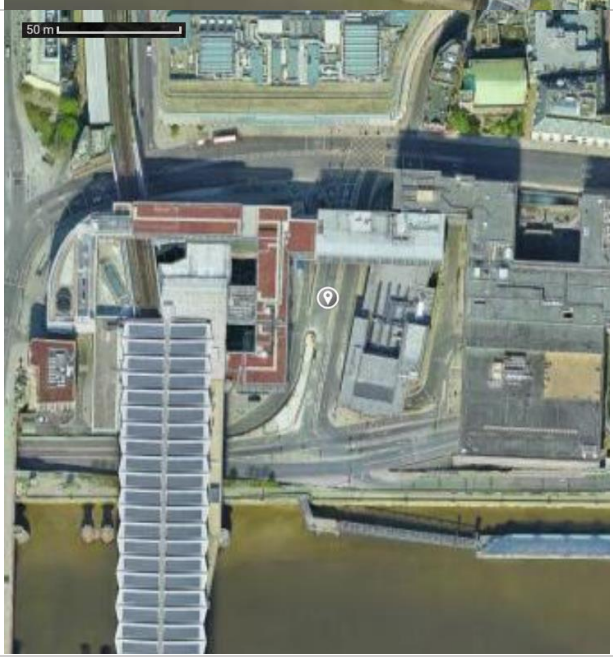
CLIN15	Goltho Manor	Goltho	Lincolnshire	
CLIN16	Heydour Castle Hills	Haydour	Lincolnshire	
CLIN17	Holme Spinney	Beckingham	Lincolnshire	

CLIN18	Hache Castle	Hough on the Hill	Lincolnshire	
CLIN19	Kinaird Castle	Owston Ferry	Lincolnshire	
CLIN20	Kingerby Hall	Osgodby	Lincolnshire	

CLIN21	Lincoln Castle	Lincoln	Lincolnshire	
CLIN22	Sleaford Castle	Sleaford	Lincolnshire	
CLIN23	Stainby Tower Hill	Gunby and Stainby	Lincolnshire	

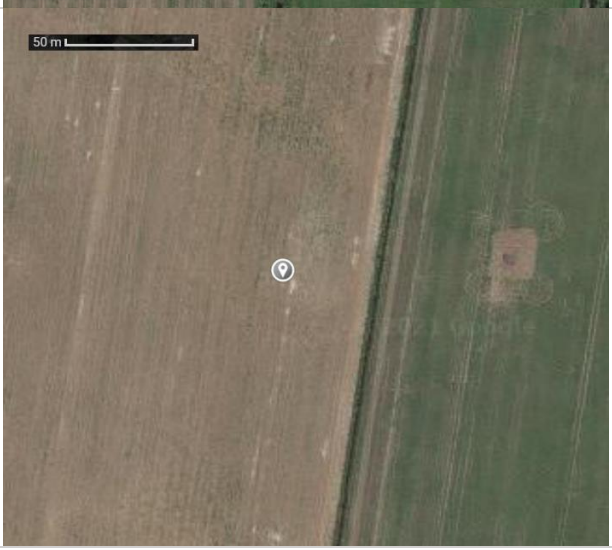
CLIN24	Stamford Castle	Stamford	Lincolnshire	
CLIN25	The Manwarings	Swineshead	Lincolnshire	
CLIN26	Castle Hills	Thonock	Lincolnshire	

CLIN27	Tothill Toot Hill	Withern With Stain	Lincolnshire	
CLIN28	Welbourn Castle Hill	Welbourn	Lincolnshire	
CLIN29	Castle Hill	Welton le Marsh	Lincolnshire	

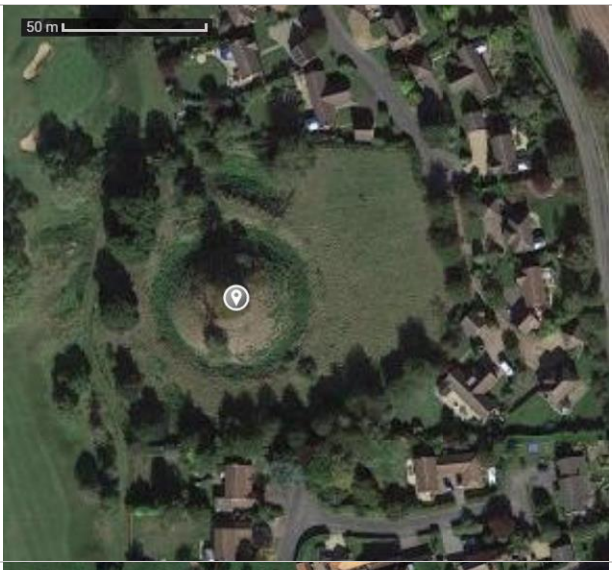
CLIN30	Kings Hill	Wrangle	Lincolnshire	
CLON01	Tower of London	Stephney	London and Middlesex	
CLON02	Baynard's Castle	City of London	London and Middlesex	

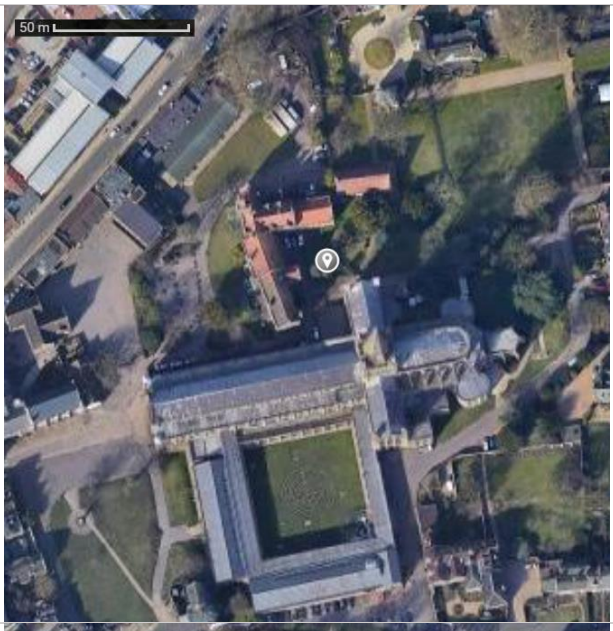
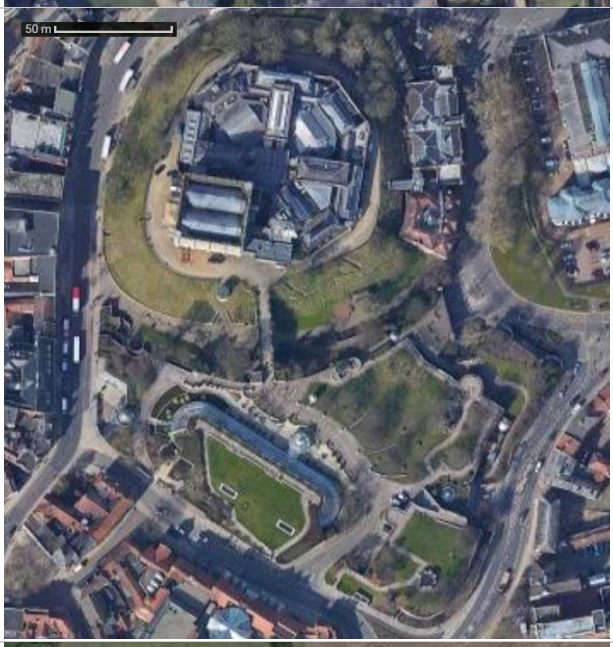
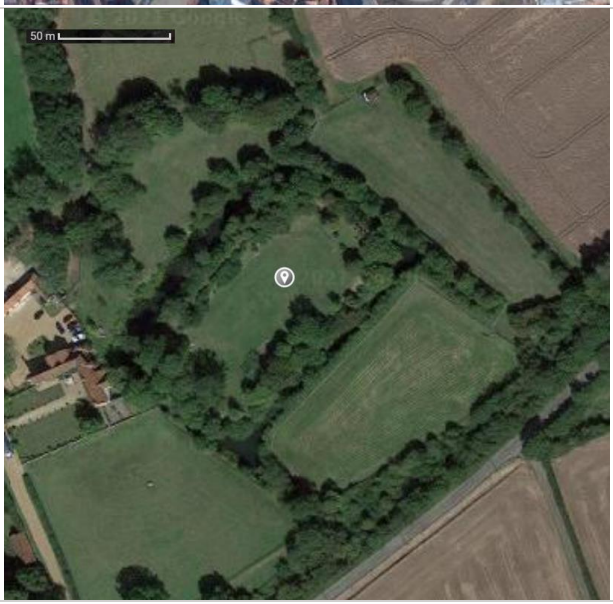
CLON03	Montfitchet Castle	City of London	London and Middlesex	
CLON04	Ruislip	Hillingdon	London and Middlesex	
CLON05	South Mimms Castle	Potters Bar	London and Middlesex	

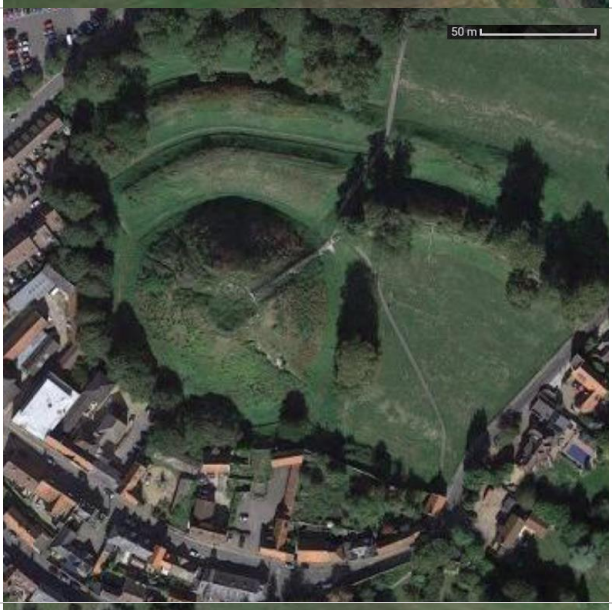
CLUD01	Marisco Castle	Lundy	Lundy Island	
CNOR01	Great Yarmouth Castle	Yarmouth	Norfolk	
CNOR02	Antingham Hall Moat	Antingham	Norfolk	

CNOR03	Castle Acre Castle	Castle Acre	Norfolk	
CNOR04	Castle Rising Castle	Castle Rising	Norfolk	
CNOR05	Crabbs Castle	Wighton	Norfolk	

CNOR06	Darrow Green	Denton	Norfolk	
CNOR07	Horsford Castle	Horsford	Norfolk	
CNOR08	Hunworth Castle	Stody	Norfolk	

CNOR09	Middleton Motte	Middleton	Norfolk	
CNOR10	Mileham Castle	Mileham	Norfolk	
CNOR11	New Buckenham Castle	Old Buckenham	Norfolk	

CNOR12	Bishops Palace	Norwich	Norfolk	
CNOR13	Norwich Castle	Norwich	Norfolk	
CNOR14	Old Buckenham Castle	Old Buckenham	Norfolk	

CNOR15	Vikings Mound	Quidenham	Norfolk	
CNOR16	Thetford Castle	Thetford	Norfolk	
CNOR17	Red Castle	Thetford	Norfolk	

CNOR18	Wormegay Castle	Wormegay	Norfolk	
CNOR19	Wymondham Moot Hill	Wymondham	Norfolk	
CNHA01	Alderton Ringwork	Grafton Regis	Northamptonshire	

CNHA02	Barnwell Castle	Barnwell	Northamptonshire	
CNHA03	Barby Castle	Barby	Northamptonshire	
CNHA04	Benefield Castle	Benefield	Northamptonshire	

CNHA05	Brackley Castle	Brackley	Northamptonshire	
CNHA06	Castle Hill	Canons Ashby	Northamptonshire	
CNHA07	Castle Hymel	Fineshade	Northamptonshire	

CNHA08	Cransley Motte	Cransley	Northamptonshire	
CNHA09	Close Hill	Culworth Berry	Northamptonshire	
CNHA10	Berry Mount	Earls Barton	Northamptonshire	

CNHA11	Castle Dykes	Farthingstone	Northamptonshire	
CNHA12	Fotheringhay Castle	Fotheringhay	Northamptonshire	
CNHA13	Higham Ferrers Castle	Higham Ferrers	Northamptonshire	

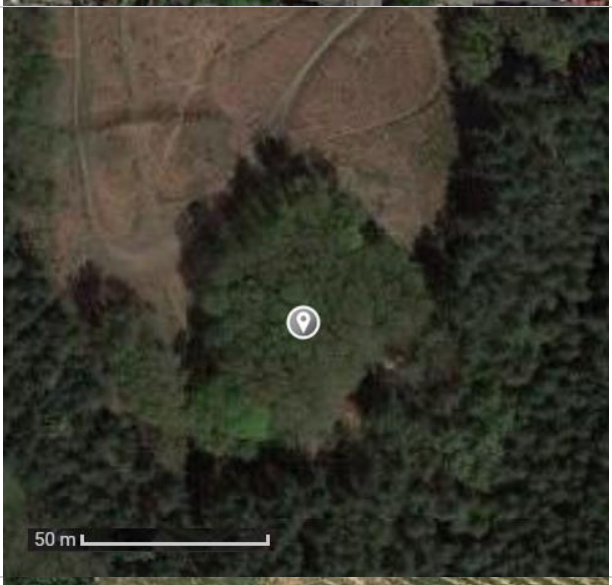
CNHA14	Lilbourne Castle	Lilbourne	Northamptonshire	
CNHA15	Lilbourne Roundhill	Lilbourne	Northamptonshire	
CNHA16	Little Houghton Motte	LittleHoughton	Northamptonshire	

CNHA17	Little Houghton Ringwork	Little Houghton	Northamptonshire	
CNHA18	The Mounts	Long Bucky	Northamptonshire	
CNHA19	Mount Thorold	Peterborough	Northamptonshire	

CNHA20	Northampton Castle	Northampton	Northamptonshire	
CNHA21	Preston Capes Castle	Preston Capes	Northamptonshire	
CNHA22	Rockingham Castle	Rockingham	Northamptonshire	

CNHA23	The Berry	Rothersthorpe	Northamptonshire	
CNHA24	Castle Yard	Sibbertoft	Northamptonshire	
CNHA25	Castle Hill	Sulgrave	Northamptonshire	

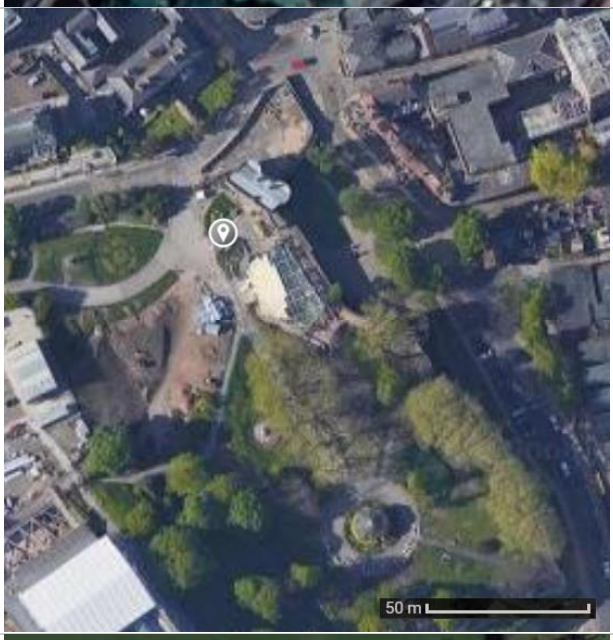
CNHA26	Torpel Castle	Bainton	Northamptonshire	
CNHA27	Bury Mount	Towcester	Northamptonshire	
CNHA28	Lois Castle Mound	Weston and Weedon	Northamptonshire	

CNHA29	Beacon Hill	Wollaston	Northamptonshire	
CNOT01	Annesley Castle	Annesley	Nottinghamshire	
CNOT02	Cranmers Mound	Aslockton	Nottinghamshire	

CNOT03	Bothamsall Castle Hill	Bothamshall	Nottinghamshire	
CNOT04	Cuckney Castle Hill	Cuckney	Nottinghamshire	
CNOT05	Pancake Hill	East Bridgeford	Nottinghamshire	

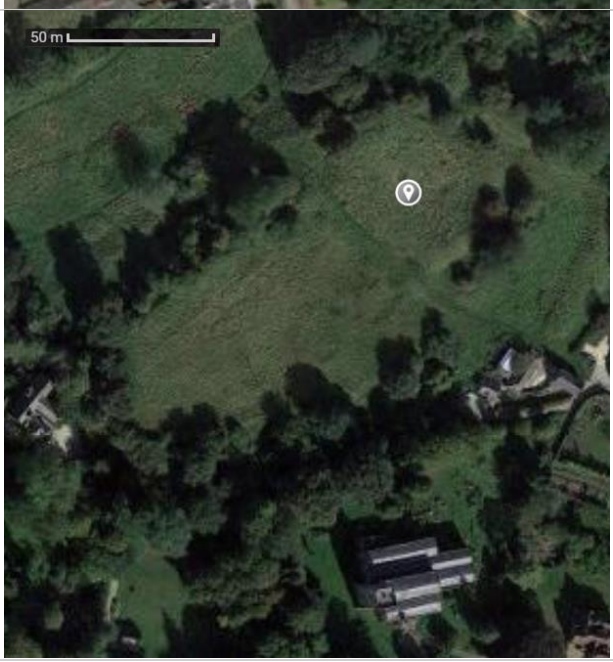
CNOT06	Gaddick Hill	Egmanton	Nottinghamshire	
CNOT07	Haughton Motte	Haughton	Nottinghamshire	
CNOT08	Jordan's Castle	Wellow	Nottinghamshire	

CNOT09	Kingshaugh Camp	Darlton	Nottinghamshire	
CNOT10	Laxton Castle	Laxton and Moorhouse	Nottinghamshire	
CNOT11	Lowdham Motte	Lowdham	Nottinghamshire	

CNOT12	Newark Castle	Newark	Nottinghamshire	
CNOT13	Nottingham Castle	Nottingham	Nottinghamshire	
CNOT14	Shelford earthworks	Shelford and Newton	Nottinghamshire	

CNOT15	Worksop Castle Hill	Worksop	Nottinghamshire	
COXF01	Aedley	Ardley	Oxfordshire	
COXF02	Ascott d'oilly Castle	Ascott under Wychwood	Oxfordshire	

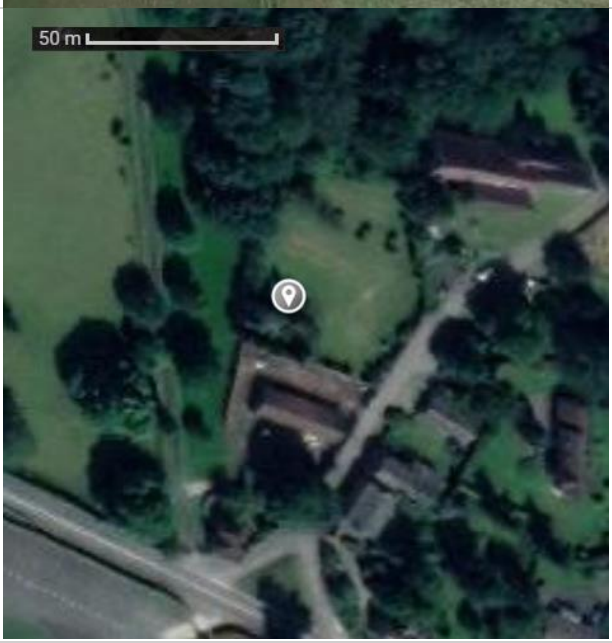
COXF03	Ascott Earl	Ascott under Wychwood	Oxfordshire	
COXF04	Banbury Castle	Banbury	Oxfordshire	
COXF05	Beaumont Castle	Mixbury	Oxfordshire	

COXF06	Blenheim Park	Blenheim	Oxfordshire	
COXF07	Britwell Castle	Britwell Salome	Oxfordshire	
COXF08	Chipping Norton Castle	Chipping Norton	Oxfordshire	

COXF09	Deddington Castle	Deddington	Oxfordshire	
COXF10	Middleton Stoney Castle	Middleton Stoney	Oxfordshire	
COXF11	Oxford Castle	Oxford	Oxfordshire	

COXF12	The Garrison	Grafton and Radcot	Oxfordshire	
COXF13	Somerton Castle	Oxfordshire	Oxfordshire	
COXF14	Swerford Castle	Swerford	Oxfordshire	

CRUT01	Essendine Castle	Essendine	Rutland	
CRUT02	Mount Alstoe	Burley	Rutland	
CRUT03	Oakham Castle	Oakham	Rutland	

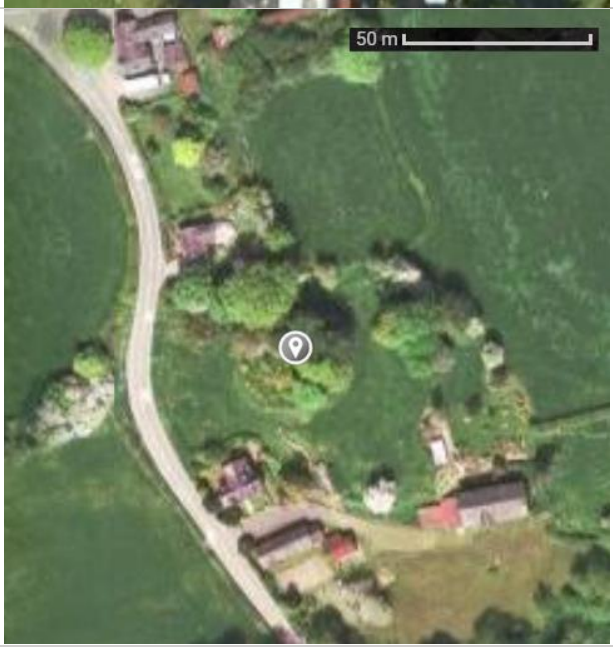
CRUT04	Uppingham Castle	Beaumont Chase	Rutland	
CRUT05	Woodhead Castle	Great Casterton	Rutland	
CSHR01	Alberbury Castle	Albebury with Cardeston	Shropshire	

CSHR02	Redcastle	Weston under Redcastle	Shropshire	
CSHR03	Wattlesborough Hall	Alberbury with Cardeston	Shropshire	
CSHR04	Adderley Castle Hill	Adderley	Shropshire	

CSHR05	Amaston Heath Farm	Alberbury with Cardeston	Shropshire	
CSHR06	Aston Botterell Ringwork	Aston Botterell	Shropshire	
CSHR07	Belan Bank	Kinnerley	Shropshire	

CSHR08	Bicton Castle Mound	Clun	Shropshire	
CSHR09	Bishops Castle	Bishops Castle	Shropshire	
CSHR10	Bretchel Beacon	Alberbury with Cardeston	Shropshire	

CSHR11	Bridgenorth Castle	Bridgenorth	Shropshire	
CSHR12	Broadward Hall	Clungunford	Shropshire	
CSHR13	Brockhurst Castle	Church Stretton	Shropshire	

CSHR14	Brockton Castle Mound	Shipton	Shropshire	
CSHR15	Bromlow Castle Mound	Worthen with Shelve	Shropshire	
CSHR16	Brompton Mill Castle Mound	Chirbury with Brompton	Shropshire	

CSHR17	Bryn Y Castell	Selattyn and Gobowen	Shropshire	
CSHR18	Bucknell Motte	Bucknell	Shropshire	
CSHR19	Castlell Brogyntyn	Selattyn and Gobowen	Shropshire	

CSHR20	Castle Bryn Amlwg	Bettws yy Crwyn	Shropshire	
CSHR21	Castle Pulverbatch	Church Pulverbatch	Shropshire	
CSHR22	Caus Castle	Westbury	Shropshire	

CSHR23	Cheney Castle Ring	Wistanshow	Shropshire	
CSHR24	Castle Ditches	Cleobury Mortimer	Shropshire	
CSHR25	Castle Toot	Cleobury Mortimer	Shropshire	

CSHR26	Clun Castle	Clun	Shropshire	
CSHR27	Clungford Motte	Clungford	Shropshire	
CSHR28	Colebatch Motte	Colebatch	Shropshire	

CSHR29	Corfham Castle	Diddlebury	Shropshire	
CSHR30	Crofton Mount	Diddlebury	Shropshire	
CSHR31	Culmington Camp Ring	Stanton Lacy	Shropshire	

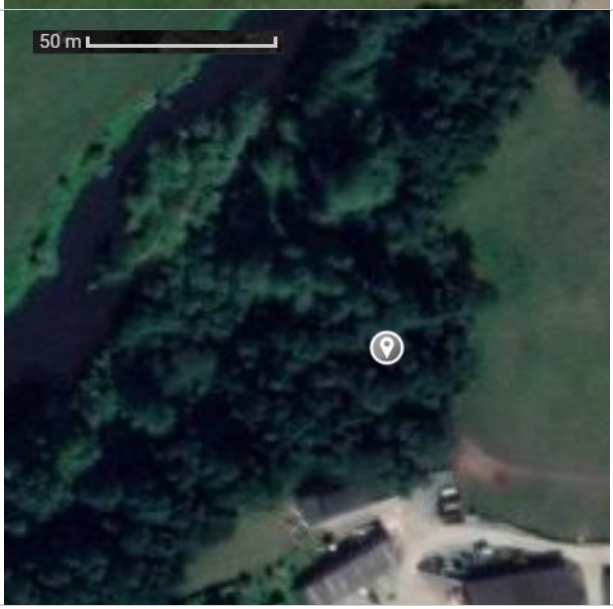
CSHR32	Dudston Castle Mound	Chirbury with Brompton	Shropshire	
CSHR33	Edgton Ring-Motte	Edgton	Shropshire	
CSHR34	Ellesmere Castle	Ellesmere Urban	Shropshire	

CSHR35	Fitz Mound	Pimhill	Shropshire	
CSHR36	Fordhall	Moreton Say	Shropshire	
CSHR37	Habberley Hall	Pontesbury	Shropshire	

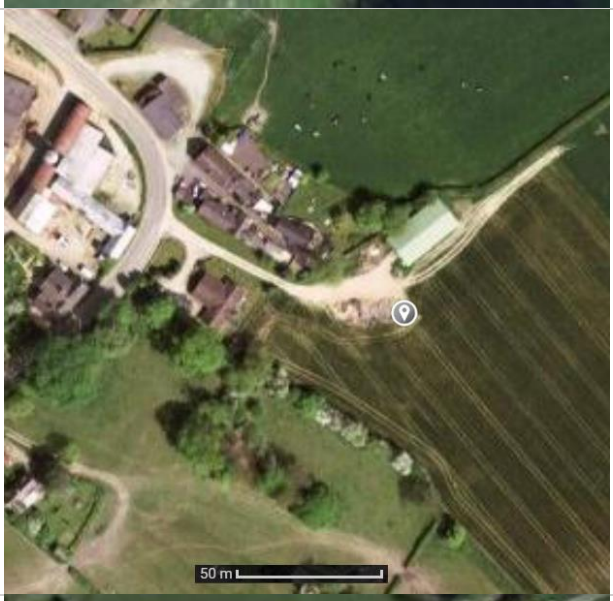
CSHR38	Hardwick Mount	Norbury	Shropshire	
CSHR39	Howcocks Mount	Westbury	Shropshire	
CSHR40	Hisland Castle Mound	Oswestry Rural	Shropshire	

CSHR41	Hockleton Motte	Chirbury with Brompton	Shropshire	
CSHR42	Hodnet Castle Hill	Hodnet	Shropshire	
CSHR43	Holdgate Castle	Abdon	Shropshire	

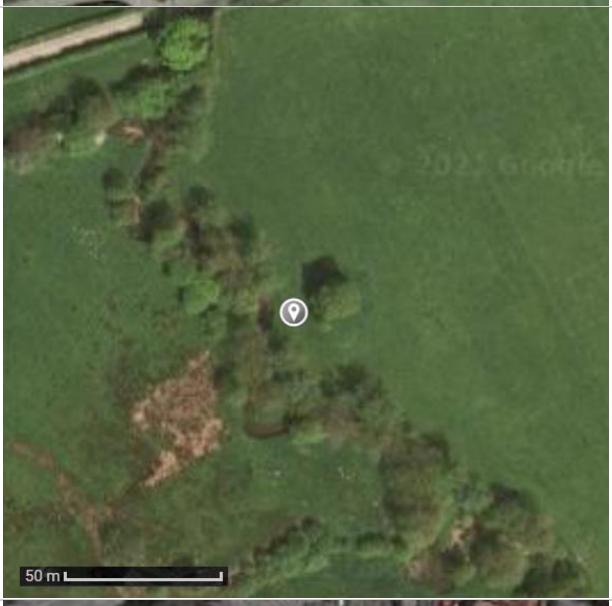
CSHR44	Hope Castle Mound	Worthen with Shelve	Shropshire	
CSHR45	Hopton Castle	Hopton Castle	Shropshire	
CSHR46	Kinton Motte	Great Ness	Shropshire	

CSHR47	Knockin Castle	Knockin	Shropshire	
CSHR48	Little Ness Castle Mound	Little Ness	Shropshire	
CSHR49	Little Shrawardine Motte	Alberbury with Cardeston	Shropshire	

CSHR50	Lower Down Castle	Lydbury North	Shropshire	
CSHR51	Ludlow Castle	Ludlow	Shropshire	
CSHR52	Lydham Castle	Lydham	Shropshire	

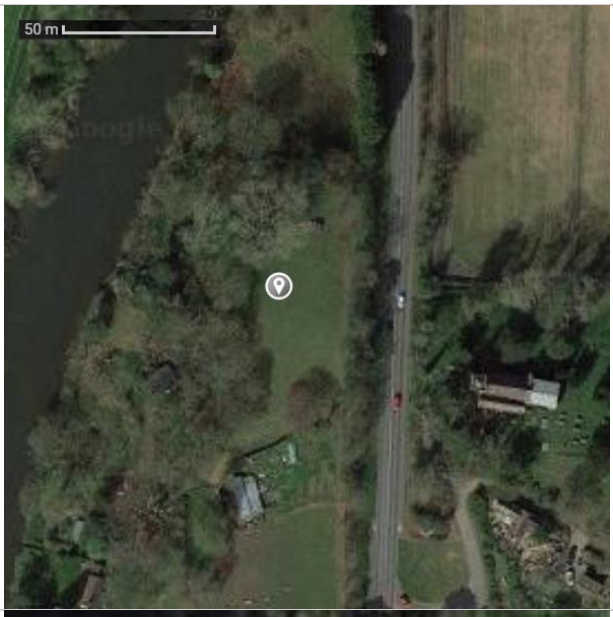
CSHR53	Marche Hall	Westbury	Shropshire	
CSHR54	Marton Mount	Chirbury with Brompton	Shropshire	
CSHR55	Middlehope	Biddlebury	Shropshire	

CSHR56	Middleton Mottes	Bitterley	Shropshire	
CSHR57	Minton Castle Mound	Church Stretton	Shropshire	
CSHR58	More Castle	More	Shropshire	

CSHR59	Moreton Corbet Castle	Moreton Corbet and Lee Brockhurst	Shropshire	
CSHR60	The Crugyn	Newcastle	Shropshire	
CSHR61	Oswestery Castle	Oswestry	Shropshire	

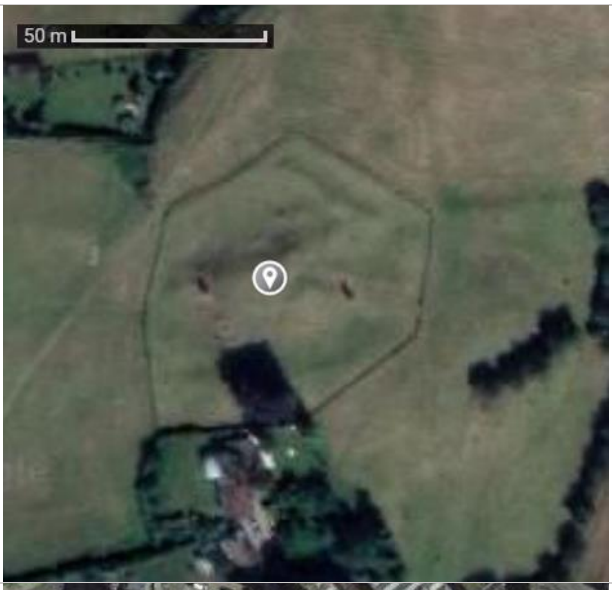
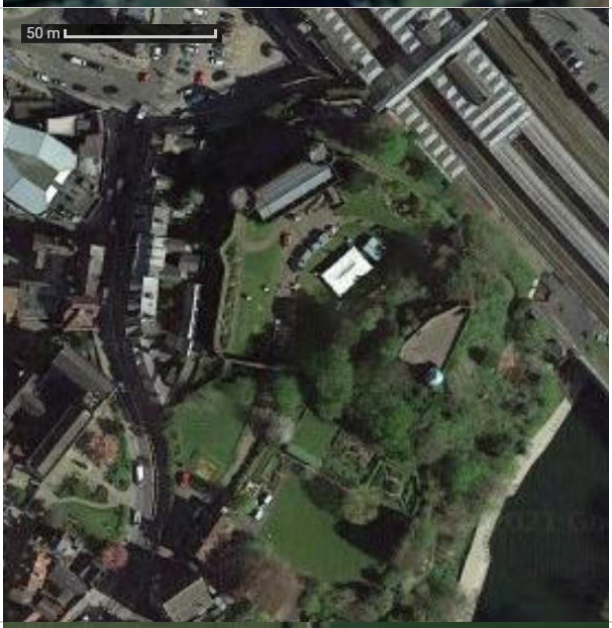
CSHR62	Pan Castle	Whitchurch Urban	Shropshire	
CSHR63	Panpudding Hill	Bridgenorth	Shropshire	
CSHR64	Pickthorne Castle	Stottesdon	Shropshire	

CSHR65	Plowden Mill Ringwork	Ludby North	Shropshire	
CSHR66	Pomtesbury Castle	Pontesbury	Shropshire	
CSHR67	Pontfadog	Kinnerley	Shropshire	

CSHR68	Quatford Castle	Bridgenorth	Shropshire	
CSHR69	Queen Elenors Bower	Uffington	Shropshire	
CSHR70	Ritton Castle	Worthen with Shelve	Shropshire	

CSHR71	Rorrington	Chirbury with Brompton	Shropshire	
CSHR72	Ruckley Long Field	Ruckley and Langley	Shropshire	
CSHR73	Rushbury Castle Mound	Rushbury	Shropshire	

CSHR74	Ruyten XI Towns Castle	Ruyton XI Towns	Shropshire	
CSHR75	Ryton Castle	Ryton	Shropshire	
CSHR76	Sandford Caslte Mound	Prees	Shropshire	

CSHR77	Shrawardine Castle	Montford	Shropshire	
CSHR78	Shrewsbury Castle	Shrewsbury	Shropshire	
CSHR79	Smethcott Castle Field	Smethcott	Shropshire	

CSHR80	St Martins Oaklands Mount	Weston Rhyn	Shropshire	
CSHR81	Stapleton Motte	Condover	Shropshire	
CSHR82	Tempeston; The Motte	Bettws y Crwyn	Shropshire	

CSHR83	Tenby Wells Castle Tump	Burford	Shropshire	
CSHR84	Tong Castle Hill	Tong	Shropshire	
CSHR85	Upper Garthlow Motte	Chirbury with Brompton	Shropshire	

CSHR86	Wem Castle	Wem	Shropshire	
CSHR87	West Felton Motte	West Felton	Shropshire	
CSHR88	The Mount	Weston under Redcastle	Shropshire	

CSHR89	Whattal Castle	Cockshutt	Shropshire	
CSHR90	Whitchurch Castle Hill	Whitchurch Urban	Shropshire	
CSHR91	Whitsburn Hill	Worthen with Shelve	Shropshire	

CSHR92	Whittington Castle	Whittington	Shropshire	
CSHR93	Wilcott Castle Mound	Great Ness	Shropshire	
CSHR94	Wilderley Hall Farm	Church Pulverbach	Shropshire	

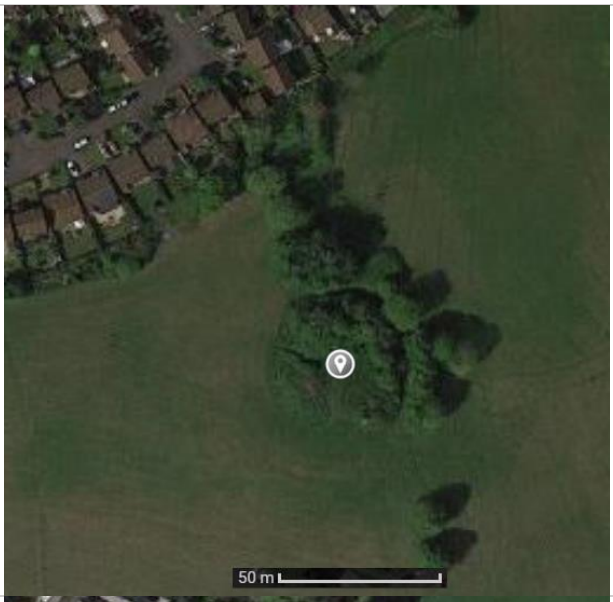
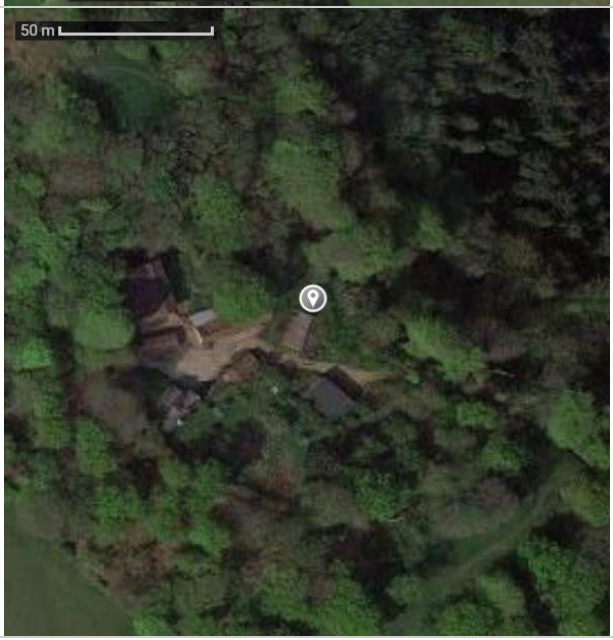
CSHR95	Walliston Castle Mound	Ightfield	Shropshire	
CSHR96	Walmington the Mount	Chirbury with Brompton	Shropshire	
CSHR97	Winsbury Castle Mound	Chirbury with Brompton	Shropshire	

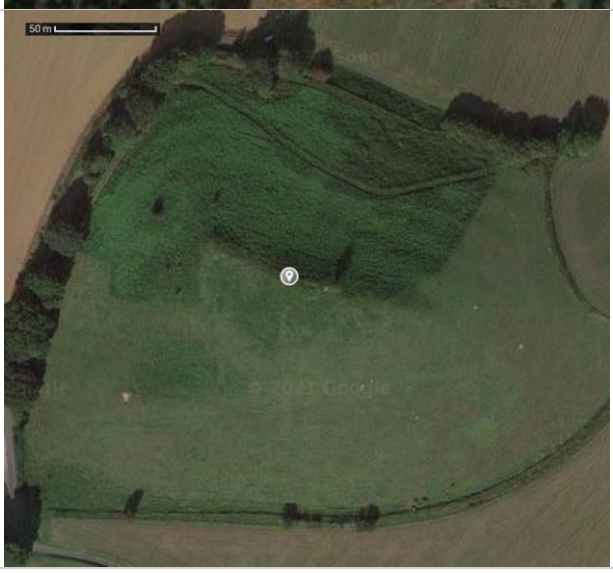
CSHR98	Wollaston Caesars Camp	Alberbury with Cardeston	Shropshire	
CSHR99	Wollaston Mount	Wollaston	Shropshire	
CSHR100	Woolstaston Castle Bank	Woolstaston	Shropshire	

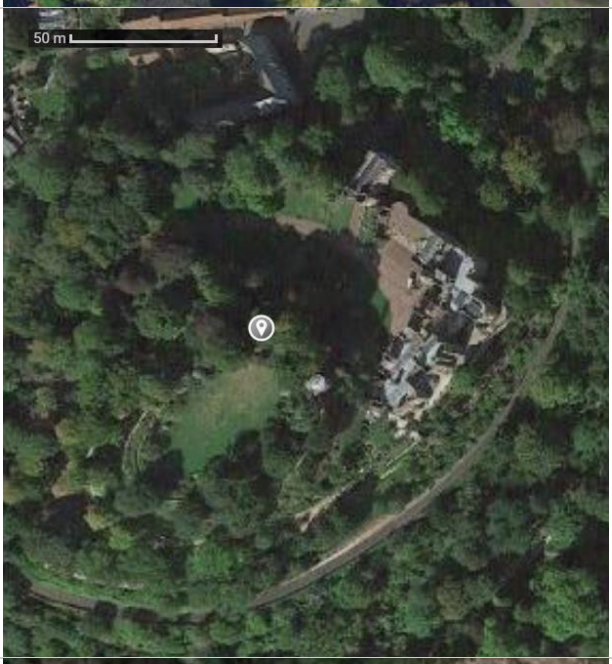
CSHR101	Worsley Castle Hill	Church Stretton	Shropshire	
CSHR102	Wotherton Castle Mound	Chirbury with Brompton	Shropshire	
CSHR103	Wroxeter Castle	Wroxeter and Uppington	Shropshire	

CSHR104	Yokleton Mount	Westbury	Shropshire	
CSOM01	Glastonbury Castle	Glastonbury	Somerset	
CSOM02	Somerton Castle	Somerton	Somerset	

CSOM03	Ballands Castle	Pen Selwood	Somerset	
CSOM04	Breach Wood Mound	Wanstrow	Somerset	
CSOM05	Bury Castle	Brompton Regis	Somerset	

CSOM06	Castle Batch	Weston Super Mare	Somerset	
CSOM07	Castle Cary	Castle Cary	Somerset	
CSOM08	Castle Neroche	Curland	Somerset	

CSOM09	Chisley Mount	Puriton	Somerset	
CSOM10	Cockroad Wood Motte	Charlton Musgrove	Somerset	
CSOM11	Croft Castle	Crewkerne	Somerset	

CSOM12	Culverhay Castle	Englishcombe	Somerset	
CSOM13	Dunster Castle	Dunster	Somerset	
CSOM14	Edithmead Motte	Burnham Without	Somerset	

CSOM15	Fenny Castle	Wookey	Somerset	
CSOM16	Hales Castle	Selwood	Somerset	
CSOM17	Ilchester Castle	Ilchester	Somerset	

CSOM18	Locking Castle	Locking	Somerset	
CSOM19	Montacute Castle	Montacute	Somerset	
CSOM20	Nether Stowey Castle	Nether Stowey	Somerset	

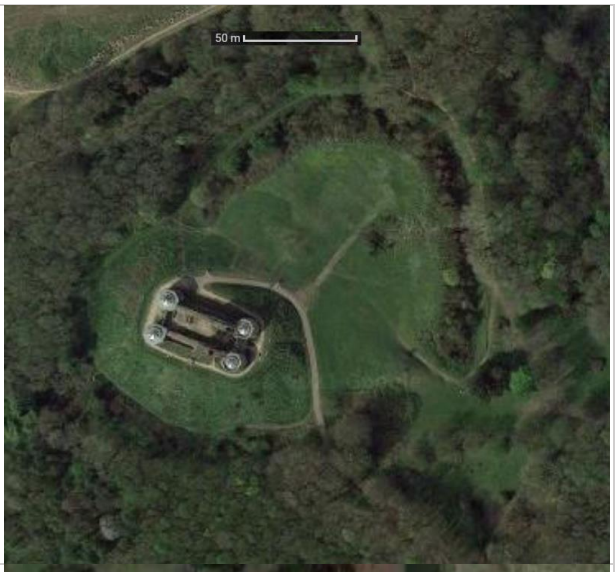
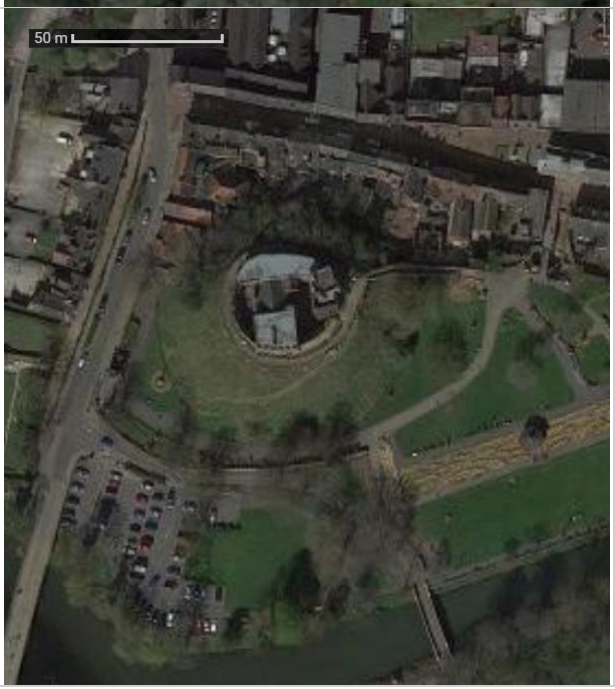
CSOM21	Over Stowey Mound	Over Stowey	Somerset	
CSOM22	Richmont Castle	East Harptree	Somerset	
CSOM23	Stogursey Castle	Stogursey	Somerset	

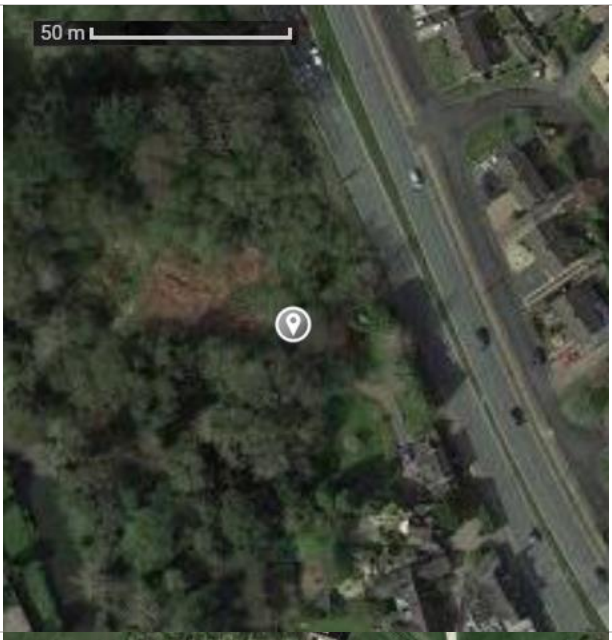
CSOM24	Taunton Castle	Taunton	Somerset	
CSTA01	Alton Castle	Alton	Staffordshire	
CSTA02	Caverswall Castle	Caverswall	Staffordshire	

CSTA03	Eccleshall Castle	Eccleshall	Staffordshire	
CSTA04	Audley Castle Hill	Audley Rural	Staffordshire	
CSTA05	Biddulph Lea Forge	Biddulph	Staffordshire	

CSTA06	Chartley Castle	Stowe	Staffordshire	
CSTA07	Dudley Castle	Dudley	Staffordshire	
CSTA08	Heighley Castle	Madeley	Staffordshire	

CSTA09	Littywood Moat	Bradley	Staffordshire	
CSTA10	Newcastle Under Lyme Castle	Newcastle Under Lyme	Staffordshire	
CSTA11	Castle-Kings Castle	Stafford	Staffordshire	

CSTA12	Stafford Castle	Castlechurch	Staffordshire	
CSTA13	Stourton Castle	Kinver	Staffordshire	
CSTA14	Tamworth Castle	Tamworth	Staffordshire	

CSTA15	Trentham Castle Field	Swynnerton	Staffordshire	
CSTA16	Tutbury Castle	Tutbury	Staffordshire	
CSTA17	Turley Castle	Sutton Upon Tern	Staffordshire	

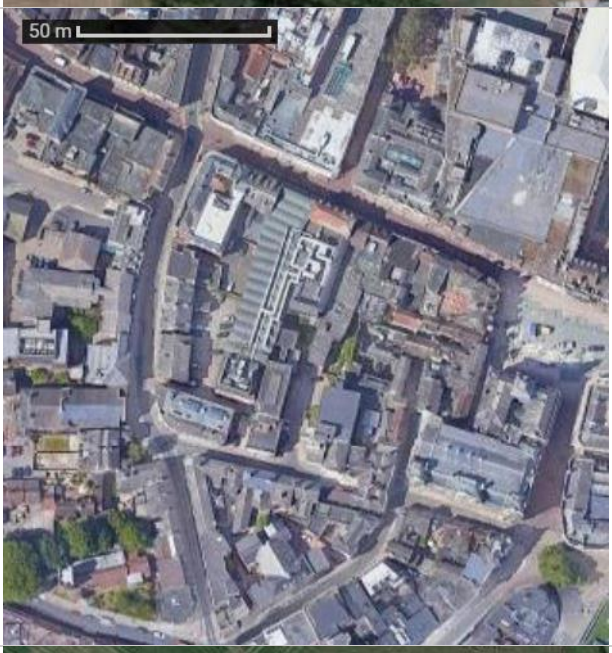
CSTA18	Weston Jones Motte	Norbury	Staffordshire	
CSUF01	Orford Castle	Orford	Suffolk	
CSUF02	Bramfield Castle Yard	Bramfield	Suffolk	

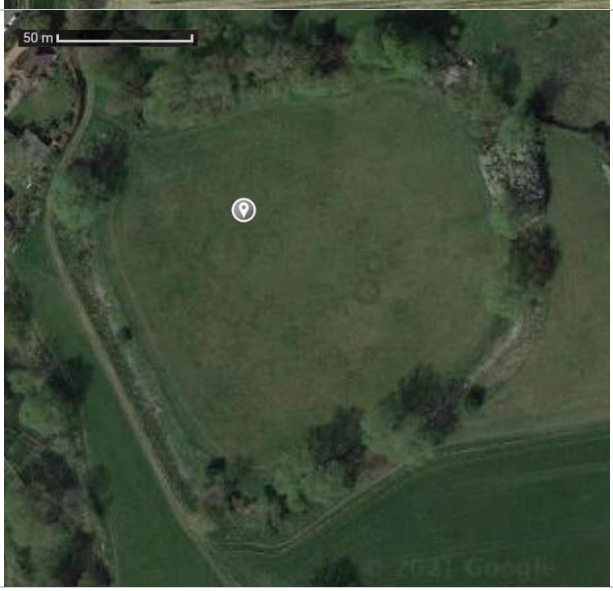
CSUF03	Bungay Castle	Bungay	Suffolk	
CSUF04	Burgate Ringwork	Burgate	Suffolk	
CSUF05	Burgh Castle	Burgh Castle	Suffolk	

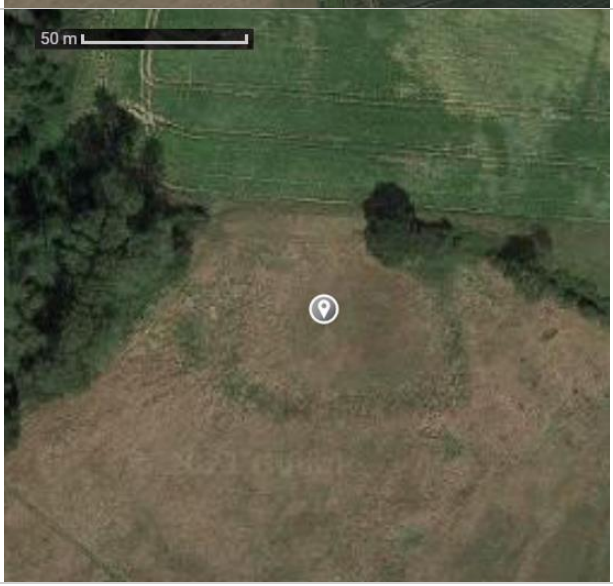
CSUF06	Clare Castle	Clare	Suffolk	
CSUF07	Denham Castle	Gazeley	Suffolk	
CSUF08	Eye Castle	Eye	Suffolk	

CSUF09	Fakenham Magna	Fakenham Magna	Suffolk	
CSUF10	Framlingham Castle	Franlingham	Suffolk	
CSUF11	Freckenham Castle	Freckenham	Suffolk	

CSUF12	Great Ashfield Castle Hill	Great Ashfield	Suffolk	
CSUF13	Great Pitches Mount	Groton	Suffolk	
CSUF14	Haughley Castle	Haughley	Suffolk	

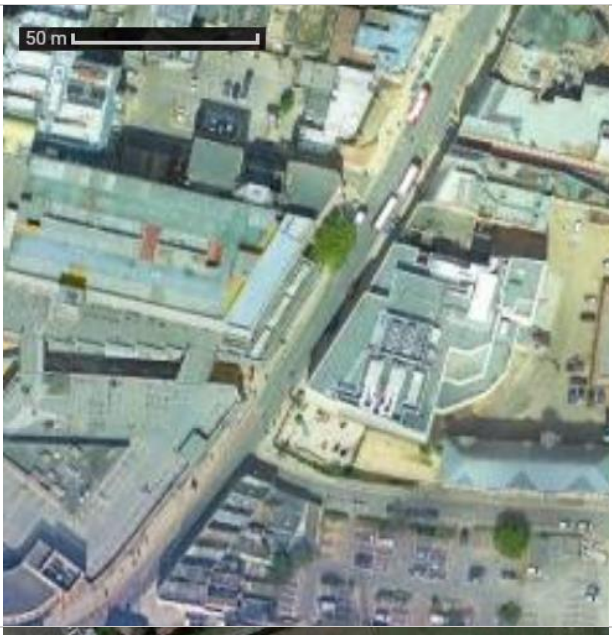
CSUF15	The Mount	Ilketshall st John	Suffolk	
CSUF16	Ipswitch Csatle	Ipswitch	Suffolk	
CSUF17	Lidgate Castle	Lidgate	Suffolk	

CSUF18	The Mounts	Lindsey	Suffolk	
CSUF19	Milden Castle	Milden	Suffolk	
CSUF20	Nayland Court Knoll	Nayland with Wassington	Suffolk	

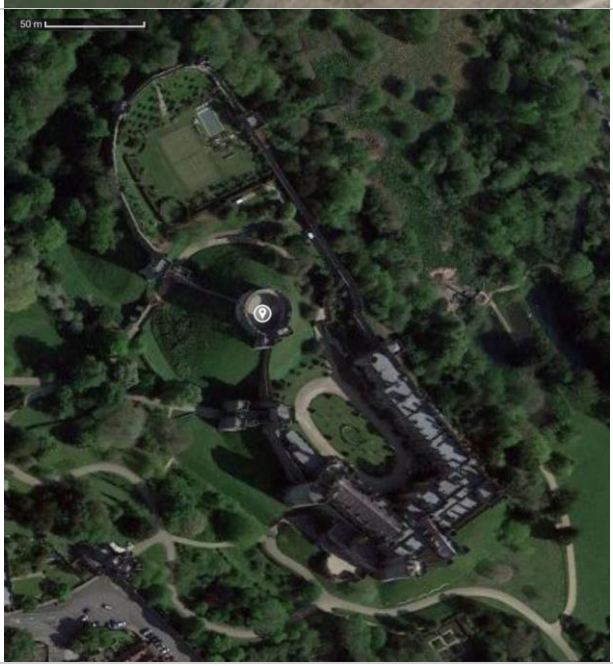
CSUF21	Offton Castle	Offton	Suffolk	
CSUF22	The Mount	Otley	Suffolk	
CSUF23	The Mound	South Cove	Suffolk	

CSUF24	Wissington Grange Wood	Nayland with Wissington	Suffolk	
CSUR01	Abinger Motte	Abinger	Surrey	
CSUR02	Bletchingley Castle	Bletchingley	Surrey	

CSUR03	Broomhall Copse	Cranleigh	Surrey	
CSUR04	Farnham Castle	Farnham	Surrey	
CSUR05	Guildford Castle	Guildford	Surrey	

CSUR06	Kingston Upon Themes Castle	Kingston Upon Themes	Surrey	
CSUR07	Oxted Barrow Green	Oxted	Surrey	
CSUR08	Reigate Castle	Reigate	Surrey	

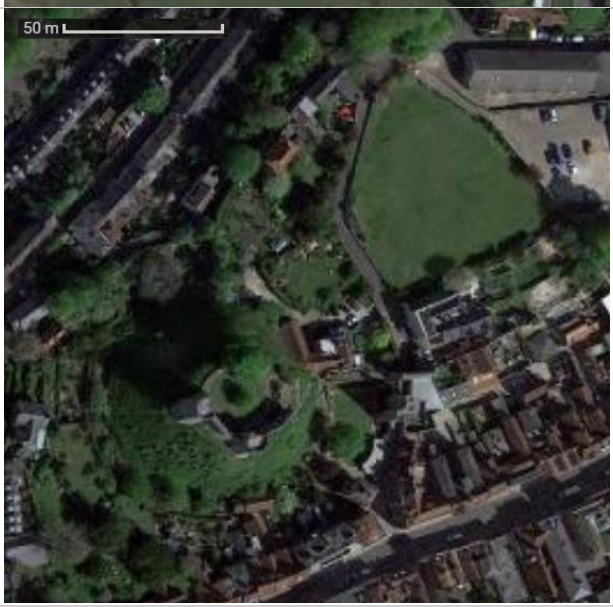
CSUR09	Thunderfield Castle	Horley	Surrey	
CSUR10	Walton on the Hill	Leatherhead	Surrey	
CSUS01	Amberley Castle	Amberley	Sussex	

CSUS02	Tote Copse Castle	Aldingbourne	Sussex	
CSUS03	Arlington Castle	Arlington	Sussex	
CSUS04	Arundel Castle	Arundel	Sussex	

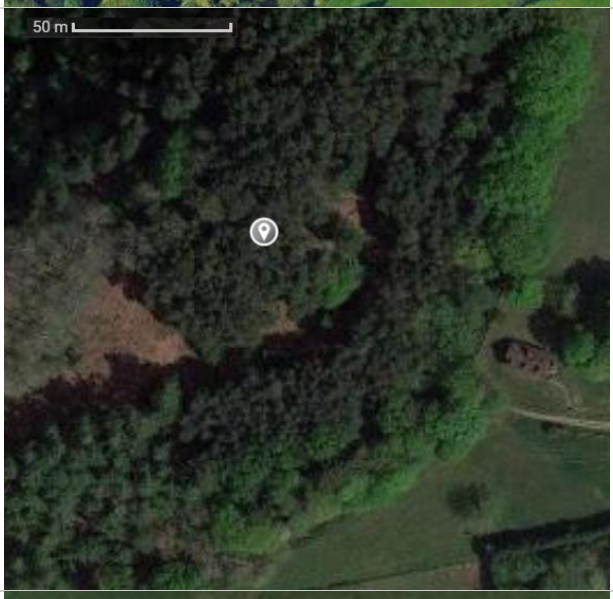
CSUS05	Berwick Motte	Berwick	Sussex	
CSUS06	Bramber Castle	Bramber	Sussex	
CSUS07	Channells Brook Farm	North Horsham	Sussex	

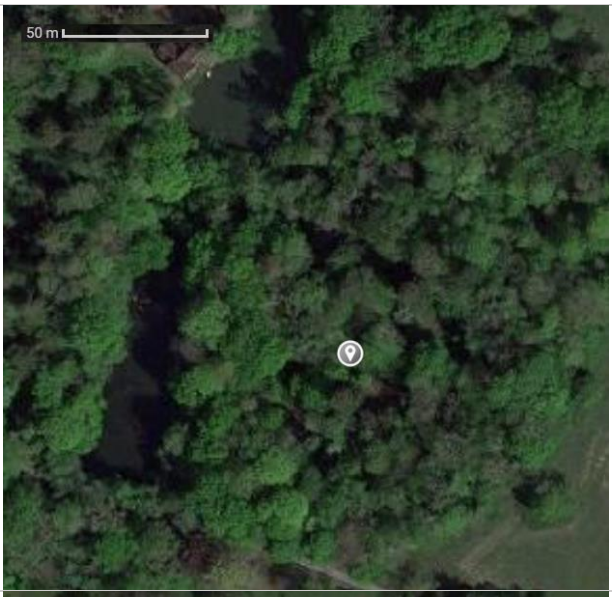
CSUS08	Chichester Castle	Chichester	Sussex	
CSUS09	Church Norton	Selsey	Sussex	
CSUS10	Edburton Castle Ring	Fulking	Sussex	

CSUS11	Ford Castle	Ford	Sussex	
CSUS12	Hartfield Motte	Hartfield	Sussex	
CSUS13	Hastings Castle	Hastings	Sussex	

CSUS14	Isfield Motte	Isfield	Sussex	
CSUS15	Knepp Castle	Shipley	Sussex	
CSUS16	Lewes Castle	Lewes	Sussex	

CSUS17	Lindfield Pims Lock	Lindfield Rural	Sussex	
CSUS18	Lodsworth Castle	Lodsworth	Sussex	
CSUS19	Midhurst Castle	Midhurst	Sussex	

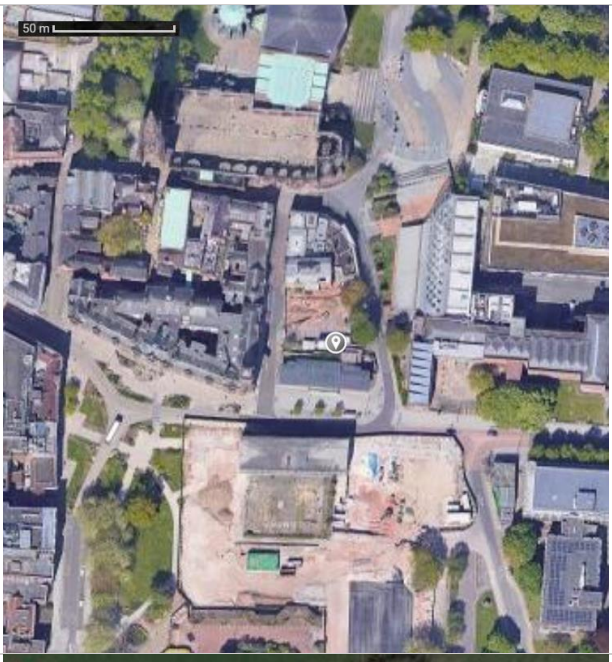
CSUS20	Pevensey Castle	Pevensey	Sussex	
CSUS21	Pulborough Park Mount	Pulborough	Sussex	
CSUS22	The Mount	Ringmer	Sussex	

CSUS23	Sedgwick Castle	Nuthurst	Sussex	
CWAR01	Astley Castle	Astley	Warwickshire	
CWAR02	Kingsbury Hall	Kingsbury	Warwickshire	

CWAR03	Allesley Ringwork	Allesley	Warwickshire	
CWAR04	Stocking Banks	Aston Cantlow	Warwickshire	
CWAR05	Baginton Castle	Baginton	Warwickshire	

CWAR06	Beaudesert Castle	Beaudesert	Warwickshire	
CWAR07	Botelers Castle	Alcaster	Warwickshire	
CWAR08	Castle Hill motte	Brailes	Warwickshire	

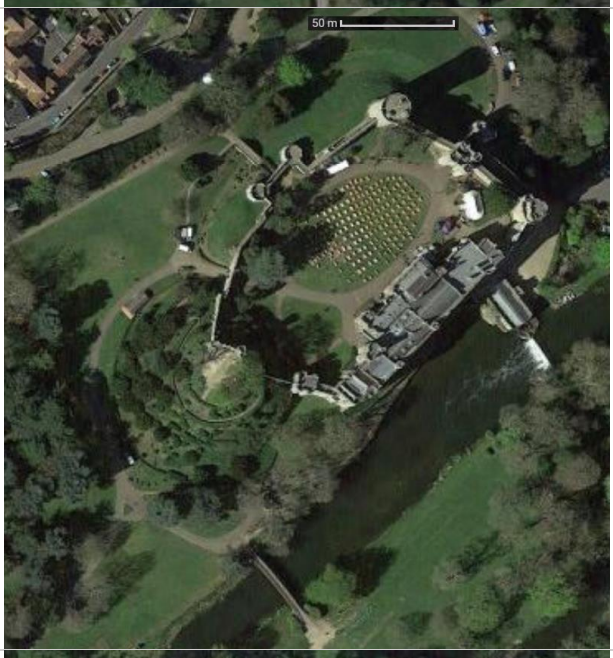
CWAR09	Brandon Castle	Brandon and Bretford	Warwickshire	
CWAR10	Brinklow Castle	Brinklow	Warwickshire	
CWAR11	Bromwich Castle Hill	Castle Bromwich	Warwickshire	

CWAR12	Coventry Castle	Coventry	Warwickshire	
CWAR13	Fillongley Castle Hills	Fillongley	Warwickshire	
CWAR14	Fillongley Castle Yard	Fillongley	Warwickshire	

CWAR15	Halford Castle	Halford	Warwickshire	
CWAR16	Hartshill Castle	Hartshill	Warwickshire	
CWAR17	Kenilworth Castle	Kenilworth	Warwickshire	

CWAR18	King Johns Castle	Kineton	Warwickshire	
CWAR19	Kingshurst Hall	Kinghurst	Warwickshire	
CWAR20	Morton Bagot Castle	Morton Bagot	Warwickshire	

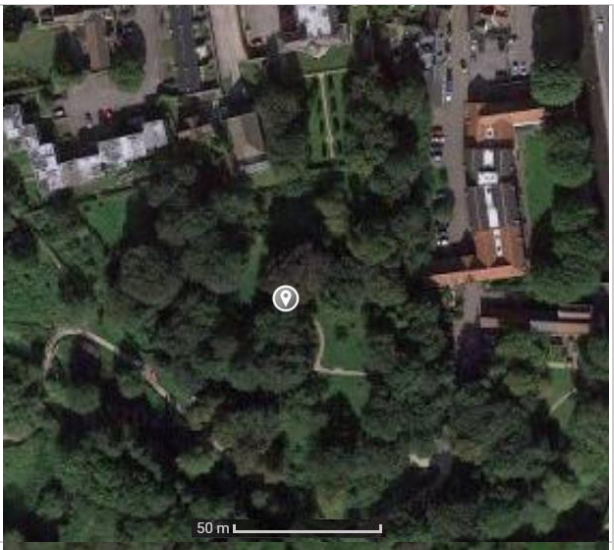
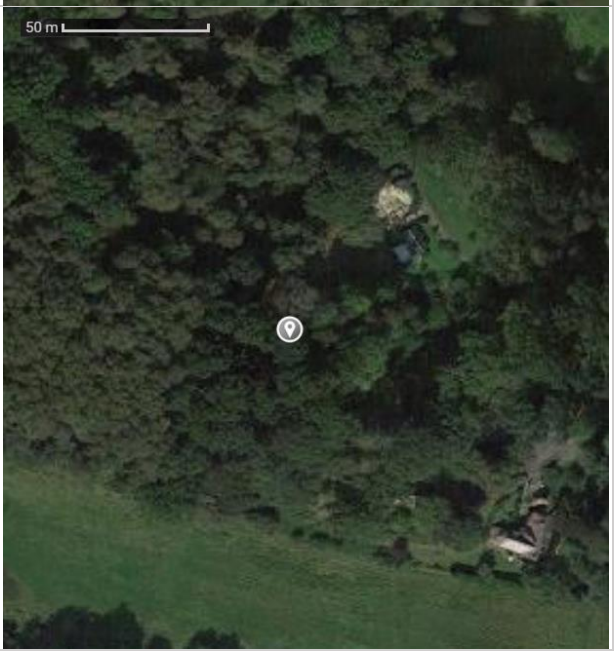
CWAR21	Ratley Motte	Ratley with Upton	Warwickshire	
CWAR22	Seckington Motte	Seckington	Warwickshire	
CWAR23	Shustoke Church End	Shustoke	Warwickshire	

CWAR24	Studley Old Castle	Studley	Warwickshire	
CWAR25	Warwick Castle	Warwick	Warwickshire	
CWES01	Brough Castle	Brough	Westmorland (south)	

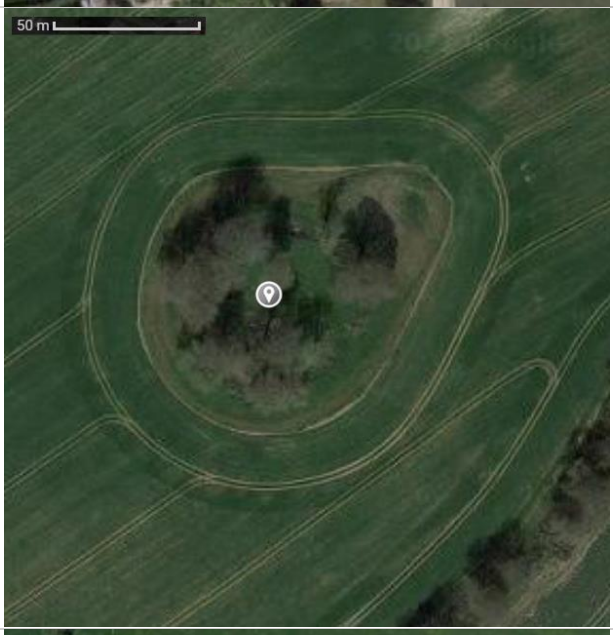
CWES02	Beetham Castle Hill	Beetham	Westmorland (south)	
CWES03	Kendal Castle	Kendal	Westmorland (south)	
CWES04	Castle Howe	Kendal	Westmorland (south)	

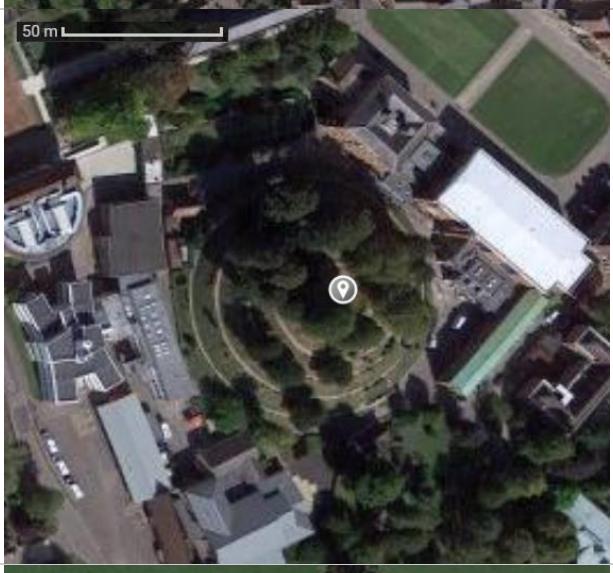
CWES05	Cockpit Hill	Kirkby Lonsdale	Westmorland (south)	
CWES06	Pendragon Castle	Mallerstang	Westmorland (south)	
CWES07	Tebay Castle Howe	Tebay	Westmorland (south)	

CWIL01	Mere Castle Hill	Mere	Wiltshire	
CWIL02	Halls Close	Ashton Keynes	Wiltshire	
CWIL03	Binknoll Castle	Broad Hinton	Wiltshire	

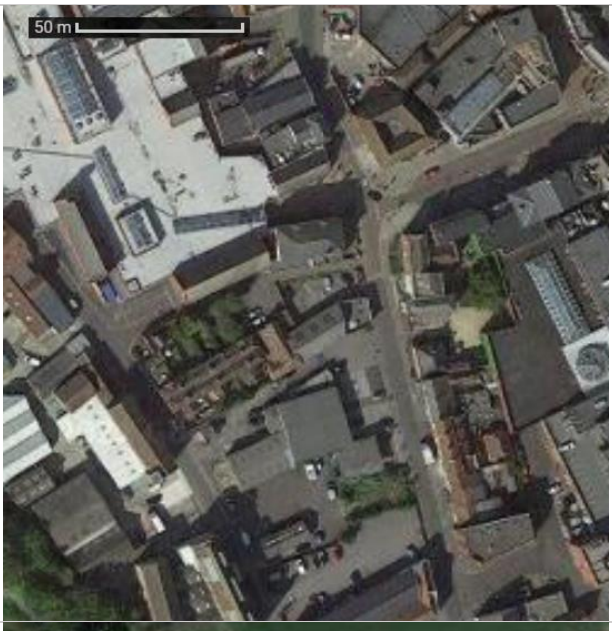
CWIL04	Clane Castle Couse	Clane	Wiltshire	
CWIL05	Castle Combe	Castle Combe	Wiltshire	
CWIL06	Castle Orchard	Stourton With Gasper	Wiltshire	

CWIL07	Chippenham Motte	Chippenham	Wiltshire	
CWIL08	Devizes Castle	Devizes	Wiltshire	
CWIL09	Downton Moot Close	Downton	Wiltshire	

CWIL10	The Mound	Great Somerford	Wiltshire	
CWIL11	Lewisham Castle	Aldbourne	Wiltshire	
CWIL12	Ludgershall Castle	Ludgershall	Wiltshire	

CWIL13	Malmesbury Castle	Malmesbury	Wiltshire	
CWIL14	Marlborough Castle	Marlborough	Wiltshire	
CWIL15	Norwood Castle	Oaksey	Wiltshire	

CWIL16	Old Sarum Castle	Salisbury	Wiltshire	
CWIL17	Sherrington Motte	Sherrington	Wiltshire	
CWIL18	Stapleford Castle	Stapleford	Wiltshire	

CWIL19	Trowbridge Castle	Trowbridge	Wiltshire	
CWIL20	West Dean Motte	West Dean	Wiltshire	
CWOR01	Hanley Castle	Hanley Castle	Worcestershire	

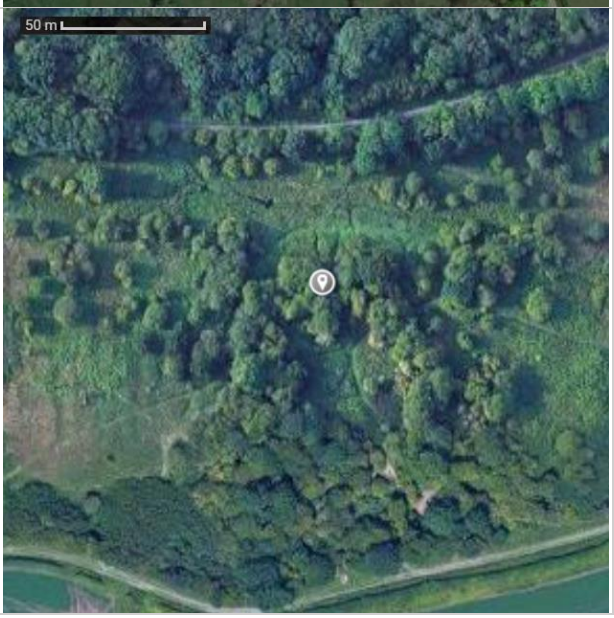
CWOR02	Hartlebury Castle	Hartlebury	Worcestershire	
CWOR03	Bengeworth Castle	Eversham	Worcestershire	
CWOR04	The Mount	Boeley	Worcestershire	

CWOR05	Castlemorton Motte	Castlemorton	Worcestershire	
CWOR06	Crookbarrow Hill	Whittington	Worcestershire	
CWOR07	Elmley Castle	Elmley Castle	Worcestershire	

CWOR08	Homme Castle	Clifton Upon Teme	Worcestershire	
CWOR09	Inkberrow Castle	Inkberrow	Worcestershire	
CWOR10	Leigh Castle Green	Leigh	Worcestershire	

CWOR11	Rochford Motte	Rochford	Worcestershire	
CWOR12	Worcester Castle	Worcester	Worcestershire	
CWOR13	Crundles Farm	Kidderminster Foreign	Worcestershire	

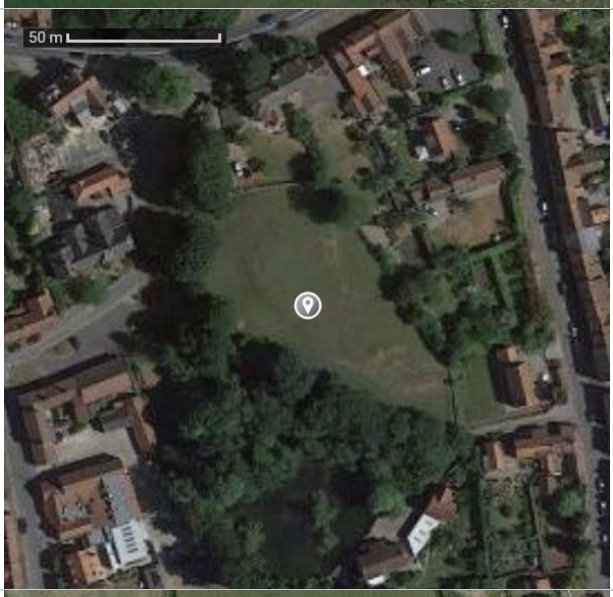
CYOR01	Cawood Castle	Cawood	Yorkshire	
CYOR02	Kirby Knowle Castle	Kirby Knowle	Yorkshire	
CYOR03	Middleham Castle	Middleham	Yorkshire	

CYOR04	Richmond Castle	Richmond	Yorkshire	
CYOR05	Acklam Motte	Acklam	Yorkshire	
CYOR06	Adwick le Street Castle Hills	Doncaster	Yorkshire	

CYOR07	Aldborough Studforth Hill	Boroughbridge	Yorkshire	
CYOR08	Almondbury Castle Hill	Huddersfield	Yorkshire	
CYOR09	Armley Giants Hill	Leeds	Yorkshire	

CYOR10	Aughton Castle Hill	Ellerton	Yorkshire	
CYOR11	Bardsey Castle Hill	Bardsey Cum Rigton	Yorkshire	
CYOR12	Hall Tower Hill	Barwick in Elmet and Scholes	Yorkshire	

CYOR13	Baynard Castle	Cottingham	Yorkshire	
CYOR14	Bishop Rufus Palace	Northallerton	Yorkshire	
CYOR15	Bowes Castle	Bowes	Yorkshire	

CYOR16	Bailey Hill	Bradfield	Yorkshire	
CYOR17	Brompton Castle hill	Brompton	Yorkshire	
CYOR18	Castle Hill	Burton in Lionsdale	Yorkshire	

CYOR19	Buttercrambe Castle	Buttercrambe With Bossall	Yorkshire	
CYOR20	Carlton Round Hill	Carlton Town	Yorkshire	
CYOR21	Castle Haugh	Newsholme	Yorkshire	

CYOR22	Castle Levington	Castlelevington	Yorkshire	
CYOR23	Castleton Castle Hill	Danby	Yorkshire	
CYOR24	Palet Hill	Catterick	Yorkshire	

CYOR25	Conisbrough Castle	Conisborough Ward Doncaster	Yorkshire	
CYOR26	Cotherstone Castle	Cotherstone	Yorkshire	
CYOR27	Crayke Castle	Crayke	Yorkshire	

CYOR28	Crazy Castle	Skelton	Yorkshire	
CYOR29	T'Hall Garth	Cropton	Yorkshire	
CYOR30	Cusworth Castle Hill	Sprotbrough and Cusworth	Yorkshire	

CYOR31	Doncaster Castle	Doncaster	Yorkshire	
CYOR32	Drax Castle Hill	Drax	Yorkshire	
CYOR33	Easby Castle Hill	Easby	Yorkshire	

CYOR34	Foss Castle	Lythe	Yorkshire	
CYOR35	Fraisthorpe Motte	Barmston	Yorkshire	
CYOR36	Gilling Castle	Gilling with Hartford and Sedbury	Yorkshire	

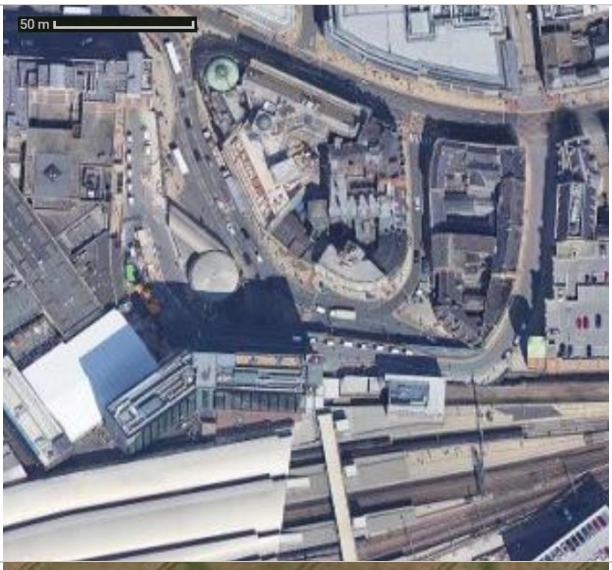
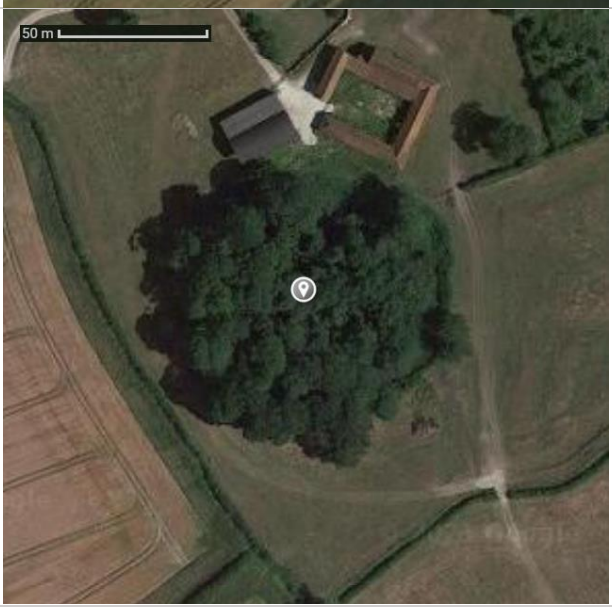
CYOR37	Great Driffield Moat Hill	Driffield	Yorkshire	
CYOR38	Grinton Oxhill	Grinton	Yorkshire	
CYOR39	Hampole Castle Hill	Hampole	Yorkshire	

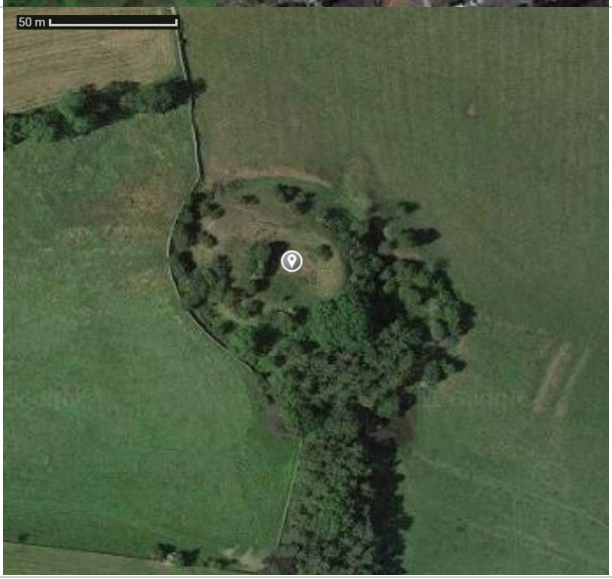
CYOR40	Helmsley Castle	Helmsley	Yorkshire	
CYOR41	Hood Castle	Kilburn High and Low	Yorkshire	
CYOR42	Huddersfield Hill House	Huddersfield	Yorkshire	

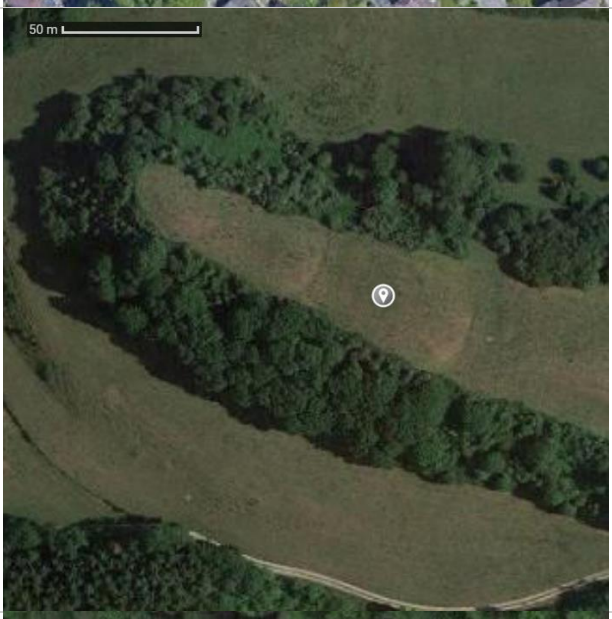
CYOR43	Humanby Castle hill	Humanby	Yorkshire	
CYOR44	Hutton Conyers Castle	Hutton Conyers	Yorkshire	
CYOR45	Ingleby Barwick Round Hill	Ingleby Barwick	Yorkshire	

CYOR46	Killerby Castle Hills	Catterick	Yorkshire	
CYOR47	Kilton Castle	Lockwood	Yorkshire	
CYOR48	Kimberworth Motte	Rotherham	Yorkshire	

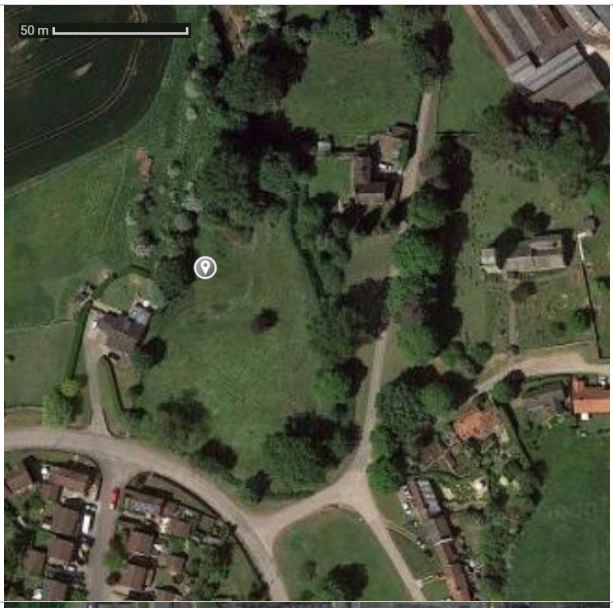
CYOR49	Garth Hill	Garforth	Yorkshire	
CYOR50	Knaresborough Castle	Knaresborough	Yorkshire	
CYOR51	Laughton en le Morthen Castle Hill	Thurcroft	Yorkshire	

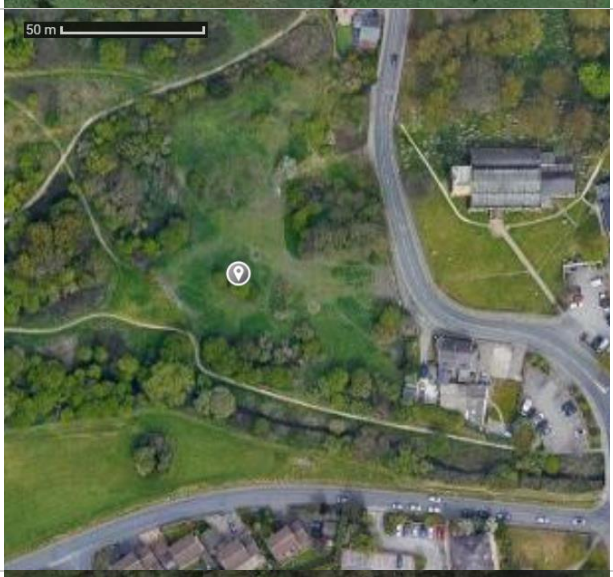
CYOR52	Leeds Castle Hill	Leeds	Yorkshire	
CYOR53	Little Kelk	Kelk	Yorkshire	
CYOR54	Coney Hill	Lockington	Yorkshire	

CYOR55	Malton Castle	Malton	Yorkshire	
CYOR56	Mexborough Castle Hill	Mexborough	Yorkshire	
CYOR57	Middleham Williams Hill	Middleham	Yorkshire	

CYOR58	Castle Hall Hill	Mirfield	Yorkshire	
CYOR59	Mount Ferrant Castle	Birdsall	Yorkshire	
CYOR60	Mowbray Castle	Kirkbury Malzeard	Yorkshire	

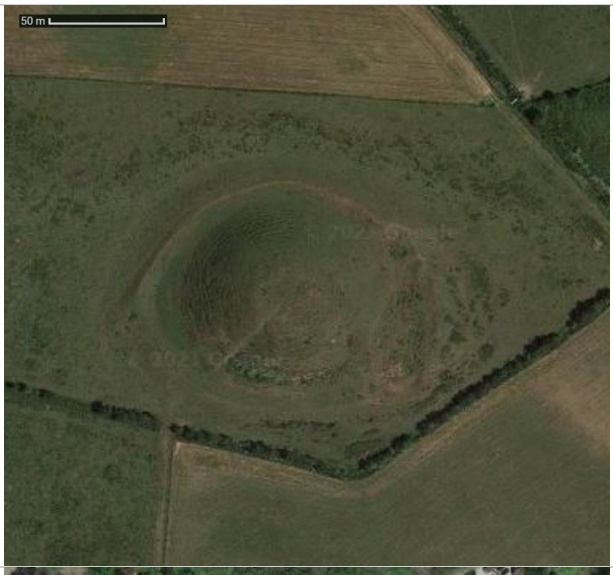
CYOR61	Mulgrave Castle	Lythe	Yorkshire	
CYOR62	Northallerton Castle Hills	Northallerton	Yorkshire	
CYOR63	Pickering Castle	Pickering	Yorkshire	

CYOR64	Money Hill	Pickhill	Yorkshire	
CYOR65	Pontefract Castle	Pontefract	Yorkshire	
CYOR66	Rastrick Castle Hill	Brighouse	Yorkshire	

CYOR67	Ravensworth Castle	Ravensworth	Yorkshire	
CYOR68	Rothwell Castle	Rothwell	Yorkshire	
CYOR69	Rougemont Castle near Weeton	Kirkby Overblow	Yorkshire	

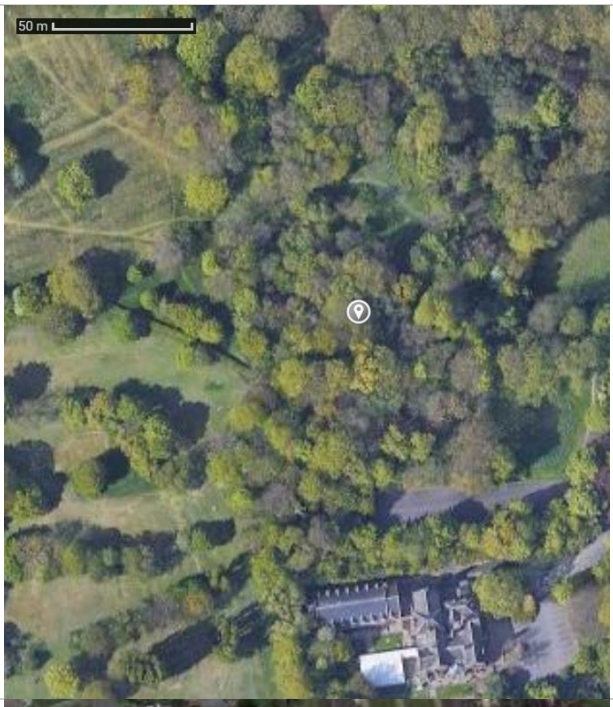
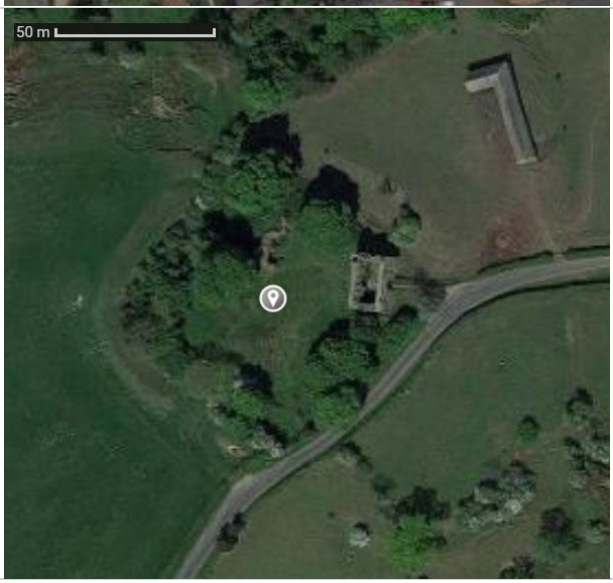
CYOR70	Sandal Castle	Wakefield	Yorkshire	
CYOR71	Saxton Motte	Saxton with Scarthingwell	Yorkshire	
CYOR72	Scarborough Castle	Scarborough	Yorkshire	

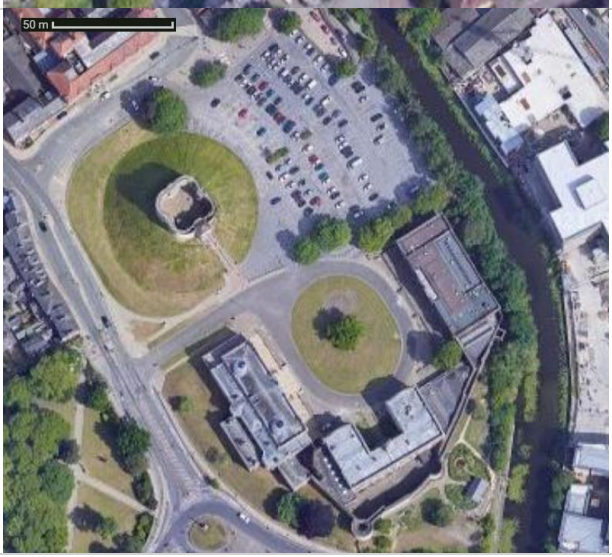
CYOR73	Sedbergh Castle Haugh Tower	Sedbergh	Yorkshire	
CYOR74	Sheffield Castle	Sheffield	Yorkshire	
CYOR75	Sheriff Hutton Ringwork	Sherriff Hutton	Yorkshire	

CYOR76	Skipsea Castle Hill	Skipsea	Yorkshire	
CYOR77	Skipton Castle	Skipton	Yorkshire	
CYOR78	Snowerby Castle Hill	Halifax	Yorkshire	

CYOR79	Swine Castle Hill	Wawne	Yorkshire	
CYOR80	Tadcaster Castle	Tadcaster	Yorkshire	
CYOR81	Thirsk Castle	Thirsk	Yorkshire	

CYOR82	Thorne Peel Hill	Thorne	Yorkshire	
CYOR83	Tickhill Castle	Tickhill	Yorkshire	
CYOR84	Topcliffe Maidens Bower	Topcliffe	Yorkshire	

CYOR85	Wakefield Lowe Hill	Wakefield	Yorkshire	
CYOR86	Wheldrake Castle	Wheldrake	Yorkshire	
CYOR87	Whorlton Castle	Whorlton	Yorkshire	

CYOR88	Yafforth Howe Hill	Yafforth	Yorkshire	
CYOR89	York Baile Hill	York	Yorkshire	
CYOR90	York Castle	York	Yorkshire	
End				

Appendix II.

Catalogue of Area for Mottes, Ringworks, Enclosures, and Baileys.

(GIS mapped data with 1m DTM 2020 public access LIDAR)

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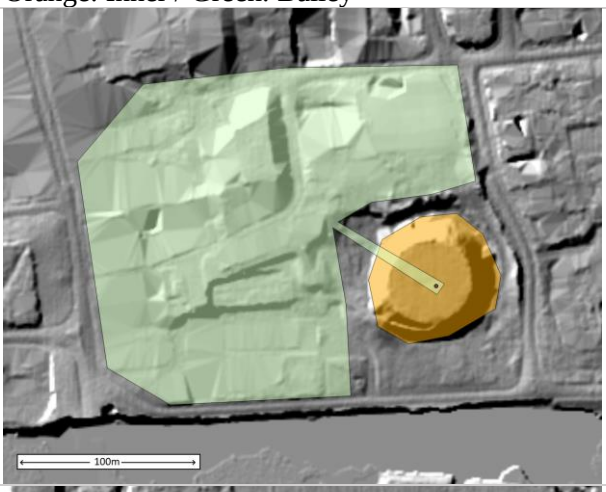
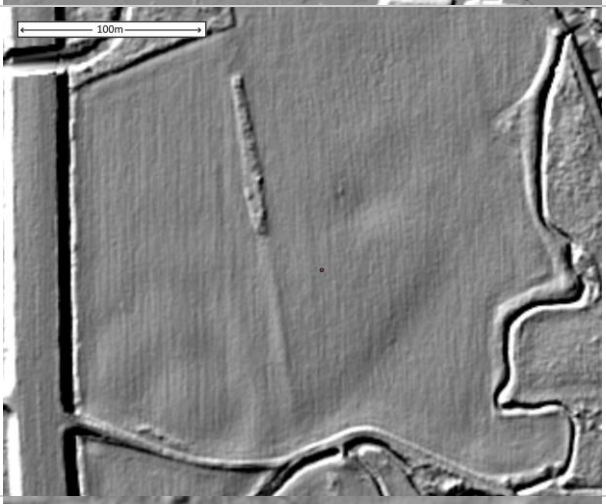
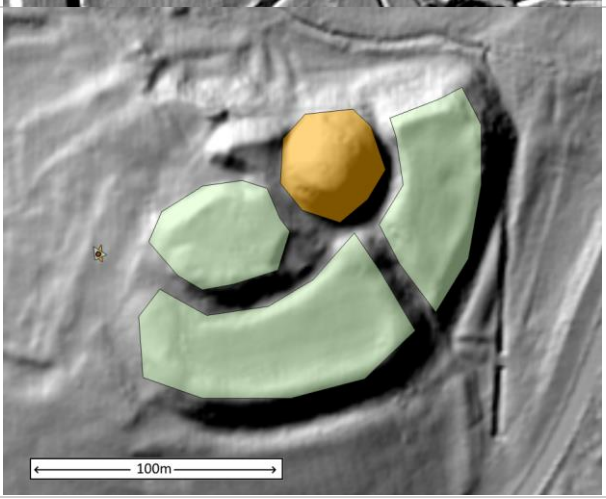
Student Email: jtam2895@uni.sydney.edu.au

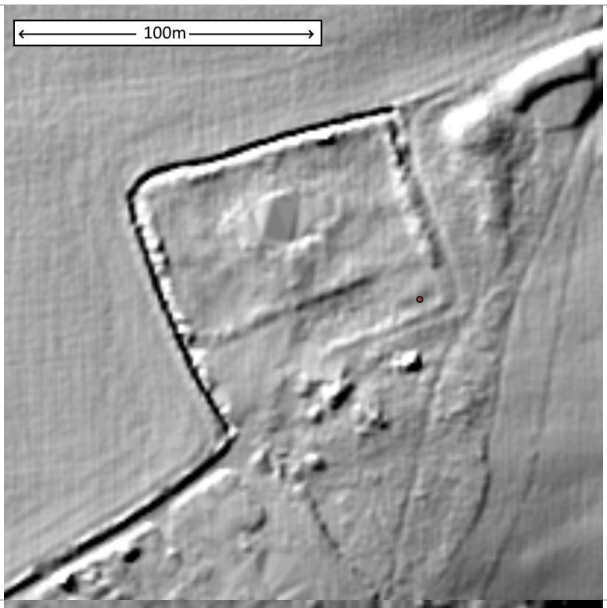
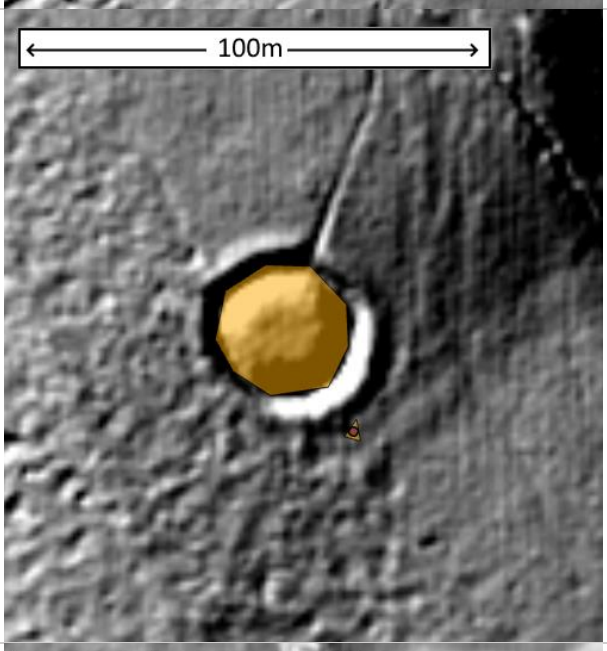
Personal Email: Jason.tamas@iinet.net.au

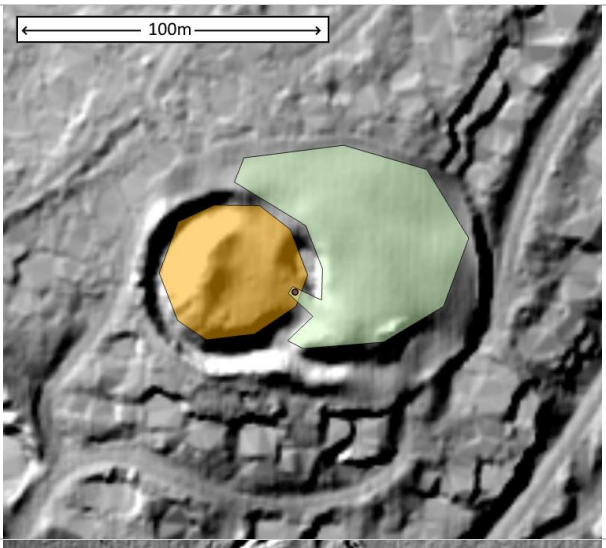
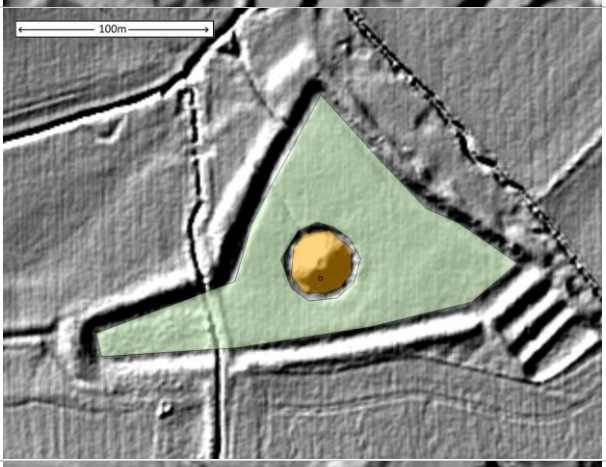
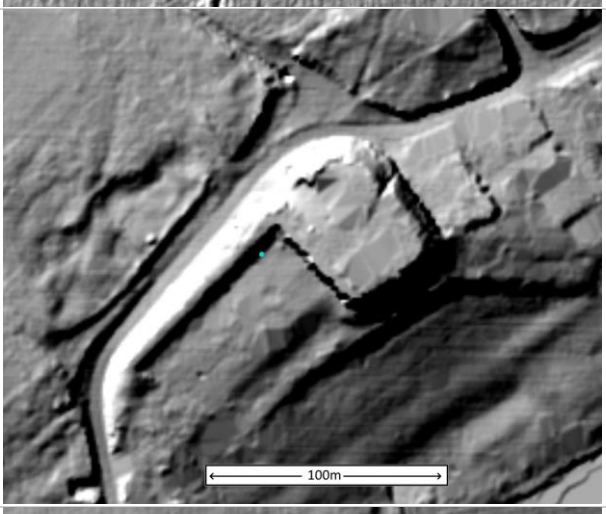
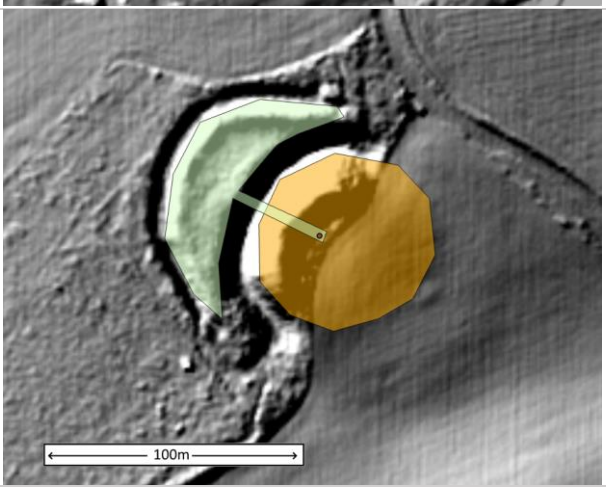
~ Castle sites of 1000—1300 England viewed via GIS mapped LIDAR ~

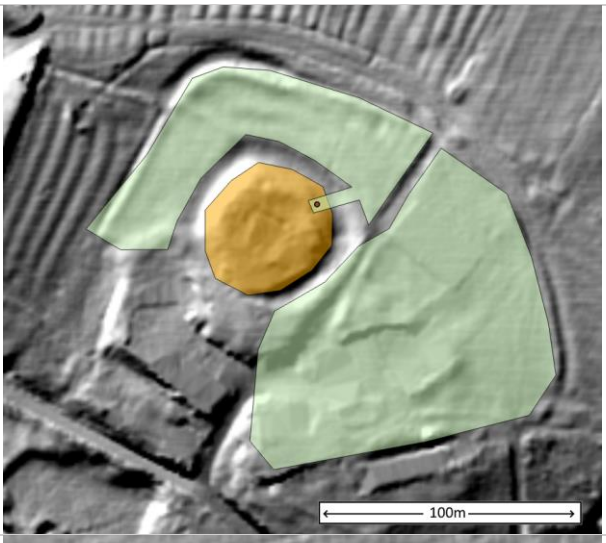
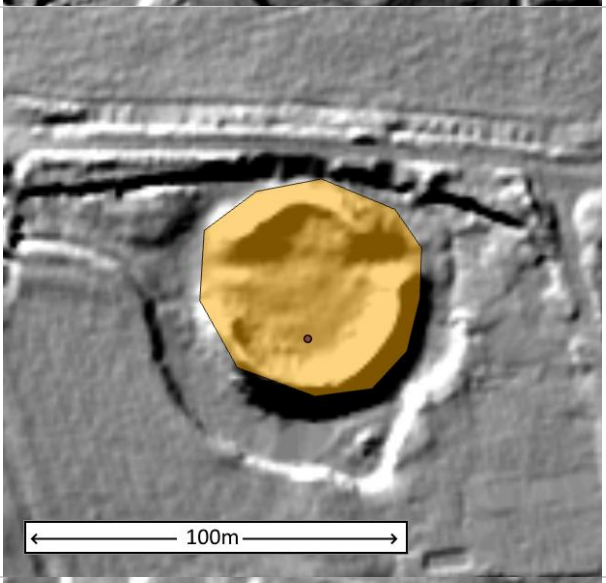
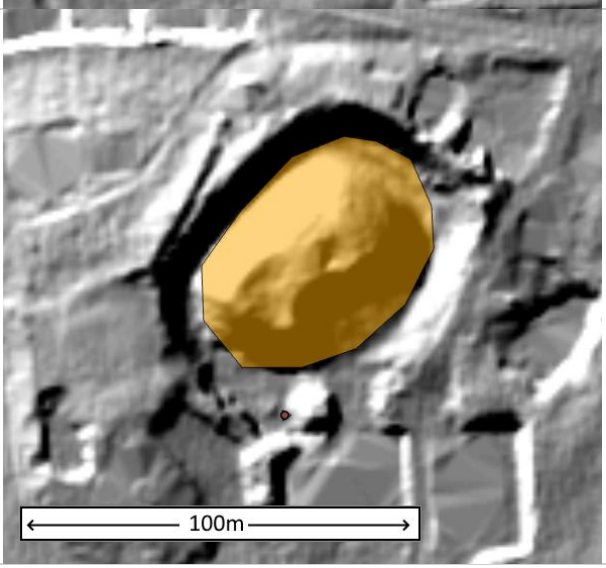


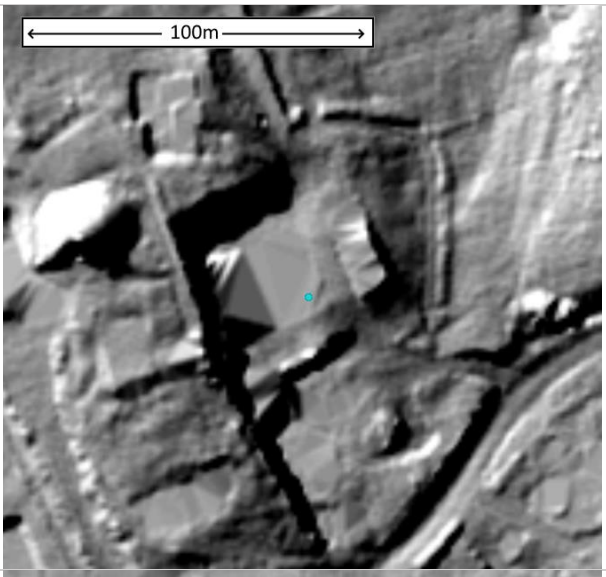
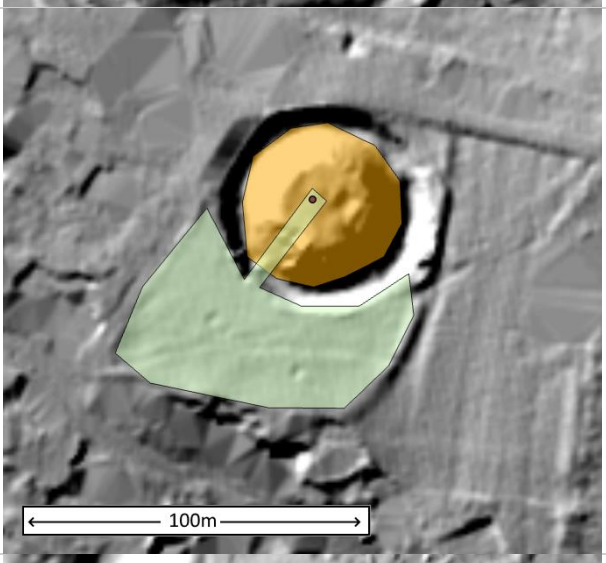
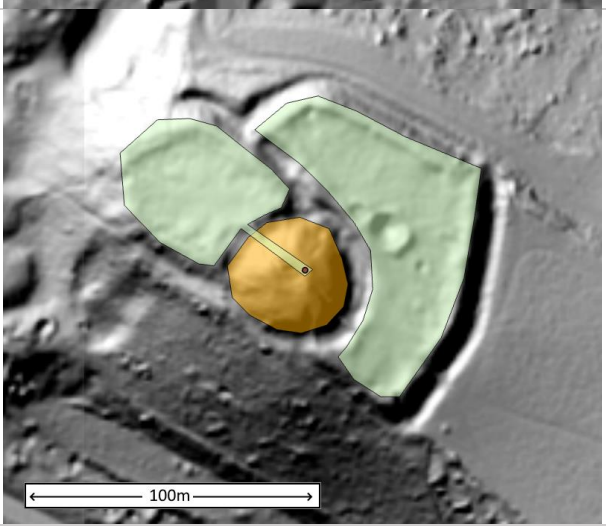
View from the north of the King's Barbican at Dover Castle, Kent (Photograph by Author).

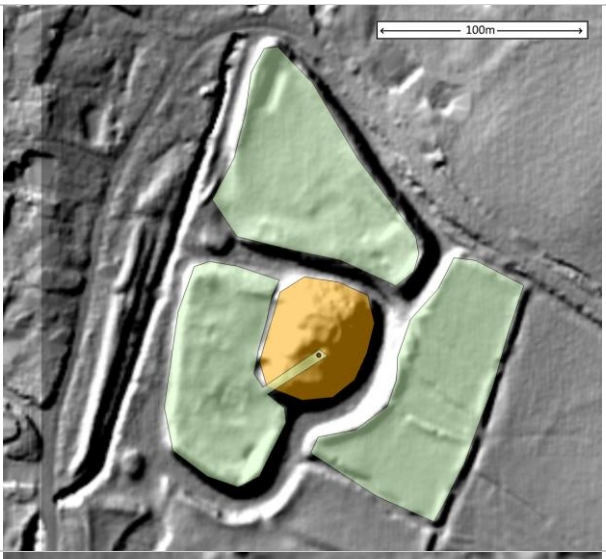
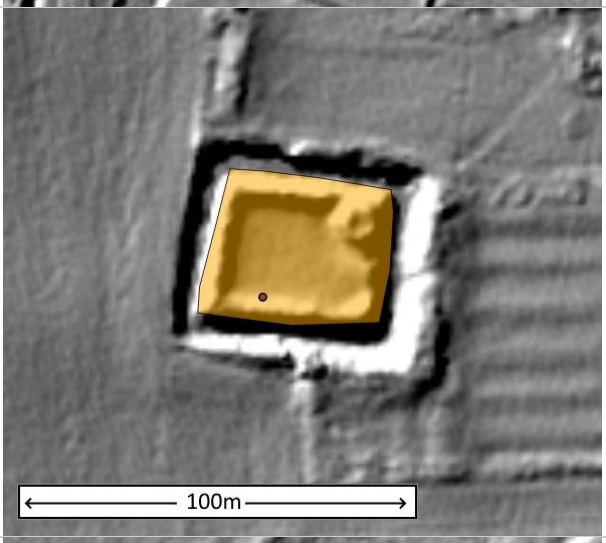
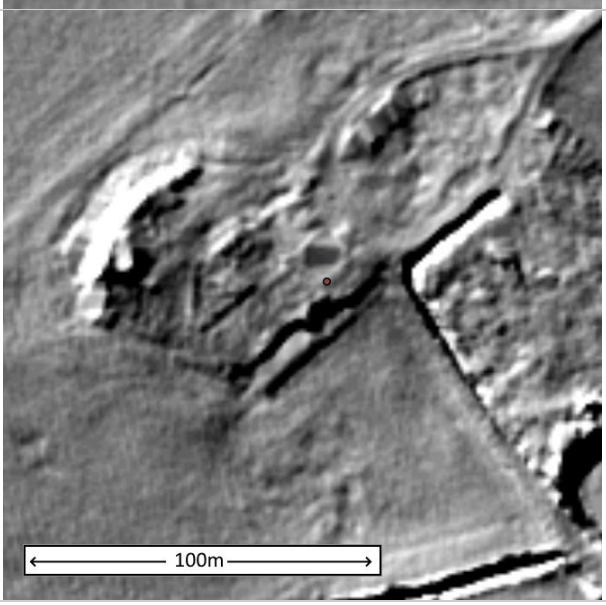
Site ID:	Name:	Location:	Historic County:	Orange: Inner / Green: Bailey
CBED01	Bedford Castle	Bedford	Bedfordshire	
CBED02	Biggleswade Castle	Biggleswade	Bedfordshire	
CBED03	Cainhoe Castle	Clophill	Bedfordshire	

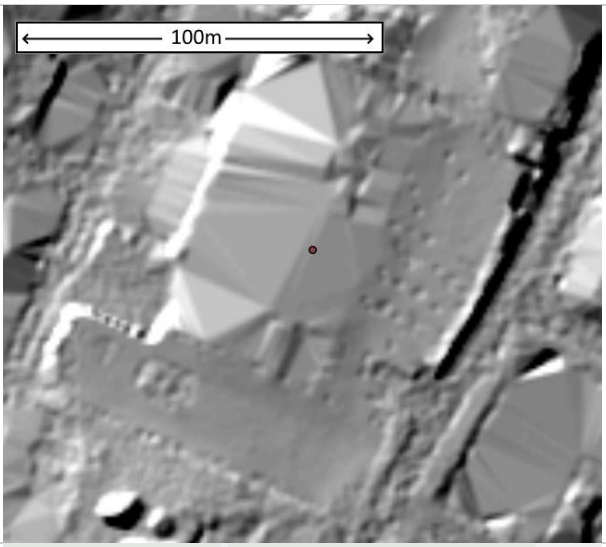
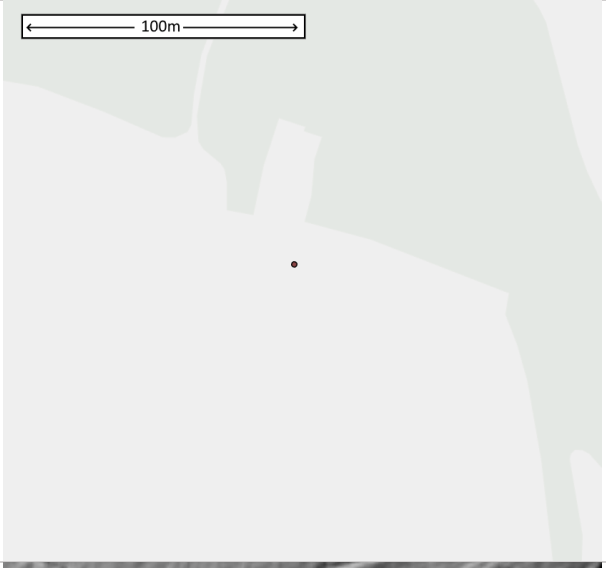
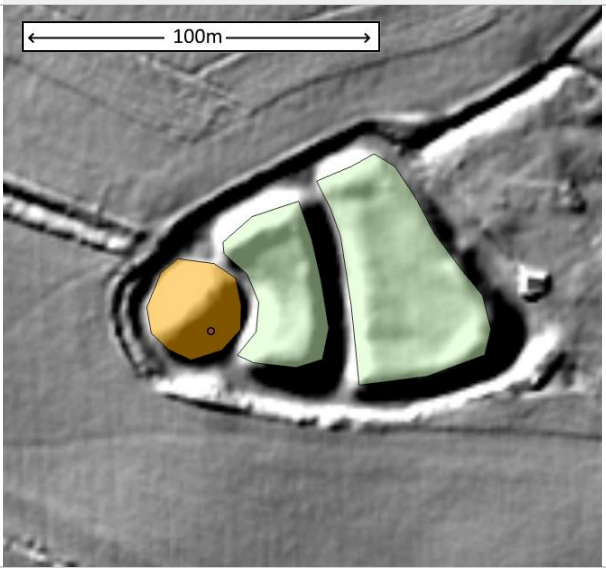
CBED04	Chalgrave Castle	Toddington	Bedfordshire	
CBED05	Eastcotts Castle	Exeter Wood	Bedfordshire	
CBED06	Entonbury Castle	Arlesey	Bedfordshire	

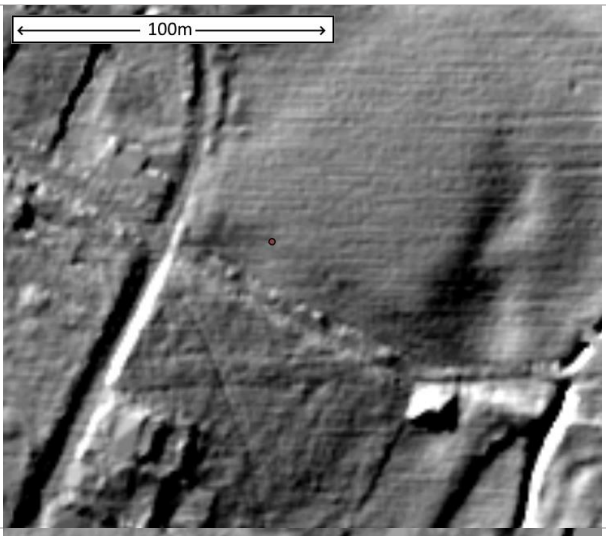
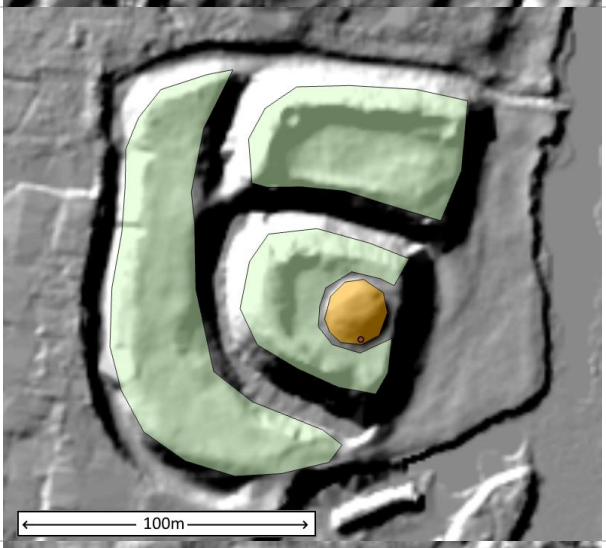
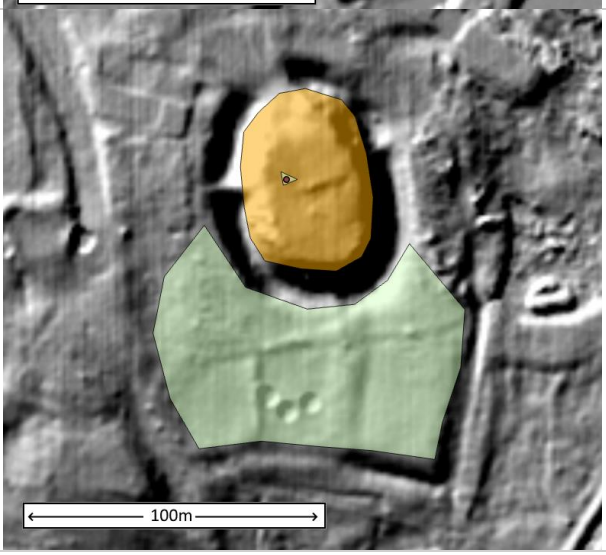
CBED07	Flitwick Castle	Flitwick	Bedfordshire	
CBED08	Higham Gobion Castle	Higham Gobion	Bedfordshire	
CBED09	Odell Castle	Odell	Bedfordshire	
CBED10	Old Warden Castle	Old Warden	Bedfordshire	

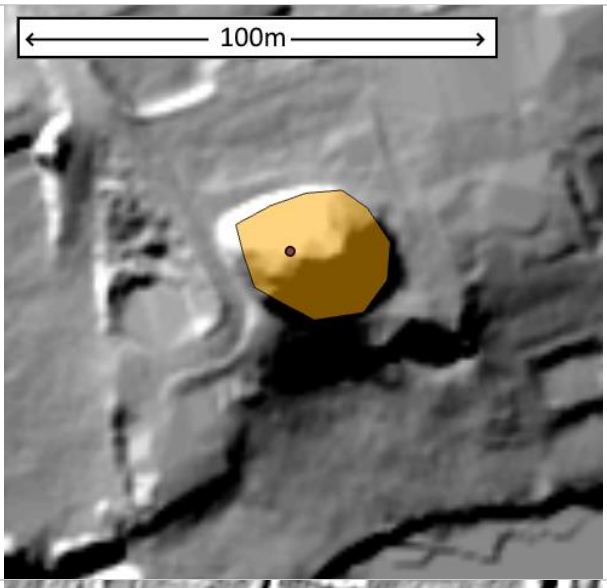
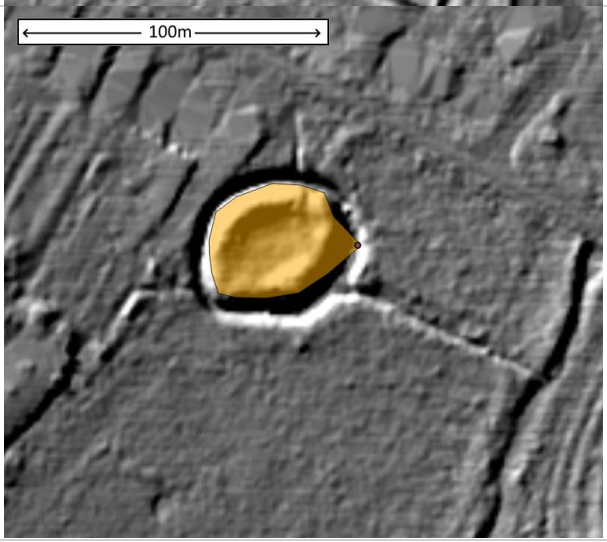
CBED11	Poddington Castle	Poddington	Bedfordshire	
CBED12	Renhold Castle	Renhold	Bedfordshire	
CBED13	Thruleigh Castle	Thruleigh	Bedfordshire	

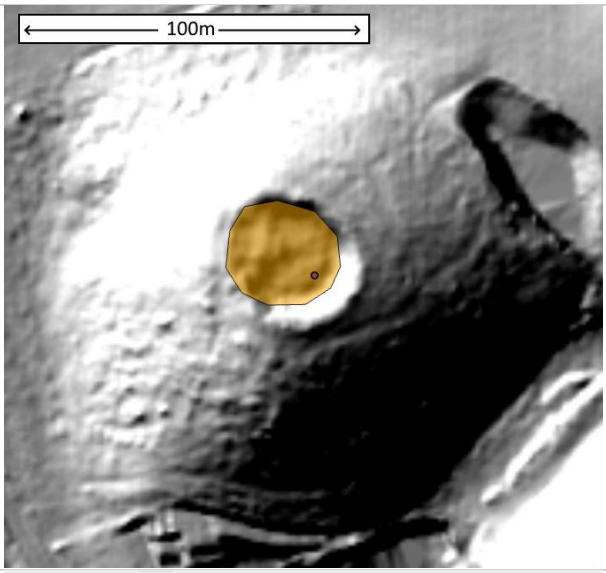
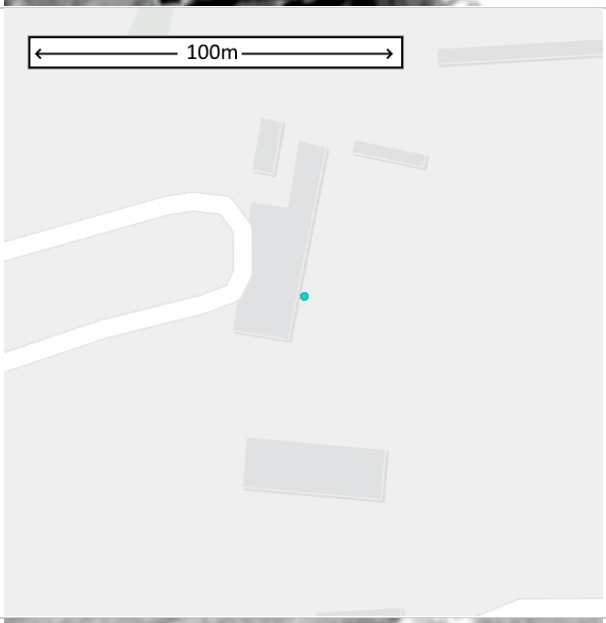
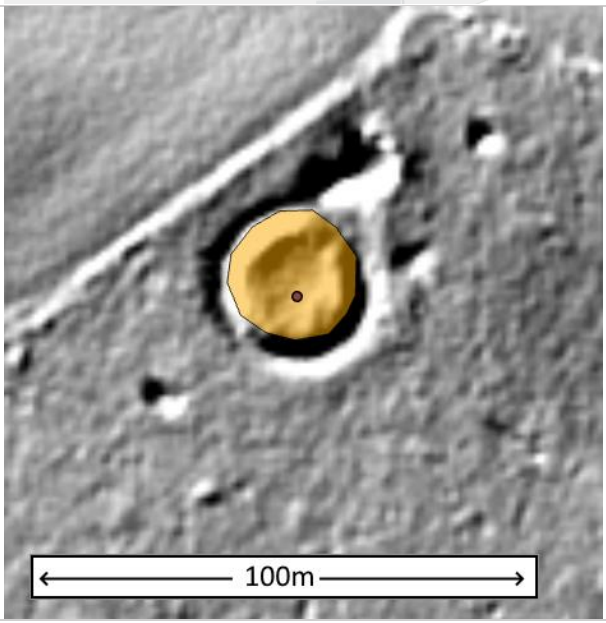
CBED14	Talsworth Castle	Talisworth	Bedfordshire	
CBED15	Toddington Castle	Toddington	Bedfordshire	
CBED16	Totternhoe Castle	Totternhoe	Bedfordshire	

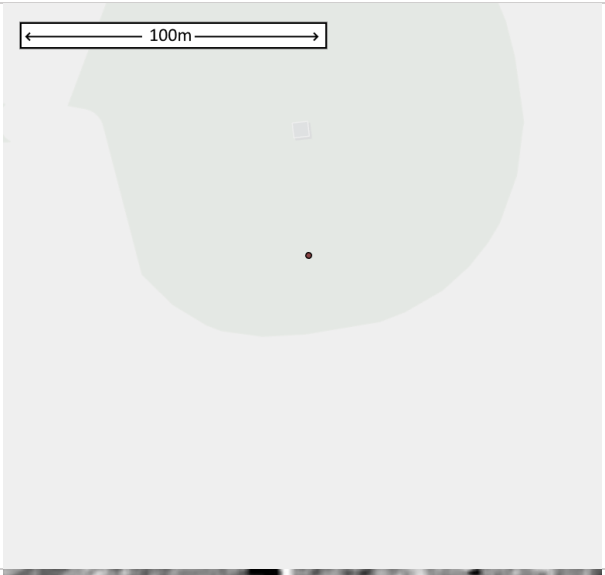
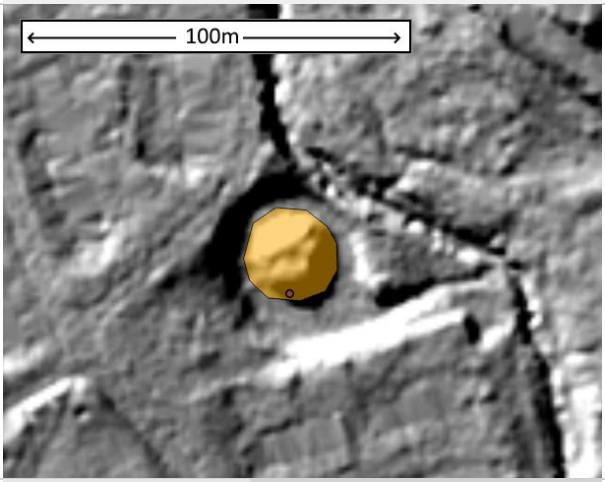
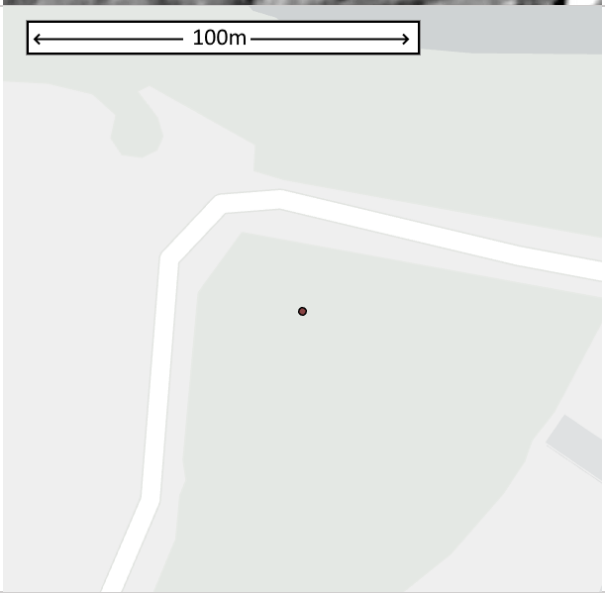
CBED17	Yielden Castle	Yielden	Bedfordshire	
CBED18	Gannocks Castle	Tempsford	Bedfordshire	
CBED19	Great Barford Castle	Great Barford	Bedfordshire	

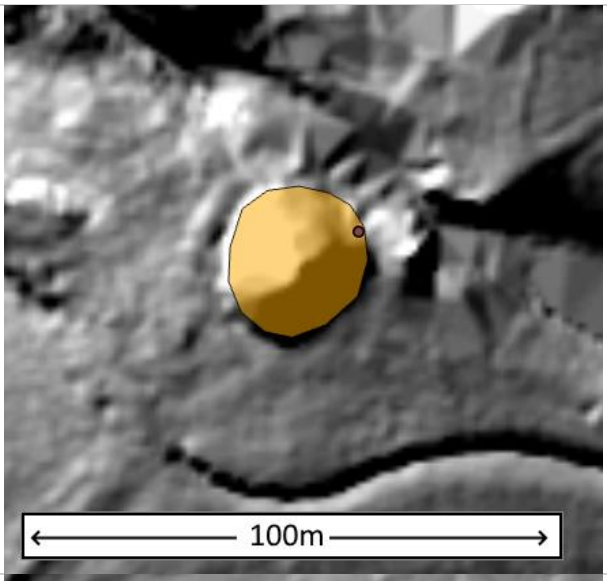
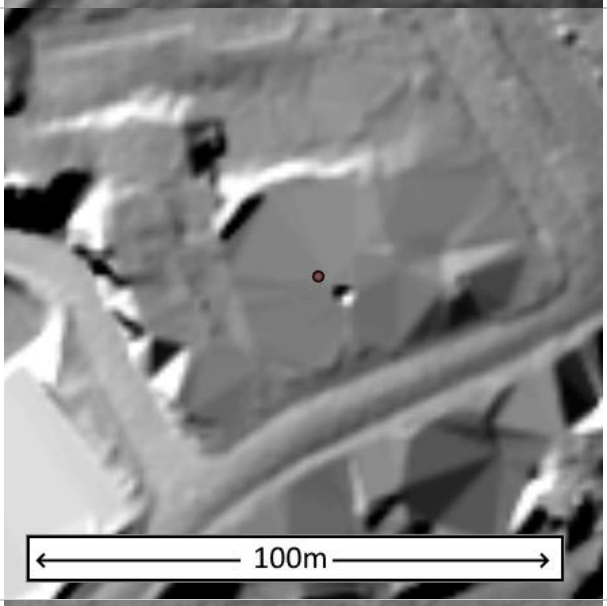
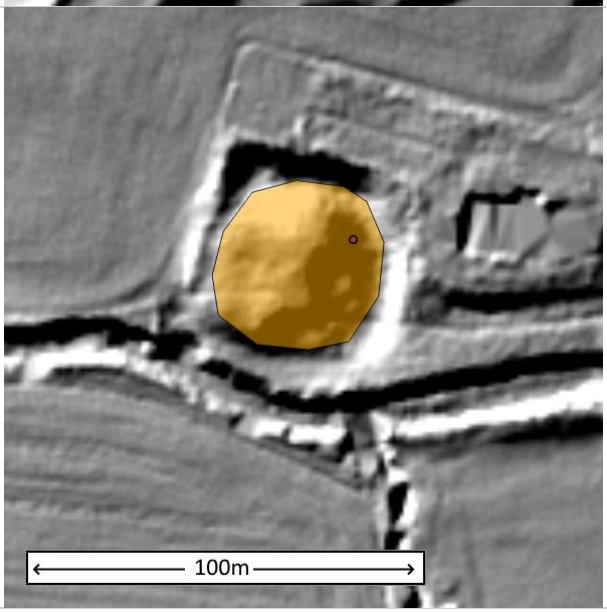
CBED20	Luton Castle	Luton	Bedfordshire	
CBED21	Rugemont Castle	Ridgmont	Bedfordshire	
CBED22	Meppershall Castle	Meppershall	Bedfordshire	

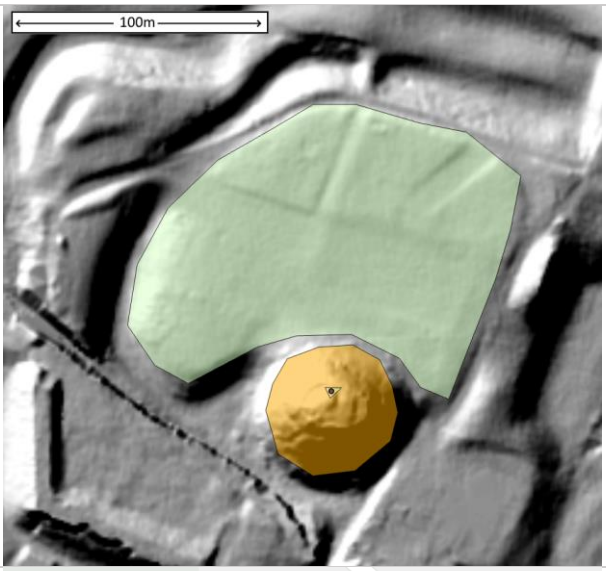
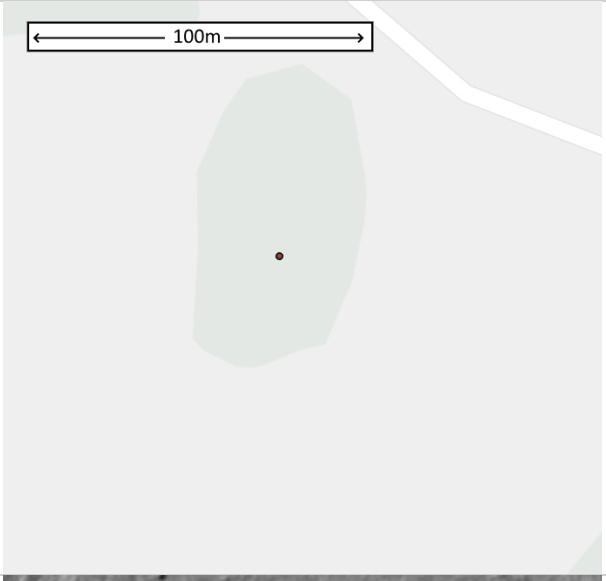
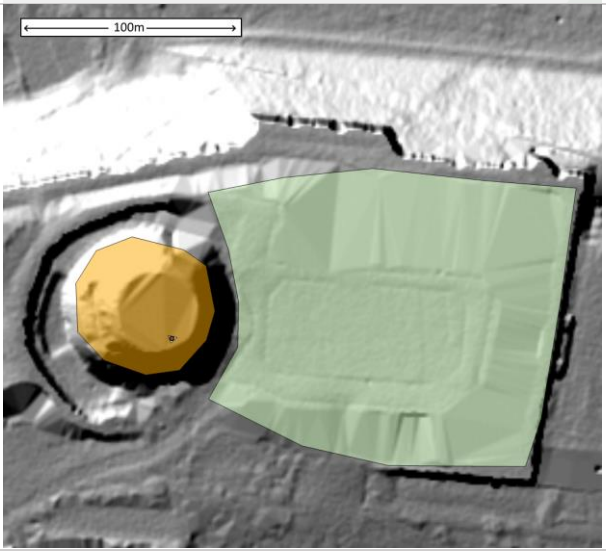
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CBED24	Eaton Socon Castle	St Neots	Bedfordshire	
CBED25	John O'Gaunt's Hill	Sutton	Bedfordshire	

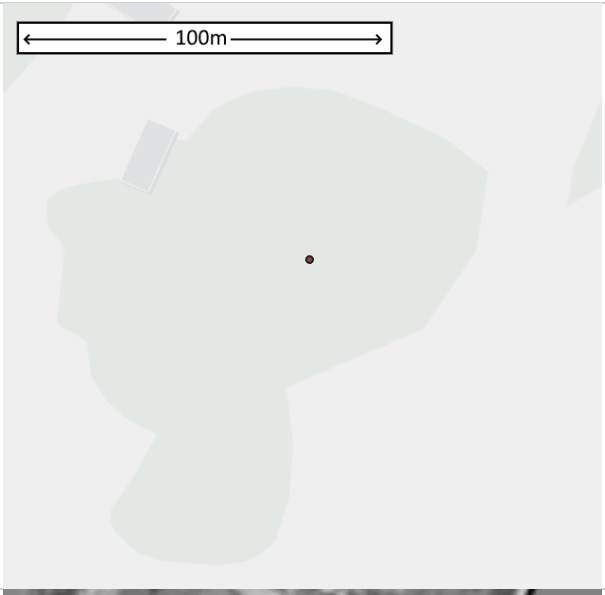
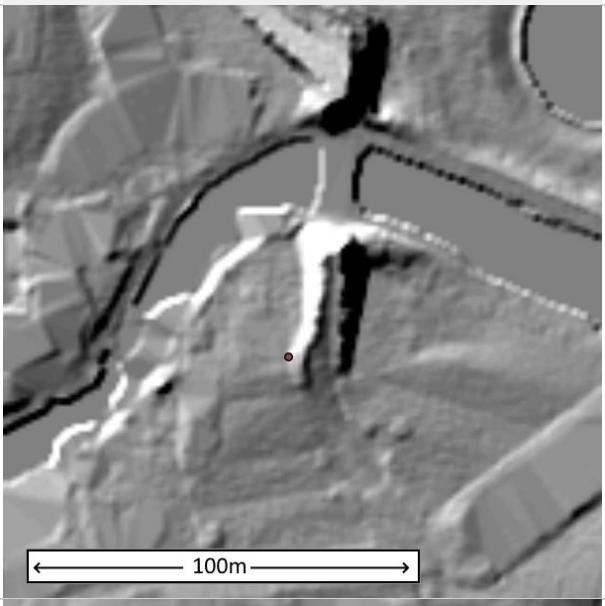
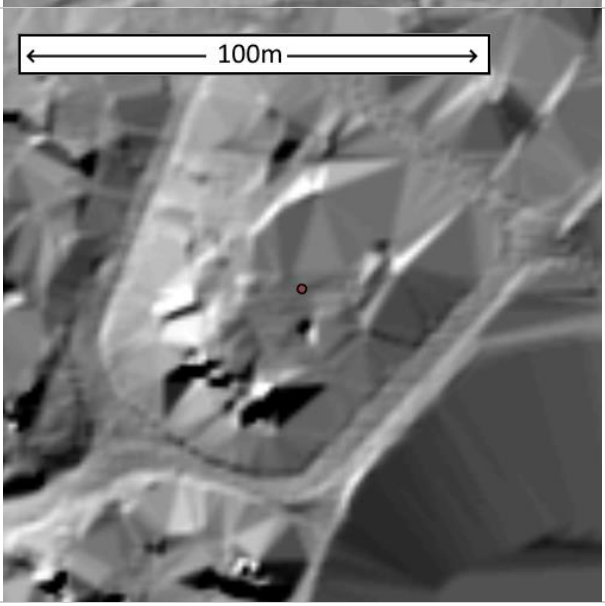
CBED26	Risinghoe Castle	Bedford	Bedfordshire	
CBED27	Palaceyard Wood	Roxton	Bedfordshire	
CBED28	Castle Close	Sharnbrook	Bedfordshire	

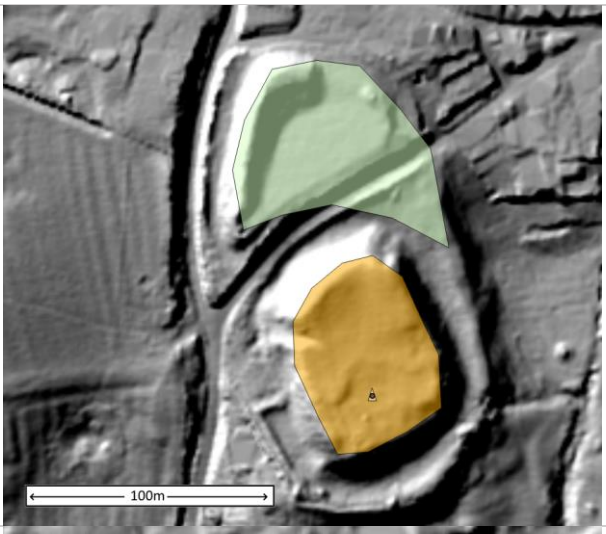
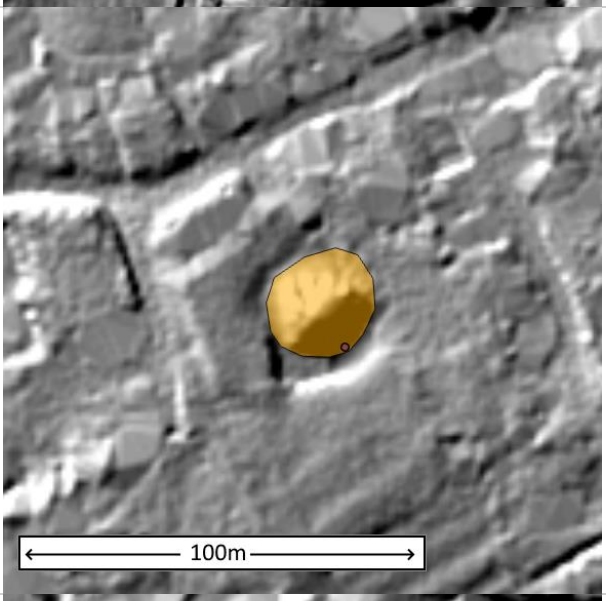
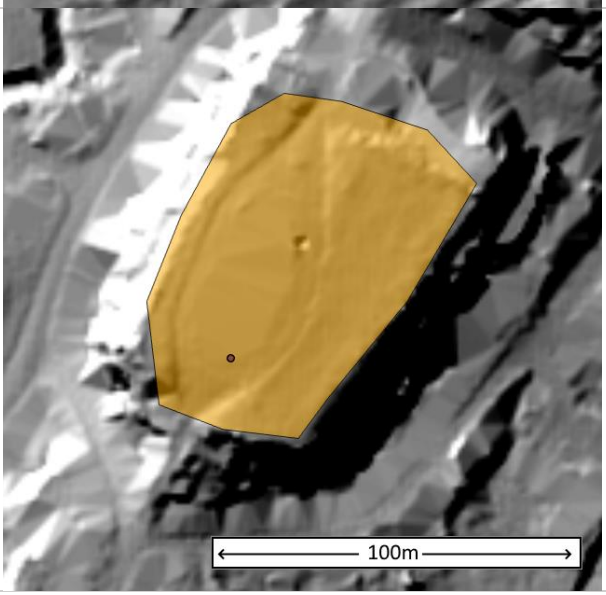
CBED29	Seymor's Mount	Steppingley	Bedfordshire	
CBER01	Buckland Castle	Buckland	Berkshire	
CBER02	Wooley Castle	Chaddleworth	Berkshire	

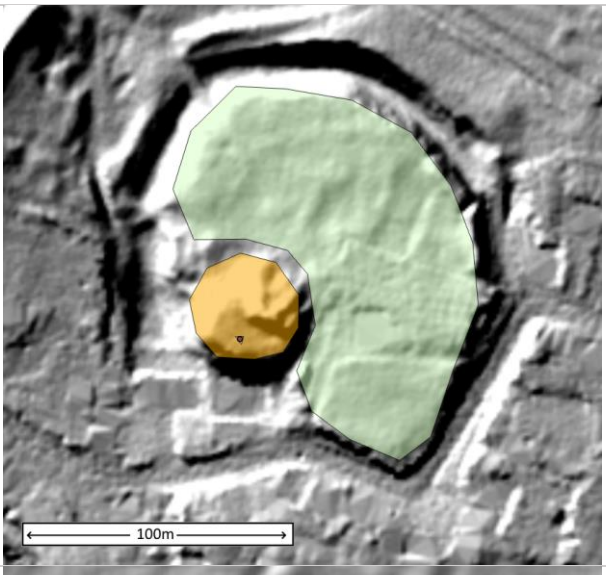
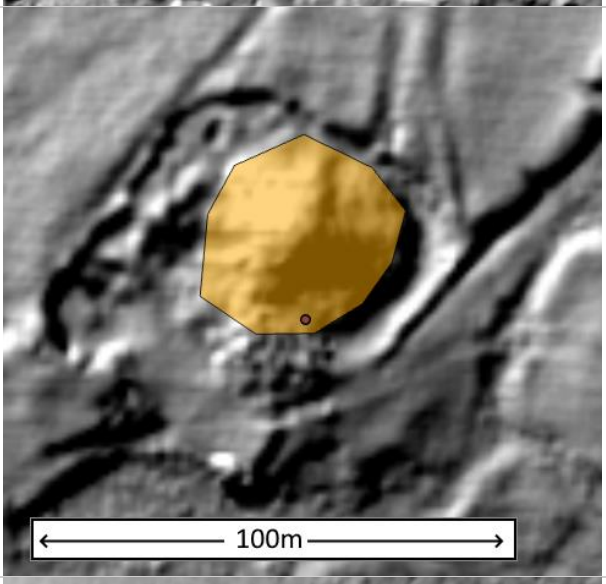
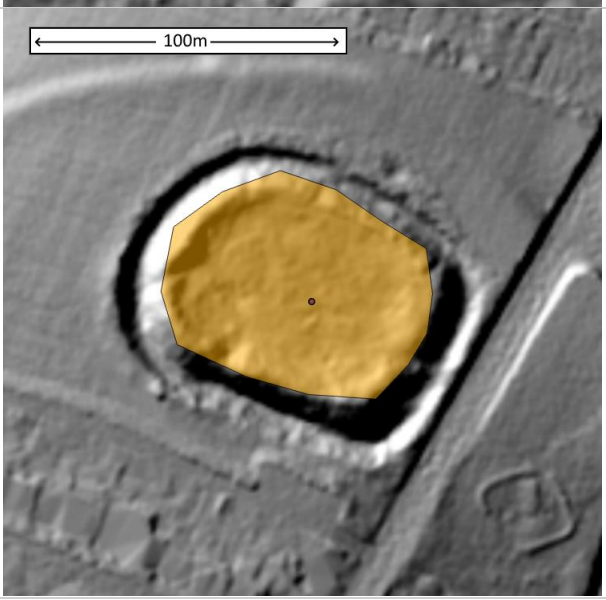
CBER03	Faringdon Castle	Great Faringdon	Berkshire	
CBER04	Fitzharris	Abingdon	Berkshire	
CBER05	Newbury Castle	Hamstead Marshall	Berkshire	

