Housing the Worker

A Study of Worker Housing on the Balmain Peninsula and Central Sydney from the Mid 19th Century to the Early 20th Century

A Thesis submitted as partial requirement for the fulfillment of a Bachelor of Arts (Honours) degree in Archaeology

Laura Anne Jones

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Cover Images:

View of Mort’s Dock, Waterview Bay from Balmain Coal Mine, 1906 (Balmain Association)

Sandstone worker’s cottage, Rowntree Street, Balmain (author’s photo)

Backyards of Balmain Terraces, c.1960s (Wong & Irving 1969)
**Abstract**

The industrialization of Sydney and the increasing prevalence of factories in the city centre and outer suburbs from the mid-nineteenth century meant that worker housing was in high demand. The opportunity to capitalize on this need for housing was taken up by many entrepreneurs, known as speculators. The industrial landscapes, which were created, as a result were in no way planned, but a case of the material and social processes interacting.

In the study area of the Balmain Peninsula in Sydney, the construction of worker housing was not under the control of one individual, in contrast to many company towns. The purpose of the thesis is to examine the relationship between social processes and the material by examining the extant houses on the Balmain Peninsula. The aims of this thesis are to examine the nature of piecemeal housing and the degree of standardization in worker housing. The changing building strategies used in order to capitalize on the demand for worker housing will also be considered. The results of the survey were compared to three equivalent urban areas of Sydney; The Rocks, Pyrmont and Haymarket.

The results of the survey of worker housing on the Balmain Peninsula indicated very little standardization, which is a direct result of the degree of speculative building. The material of existing buildings and the landscape had a major influence on the direction of future development, which ultimately led to a piecemeal environment, as depicted by contrasting building phases built beside each other. There was an obvious change in the way worker housing was constructed from the mid nineteenth century to early twentieth century, as shown by the introduction of building strategies in order
to build more densely. Industrial urban landscapes in Sydney were not planned and the intent of speculative builders was not aimed at a particular pattern of daily life. The creation of the urban landscapes was rather the product of a number of factors including the pursuit of capital investment, macro-economic processes and the constraints exerted by the material itself.
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Chapter 1: Introduction

Introduction

“Housing the worker” refers to the activity that shaped many urban environments of present day Sydney. The proliferation of factories and industrial activity during the mid nineteenth century meant that the construction of dwellings surrounding these places of work was a necessity. Due to the urban nature of Sydney and the degree of industry, these houses were not constructed by one corporate individual as is seen in many company towns. The practice of house building instead became an activity to be capitalized upon by several individuals, known as speculators. The housing forms and urban environments built by these individuals are an interesting phenomenon to be studied archaeologically because they shed light on the relationship between the material and social action. The intent of speculative building was not aimed at a social good or a particular social pattern of daily life. Instead, it was defined by capital investment. The result of this process was that the material examined in the thesis was being influenced by speculative building, as well as playing a role in its development.

The role of the material as an active agent has been discussed by Fletcher, who argues that the material needs to be examined as a factor of change in its own right, rather than being predominantly a reflection of the social (Fletcher 2004:111). The piecemeal nature of speculative building meant that the material itself created circumstances to which the social had to adjust, making the usual ‘reflections’ model untenable. Archaeologists can examine what the material does and the relationship between the material and the social and the way that they produce long-term outcomes (Fletcher 2004:111).
**Case study and comparative urban areas**

The development of industrial urban environments and working class housing will be examined throughout the thesis using the case study of the Balmain Peninsula as well as three comparative archaeological sites, The Rocks, Pyrmont and Haymarket, which are exhibited in Figure 1. The map reveals the position of the three urban areas in the centre of Sydney, while the Balmain Peninsula is situated on the margins of the city. The growth of urban environments into outer Sydney did not begin until the 1830s and 40s, and in the case of Balmain was largely a product of its development as an industrial centre and the need to house the people who worked there (Aplin 1987: 198-199). The Rocks had been the focus of Sydney’s urban development since the point of colonization. The types of material patterns present in The Rocks were different to Pyrmont and Haymarket, which developed in the mid nineteenth century as a result of industrialization.

**Figure 1.** Aerial of Sydney showing the Balmain Peninsula, The Rocks, Pyrmont and Haymarket (Google Earth 2011)
**RESEARCH PERSPECTIVE**

The main purpose of the thesis is to examine the impact of speculative housing on industrial urban landscapes in Sydney. These urban environments were constructed in a piecemeal fashion, which refers to the process of building houses in stages over time. Each case study developed in an unplanned manner and did not parallel social ideals. This process will be examined using two approaches within the thesis. The first is examining the urban development of industrial landscapes in Sydney. While the second approach involves the survey of working class housing on the Balmain Peninsula in order to understand, what material patterns have been produced across space and time. The inclusion of these two approaches is significant as there needs to be an acknowledgement of both the material and the social factors driving urbanisation.

Worker housing in archaeology has been commonly investigated using a purely typological approach, which does not provide an understanding of what caused the material to change. The thesis will therefore provide a holistic approach to the study of unplanned urban environments and discuss the various material and social attributes, which contributed to their eventual layout. The social factors shaping these communities were either be macro economic, which refers to the wider processes occurring throughout Sydney such as industrialisation and speculative building, or derived from the social community life of a particular urban area. The factors of urbanisation impacted on the material, although were ultimately constrained by an existing cultural and natural landscape.
The research aims and questions of this thesis are:

1. Interpret the material patterns of unplanned industrial landscapes
2. Examine the active role of the material and its influence on shaping piecemeal housing.
3. Analyze the degree of standardization and variation between worker housing on the Balmain Peninsula and the three comparative urban areas
4. Examine the building strategies adopted in order to capitalize on the demand for worker housing.
5. Was the development of Balmain peninsula typical of urban industrial landscapes in Sydney?

**Constraints**

Due to the large area encompassing the Balmain Peninsula, the housing survey was limited to what was known as “Mort’s Town of Waterview”, which was land subdivided by Thomas Mort, the owner of Mort’s Dock in 1858 in order to provide housing for his workers. The Balmain Peninsula was never exclusively a working class suburb and housed a variety of wealth levels. However, a comparison of the differing origins and techniques used for each type of housing was not feasible due to the limitations of time.

The study of housing in archaeology involves a number of different methods, including the analysis of spatial organization and interiors. However, information
relating to these issues was not available for the Balmain Peninsula and therefore analysis was limited to analyzing the facades and physical location of dwellings.

**THESIS OUTLINE**

*Chapter 1- Introduction*

The first chapter provides a background to the thesis topic by explaining the issues and terminology pertaining to the study of worker housing in industrial Sydney. The chapter also outlines the research questions and aims of the thesis, as well as explains the methods, which were used to collect the data.

*Chapter 2- Working with industrial landscapes*

The second chapter is divided into two parts. The first is a brief summary of archaeological approaches to industrial urbanism and examines the problems and issues concerned with how urban landscapes have been previously approached. While the second part of the chapter provides an extensive discussion of the way worker housing has been approached from the 1970s to more recent approaches.

*Chapter 3- Methodology*

Chapter 3 provides an outline of the research strategy used in order to investigate working class housing on the Balmain Peninsula and central Sydney. The chapter outlines the study area and why particular material attributes and methods were chosen to be recorded.
Chapter 4 - Urbanizing the city centre

Chapter 4 discusses the urban development of the three comparative archaeological sites; The Rocks, Pyrmont and Haymarket. The discussion is predominantly based on archaeological reports and historical photographs in order to understand the wider processes impacting on urbanization in Sydney during the nineteenth century.

Chapter 5 - ‘A Hive of Industry’ - The Balmain Peninsula

Chapter 5 outlines the urban development of the Balmain Peninsula using historical maps and photographs. The discussion of urban development on the Balmain Peninsula examines the contextual background of this urban landscape and will determine the relationship between the material and the social and their impact on changing housing forms. The chapter also presents the results extracted from the housing survey, including a discussion of the degree of standardization and significant house forms identified.

Chapter 6 - Implications and Issues

Chapter 6 provides a discussion of the results presented in Chapter Four and Five. The chapter is divided into three sections. The first section discusses the relationship between material, space and time, through an interpretation of the prevalence of material attributes recorded from the housing survey. The second section discusses the role of speculative housing and the degree to which this form of house building led to the creation of piecemeal urban environments. While the last section of this chapter discusses the eventual outcome of the various building strategies and processes outlined, which are the urban landscapes that were ultimately produced. This involves a comparative analysis of the Balmain Peninsula and the three central Sydney case
studies. The chapter also discusses the future potential for the archaeology of working class housing and industrial landscapes.

Chapter 7- Conclusion

Chapter 7 addresses each of the research aims and questions proposed in the opening chapter of this thesis. The chapter will also propose the contributions of the thesis to the study of urban landscapes and worker housing in archaeology.
Chapter Two: Working with Industrial Landscapes

Chapter 2: Working with industrial landscapes

Chapter 2 will discuss previous approaches to industrial housing and landscapes, which are the two foci of this thesis. The development and form of industrial housing has been explored using a range of themes and methodologies in historical archaeology including corporate paternalism, spatial and architectural studies, and class. Industrial housing seems to have been extensively studied in archaeology, which is indicative of the wealth of information, which can be derived from this type of material. The chapter will reveal that industrial housing should not be discussed separately from industrial landscapes, as an inclusive approach will more productively aid the discussion of the relationship between the material and the social.

Part one: The archaeology of Industrial Urbanism

The first part of the chapter will discuss the growth of the archaeology of industrial urbanism over the last thirty years. Industrial urbanism refers to the process by which the prevalence of industry alters and shapes the built environment. The thesis is primarily focused on industrial housing, however the nature of landscapes and their formation is important and must be considered in order to provide a more holistic approach to the investigation of housing forms. The study of industrial urbanism has typically involved the examination of wider processes and forces, without looking at
the individual material forms and their impact on developing social manifestations. Archaeologists typically see the material as a reflection of the social, however this is only a partial view, as the material has the ability to impact on what people try to do. Industrial urbanism in historical archaeology has also been highly influenced by social theory, which has largely stifled the growth of this field. This is due to the fact that other disciplines do not share the same aims and questions of archaeology, which is to examine change over time and the active role of the material.

The first approach to industrial urbanism, which will be discussed, is Cressey et al.’s (1982) ‘Core Periphery Model’, which examines the urban environment as a set of spatial patterns. The approach is largely influenced by social theories such as those developed by Sjoberg (1965) and Burgess (1925), who structured their interpretations of urbanism as a set of patterns involving outer and inner zones. This reliance on social theory is best exemplified by Cressey et al.’s use of zonal distinctions to explain the role of industrialism in contributing to socio-economic separation across urban landscapes (Cressey et al. 192: 146). However Cressey et al. do situate their interpretation of industrial urbanism within archaeology by implementing the study of long time span analysis and allow for archaeological questions to be answered. Cressey et al. also focus on the role of the material as they explain that the core and periphery became more materially and physically distinct as new technological and economic infrastructure was introduced (Cressey et al. 1982:171).

Like Cressey et al., Diana Dizrega Wall heavily relies on social theory to explain industrial urbanism in archaeology. Dizrega Wall has based her whole interpretation of urbanism in New York City on the theories of Burgess and Sjoberg (Dizrega Wall
1987: 65). Dizrega Wall does not exclusively observe industrial urbanism and discusses industrialism in relation to colonialism, despite these being conflicting and materially distinct processes and mechanisms. Dizrega Wall assumes that these social theories are asking the same questions as archaeologists, however the research aims of each discipline do not correspond. The lack of consistency between the two disciplines is exhibited by the fact that Dizrega Wall needs to compensate for the fact that sociology does not deal with long time spans by using two social theories. However despite this attempt to study change, Dizrega Wall’s data is largely disconnected and unable to represent change over time. This is a result of Dizrega Wall trying to fit her conclusions into linear frameworks that do not best serve the aims of archaeology.

Rothschild similarly examines the urban landscape of New York City, however offers a contrasting approach, which is more congruent with archaeological questions. Rothschild is more aware of the need for an archaeological approach to the study of urbanism, which examines the implications of material culture over time within industrial landscapes. This is exemplified by Rothschild’s discussion of the development of New York City into units of socio-economic, ethnic and religious markers, which she tries to interpret as either a result of human intention or the development of the material itself (Rothschild 1987:29). Rothschild also examines how the original fabric of New York City considerably affected its eventual development as shown by Wall Street, which served as a physical barrier and considerably altered urban development (Rothschild 1987:30). The role of the material on the subsequent development of an industrial landscape is integral to the
thesis, which is examining how the material of worker housing constrained future development implemented by speculative builders.

The next approach is Cremin’s (1989) investigation of the industrial landscape of Lithgow. This study of industrial urbanism examines the growth and decline of Lithgow, which was largely unplanned and haphazard. Cremin’s approach is quite similar to previous scholarship, where trends and development are allotted into chronological categories. Cremin uses a historical approach whereby the archaeology is simply used as supporting evidence. However, Cremin does discuss how the material from each period contributed to the subsequent development of the latter phase.

Cremin has also offered an example of a new form of industrial landscape, as previous studies largely focused on planned environments, which were intentionally altered by corporate authorities. However, in this case, factory owners showed no inclination to provide the growing working class population with housing or provisional services (Cremin 1989: 35). Cremin observes the development of this industrial environment as being a direct result of the entrepreneurs, who took an interest in the investments available in Lithgow, although showed little interest in long-term policies (Cremin 1989: 35). Although some individuals did make an effort to develop Lithgow as a practical industrial town centre, industrial urbanism was largely sporadic (Cremin 1989: 40). The thesis contributes to the study of these types of industrial landscapes, as it is proposing that their creation was a result of both deliberate choices made by individuals and the constraints of existing landscapes and housing.
Another Australian case study is Louisa Bavin’s discussion of the distinct material variables, which were attributable to middle class and working class urban environments in industrial nineteenth century Melbourne. Bavin’s analysis does not offer the most in-depth interpretation of urban development, however does demonstrate a step away from looking at the big picture and instead concentrating on the individual material and their creation of social boundaries. Bavin examined material manifestations of class in both Collingwood, a typically working class suburb and the middle class suburb of Kew (Bavin 1989: 16). This involved an analysis of buildings, parkland, streets and drainage in order to examine how they reflect social factors (Bavin 1989: 17). However, this understanding sees the material as a reflection of particular class values and Bavin does not analyze the material based on its ability to create change regardless of social ideals. Bavin also offers a simple categorization of class, which does not offer an understanding of how these industrial environments were shaped and manipulated over time.

Paul Shackel’s 1996 approach to industrial urbanism at Harper’s Ferry reveals a shift in thinking in relation to how material culture is interpreted. Shackel comments on the fact that the literature produced by other disciplines including historians and anthropologists lack the evidence, which can be extracted by archaeology (Shackel 1996: 17). Shackel instead insists upon a greater understanding of the relationship between the material and the behavioral implications of domestic life, as achieved through the application of archaeological methods (Shackel 1996: 17). Shackel’s contribution to the study of industrial urbanism is quite extensive as he is observing the considerable impact technology had on the lives of the Harper’s Ferry inhabitants.
Chapter Two: Working with Industrial Landscapes

Shackel discusses how industrial sites in the United States were intended to be planned in order to avoid the poor living conditions like those in England, however this did not materialize (Shackel 1996:1). Shackel combines this emphasis on the spatial layout of the industrial community with his analysis of the multiple uses of armory dwellings, which shifted based on changing lifestyles and ideologies (Shackel 1996:25). The Harper’s Ferry armory town was built during the 1790s and was established in order to manufacture and store arms (Shackel 1996:29). Shackel examined the industrial landscape of Harper’s Ferry, which was at first unplanned but later implemented enclosures and a structured town layout in order to ensure discipline among the workers (Shackel 1996:70). Therefore, Shackel is quite conscious of the ability of the material to transcend from its originally intended purpose in order to create new social forms, which exemplifies a shift in how the archaeologist’s role is perceived.

A recent approach developed by McNeil in 2006 explored the global process of industrialism, involving the adoption of elements found in the city of Manchester, which is known as the first industrial city. McNeil examined several towns, which modeled themselves on Manchester’s original layout in order to understand the impact of the material fabric of the Industrial Revolution (McNeil 2006:151). McNeil discusses the fact that there is a major gap in the archaeological record, whereby industrialization and urbanization are rarely studied together or over long time spans (McNeil 2006:152). McNeil also places emphasis on the role of material, which has ultimately shaped the industrial city, thus allowing it to be used as a significant tool for the analysis of industrialism (McNeil 2006:152).
Through the study of Manchester, as a symbol of industrialism, McNeil remarks on the process by which the material fabric of this city shaped the form of industrial urbanism globally. Recent scholarship discussing the application of industrialism, therefore reveals a shift in thinking, which has allowed the incorporation of significant elements of technological and economical change, that were previously unconsidered. This has resulted in a shift away from a historical or sociological approach, which has previously obscured the nature of the industrial landscape, thus allowing for a comprehensive viewpoint concerning the impact of industrialism. Although there continues to be a reluctance to examine worker housing as a major factor in the processes of industrial urbanism, which needs to be observed closely in order to understand both the material and social forces shaping these environments.