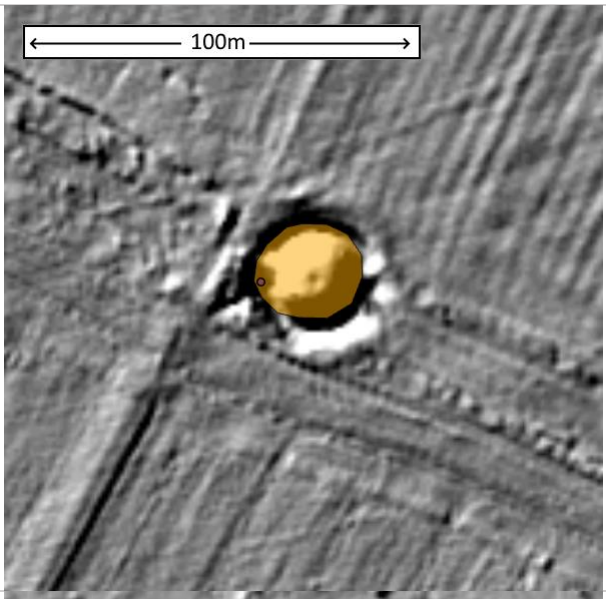
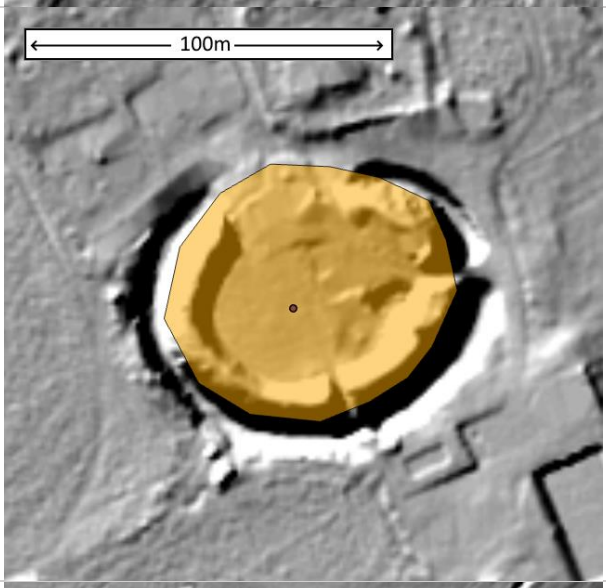
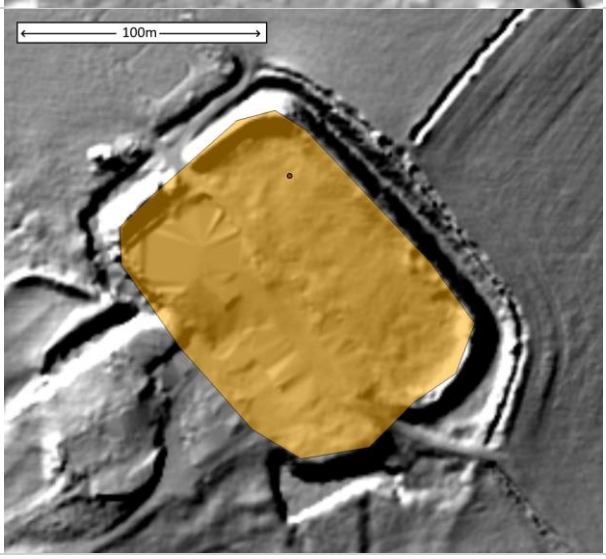
CBER06	The Mount	Hinton Waldrist	Berkshire	
CBER07	Reading Castle	Reading	Berkshire	
CBER08	South Moreton Castle	South Moreton	Berkshire	

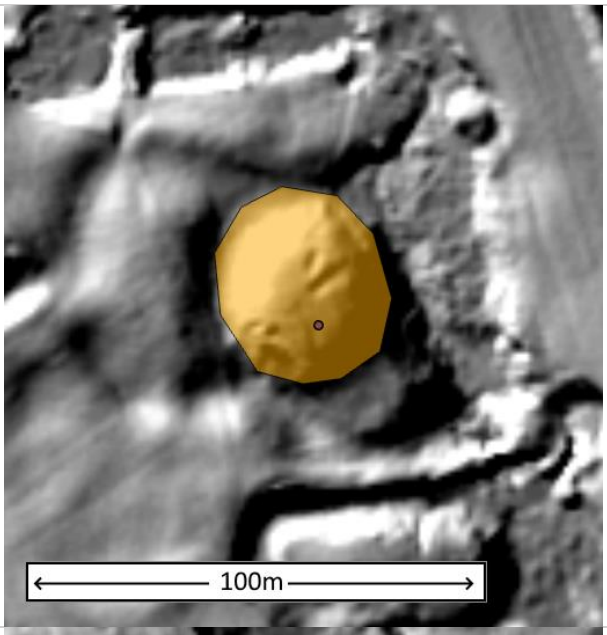
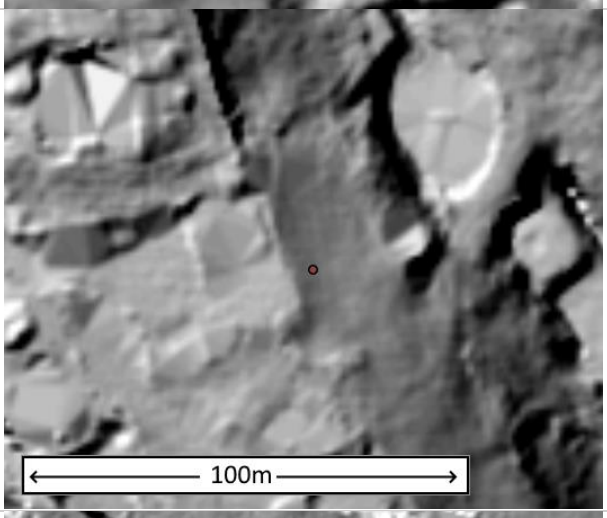
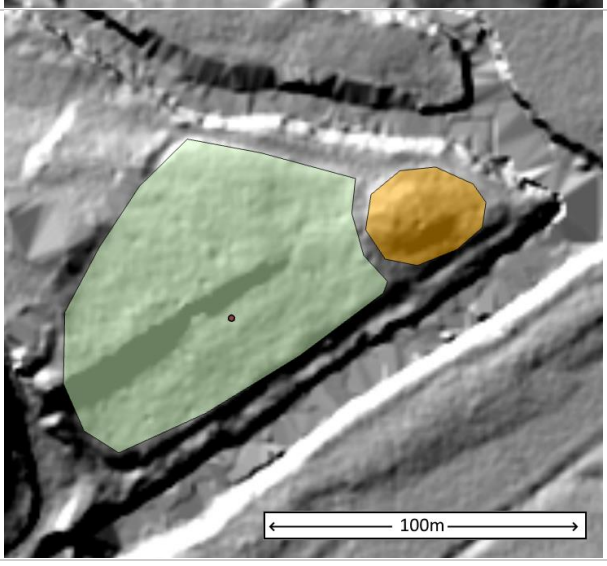
CBER09	Wallingford Castle	Wallingford	Berkshire	
CBER10	West Woodhay Motte	West Woodhay	Berkshire	
CBER11	Windsor Castle	Windsor	Berkshire	

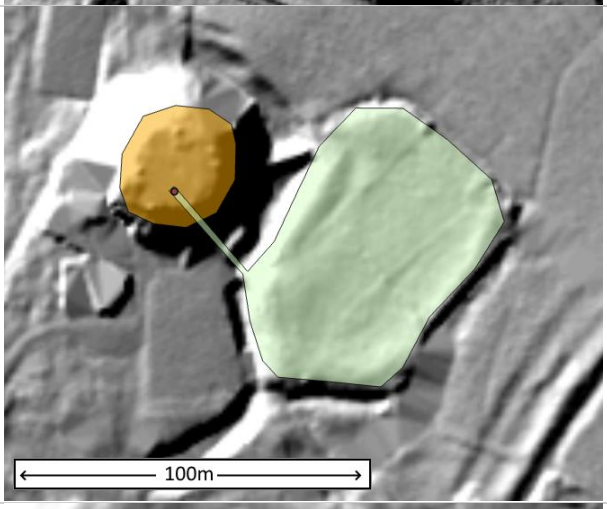
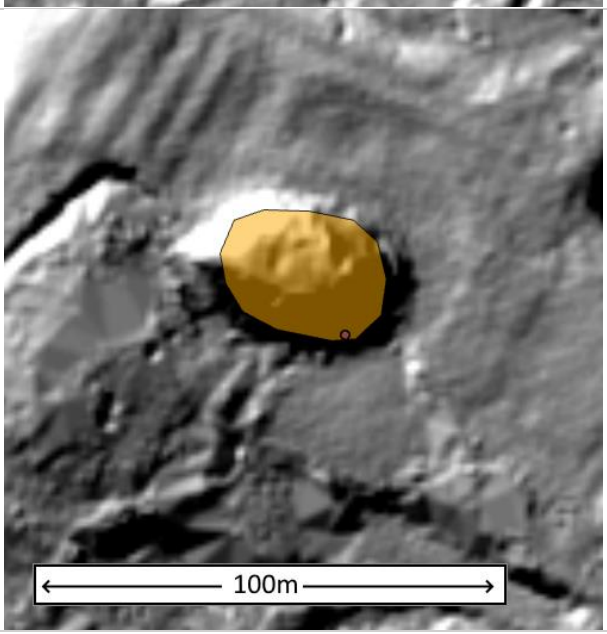
CBER12	Hamstead Marshal 2	Hamstead Marshall	Berkshire	
CBER13	Newbury Castle	Newbury	Berkshire	
CBUC01	Aylesbury Castle	Aylesbury	Buckinghamshire	

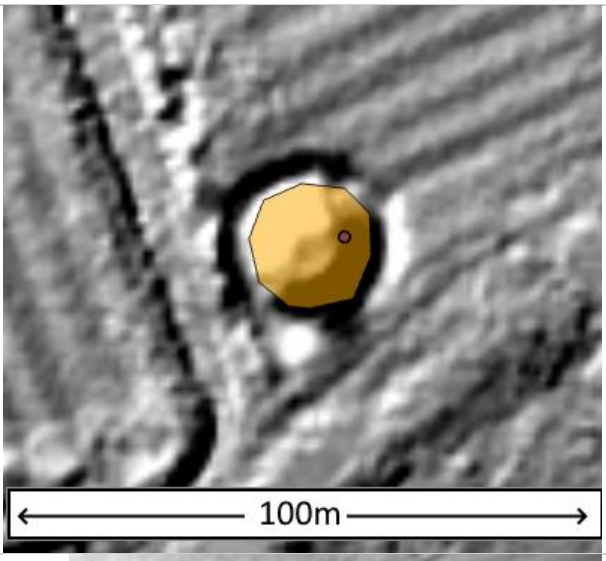
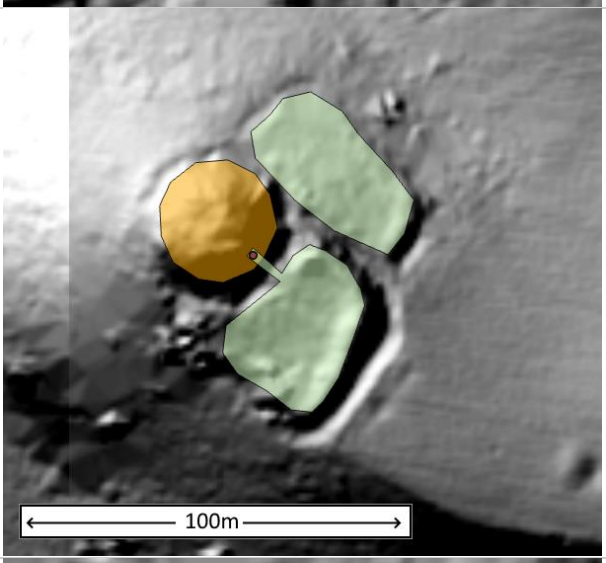
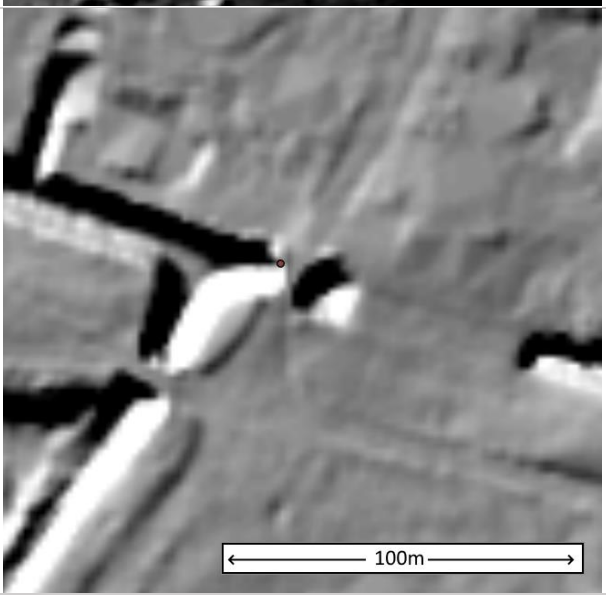
CBUC02	Bolebec Castle	Whitchurch	Buckinghamshire	
CBUC03	Bradwell Motte	Bradwell	Buckinghamshire	
CBUC04	Buckingham Castle	Buckingham	Buckinghamshire	

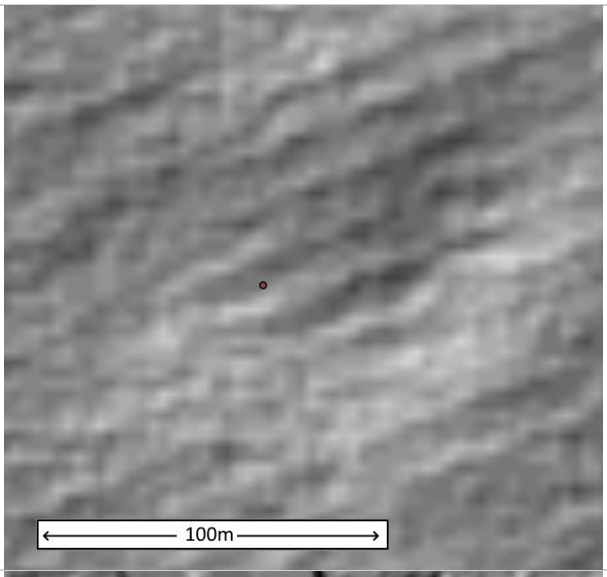
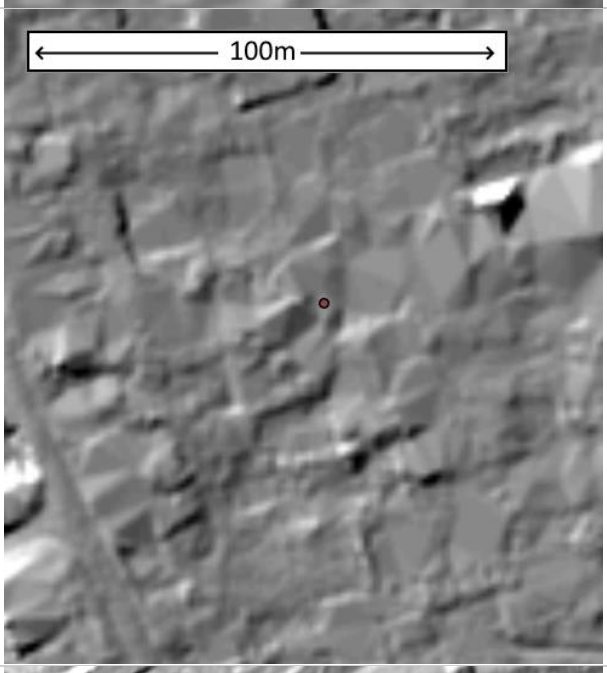
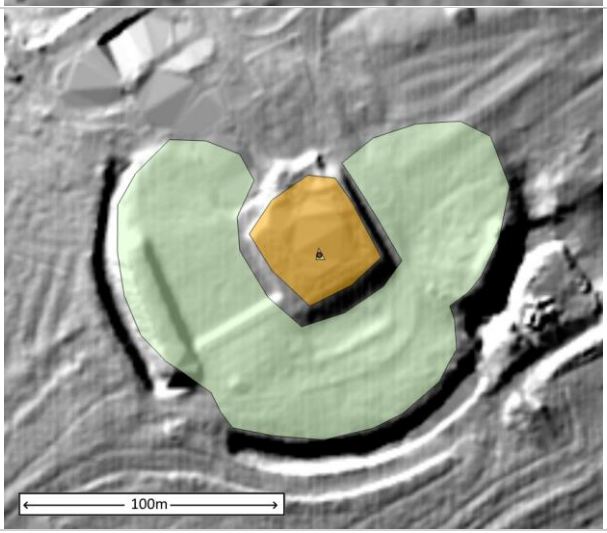
CBUC05	Castle Thorpe	Castlethorpe	Buckinghamshire	
CBUC06	The Beacon	Cublington	Buckinghamshire	
CBUC07	Desborough Castle	High Wycombe	Buckinghamshire	

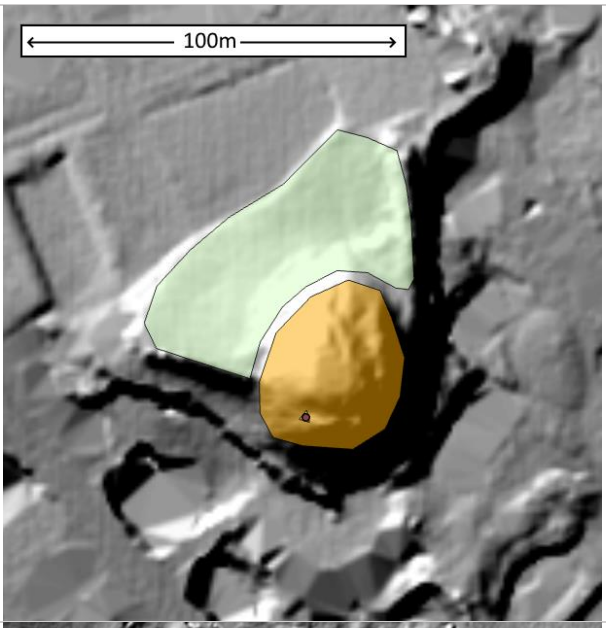
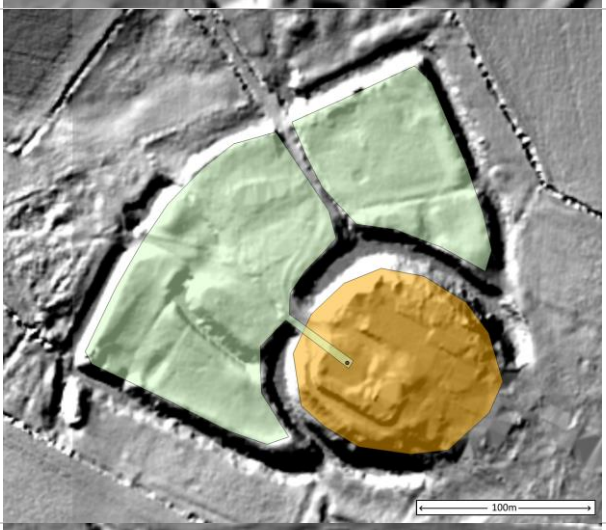
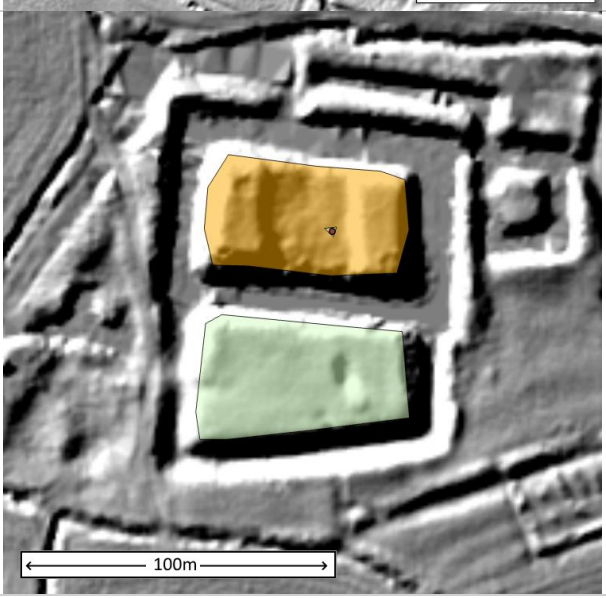
CBUC08	Hampden Danes Camp	Little Hampden	Buckinghamshire	
CBUC09	Harwidge Court	Cholesbury	Buckinghamshire	
CBUC10	Lavendon Castle	Lavendon	Buckinghamshire	

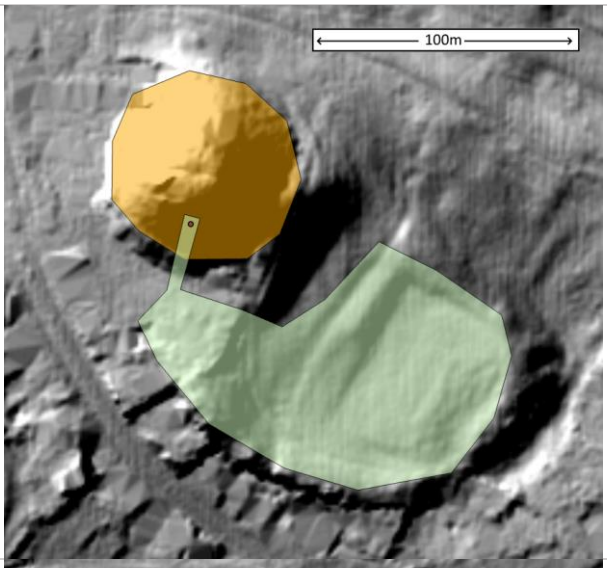
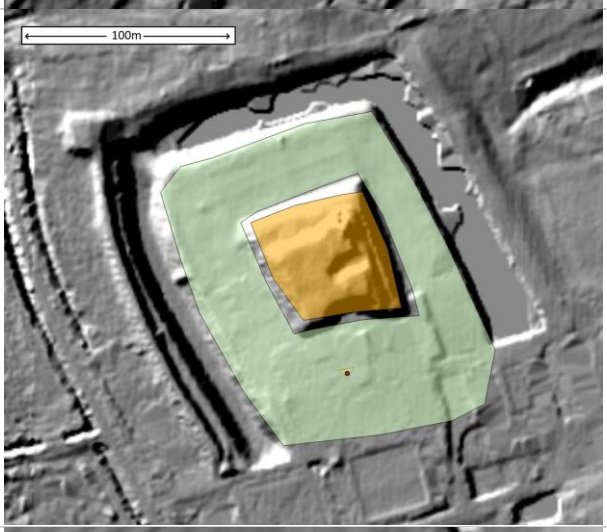
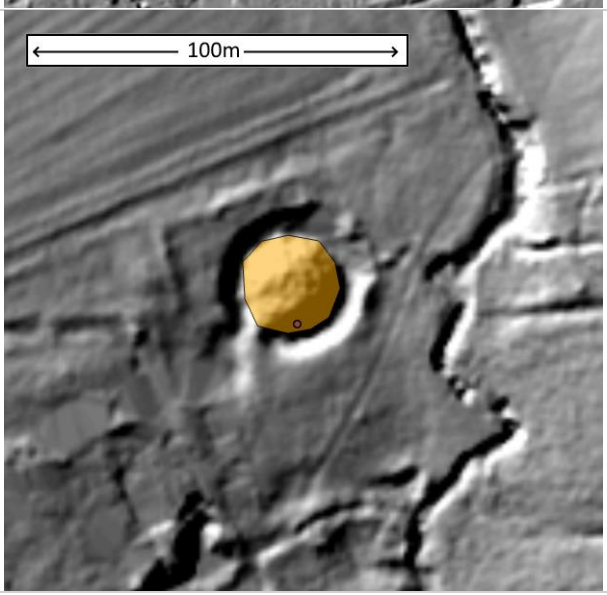
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CBUC12	Long Crendon Castle	Long Crendon	Buckinghamshire	
CBUC13	The Battery	Newport Pagnell	Buckinghamshire	

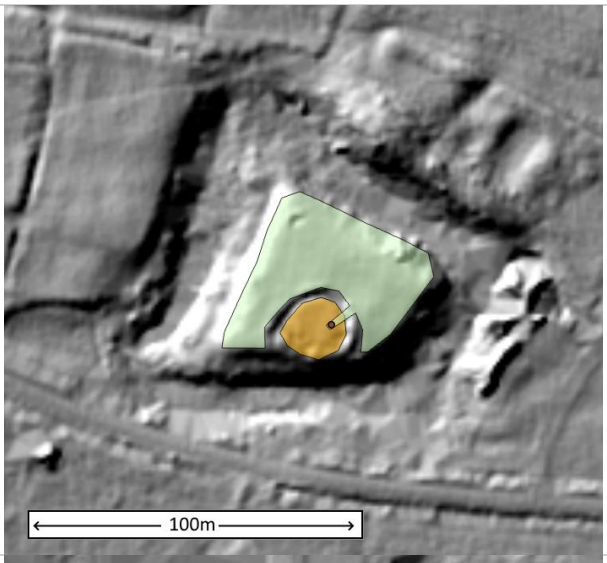
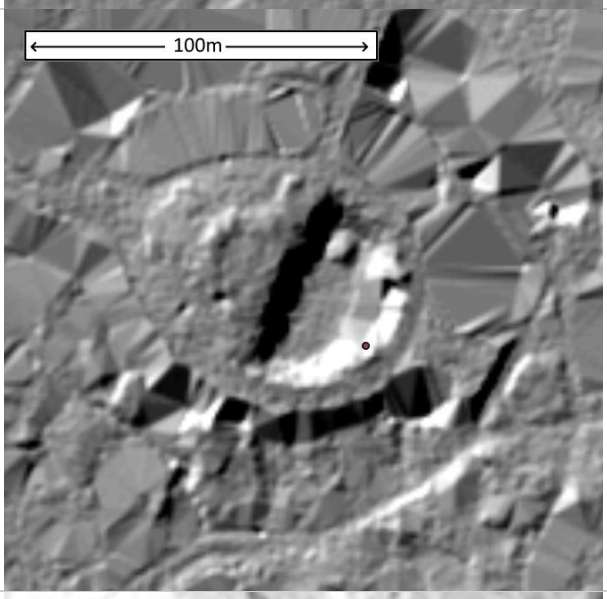
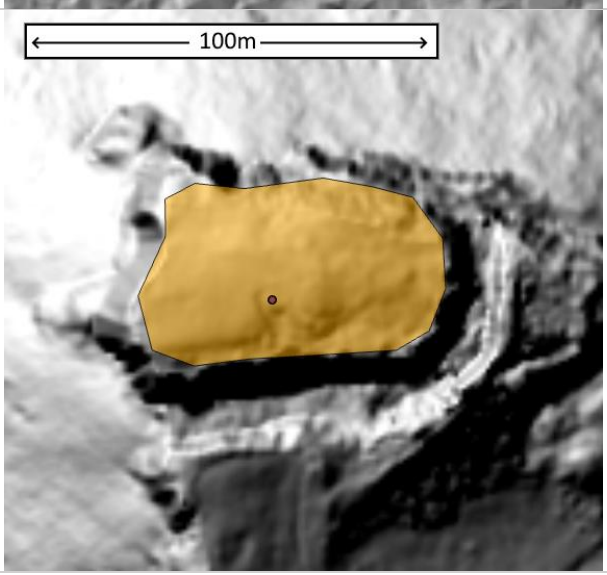
CBUC14	The Toot	Shenley Church End	Buckinghamshire	
CBUC15	The Mount	Weston Turville	Buckinghamshire	
CBUC16	Wolverton Castle	Milton Keynes	Buckinghamshire	

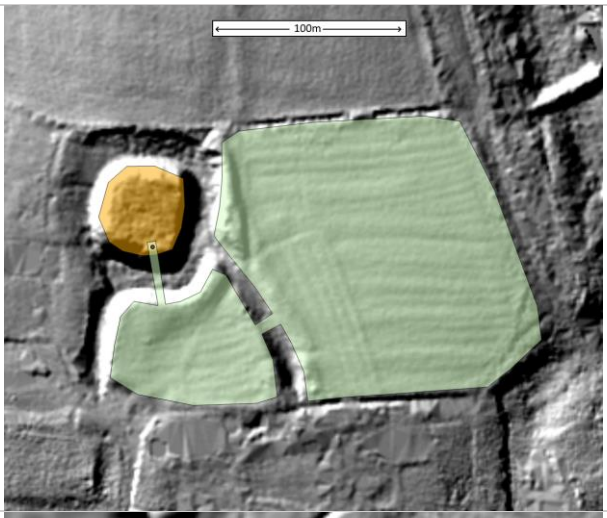
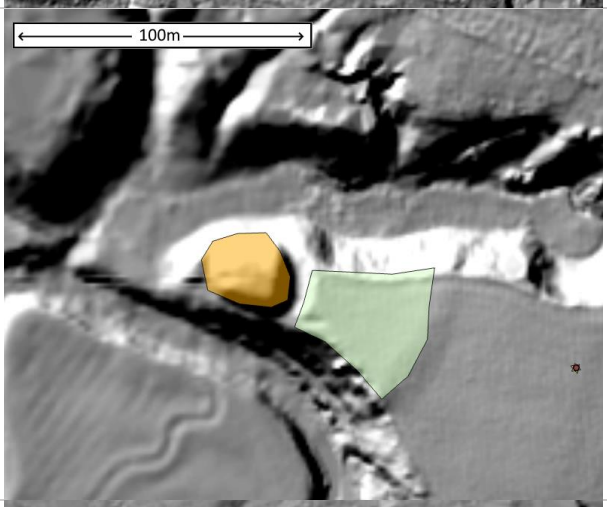
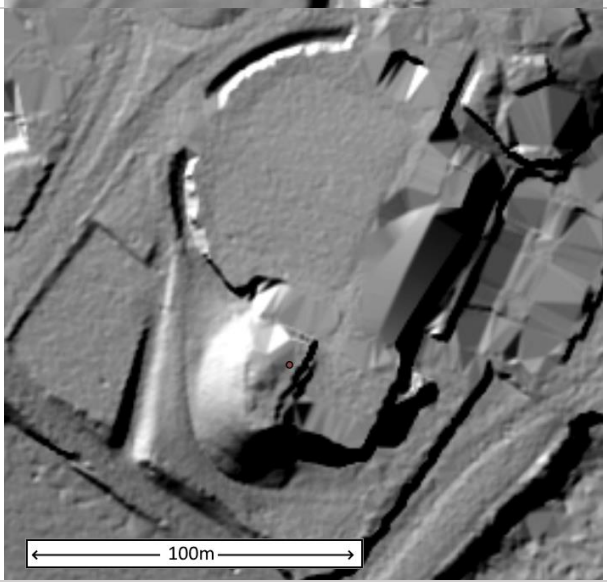
CBUC17	Wavendon Castle	Wavendon	Buckinghamshire	
CBUC18	Cymbeline's Castle	Beacon Hill	Buckinghamshire	
CCAM01	Aldreth	Haddenham	Cambridgeshire	

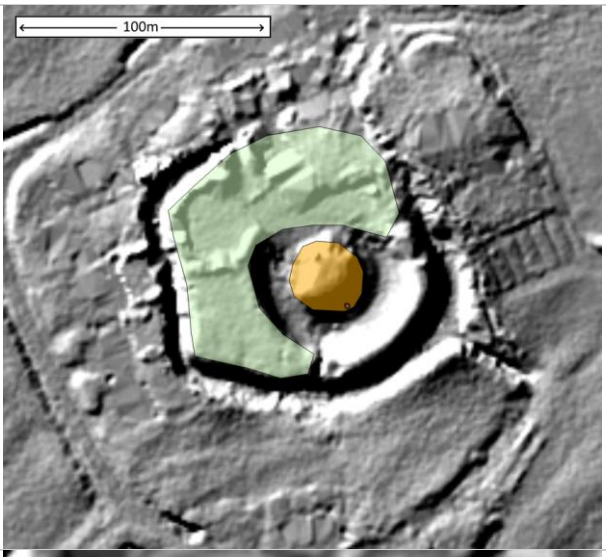
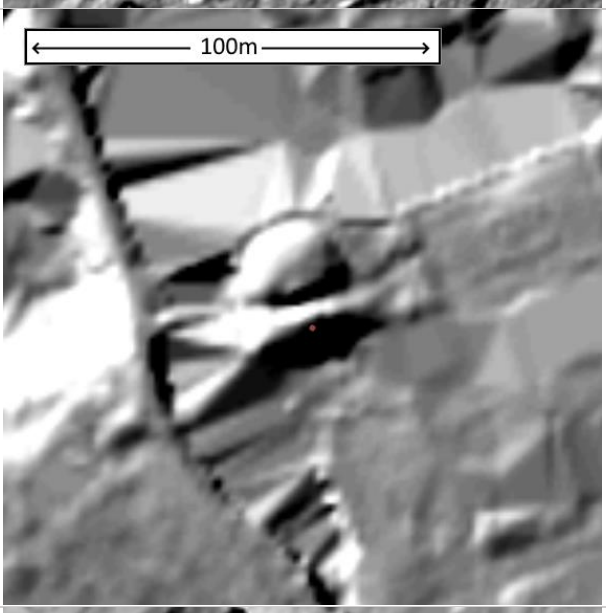
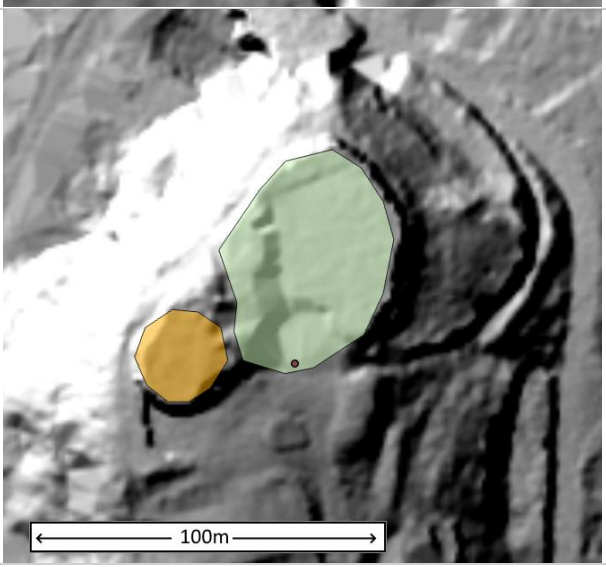
CCAM02	John O'Gaunt's House	Bassingbourne	Cambridgeshire	
CCAM03	Benwick Castle	Benwick	Cambridgeshire	
CCAM04	Bourn Hall	Bourn	Cambridgeshire	

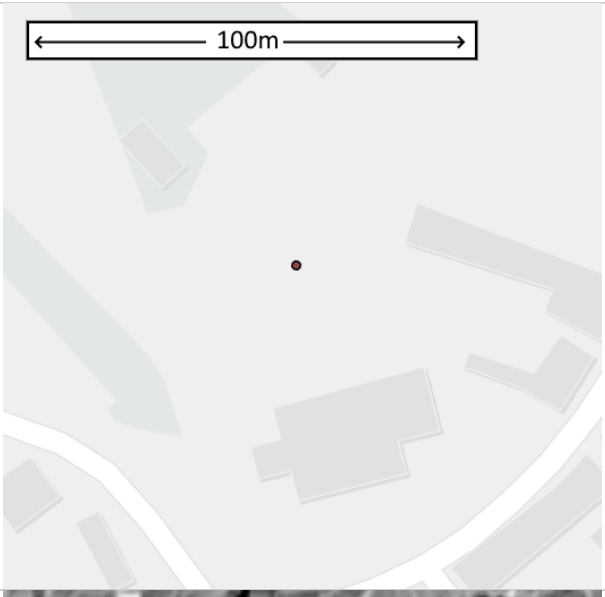
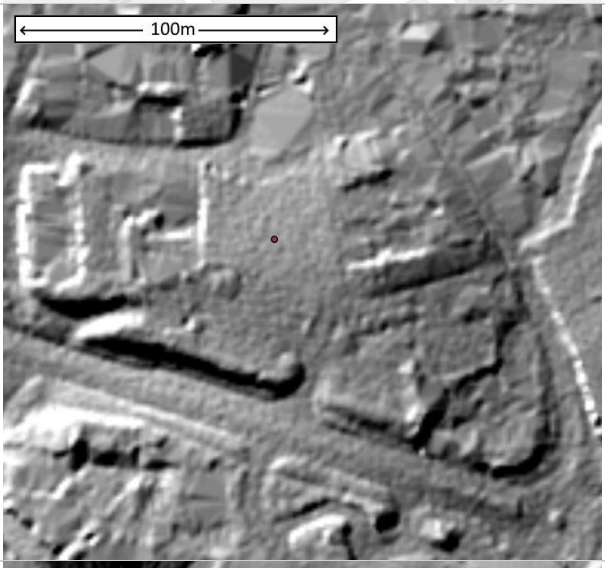
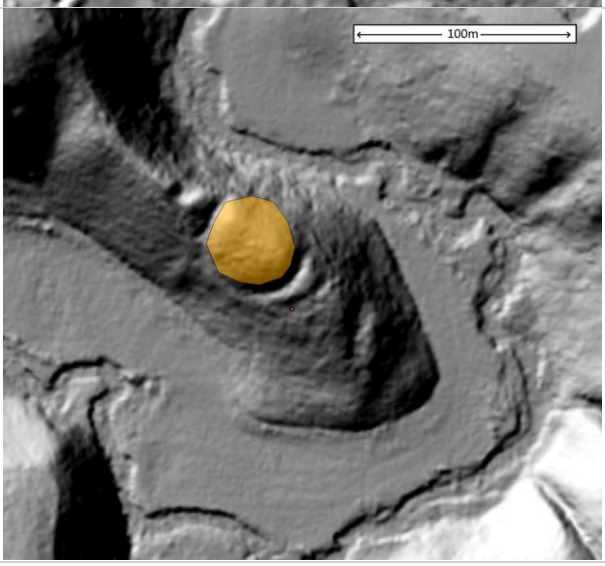
CCAM05	Cambridge Castle	Cambridge	Cambridgeshire	
CCAM06	Castle Camps	Castle Camps	Cambridgeshire	
CCAM07	Caxton Moats	Caxton	Cambridgeshire	

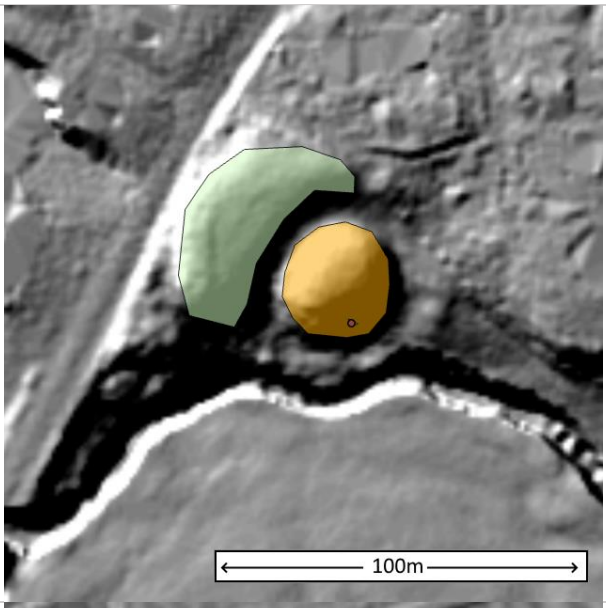
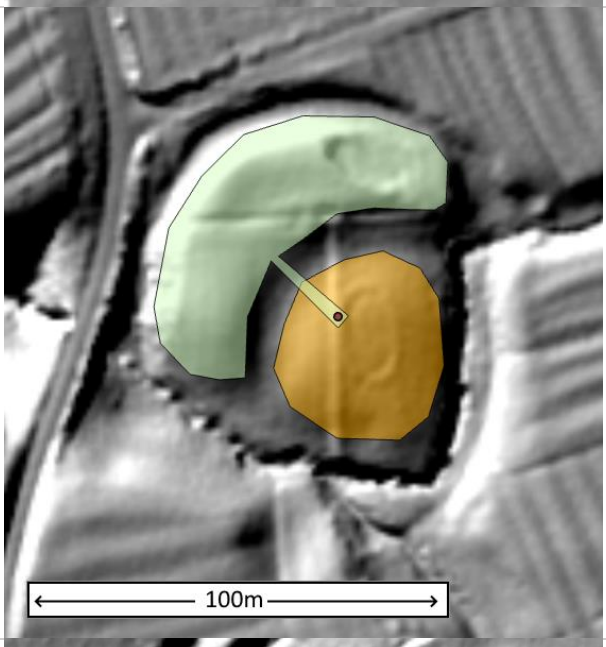
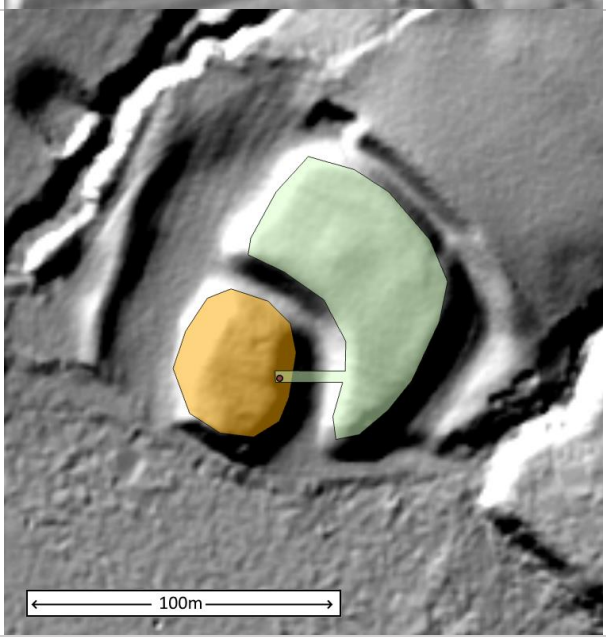
CCAM08	Cherry Hill	Ely	Cambridgeshire	
CCAM09	Kirtling Towers	Kirtling	Cambridgeshire	
CCAM10	Overhall Grove	Boxworth	Cambridgeshire	

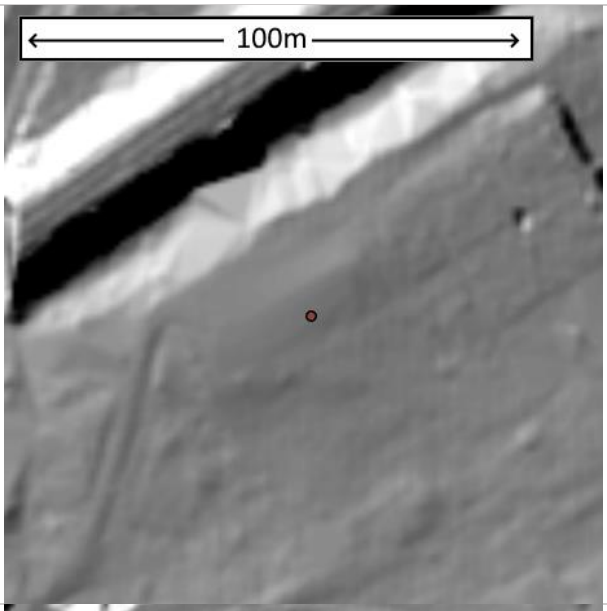
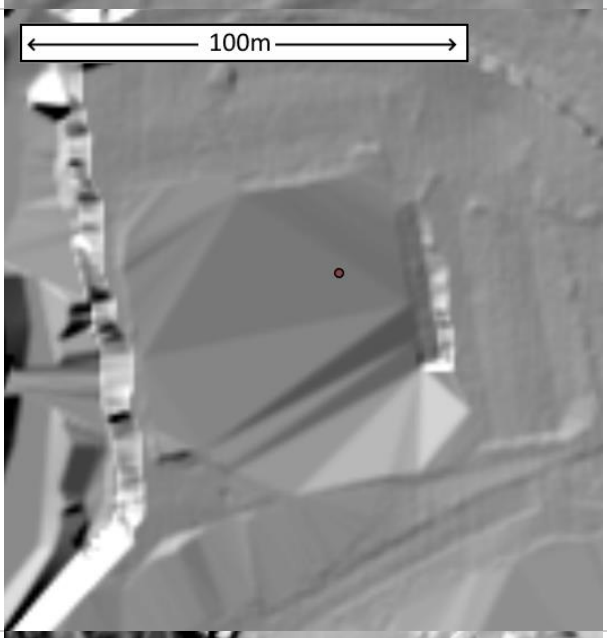
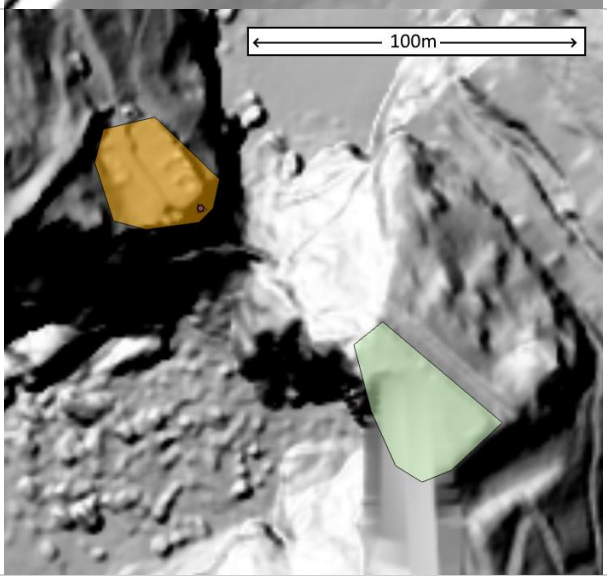
CCAM11	Giants Hill	Rampton	Cambridgeshire	
CCAM12	Wisbech Castle	Wisbech	Cambridgeshire	
CCHE01	Beeston Castle	Beeston	Cheshire	

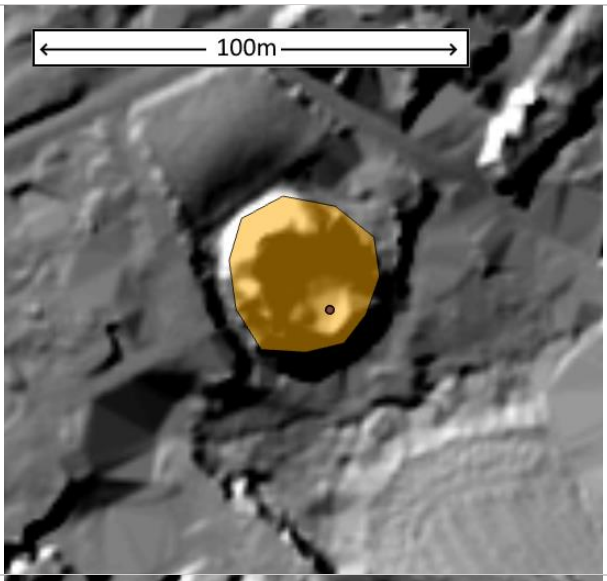
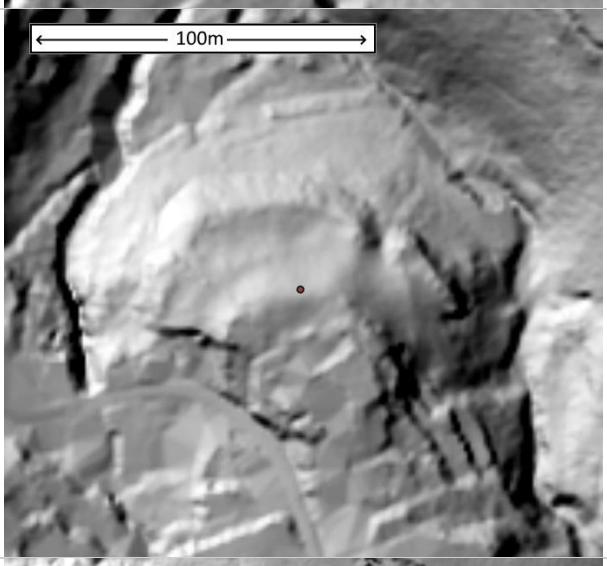
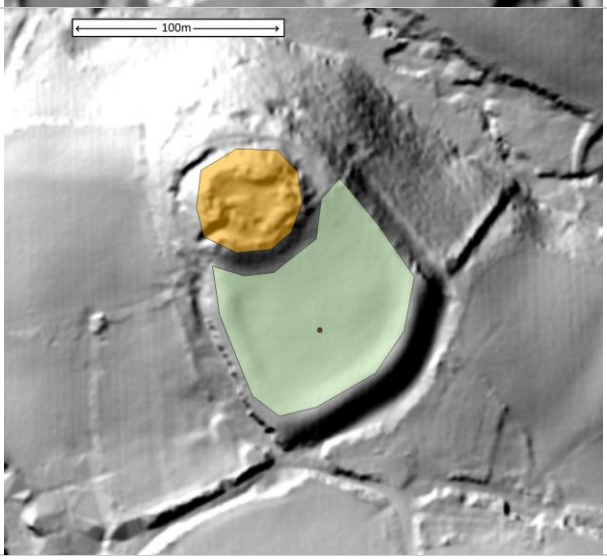
CCHE02	Blobb Hill	Alford	Cheshire	
CCHE03	Watch Hill	Altrincham	Cheshire	
CCHE04	Chester Castle	Chester	Cheshire	

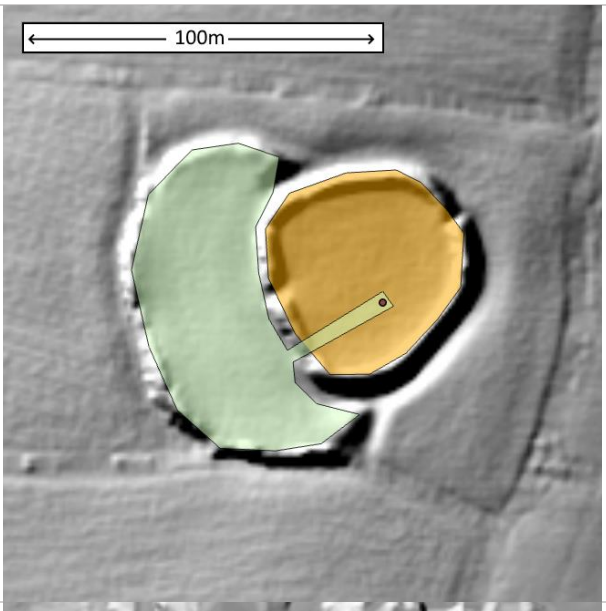
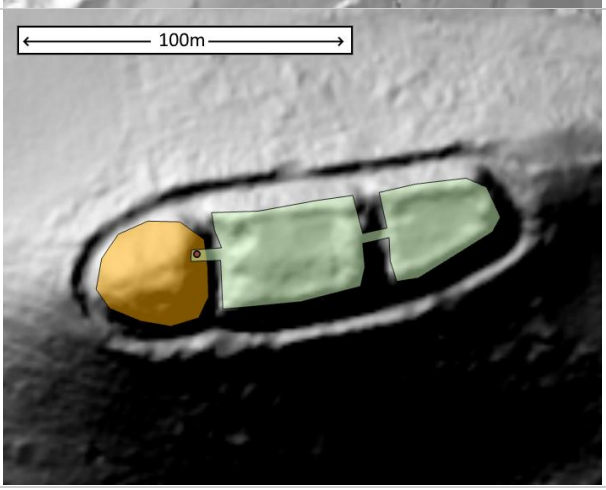
CCHE05	Dodleston Castle	Dodleston	Cheshire	
CCHE06	The Mount	Dunham Massey	Cheshire	
CCHE07	Halton Castle	Runcorn	Cheshire	

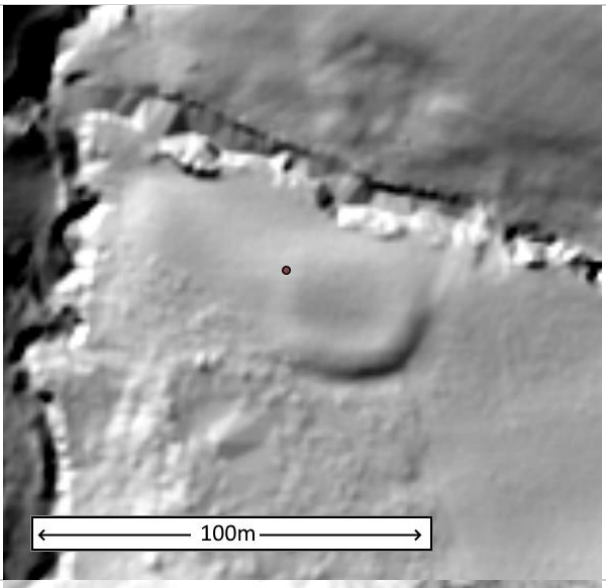
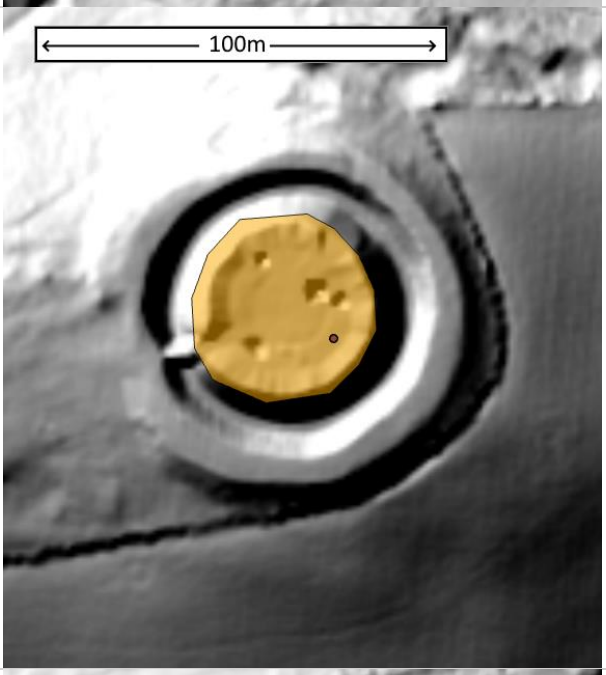
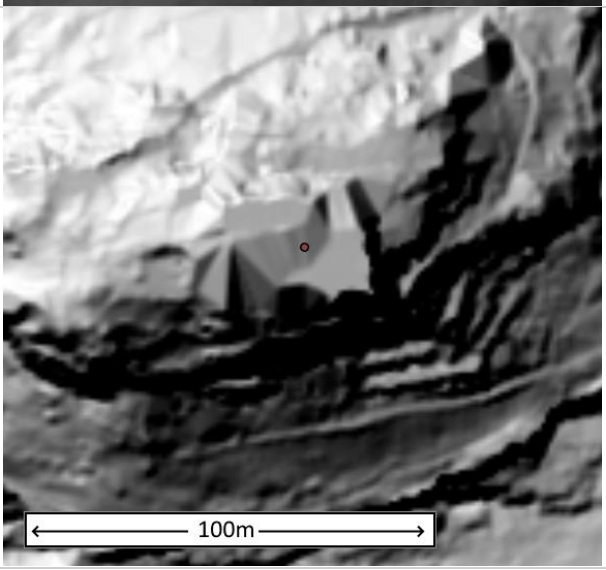
CCHE08	Maplas Castle	Maplas	Cheshire	
CCHE09	Nantwich Castle	Nantwich	Cheshire	
CCHE10	Castle Hill	Oldcastle	Cheshire	

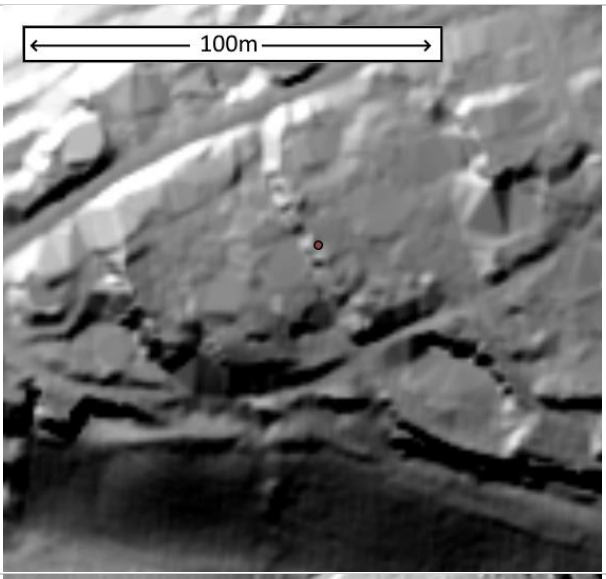
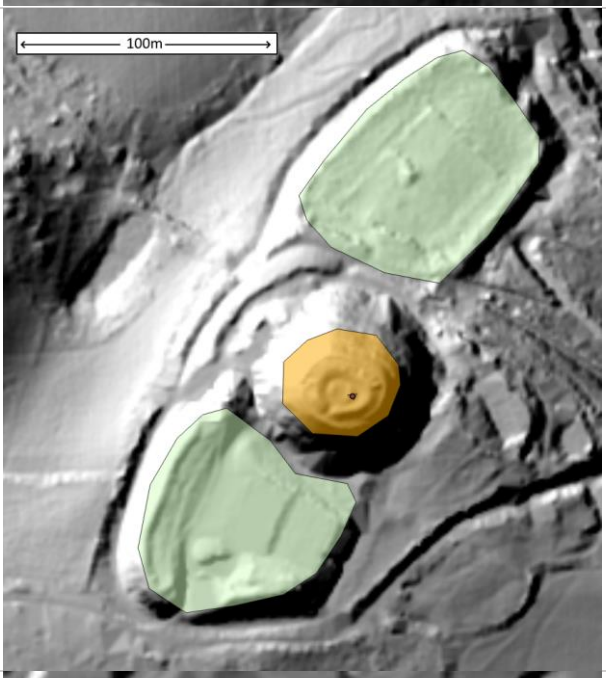
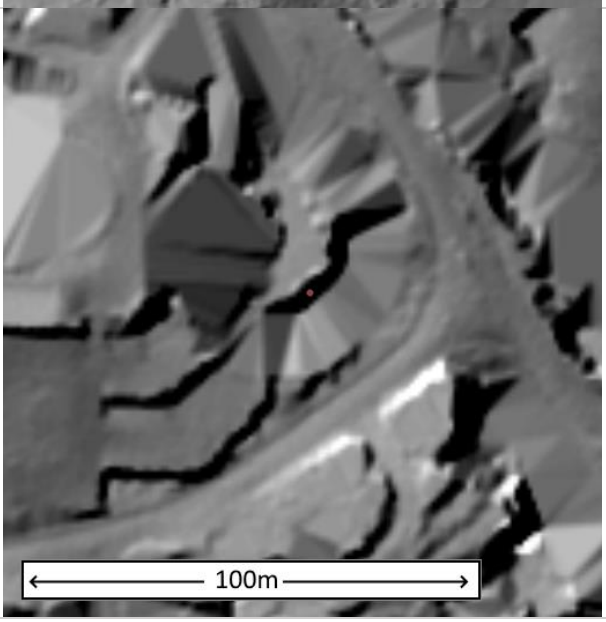
CCHE11	Pullford Castle	Pullford	Cheshire	
CCHE12	Shocklach Castle	Caldecott	Cheshire	
CCHE13	Shotwick Castle	Shotwick Park	Cheshire	

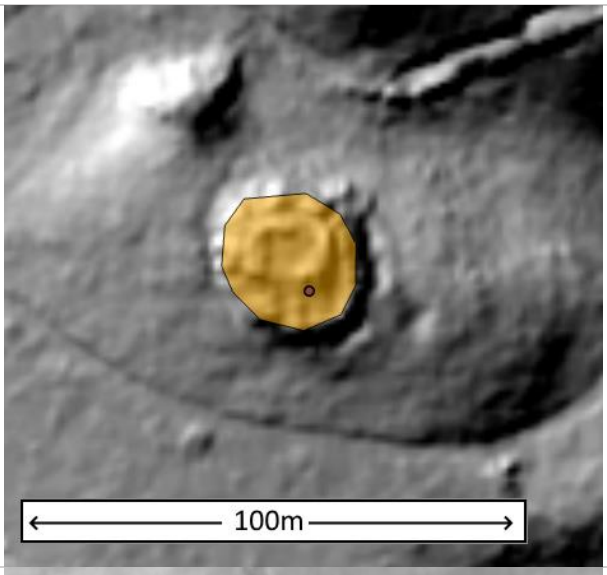
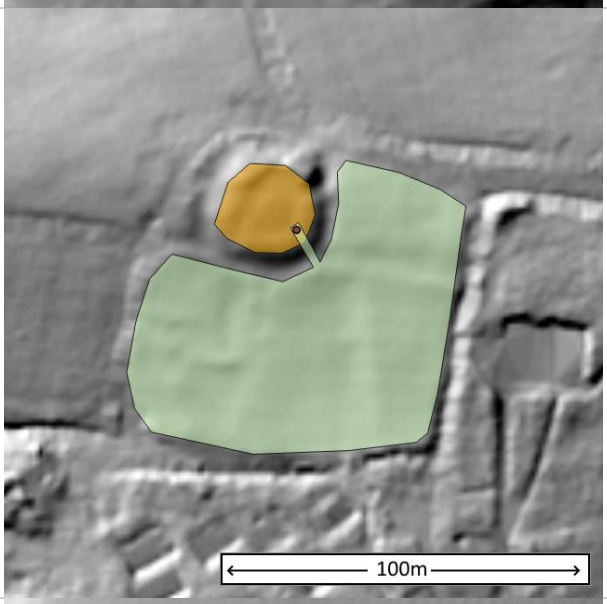
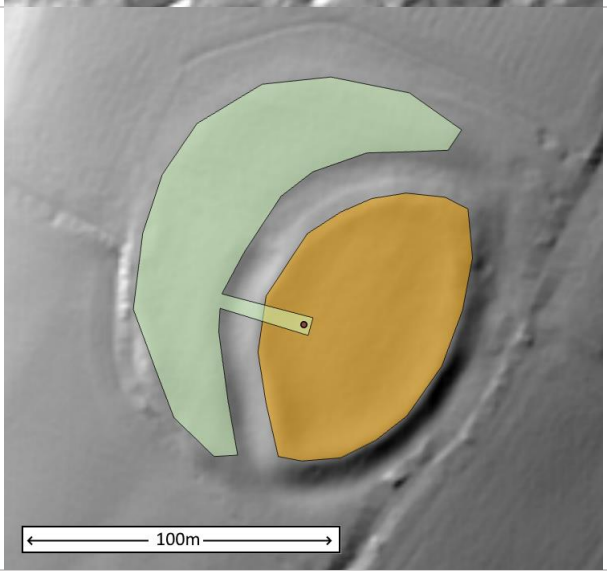
CCHE14	Frodsham Castle	Frodsham	Cheshire	
CCHE15	Stockport Castle	Stockport	Cheshire	
CCOR01	Tintagel Castle	Tintagel	Cornwall	

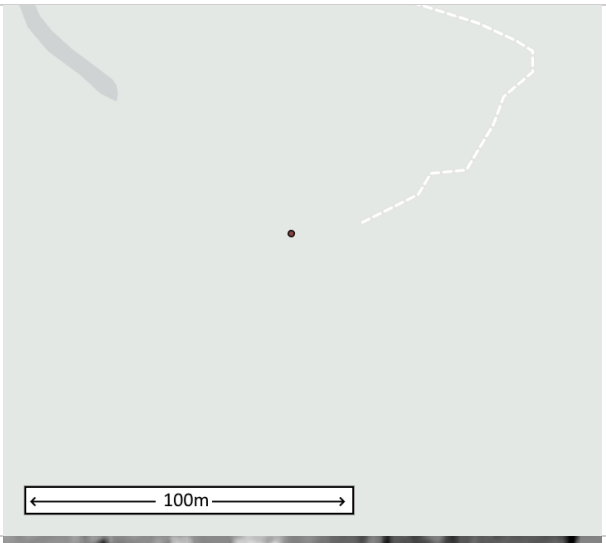
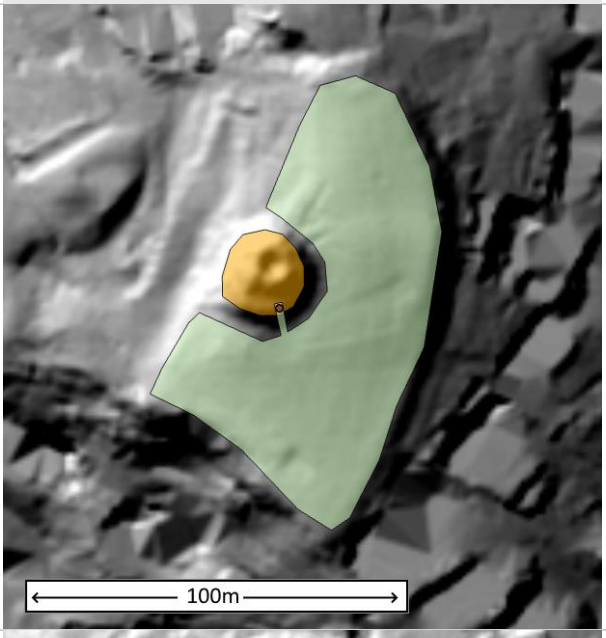
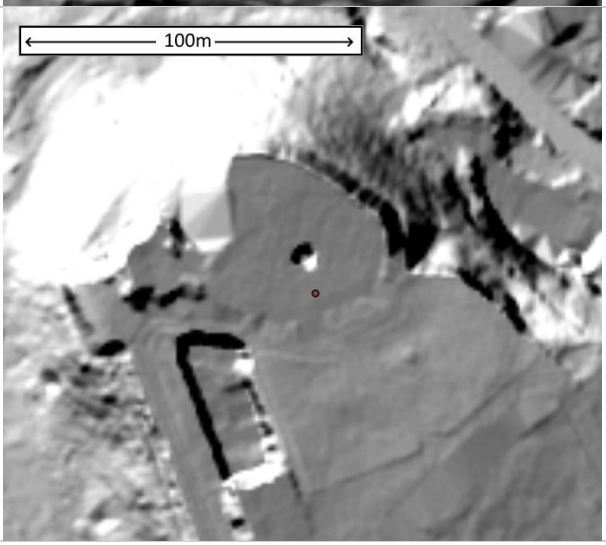
CCOR02	Bossiney Castle	Tintagel	Cornwall	
CCOR03	Bottereaux Castle	Forrabury & Minster	Cornwall	
CCOR04	Cardinham Castle	Cardinham	Cornwall	

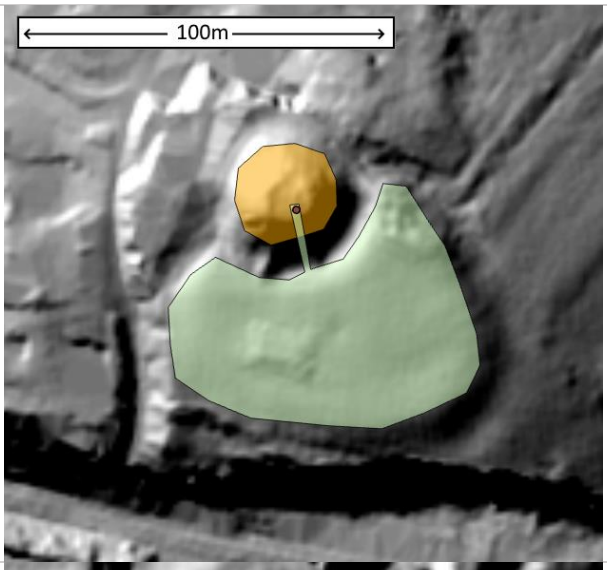
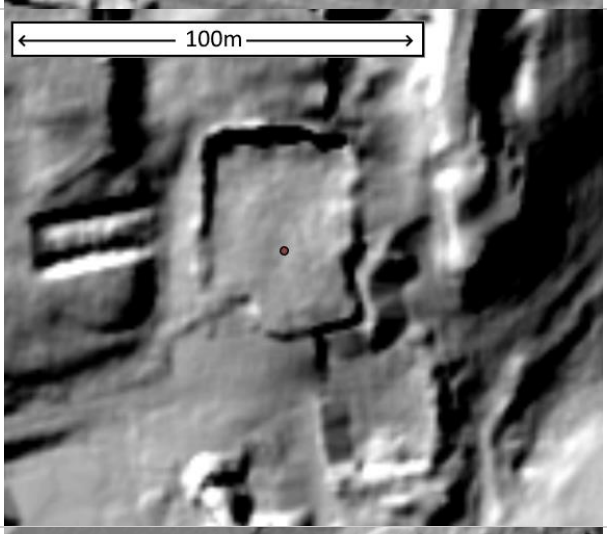
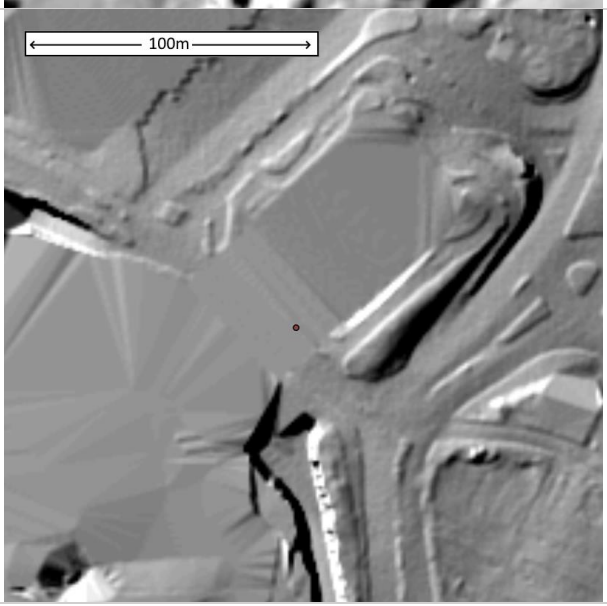
CCOR05	Castle Goff	Camelford	Cornwall	
CCOR06	Launceston Castle	Launceston	Cornwall	
CCOR07	Penstowe Castle	Kilkhampton	Cornwall	

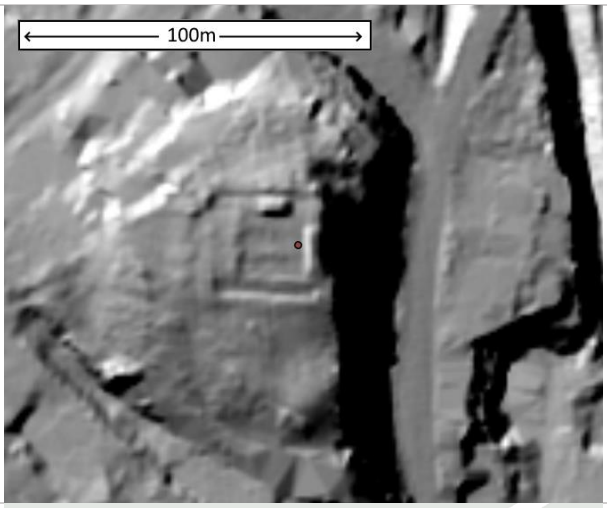
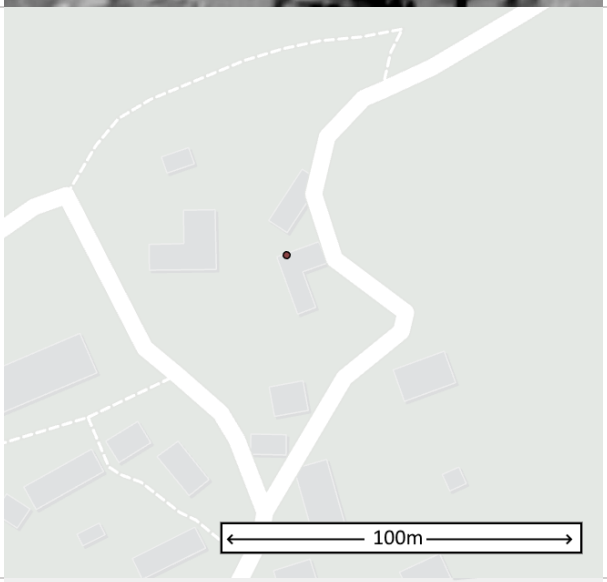
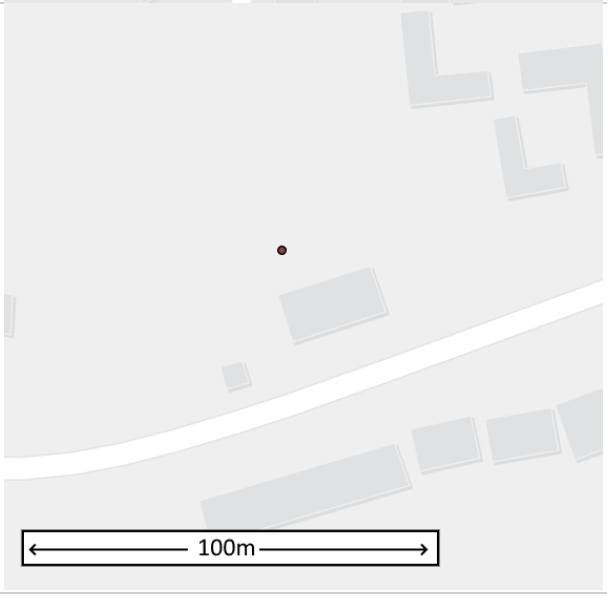
CCOR08	Poundstock Castle	Poundstock	Cornwall	
CCOR09	Rostormel Castle	Lostwithiel	Cornwall	
CCOR10	St Michael's Mount	St Michael's Mount	Cornwall	

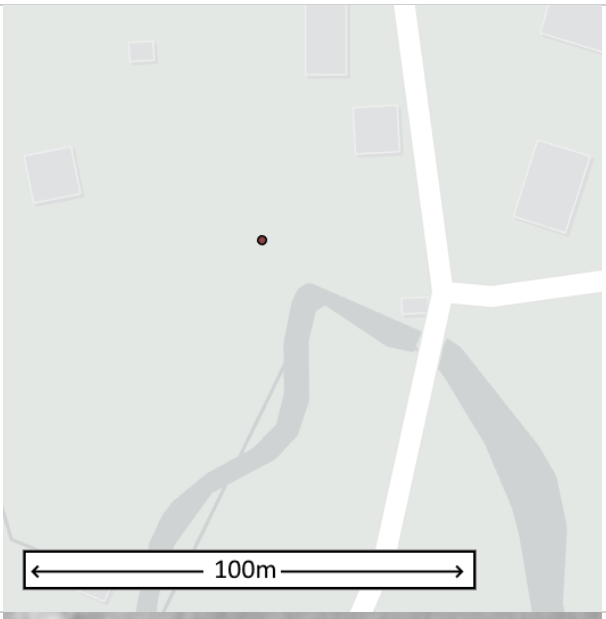
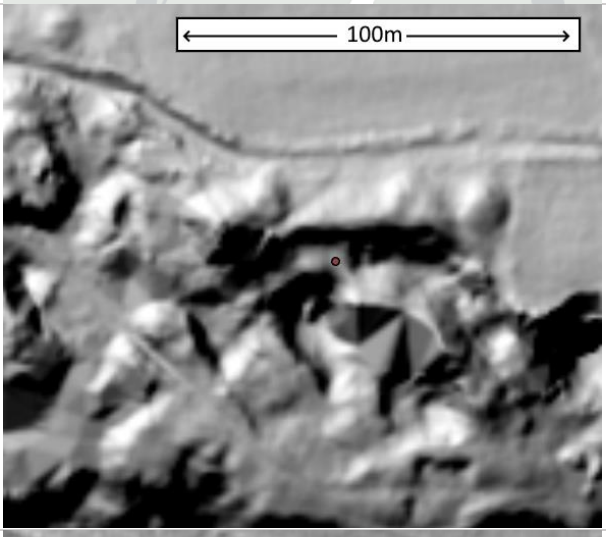
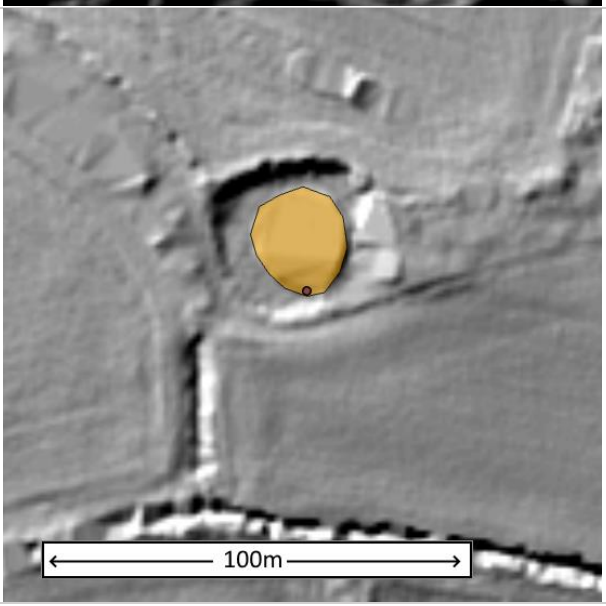
CCOR11	Tregoney Castle	Tregoney	Cornwall	
CCOR12	Trematon Castle	Saltash	Cornwall	
CCOR13	Truro Castle Hill	Truro	Cornwall	

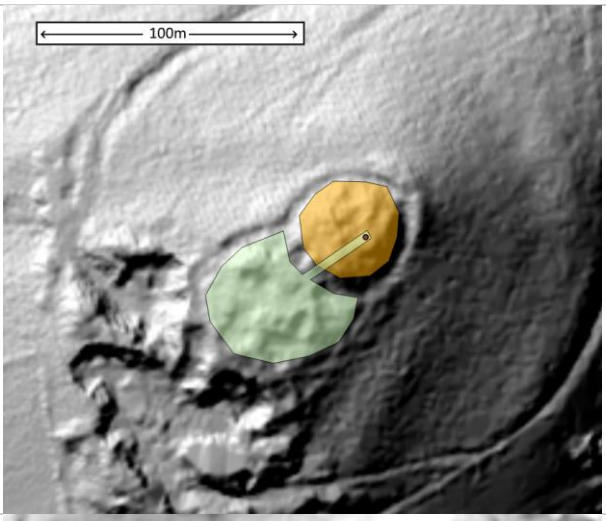
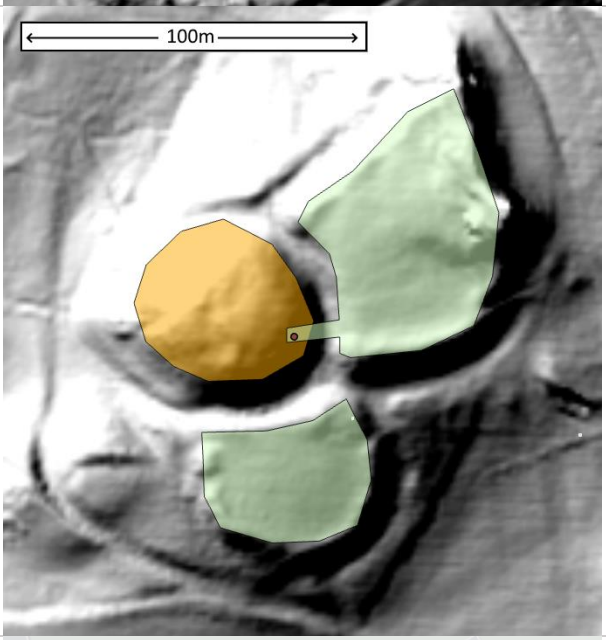
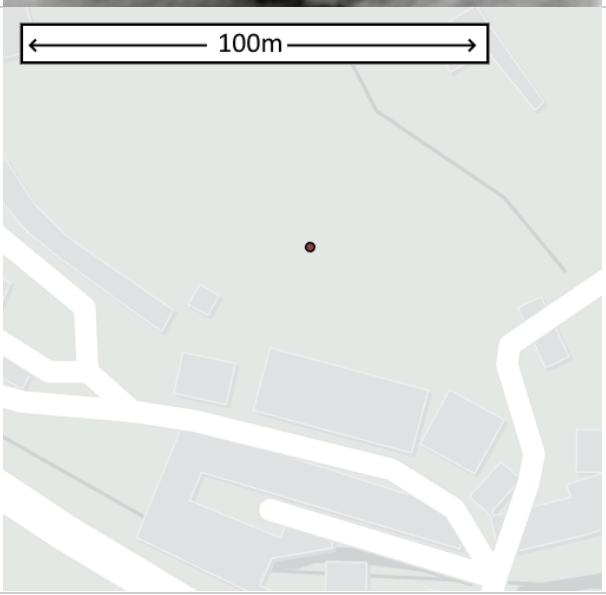
CCOR14	Upton Castle	Lewannick	Cornwall	
CCOR15	Week St Mary Hill	Week St Mary	Cornwall	
CCOR16	Roundbury	Linkinhorne	Cornwall	

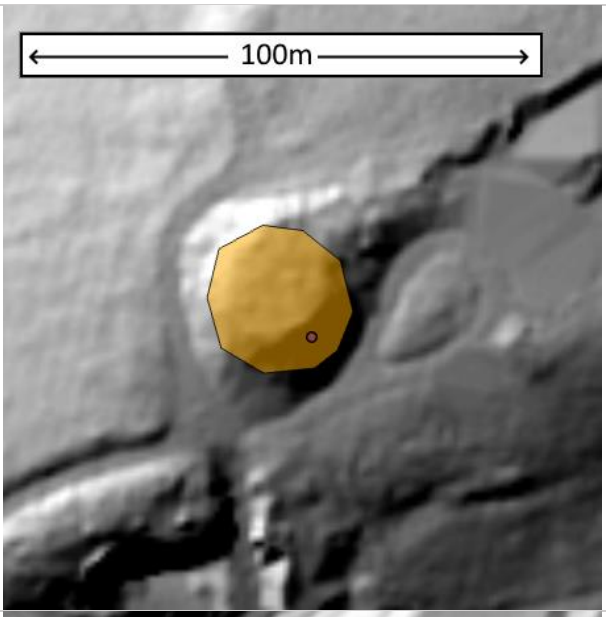
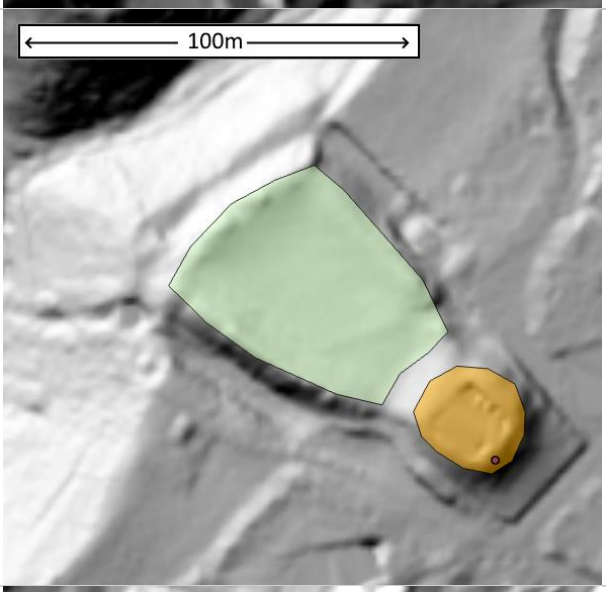
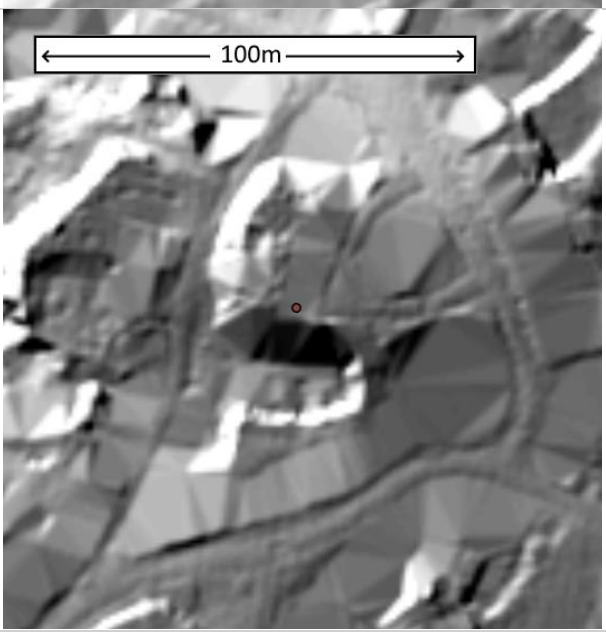
CDER01	Pervil Castle	Castleton	Derbyshire	
CDER02	Bakewell Castle	Bakewell	Derbyshire	
CDER03	Bolsover Castle	Old Bolsover	Derbyshire	

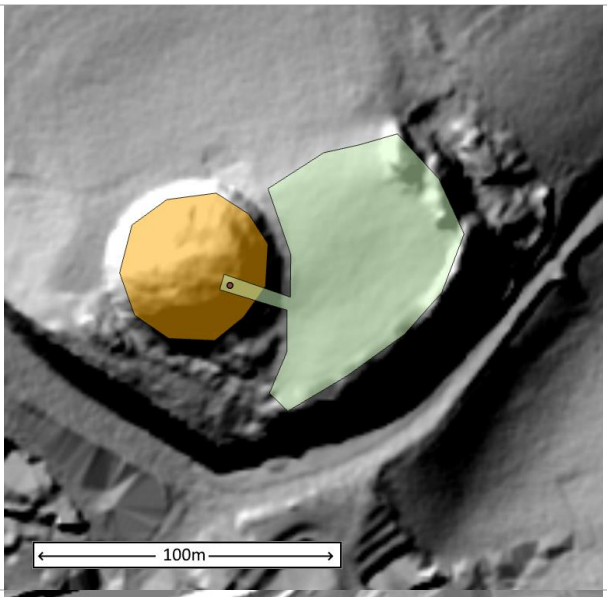
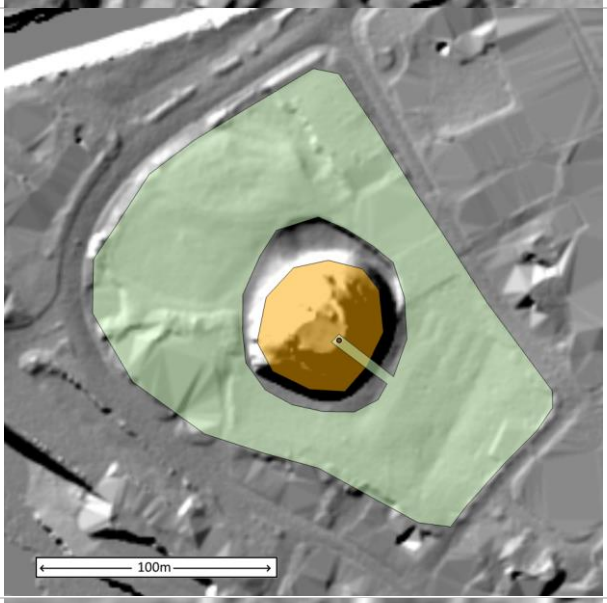
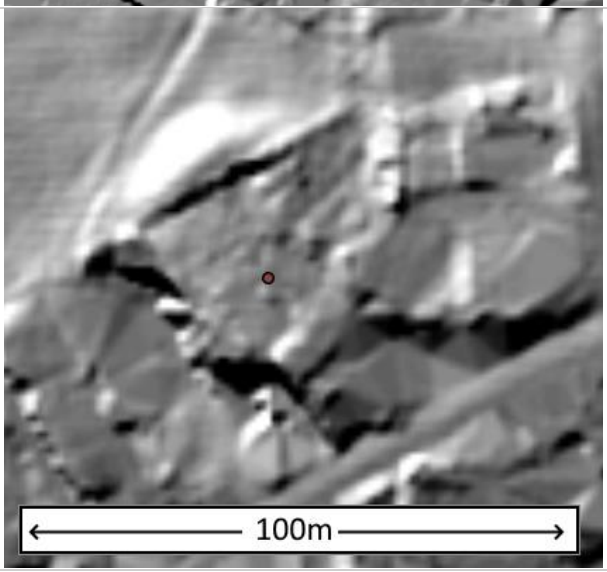
CDER04	Castle Gresley	Castle Gresley	Derbyshire	
CDER05	Condor Castle	Aldercar Langley	Derbyshire	
CDER06	Cockpit Hill	Derby	Derbyshire	

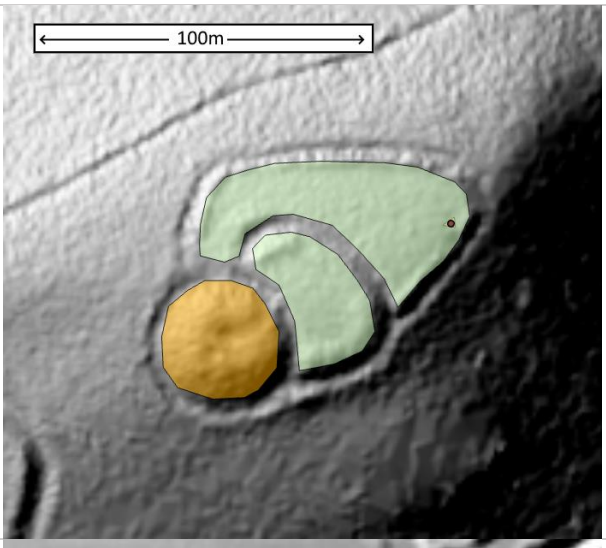
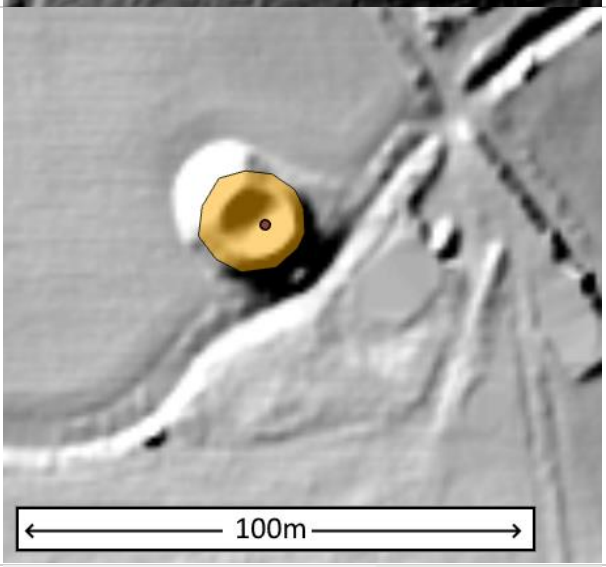
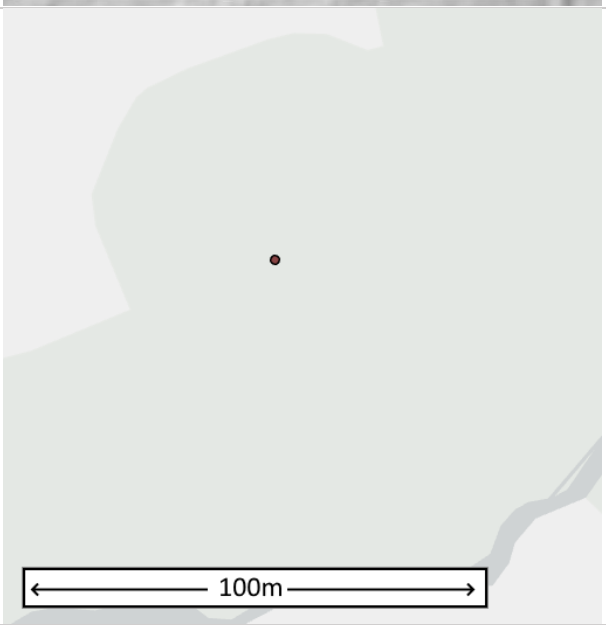
CDER07	Duffield Castle	Duffield	Derbyshire	
CDER08	Camp Green	Hathersage	Derbyshire	
CDER09	Castle Hill	Holmesfield	Derbyshire	

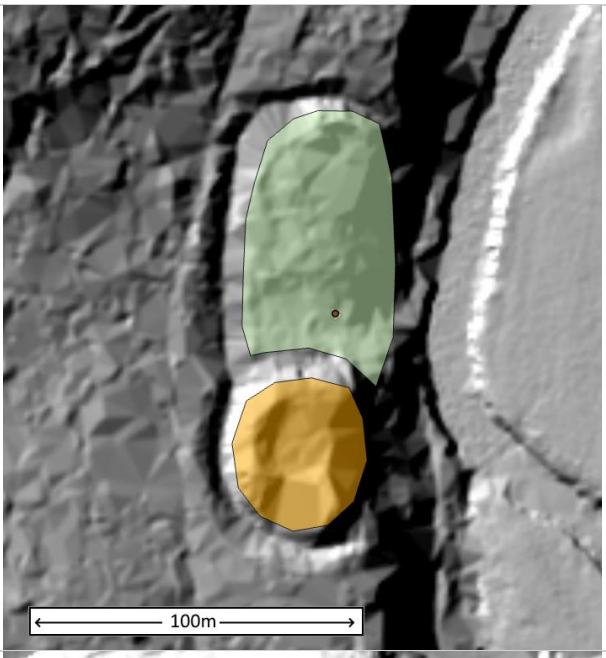
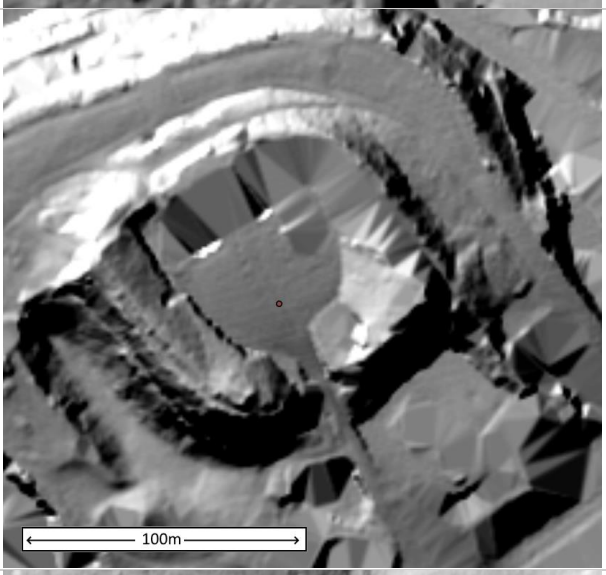
CDER10	Hope Motte	Hope	Derbyshire	
CDER11	Horsley Castle	Horsley	Derbyshire	
CDER12	Moor Mound	Morley	Derbyshire	

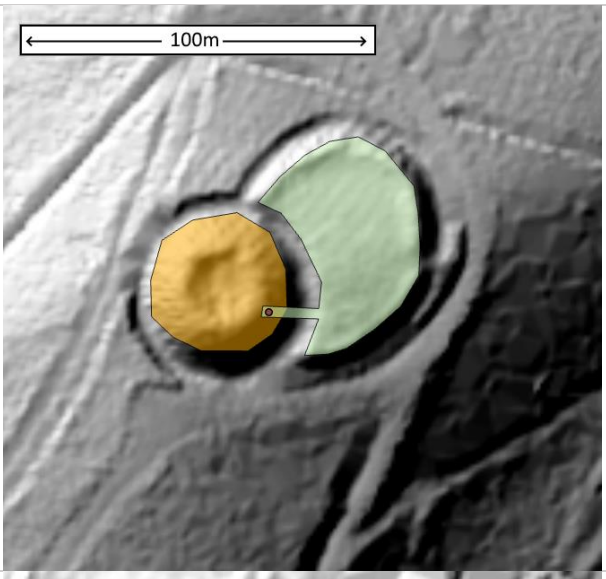
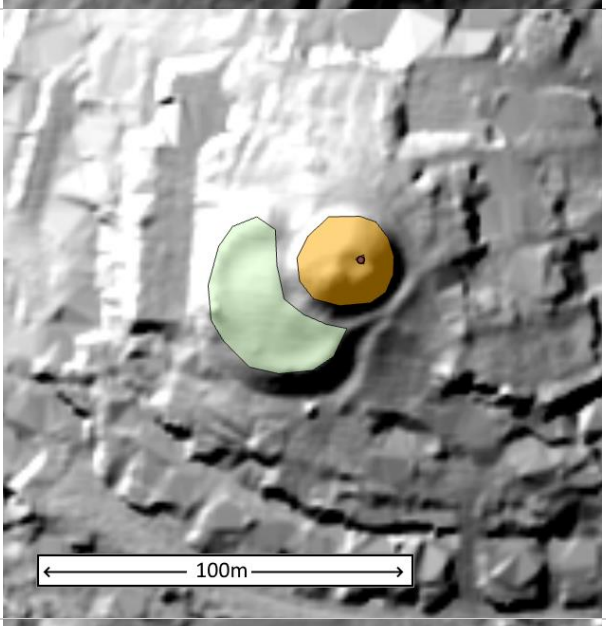
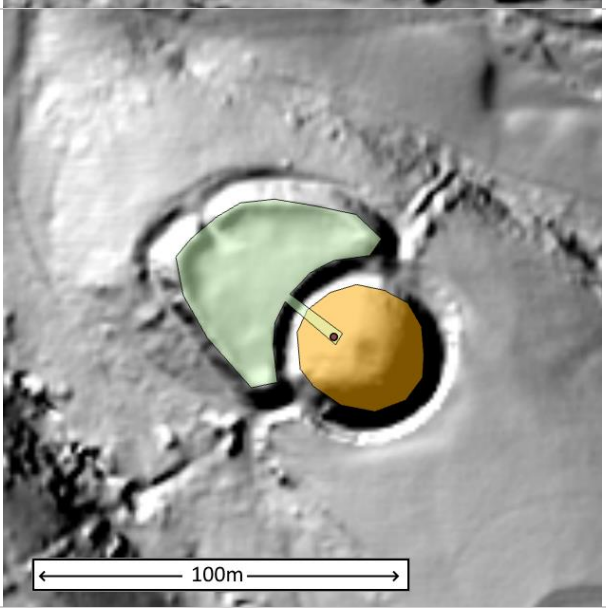
CDER13	Mouselow Castle	Glossop	Derbyshire	
CDER14	Pilsbury Castle	Hartington Town	Derbyshire	
CDER15	Unnamed Hill	Stoney Middleton	Derbyshire	

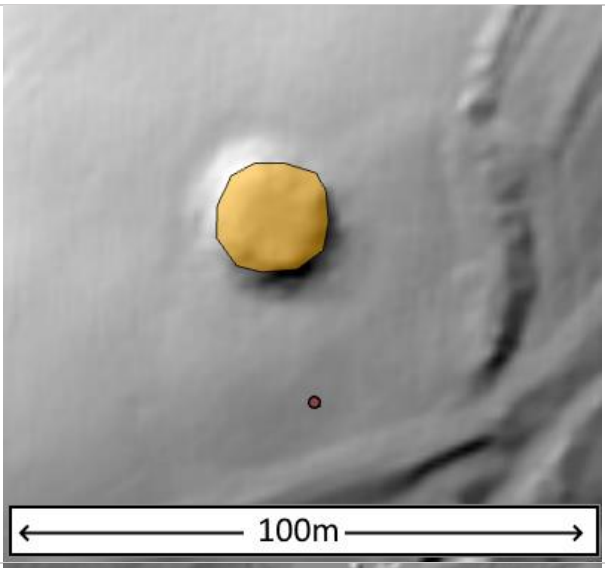
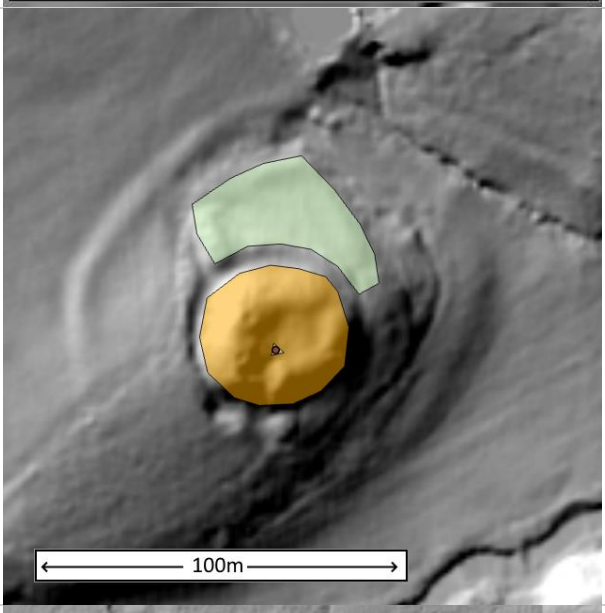
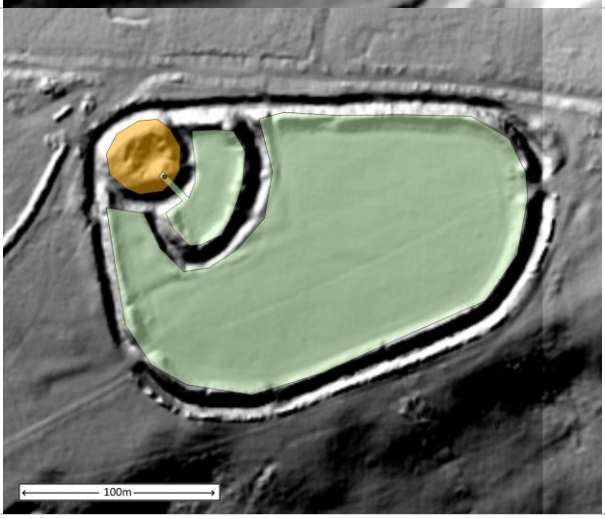
CDER16	Tapton motte	Chesterfield	Derbyshire	
CDEV01	Lydford Castle	Lydford	Devonshire	
CDEV02	unnamed castle site	Axminster	Devonshire	

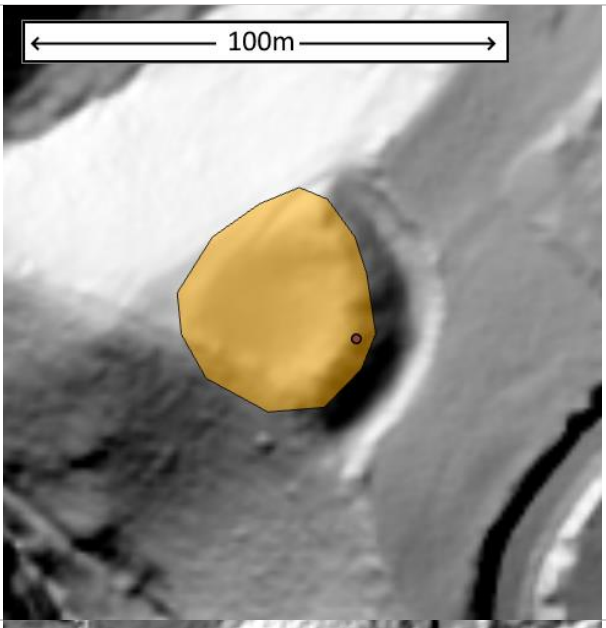
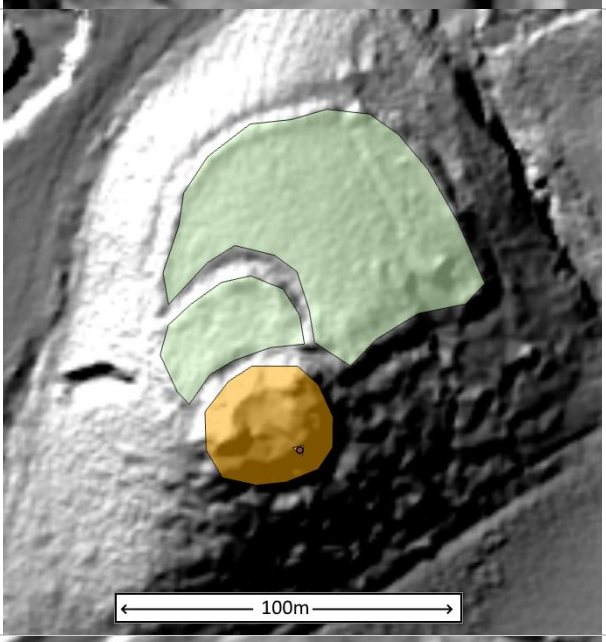
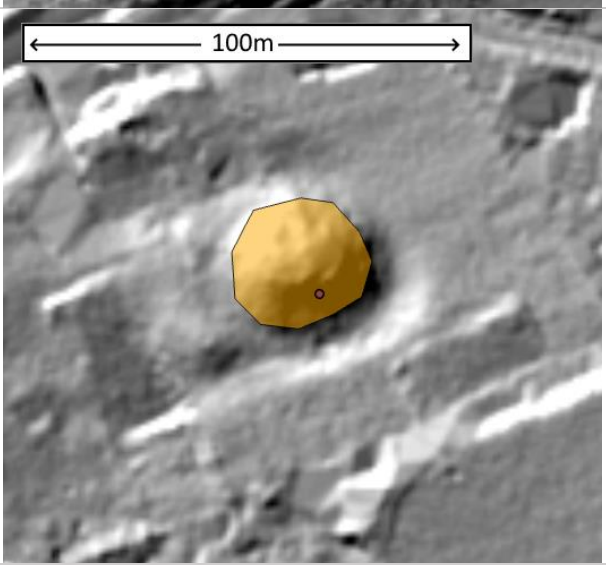
CDEV03	The Motte	Bampton	Devonshire	
CDEV04	Barnstaple Castle	Barnstaple	Devonshire	
CDEV05	unnamed castle site	Bratton Flemming	Devonshire	

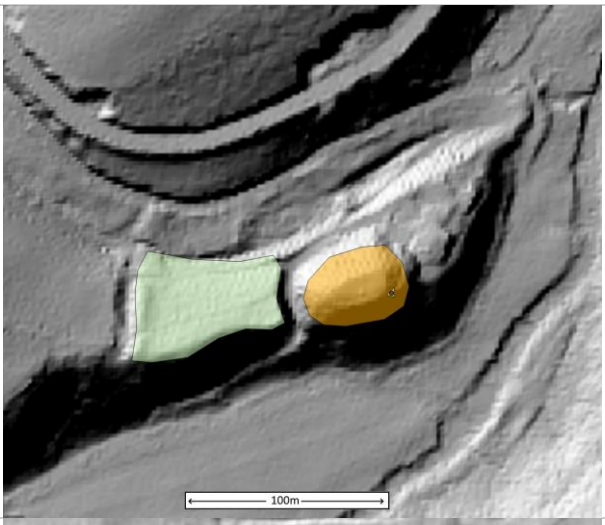
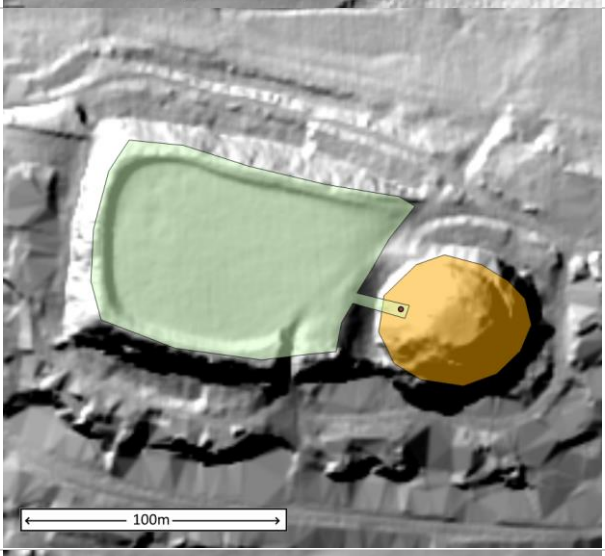
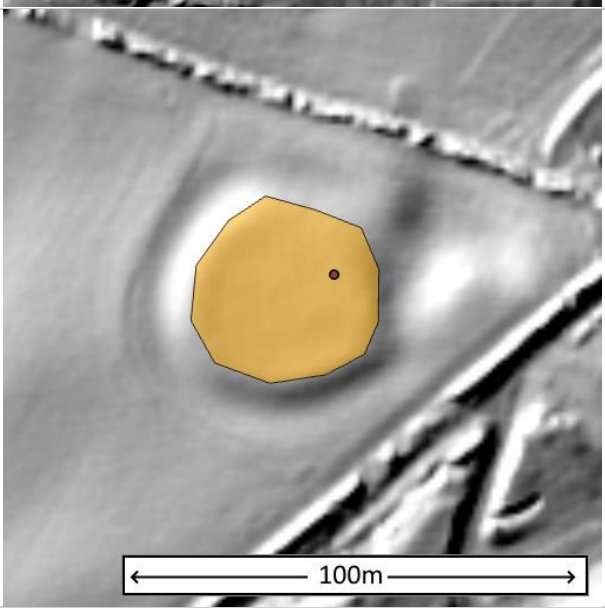
CDEV06	Burley Wood	Bridestowe	Devonshire	
CDEV07	Castle Roborough	Loxhore	Devonshire	
CDEV08	Derpley Castle	Shebbear	Devonshire	

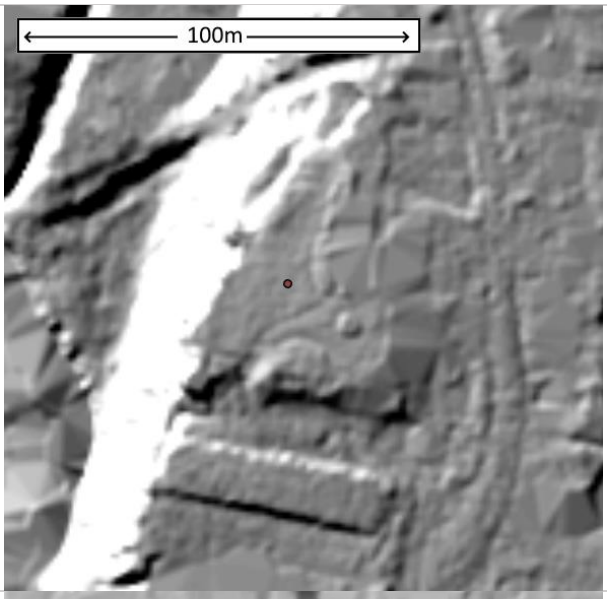
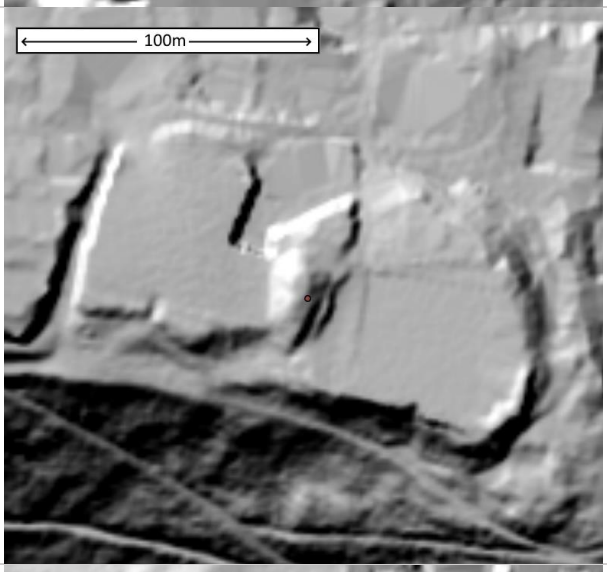
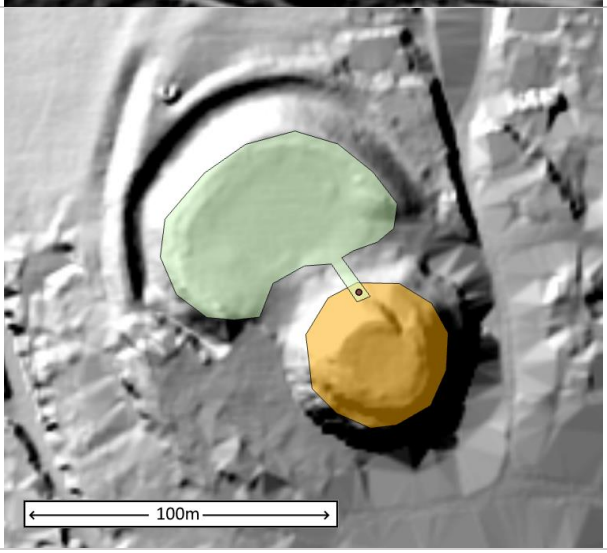
CDEV09	Eggsford Castle	Wembworthy	Devonshire	
CDEV10	Exeter Castle	Exeter	Devonshire	
CDEV11	Hembury Castle	West Buckfastleigh	Devonshire	

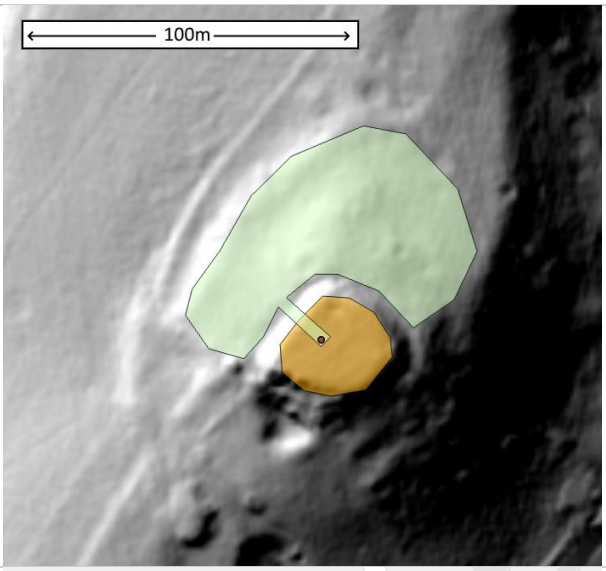
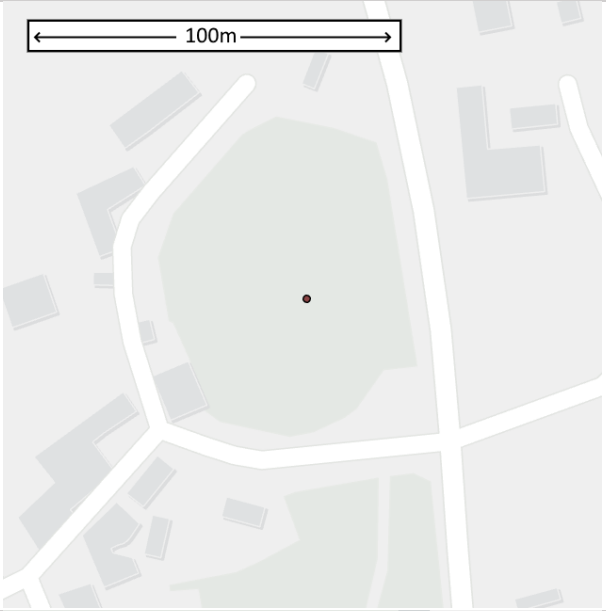
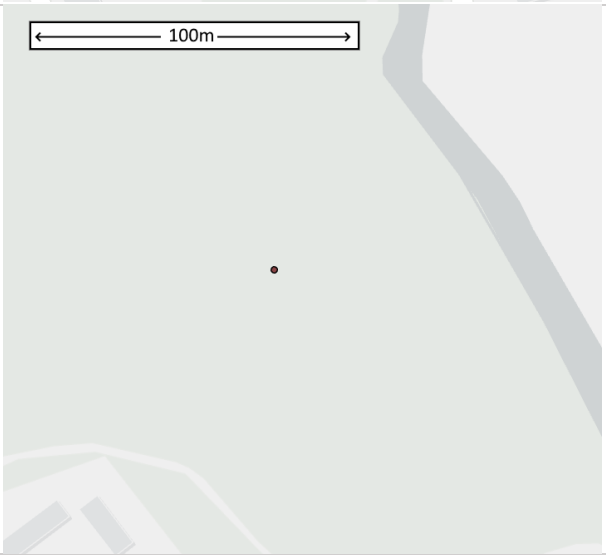
CDEV12	Heywood Castle	Wembworthy	Devonshire	
CDEV13	Highweek Castle Dyke	Newton Abbot	Devonshire	
CDEV14	Holwell Castle	Parracombe	Devonshire	

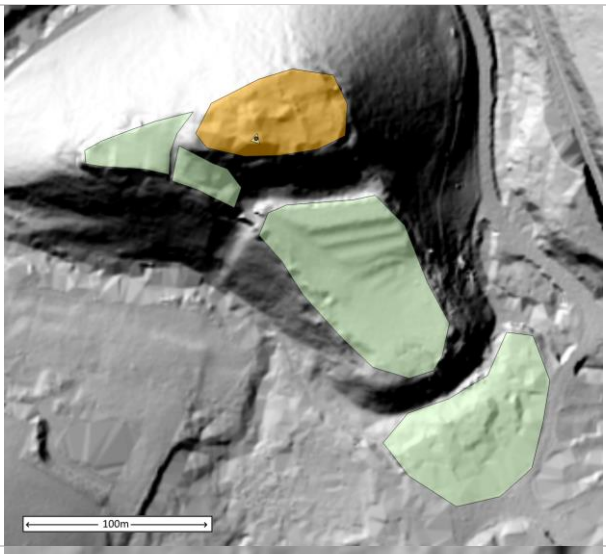
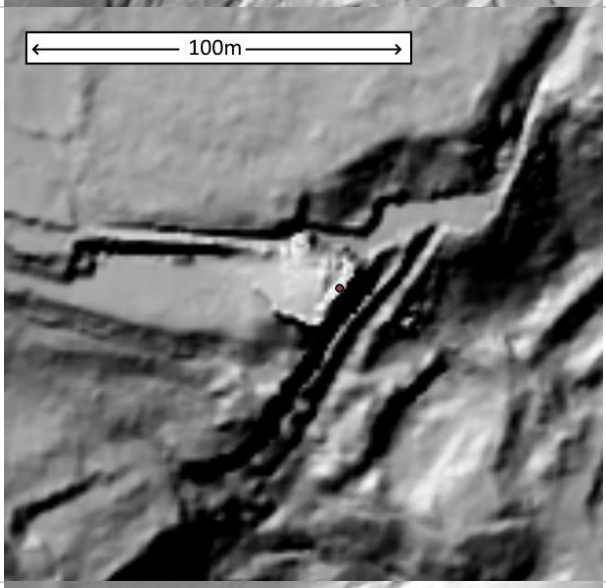
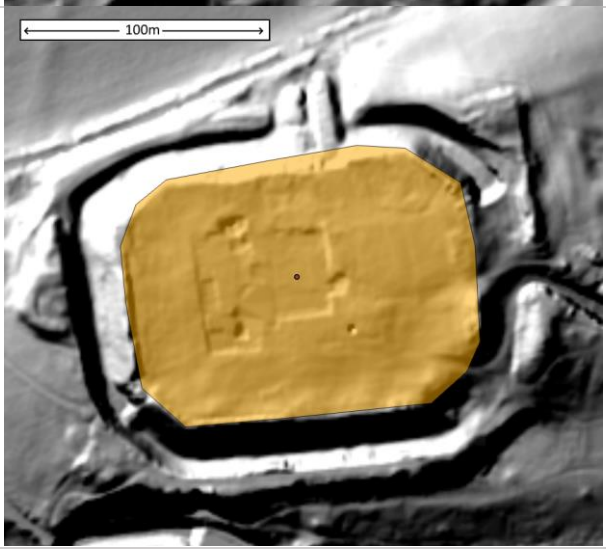
CDEV15	Lamerton motte	Sydenham Damerel	Devonshire	
CDEV16	Langford Barton	Upborough	Devonshire	
CDEV17	Blackdown Rings	Loddiswell	Devonshire	

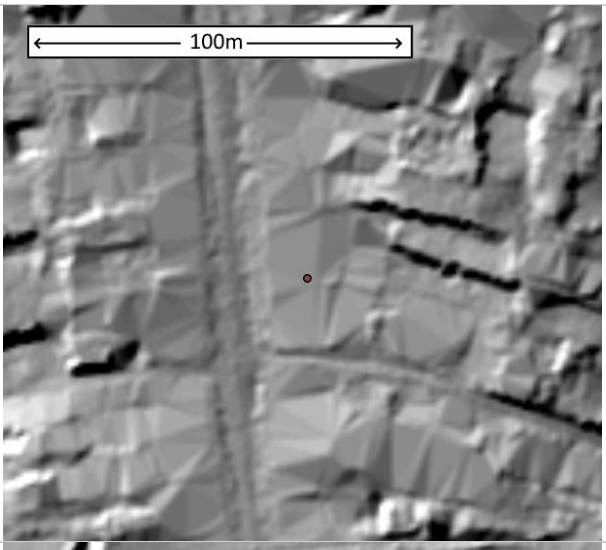
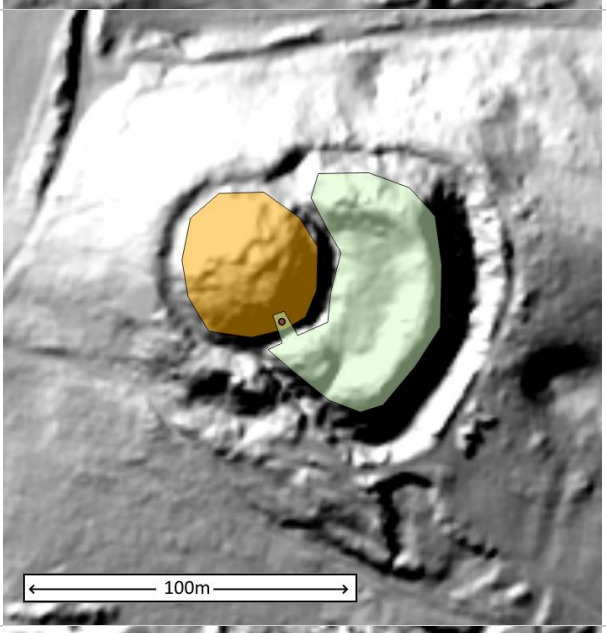
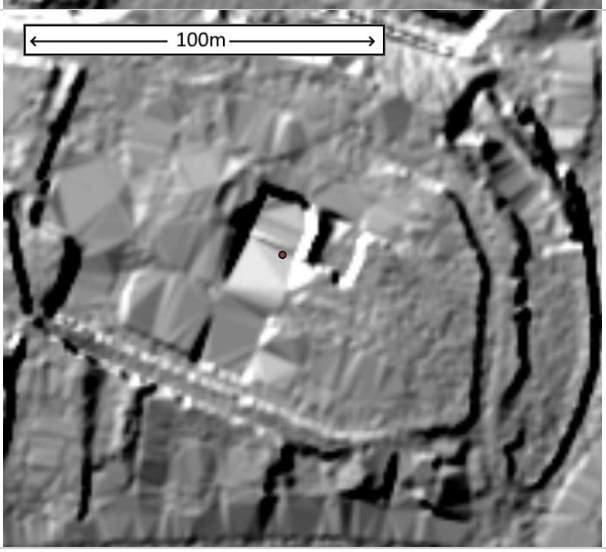
CDEV18	Norman Ringwork	Lydford	Devonshire	
CDEV19	Millsome Castle	Coldridge	Devonshire	
CDEV20	Castle Court	North Tawton	Devonshire	

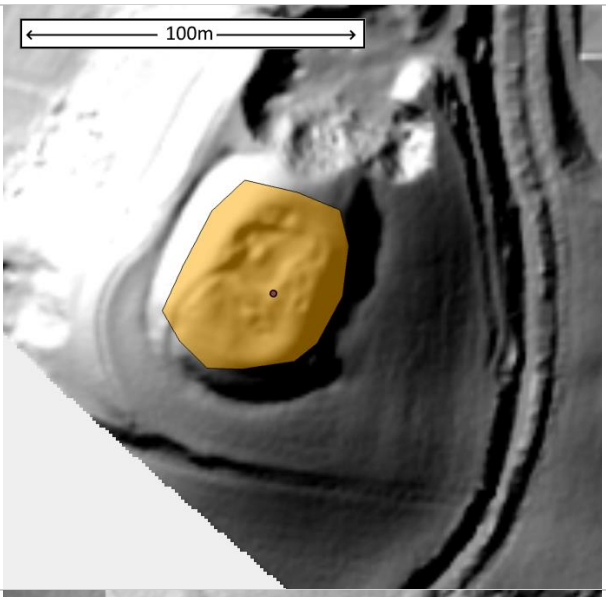
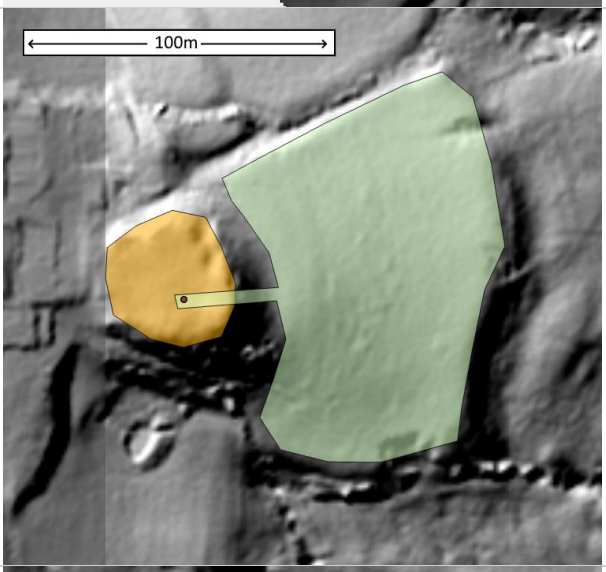
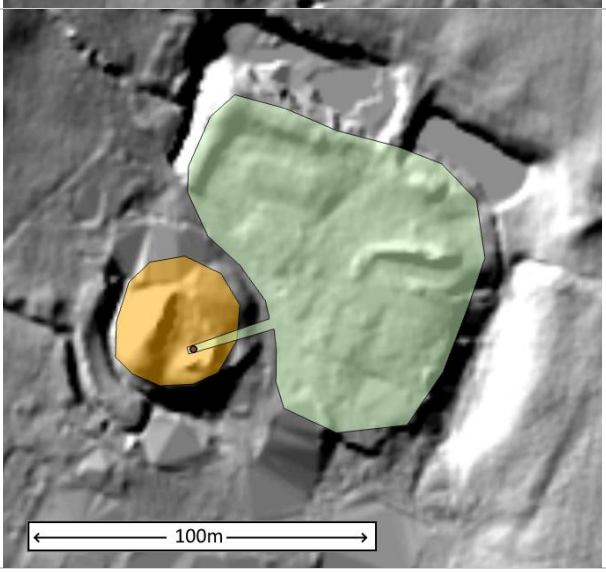
CDEV21	Okehampton Castle	Okehampton	Devonshire	
CDEV22	Plympton Castle	Plymouth	Devonshire	
CDEV23	Stanborough Motte	Halwell & Moreleigh	Devonshire	

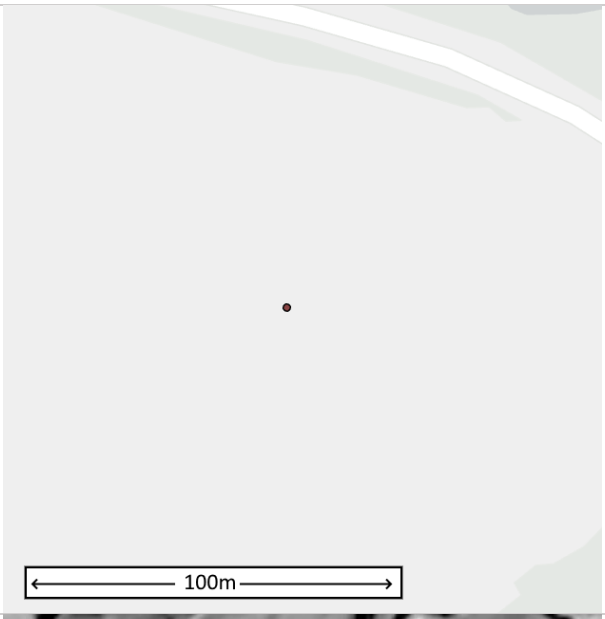
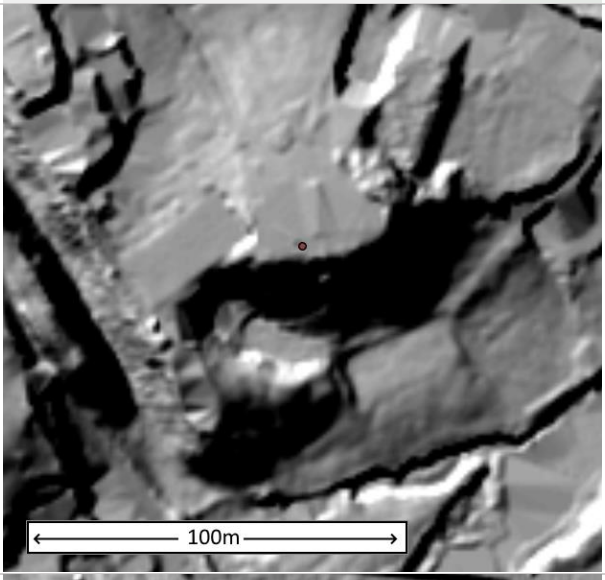
CDEV24	Tiverton Castle	Tiverton	Devonshire	
CDEV25	Torrington Castle	Great Torrington	Devonshire	
CDEV26	Totnes Castle	Totnes	Devonshire	

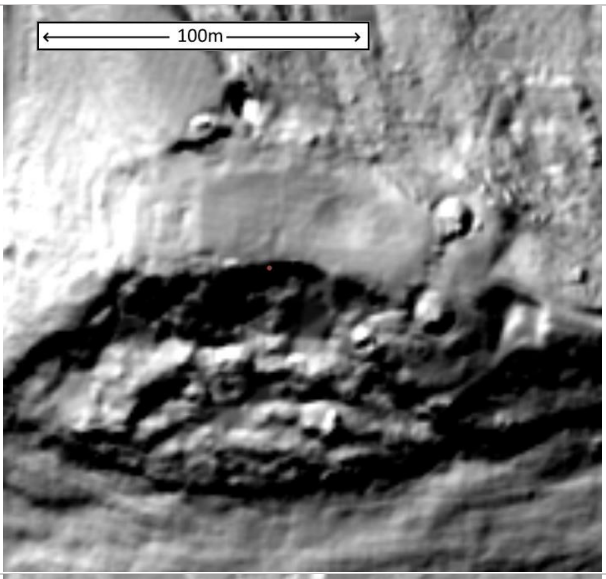
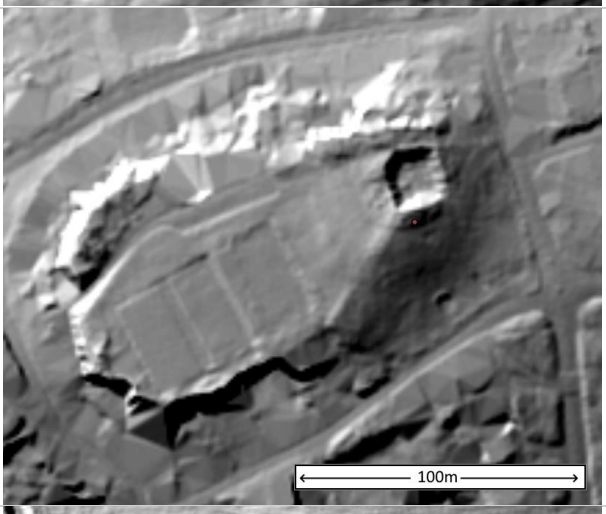
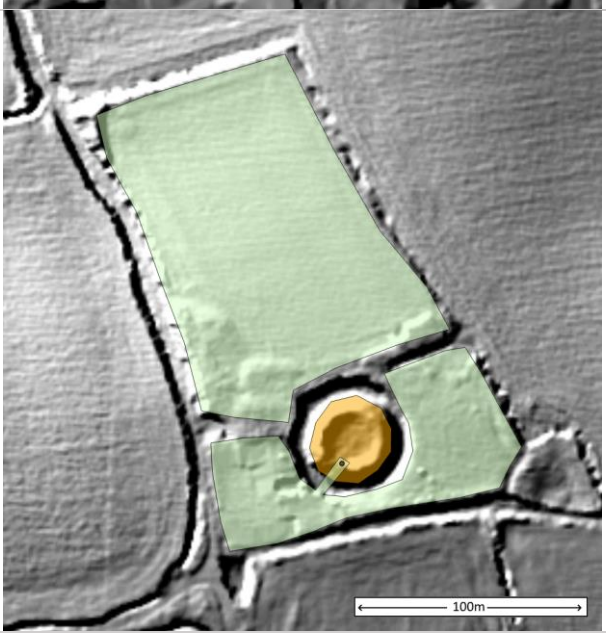
CDEV27	Castle Hill	Widworthy	Devonshire	
CDEV28	Winkleigh Court	Winkleigh	Devonshire	
CDEV29	Woodford Motte	Milton Damerel	Devonshire	

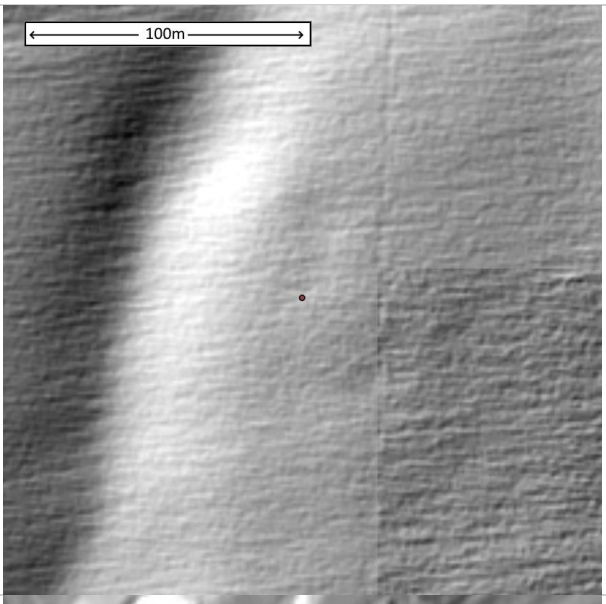
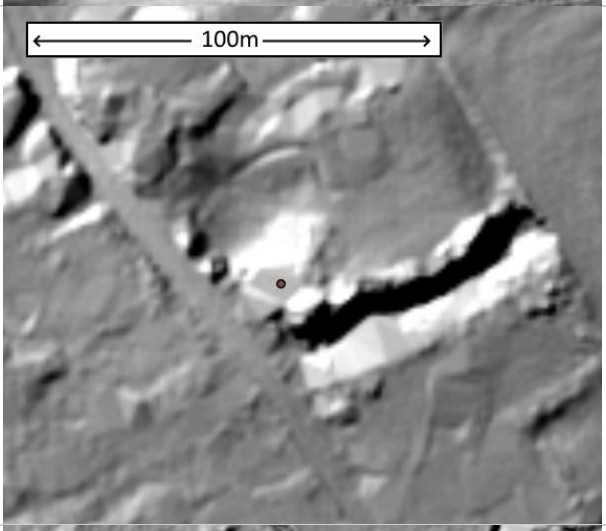
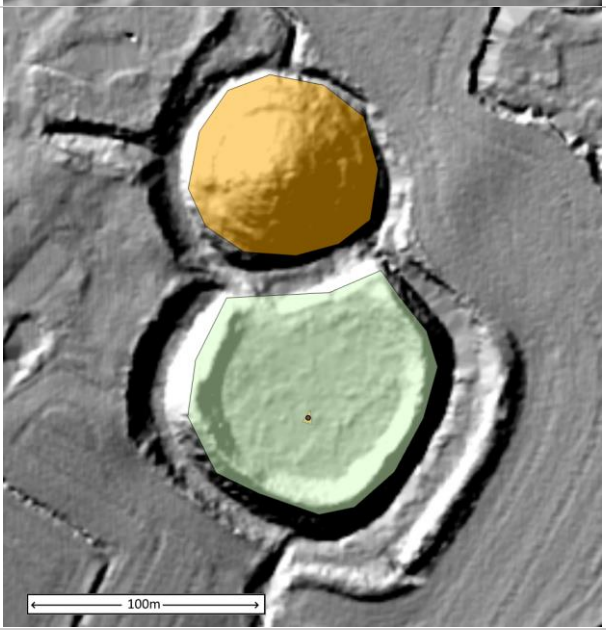
CDOR01	Corfe Castle	Corfe Castle	Dorset	
CDOR02	Rufus Castle	Portland	Dorset	
CDOR03	Sherborne Castle	Castleton	Dorset	

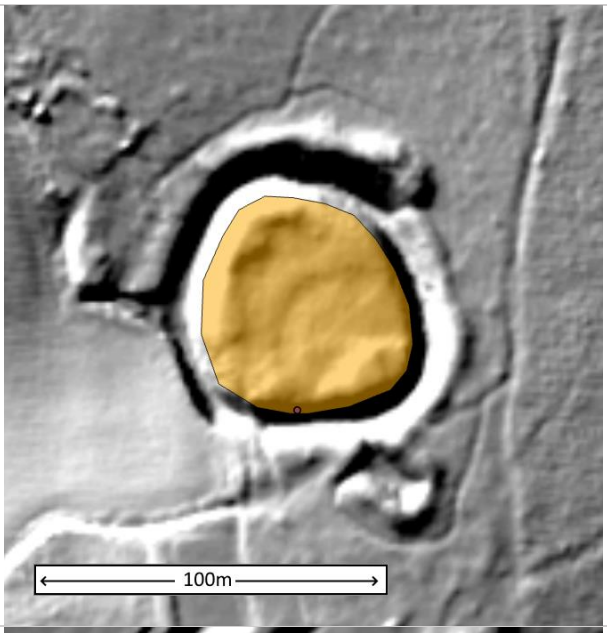
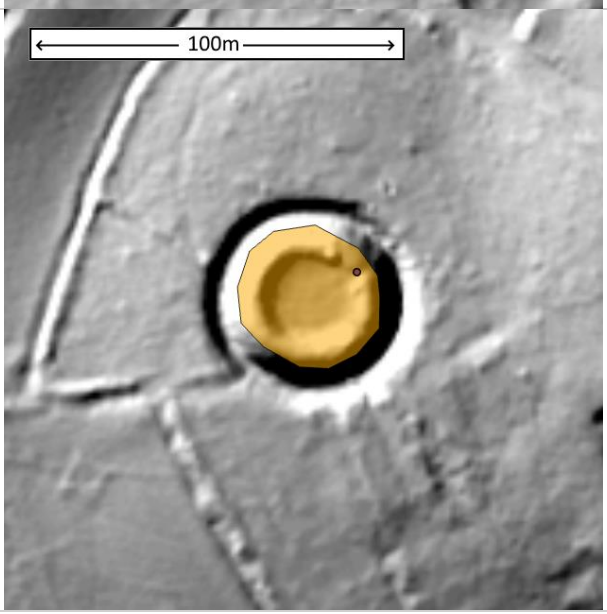
CDOR04	Bridport Castle	Bridport	Dorset	
CDOR05	unnamed castle site	Cranborne	Dorset	
CDOR06	Dorchester Castle	Dorchester	Dorset	

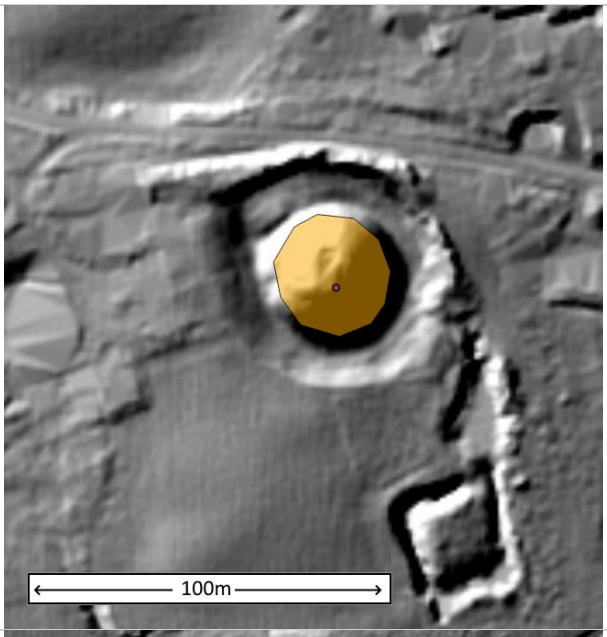
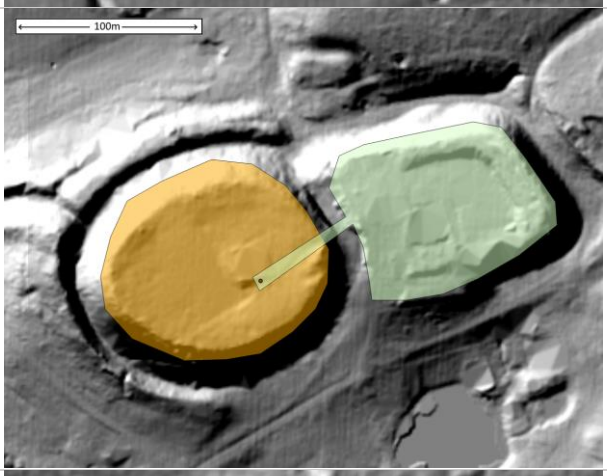
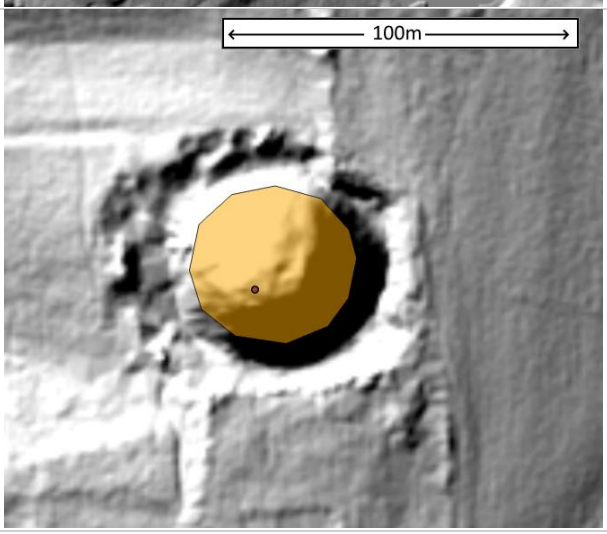
CDOR07	unnamed castle site	East Chelborough	Dorset	
CDOR08	Stake Farm	East Chelborough	Dorset	
CDOR09	Marshwood Castle	Marshwood	Dorset	

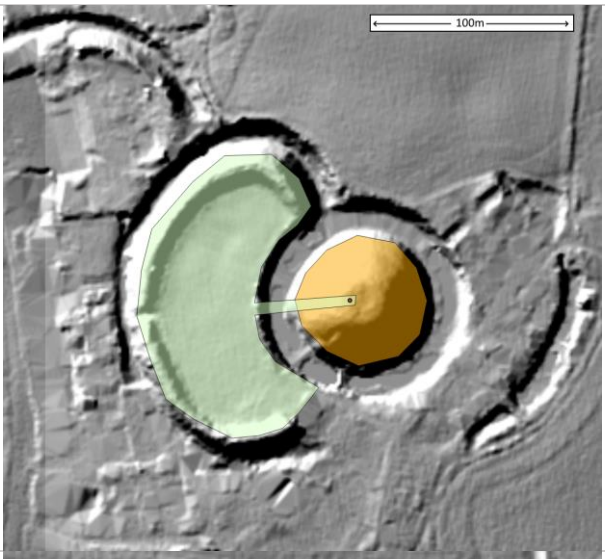
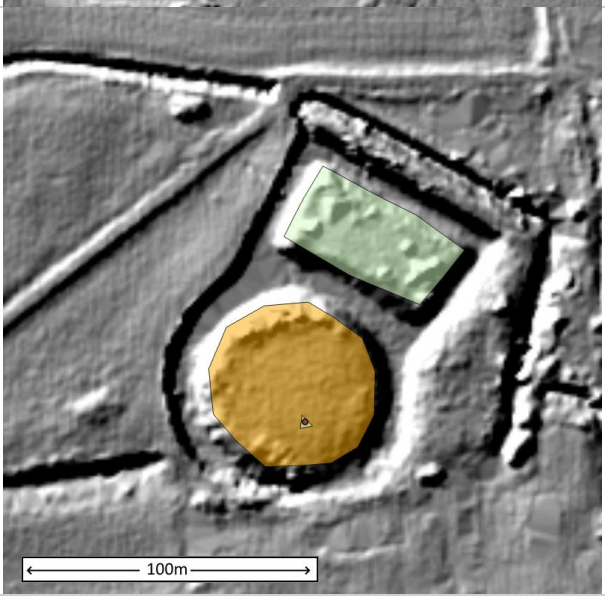
CDOR10	Powerstock Castle	Powerstock	Dorset	
CDOR11	Wareham Castle	Wareham Town	Dorset	
CESS01	Colchester Castle	Colchester	Essex	

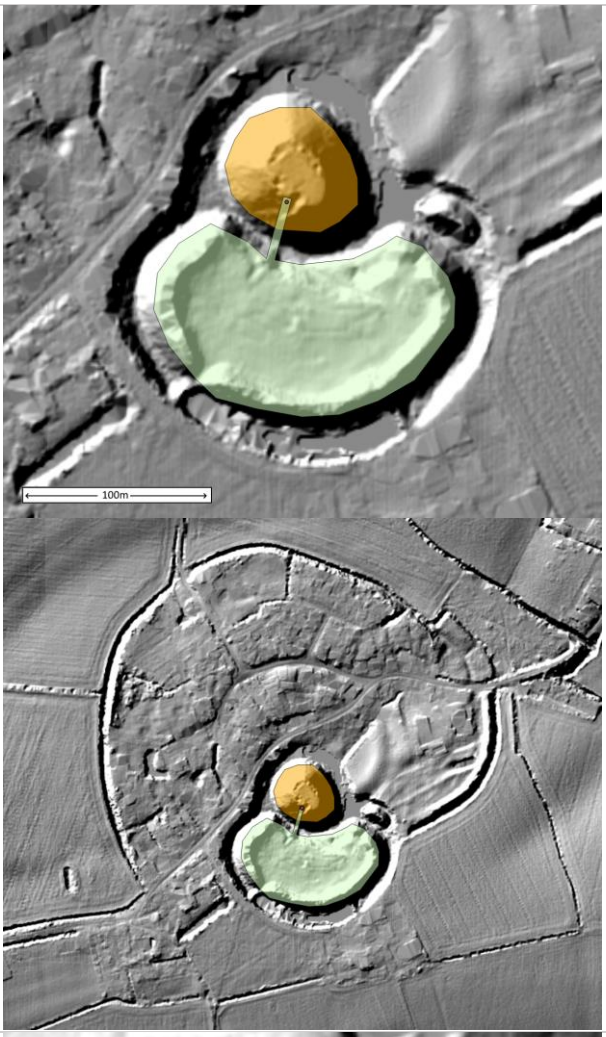
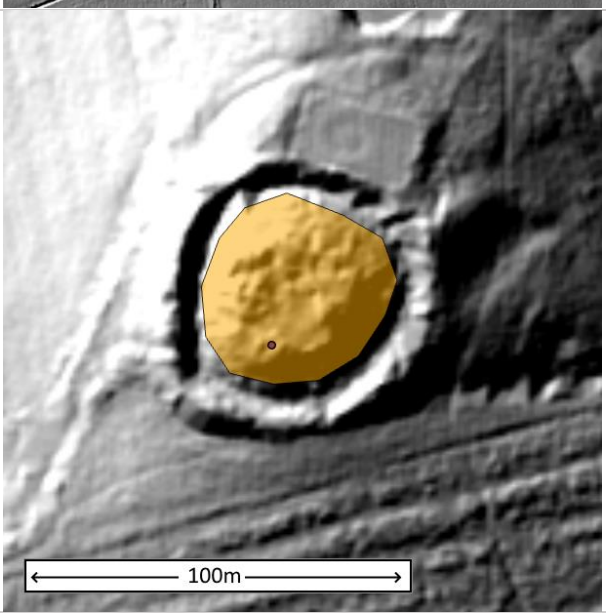
CESS02	Hadleigh Castle	Hadleigh	Essex	
CESS03	Saffron Walden Castle	Saffron Walden	Essex	
CESS04	The Crump	Berden	Essex	

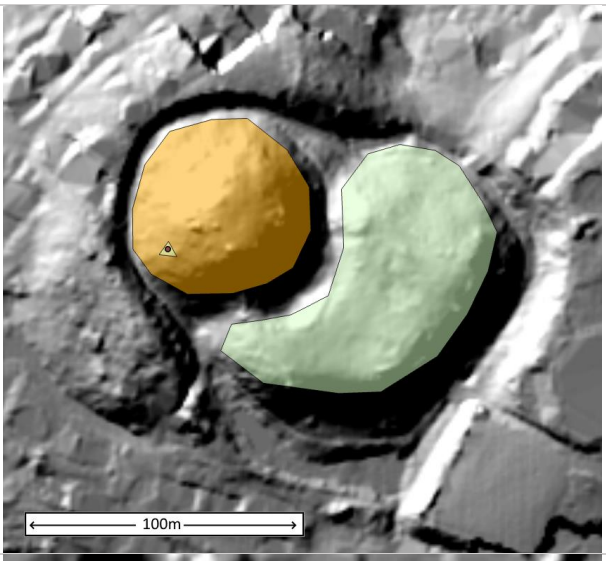
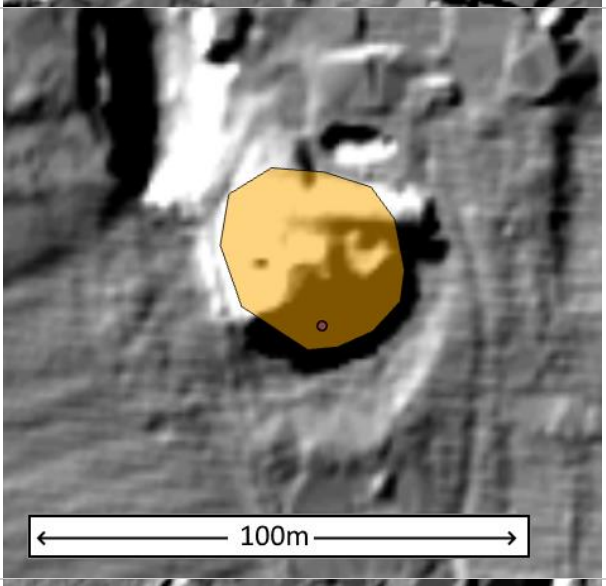
CESS05	The Rookery	Berden	Essex	
CESS06	Birch Castle	Birch	Essex	
CESS07	Canfield Castle	Great Canfield	Essex	

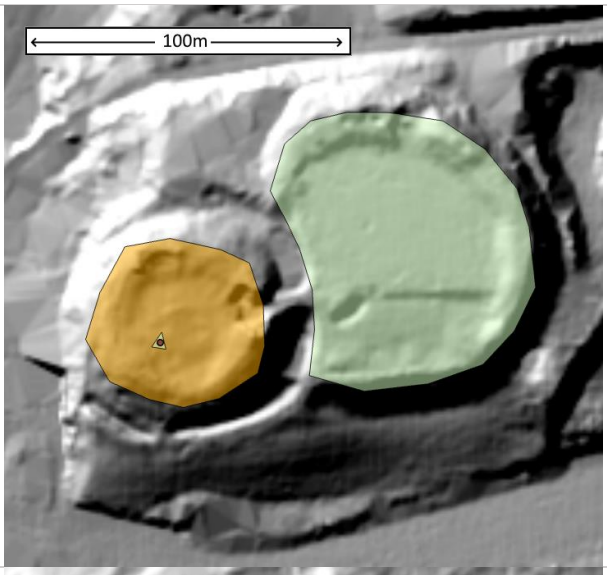
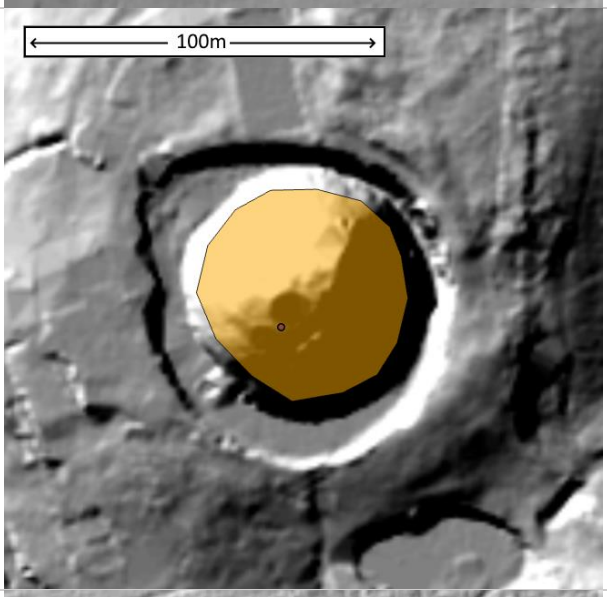
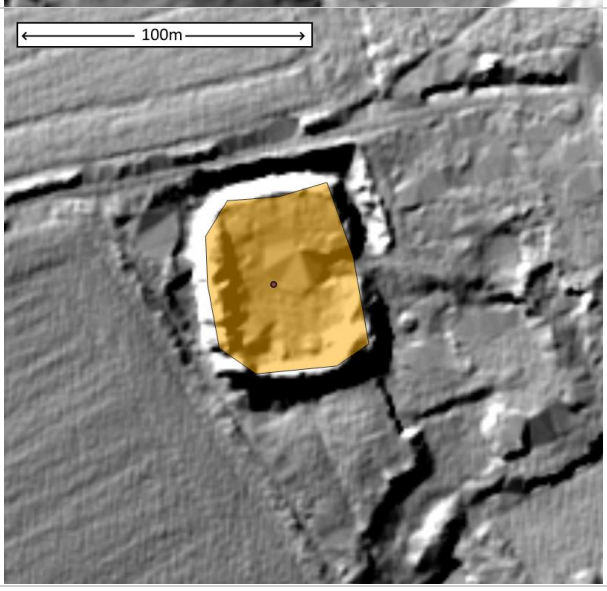
CESS08	Park Wood	Chrishall	Essex	
CESS09	Clavering Castle	Clavering	Essex	
CESS10	Castle Grove	Elmdon	Essex	

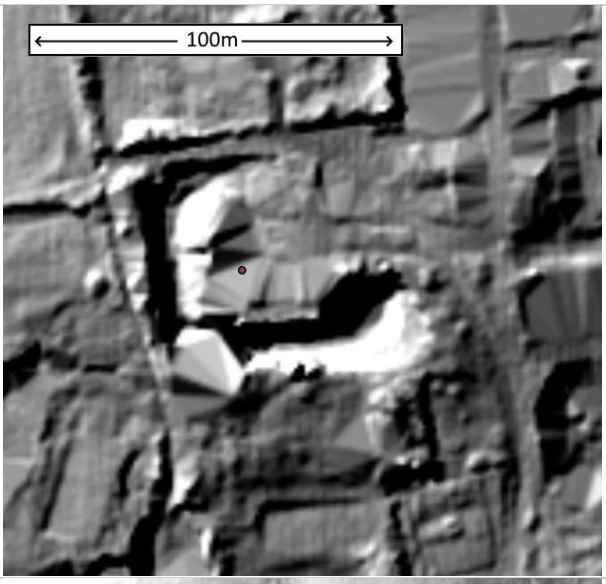
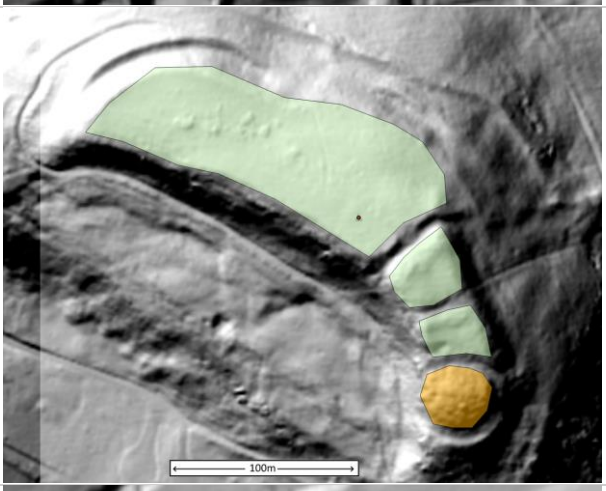
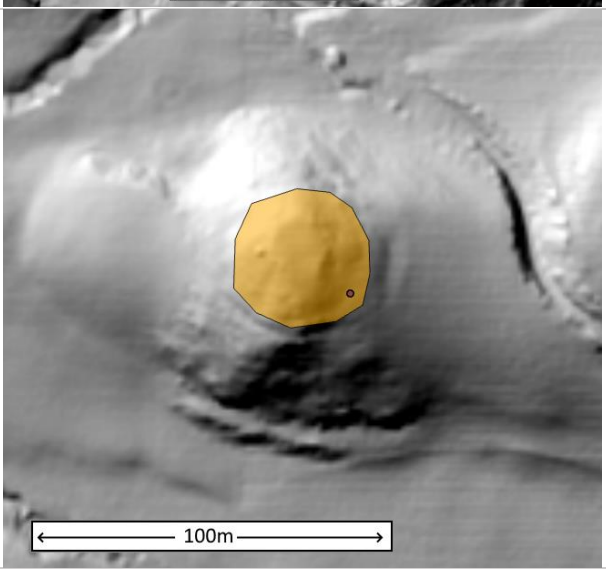
CESS11	Great Easton Castle	Great Easton	Essex	
CESS12	Hedingham Castle	Castle Hedingham	Essex	
CESS13	Mount Bures	Mount Bures	Essex	

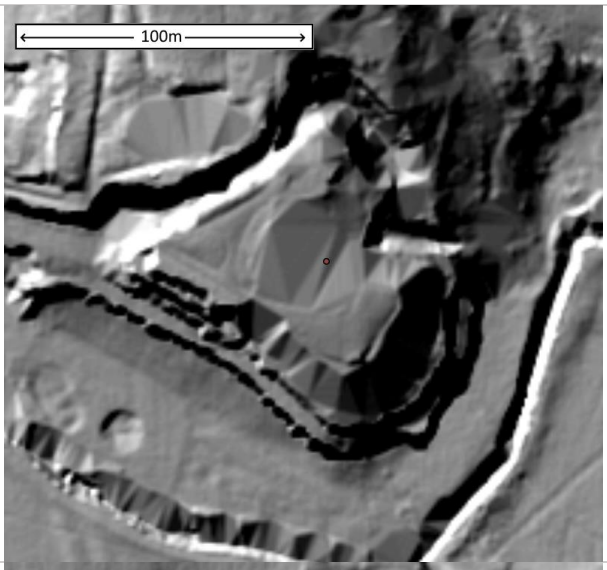
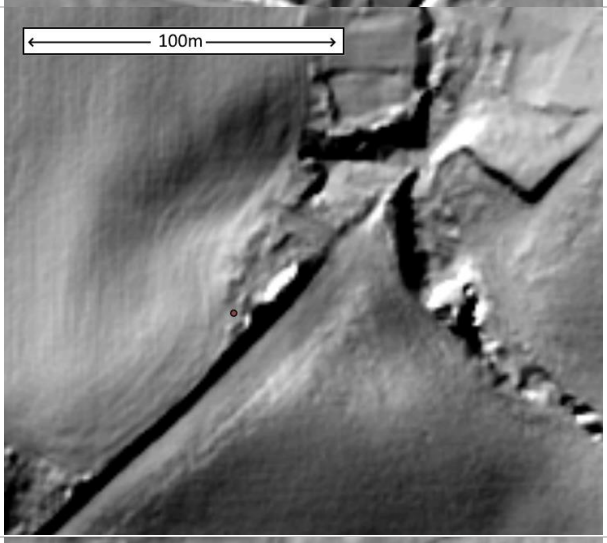
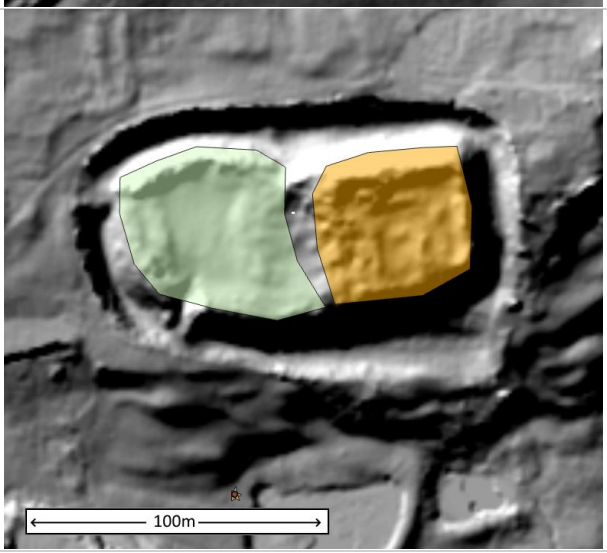
CESS14	Onager Castle	Onager	Essex	
CESS15	Bishop Bonners Palace	Orsett	Essex	

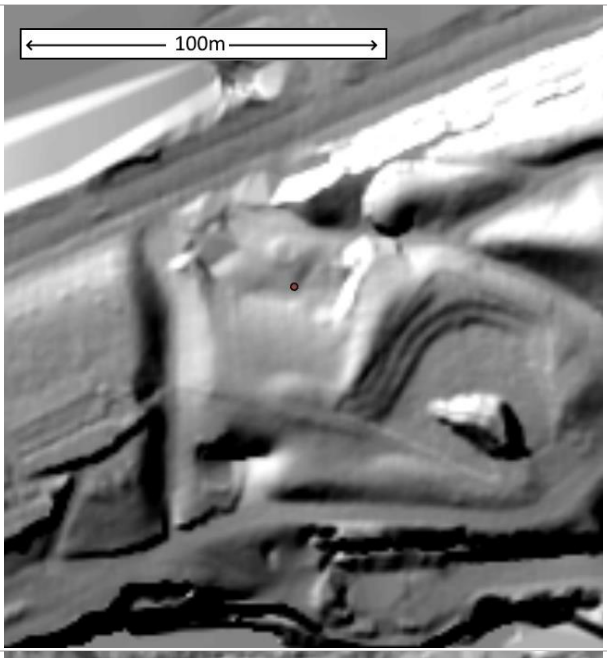
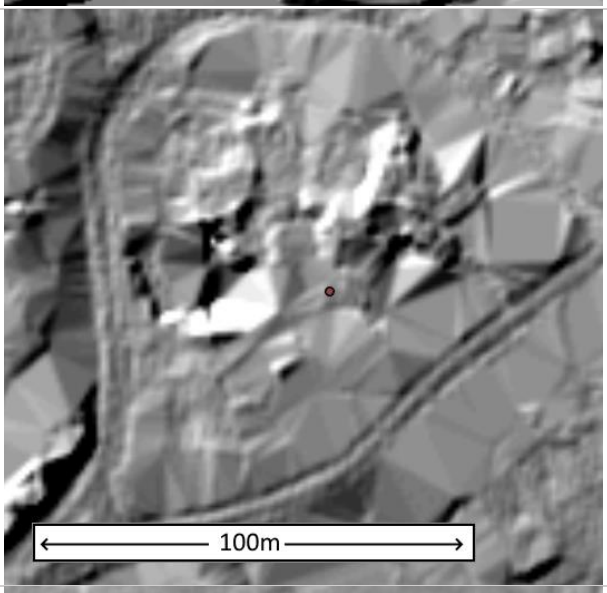
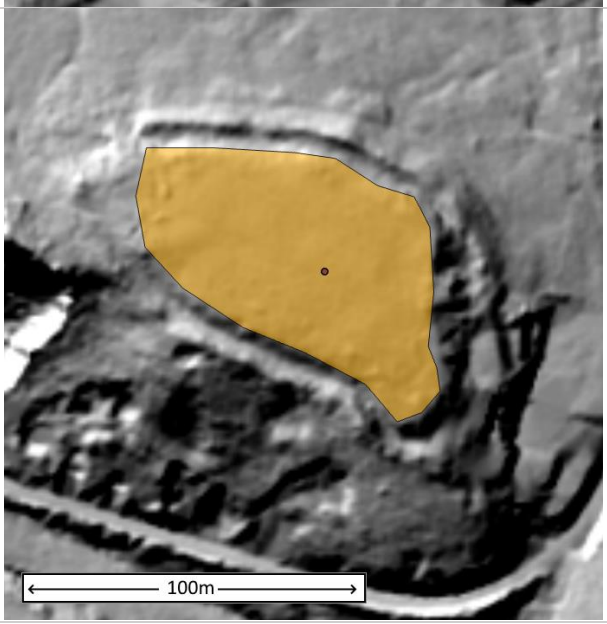
CESS16	Pleshey Castle	Pleshey	Essex	
CESS17	Purleigh Mount	Purleigh	Essex	

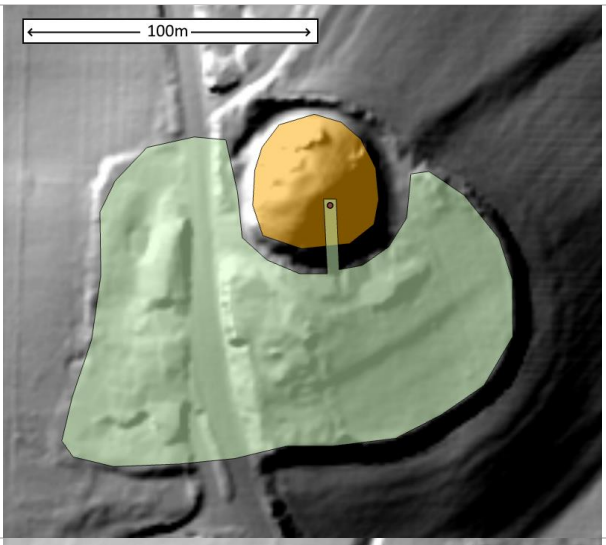
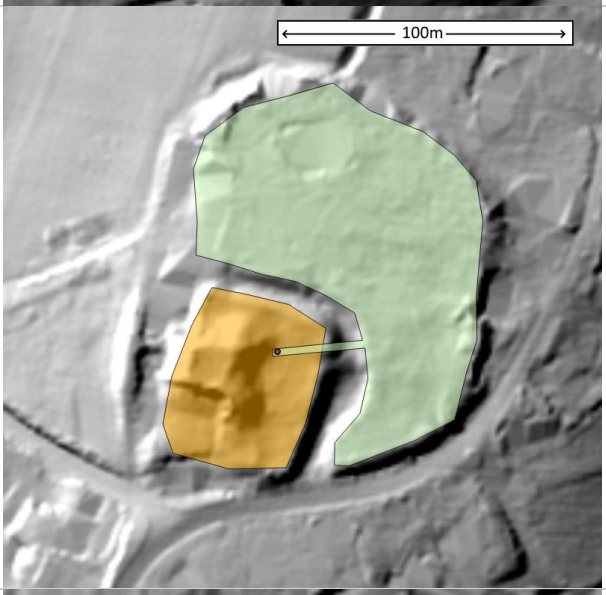
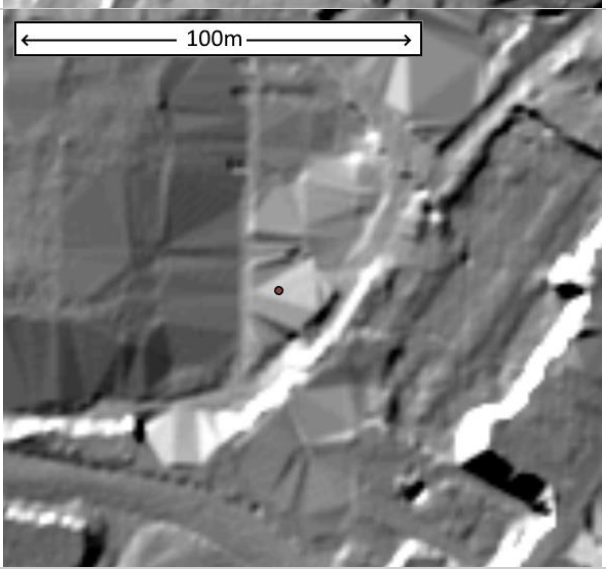
CESS18	Rayleigh Castle	Rayleigh	Essex	
CESS19	Rickling Hall Motte	Quendon & Rickling	Essex	
CESS20	Sheering Hall	Sheering	Essex	

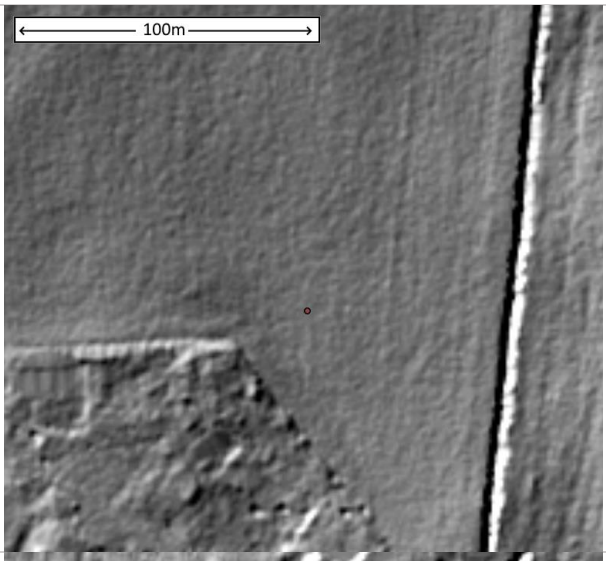
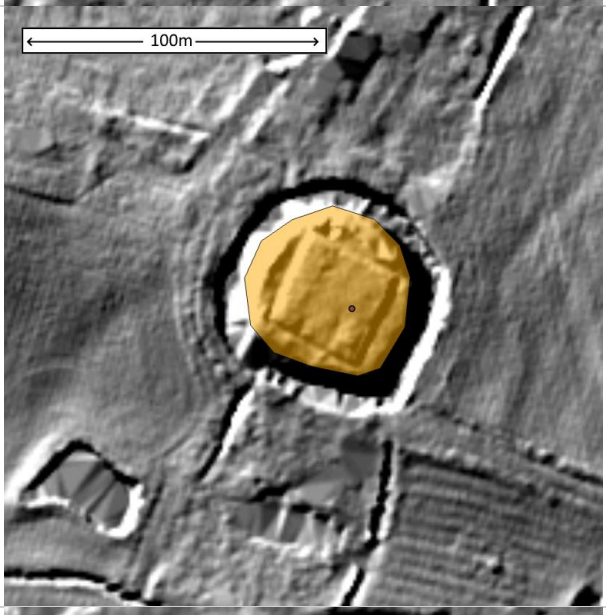
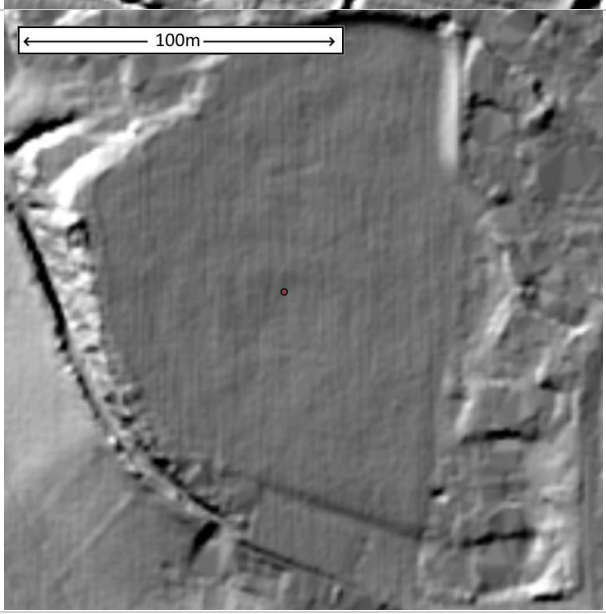
CESS21	Mountfitchet Castle	Stanstead Mountfitchet	Essex	
CESS22	The Mount	Stebbing	Essex	
CESS23	Blunts Hall	Witham	Essex	

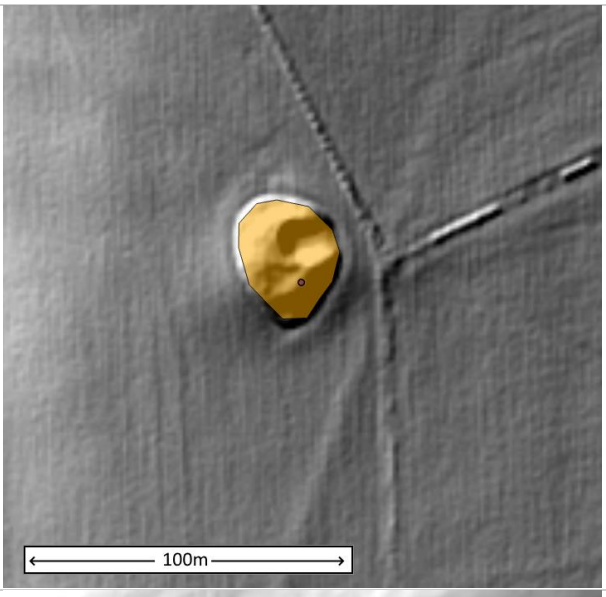
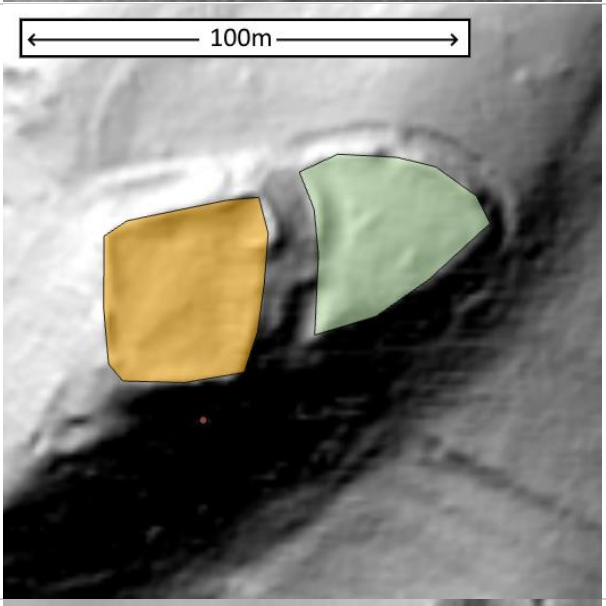
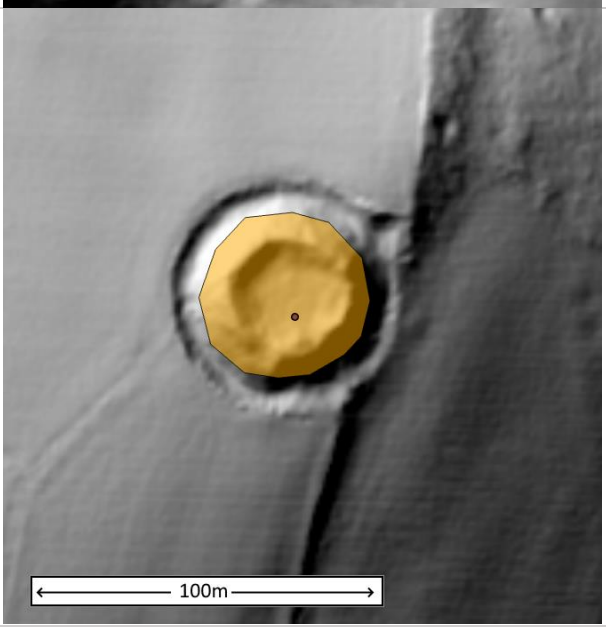
CGLO01	Beverstone Castle	Beverstone	Gloucestershire	
CGLO02	Dixton Hill	Alderton	Gloucestershire	
CGLO03	Cern Hill	Newnham	Gloucestershire	

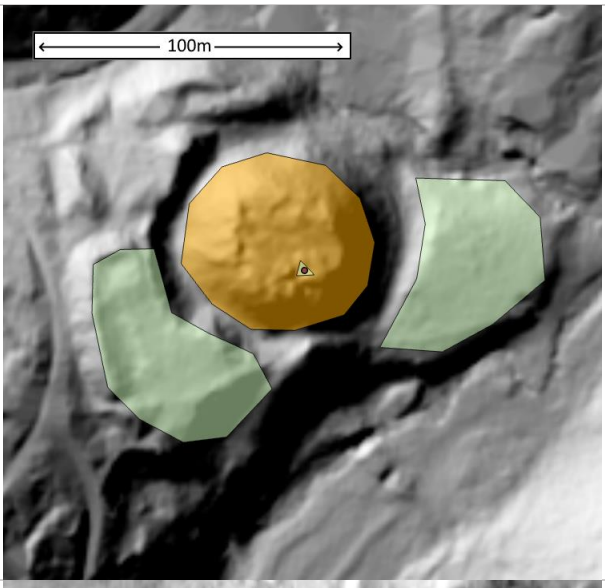
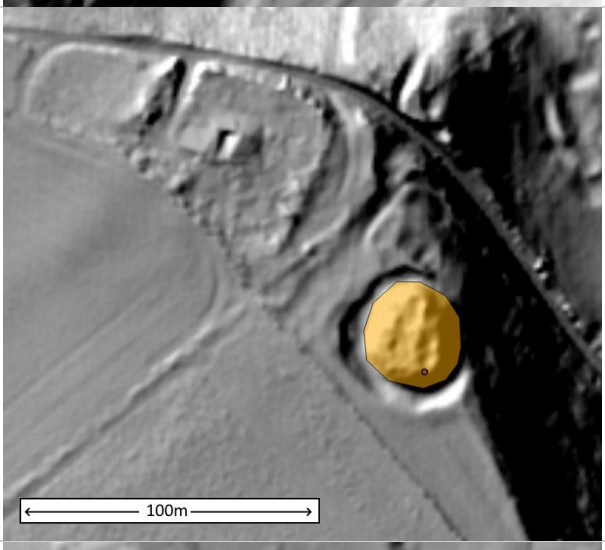
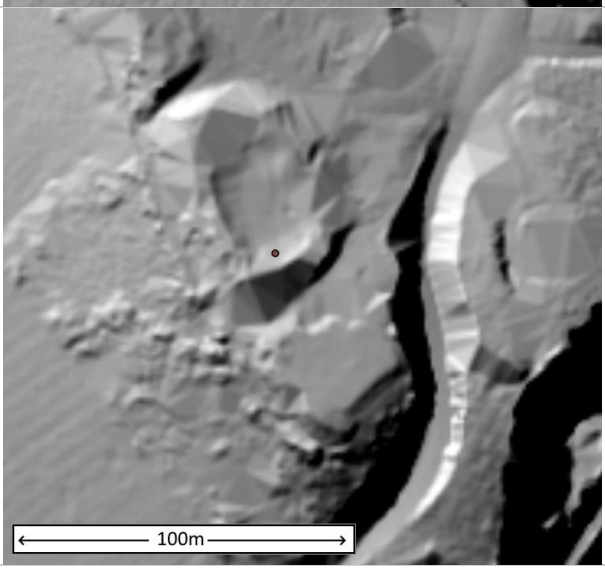
CGLO04	Berkeley Castle	Berkeley	Gloucestershire	
CGLO05	Bledisloe Tump	Awre	Gloucestershire	
CGLO06	Brimpsfield Castle	Brimpsfield	Gloucestershire	

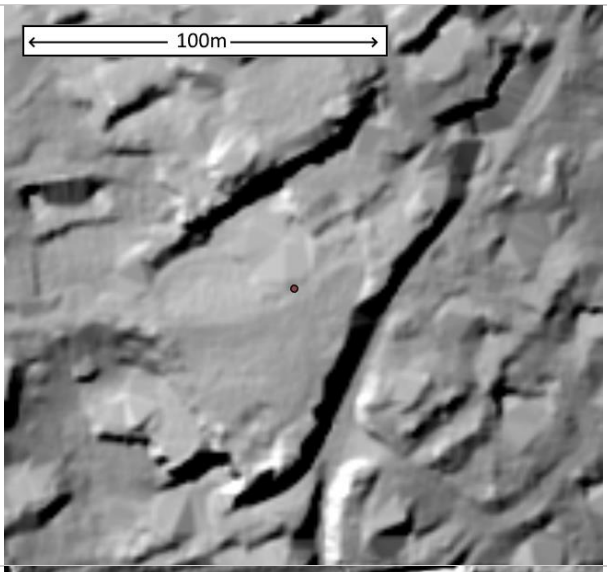
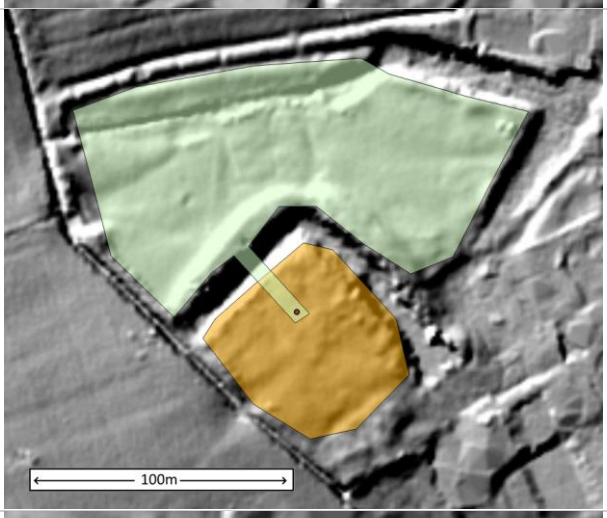
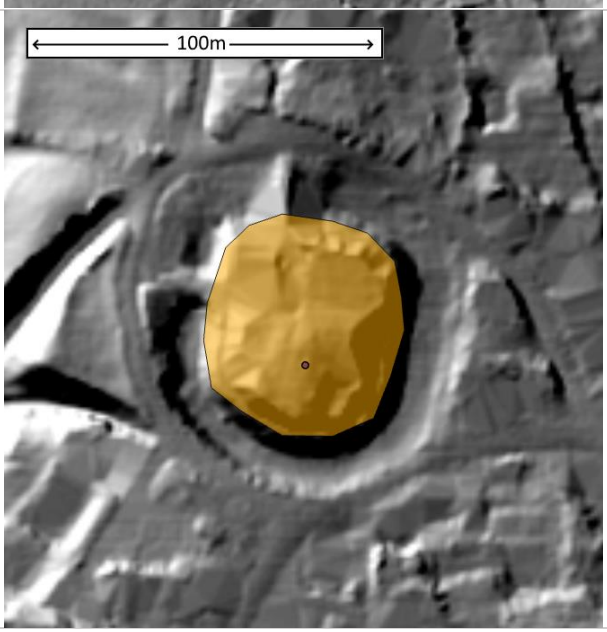
CGLO07	Bristol Castle	Bristol	Gloucestershire	
CGLO08	Cirencester Castle	Cirencester	Gloucestershire	
CGLO09	Damery Old Castle	Alkington	Gloucestershire	

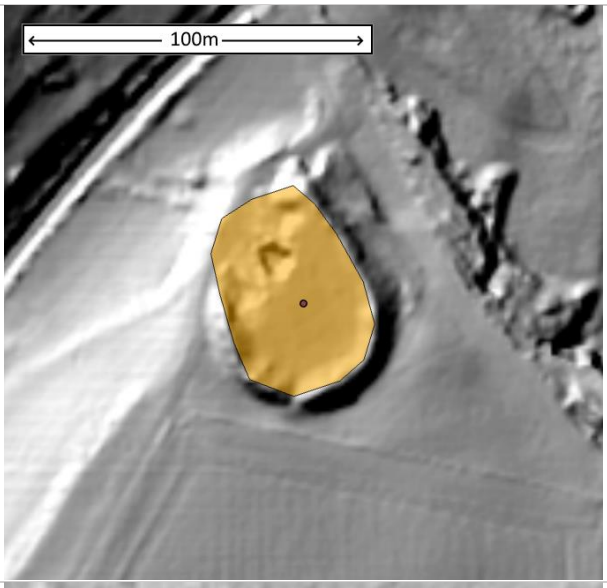
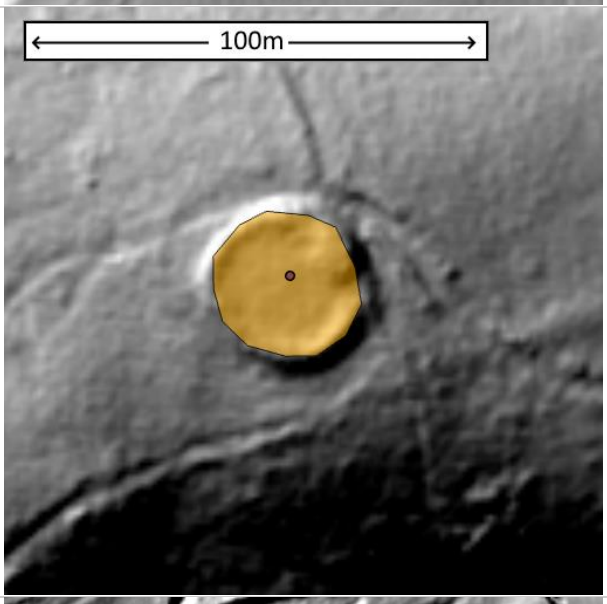
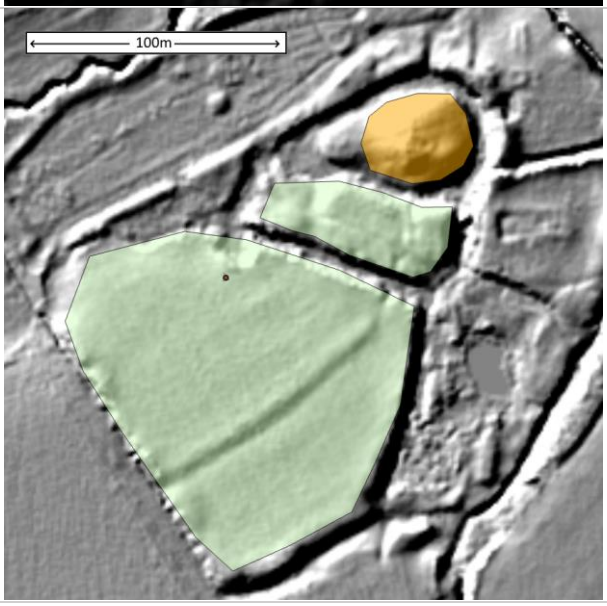
CGLO10	Dymock Castle Tump	Dymock	Gloucestershire	
CGLO11	Bicknor Castle	English Bicknor	Gloucestershire	
CGLO12	Gloucester Castle	Gloucester	Gloucestershire	

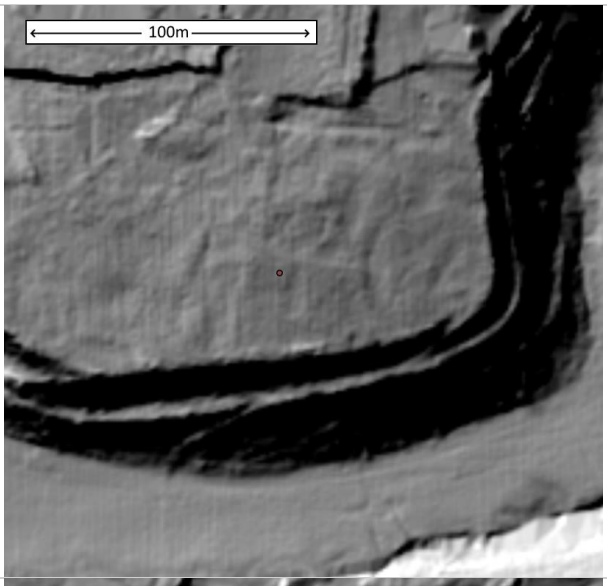
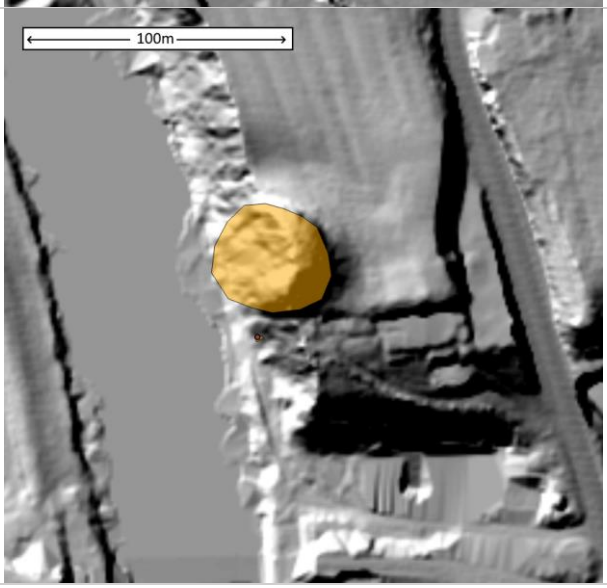
CGLO13	Hailes Castle	Stanway	Gloucestershire	
CGLO14	Haresfield Mount	Haresfield	Gloucestershire	
CGLO15	Hillesley Ringwork	Hillesley and Tresham	Gloucestershire	

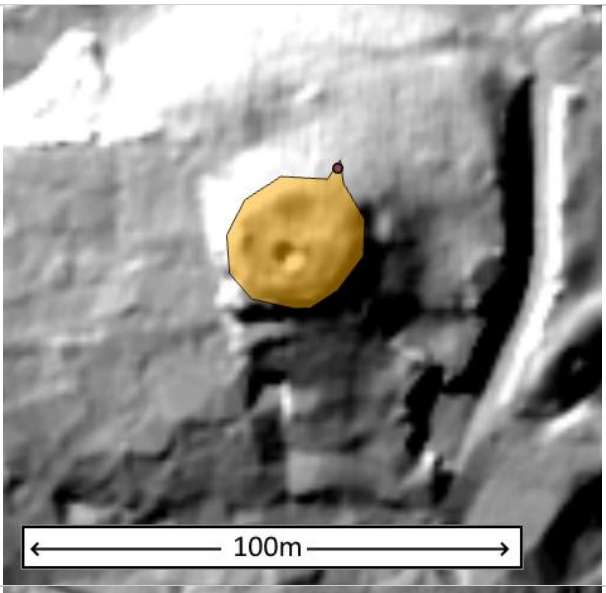
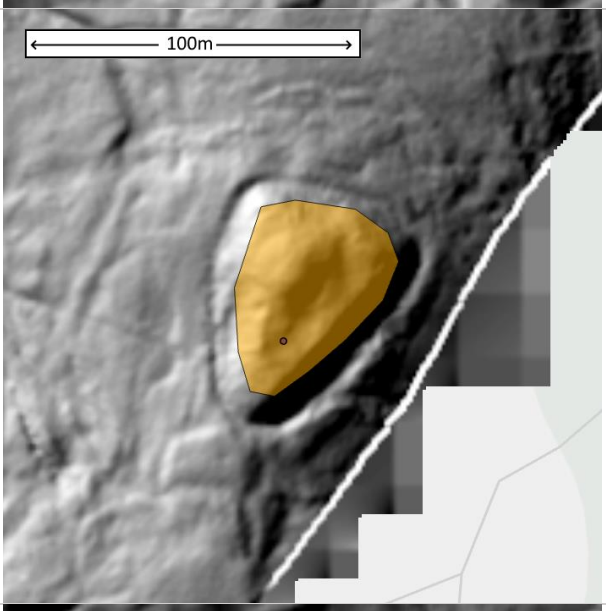
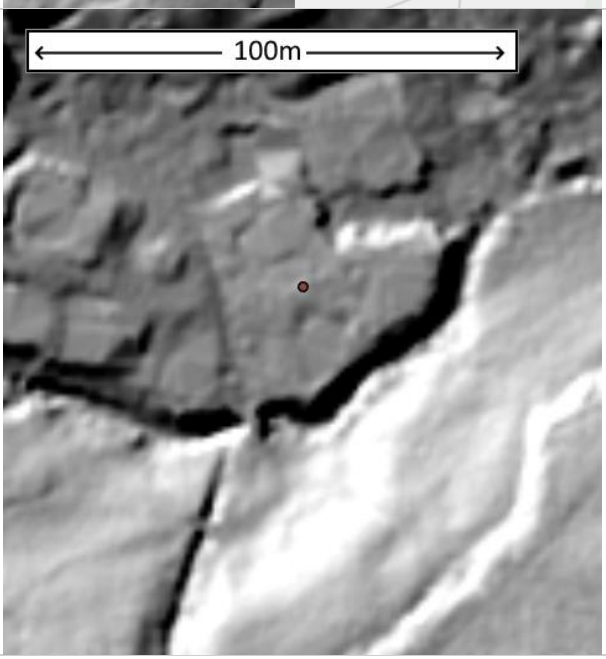
CGLO16	Lasborough Motte	Westonbirt Lasborough	Gloucestershire	
CGLO17	Little Camp Hill	Lidney	Gloucestershire	
CGLO18	Littledean Camp	Littledean	Gloucestershire	

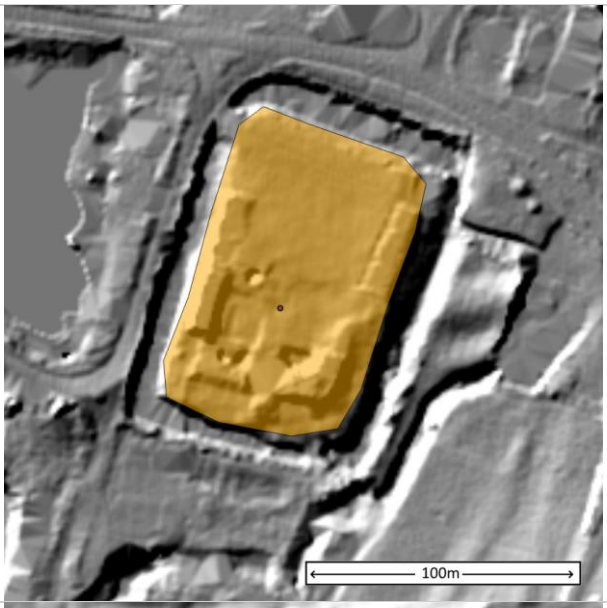
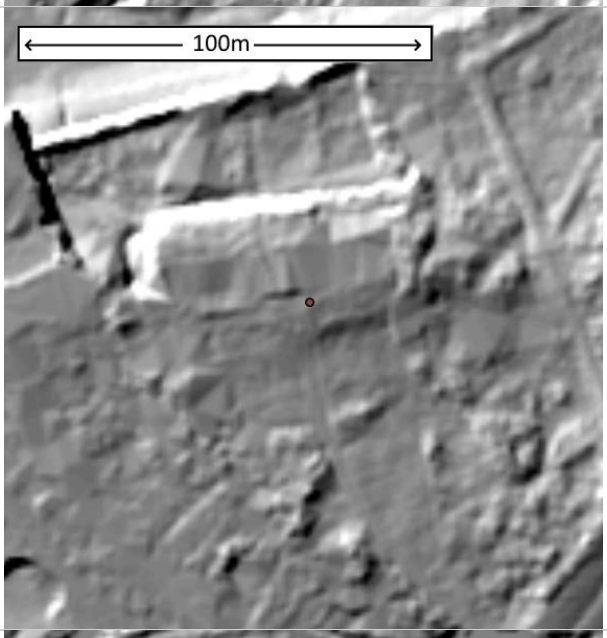
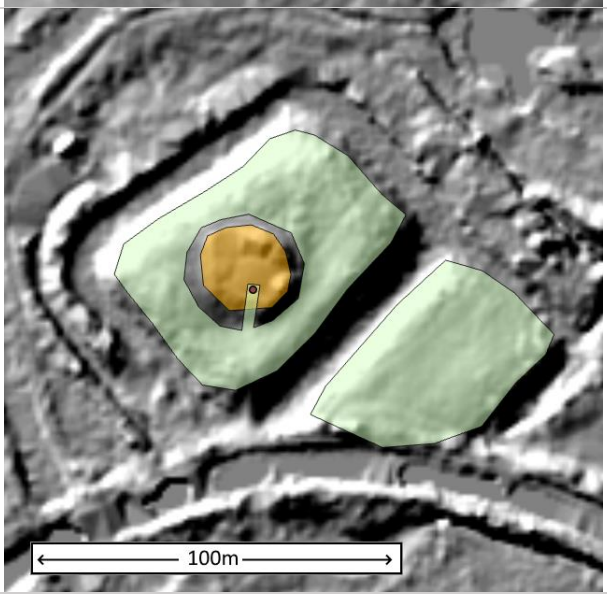
CGLO19	Miserden Castle	Miserden	Gloucestershire	
CGLO20	Newington Motte	Kingscote	Gloucestershire	
CGLO21	Newington on Severn	Newnham	Gloucestershire	

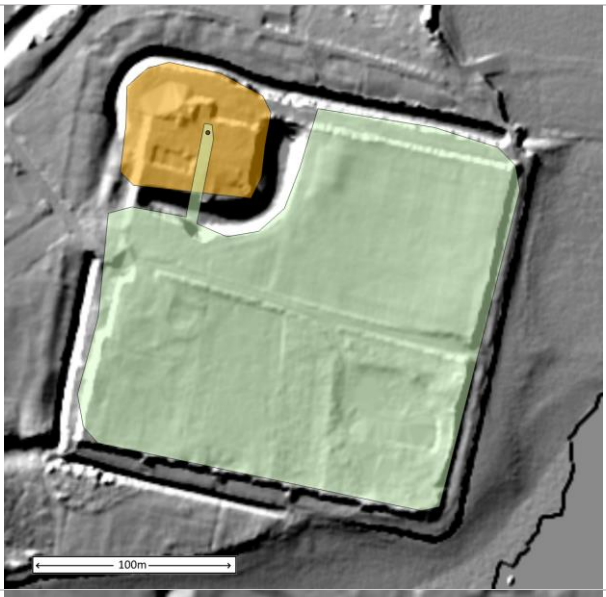
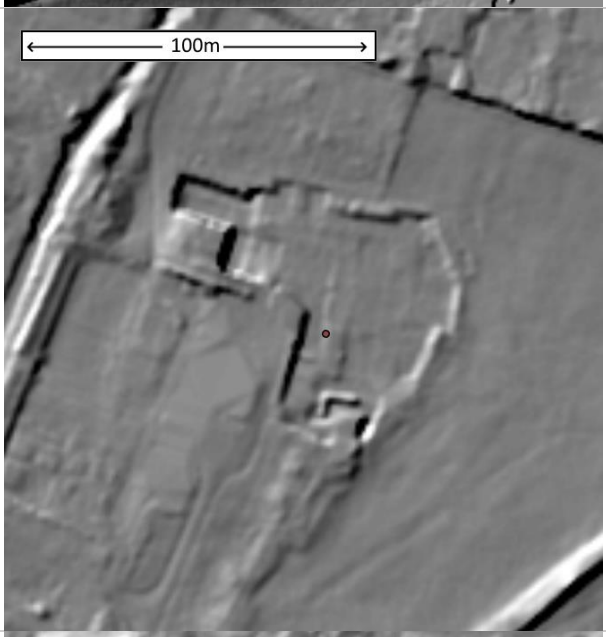
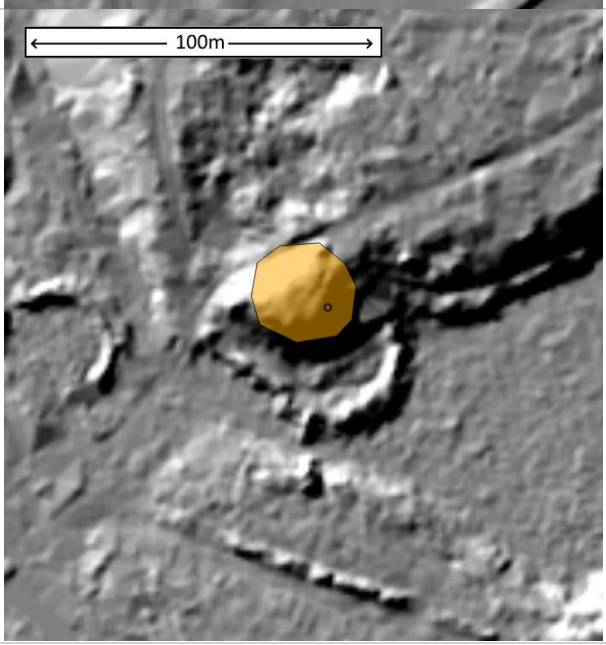
CGLO22	Castle Hale	Painswick	Gloucestershire	
CGLO23	South Cerney Castle	South Cerney	Gloucestershire	
CGLO24	St Briavels Castle	St Briavels	Gloucestershire	

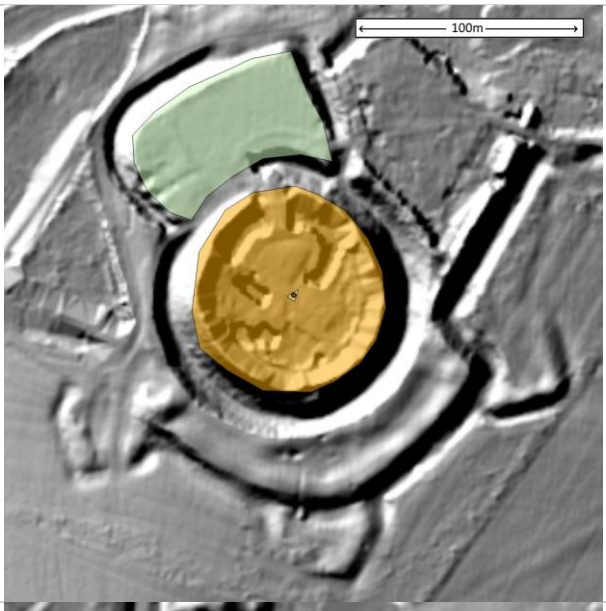
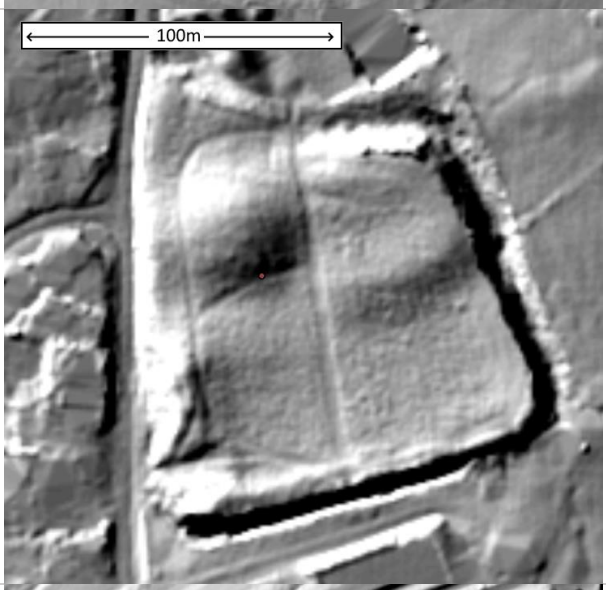
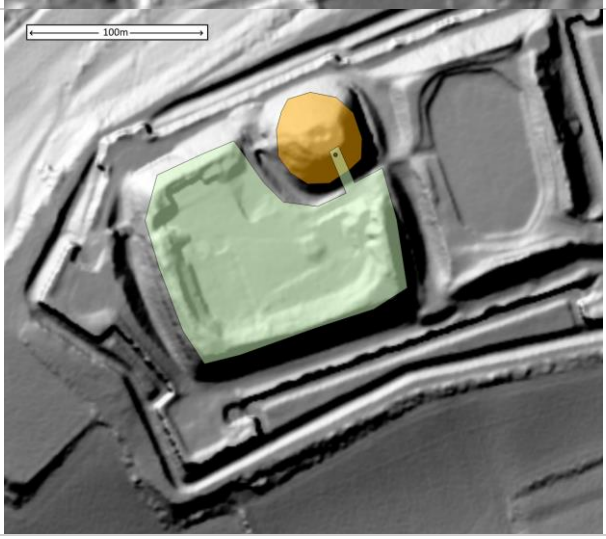
CGLO25	Stow Green	St Briavels	Gloucestershire	
CGLO26	Taynton Castle Wood	Taynton	Gloucestershire	
CGLO27	Taynton Parva	Taynton	Gloucestershire	

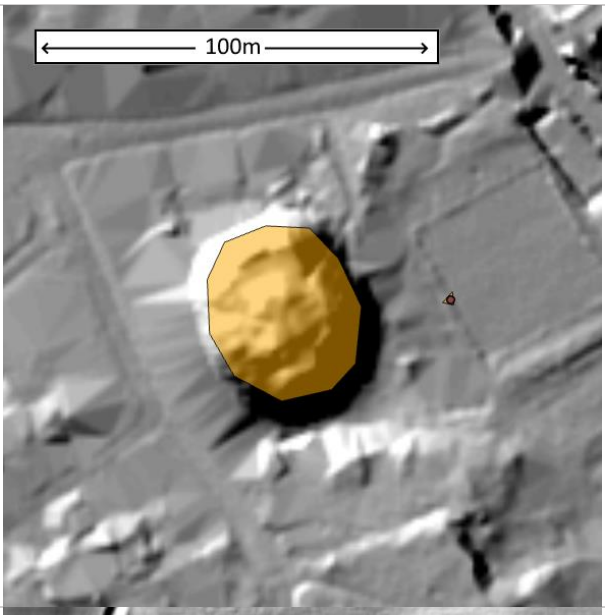
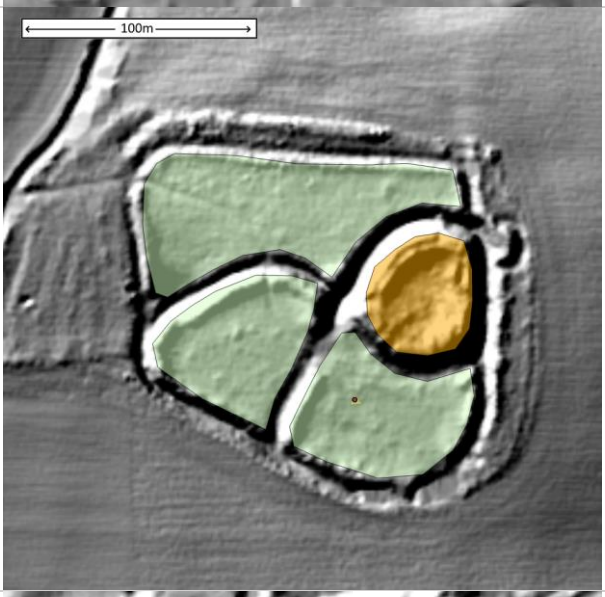
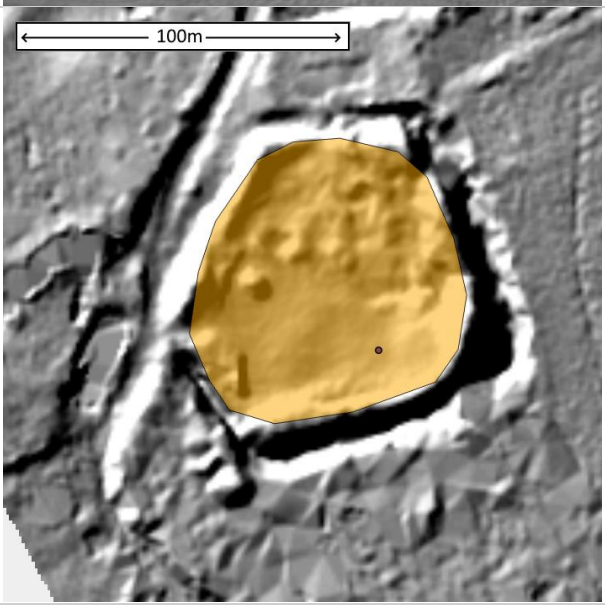
CGLO28	Tetbury Castle	Tetbury	Gloucestershire	
CGLO29	Holme Castle	Tewkesbury	Gloucestershire	
CGLO30	The Myrtle Tute	Tewkesbury	Gloucestershire	

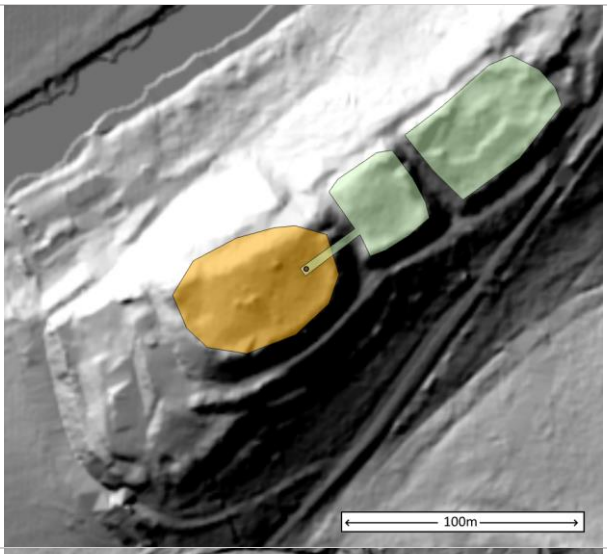
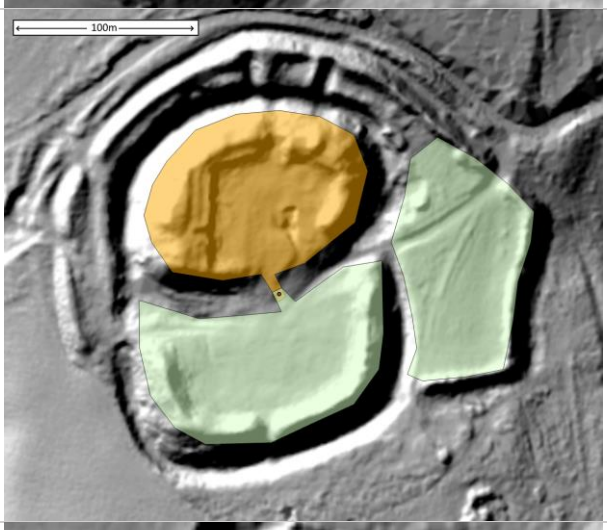
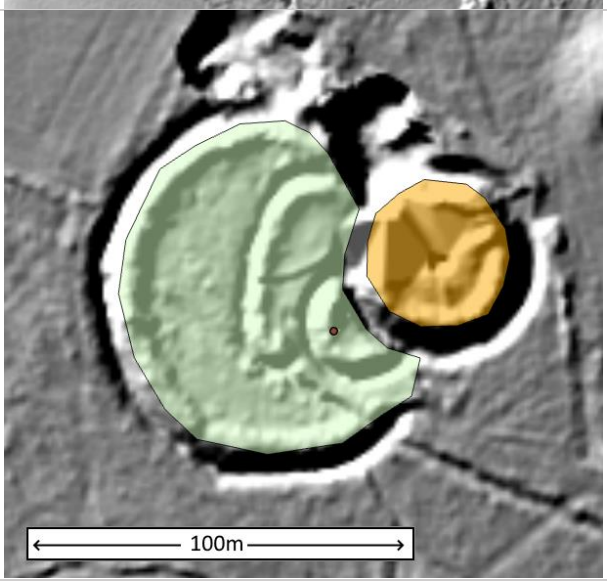
CGLO31	Upper Slaughter Castle	Upper Slaughter	Gloucestershire	
CGLO32	Weston Park	Saintbury	Gloucestershire	
CGLO33	Winchcombe Castle	Winchcombe	Gloucestershire	

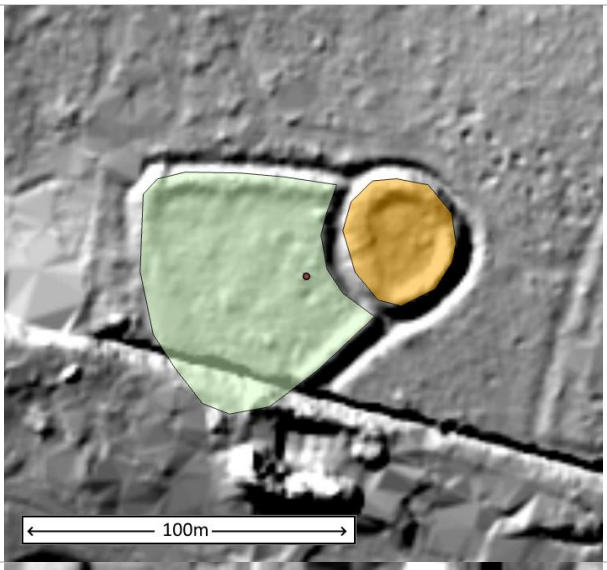
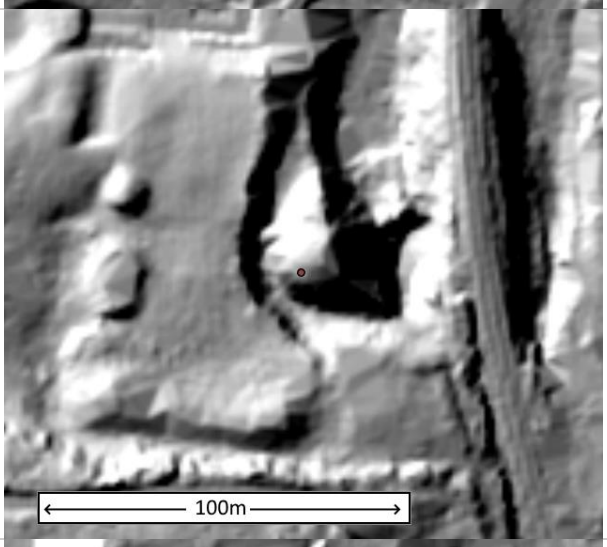
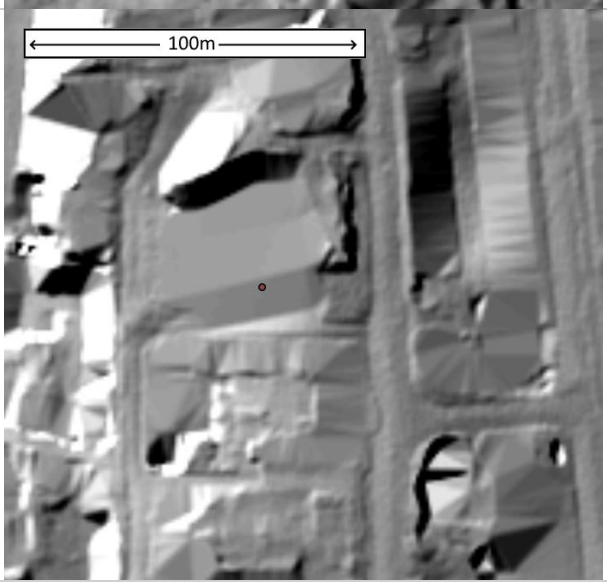
CHAM01	Bishops Waltham Palace	Bishops Waltham	Hampshire & Wight	
CHAM02	Bitterne Bishops Castle	Southampton	Hampshire & Wight	
CHAM03	Odiham Castle	Odiham	Hampshire & Wight	

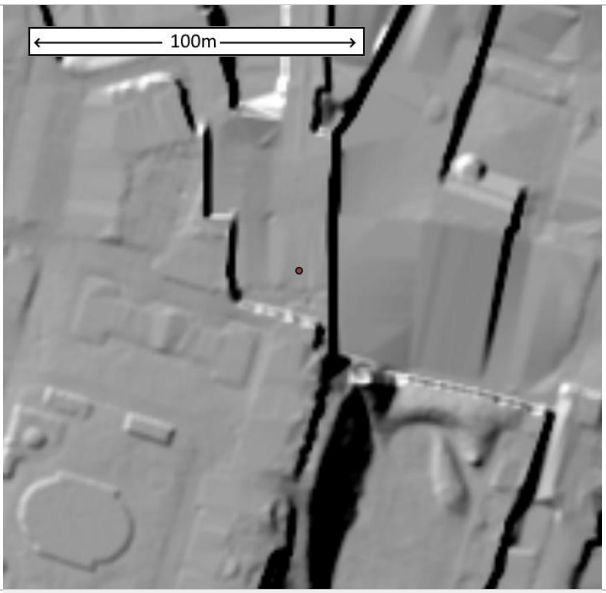
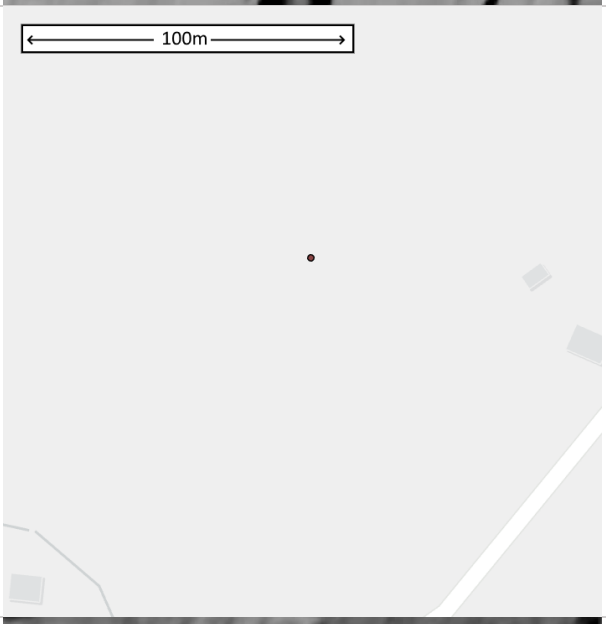
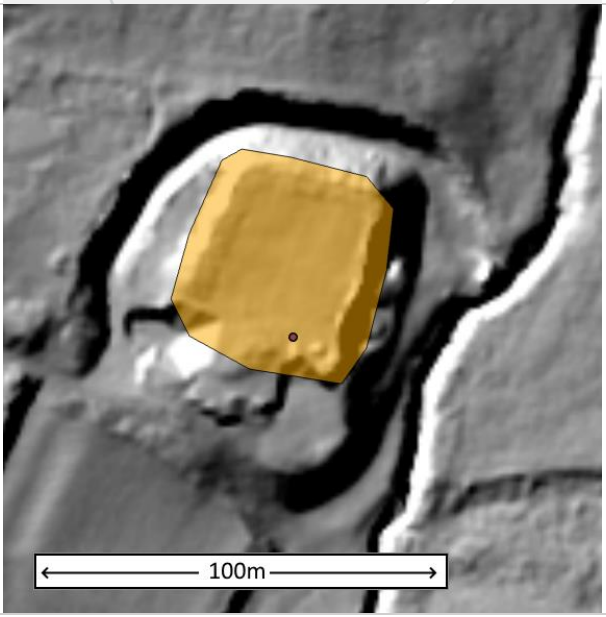
CHAM04	Portchester Castle	Fareham	Hampshire & Wight	
CHAM05	Wolvesey Castle	Winchester	Hampshire & Wight	
CHAM06	Alverstoke Motte	Gosport	Hampshire & Wight	

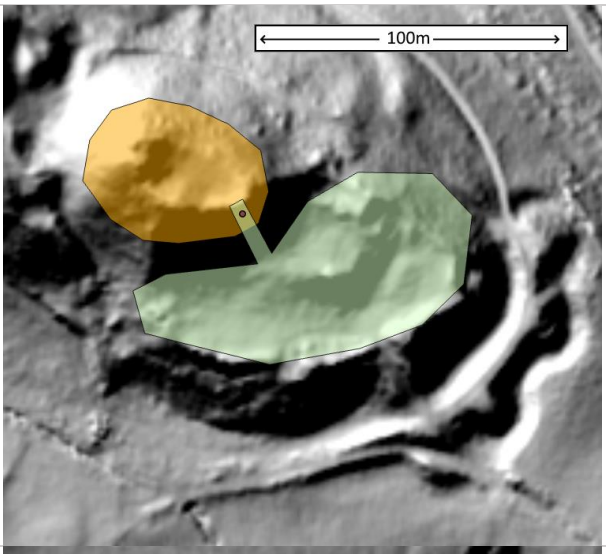
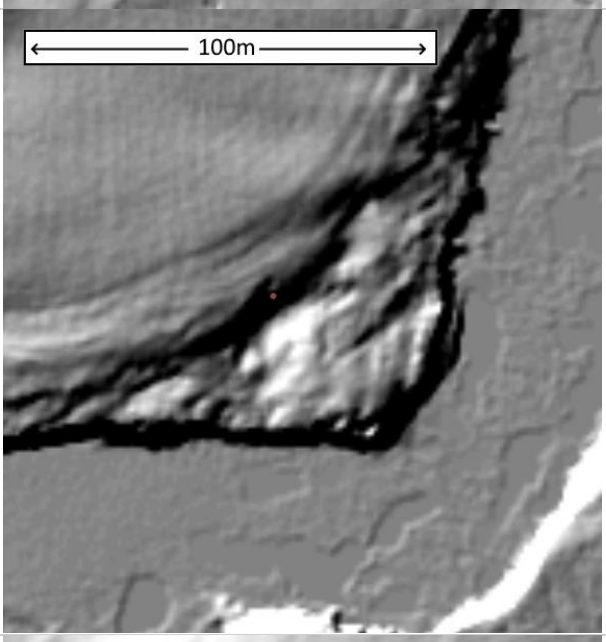
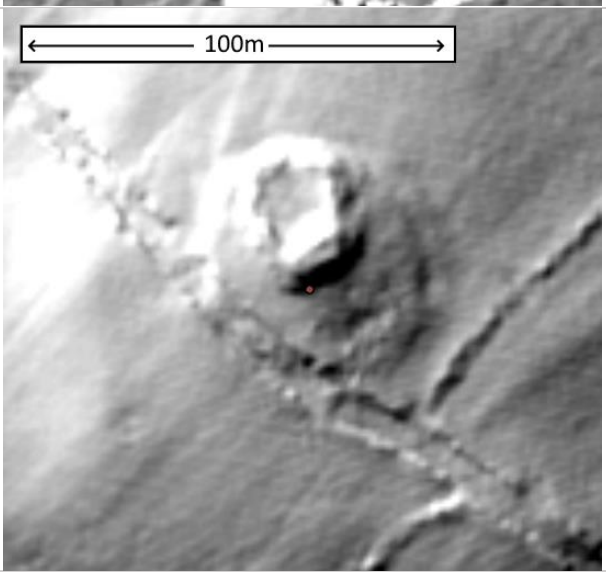
CHAM07	Basing House	Old Basing	Hampshire & Wight	
CHAM08	Basing Old Castle	Old Basing	Hampshire & Wight	
CHAM09	Carisbrooke Castle	Newport	Hampshire & Wight	

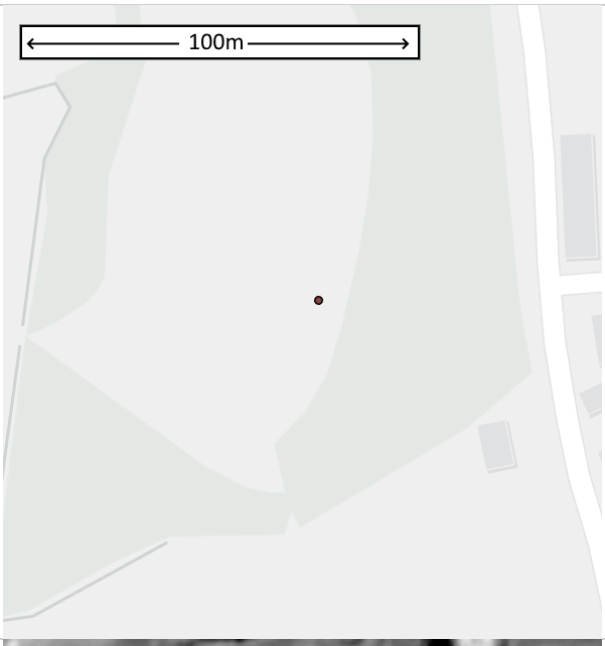
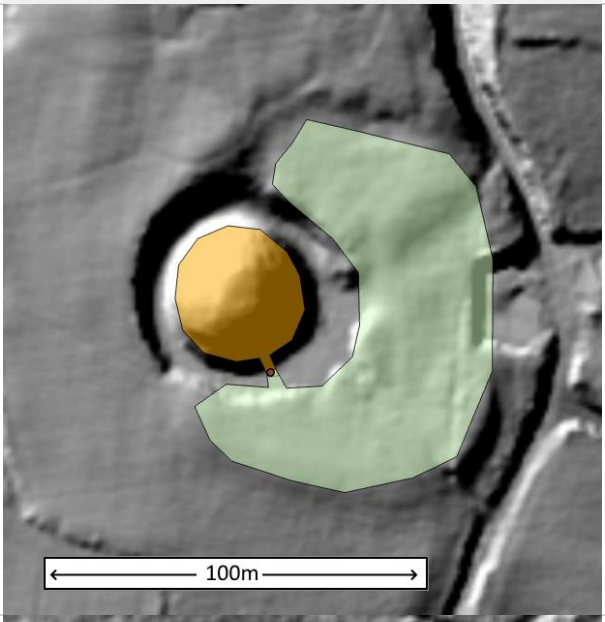
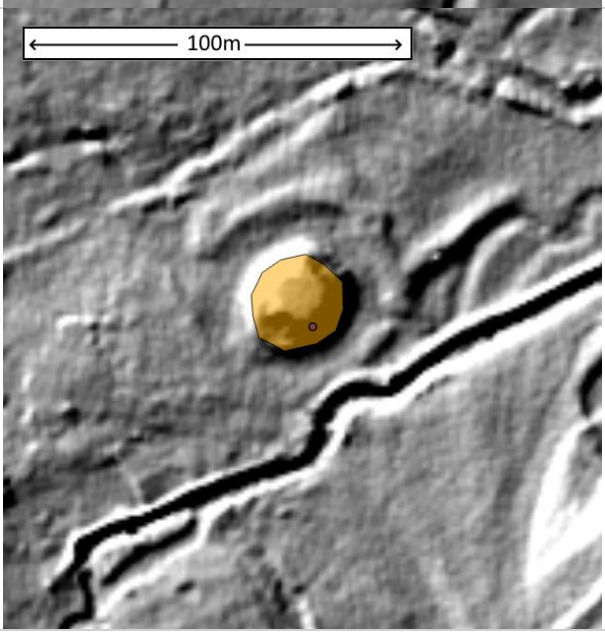
CHAM10	Christchurch Castle	Christchurch	Hampshire & Wight	
CHAM11	Crondall Barley Pound	Crondall	Hampshire & Wight	
CHAM12	Ashley Castle	Ashley	Hampshire & Wight	

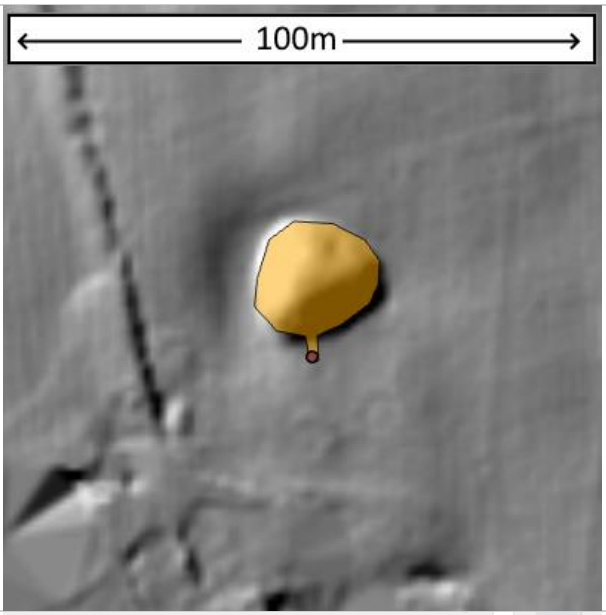
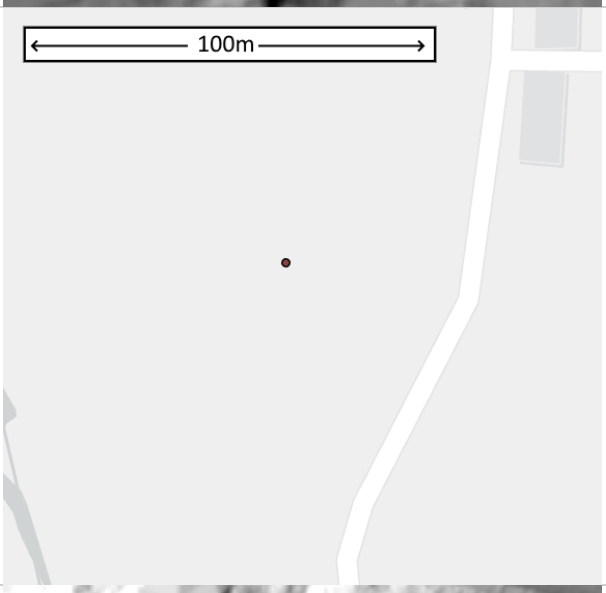
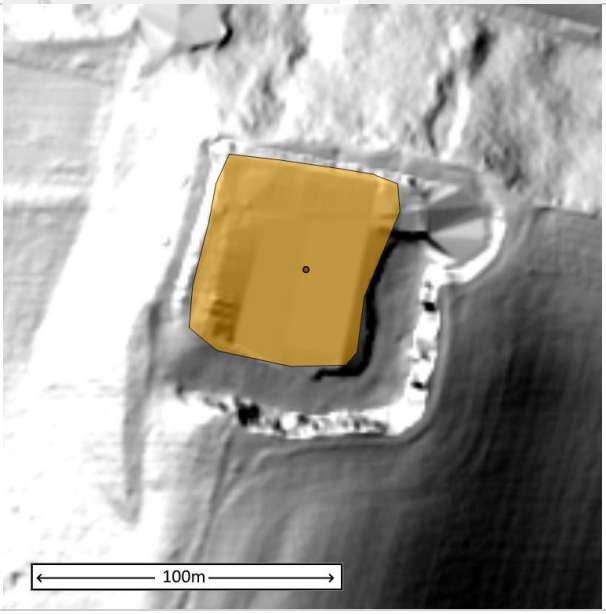
CHAM13	Godshill Castle Hill	Woodgreen	Hampshire & Wight	
CHAM14	Merdon Castle	Hursley	Hampshire & Wight	
CHAM15	Motleys Castle	Rowlands Castle	Hampshire & Wight	

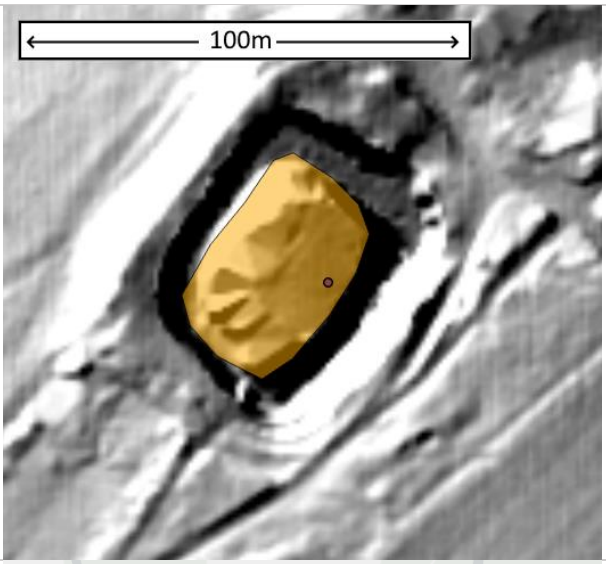
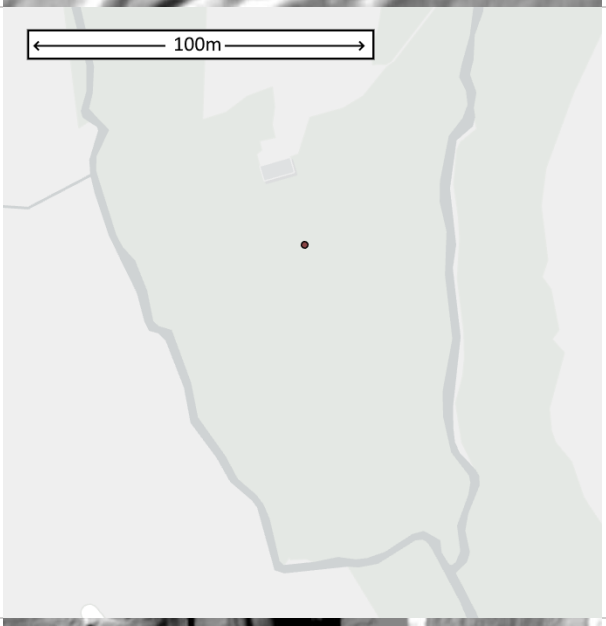
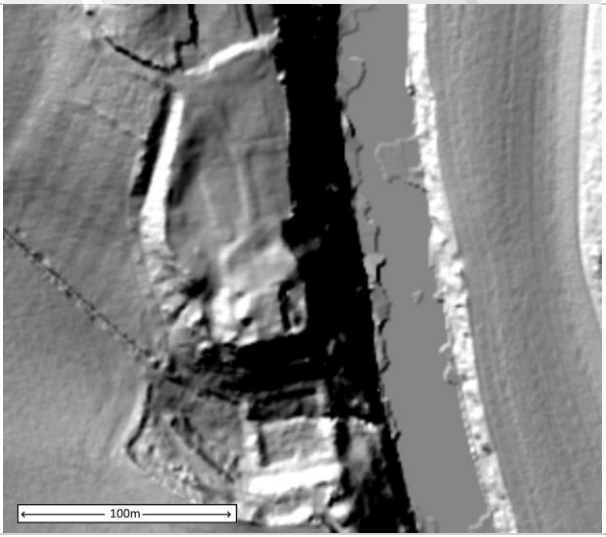
CHAM16	Place Wood Motte	Southwark and Widley	Hampshire & Wight	
CHAM17	Rowlands Castle	Rowlands Castle	Hampshire & Wight	
CHAM18	Southampton Castle	Southampton	Hampshire & Wight	

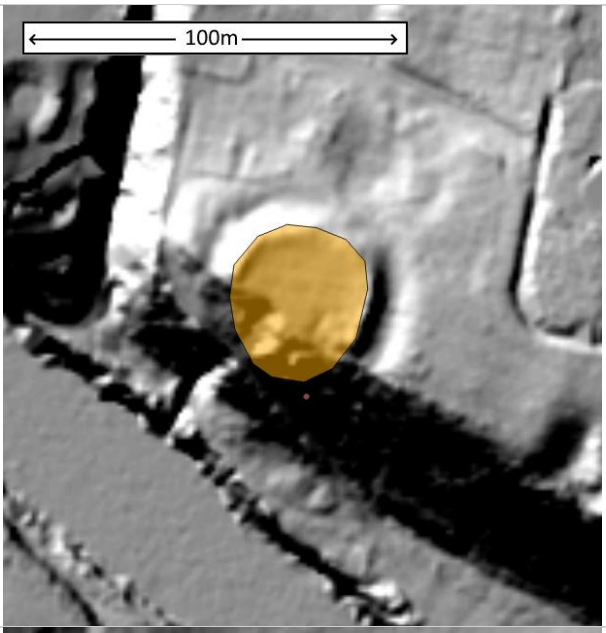
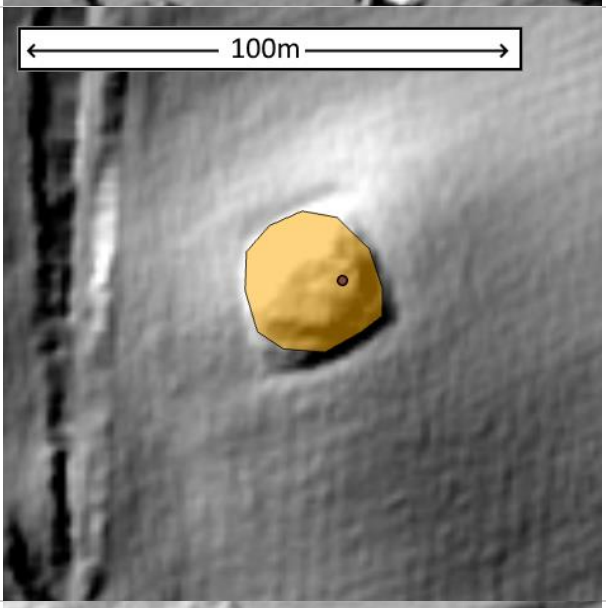
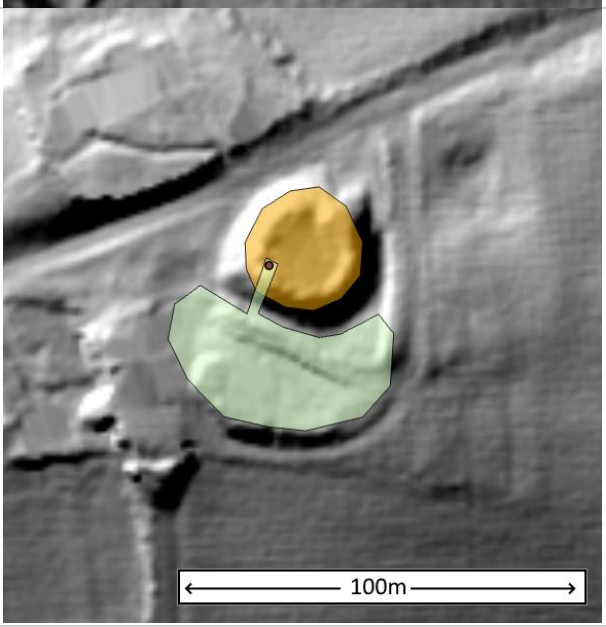
CHAM19	Winchester Castle	Winchester	Hampshire & Wight	
CHER01	Woonton Castle	Almeley	Herefordshire	
CHER02	Wilton Castle	Bridstow	Herefordshire	

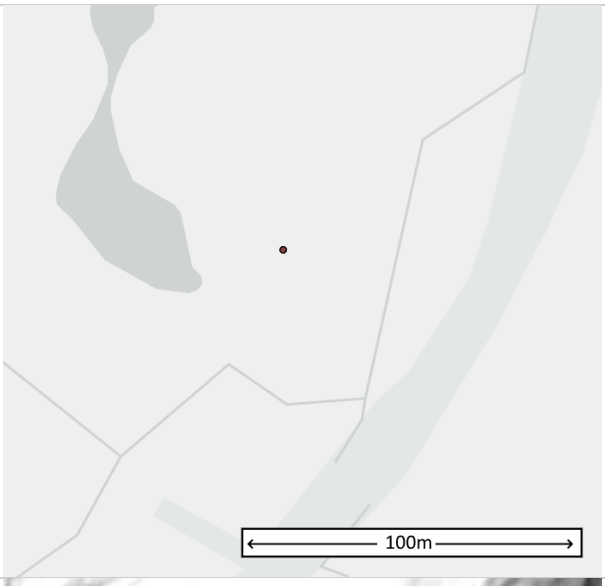
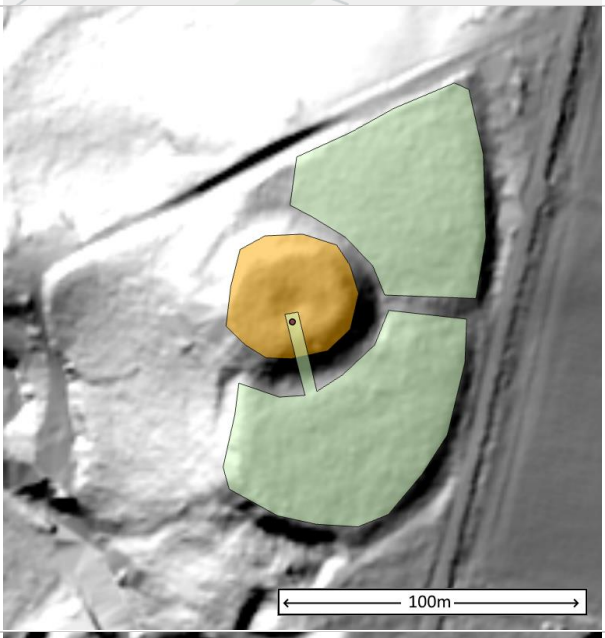
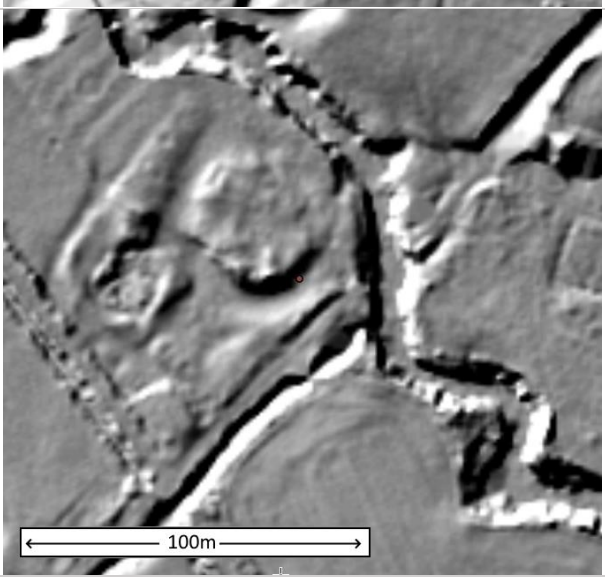
CHER03	Wigmore Castle	Wigmore	Herefordshire	
CHER04	Whitney Castle	Whitney on Wye	Herefordshire	
CHER05	Whitehouse Camp	Michaelchurch Escley	Herefordshire	

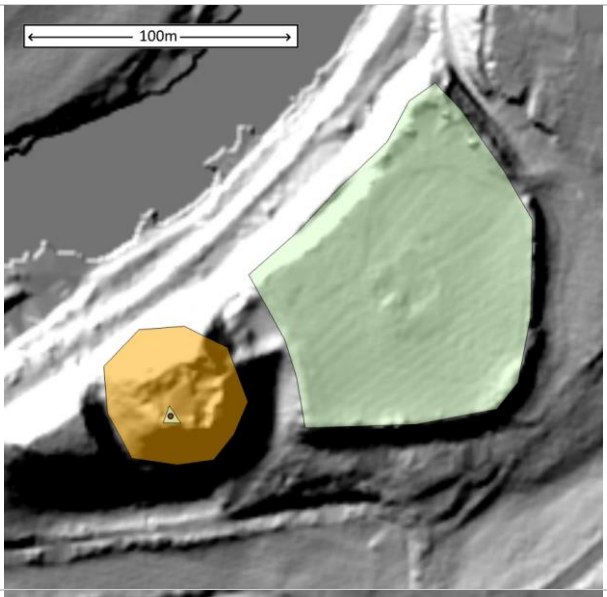
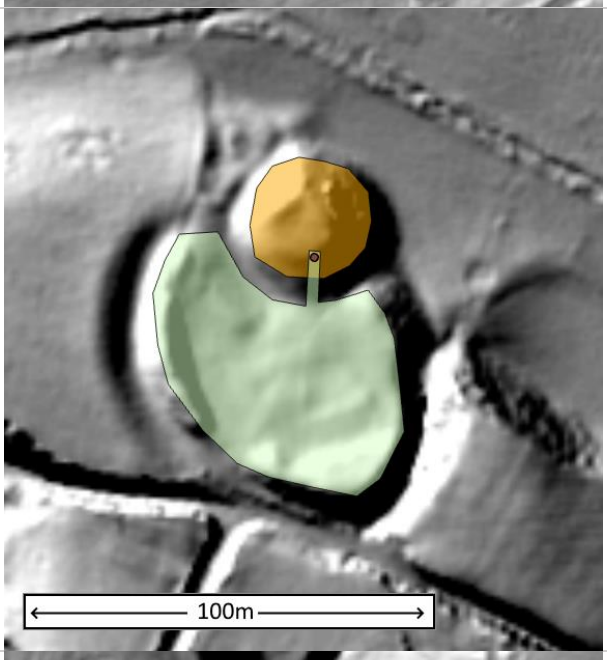
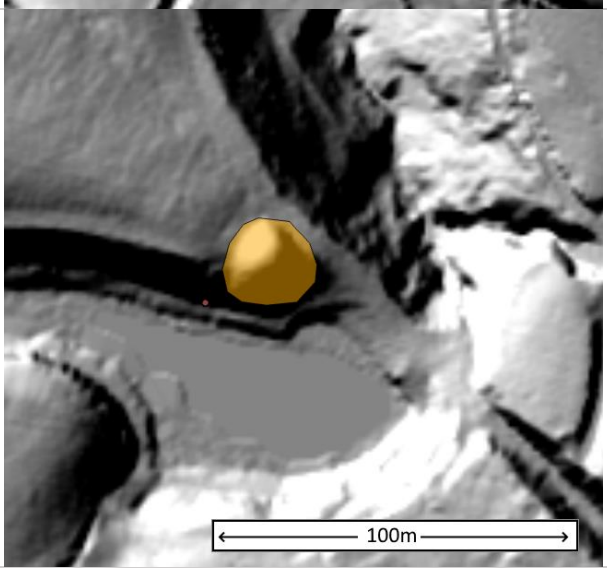
CHER06	Weobley Castle	Weobly	Herefordshire	
CHER07	Walterstone Motte	Walterstone	Herefordshire	
CHER08	Walford Motte	Walford, Letton and Newton	Herefordshire	

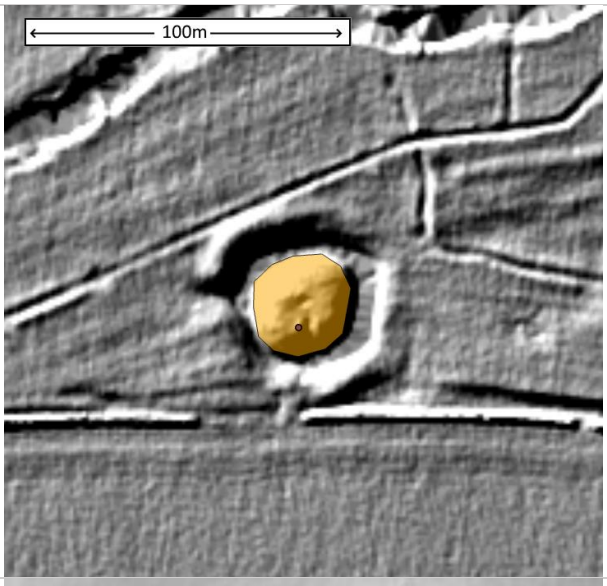
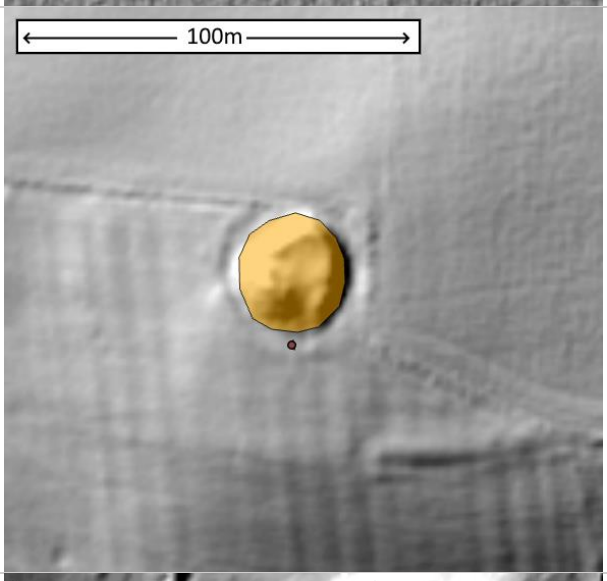
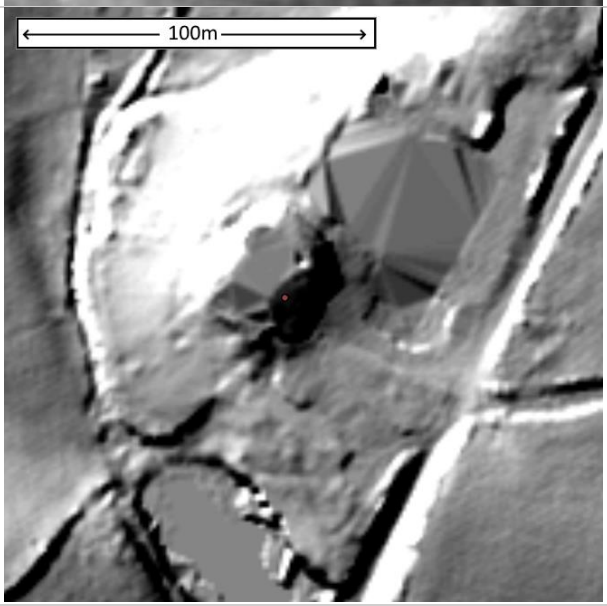
CHER09	Wacton; The Court	Wacton	Herefordshire	
CHER10	Almeley Castle	Almeley	Herefordshire	
CHER11	Goodrich Castle	Goodrich	Herefordshire	

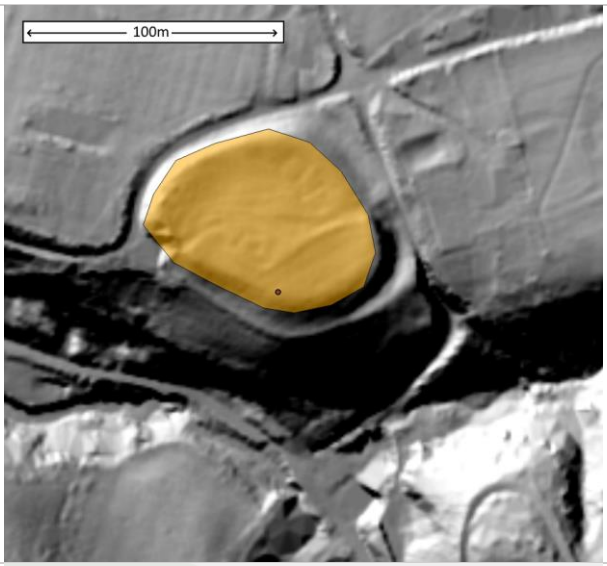
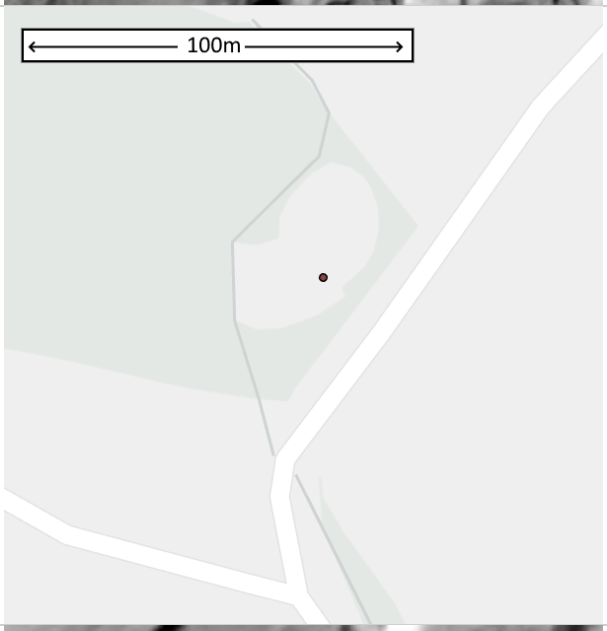
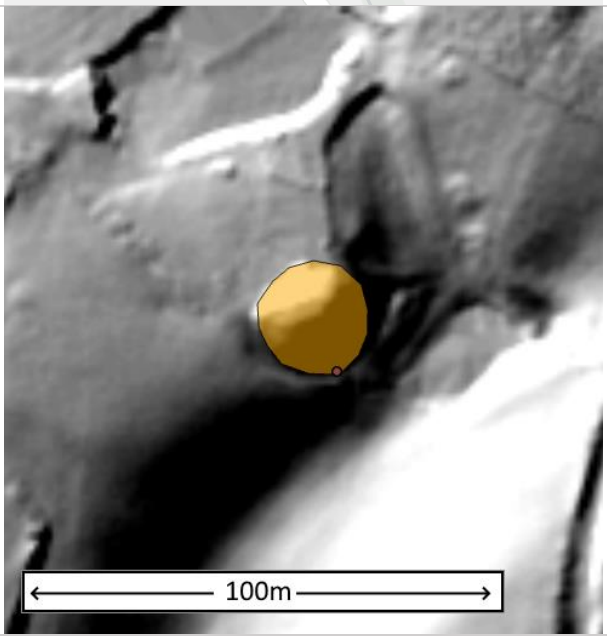
CHER12	Pembridge Castle	Welsh Newton	Herefordshire	
CHER13	Oldcastle Twt	Almeley	Herefordshire	
CHER14	Bredwardine Oldcastle	Bredwardine	Herefordshire	

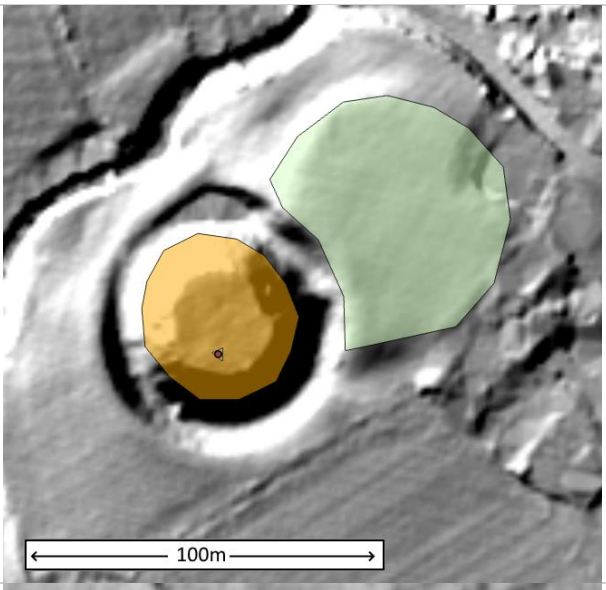
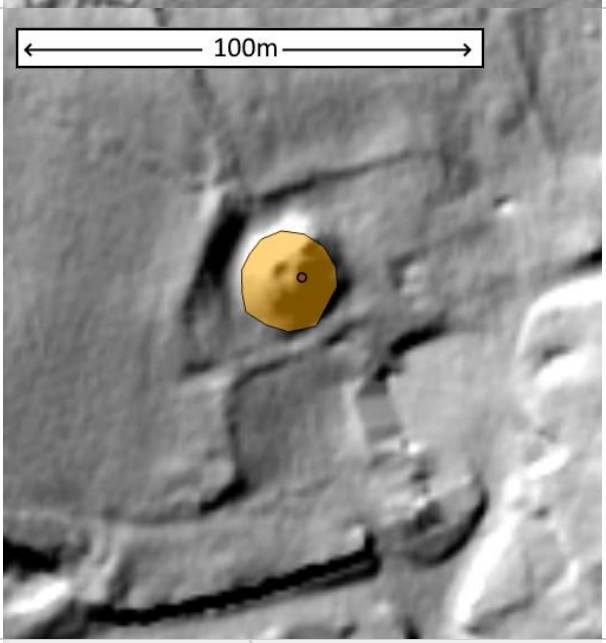
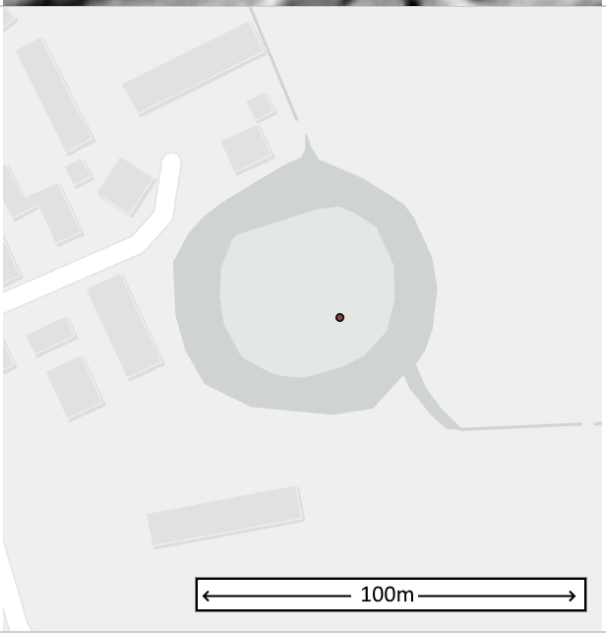
CHER15	Breinton Moat	Breinton	Herefordshire	
CHER16	Butthouse Motte	Kings Pyon	Herefordshire	
CHER17	Caple Tump	Kings Caple	Herefordshire	

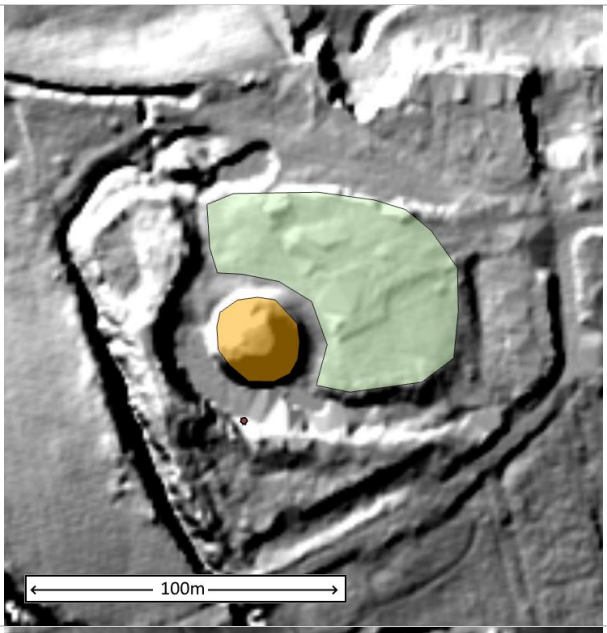
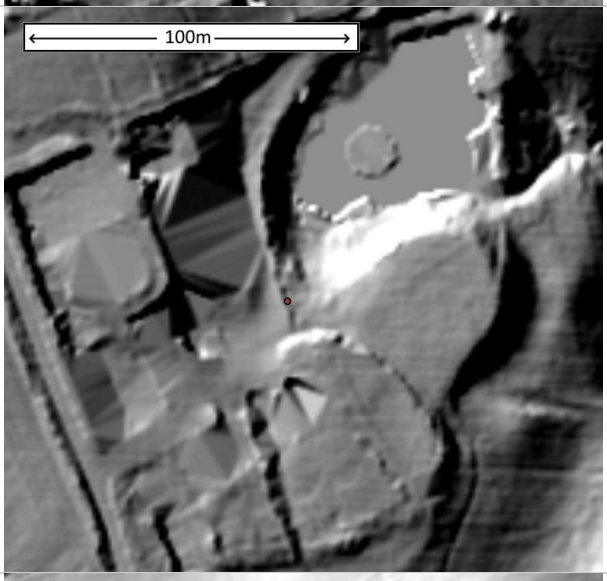
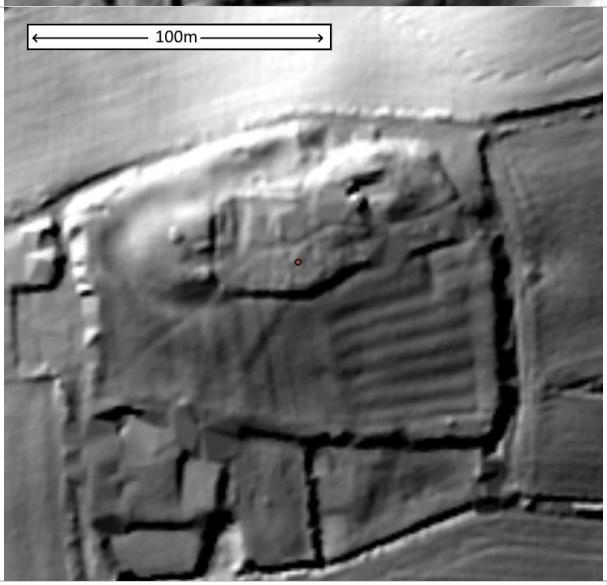
CHER18	Cabal Tump	Pembridge	Herefordshire	
CHER19	Castle Frome Castle	Castle Frome	Herefordshire	
CHER20	Chanstone Tumps	Vowchurch	Herefordshire	

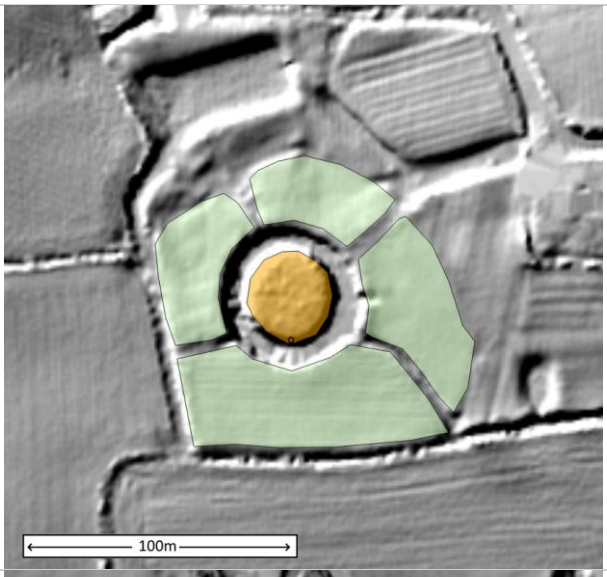
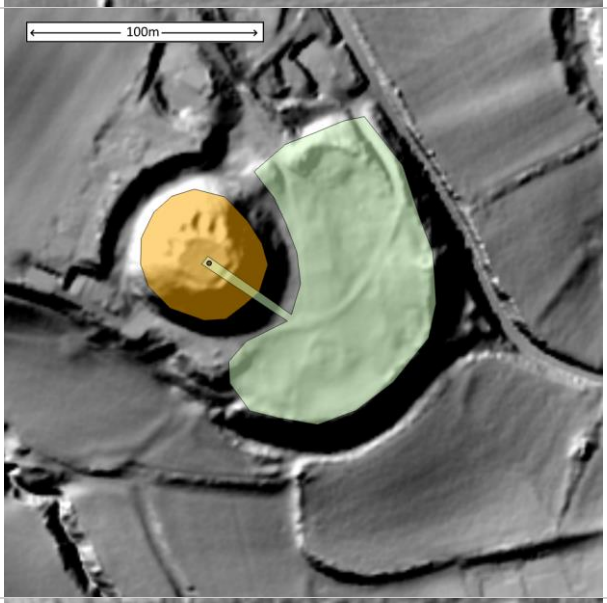
CHER21	Clifford Castle	Clifford	Herefordshire	
CHER22	Old Castleton	Clifford	Herefordshire	
CHER23	The Bage	Clifford	Herefordshire	

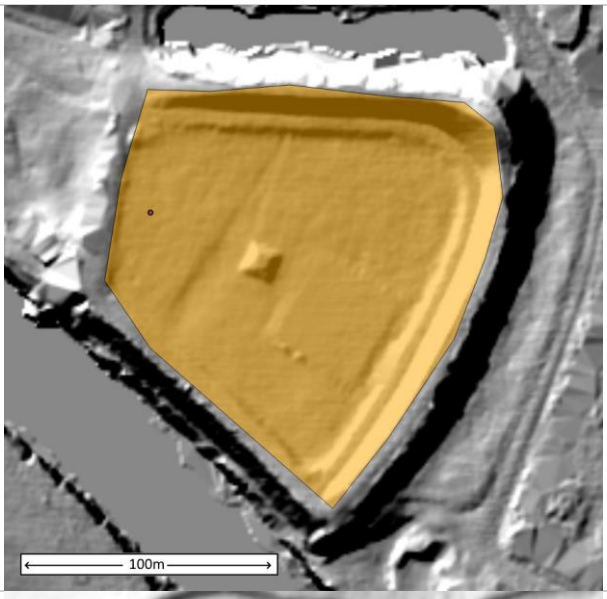
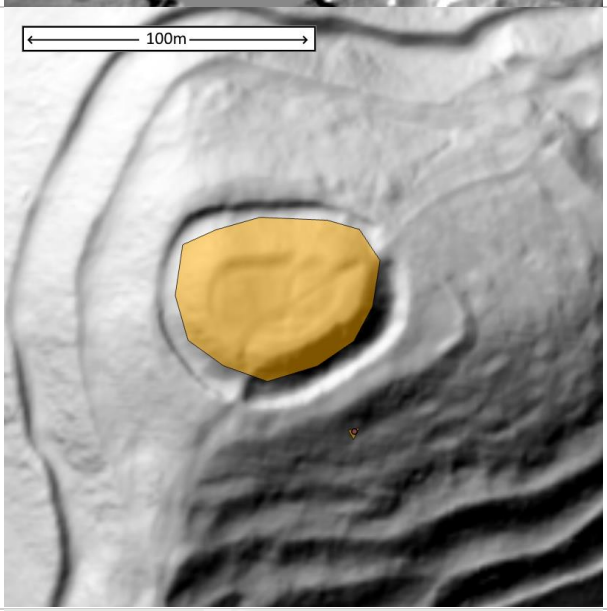
CHER24	Combe Motte	Combe	Herefordshire	
CHER25	Cothill Tump	Turnastone	Herefordshire	
CHER26	Cublington Castle Farm	Madley	Herefordshire	

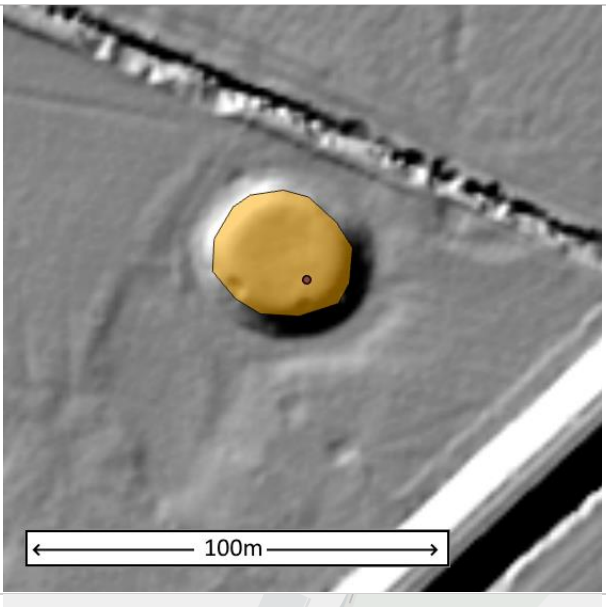
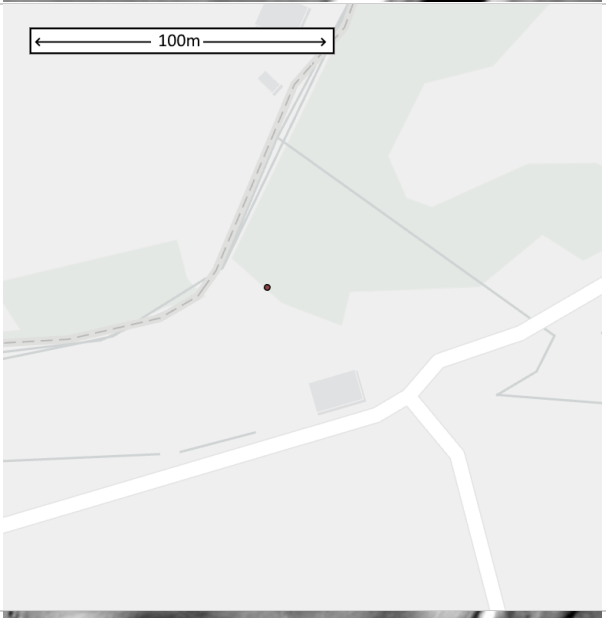
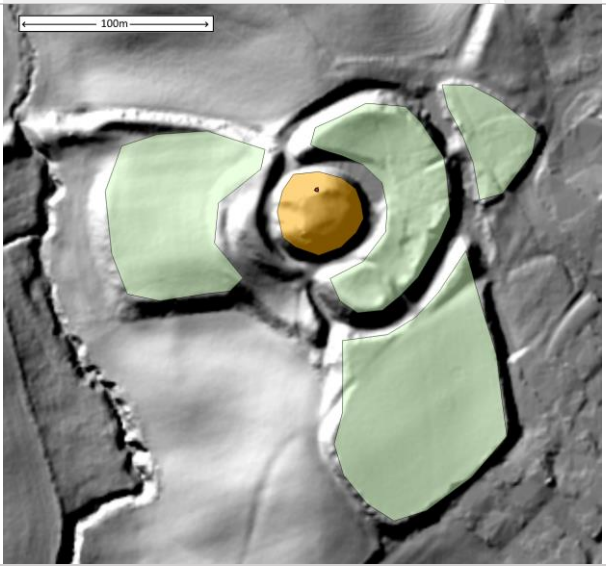
CHER27	Cusop Castle	Cusop	Herefordshire	
CHER28	Cwmma Tump	Brilley	Herefordshire	
CHER29	Didley Court Motte	St Devereux	Herefordshire	

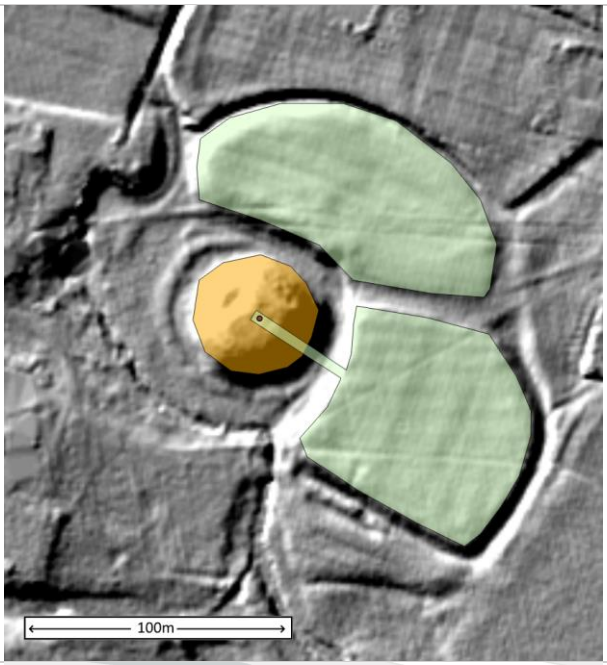
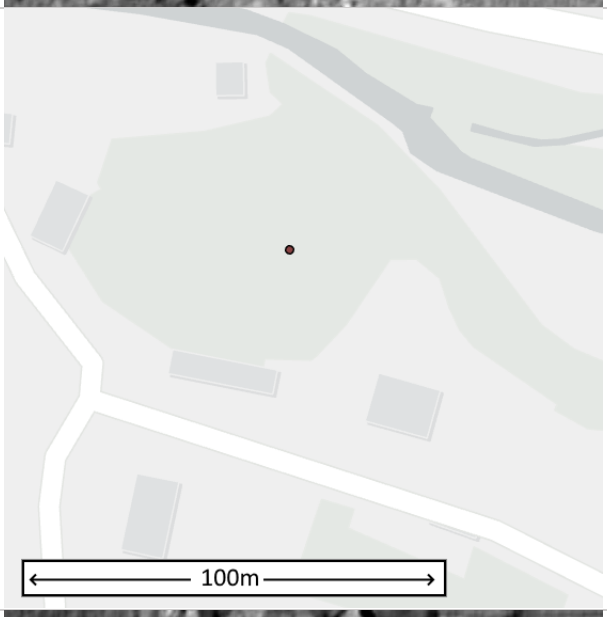
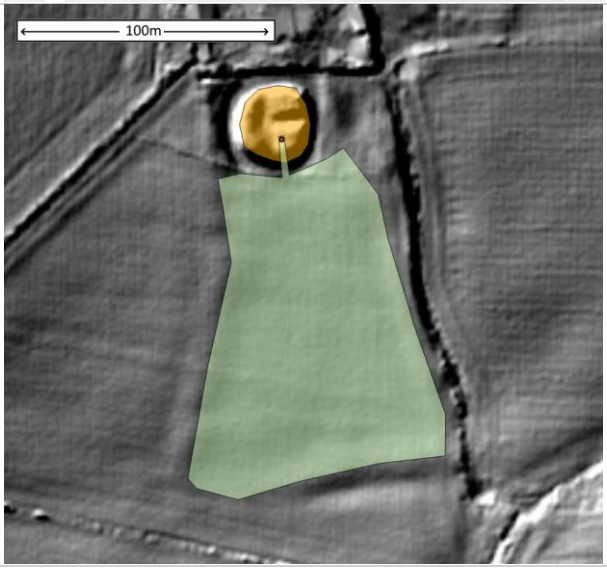
CHER30	Dorstone Castle	Dorstone	Herefordshire	
CHER31	Downton on the Rock	Downton	Herefordshire	
CHER32	Eardisland Castle	Eardisland	Herefordshire	

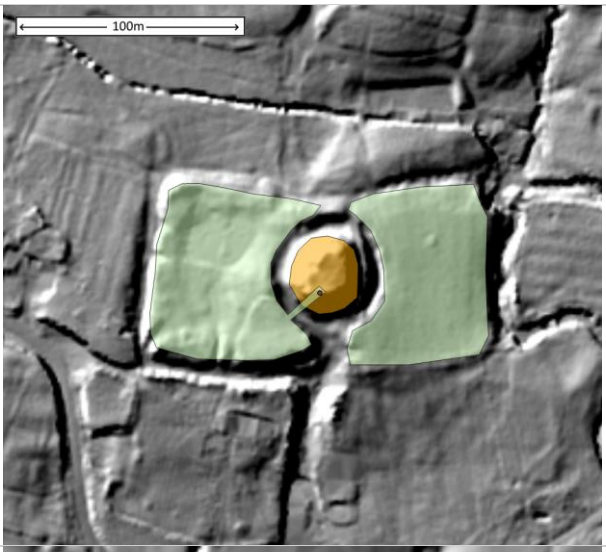
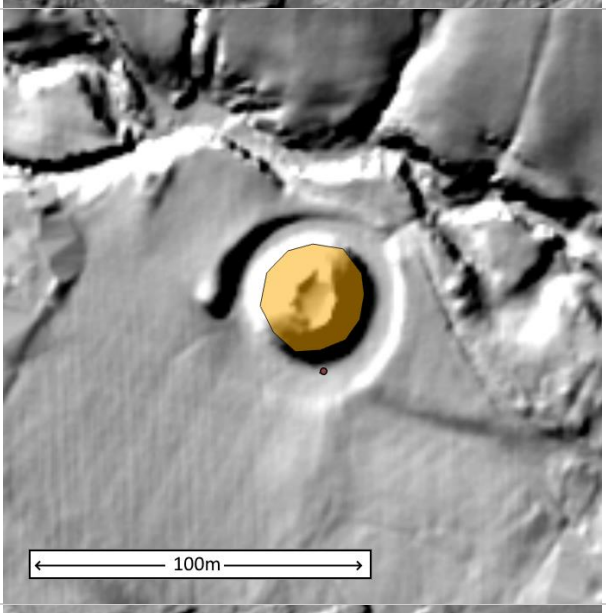
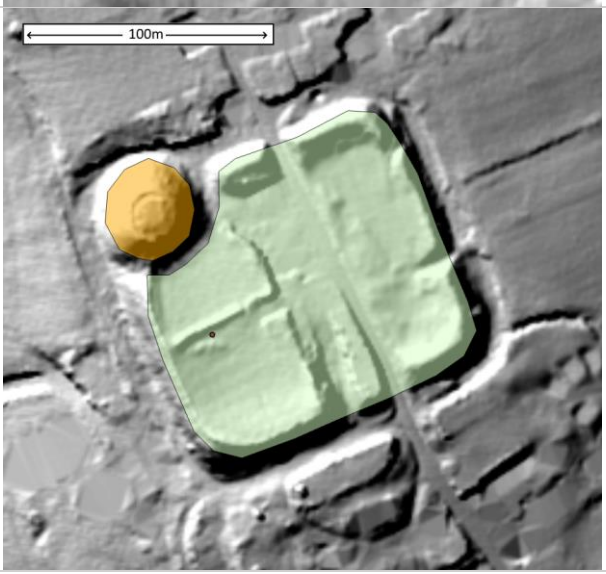
CHER33	Eardisley Castle	Eardisley	Herefordshire	
CHER34	Eccleswell Castle	Linton	Herefordshire	
CHER35	Edvin Loach Ringwork	Edvin Loach and Saltmarsh	Herefordshire	

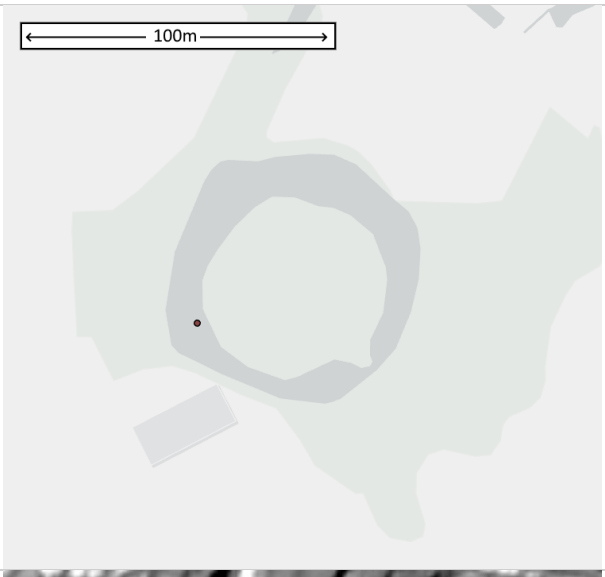
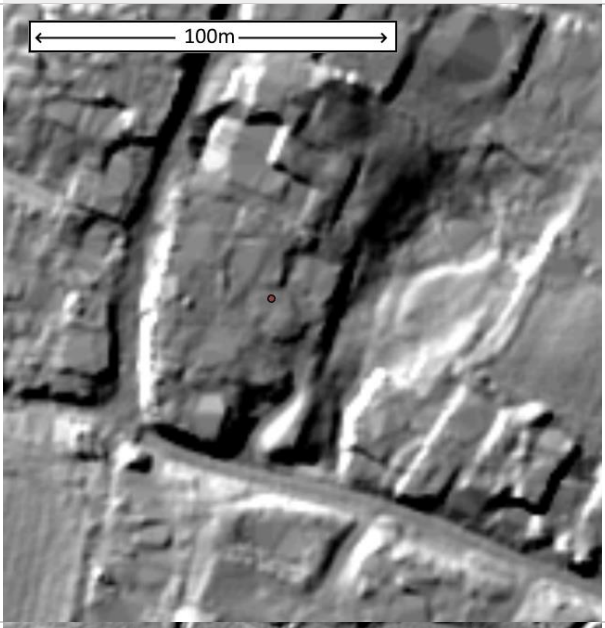
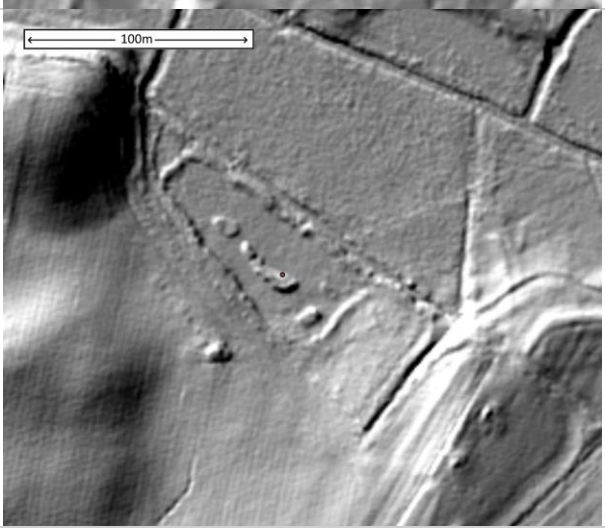
CHER36	Edwyn Ralph Motte	Edwyn Ralph	Herefordshire	
CHER37	Ewyas Harold Castle	Ewyas Harold	Herefordshire	
CHER38	Hentland Chapel Tump	Hentland	Herefordshire	

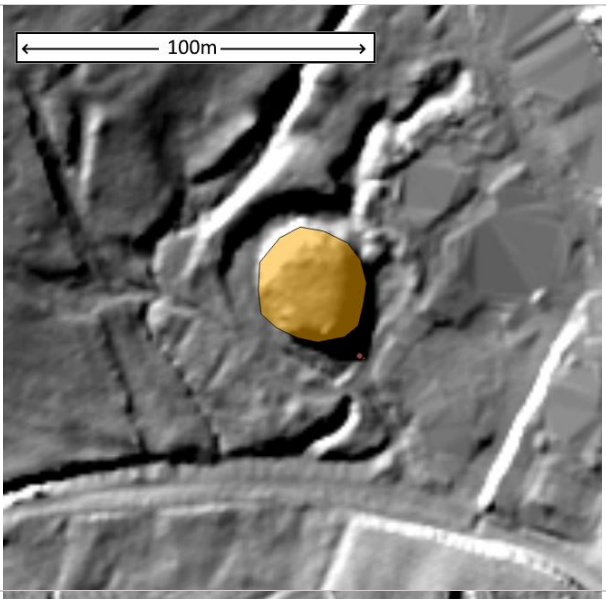
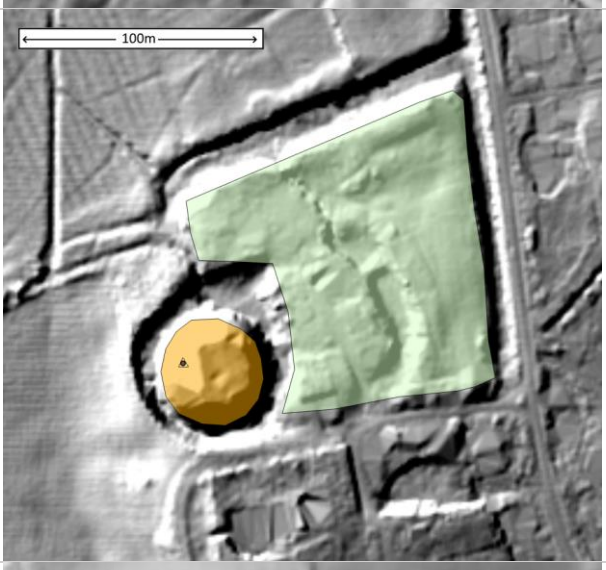
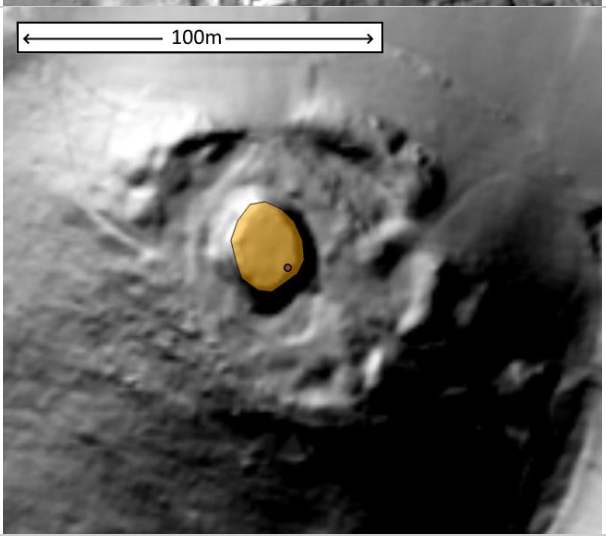
CHER39	Hereford Castle	Hereford	Herefordshire	
CHER40	Herefordshire Beacon	Colwall	Herefordshire	
CHER41	Hergest Castle	Kington Rural	Herefordshire	

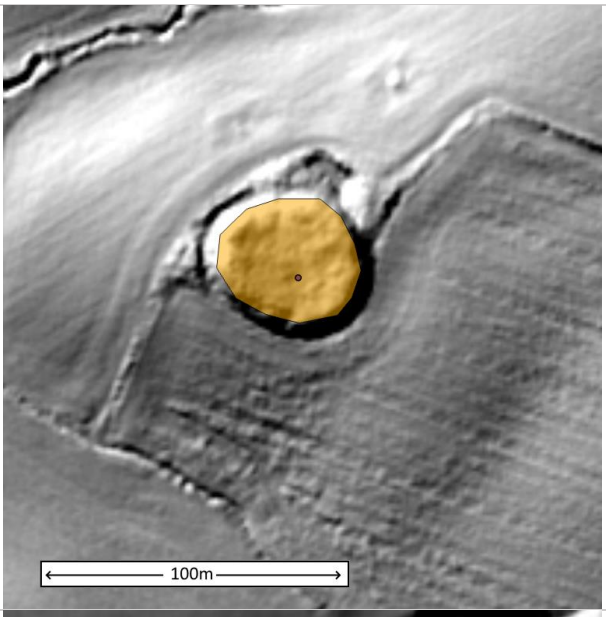
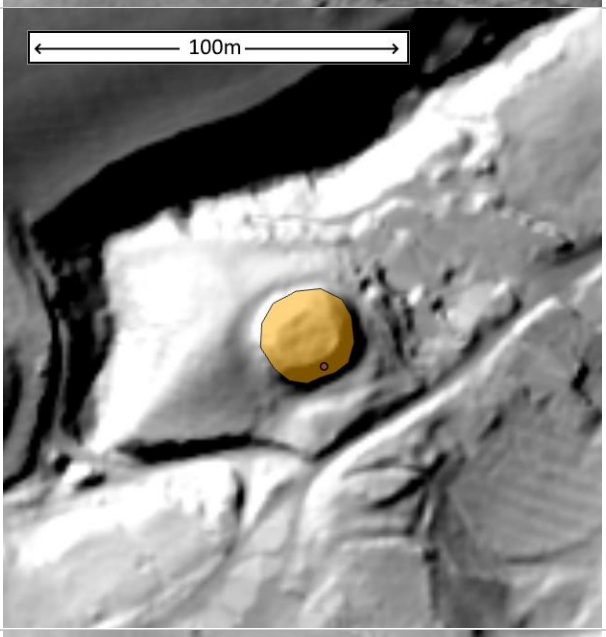
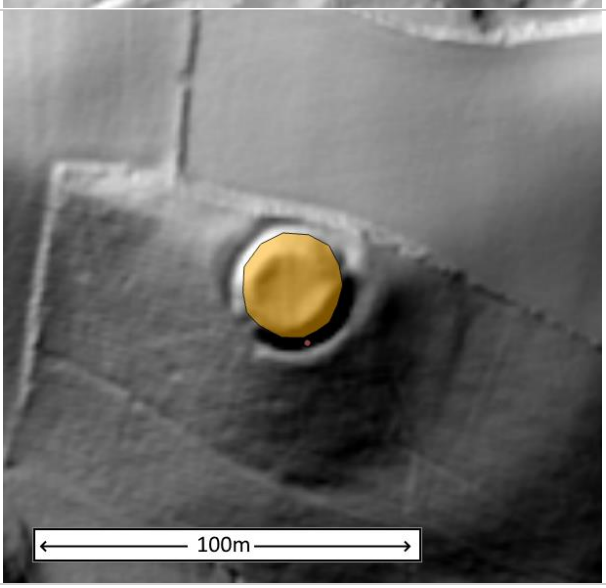
CHER42	Howton Farm Mound	Kenderchurch	Herefordshire	
CHER43	Huntington Castle	Huntington	Herefordshire	
CHER44	Kilpeck Castle	Kilpeck	Herefordshire	

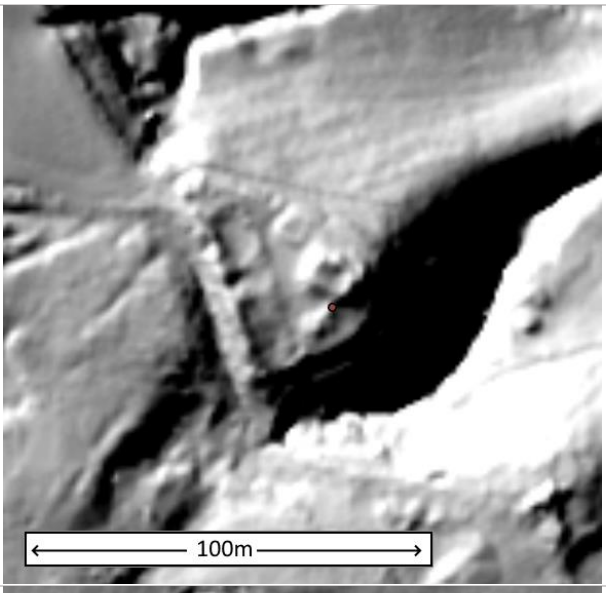
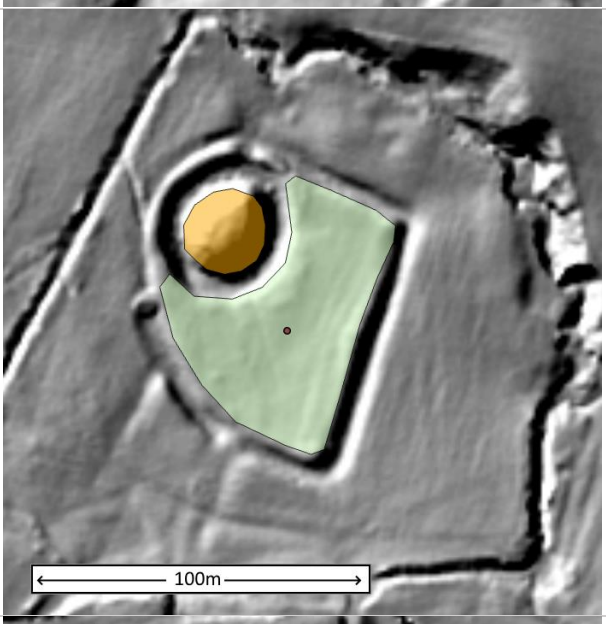
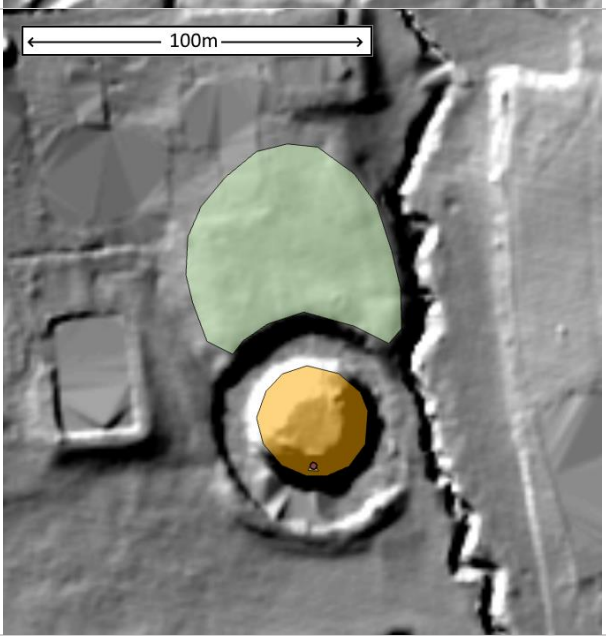
CHER45	Kingsland Castle	Kingsland	Herefordshire	
CHER46	Kington Castle Hill	Kington	Herefordshire	
CHER47	Laysters Motte	Laysters	Herefordshire	

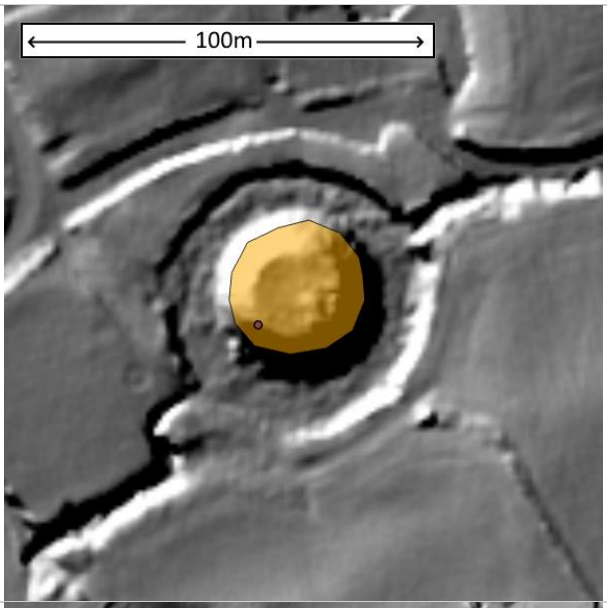
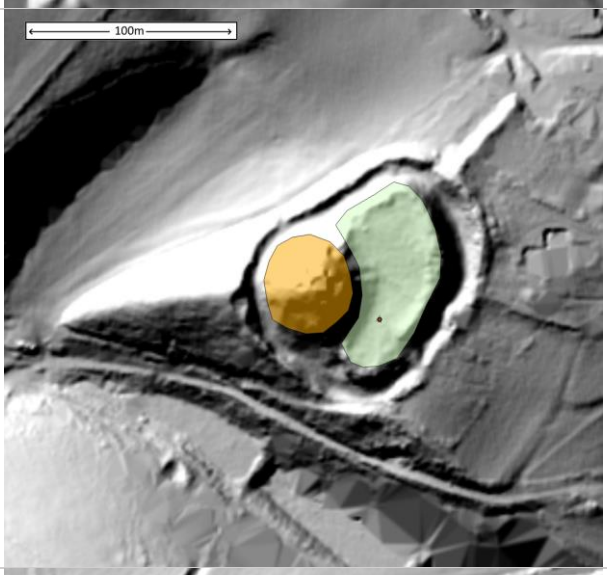
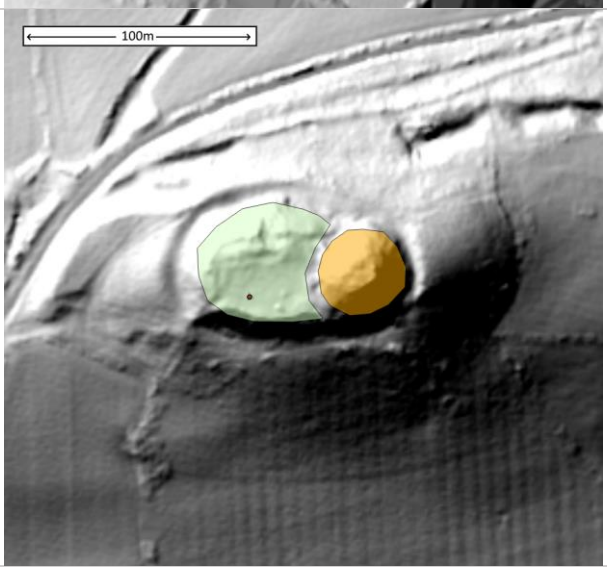
CHER48	Lingen Castle	Lingen	Herefordshire	
CHER49	Llancillo Castle	Llancillo	Herefordshire	
CHER50	Longtown Castle	Longtown	Herefordshire	