**PART TWO: THE ARCHAEOLOGY OF WORKER HOUSING**

Housing offers a considerable amount of evidence for archaeologists interpreting the lives of past individuals and thus has been utilized for the purpose of the thesis. Ross Samson, who has been an influential advocate for the study of houses in archaeology, explains that houses as the domain within people lived, provide archaeologists with a significant tool for reconstructing the past (Ross 1990:2). Matthew Johnson has extensively critiqued and discussed various approaches to the study of housing. His discussion and interpretation of the way houses should be studied in archaeology is derived from his investigation of English houses from 1400-1700, which exhibits his attempt to untangle ‘the cultural and mental lives’ of their uses and those who built them (Johnson 1993: 1). According to Johnson there has been reluctance in archaeology to apply explicit theory to the study of houses, which has resulted in two
approaches, typological and economic studies (Johnson 1993: 7). Both approaches have been substantially exploited by archeologists studying industrial housing as will be examined in this chapter, however neither provides a deep analysis of the interrelationship between the material and social forces, which shape and change urban environments.

Approaches to worker’s housing, from the 1970s and 80s, display a largely typological approach, however they still encompass some interpretation concerning the factors which caused worker housing to change. The literature concerning industrial housing was at first largely concentrated within Britain and attributed to the field of ‘industrial archaeology’ defined by Schuyler as the fifth sub field of ‘historical archaeology’, which studied complex technologies from AD 1750 onwards (Orser 1996:24). There are, however, several problems inherent in this early literature, which primarily concentrates on the way the material was impacted by the social, which represents a one-way relationship that is not in tune with the aims of archaeology. These scholars also fail to examine the way the houses themselves shape industrial environments. The early approaches to industrial housing will be examined through two British studies conducted by Colin P. Griffin and Lucy Caffyn.

Griffin’s 1977 discussion of industrial housing demonstrates the youthfulness of this field due to his constant definition of the role of the industrial archaeologist. According to Griffin, this role is to examine the evolution of workers’ housing as well as their utilization (Griffin 1977:276). This involved the discussion of three types of housing built in Moira, Leicestershire during the nineteenth and twentieth century (Griffin 1977: 276). The situation and scope of industrial archaeology is made clear
by Griffin, who comments on the opinion of many archaeologists that the recent past, which for Griffin was the last forty years, should not be investigated due to its situation in ‘living memory’ (Griffin 1977: 279). This is a significant statement, as it reveals a major interference in the archaeology of industrial housing, particularly from the twentieth century, which would have been seen as too ‘contemporary’ to be effectively studied by archaeologists. Griffin, however, is not of this opinion and believes that industrial archaeologists should examine any industrial monument, no matter its age (Griffin 1977: 279).

Griffin provides a description of each house and its layout, with reference to building context. The first phase of building in 1811 involved the provision of housing from the colliery owners, which are described by Griffin as being ‘cottage rows’ and considerably smaller than later examples (Griffin 1977: 276-277). The second phase refers to a group of terraces built in 1868 (Griffin 1977: 277). Griffin provides extensive background concerning why the housing was built and explains it was a direct result of corporate paternalism from the Moira Colliery (Griffin 1997: 277). The term ‘corporate paternalism’ is continuously discussed by historical archaeologists, investigating industrial housing, as in many cases factory owners took responsibility for housing their workers in order to both attract employees as well as retain a sense of loyalty. Griffin, however, does not provide an understanding of how these motives shaped the nature of housing. While the third phase, refers to housing provided by the Ashby Would Urban District Council in 1934, a new phase of council housing (Griffin 1977: 278).
Griffin examines each of these housing forms in relation to their utilization, which is based on the amount of living space and number of occupancy in order to decipher the degree of overcrowding (Griffin 1977: 279). Griffin reveals a range of outcomes, which can be derived from the study of industrial housing, although there is no obvious argument to his investigation. However, Griffin’s study does reveal the beginnings of the archaeology of industrial housing, and the initial aims and debates, which were propelling this field.

While Caffyn’s 1983 investigation of industrial housing in West Yorkshire is to some extent more developed in her choice of questions and interpretation of the evolution of house forms and their social context. Caffyn examines housing across various industries and sees the main factor contributing to the design and standard of housing as being the contrasting reasons behind their origin (Caffyn 1983: 173). Caffyn’s standpoint is particularly interesting and was in part discussed previously by Griffin through his comparison of owner and council provided housing. Caffyn, however, provides greater depth to this analysis. Each house form is examined chronologically, which includes a description of layout, building materials and their physical position in relation to other houses e.g. row, ‘back to back’, ‘dwellings and under dwelling’ etc (Caffyn 1983)

Caffyn also discusses the range of groups and individuals involved in building activity, including speculators, investors, employers and workers (Caffyn 1983). The range of individuals illustrates how the industrial landscape involved various interests and therefore contributed to changing house forms. Housing forms in West Yorkshire were largely altered and arranged in order to build more densely, which led to designs
that accommodated the terrain and made use of unoccupied land (Caffyn 1983: 180). The process of speculative building is significant as it was the main contributing factor in the unplanned industrial landscape of Balmain, this thesis’ case study and therefore a similar mode of analysis to that of Caffyn will be undertaken.

The 1990s saw a great diversity in the study of industrial house forms and involved an international range of archaeologists from North America, Britain and Australia, however each offers a markedly different approach. The first is the archaeological investigation of Boott Mill in Lowell, Massachusetts, which is prominently referred to alongside debates surrounding domination and resistance in historical archaeology. Mrozowski explains that Lowell, Massachusetts was the first planned industrial city in North America and was organized predominantly around a corporate hierarchy (Mrozowski 2006:16). This corporate hierarchy were expected to provide the workers with housing as well as moral guidance.

Mrozowski used a range of documentary and archaeological evidence in order to explore the material identities present within this structured industrial city (Mrozowski 2006: 16). Mrozowski explains how Lowell represents a dramatic change in the organization of industrial communities through a comparison with Newport whose urban landscape evolved organically (Mrozowski 2006: 65). This demonstrates a shift in the analysis of worker housing to industrial landscapes that were tightly constricted in their development. These approaches were largely dominated by ideas relating to social forces and power relations rather than looking at the active role of the material. Beaudry et al. (1996) did interpret the fact that the workers were not oppressed as a result of the material structuring of their everyday lives. However,
these conflicting responses were played out through other material including tobacco and alcohol (Beaudry et al. 1996: 287), rather than through an altering of the housing itself. Therefore, the study of planned urban environments are not ideal for the study of the material as a vehicle for change.

The best example of an archaeological study of the relationship between industrial housing and landscape is Alfrey and Clarke’s 1993 investigation of Ironbridge Gorge. Their analyses relate most comparatively to the thesis as they are actually examining the role of the material and its influence on the physical layout of an industrial community. These two authors emphasize the depth of information, which can be uncovered through the use of housing as a archaeological source including an understanding of the wider processes of industrialization and its role in producing patterns of social change (Alfrey & Clarke 1993: 6). The types of data extracted from the investigation include distribution of land use and changing architectural styles (Alfrey & Clarke 1993: 6). The study uncovered similar implications and phenomena observed in Balmain including the development from single dwellings to terrace rows, as well as the eventual impact of piecemeal and speculative building.

Alfrey and Clarke observed the creation of an industrial vernacular at Ironbridge and examined the way this model of design changed over time. They discuss the interrelationship between various building variables including the materials used and house layout. A significant implication of the Ironbridge Gorge study was that the workers’ housing involved very little standardization and terraces were merely stylistically different dwellings built side by side (Alfrey & Clarke 1993:180). The material phenomenon can be explained as a result of piecemeal expansion whereby
individual buildings were built free standing and then attached to a later built house (Alfrey & Clarke 1993: 180). This highlights the gradual process of house building, which came about due to an increasing workforce, as a result of encroaching industrialization. The fact that Alfrey and Clarke acknowledge the material process is significant and shows a progression from examining housing as purely a social phenomenon.

Heather Burke’s study of meaning, ideology and class identity in Armidale, Australia presents a different approach to housing. Burke, unlike the majority of case studies in this chapter, explored the housing of three social groups; the mercantile capitalists, the industrial capitalists and the working class (Burke 1999:37). Burke has been a considerable influence on the thesis due to her observation of the material evidence in order to interpret how each class manufactured their own ideology through architectural style (Burke 1999: 103). Style is typically referred to alongside typological approaches, however in this case, Burke is trying to communicate how particular classes wanted to showcase their status in society through the use of various material devices. This concept is highly influenced by Leone, who similarly examined the way William Paca created his garden as a space to emphasize his social status and portray the divisions of class as being firmly cemented in the natural order (Leone 1984: 31).

The methodology used by Burke involved the use of four sets of variables in order to structure and analyze architecture types and their correlation to class and identity. These included social context, physical appearance or style, geographic context and use (Burke 1999:85). The methods were effective for communicating the spatial
patterns across Armidale in relation to class and status. Burke also provided a significant contribution to the use of ideological concepts in historical archaeology, as she explains the diverse meanings of the term from the nineteenth century up to the present day.

However Burke’s use of methods did not produce extensive results concerning the working class, as she was predominantly examining the ideology of house builders and owners, which were two roles not typically associated with the working class (Burke 1999:99). Burke does suggest that the common stylistic features inherent in worker housing may have created a common identity between the workers (Burke 1999: 187). Although it is difficult to assume this is the case and therefore Burke’s approach does not reflect the aims of the thesis, as she is instead examining the social identity of houses and the meanings people place upon them.

Recent approaches from the last ten years seem to be focused on what industrial housing meant to both the people who lived in them and outsiders. This has led to a greater use of documentary evidence and oral histories in order to uncover these social meanings. The first approach, which will be examined, is Geoffrey Timmins’ archaeological investigation of the quality of early nineteenth century textile worker housing in rural Britain. Timmins uses a wide range of nineteenth century contemporary sources as well as field observation in order to interpret the extent to which houses provided by the Ashworth mill owners were of high quality (Timmins 2000: 21). The houses were generally accepted as being of a high standard, particularly in comparison to other factory provided worker housing (Timmins 2000:22). However, Timmins remarks that other evidence, particularly field survey,
has not been tested, which therefore strengthens the importance of archaeology when studying worker housing (Timmins 2000:22). Timmins’ investigation reveals that in fact the housing quality provided by the Ashworth Company varied considerably (Timmins 2000:22). Timmins focuses primarily on the role of corporate paternalism in shaping the industrial community, which is typically common in the investigation of rural settlements. The Ashworth Company did deliberately attempt to provide higher quality housing, however this did not mean that workers necessarily lived in these houses (Timmins 2000:34). Therefore, the process by which Timmins explored worker housing began with a public perception, which he contradicted through a physical survey of working class housing. This represents a trend in recent archaeology, whereby archaeologists are using techniques specific to their field in order to reveal that the material not what people say is a more reliable depiction of what actually happened in the past.

The second recent approach was undertaken by Karen Metheny, who investigated miner housing in Helvetia, Pennsylvania. Metheny, like Timmins is observing the impacts of corporate paternalism on industrial communities. As observed from previous case studies of corporate towns, the worker housing and its appearance is often portrayed as being strictly dictated by company owners with little input from their inhabitants. However Metheny is trying to observe the extent to which workers actually constructed their domestic world of the household, through alterations and repairs to their dwellings as observed through archaeological and documentary evidence, as well as oral accounts from past inhabitants (Metheny 2006:xvi). Metheny explains that previous approaches to worker housing, such as Boott Mill, have been too constricted by a focus on domination and resistance, and explains that the working
class are active rather than reactive to a higher authority (Metheny 2006:xx). This presents a definite shift in the portrayal of the working class and their own impact on industrial urban landscapes, which had previously been seen as very minimal. As examined by Timmins, contemporary sources at Helvetia similarly suggested the miners’ houses were of high quality and well maintained (Metheny 2006:179). The constant maintenance of dwellings is attributed to the company owners, but oral histories identified that in fact workers were highly involved in shaping the exterior and interiors of their homes. (Metheny 2006: 179). Miner housing is also viewed as typically monotonous and uniform in appearance, although there was immense variation, which Metheny found was directly attributable to the working class inhabitants (Metheny 2006: 186). This included the furnishing of interiors, creation of porches and the repair of drainage and sanitation facilities (Metheny 2006:186).

Therefore, Metheny is able to present a completely new understanding concerning the working class and portrays the house as being of high value to this social group. This once again, like the archaeological investigation of Timmins, dispels previous myths, particularly concerning the idea that working class housing was monotonous and unable to shape an understanding of individual cultural identity.

The last approach (2008) to workers’ housing has examined the past and present perceptions associated with these structures. The investigation was undertaken by Carol & Richard Newman, and was based on the Lancashire Historic Town Survey undertaken from 2001 through to 2006 (Newman et al. 2008: 181). Newman & Newman discuss the lack of attention archaeologists have paid to industrial workers’ housing, particularly those in Britain (Newman et al. 2008:181). They emphasize that industrial working class areas have been primarily stigmatized by the public, due to
the deprivation caused by de-industrialization in the mid twentieth century (Newman et al. 2008: 182). They explore the fact that industrial housing has been largely viewed as monotonous and lacking in cultural significance, however explain that in fact industrial housing was a reaction to individual characteristics and factors inherent to their social and material context (Newman et al. 2008:183). Newman & Newman explain that uniformity in worker housing only became a prominent feature in dwellings built towards the end of the nineteenth century and that many streets built in a piecemeal fashion contain great variability in design (Newman et al, 2008: 183). Through their investigation of Lancashire, Newman & Newman are attempting to dispel previous myths surrounding worker’s housing and display the changes occurring in association with worker housing due to interrelating social and material factors (Newman et al. 2008:184). This involved observing house plans and documenting architectural styles, as well as government housing legislation, which may have affected the way houses were built. Therefore, this study is attempting to emphasize the significance of interpreting and preserving lower class dwellings, which are in fact shaped by a wide range of competing forces and ideologies.

Conclusion

The review of previous scholarship in archaeology concerning industrial urbanism and worker housing, has revealed that there are numerous approaches to both these study areas. Houses and urban landscapes can be examined differently due to the individual circumstances and available sources from which they are situated. Industrial era archaeology is only new and beginning to be valued for the broad range of themes and questions this period can generate. Early approaches to industrial
urbanism were highly impacted by social theory, which is displayed by the use of wide processes and trends. The methodologies used did not suit the aims of archaeology, which are to examine the material forces that shape urban environments. However, individual material variables were increasingly considered and interpreted, although they were still portrayed as a reflection of social factors rather than producing change in their own right. Approaches to worker housing exemplified a similarly slow start, which began predominantly with a typological classification of building types. These earlier studies however were extremely useful to the thesis, as they were focused on speculator built industrial landscapes, which developed in a piecemeal fashion, much like the Balmain Peninsula. While approaches from the late twentieth century were more varied and influenced by themes such as resistance and class. Recent approaches were highly centered on disproving previous misconceptions surrounding worker housing and trying to correct them through the techniques of archaeology. Through examining these archaeological approaches to worker housing, it has been observed that many of these investigations neglect to provide a broader picture of the urban landscape of these the areas within which the houses are situated. This is necessary in order to understand both the forces generating and creating these houses, as well as in turn the implications of these buildings on the urban environment.

The thesis will seek to create a more holistic perspective and demonstrate the housing forms and spatial patterns, which have arisen due to the industrialization of an area and the subsequent demand for worker housing. This will involve looking at phenomena such as row or terrace housing, piecemeal development and the degree of standardization or variability in house forms. The approach is significant, as it doesn’t
just place worker housing in restricted categories of time, but actually embraces the irregularity and inconsistency of industrial environments. Urban industrial environments are typically not straightforward and are rarely built as planned spaces. Therefore, it is important to study why these industrial landscapes developed a certain way, particularly when they offer such meaningful and surprising conclusions.
Chapter Three: Methodology

The goal of the thesis is to understand the way building forms developed and changed within an industrial environment through an analysis of worker housing on the Balmain Peninsula and a comparison to three selected urban areas situated in central Sydney. As shown in the previous chapter, there have been numerous studies of industrial housing and a variety of methods have been employed. Previous archaeological perspectives have tended to presume that urban environments are to be understood as representations of social ideals and that the material is simply a reflection of social factors. A principle aim of the thesis is to contribute to this scholarship through an understanding of the process by which the relationship between the material and the social transforms and dictates urbanization.

The aim of the study is to analyse the creation of industrial urban environments as a consequence of both social and material processes, which are each unique to a particular time and location. These processes can be understood through an observation of material patterns on the Balmain Peninsula and how they developed. The results of this survey will then be assessed alongside previously studied archaeological working class sites; The Rocks, Pyrmont and Haymarket. The demonstration of overall trends relating to working class housing during the mid nineteenth and early twentieth century will highlight significant differences and explain why they occurred based on each area’s individual context.
**Research Goals**

The purpose of this research is to interpret the material patterns of unplanned industrial landscapes, through the analysis of worker housing. The purpose of the thesis will be achieved through isolating particular material forms and interpreting why they developed or changed on the Balmain Peninsula. The interpretation of this development will be examined through an observation of the relationship between the material, time and space. Conclusions will be produced concerning the role of the material and its influence on worker housing, as inevitably the industrial environments presented in this thesis become highly haphazard and were clearly not based on social ideals.

**Study area**

The main study area of this thesis is the Balmain Peninsula, which is an inner west suburb of Sydney, Australia. The study area was chosen as it represents a typical working class suburb of Sydney, which up by the mid twentieth century contained a number of factories and dockyards, as well as a coal mine. A practical reason for the choice of the Balmain Peninsula for the house survey is that despite its recent gentrification, the suburb still retains a large amount of its nineteenth century and early twentieth century houses. The Balmain Peninsula was therefore able to provide a large sample of houses to analyze and interpret. The Balmain Peninsula is also an interesting case study as despite being in close proximity to the centre of Sydney, it was separated from the city for the first half of the nineteenth century with very limited transportation linkages. The Balmain Peninsula is therefore an interesting
contrast with its harbor neighbors, which are located in the city centre. Another reason for choosing Balmain as a study area is the fact that it developed so quickly as a result of industrialization and grew from a small isolated maritime village to the most populated residential area outside the city.

**Comparative Urban Areas Of Sydney**

The Balmain Peninsula will be analyzed alongside three urban areas of Sydney; The Rocks, Pyrmont and Haymarket. The three urban areas were chosen as they are each situated within the centre of Sydney, however had distinct patterns of urbanization. Each of these urban areas have also previously undergone archaeological investigation as well as excavation, which is of particular importance as the majority of early industrial housing in these areas have been demolished or redeveloped. The three urban areas will be compared to the Balmain Peninsula through an analysis of their urban development. The industrial housing will also be interpreted in terms of what building materials were used, significant changes to their form and the extent of standardized or terrace housing. These analyses will be undertaken using archaeological reports, as well as historical maps and photographs. The use of documentary evidence was extremely important, particularly when deciphering the appearance of working class houses in central Sydney, where many have been resumed. The appearance of working class housing was extracted from The Demolition books, which are a collection of photographs taken before and after the demolition of central Sydney urban areas.
Table 1. Background of urban areas of Sydney discussed in this study

The Analysis of the Urban Landscape of the Balmain Peninsula

Prior to conducting the house survey, a contextual background of the development of the Balmain peninsula needed to be outlined and interpreted. The construction and placement of workers’ housing reacted to wider circumstances and needs to be situated in its historical context. The urban development of Balmain is interesting due to its dramatic growth throughout the nineteenth century. Therefore, this development needed to be effectively demonstrated through analysis in conjunction with the worker housing in order to provide a holistic perspective of change. The connection
between industrial urbanism and worker housing has rarely been appropriately undertaken in previous scholarship. Industrial urbanism in archaeology was initially understood in terms of large processes and it is only recently that archaeologists have begun to examine the smaller material attributes, which contribute to the urban environment.

The interpretation of the industrial landscape of the Balmain Peninsula will be uncovered by two documentary sources, maps and photographic evidence. Documentary evidence is a tool used extensively throughout archaeology, which can be used to examine changing landscapes over time, as well as compliment archaeological data. (Little 1992:4-5). The maps of Balmain used for this thesis are held in the Mitchell Library, Sydney and are predominantly official documents including parish maps or subdivision plans drawn by surveyors. Another source of documentary evidence used was photographs extracted mainly from the Mitchell Library and National Library image collections. These photographs were primarily used to interpret the changing landscape and the degree of urban density.

**Housing Survey**

The second part of the methodology for this thesis involved undertaking a survey of the facades of approximately 400 extant houses on the Balmain Peninsula. The housing survey employed a sampling

**Figure 2.** Aerial image of the Balmain Peninsula showing the location of sample area (Google Earth 2011)
strategy due to the large scale of the Balmain peninsula. The survey area chosen was the worker’s housing situated around Mort Bay, which was the former location of Mort’s Dock, the largest industrial site on the peninsula and a major trigger for urbanization in the mid nineteenth century. The area was known as ‘Mort’s Town of Waterview’ and was subdivided by Thomas Mort for the purpose of housing workers in 1858. The survey area was bounded by Ballast Point Rd to the west, Curtis Rd to the east, Waterview and Mort St. to the north and Grove St to the south.

The survey of this area involved the recording of the following streets, which run parallel to Mort’s dry dock:

- Mort St. (formerly William St.)
- College St.
- Church St.
- Phillip St.
- Short St.
- Rowntree St (formerly Wharf St.)
- Dock Rd.
- Gipps St.
- Grove St.

Other sampling strategies were employed in order to meet the research goals of this thesis. This involved not including houses, which had been renovated to the point that
they no longer are indicative of the original structure. The houses were analyzed using
the Metropolitan Detail Series maps commissioned by the NSW Department of Lands
during the 1880s and early 1890s and currently available on the State Library online
mapping database. This is the only detailed survey of houses undertaken on the
Balmain Peninsula, although it does provide a sense of the degree of urbanization by
the end of the nineteenth century, as well as an indication of how well the present
streetscape relates to this time period.

**Material attributes chosen**

The recording form initially included a larger number of material attributes, which
provided a detailed explanation of architectural features. However, these were not in
tune with the aims of this thesis and the material attributes were therefore limited to
five, which allow for an interpretation of the techniques used by speculative builders
to build more densely. The inability to access house layouts meant that the material
attributes were all extracted from the facade of the buildings.

1. *Building material*

The first attribute is the type of building material used to construct each housing form.
The recording of the type of building material provides an understanding of the
deliberate choices made by speculative builders. The choice of a particular building
material is most likely the result of access or cost, which is influenced by whether the
material is locally crafted or mass-produced.
2. **Degree of detached and undetached houses**

The second material attribute is significant as it provides an understanding of the degree of standardization, as well as attitudes towards land use. The term detached refers to houses, which have been built in isolation from other houses. Undetached houses are most commonly identical terraces built in rows, although houses were also built beside earlier dwellings in order to decrease land-use. The observation of undetached houses is indicative of building strategies used by speculators in order to increase their profits.

3. **Size of terrace rows**

The size of terrace rows refers to the number of identical houses built beside each other. Each row was built by one individual and exemplifies a strategy to decrease building and land costs in order to increase the amount of profit obtained. The length of terrace rows also provides an understanding of the process of piecemeal building, as longer terraces could not have been built in already heavily urbanised areas without substantial and costly demolitions. This would therefore mean that semi-detached houses would thrive most prominently in this type of environment, as this type of terrace typically only requires one land allotment.

4. **Symmetry**

The identification of whether a house has a symmetrical or asymmetrical façade provides an understanding of building strategies used by speculative builders. The symmetrical house is typically a wider structure and includes an even number of windows placed across the house. Symmetrical cottages are commonly an earlier form of working class housing, however later forms do exist. While the existence of
asymmetrical buildings reveals a shift from these earlier forms in order to save on building costs, as they typically are narrower and with fewer windows.

5. Number of storeys

The number of storeys is an important material attribute to document as the decision to build upwards or downwards is a deliberate choice to use as little land as possible in order to construct a greater number of houses and thus secure a greater profit. Working class houses used a number of techniques in order to acquire further space on a small lot including incorporating a basement or an attic level.

House Chronology

The organization of houses into building phases was necessary in order to document change over time. These building phases provide an understanding of what features were prominent over a particular period. The estimated time of construction for each house was identified using references relating to the changing architectural styles within Sydney, as well as Australia. These included the use of Australian architecture guide books, an architectural survey of Glebe and the Leichhardt Municipality Heritage Study, which provide an indication of changing styles and the time frame that they were used (Apperly, Irving & Reynolds 1989; Building Commission of Victoria 2004; Smith & Smith 1973; McDonald Mcphee Pty Ltd, Burton & Thorp 1990).
### Table 2: List of building phases and historical markers used to date worker housing (Apperly, Irving & Reynolds 1989; Building Commission of Victoria 2004; Smith & Smith 1973; McDonald Mcphee Pty Ltd, Burton & Thorp 1990).

<table>
<thead>
<tr>
<th>Building Phases</th>
<th>Time period</th>
<th>Historical markers used</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>c. 1850-1875</td>
<td>- Simple decoration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Weatherboard</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Hipped/ pitched roof</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Simple or no verandah</td>
</tr>
<tr>
<td>2</td>
<td>c. 1876-1899</td>
<td>- Cast iron lacework</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Molding</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Parapets</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Arched doorways/ windows</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Elaborate decoration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Double storey verandah</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Italianate style</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Iron Bull Nose verandah</td>
</tr>
<tr>
<td>3</td>
<td>c. 1900-1930</td>
<td>- Typically Terracotta Roof</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Federation/Art Nouveau</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Typically bungalow house form</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Red Brick</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Front verandahs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Terracotta finial</td>
</tr>
</tbody>
</table>
Chapter Three: Methodology

**Analysis**

The analysis of material undertaken for this thesis involves five main areas:

1. *The relationship between material and space*

The first area of analysis involved the relationship between the material and space. Space refers to the physical location of the houses within the survey areas and where each street is located in proximity to Mort’s Dock. It was initially assumed that the houses closest to Mort’s Dock would have been built upon first. The material refers to the attributes recorded during the housing survey, which were mentioned above. The relationship between the material and space was analyzed based on the types of housing attributes recorded in each street. The relationship between the material and space was analyzed in order to examine what spatial patterns existed in the survey area and whether location had a significant impact on the types of housing forms that emerged.

![Diagram](image)

**Figure 3.** Chart showing the methodology used to determine the relationship between the material and space
2. *The relationship between time and space*

The interpretation of the relationship between time and space was undertaken in order to examine the processes of urbanization within the study area. The examination of the relationship between these two variables allows for an understanding of where houses were placed over time. This will also allow for an analysis of the nature of piecemeal building and the distribution of various building phases across the landscape.

![Figure 4. Chart showing the methodology used to determine the relationship between time and space](image)

3. *The relationship between the material and time*

The relationship between the material and time was essential as it examined the trends relating to each housing attribute. The patterns of these material attributes over time signified particular attitudes, which changed as a result of the need to house workers and the role undertaken by speculative builders who changed the nature of house building in order to achieve higher profits.
4. *The role of Speculative builders*

The fourth area of analysis will examine the role of speculative builders, who created piecemeal urban environments throughout Sydney. The implications of urban environments in Sydney being built by numerous individuals will be examined through an interpretation of the material attributes, which were a result of the need to build more densely in order to extract a profit. The examination of the role of the speculator will also involve an understanding of the degree to which this form of commercial investment existed on the Balmain peninsula, as well as the three urban areas of central Sydney.

5. *Urban landscapes of Sydney*

The fifth area of analysis involves the discussion of the urban landscapes, which were produced as a result of the need to house workers. The analysis will involve the comparison of the Balmain peninsula with the three urban areas of Sydney in order to understand what wider processes were instigating urbanization, as well as the material forces, which led each urban environment to develop differently.
Conclusion

The archaeology of working class housing and industrial landscapes has utilized a number of approaches and methodologies. The thesis will attempt to contribute to this scholarship through an identification of the processes by which housing forms were created. Therefore, the methodology devised for this thesis has isolated material attributes and examined the degree to which they changed over both time and space. The small-scale analysis of the material will be interpreted alongside the urban landscapes in Sydney, as they effectively influenced each other's development. The methodology has also made use of a range of data, including both documentary and archaeological evidence.

The thesis will illustrate the effectiveness of the methodology chosen to recognize patterns and trends in the development of industrial environments as a result of the
need to house workers. The relationship between the material and social action will be analysed through an understanding of the urban development of the Balmain Peninsula and three comparative case studies situated in central Sydney. The analysis of the housing survey results will provide an understanding of material patterns across space and time, which were ultimately produced by piecemeal building. The nature of piecemeal building is a direct result of the growth of speculative building, which was driven by capital investment and the material constraints of an existing landscape.
Chapter 4: Urbanising the City Centre

**INTRODUCTION**

Chapter 4 will address the wider issues that dominated nineteenth century and early twentieth century Sydney. These issues involve the fact that many urban environments built during this period were a direct result of industrialization and the need to provide worker housing. The mid nineteenth century saw many changes taking place including the prevalence of factories and dockyards surrounding Sydney’s harbor as well as an increasing population. In many cases the industrial landscapes developed in a piecemeal fashion and were built by a large number of individuals seeking to obtain capital investment. The centre of Sydney is especially interesting as the crowded nature of residential areas ultimately led to the growth of the city into surrounding areas, such as the Balmain Peninsula. The three urban areas, which will be investigated in this chapter, are The Rocks, Pyrmont and Haymarket. Each of these sites are indicative of the factors shaping wider Sydney, although also retain distinctive features, which ultimately steered their urban development.

1. **The Rocks**

The Rocks is not a typical industrial area, as it did not initially develop from the prevalence of factories or dockyards. The Rocks housed both convicts and non-convicts from the early days of European settlement in Sydney. The Rocks is therefore atypical of later working class areas, which originated in the 1840s, as it had a long history of house building already established. The impact of industrialization,
however, in the mid nineteenth century meant that The Rocks became further built upon, leading to its public image as an overpopulated and crowded ‘slum’.

The main area of The Rocks, which will be discussed, is the Cumberland/Gloucester street site. This site was excavated under the direction of Godden Mackay Pty Ltd in conjunction with Grace Karskens from May 1994 to October 1996 (Karskens et al. 1999:11). The research themes of this investigation, which relate to this thesis, include an examination of industrialization and ‘the lifestyles of working people’ (Karskens et al. 1999: 32). Another significant goal of the archaeological investigation was to identify the development of the Rocks’ urban environment and whether the area suffered, as was typically assumed, from poor housing and crowded conditions (Karskens et al. 1999:30). The excavation uncovered remains of forty-six buildings, which included postholes, footings and sandstone and brick features (Karskens et al. 1999:38). These remains dated from the 1790s to the 1890s (Karskens et al. 1999:17), and provide a detailed picture of the urban development of The Rocks over this time period.
URBAN DEVELOPMENT

The early stages of The Rocks’ urban development from 1790 to 1830 will first be considered in order to provide an understanding of what initially shaped this area of Sydney. The first houses established at the Rocks were tents and wooden huts (Karskens 1999b: 28). Archaeological evidence has revealed many of these were situated along what later became Gloucester and Cumberland streets and were built in a row facing the water (Karksens et al. 1999: 75). At this time The Rocks was not considered part of Sydney and was largely characterized by an ‘otherness’ due to its large convict population (Karskens et al. 1999:105). This meant that early town planning was not official or conducted under government authority (Karskens et al. 1999: 105). The early housing was subsequently dictated by the needs of the convicts and ex-convicts, who lived in the area (Karskens 1999b: 29).

The construction of more durable housing began in the early 1800s and were made from rubblework stone and sawn weatherboard (Karskens 1999b: 31). The earlier houses were not demolished but rather co-existed side by side, and were situated in front or behind the newer housing (Karskens et al. 1999: 105). Another factor, which severely impacted on the nature of housing in The Rocks, is the steep topography. The placement of housing was largely dictated by the rising topography, thus creating houses built at odd angles and a disorderly street plan (Karskens 1999b: 28). This is similar to the physical environment of Balmain whereby much of the area slopes steeply and varies from sea level to 140 feet (State Planning Authority of NSW 1972: 3).
The house forms built in the early nineteenth century were typically weatherboard and shingled houses, although stone was also a popular building material (Karskens et al. 1999: 76-77). The most common house form is described by Karskens as having a ‘simple, symmetrical façade-central door [with] multipaned windows on either side’ (Karksens et al. 1999: 82). By the 1820s, builders in the Rocks had already started to build identical conjoined units in order to capitalise on space (Karskens 1999b:77). This style of housing borrowed from an old tradition of terraces originating from seventeenth century London (Smith et al. 1973: 31). The Rocks’ implementation of this form of building is early in comparison with the rest of Sydney, where terraces were not rampant until the 1840s (Smith et al. 1973: 33). These early terraces were typically built without verandahs or balconies, and situated along the street line (Smith et al. 1973: 35).

The early urban development of The Rocks is highly significant as already houses were being built in a piecemeal fashion. This involved extensions of earlier houses in the 1810s and 1820s, as well as the construction of new rooms at the back of the dwellings (Karskens 1999b: 31). The urban environment, which developed as a result of these house building practices was unplanned and haphazard and were still yet to experience the increased pressures for working class housing by the end of the nineteenth century.

The period from the 1830 involved a number of developments in terms of the way houses were built. The first major development was the Building Act of 1837, which was the first building legislation implemented in The Rocks (Karskens 1999b: 78). This act was concerned with the prevention of fires, rather than the standard of
construction, and involved the declaration that all buildings were to be built from brick or stone and were to have party walls separating each house (Karskens 199b: 78). Government policy also banned timber awnings and verandahs, however these were later allowed due to public objection (Karksens et al. 1999:199). This meant there was a dramatic change to housing forms in The Rocks as ‘rents’ from the early 1830s had a single unbroken roof, while later houses were segmented by party walls (Karskens 1999b: 78). These new regulations can be viewed by Figures 8 and 9. Figure 8 is most likely an earlier built style of row housing due to its unbroken roof and wooden verandah. While Figure 9 depicts two-storey sandstone terraces with party walls and a lack of either wooden verandahs or balconies.