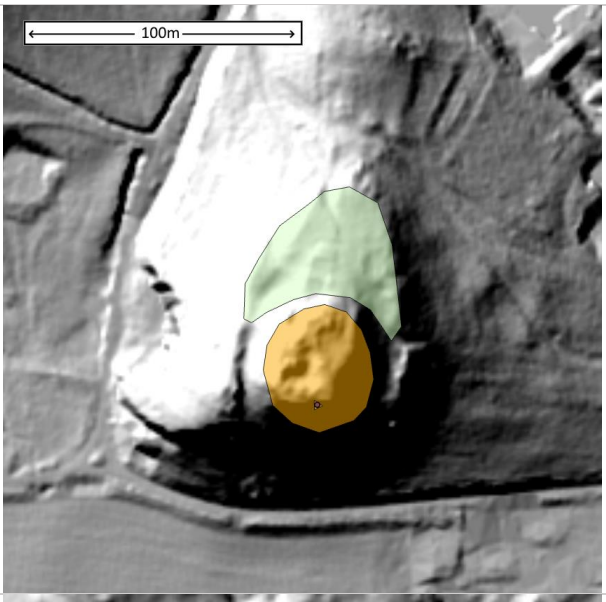
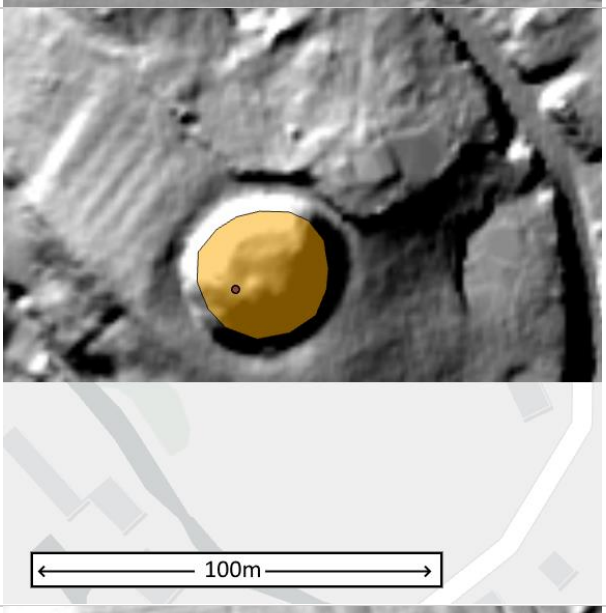
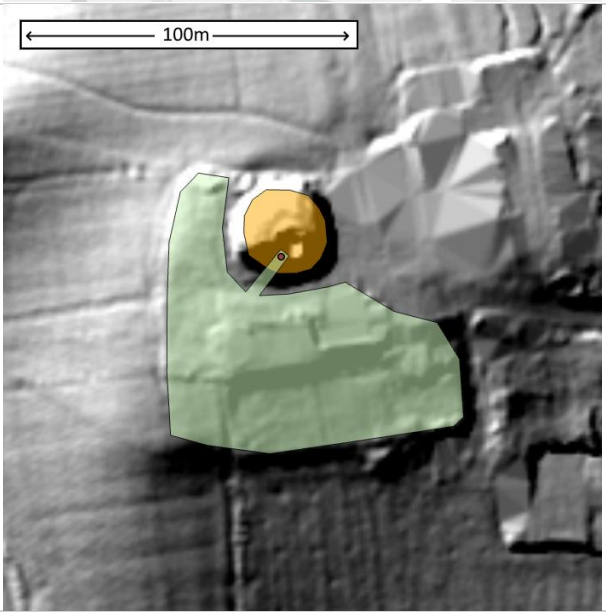
CHER51	Lyonshall Castle	Lyonshall	Herefordshire	
CHER52	Madley Castle	Madley	Herefordshire	
CHER53	Moccas Castle	Moccas	Herefordshire	

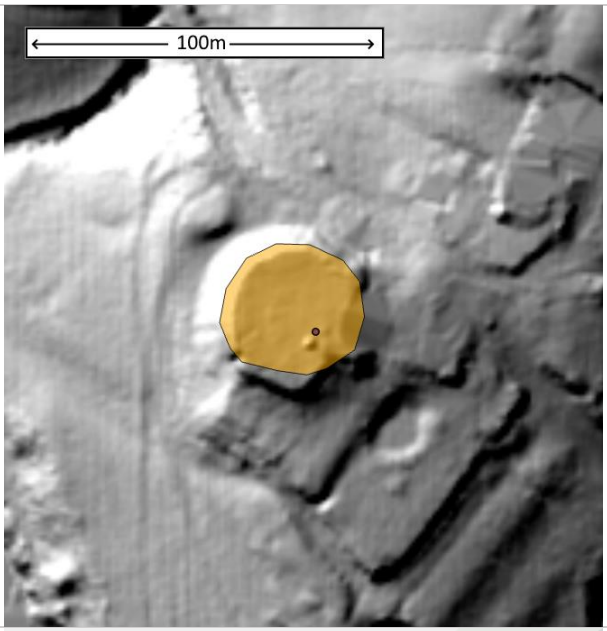
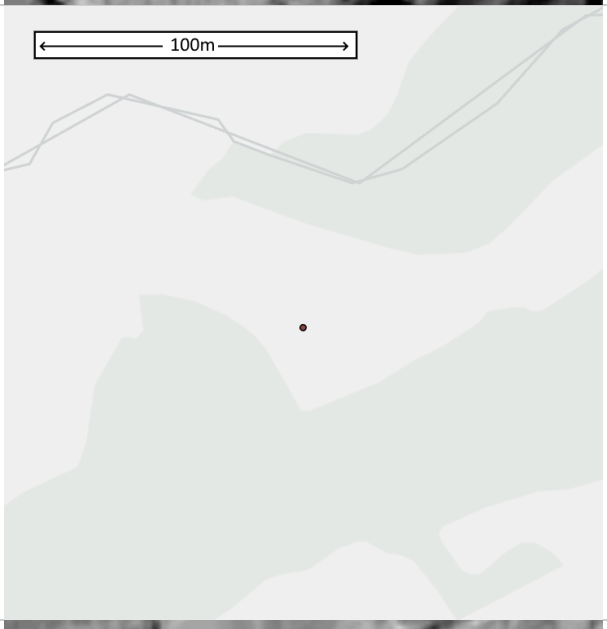
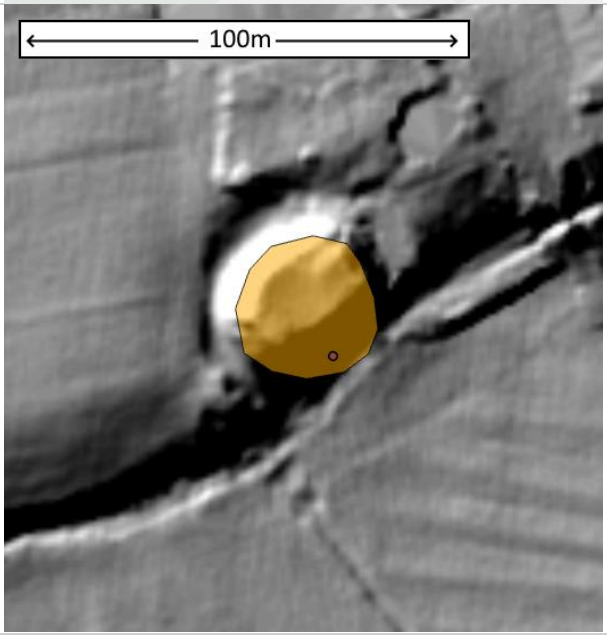
CHER54	Monnington Court	Vowchurch	Herefordshire	
CHER55	Mortimers Castle	Much Marcle	Herefordshire	
CHER56	Mouse Castle	Cusop	Herefordshire	

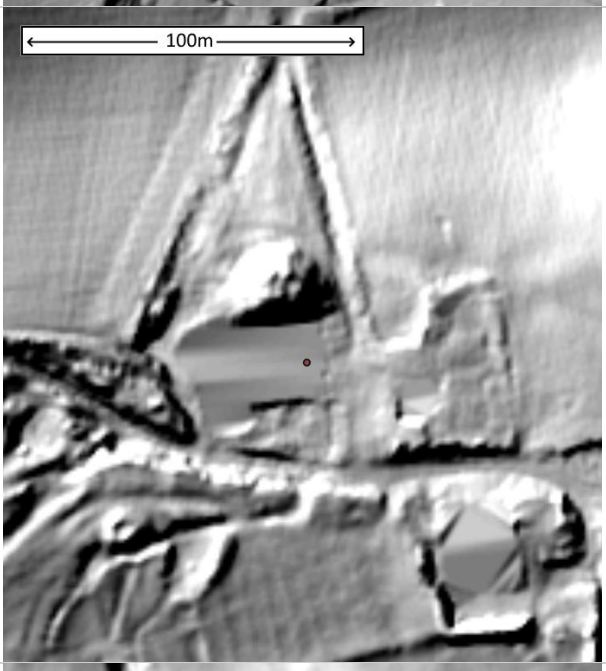
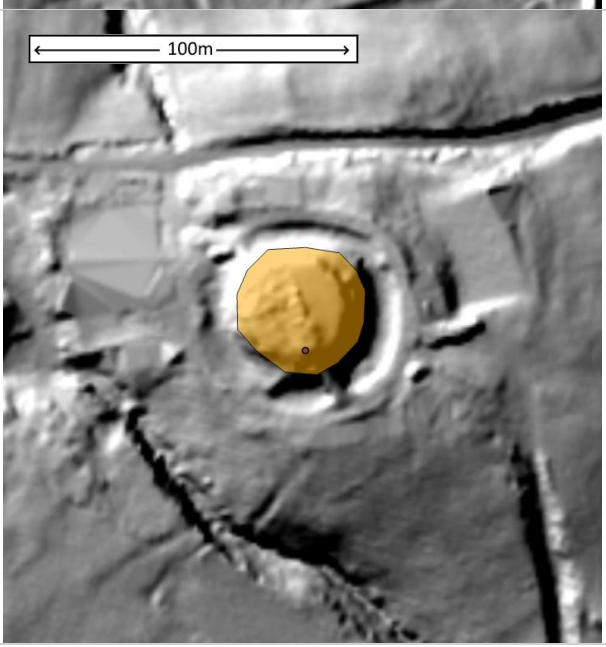
CHER57	The Camp	Much Dewich	Herefordshire	
CHER58	Mynyddbryd d Tump	Dorstone	Herefordshire	
CHER59	Nant-y-bar	Dorstone	Herefordshire	

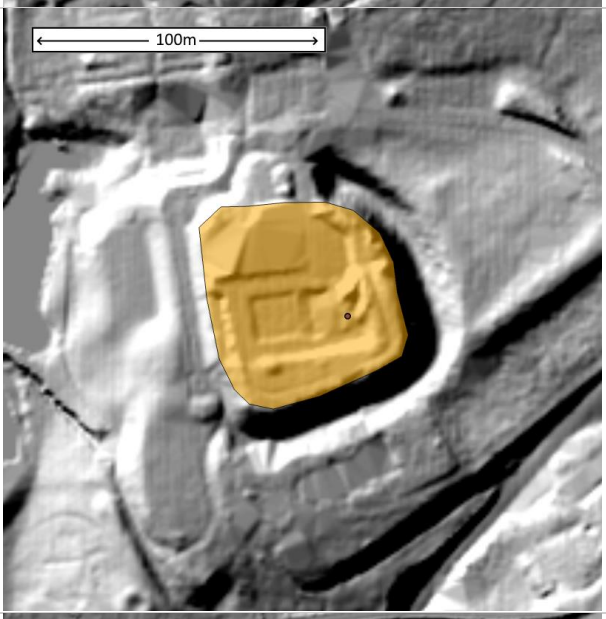
CHER60	Newcourt Tump	Bacton	Herefordshire	
CHER61	Newton Tump	Clifford	Herefordshire	
CHER62	Orcop Castle	Orcop	Herefordshire	

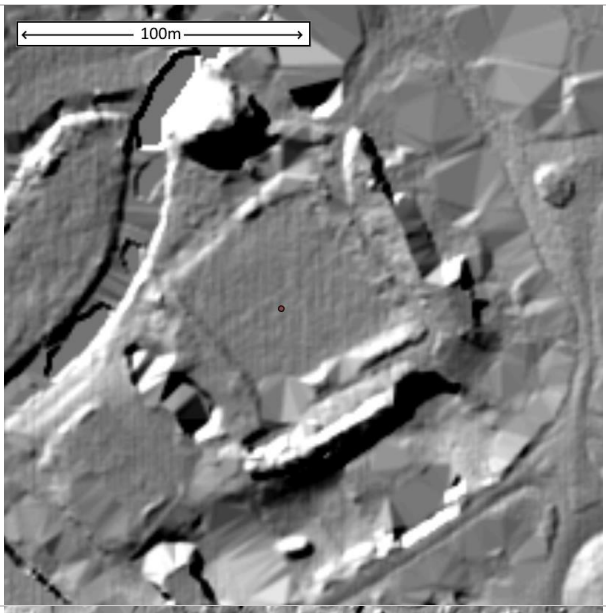
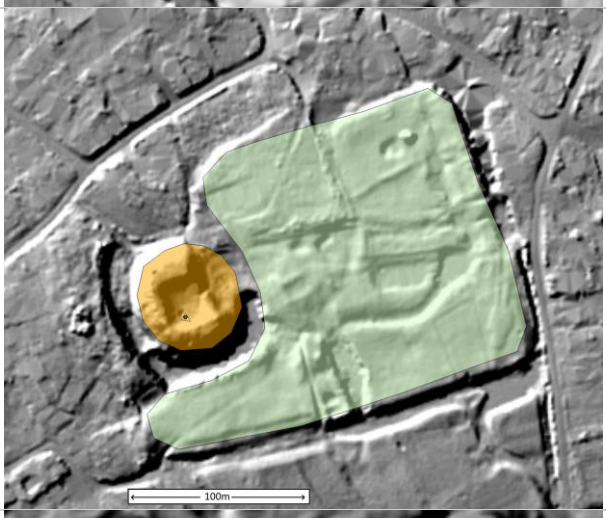
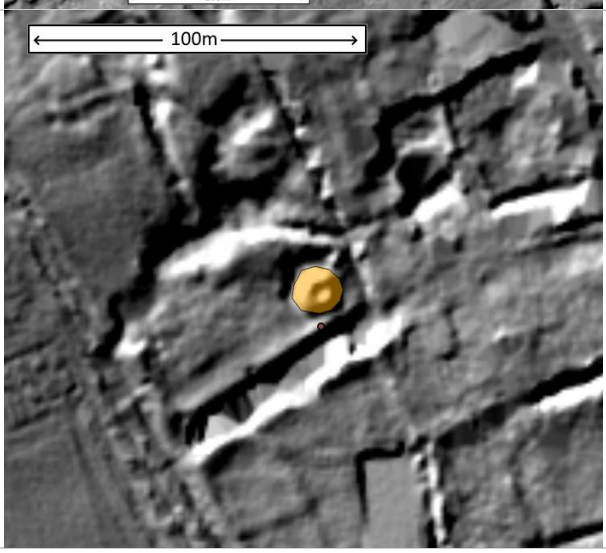
CHER63	Pipe Aston Tump	Pipe Aston	Herefordshire	
CHER64	Richards Castle	Richards Castle	Herefordshire	
CHER65	Snodhill Castle	Peterschurch	Herefordshire	

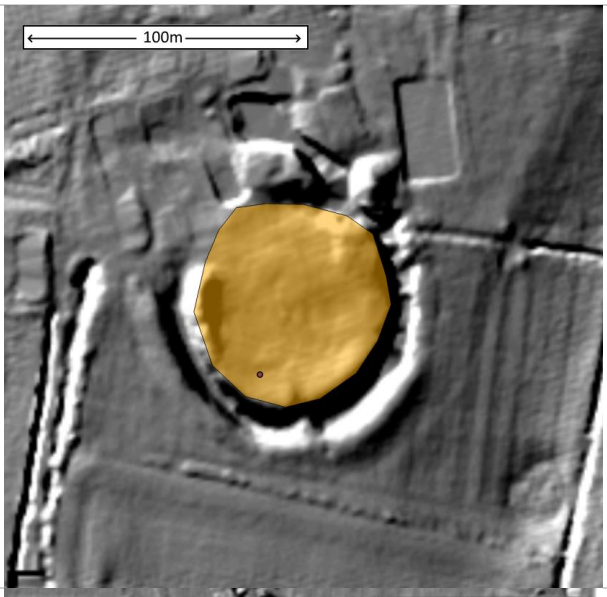
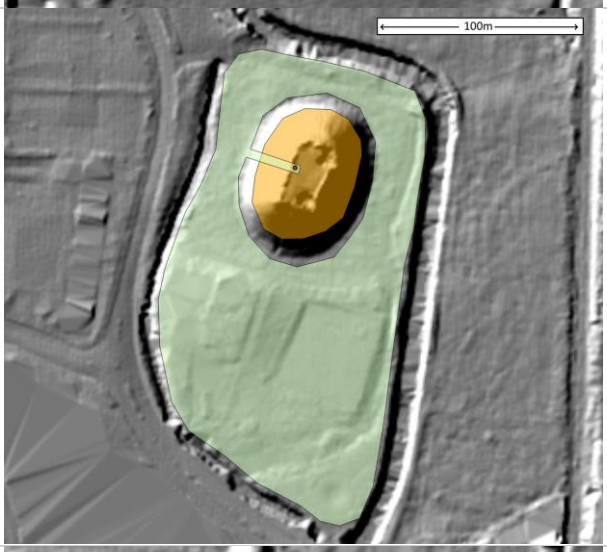
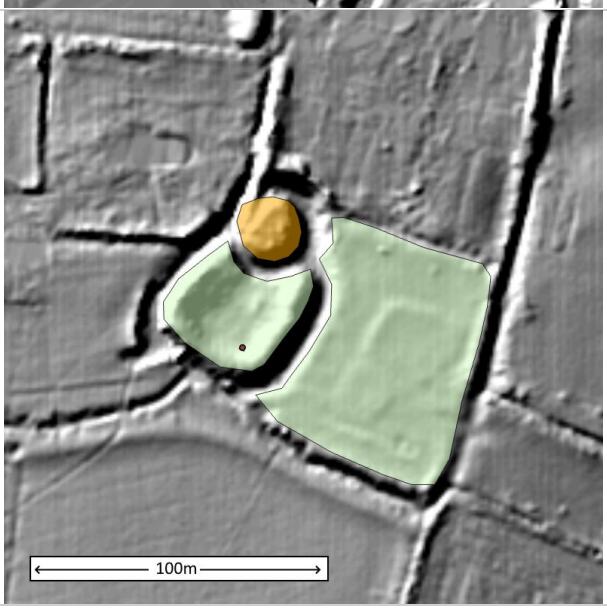
CHER66	Stapleton Castle	Stapleton	Herefordshire	
CHER67	Staunton Motte	Staunton on Arrow	Herefordshire	
CHER68	Thruxton Court	Thruxton	Herefordshire	

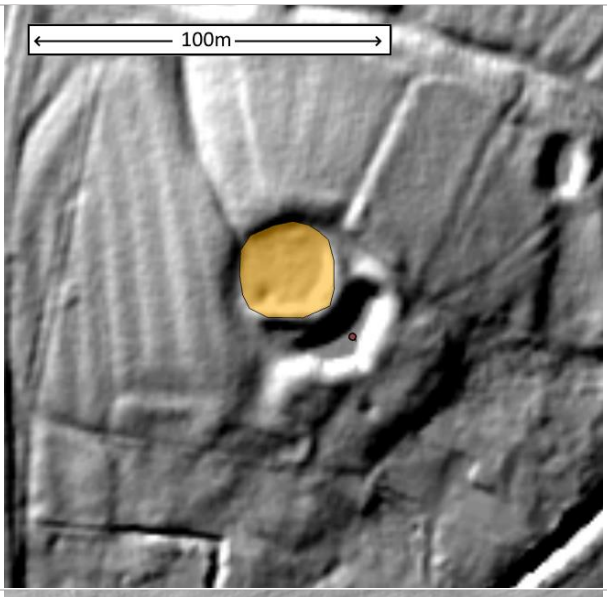
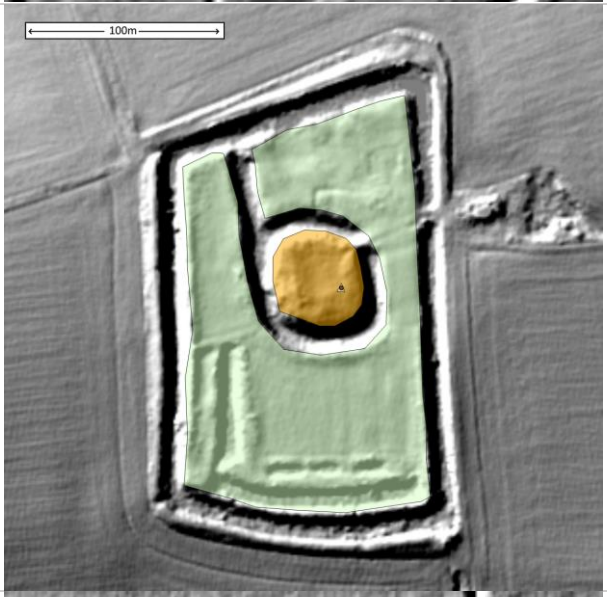
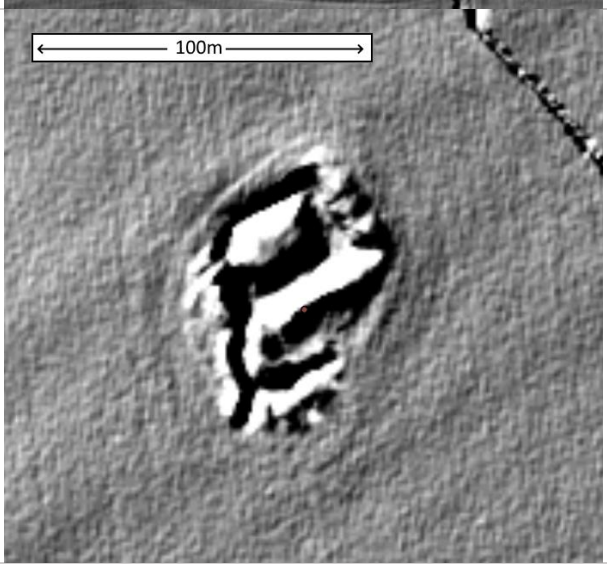
CHER69	Tregate Castle	Llanrothal	Herefordshire	
CHER70	Turret Castle	Huntington	Herefordshire	
CHER71	Buckton Motte	Buckton and Coxall	Herefordshire	

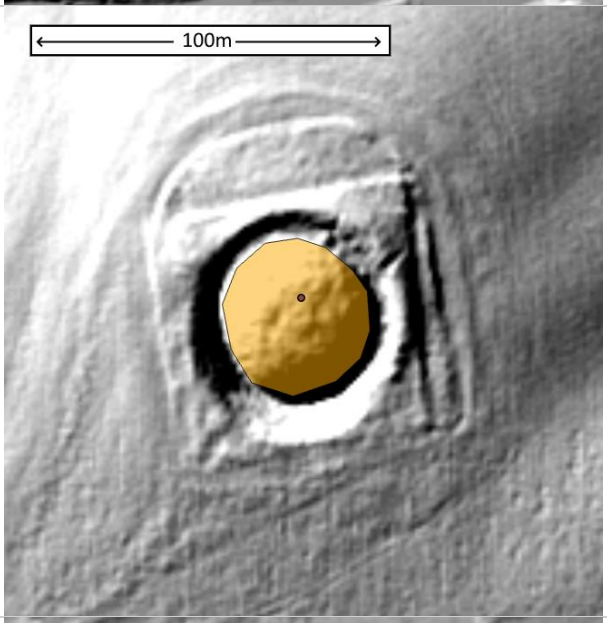
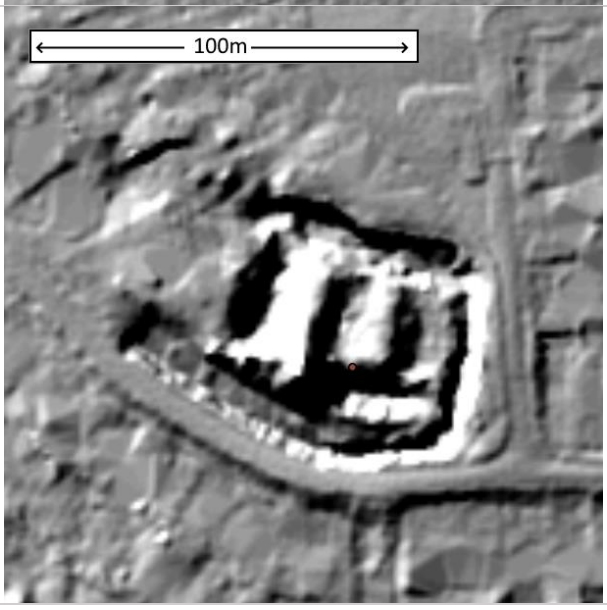
CHER72	Camp Wood Mound	Aymestrey	Herefordshire	
CHER73	Upper Pedwarine Motte	Brampton Bryan	Herefordshire	
CHER74	Urishay Castle	Peterchurch	Herefordshire	

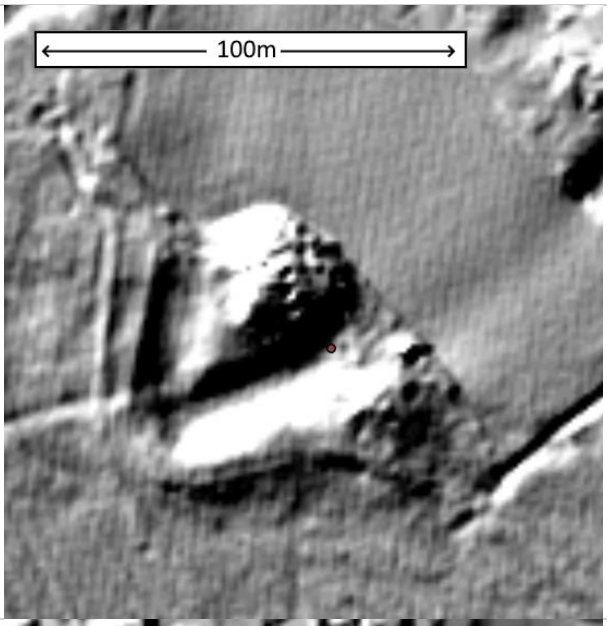
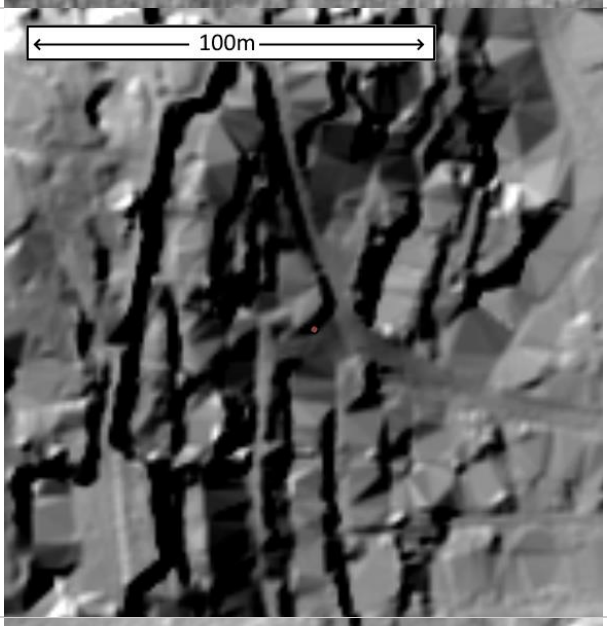
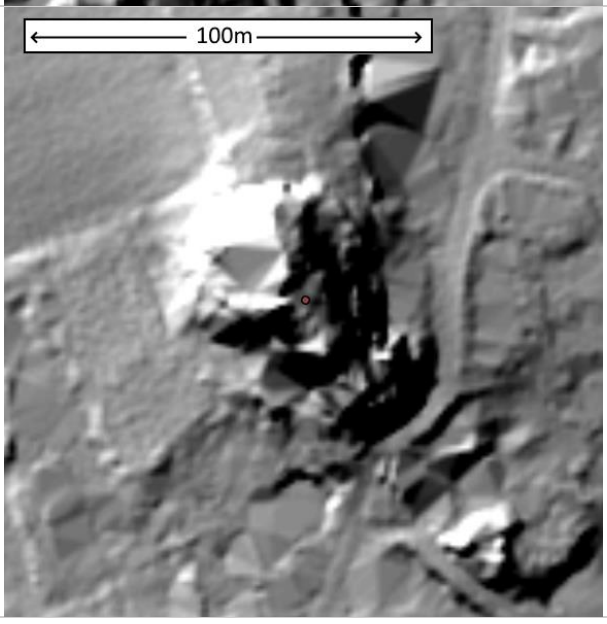
CHRT01	Anstey Castle	Anstey	Hertfordshire	
CHRT02	Benington Castle	Benington	Hertfordshire	
CHRT03	Berkhamsted Castle	Berkhamsted	Hertfordshire	

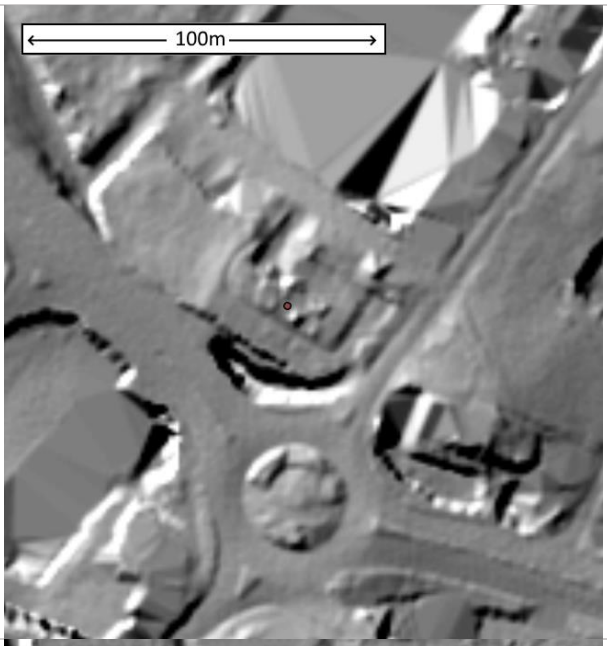
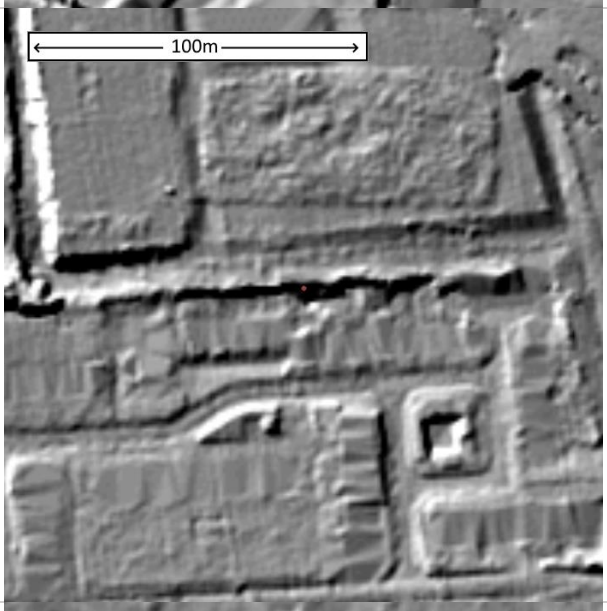
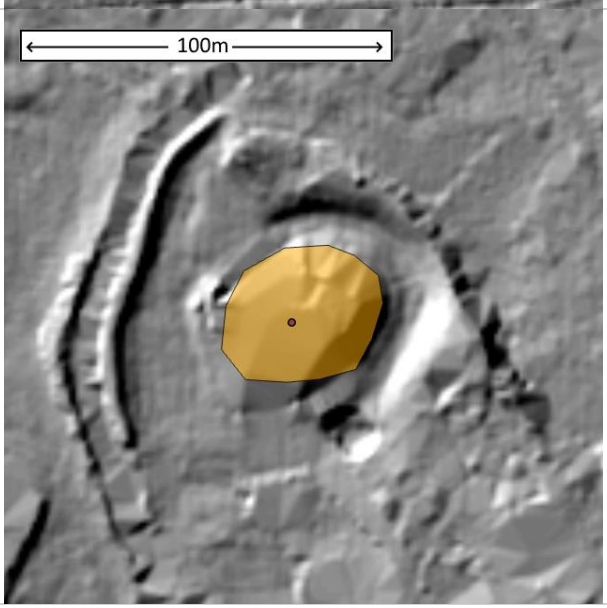
CHRT04	Hertford Castle	Hertford	Hertfordshire	
CHRT05	Pirton Toot Hill	Pirton	Hertfordshire	
CHRT06	Therford Castle	Therford	Hertfordshire	

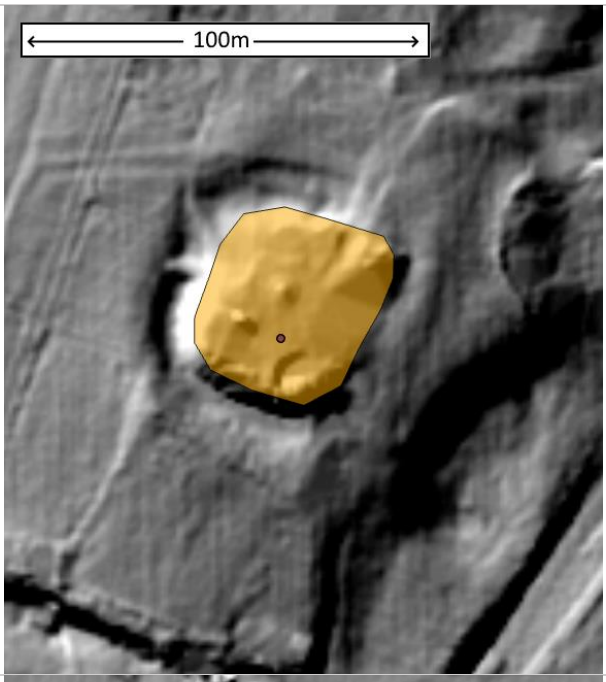
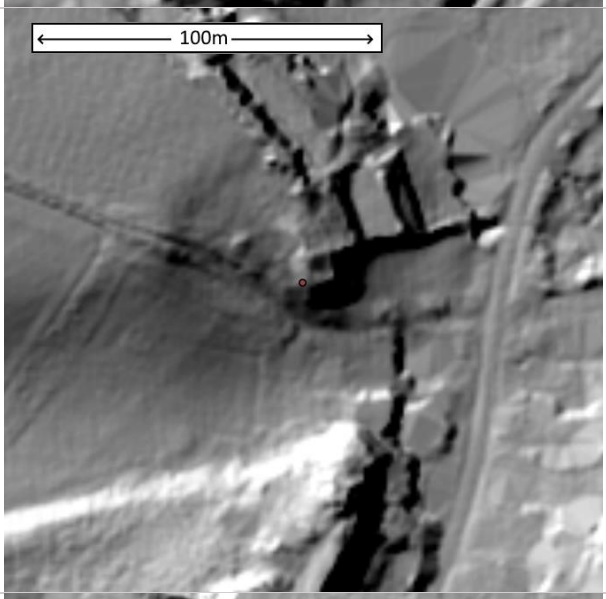
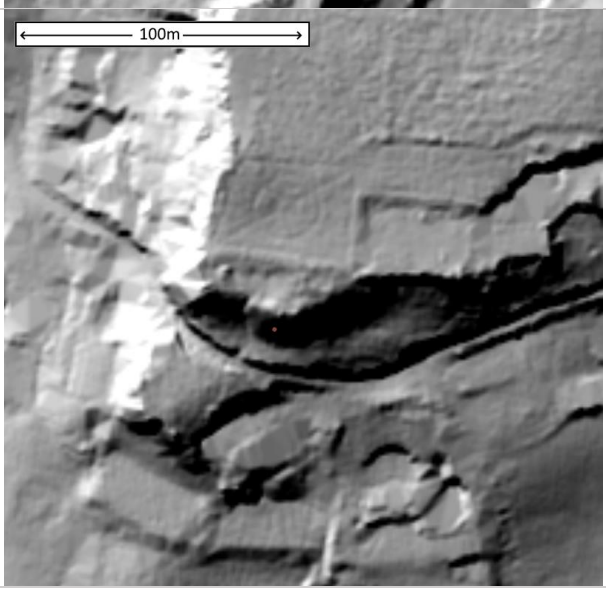
CHRT07	Walkern Bury	Walkern	Hertfordshire	
CHRT08	Waytemore Castle	Bishops Stortford	Hertfordshire	
CHRT09	Wymondley Castle	Wymondley	Hertfordshire	

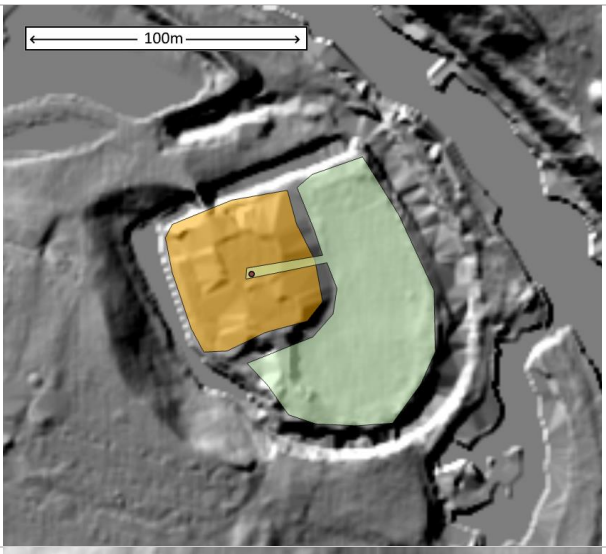
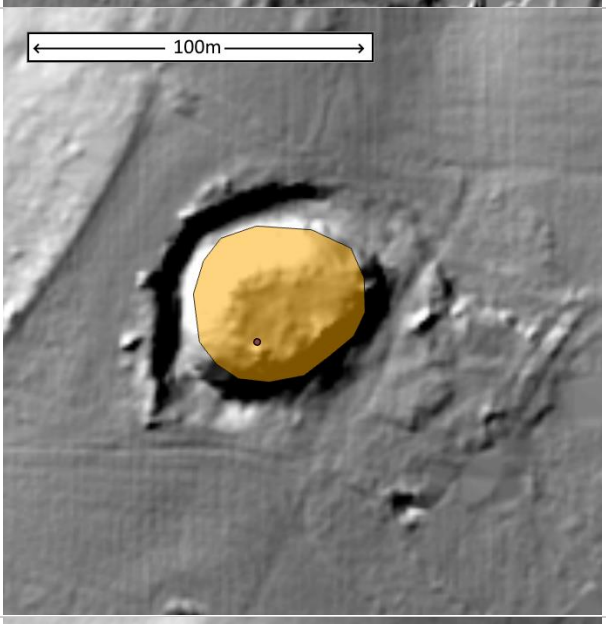
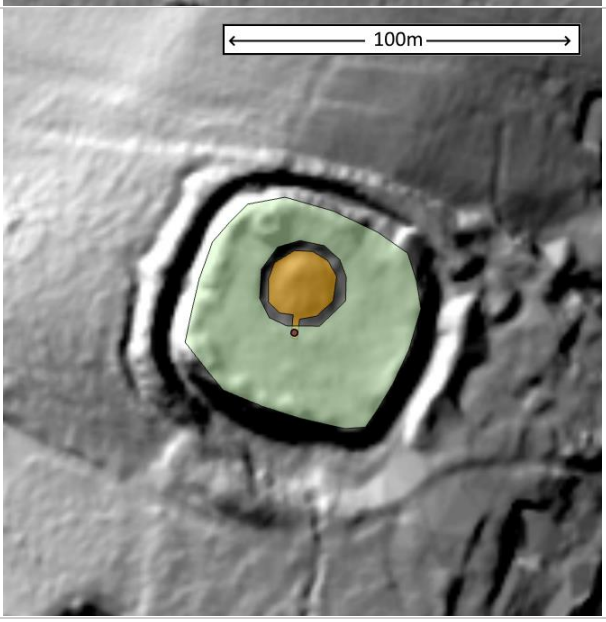
CHUN01	Wood Walton Castle	Wood Walton	Huntingdonshire	
CHUN02	The Old Manor House	Great Staughton	Huntingdonshire	
CHUN03	The Mount	Kings Ripton	Huntingdonshire	

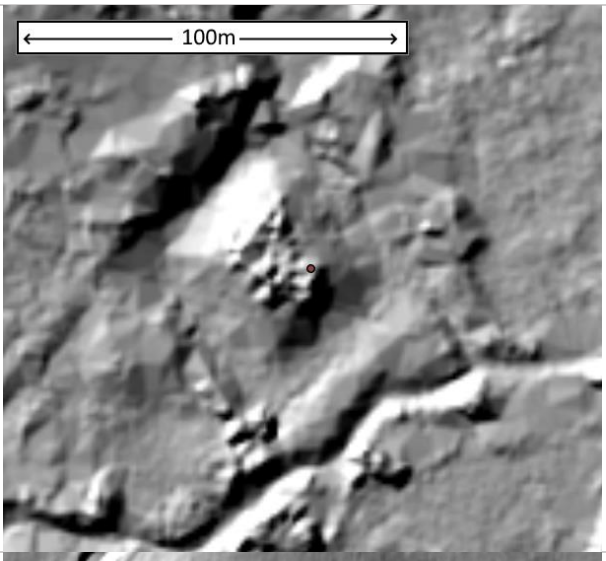
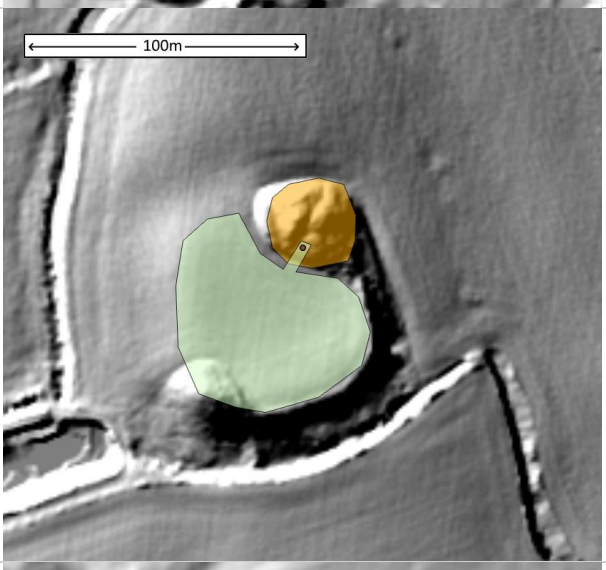
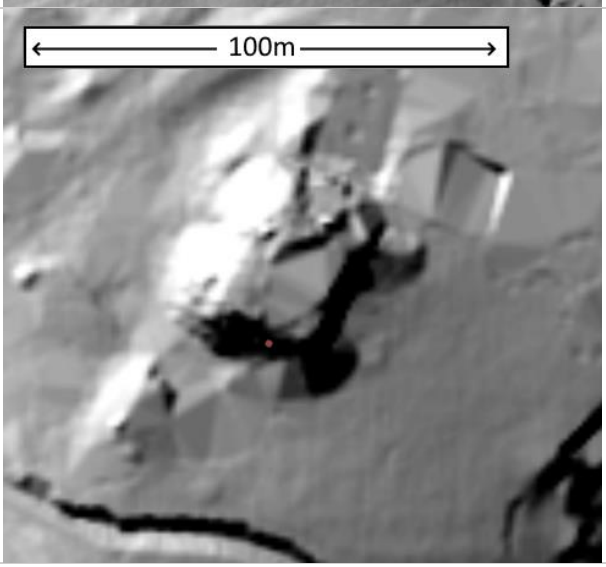
CHUN04	Huntingdon Castle	Huntingdon	Huntingdonshire	
CHUN05	Kimbolton; The Mound	Kimbolton	Huntingdonshire	
CHUN06	Ramsay Booths Hill	Ramsay	Huntingdonshire	

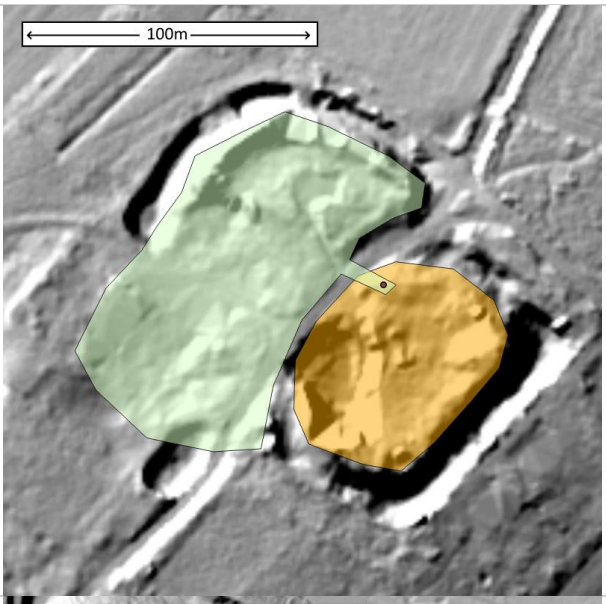
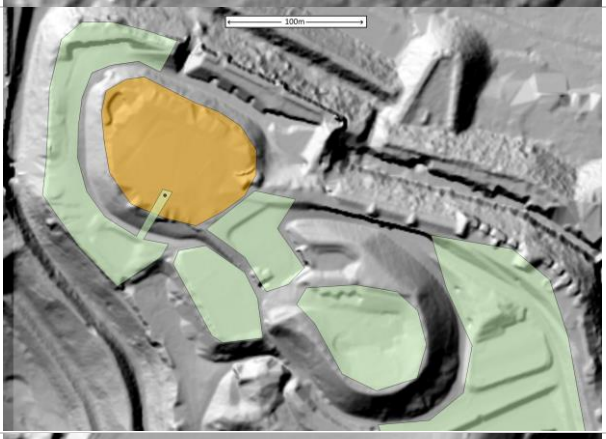
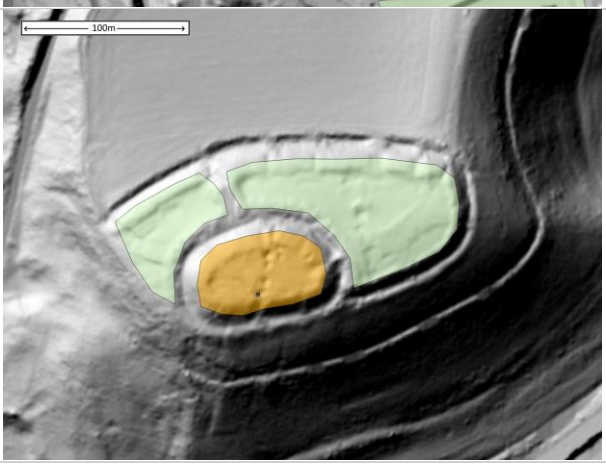
CHUN07	Washingley Hall Farm	Folksworth and Washingley	Huntingdonshire	
CISC01	Mount Holles	St Marys	Isles of Scilly	
CISC02	Ennor Castle	St Marys	Isles of Scilly	

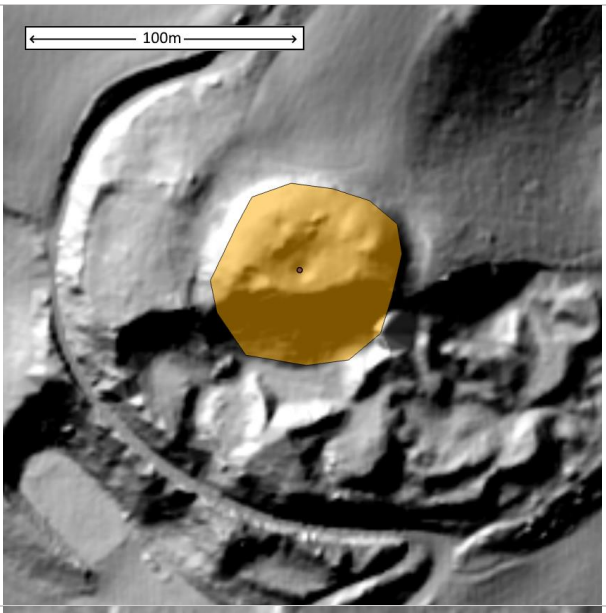
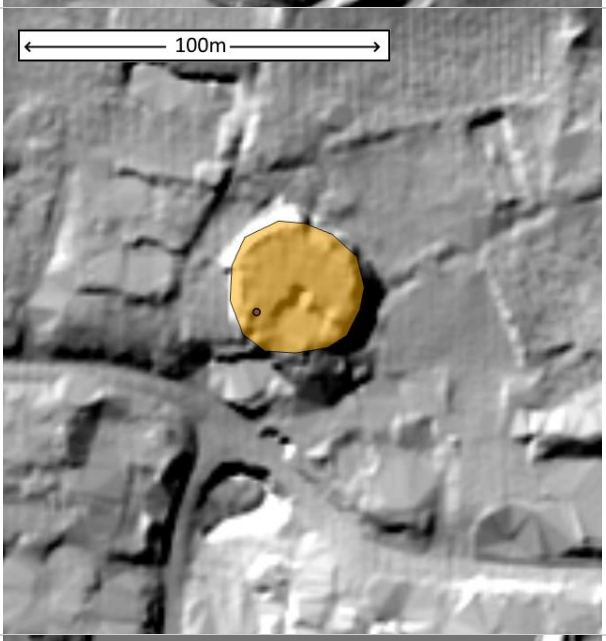
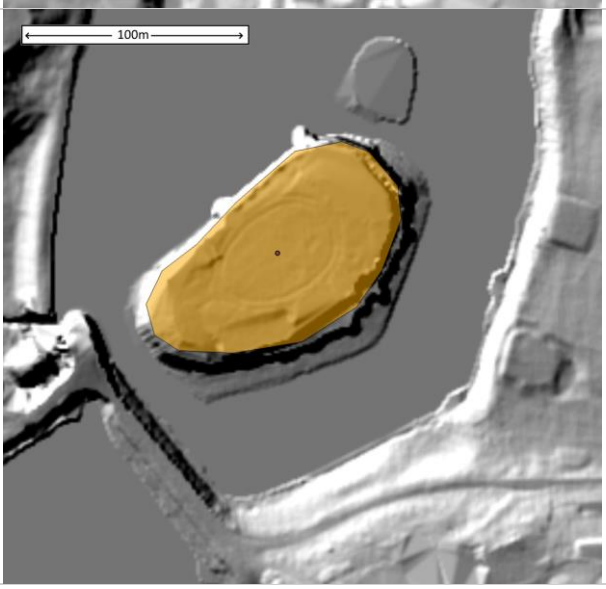
CKEN01	Cantebury Castle	Cantebury	Kent	
CKEN02	Deptfort Castle	Lewisham	Kent	
CKEN03	Eynesford Castle	Eynesford	Kent	

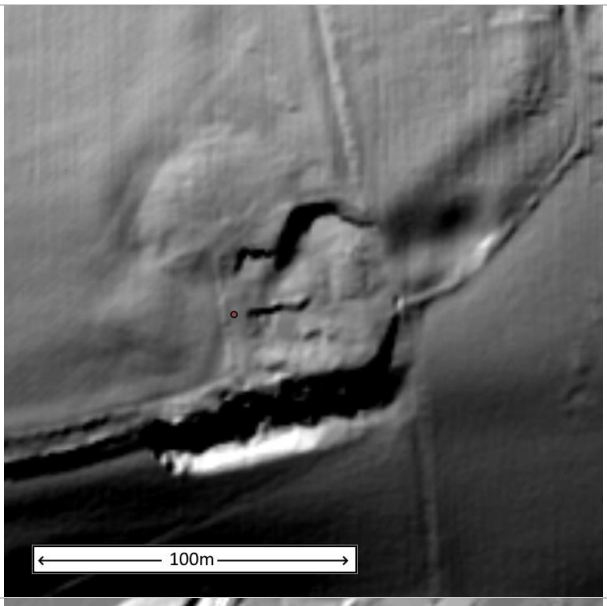
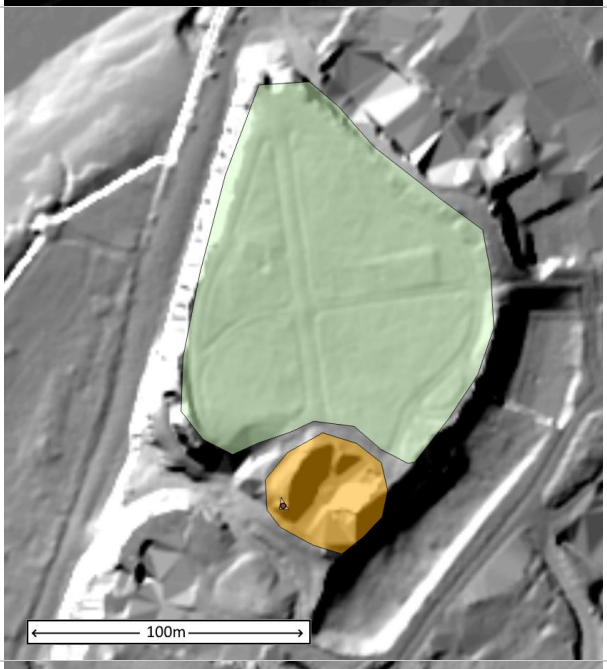
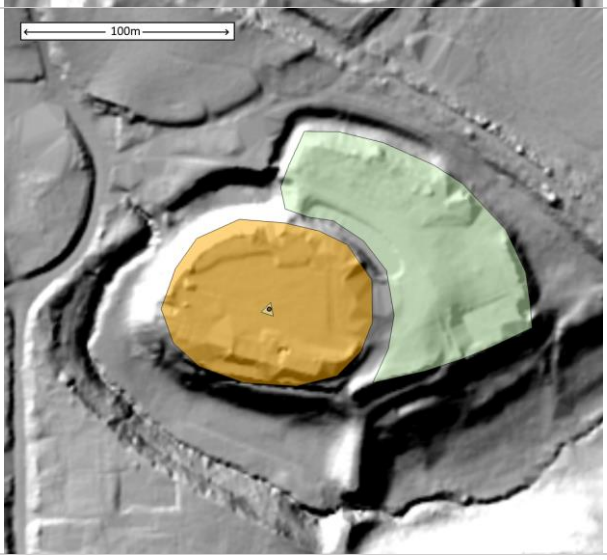
CKEN04	Leybourne Castle	Leybourne	Kent	
CKEN05	St Leonards Tower	West Malling	Kent	
CKEN06	Sutton Valence Castle	Sutton Valance	Kent	

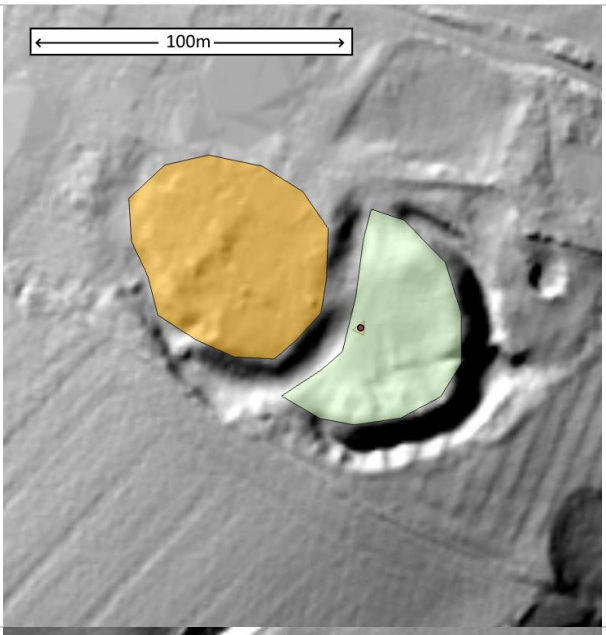
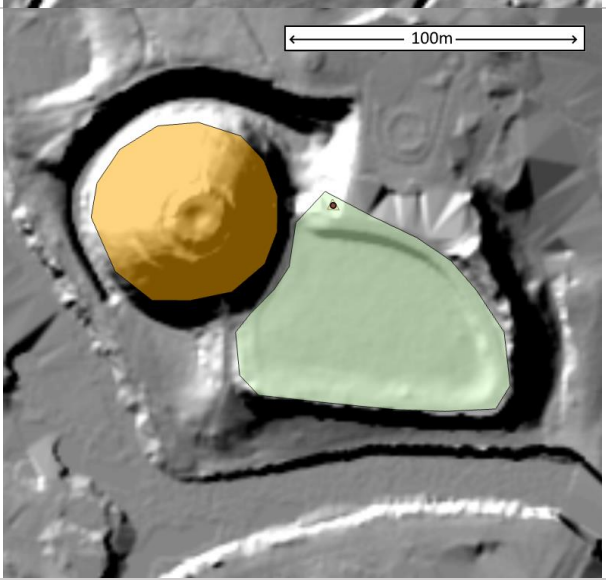
CKEN07	Allington Castle	Maidstone	Kent	
CKEN08	Binbury Castle	Turnham	Kent	
CKEN09	Brenchley Castl Hill	Brenchley	Kent	

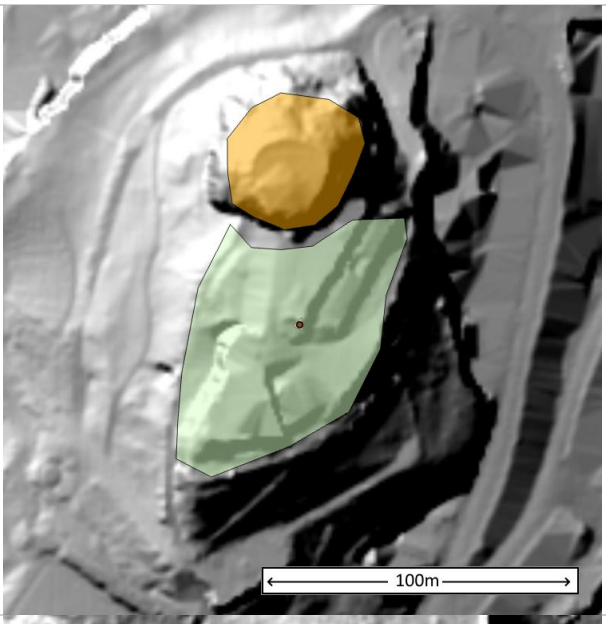
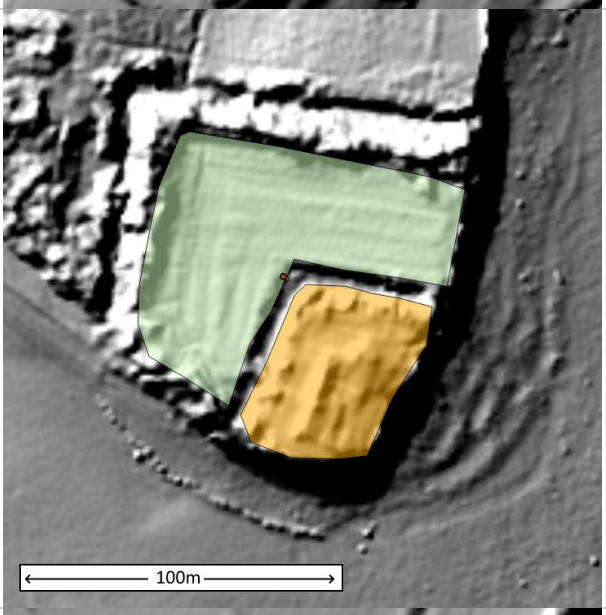
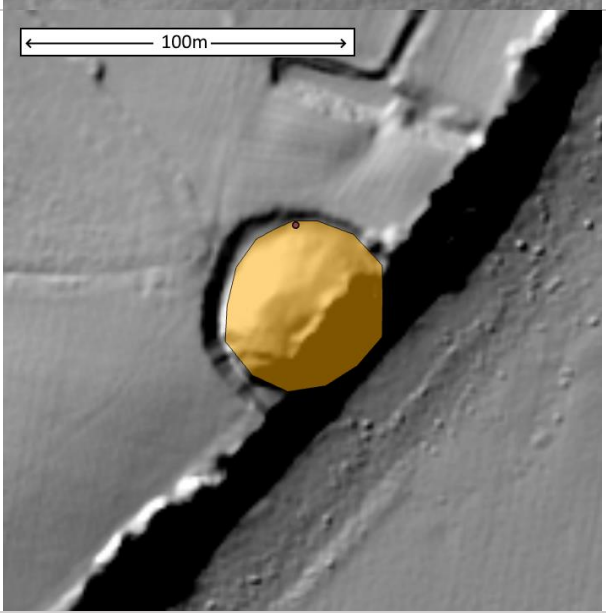
CKEN10	Castle Rough	Sittingbourne	Kent	
CKEN11	Castle Toll	Newenden	Kent	
CKEN12	Chilham Castle	Chilham	Kent	

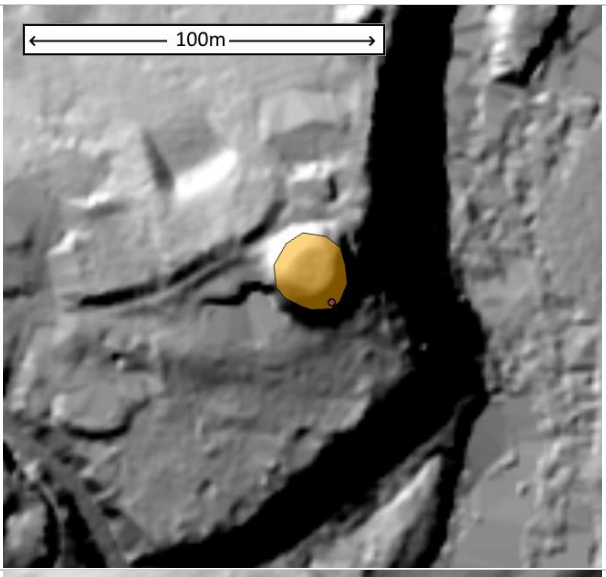
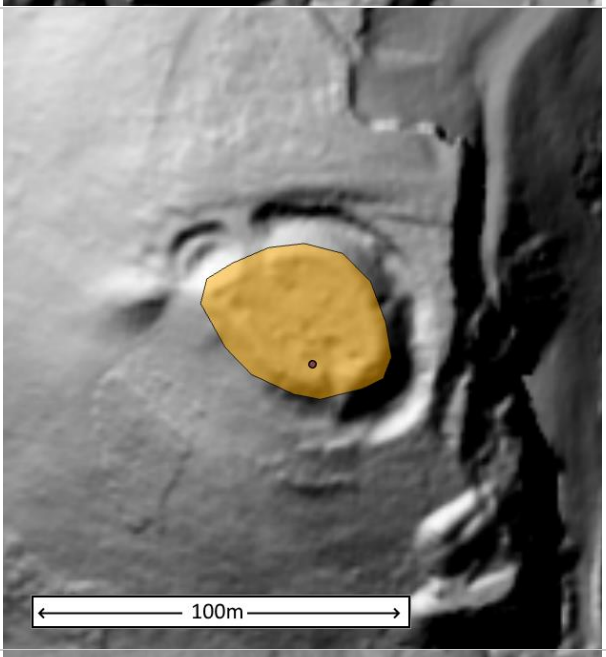
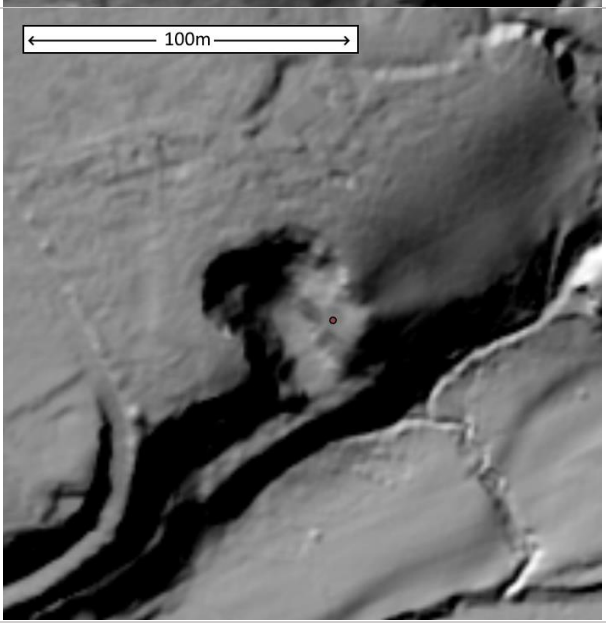
CKEN13	Coldred Court	Coldred	Kent	
CKEN14	Dover Castle	Kent	Kent	
CKEN15	Castle Hill	Folkstone	Kent	

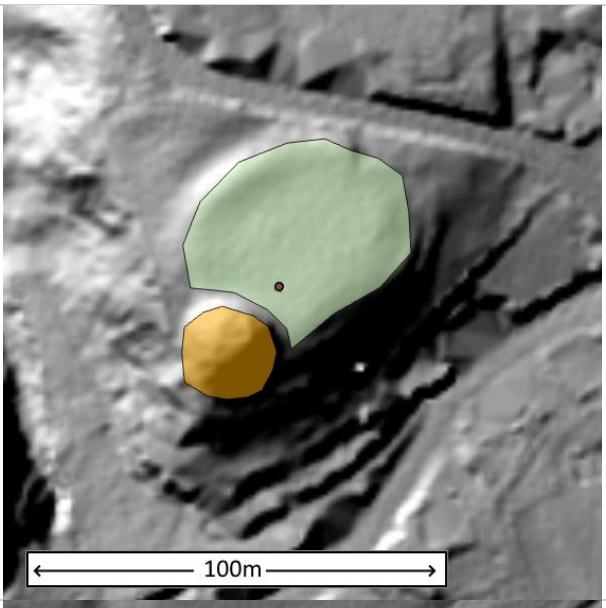
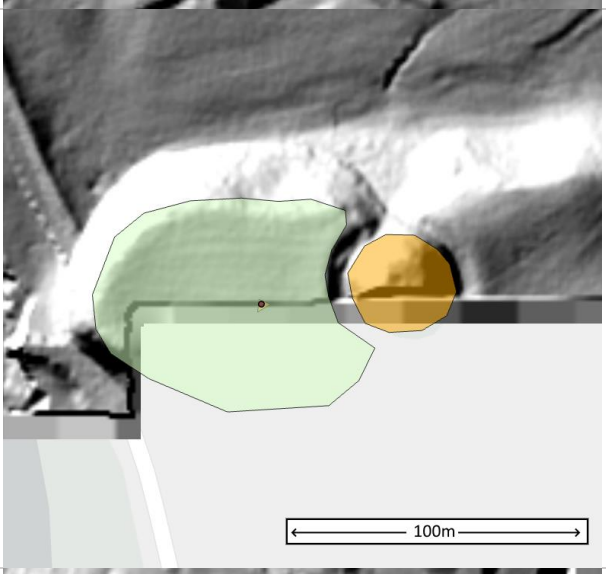
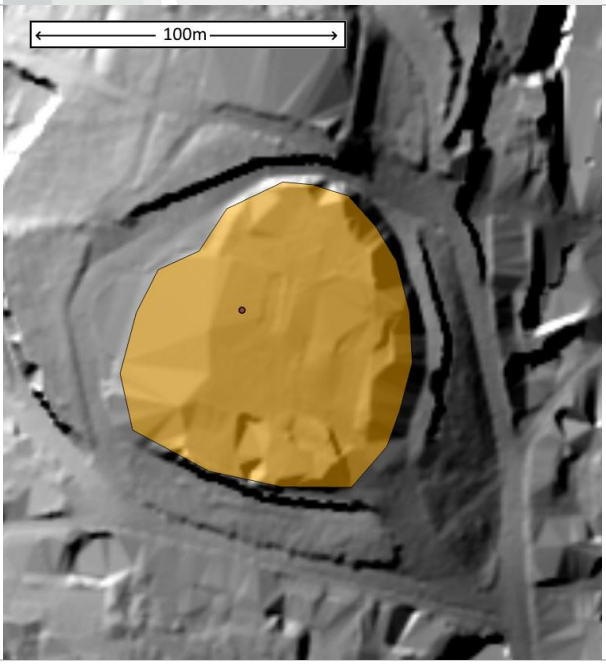
CKEN16	Godards Castle	Thurnham	Kent	
CKEN17	Castle Bank	Kemsing	Kent	
CKEN18	Leeds Castle	Broomfield And Kingswood	Kent	

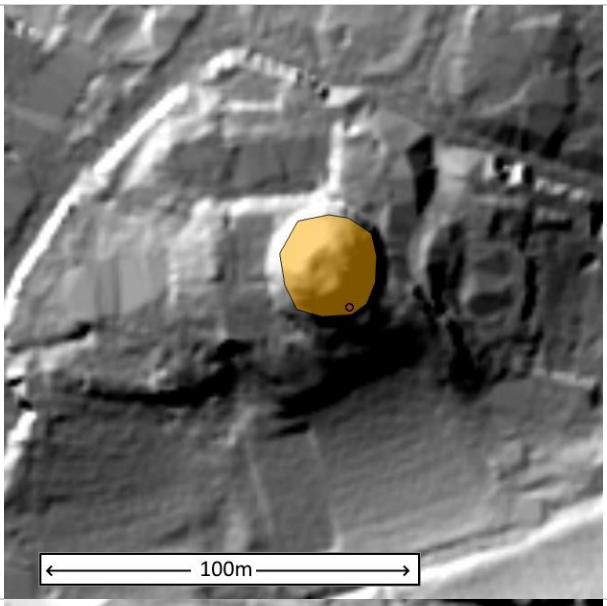
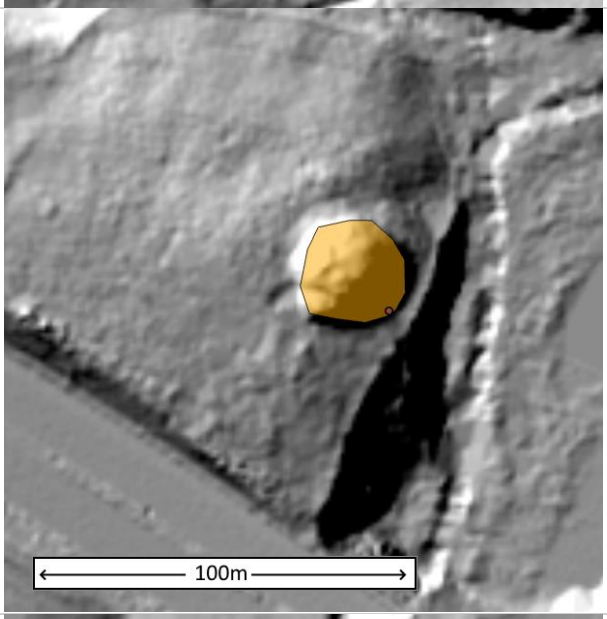
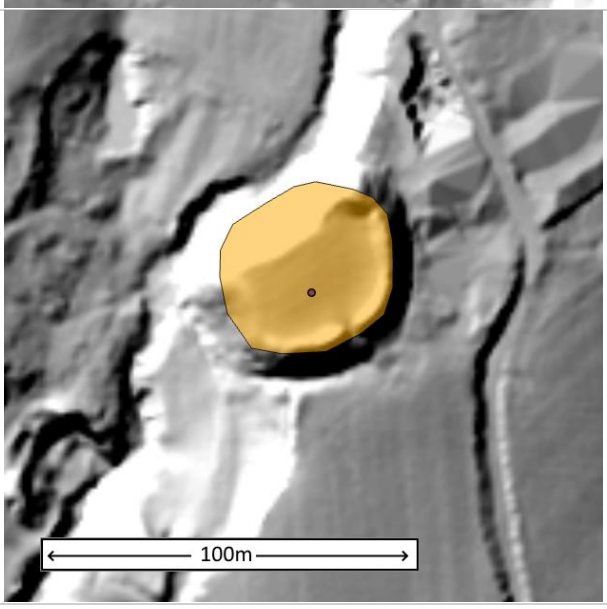
CKEN19	Newham Castle	Newham	Kent	
CKEN20	Rochester Castle	Rochester	Kent	
CKEN21	Saltwood Castle	Saltwood	Kent	

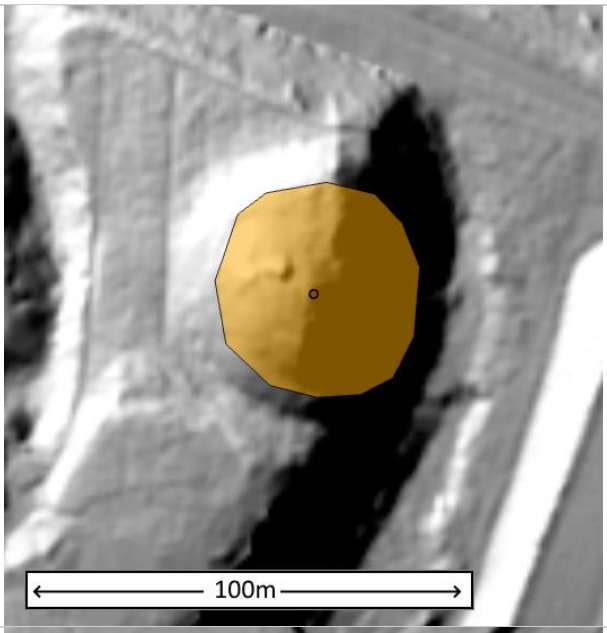
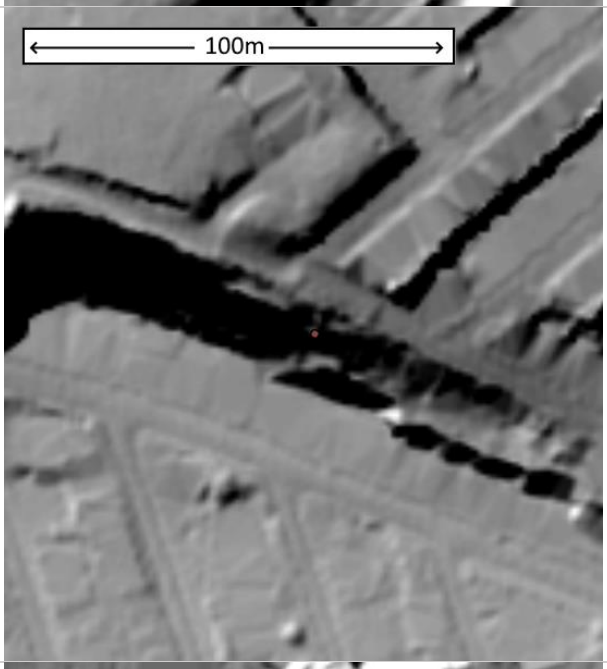
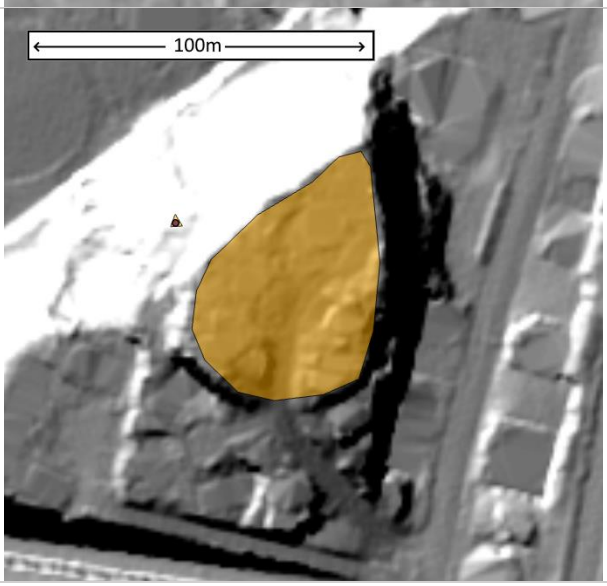
CKEN22	Stockbury Castle	Stockbury	Kent	
CKEN23	Stowing Castle	Stowing	Kent	
CKEN24	Tonbridge Castle	Tonbridge	Kent	

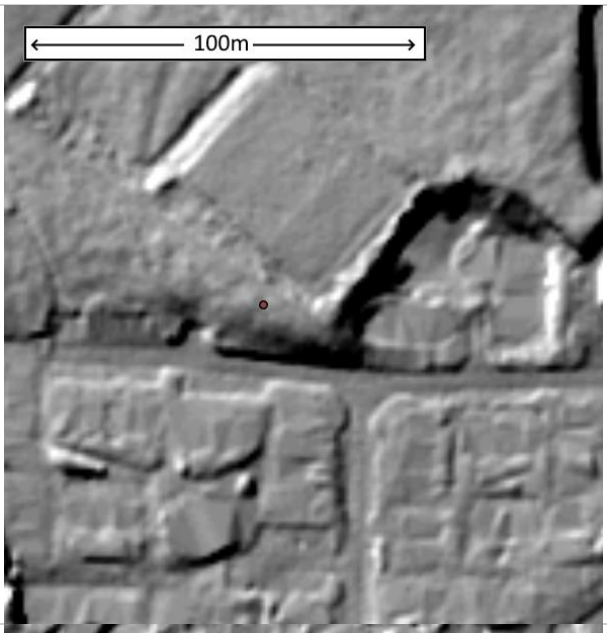
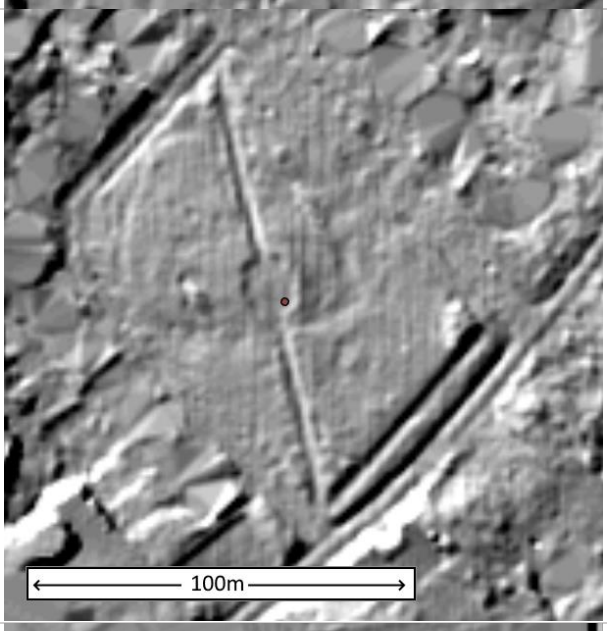
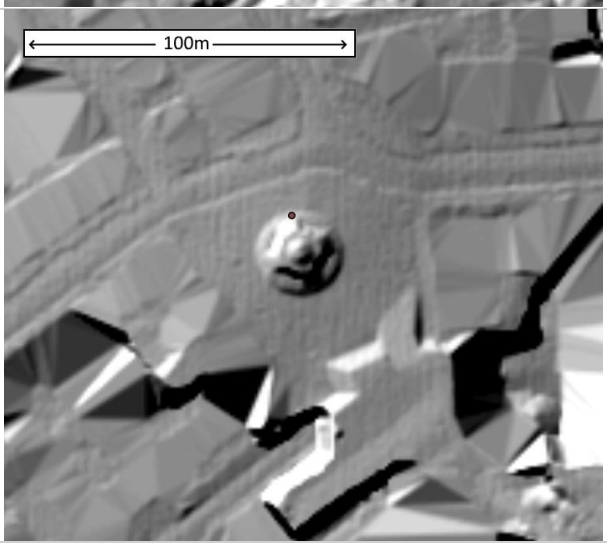
CLAN01	Clitheroe Castle	Clithroe	Lancashire	
CLAN02	Piel Castle	Barrow In Furness	Lancashire	
CLAN03	Aldingham Motte	Aldingham	Lancashire	

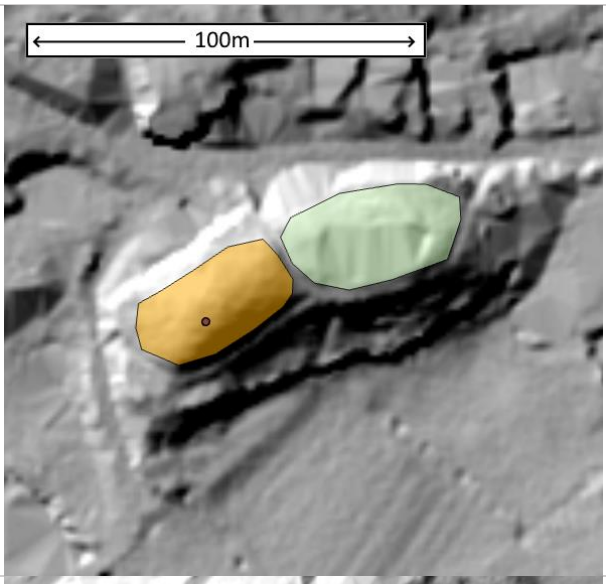
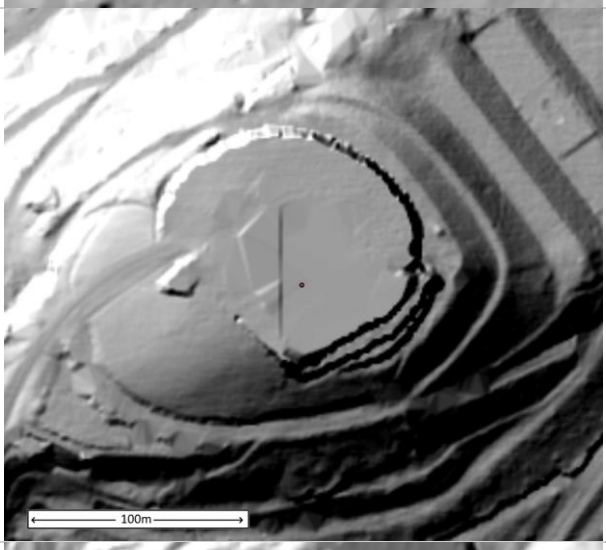
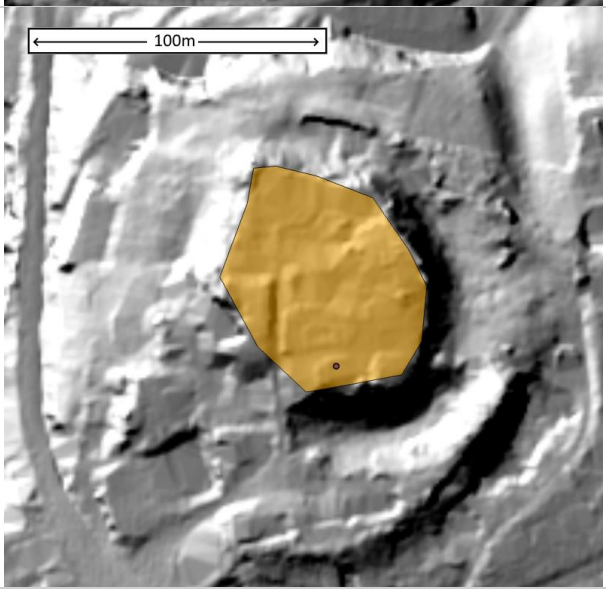
CLAN04	Chapel Hill	Arkholme with Cawood	Lancashire	
CLAN05	Buckton Castle	Mossley	Lancashire	
CLAN06	Dolphinholme Castle Hill	Ellel	Lancashire	

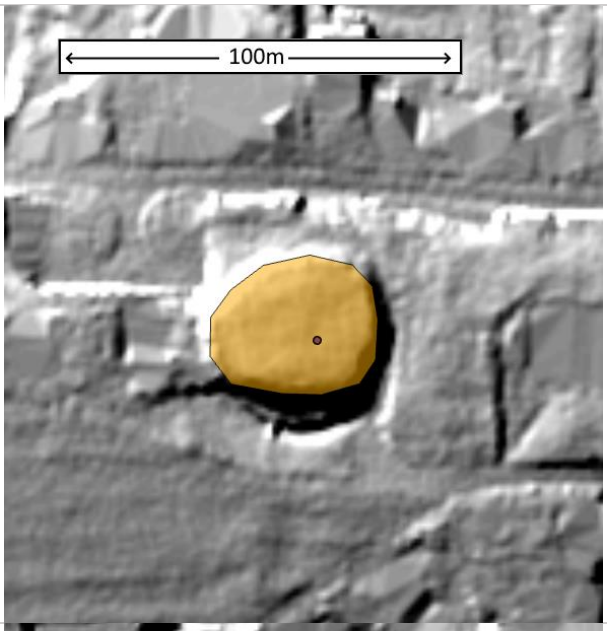
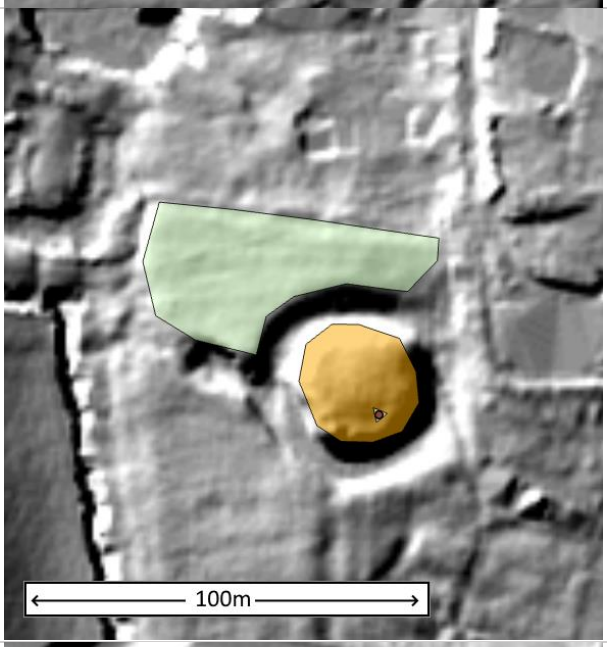
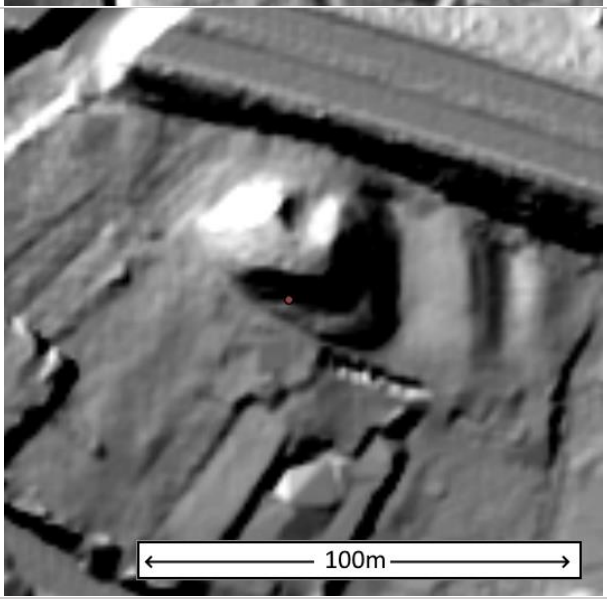
CLAN07	Halton Castle Hill	Halton With Aughton	Lancashire	
CLAN08	Hornby Castlestede	Hornby with Farleton	Lancashire	
CLAN09	Lancaster Castle	Lancaster	Lancashire	

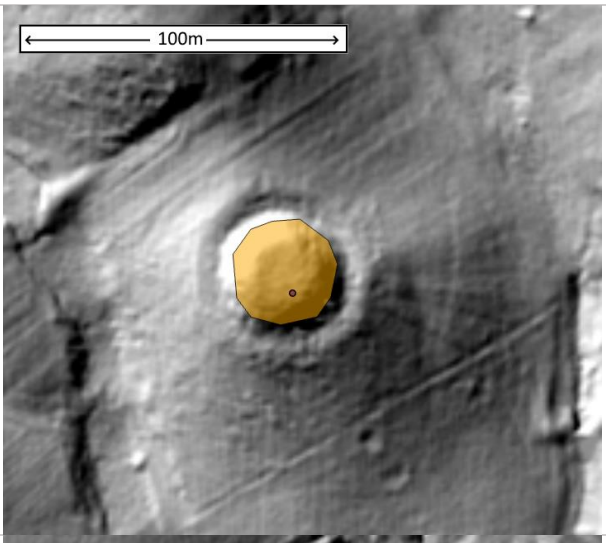
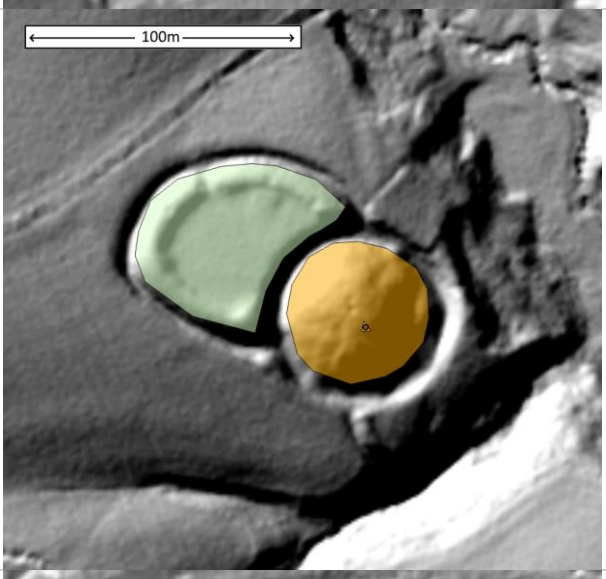
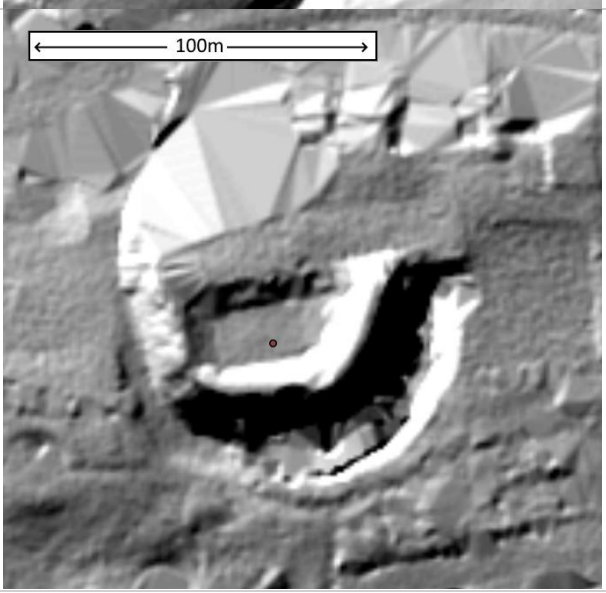
CLAN10	Castle Mount	Melling with Wrayton	Lancashire	
CLAN11	Castle Hill	Newton Le Willows	Lancashire	
CLAN12	Castle Hill	Pennington	Lancashire	

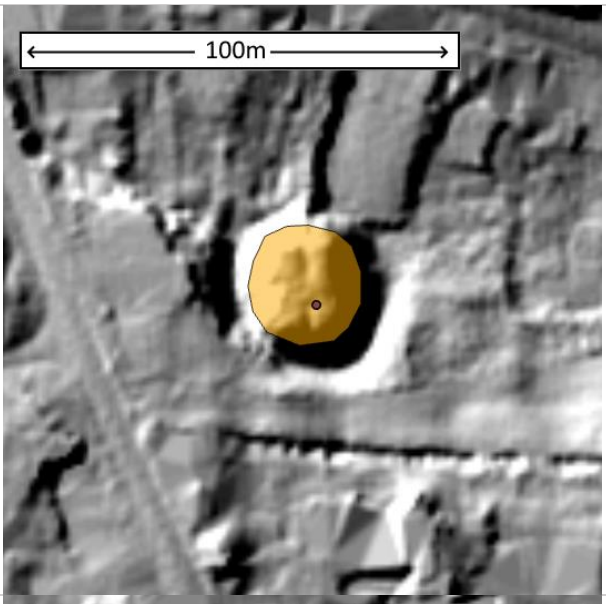
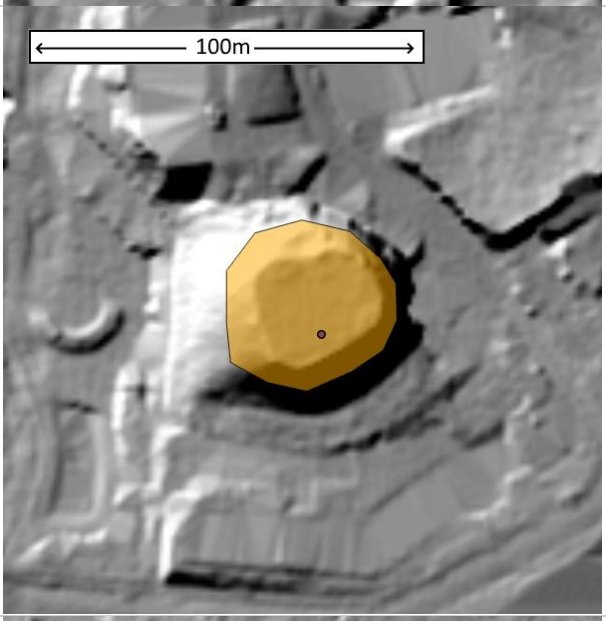
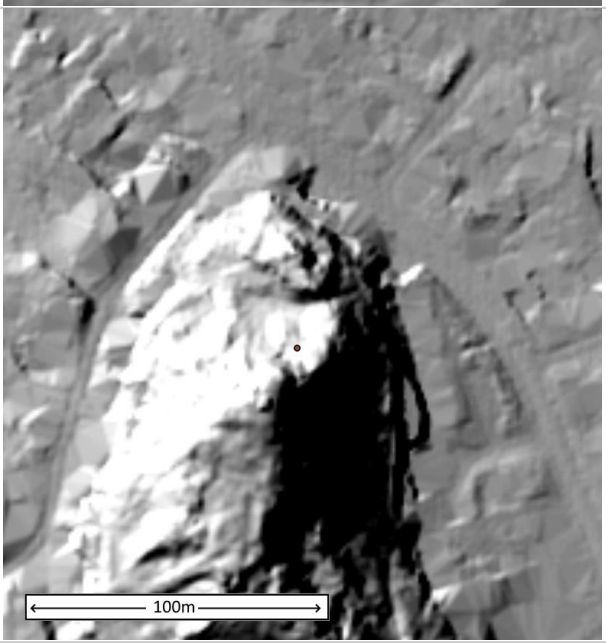
CLAN13	Castle Hill	Penwortham	Lancashire	
CLAN14	Preston Castle	Preston	Lancashire	
CLAN15	Rochdale Castle	Rochdale	Lancashire	

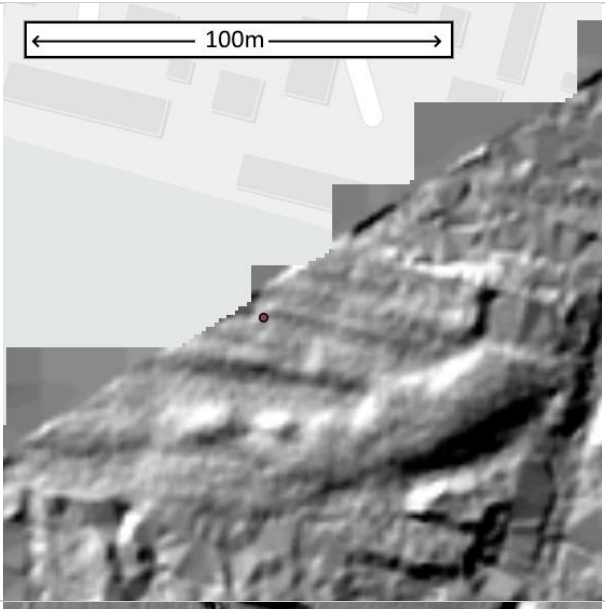
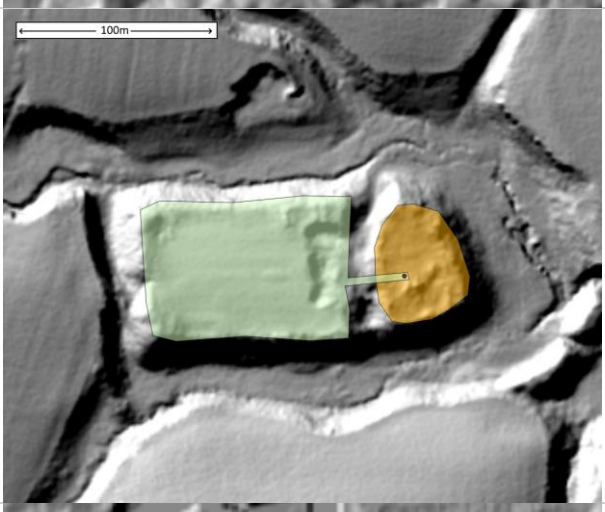
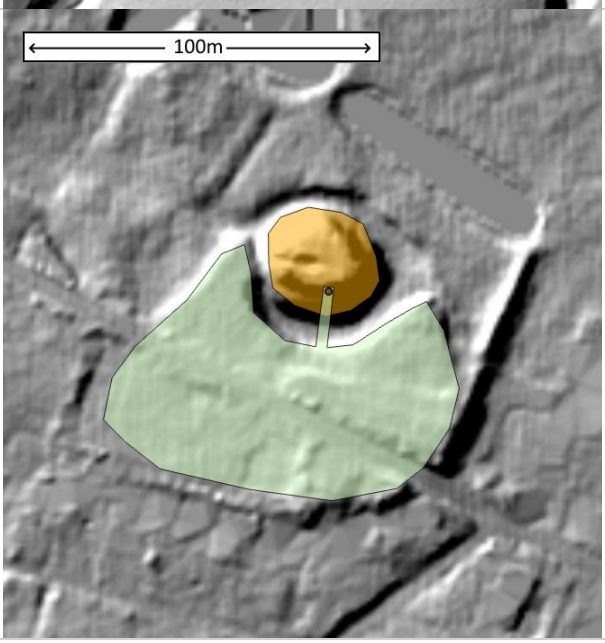
CLAN16	Warrington Motte Hill	Warrington	Lancashire	
CLAN17	West Derby Castle	Liverpool	Lancashire	
CLAN18	Liverpool Castle	Liverpool	Lancashire	

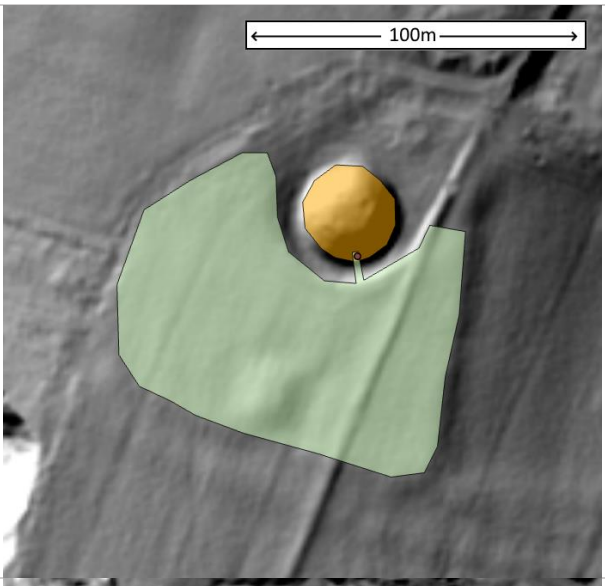
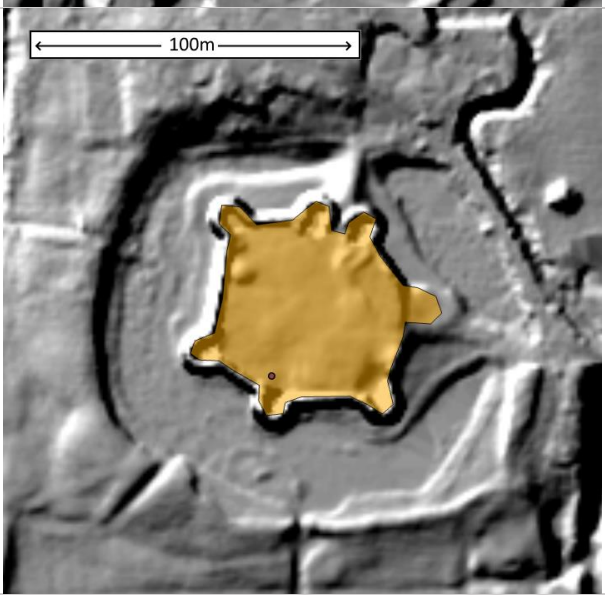
CLAN19	Whittington Motte	Whittington	Lancashire	
CLEI01	Belvoir Castle	Belvoir	Leicestershire	
CLEI02	Castle Donington	Donington	Leicestershire	

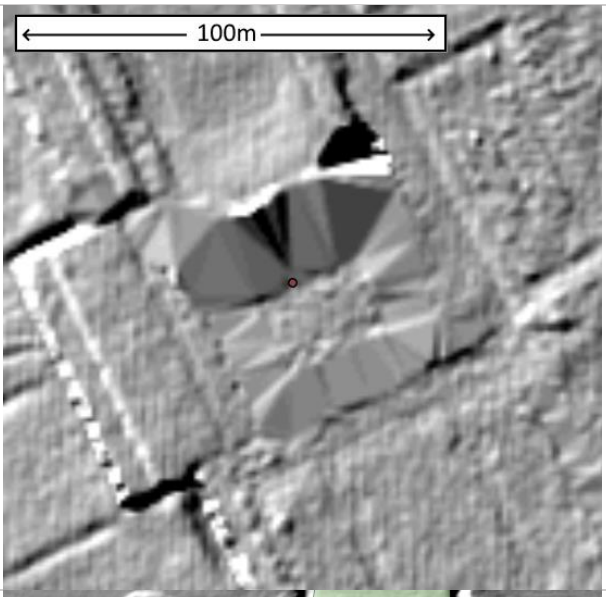
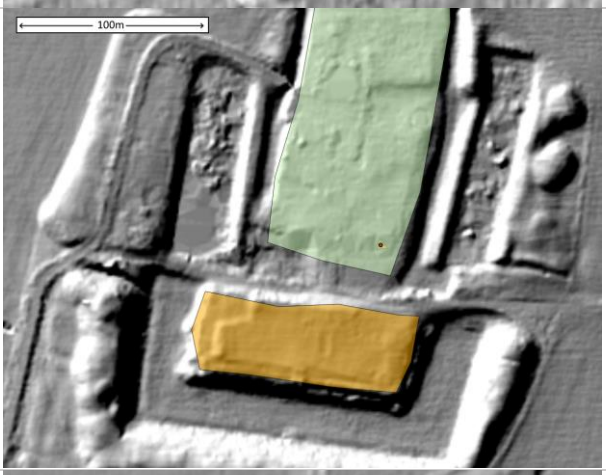
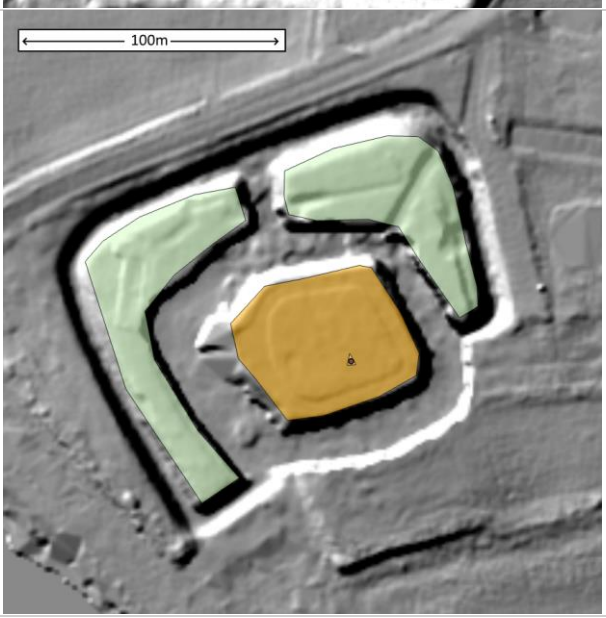
CLEI03	Earl Shilton Castle Yard	Hinckley	Leicestershire	
CLEI04	Gilmorton motte	Gilmorten	Leicestershire	
CLEI05	Groby Castle Hill	Groby	Leicestershire	

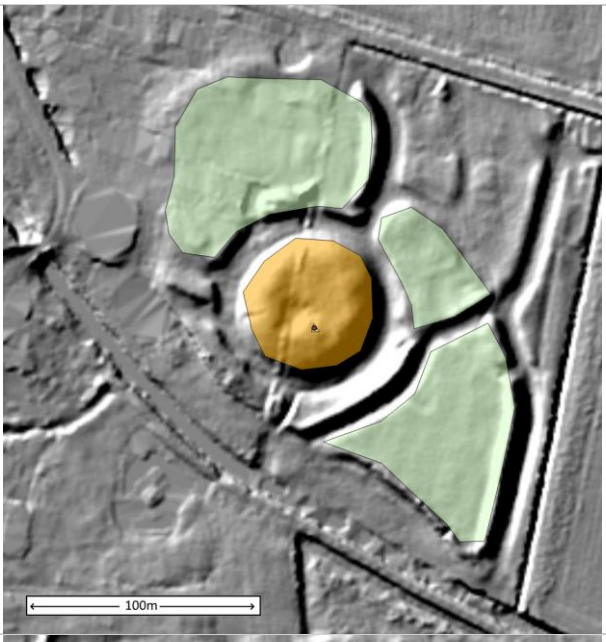
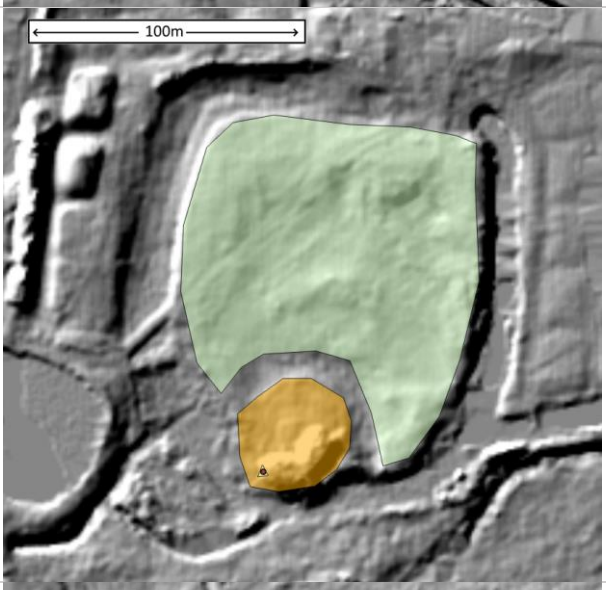
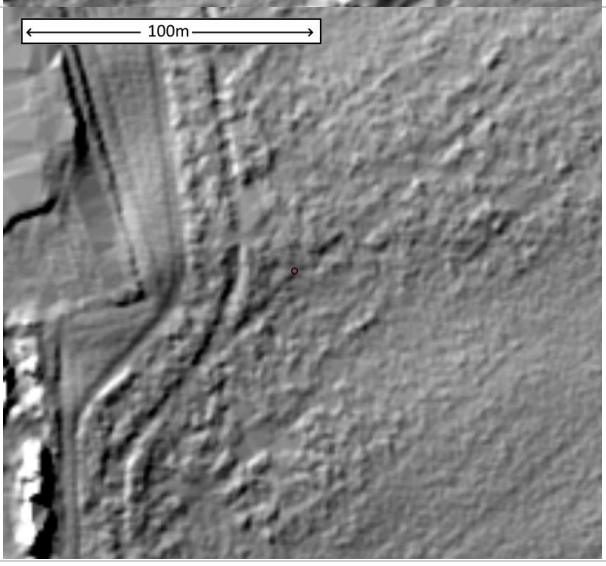
CLEI06	Cat Gruff	Glumley	Leicestershire	
CLEI07	Hallaton Castle Hill Camp	Hallaton	Leicestershire	
CLEI08	Hinckley Castle Hill	Hinckley	Leicestershire	

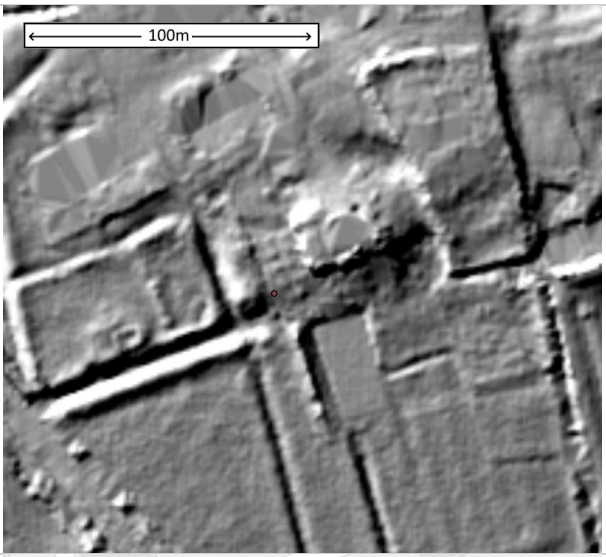
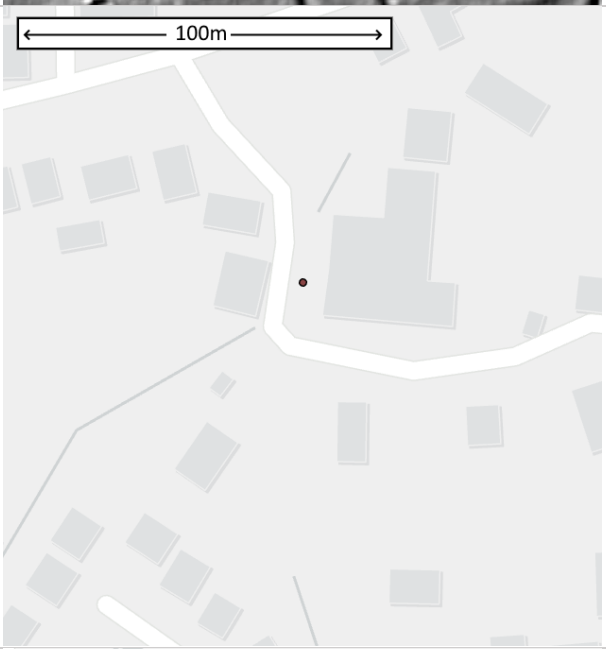
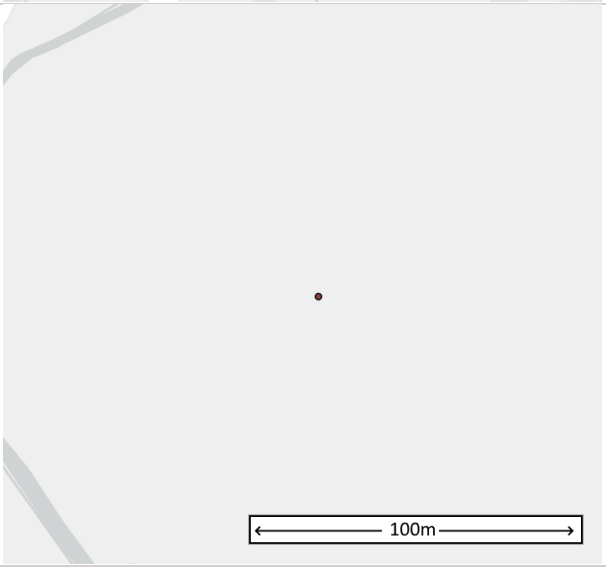
CLEI09	The Munt	Kibworth Harcourt	Leicestershire	
CLEI10	Leicester Castle	Leicester	Leicestershire	
CLEI11	Mountsorrel Castle	Mountsorrel	Leicestershire	

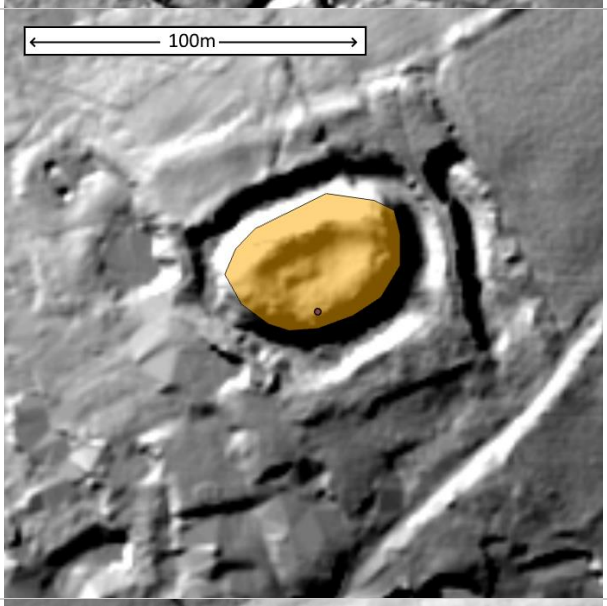
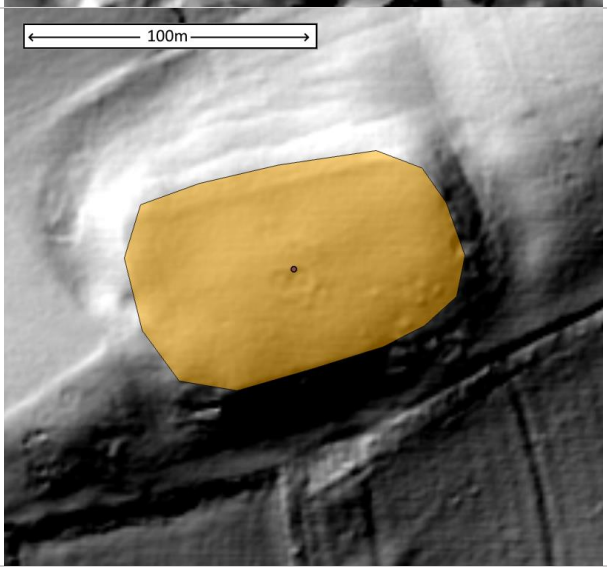
CLEI12	Sapcote Castle	Sapcote	Leicestershire	
CLEI13	Sauvey Castle	Withcote	Leicestershire	
CLEI14	Shackerstone Motte	Shackerstone	Leicestershire	

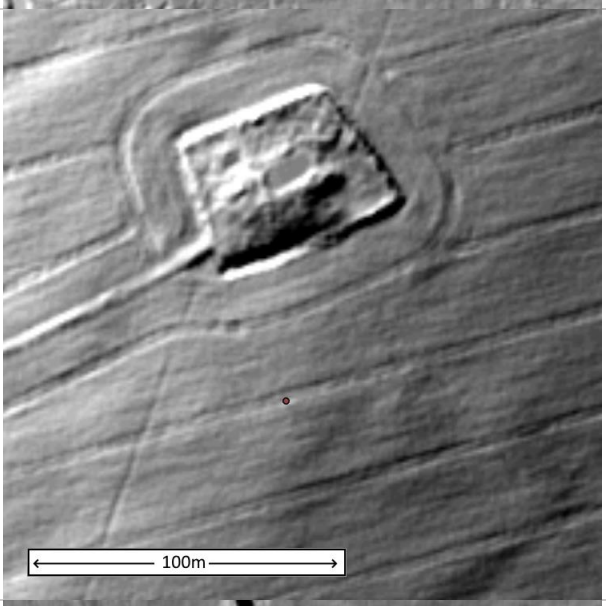
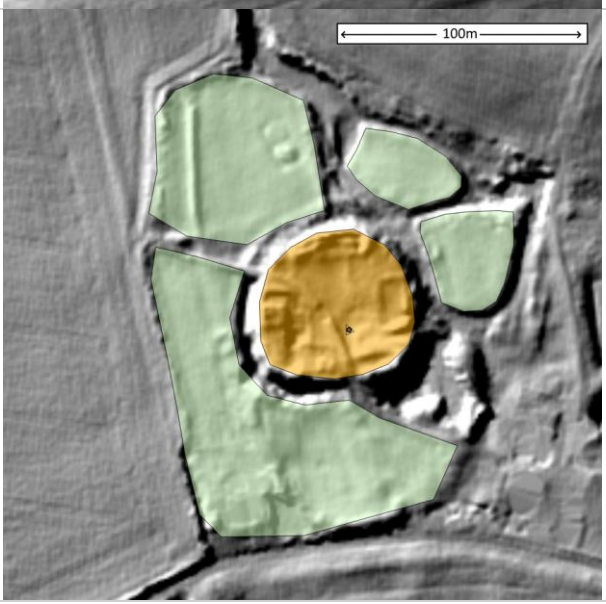
CLEI15	Catthorpe	Shawell	Leicestershire	
CLEI16	Whitwick Castle	Coalville	Leicestershire	
CLIN01	Bolingbroke Castle	Bolingbroke	Lincolnshire	

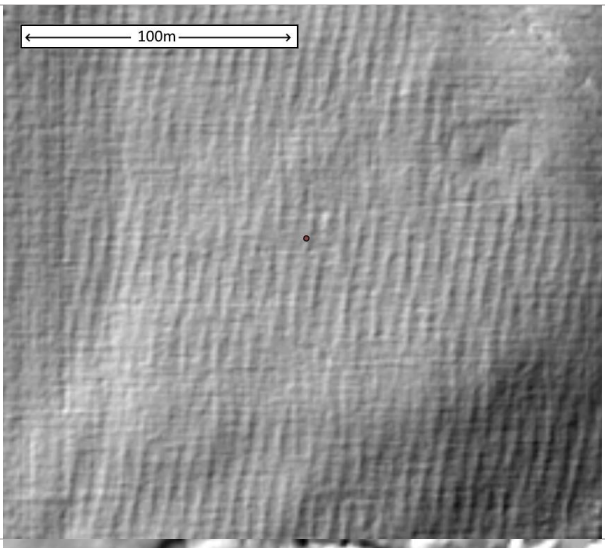
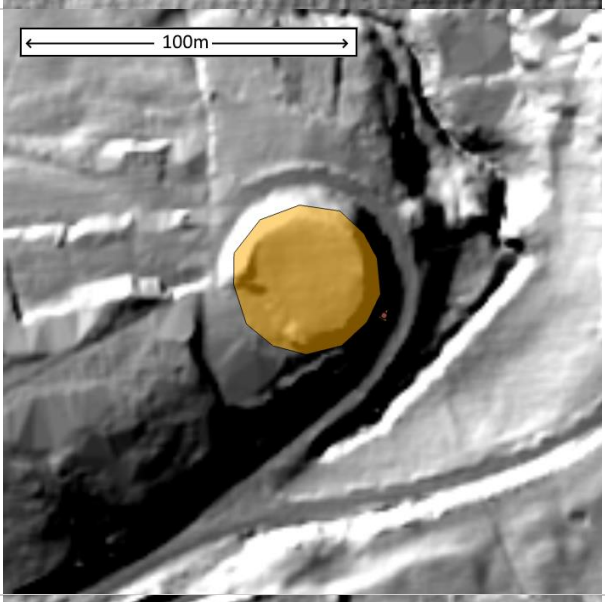
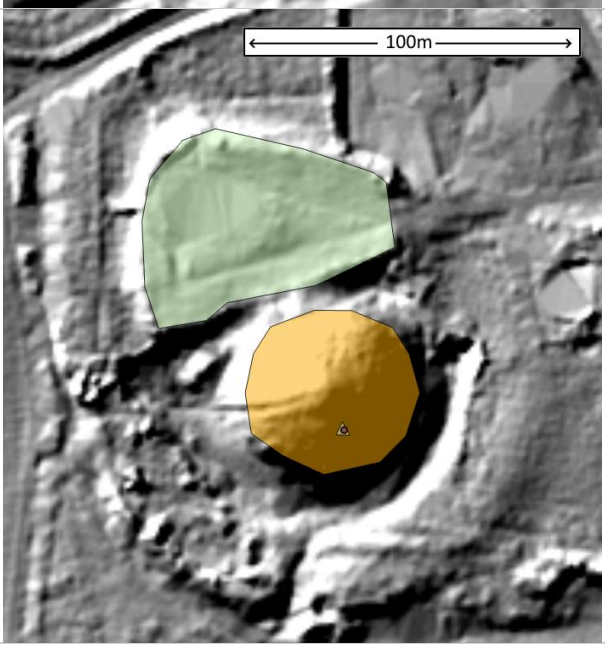
CLIN02	Grimsthorpe Castle	Edenham	Lincolnshire	
CLIN03	Somerton Castle	Boothby Graffoe	Lincolnshire	
CLIN04	Tattershall Castle	Tattershall	Lincolnshire	

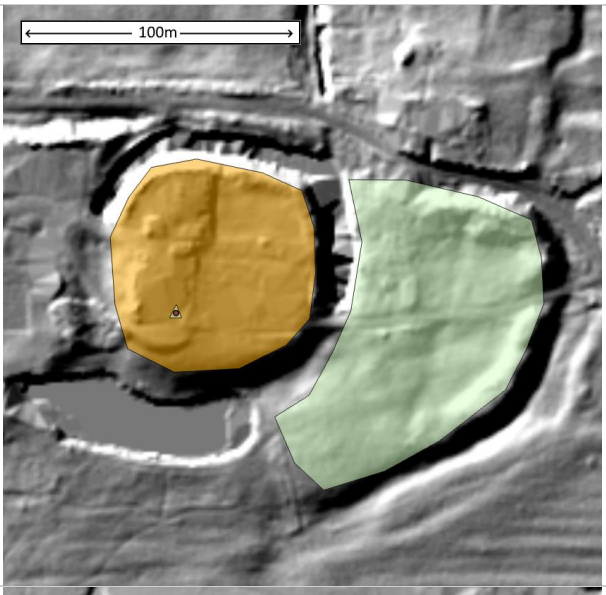
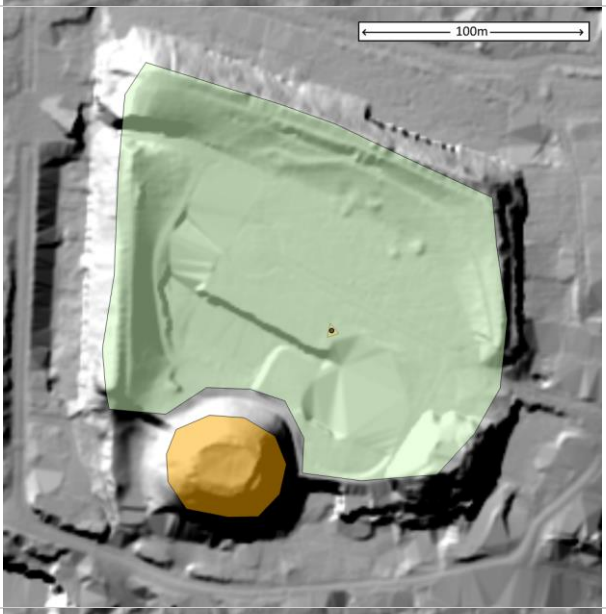
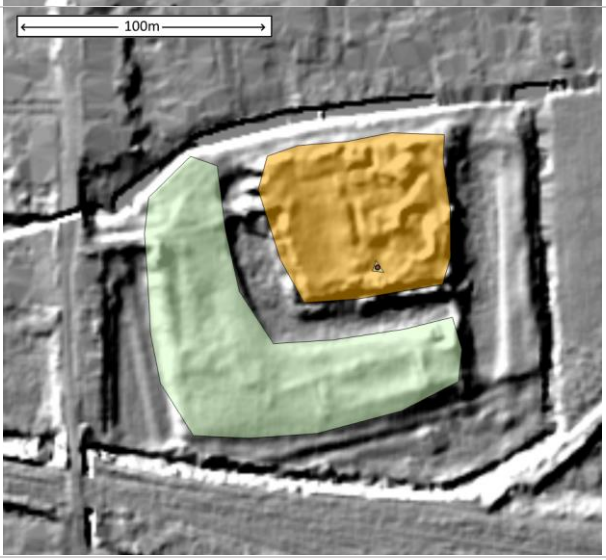
CLIN05	Barrows Castle	Barrow upon Humber	Lincolnshire	
CLIN06	Bourne Castle	Bourne		
CLIN07	Catlethorpe	Broughton	Lincolnshire	

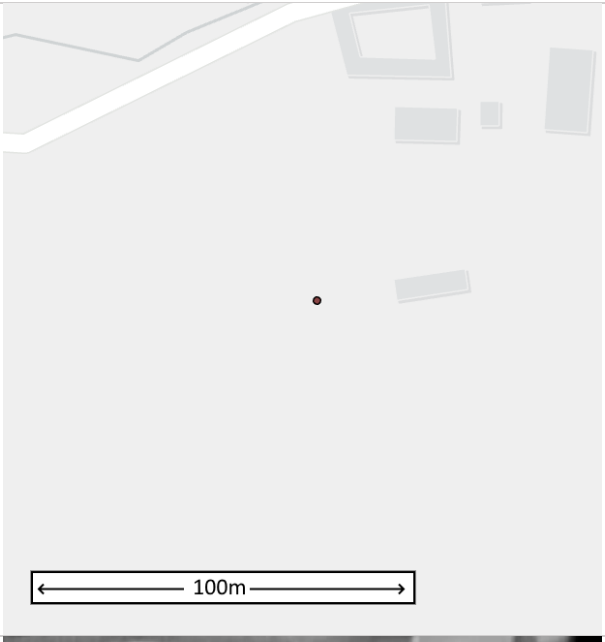
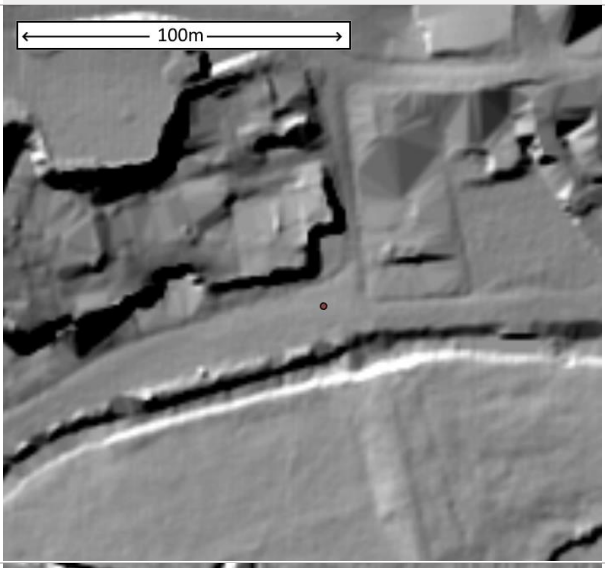
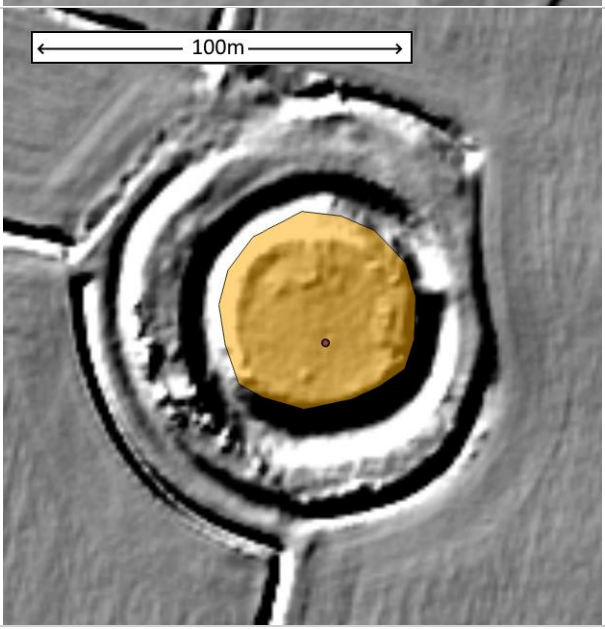
CLIN08	Burton Pedwardine Motte	Burton Pedwardine	Lincolnshire	
CLIN09	Caistor Castle Hill	Caistor	Lincolnshire	
CLIN10	Castle Bytham	Castle Bytham	Lincolnshire	

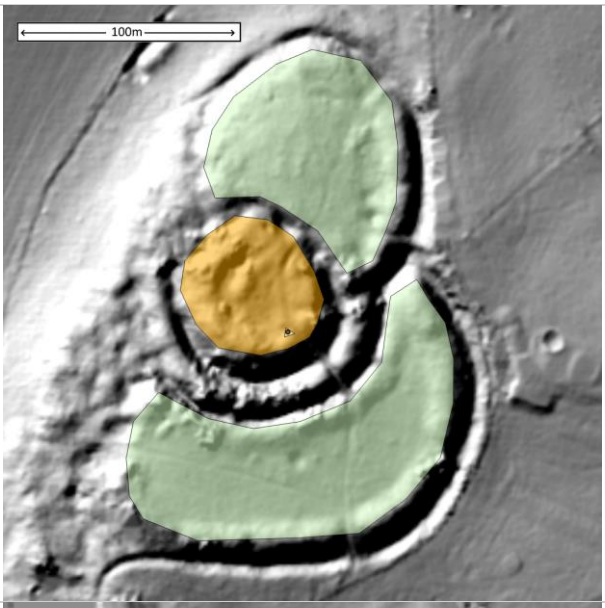
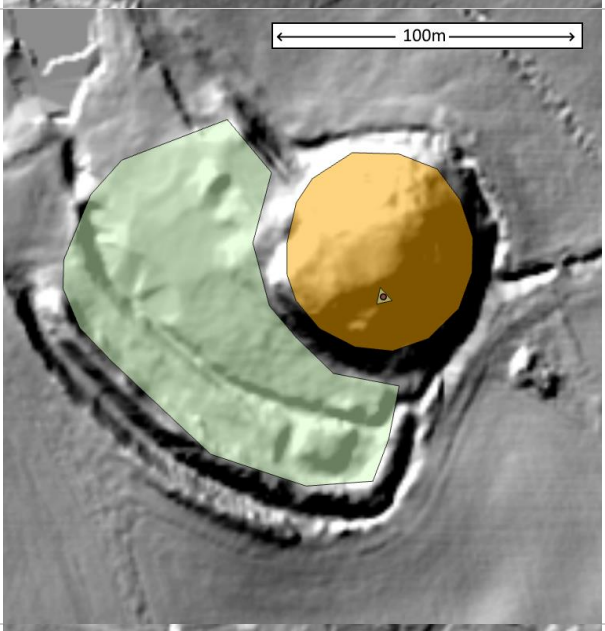
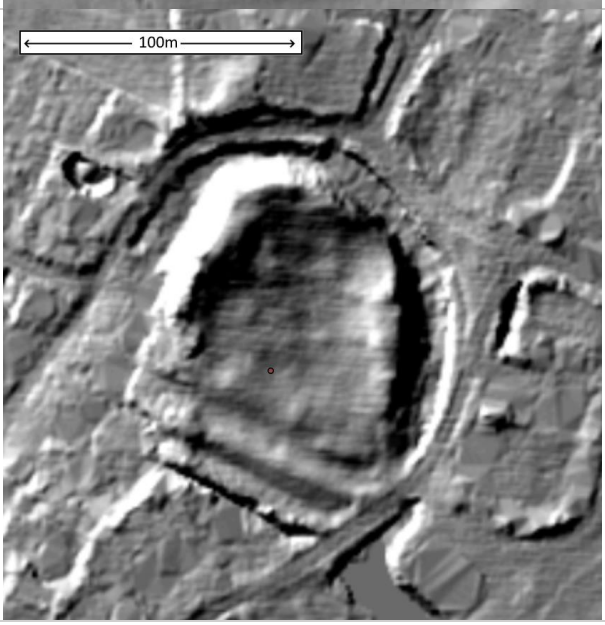
CLIN11	Castle Carlton	Reston	Lincolnshire	
CLIN12	Corby Glen Motte	Corby Glen	Lincolnshire	
CLIN13	Dewy Hill	Bolingbroke	Lincolnshire	

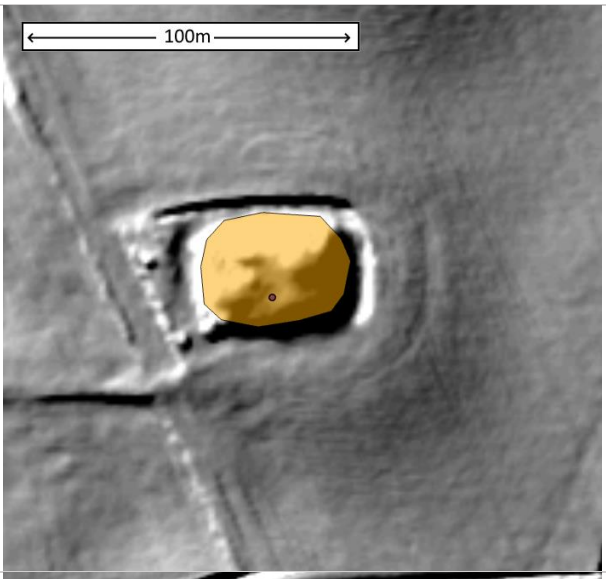
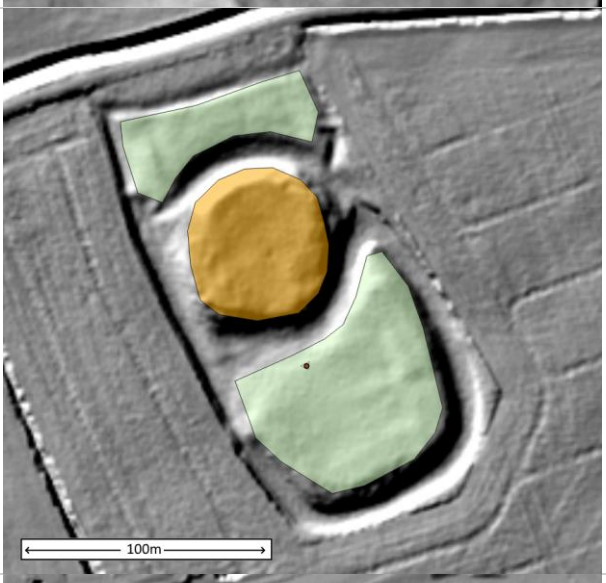
CLIN14	Folkingham Castle	Folkingham	Lincolnshire	
CLIN15	Goltho Manor	Goltho	Lincolnshire	
CLIN16	Heydour Castle Hills	Haydour	Lincolnshire	

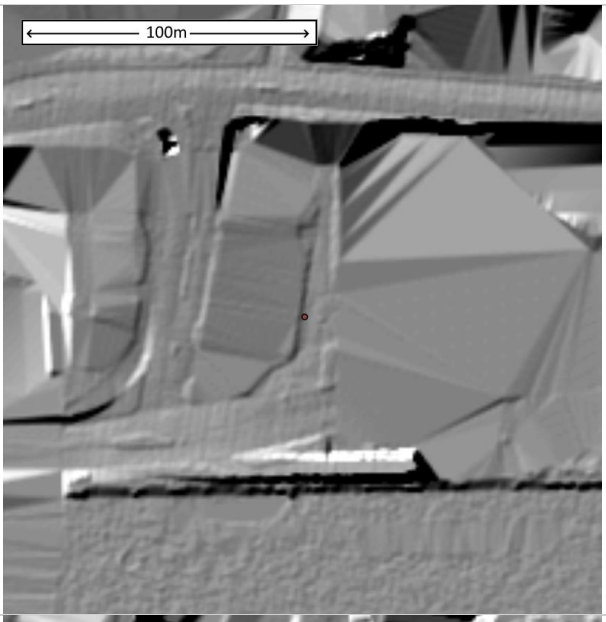
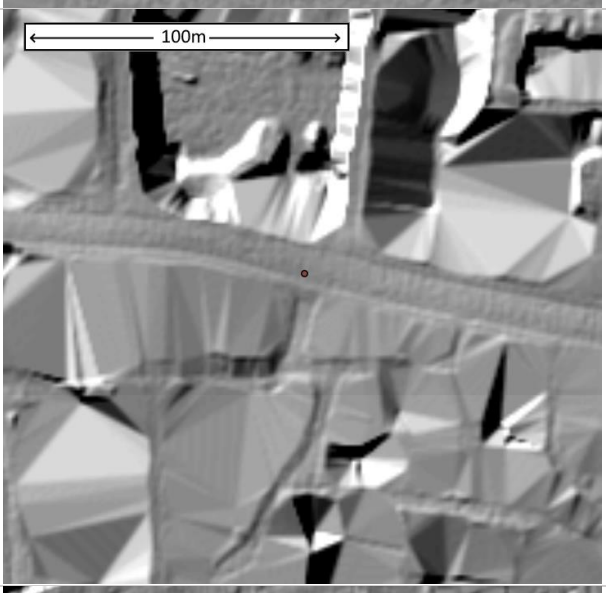
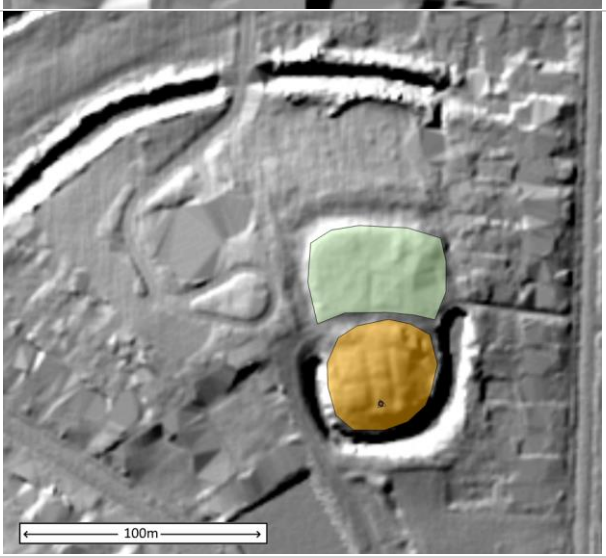
CLIN17	Holme Spinney	Beckingham	Lincolnshire	
CLIN18	Hache Castle	Hough on the Hill	Lincolnshire	
CLIN19	Kinaird Castle	Owston Ferry	Lincolnshire	

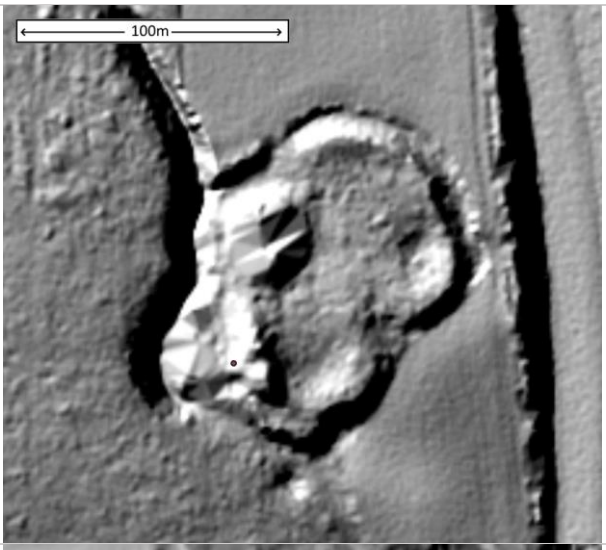
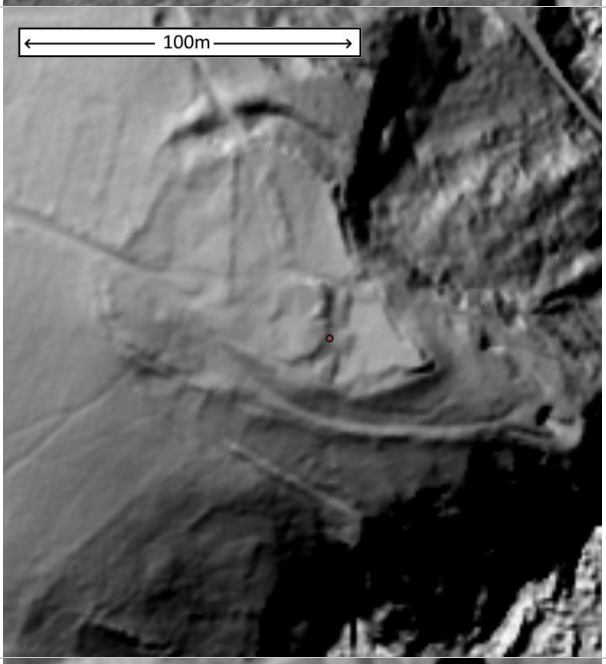
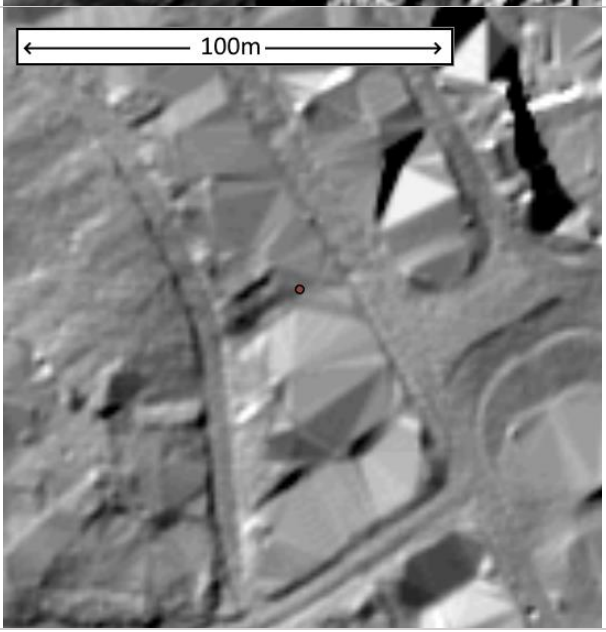
CLIN20	Kingerby Hall	Osgodby	Lincolnshire	
CLIN21	Lincoln Castle	Lincoln	Lincolnshire	
CLIN22	Sleaford Castle	Sleaford	Lincolnshire	

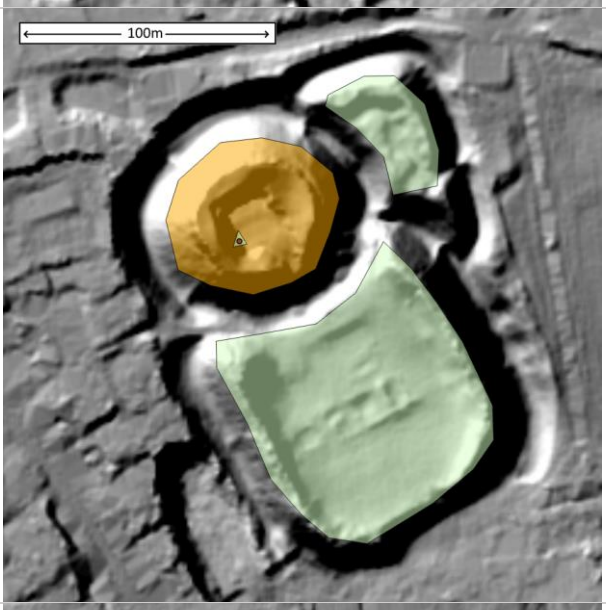
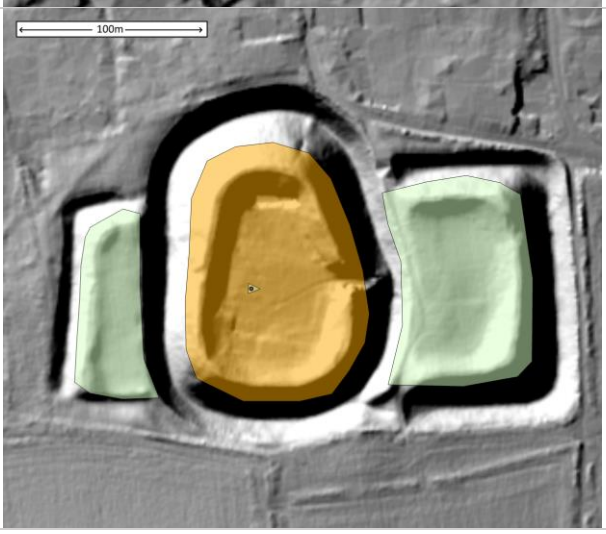
CLIN23	Stainby Tower Hill	Gunby and Stainby	Lincolnshire	
CLIN24	Stamford Castle	Stamford	Lincolnshire	
CLIN25	The Manwarings	Swineshead	Lincolnshire	

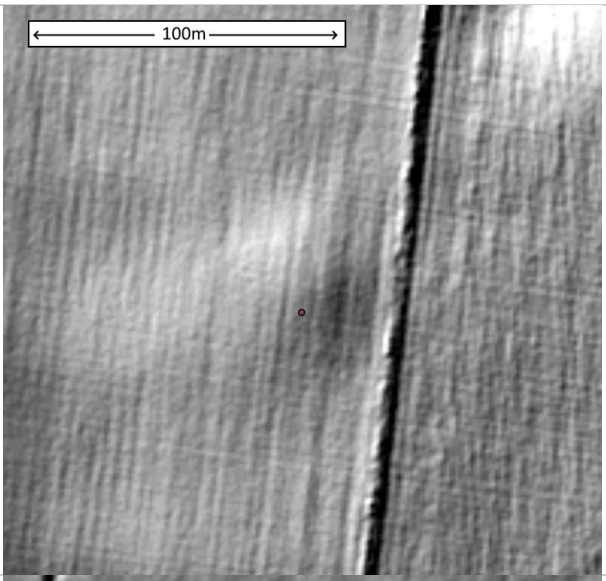
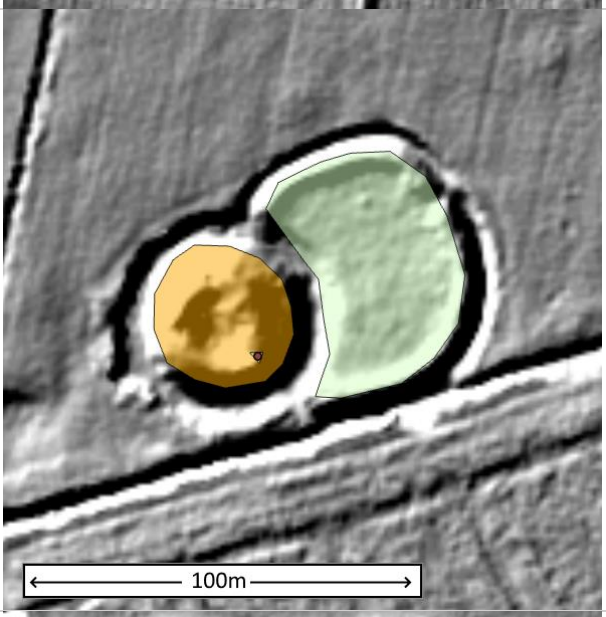
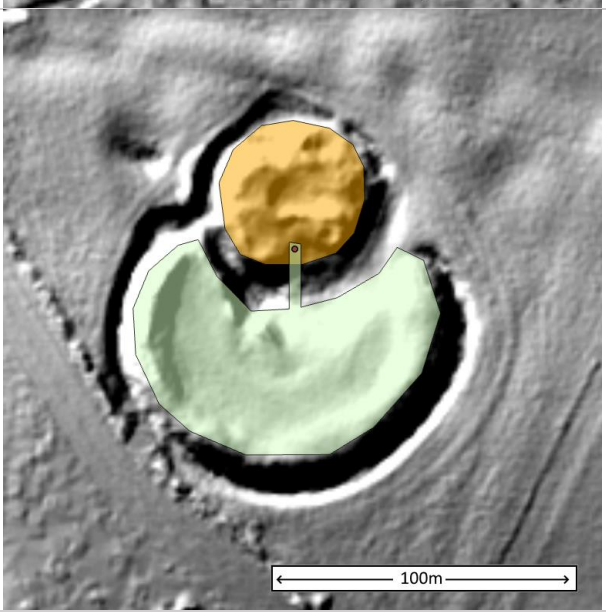
CLIN26	Castle Hills	Thonock	Lincolnshire	
CLIN27	Tothill Toot Hill	Withern With Stain	Lincolnshire	
CLIN28	Welbourn Castle Hill	Welbourn	Lincolnshire	