The 1850s saw a rise in the amount of speculative building in The Rocks leading to a rapid spread of terraces (Karksens 1999b: 81). The urban environment of The Rocks had become extremely crowded as houses were built on land allotted for gardens and backyards, as well as being placed alongside earlier freestanding houses (Karskens et
al. 1999:77). These terraces were typically plain fronted and smaller in size than houses built in the early nineteenth century (Karskens 1999b: 79; Karskens et al. 1999:89). Karskens also remarks that speculative builders in The Rocks regularly cut costs in order to secure greater capital, thus leading to substandard housing (Karskens 1999b: 81).

By the 1860s, the Rocks had acquired the shape, which it held for the rest of the nineteenth century, which included approximately thirty-three houses, shops and hotels (Karskens et al. 1999: 93). The development of the Rocks during this period was markedly different from the rest of Sydney, which was experiencing a boom period of housing (Karskens et al. 1999: 94). Instead, many substandard houses were demolished in the Cumberland/ Gloucester St. area of the Rocks (Karskens et al. 1999: 94). The majority of these houses were replaced with larger terraces, however a few of the demolished lots were left vacant (Karskens et al. 1999: 94).

Figure 10 reveals the irregular street design as well as the degree of urbanization by 1889. The map reveals the existence of long terrace rows, with little detached housing. The house types are also quite varied, which is typical of the various stages of housing development, which occurred from the beginning of the nineteenth century. The area depicted on the map was predominantly resumed at the beginning of the twentieth century. This is typical of many central Sydney areas due to the outbreak of the Bubonic Plague in 1900, which meant that many rows of rear lane terraces were demolished (Karskens et al. 1999: 95).
Summary

The early urbanization of The Rocks was a significant influence on the type of urban landscape, which developed. The urban development of The Rocks involved numerous building stages, from the housing of convicts in the 1790s to the housing of the working class from the mid nineteenth century. The landscape of The Rocks was constructed in a piecemeal fashion, whereby houses of earlier stages were built beside later dwellings. This type of building activity was probably the most extreme in The Rocks as there was no regulations or government involvement concerning house construction or town planning during the late eighteenth century (Karskens 1999:105). The Rocks also offers the most dramatic change in the way houses were constructed. This change is observed through the shift from owner builders to speculators, which demonstrates the growing market surrounding the building of
working class housing. The Rocks also demonstrated an early implementation of the terrace idiom, whereby houses were built in rows in order to build densely and secure a greater profit. The urban landscape, which resulted from numerous building activities over a period of hundred years, was crowded and haphazard. The nature of The Rocks’ urban environment led to the demolition of substandard housing by the end of the nineteenth century (Karskens 1999: 95).

2. PYRMONT

Pyrmont is quite similar to Balmain due to its diverse range of industries. Both areas were obtained via land grants at the end of the eighteenth century, although neither area was subdivided for sale until the end of the 1830s. The location of both peninsulas is also significant, as they are situated close to the city centre, but suffered from lack of transportation linkages to make them viable residential areas. Both areas, however, experienced dramatic urbanization as a result of industry and the need to house workers. This led to both the Balmain Peninsula and Pyrmont, reaching a population of over 30,000 each by the beginning of the twentieth century (Mathews 1982: 26; Irving 1969).
The main area of Pyrmont, which will be discussed, is the CSR (Colonial Sugar Refinery) site, which was excavated by Casey & Lowe Associates from October to December 1996 (Casey & Lowe 2000: i). The reason this case study was chosen is that one of the main research objectives explored the technology and nature of industrial housing during the nineteenth century (Casey & Lowe 2000: 3), which is directly linked to the aims of this thesis. The recording of worker housing at the CSR site involved the excavation of thirteen houses, which were each surveyed and their structural remains were recorded and divided into five groups based on the period or year they were built (Casey & Lowe 2000: 1). The main focus of the excavations of workers’ housing in Pyrmont was to provide comparative evidence to that presented in the 1859 and 1876 reports to the Legislative Council (Casey & Lowe 2000: iv). These reports presented these houses as poorly built and claimed that they had an immoral impact on their inhabitants (Casey & Lowe 2000: iv). Therefore, Casey and Lowe were attempting to discuss whether this was in fact the reality of workers in Pyrmont, as well as provide a chronology of worker housing for the end of the nineteenth century.

**Urban Development**

Unlike The Rocks, Pyrmont’s urban development was rather slow and land was not cleared and subdivided until 1836 (Casey & Lowe 2000:23). The initial plan outlined by Edward Macarthur attempted to devise a wealthy residential neighborhood with one house per allotment, however the area did not attract middle class buyers (Casey & Lowe 2000: 42). Therefore, Macarthur instead sold his land for the building of low-
income housing and shipbuilding (Casey & Lowe 2000:42), which subsequently attracted workers to Pyrmont. The first industries established in Pyrmont were shipyards and quarries, leading to the first stone workmen’s houses to be built in the 1840s and 50s (Mathews 1982: 30). By 1855, 278 houses had been built on the Pyrmont peninsula (Casey & Lowe 2000: 26) Casey & Lowe found little surviving archaeological evidence for 69 John Street, which was built in 1856 (Casey & Lowe 2000: 219). However Council rates from 1867 revealed that the house at the time was a single storeyed, four roomed stone dwelling with a shingled roof (Casey & Lowe 2000:206).

The urbanization of Pyrmont did not accelerate until the building of the Pyrmont Bridge in 1857, which created a linkage with the city centre (as shown in Figure 12) and by 1867, Pyrmont had over 400 households (Casey & Lowe 2000:26-27). Casey & Lowe provided a number of developments in Sydney housing, which they explain were consistent with the results of their investigation in Pyrmont. They remark that housing was generally built of poor materials and smaller in size prior to 1861, while those built after 1861 were built of brick or stone and had at least three rooms (Casey & Lowe 2000: 27). Casey & Lowe also comment on the impact of speculative and leasehold building, which led many houses to spring up quickly in Pyrmont (Casey & Lowe 2000:28). Although the quality of these houses was not monitored effectively, leading to substandard housing (Casey & Lowe 2000:28). Land in the city centre was also becoming scarcer, meaning that the urban environment was becoming highly compacted (Casey & Lowe 2000:28).
Casey & Lowe excavated four houses that were built in either 1858 or 1859 (Casey & Lowe 2000: 219). The first house (1 McCredie St) is a two-storey plain facade stone structure with a slate roof (Casey & Lowe 2000: 121). The house is located in Area C, which encompassed lot 39 of the Macarthur Estate (Casey & Lowe 2000:119). It is likely that this house was the first built on this street (Casey & Lowe 2000:119). Each house built in Area C had separate head lessees (Casey & Lowe 2000:119). This indicates the high degree of speculative building occurring at this time, which meant very little standardization between houses. While the second (67) and third house (69) are situated on Bowman St. and are semi-detached one–story stone houses with an attic level (Casey & Lowe 2000:189). 67 and 69 Bowman were built as a pair and reveal a conscious land-strategy development implemented by a single builder. The last house was located at 17 Mount St. and was noted in Council Rates as being a single story brick and stone house, however, Casey & Lowe believe it most likely contained two storeys (Casey & Lowe 2000: 211). The house was originally a part of a row, which lined the western side of Mount Street, however is described by Casey
& Lowe as having always been free standing (Casey & Lowe 2000:211). The houses from this group indicate that sandstone, like in Balmain, was a popular construction material during the 1850s.

<table>
<thead>
<tr>
<th>House</th>
<th>Stone Structure</th>
<th>Brick Structure</th>
<th>No. Floors</th>
<th>No. Rooms</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 McCredie St.</td>
<td>Yes</td>
<td></td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>67 Bowman St.</td>
<td>Yes</td>
<td></td>
<td>1+ attic</td>
<td>3</td>
</tr>
<tr>
<td>69 Bowman St.</td>
<td>Yes</td>
<td></td>
<td>1+ attic</td>
<td>3</td>
</tr>
<tr>
<td>17 Mount St.</td>
<td>Yes</td>
<td>Yes</td>
<td>1?</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 3. Summary of houses excavated on the CSR Site that were built in either 1858 or 1859 (Casey & Lowe 2000: 219)

The next phase in Pyrmont’s urban development post 1865 saw a boom in the economic growth of Sydney, as well as an increasing population (Casey & Lowe 2000:29). New industries developed in Pyrmont during the 1870s and 80s including the Colonial Sugar Refinery, The Australian Tin Smelting Company and the Goldsborough Mort Wool Store (Casey & Lowe 2000: 48). The development of an industrial centre at Pyrmont was largely a product of the installation of wharves and a goods rail line, which made transportation
of goods easier. The population of Pyrmont began to rise due to the growing industries, which created opportunities for employment (Casey & Lowe 2000:29). The growing population of the area contributed to the establishment of many public services, including schools and churches, thus cementing Pyrmont as an urban community (Casey & Lowe 2000:50). However, despite the introduction of public services, the living conditions for workers in Pyrmont have been described as overcrowded and poor (Casey & Lowe 2000:30). This can be observed in Figure 13 depicting Bayview Terrace, which reveals the neglected state of Pyrmont worker housing at the beginning of the twentieth century.

Casey & Lowe excavated three houses, which were built post 1865 and demonstrate changes in the way worker housing were being built by the end of the nineteenth century. The three houses investigated from this period are part of a row of houses, which were built at the same time by the same head lessee (Casey & Lowe 2000:87). All three houses were constructed using brick and consisted of two storeys most likely a slate roof (Casey & Lowe 2000: 87). The first two houses contained three rooms, while the latter had four rooms (Casey & Lowe 2000: 219).

<table>
<thead>
<tr>
<th>House</th>
<th>Stone Structure</th>
<th>Brick Structure</th>
<th>No. Floors</th>
<th>No. Rooms</th>
</tr>
</thead>
<tbody>
<tr>
<td>17 New Street</td>
<td>Yes</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>19 New Street</td>
<td>Yes</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>21 New Street</td>
<td>Yes</td>
<td>2</td>
<td>4?</td>
<td></td>
</tr>
</tbody>
</table>

*Table 4. Summary of houses excavated on the CSR site that were built post 1865 (Casey & Lowe 2000: 219)*
The houses were most likely typical of the late nineteenth century two-storey brick terrace, which were situated throughout Pyrmont. This can be shown by Figure 14 extracted from The Demolition Books recorded during the first half of the twentieth century. The photograph depicts 320-324 Jones St, Pyrmont, which like those recorded at New Street are two storey brick terraces, although these houses have an iron rather than a slate roof. The terraces also have a verandah and cast iron balcony, which was becoming common in houses, built in Sydney during the 1870s (Smith et al. 1973: 40).

Figure 14. 320-324 Jones Street, Pyrmont, 1919 (City of Sydney Archives, Demolition Books, 1900-1949)

The analyses undertaken by Casey & Lowe revealed that there were differences between the earlier and later housing. The majority of earlier houses were built of stone, while all the houses in the study area constructed after 1865 were made of brick. Casey & Lowe also reveal that the earlier built houses around 1859, which coincided with the report into the ‘Conditions of the working classes’ were designed to provide poor long-term housing while later housing appeared to have been of sound quality (Casey & Lowe 2000:224).
The end of the nineteenth century in Australia experienced a major economic
depression, which meant less housing, was built at this time (Casey & Lowe 2000:
31). The twentieth century saw a decreasing amount of houses built in the city centre,
due to the construction of commercial buildings for industrial and mercantile purposes
(Casey & Lowe 2000:32). This led the City of Sydney Council to demolish whole
blocks of houses in order to widen roads and provide space for commercial buildings
(Casey & Lowe 2000:32). The increasing number of industries, which were
established in the early twentieth century, also had a detrimental effect on houses
(Casey & Lowe 2000: 51). This is exhibited by industrial sites being placed alongside
houses as well as encroaching on land previously occupied by worker dwellings. The
increasing dominance of industry on the Pyrmont peninsula during the twentieth
century can be shown by the photograph below, which shows a row of four terrace
houses situated alongside the Pyrmont Power Station, built in 1904.

Figure 15. 14-20 Pyrmont Street, situated beside the Pyrmont
Power Station (City of Sydney Archives, Demolition books,
1900-1949)
Summary

The urban development of Pyrmont shares several similarities with the Balmain Peninsula. This is exhibited by the fact that both urban areas developed in the 1830s and the degree of industry that was established. Like the Rocks, urbanization was only minimally regulated, which led to a compact urban environment. Casey & Lowe identified a number of trends concerning the development of working class housing during the late nineteenth century. This can be exhibited by the shift from sandstone to brick structures, as well as the growing predominance of two-storey dwellings. Casey & Lowe discovered a difference between houses built around the time of the “Conditions of the working class’ report, which were intended to provide poor long term housing. While those houses built during the late nineteenth century were intended to be durable and of sound quality. Pyrmont became highly compacted by the end of the nineteenth century as industry began to increasingly compete with houses for free land.

3. Haymarket

The urbanization of Haymarket was not as drastic as other areas of Sydney and the worst forms of speculative housing were not as rife in comparison to Pyrmont and the Rocks (GML & Thorp 1993: 70). This was due to agreements concerning the standard of housing made between the lessees of the Harris estate and builders when the land was initially subdivided (GML & Thorp 1993: 70). The urban development of Haymarket was also more irregular due to its marshy environment, which was not ideal for house building (GML & Thorp 1993: 44).
The main area of Haymarket, which will be discussed, is that currently occupied by Paddy’s Market. The site, which was subject to archaeological investigation, encompassed a full city block bounded by Hay Street, a lane (formerly Engine St.) and Market 2 to the south, Quay Street to the West and Thomas Street to the East (GML & Thorp 1993: 1). This site was under the direction of Godden Mackay Heritage Consultants Pty Ltd in conjunction with Wendy Thorp from 1990-1991 (Crook et al. 2003: 7). The main objective of the investigation was to provide an understanding of the ‘pattern of life expressed through material culture’ of working class individuals during the nineteenth century (GML & Thorp 1993:4). The ‘Paddy’s Market site’ was chosen for archaeological investigation as it did not develop considerably until the 1860s and was subsequently cleared in the early twentieth century. Therefore, the archaeological evidence uncovered provides a clear state of preservation for the late nineteenth century.

**Urban Development**

The land, which encompasses the Paddy’s Market site, was granted to Surgeon John Harris in 1818 (GML & Thorp 1993: 39), although the area remained undeveloped
throughout the first half of the nineteenth century. The urbanization of Haymarket was closely linked with the industrial development of Darling Harbour, which became the centre of industrial activity from the 1830s (GML & Thorp 1993: 44). This led to the reservation of roads including Hay and Engine Street in Haymarket for later development (GML & Thorp 1993:44). The area although had avoided development for some time due to the natural topography of the site, which involved extensive marshlands (GML & Thorp 1993:44). A process of infill undertaken by the local government made this area considerably more desirable for urbanization (GML & Thorp 1993:44).

The Harris family began selling off their estate known as ‘Ultimo Farm’ in 1836, however this did not include Haymarket (GML & Thorp 1993:44). This process of the subdivision of large family estates, as shown by the two maps below, was common throughout Sydney during this period. The rising population of Sydney and need for residential buildings, meant this land was highly valuable to builders and speculators. Haymarket is similar to the Balmain peninsula, where urbanization quickly followed the subdivision of the Waterview Estate in 1841.

![Figure 17. Plan of the Waterview Estate, Balmain, 1841 (Mitchell Library)](image)

![Figure 18. Plan of the Ultimo Estate, 1837 (GML & Thorp 1993: 45)](image)
Industrial activity began to proliferate around nearby Darling Harbour including the establishment of the Australian Gaslight Company plant and the Albion Mill (GML & Thorp 1993:47). The growth and increasing popularity of Darling Harbour as an industrial hub led to the spread of industrialism outwards to Haymarket. This led to the formalization of streets in the mid 1840s including Victoria, Quay and Hay Street (GML & Thorp 1993:47). However, the Harris family retained ownership and leased the land to both speculators and residents (GML & Thorp 1993:47).

The mid nineteenth century was of high significance in the wider development of Sydney due to the discovery of gold and the rising demand for housing and services (GML & Thorp 1993: 49). Godden & Mackay, however, comment that the impact of these social processes were less felt in Haymarket than its neighbor, Pyrmont (GML & Thorp 1993:49). Although the changes were still considerable as industrialism began to transform the layout of the area. The organization of housing seems to have been quite irregular, which is exhibited in an 1851 Sanitation Report featured in the Sydney Morning Herald describing some areas as ‘extremely crowded’, while others were hardly built upon (SMH 1851:2). This is due to the natural environment of Haymarket, which still contained extensive marshlands.

A major contributor to initial worker housing in Haymarket was the completion of the Victoria Steam Mill in 1846 (GML & Thorp 1993: 51). This can be exhibited by the row of eight joined terraces known as ‘the

**Figure 19.** Engine street c.1910 (City of Sydney Archives, Demolition Books, 1900-1949)
Victoria Terraces’ built between 1845 and 1848 in Engine Street (formerly Victoria St.), which were built for the mill workers (GML & Thorp 1993: 53). A vivid picture of worker class housing can be exhibited by the set of historical photographs (Figures 19 and 20) taken shortly before the building of what is now Paddy’s Markets c. 1910. These present a traditional form of row housing, which was not present in the housing survey undertaken on the Balmain Peninsula. Both photographs exhibit very standardized row housing, which is identical across a whole block and exemplifies efficient land use in order to house as many workers as possible. The houses are two storeys and appear to be built from brick with roof shingles. The houses depicted in the second photograph are indicative of a later style of housing due to its inclusion of a verandah and balcony. While Figure 21 shows the haphazard style of development, whereby the backyards are highly compact.

These houses are discussed in the Paddy’s Market site report, which provides a detailed survey of 16 Engine St that is said to be typical of the worker’s housing built during the 1840s and 50s (GML & Thorp 1993: 53). 16 Engine Street is made from
sandstone and brick and is double storeyed with no verandah (GML & Thorp 1993: 55). This style of dwelling is consistent with houses recorded in both The Rocks and Pyrmont in the same time period, where the house was built up to the street line with a plain facade.

<table>
<thead>
<tr>
<th>Material</th>
<th>Footing</th>
<th>Width</th>
<th>Verandah?</th>
<th>Storeys?</th>
<th>Outbuildings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sandstone/Brick</td>
<td>Sandstone</td>
<td>4m</td>
<td>No</td>
<td>2+semi-basement</td>
<td>Single storey, possibly laundry, kitchen or both</td>
</tr>
</tbody>
</table>

Table 5. Summary of results of the excavation of 16 Engine Street, Paddy’s Market Site (GML & Thorp 1993: 55)

According to Godden and Mackay the character of the Haymarket area had been largely established from the mid 1850s, which was a result of the industrial environment and topography (GML & Thorp 1993: 61). These areas were largely viewed as unpleasant places to live and characterized as slums. This is justified by Godden and Mackay, who state that despite improving house forms, the urban environment became considerably worse over time (GML & Thorp 1993: 61). Up to the end of the 1850s, the Harris family retained ownership of the land and houses built in Haymarket (GML & Thorp 1993: 68). Agreements between the Harris family and the builders meant that houses were to have no less than two rooms and were to be constructed of either brick or stone (GML & Thorp 1993: 68). Although the majority of land was subdivided and sold in 1859, which meant that the Engine Street block was now under the ownership of several individuals (GML & Thorp 1993: 68).
Industrialism further increased within and around Haymarket, which continued to have a detrimental impact on the domestic life of workers due to the noise and smells dispelling from the factories and mills (GML & Thorp 1993: 71). The block along Engine Street continued to be a centre of housing developments during the 1860s (GML & Thorp 1993: 71). The extent of preservation for this period seems to be more considerable than the latter, which allows the archaeological record to demonstrate that the conditions of the lease were adhered to during the time of construction (GML & Thorp 1993: 73). The first two houses are located at 28-30 Engine Street, which is east of 16 Engine Street. Both houses are two storeyed stone buildings, which apart from the verandahs are similar in arrangement to 16 Engine St (GML & Thorp 1993: 73). The second group of three houses were built around 1864 and are located at 22-26 Engine Street (GML & Thorp 1993: 73). These houses were brick two storeyed terrace houses with verandahs (GML & Thorp 1993: 73).

<table>
<thead>
<tr>
<th>Terrace</th>
<th>Built</th>
<th>Material</th>
<th>Storeys?</th>
<th>Verandah?</th>
<th>Footing</th>
<th>Outbuildings?</th>
<th>Rooms</th>
</tr>
</thead>
<tbody>
<tr>
<td>28-30 Engine St.</td>
<td>c.1862</td>
<td>Sandstone/brick</td>
<td>2</td>
<td>Yes</td>
<td>Bedrock</td>
<td>Outhouse</td>
<td>Internally divided with five rooms in each half</td>
</tr>
<tr>
<td>22-26 Engine St.</td>
<td>c.1864</td>
<td>Brick</td>
<td>2</td>
<td>Yes</td>
<td>Bedrock</td>
<td>Outhouse</td>
<td>?</td>
</tr>
</tbody>
</table>

Table 6. Summary of results of the excavation of terraces 28-30 and 22-26 Engine Street, Paddy’s Market Site (GML & Thorp 1993:73)
By 1865, the Engine St. block consisted of over twenty structures, which varied from wooden to brick and stone structures (GML & Thorp 1993: 80). Like Pyrmont, the encroachment of industry on residential areas in Haymarket increased during the second half of the nineteenth century (GML & Thorp 1993: 80). This created harsh living conditions for residents living beside factories. The outbreak of the plague in 1900, like in The Rocks and Pyrmont, led to the demolition and clearing of many residential areas in Haymarket (GML & Thorp 1993: 101-102). In the early twentieth century both 16 and 30 Engine St. was demolished (GML & Thorp 1993: 103-104). The rest of the terraces along Engine St. were subsumed in 1908 and demolished a year later to provide space for the building of Paddy’s Market (GML & Thorp 1993: 104).

**Summary**

Like Pyrmont and the Balmain Peninsula, Haymarket did not develop until the mid-nineteenth century. The urbanization of Haymarket was highly attributable to the subdivision of land grants, as well as increasing industrialisation during this period.
Haymarket’s urban development was quite unique in comparison to the other two urban areas and the Balmain Peninsula due to two factors. The first was the natural topography of the area encompassing Haymarket, which involved extensive marshlands that were not ideal for house building. This meant that the construction and layout of houses was highly irregular. The second feature is the fact that the Harris Family retained ownership of their estate, which they leased rather than sold to speculative builders. The Harris Family therefore had control over the type of housing, which were built. Substandard housing found in The Rocks and Pyrmont was therefore, not as rife.

The construction of housing in Haymarket was triggered by the need to house workers as shown by the completion of the Victoria terraces shortly after the opening of the Victoria Steam Mill in 1846. The terrace group was built using a standardized model and extended across a whole block. As exhibited in The Rocks and Pyrmont, the urban environment of Haymarket became considerably worse over time as factories became built directly next to urban areas. Therefore, despite many constrictions on housing forms and degree of urbanization, Haymarket became increasingly crowded. Worker housing in the area was ultimately demolished in favor of the building of Paddy’s Markets. This is consistent with trends across central Sydney at the beginning of twentieth century, which saw the loss of numerous working class houses to make way for commercial buildings.

**Conclusion**

This chapter has highlighted the issues surrounding worker housing and industrial landscapes in Sydney. The two urban areas, Haymarket and Pyrmont are indicative of
urbanization in the mid nineteenth century as a result of industrialization. While The Rocks’ development was the result of a number of factors, including its original status as the residential site of convicts at the beginning of the nineteenth century. The types of house forms identified in the three urban areas exemplify very little standardization and were all built in a piecemeal fashion. The presence of speculative building was common in all three urban areas, which was a popular form of investment during the mid nineteenth century. Although The Rocks does present a shift from owner builders in the early nineteenth century to houses built for the purpose of obtaining rent. As a result, terrace housing was common in each case study, in order to build more densely.

Another issue identified was the shift from one to two storeyed houses, as well as the prevalence of brick in later built dwellings. While timber was typically discarded as a building material by the end of the nineteenth century as it was identified as a fire risk. The natural environment and location of the urban areas also played a significant role as each dictated the types of house forms and the degree of urbanization. Lastly, each urban area developed into a crowded urban environment, which was eventually resumed due to substandard housing or the need to construct commercial buildings. The next chapter will analyze the urban development of the Balmain Peninsula and the results of the housing survey in order to compare with the wider factors, which shaped the industrial landscapes of central Sydney.
Chapter 5: ‘A Hive of Industry’

The Balmain Peninsula

Introduction

Chapter 5 will examine the results of the analysis of the Balmain Peninsula’s urban development, as well as the types of house forms identified in the housing survey. The interpretation of these two approaches will demonstrate the link between industrialization and urbanization, as exemplified by the fast growth of Balmain’s urban landscape due to the need to house the working class from the mid nineteenth century. The data obtained for this investigation will be extracted from historical maps and photographs. The urban development of the Balmain Peninsula will be compared with the equivalent urban areas in Chapter 6 in order to examine whether previous archaeological research into worker housing is consistent with the results presented in this thesis. The results of the housing survey will be examined street by street in order to provide an understanding of the distribution of dwellings throughout the sample area. The results will be discussed in the Chapter 6 in order to examine the relationship between material, time and space.

Part one: Urban development

The first area of the Balmain Peninsula to be occupied by Europeans was Birchgrove, which developed from a grant of 30 acres obtained by George Whitfield, a private in the NSW Corps in 1796 (Jeffery 1986:7). The division of this grant was bounded by
two perpendicular lines, Cove St. and Grove St as shown in Figure 23, which continue to mark the border between Balmain and Birchgrove today (Jeffery 1986: 7). The Birchgrove land grant became Whitfield’s Farm. However, little is known about this period of occupancy. The land changed hands many times at the beginning of the 19th century, and was eventually transferred to Lieutenant John Birch in 1810 (Jeffery 1986: 8). The first known residence was built by Birch in 1810, which he named ‘Birch Grove’ (Jeffery 1986:8). This residence was isolated from the rest of Sydney without any form of public services available. This meant that Birch and later owner, Rowland Walpole Loane did not live at the house for long periods of time and had other residences close to their places of work (Jeffery 1986:8). In the early nineteenth century, there were two options to reach Sydney from the Balmain peninsula. The first was by boat, which took approximately twenty minutes (Jeffery 1986: 10). While the other option involved taking a rough bush track by carriage, which extended from Birch Grove House to Parramatta Rd (Jeffery 1986:10). The stifled development on the Balmain Peninsula can therefore be attributed to a lack of transportation linkages.

Figure 23. Map showing urban development of Balmain from 1796 to 1836 (original map from Jeffery 1986:7)
Chapter Five: ‘A Hive of Industry’ – The Balmain Peninsula

The second distribution of land on the Balmain peninsula was granted to Dr. William Balmain in 1800 by Governor John Hunter, which consisted of 550 acres (Lawrence & Warne 2009: 6). However, Balmain’s namesake sold the land quickly to John Gilchrist fifteen months later (Lawrence & Warne 2009:4-5). Although, this transaction was kept secret to the public and Gilchrist himself never lived in New South Wales (Lawrence & Warne 2009:5). This meant that the land was not sold until 1836 and any urban planning prior to this point was impossible (Lawrence & Warne 2009:6). One house, known as ‘Waterview House’ was built on the Balmain estate in 1835 by Gilchrist’s agent, Frederick Parburry (Reynolds 1981:5).

The first subdivision of the Balmain estate occurred in 1836 when twenty-two land allotments situated in Balmain East and around Mort Bay were auctioned off (see subdivision plan, Figure 24). The sale was instigated by Gilchrist’s agent, who wanted to capitalize on the need for residential land close to the city (Reynolds and Irving 1971:4). Reynolds describes the process of dividing and selling land during the 1830s and 40s as being ‘laissez faire’ (Reynolds 1982: 13). This term refers to a type of urbanization, which was unregulated and did not involve any constraints concerning the size of allotments or width of streets (Reynolds 1982:14). Reynolds discusses the fact that these attitudes were present during the initial subdivision of Balmain and had a huge impact on the way urbanization on the peninsula developed. The first three streets created were Darling Street, Johnson Street and Nicholson Street, which were each fifty feet wide. They were laid out in preparation for the 1836 land sale by surveyor John Armstrong (Reynolds 1982: 14). Darling Street follows the natural ridge of the peninsula and served as the spine of the suburb extending from Darling Harbour to Victoria Road, while the other two streets flanked at either side (Reynolds...
1982: 14). The subdivision pattern largely ignored the natural topography of Balmain East and was outlined in a rectilinear layout in order to allow for as many lots to be sold as possible (Reynolds 1985: 56). The urban development was shaped by a number of activities, which resulted from the sale of these lots, including owner builders, further subdivisions and the creation of streets (Reynolds 1985: 56). The first houses were built from a mixture of timber, brick and stone, with timber shingled roofs (Reynolds 1985: 56).

The type of settlement, which existed in Balmain during this period, can be exemplified by the 1830s painting by James Clarke (see Figure 25). It presents Balmain as a small village with few residences. The location of this scene is not specified, although it is most likely Darling St., which is the oldest street in Balmain. The picturesque hills in the background present Balmain as a largely isolated and undeveloped area of Sydney.
Figure 26 reveals the development of Balmain by 1846. This map shows the extent to which the urbanization of the Balmain peninsula rapidly developed in only a short period of time. The laying out of many streets is particularly clear, as well as the degree of residential development. The map also shows a change from the previous subdivision plan, whereby the larger estates have been broken up into smaller land allotments and divided by streets. Another development, which would impact on subsequent development is the establishment of ferry services, allowing for transportation to the city centre, however at a large cost. The map also shows the beginning of public services through the building of the Anglican Church, St Mary’s on Darling St. However, this church did not officially open until 1848.
By the 1850s, Balmain’s population reached 1,397 and the peninsula included a mixture of housing and wealth levels (Lawrence & Warne 2009: 3). The degree of urbanization by 1854 in Balmain East can be exemplified by the increased

Figure 26. Plan of the Town of Balmain, 1846 (Mitchell Library)

Figure 27. Map of Balmain East showing degree of urban density by 1854 (original map “Woolcott & Clarke’s Map of Sydney”, The National Library of Australia)
number of residences shown in Figure 27. By this time, Balmain had developed into a maritime suburb with residents including sea captains, boat builders and shipwrights, who took advantage of Balmain’s idyllic harbor location (Lawrence & Warne 2009:7). This congregation of maritime specialists led to the establishment of shipyards and various maritime industries along the Balmain peninsula (Lawrence & Warne 2009:7). The urbanization of Balmain in the 1850s can be viewed in John Hardwick’s pencil sketch of Waterview Bay in 1853 (see Figure 28), which shows a number of early symmetrical cottages as well as the prominent building, St. Augustine’s Catholic Church on top of the hill.

![Figure 28. Sketch of Waterview Bay by John Hardwick, 1853 (Mitchell Library)](image)

Figure 29 provides an understanding of the extent to which the land encompassing the Balmain Peninsula was divided up by the beginning of the 1850s. The map was drawn by Charles Langley in 1852 and regulated the basic street plan of the suburb up to the present day. The map shows, as previously stated, the grid layout of Balmain West and the area surrounding Waterview Bay. The subdivision of land, however, becomes irregular and non linear from Gladstone Park onwards. According to Solling and
Reynolds, the piecemeal dispersal of estates and nature of the terrain were large contributors to the complex nature of the street plan (Solling & Reynolds 1997:80).

The mid 1850s was the period at which the urban development of the Balmain Peninsula began to escalate. According to Lawrence and Warne this was the result of two factors. The first being the building of Mort’s Dock in 1855 and the second is the opening of the Pyrmont Bridge in 1857 (Lawrence & Warne 2009:3). The opening of the Pyrmont Bridge strengthened the appeal of the Balmain peninsula as a viable residential centre outside the city due to increased transportation linkages, although Mort’s Dock has been described by Lesley Lynch as the main catalyst, which transformed the urban environment of the Balmain Peninsula (Lynch 1978:82). This was largely a product of the need to house workers, who increasingly flocked to Balmain due to the subsequent industrialization of the suburb. Mort’s Dock was located along Waterview Bay (now Mort Bay) on land previously known as the Strathean estate (Reynolds 1985b: 2-3). The land surrounding Waterview Bay was

Figure 29. Plan of the Balmain Estate, 1852 (National Library of Australia)
initially purchased by Captain Thomas Rowntree in 1853, who wanted to build a patent slip and approached Thomas Sutcliffe Mort to form a partnership (Bickford & Broomham 2004: 12).

Mort’s Dock first appears on the map drawn by F.H. Reuss in 1858 (see Figure 30), which shows the distinctive impact of the dry dock on Balmain’s landscape, which has remained up to the present day. As shown in the drawing by John Hardwick (Figure 28), Balmain was up to this point a place of quiet living with only small boat building shipyards. Mort’s role in transforming the landscape was highly significant as he bought land surrounding the dock, which was intended for worker’s housing. The role of Thomas Mort on the urbanization of Balmain is exhibited by the map below, which shows the land around Waterview Bay divided up and parcels of land allotted to certain individuals. The street plan has also been clearly laid out in a geometric fashion, with roads clearly marked.

Figure 30. Town of Waterview, Mort’s Dry Dock, 1858 (Mitchell Library)
The area laid out by Thomas Mort was termed ‘Mort’s town of Waterview’ and is exhibited in the 1867 subdivision plan drawn by F.H. Reuss and stretched from the water up to Darling St. and from Mort Street to Birchgrove Road. Mort’s Town of Waterview was a large development consisting of 700 allotments (Solling & Reynolds 1997:69). The allotments were predominantly 33 feet wide with depths from 84 to 109 feet, although re-subdivision did create smaller parcels of land (Solling & Reynolds 1997:69).