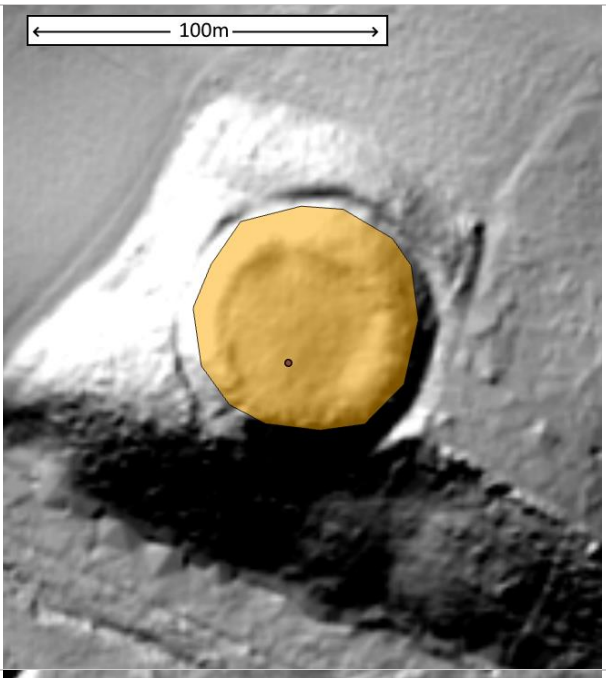
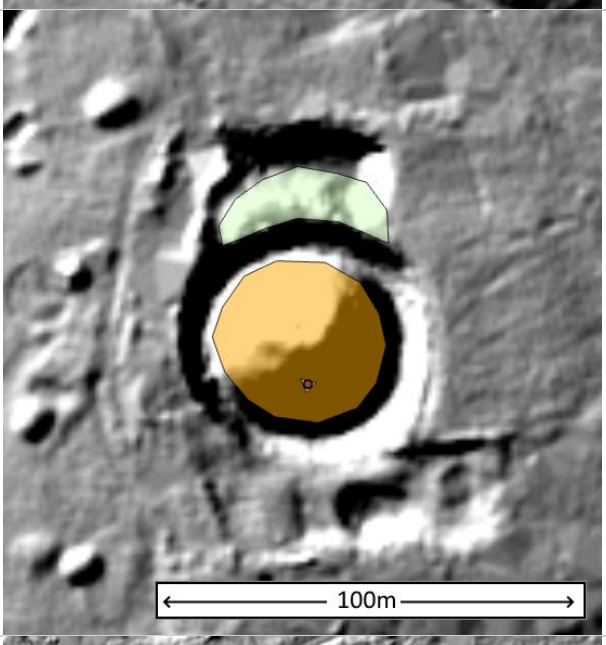
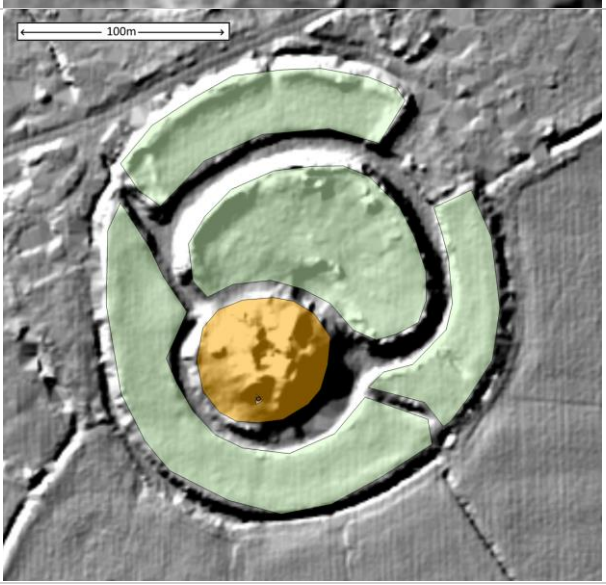
CLIN29	Castle Hill	Welton le Marsh	Lincolnshire	
CLIN30	Kings Hill	Wrangle	Lincolnshire	
CLON01	Tower of London	Stephney	London and Middlesex	

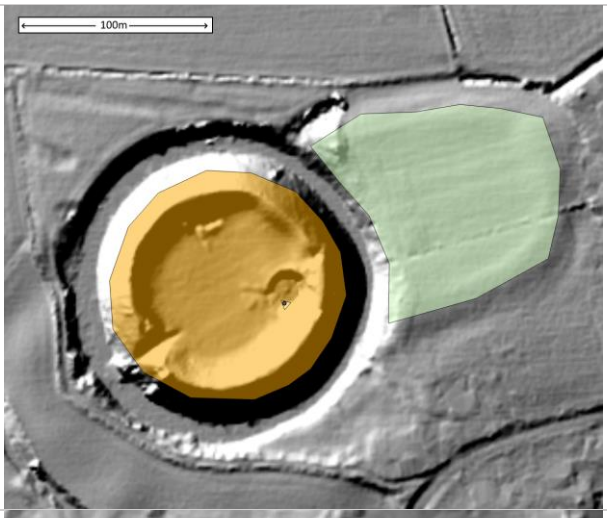
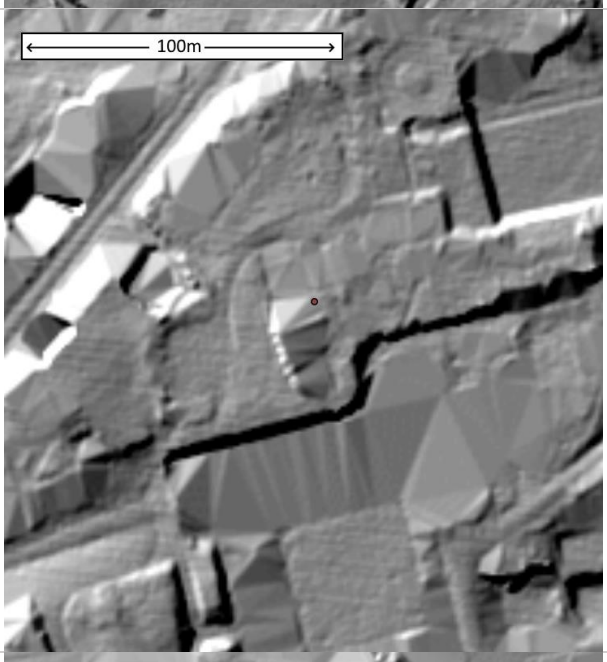
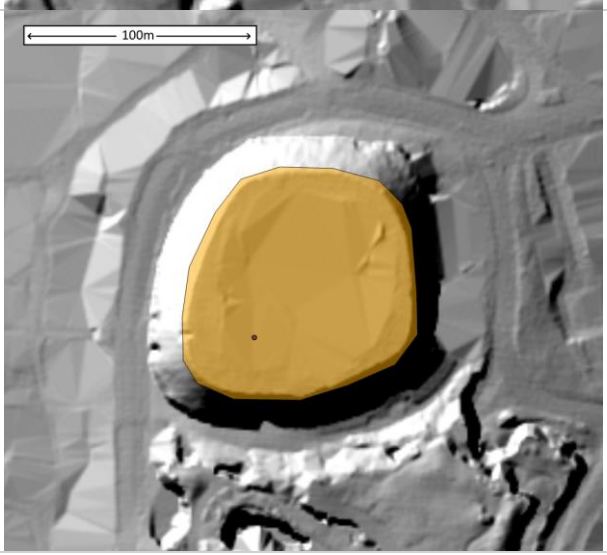
CLON02	Baynard's Castle	City of London	London and Middlesex	
CLON03	Montfitchet Castle	City of London	London and Middlesex	
CLON04	Ruislip	Hillingdon	London and Middlesex	

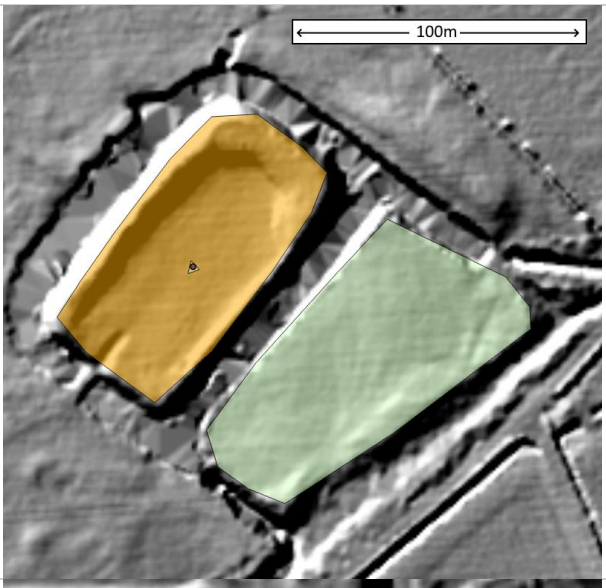
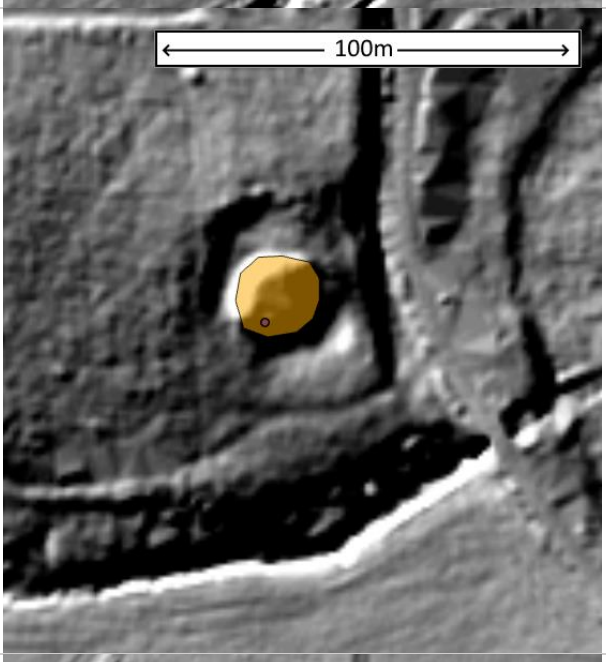
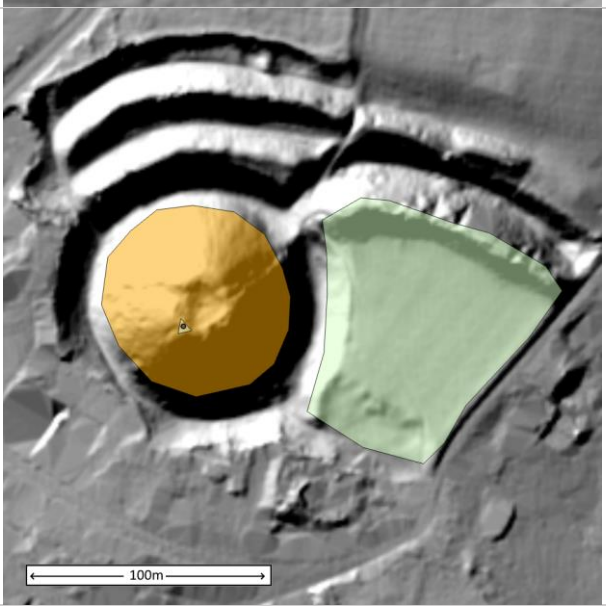
CLON05	South Mimms Castle	Potters Bar	London and Middlesex	
CLUD01	Marisco Castle	Lundy	Lundy Island	
CNOR01	Great Yarmouth Castle	Yarmouth	Norfolk	

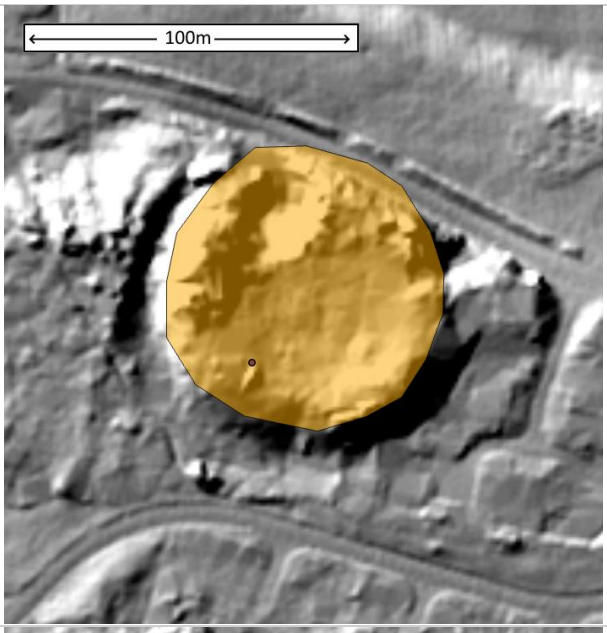
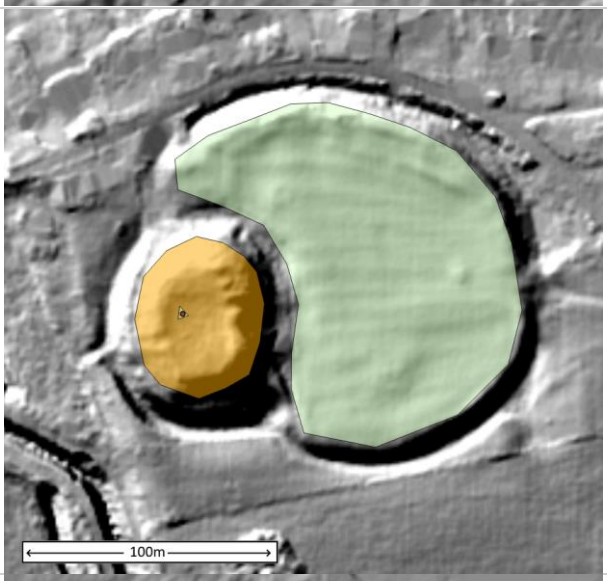
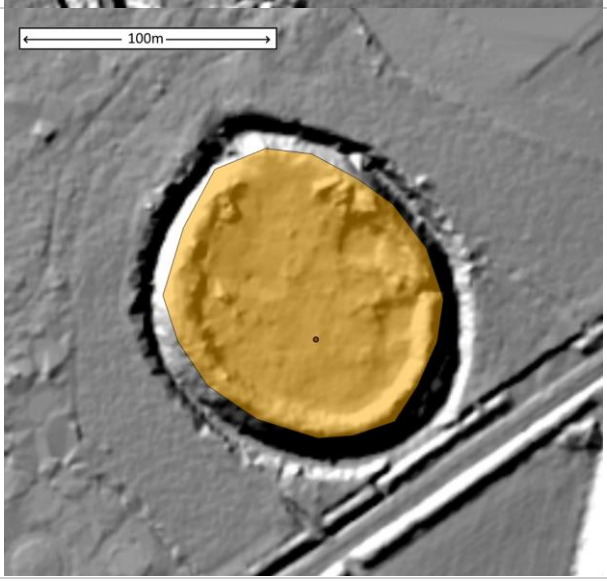
CNOR02	Antingham Hall Moat	Antingham	Norfolk	
CNOR03	Castle Acre Castle	Castle Acre	Norfolk	
CNOR04	Castle Rising Castle	Castle Rising	Norfolk	

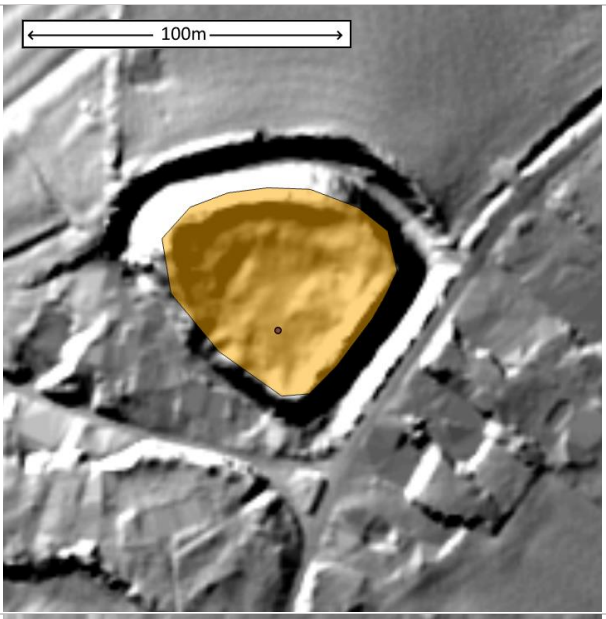
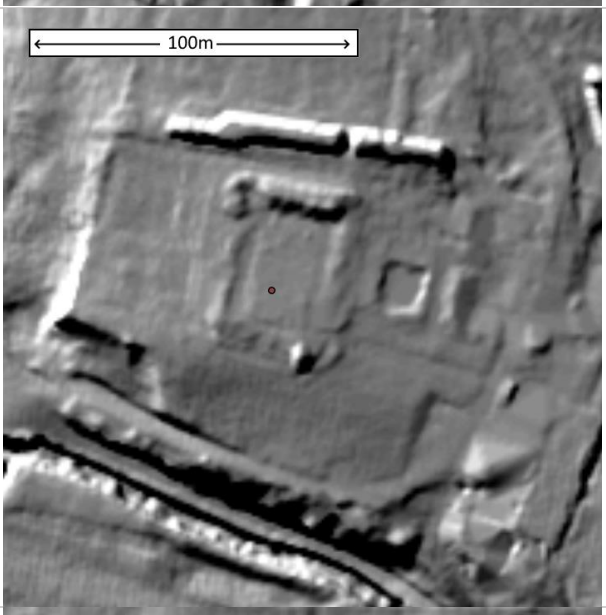
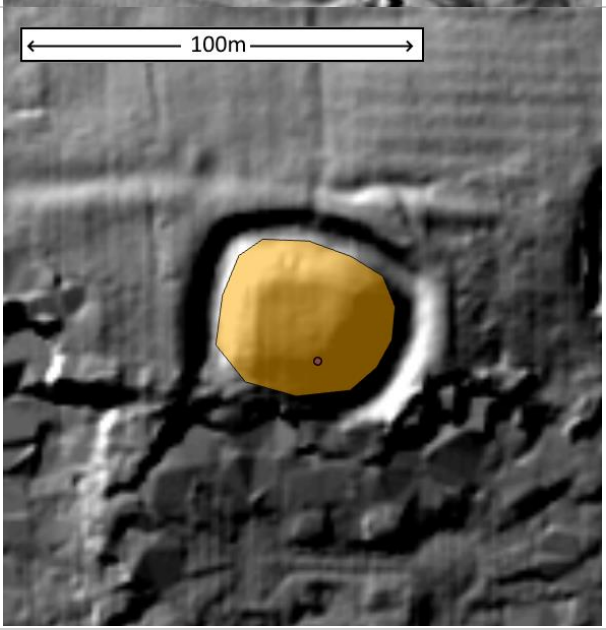
CNOR05	Crabbs Castle	Wighton	Norfolk	
CNOR06	Darrow Green	Denton	Norfolk	
CNOR07	Horsford Castle	Horsford	Norfolk	

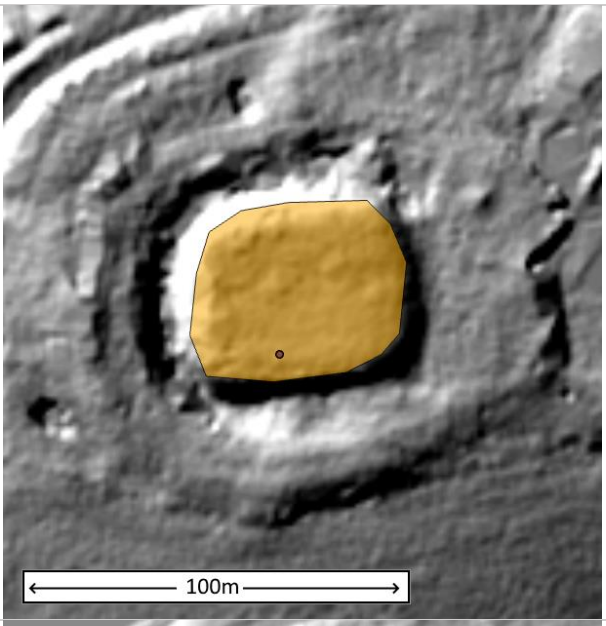
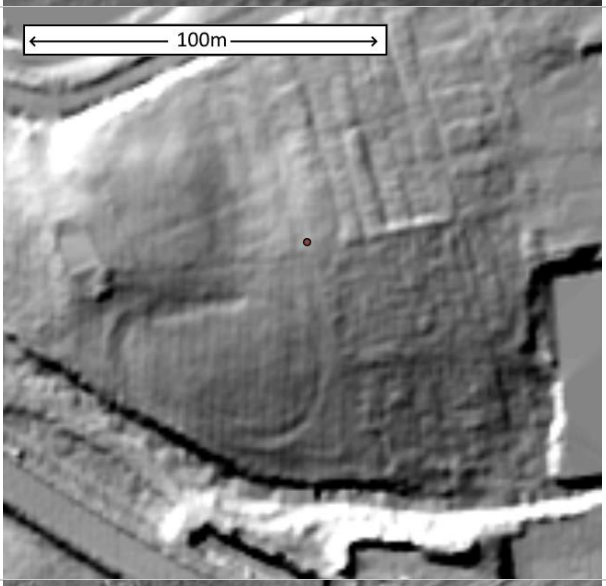
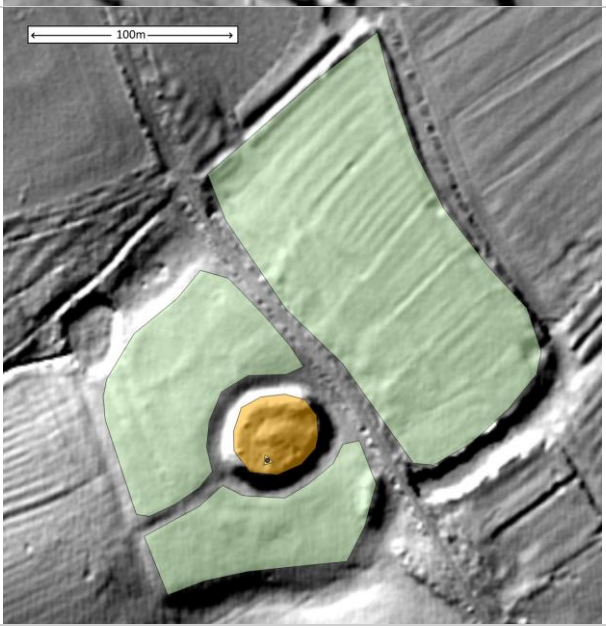
CNOR08	Hunworth Castle	Stody	Norfolk	
CNOR09	Middleton Motte	Middleton	Norfolk	
CNOR10	Mileham Castle	Mileham	Norfolk	

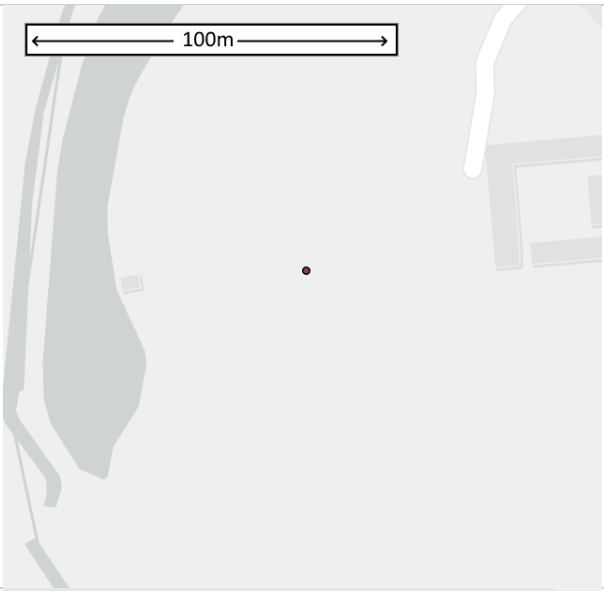
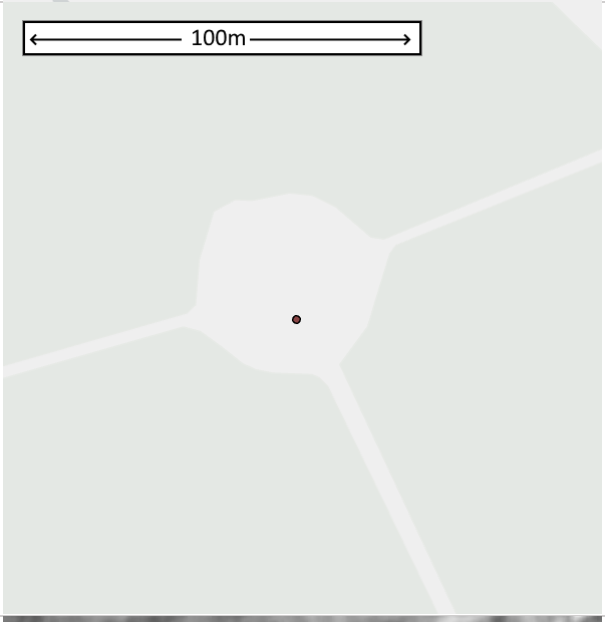
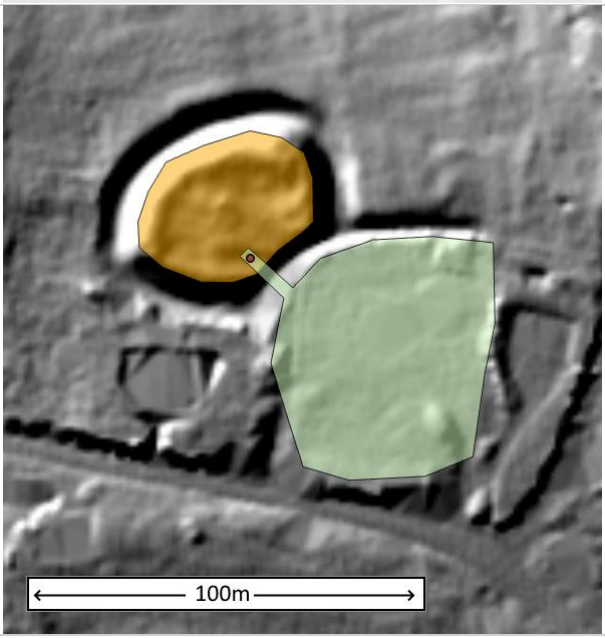
CNOR11	New Buckenham Castle	Old Buckenham	Norfolk	
CNOR12	Bishops Palace	Norwich	Norfolk	
CNOR13	Norwich Castle	Norwich	Norfolk	

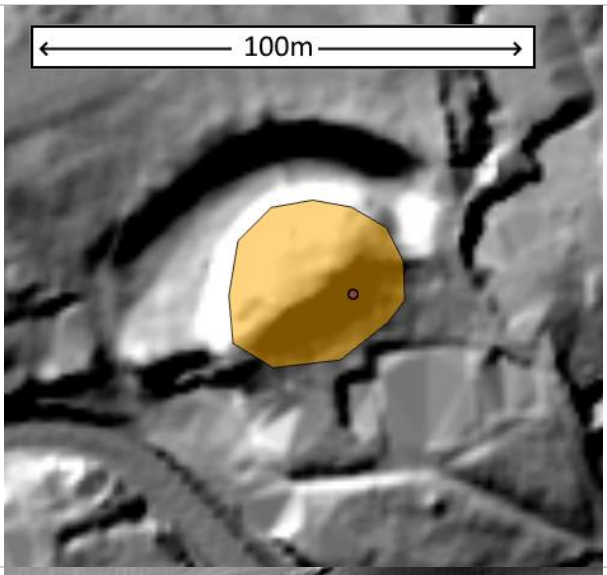
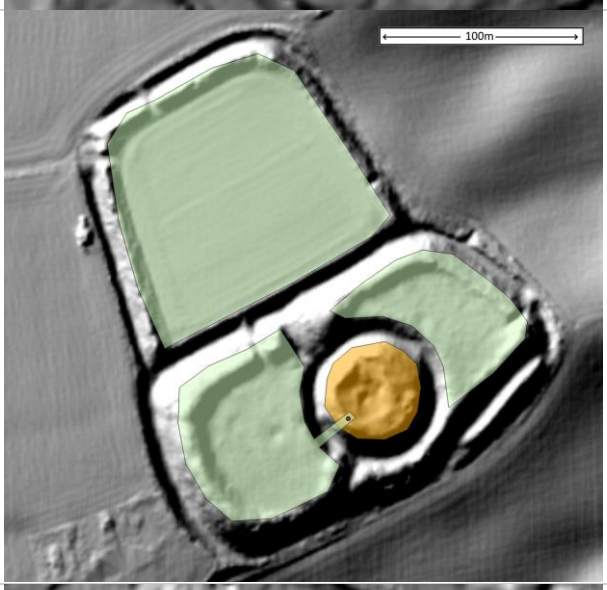
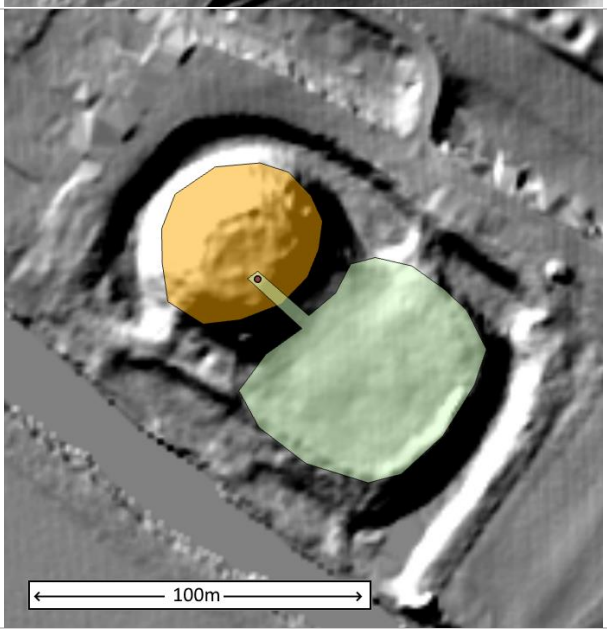
CNOR14	Old Buckenham Castle	Old Buckenham	Norfolk	
CNOR15	Vikings Mound	Quidenham	Norfolk	
CNOR16	Thetford Castle	Thetford	Norfolk	

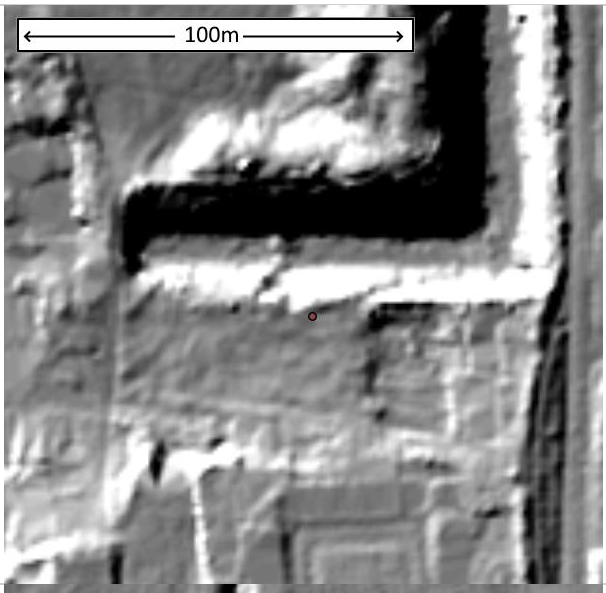
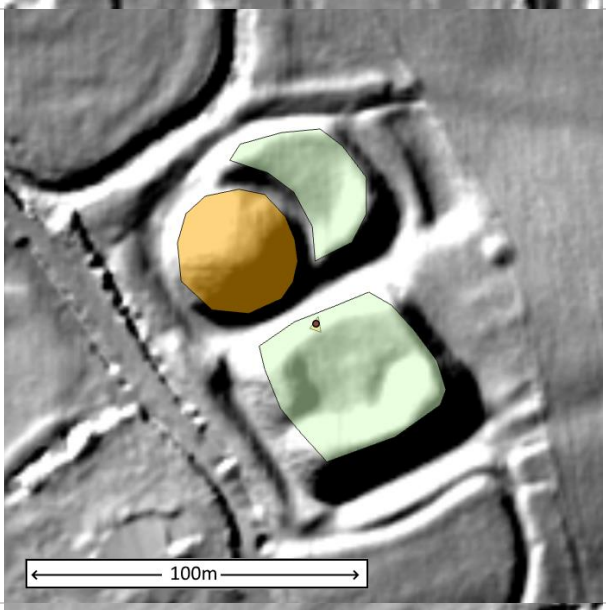
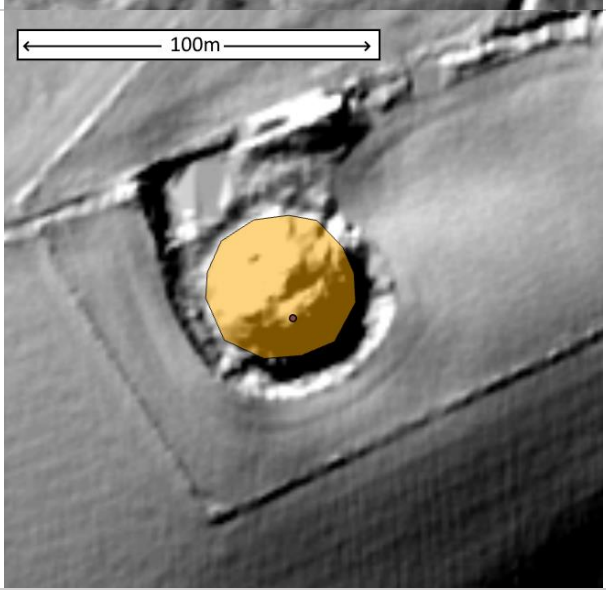
CNOR17	Red Castle	Thetford	Norfolk	
CNOR18	Wormegay Castle	Wormegay	Norfolk	
CNOR19	Wymondham Moot Hill	Wymondham	Norfolk	

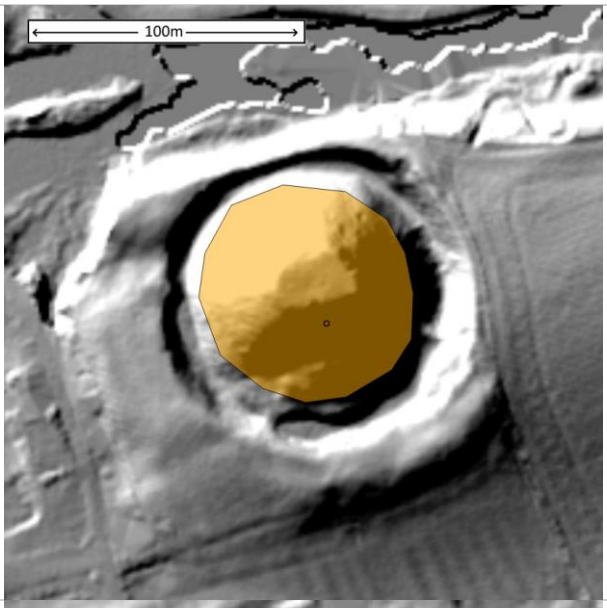
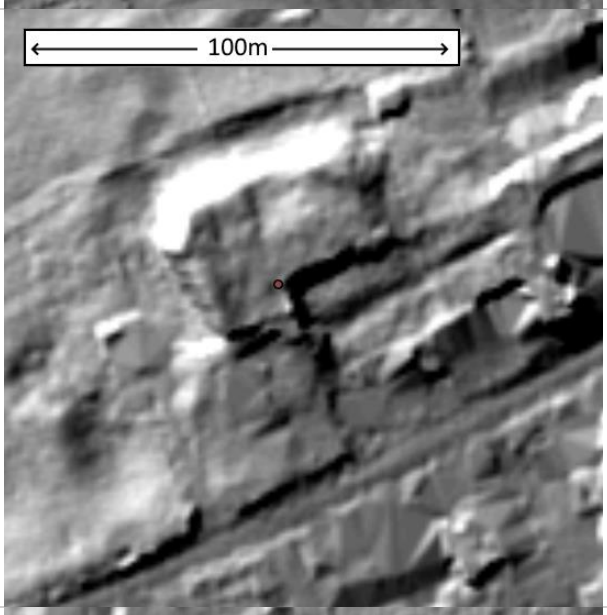
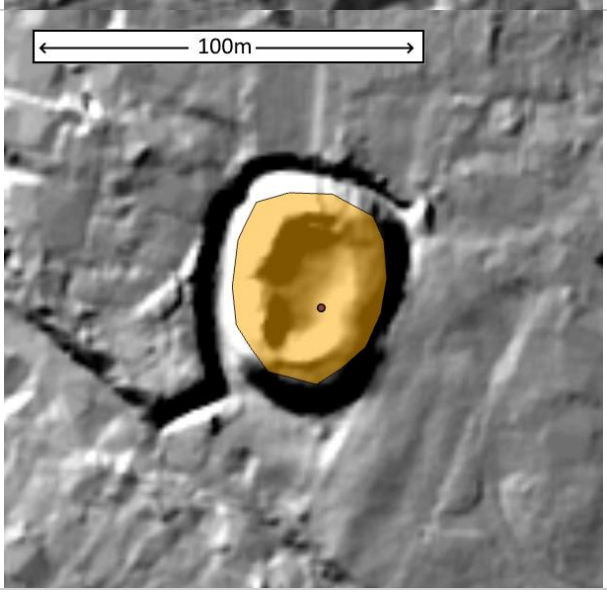
CNHA01	Alderton Ringwork	Grafton Regis	Northamptonshire	
CNHA02	Barnwell Castle	Barnwell	Northamptonshire	
CNHA03	Barby Castle	Barby	Northamptonshire	

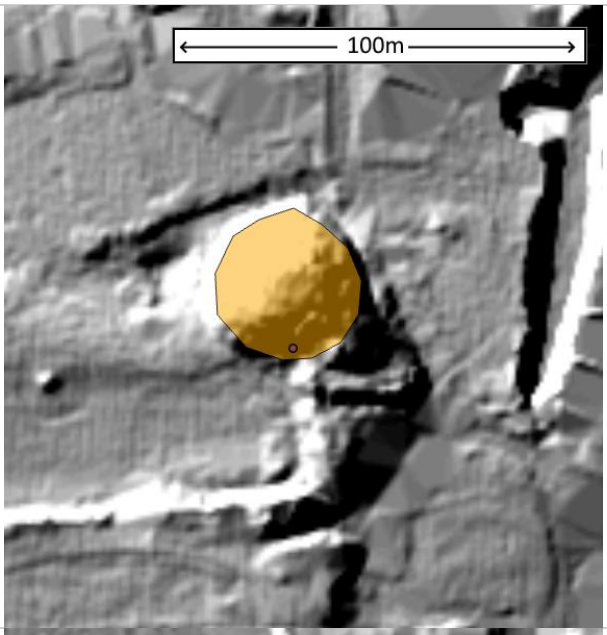
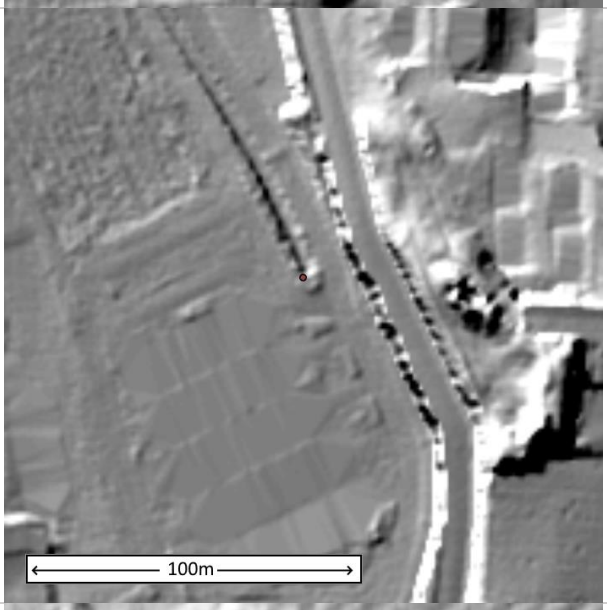
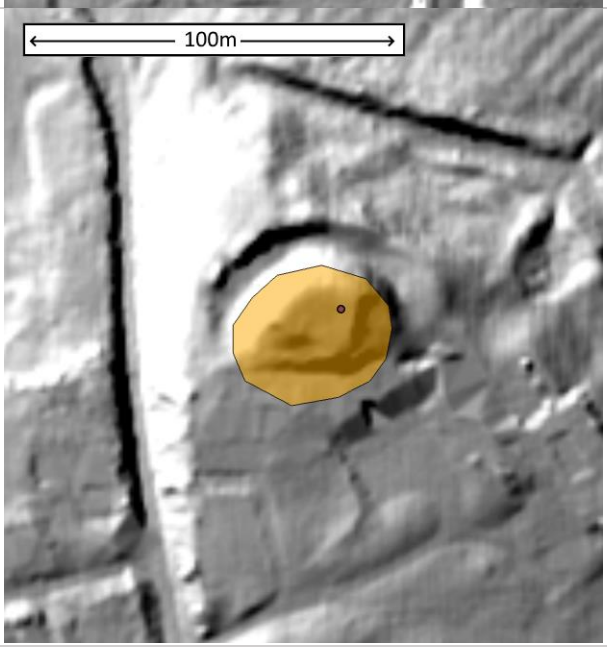
CNHA04	Benefield Castle	Benefield	Northamptonshire	
CNHA05	Brackley Castle	Brackley	Northamptonshire	
CNHA06	Castle Hill	Canons Ashby	Northamptonshire	

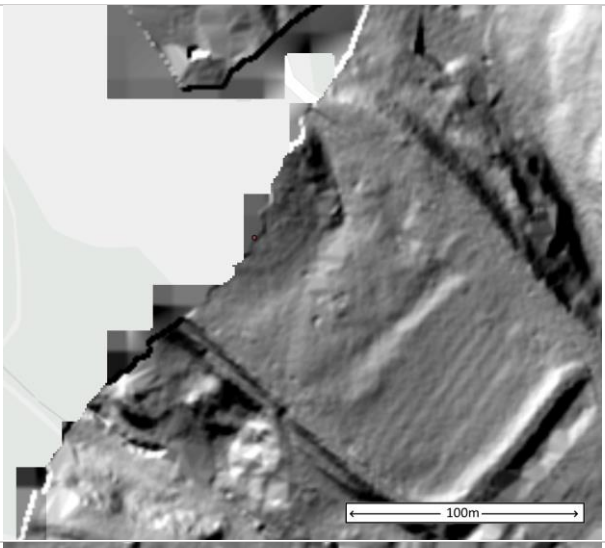
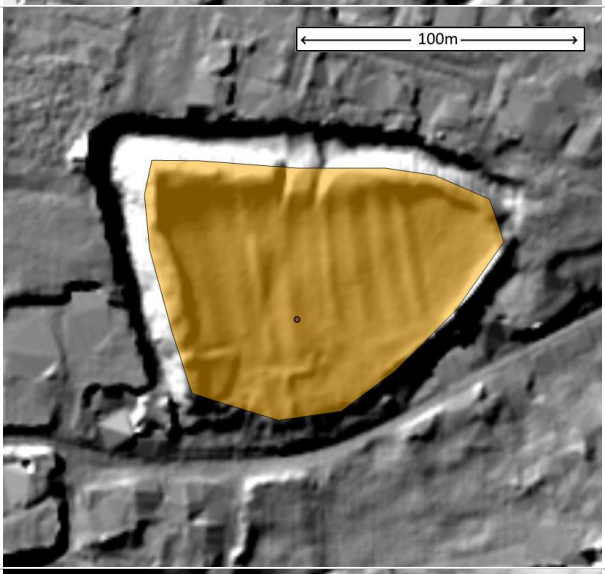
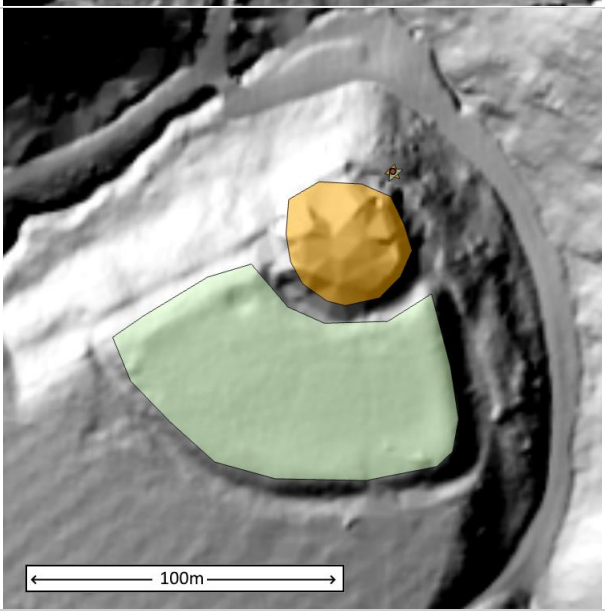
CNHA07	Castle Hymel	Fineshade	Northamptonshire	
CNHA08	Cransley Motte	Cransley	Northamptonshire	
CNHA09	Close Hill	Culworth Berry	Northamptonshire	

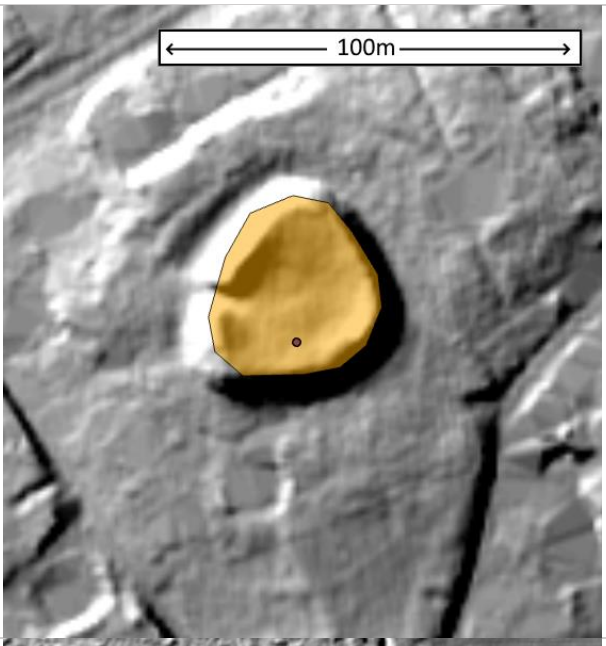
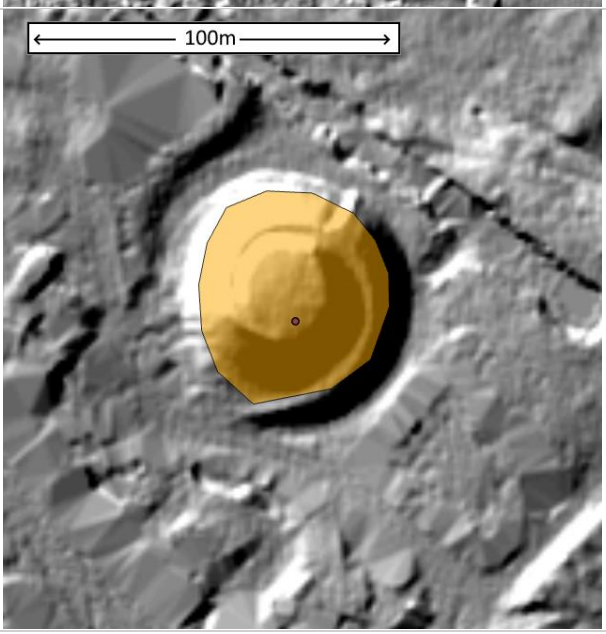
CNHA10	Berry Mount	Earls Barton	Northamptonshire	
CNHA11	Castle Dykes	Farthingstone	Northamptonshire	
CNHA12	Fotheringhay Castle	Fotheringhay	Northamptonshire	

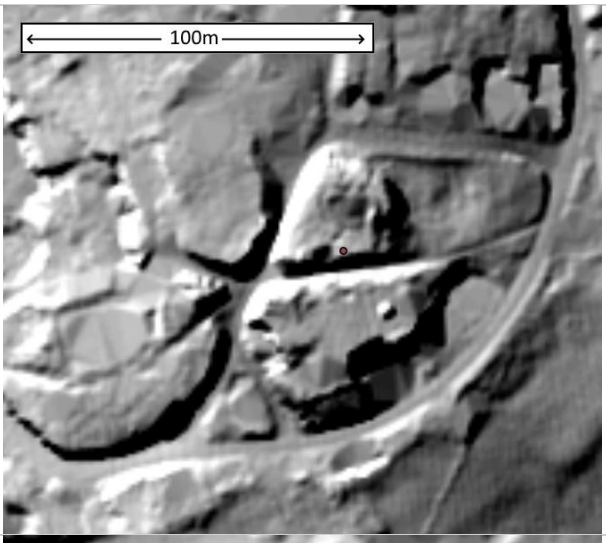
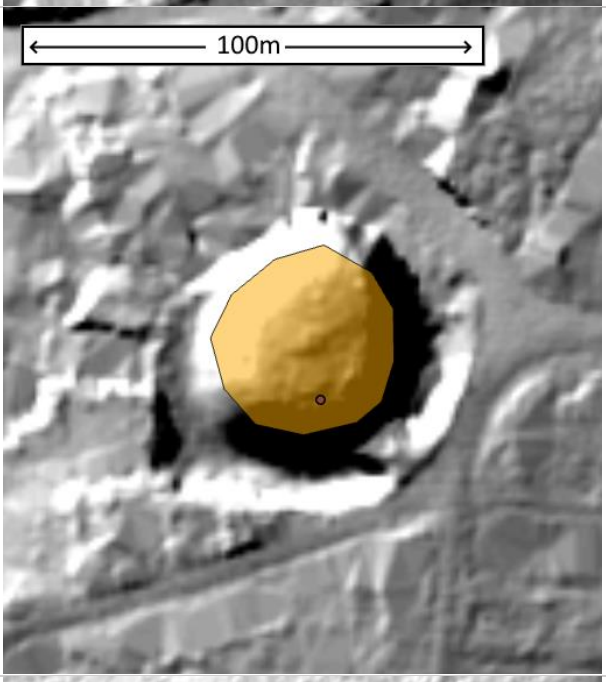
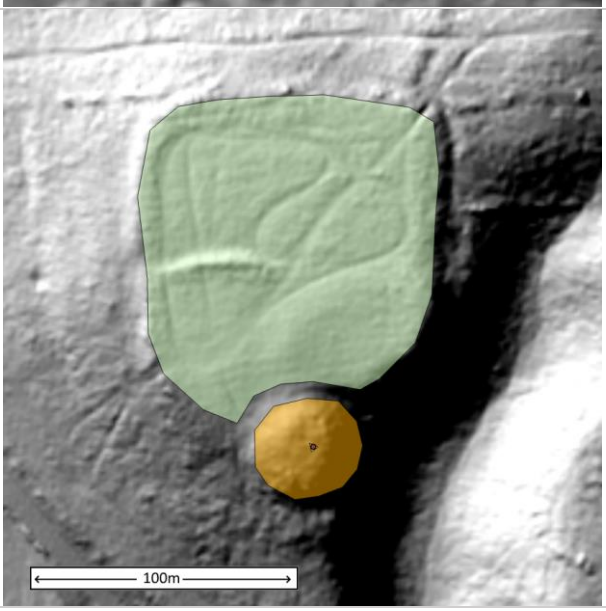
CNHA13	Higham Ferrers Castle	Higham Ferrers	Northamptonshire	
CNHA14	Lilbourne Castle	Lilbourne	Northamptonshire	
CNHA15	Lilbourne Roundhill	Lilbourne	Northamptonshire	

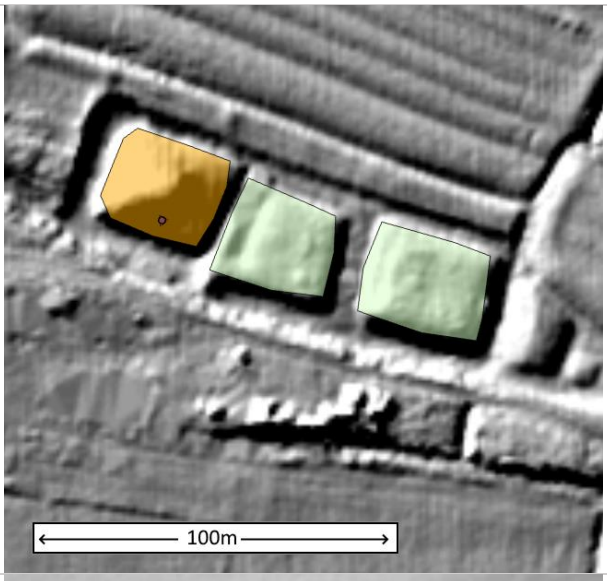
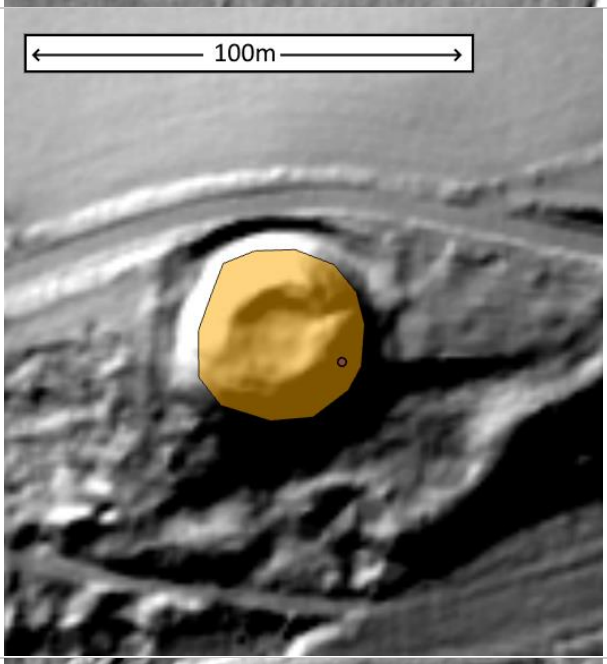
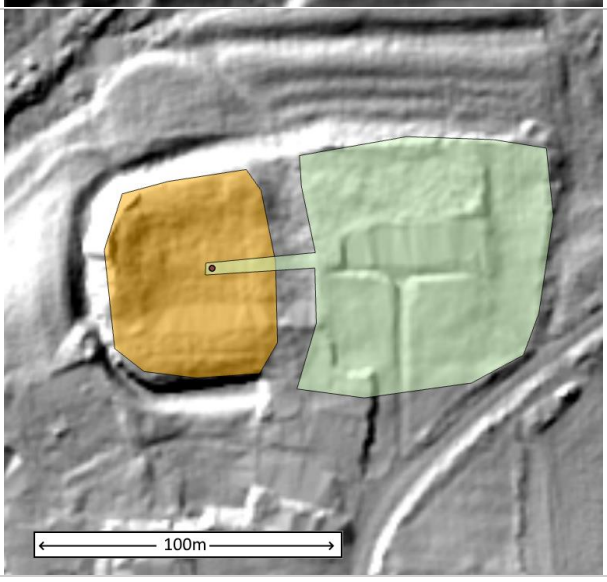
CNHA16	Little Houghton Motte	LittleHoughton	Northamptonshire	
CNHA17	Little Houghton Ringwork	Little Houghton	Northamptonshire	
CNHA18	The Mounts	Long Bucky	Northamptonshire	

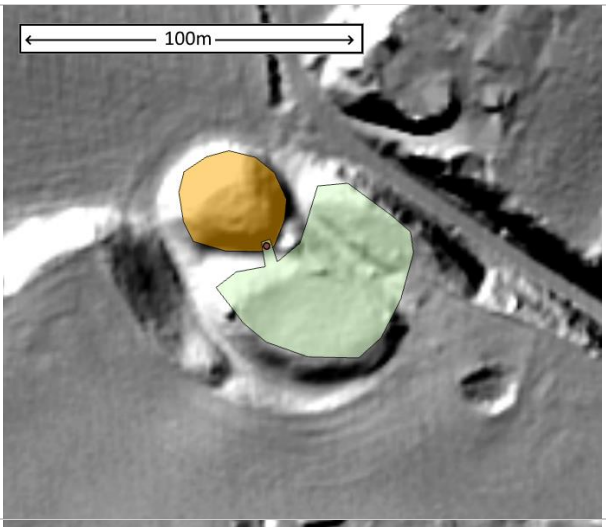
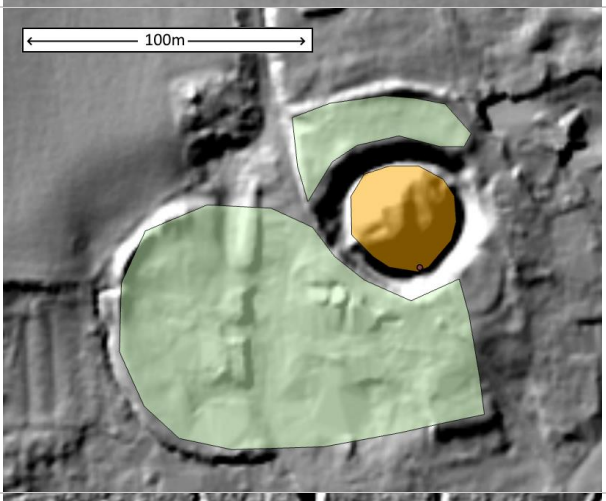
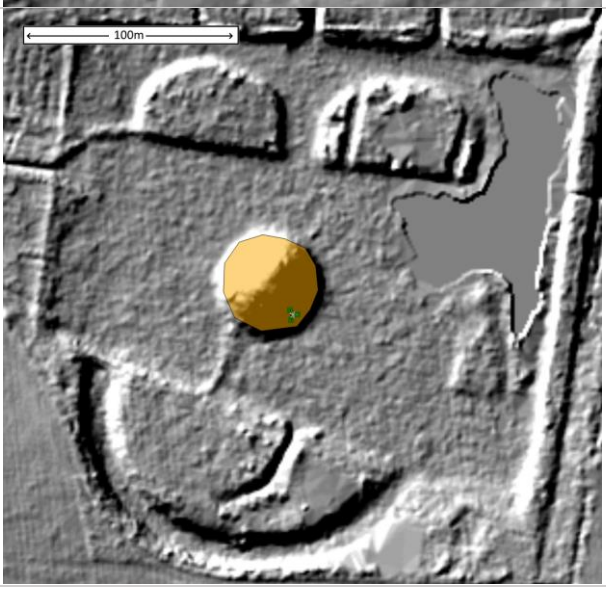
CNHA19	Mount Thorold	Peterborough	Northamptonshire	
CNHA20	Northampton Castle	Northampton	Northamptonshire	
CNHA21	Preston Capes Castle	Preston Capes	Northamptonshire	

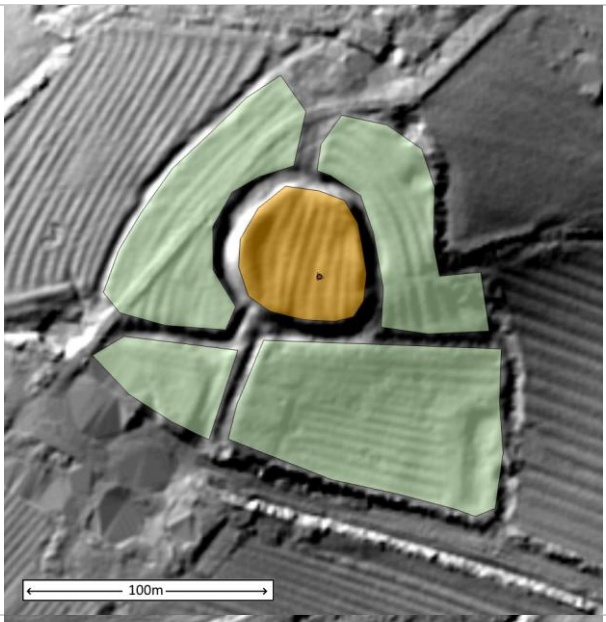
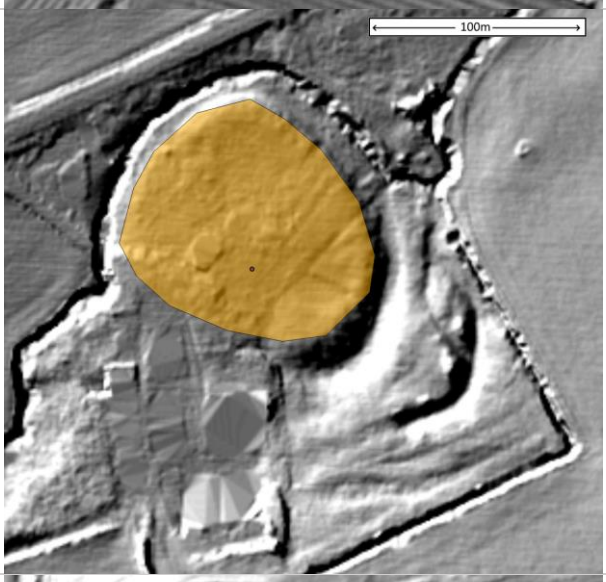
CNHA22	Rockingham Castle	Rockingham	Northamptonshire	
CNHA23	The Berry	Rothersthorpe	Northamptonshire	
CNHA24	Castle Yard	Sibbertoft	Northamptonshire	

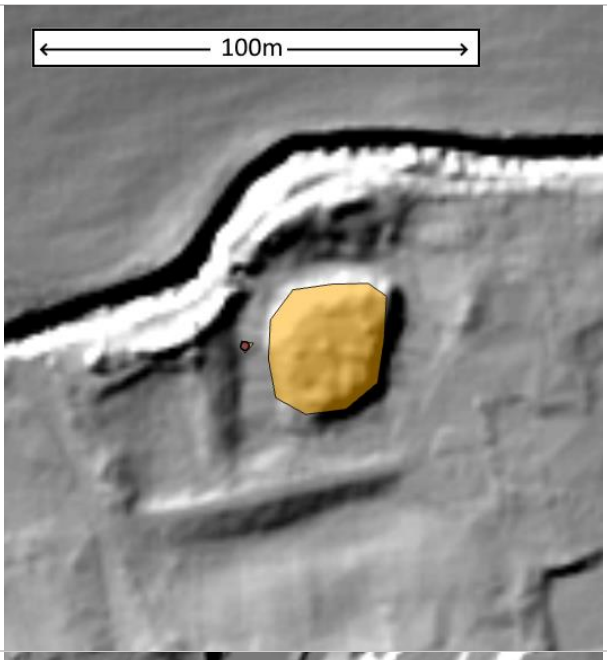
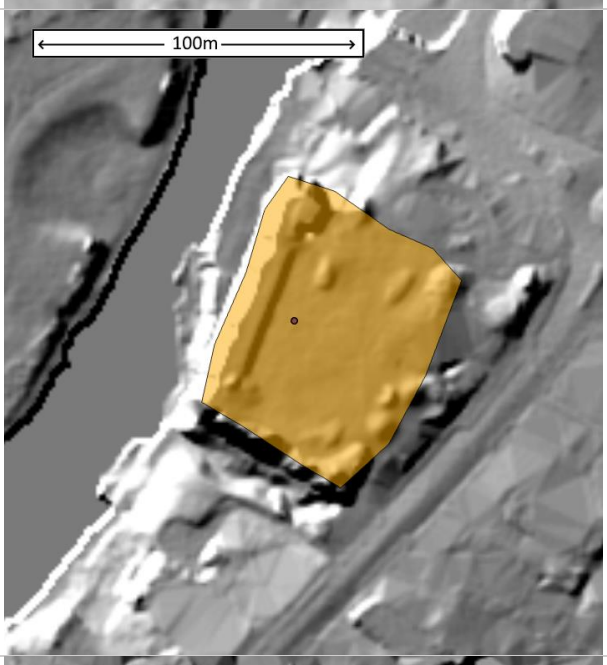
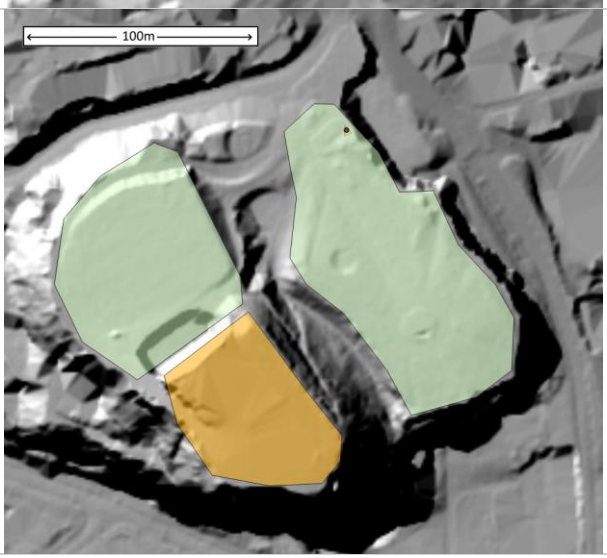
CNHA25	Castle Hill	Sulgrave	Northamptonshire	
CNHA26	Torpel Castle	Bainton	Northamptonshire	
CNHA27	Bury Mount	Towcester	Northamptonshire	

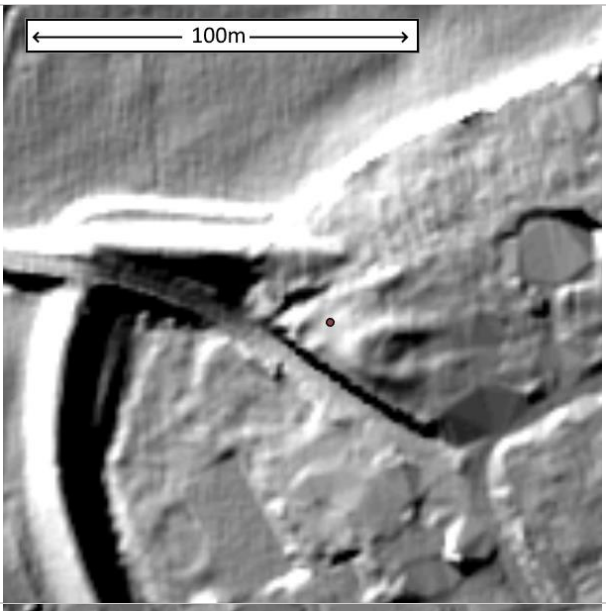
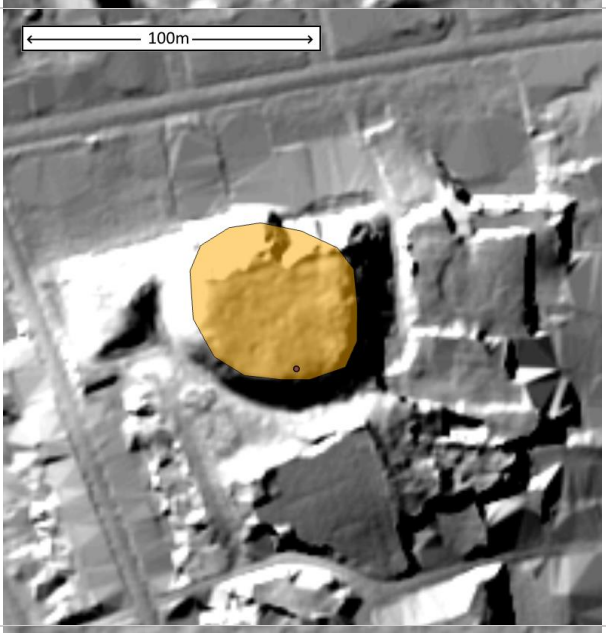
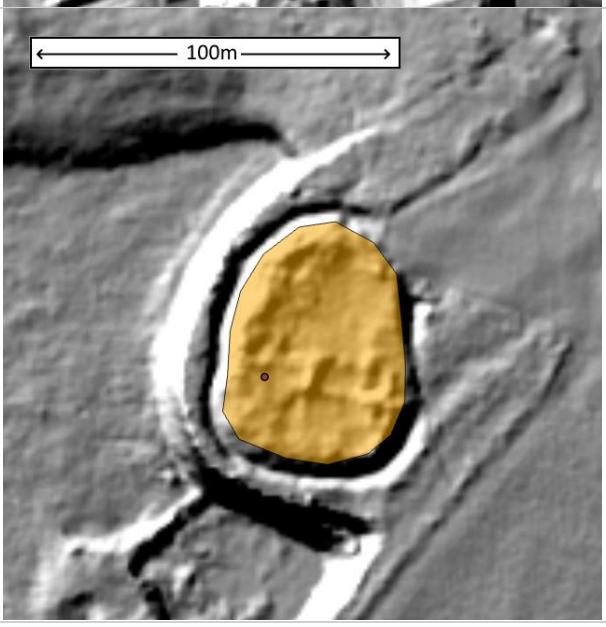
CNHA28	Lois Castle Mound	Weston and Weedon	Northamptonshire	
CNHA29	Beacon Hill	Wollaston	Northamptonshire	
CNOT01	Annesley Castle	Annesley	Nottinghamshire	

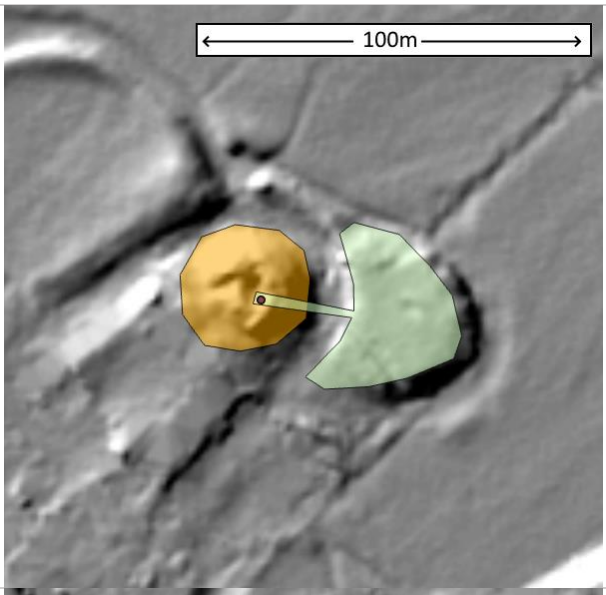
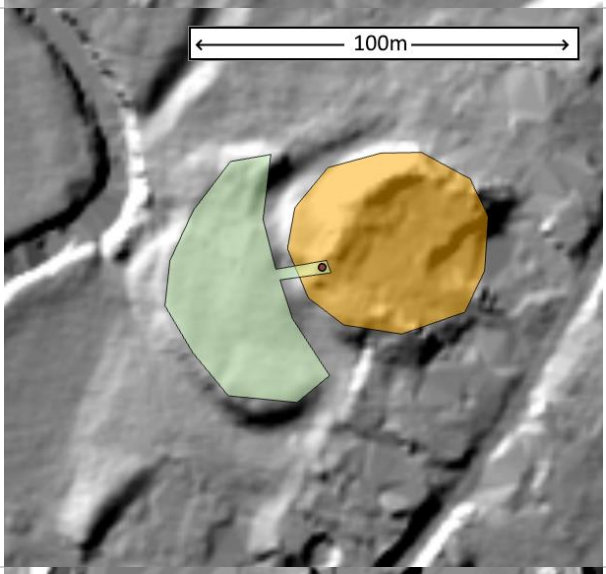
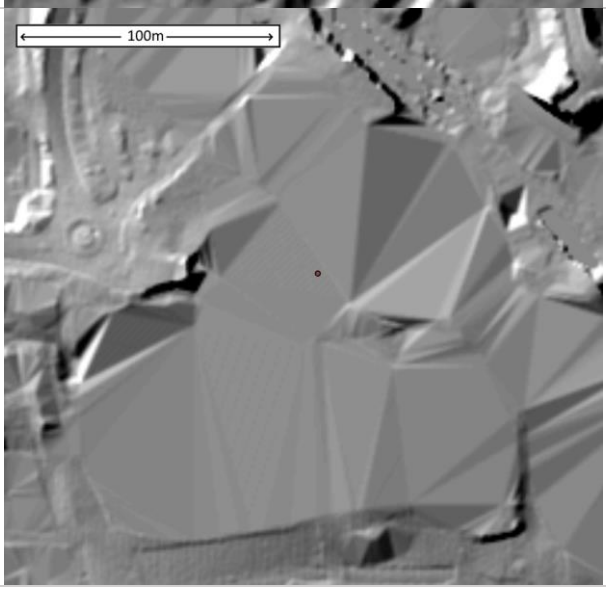
CNOT02	Cranmers Mound	Aslockton	Nottinghamshire	
CNOT03	Bothamsall Castle Hill	Bothamshall	Nottinghamshire	
CNOT04	Cuckney Castle Hill	Cuckney	Nottinghamshire	

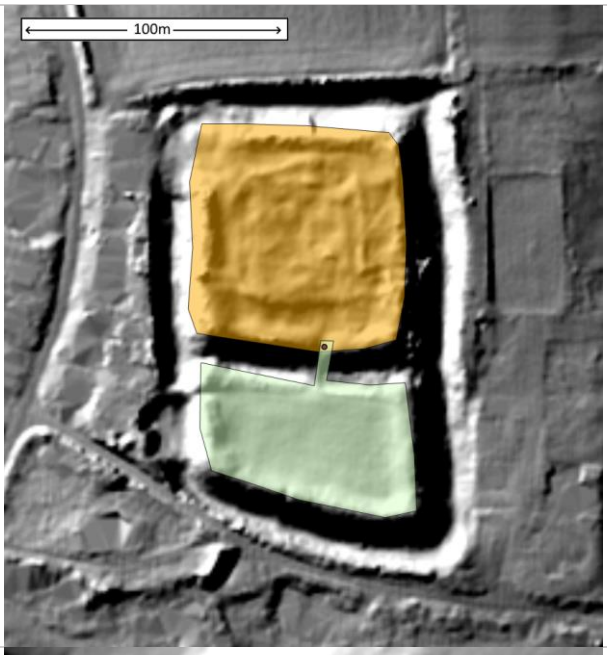
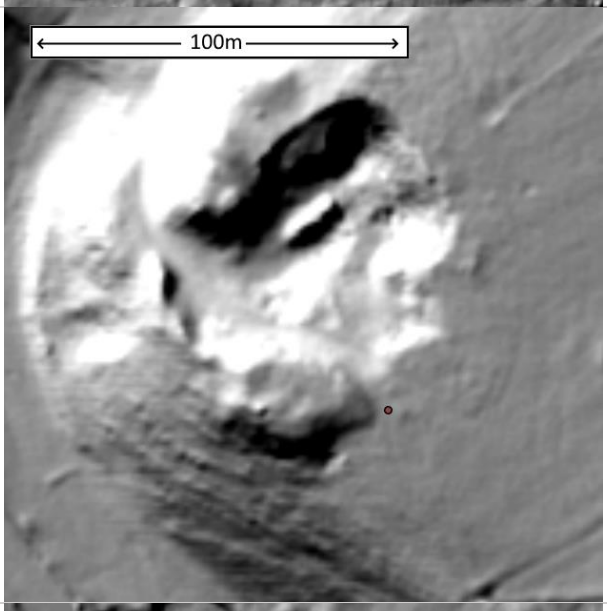
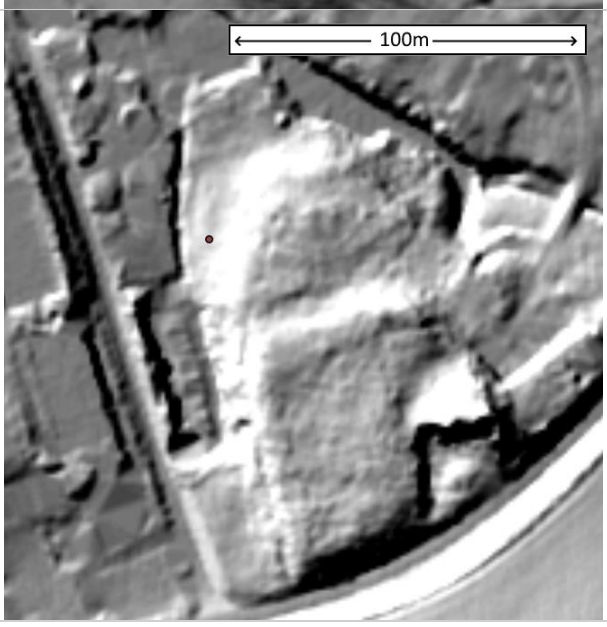
CNOT05	Pancake Hill	East Bridgeford	Nottinghamshire	
CNOT06	Gaddick Hill	Egmanton	Nottinghamshire	
CNOT07	Haughton Motte	Haughton	Nottinghamshire	

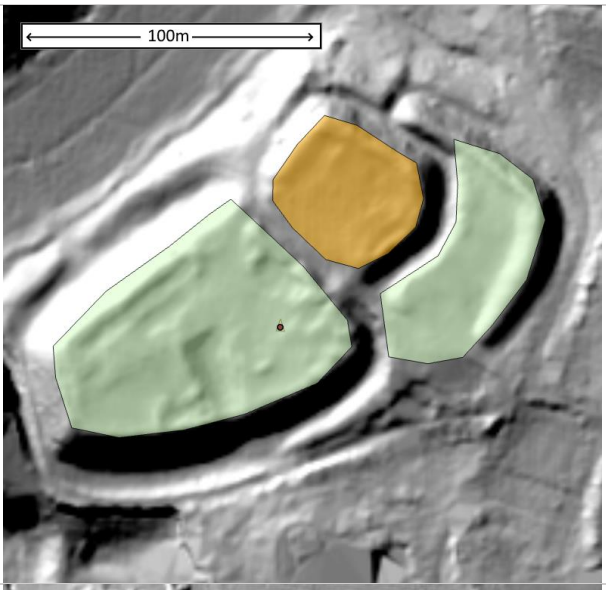
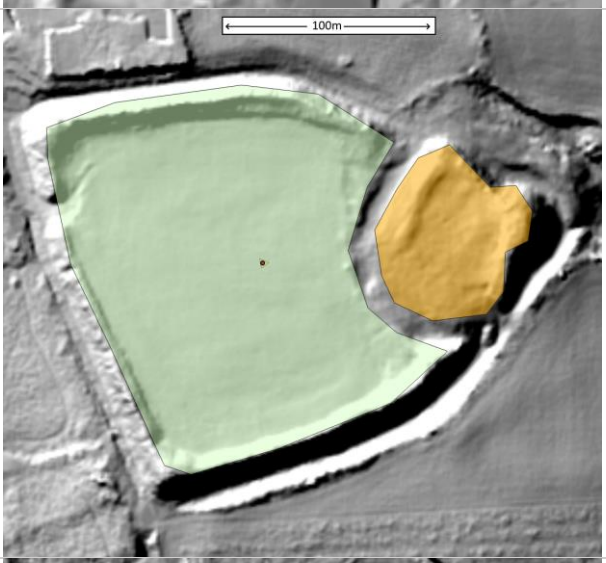
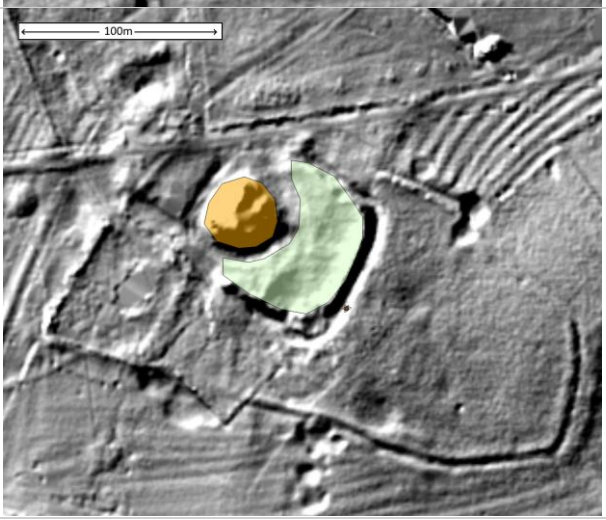
CNOT08	Jordan's Castle	Wellow	Nottinghamshire	
CNOT09	Kingshaugh Camp	Darlton	Nottinghamshire	
CNOT10	Laxton Castle	Laxton and Moorhouse	Nottinghamshire	

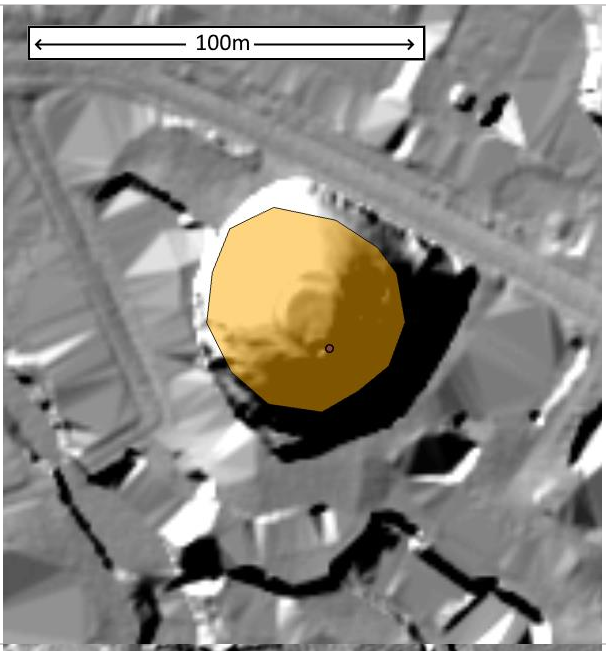
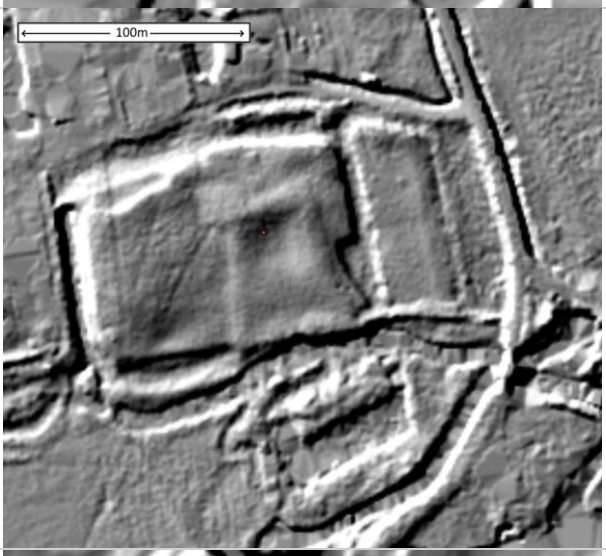
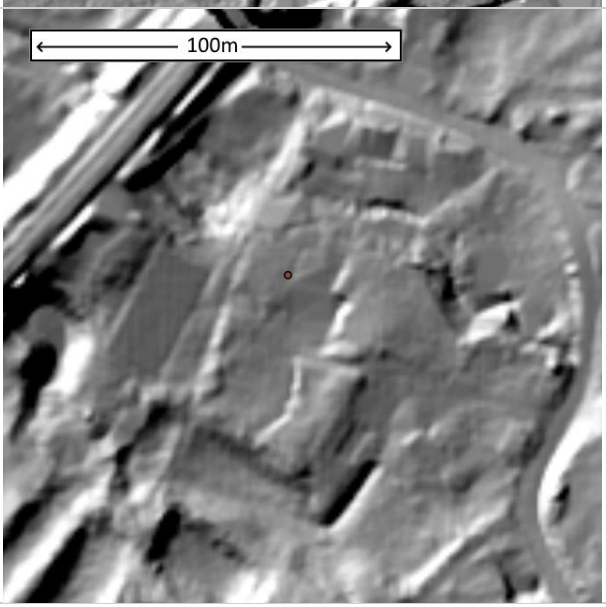
CNOT11	Lowdham Motte	Lowdham	Nottinghamshire	
CNOT12	Newark Castle	Newark	Nottinghamshire	
CNOT13	Nottingham Castle	Nottingham	Nottinghamshire	

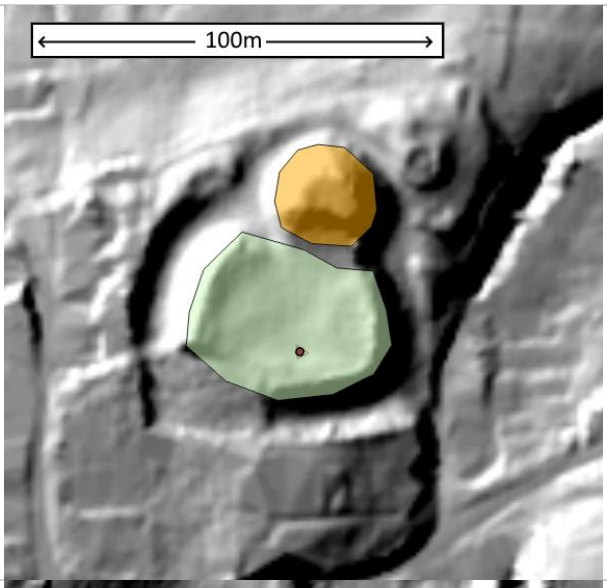
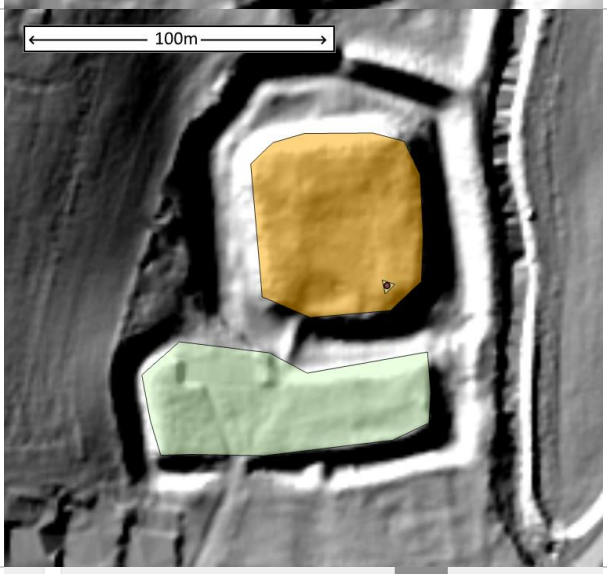
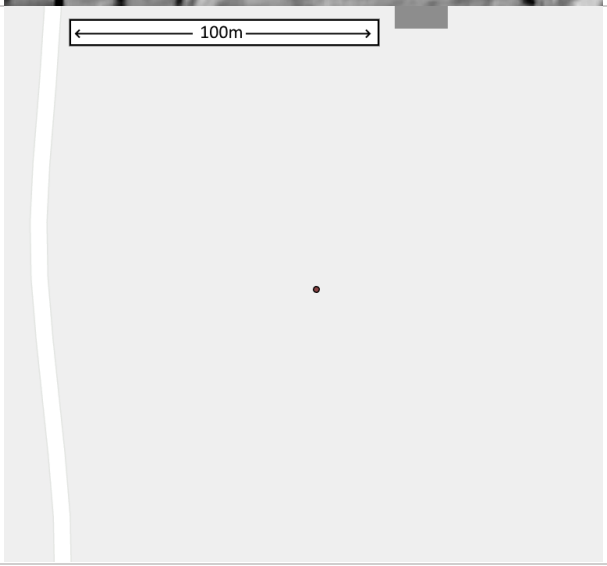
CNOT14	Shelford earthworks	Shelford and Newton	Nottinghamshire	
CNOT15	Worksop Castle Hill	Worksop	Nottinghamshire	
COXF01	Aedley	Ardley	Oxfordshire	

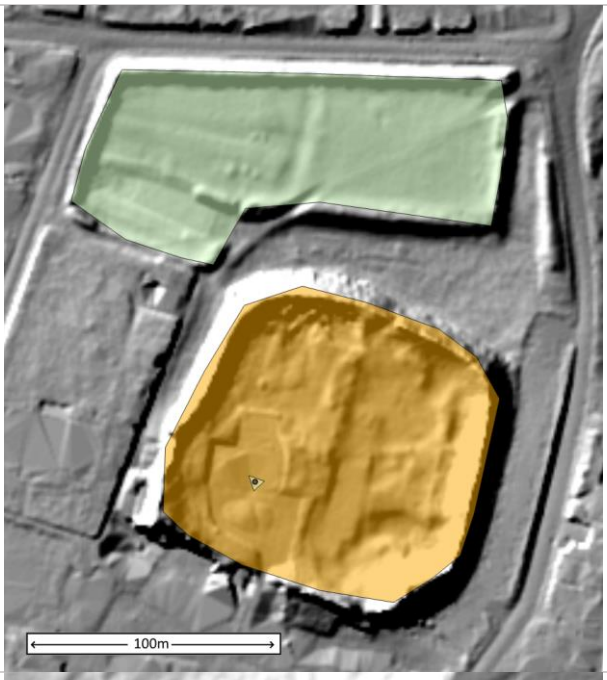
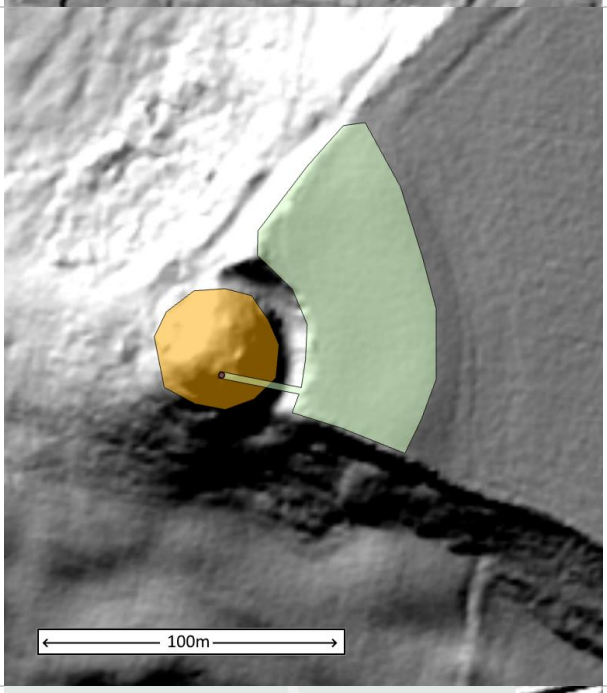
COXF02	Ascott d'oilly Castle	Ascott under Wychwood	Oxfordshire	
COXF03	Ascott Earl	Ascott under Wychwood	Oxfordshire	
COXF04	Banbury Castle	Banbury	Oxfordshire	

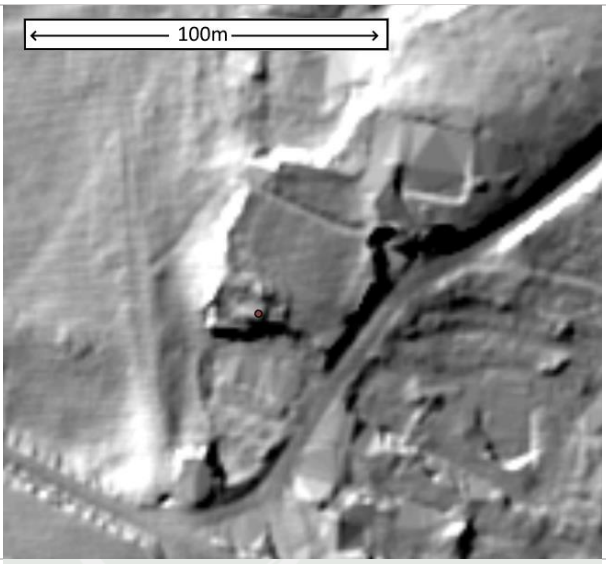
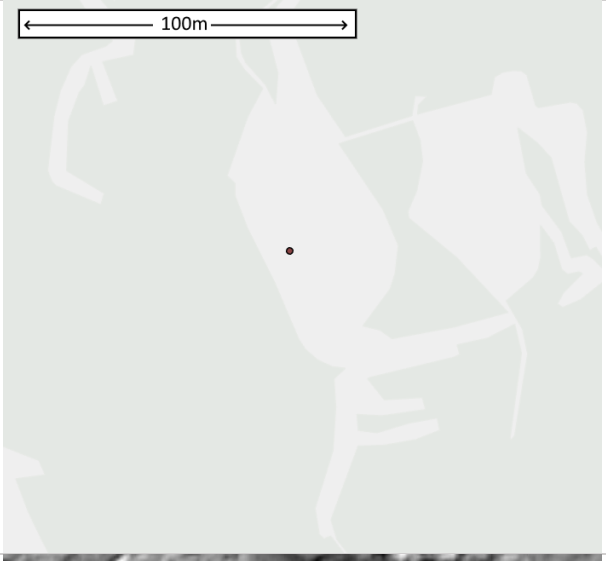
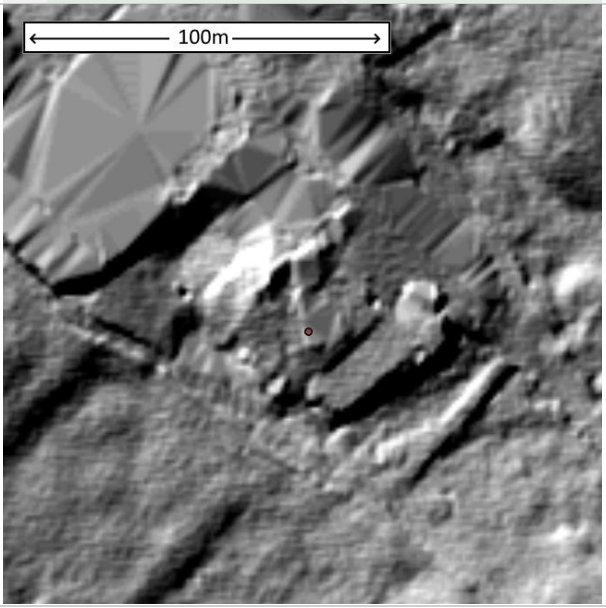
COXF05	Beaumont Castle	Mixbury	Oxfordshire	
COXF06	Blenheim Park	Blenheim	Oxfordshire	
COXF07	Britwell Castle	Britwell Salome	Oxfordshire	

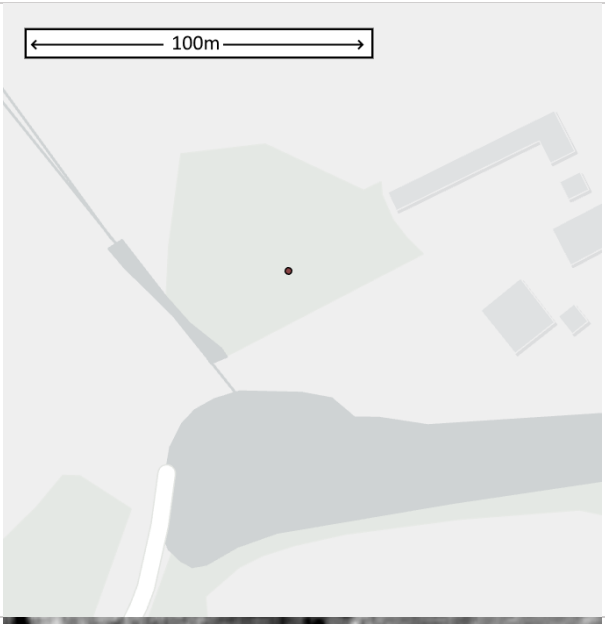
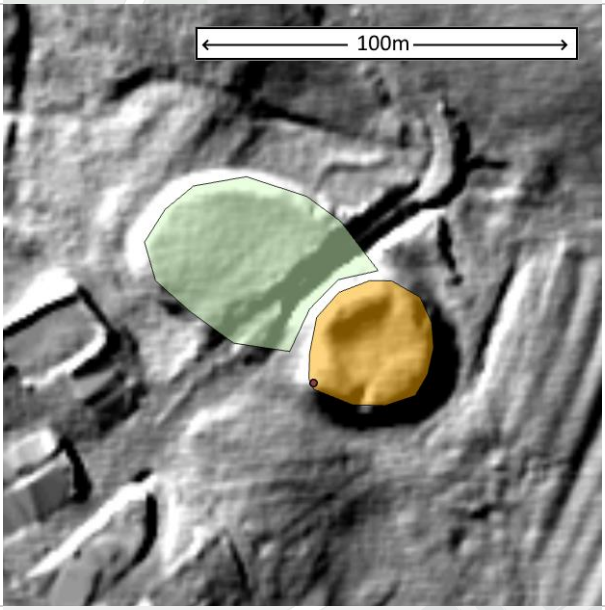
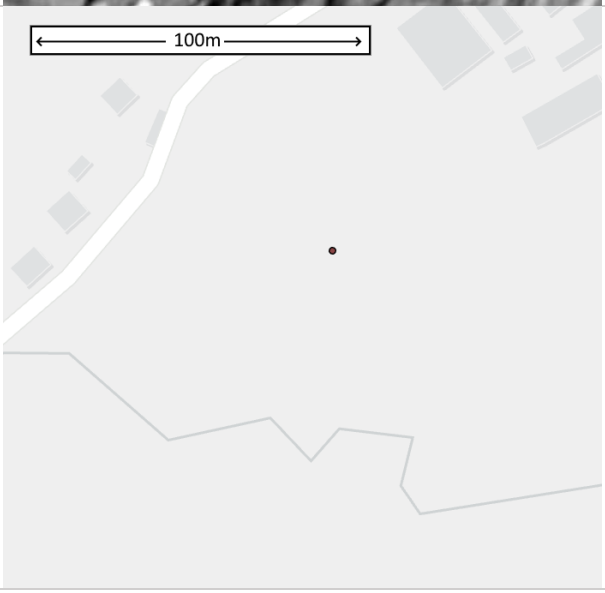
COXF08	Chipping Norton Castle	Chipping Norton	Oxfordshire	
COXF09	Deddington Castle	Deddington	Oxfordshire	
COXF10	Middleton Stoney Castle	Middleton Stoney	Oxfordshire	

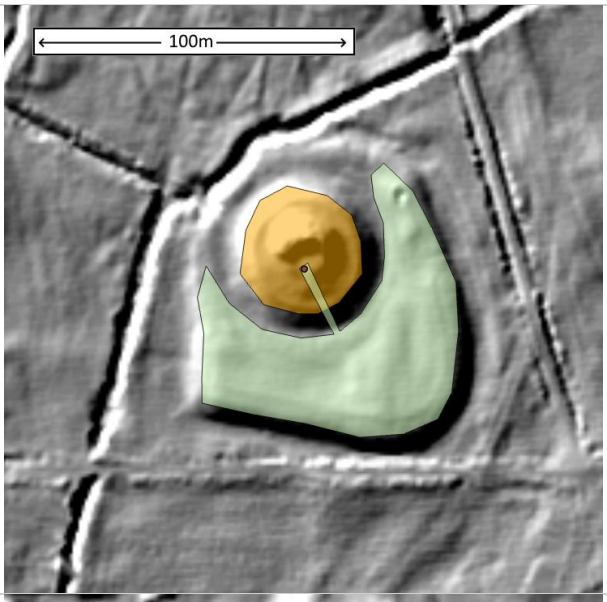
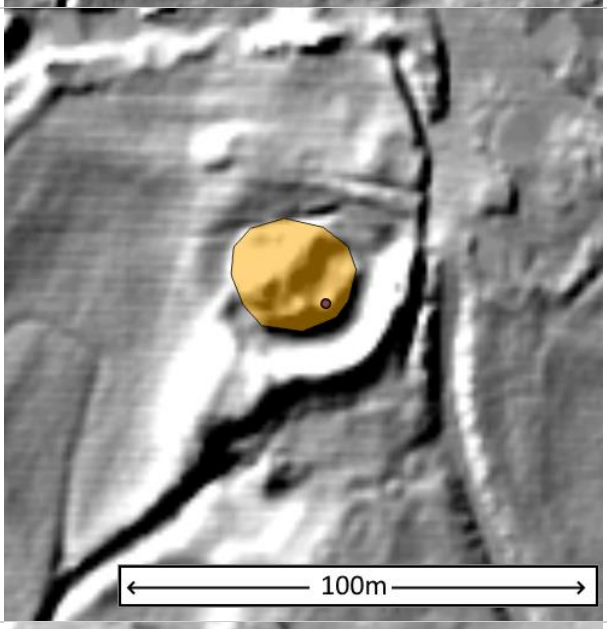
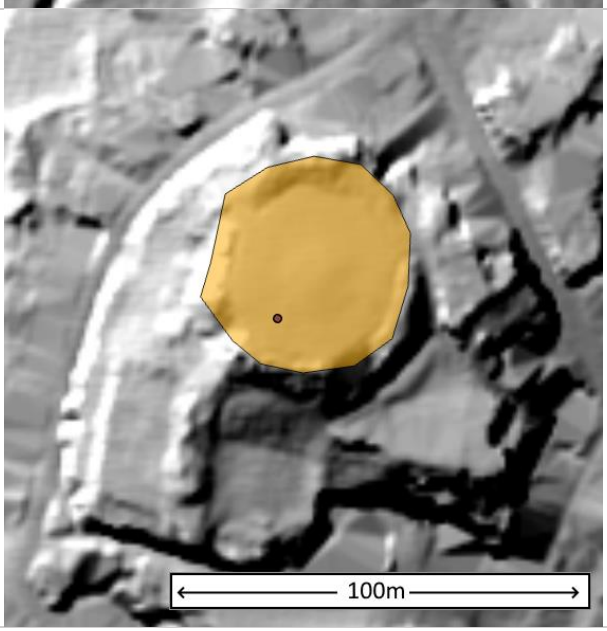
COXF11	Oxford Castle	Oxford	Oxfordshire	
COXF12	The Garrison	Grafton and Radcot	Oxfordshire	
COXF13	Somerton Castle	Oxfordshire	Oxfordshire	

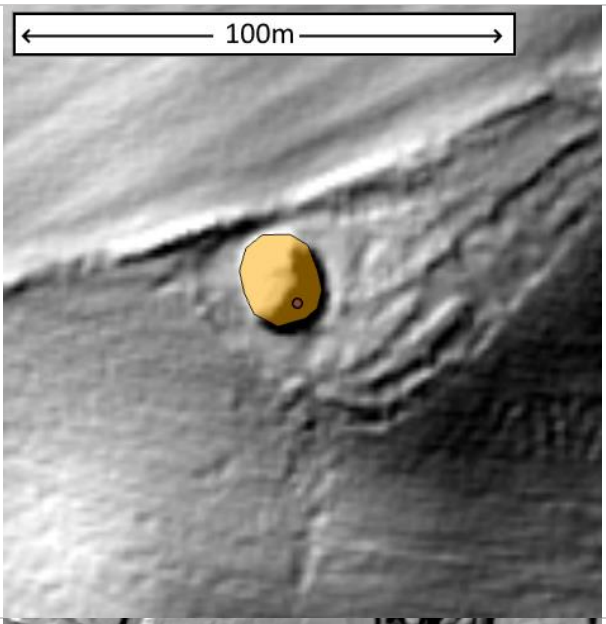
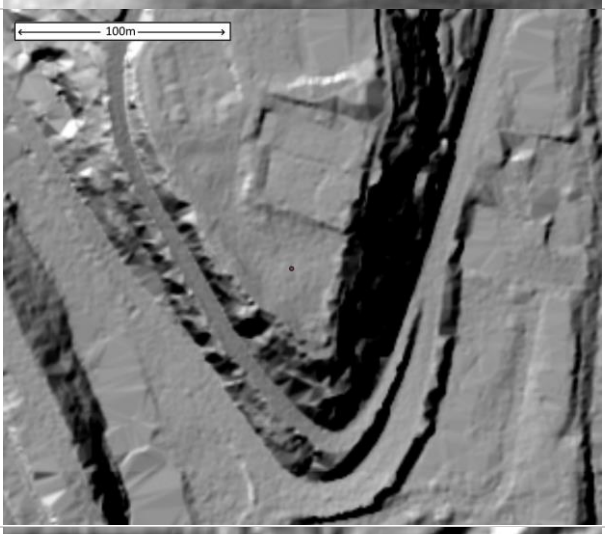
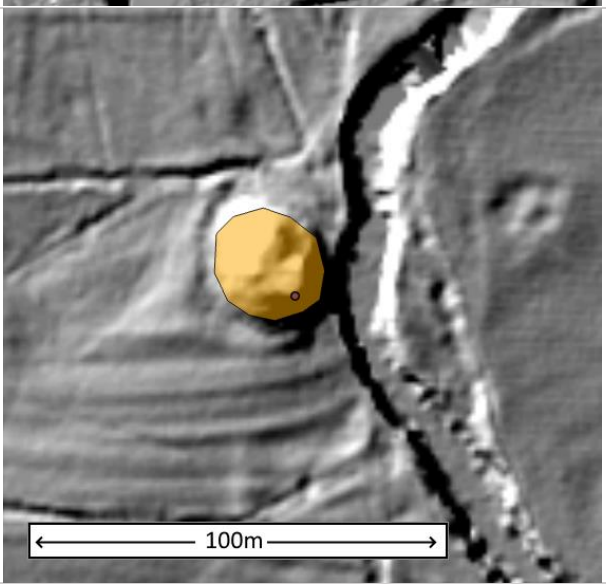
COXF14	Swerford Castle	Swerford	Oxfordshire	
CRUT01	Essendine Castle	Essendine	Rutland	
CRUT02	Mount Alstoe	Burley	Rutland	

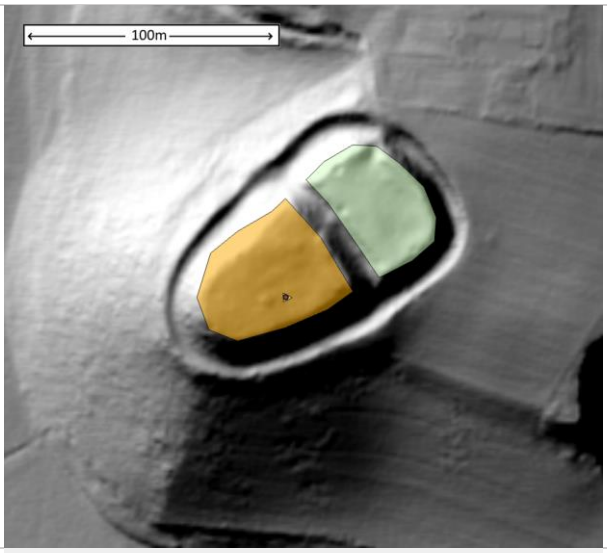
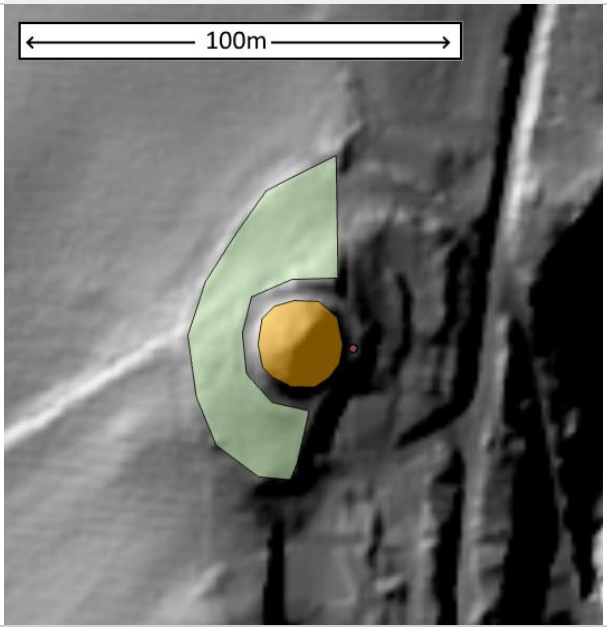
CRUT03	Oakham Castle	Oakham	Rutland	
CRUT04	Uppingham Castle	Beaumont Chase	Rutland	
CRUT05	Woodhead Castle	Great Casterton	Rutland	

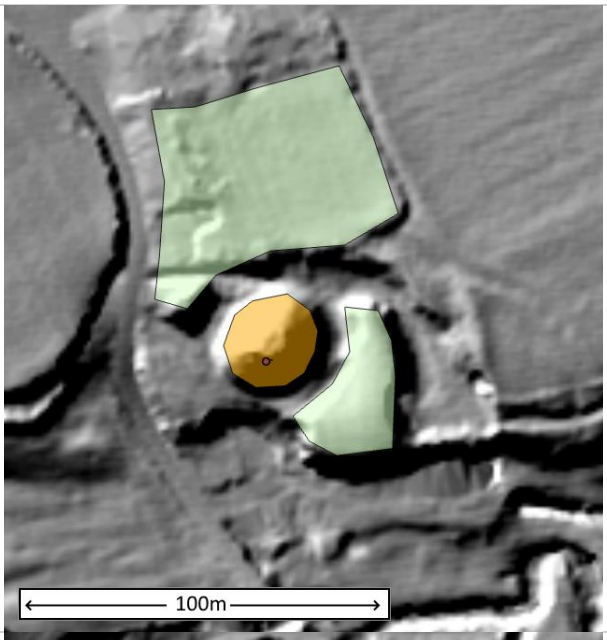
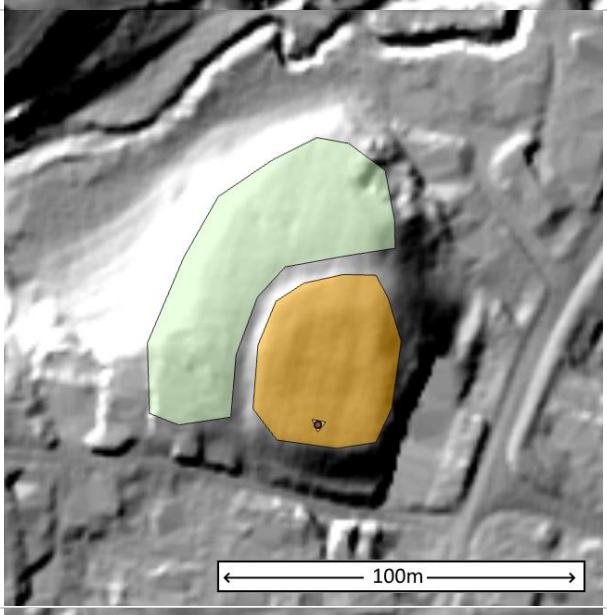
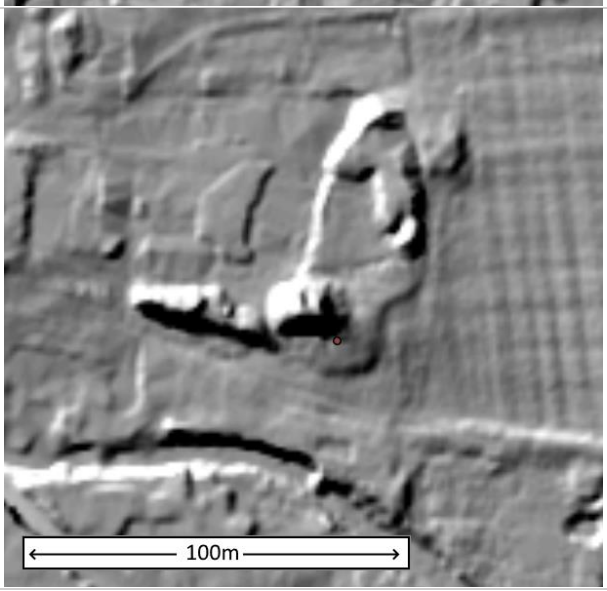
CSHR01	Alberbury Castle	Albebury with Cardeston	Shropshire	
CSHR02	Redcastle	Weston under Redcastle	Shropshire	
CSHR03	Wattlesborough Hall	Alberbury with Cardeston	Shropshire	

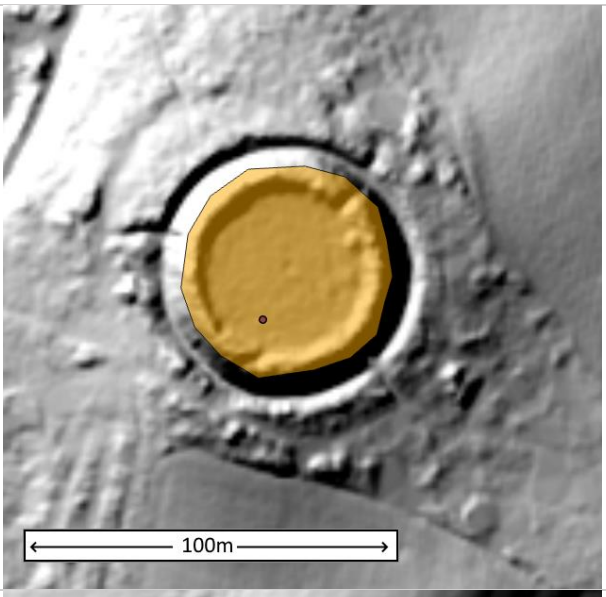
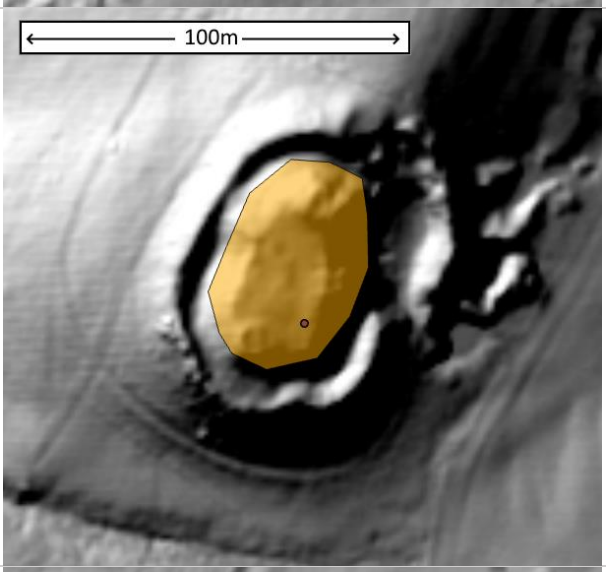
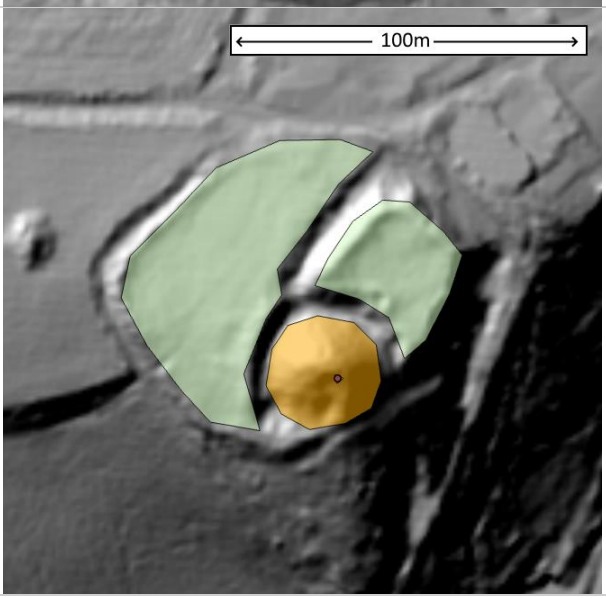
CSHR04	Adderley Castle Hill	Adderley	Shropshire	
CSHR05	Amaston Heath Farm	Alberbury with Cardeston	Shropshire	
CSHR06	Aston Botterell Ringwork	Aston Botterell	Shropshire	

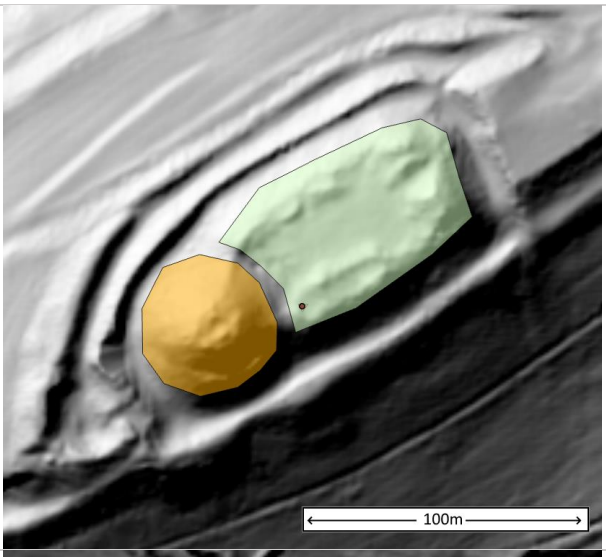
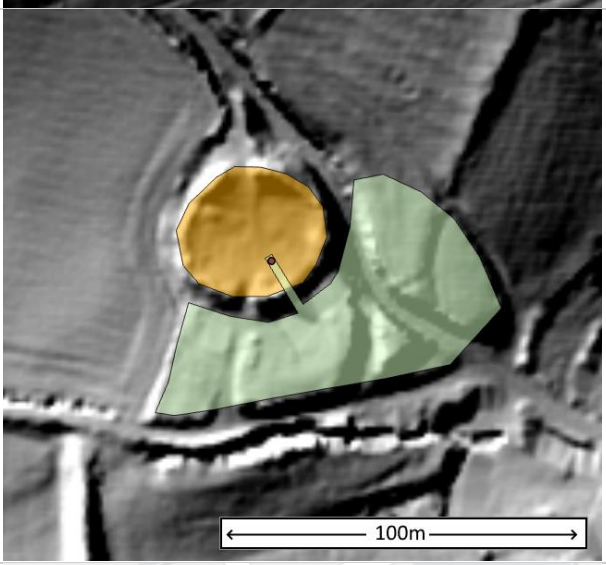
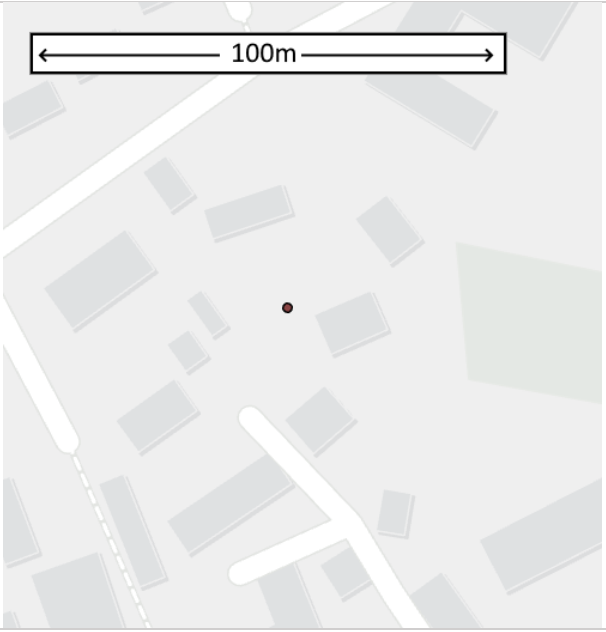
CSHR07	Belan Bank	Kinnerley	Shropshire	
CSHR08	Bicton Castle Mound	Clun	Shropshire	
CSHR09	Bishops Castle	Bishops Castle	Shropshire	

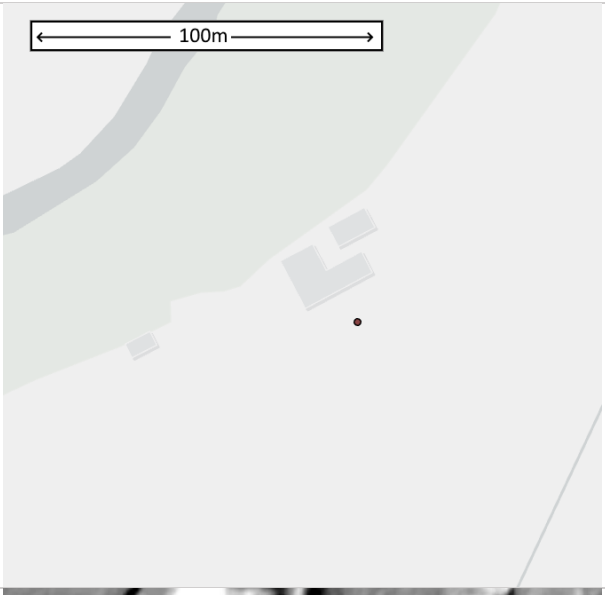
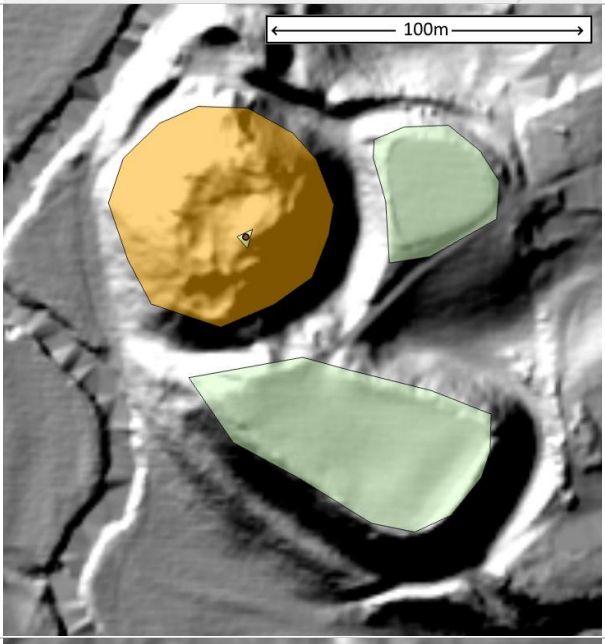
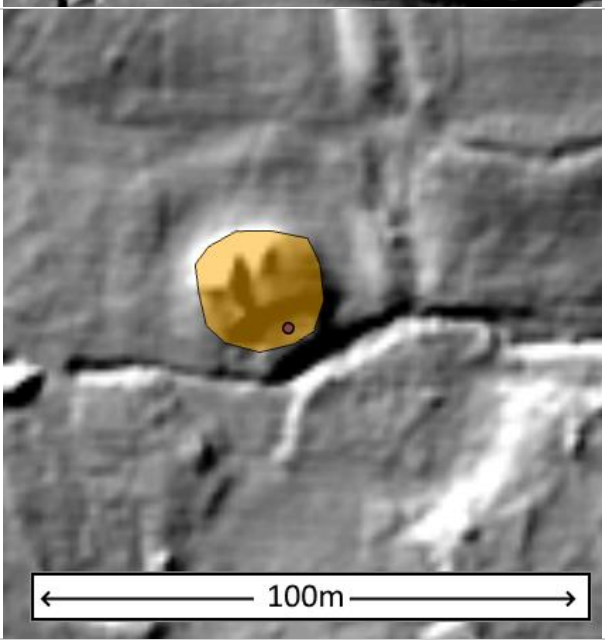
CSHR10	Bretchel Beacon	Alberbury with Cardeston	Shropshire	
CSHR11	Bridgenorth Castle	Bridgenorth	Shropshire	
CSHR12	Broadward Hall	Clungunford	Shropshire	

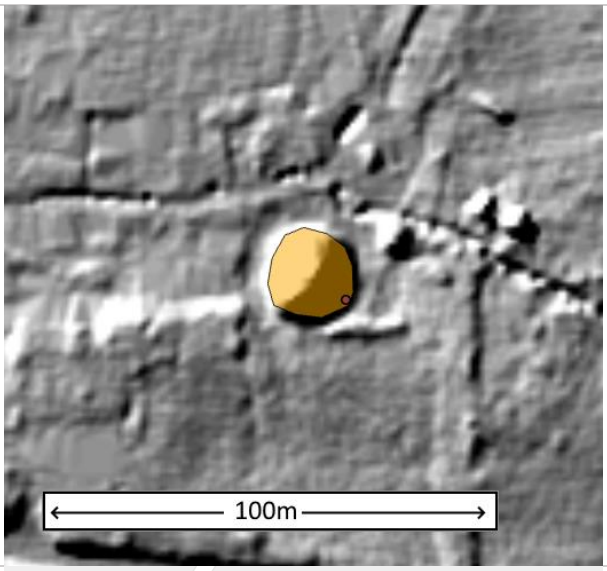
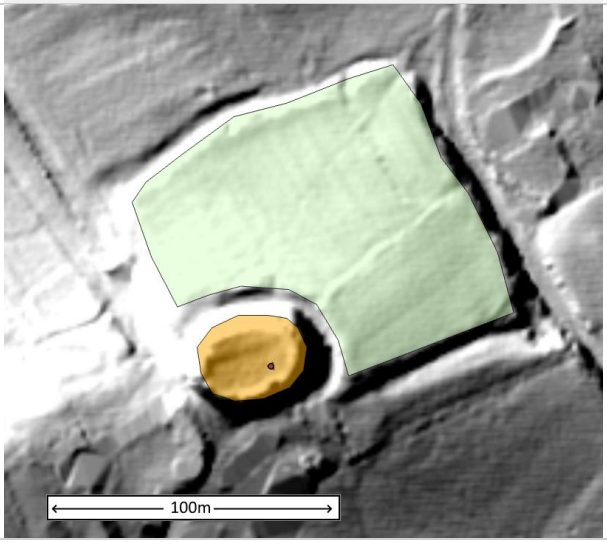
CSHR13	Brockhurst Castle	Church Stretton	Shropshire	
CSHR14	Brockton Castle Mound	Shipton	Shropshire	
CSHR15	Bromlow Castle Mound	Worthen with Shelve	Shropshire	

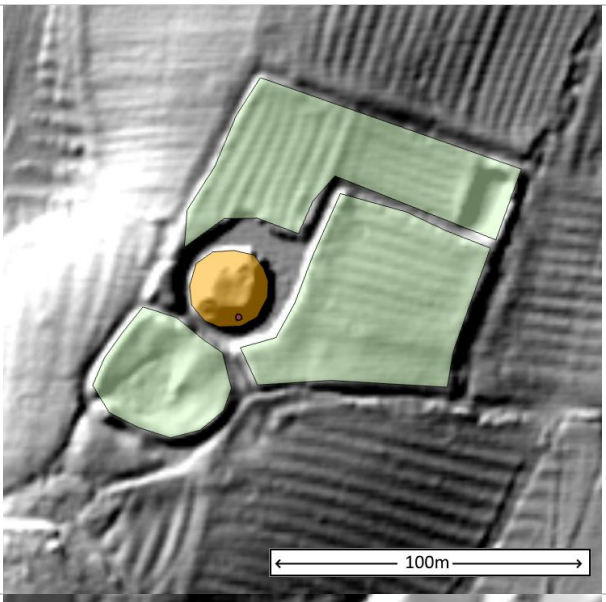
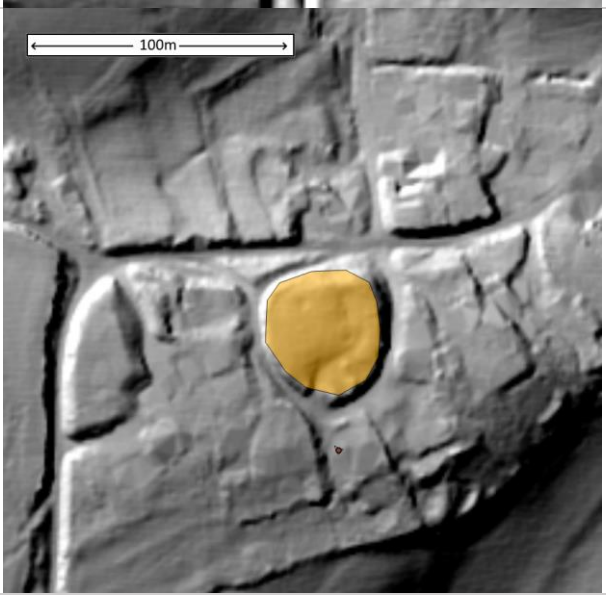
CSHR16	Brompton Mill Castle Mound	Chirbury with Brompton	Shropshire	
CSHR17	Bryn Y Castell	Selattyn and Gobowen	Shropshire	
CSHR18	Bucknell Motte	Bucknell	Shropshire	

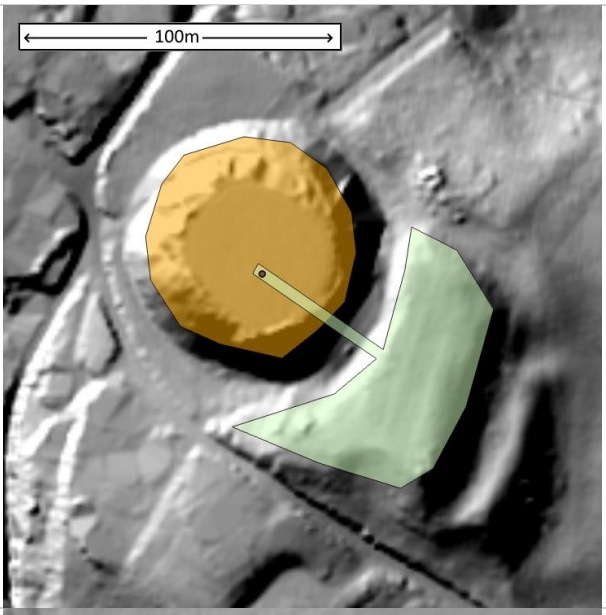
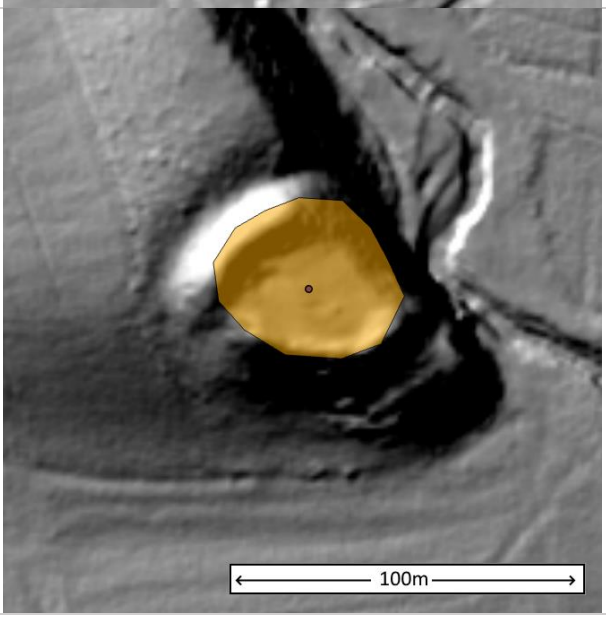
CSHR19	Castlell Brogyntyn	Selattyn and Gobowen	Shropshire	
CSHR20	Castle Bryn Amlwg	Bettws yy Crwyn	Shropshire	
CSHR21	Castle Pulverbatch	Church Pulverbatch	Shropshire	

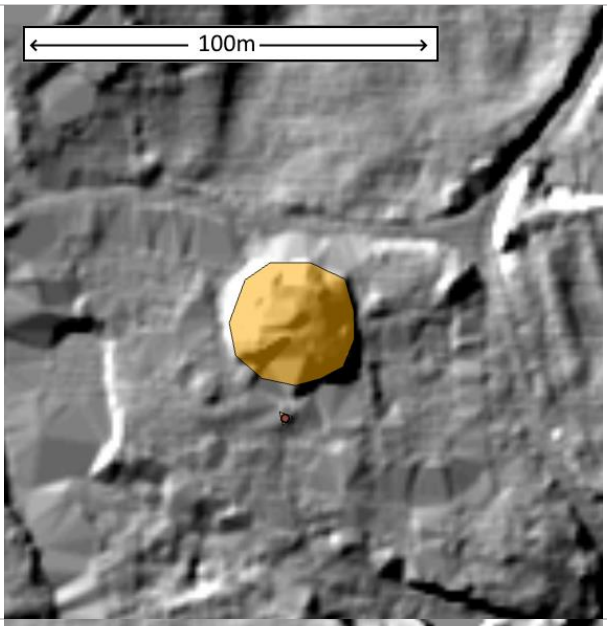
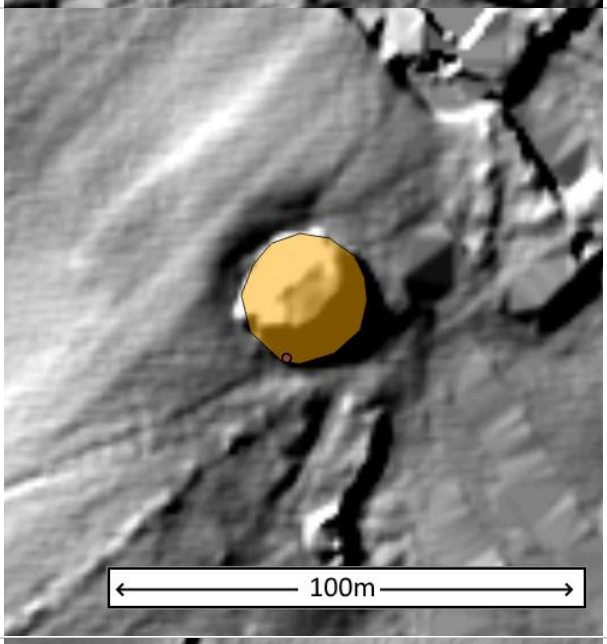
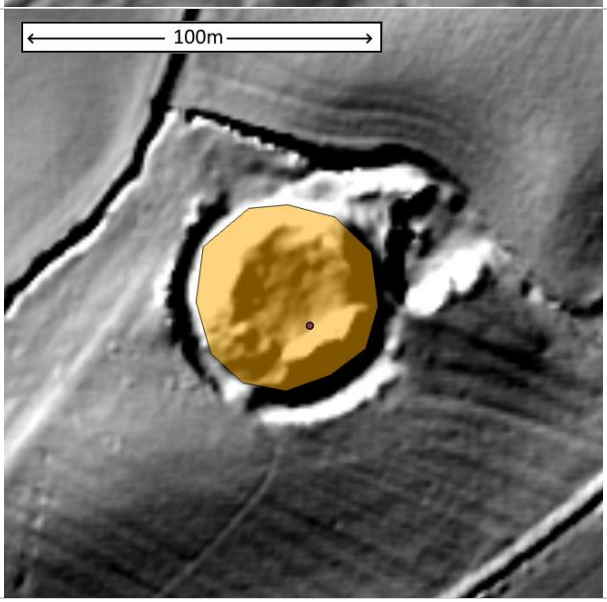
CSHR22	Caus Castle	Westbury	Shropshire	
CSHR23	Cheney Castle Ring	Wistanshow	Shropshire	
CSHR24	Castle Ditches	Cleobury Mortimer	Shropshire	

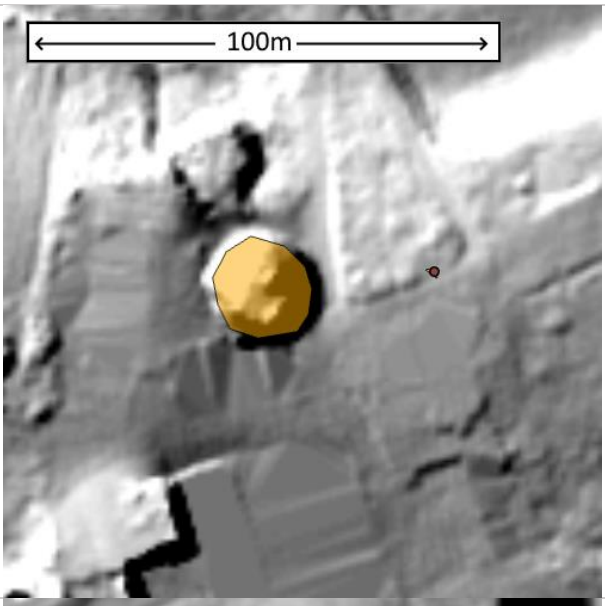
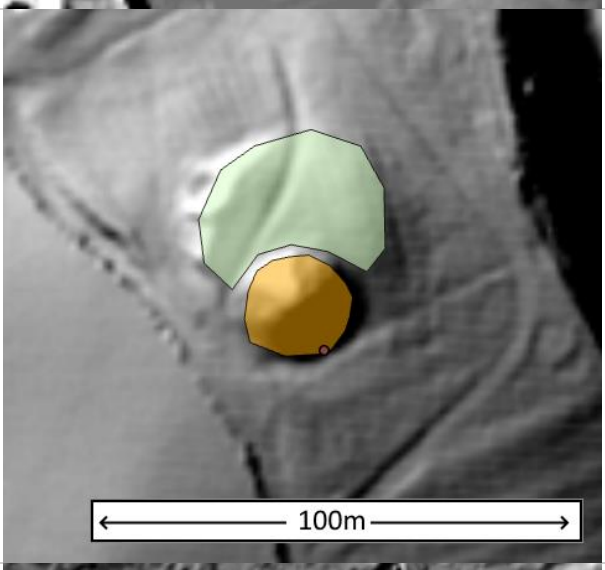
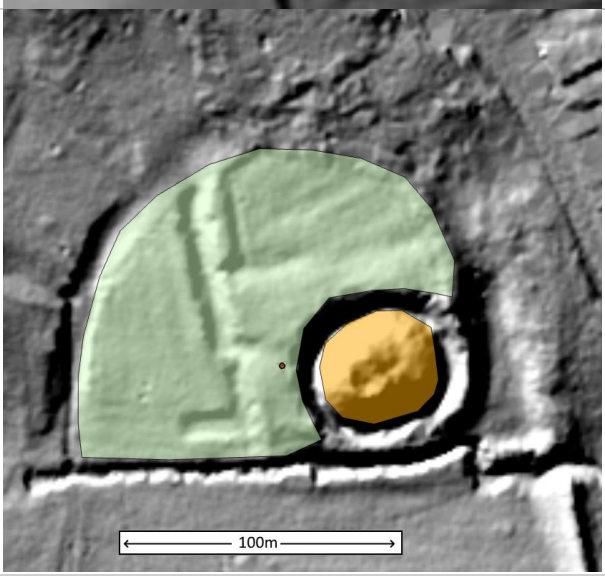
CSHR25	Castle Toot	Cleobury Mortimer	Shropshire	
CSHR26	Clun Castle	Clun	Shropshire	
CSHR27	Clungford Motte	Clungford	Shropshire	

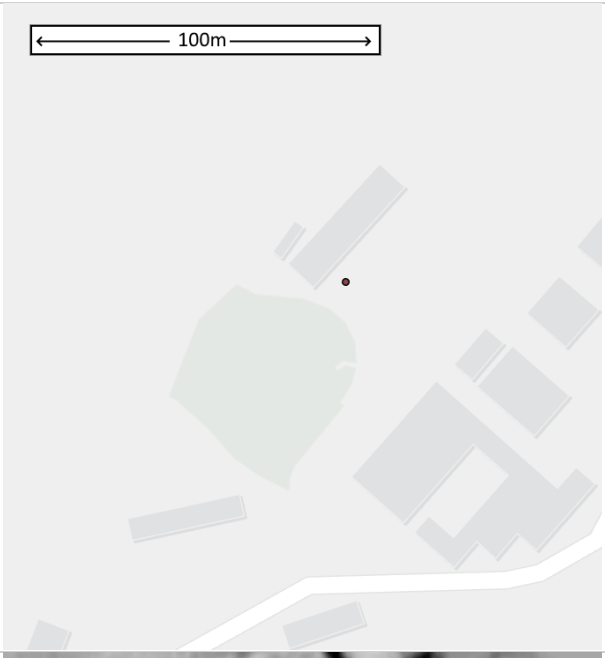
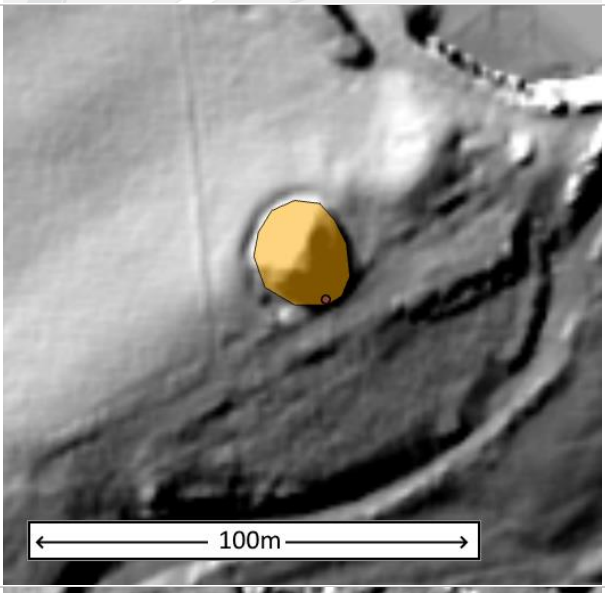
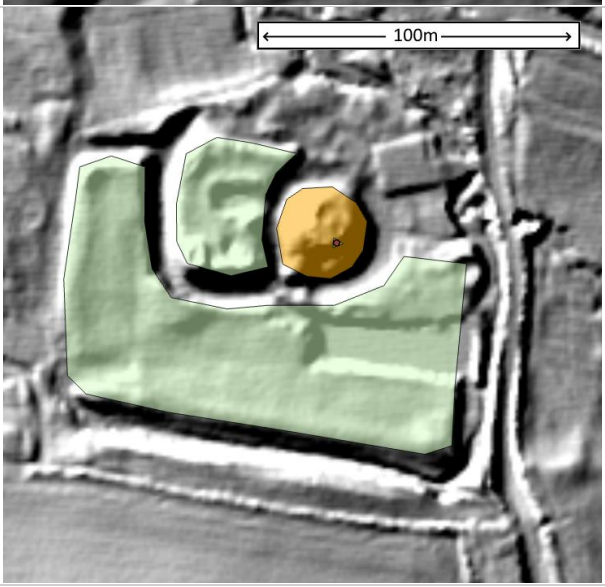
CSHR28	Colebatch Motte	Colebatch	Shropshire	
CSHR29	Corfham Castle	Diddlebury	Shropshire	
CSHR30	Crofton Mount	Diddlebury	Shropshire	

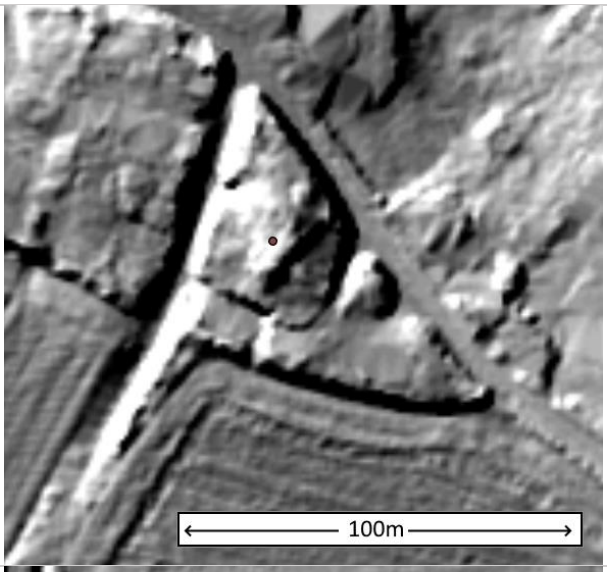
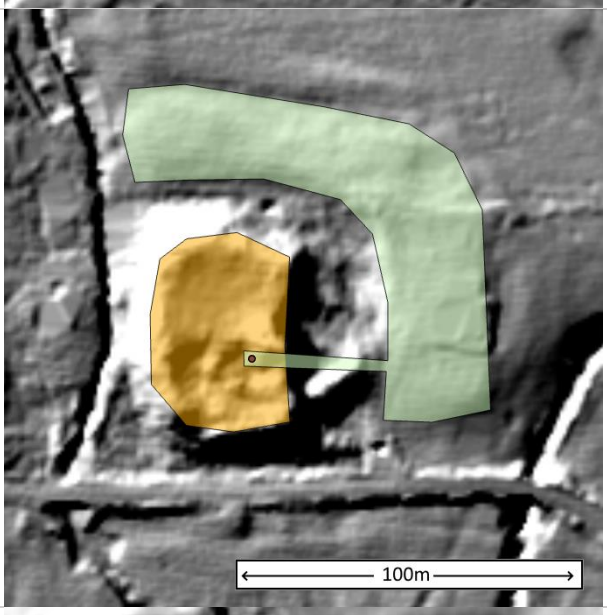
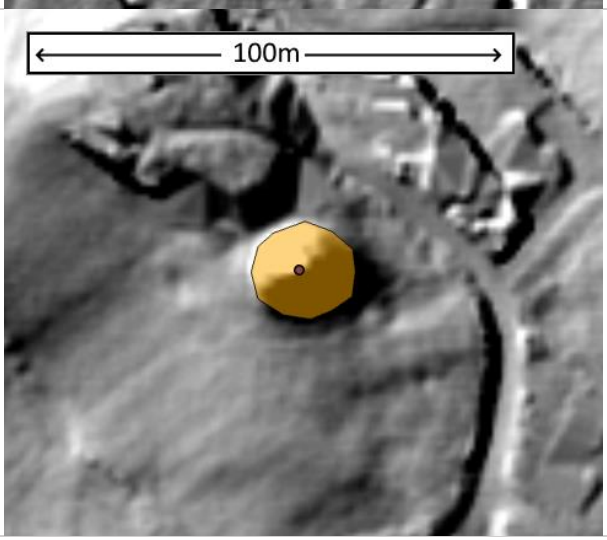
CSHR31	Culmington Camp Ring	Stanton Lacy	Shropshire	
CSHR32	Dudston Castle Mound	Chirbury with Brompton	Shropshire	
CSHR33	Edgton Ring-Motte	Edgton	Shropshire	

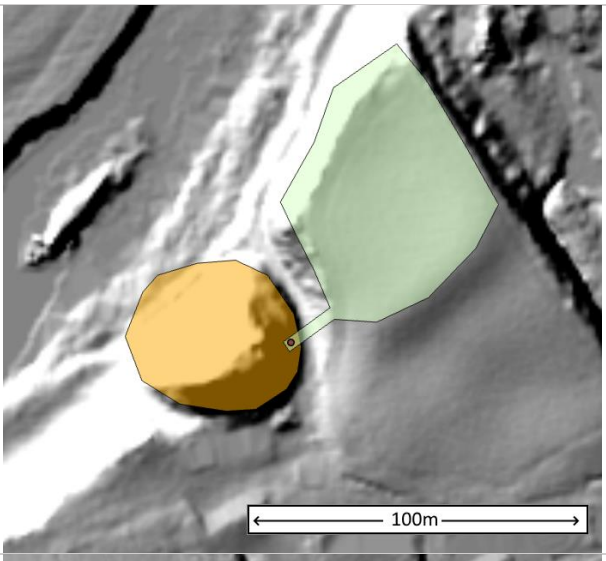
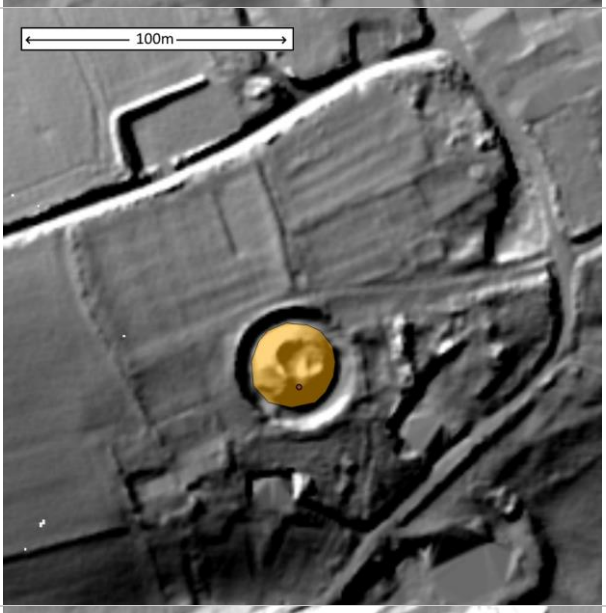
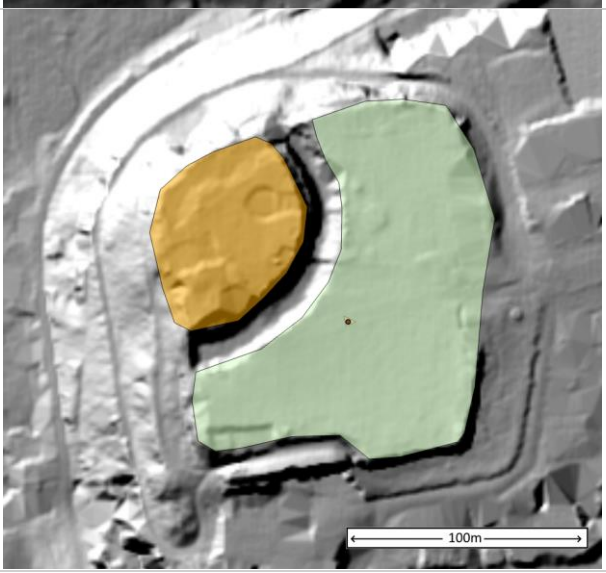
CSHR34	Ellesmere Castle	Ellesmere Urban	Shropshire	
CSHR35	Fitz Mound	Pimhill	Shropshire	
CSHR36	Fordhall	Moreton Say	Shropshire	