Mort knew the importance of maintaining a good relationship with workers and believed that the provision of housing would provide labor to both build the dock and sustain its future. Mort declared that ‘every man engaged upon the works who had fulfilled his engagement, would be entitled to a freehold allotment in the vicinity of the dock’ (Evans 1987:136). This statement may infer that at one
point the working class did construct their own houses prior to the boom of speculative builders. The first form of worker housing was most likely tents or huts provided for workers during the building of Mort’s Dock and before the construction of durable residences (Lynch 1978:84). This type of housing appears in Figures 31 and 32, which depicts a row of ‘workman’s huts’ along Waterview Bay. The company never provided housing for workers, but instead sold off the majority of the land in lots to entrepreneurs, who built small cottages for cheap rent (Reynolds 1985b: 4). The building up of Mort’s estate took over forty years and this gradual process of infill is well exemplified by the results of the housing survey undertaken for this thesis (Solling & Reynolds 1997:69). By 1896 Mort’s Town of Waterview was filled with a great variety of houses including 396 brick, 348 weatherboard, 51 stone and one iron dwelling (Solling & Reynolds 1997: 69). The process of speculative builders buying and building on land allotments has largely shaped the characterization of Balmain’s landscape and its subsequent piece-meal development.

Another contribution to the industrial landscape of Balmain in the 1850s was John Booth’s Saw Mill (see Figure 33), which he opened in 1854 (Reynolds 1996: 21). The mill stretched along the White Bay waterfront for approximately 300 metres east of Booth Street by 1885 (Reynolds 1996: 20). The mill produced a wide range of timber products from doors to soap and candle boxes (Reynolds 1996:23). The emergence of these large-scale industries began to firmly distinguish Balmain as a working class suburb.
By the 1860s, Balmain was already becoming highly urbanized as a product of increasing industrialism with housing stretching along the water and starting to move backwards down the rest of the peninsula. This can be exhibited by the photographic series taken by John Degotardi in 1865 (Figure 34). The image above shows the high density of housing along the water of Balmain East and the building of houses directly behind each other along the sloping terrain.
A major development of urbanization on the Balmain Peninsula occurred in 1860 was when the Birchgrove estate was subdivided after remaining vacant apart from Birch Grove house from 1796 (see subdivision plan, Figure 35). The surveyor, W.M. Brownrigg was commissioned to divide up the Birch Grove Estate into ten sections of many ‘villa allotments’ as shown in Figure 35 (Jeffery 1986: 11). The land was deliberately subdivided with Louisa Rd at the central ridge in order to allow as many allotments as possible (Jeffery 1986: 11). However, despite this period being marked by high urban expansion in Sydney, little demand was made for the habourside lots (Jeffery 1985:11).

The end of the nineteenth century was the boom period for housing building throughout Sydney and largely impacted on the growth of Balmain’s urban environment. Public services, civic buildings and transportation began to proliferate during this period, as well as the introduction of amenities such as sewerage and electric streetlights (Wong & Irving 1969). The development of Balmain as a developing community can be exemplified by the images contained in the State Library collection ‘At Work and Play – our past in pictures’, which features images taken of Balmain in 1888, that exhibit the rise in the construction of both commercial and civic buildings (see Figures 36 & 37). Speculator building was rife during this period and led to a great variety in terrace housing due to the abundance of capital.
Chapter Five: ‘A Hive of Industry’ – The Balmain Peninsula

(Wong & Irving 1969). The industrialization of the area began to increase, as exhibited by the establishment of the Balmain Coal Mine, which began extracting coal in 1897 (Lawrence & Warne 2009: 62).

By the early twentieth century, Balmain was the most populous municipality outside the City of Sydney, with a population of 34,000 and the number of residences reaching over 7,000 (Wong & Irving 1969). The rise of industrialization had encroached upon the urban environment of Balmain, leaving very little land undeveloped. Industry began to move into residential areas, as the only available land was that allotted for housing (Wong & Irving 1969). The type of industries, which were established during this time, were predominantly soap factories, including Lever Brothers and Colgate Palmolive (Lawrence & Warne 2009:22-24).

An article from the Sydney Morning Herald in 1924 described Balmain as ‘a hive of industry…. whereby the population is so dense that viewing its hilly sides from the water one would almost think that houses were sitting upon another’ (SMH 1924:14). The article also comments on the dramatic change Balmain experienced in less than a hundred years from a small boatbuilding suburb to an industrial centre (SMH 1924: 14). The article clearly acknowledges the role of worker housing in this shift as the
author states ‘today the works of Lever Bros., Elliotts and countless other activities, together with the housing of armies of employees connected with them, have quite changed the face of the old waterside suburb’ (SMH 1924: 14). The extent to which Balmain had become heavily urbanized is well illustrated by the 1925 map of the “Municipality of Balmain” (Figure 38), whereby little space has been left vacant due to the dominance of residential and industrial buildings.

Figure 38. Map of Municipality of Balmain, 1925 (Mitchell Library)
Chapter Five: ‘A Hive of Industry’ – The Balmain Peninsula

Summary

The Balmain Peninsula developed slowly at the beginning of the nineteenth century despite land grants dating to 1796. A large stumbling block was the isolation of the Peninsula, which meant long-term residence was not viable. The city of Sydney at this time was quite compact and did not begin to spread out to the suburbs until the 1830s and 40s. The commercial market surrounding the building of houses was also yet to be established till the mid nineteenth century. The subdivision of Balmain in 1836 was highly influential and effectively shaped the urban layout of the area including the layout of streets and distribution of estates. At this point, the Balmain Peninsula was a small maritime village, which did not become heavily urbanized until the opening of Mort’s Dock in 1855. The need for worker housing was in high demand, which was identified by Thomas Mort who sold the land surrounding his Dock for residential purposes. The land was subdivided and allotments were sold to a number of speculative builders, who shaped what was termed ‘Mort’s Town of Waterview’, along Waterview Bay. The establishment of Mort’s Dock along the waterfront sparked the interest of several industrial entrepreneurs. The possibilities to capitalize on the need for worker housing on the Balmain Peninsula was rife, leading to its status as the most populated areas outside the city centre at the beginning of the twentieth century.
**Part 2: Housing survey results**

Part 2 of Chapter 5 will discuss the results extracted from the housing survey, which recorded approximately 400 extant houses located in what was referred to in the mid-nineteenth century as “Mort’s Town of Waterview”. The discussion of the results will include an identification of house forms, as well as the degree of standardization observed in each street surveyed. The material attributes recorded for each house will also be presented and each material phenomenon will be analyzed in the Chapter 6 in order to observe the material’s relationship with time and space.

**Mort Street (Formerly William street)**

Mort Street is located adjacent to Mort Bay (formerly Waterview Bay) and runs from Darling St. to the Thames St. Wharf. This Street was in close proximity to Mort’s Dock and therefore would have been a prime location for worker housing.

The house survey revealed that Mort Street contained very little standardized housing with the longest terrace being a group of four houses. The housing survey revealed a wide mix of styles and building phases indicative of a piecemeal process of infill (see Figures 40 & 41).
The NSW Department of Lands Metropolitan Detail series undertaken in 1888 is consistent with the present streetscape. The mix of styles is a direct result of speculator housing, whereby individuals bought land from Thomas Mort, in order to rent to workers. The lack of standardization in form (size and shape) and degree of detached buildings in 1888 is exhibited in the Water Board Survey map (Figure 42).
## Table 7. Mort Street housing survey results

<table>
<thead>
<tr>
<th>House No.</th>
<th>Building material</th>
<th>Roof material</th>
<th>Detached</th>
<th>No. of identical units?</th>
<th>Symmetrical</th>
<th>No. of Storeys</th>
<th>Building Phase</th>
</tr>
</thead>
<tbody>
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<td>1</td>
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</tr>
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<td>Y</td>
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<td>2</td>
</tr>
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<td>2</td>
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<td>75</td>
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<td>Y</td>
<td>-</td>
<td>Y</td>
<td>1 + attic</td>
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</tr>
<tr>
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</tr>
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<td>-</td>
<td>N</td>
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<td>3</td>
</tr>
<tr>
<td>65 &amp; 63</td>
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<td>2</td>
</tr>
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<td>-</td>
<td>Y</td>
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<td>2</td>
</tr>
<tr>
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<td>1</td>
<td>1</td>
</tr>
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</tr>
<tr>
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<td>3</td>
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<td>1</td>
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<tr>
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<td>-</td>
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<td>1</td>
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<td>1</td>
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<tr>
<td>58</td>
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<tr>
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<td>3</td>
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<td>3</td>
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<td>3</td>
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<tr>
<td>66</td>
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<td>Steel</td>
<td>Y</td>
<td>-</td>
<td>N</td>
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<td>3</td>
</tr>
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</table>
College Street

College Street is located parallel to Mort Street and runs alongside the former dry dock. The house survey of the street revealed a range of house styles and building phases. The first building phase was the most prominent, however there was no obvious standard model for worker housing. The first building phase included detached symmetrical cottages as well as semi detached and terrace housing. The majority of these houses were one storey, however there were a few examples of houses with attic rooms.

The second building phase contained mainly one-storey cottages, with the longest terrace row being made up of four houses (67-73 College St.), which were placed on two land allotments (see Figure 44). The houses from 51-45 College Street are detached cottages, although similar in design and most likely built by the same individual (see Figure 45).
One early twentieth century house was identified in College Street. Apart from this and the addition of the second building phase row housing, the majority of the street surveyed was consistent with the late nineteenth century Metropolitan detail survey (see Figure 46). The survey of this street illustrates the diversity of house sizes, as a result of semi-detached houses sharing one land allotment, while earlier symmetrical houses were spread out across a single allotment.

<table>
<thead>
<tr>
<th>House No.</th>
<th>Building material</th>
<th>Roof material</th>
<th>Detached¹</th>
<th>No. of identical conjoined units</th>
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<td>-</td>
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<td>-</td>
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<td>-</td>
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<td>Steel</td>
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<td>-</td>
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<td>2</td>
</tr>
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<td>1</td>
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<td>-</td>
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<td>1</td>
</tr>
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<td>N</td>
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<td>1</td>
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<td>1</td>
</tr>
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<td>Steel</td>
<td>Y</td>
<td>-</td>
<td>Y</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>46/48</td>
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<td>Steel</td>
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<td>N</td>
<td>1</td>
<td>1</td>
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<td>-</td>
<td>Y</td>
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<td>1</td>
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<td>-</td>
<td>Y</td>
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<td>1</td>
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<td>N</td>
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<td>1</td>
</tr>
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</table>

Table 8. College Street housing survey results
Church Street

Church St. has not retained a large majority of its original nineteenth century and early twentieth century buildings and includes many late twentieth century apartments. As shown by the “Town of Waterview” subdivision map, this street, as the name suggests, was intended to be the situation of a church, however it was never constructed. The majority of surviving buildings are either symmetrical detached cottages or smaller semi-detached cottages. The four semi-detached cottages from 58-64 Church St. were built using the same standardized model (see Figures 48 & 49).

Figure 47. Mort’s Town of Waterview, 1867 showing the location of Church Street (Mitchell Library)

Figure 48. 62 & 64 Church Street (author’s photo)

Figure 49. 58 & 60 Church Street (author’s photo)
Phillip street

The survey of Phillip Street extended from Bay Street to Curtis Road. Thomas Mort originally proposed that Phillip Street extend to Ballast Point Road, as shown in the subdivision plan, however the street was made shorter possibly due to the extension of the Dock in 1868 (Bickford & Broomham 2004:18). Phillip Street contained mainly one-storey dwellings and houses were typically from the second building phase. Phillip Street also contained a large amount of timber houses and no row housing was longer than two dwellings (see Figures 51 & 52).
### Table 10. Phillip Street housing survey results

<table>
<thead>
<tr>
<th>House No.</th>
<th>Building material</th>
<th>Roof material</th>
<th>Detached?</th>
<th>No. of identical conjoined houses?</th>
<th>Symmetrical?</th>
<th>No. of storeys</th>
<th>Building phase</th>
</tr>
</thead>
<tbody>
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<td>45</td>
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<td>Steel</td>
<td>Y</td>
<td>-</td>
<td>Y</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>46/48</td>
<td>Sandstone</td>
<td>Steel</td>
<td>N</td>
<td>2</td>
<td>N</td>
<td>1+ attic</td>
<td>1</td>
</tr>
<tr>
<td>51/53</td>
<td>Timber</td>
<td>Steel</td>
<td>N</td>
<td>2</td>
<td>N</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>55</td>
<td>Timber</td>
<td>Tile</td>
<td>Y</td>
<td>-</td>
<td>Y</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>57/59</td>
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<td>Steel</td>
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<td>1</td>
</tr>
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<td>Steel</td>
<td>Y</td>
<td>-</td>
<td>N</td>
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<td>3</td>
</tr>
<tr>
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<td>Brick</td>
<td>Tile</td>
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<td>2</td>
<td>N</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
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<td>Steel</td>
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<td>2</td>
<td>N</td>
<td>1</td>
<td>2</td>
</tr>
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<td>Steel</td>
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<td>2</td>
</tr>
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<td>-</td>
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</tr>
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<td>74/76</td>
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<td>Steel</td>
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<td>N</td>
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<td>2</td>
</tr>
<tr>
<td>82</td>
<td>Timber</td>
<td>Steel</td>
<td>Y</td>
<td>-</td>
<td>N</td>
<td>1+ attic</td>
<td>1</td>
</tr>
<tr>
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<td>Steel</td>
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<td>-</td>
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<td>2</td>
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<tr>
<td>85</td>
<td>Timber</td>
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<td>-</td>
<td>N</td>
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<td>2</td>
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<tr>
<td>89</td>
<td>Brick</td>
<td>?</td>
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<td>-</td>
<td>N</td>
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<td>2</td>
</tr>
<tr>
<td>92</td>
<td>Timber</td>
<td>Steel</td>
<td>Y</td>
<td>-</td>
<td>Y</td>
<td>1+ attic</td>
<td>1</td>
</tr>
<tr>
<td>96/98</td>
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<td>Tile</td>
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<td>2</td>
<td>N</td>
<td>1</td>
<td>2</td>
</tr>
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<td>Timber</td>
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<td>-</td>
<td>N</td>
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<td>1</td>
</tr>
<tr>
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<td>Steel</td>
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<td>-</td>
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<td>1</td>
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<td>-</td>
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</tr>
</tbody>
</table>

**Figure 51. 57 & 59 Phillip Street**  
(author’s photo)  

**Figure 52. 70 & 72 Phillip Street**  
(author’s photo)
Short Street

The survey of Short Street extended from Ballast Point Road to Curtis Road. Short Street is located on a steep incline behind what was formerly Mort’s Dock. The first section of Short Street from Ballast Point to Bay Street is made up of long rows of identical houses, with the longest series of housing being seven (see Figures 54 & 55).

Although the size of terrace rows start to decrease as the houses move further away from Mort’s Dock and the majority of houses become detached (see Figures 56 & 57). This may be due to the fact that those houses built along the first street block were the closest in proximity to the dock and therefore the most desirable places for
speculators to provide housing. This is exhibited in the Water Board survey, which shows the degree of standardization present in the houses built along Mort’s Dock.

<table>
<thead>
<tr>
<th>House No.</th>
<th>Building material</th>
<th>Roof material</th>
<th>Detached?</th>
<th>No. of identical conjoined houses?</th>
<th>Symmetrical?</th>
<th>No. of storeys</th>
<th>Building phase</th>
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<td>2</td>
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<tr>
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<td>Steel</td>
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<td>&quot;</td>
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<tr>
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<td>140/142-134</td>
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<td>Tile</td>
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<tr>
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<td>Tile</td>
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<td>&quot;</td>
<td>Y</td>
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</table>

Figure 56. 65 Short Street (author’s photo)

Figure 57. 67 Short Street (author’s photo)

Figure 58. Short Street, Water Board Survey 1888 (Leichhardt Library Local History Collection)
Table 11. Short Street housing survey results

<table>
<thead>
<tr>
<th>No.</th>
<th>Material 1</th>
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<th>Flag 2</th>
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<td>-</td>
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</tr>
<tr>
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<td>-</td>
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<td>-</td>
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</tr>
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<td>-</td>
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<td>-</td>
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</tr>
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<td>-</td>
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<td>-</td>
<td>Y</td>
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<tr>
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<td>-</td>
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<td>-</td>
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</tr>
<tr>
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<td>-</td>
<td>N</td>
</tr>
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<td>Sandstone</td>
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<td>Y</td>
<td>-</td>
<td>Y</td>
</tr>
<tr>
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<td>-</td>
<td>Y</td>
</tr>
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<td>57: Steel</td>
<td>55: Tile</td>
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<td>-</td>
<td>Y</td>
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</tr>
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<td>-</td>
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</tr>
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<td>73</td>
<td>Brick</td>
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<td>-</td>
<td>Y</td>
</tr>
<tr>
<td>93</td>
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<td>-</td>
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<td>Timber</td>
<td>Steel</td>
<td>Y</td>
<td>-</td>
<td>Y</td>
</tr>
</tbody>
</table>

Chapter Five: ‘A Hive of Industry’ – The Balmain Peninsula
Rowntree Street (Formerly wharf street)

Rowntree Street is located between Ballast Point Road and Curtis Road. Rowntree Street exhibited a wide range of housing forms, although predominantly contained two storeyed second phase dwellings (see Figures 60 & 61). Rowntree Street contained a large amount of terrace and undetached houses.

Some of the oldest terrace houses in Balmain are located at 211-177 Rowntree Street and was most likely built in the 1850s (see Figures 62 & 63). The sandstone houses are built with a single storey at street level and two storeys at the rear of the house. This illustrates a deliberate building strategy to utilise the sloping terrain. This group is also known to be built specifically for the workers at Mort’s Dock.

Figure 59. Mort’s Town of Waterview, 1867 showing location of Rowntree Street (Mitchell Library)

Figure 60. 141 & 143 Rowntree Street (author’s photo)

Figure 61. 120 & 122 Rowntree Street (author’s photo)
Chapter Five: ‘A Hive of Industry’ – The Balmain Peninsula

The 1890 Water board Survey reveals the degree of terrace housing on Rowntree Street between Ballast Point Road and Bay Street.

![Figure 62. Sandstone group, 211-197 Rowntree Street (author’s photo)](image)

![Figure 63. Sandstone group, 183-177 Rowntree Street (author’s photo)](image)

The 1890 Water board Survey reveals the degree of terrace housing on Rowntree Street between Ballast Point Road and Bay Street.

![Figure 64. Rowntree Street, Water Board Survey 1888 (Leichhardt Library Local History Collection)](image)

<table>
<thead>
<tr>
<th>House No.</th>
<th>Building material</th>
<th>Roof material</th>
<th>Detached?</th>
<th>Symmetrical?</th>
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Table 12. Rowntree Street housing survey results
Dock Road

The curved layout of Dock Road is in contrast to the geometric outline of the surrounding streets that were arranged in Mort’s 1861 subdivision. Dock Rd is exemplary of worker’s housing built during the late nineteenth century. This period during the 1880s and 90s involved rapid housing construction and elaborate decoration employed by speculators (Wong & Irving 1969). According to Robert Irving, this period represented the greatest variety and sophistication in terrace housing due to the abundance of wealth and the expansion of Balmain (Wong & Irving 1969). This represents a definite shift from the undecorated worker’s housing from the first building phase.

The majority of houses on Dock Rd are two storey and the longest terrace group on Dock Rd is made up of three houses (see Figure 66). Some detached cottages dating from the first building phase do remain, however the majority of detached houses are typical of the terrace fashion from the second building phase, whereby spare land has been filled in as seen by Figure 67.

Figure 65. Mort’s Town of Waterview, 1867 showing location of Dock Road (Mitchell Library)
Table 13. Dock Road housing survey results
Gipps Street

Gipps St. is located parallel to Rowntree St and is situated between Bay Street and Curtis Road. Gipps St. is situated on a hill, which slopes downward downwards Grove Street. Gipps street did not follow the general trend of increasingly more frequent second phase two storeyed dwellings. Gipps Street is a mix of styles (see Figures 69 & 70), building phases and housing forms as shown in the 1889 Water board survey below, quite typical of the first streets surveyed near Mort’s Dock. Although Gipps Street does contain considerable undetached and terrace housing.

Figure 68. Mort’s Town of Waterview, 1867 showing location of Gipps Street (Mitchell Library)

Figure 69. 58 & 56 Gipps Street (Google Earth 2011)

Figure 70. 34 Gipps Street (Google Earth 2011)
### Figure 71. Department of Lands Metropolitan Detail survey series, Sheet 11 (State Library of NSW)

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Chapter Five: ‘A Hive of Industry’ – The Balmain Peninsula

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Table 14. Gipps Street housing survey results

Grove Street

Grove St. was the final street recorded during the house survey on the Balmain peninsula. The street is located along what is known as Snails Bay, which previously consisted of mud flats before the area was reclaimed in 1882. Prior to this, tenants of the early row houses had direct access to the water (Reynolds & Irving 1971: 13). Another feature of this street is its natural topography, which slopes downwards from the rest of the survey area. The street contains mainly houses built during the second phase, and the majority of houses are two storeyed and asymmetrical. Grove St. contains the heritage listed terrace group built in 1886 (McDonald McPhee Pty Ltd et al. 1990) consists of eight two storeyed sandstone houses (see Figure 73). These appear on the 1888 Water board Survey between Bay and Cover Street (see Figure 74). Grove St. also contains the only three storeyed houses in the survey area, which may be a result of the natural topography, which allowed speculators to build a higher level.

Figure 72. Mort’s Town of Waterview, 1867 showing location of Grove Street (Mitchell Library)
## House No. 9
- Building material: Brick
- Roof Material: Steel
- Detached: Y
- No. of identical conjoined houses?: N
- Symmetrical?: N
- No. of storeys: 2
- Building Phase: 2

## House No. 11
- Building material: Timber
- Roof Material: Steel
- Detached: Y
- No. of identical conjoined houses?: N
- Symmetrical?: N
- No. of storeys: 2
- Building Phase: 2

## House No. 13
- Building material: Timber
- Roof Material: Steel
- Detached: N
- No. of identical conjoined houses?: N
- Symmetrical?: N
- No. of storeys: 2
- Building Phase: 2

## House No. 15
- Building material: Brick
- Roof Material: Tile
- Detached: N
- No. of identical conjoined houses?: Y
- Symmetrical?: Y
- No. of storeys: 1+ attic
- Building Phase: 1

## House No. 6
- Building material: Timber
- Roof Material: Steel
- Detached: Y
- No. of identical conjoined houses?: Y
- Symmetrical?: Y
- No. of storeys: 1
- Building Phase: 1

## House No. 8
- Building material: Timber
- Roof Material: Steel
- Detached: Y
- No. of identical conjoined houses?: N
- Symmetrical?: N
- No. of storeys: 1+ attic
- Building Phase: 2

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**Figure 73.** 39-53 Grove Street (author’s photo)

**Figure 74.** NSW Department of Lands Metropolitan Detail survey series, Sheet 7, 1888 (State Library of NSW)
The results presented in this chapter have included the discussion of the urban
development of Balmain and the influence of the increasing need to house workers on
both the suburb’s landscape and housing. The result of this process was a piecemeal
urban environment, which involved the building of houses in stages according to the
supply of vacant lots. The urban environment of the Balmain Peninsula was not
shaped by one corporate hierarchy but involved a number of individuals competing
for capital investment, which meant that eventually little land was left vacant. The
landscape, which evolved was the result of both social and material processes, as
future development was dictated by where houses had already been placed. This led to
the building of houses, which had very little standardization. The area sampled for the
housing survey developed as a result of the opening of Mort’s Dock in 1855 due to
workers wanting to live nearby their place of work. The need for housing was quickly
capitalized on, thus leading to the subsequent urbanization of the Balmain Peninsula.
The processes, which instigated urbanization in Sydney, as well as an analysis of the relationship between the material, space and time observed in the survey area will be discussed in the following chapter.
Chapter Six: Implications and Issues

Introduction

The following chapter will involve a discussion of the results outlined in the previous chapter and provide an understanding of what can be extracted from the analysis of worker housing on the Balmain Peninsula and the three comparative urban areas. The aim is to show that the nature of industrial urban environments can be examined through an analysis of working class housing. The aims of the thesis were investigated through an interpretation of the degree of standardization, as well as significant changes in housing form over time. Through examining the process of piecemeal building the role of the material has been interpreted. The process involved the shaping of landscapes that were not laid out according to social ideals concerning urban patterns of daily life but instead result from “negotiation” between macro-economic factors, individual enterprise and the constraints of an existing cultural and natural landscape.

The thesis’ research aims and questions will be reviewed in order to demonstrate what conclusions have been extracted from the collection of data presented. The aims and questions of this thesis have been assessed by analysing the degree of standardization on the Balmain Peninsula and central Sydney, as well as the types of building strategies used to build more densely. First, the relationship between material, space and time will be examined based on the results of the housing survey in order to examine the process of infill over the survey area. The examination of these results will also identify any possible relationships between each variable. Secondly, this chapter will examine the role of speculative builders, who effectively shaped the
urban environments of Sydney from the mid nineteenth century. A piecemeal landscape was created, whereby houses were built side by side other houses of contrasting building forms and phases. Thirdly, this chapter will interpret the material factors shaping both the Balmain Peninsula and the three urban areas of central Sydney. The comparative analysis of these urban landscapes examine the way that the urban areas were shaped by operational economic factors, including capital investment and the demand for worker housing, and the adjustments made by these social trends as a result of the material. And lastly, the future potential for the study of worker housing and industrial landscapes will be discussed, which will be informed from the implications addressed in this chapter.

1. Material, Space and Time

The first section of the chapter will offer a discussion of the results of the housing survey conducted on the Balmain peninsula. A discussion of the material and social factors shaping urban environments will provide an understanding of why particular house forms appeared across both space and time.

**Material vs. Space**

The observation of the relationship between material and time involved an analysis of the spatial patterns which occurred as a result of the need to house workers. The survey involved identifying obvious changes across parallel streets and examining the way houses were built across the survey area. The survey began at Mort Street, situated perpendicular to Waterview Bay and continued through to Grove Street. The
survey also identified the impact of topography on the housing forms, which were built, as the survey area inclines upwards from Mort’s Dock and declines from Rowntree Street to Grove Street. It was assumed that those streets and houses laid out closer to Mort’s Dock would be earlier and the rest of the survey area was filled in over time. This proposition was to some extent valid, although development was varied throughout the survey area and several implications arise concerning the way urban landscapes were produced.

Building Material

The housing survey identified a number of interesting issues concerning the distribution of the building materials used over space. As shown by the graph below, timber houses were most commonly observed in the streets positioned perpendicular to the dry dock, while houses built further away from Mort’s Dock were typically built from brick. The use of sandstone as a building material was visible throughout the survey area, and there seems to be little pattern concerning the distribution of this material across space. The occurrence of timber houses closer to Mort’s Dock is most likely a factor of location. Balmain contained a number of saw mills along Waterview and Johnston’s Bay including the works surrounding Mort’s Dock, which would have provided an abundant source of timber for house builders (Lawrence & Warne 2009: 20). As a result timber was a popular building material in Balmain and was significantly higher in usage in contrast to neighboring suburbs (Solling & Reynolds 1997: 88).
Chapter Six: Implications and Issues

The degree of detached and undetached housing

Undetached houses were the most common in the survey area sampled. There is also a slight increase in undetached houses built further away from Mort’s Dock, indicating that possibly these streets had retained allotments located side by side, which allowed for the terrace form to be built. The greater number of undetached houses in each street is common in working class areas due to the demand of packing houses in more closely (see next section).

Figure 75. Graph showing the percentage of building materials used in each street

Figure 76. Graph showing the percentage of detached and undetached houses in each street
Size of terrace rows

As indicated by the graph below, houses observed in the survey area were commonly built as semi-detached buildings. Although some longer terraces were prominent and consisted of up to eight identical houses built in a row. These longer terrace groups were more prominent in the streets located furthest from Mort’s Dock, particularly Rowntree and Grove Street. The building of terraces was a common building form implemented by speculative builders. This is due to the fact that the building of a terrace group maximized capital for speculators as it allowed for the reduction of building costs due to the use of party walls and common chimney flues (Solling & Reynolds 1997: 72). Savings were also made on land costs by building more than one house on a single allotment (Solling & Reynolds 1997:72).

**Figure 77.** Graph showing number and size of terrace rows in each street
Chapter Six: Implications and Issues

**Symmetry**

The house survey revealed that the majority of dwellings located in the sample area were asymmetrical. There is not an obvious pattern of change over space however there is a slight increase in asymmetrical houses located in the furthest streets from Mort’s Dock. This may indicate that the first streets surveyed (Mort, College and Church) were developed first, as symmetrical houses are typically an earlier house form. The presence of asymmetrical dwellings reveals an obvious strategy used by speculative builders in order to cut building costs such as windows. Speculators could also build more densely as asymmetrical houses were typically narrower than those that were symmetrical as indicated by Figures 79 and 80.

**Figure 78.** Graph showing percentage of symmetrical and asymmetrical houses in each street
Chapter Six: Implications and Issues

Number of storeys

The results from the housing survey conducted on the Balmain Peninsula revealed that there was a shift across space concerning the distribution of multistoried dwellings. The streets positioned perpendicular to Mort’s Dock were predominantly one storeyed. While those positioned further away from Mort’s Dock were typically two storied. The furthest street in the survey, Grove St., also contained a three storeyed house, which most likely took advantage of the steep topography of the street directly behind it (see Figure 81). Other house forms, which took advantage of topography, were the sandstone terraces on Rowntree St, which were one storeyed at street level, but were two storied at the rear of the house in order to utilize the slope of the terrain. The incorporation of an attic room was also observed throughout the survey area, as seen in Figure 82, which allowed for an extra room and meant the use of as little land as possible. The origin of attic rooms is, however, undetermined and
it is difficult to ascertain whether they were implemented originally by the builder or by the occupants.

**Figure 81.** Graph showing the percentage of house storeys in each street

**Figure 82.** Houses with attic rooms, 38 & 40 College Street (author’s photo)

**Figure 81.** Row of eight three storeyed houses, 55-69 Grove Street (author’s photo)
**Space vs. Time**

The relationship between space and time was particularly interesting as it illustrates the processes involved during the urbanization of the survey area. Figure 83 reveals no obvious trends that indicate that houses were built sequentially over time. It was assumed initially that those streets closest to Mort’s Dock would be built upon first, which was to some extent correct, as second building phase houses were more common in the streets located furthest in the survey area. However, buildings of the various phases were sporadically distributed throughout the survey area. The irregularity of the survey area strengthens the proposition that many industrial suburbs of Sydney were built in a piecemeal fashion whereby houses from differing building phases were built side by side. The third building phase was scattered throughout the survey area and these houses were most likely placed on vacant land allotments, which were rare by the end of the nineteenth century.

![Figure 83. Graph showing the percentage of building phases in each street](image)

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**Figure 83.** Graph showing the percentage of building phases in each street
Chapter Six: Implications and Issues

**Material vs. Time**

The relationship between material attributes and time was observed through the dating of houses into three building phases: Building Phase 1 (c.1850-1875), Building Phase 2 (c.1876-1899) and Building Phase 3 (c.1900-1930). This was undertaken in order to examine significant changes taking place in relation to the way houses were built, particularly the increasing role played by speculators by the end of the nineteenth century. It was also important to examine where houses were situated in conjunction with dwellings from different phases. The placement of different building phases side by side resulted in a piecemeal environment, due to the material constricting where later houses could be placed.

*Building Material*

The results of the housing survey revealed that there were obvious trends, which developed over time in relation to what type of building material was most predominantly used. It is clear that timber was the most used building material in the first phase, most likely due to the abundant resources available on the Balmain Peninsula, with eleven timber merchants operating by 1886 (Solling & Reynolds 1997: 88). The housing survey was consistent with the rest of Balmain, where timber made up 54% of all housing in 1861 (Solling & Reynolds 1997: 88), while sandstone and brick were quite similar in their degree of representation in houses typical of the first building phase. Sandstone was the most extensively used in Phase 1 as this was the only walling material available in the early urbanization of the Balmain Peninsula (Wong & Irving 1969). The use of sandstone, however began to decline as brick
became cheaper and easier to obtain (Wong & Irving 1969). The second building phase predominantly used brick, due to the fact that they were machine produced by the 1870s and 80s (Solling & Reynolds 1997: 51). Brick was also the dominant building material used for houses in the third building phase, which identifies the continuation and popularity of this material for house builders into the twentieth century.

![Figure 84](image)

*Figure 84.* Graph showing percentage of building materials in each building phase

*Degree of detached and undetached houses*

The results of the housing survey concerning whether the dwelling was detached or not revealed obvious trends in the way houses were placed on the urban landscape. The first building phase represents the most equal distribution between detached and non-detached houses. Terrace housing became popular in Sydney during the 1840s (Smith & Smith 1973: 33) and therefore the first building phase represents a shift towards a new method of building. This involved moving away from the use of the detached cottage in order to house as many workers as possible.
The second phase reveals an overwhelming proportion of undetached houses during the late nineteenth century. The observation is consistent with the boom period of terrace housing, whereby this style of dwelling became the most popular house form. Speculative building was also the most rife during this period and therefore the predominance of the terrace during the second building phase identifies the actual house form that was used in order to allow for continuous development (Solling & Reynolds 1997: 72).

The third building phase similarly represents an interesting shift in opinions about the nature of urbanization. Figure 85 reveals that the majority of houses during this period were detached. This is consistent with opinions, at the beginning of the twentieth century, concerning the way houses should be built. Terraces at this time were seen as an obstacle towards social progress and by the end of World War I were rarely built (Howells & Morris 1999:64). The decline of this building tradition is well illustrated by the fact that many terraces in the urban areas observed in the city centre were demolished due to their association with moral decay and squalor. The attitudes of moral progress led to the creation of what was termed ‘garden suburbs’, which consisted of clean lined streets and detached federation cottages (Freestone 1987: 55). These landscapes were built under the guise of creating a pleasant living environment, although they are more accurately said to have been spurred by economic benefit (Freestone 1987: 55).
Size of Terrace Rows

The number and size of terrace rows in each building phase was calculated in order to examine any obvious trends. The general trend examined in the survey area was that the majority of terraces were built in pairs, as shown by the figures present in both building phase one and two. The trend is consistent with the nature of speculative building whereby many individuals bought single or double land allotments in order to build two or three terrace houses (Solling & Reynolds 1997: 72). Longer terraces were however quite rare. Building phase two had the greatest amount of larger terraces, which ranged from terraces rows comprising three to eight houses. As previously discussed, the third building phase had very few terraces. The third phase
did include a row of six terraces, although it was assumed these houses were quite an early example due to its retention of Italianate features consistent with the terrace boom.