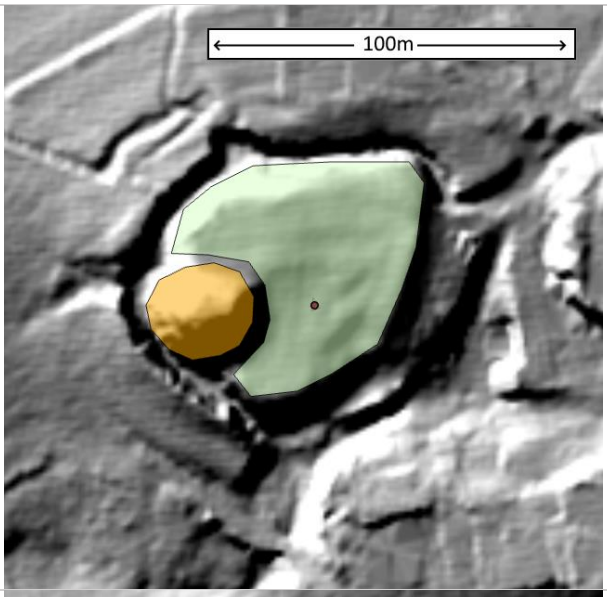
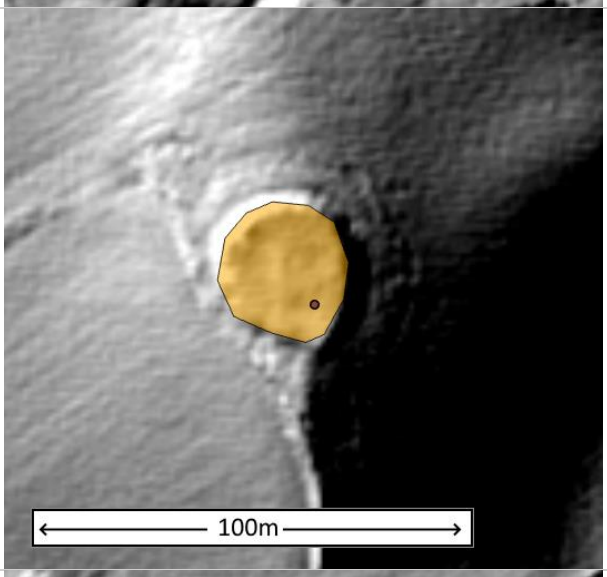
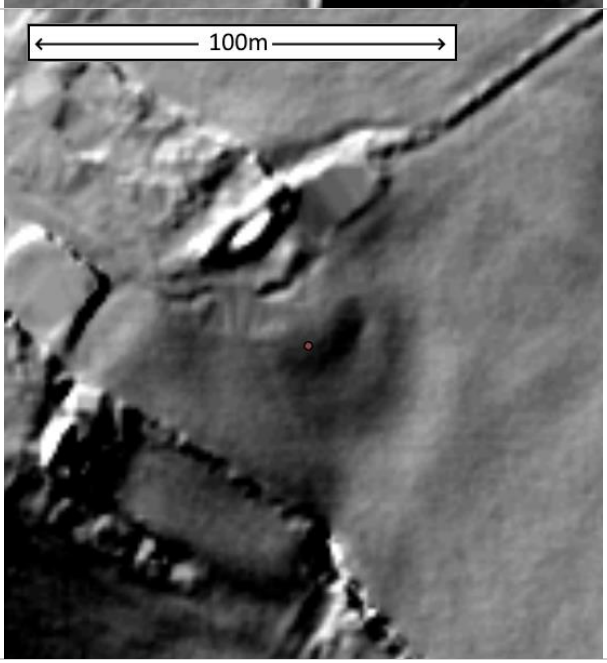
CSHR37	Habberley Hall	Pontesbury	Shropshire	
CSHR38	Hardwick Mount	Norbury	Shropshire	
CSHR39	Howcocks Mount	Westbury	Shropshire	

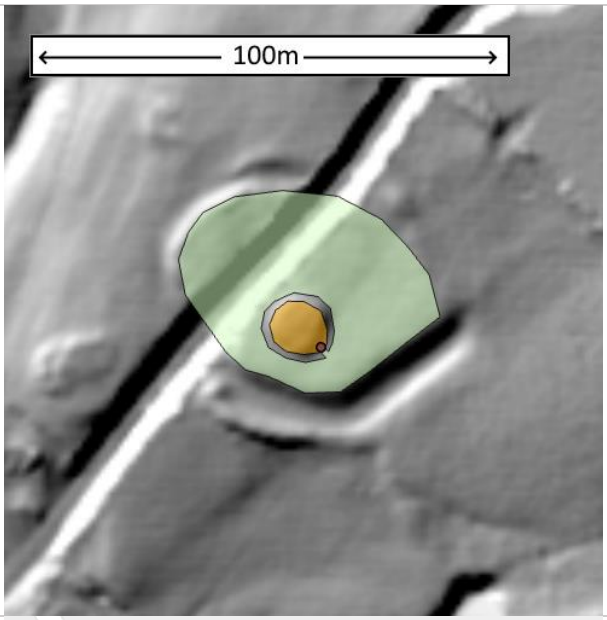
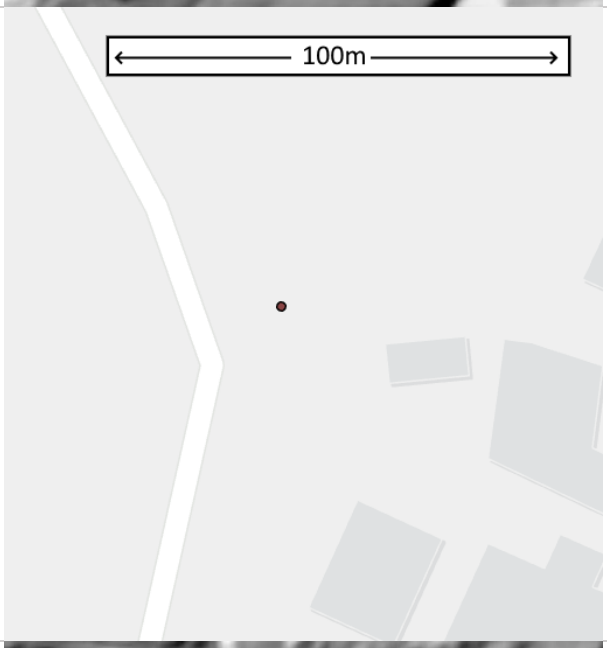
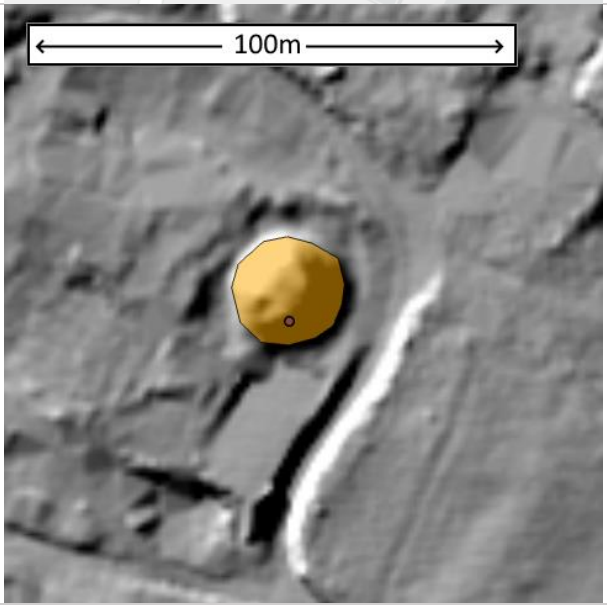
CSHR40	Hisland Castle Mound	Oswestry Rural	Shropshire	
CSHR41	Hockleton Motte	Chirbury with Brompton	Shropshire	
CSHR42	Hodnet Castle Hill	Hodnet	Shropshire	

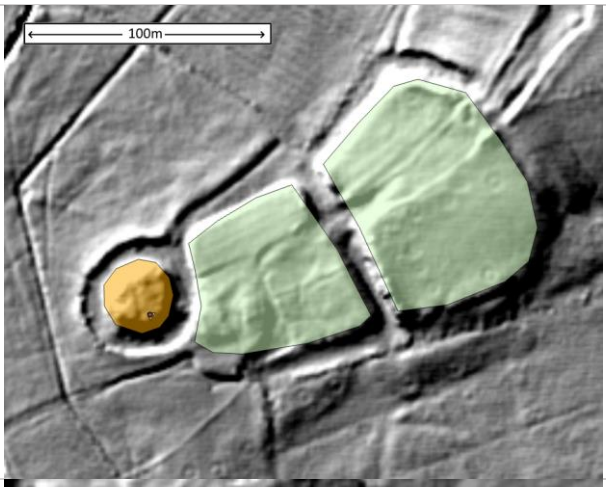
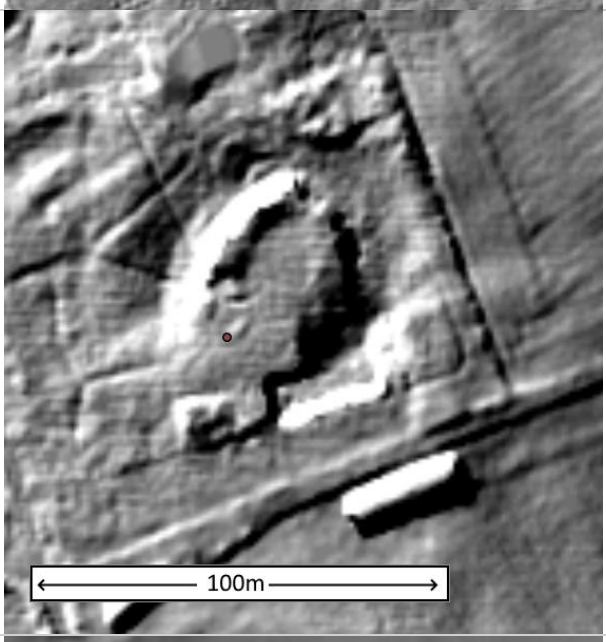
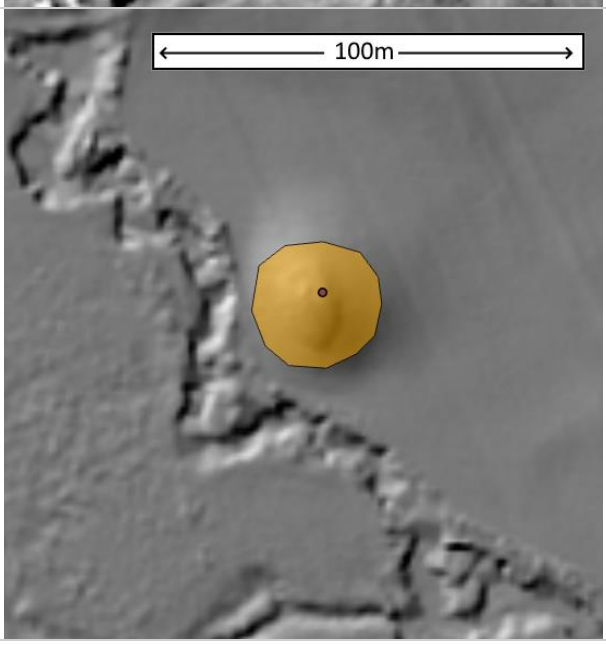
CSHR43	Holdgate Castle	Abdon	Shropshire	
CSHR44	Hope Castle Mound	Worthen with Shelve	Shropshire	
CSHR45	Hopton Castle	Hopton Castle	Shropshire	

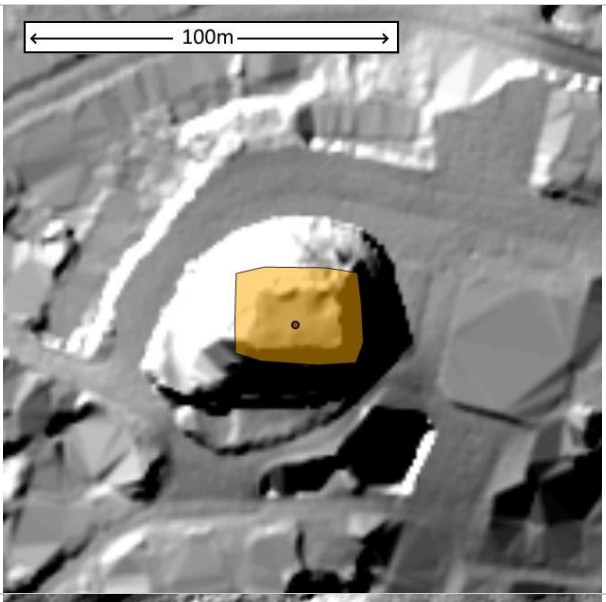
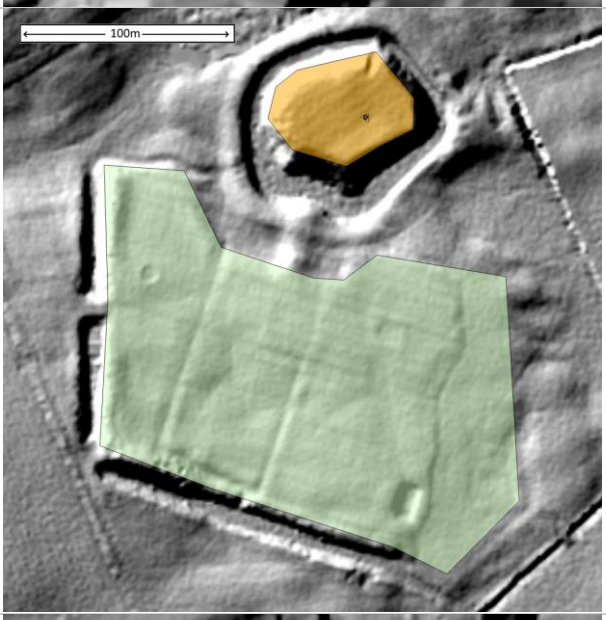
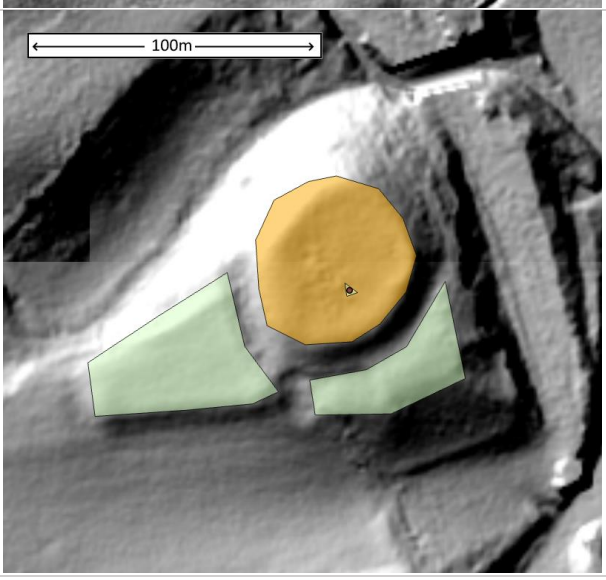
CSHR46	Kinton Motte	Great Ness	Shropshire	
CSHR47	Knockin Castle	Knockin	Shropshire	
CSHR48	Little Ness Castle Mound	Little Ness	Shropshire	

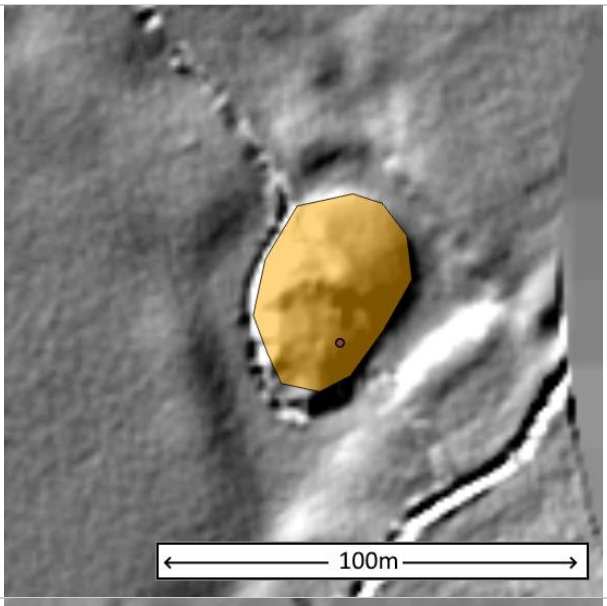
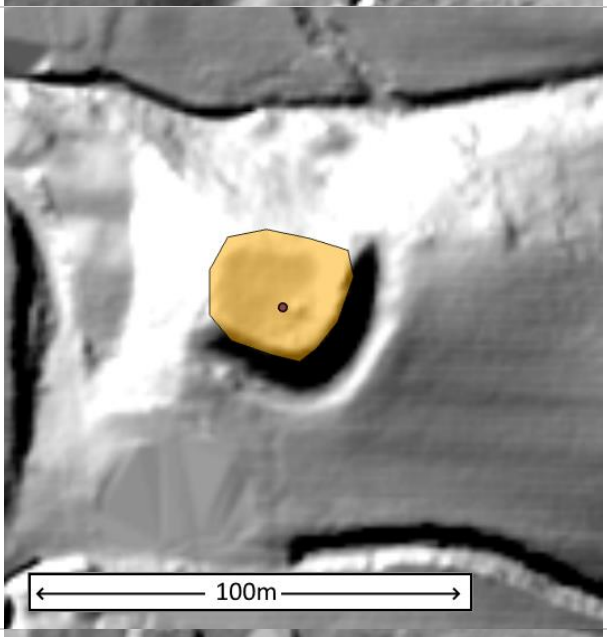
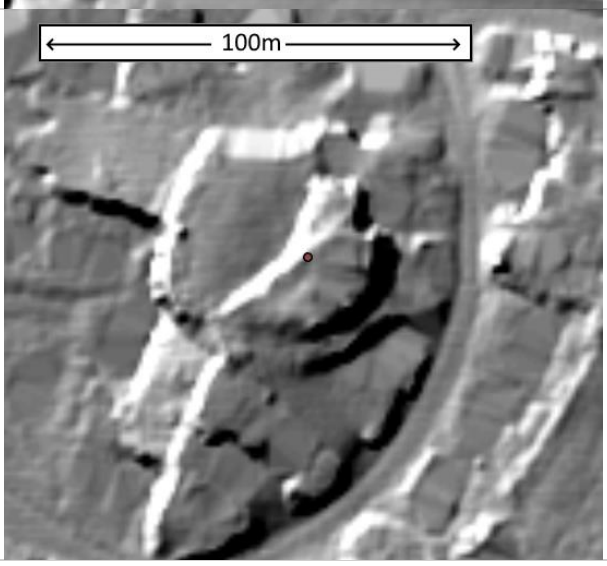
CSHR49	Little Shrawardine Motte	Alberbury with Cardeston	Shropshire	
CSHR50	Lower Down Castle	Lydbury North	Shropshire	
CSHR51	Ludlow Castle	Ludlow	Shropshire	

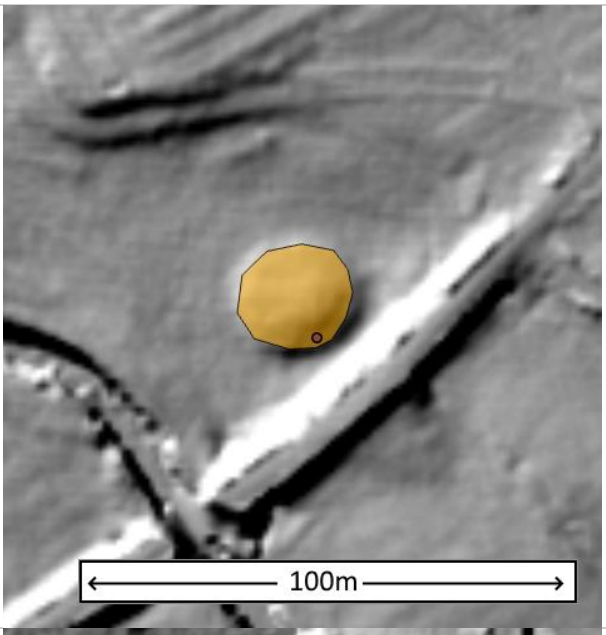
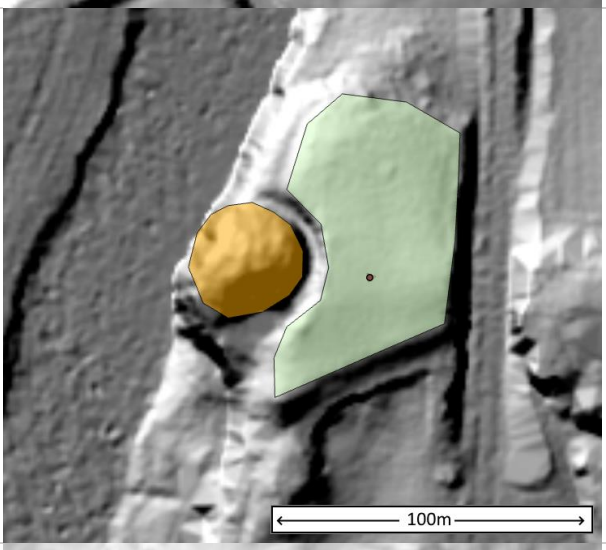
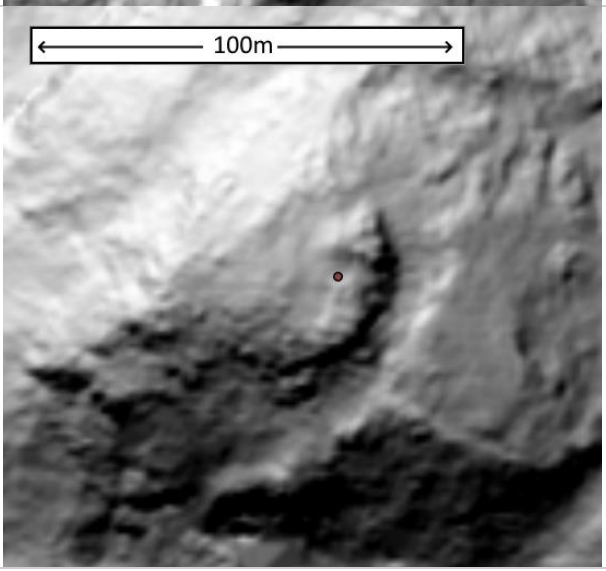
CSHR52	Lydham Castle	Lydham	Shropshire	
CSHR53	Marche Hall	Westbury	Shropshire	
CSHR54	Marton Mount	Chirbury with Brompton	Shropshire	

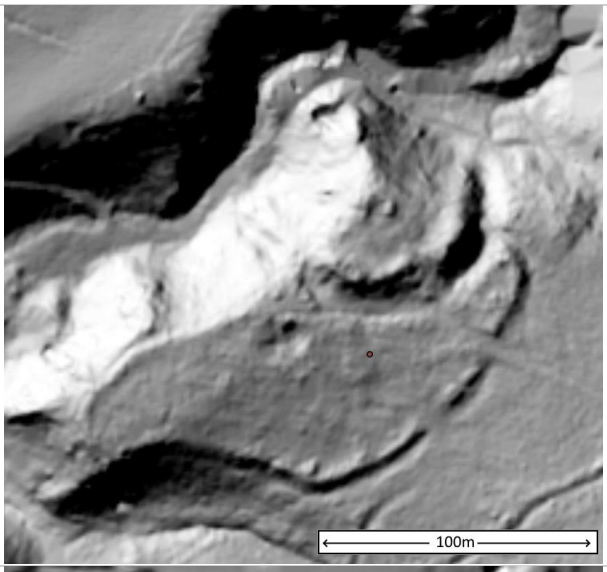
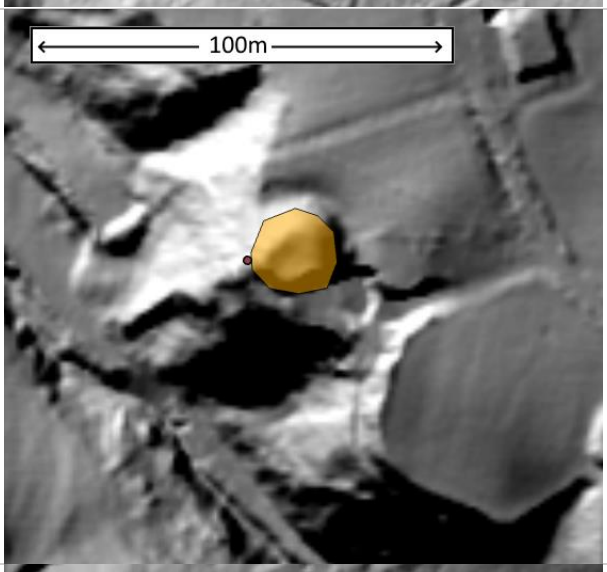
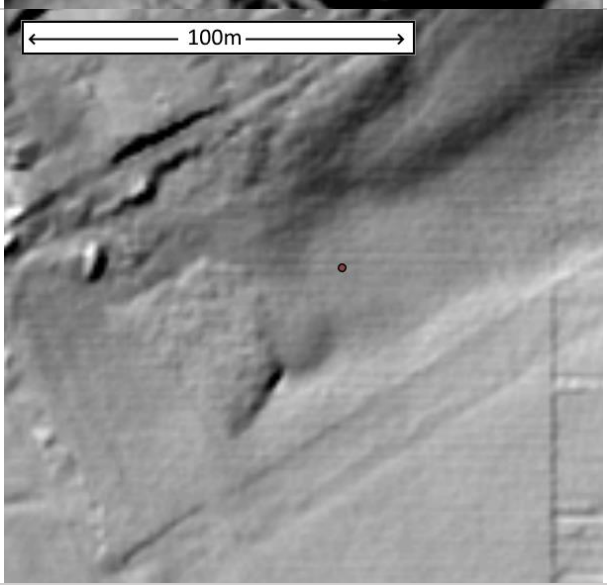
CSHR55	Middlehope	Biddlebury	Shropshire	
CSHR56	Middleton Mottes	Bitterley	Shropshire	
CSHR57	Minton Castle Mound	Church Stretton	Shropshire	

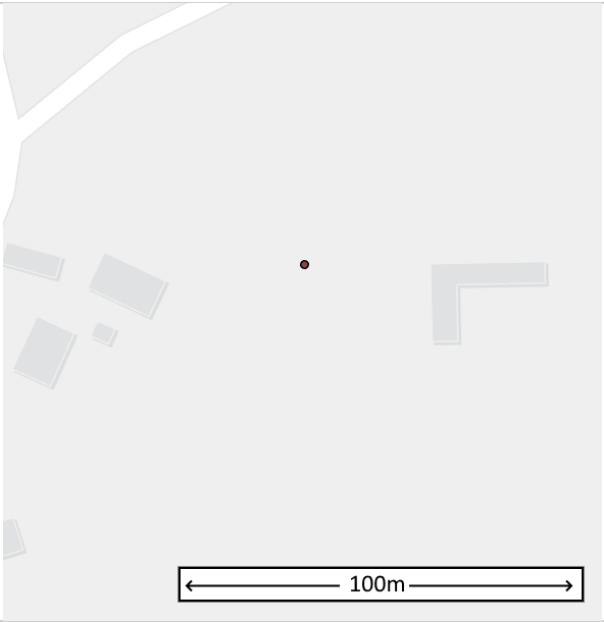
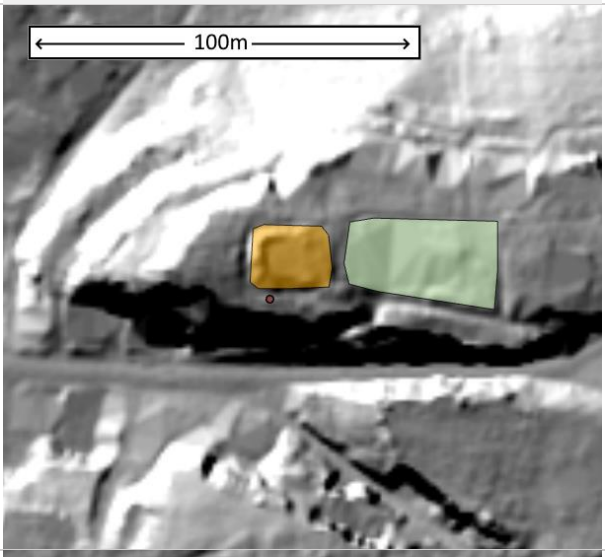
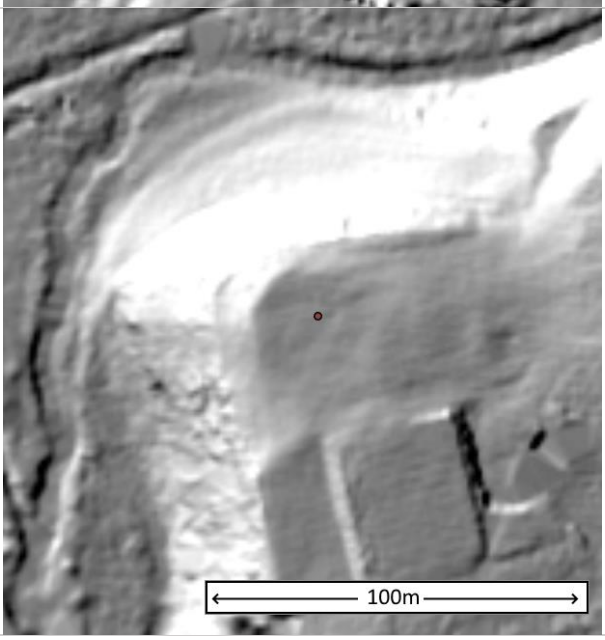
CSHR58	More Castle	More	Shropshire	
CSHR59	Moreton Corbet Castle	Moreton Corbet and Lee Brockhurst	Shropshire	
CSHR60	The Crugyn	Newcastle	Shropshire	

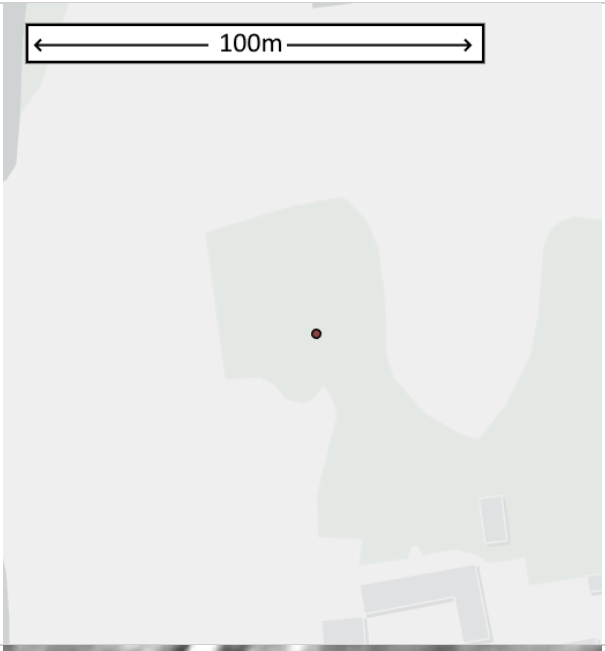
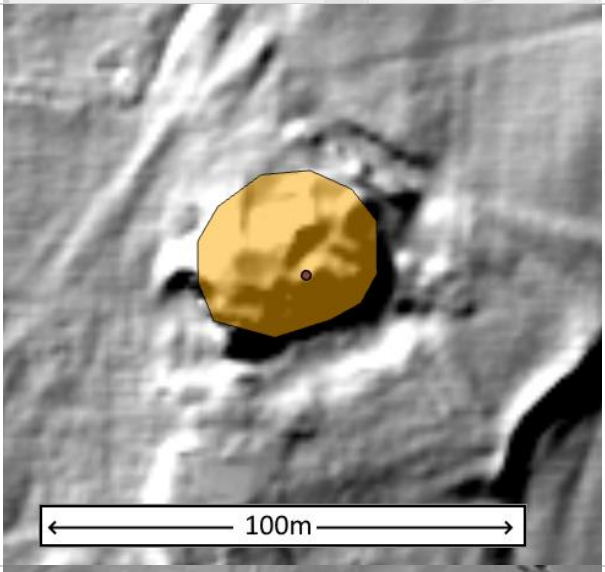
CSHR61	Oswestery Castle	Oswestry	Shropshire	
CSHR62	Pan Castle	Whitchurch Urban	Shropshire	
CSHR63	Panpudding Hill	Bridgenorth	Shropshire	

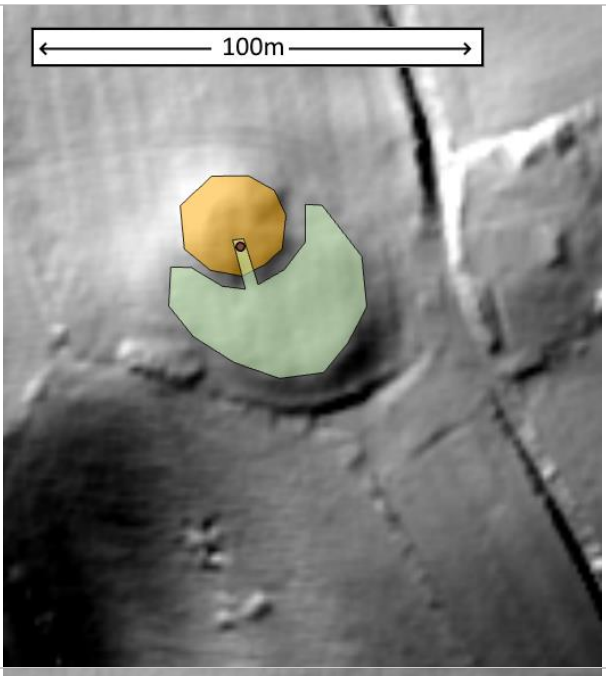
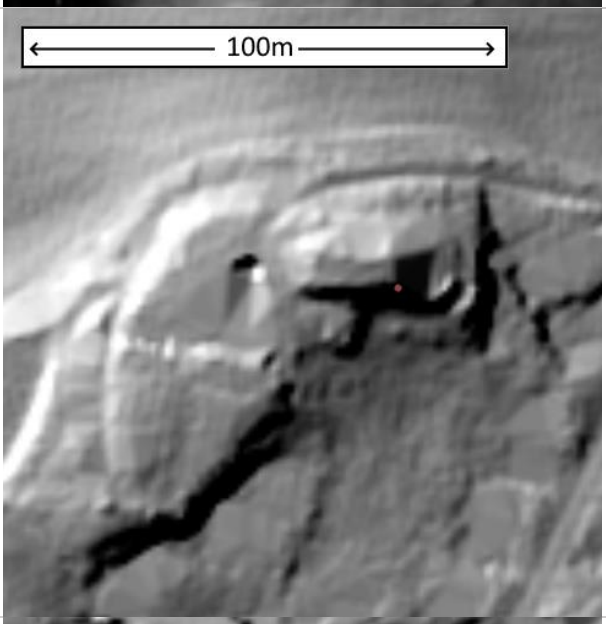
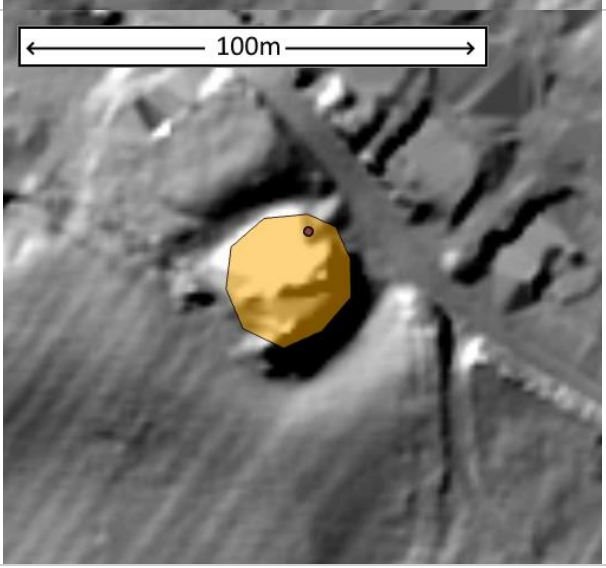
CSHR64	Pickthorne Castle	Stottesdon	Shropshire	
CSHR65	Plowden Mill Ringwork	Ludby North	Shropshire	
CSHR66	Pomtesbury Castle	Pontesbury	Shropshire	

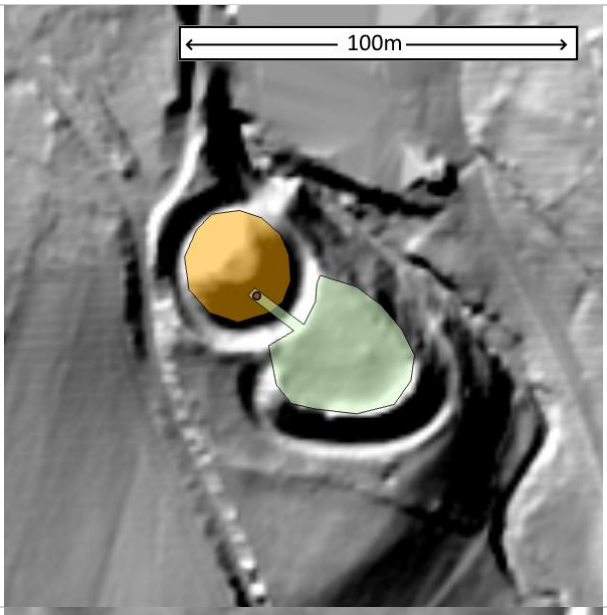
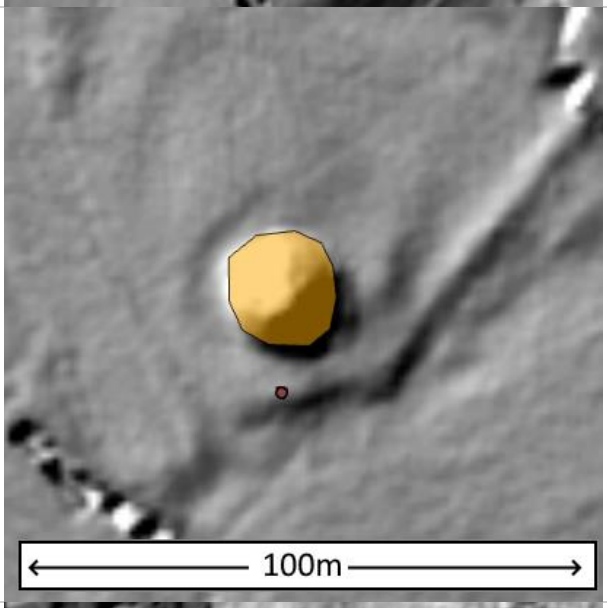
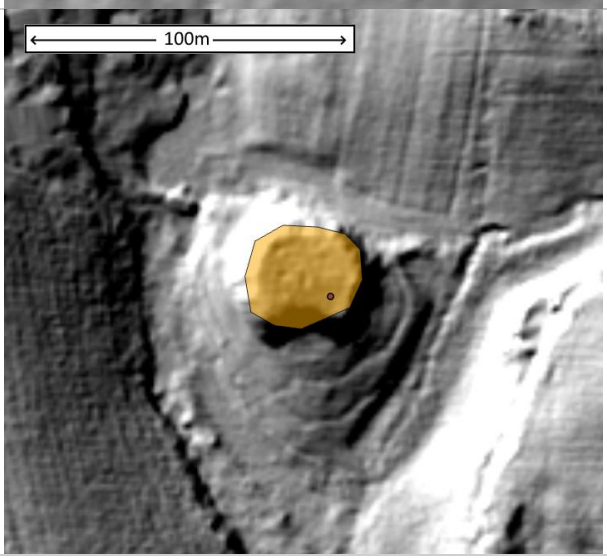
CSHR67	Pontfadog	Kinnerley	Shropshire	
CSHR68	Quatford Castle	Bridgenorth	Shropshire	
CSHR69	Queen Elenors Bower	Uffington	Shropshire	

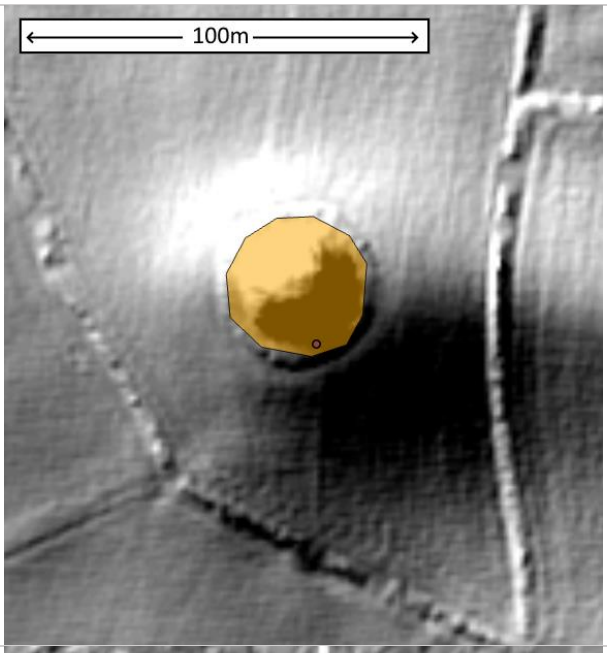
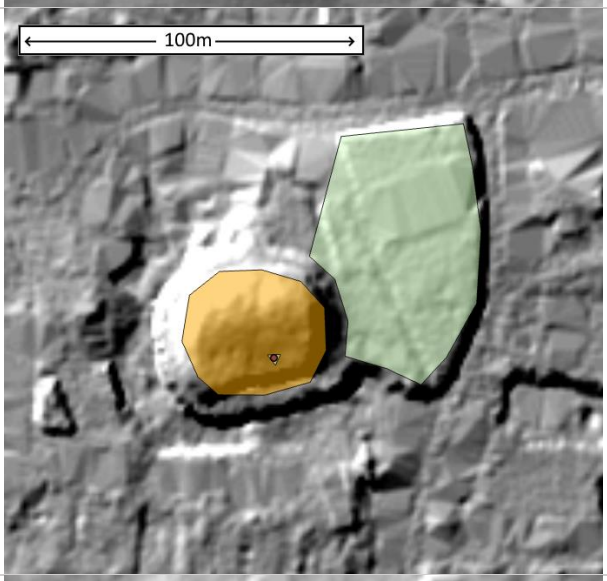
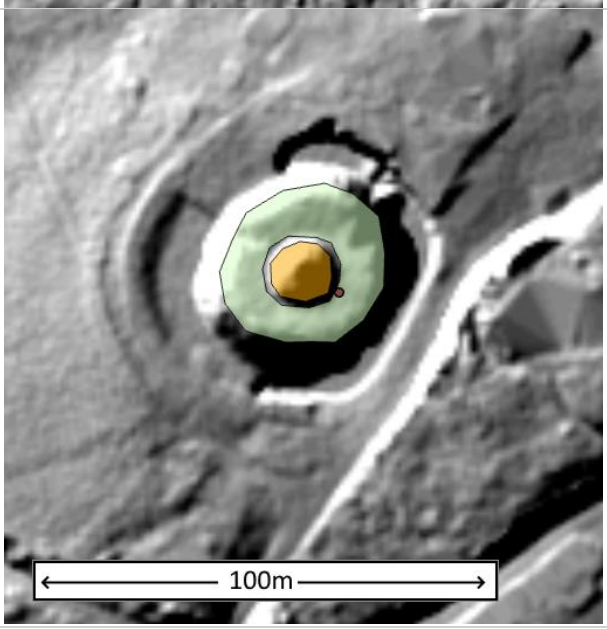
CSHR70	Ritton Castle	Worthen with Shelve	Shropshire	
CSHR71	Rorrington	Chirbury with Brompton	Shropshire	
CSHR72	Ruckley Long Field	Ruckley and Langley	Shropshire	

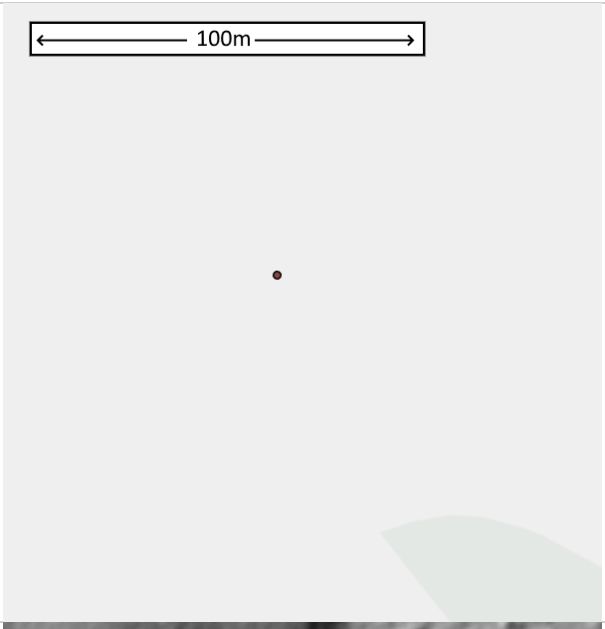
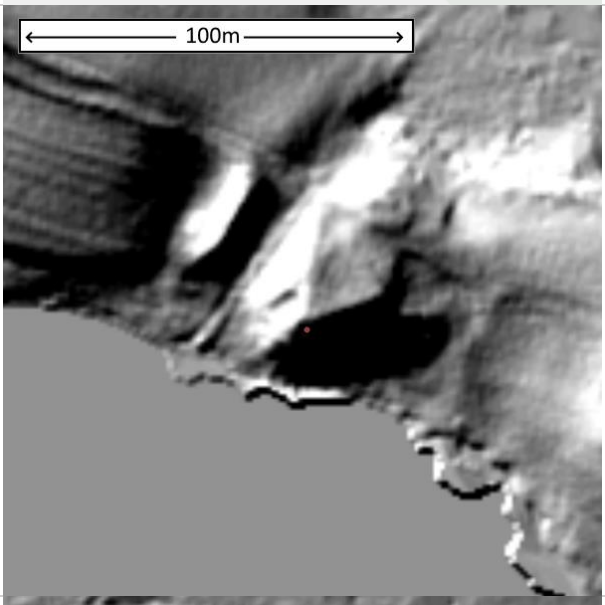
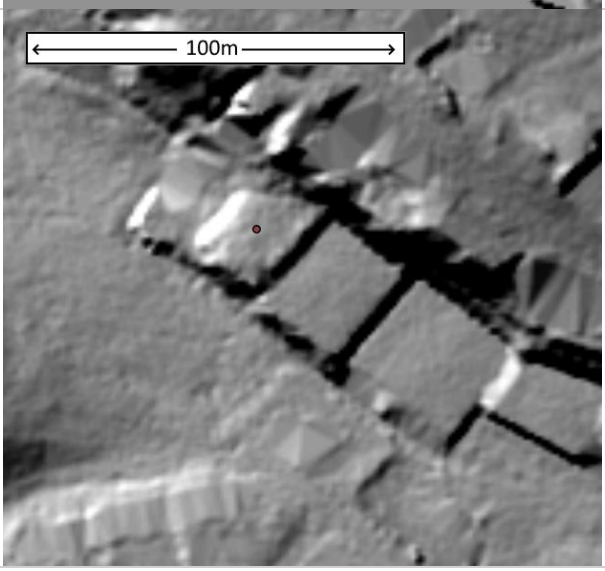
CSHR73	Rushbury Castle Mound	Rushbury	Shropshire	
CSHR74	Ruyten XI Towns Castle	Ruyton XI Towns	Shropshire	
CSHR75	Ryton Castle	Ryton	Shropshire	

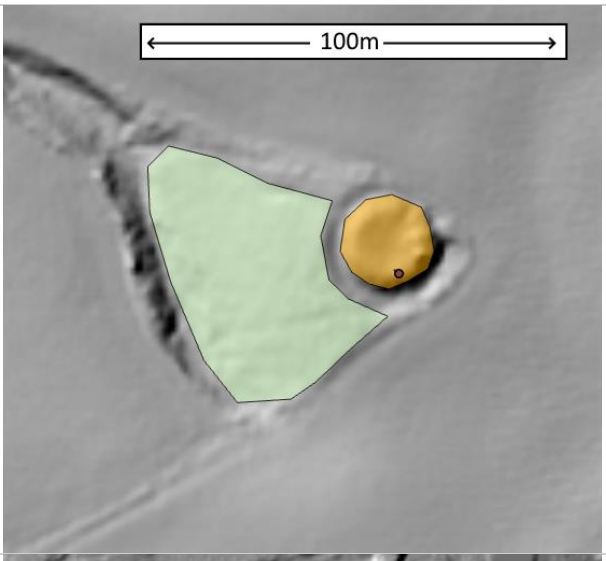
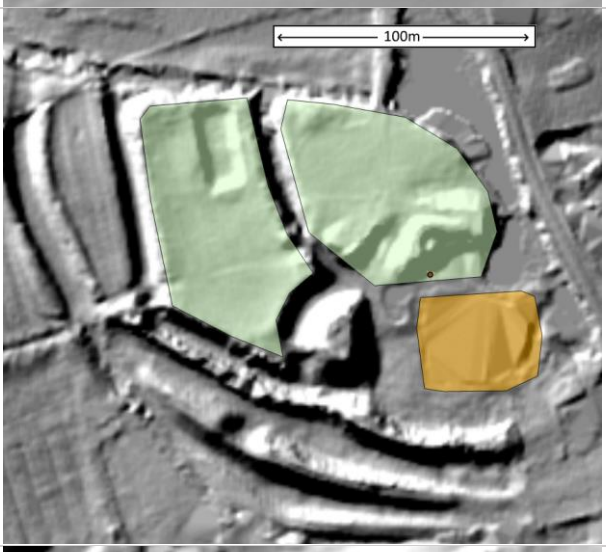
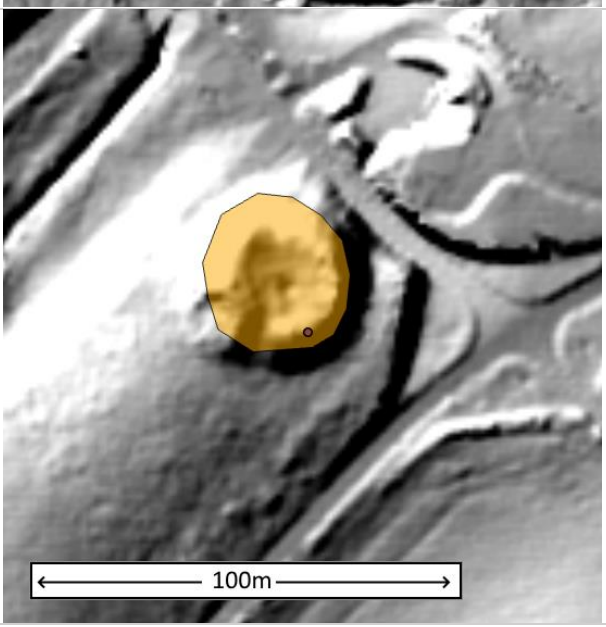
CSHR76	Sandford Caslte Mound	Prees	Shropshire	
CSHR77	Shrawardine Castle	Montford	Shropshire	
CSHR78	Shrewsbury Castle	Shrewsbury	Shropshire	

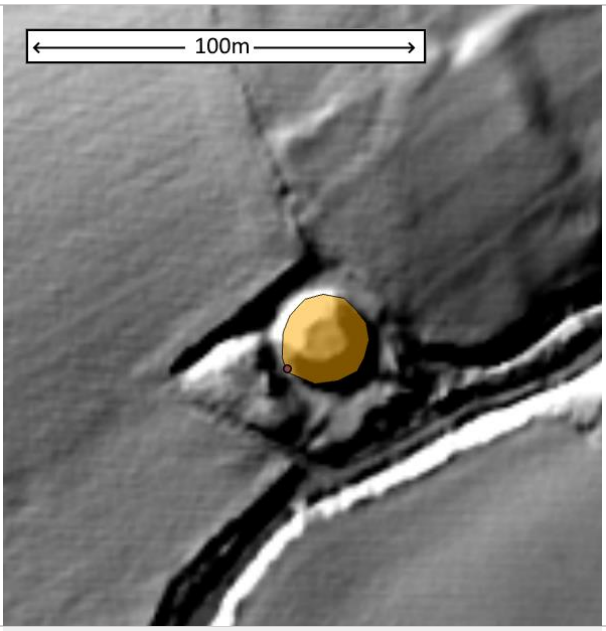
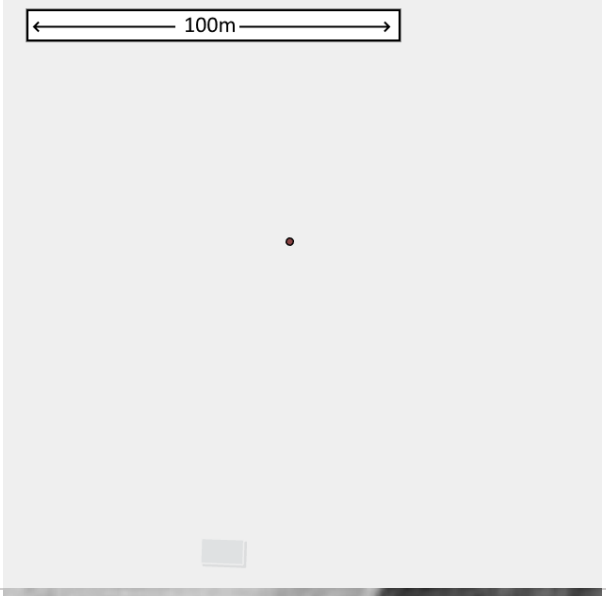
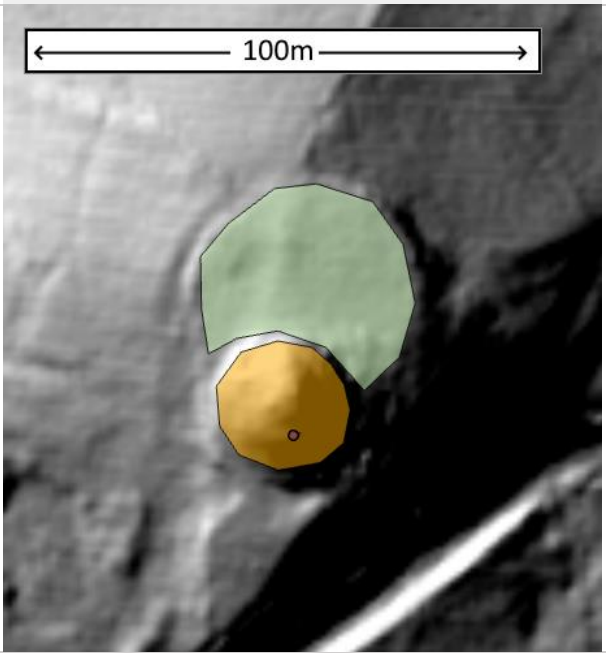
CSHR79	Smethcott Castle Field	Smethcott	Shropshire	
CSHR80	St Martins Oaklands Mount	Weston Rhyn	Shropshire	
CSHR81	Stapleton Motte	Condover	Shropshire	

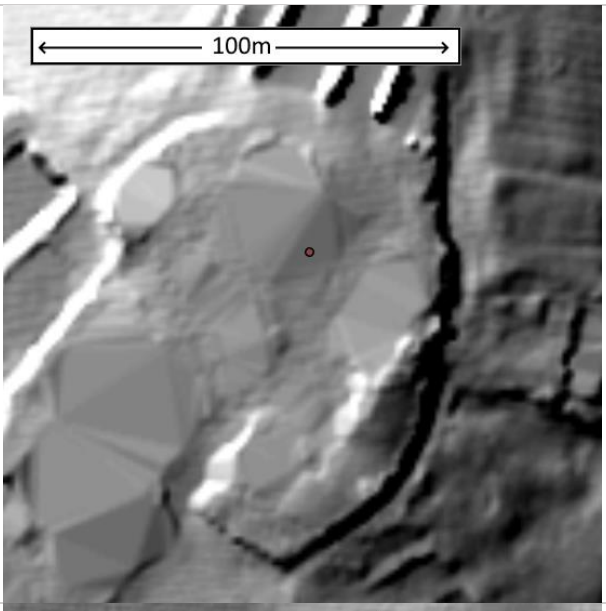
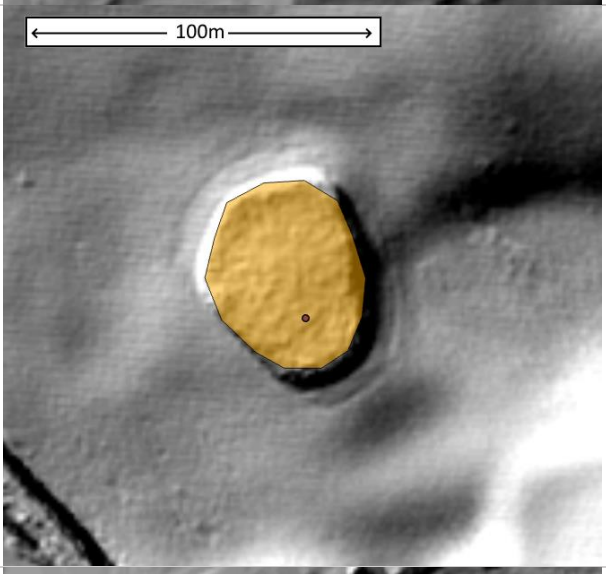
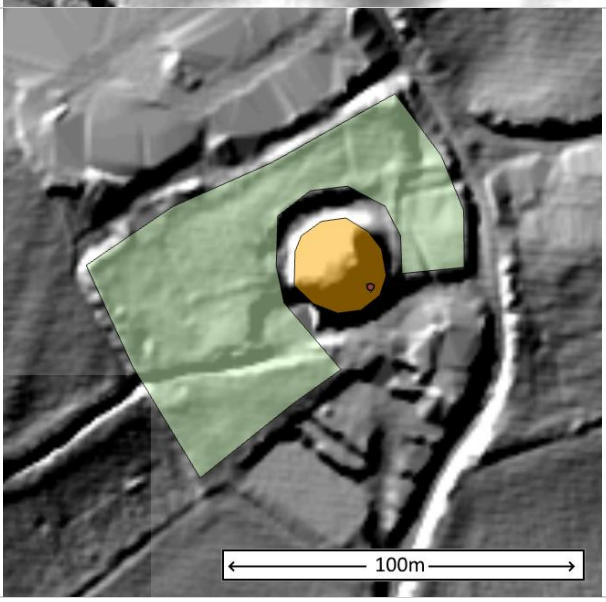
CSHR82	Tempeston; The Motte	Bettws y Crwyn	Shropshire	
CSHR83	Tenby Wells Castle Tump	Burford	Shropshire	
CSHR84	Tong Castle Hill	Tong	Shropshire	

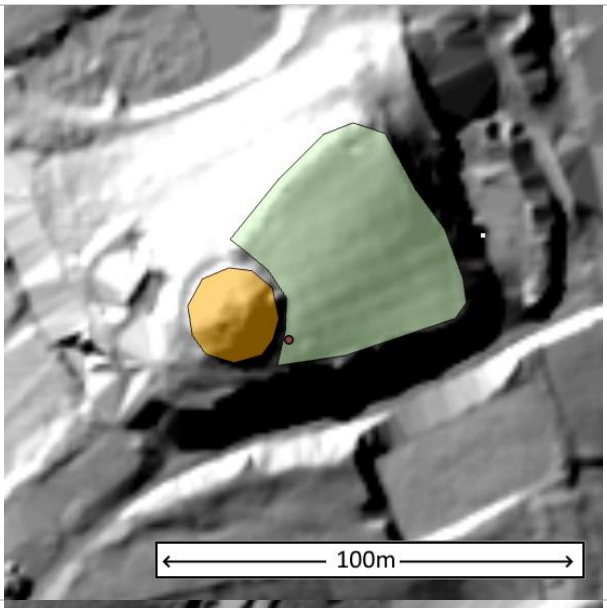
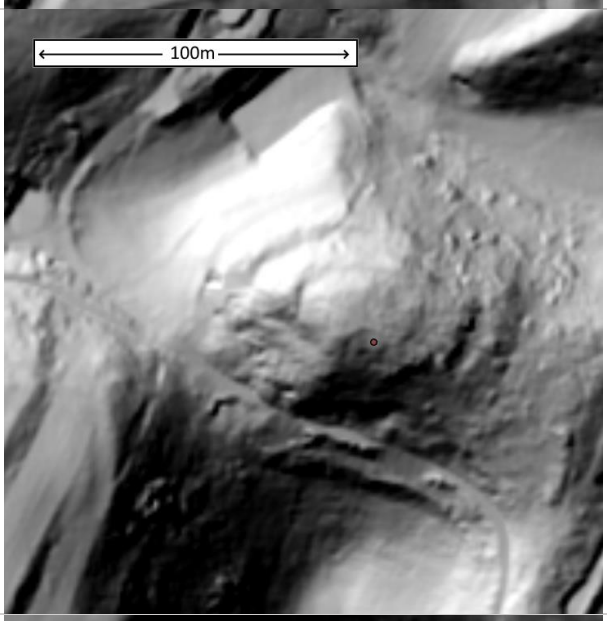
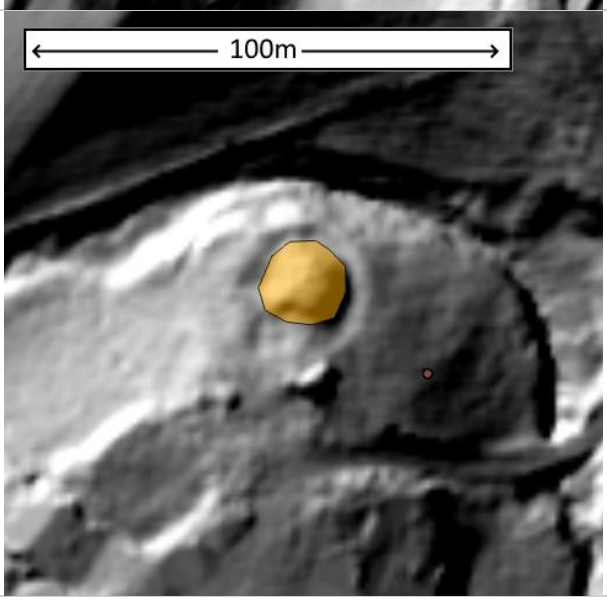
CSHR85	Upper Garthlow Motte	Chirbury with Brompton	Shropshire	
CSHR86	Wem Castle	Wem	Shropshire	
CSHR87	West Felton Motte	West Felton	Shropshire	

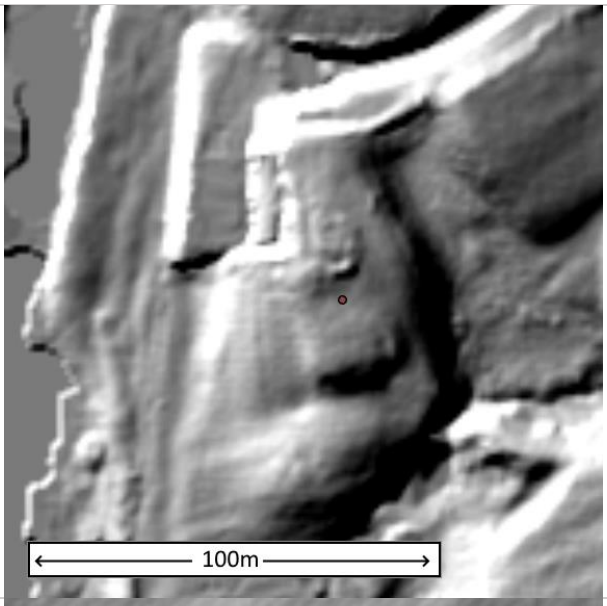
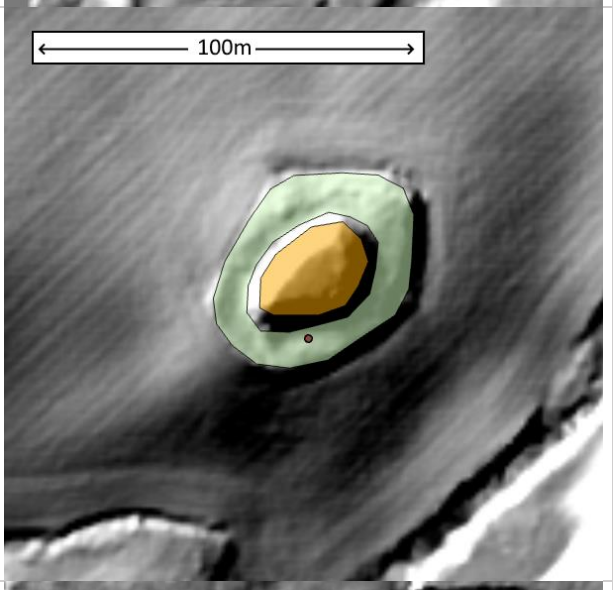
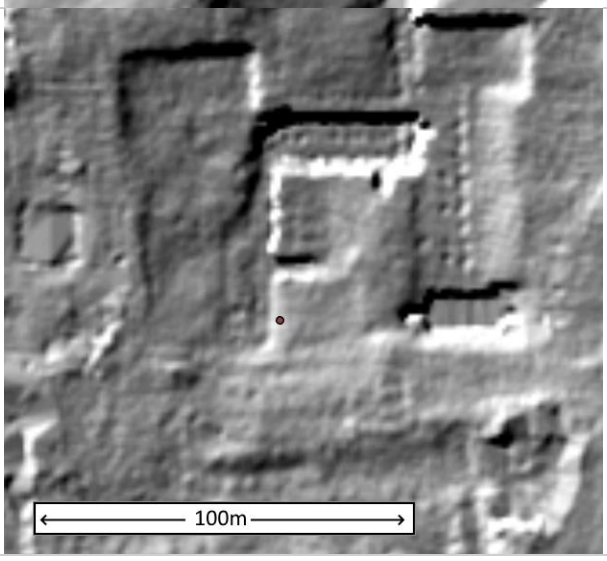
CSHR88	The Mount	Weston under Redcastle	Shropshire	
CSHR89	Whattal Castle	Cockshutt	Shropshire	
CSHR90	Whitchurch Castle Hill	Whitchurch Urban	Shropshire	

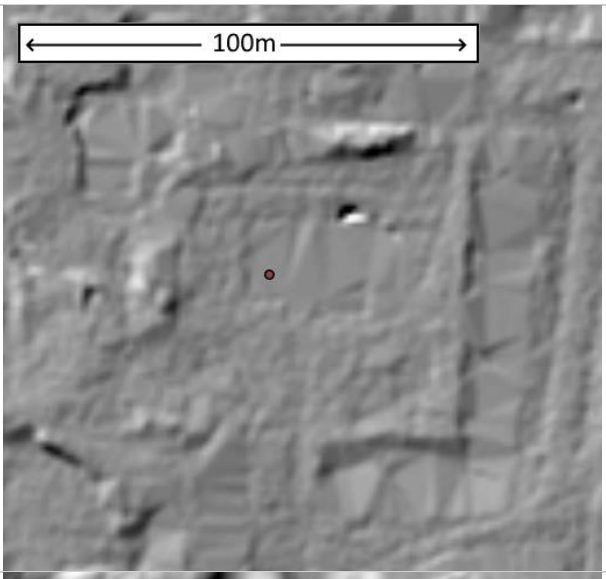
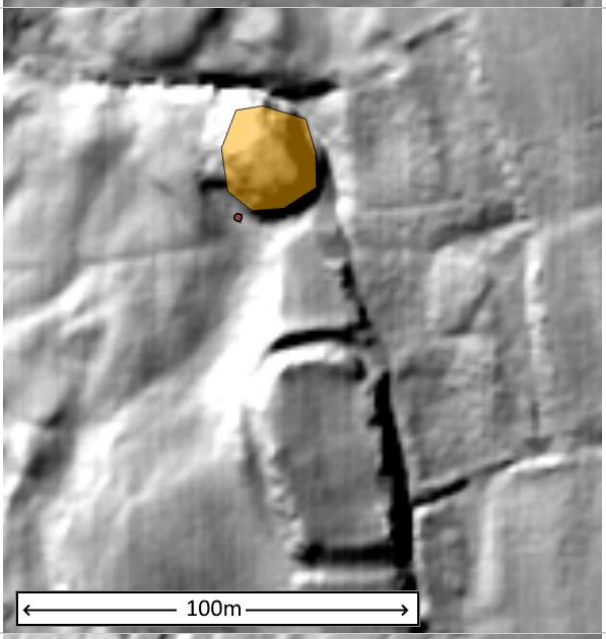
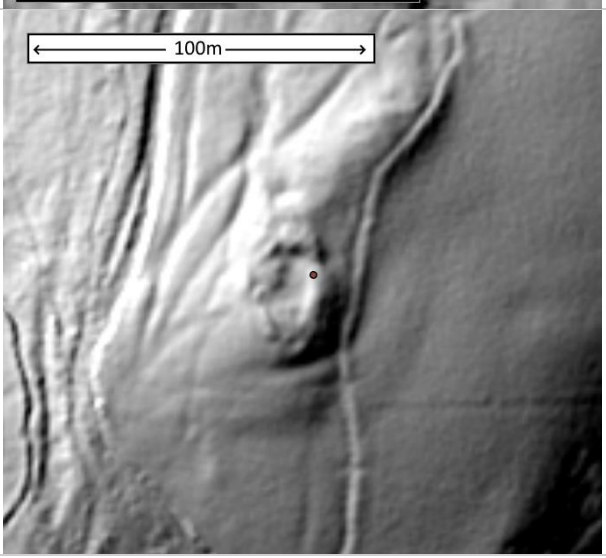
CSHR91	Whitsburn Hill	Worthen with Shelve	Shropshire	
CSHR92	Whittington Castle	Whittington	Shropshire	
CSHR93	Wilcott Castle Mound	Great Ness	Shropshire	

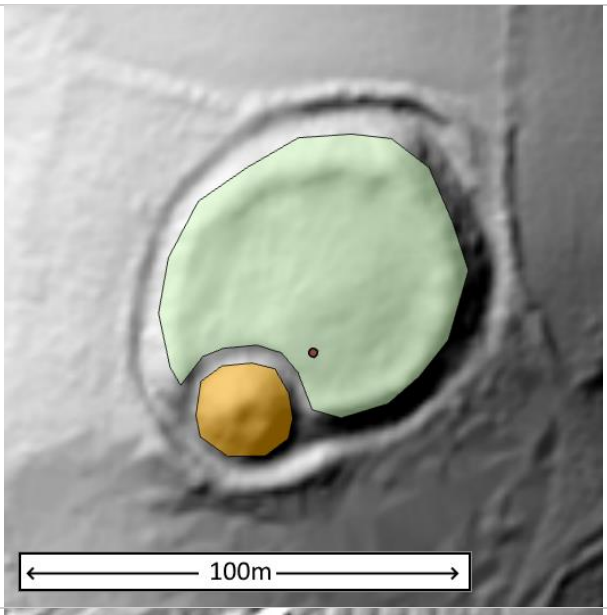
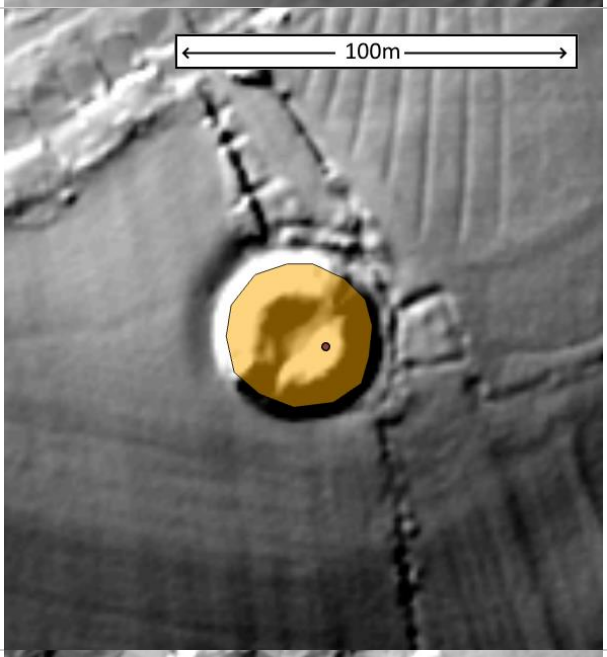
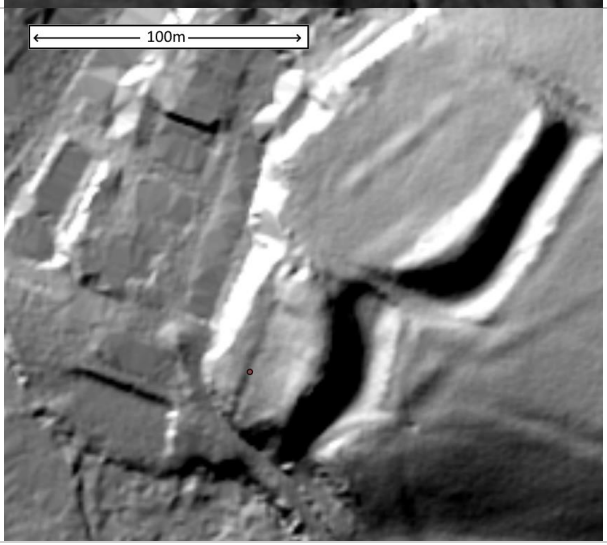
CSHR94	Wilderley Hall Farm	Church Pulverbach	Shropshire	
CSHR95	Walliston Castle Mound	Ightfield	Shropshire	
CSHR96	Walmington the Mount	Chirbury with Brompton	Shropshire	

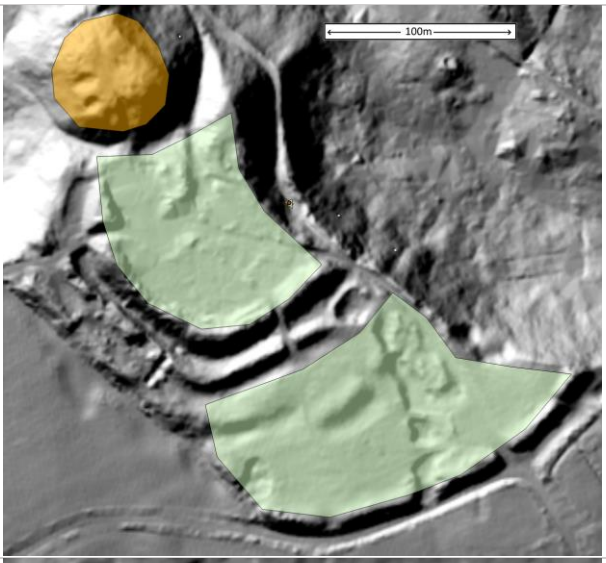
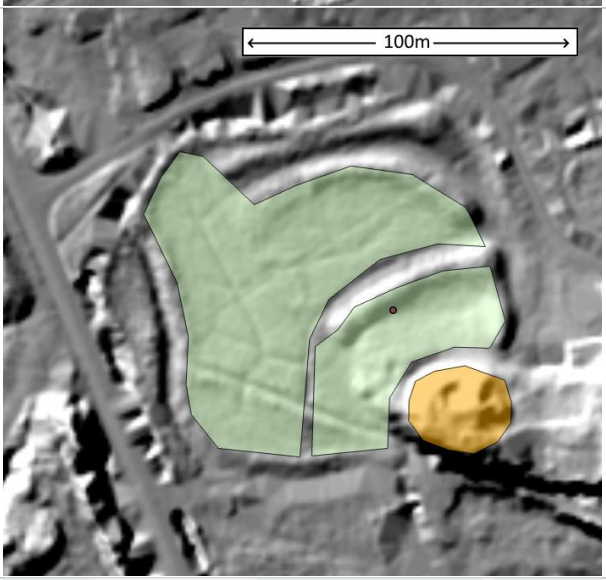
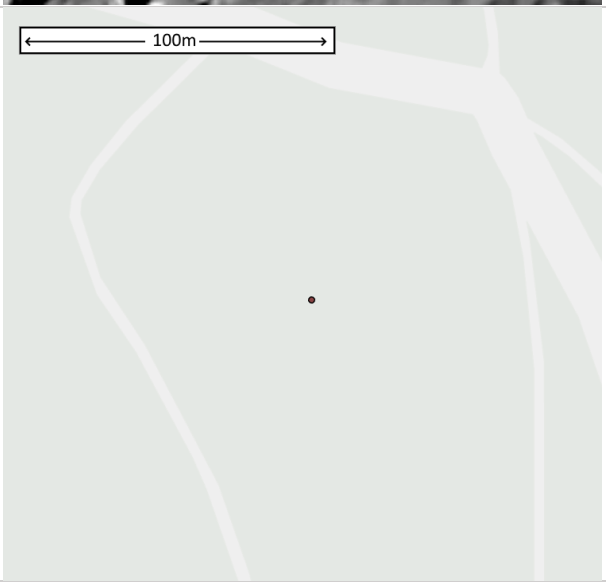
CSHR97	Winsbury Castle Mound	Chirbury with Brompton	Shropshire	
CSHR98	Wollaston Caesars Camp	Alberbury with Cardeston	Shropshire	
CSHR99	Wollaston Mount	Wollaston	Shropshire	

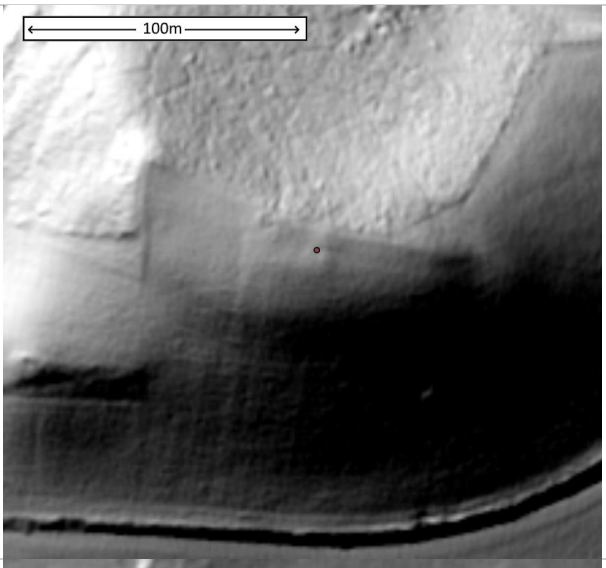
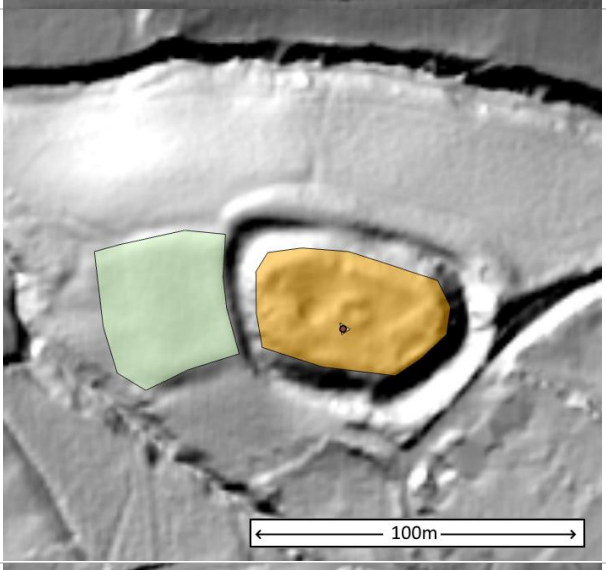
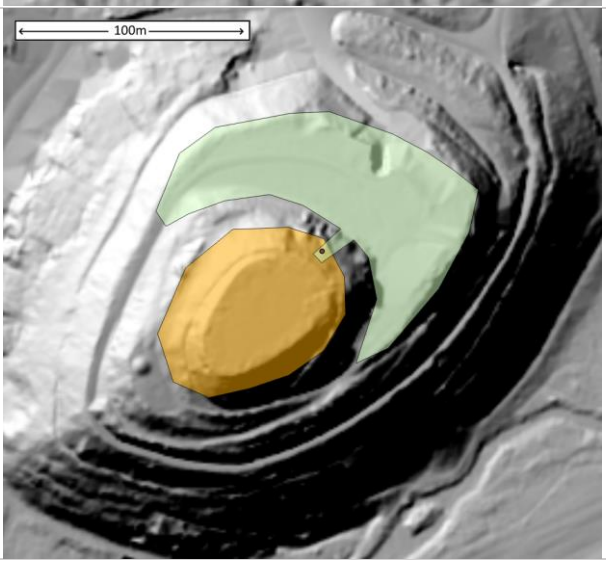
CSHR100	Woolstaston Castle Bank	Woolstaston	Shropshire	
CSHR101	Worsley Castle Hill	Church Stretton	Shropshire	
CSHR102	Wotherton Castle Mound	Chirbury with Brompton	Shropshire	

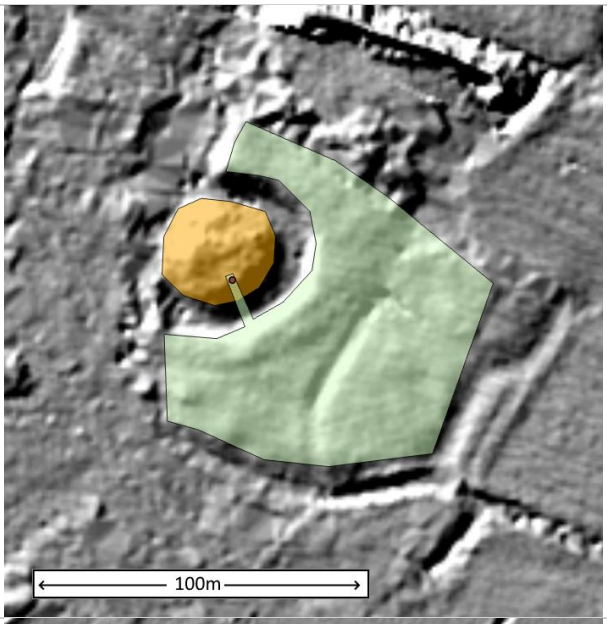
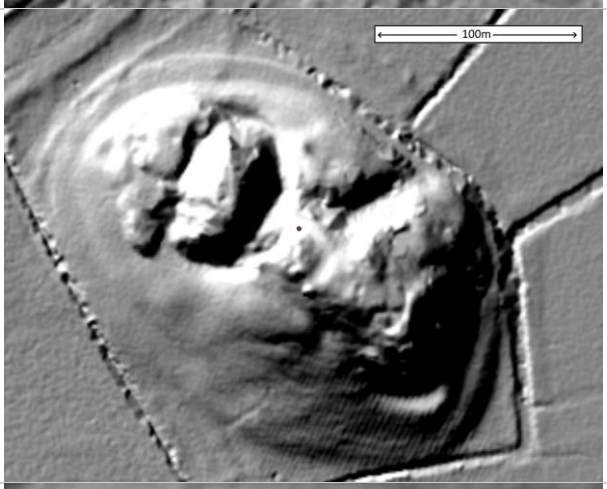
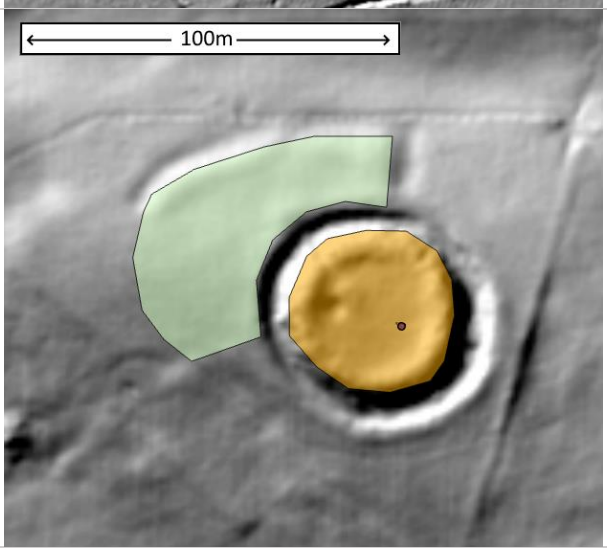
CSHR103	Wroxeter Castle	Wroxeter and Uppington	Shropshire	
CSHR104	Yokleton Mount	Westbury	Shropshire	
CSOM01	Glastonbury Castle	Glastonbury	Somerset	

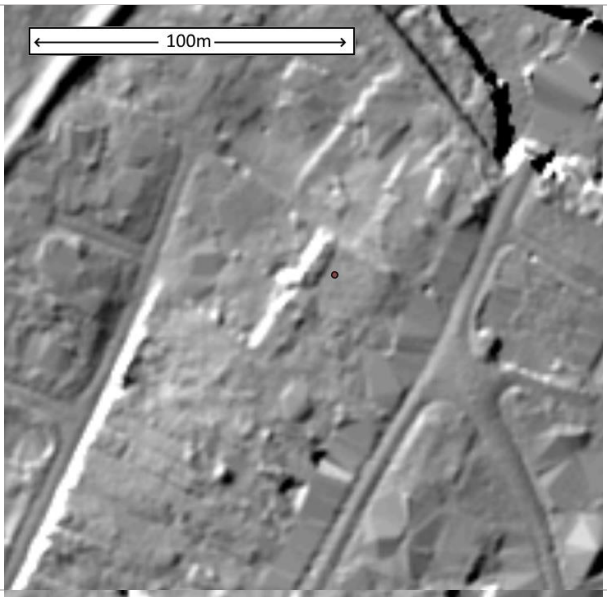
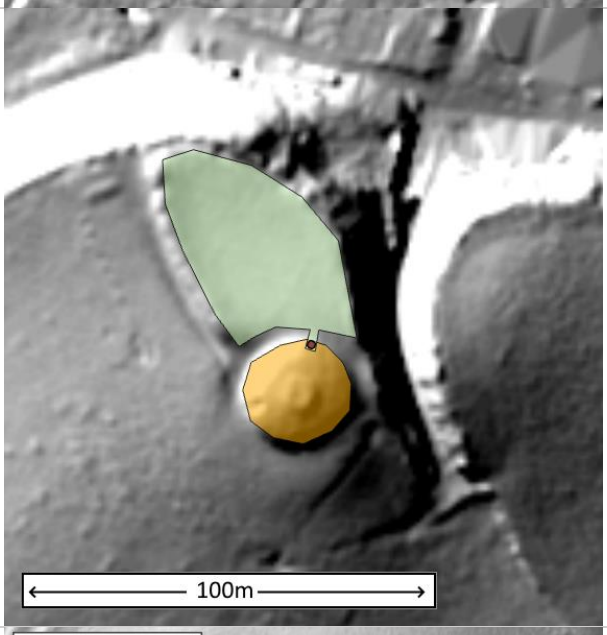
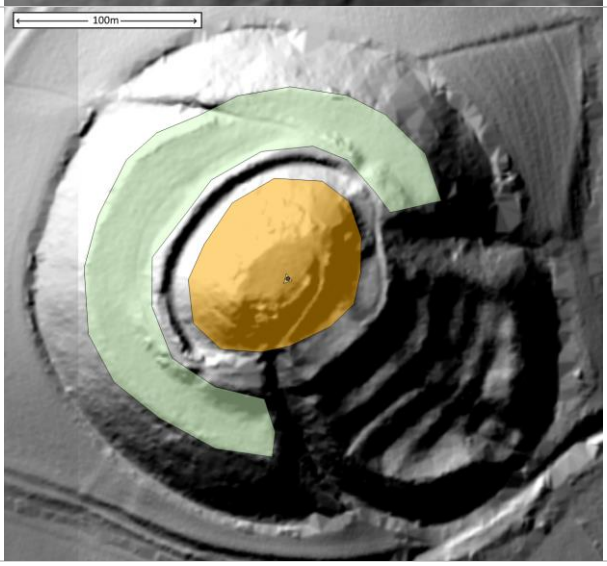
CSOM02	Somerton Castle	Somerton	Somerset	
CSOM03	Ballands Castle	Pen Selwood	Somerset	
CSOM04	Breach Wood Mound	Wanstrow	Somerset	

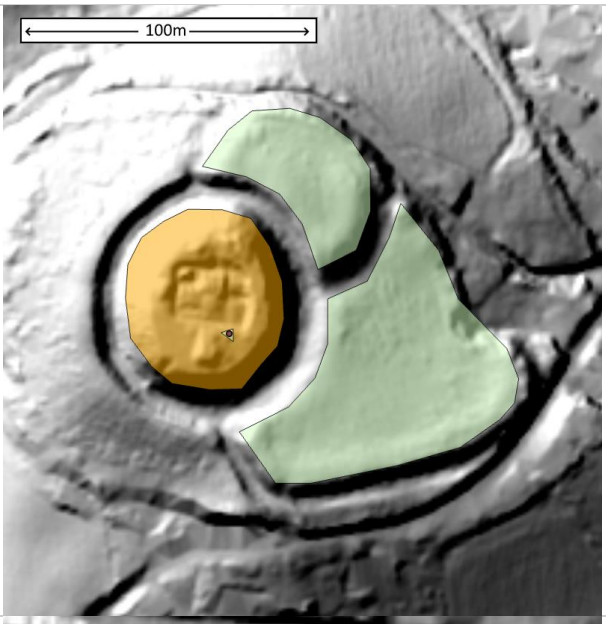
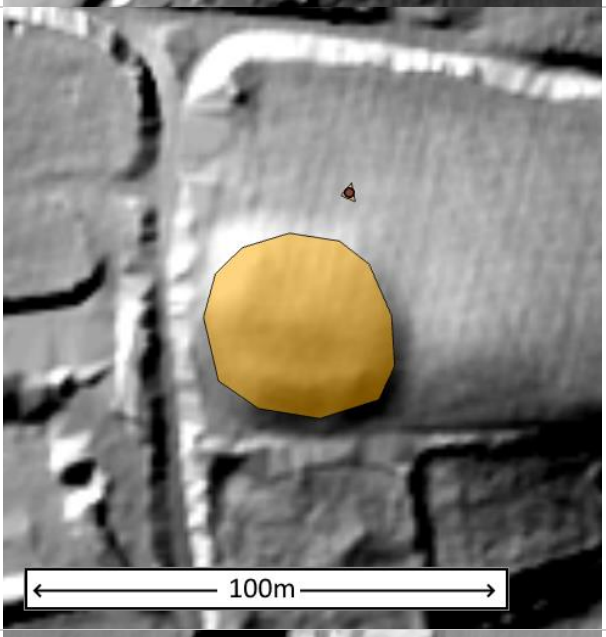
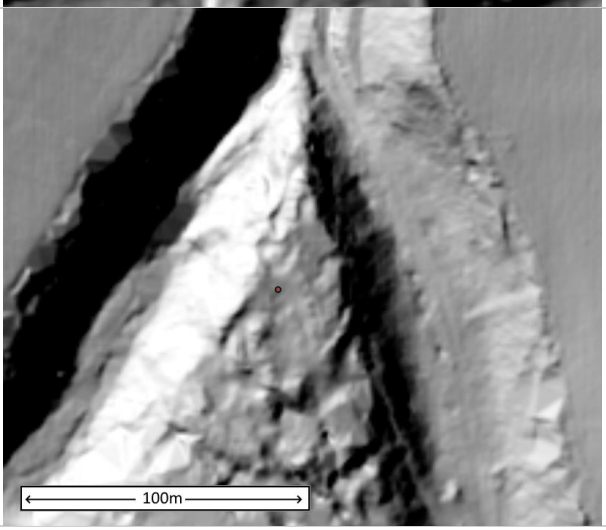
CSOM05	Bury Castle	Brompton Regis	Somerset	
CSOM06	Castle Batch	Weston Super Mare	Somerset	
CSOM07	Castle Cary	Castle Cary	Somerset	

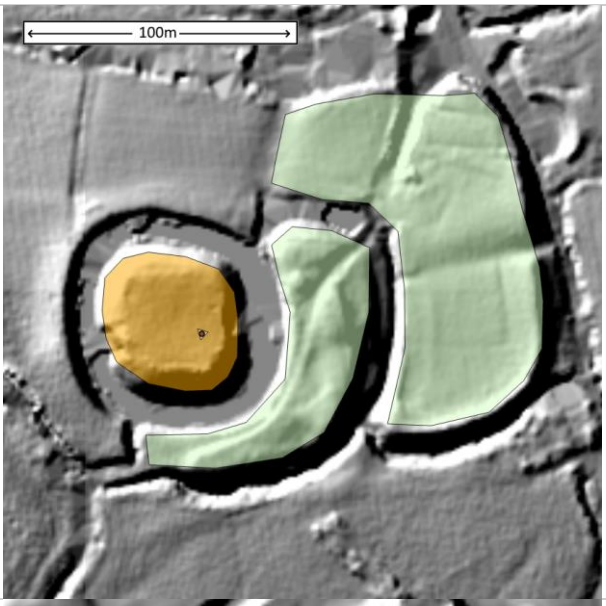
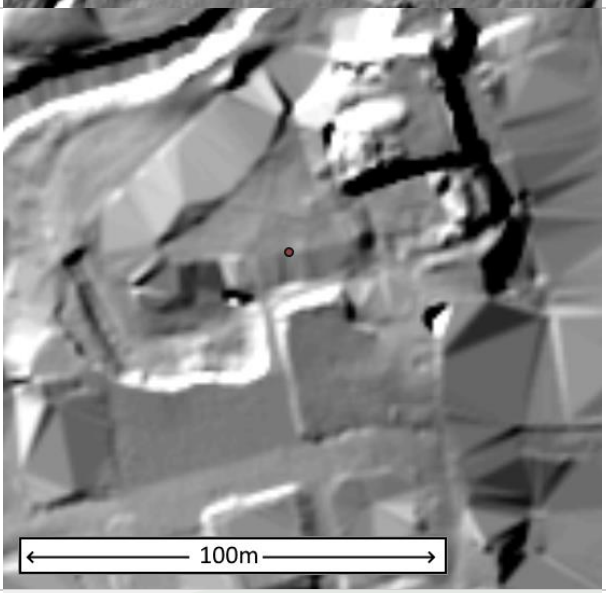
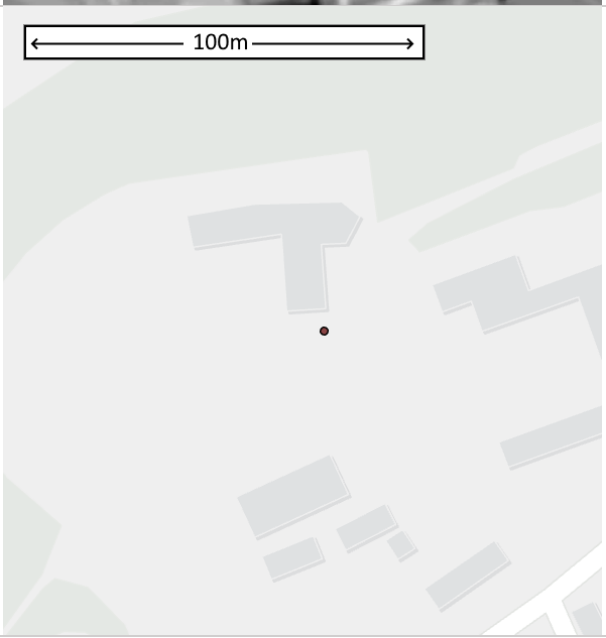
CSOM08	Castle Neroche	Curland	Somerset	
CSOM09	Chisley Mount	Puriton	Somerset	
CSOM10	Cockroad Wood Motte	Charlton Musgrove	Somerset	

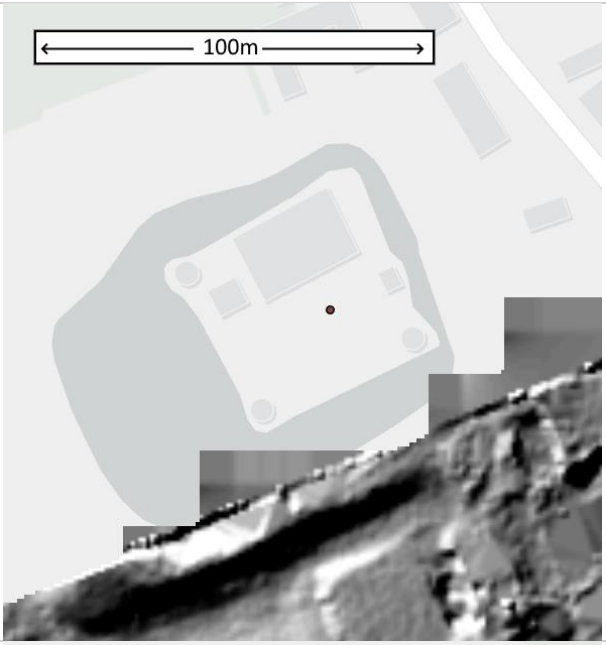
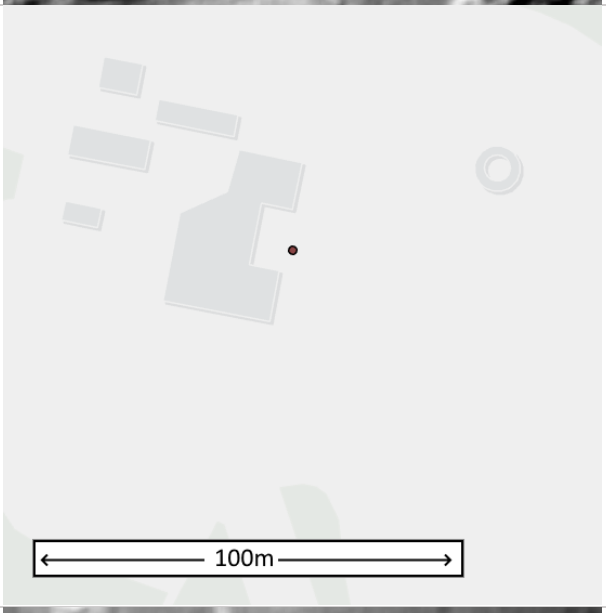
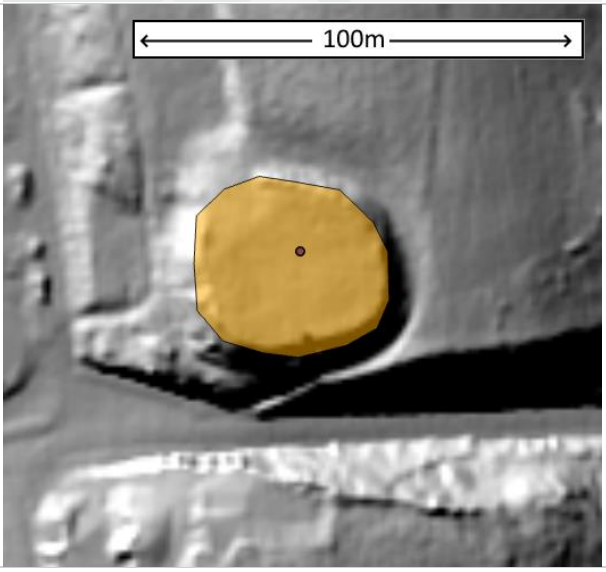
CSOM11	Croft Castle	Crewkerne	Somerset	
CSOM12	Culverhay Castle	Englishcombe	Somerset	
CSOM13	Dunster Castle	Dunster	Somerset	

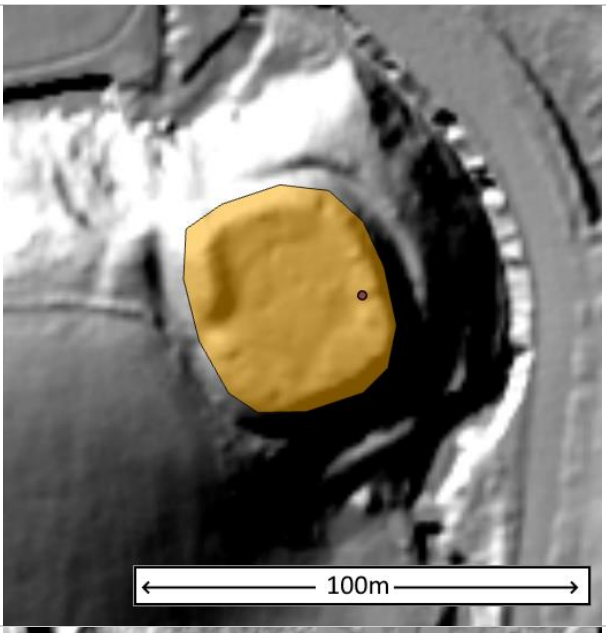
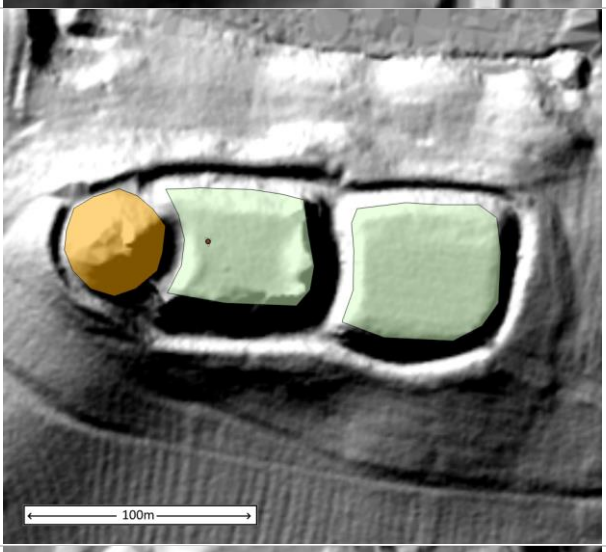
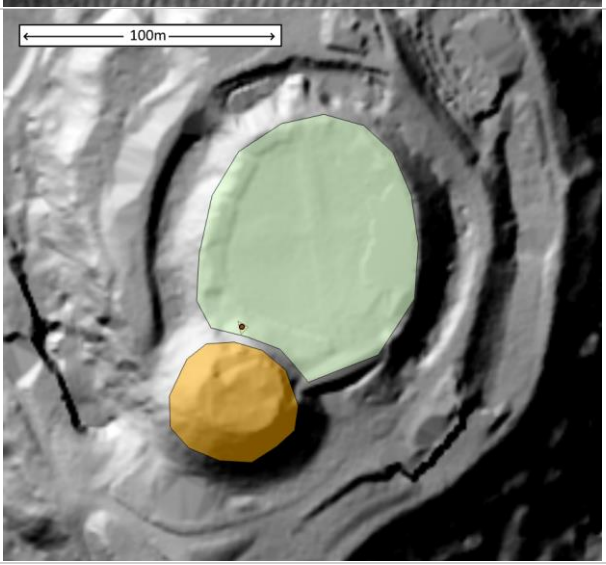
CSOM14	Edithmead Motte	Burnham Without	Somerset	
CSOM15	Fenny Castle	Wookey	Somerset	
CSOM16	Hales Castle	Selwood	Somerset	

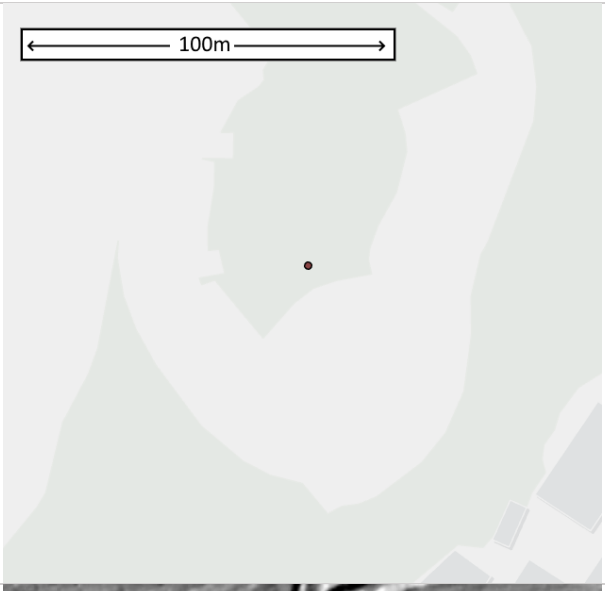
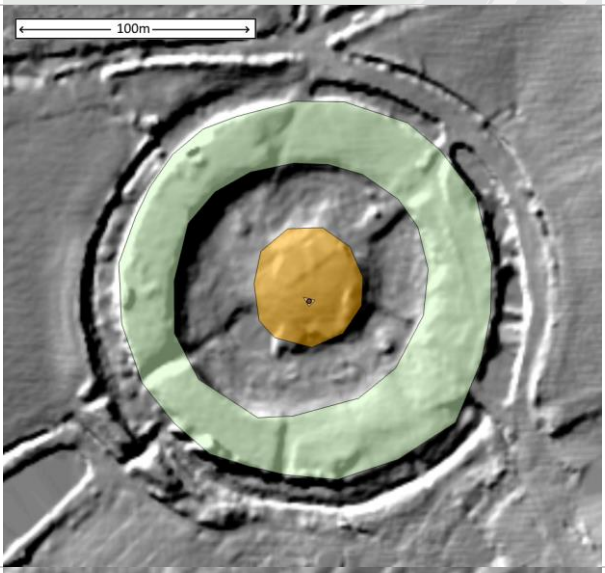
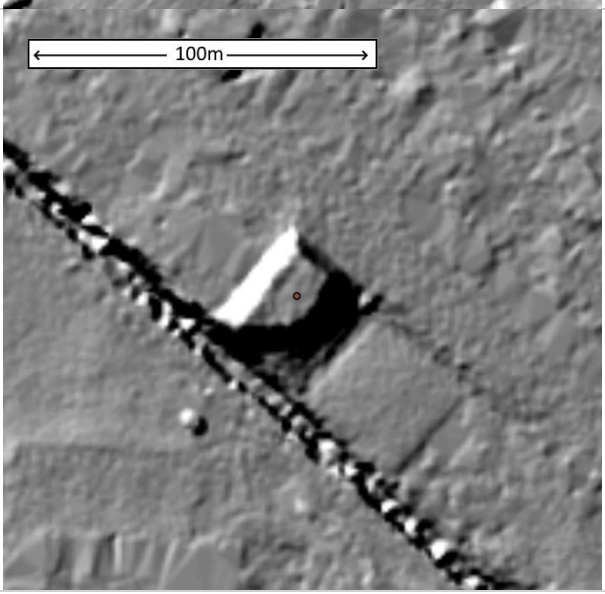
CSOM17	Ilchester Castle	Ilchester	Somerset	
CSOM18	Locking Castle	Locking	Somerset	
CSOM19	Montacute Castle	Montacute	Somerset	

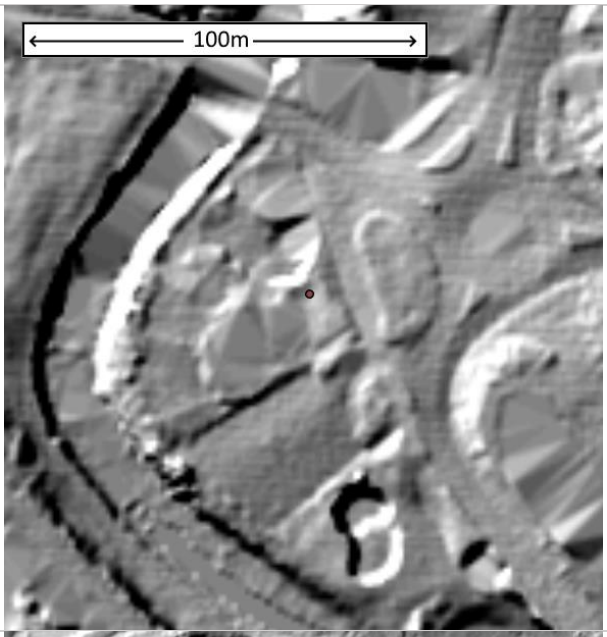
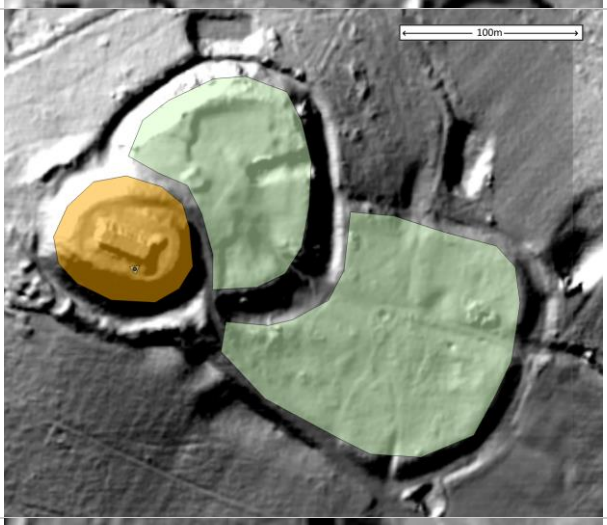
CSOM20	Nether Stowey Castle	Nether Stowey	Somerset	
CSOM21	Over Stowey Mound	Over Stowey	Somerset	
CSOM22	Richmont Castle	East Harptree	Somerset	

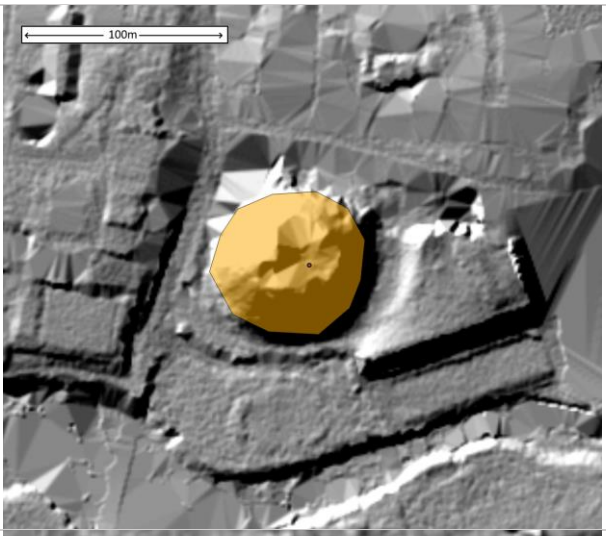
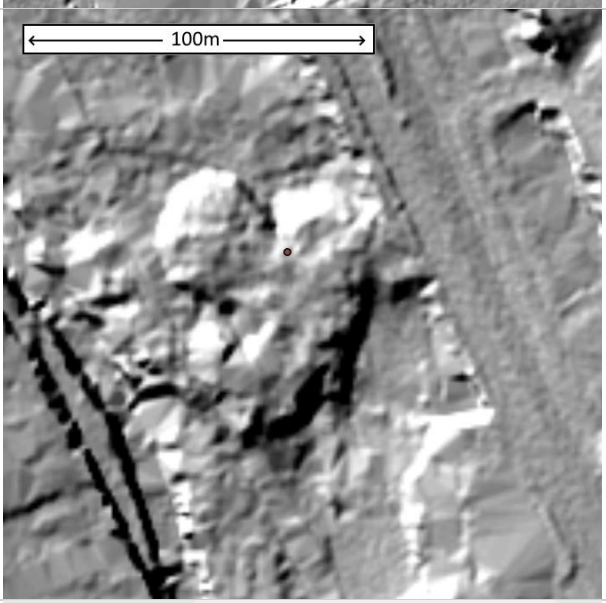
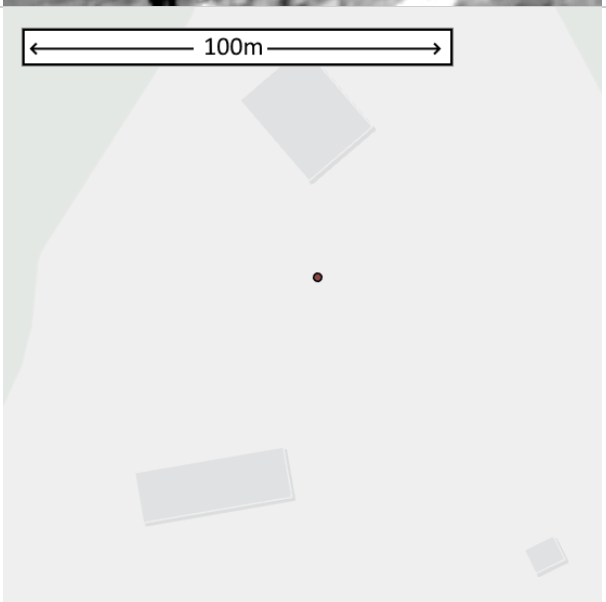
CSOM23	Stogursey Castle	Stogursey	Somerset	
CSOM24	Taunton Castle	Taunton	Somerset	
CSTA01	Alton Castle	Alton	Staffordshire	

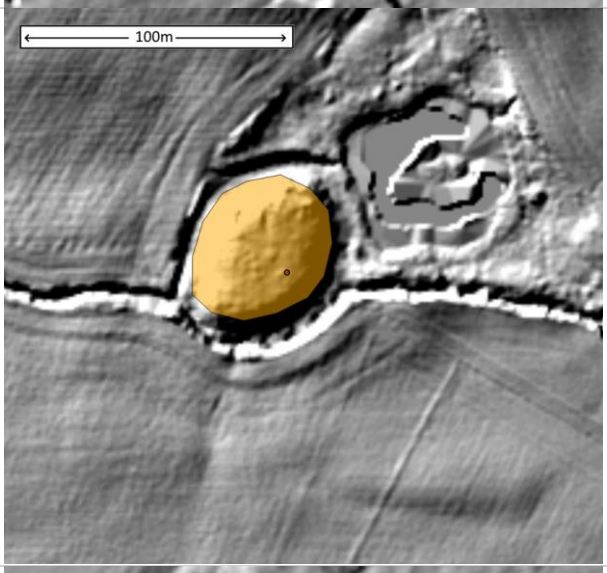
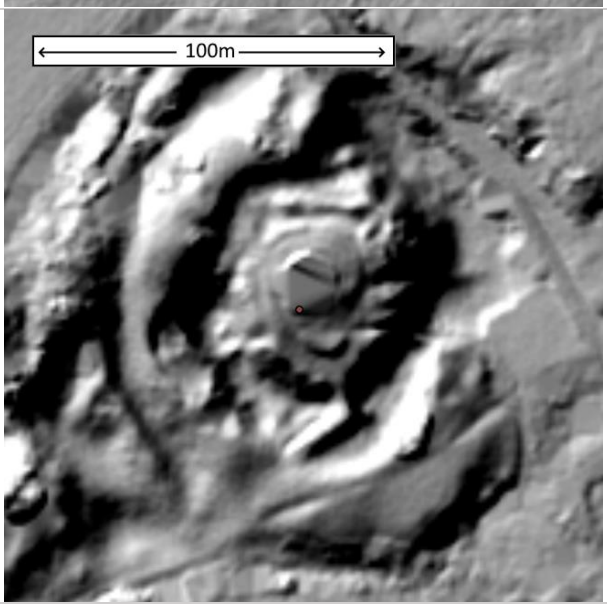
CSTA02	Caverswall Castle	Caverswall	Staffordshire	
CSTA03	Eccleshall Castle	Eccleshall	Staffordshire	
CSTA04	Audley Castle Hill	Audley Rural	Staffordshire	

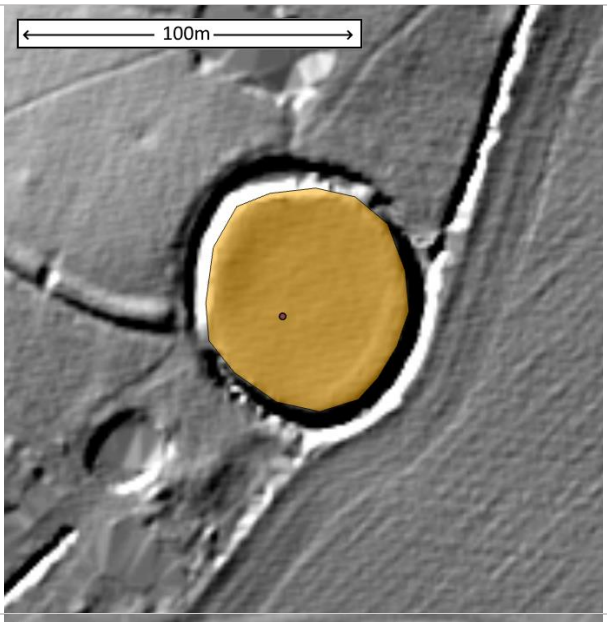
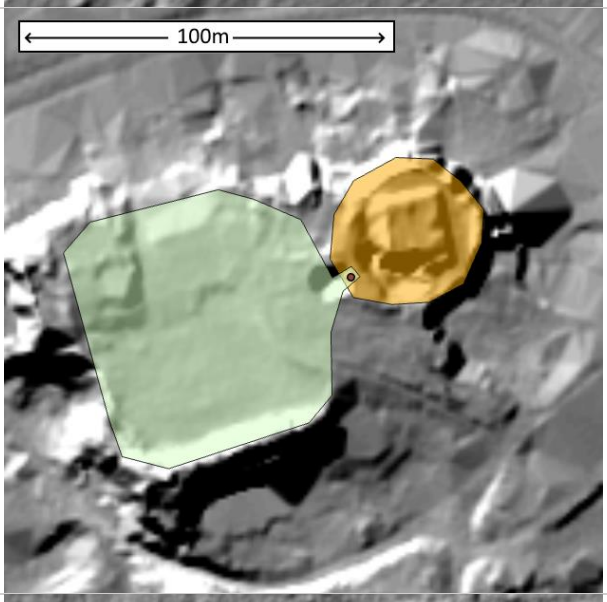
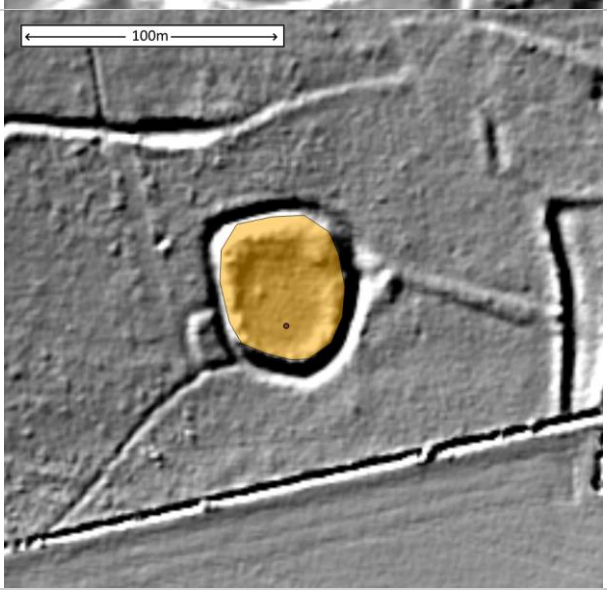
CSTA05	Biddulph Lea Forge	Biddulph	Staffordshire	
CSTA06	Chartley Castle	Stowe	Staffordshire	
CSTA07	Dudley Castle	Dudley	Staffordshire	

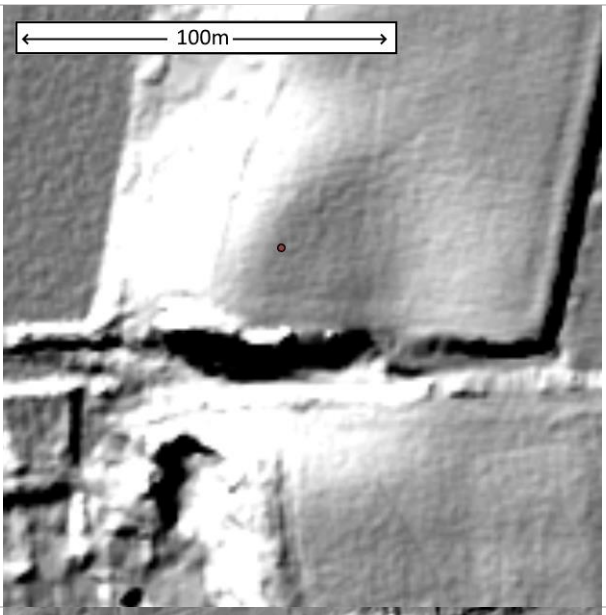
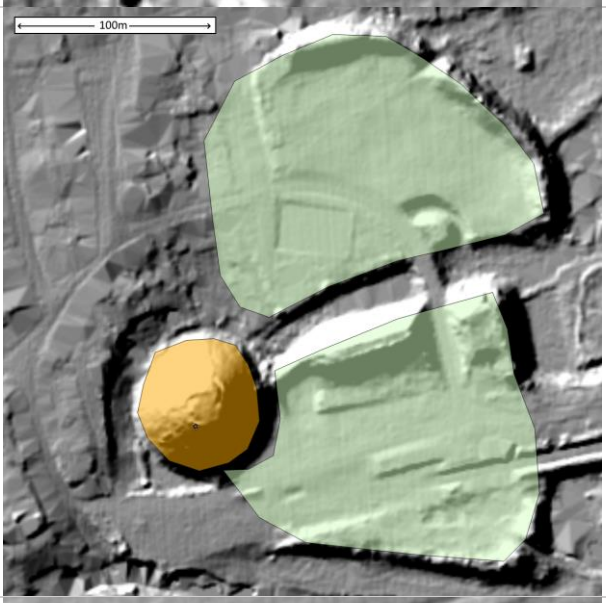
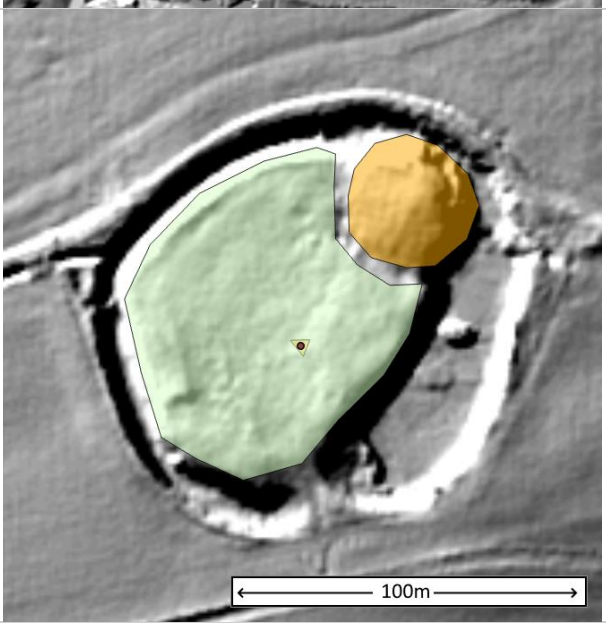
CSTA08	Heighley Castle	Madeley	Staffordshire	
CSTA09	Littywood Moat	Bradley	Staffordshire	
CSTA10	Newcastle Under Lyme Castle	Newcastle Under Lyme	Staffordshire	

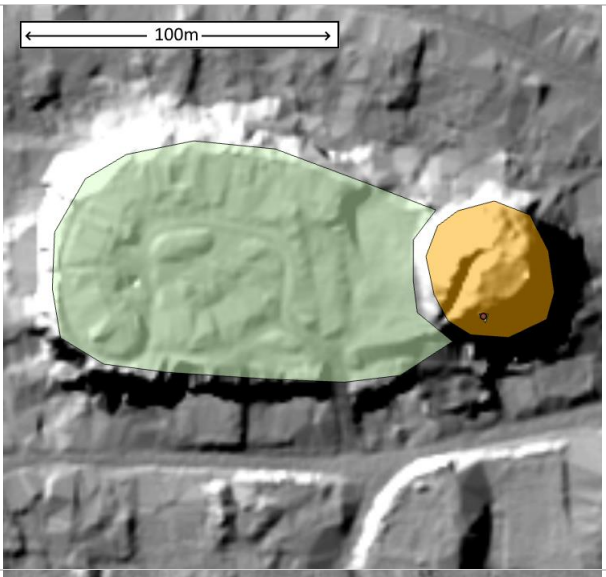
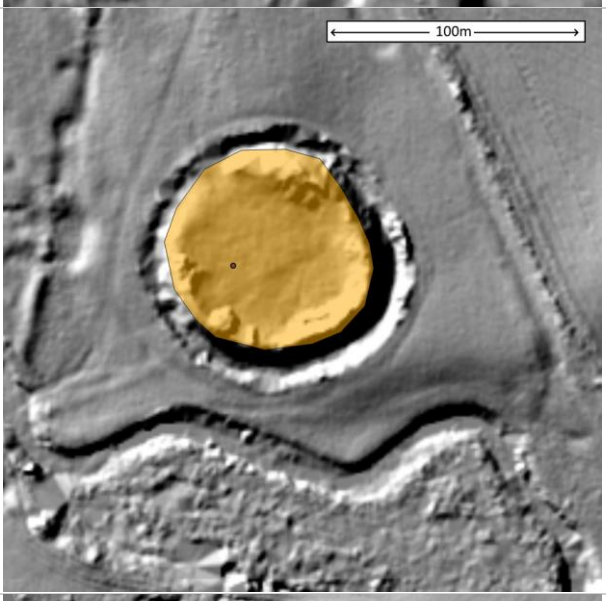
CSTA11	Castle-Kings Castle	Stafford	Staffordshire	
CSTA12	Stafford Castle	Castlechurch	Staffordshire	
CSTA13	Stourton Castle	Kinver	Staffordshire	

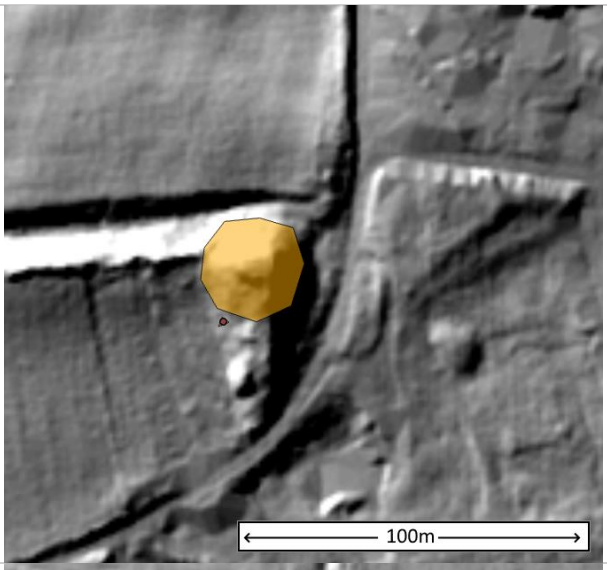
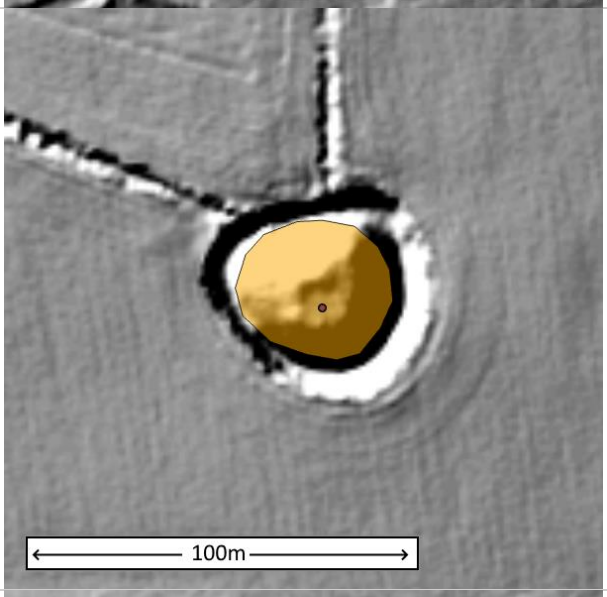
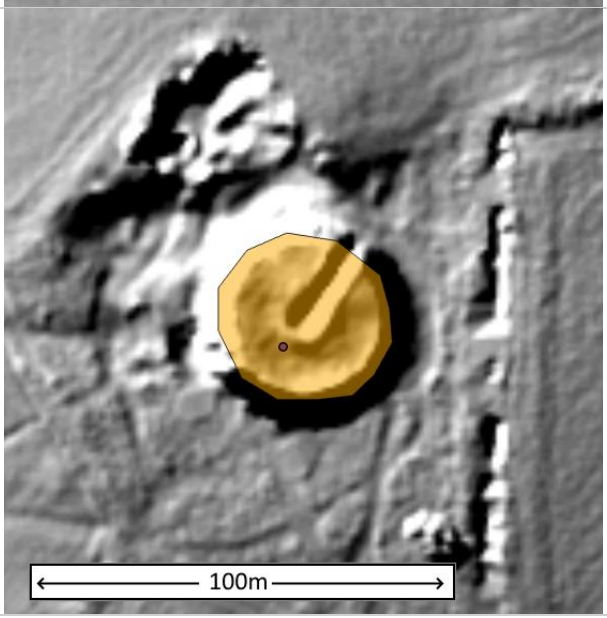
CSTA14	Tamworth Castle	Tamworth	Staffordshire	
CSTA15	Trentham Castle Field	Swynnerton	Staffordshire	
CSTA16	Tutbury Castle	Tutbury	Staffordshire	

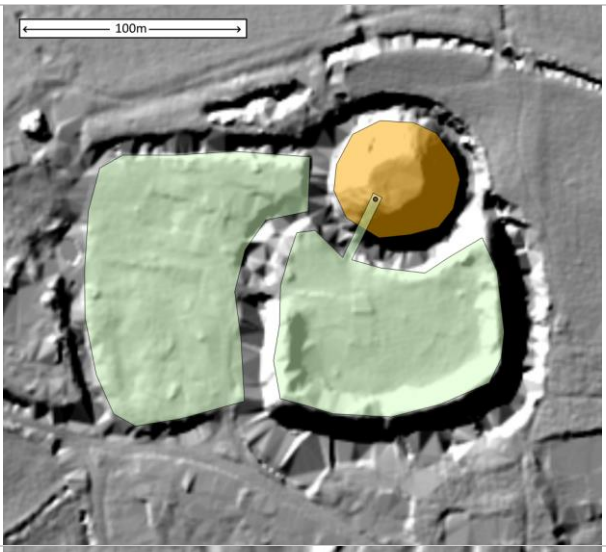
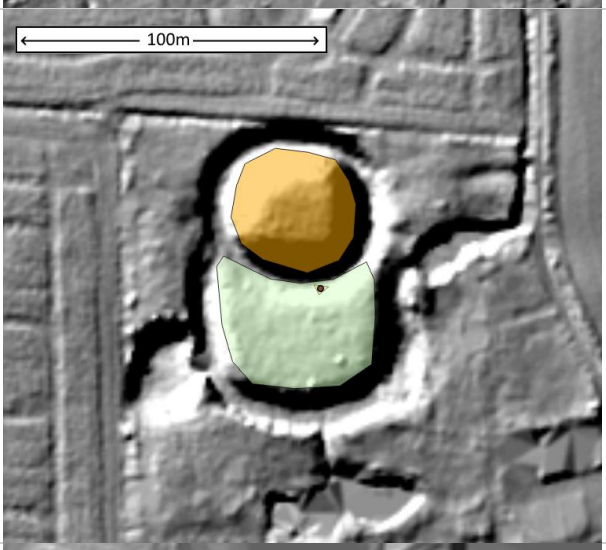
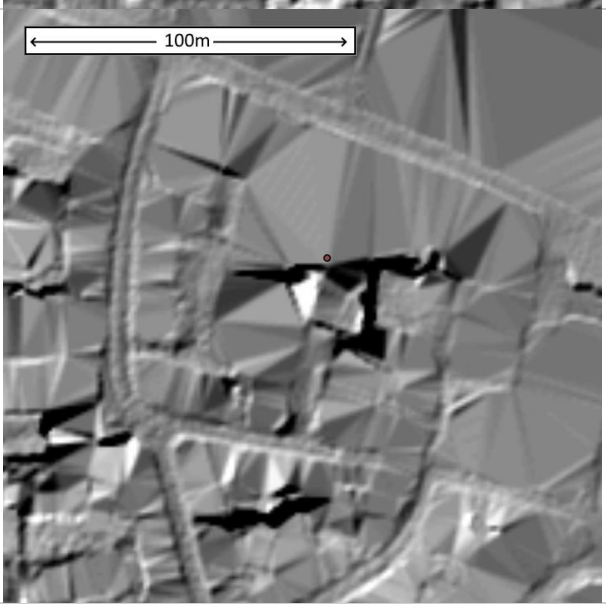
CSTA17	Turley Castle	Sutton Upon Tern	Staffordshire	
CSTA18	Weston Jones Motte	Norbury	Staffordshire	
CSUF01	Orford Castle	Orford	Suffolk	

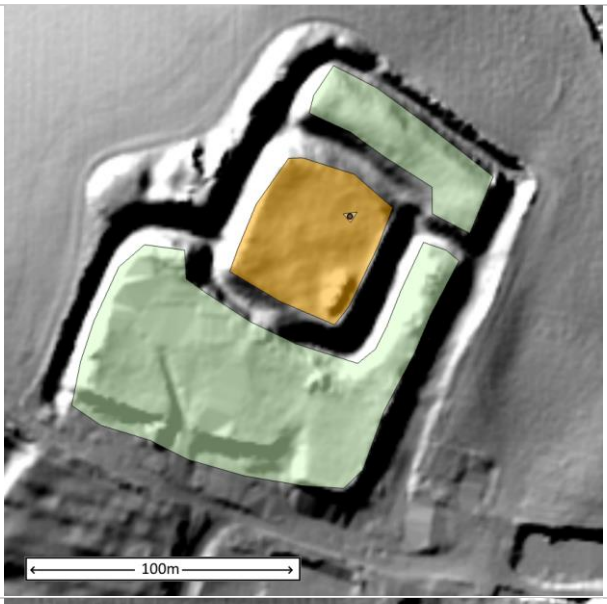
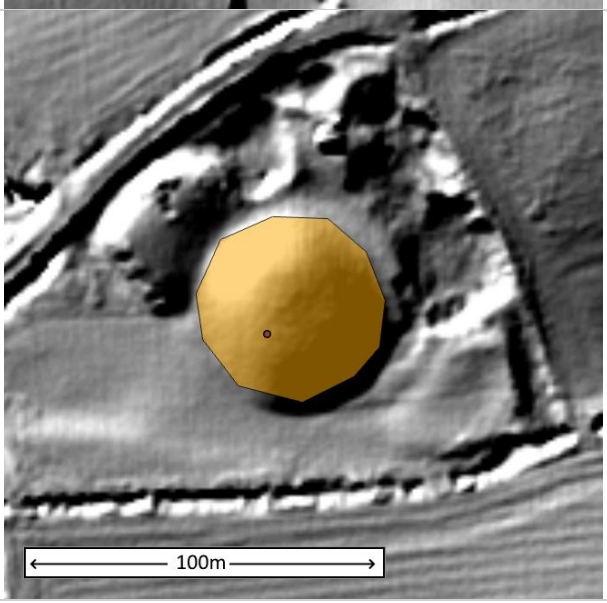
CSUF02	Bramfield Castle Yard	Bramfield	Suffolk	
CSUF03	Bungay Castle	Bungay	Suffolk	
CSUF04	Burgate Ringwork	Burgate	Suffolk	

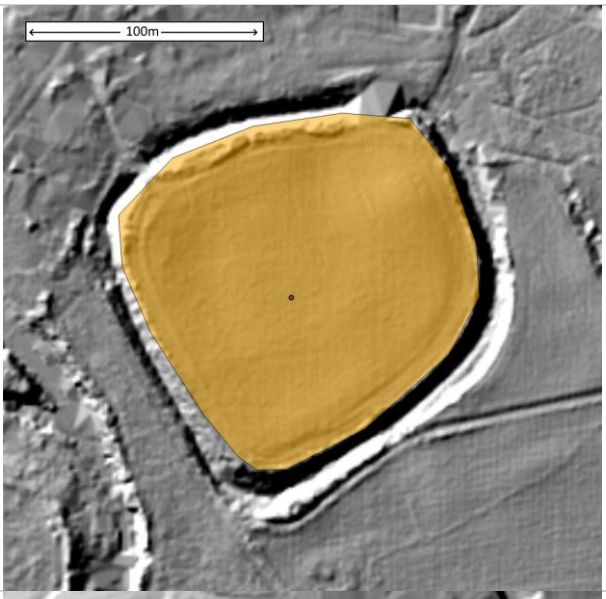
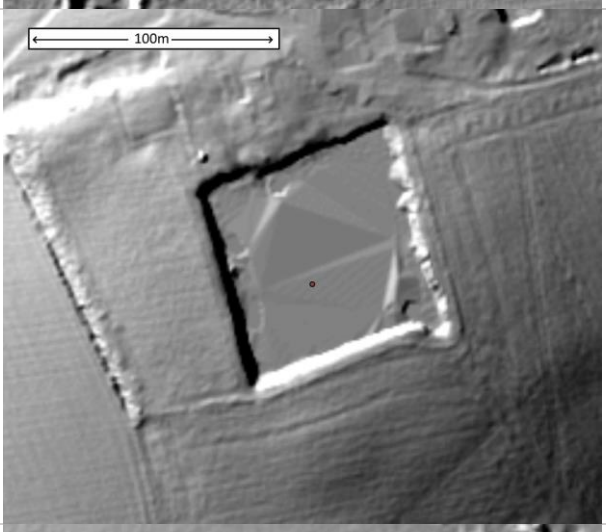
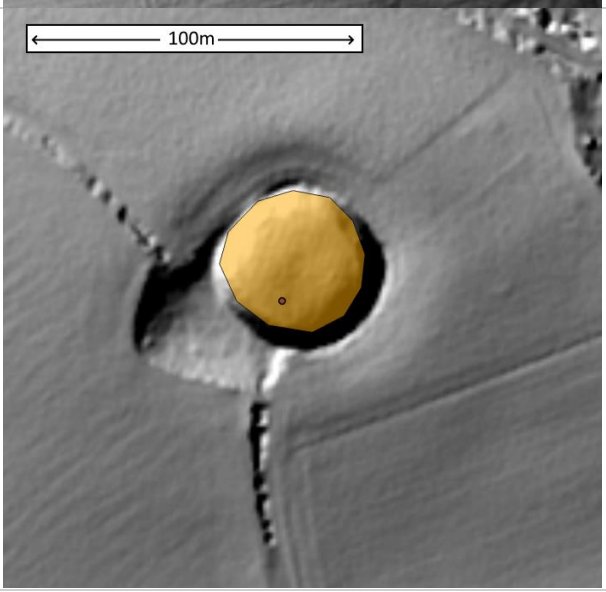
CSUF05	Burgh Castle	Burgh Castle	Suffolk	
CSUF06	Clare Castle	Clare	Suffolk	
CSUF07	Denham Castle	Gazeley	Suffolk	

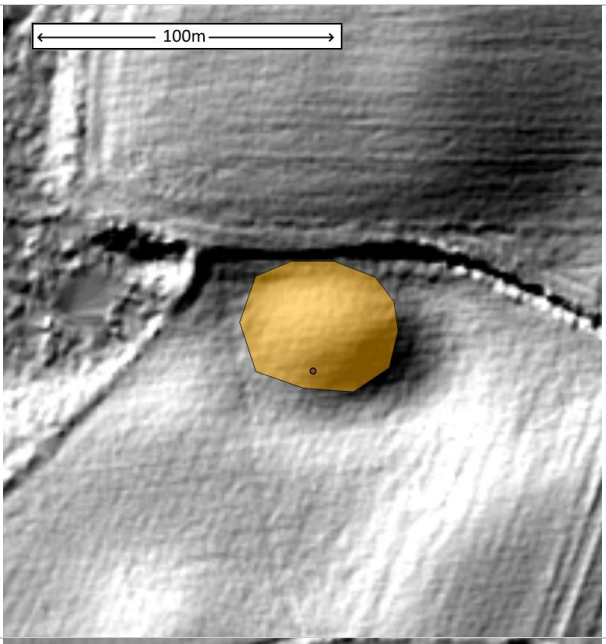
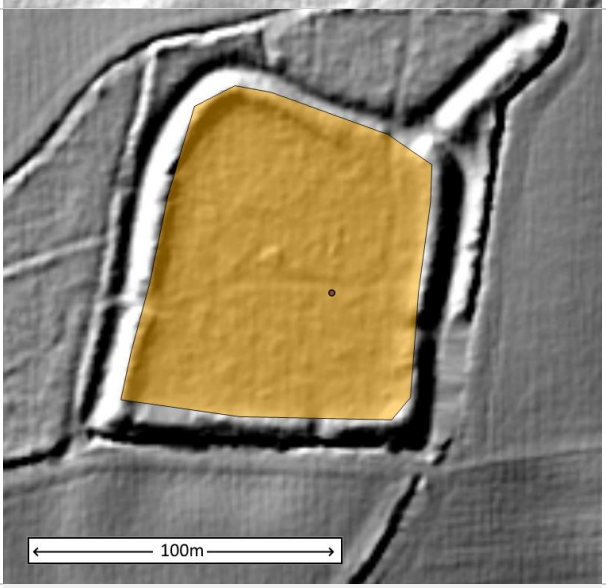
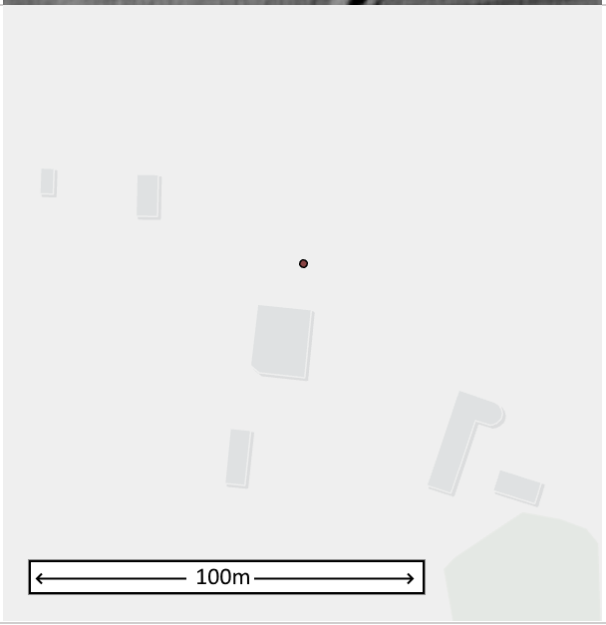
CSUF08	Eye Castle	Eye	Suffolk	
CSUF09	Fakenham Magna	Fakenham Magna	Suffolk	
CSUF10	Framlingham Castle	Franlingham	Suffolk	

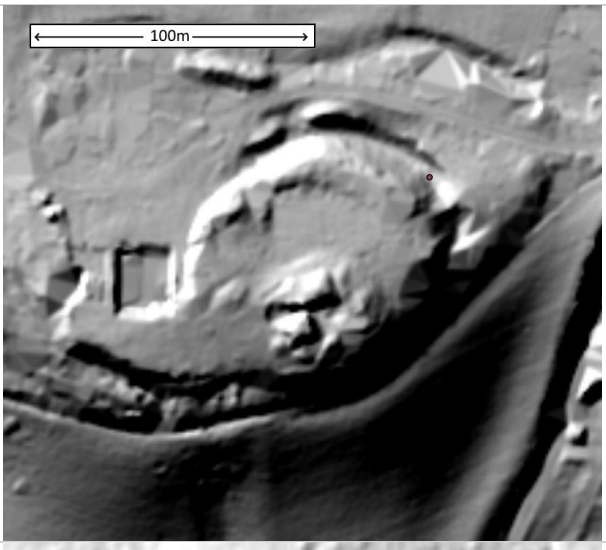
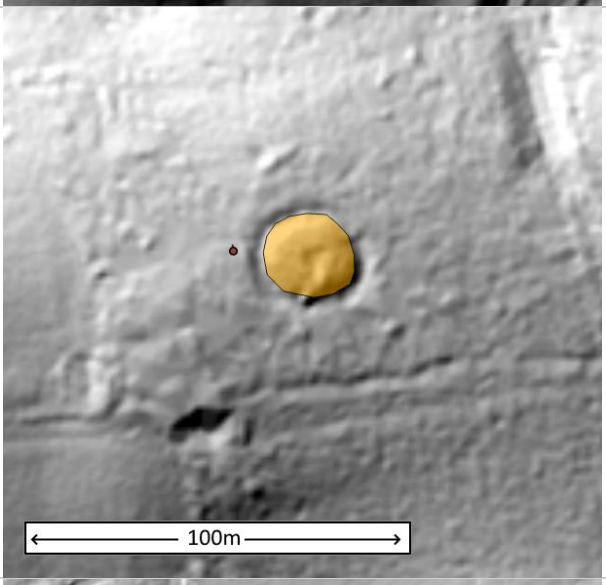
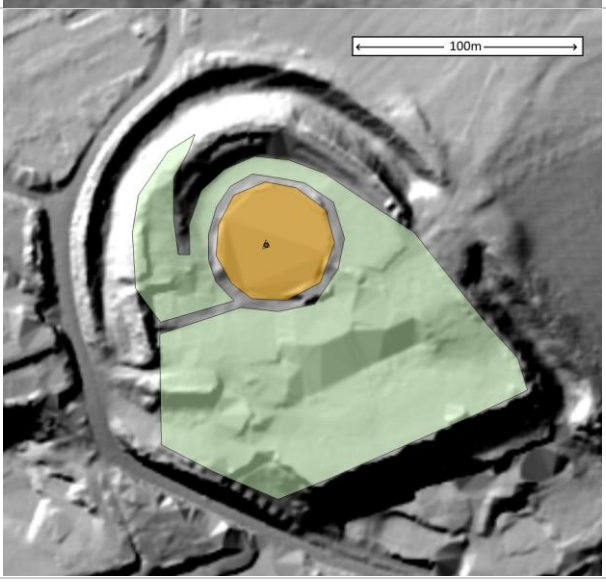
CSUF11	Freckenham Castle	Freckenham	Suffolk	
CSUF12	Great Ashfield Castle Hill	Great Ashfield	Suffolk	
CSUF13	Great Pitches Mount	Groton	Suffolk	

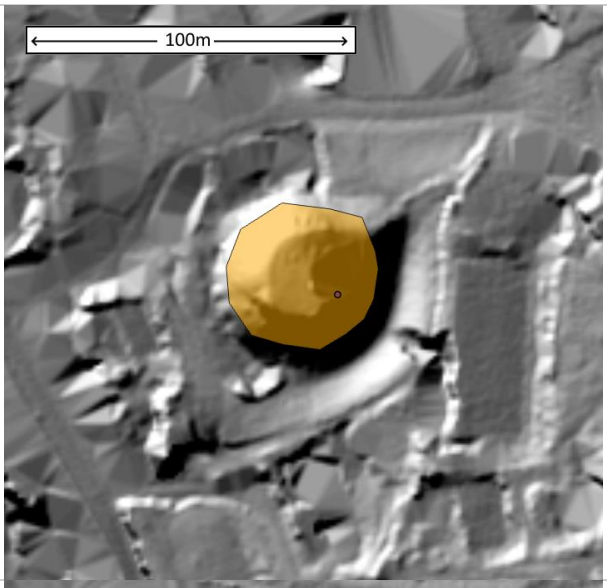
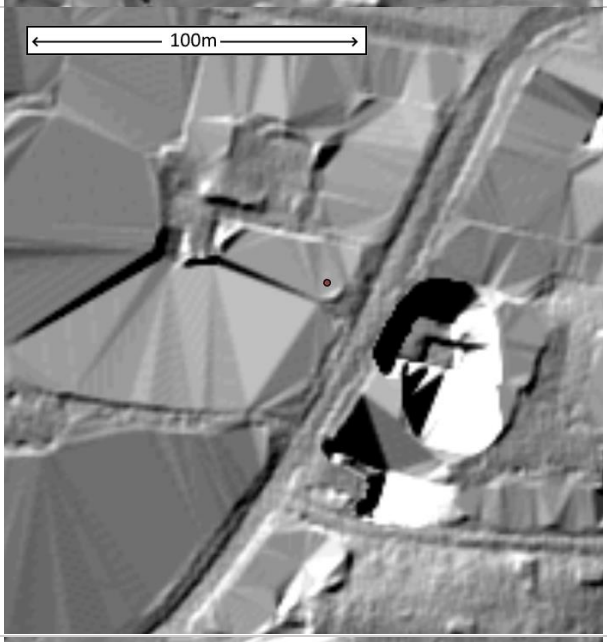
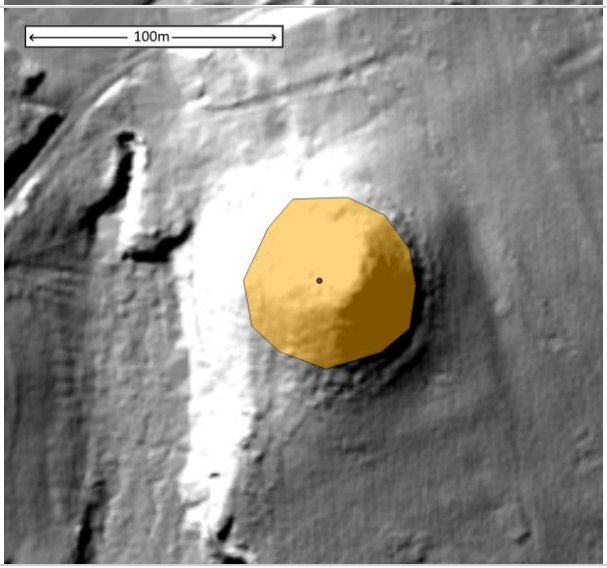
CSUF14	Haughley Castle	Haughley	Suffolk	
CSUF15	The Mount	Ilketshall st John	Suffolk	
CSUF16	Ipswitch Csatle	Ipswitch	Suffolk	