![Figure 87. Graph showing size and number of terrace rows in each building phase](image)

**Figure 87.** Graph showing size and number of terrace rows in each building phase

![Figure 88. Building phase two, Row of Four houses, 76-82 Rowntree Street (author’s photo)](image)

**Figure 88.** Building phase two, Row of Four houses, 76-82 Rowntree Street (author’s photo)

![Figure 89. Early Federation style terrace group of six houses, 101-111 Rowntree Street](image)

**Figure 89.** Early Federation style terrace group of six houses, 101-111 Rowntree Street

**Symmetry**

Figure 88 reveals houses in the survey area were predominantly asymmetrical. The first building phase exhibits a less obvious majority, which is most likely due to this
period being a transitional phase whereby symmetrical cottages were losing their popularity (Solling & Reynolds 1997: 72). The symmetrical cottage was typically a wide structure, which traditionally was built across a single allotment. The housing form was not suitable for large-scale development, and was effectively abandoned by the end of the 1870s (Solling & Reynolds 1997: 72). This was largely due to the costs, which came with building these types of structures including land size, multiple windows and building materials.

![Figure 90. Graph showing percentage of symmetrical and asymmetrical houses in each building phase](image)

The investigation of the distribution of house storeys across time identified a number of interesting developments concerning the nature of speculative building. As exhibited by Figure 91, the first building phase consisted of predominantly one-storey houses. There were also a greater proportion of houses with attics than two storeyed dwellings in the first building phase. The attic level is also not as well represented in the other two building phases, which may suggest this was an early attempt at
providing further living space on a limited amount of land or a form of initiative undertaken by the original occupants.

The second building phase predominantly consisted of two storeyed dwellings, however one-storey houses were still prominent. The decision made by speculators to build upwards is significant as effectively houses were able to be narrower and the amount of houses that could be built on a particular land allotment was increased. The two storeyed workers’ houses is also intrinsically linked with the development of the terrace, which was the predominant house form during the late nineteenth century. A row of eight three-storeyed houses was also observed during the housing survey, which was typical of the second building phase. This type of housing is characteristic of traditional English terraces, whereby houses were up to four storeys high (Smith & Smith 1973:31). This type of terrace was not overly abundant in Sydney, although is a further example of the use of multiple storeys in order to build more densely. The third building phase involved mainly one-storey houses, although two storey houses were also prominent. The trend is most likely once again a result of the changing attitudes towards terrace housing, whereby many houses during the federation period were built as bungalows and spread over one floor.

![Graph showing percentage of house storeys in each building phase](image)

**Figure 91.** Graph showing percentage of house storeys in each building phase
2. THE ROLE OF SPECULATIVE BUILDERS

Speculative builders played a prominent role in the way housing forms developed and shaped industrial landscapes. Urban industrial landscapes, particularly in Sydney, were not shaped by corporate interests, but were rather a mix of various individuals competing for capital investment. This is well affirmed by Solling and Reynolds, who have discussed the impact of speculators on suburbanization in the mid nineteenth century. They remark that ‘the making of each suburb was not a conscious creation, nor was it the work of a homogenous [group of people]’ (Solling & Reynolds 1997: 92). This is to some extent valid, as the living conditions which were effectively created for the working class were not the intention of speculative builders. They were, however, actively shaping these urban landscapes for their own capital investment. The process by which these landscapes were created highlights the aims of the thesis, which is to examine the relationship between social factors and the material. As ultimately, the material began to constrain the choices made by speculative builders. A major influence on piecemeal building in Sydney during the nineteenth century was the subdivision of estates. This process enabled the dividing up of land and auctioning allotments off to a variety of individuals.

The thesis has predominantly analysed worker housing built from the mid nineteenth century, which are indicative of a major shift in relation to the mechanics of house building. Previous to this period dwellings in Sydney were constructed either by owner builders or specialist tradesmen (Solling & Reynolds 1997: 51). The construction of houses involved a range of skilled laborers each working under contract side by side (Solling & Reynolds 1997: 51). Due to the increasing demand
for housing as a result of industrialization, these practices began to change. By the second half of the nineteenth century building materials were becoming machine produced, which meant an increasing use of brick and timber (Solling & Reynolds 1997:51). The contractor also displaced the role of owner-builders and trades people, which involved overseeing every aspect of house construction (Solling & Reynolds 1997: 51). This led to what is termed speculative building, which became the most popular form of investment during this period.

The housing survey of the Balmain Peninsula exhibited a great degree of variability in terms of housing forms. There also appeared to be no obvious organized process of infill, which is indicative of irregular vacant allotments being bought and built upon over a gradual process of time. The housing survey also observed obvious changes in housing forms, which began to develop by the second half of the nineteenth century and are most likely a result of the rise of speculative building during this period. These included the use of asymmetrical two storeyed terraces in order to reduce the amount of land per house, and thus cut building costs in order to secure greater capital return (Solling & Reynolds 1997:72). The asymmetrical two storeyed terrace was the most frequently used housing form by speculators by the end of the nineteenth century and demonstrates a shift in approaches to building as a result of the need to house workers.

Speculative building was identified in each of the areas that was examined for this thesis. The Rocks was the only area, which highlighted the shift from the role of owner builder to speculator, as a result of its earlier development. In each case study observed in central Sydney, speculator housing was rife and in many cases resulted in
substandard housing and overcrowded environments. The Rocks at the beginning of the nineteenth century had little government interference and therefore houses were built according to the circumstances, capacities and needs of the people who lived there (Karskens 1999b: 29). The early establishment of this urban environment intertwined with later development introduced by speculators meant the landscape was constructed in an extremely piecemeal fashion.

Unlike the Rocks, the three other urban areas mentioned in this thesis did not develop until the mid nineteenth century. The urban areas instead developed as the result of the subdivision of early land grants, which significantly impacted on the way house building was organized. The subdivision of land grants allowed for allotments to be sold over time to speculative buyers. The subdivision of Haymarket was particularly different to the other case studies, as the land allotments were leased, which meant that the original landowners retained ownership and implemented control over the types of house forms, which were built (GML & Thorp 1993:47). The impacts of speculative housing appear to have been worse felt in the city centre, which was increasingly becoming crowded. The city therefore began spreading outwards in order to combat these issues. In each of the city centre areas observed these conditions, as well as encroaching commercial and industrial buildings, led to the demolition of many residential areas during the twentieth century.

3. Industrial landscapes of Sydney

The industrial landscapes of Sydney discussed in this thesis were a product of a number of factors. As observed in the development of the Balmain peninsula and the
three central Sydney areas, industrialization in Australia during the mid nineteenth century and urbanization were intrinsically linked as a result of the need to provide worker housing. As a result these environments were developed in a piecemeal fashion, which was the result of the relationship between social and material factors. Each area was reacting to wider issues inherent to nineteenth century Sydney including an increasing population, the gold rush and the introduction of new technologies (Smith & Smith 1973:31). The urban development of these landscapes was also shaped by material forces attributable to each area, which effectively shaped the direction of their development.

First, the location and environment of each urban area had significant implications for the types of housing forms that developed. The Balmain Peninsula was located outside the city centre, which meant that builders in the area were reacting to very different material forces. The Balmain Peninsula faced extreme pressures as a result of industrialization and the need to house workers, although it was not subjected to the same overcrowding, which was observed in the centre of Sydney. The central Sydney urban landscapes had to compete with commercial buildings for land and thus resulted in their eventual demolition. The development of the Balmain peninsula was largely stifled due to its position outside the city as it could not sustain a residential community without transportation linkages to the city. The need for these forms of technology were however not required until the growth of the Balmain peninsula as an industrial centre. An aspect of Balmain’s environment, which also impacted on the type of development, observed was its natural topography that slopes steeply throughout the peninsula. The nature of the topography meant that houses had to be built along these slopes and created an irregular street plan. This was similarly the
case with the Rocks, whose environment closely resembles the Balmain peninsula and led to further difficulties for house builders.

The location of Pyrmont next to the Balmain peninsula led to both landscapes being suitable for industrial development due to their harbor surroundings. The position of Pyrmont and the Balmain Peninsula meant that both areas of Sydney had a great diversity of industries. In both urban areas this led to the encroachment of industry and factories were located side-by-side with residential dwellings. Another aspect of environment, which impacted on urban development, was observed in Haymarket. Haymarket was located on marshlands, which meant that unlike the other three case studies, house building and urban development was highly irregular and scattered unevenly throughout the area based on where infill had been completed.

Secondly, the timing of urban development in each of the areas was significant. The Rocks was characteristically different to the other three urban areas due to its establishment as a residential area for convicts at the end of the eighteenth century. This meant there was little governance concerning the types of houses that could be built. It also meant that by the time mass urbanization was occurring in Sydney, The Rocks had already had a long history of house building, which led to a crowded and haphazard environment. By contrast, the three remaining case studies experienced very little urban development until the mid nineteenth century.

Thirdly, it was observed that in each area, housing forms display the consequences of several common factors during the nineteenth century. As a result of industrialization and the need to house workers, each urban area was unplanned and overdeveloped.
This resulted in multiple houses built on single allotments, as well as areas designated for backyards being built upon. Each area experienced similar building phases including the observation of terrace housing, which was rife throughout Sydney during the late nineteenth century. The shift from one to two storey dwellings was also observed, as well as the use of brick in order to save on building costs. Little standardization was observed, although longer terraces were more frequent in the centre of Sydney as identified by the Engine Street terraces in Haymarket, which extended across a whole block. These attributes of housing forms were an outcome of pressures to house the workers, colliding with previous material conditions and landscapes, which effectively resulted in piecemeal environments built by a large number of individuals.

**Future research potential**

There is still a great amount of potential for the study of the worker housing and industrial landscape of the Balmain Peninsula, due to the sheer scale of the suburb. The Balmain Peninsula had a number of industries including Booth’s Steam Mill located along Johnston’s Bay and the Balmain Coal Mine and it would be worthwhile to examine the impact of these as triggers of urbanization.

A comparative study of housing forms on the Balmain Peninsula across class would also provide interesting conclusions. The Balmain Peninsula was not merely a working class suburb and contains a rich source of middle class housing. Like the working class, these houses were first constructed by owner builders but by the mid nineteenth century were increasingly being built as investments. Originally, these
houses were not build densely but contained a considerable amount of land, which separated the house from neighboring dwellings. The difference between urban landscapes was essentially a marker of class, which distinguished the middle class from the tightly compacted houses of the workers. Ultimately over time, these areas of the Balmain Peninsula became crowded as a result of the need for housing due to the growing number of industries. Therefore, it would be interesting to record this process and examine the different attitudes concerning house building.

A similar methodology could be applied to many industrial case studies across Sydney. The Balmain Peninsula was an interesting choice based on its rapid urbanization as a result of industrialisation, although the documentary sources available concerning the houses was very limited. Therefore it may be interesting to investigate suburbs whereby house layouts or numbers of rooms is available, which would provide further depth to the study of working class housing. Some possible inner city case studies, which could be observed, include Glebe, Newtown, Paddington and Surry Hills. These suburbs and many more developed as a result of suburbanization and each retain a large number of extant residences and the original layout of their former industrial landscape.

**Conclusion**

The research questions investigated throughout the thesis led to several interesting implications, which can contribute to the study of worker housing and industrial landscapes in archaeology. The methodology applied observed the patterns of extant houses, which highlighted the rich source of these buildings for archaeological
investigation. The fact that these types of urban landscapes exhibit no obvious plan is intriguing as they enable the study of the relationship between social and material factors. These two factors intertwined to create social patterns of daily life, which in no way corresponded to social ideals. The goal of the speculator was instead to extract capital investment, which led to the development of various housing forms identified in this thesis. The material equally created new house forms as it made speculators adjust their building strategies in order to compete with an existing landscape. The nature of this relationship is highly significant as many urban areas within inner Sydney developed as a result of this process. This cements the proposition that urbanisation was initially instigated out of the need to house the working class, which ultimately provided a market to be exploited for capital investment.
Chapter 7: Conclusion

The material implications of worker housing have been examined throughout the thesis and have provided an understanding of the development of urban industrial landscapes in Sydney. Worker housing and industrial landscapes have been examined thoroughly by archaeologists. This thesis has contributed to this field of research through a discussion of the interaction between the social and the material. The social factors, which instigated urbanization in Sydney were numerous and involved the prevalence of factories during the mid nineteenth century that led to the need for worker housing. The processes, which led to the creation of urban landscapes, were largely the product of a multitude of individuals known as speculators. These individuals were predominantly driven by capital gain, which led to the implementation of numerous building strategies aimed at building more densely in order to secure greater profit.

The relationship between material and social forces was achieved through the recording of extant dwellings surrounding the former site of Mort’s Dock on the Balmain Peninsula. The attributes recorded were chosen as they exemplified changes in housing forms from the mid nineteenth century to the early twentieth century. The material attributes were deliberately modified by speculators in order to build more densely. As well as time, these attributes were examined across space in order to examine the extent to which house building on the Balmain Peninsula was conducted in a piecemeal fashion, whereby different building phases were built side by side. The material and social phenomena examined on the Balmain Peninsula was similarly compared to three urban areas of central Sydney in order to examine whether the
housing survey was consistent with previous research. The research aims and questions were effectively addressed throughout this thesis and reveal the diversity and significance of working class landscapes for archaeological interpretation.

The first research aim was to interpret the material patterns of unplanned industrial landscapes. This was achieved through utilizing the methodology of a housing survey, which investigated the relationship between various housing forms, space and time. The housing survey demonstrated some significant trends, which developed by the end of the nineteenth century including two storeyed narrow terraces as opposed to detached symmetrical houses, which was a direct result of speculative building. The housing survey also revealed that the process of housing construction was highly irregular across space and houses were placed throughout the landscape in a piecemeal fashion. The haphazard nature of these urban landscapes is attributable to both social and material factors, although the material was highly influential as the placement of later houses was dictated by previous development.

This phenomena is directly linked to the second research aim, which is to examine the active role of the material. The material is commonly seen to as a reflection of social actions, although it is able to create change in its own right, as seen by the processes of piecemeal building. The social is prominent in many archaeological investigations of worker housing, particularly the development of company towns, whereby the material is structured according to social ideals. The urban environments in this thesis, however, were not created to conform to social ideals, but were instead created in order for individuals to seek capital investment. This meant that the material played an active role alongside the social actions of these individuals.
Chapter Seven: Conclusion

The third research aim was to analyze the degree of standardization and variation between worker housing on the Balmain Peninsula and the three comparative case studies. The thesis exhibited that these environments had very limited standardization. The lack of standardisation was a result of the fact that these houses were built by a number of individuals rather than the corporate hierarchy of a company town or suburb. This most likely due to the diverse range of factories and the fact that the urbanization of Sydney was increasing rapidly by the mid nineteenth century. Very few houses were stylistically the same in the area surveyed on the Balmain Peninsula and it was common for houses built across different time periods to be placed side by side. Terraces were common, however, the majority were built in pairs, which typically shared one land allotment. The comparative urban areas from central Sydney were equally diversified as a result of speculative building and exhibited a large number of terrace housing.

The fourth research question involved examining the building strategies, which were adopted, in order to capitalize on the demand for worker housing. A number of building strategies were examined including the choice to build upwards and the construction of terraces in order to capitalize on as much land as possible. Houses were typically wider and detached during the first building phase, which implied that by the end of the nineteenth century speculators were making a conscious effort to build more densely.

The last research question involved examining whether Balmain was typical of urban industrial landscapes in Sydney. The research question was answered by comparing
the Balmain Peninsula with Rocks, Pyrmont and Haymarket. Each of these urban areas developed in a piecemeal fashion, which can be attributable to both material and social factors occurring concurrently. The factors prominent were macro economic including industrialisation and the need for worker housing, as well as those attributable to the social community life of each urban area. The material forces shaping urbanisation were consistent across the four urban areas, as each area’s development was reacting to an already existing cultural and natural landscape.

The investigation of worker housing on the Balmain Peninsula and central Sydney identified a number of implications and issues. There is a strong relationship between the material, time and space as observed by the results of the housing survey conducted around Waterview Bay. The distribution of housing across space was not systematic and involved different building phases being built beside each other. To some extent, the earlier housing forms were situated closer to Mort’s Dock, although there was a large amount of variability throughout the survey area. The examination of changing housing forms over time exhibited a number of strategies used by speculative builders in order to build more densely including building upwards and the implementation of terrace housing.

The goal of speculators and the eventual urban landscapes that were created were not in agreement with social ideals, as little thought was given to the nature of daily life for the people who lived there. On the other hand, the material also played an active role in the creation of urban landscapes due to the piecemeal nature of their development. This meant that the placement of new housing by speculators was constrained by where earlier houses had already been constructed. The contribution of
the speculator to the creation of these urban landscapes was apparent throughout the investigation of this thesis. The relationship between these individuals and the way that the material constrained their decisions was exhibited in each of the urban areas of Sydney investigated and offers an additional contribution to the study of the development of urban landscapes in archaeology.

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