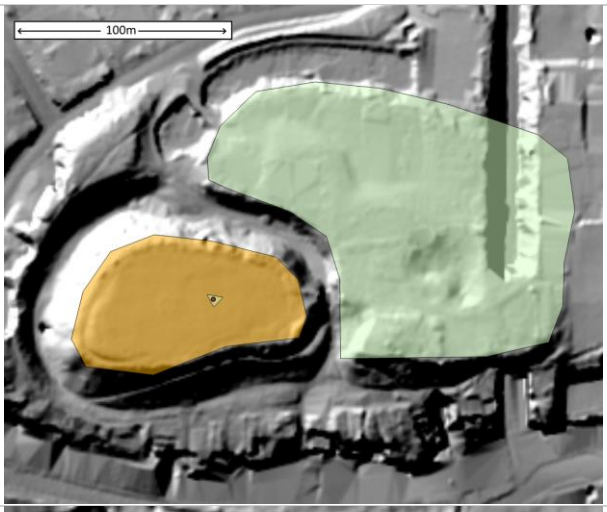
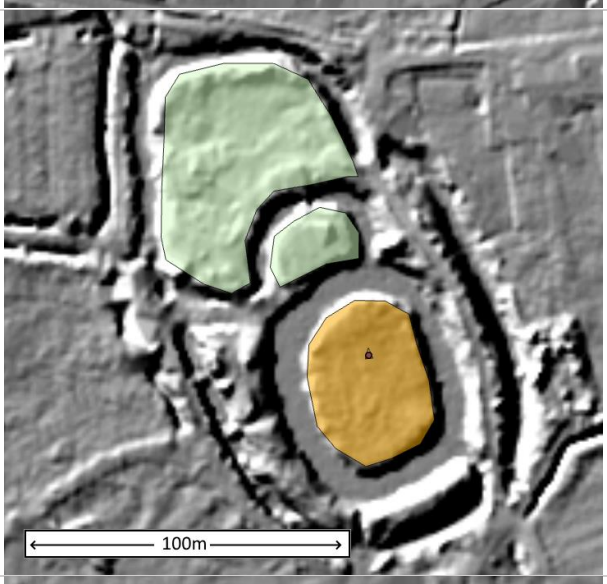
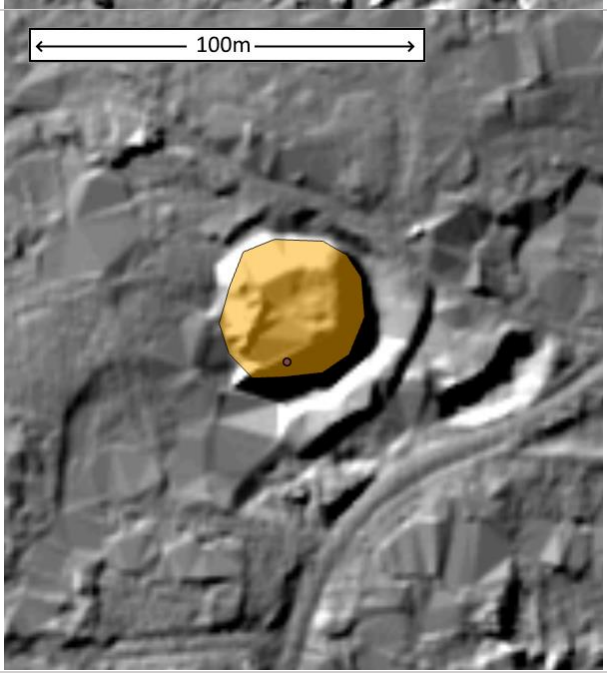
CSUF17	Lidgate Castle	Lidgate	Suffolk	
CSUF18	The Mounts	Lindsey	Suffolk	
CSUF19	Milden Castle	Milden	Suffolk	

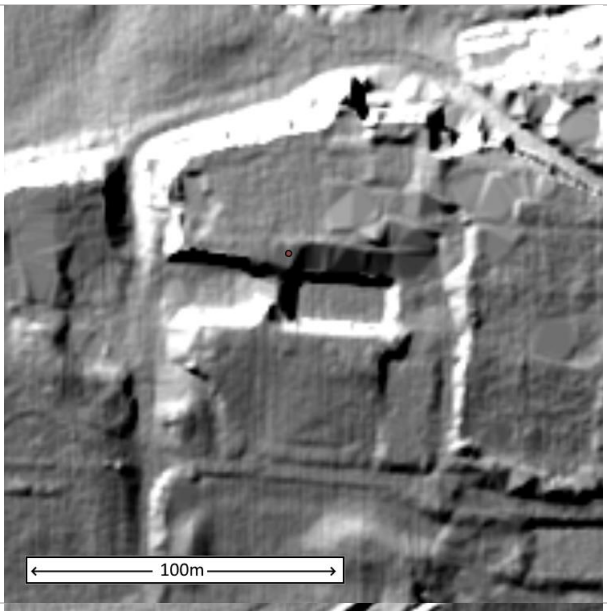
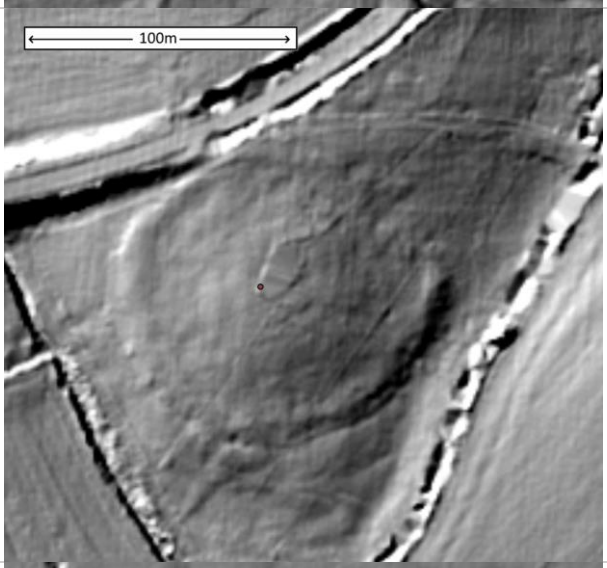
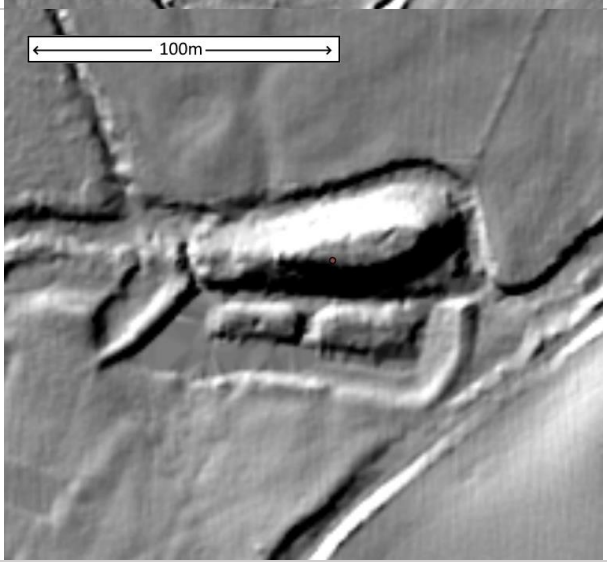
CSUF20	Nayland Court Knoll	Nayland with Wassington	Suffolk	
CSUF21	Offton Castle	Offton	Suffolk	
CSUF22	The Mount	Otley	Suffolk	

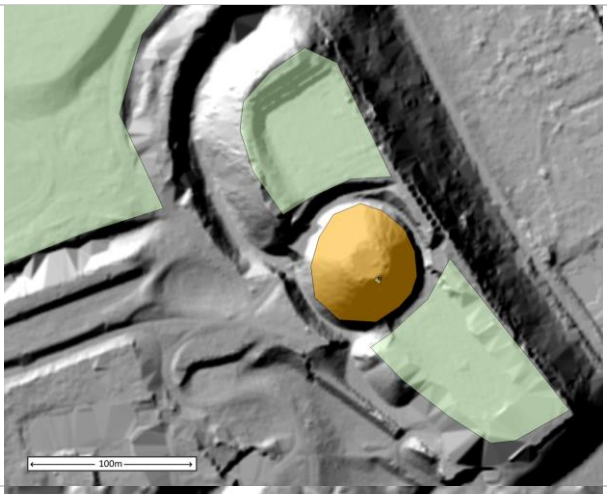
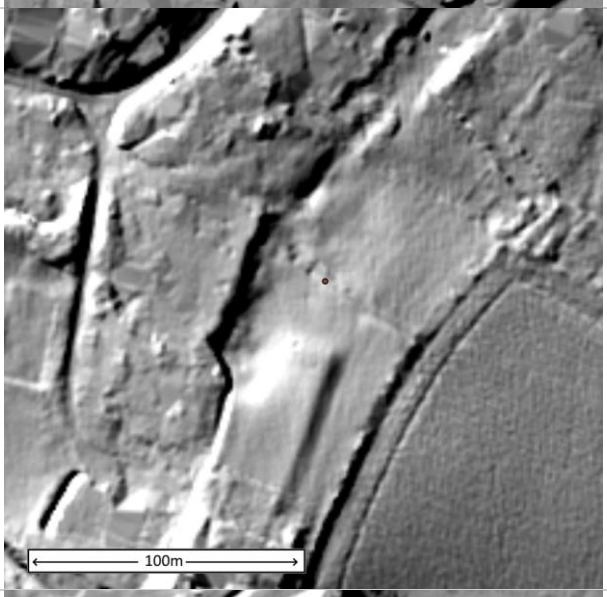
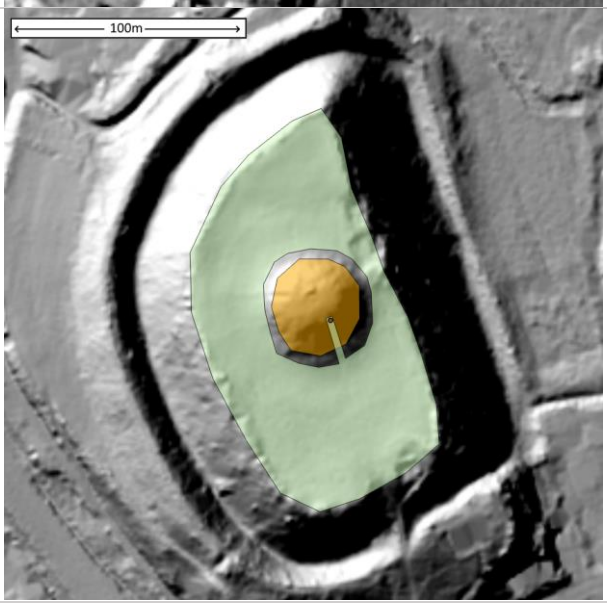
CSUF23	The Mound	South Cove	Suffolk	
CSUF24	Wissington Grange Wood	Nayland with Wissington	Suffolk	
CSUR01	Abinger Motte	Abinger	Surrey	

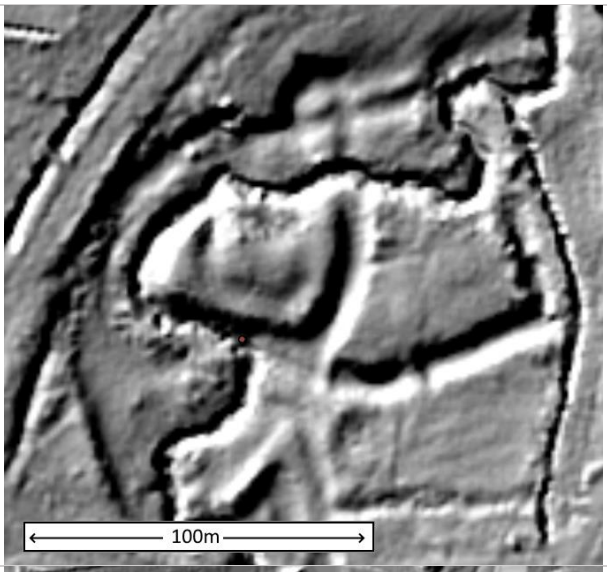
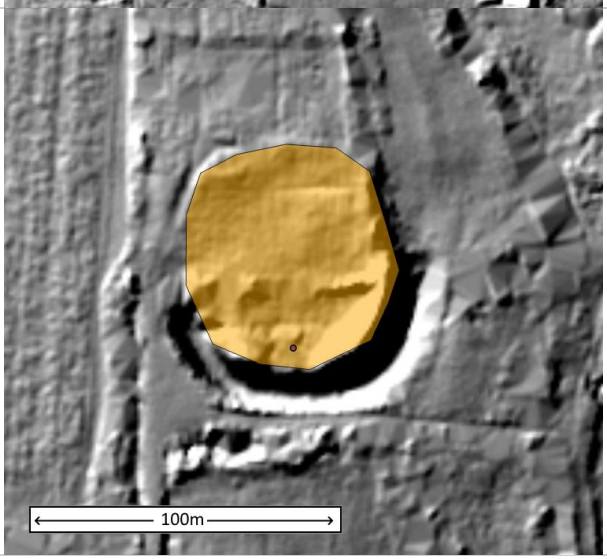
CSUR02	Bletchingley Castle	Bletchingley	Surrey	
CSUR03	Broomhall Copse	Cranleigh	Surrey	
CSUR04	Farnham Castle	Farnham	Surrey	

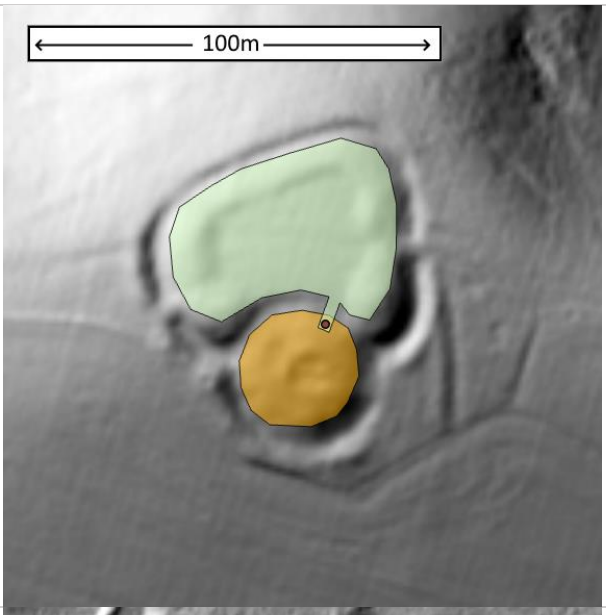
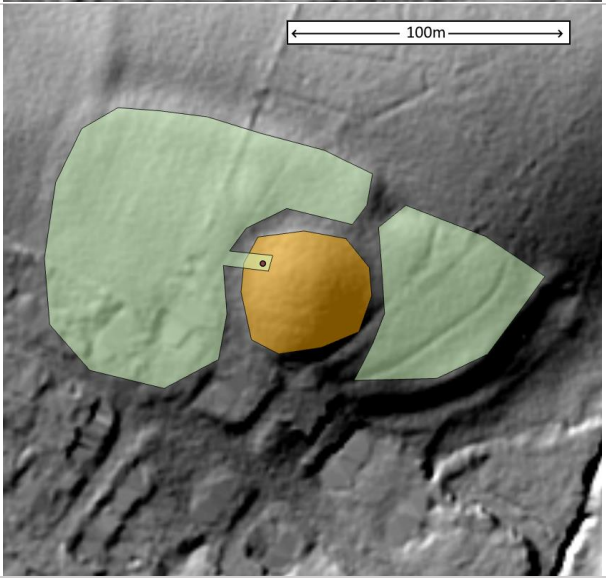
CSUR05	Guildford Castle	Guildford	Surrey	
CSUR06	Kingston Upon Themes Castle	Kingston Upon Themes	Surrey	
CSUR07	Oxted Barrow Green	Oxted	Surrey	

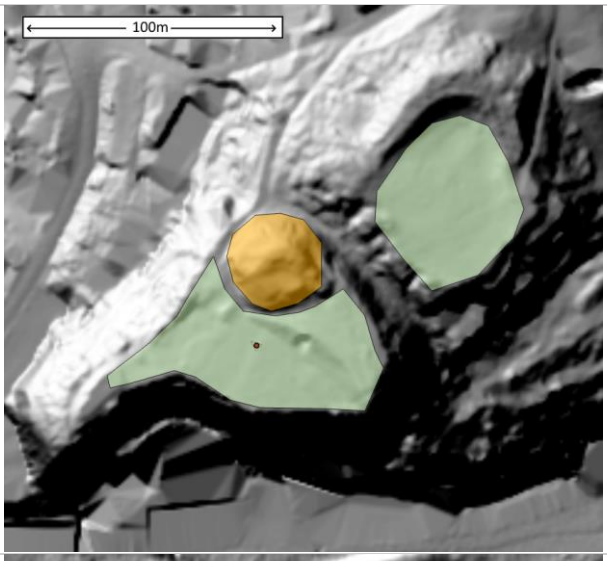
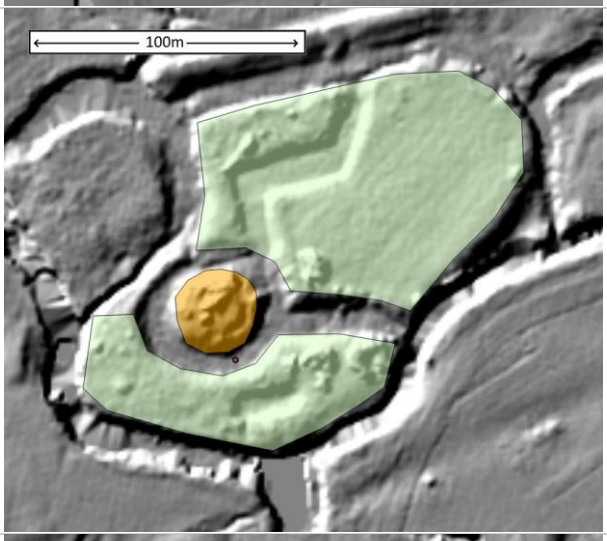
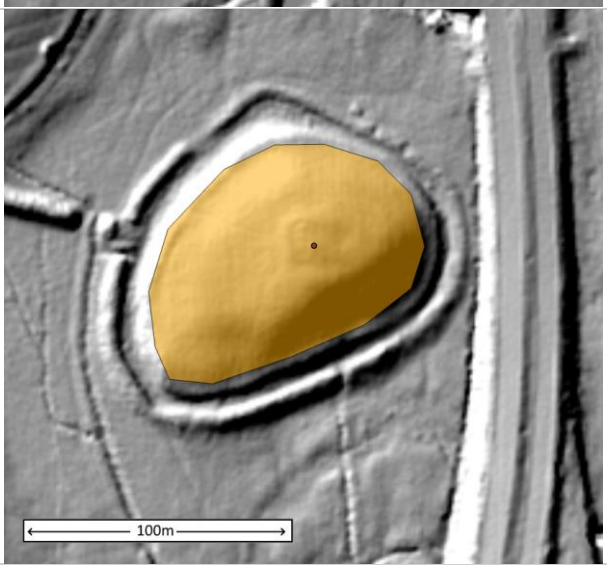
CSUR08	Reigate Castle	Reigate	Surrey	
CSUR09	Thunderfield Castle	Horley	Surrey	
CSUR10	Walton on the Hill	Leatherhead	Surrey	

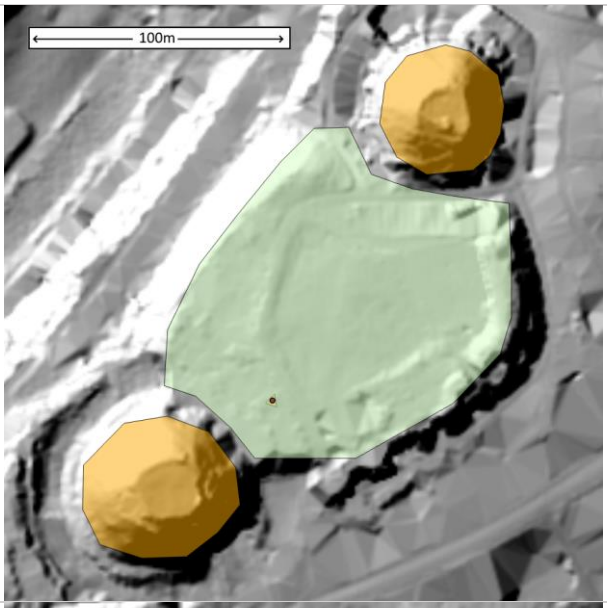
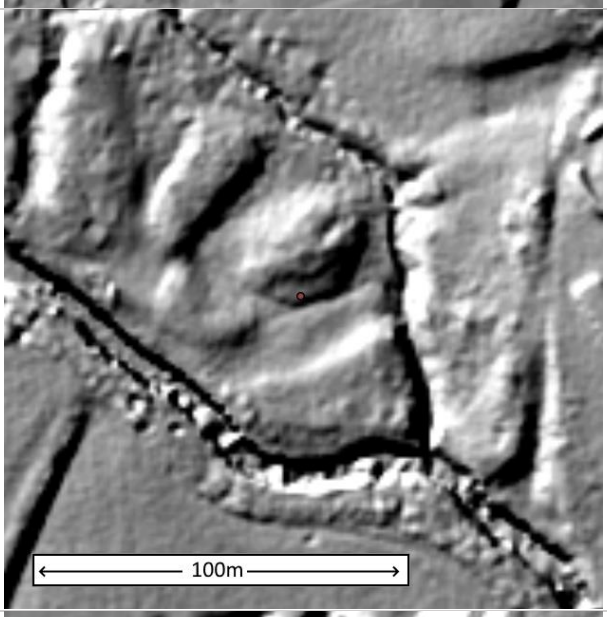
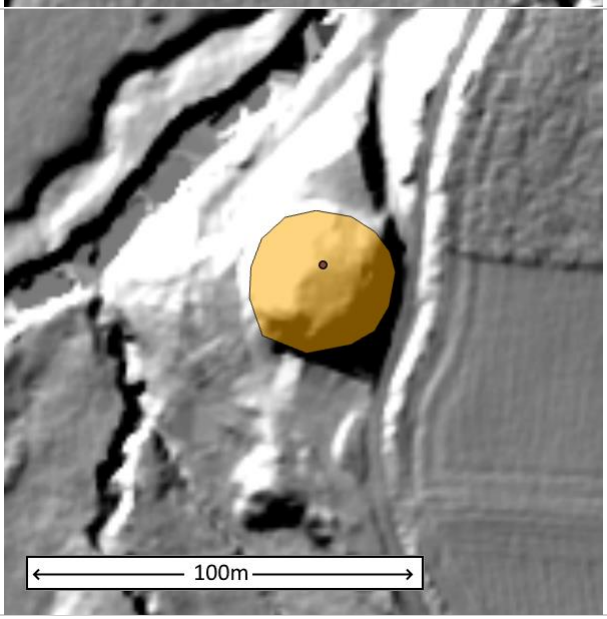
CSUS01	Amberley Castle	Amberley	Sussex	
CSUS02	Tote Copse Castle	Aldingbourne	Sussex	
CSUS03	Arlington Castle	Arlington	Sussex	

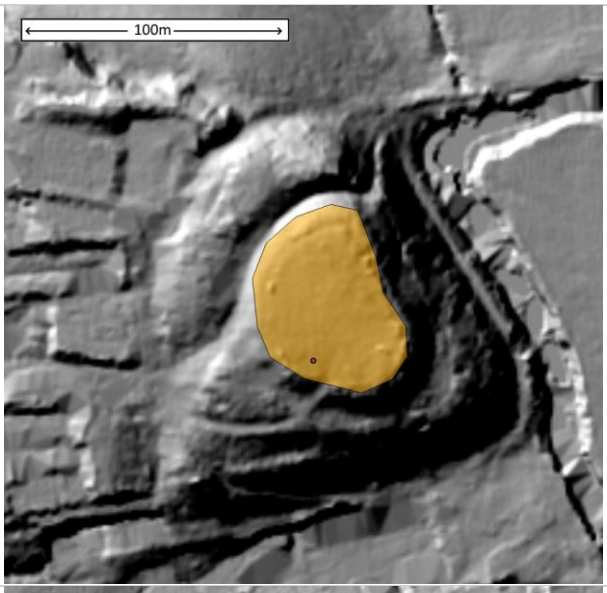
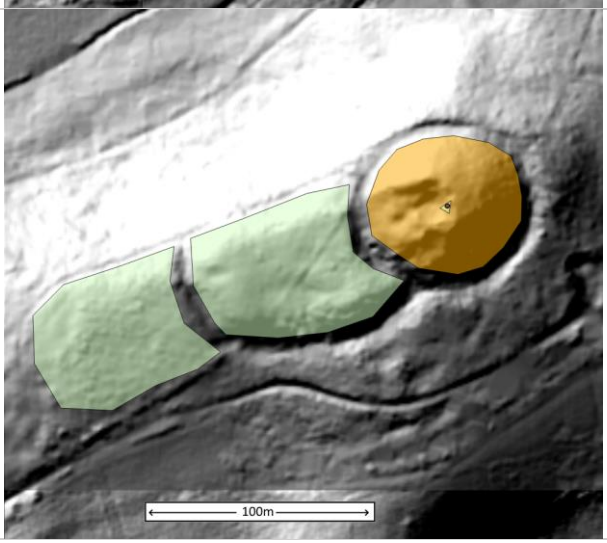
CSUS04	Arundel Castle	Arundel	Sussex	
CSUS05	Berwick Motte	Berwick	Sussex	
CSUS06	Bramber Castle	Bramber	Sussex	

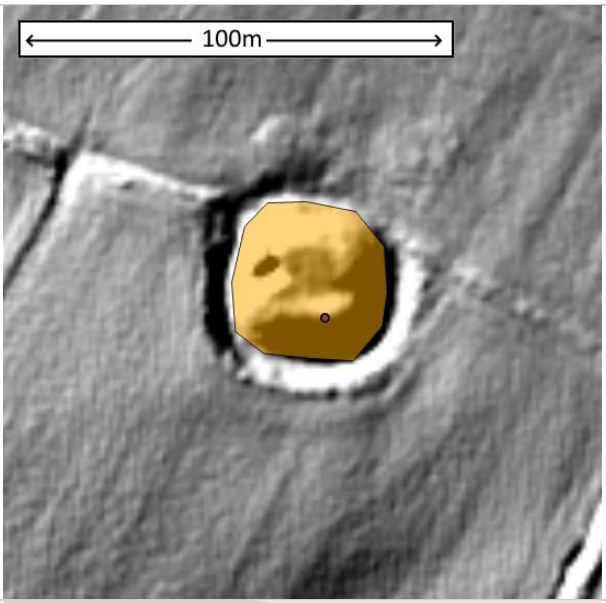
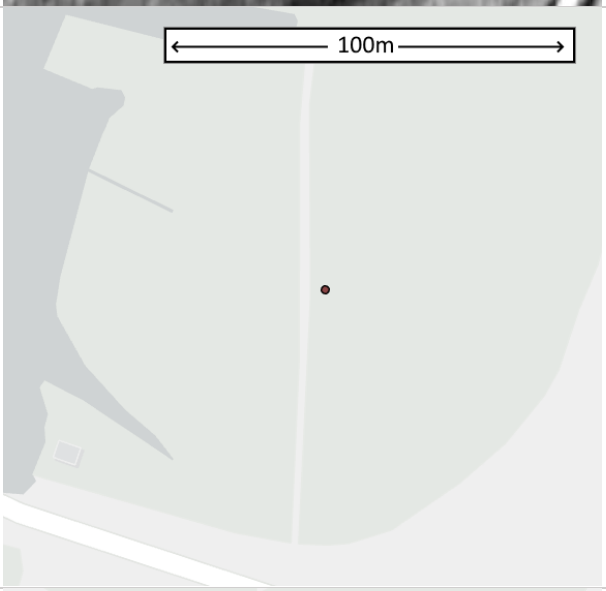
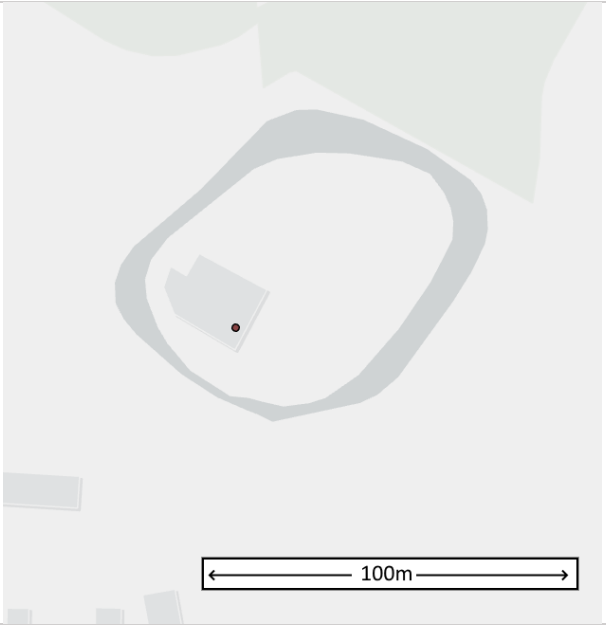
CSUS07	Channells Brook Farm	North Horsham	Sussex	
CSUS08	Chichester Castle	Chichester	Sussex	
CSUS09	Church Norton	Selsey	Sussex	

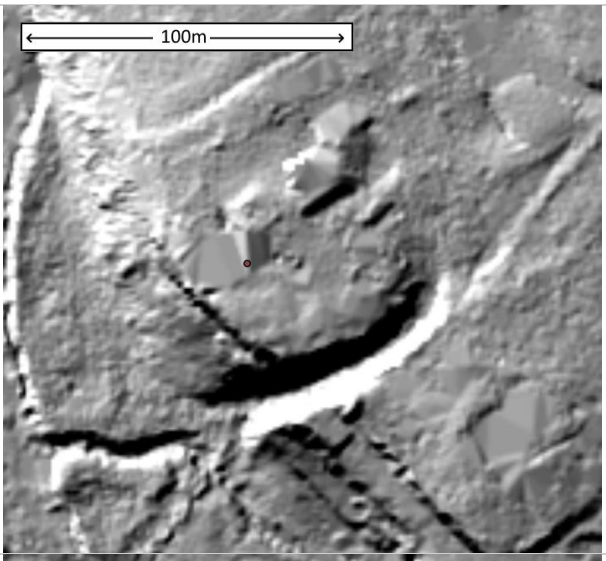
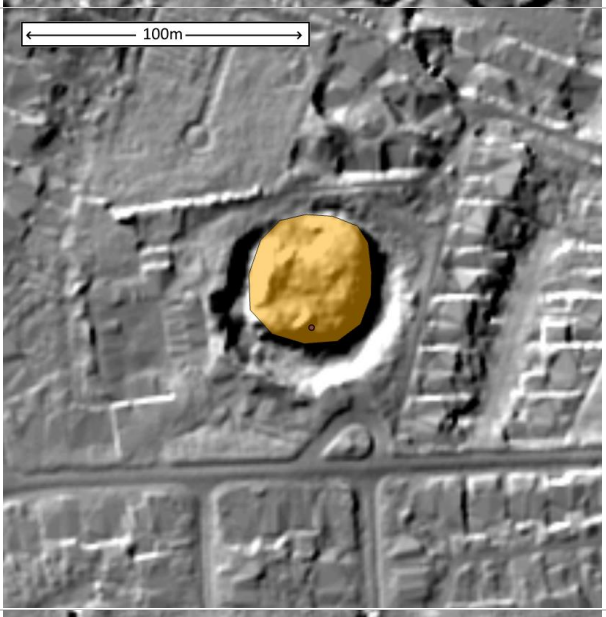
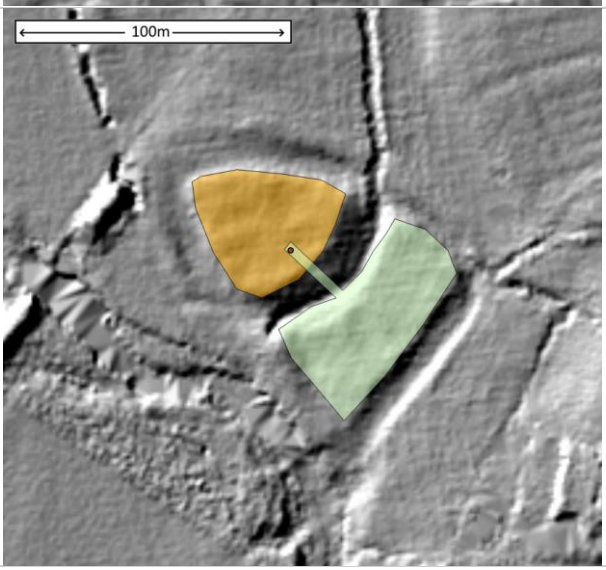
CSUS10	Edburton Castle Ring	Fulking	Sussex	
CSUS11	Ford Castle	Ford	Sussex	
CSUS12	Hartfield Motte	Hartfield	Sussex	

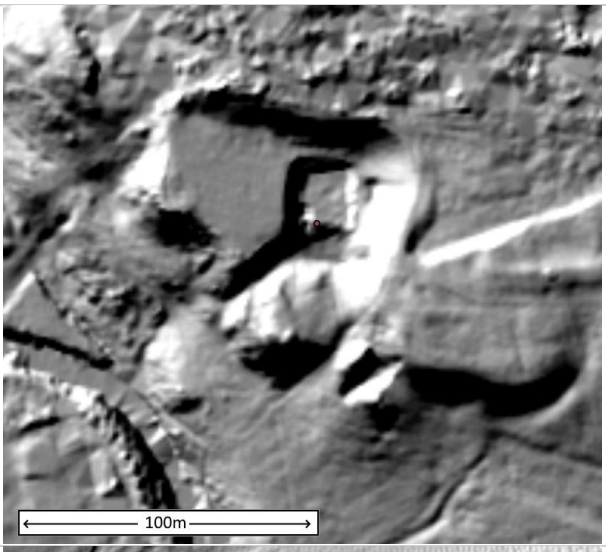
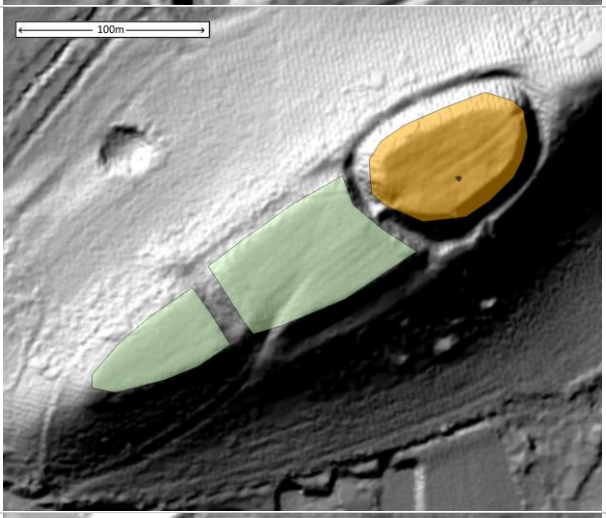
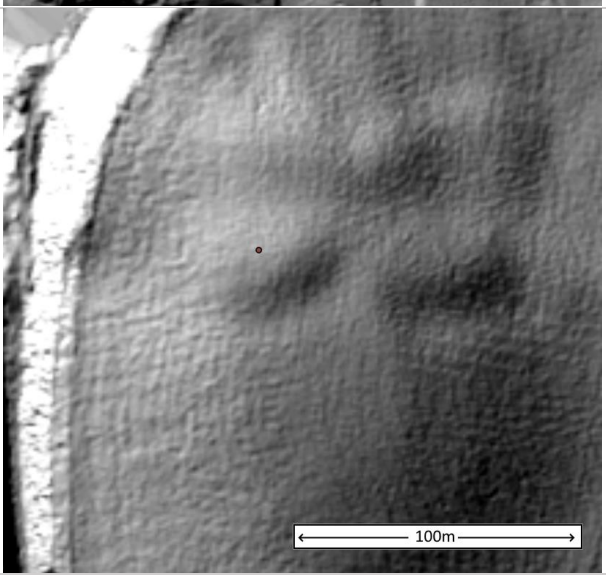
CSUS13	Hastings Castle	Hastings	Sussex	
CSUS14	Isfield Motte	Isfield	Sussex	
CSUS15	Knepp Castle	Shipley	Sussex	

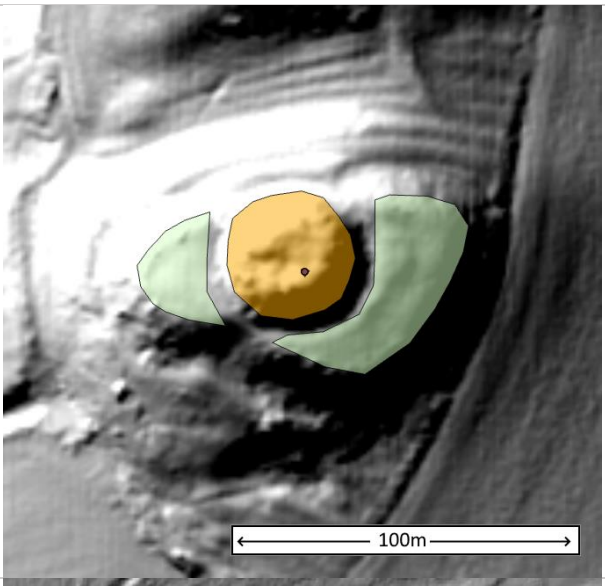
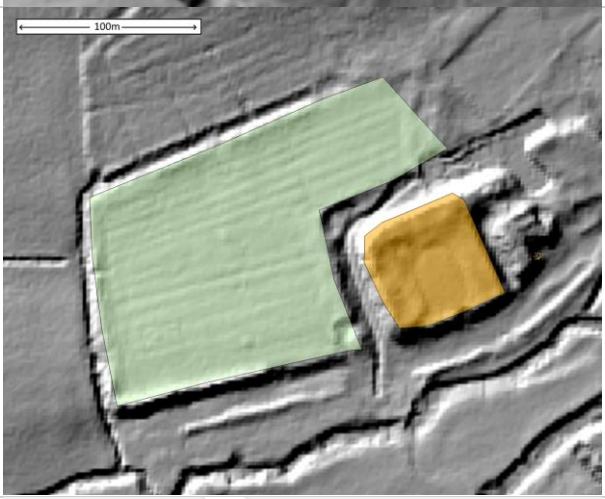
CSUS16	Lewes Castle	Lewes	Sussex	
CSUS17	Lindfield Pims Lock	Lindfield Rural	Sussex	
CSUS18	Lodsworth Castle	Lodsworth	Sussex	

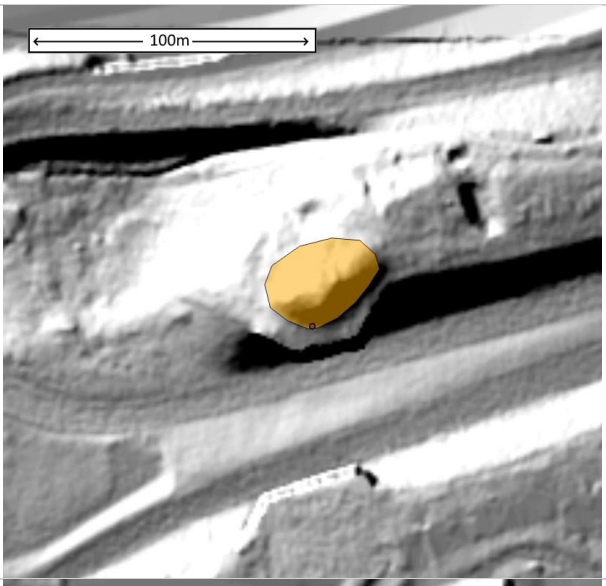
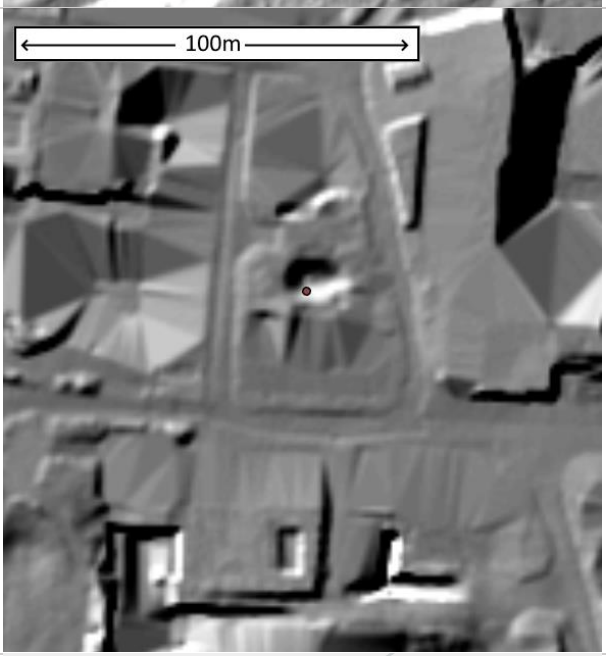
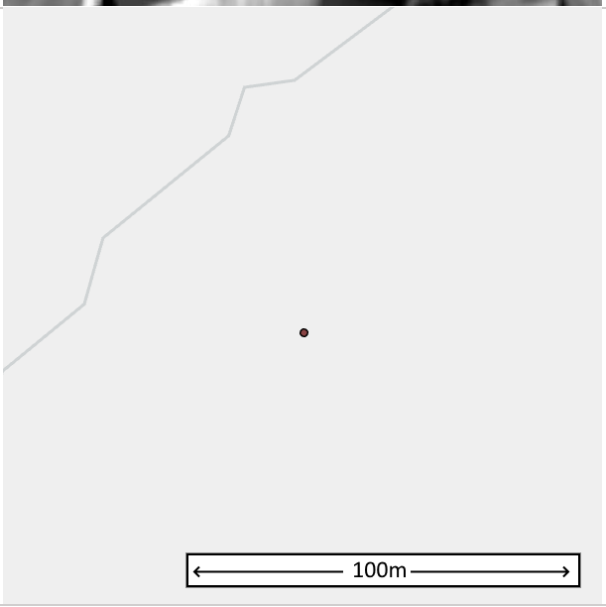
CSUS19	Midhurst Castle	Midhurst	Sussex	
CSUS20	Pevensey Castle	Pevensey	Sussex	
CSUS21	Pulborough Park Mount	Pulborough	Sussex	

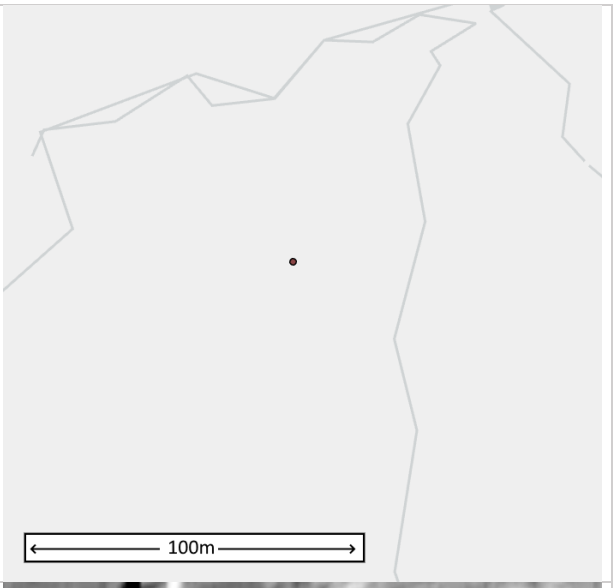
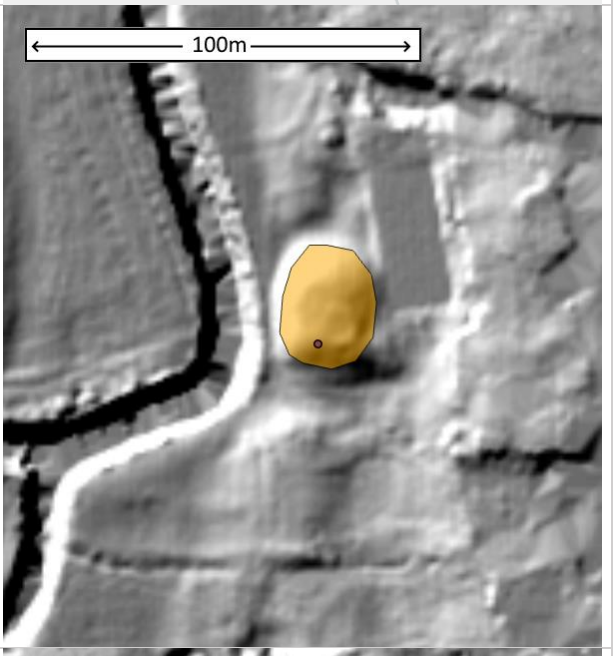
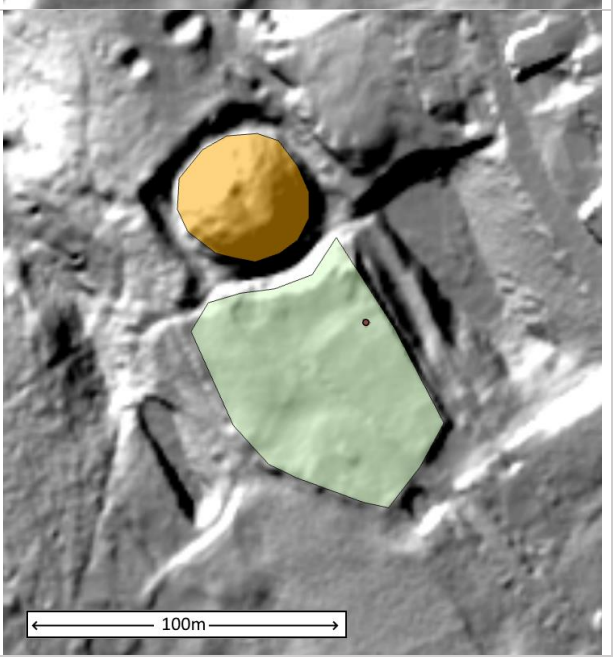
CSUS22	The Mount	Ringmer	Sussex	
CSUS23	Sedgwick Castle	Nuthurst	Sussex	
CWAR01	Astley Castle	Astley	Warwickshire	

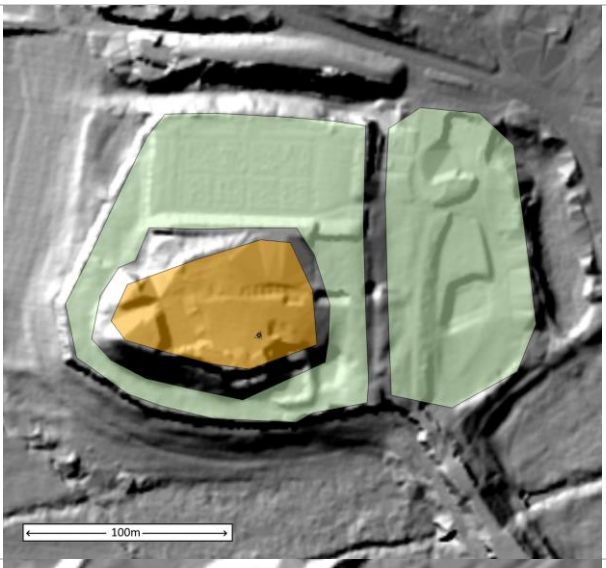
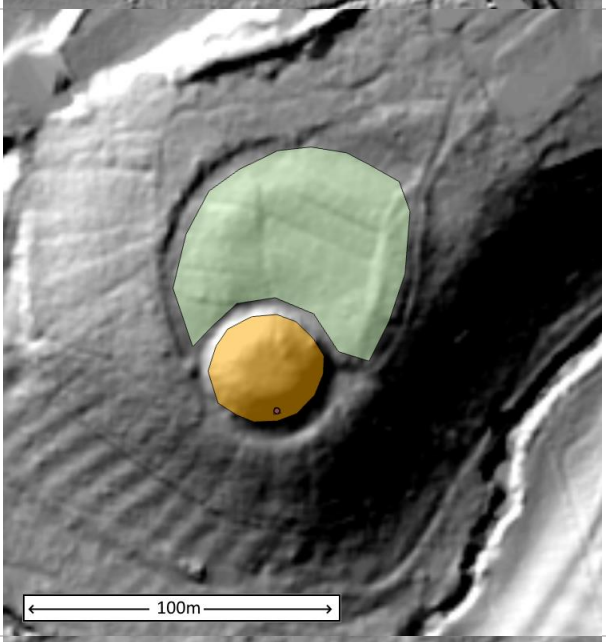
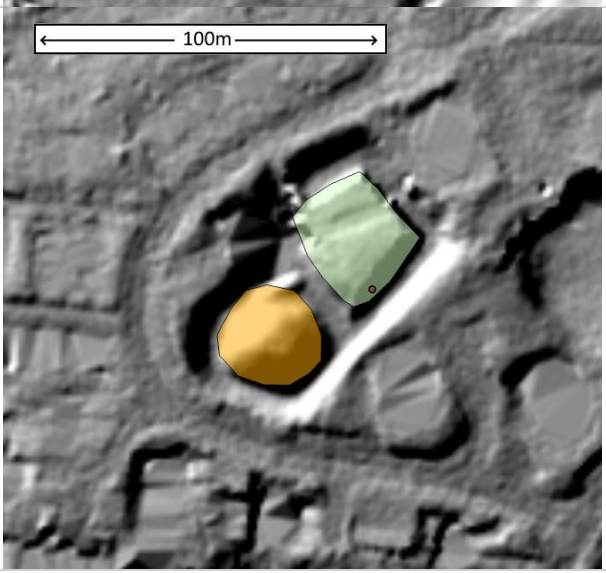
CWAR02	Kingsbury Hall	Kingsbury	Warwickshire	
CWAR03	Allesley Ringwork	Allesley	Warwickshire	
CWAR04	Stocking Banks	Aston Cantlow	Warwickshire	

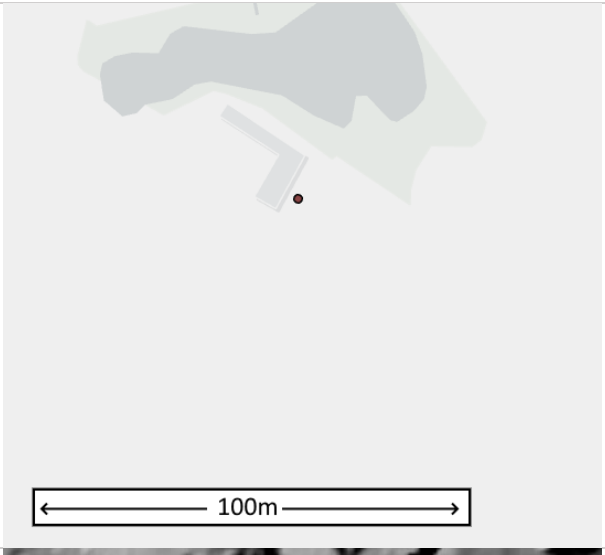
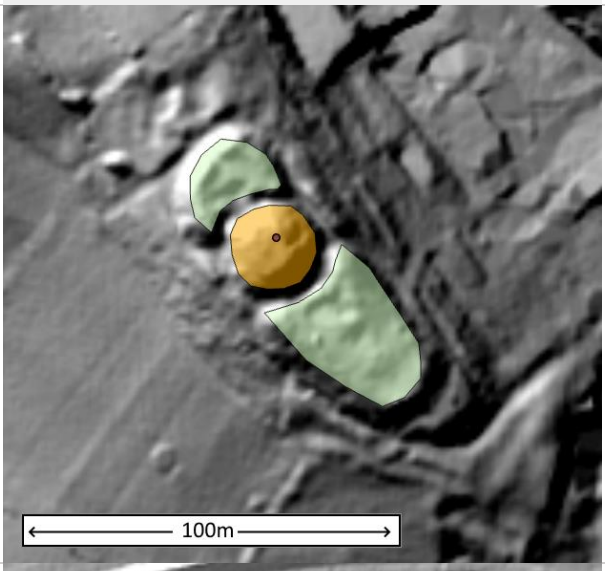
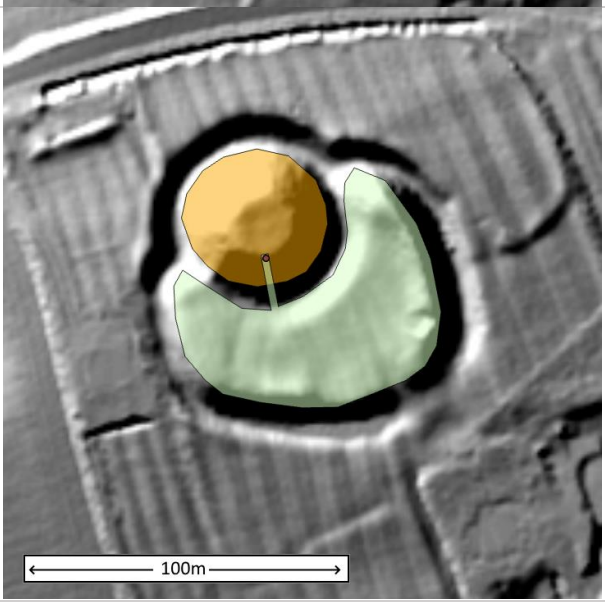
CWAR05	Baginton Castle	Baginton	Warwickshire	
CWAR06	Beaudesert Castle	Beaudesert	Warwickshire	
CWAR07	Botelers Castle	Alcaster	Warwickshire	

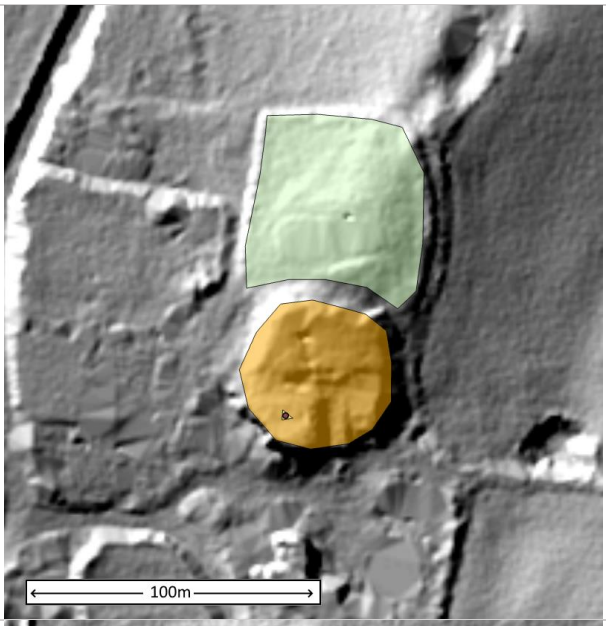
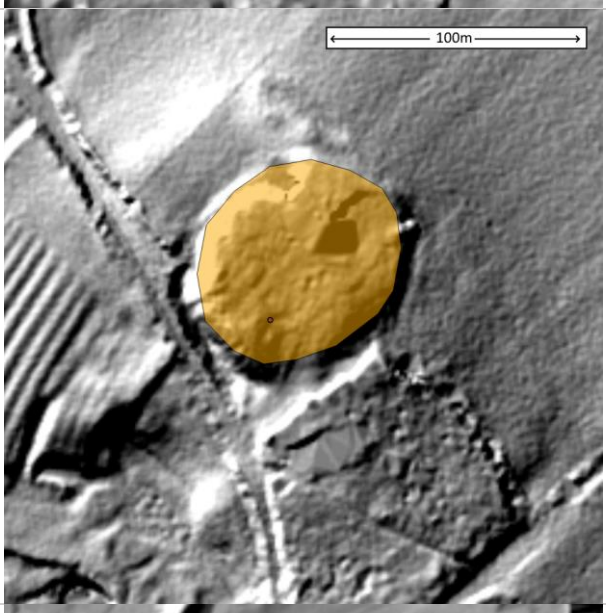
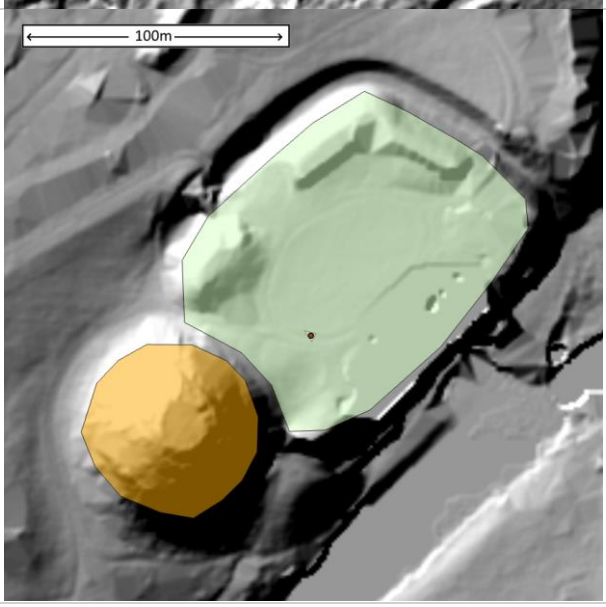
CWAR08	Castle Hill motte	Brailes	Warwickshire	
CWAR09	Brandon Castle	Brandon and Bretford	Warwickshire	
CWAR10	Brinklow Castle	Brinklow	Warwickshire	

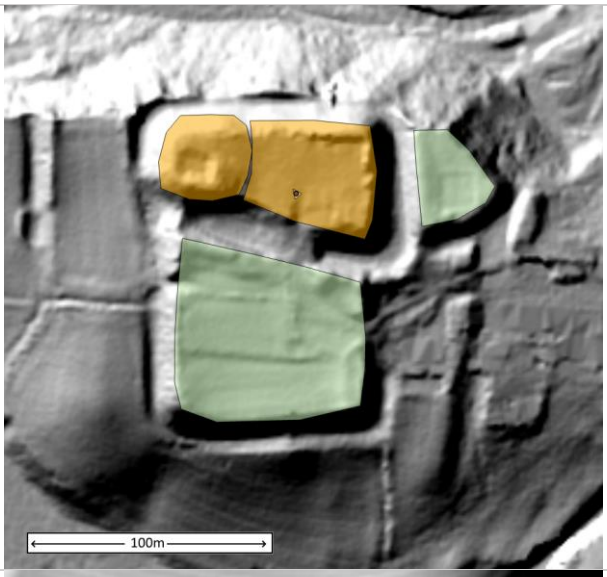
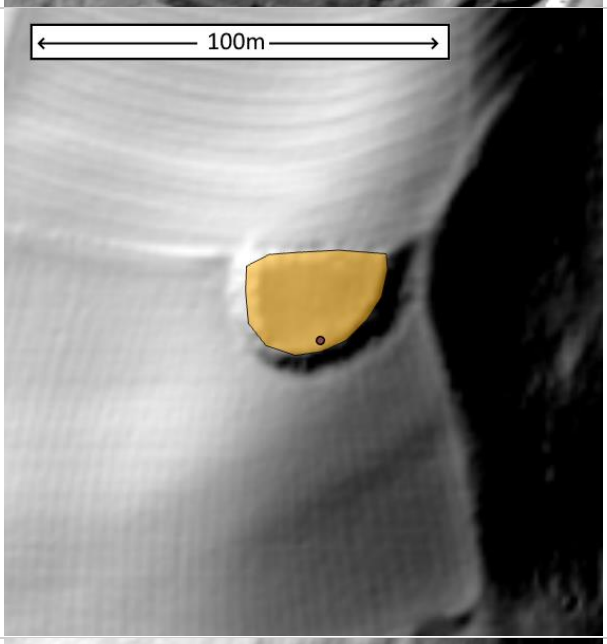
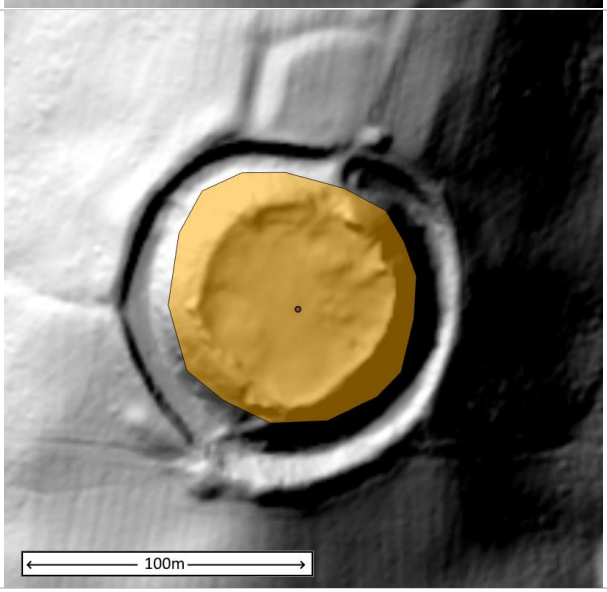
CWAR11	Bromwich Castle Hill	Castle Bromwich	Warwickshire	
CWAR12	Coventry Castle	Coventry	Warwickshire	
CWAR13	Fillongley Castle Hills	Fillongley	Warwickshire	

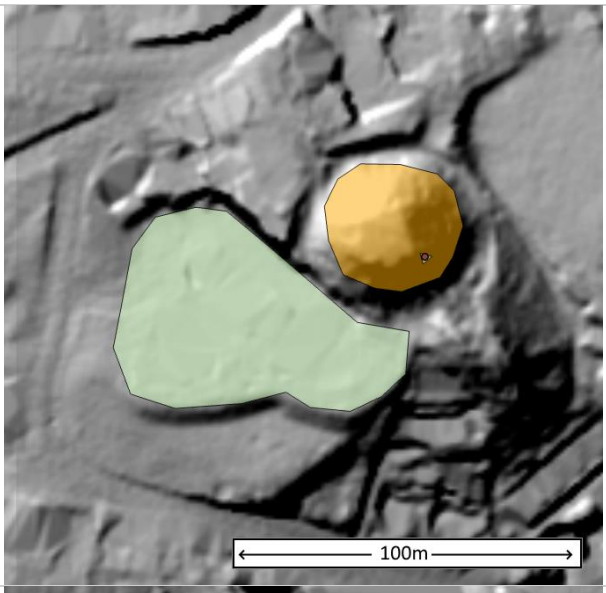
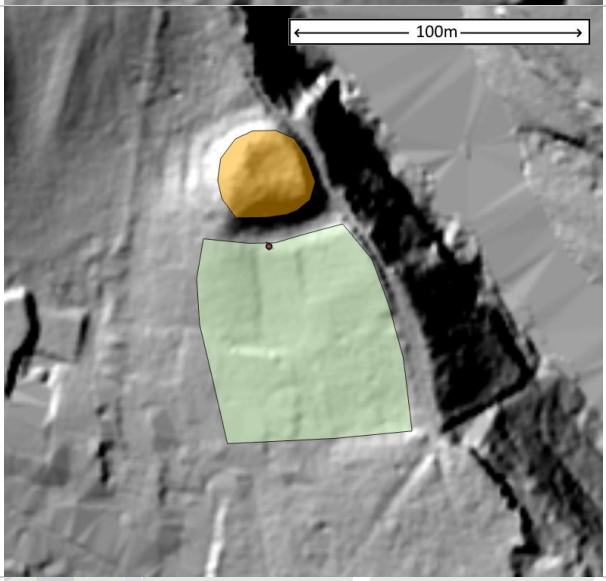
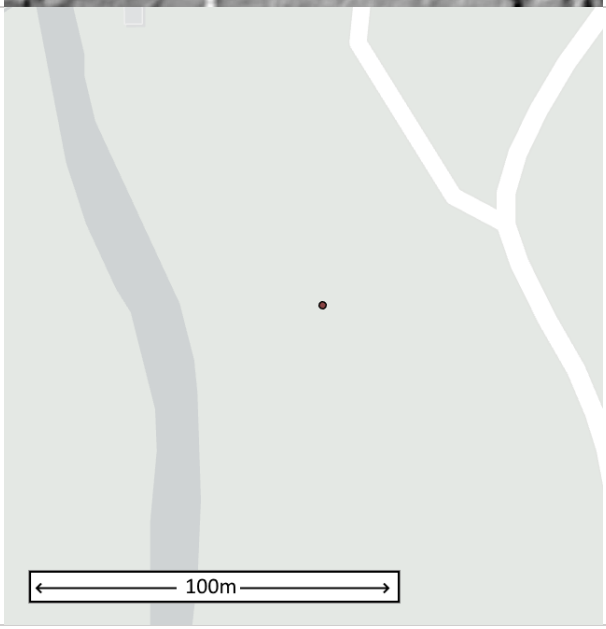
CWAR14	Fillongley Castle Yard	Fillongley	Warwickshire	
CWAR15	Halford Castle	Halford	Warwickshire	
CWAR16	Hartshill Castle	Hartshill	Warwickshire	

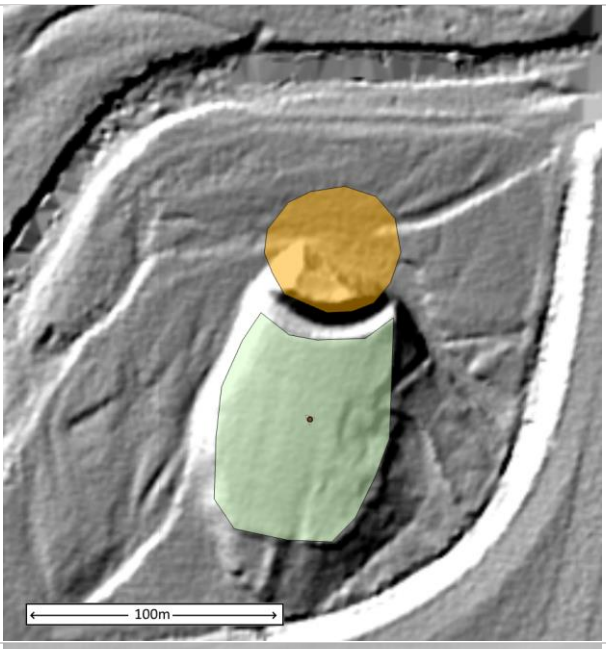
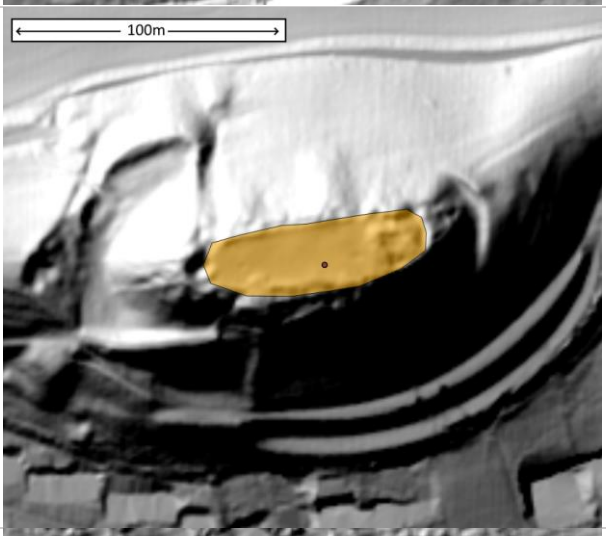
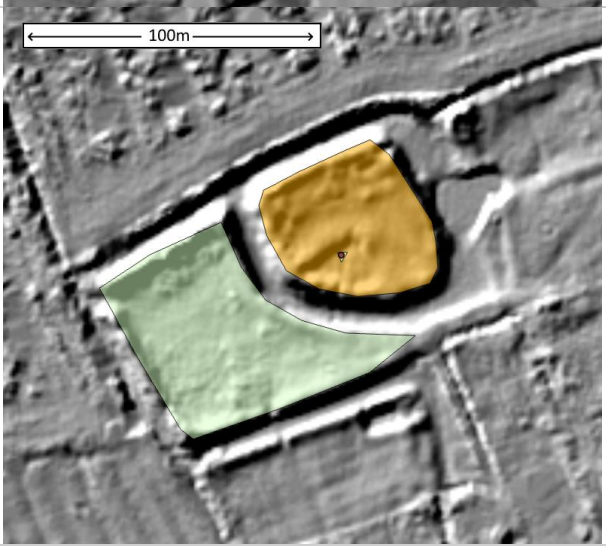
CWAR17	Kenilworth Castle	Kenilworth	Warwickshire	
CWAR18	King Johns Castle	Kineton	Warwickshire	
CWAR19	Kingshurst Hall	Kinghurst	Warwickshire	

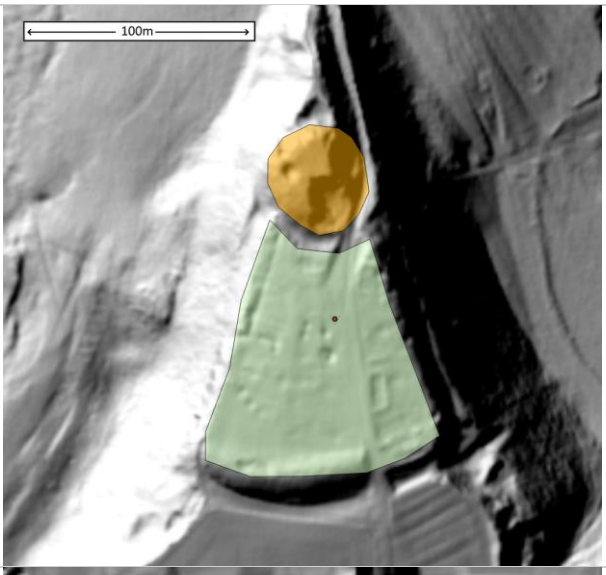
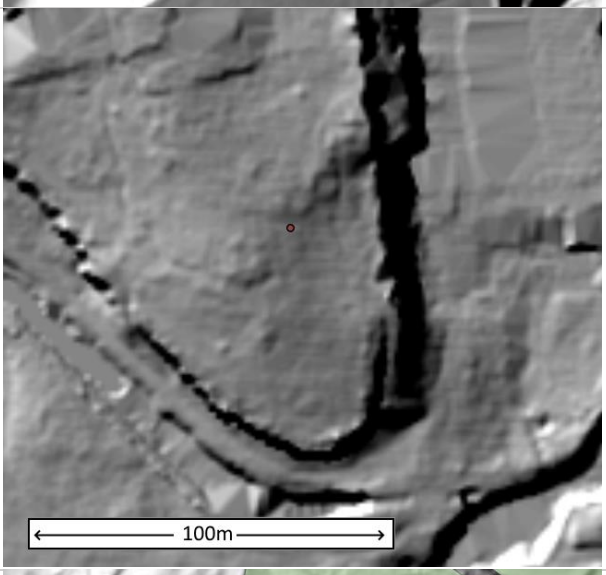
CWAR20	Morton Bagot Castle	Morton Bagot	Warwickshire	
CWAR21	Ratley Motte	Ratley with Upton	Warwickshire	
CWAR22	Seckington Motte	Seckington	Warwickshire	

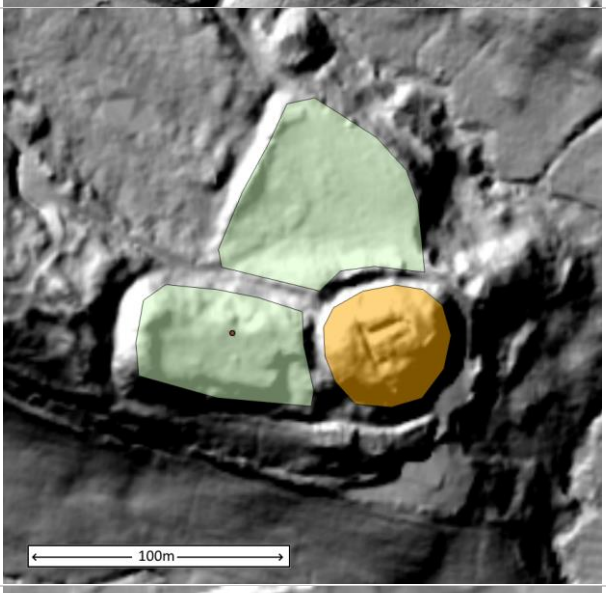
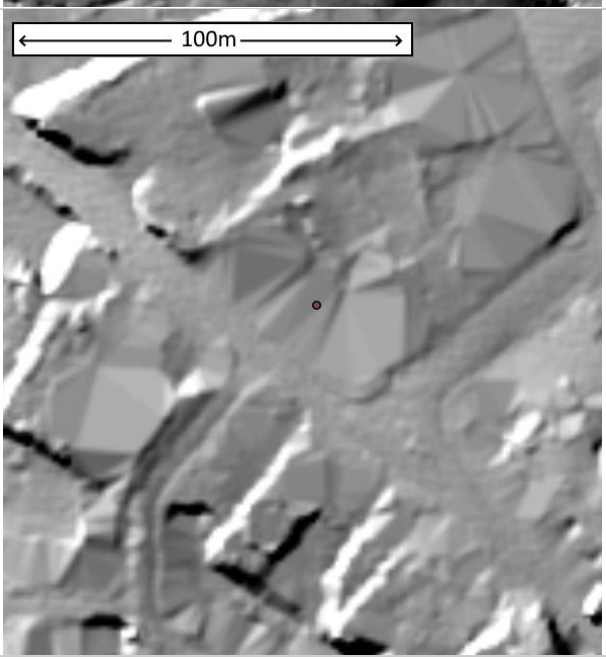
CWAR23	Shustoke Church End	Shustoke	Warwickshire	
CWAR24	Studley Old Castle	Studley	Warwickshire	
CWAR25	Warwick Castle	Warwick	Warwickshire	

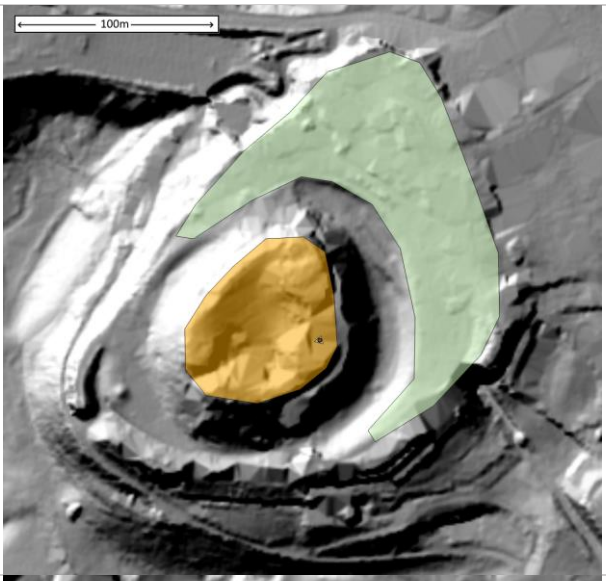
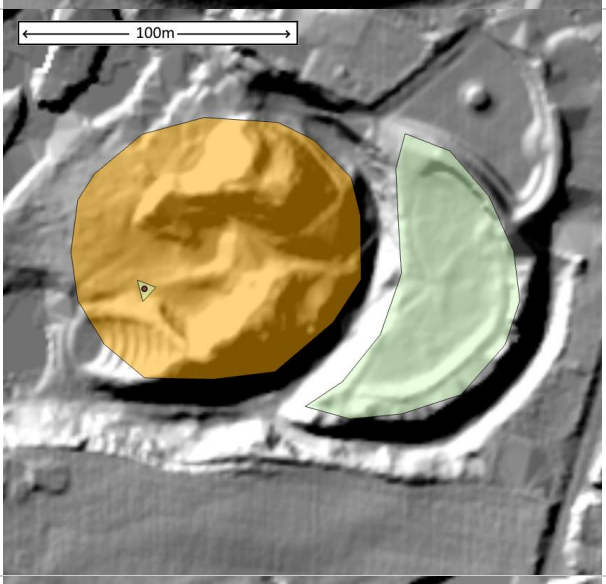
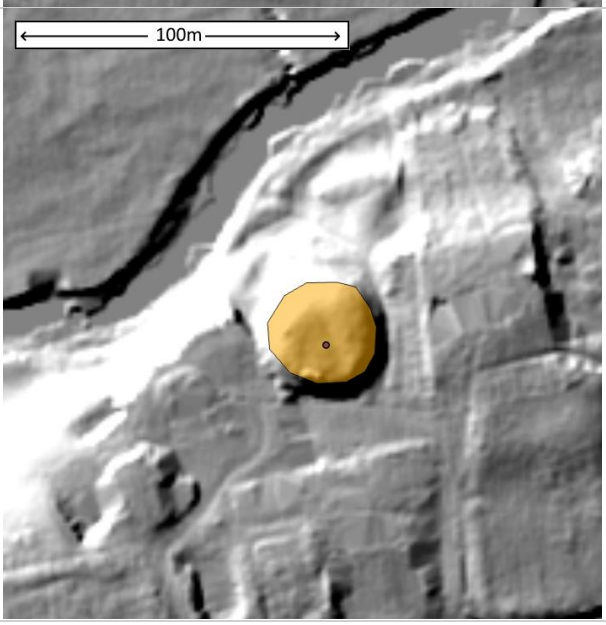
CWES01	Brough Castle	Brough	Westmorland (south)	
CWES02	Beetham Castle Hill	Beetham	Westmorland (south)	
CWES03	Kendal Castle	Kendal	Westmorland (south)	

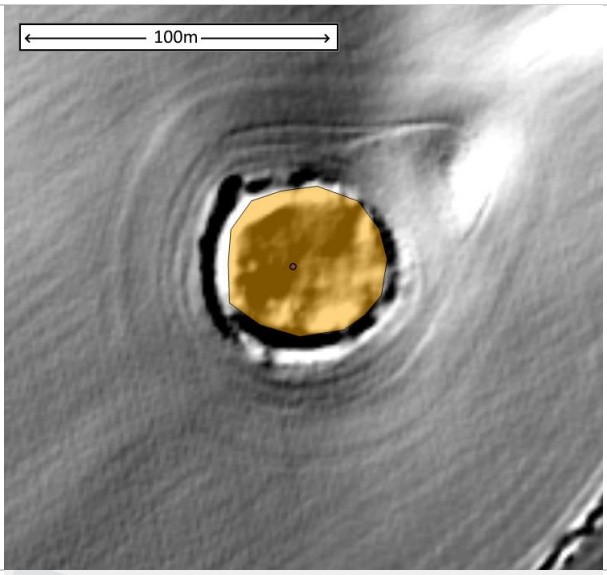
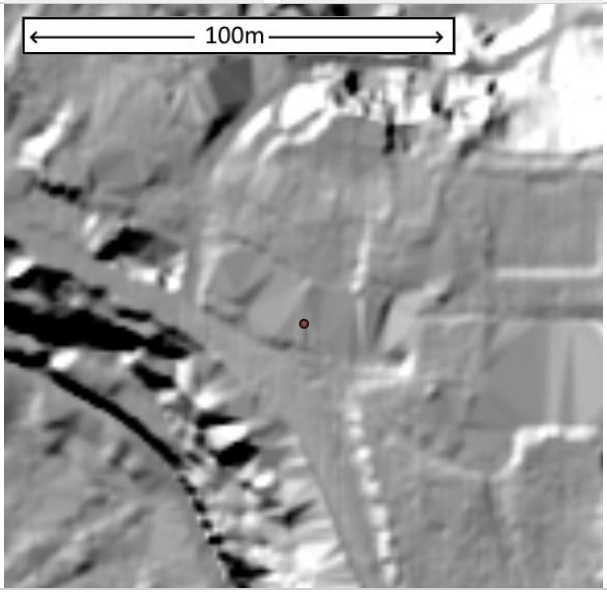
CWES04	Castle Howe	Kendal	Westmorland (south)	
CWES05	Cockpit Hill	Kirkby Lonsdale	Westmorland (south)	
CWES06	Pendragon Castle	Mallerstang	Westmorland (south)	

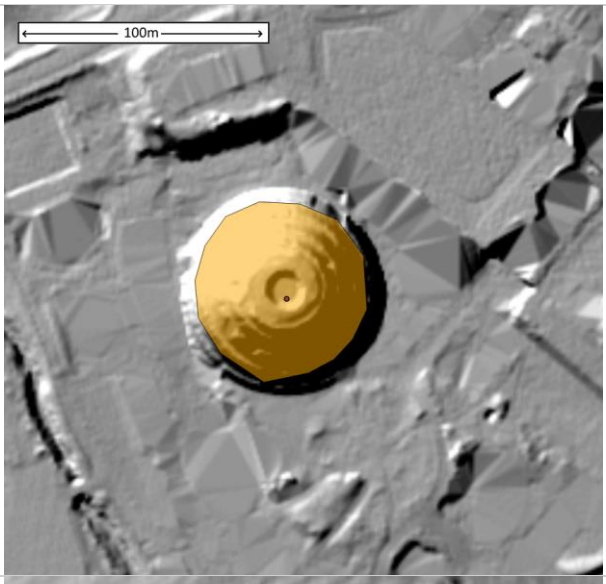
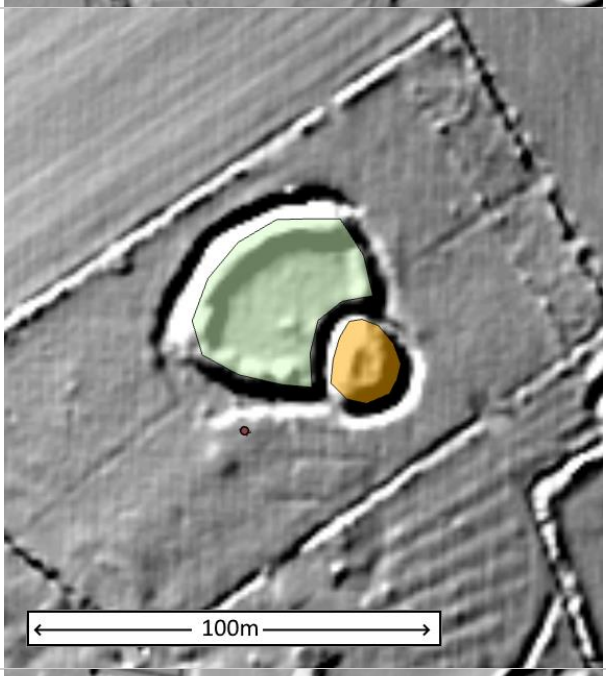
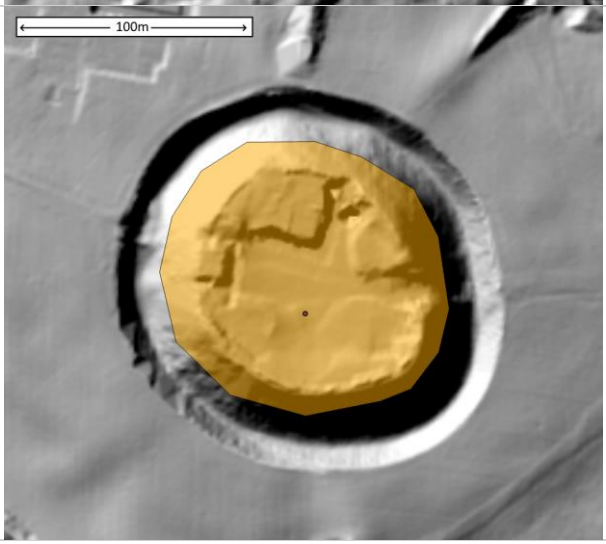
CWES07	Tebay Castle Howe	Tebay	Westmorland (south)	
CWIL01	Mere Castle Hill	Mere	Wiltshire	
CWIL02	Halls Close	Ashton Keynes	Wiltshire	

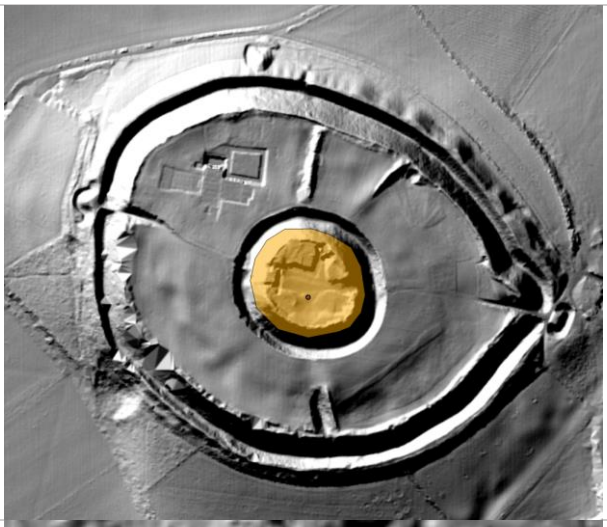
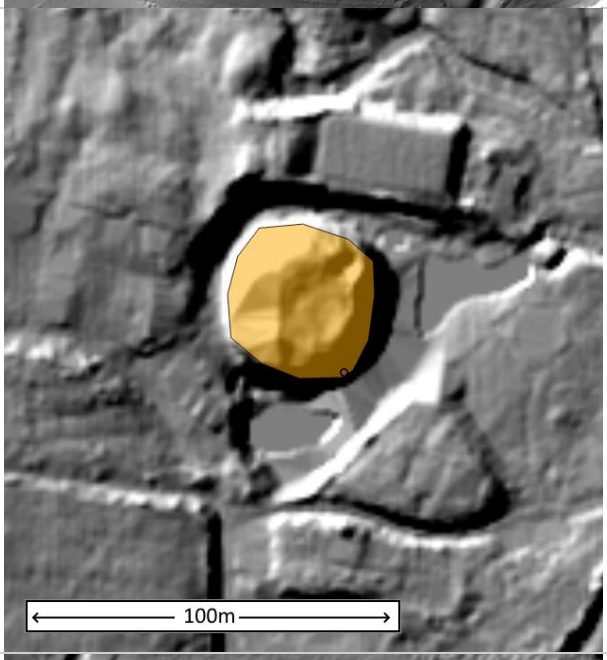
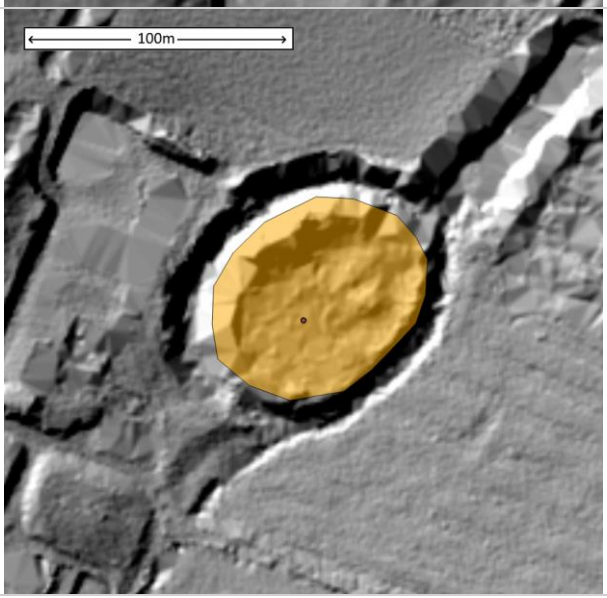
CWIL03	Binknoll Castle	Broad Hinton	Wiltshire	
CWIL04	Clane Castle Couse	Clane	Wiltshire	
CWIL05	Castle Combe	Castle Combe	Wiltshire	

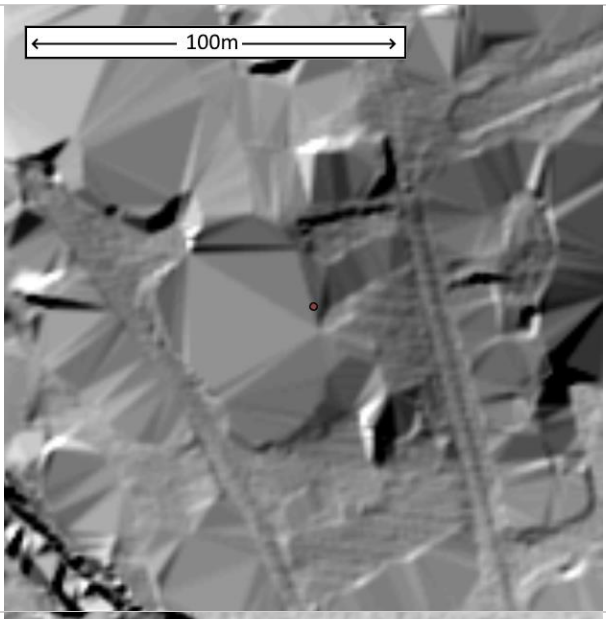
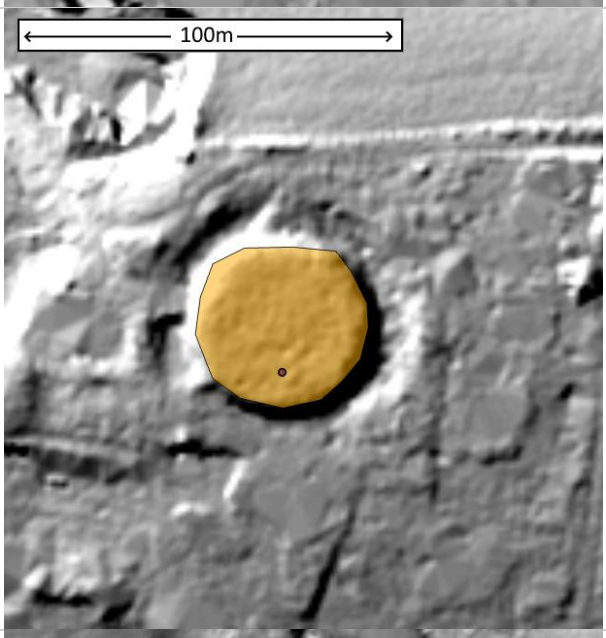
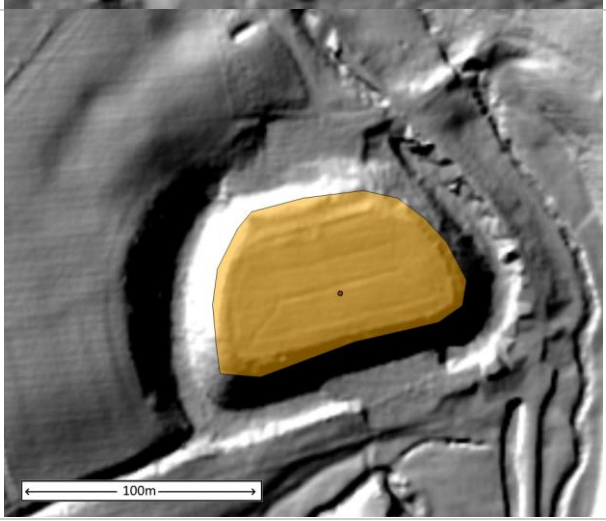
				
CWIL06	Castle Orchard	Stourton With Gasper	Wiltshire	
CWIL07	Chippenham Motte	Chippenham	Wiltshire	

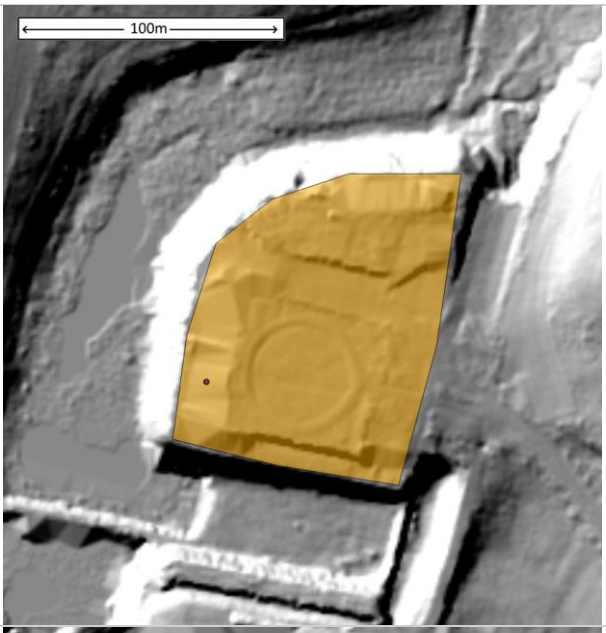
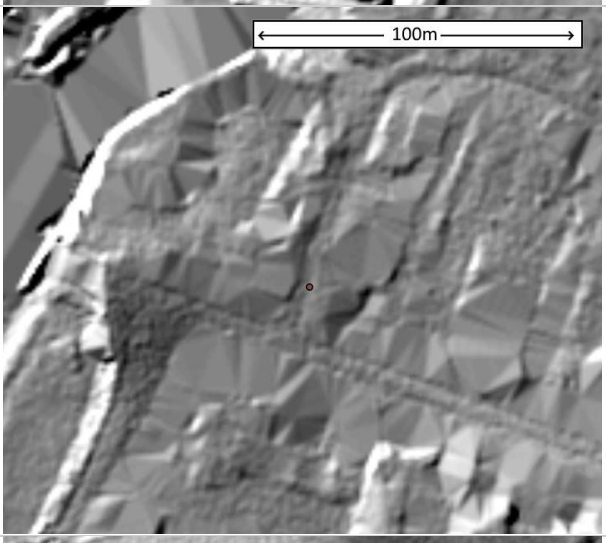
CWIL08	Devizes Castle	Devizes	Wiltshire	
CWIL09	Downton Moot Close	Downton	Wiltshire	
CWIL10	The Mound	Great Somerford	Wiltshire	

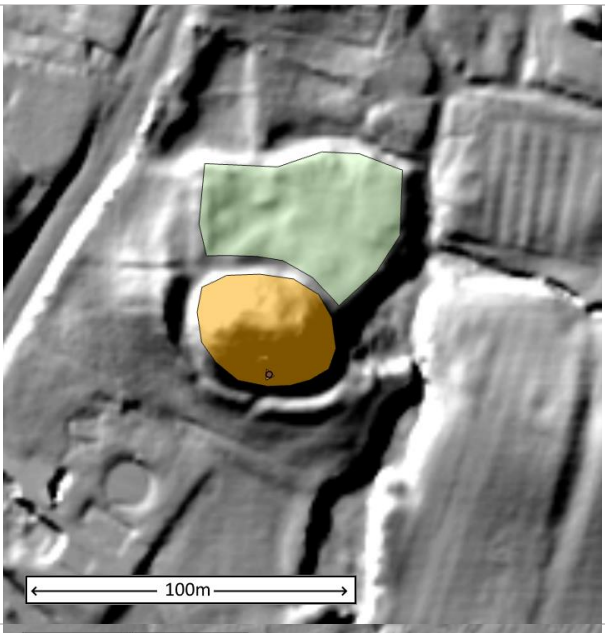
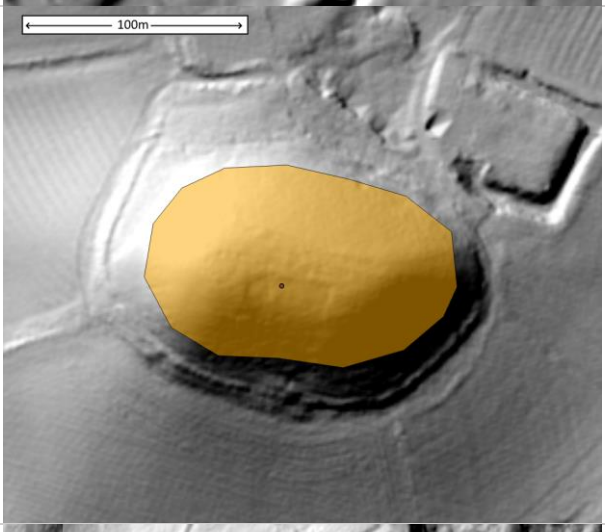
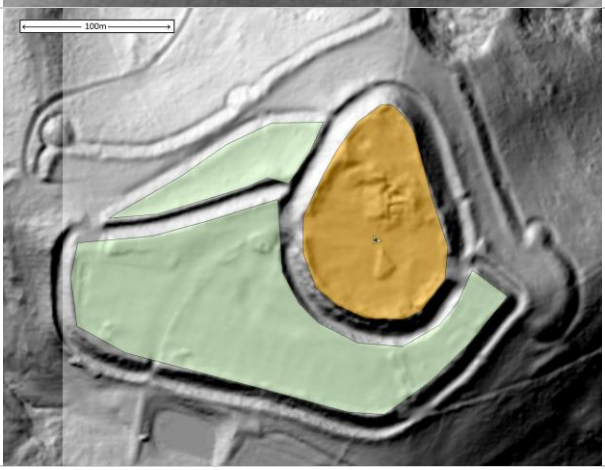
CWIL11	Lewisham Castle	Aldbourne	Wiltshire	
CWIL12	Ludgershall Castle	Ludgershall	Wiltshire	
CWIL13	Malmesbury Castle	Malmesbury	Wiltshire	

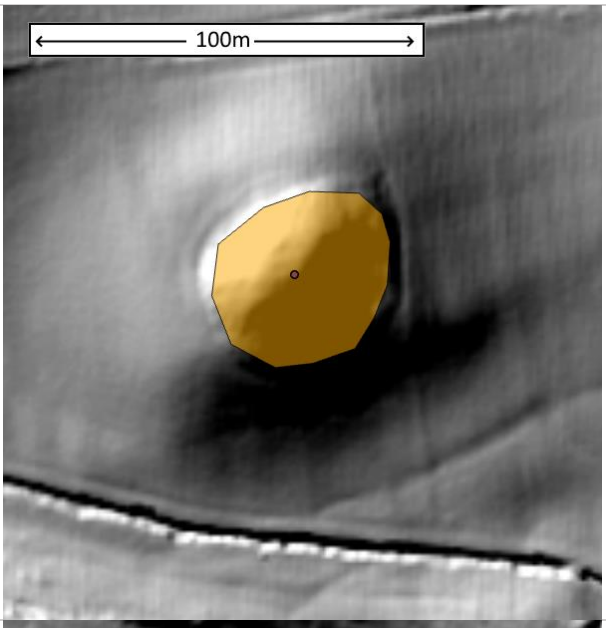
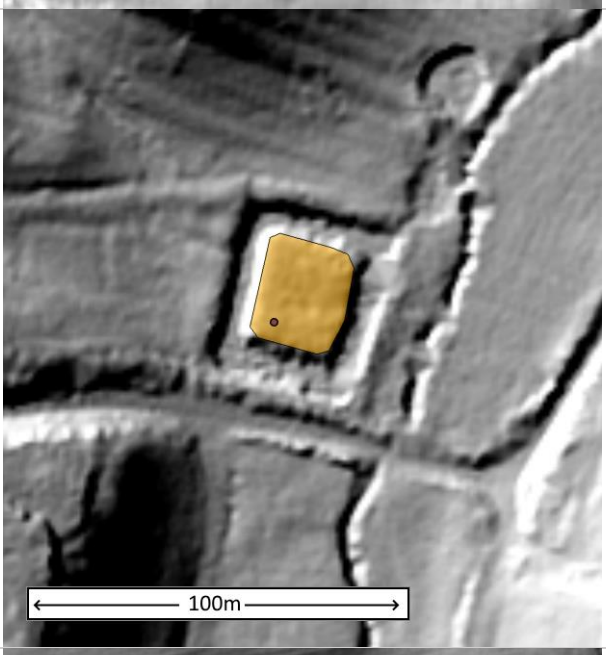
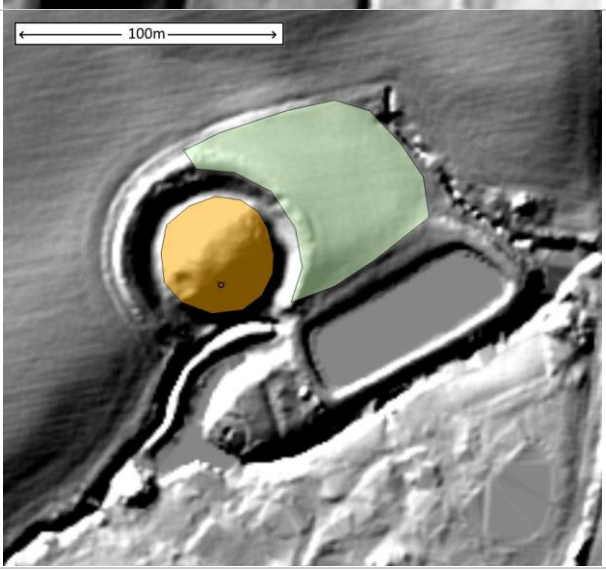
CWIL14	Marlborough Castle	Marlborough	Wiltshire	
CWIL15	Norwood Castle	Oaksey	Wiltshire	
CWIL16	Old Sarum Castle	Salisbury	Wiltshire	

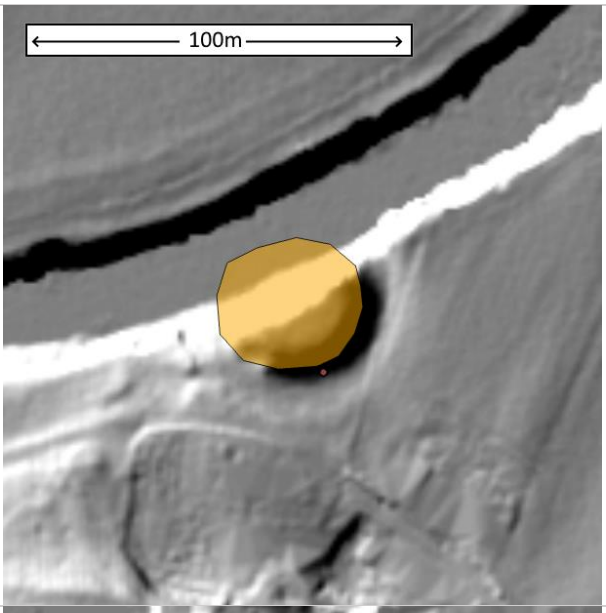
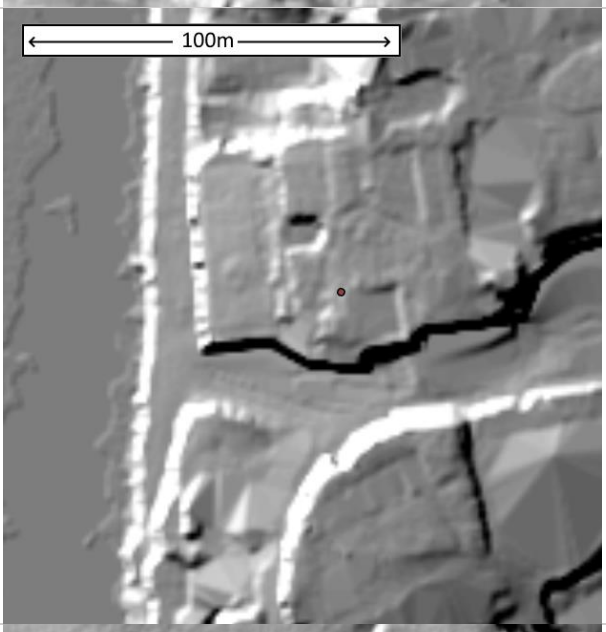
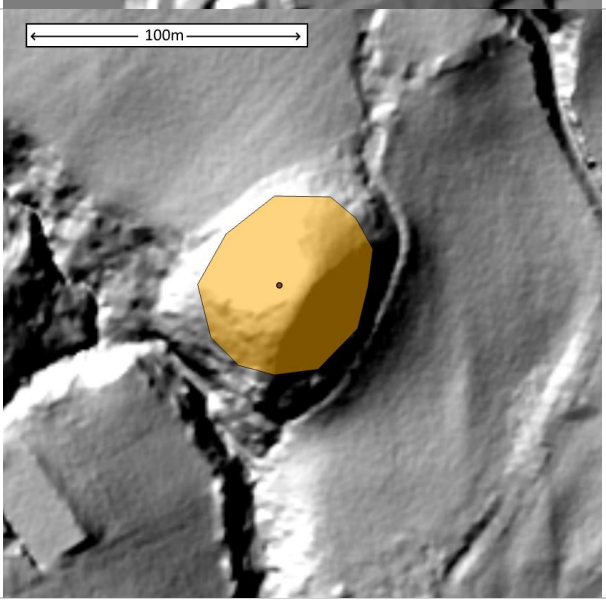
				
CWIL17	Sherrington Motte	Sherrington	Wiltshire	
CWIL18	Stapleford Castle	Stapleford	Wiltshire	

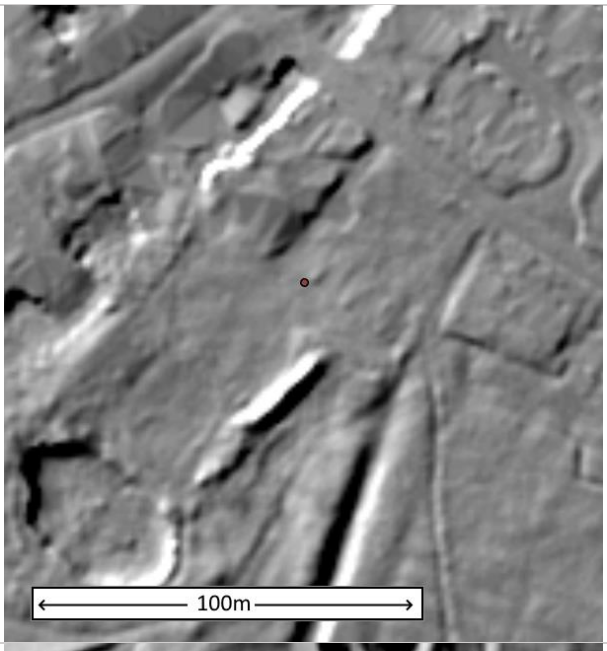
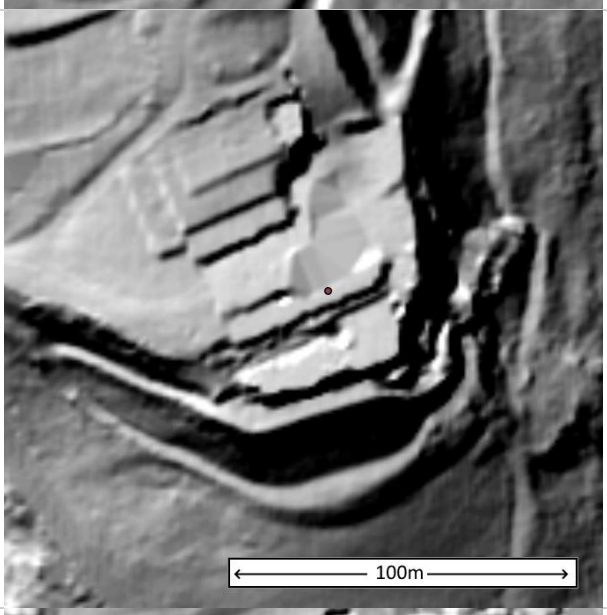
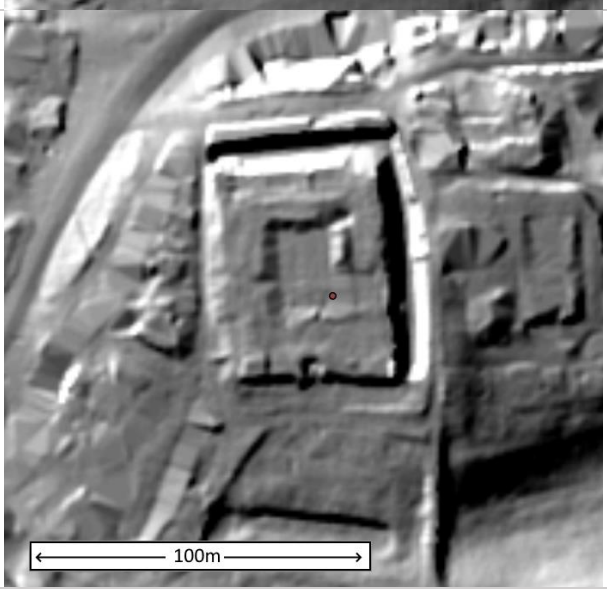
CWIL19	Trowbridge Castle	Trowbridge	Wiltshire	
CWIL20	West Dean Motte	West Dean	Wiltshire	
CWOR01	Hanley Castle	Hanley Castle	Worcestershire	

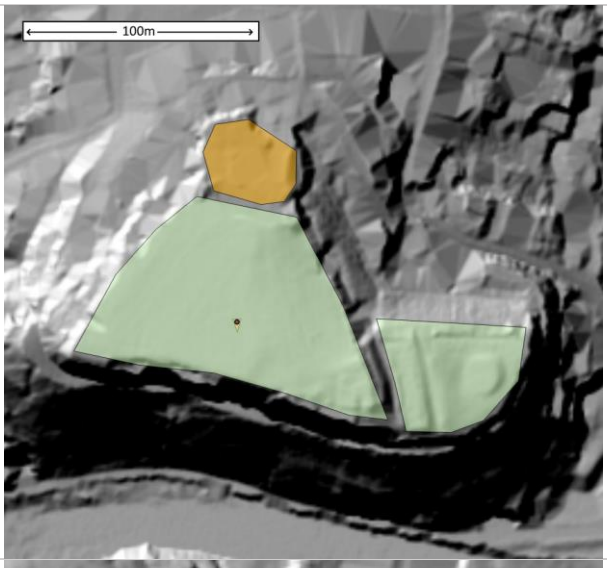
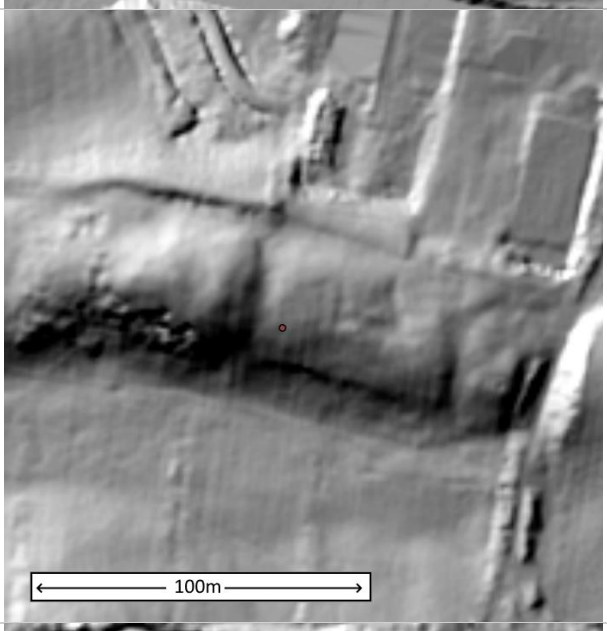
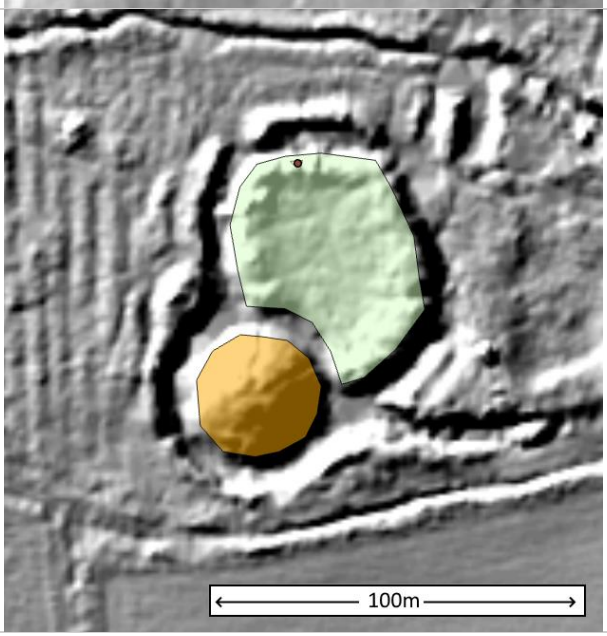
CWOR02	Hartlebury Castle	Hartlebury	Worcestershire	
CWOR03	Bengeworth Castle	Eversham	Worcestershire	
CWOR04	The Mount	Boeley	Worcestershire	

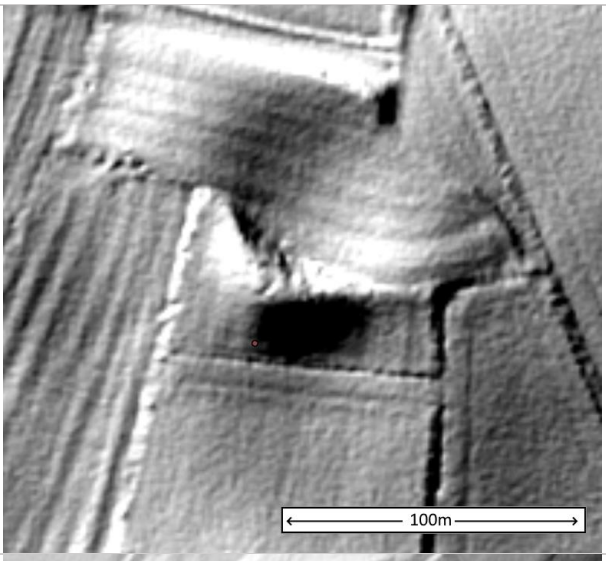
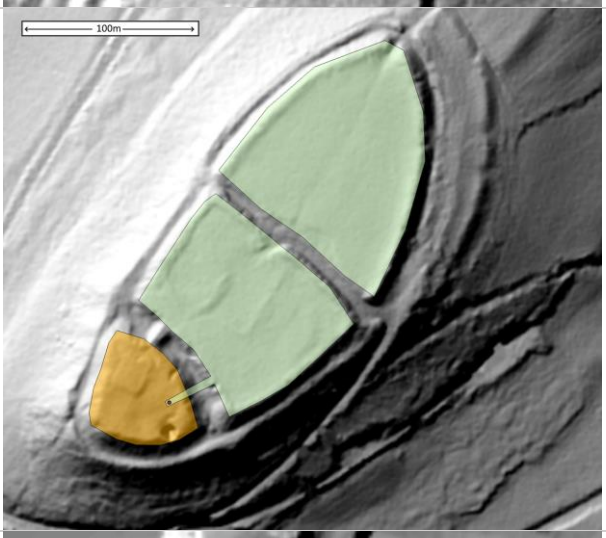
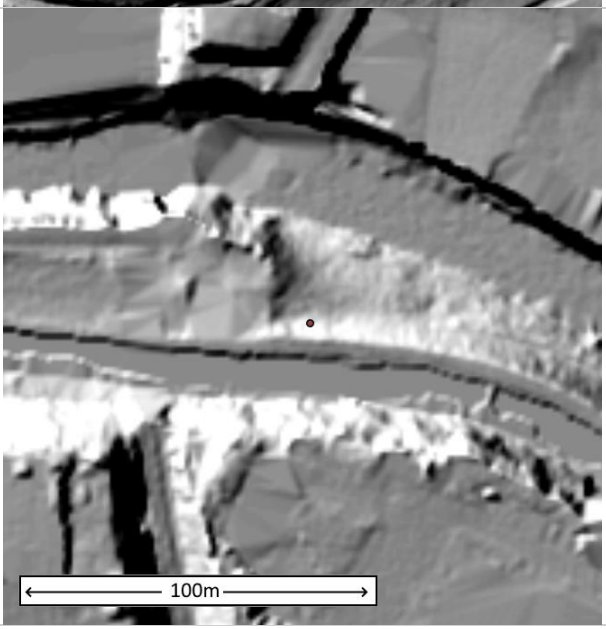
CWOR05	Castlemorton Motte	Castlemorton	Worcestershire	
CWOR06	Crookbarrow Hill	Whittington	Worcestershire	
CWOR07	Elmley Castle	Elmley Castle	Worcestershire	

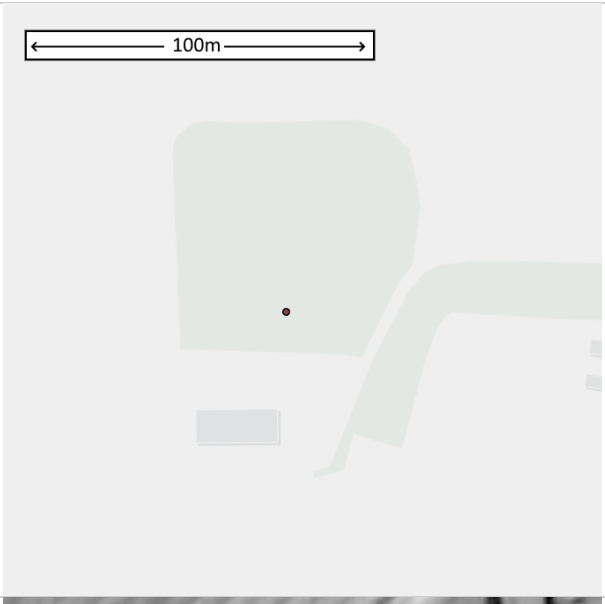
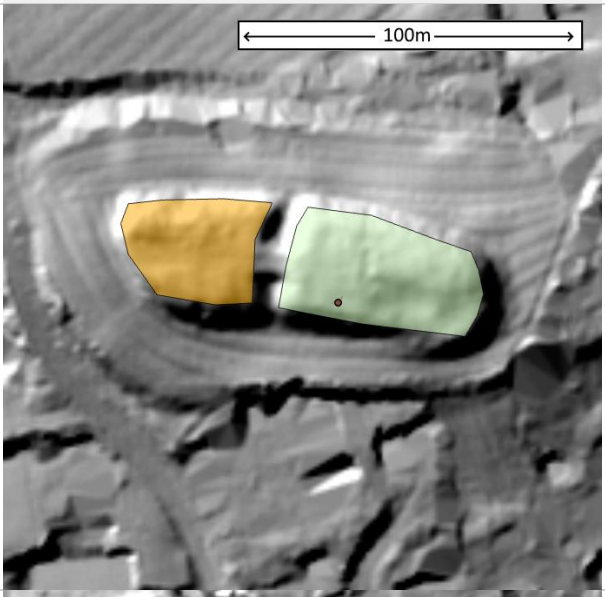
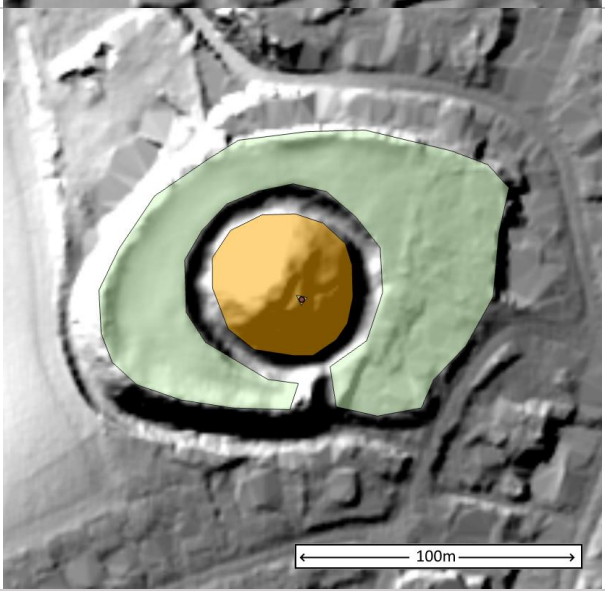
CWOR08	Homme Castle	Clifton Upon Teme	Worcestershire	
CWOR09	Inkberrow Castle	Inkberrow	Worcestershire	
CWOR10	Leigh Castle Green	Leigh	Worcestershire	

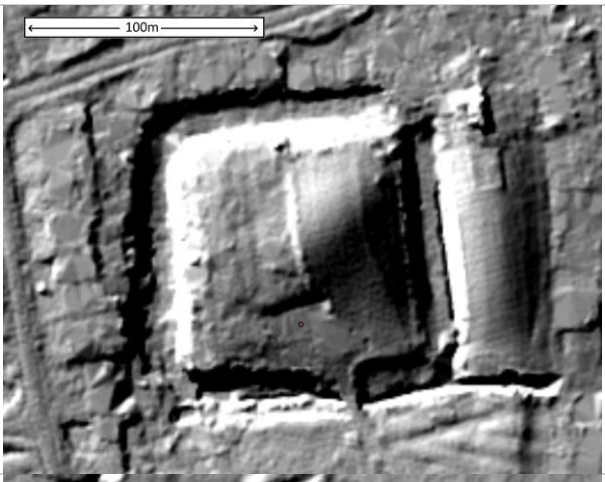
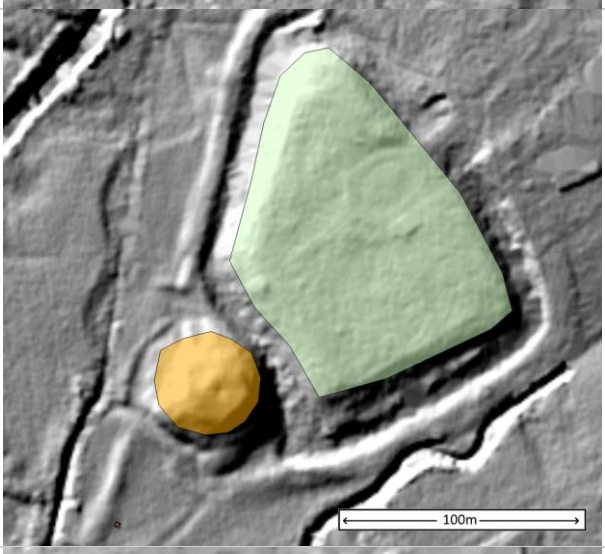
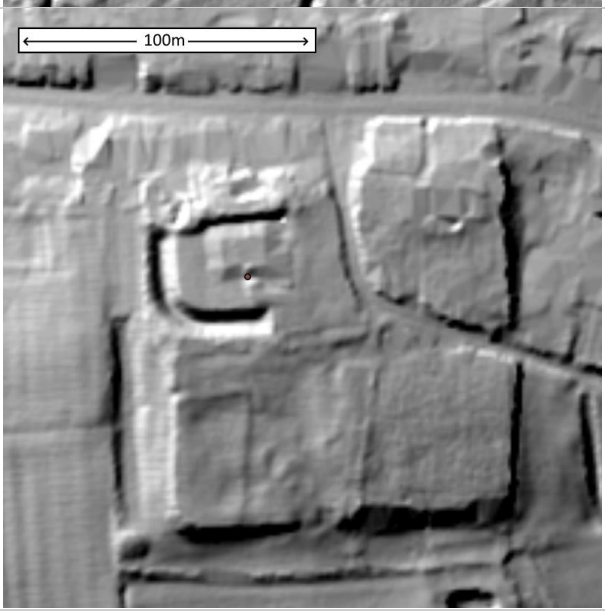
CWOR11	Rochford Motte	Rochford	Worcestershire	
CWOR12	Worcester Castle	Worcester	Worcestershire	
CWOR13	Crundles Farm	Kidderminster Foreign	Worcestershire	

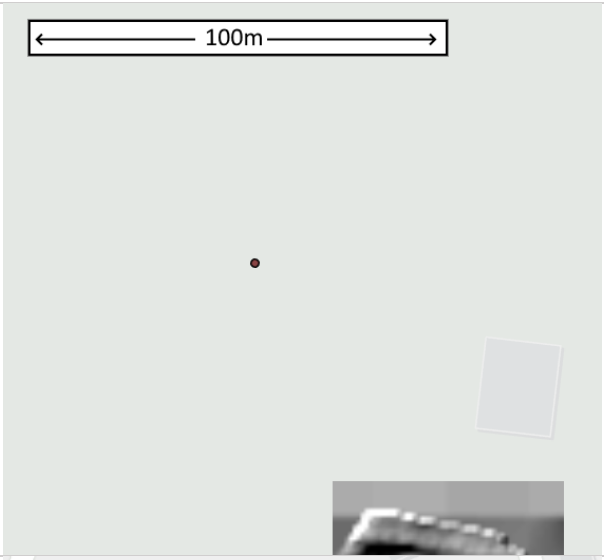
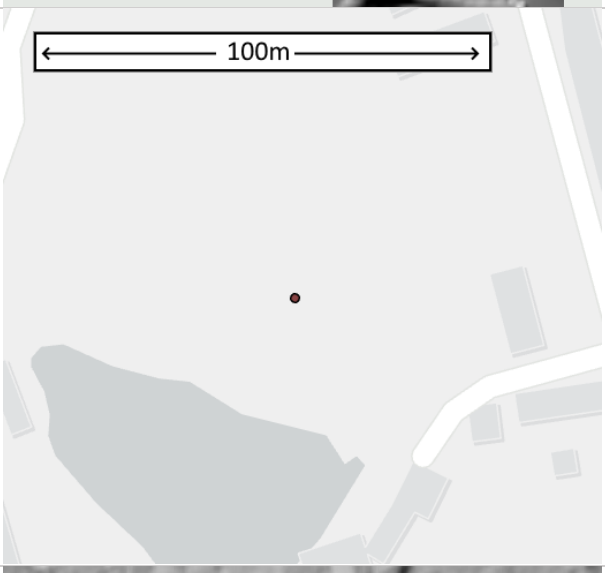
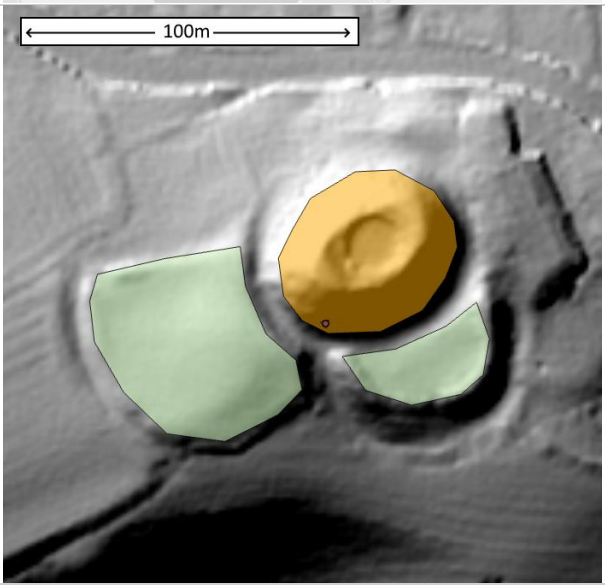
CYOR01	Cawood Castle	Cawood	Yorkshire	
CYOR02	Kirby Knowle Castle	Kirby Knowle	Yorkshire	
CYOR03	Middleham Castle	Middleham	Yorkshire	

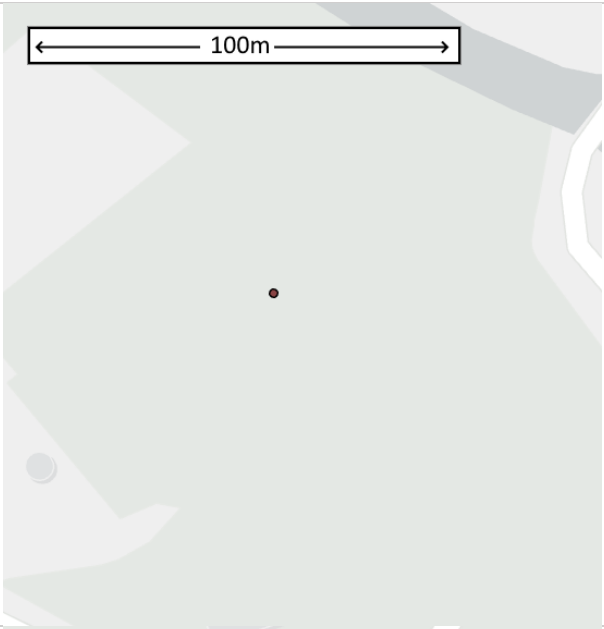
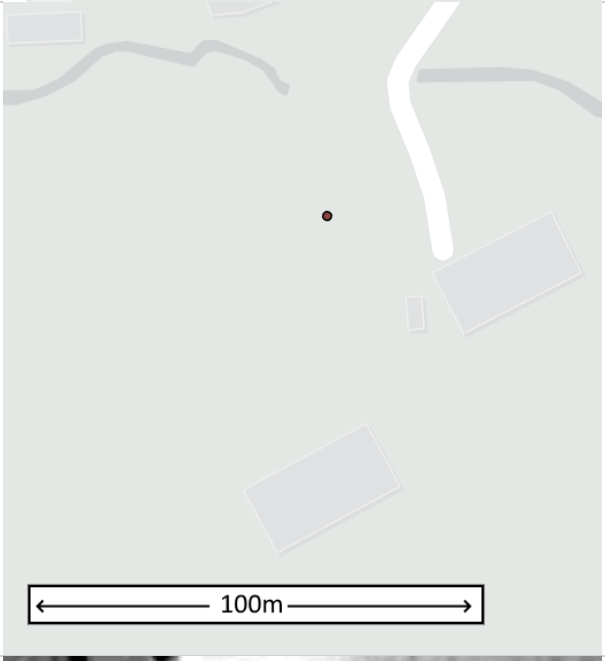
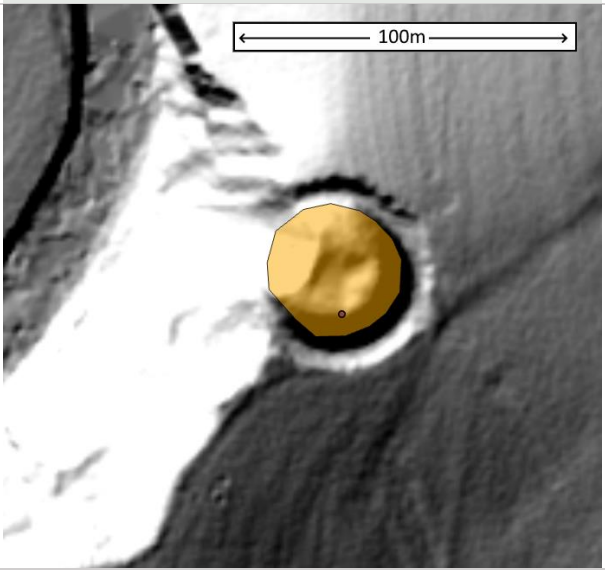
CYOR04	Richmond Castle	Richmond	Yorkshire	
CYOR05	Acklam Motte	Acklam	Yorkshire	
CYOR06	Adwick le Street Castle Hills	Doncaster	Yorkshire	

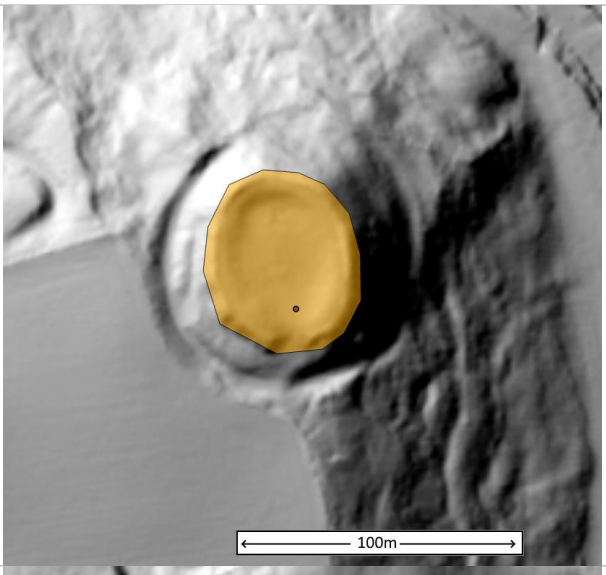
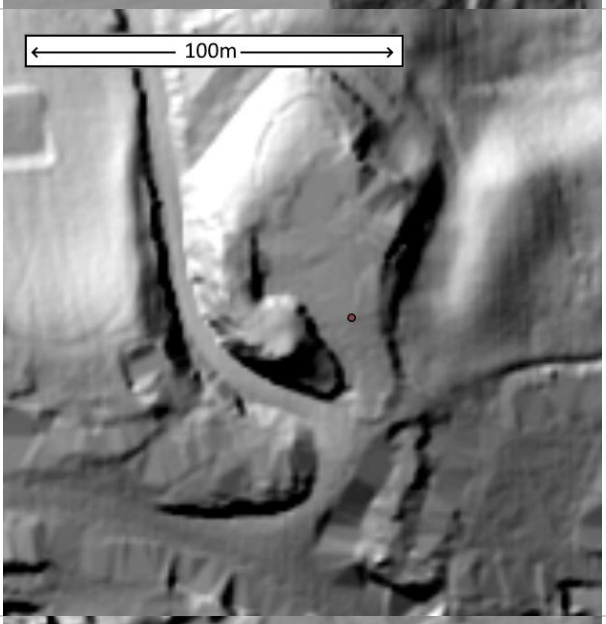
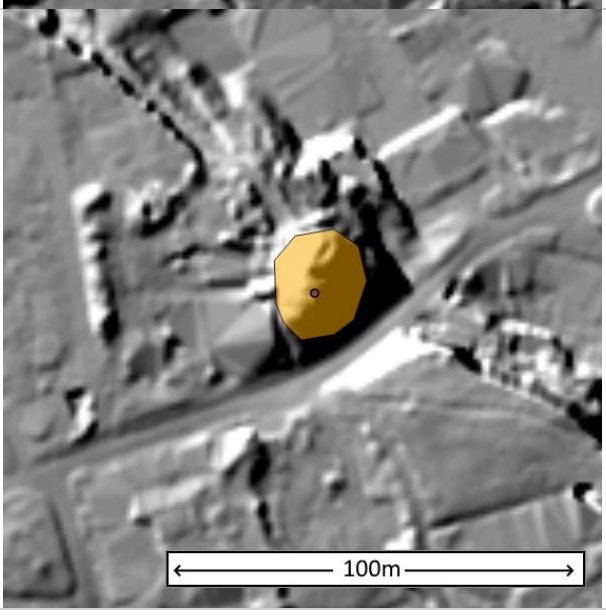
CYOR07	Aldborough Studforth Hill	Boroughbridge	Yorkshire	
CYOR08	Almondbury Castle Hill	Huddersfield	Yorkshire	
CYOR09	Armley Giants Hill	Leeds	Yorkshire	

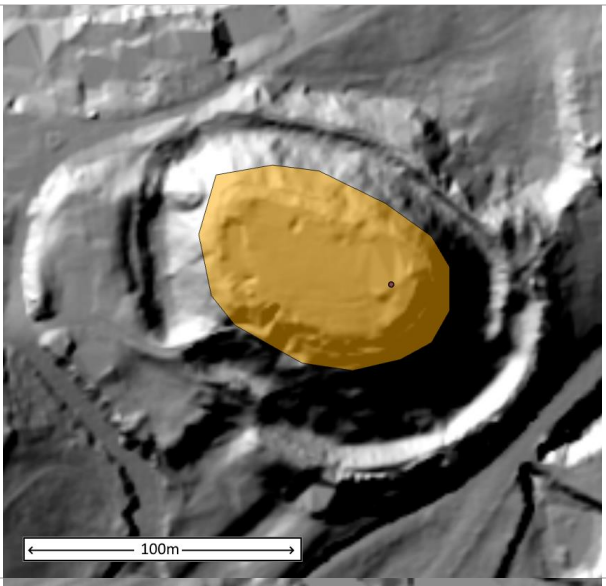
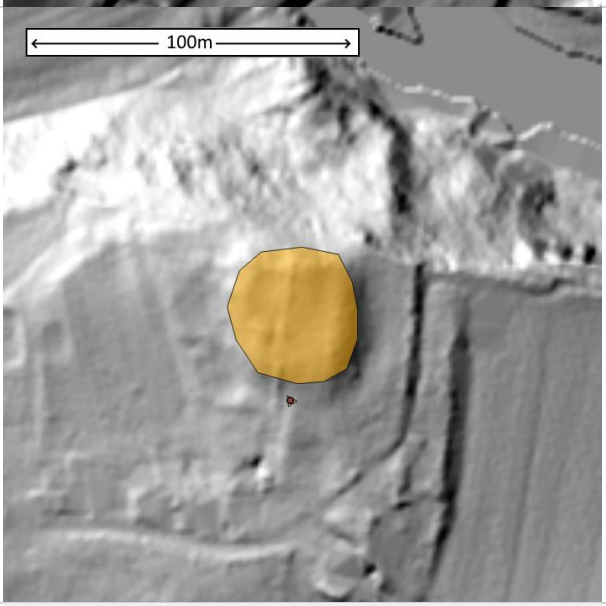
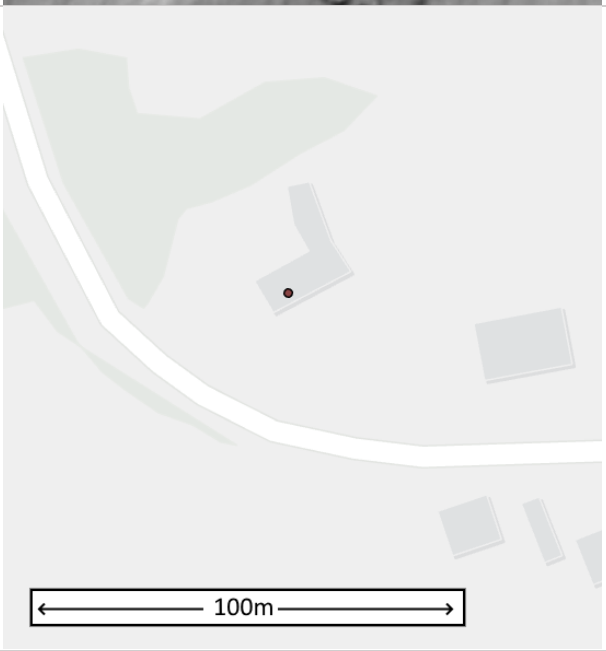
CYOR10	Aughton Castle Hill	Ellerton	Yorkshire	
CYOR11	Bardsey Castle Hill	Bardsey Cum Rigton	Yorkshire	
CYOR12	Hall Tower Hill	Barwick in Elmet and Scholes	Yorkshire	

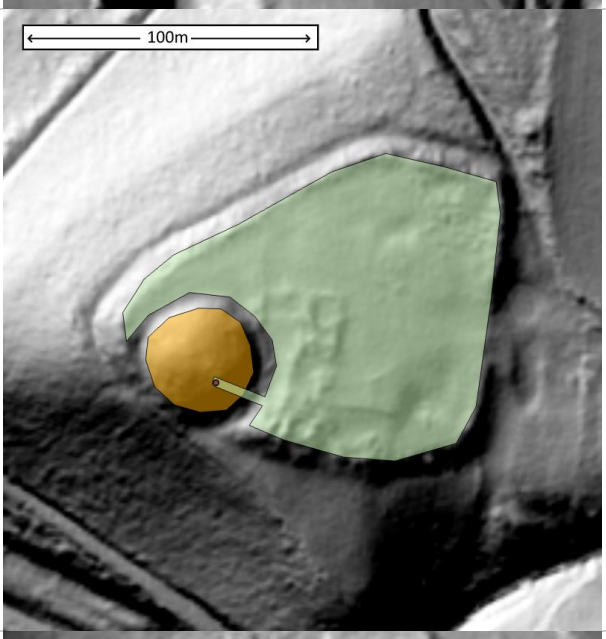
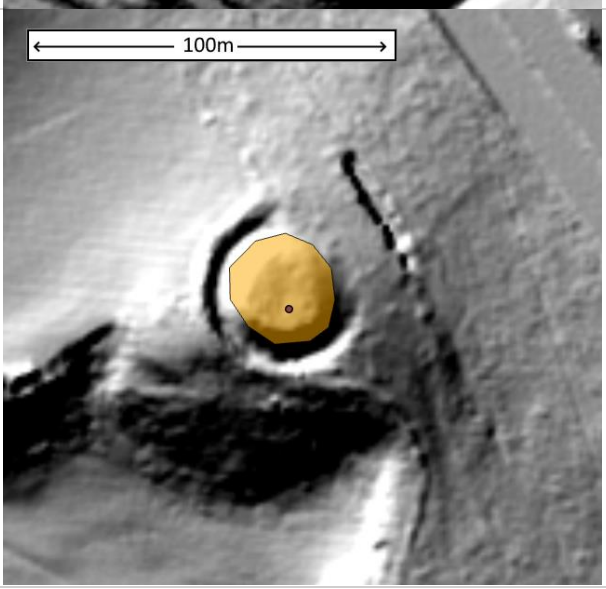
CYOR13	Baynard Castle	Cottingham	Yorkshire	
CYOR14	Bishop Rufus Palace	Northallerton	Yorkshire	
CYOR15	Bowes Castle	Bowes	Yorkshire	

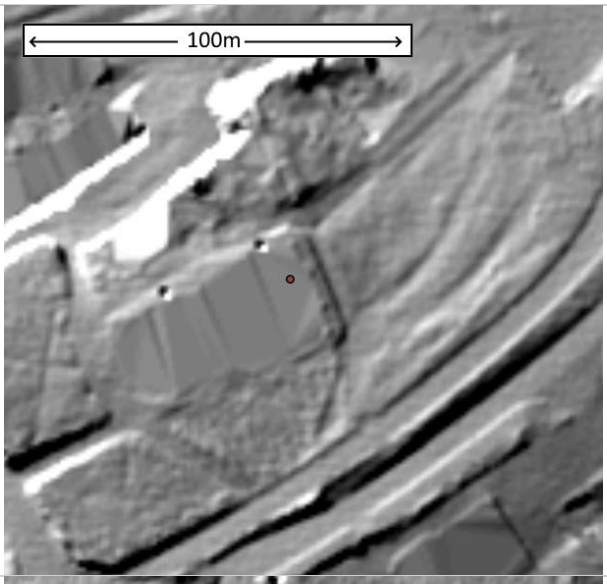
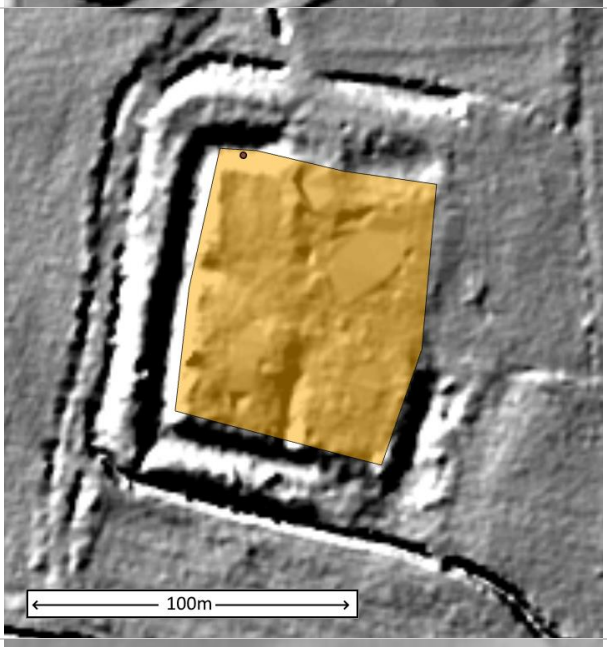
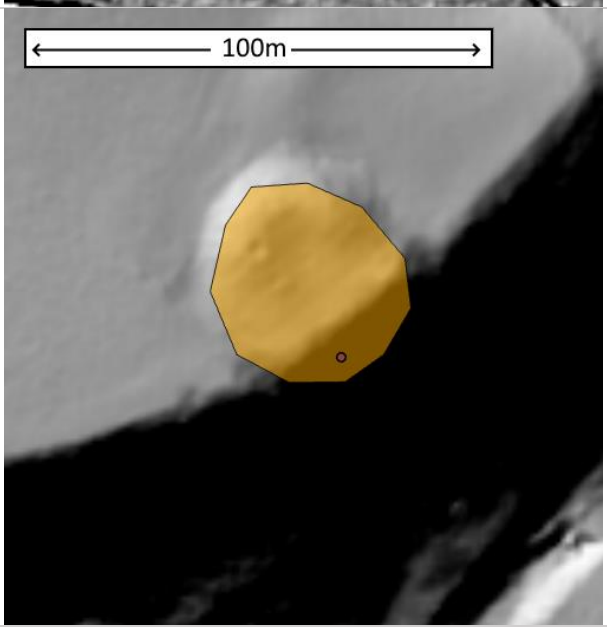
CYOR16	Bailey Hill	Bradfield	Yorkshire	
CYOR17	Brompton Castle hill	Brompton	Yorkshire	
CYOR18	Castle Hill	Burton in Lionsdale	Yorkshire	

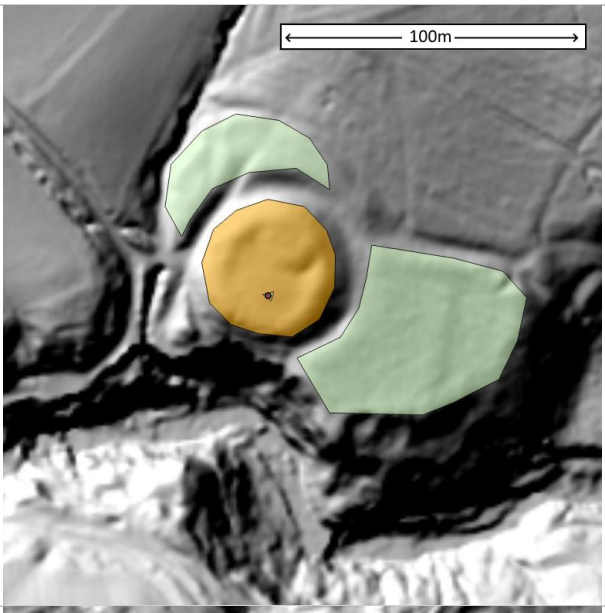
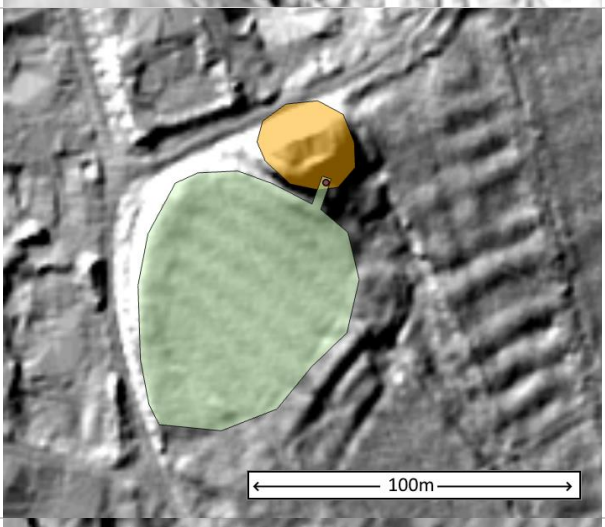
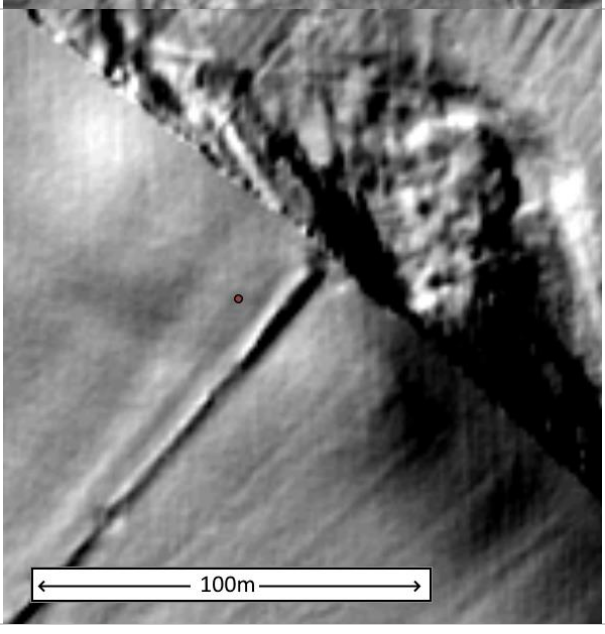
CYOR19	Buttercrambe Castle	Buttercrambe With Bossall	Yorkshire	
CYOR20	Carlton Round Hill	Carlton Town	Yorkshire	
CYOR21	Castle Haugh	Newsholme	Yorkshire	

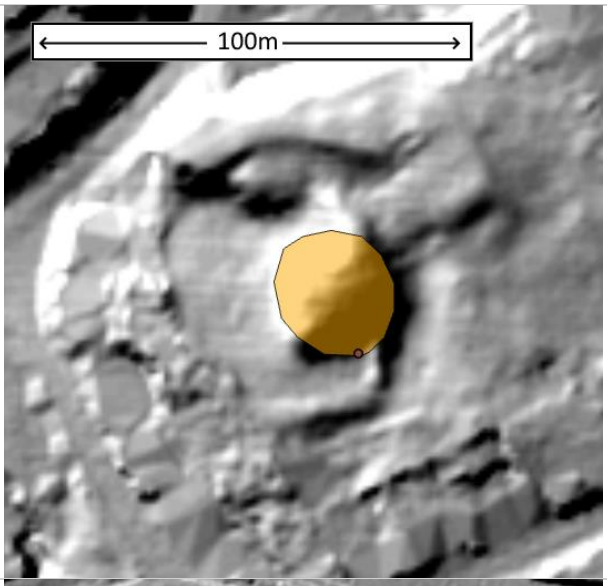
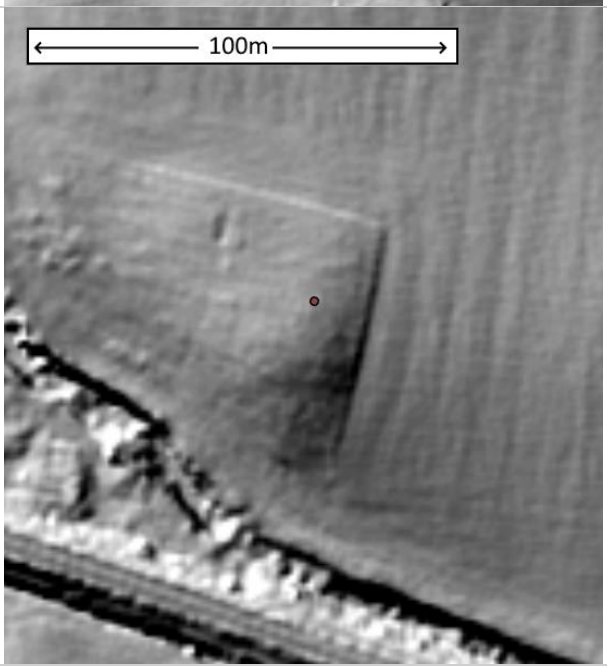
CYOR22	Castle Levington	Castlelevington	Yorkshire	
CYOR23	Castleton Castle Hill	Danby	Yorkshire	
CYOR24	Palet Hill	Catterick	Yorkshire	

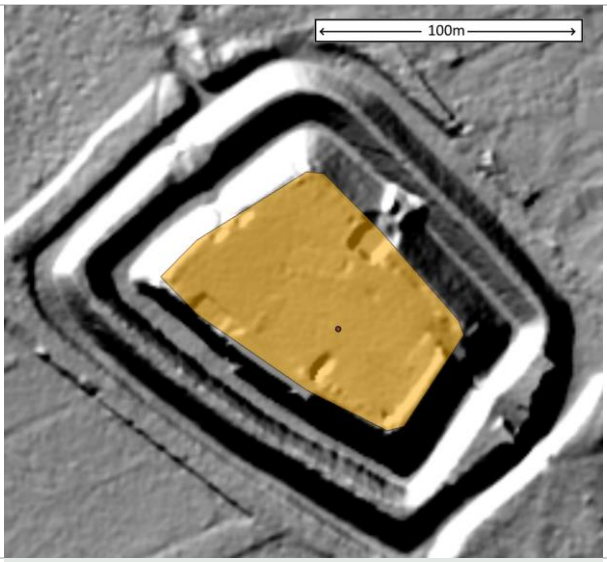
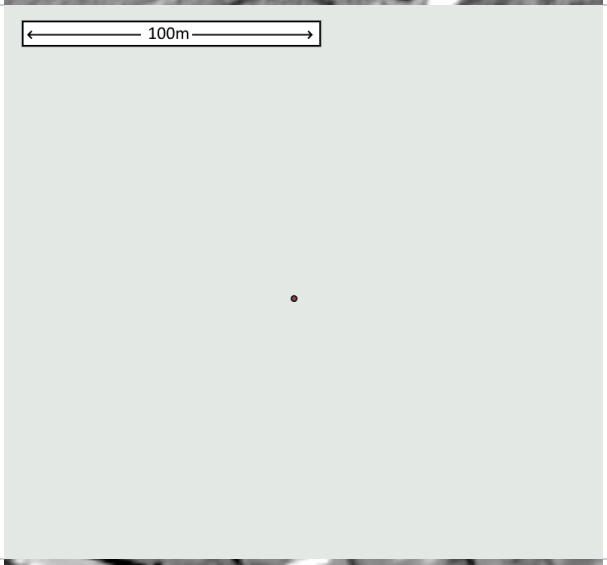
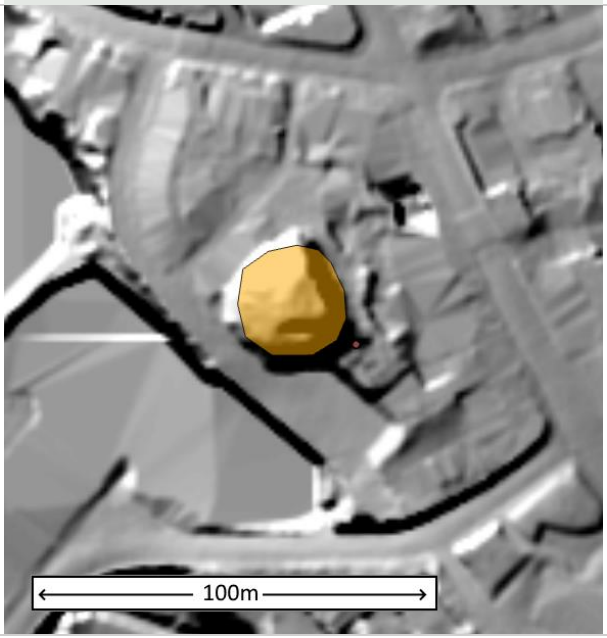
CYOR25	Conisbrough Castle	Conisborough Ward Doncaster	Yorkshire	
CYOR26	Cotherstone Castle	Cotherstone	Yorkshire	
CYOR27	Crayke Castle	Crayke	Yorkshire	

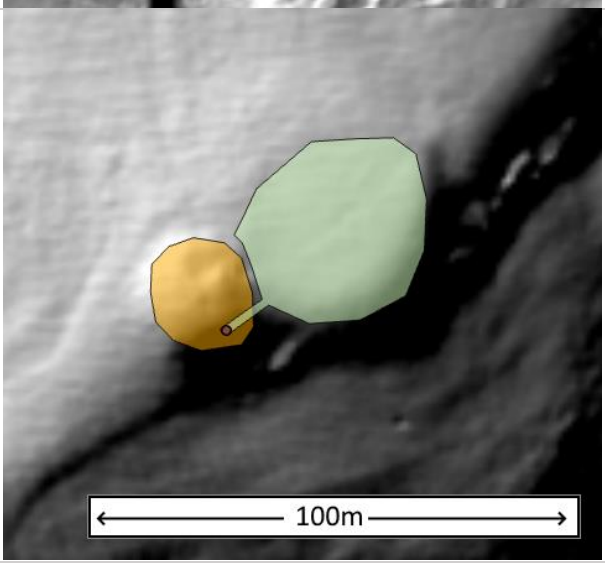
CYOR28	Crazy Castle	Skelton	Yorkshire	
CYOR29	T'Hall Garth	Cropton	Yorkshire	
CYOR30	Cusworth Castle Hill	Sprotbrough and Cusworth	Yorkshire	

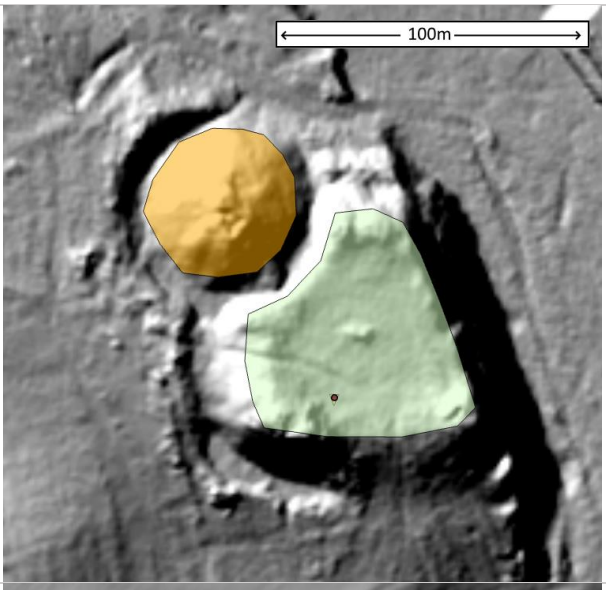
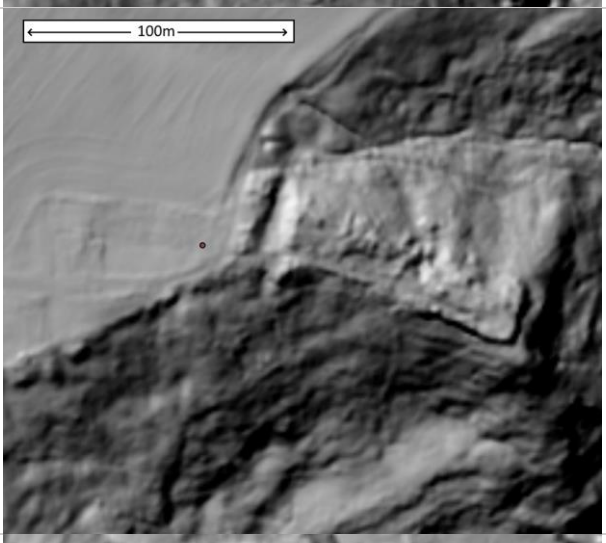
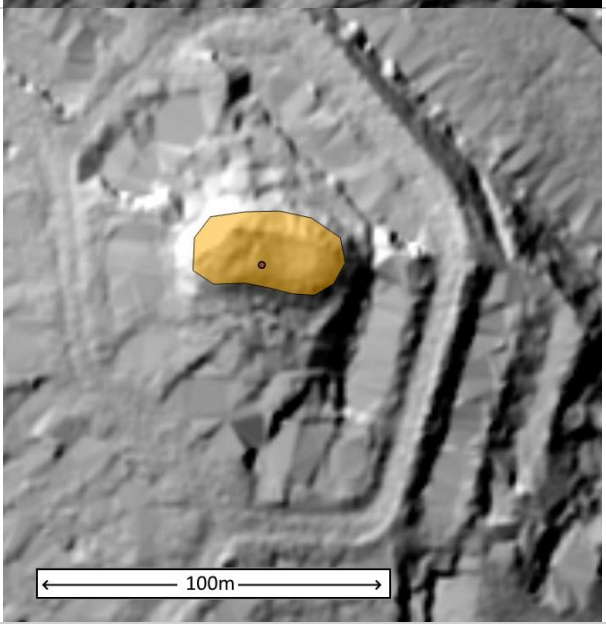
CYOR31	Doncaster Castle	Doncaster	Yorkshire	
CYOR32	Drax Castle Hill	Drax	Yorkshire	
CYOR33	Easby Castle Hill	Easby	Yorkshire	

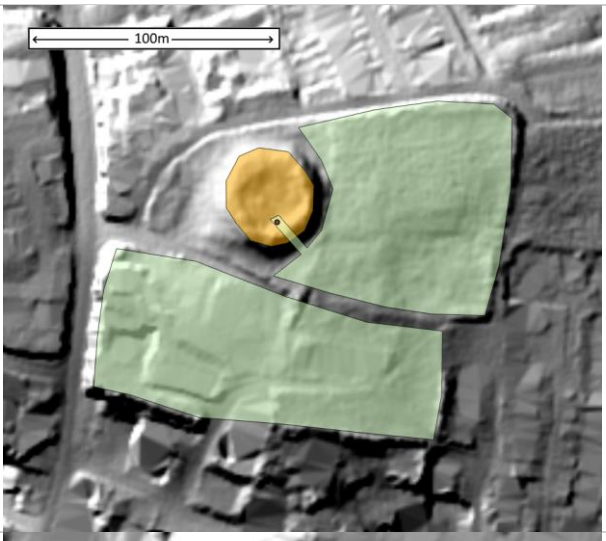
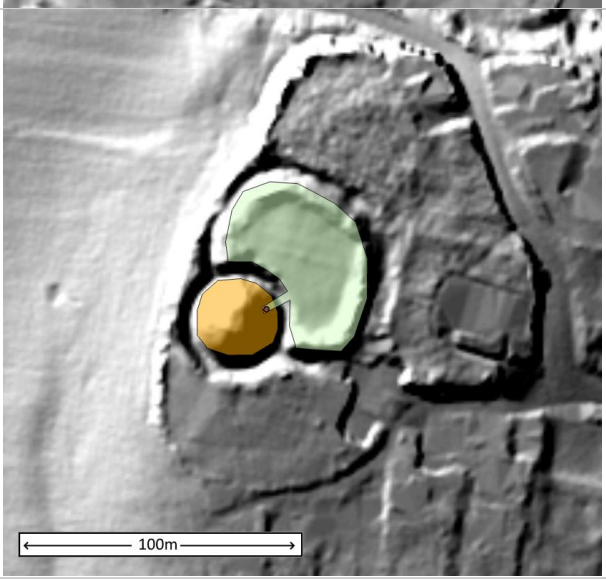
CYOR34	Foss Castle	Lythe	Yorkshire	
CYOR35	Fraisthorpe Motte	Barmston	Yorkshire	
CYOR36	Gilling Castle	Gilling with Hartford and Sedbury	Yorkshire	

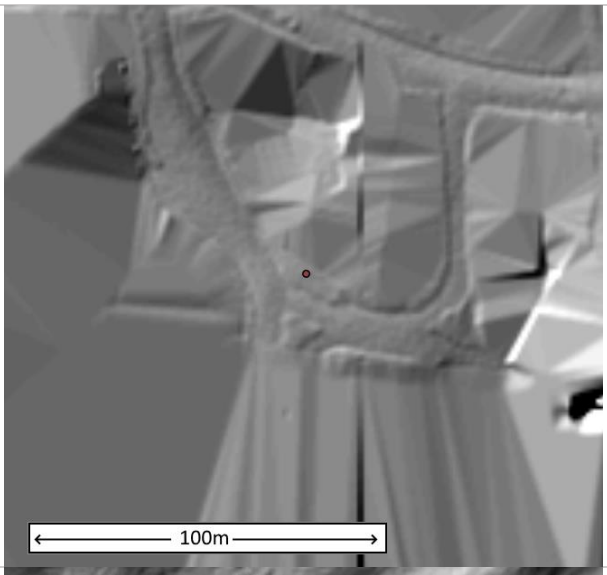
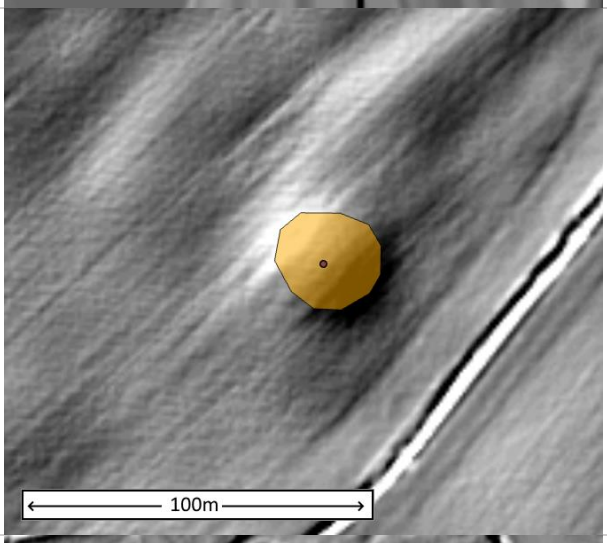
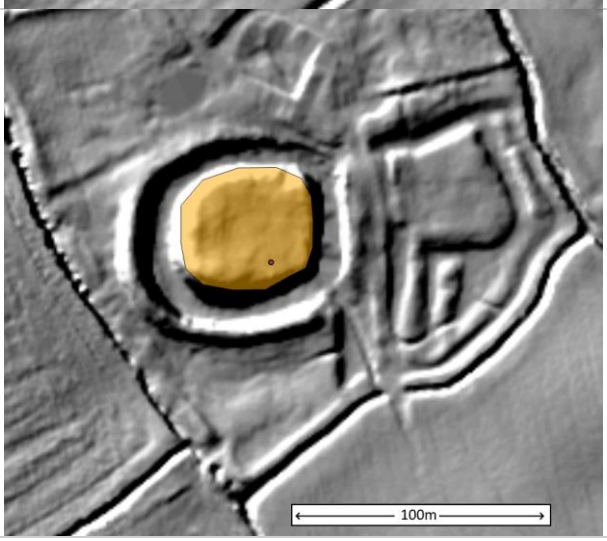
CYOR37	Great Driffield Moat Hill	Driffield	Yorkshire	
CYOR38	Grinton Oxhill	Grinton	Yorkshire	
CYOR39	Hampole Castle Hill	Hampole	Yorkshire	

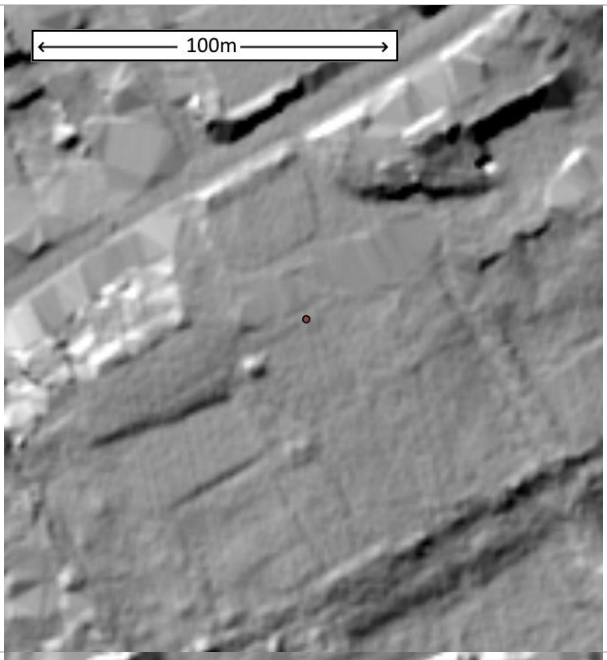
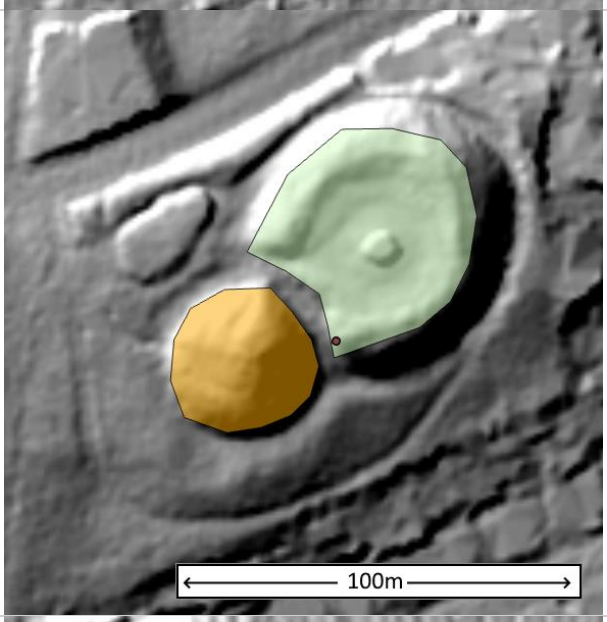
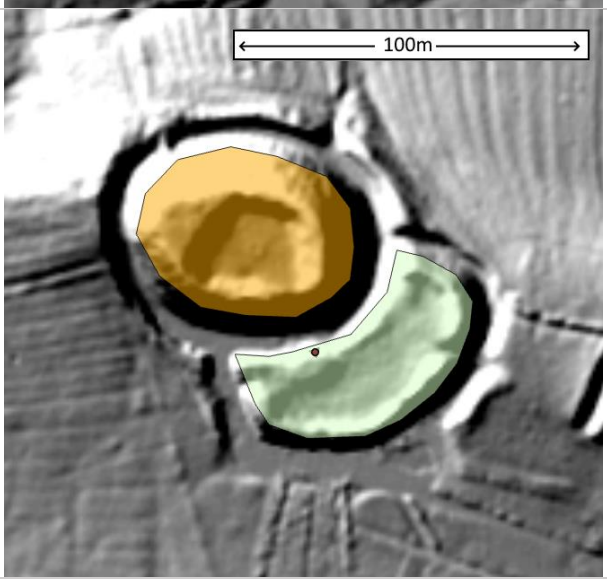
CYOR40	Helmsley Castle	Helmsley	Yorkshire	
CYOR41	Hood Castle	Kilburn High and Low	Yorkshire	
CYOR42	Huddersfield Hill House	Huddersfield	Yorkshire	

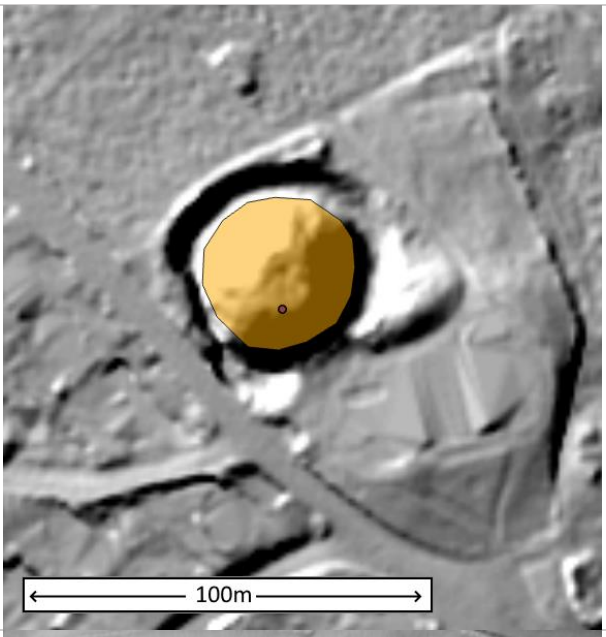
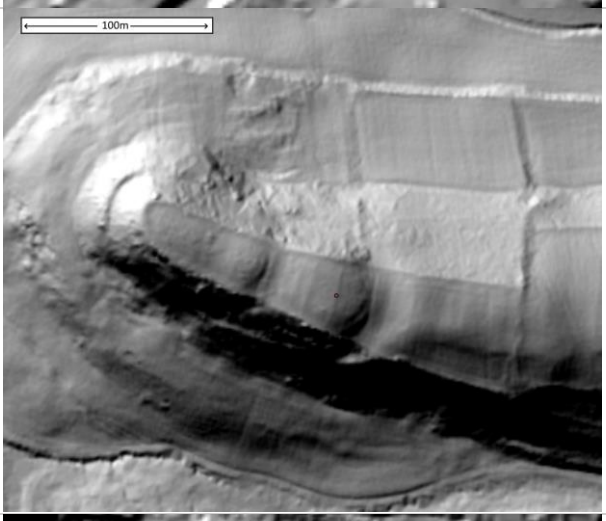
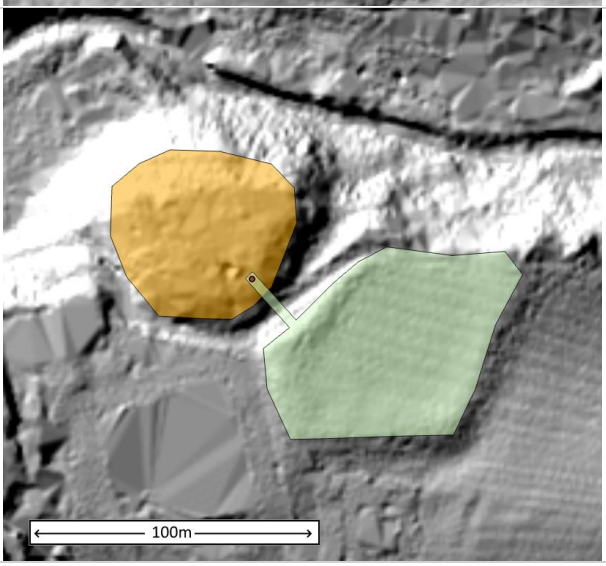
CYOR43	Humanby Castle hill	Humanby	Yorkshire	
CYOR44	Hutton Conyers Castle	Hutton Conyers	Yorkshire	
CYOR45	Ingleby Barwick Round Hill	Ingleby Barwick	Yorkshire	

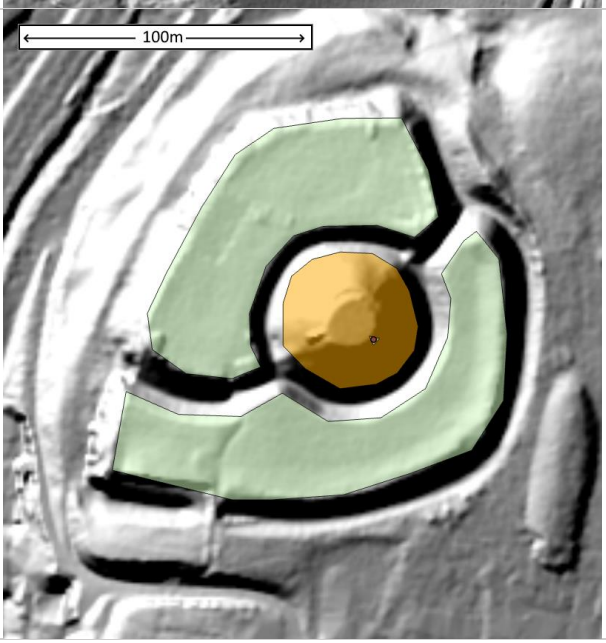
CYOR46	Killerby Castle Hills	Catterick	Yorkshire	
CYOR47	Kilton Castle	Lockwood	Yorkshire	
CYOR48	Kimberworth Motte	Rotherham	Yorkshire	

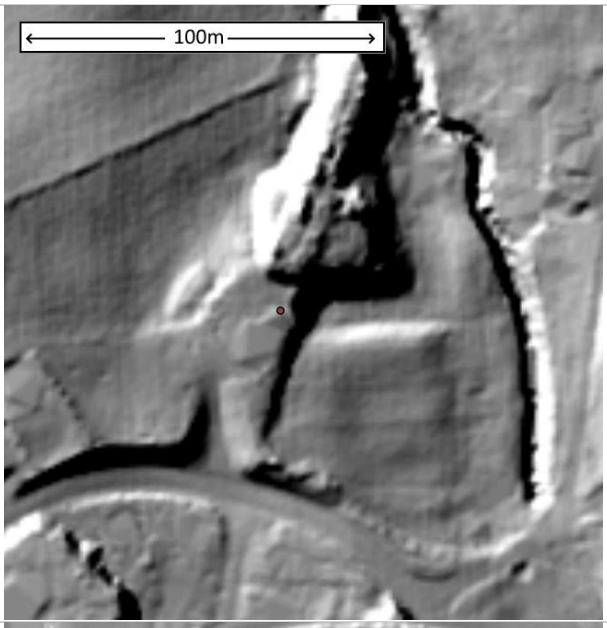
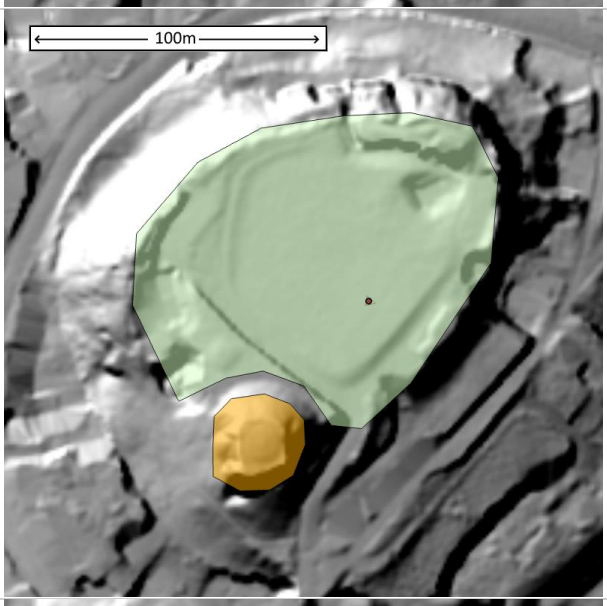
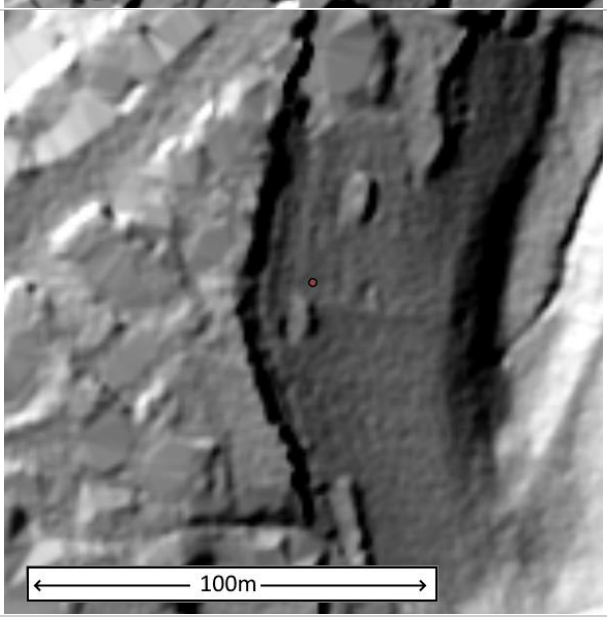
CYOR49	Garth Hill	Garforth	Yorkshire	
CYOR50	Knaresborough Castle	Knaresborough	Yorkshire	
CYOR51	Laughton en le Morthen Castle Hill	Thurcroft	Yorkshire	

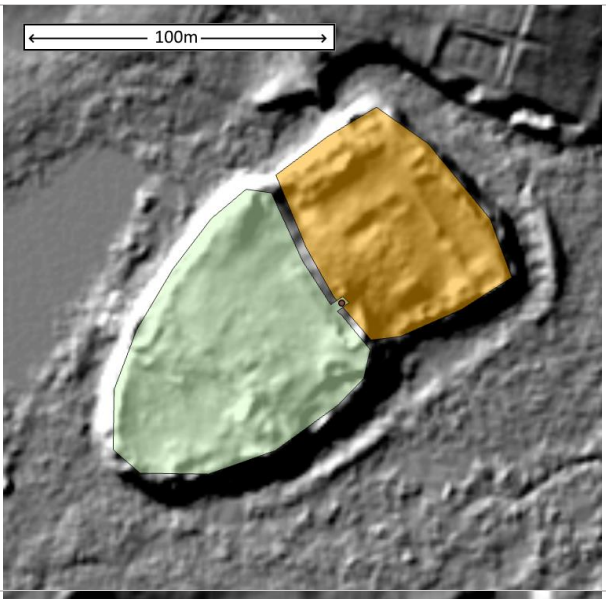
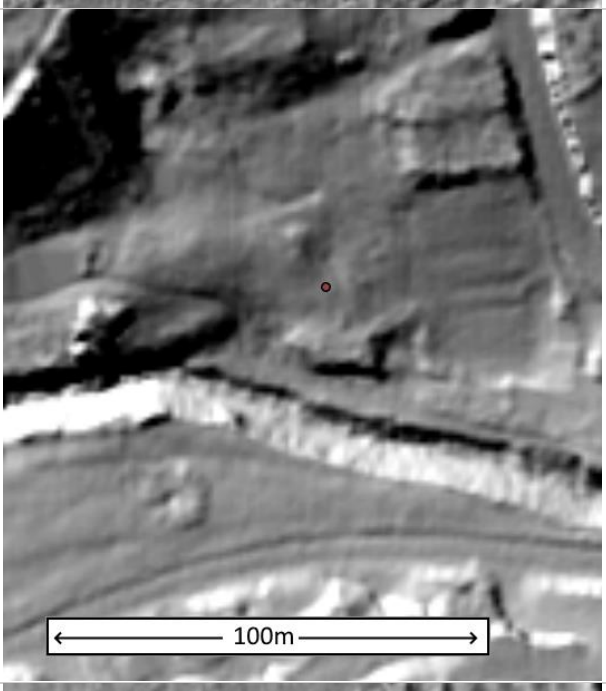
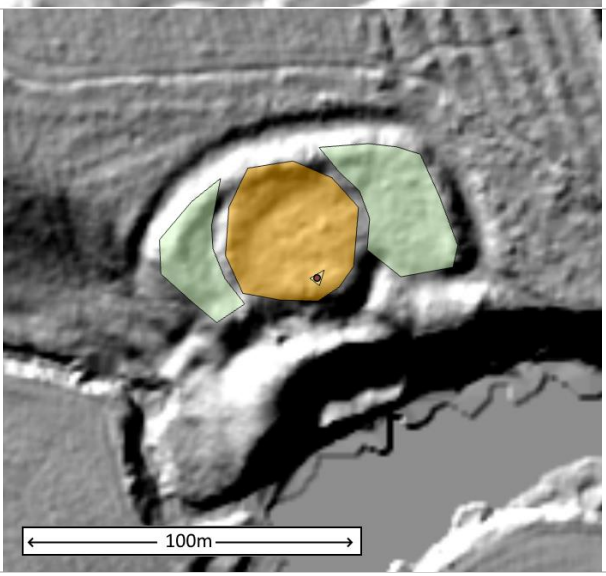
CYOR52	Leeds Castle Hill	Leeds	Yorkshire	
CYOR53	Little Kelk	Kelk	Yorkshire	
CYOR54	Coney Hill	Lockington	Yorkshire	

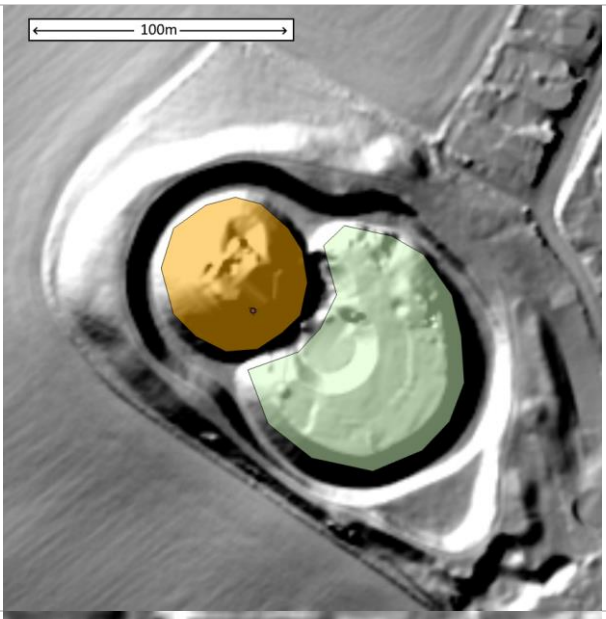
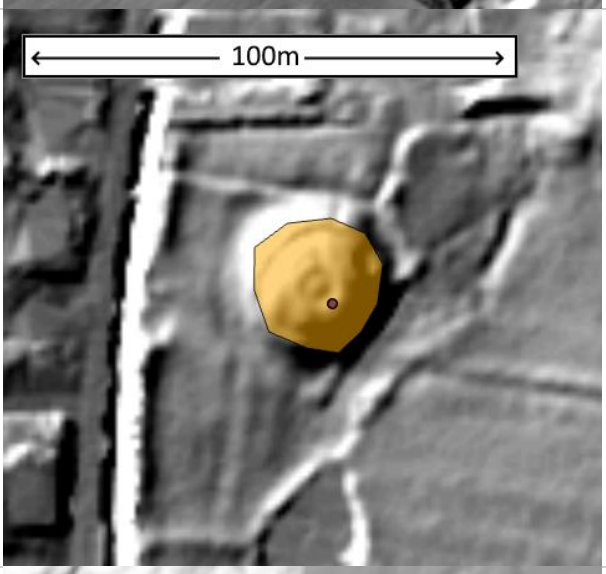
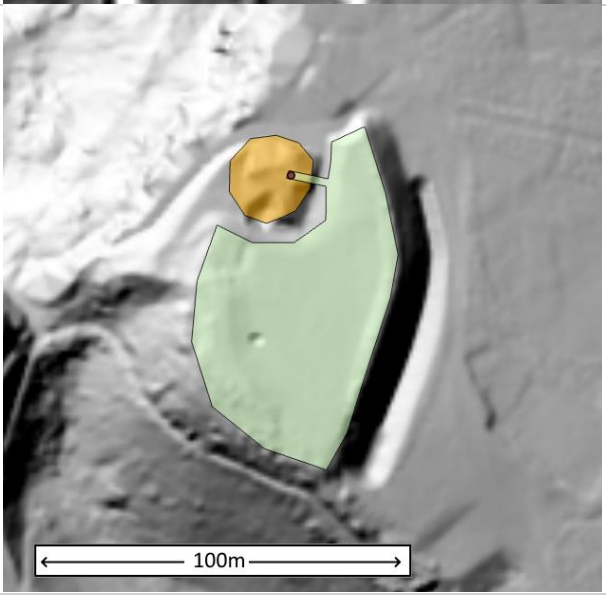
CYOR55	Malton Castle	Malton	Yorkshire	
CYOR56	Mexborough Castle Hill	Mexborough	Yorkshire	
CYOR57	Middleham Williams Hill	Middleham	Yorkshire	

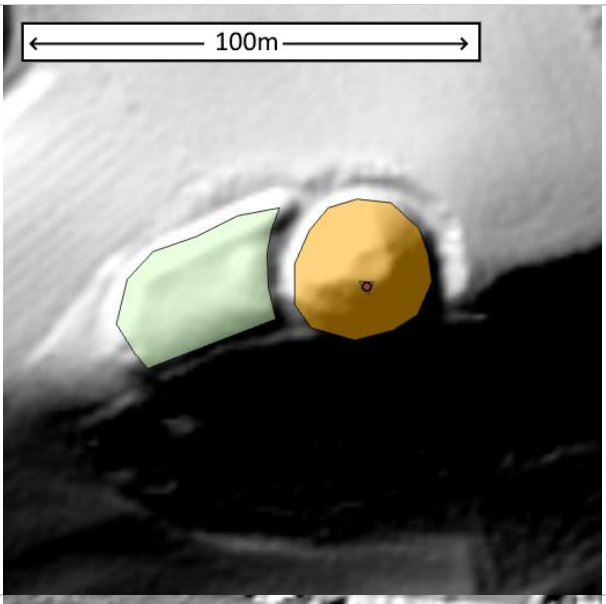
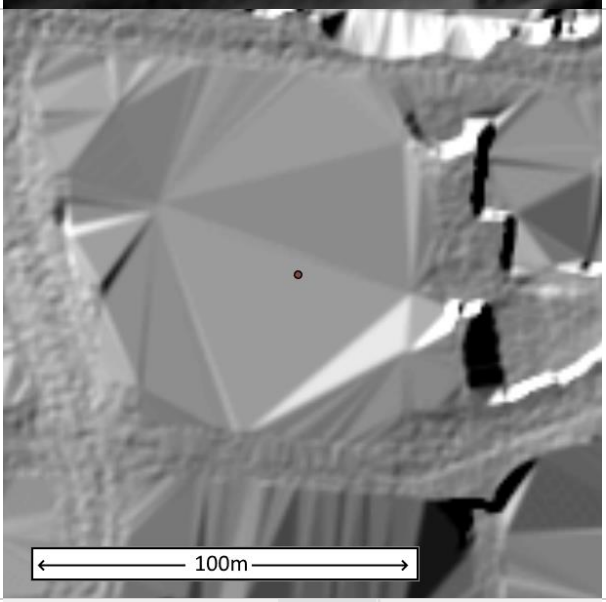
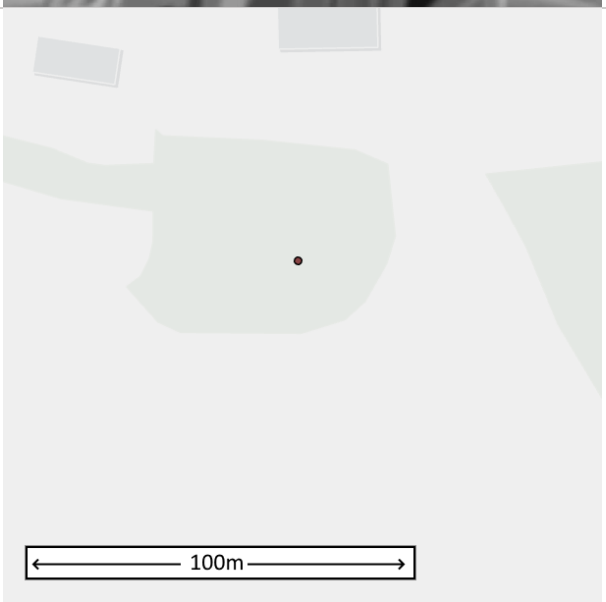
CYOR58	Castle Hall Hill	Mirfield	Yorkshire	
CYOR59	Mount Ferrant Castle	Birdsall	Yorkshire	
CYOR60	Mowbray Castle	Kirkbury Malzeard	Yorkshire	

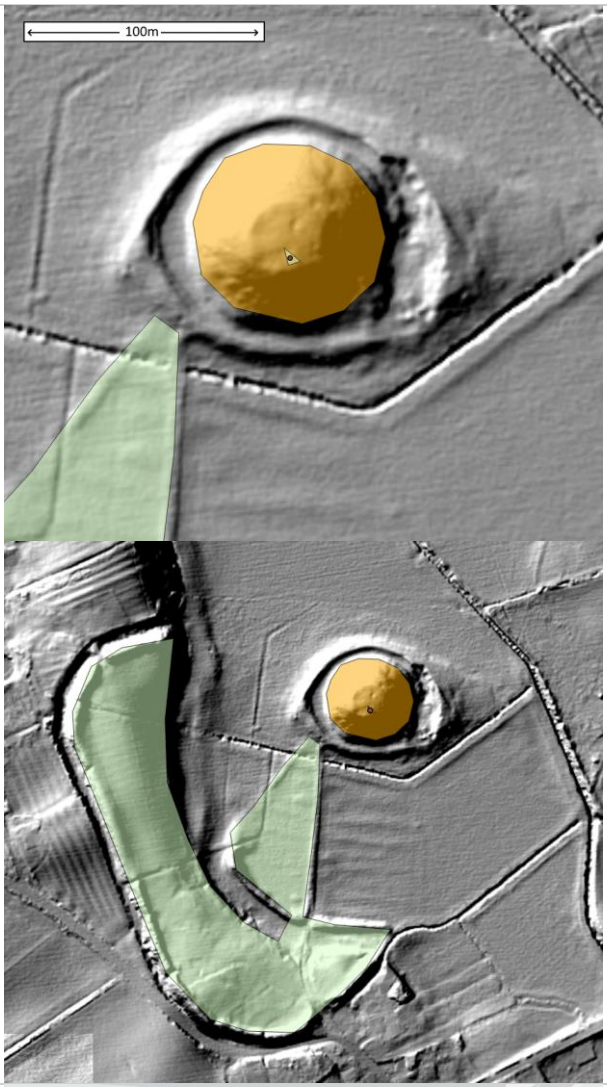
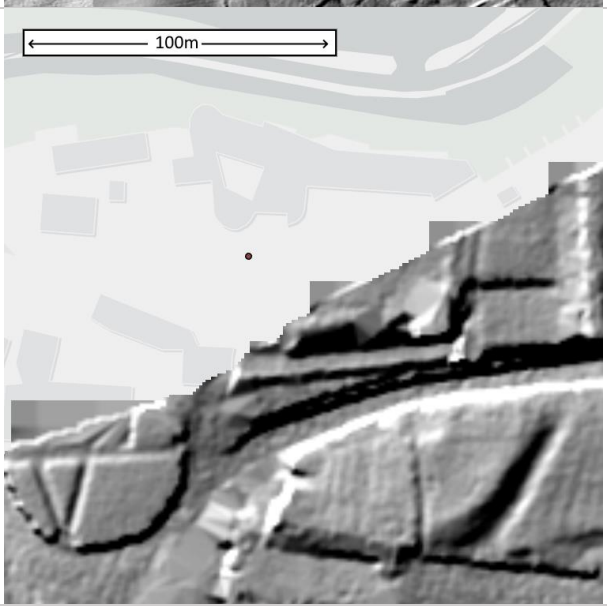
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CYOR62	Northallerton Castle Hills	Northallerton	Yorkshire	
CYOR63	Pickering Castle	Pickering	Yorkshire	

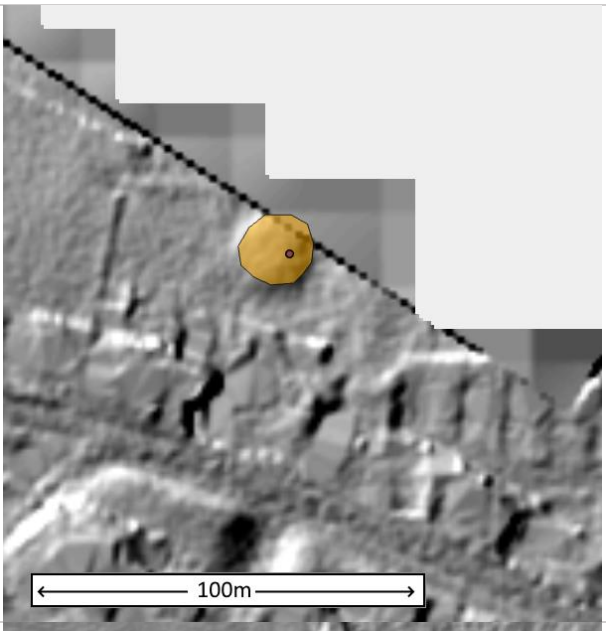
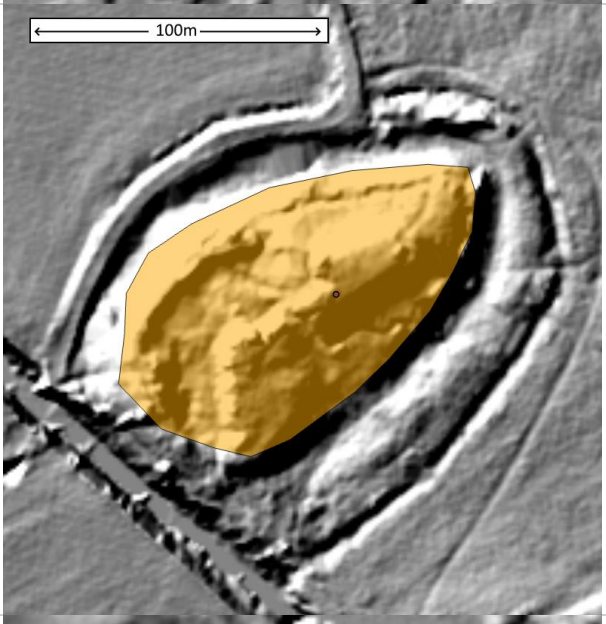
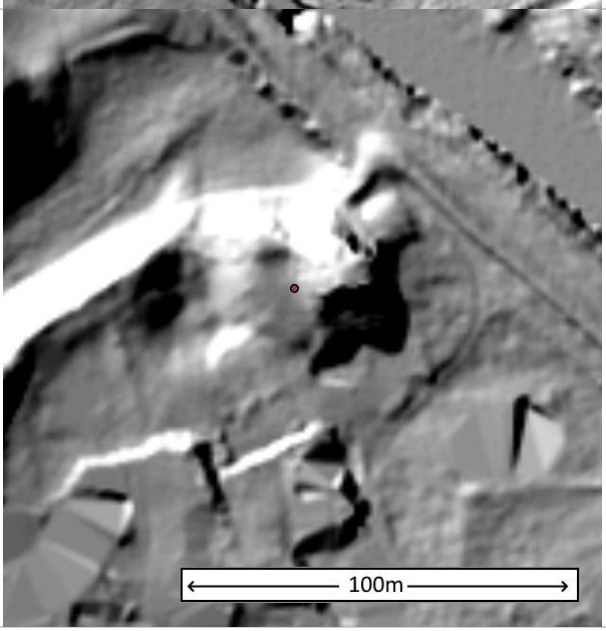
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CYOR65	Pontefract Castle	Pontefract	Yorkshire	
CYOR66	Rastrick Castle Hill	Brighouse	Yorkshire	

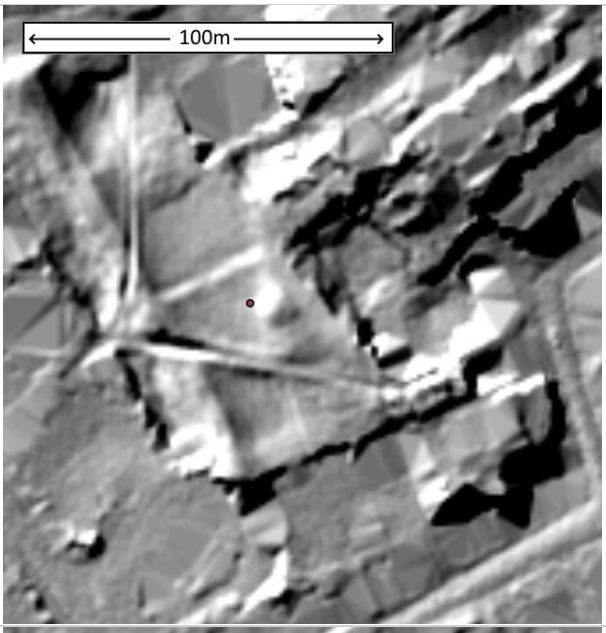
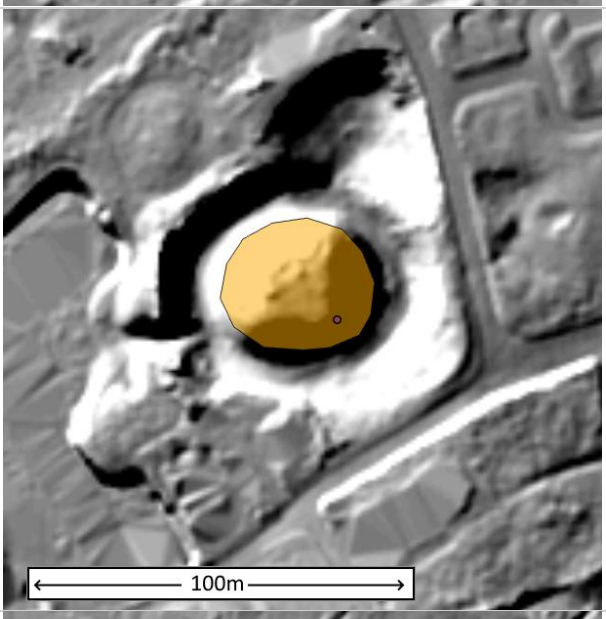
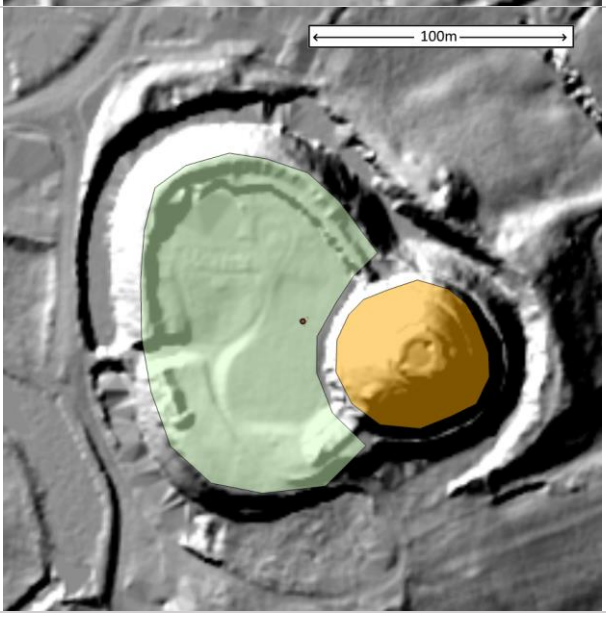
CYOR67	Ravensworth Castle	Ravensworth	Yorkshire	
CYOR68	Rothwell Castle	Rothwell	Yorkshire	
CYOR69	Rougemont Castle near Weeton	Kirkby Overblow	Yorkshire	

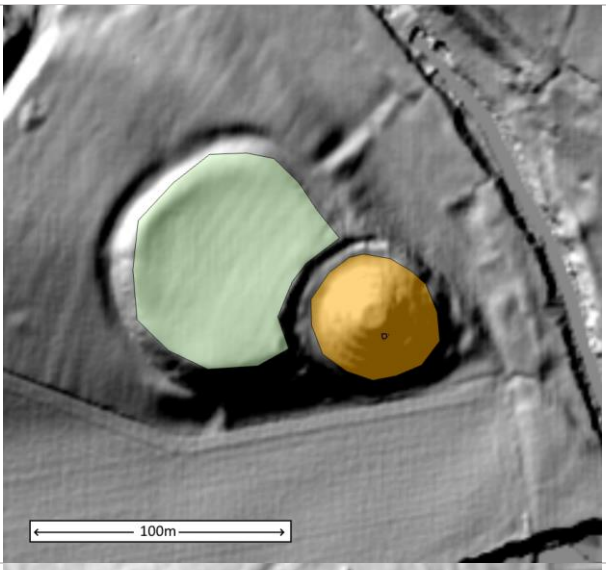
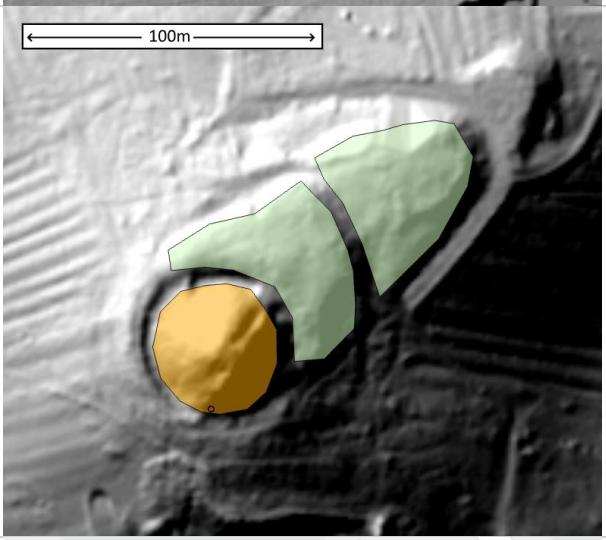
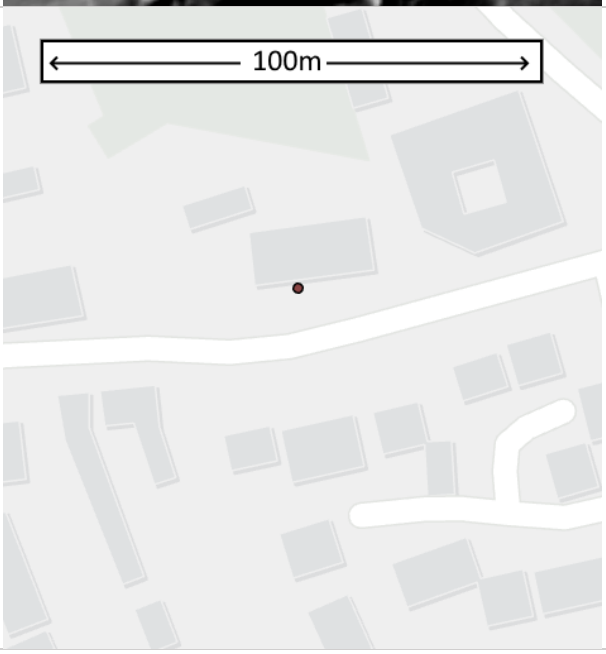
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CYOR71	Saxton Motte	Saxton with Scarthingwell	Yorkshire	
CYOR72	Scarborough Castle	Scarborough	Yorkshire	

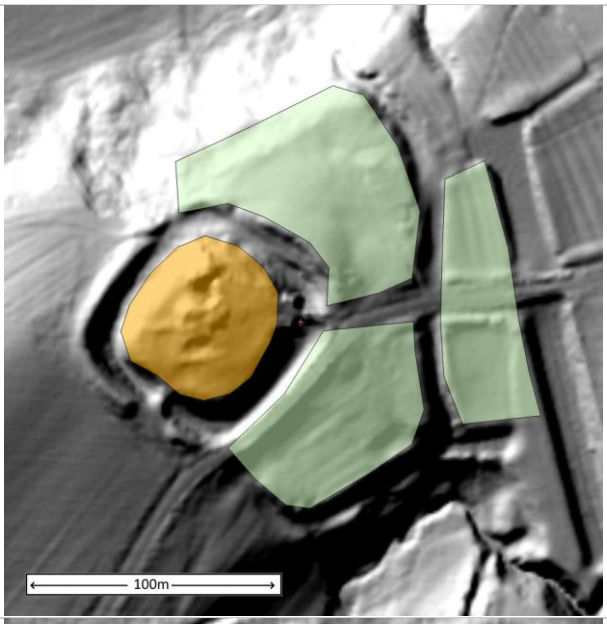
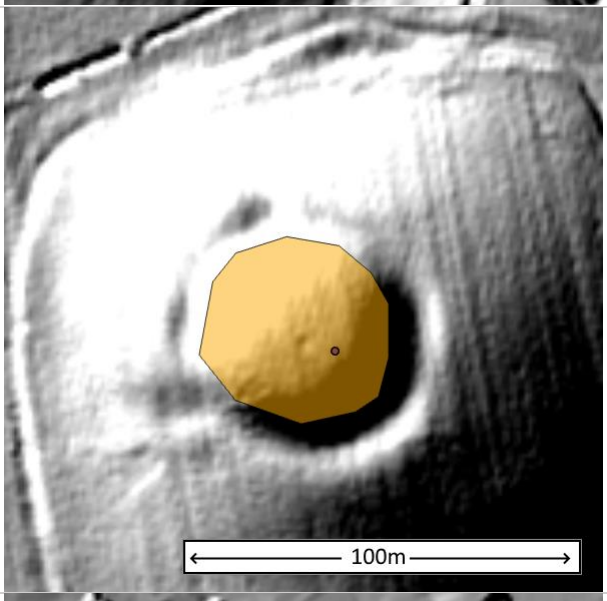
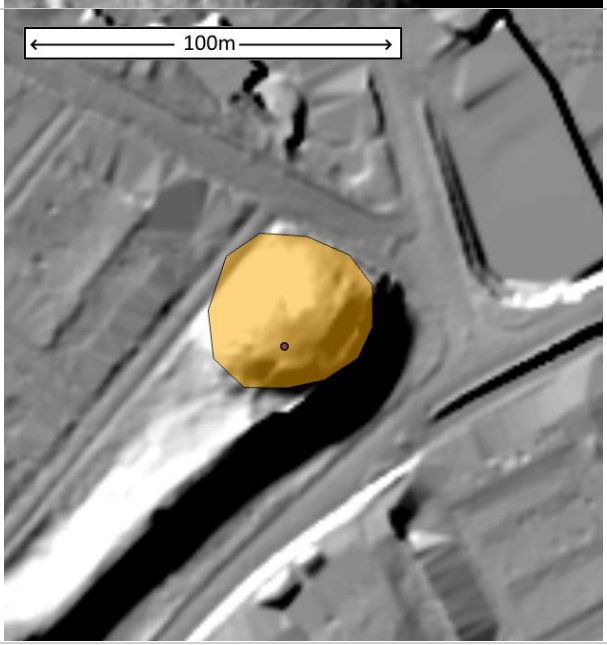
CYOR73	Sedbergh Castle Haugh Tower	Sedbergh	Yorkshire	
CYOR74	Sheffield Castle	Sheffield	Yorkshire	
CYOR75	Sheriff Hutton Ringwork	Sherriff Hutton	Yorkshire	

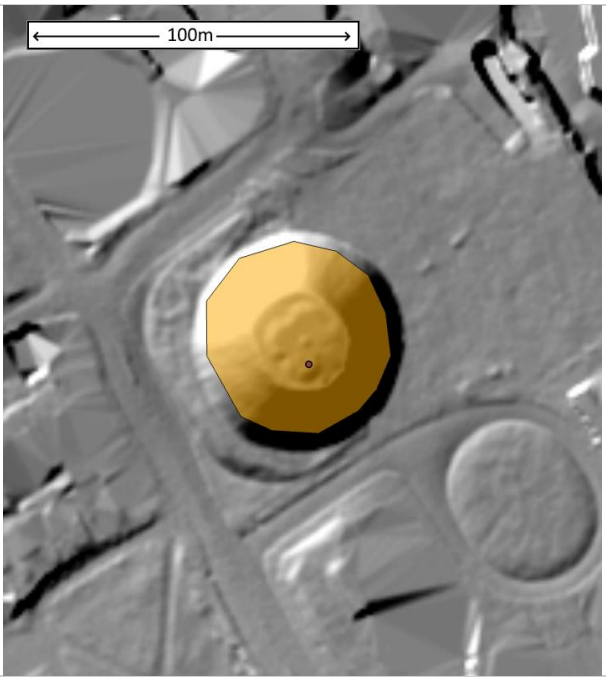
CYOR76	Skipsea Castle Hill	Skipsea	Yorkshire	
CYOR77	Skipton Castle	Skipton	Yorkshire	

CYOR78	Snowerby Castle Hill	Halifax	Yorkshire	
CYOR79	Swine Castle Hill	Wawne	Yorkshire	
CYOR80	Tadcaster Castle	Tadcaster	Yorkshire	

CYOR81	Thirsk Castle	Thirsk	Yorkshire	
CYOR82	Thorne Peel Hill	Thorne	Yorkshire	
CYOR83	Tickhill Castle	Tickhill	Yorkshire	

CYOR84	Topcliffe Maidens Bower	Topcliffe	Yorkshire	
CYOR85	Wakefield Lowe Hill	Wakefield	Yorkshire	
CYOR86	Wheldrake Castle	Wheldrake	Yorkshire	

CYOR87	Whorlton Castle	Whorlton	Yorkshire	
CYOR88	Yafforth Howe Hill	Yafforth	Yorkshire	
CYOR89	York Baile Hill	York	Yorkshire	

CYOR90	York Castle	York	Yorkshire	
End				

Appendix III.

Observational Fieldwork Photography Log

Accompanied by Site Descriptions and Detailed Notes

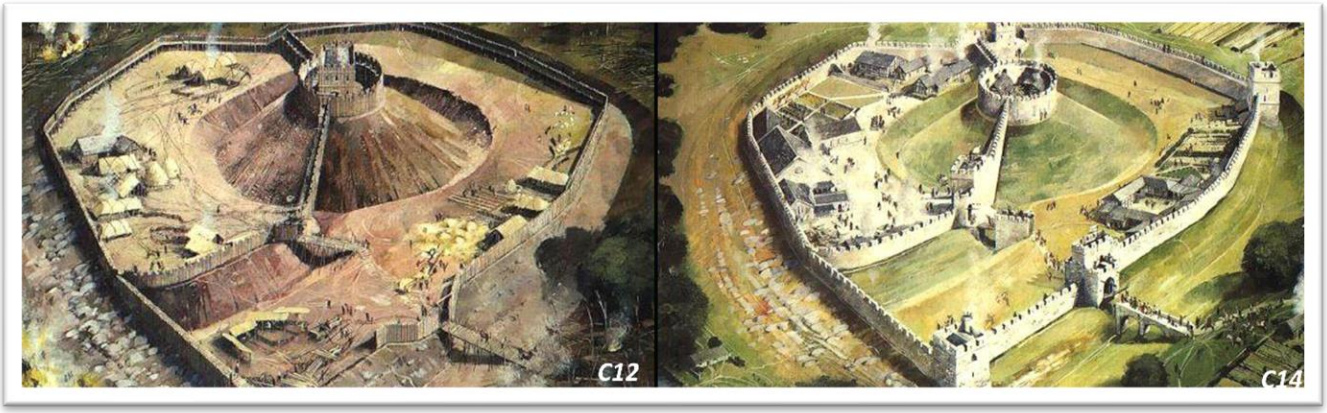
(Photographs covering 31 castle sites included from a research trip to the UK in August and September 2022. Roughly 13,400 words of notes.)

SID: 450482791

Student Email: jtam2895@uni.sydney.edu.au

Personal Email: Jason.tamas@iinet.net.au

~ Shots limited to elements of sites dated to 1300 CE or prior where possible ~



Conjectural reconstruction of Pickering Castle (source: Ivan Lamper https://www.markedbyteachers.com/gcse/history/history-question-2-pickering-castle.html)

Map of Included Sites:



Map of the route taken by the author in August/September 2022. 31 Castle sites visited, 3 cathedrals visited. Note, forest density layer reflects the 1086 Domesday counties outline, not the Kingdom of England. (Composed by Author)

Site #1 CKEN20 Rochester Castle

The Norman castle at Rochester is thought to be among the first fortified in stone in England. The keep is also the tallest tower keep of its kind. A castle here was first constructed prior to 1088 and was held principally as a seat of the Archbishops of Canterbury, before passing to the crown. It long served a role in preventing invasion through England's south-east. The site is only 16 metres above sea level and held an important role in controlling the entrance to the river Medway. It is also located along the key routeway of Watling Street. The keep itself was built in the early 12th century. From its construction till 1300, the castle endured three different sieges; however, it never fell to storm. Once, the defenders held out till relief came, once the conflict ended early, and once the defenders surrendered due to starvation. Little is known about the early use of the site as a motte and bailey. The 12th century enclosure and keep were constructed to utilise the existing Roman masonry town wall foundations. The main exterior walling consists of local Kentish ragstone, with the cornerstones (quoins) and archways constructed in Caen stone from Normandy.

Description:	**Photograph:**
View of the eastern wall in front of the tower keep. There are two visible floors in the external wall towers. Note the repair of wall foundations with red brick are post C13. The bases of the towers are slightly flayed for stability and defensibility.	
The southward facing tower. This tower is called the 'Drum Tower' and is the only rounded tower still standing. The tower overlooks the south gate, providing enfilading fire in the event of an assault.	



The exterior of the main keep visible from the south. Note the visibility of the Caen stone ashlar on the keeps corner stones and loopholes (arrow slits). The larger windows are located well above ground level of reasons of defence. The quality of the mortar in holding up the southern wall (visible in the foreground) is evidently high.



View of the ‘Drum Tower’ from the gateway demonstrating its protrusion for defensive visibility. The thickness of the exposed wall can be seen to slightly taper towards its top. The fill of the wall is of rough sandstone rubble and mortar, while the facades are of more carefully selected and larger stones.



The interior of the main keep of Rochester castle. Two rows of putlogs are visible -providing support for timber beams for the main floors of the interior. The walls are of such thickness that small individual rooms were built into them.

Good visibility of large putlogs at the bottom of the keep. These putlogs would have supported large timber beams. The thickness and strength of the floors appears to have been greater in the lowest levels. Presumably there were also interior wooden pillars, so the lower floors would bear the greatest load.	
A closeup of external putlogs. These were most likely related to scaffolding during construction of the wall. The utility of the Kentish flagstone at the top and bottom of the putlogs is visible, with larger irregular sandstone blocks set in-between.	

View of interior masonry work. The archways at Rochester keep are quite tall and elegant. Some sites have small flagstone arches, but others like this one use larger ashlar blocks locked against each-other to achieve sturdy and load-bearing arches.	
View of two small putlogs above a small doorway arch. These were potentially utilised to support higher up timberwork in the manner of hoardings, but may also be remnant from construction scaffolding.	



Caen stone window masonry in well preserved condition. The haphazard nature of the smaller stones suggests interior plastering, as is seen in a poor state of preservation in some parts of the castle. Whitewashed interior plastering is thought to have been common on masonry castle interiors.



The view from the top of the keep facing north highlighting the close proximity to the river Medway, which the castle stood to watch over. Small horizontal Kentish flagstones were used for the towers. The neatness of these stones indicates they may have been left exposed, rather than whitewash plastered.



Exterior of the western tower. Note the decorative corner stone work (quoins), demonstrating the skill of the masons. The crenelations are unsophisticated in their present state.



Interior of the northern keep tower. Interestingly, the crenels between the merlons are quite broad, with the merlons themselves being rectangular rather than having tapered sides, as is seen elsewhere.

A closeup of some exposed masonry from Rochester castle evidences the deliberate usage of shells in the mortar. The on-site historian posited that this was known by masons to provide structural integrity.	
A closeup of some larger Kentish flagstone masonry closer to the bottom of the keep. The size of the stones is generally smaller in the upper levels and broadest at the base of the towers and keep.	



View of the interior of the corner staircase leading to the roof of the keep at Rochester. The incline is quite steep and narrow enough only to easily allow single file and passers by if necessary.



Interior staircase at Rochester keep. Large ashlar stairs worn down from usage. The keep utilises both straight and spiral cases. The passage design is single file only. Narrow passages such as this one seem to generally only have been used to access prison cells, stores, or postern gates. Most passages permit two persons to pass by each other.



The foundations of the keep. A rung of stones protrudes outward roughly 40 centimetres at about 1 metre height from ground level. This would have supported the lowest floor of the keep. Reconstructions elsewhere conjecturally suggest that a framework of thick beams covered by floorboards would be used in such a setting. Generally this only occurs on the lowest floor, with higher floors utilising putlogs or merlons rather than a complete protrusion.



Visible are several fireplaces built into the lower floors of the keep interior. The chimney shoots connect in the thickness of the wall. Putlogs for the second and third floors visible.



Eastern tower from the curtain wall. Two layers of interior loopholes visible. The lowest layers of masonry are comprised of substantial ashlar masonry, which flays out for stability. This flaying also makes it difficult for a besieger to ‘hug’ the wall, enhancing effectiveness of enfilading fire.

View of Rochester cathedral from the keep. The close proximity of Norman keeps and castles was deliberate in many cases.	

Site #2 CKEN03 Eynsford Castle

The site is situated at 38 metres above sea level. A late 11th or early 12th century masonry enclosure construction. The site is thought to have hosted a wooden tower around the time of the conquest and been upgraded to a masonry enclosure castle around 1090 by William de Eynsford. Substantial damage was dealt to the castle in 1312 during a siege by a claimant. Site is thought to previously have been an Anglo Saxon manor. There is a crossing point of the river Darent nearby, and this may have influenced the siting of the castle here. Primarily flint masonry is used.

Description:	**Photograph:**
View of the gatehouse from the south across the bridge. The bridge is built where the original would have been. The gatehouse intruded within the interior of the enclosure, rather than jutting outside the wall line.	

Closeup of the flint masonry of which the walls and buildings were constructed. Due to the roundness of the flint stone, much of the total volume consists of mortar.	
The western wall of the enclosure. Rectangular putlogs appear in the interior of the wall, perhaps originally supporting 2-story buildings that abutted the wall, or an interior walk-way for defence.	

What remains of the castle hall. Several large rooms were constructed in flint stone. Reconstructions conjecturally posit a 2-story structure, originally in timber, and then flint.	
The interior of one of the bailey structures that composed the hall. Neatly lined rows of flint suggest the masonry may have originally been visible. The kitchen was a separate masonry structure adjacent to the western wall, while the hall was adjacent to the eastern wall.	

A masonry doorway constructed into the wall. Conjectural reconstructions suggest the ground outside this northern feature was originally higher -with this feature having a drawbridge to some sort of bailey.	
A closeup of the rectangular putlogs in the western wall.	

View of the best preserved portion of the enclosure wall to the east of the bridge. Here it is clear that the external facing masonry consisted of neat rows of flint. The moat is not deep, but may have been filled in over time, and is conjecturally thought to have been water filled by the river Darent.	
A garderobe (toilet) built into the southern portion of the wall. This presumably would have fed into the water moat.	

The north-western portion of the enclosure wall collapsed in the 1800s. Archaeologists excavated this portion of the mound and rebuilt the height in concrete with white lines representing the earth layers. The fallen portion of the wall is yet visible.	

Site #3 CDOR01 Corfe Castle

Castle is 40 metres above sea level on the ridge of a large naturally isolated hill. The original castle was founded by William the Conqueror in the 11th century, and expanded for the following three centuries. The hill Corfe castle is built upon is made of soft chalk stone unsuitable for masonry. The castle is built primarily of Purbeck limestone quarried a few miles from the site. The site has three wards; one at the highest point containing the keep and chapel; one to the west; and one more to the south toward the outer gatehouse. The towers are simi-circular for the most part, with one octagonal and two square. There are two wells on the site, one in the outer ward, and one near the chapel.

Description:	**Photograph:**
The southern bridge leading from the town to the castle. The gatehouse consists of two semi-circular towers of ashlar limestone.	



The second tower on the western outer wall. The walls are several metres thick in most parts, with ashlar exterior and interior filled in with rubble and mortar.



Remains of the ‘Kings Tower’ to the east of the southwest gatehouse. The natural limestone hill has been cut to increase the incline of the slope. A wall connects the Kings Tower to the southwest gatehouse, effectively dividing the outer wards for defensive purposes.

The collapse of the interior facing of this tower reveals the vaulting technique used by the rough ashlar stones. The tapering of the position reinforces the loophole so that any projectile will minimally damage the tower.	
The inside perspective on one of the southwestern gatehouse towers. The tapering slant allows the defender to manoeuvre their projectile weapon within a range of some 45 degrees or so.	

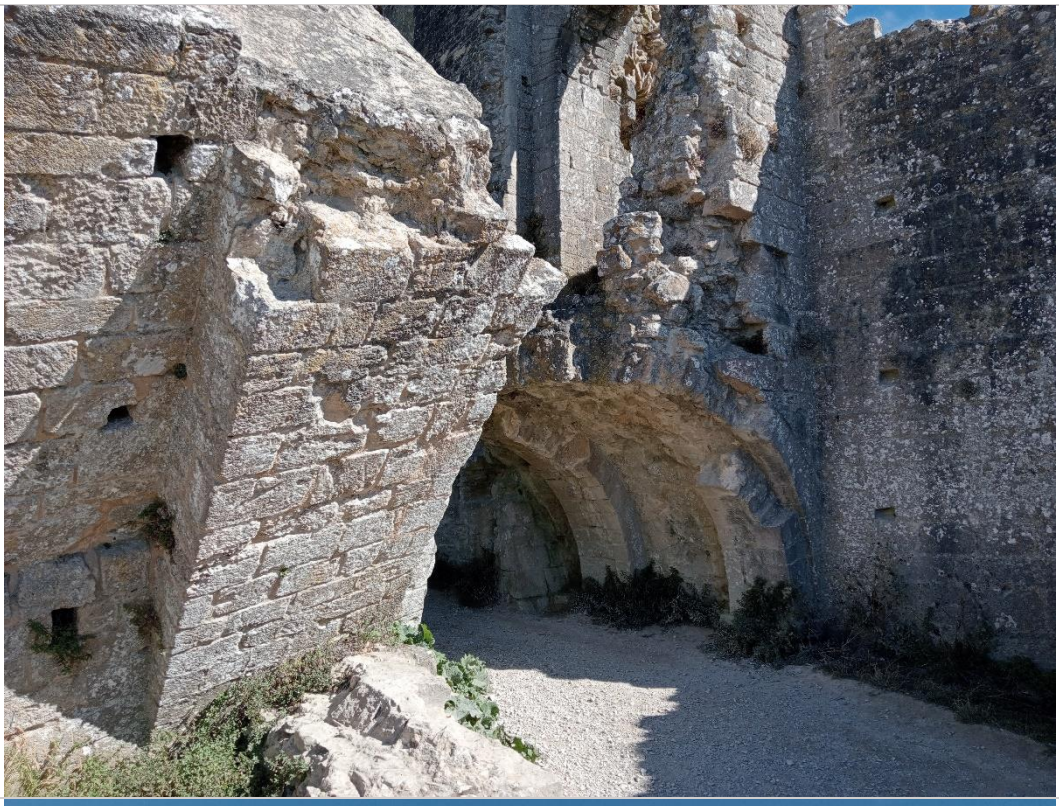


The exterior of the right tower of the southwest gatehouse. The loophole is cut into a ‘t’ shape to allow a wider range of fire. The length of the lower tapered slit enables the defender to shoot almost directly downward.

View of the cutting made in the gatehouse interior for the portcullis to slot into. The depth of the cutting is much more substantial than is seen at some other sites. The ashlar masonry is exceptional.	



The western wall past the southwest gatehouse. The wall here is thinner than in the southern ward. From the outside the walls were probably designed to look equally impressive, while being practically thick enough depending on the likelihood of assault from each angle of approach.

A collapsed portion of the keep demonstrates the robustness of the limestone masonry. As the stones have aged in position, they have effectively conglomerated chemically into larger rocks. The buried archway also demonstrates that much of the upper castle is buried in rubble at present.	
The view north from the upper ward. The defenders of Corfe could effectively see as far as the human eye can northward. The east and west views are blocked by the limestone ridge, and the view south overlooks the township.	

The masonry of the chapel is very fine. The smaller stones appear to also include a mix of local stone with Pubeck limestone. The haphazard arrangement of the stone adjacent to the windows suggests these walls were originally plastered.



The view to the south provides the castle keepers with full vision of the township and the farmlands beyond. It is likely that the trees on the slope were historically cleared to provide a clear line of sight for the defenders.	
The view from the King's Tower to the southwestern gatehouse and bridge. The way the castle was constructed at this angle would have allowed defenders perfect enfilading fire from the upper bastion tower to the southwestern gatehouse exterior if the outer gatehouse were to be breached.	

The view to the east demonstrating the incline of the slope from the upper castle and chapel down to the southern ward. The natural hill has been scarped to achieve an almost untraversable slope.	
A fine example of a barrel-vaulted ceiling. The stones are arranged over a timber frame such that they are self-supporting, and the frame is then removed.	



Both of the gatehouses at Corfe boast fine examples of murder-holes. These holes are positioned strategically above the portcullis gates so that any attacker who came too close could be picked off.



A fine example of putlog holes at one of the outer wall towers. These would have supported the second floor of the tower, which given its height, indicates that three storeys of defenders could operate from each tower.

Site #4 CDEV26 Totnes Castle

The site of a motte and bailey castle 39 metres above sea level. The castle is situated on elevated ground close to the river Dart. It is thought the original tower was built in timber with dry stone foundations. The castle overlooks the adjacent settlement. The tower was thought to have been replaced with the shell keep in 1219. Much of the present masonry dates to 1329. In the broader landscape, the castle guards the approach to three valleys. The masonry is composed of Devonian limestone and local sandstone.

Description:	**Photograph:**
The motte and shell keep are some of the finest preserved examples in England. Note the wall connecting to the keep which is thought to be late 13th or early 14th century.	



Here the red sandstone ashlar work for the main gate is visible. Most of the walls are built in small Devonian limestones which have weathered dark burgundy in colour.

Closeup of the stonework. The stones are marked by hundreds of years of lichen and weathering. Many of the stones have a red tint, presumably some local flagstone.	
Example of putlog in the interior wall. There are foundations visible in the interior area indicating many adjacent structures to the shell keep wall.	



The parapets are broad enough to have two men walk abreast. The crenelations consist of sets of double merlons with tapered loopholes and solid finials.



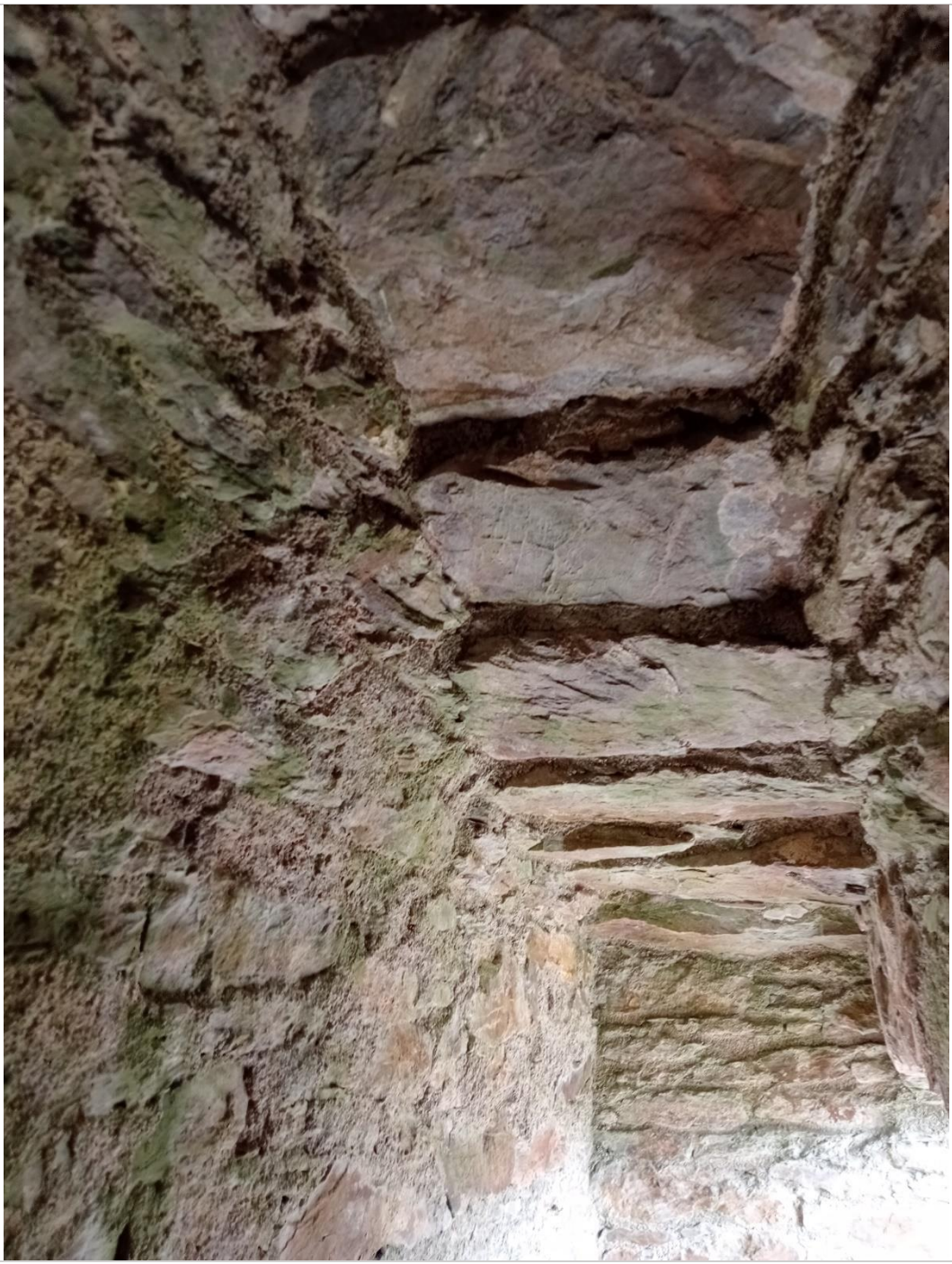
A fine example of a tapered loophole arrow slit. These were designed to permit optimal view and angle of fire whilst minimising defenceless area. Note that the base of the slit does not taper downward as it does at Corfe.

The view south-east towards St. Mary's church and the River Dart from the parapets. The defenders would have had full view over the growing settlement in all directions from the keep.	
The view west following the valley towards Plymouth. The range of view achieved from a relatively small motte is noteworthy.	



Visible calcification and colour leeching of the interior stonework. Here, the archway has been formed from arched flagstones.

What remains of the garderobes (toilets). The wall is substantially thinner here -evidencing the willingness of the defender to compromise for practicality.	
The roof of the garderobe is a fine example of barrel vaulted limestone work. The low angle has stood the test of time, demonstrating its feasibility.	



A fine example of solid flagstone roofing (in place of vaulting) achieved above the main stairway to the parapets. The viability of such would depend on the availability of appropriate stone.



The curtain wall of the bailey. Here there is a clear differentiation seen between the outer facing masonry with minimal water and carefully selected stones, and the rubble fill masonry with small stones in high percentage mortar.

There is a steep embankment around the bailey walls that drops another 10 metres or so below the base of the motte mound. This would increase difficulty of assault for any attacker.



On the southern side of the castle motte, there are a series of three or four stepped tiers of stonework. There is little available information on these, but they were presumably designed to increase difficulty of ascent, rather than to have been manned defences.	

Site #5 CCOR09 Restormel Castle

Recognised as the best preserved example of a shell keep, Restormel sits at some 73 metres above sea level. There are some 71 examples of shell keeps known in England and Wales. These consist of a former timber motte defensive tower being converted into a round walled keep with interior adjacent structures. The masonry construction was possibly started in the 11th century, although probably was mostly 12th and 13th century. The wall and internal buildings were constructed from local slate stone, which appears to have been quarried from north east of the site. The site was constructed in the middle of a large deer park with no adjacent settlement, and is thus understood to have been a hunting base. The castle changed hands many times and is thought to have been in a state of disrepair in 1337.

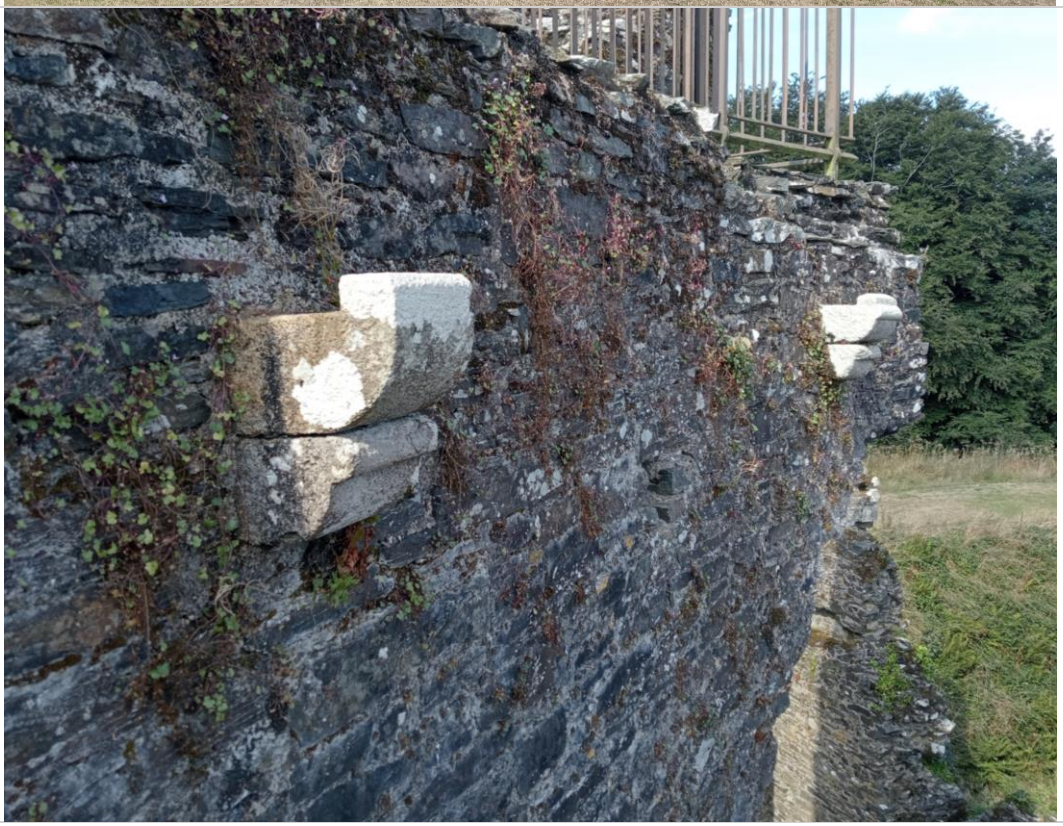
Description:	**Photograph:**
The approach to Restormel. The gatehouse tower is tapered in an unusual fashion. The foundations of the walls are sunk deep into the motte, possibly assisting its exceptional preservation condition.	

The earthwork ditch surrounding the keep is still quite deep, although it has presumable filled in some over time. The earthwork ringwork surrounding the moat is never thought to have had any wall, and may be a later addition as a garden path from once the site was already a ruin.





The main gate was cut in ashlar red sandstone, as was fashionable. The slate stonework may well have been plastered.

The interior structures of Restormel keep. The circular walls were substantial enough to allow for several large adjacent rooms and still fit an open circular courtyard.	
An intriguing architectural specimen -two corbel stones stick out of the wall roughly 80 centimetres from the parapet. Presumably these supported some component of hoarding. They also provide an insight into the potential usage of putlogs elsewhere where timber has been lost to time.	



The interior passage ceilings are vaulted with a ‘v’ shape. Lime from the mortar appears to have badly calcified the internal slate work. The passage floor appears to have been robbed for stone.

View from the keep to the east. While the castle is thought to have been principally a hunting site, we can reasonably presume that defensibility was still a key concern, as the range of view from the hill is exceptional.



The stairs to the parapets are arranged in two single file cases to either side of the gatehouse. Rather than internally in the walls, or spiralling through a tower as is seen at other sites, these cases appear to have been exposed.



The main hall hosts a fine example of putlogs which would have supported the second story of the structure.	
The chamber of the well dates to the 12th century. It is unknown how deep the well goes below this surface.	



A crumbling portion of the wall in the porter's house. The rough ashlar corner work, carefully selected facing work, and slate sill are clearly distinguishable. The porter controlled access to the gate, and was a member of a small permanent staff of perhaps 5, or 6.



The chapel juts out from the wall to the north-easy, directly opposite the gatehouse. There is an unusually high amount of putlogs within its masonry structure. This requires further investigation.

The interior of the chapel also features an unusually high number of putlogs. There is little available information on their conjectural usage, although clearly timber beams were involved.	

Site #6 CCOR01 Tintagel Castle

Tintagel is built on a cliffside adjacent to the sea. The fortifications are ~ 56 metres above sea level. Components of the defences are present on both sides of the isthmus joining Tintagel Island to the mainland. The earl of Cornwall established a castle on the site in 1233. The site was chosen largely for its connection to Cornish mythology and kingship. The site had a large hall but no keep. The masonry is of Cornish slate.

Description:	**Photograph:**
Not much remains of the castle. Larger stones of Cornish slate were used near the lower sections of the walls, and smaller stones at their highest points.	



The thickness of the Cornish slate is in many places very thin. The strength of the mortar is still evident in those places where the walls are tallest - withstanding 800 years of coastal conditions.

It is thought that the architecture of the castle was deliberately designed to appear archaic, to emphasise the role of the seat of Cornish kingship. Here putlogs can be seen passing through the thickness of the wall, with finials composed of smaller pieces of Cornish slate.	
The doorway to the postern gate can be seen to have been crafted of ashlar sandstone. The majority of the site is Cornish slate flagstones.	

A well preserved section of wall. Here, the larger Cornish slate flagstones can be seen to have been carefully selected to form a neat face. Strangely, the putlogs go through the thickness of the wall. The reason for this requires further investigation, but may simply relate to their relative narrowness.	

Site #7 CCOR06 Launceston Castle

The castle is 135 metres above sea level. Launceston castle started as an 11th century timber motte and bailey. A shell keep was built on the motte in the 12th century, and this was expanded, along with new walls and towers in the 13th century. The castle was used extensively in the 16th and 17th century for military defence. It is known that the local market was relocated to outside the castle walls, in an attempt by the lord to profit from the trade. The majority of the masonry is in shale stone, with details in granite and polyphant.

Description:	**Photograph:**
View of the keep and remains of the gatehouse. Much of the masonry is now lost, and only the earthworks give away the position of the defences.	



View of the south gatehouse of the main bailey. The walls are of large shale stone quarried locally. The archway is one of the largest of its kind not to be made of ashlar.



Remains of the upper gatehouse leading to the keep. Here the stone is ashlar sandstone with shale infill.



View of the internal tower of the shell keep. The keep here consists of a circular wall, containing a tower - unusual for a shell keep. A ring of putlogs is visible halfway up the inner tower.



At the base of the tower, large ashlar sandstones were used to construct a very sturdy gateway. The arch is an uncommon ‘v’ design, one seen more often in ashlar than flagstone arches.



The view west from the top of the keep over Launceston and the surrounding hills. The view is similarly far reaching for all cardinal directions.



Closeup of the shale stones and rough mortar used to construct the central tower.



A view of the north face of the motte demonstrates its sheerness.



The outer wall of the shell keep has a gentle taper up to ~ 3 metres from which point the wall is vertical. A row of cut stones marks this transition. As is seen elsewhere, the use of mortar for facing stones is deliberately minimal, while the fill has a higher percentage of mortar.

Some foundations remain in the inner bailey. These are conjecturally understood as the main hall, kitchen, and stables.	

Site #8 CHER09 Goodrich Castle

Castle built onto the bedrock at 73 metres above sea level. The site was constructed at the start of the 12th century, first in timber and then in masonry ~1240CE. The castle became a semi-concentric fortification by the 13th century, with the north and west having a second layer of walls. The castle is built of sandstone, with different shades differentiating phases of construction. There is a lighter grey early keep, darker reddish corner towers in 3 corners, and a gatehouse. The gatehouse is, unusually, in a corner of the keep, taking the place of the fourth tower. There is an external barbican to the east, which was designed to trap attackers.

Description:	**Photograph:**
View of the castle from the south. The south-eastern and south-western towers are built into the bedrock with square bases which gradually transition into cylindrical towers. The resulting towers are highly robust, without sacrificing enfilading fire points.	



Closeup of the south-western tower. The individual levels are delineated by narrow external decorative bands - as is seen at the tower of Launceston. The slanted base would prolong the towers defence against undermining.

The inner gatehouse leads to a bridge that has an external barbican. The quality of ashlar masonry is exceptional for its date - comparable to that of contemporary cathedrals.





The inner gatehouse tower. Note how the fill stone is rubble rather than ashlar cut blocks. The external view of the loophole demonstrates the difficulty of hitting any defender.



The groove and slot for the portcullis and gate. Note that the grain of the sandstone is aligned - indicating highly skilled masons. Very little mortar is used for the exterior facing.

A murder hole from which defenders in the upper gatehouse could attack anyone trapped by the portcullis.	
The archways for the main gatehouse utilise ‘v’ shaped construction with 2 central stones sharing the load, rather than a keystone. Vaulting with smaller stones is reinforced by a solid stone arch internally.	



The second story of the solar hall with a duel arcade. The single pillar continues to the basement level.



Much of the sandstone is rounded, but it is clear this is largely from weathering. The well preserved arch of the solar indicates that many of these cut facades featured clean angular stonework.



View of the internal defensive position within a tower. As typical, the walls are tapered to maximise external strength and internal projectile angle of fire.



Interior of the south-west tower. A finely cut fireplace is visible on the third story. The quality of the wall facing suggests these internal walls were plastered.

Here an outset grove of diagonally slanted stone appears to have been designed to support the roof of the adjacent structure.	
Again here, an inset diagonally slanted cut appears to have been designed to accommodate a roof for the adjacent structure. This cut was made into the earlier tower, indicating the preference for external jutting came later.	

The spiral staircase within the main keep. It is only wide enough to fit one man abreast, with passing by forcing a squeeze. The stairs are cut from single units of stone each.	
View from the keep over the gatehouse to the north-east. The surrounding land is relatively flat and easily observed. It was necessary to build the castle on the end of a small ridge to allow the foundations to be built into the bedrock.	

The prison cell of the castle, below the keep. It has a narrow cut entrance in single file to prevent escape. The roof appears to be calcified from lime in the mortar.	
The loopholes and crenelations have deep set slanted bases to allow defenders to shoot almost vertically downward. This feature is not always present and indicates a responsive innovation to combat experience of enemies 'hugging' the walls during assault.	

The remains of a spiral stair are visible in one of the towers. The fragility of each step means each is dependant on the step below it.	
The thoughtfully reconstructed floor of the chapel gives an excellent conjectural idea of the use of the supportive jutting stones called corbels visible elsewhere at the site. Putlogs can serve a similar purpose.	

The external barbican. It is thought that this element was designed not only to add additional defence, but also to deliberately trap over-eager attackers within the defences.	

Site #9 CHER50 Longtown Castle

Longtown castle was constructed on the Welsh border 185 metres above sea level. Thought to be a timber motte and bailey built in the 11th century and rebuilt in 1149 in masonry. The site utilises existing earthworks dating to Roman and Iron Age use. The site was not widely used in the 14th century, and was abandoned in the 15th.

Description:	**Photograph:**
The approach to Longtown castle inner bailey. The round tower keep is visible in the background, with the gatehouse and bailey wall in the fore.	

No account of the stone type is given at the site, but it appears to be principally made of small flagstones - most likely slate of some kind.	
As opposed to castles elsewhere, the full thickness of the walls at Longtown appear to have been constructed in carefully placed slate.	



The layers of slate are clearly visible in the crumbling left tower of the inner bailey gatehouse.



The gap for the portcullis is still visible in the gatehouse. Larger stones were utilised for the main arch of the gate.



The keep is a solid round structure, rather than a wall with abutted structures as seen at Totnes or Restormel.

The interior of the keep was inaccessible during the visit. However, the quality and size of the stones is clearly larger and of greater cost than the bailey walls.	

Site #10 CHER03 Wigmore Castle

Site is 176 metres above sea level, situated on the Welsh border. A timber motte and bailey was constructed at the site in the 11th century by the early of Hereford. The keep and walls were constructed in the 12th century, and expanded upon in the 13th. The adjacent settlement is thought to have had a timber palisade and earthworks connected to the inner bailey defences.

Description:	**Photograph:**
The current entrance to Wigmore castle is completely buried under rubble and earth. The gate stone was of red imported red sandstone with local grey sandstone.	



View of the approach to the gatehouse. Little remains. The height would have once been substantial.



View of the interior of the keep. Conservationists have replaced several of the red sandstone blocks with new ones. The grey stone appears to be a local mudstone or shale.

Closeup of the grey stone highlighting putlogs for the second story of the keep.	
Putlogs are also visible on the external face of the keep, except these were clearly for construction scaffolding.	



An elevated opening into the main structure of the motte. Conjectural reconstructions suggest this was connected to a barbican like defence via a bridge. Reconstructions of the site vary markedly.

The ground inside the castle is much elevated above that outside -it appears to be a defensive feature, but may be the result of collapsed infill.	

Site #11 CSHR51 Ludlow Castle

The site is 112 metres above sea level. It is understood to have been an unusual ringwork type timber fortification which was upgraded to a masonry enclosure castle. The castle is semi-concentric with the east and south having two layers of walls. The castle is thought to have been founded in 1075. The round chapel and walls were built in the 12th century. The site lies strategically at a crossroads adjacent to the river Teme on a long defensive promontory. The first stone castle at the site was finished in 1115 at the current site of the inner bailey.

Description:	**Photograph:**
The approach to Ludlow keep. The keep is mainly built in red sandstone, while the walls and towers are in grey siltstone.	



View of the main castle highlighting the depth of the dry moat and the entrance bridge.



The tower keep has four floors and roof parapets. Its corner work, windows, and doorways are completed in red sandstone with walls of grey siltstone. Scaffolding putlogs are visible.

View of the River Teme and the flat terrain beyond from the top of the tower. The parapets are narrow and the crenelation appears to be unsophisticated.	
The solar is visible here to the left, adjacent to the great hall. These were completed around the same date as the tower keep.	

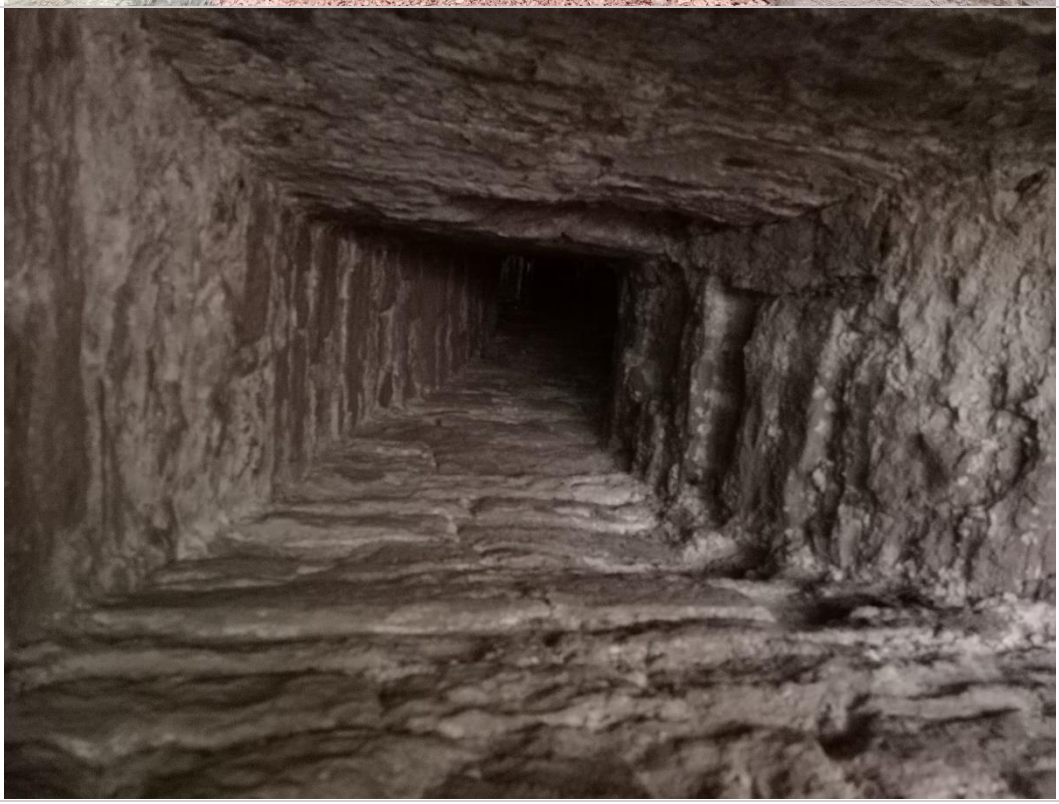


View of the interior of the great hall. Note the row of small corbels and the two large corbels which would have supported the upper floor and roof. There are no putlogs here, so their use is preferential.



The round chapel tower. This free-standing structure is thought to resemble the round chapels of the Templar order, as its builder later joined them. There is an additional chapel to Saint Peter in the outer bailey.

The interior roof of the round chapel tower. This conjectural reconstruction is an excellent take on how such a structure may have been crowned.	
The garderobe (toilet). Housed in its own tower, the waste would flow into the river.	

There are many fireplaces in the structures of the inner bailey. This fireplace is at ground level, but the chimney feeds into that of the 2nd story fireplace in the room that would have been above it.	
A closeup of the interior of the aforementioned fireplace. It can be seen veering to the right, where it meets inside the wall with the fireplace on the level above.	

A row of large corbels in the ‘state of apartments’ hall. Note again that there are no accompanying putlogs for beams, so this appears to be a matter of choice/preference.	

Site #12 CCHE01 Beeston Castle

Beeston dominates the surrounding landscape from a rocky outcrop 146 metres above sea level. The castle was built in c.122o by a returned crusader lord -similarities between crusader castles and Beeston have thus been linked. The site overlooks the plains of Cheshire for miles. The castle was slighted in 1646. Unlike most contemporary castles, Beeston did not feature a keep, but was rather an enclosure castle. Little is known about what buildings it housed.

Description:	**Photograph:**
View of the approach to the castle taken from within the bailey defences. The castle is built into the sandstone bedrock with local reddish sandstone. The modern bridge takes the place of the original bridge to the gatehouse.	



View of the sheer face of the inner castle. No wall connects the bailey walls to the inner enclosure, so any attack must take both sets of walls. The moat is cut into the sandstone cliffs, and presumably was a source of quarry.



The main gate is one of the most well preserved components of the castle. The facing work is in ashlar red sandstone with curved ‘v’ vaulting. The height is greatly reduced by c17 slighting.

The slot for the portcullis is well preserved. It is narrower than is observable elsewhere, but still appears thoroughly sturdy. Thickness may not indicate defensibility, as a narrow iron gate would be stronger than a broad timber one.	

View over the Cheshire plains. The range of view from the top of the castle when it was complete would have been one of the most far reaching in all England. Interestingly, the sites defensiveness did not lead to any permanent settlement that is still present.	
Here a closeup demonstrates that the interior of the castle walls were filled with smaller stones and mortar. In the bailey walls, the infill stones are larger.	

There is a well on top of the crag at Beeston, despite its high elevation. Reaching the water table from this height must have been a considerable task but would have extended the time the site could withstand a siege.	
View of one of the towers of the bailey wall. These walls are thicker than the enclosure castle, and comprised of large stones. Presumably the defenders anticipated holding the outer defences longer than would be expected for baileys elsewhere.	

Visible in one of the towers is a row of corbel stones. Note that there are no accompanying putlogs. This confirms that the use of corbels or putlogs was a matter of preference rather than a technological transition.	

Site #13 CYOR25 Conisborough Castle

The castle stands 50 metres above sea level on a natural hill in South Yorkshire. The initial motte and bailey were constructed in the 11th century and were rebuilt in stone c.1180. The derelict state of the castle spared it from involvement in the civil war, and hence it is well preserved for its age. The keep is built onto a rocky limestone spur. The site would have dominated views of the adjacent settlement and the Don River Valley. The keep is an unusual hexagonal buttressed form, with the curtain wall towers being round.

Description:	**Photograph:**
View of the approach to the castle. The keep is built in distinguishable limestone ashlar. The gatehouse is largely crumbled. The walls and towers are made of local sandstone and limestone. The earth is visibly scarped around the base of the defences.	

Closeup of the keep. The structure is hexagonal in design with 6 full height buttress towers. The ashlar masonry of the limestones requires minimal masonry which is ideal for defence against undermining or ramming. There is a well within the centre of the keep.	

View to the south from the top of the keep. The range of view is extensive I all directions.	
View of Conisborough viaduct over the River Don. The river is navigable and was used for trade, and would have been in full view from the keep.	

The quality and design of the curtain walls varies markedly from the keep. Rough masonry utilises primarily sandstone, with rough sandstone and mortar infill.	
The top of the curtain wall features a row of stone corbels. These would have had some role in the timber hoardings or walkway defences of the parapets. Note that the rows of stone are delineated by height, with no clear pattern.	



View of the keep exterior. Here the garderobes drain down the face of the structure. One wonders if this was for regular usage or for siege situations.

The fine ashlar masonry is best highlighted in the solid blocks forming the top of the fireplaces and doorways of the keep. The diagonal cuts and ledges cut into the stones allows them to bear the weight of the masonry above them.	
Here again is another example. Note that the chimney connects to a system inside the walls which flows to the roof. This load-bearing masonry is truly unique to Conisborough.	

The reconstructed floors of the castle appear to be well thought out approximations of the originals. Stone corbels hold the weight of the main beams which support the floorboards.	
View of the interior of the garderobe shoot.	



Remains of the bailey structures at the site. These consisted of a kitchen, service building, apartments, chapel, prison, solar, and hall. Much of this construction was achieved in the 13th century.



The crumbling portions of the curtain wall and gatehouse reveal that the large rough ashlar sections are only for facing work, with the infill consisting of very rough rubble and mortar.

Site #14 CYOR65 Pontefract Castle

Pontefract castle is 54 metres above sea level. The first castle was built in late C11. The castle had inner and outer baileys. The masonry work dates to the 12th and 13th centuries. Parts of the wall and the Piper's tower are thought to be the oldest. The keep has an unusual structure comprised of 5 cylindrical towers. The wall towers are rectilinear rather than round, of which there are 5 on the inner curtain wall.

Description:	**Photograph:**
Very little remains of the keep. The masonry is of yellow and grey sandstone, with rough ashlar facing and rubble infill.	

Remains of a segment of wall which divided the main bailey into two sections of differing elevation. Presumably this was preferential to a gradual slope for the positioning of the structures.	

Two of the remaining bases of the round towers than comprised the keep. Note that the height of the stones is roughly equal for each row -a deliberate decision of the builder. This seems sensible for the standardisation of the quarrying and construction process.	
An exposed portion of the curtain wall demonstrates the size and quality of the infill. Larger rubble than elsewhere is used, being roughly equivalent to the size of the facing stones.	

The foundations of the chapel. An 11th century construction, the chapel is indented into the surrounding ground level. Other buildings in the inner bailey include larders, a kitchen, great hall, bakehouse, scullery, stables, and lodgings.





Visible here is a postern gate on the western side of the enclosure. This connects to the ditch which is scarped around the keep. Postern gates are deliberately narrow for defensive reasons.

Site #15 CYOR04 Richmond Castle

Richmond castle is built on a natural triangular hill on a bend in the River Swale valley. The fortress is 129 metres above sea level. The earliest masonry work is that of the curtain wall, which is dated to the late 11th century. The keep is thought to date to the second half of the 12th century. Unusually, the keep is positioned at the forefront of the castle, facing the town, rather than behind the curtain wall. The keep overlooks the settlement and guards the enclosure. The walls facing the River Swale are 13th century. The main building facing the river is the Scotland's Hall, which is alongside a buttery and pantry.

Description:	**Photograph:**
View of the main keep from the interior. There are few loopholes on the keep on any side, but several windows and a defensive roof parapet. The layers of the keep narrow slightly at each floor. The keep is constructed of yellow sandstone.	

View of the large inner bailey, curtain wall, and keep. Many of the towers and structures are lost. The site is remarkably level for its elevation with respect to the surrounding valley.	
The interior of the Shotland's Hall structure. Here, both putlogs (second floor) and corbels (third floor/roof) were used. The windows and doors are cut in sandstone, while the walls are siltstone and sandstone flagstones.	

View from the keep eastward over the lower township and the River Swale. The river is not navigable, but the castle did control a crossing point.	
View from the keep southward to the Scotland's Hall complex. To the right can be seen the palatial garden, which had its own bailey walls.	

The crenelation is very unsophisticated with rectilinear merlons and triangular finials.	
The lowest floor of the keep features a well preserved example of reinforced groin vaulting. The walls can also be seen to be attached to an earlier foundation of siltstone.	



View of a tower complex on the eastern curtain wall. The tower is called the ‘Robin Hood’ tower, and housed St. Nicholas’ chapel. The exterior is buttressed by several low buttresses which are a fine example of their type.



A further example of large putlogs used to support an interior floor. The thickness of the rows of stones can also be seen to alternate.



A closeup of the 11th century masonry highlights the careful selection of flagstones to form the wall façade.



View of the fortifications facing the river Swale. There is a drop of some 20 metres where the wall has been built into the cliffs. Note that the keep does not hold this highly defensible station, prioritising overview of the settlement.



Parts of the 11th century walling appear to utilise a combination of sandstone and siltstone. The siltstone may be shale. This closeup highlights the variations.

Site #16 (not in main dataset) Durham Castle

Durham castle was an 11th century castle in the Kingdom of England, but is excluded from the main dataset due to the available information from the Domesday book. Durham and Cumbria were not surveyed at that time. Bishop Walcher purchased the castle from the king after the earl of Northumbria revolted, and this began its long-term role as the seat of the prince-bishops of Durham. The castle was a timber motte and bailey built in stone in the late 11th century. The island of Durham was entirely walled off by an outer bailey wall, while an inner bailey defended the immediate are around the castle. The tower was replaced with a shell keep like structure, but very little of the early masonry survives.

Description:	**Photograph:**
The current castle is largely rebuilt, but the earthwork mound is in the original position. The masonry is of yellow sandstone.	



The fishbone masonry from the chapel floor is dated to the 11th century, but much of the chapel was rebuilt later.



The chapel roof (c. C12?) with groin or rib vaulting. The chapel is one of the oldest parts of the site yet remaining.

View of the current castle. While much of the stonework is C14 or later, there are several noteworthy features. The inner bailey wall connects from the keep to the gatehouse, as is seen at other sites where the original design is not substantially altered, like Totnes. Decorative buttressing on the inner wall has kept it in sturdy shape.	

Site #17 CYOR63 Pickering Castle

The site is 60 metres above sea level. Pickering is a superb example of a motte and bailey castle rebuilt in stone without substantial alteration to the original defensive layout. The site was originally a timber and earth motte and bailey. The keep was built in stone some time between 1216-1236. The site was erected first during the Harrowing of the North by William. It was built on Pickering Brook on the main road between Helmsley and Scarborough.

Description:	**Photograph:**
View of the motte with a masonry wall leading to the gatehouse. The entrance to the keep was from the ramp atop the wall.	



The inner gatehouse, known as the ‘Coleman Tower’. It has a small dry moat and masonry bridge. The entrance here is considerably narrower than that of the outer bailey gate, and was probably designed only for human traffic.

Little remains of the keep on the motte. It is thought to have been a shell keep. An unusual design appears to consist of several loopholes on the bottom floor. From these, defenders could cover 360 degrees of fire and view.	
A closeup of the loophole. Such a feature is typically on the second or third story, to prevent forced entry through assault of the loophole.	

Visible remains of buildings within the inner bailey. These may be apartments, or a kitchen. Further along are a chapel, and two halls.	
A view from the keep demonstrating the slope of the motte and highlighting the 11th century chapel. This structure is thought to have been built when the fortress was still in timber.	



A tower on the eastern outer bailey wall known as the ‘Diate Hill Tower’. The tower contains a garderobe (toilet) and some well preserved loopholes. The timber walkway is a very reasonable reconstruction of the entrance way to the tower.



The external face of the ‘Diate Hill Tower’. The stones around the loophole are of solid ashlar to maximise the strength of the position against assault or projectile fire.

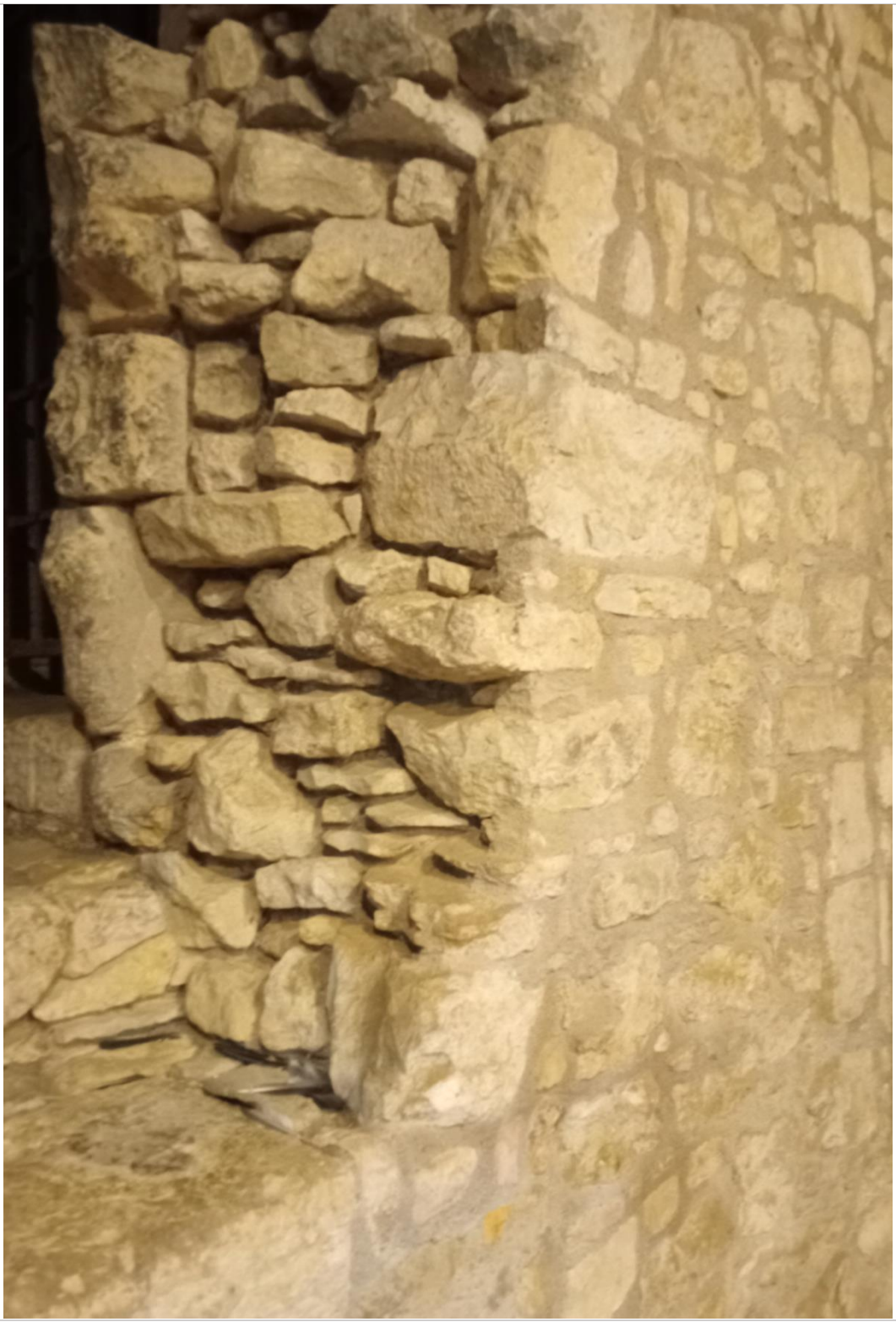


Visible here is the external shoot of a garderobe (toilet). It feeds outside the outer bailey wall into the dry moat. The dry moat is several metres deep and broad.

Site #18 CYOR40 Helmsley Castle

Helmsley castle is 65 metres above sea level. The castle is situated in the town of Helmsley overlooking the river Rye. The original castle was a 12th century rectangular enclosure describes as a ringwork. The first castle dates to around 1120 and was thought to have been in timber. A double ditch surrounds the external defences. The castle was converted into stone beginning in 1186.

Description:	**Photograph:**
The site features a large 'D' shaped tower. This appears large enough to be described as a keep, but it is only referred to as a tower. There is a large hall at the site, so the usually combined roles of residence and defence may have been split here.	



An open section of the wall of the hall (now a museum) shows that the masons selected stones carefully for the full thickness rather than infilling between two facades.

The stone used was yellow sandstone and white limestone, both locally sourced. The keep is built on a limestone spur.





The limestone vault is an excellent example of a large barrel vault. The entrance is narrow and the room's original use was as a cell.

Site #19 CLIN21 Lincoln Castle

Lincoln castle is 72 metres above sea level. The site has two mottes, which makes it unusual. Only 2 other sites with 2 mottes are known in England. A wooden castle is thought to have been quickly erected, replacing some 160 Saxon houses. The site was previously a Roman fortress. The settlement in 1070 is described as essentially a Viking trading town of some 6,000. The location is on a key crossroads and has maintained its significance since Roman times. Masonry construction was complete in the 12th century following the conflicts of the anarchy. The fine features of the masonry are done in Ancaster limestone, with the majority of the stone being local Lincolnshire Limestone.

Description:	**Photograph:**
The 'Lucy Tower' motte. One of the two motte towers at the site and the original keep location.	
Interior of the 'Lucy Tower'. There are shallow putlogs around the interior of the wall. There are no remaining crenelations at the keep. The stonework is of lower quality than elsewhere at the site, and presumably earlier.	

The second motte at the site features the ‘Observatory Tower’. The turret dates to 1820. The original tower is 12th century. Given the good condition of the masonry, much of it can reasonably be assumed to have been repaired/replaced, if not multiple times.	
The stones near the base of the wall are exceptionally large. The transition from Roman foundations to medieval masonry is visible here.	

The view from the ‘Observatory Tower’ east to Lincoln cathedral. The cathedral was completed in the 11th century, and the medieval settlement did not extend too far beyond its position.	
The now expansive town of Lincoln covers what would once have been a view south over woodlands and farmland. The relatively small increase in elevation at the keep is sufficient to overview the flat land as far as the eye can see.	

Several seemingly random patches of wall are built in herringbone masonry. It is possible that these walls were therefore originally plastered over on the interior.	
The west gate has been entirely reconstructed.	



A portion of the wall outside the west gate features a large portion of herringbone masonry. The wall is also damaged badly enough here that the interior is visible. The facades are of rough ashlar limestone with rough stone and mortar infill.

The eastern wall is of considerable length, and has no towers along its path. The crenelations are unsophisticated, with rectangular merlons and multi-part triangular finials.	

Site #20 CNOT12 Newark Castle

Newark castle is close to sea level at only 19 metres. The castle is thought to be a 12th century foundation by the bishop of Lincoln. It was built in timber at the start of C12 and rebuilt in masonry at the end of that century. A mint is known to have been established at the castle in C12. The castle was built with one façade facing the River Trent, which was originally diverted to fill a moat around it.

Description:	**Photograph:**
At the time of observation, the castle was undergoing repairs. Only the northern face of the rectangular enclosure still stands today.	

There is presently a red brick canal edge on the River Trent. The castle would have originally had its foundations right into the river bed, with the river diverted to flow around it for defence.



The main façade work of the castle is in red sandstone, with grey siltstone used for filling work. There are many large windows which are likely post C14, but still several loopholes visible.	
Here the façade work has fallen away (or been removed during the castle slighting) revealing the grey siltstone beneath.	



The northern most tower is hexagonal in shape. Several attempts to repair the masonry have been carried out, including the entirely reconstructed postern gate. On the diagonal face is a large buttress which supported the tower's weight.



One of the most well preserved elements is the base of the southern tower, demonstrating the skill of the masons. Small putlogs from scaffolding are visible along the surface.

Site #21 CLIN01 Bolingbroke Castle

A castle was only built in Bolingbroke in the 13th century. There was no timber castle at the site. Spilsby greenstone and Ancaster limestone were used for the masonry. Excavation of the site has shown the interior included service buildings, kilns, a hall, and gatehouse. There is also room for a kitchen and solar, but not much is left to observe. The towers, of which there were once seven, are 'D' shaped. The castle was captured twice during the English civil war and was subsequently badly slighted to prevent its further use. It is a fine example of an enclosure castle with no keep. The Spilsby greenstone used for construction was also found to be a poor choice, being porous and easily weatherable.

Description:	**Photograph:**
View of the approach from the east of the site. The area is deliberately surrounded by marshes. At the time of observation England had experienced weeks of heatwave conditions and the water was still high, so it can be assumed to have been a permanent defensive feature despite the lack of river.	
An example of one of the corner towers at the site. The stones were laid in layers of roughly equal thickness. It is unusual for large stones to be used for the full thickness of the wall, but the site was 13th century and may have utilised stronger techniques.	

View from the south-eastern tower southward over the Old Bolingbroke marshland. When the towers were at full height (three storeys) the flatness of the surrounds would have permitted them wide-reaching views.	
An entrance way to one of the towers -the last to still be standing. The Spilsby greenstone is fairly well preserved here, and the quality of the masonry is perceivable.	

The foundations of the walls butt out around 15 centimetres at the base, as do the bases of the towers. Presumably, these foundations run deep into the soft earth. The enfilading fire achievable between the towers is highly apparent.	
View of the relative position of the western tower from the enclosure platform. Note that the elevation decreases some 45 centimetres from the interior elevation to that of the tower floors. The reason for this requires further inquiry.	

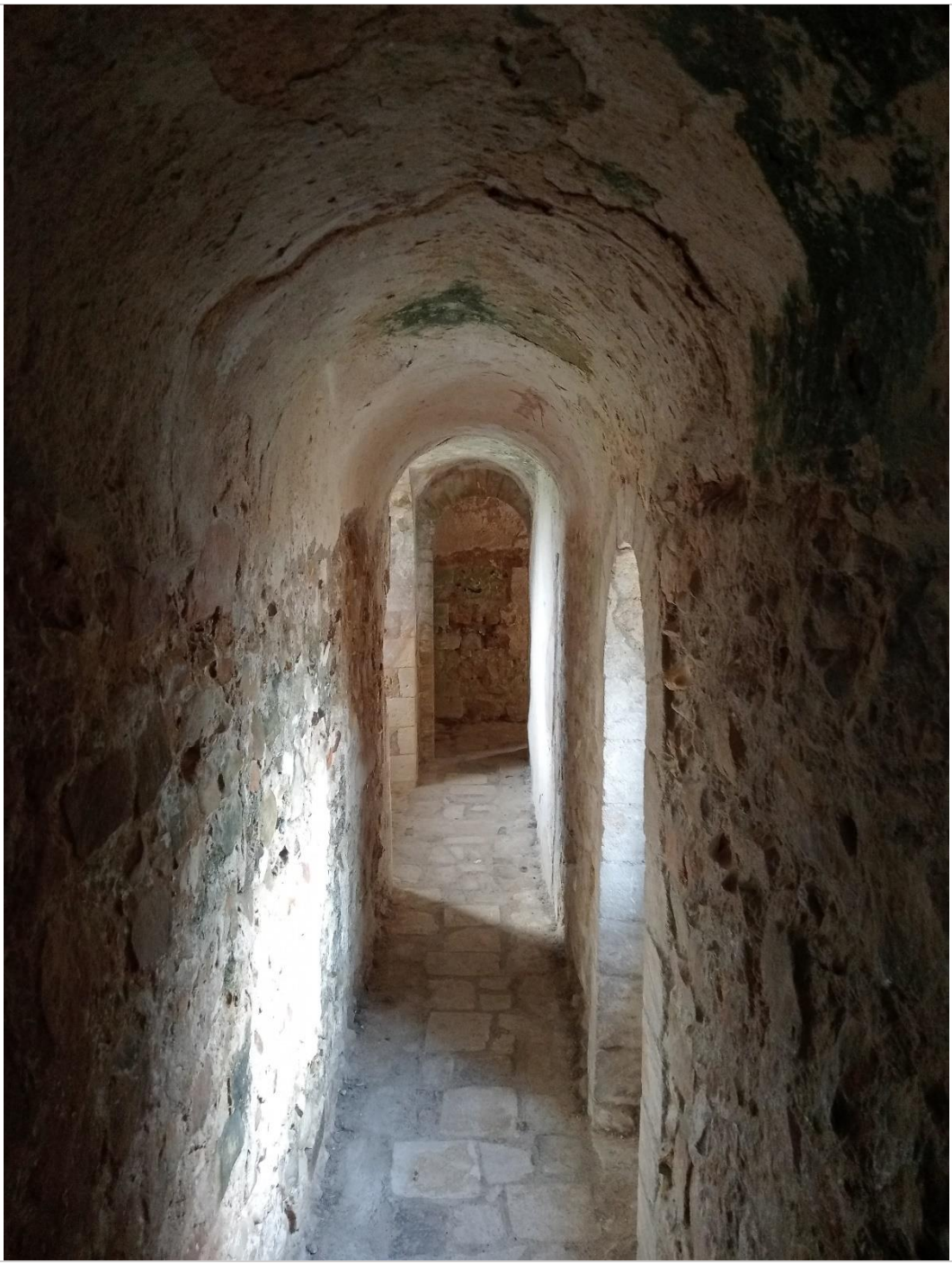
Site #22 CNOR04 Castle Rising

An 11th century Norman chapel existed at the site prior to the castle. The castle was built around the chapel in an unusual fashion. The masonry castle was built in 1138 by the earl of Arundel. The castle was predominantly used as a hunting base rather than an administrative centre. There are three separated baileys each with a large earthwork. The adjacent town was planned, as was a large deer park.

Description:	**Photograph:**
The southern banks of the inner bailey walls earthworks. None of the bailey walls still stand, but the earthworks are in good condition.	
View of the approach to the keep. The keep was larger in C13, with several rooms built to the left of the current structure (foundations visible). The stone is sandstone with flint rubble infill.	

View of the western bailey. The three baileys are separated earthworks. The ditching is several metres deep. When topped with walls, the defences would have been quite impressive.	
The C12 masonry work of the main keep demonstrates the wealth of the lord of Arundel. The narrow buttress work is of ashlar sandstone, with sandstone facades and flint rubble infill.	

View of the top of the interior of the keep. Repairs visible in red brick. The infill of the walls is visible, differentiating it from the carefully selected stone facades.	
One of the interior rooms has been reconstructed with plaster. This is thought to be the manner in which most castle interiors of C12 and C13 would have appeared, with whitewashed plaster. Note how the corner work is left visible, as is seen at other sites where it protrudes slightly.	



The passages built within the massive walls of the keep are vaulted with barrel vaults. All of the interior frame work is done in rough ashlar.

View of the interior dividing wall of the keep. Large putlogs can be seen for the support of the floor, and smaller putlogs for scaffolding. The stonework is roughly set in rows by stone height.	
View of the arch work of the interior. The vaults and arches are well designed to disperse their weight on key corner pillars which bear their weight to the ground.	



View of the southern section of the keep. The interior was divided into two main layers. The quality of the façade stone work suggests the interiors were all plastered.

A fine example of a large round arch from the bottom of the northern section of the keep. The square section of roof behind it is groin vaulted.	
A second example of a round arch across from the aforementioned. These two arches support the massive weight of the walls and floors above. Corbels reinforce the base of the arch.	

Here is the site of the 11th century chapel. It would have been well defended by the earthworks and walls, but the sunken design is highly unusual for this date. The castle was built around the existing chapel site.



A closeup of the exposed infill of the wall demonstrates the use of flint and sandstone with a high proportion of mortar.



Site #23 CNOR03 Castle Acre

The site is of a motte and bailey form at 41 metres above sea level. The castle is not thought to have been first built in timber, and was constructed in masonry in C12. It was an important administrative site over the settlement and surrounds in C12-C14, but was in disrepair by C15. The motte featured a square keep in its centre of several storeys. To the east was a small triangular barbican earthwork. To the south was the inner bailey, and to the west was a large outer bailey which contained the medieval town. Water from the river Nar is thought to have been diverted into the moats. The masonry is of local flint and sandstone.

Description:	**Photograph:**
View of the motte and keep from the western gatehouse. The modern bridge is in the original place. The diches are broad and deep. The keep foundations are in sandstone, while the walls are in flint.	
Closeup of the keep foundations. A square plan with a central division survives. The stonework is in sandstone and the foundations appear to be a full story below the original ground level of the motte platform. Perhaps the structure was first built, then the motte was built around it.	

A closeup of the wall masonry reveals a similar quality of flint facing to Eynsford. This stone appears much harder to work with than other stone in England, but the masons were limited by availability. The roundness of the stones necessitated a high volume of mortar.	
A closeup of the stone of the keep foundations - presumably sandstone, though no description is available. This stone must have been quarried and brought to the site.	

The flint stone gatehouse is still standing to the west of the motte in the town. The town has outgrown its original borders, which the gatehouse once marked. Its height indicates the entire outer bailey was walled in flint stone walls of similar quality. Presumably the stone has been robbed for construction, as many of the local residences are of flint.	
The inner bailey earthworks. These were some ~5 metres tall and were surmounted by flint walls. The flat distant land gives an indication of how far reaching the view from the keep must have once been.	



A section of the wall from the motte still stands on its northern curve. The wall is quite thin at this point, though it appears there may have been a passage here. The wall is flint with a high proportion of mortar.

There appear to have been four gatehouses within the inner defences. One to the east, south, and west of the inner bailey walls, and one at the entrance to the motte walls. Shown here is the western gatehouse. It was built at ground level, with the wall continuing above it. Such a design seems wise, as it would force an attacker against what would have been one of the strongest points of defence.	

Site #24 CNOR16 Thetford Castle

The tallest still standing earthwork motte in England. Thetford is a fine example of an 12th century earthwork and timber castle that was not rebuilt in stone. It is thought that an 11th century ringwork also existed at the site. The motte and bailey earthworks utilised existing Iron Age earthworks adjacent to the settlement. At only 21 metres above sea level, and with no natural hills in the area to scarp, the builders were forced to construct a man-made mound. Thetford was the second largest town in East Anglia in C11. It is estimated to have taken 24,000 man days of work to build the mound.

Description:	**Photograph:**
The motte is some 19.6 metres above ground level, and 22 metres to the base of the ditch due to scarping. Presumably these measurements would have been slightly amplified 900 years ago when the site was built.	

View from the approach to the west. The ditch is several metres wide and deep, and was presumably even sheerer in its original condition.	
The view from the motte northward over the double ditches of the Iron Age earthworks. The ridge of the mounds would not have compromised much on the visibility of an attacking force from the tower, while making the approach more arduous.	

The view from the top of the motte reaches just above the modern tree-line and well over the modern town. When the motte was at its original height and surmounted by a wooden tower, the view range would have been extensive.



The path up to the motte is exceptionally steep. One must wonder if those mottes that were rebuilt with masonry defences were lowered, or if Thetford was always an outlier.



Site #25 CSUF10 Framlingham Castle

The castle is 43 metres above sea level. A motte and bailey or ringwork with timber defences is thought to have existed at the site in C11, but was razed in 1148. Either way, a new masonry castle was constructed in 1160. This masonry castle was an enclosure castle with no keep. The bailey would have had several halls and a number of smaller buildings adjacent to its walls. Little survives from the interior beyond the walls themselves. The defenders of the castle surrendered without a siege in 1216, following the deliberate example of the sack of Rochester castle. The castle housed some 80 inhabitants by the end of C13, and is an excellent example of an economically influential site -ordering and managing goods and foods imports from across Europe. The walls boast some 13 large towers built of flint and septaria.

Description:	**Photograph:**
The view of the bridge leading to the southern gatehouse. This has been repaired in C16. The corner work (quoins) of the towers is of sandstone, while the facades are flint and septaria. The dry moat may once have been fed by the adjacent body of water known as ‘The Mere’.	

The towers are of rectangular plan with sandstone and flint masonry. Red brick is used for C16 repair work and the addition of decorative chimneys. The earthworks of the site are substantial.



A steep slope surrounds the walls on all sides. There are loopholes in the towers, but very few are close to ground level. Garderobe shoots are visible in the centre.





View from inside the motte of the eastern walls. Loopholes are visible here in the ground floor. The dry moat may have originally been water fed.

View of the inside of the eastern walls. The central tower appears to have been one end of a larger hall. Several reconstructions suggest this was the chapel. To the left is a series of small rooms built into the wall known as the ‘chamber block’.





The parapets have seen C16 modification. The walkway and finials are in red brick. The merlons are C12 and are of flint and septaria.



Where the C11 loopholes are preserved, they are of fine quality. Their base is sloped diagonally to allow vertical shooting, and their angle is broad for range of fire. The exterior and interior edge work is in rough ashlar and the infill is in flint.

Little remains on the original western bailey. Earthwork banks follow its perimeter suggesting it was well defended in C12. Some reconstructions show this as a private vegetable garden for the castle, but no indication is given at the site.	

Site #26 CSUF01 Orford Castle

Orford sits overlooking the sea and is just 16 metres above the sea level. All that remains today is the central keep, which was once surrounded by a set of thick walls and rectangular towers. It was built around 1165 to consolidate royal influence in the region following a period of rebellion. The keep has a central well like that of Conisborough. The plan of the keep is cylindrical, with three buttressing rectangular towers. Much of the interior is complete in smooth ashlar. Some of the best stone is limestone from Caen in Normandy, while most is local mudstone and coralline.

Description:	**Photograph:**
The keep was undergoing repairs at the time of observation, but the interior was well worth visiting. The extent of the scaffolding gives some indication of the difficulties of erecting such tall structures to begin with.	



The interior stairs of Orford keep are sufficient to allow two people to walk abreast or to pass in single file. The steps are not crafted from single stones as is seen elsewhere, but from rows of ashlar limestone.

A closeup of the interior masonry delineates the ashlar limestone from the local mudstone. Young sedimentary stone like this is prone to crumble.	
The view over the settlement of Orford and the coastline. In its original condition, the keep would have provided excellent visibility for miles.	

Many of the limestone features of the keep are calcified and worn away. Perhaps this is due to the sites proximity to the sea, but the damage appears worse than at other limestone castles, and may relate to the source of stone.	
The interior of the chapel is in a decent state of preservation/reconstruction. The putlogs in the roof have been conjecturally reconstructed with large sturdy beams of oak.	

The central well is located on the lowest floor of the keep. It seems like a prudent choice to locate at least one well inside the keep for defence, and this seems to occur more often in 12th century foundations - perhaps in response to failures of C11 designs.	

Site #27 CESS01 Colchester Castle

Colchester castle sits at 31 metres above sea level on the site of a Roman temple. It was completed in masonry with no prior timber fortification at the end of C11. The castle endured a three month siege in 1216. The castle was built by Williams steward and reverted to the crown upon his death in 1120. The castle was managed thereafter by constables loyal to the king, rather than hereditary lords. In its original state in C12, the keep had four large corner towers with crenelated parapets, but its height is now reduced and capped with a modest roof.

Description:	**Photograph:**
The masonry of the castle is made of a true mix of resources including: roman tile and brick; Barnack stone; local mudstone and septaria. The height of the keep is greatly reduced at present.	



Roman brick and tile has been used in the load-bearing vaults of the lower floor. Here the loophole/window also demonstrates the thickness of the keep walls. In an unusual design, the defender may have shot from this position.

In an example of the use of Roman tile and local mudstone masonry the robustness of the former is highlighted. Despite being some 700 years older, the roman tiles have outlasted the local stone.	
The exterior masonry is arranged in layers of roman tile and local stone. Two rows of rough ashlar delineate the vertical masonry from a gentle flaying slope. This buttressing of the foundations not only adds to structural stability, but increases the time required to destabilise the towers or walls through siege mining.	

The Norman keep was the largest in ground area of any in England. It is a testament to the Roman foundations that they have lasted for some 1600 years. Just to the left of this image, and 11th century chapel stood outside the entrance to the keep.	

Site #28 CKEN01 Canterbury Castle

The site is just 16 metres above sea level, with no substantial motte. The site was one of three important royal castles in Kent in C11. However, as Dover became the principal seat in Kent, Canterbury castle declined in importance and became a county jail by C13. It is believed that the site began as a timber motte and bailey, with the motte still visible in the adjacent gardens. The masonry keep was built in flint and sandstone rubble. It had a small enclosure bailey with two gatehouses which is now lost.

Description:	**Photograph:**
View of the approach to the keep. Little remains at the site beyond the keep walls, which are in a poor state of preservation. The large open windows suggest a residential and administrative role was key here, with defence falling to the inner bailey walls.	



A collapsed buttress column. The infill masonry is of small flint rubble of low quality. The facades are made of local and imported sandstone, and are badly weathered.

The corner work here appears to have been completed in flint? Unless there was an exterior ashlar sandstone corner that has since fallen away.	
Again here, the corner work (quoins) appear to have crumbled, leaving the remainder of the tower to degrade over time. It is worth noting then that stable quoins may be essential to long-term preservation.	

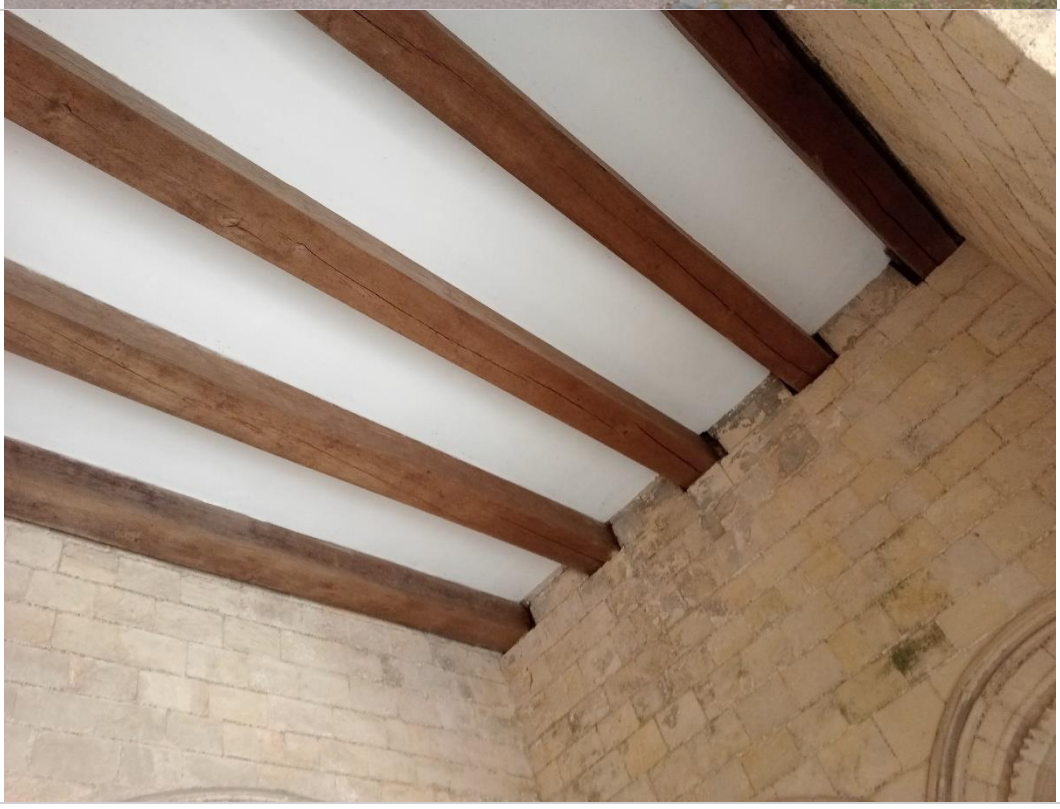
Site #29 CKEN14 Dover Castle

The site of Dover castle was fortified prior to the conquest. The Normans burned a Saxon defence there when the Saxons surrendered, and thereafter built their own defences. The concentric masonry castle began to take shape in late C12 when King Henry II invested vast sums of money in bolstering its defences. It was at this time that the present keep, outer bailey, and inner bailey were constructed. The church of Saint Mary was one of the earliest structures from the medieval era, dating to C11. The south-western portion of the outer wall and the walls around the church wore built in the 13th century. The keep and outer defences saw substantial practical developments in C18-C20 due to the continued significance of the castle in monitoring and defending the English Channel.

Description:	**Photograph:**
Approach to the castle from 'Colton's Gate' gatehouse. The quoins, arches, and gate frames are built in Caen stone, with the walls of local sandstone. Some 12 towers form the inner bailey defences.	
The keep of Dover. Built mostly of Caen limestone. The windows were a later addition. The keep contains all the amenities needed for daily life including: bread ovens; a well; storerooms; latrines; a solar; great hall; and apartments. As is seen elsewhere, the lower metre of the walls is flayed slightly.	



What remains of the C12 gatehouse known as ‘Colton’s Gate. The stonework is of local sandstone rubble with Caen stone ashlar cornering and loopholes. An unusual gatehouse design, featuring a single tower, rather than double enfiladed towers.

The approach to the inner bailey. This is guarded by a gatehouse known as the ‘Palace Gate’ which features a portcullis and drawbridge. Note the exceptional horizontal stonework reminiscent of that at Conisborough. Note also the replaced Caen stone quoins.	
A very reasonable reconstructed floor (utilising existing putlogs) in one of the smaller rooms. These reconstructions are highly useful and appropriate for understanding the architecture.	



One architectural feature not observed at any of the other castle sites is the Dover keep rainwater tank. It was once lined with lead, and collected run-off from the roof system. This may have helped save the garrison in a siege scenario.



A reconstruction of the well's mechanical hauling system. The larger cog greatly reduces the number of revolutions required to haul water. The well is 85 metres deep, with the castle being on high ground. The construction of the well alone is an astonishing feat.



A reconstruction of the household living quarters known as the solar. Solars were generally located above the main hall and housed the lord's close kin. Medieval people are understood to have favoured bold and bright colours.



A small reconstructed dining room used by the lord's retainers. The walls have been plastered and whitewashed -as is understood to have been the norm at the time. Note again the ashlar corner, door, and arch work would have been left exposed to show its quality.



The chapel of Thomas Becket. The chapel is a fine example of the skill of 12th century masons and a demonstration of what could be achieved with the King's personal funding. The roof is rib vaulted in local stone with Caen stone reinforcement.



The spiral staircases at Dover are broad enough to have three men walk abreast, and easily pass in single file. These are the broadest stairs of this kind observed during the visit.

The view from the top of the keep to the north-west overlooking the settlement. Note the lower parapets have been stripped of their crenelation to permit the use of heavy guns.



Parts of the upper keep are still in C12 condition, while others have been heavily altered in C18. The sandstone and flint wall for example is original, while the roof floor has been made bomb-proof and the finials replaced.



An interesting observation; there are in some places in the walls rows of smashed flint. This appears to achieve an effect similar to herringbone masonry.	
A reconstructed garderobe (toilet) is a well-considered conjectural piece. This gives some idea of what would have existed at those other castles which now have simple holes in the wall.	

A view of the inner bailey walls from the north of the site near the medieval tunnels. The structure with the hung shields is called the ‘Kings Barbican’ as it protrudes from the inner bailey where a second gate called the ‘King’s Gate’ stands. To approach from this side then, an attacker would have to best three gatehouses and a keep. Note also that the inner defences are sufficiently high to shoot projectiles from some distance, forming a true concentric castle.





Outside the second layer of walls is a steep earthwork - further complicating any potential assault. The castle is built on a naturally elevated site, but the earth around each layer of walls has clearly been piled and scarped.

Site #30 CSUS20 Pevensey Castle

Pevensey sits on the site of a Roman fort of the Saxon Shore at just 12 metres above sea level. Pevensey was besieged four times, twice before 1300 (1216 &1088). The bailey walls are largely those of the Roman fort. These were expanded and re-fortified by the Normans. The gatehouse and keep date to the 12th century, while the three inner baily towers and walls are mostly 13th century. The moat was filled with water at the time of observation. When William first landed in England, he made his camp at Pevensey inside the Roman ruins. After the Battle of Hastings, he immediately began work to re-fortify the site.

Description:	**Photograph:**
View of the bridge crossing to the gatehouse. The gatehouse is approached from the west. The castle walls are built of ironstone and sandstone with sandstone rubble infill.	
There are three large ‘D’ shaped towers following the path of the wall. Loopholes are visible on the exteriors, but no scaffolding putlogs. The towers taper at the base as at other sites, but more gradually than most.	

A very well preserved loophole station inside the north tower. The quality of the ashlar stonework is quite high. The base of the loophole slants diagonally downward and the angle of fire is ~40 degrees.	
A closeup of a section of crumbling wall shows an ironstone arch set against the interior sandstone rubble infill.	

The view over the Roman walls of the outer bailey. When the keep was standing, the view over the surrounding landscape would have been vast. The surrounding lands are flat for several miles.	
A section of crumbling Norman masonry highlights the contrast between the sandstone rough ashlar facades and mortar and rouble infill.	

The remains of the main keep. The rough ashlar stonework is comprised of larger individual stones than elsewhere at the site. Reconstructions of the castle show a rectangular hall with three protruding ‘D’ shaped towers. The keep was three stories high, with an entrance on the middle floor.	
View of a pile of trebuchet shot collected at the site with the foundations of the keep behind. The site suffered four sieges in its lifetime.	



A closeup of the Roman outer bailey walls. These were built in layers of Roman brick, sandstone, flint, and mortar. It is a testament to their masons that they have lasted so long.



A further example from the Roman outer bailey walls demonstrating the use of herringbone masonry on a curved section of a tower.

Site #31 CSUS16 Lewes Castle

Lewes castle sits 31 metres above sea level. The site is noted as unusual for having two mottes. The first motte known as 'Brack Mount' was completed shortly after the conquest. The second motte known as the 'Keep Motte' was completed at the end of C11. Both mottes were completed by the Earl of Surrey. Both motte defences were originally in timber. These were replaced by masonry shell keeps in C12. The barbican dates to C14. A bailey was constructed between the two mottes. An important route along the Downs crossed the River Ouse at Lewes, so the location was certainly worth defending.

Description:	**Photograph:**
The barbican is thought to date to C14. It is one of the best-preserved elements of the site. The loopholes take a crucifix design and the parapets boast a fine example of machicolation.	

Closeup of the machicolation. The slits allow the defender to shoot vertically downward at any force attacking the gate below, whilst being almost entirely defended by the stone structure. No other good examples of machicolation were identified during the visit to 31 castle sites, and even here the defence is thought to be 14th century, and so is outside the study's date range.	
View of the surviving portion of the main shell keep from the larger motte. The masonry consists mostly of small flint stones, with repairs in red brick and detail work in sandstone.	



A surviving loophole station provides example of the detail work in sandstone. There is no diagonal slant at the base of the loophole to permit downward fire, but this may be due to reconstruction.

On one of the surviving sections of shell keep wall a large fireplace cutting is visible. Presumably this was one end of the main hall that once stood atop the motte. A plan on the site shows a kitchen and great hall.	
The view southward from the shell keep. Despite the relatively small keep, the height of the motte grants exceptional view over the surrounding settlement and landscape beyond. The crenelations have been altered post C14 in red brick.	
~ End.	