PUBLIC ARCHITECTURE AS THERAPY

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Statement of Originality and Author Attribution

I declare that the work in this thesis is entirely my own, and all the assistance received in preparing this thesis and its sources have been acknowledged. No portion of the work referred to in this thesis has been submitted to support an application for another degree or qualification of this or any other university or institute of learning.

I have published a conference proceeding: Luo, Sephira Y. 2023. "Public Architecture as Therapy – a Literature Review", *Repurposing Places for Social and Environmental Resilience*, 178–179[1]. There is redundancy in the introduction, method, and thematic review in Chapter 2. I am the sole author of this publication.

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Abstract

The notion of well-being as a social sustainability strategy has also become a timely issue in the post-pandemic context, which reshapes the interactions between people and public urban spaces. The shifting paradigm of social interactions with urban public spaces requires a renewed understanding of public architecture. Although "public architecture" is not an emerging term, the evolving social context indicates further conceptualisation is necessary, emphasising the therapeutic effect of public architecture in promoting subjective well-being (SWB).

This thesis investigates the expanded conceptualisation of public architecture and the potential application of curatorship in designing socially resilient public architecture, which encourages a new framework that specifically fosters SWB by promoting positive interactions and overcoming some of the negative impacts of loneliness, anxiety, and stress associated with urban dwelling. The field research was conducted based on the premise that public architecture is a spatial practice in a neighbourhood-scale urban open space that sensitively considers the existing social demands, which creates a social gathering space for the neighbourhood or a network of neighbourhoods, inviting interaction without barriers. As a result, this thesis proposes a design framework under a new terminology -*therapeutic public architecture*, which aims to engage in critical and aesthetic reasoning that emphasises the impacts of public architecture on social resilience and well-being.

The main objectives of this thesis are as follows:

1. Examine and redefine the conceptualisation of public architecture in an urban built environment.
2. Establish a design framework for public architecture promoting positive social engagement and SWB.
3. Identify relevant concepts and initiatives across disciplines to develop a combined understanding regarding how public architecture could foster SWB as a potential social sustainability strategy.

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Glossary

The following is a list of terminology in the context of relevant research areas. I have used these terms in both writing this thesis and the interviews. Some terms are more common in everyday life, yet they have abstract meanings and can be perceived differently depending on the individual. Some terms are specific to one research area and are not used as often in others. There is no universally agreed definition of any of the following terms. This glossary aims to create a brief introduction to some key terms that I include frequently in this thesis. The main categories the terms of the glossary come from are architecture, urban studies, positive psychology, and art curating.

Art Curating: Marstine and Kay (2021, 2) wrote that curating art signifies the connections between artwork and people and is essentially a "relational practice" that emphasises building connectedness. Curators apply specific strategies in exhibition design, spatial engagement, and art theory to create relationships between objects and people (Hansen and Handberg 2023).

Built environment: Handy et al. (2002) wrote that the built environment consists of the distribution of activities and the buildings that house them, the physical infrastructure of transportation, the service of this system, and urban design. Jens and Gregg also noted that the built environment can be summarised as "within the buildings in which we work, study and live; and through the urban fabric that connects these buildings" (Jens and Gregg 2021, 1).

Circulation design: In architectural drawings, circulation design indicates the pathways and destinated spaces for people to move through the architecture, and it includes design strategies for accessibility and wayfinding.

Connectedness: or social connectedness, a common term in social psychology that describes social interactions and connections. It is often discussed along with belongingness or a sense of belonging (Bailey et al. 2018).

Coping mechanism: a cognitive-behavioural strategy to respond and adapt to psychological distress (Rose et al. 2021; Pascoe and Law 2013).

Environmental psychology: a discipline dedicated to studying the relationship between psychological well-being and the built environment.

Embodiment: this thesis uses embodiment as a manifestation of emotions and subjective experience discussed in social psychology.

Empathetic architecture: it is a recent topic in architecture that emphasises design architecture for wellness, which channels empathetic feelings and support (Stamenovic 2024).

Happiness: a broad and abstract term that is interchangeable with many other concepts. In this thesis, happiness is considered an individual experience involving four central factors: the experience of pleasure, the avoidance of negative feelings, self-actualisation, and contribution to others (Veenhoven 2015; Miller 2008).

Healing: in this thesis, healing means the cognitive recovery from psychological distress and negative emotions.

Human flourishing: fulfilling one's psychological needs to become their best version.

Incidental experience: an individual's momentary interaction with others, objects, and spaces.

Loneliness: a psychological state associated with social isolation while not necessarily being alone.

Mental health: an essential part of one's overall state of functioning between oneself and one's physical and social environment (Sartorius 2002). There are three main indicators of individual mental health: the ability to form and maintain social relationships, perform to social rules, and manage and communicate positive and negative emotions.

Placemaking: a design intervention in public space, including social programming, streetscape design, and governance to revitalise and activate the public space.

Pocket Park: a small public park, usually tucked away within dense buildings in an urban area.

Positive psychology: a holistic view of human existence and the discipline that studies the process of realising and expressing self-actualisation and subjective well-being.

Psychological distress: a common term in clinical psychology and psychotherapy to describe "the general psychopathology of an individual with a combination of depressive symptoms, anxiety, and perceived stress" (Ohayashi and Yamada 2012, 49).

Quality of Life (QoL): a multidimensional term used in many disciplines. In this thesis, QoL represents a general understanding towards individual well-being, which contains key indicators of subjective well-being and life satisfaction.

Sensitising concept: contrary to a definitive concept, which has well-defined constructs, a sensitising concept indicates an empirical instance of an idea that goes beyond the abstract reference of the concept (Hertzum 2018). It is a term first proposed by social theorist Herbert Blumer, suggesting "directions along which to look" (Blumer 1954, 7). Qualitative researchers often incorporate sensitising concepts into theoretical frameworks to guide the design of fieldwork and interviews (Bowen et al. 2020).

Site-specific installations: a type of public art installation catered to one specific site. The artwork usually artistically expresses the characteristics of the space.

Stressor: an environmental or physical trigger likely to induce stress build-up. This trigger can be formed based on biological or psychological vulnerabilities, personality dispositions, and other factors.

Subjective well-being (SWB): cognitive evaluations of an individual's well-being. Unlike objective indicators, such as education and achievement, SWB investigates these three pathways: pleasure, engagement, and meaning (Seligman 2002).

Therapy: a means for psychological professionals to improve the client's approach to their problems. There are many types of therapy. Therapy aims to help clients change their feelings

about or how they view their problems. In the context of this thesis, *therapy* does not mean medical interventions for diagnosed psychological illnesses but a proposed therapeutic relationship between people and places. It is often used with the term *healing* (mentioned above) to emphasise the well-being-oriented context when discussing design and placemaking.

Urban furniture: sometimes called street furniture, urban furniture is a design element installed in public open spaces that promotes comfort and a better outdoor experience. Contemporary urban furniture is more than mass-produced benches and bins; it focuses on user experience, design quality, and contributing to the public space experience.

Acknowledgements

I want to acknowledge the Gadigal of the Eora Nation and the Daruq people, the traditional custodians of the land where this thesis's research was conducted. I pay my respects to the Elders, past and present.

The last three and a half years have been an emotional journey. By submerging myself in fieldwork and writing, I have discovered the meaning of my research and reflected on my growth as a researcher and a person.

I would never have imagined starting a doctoral study amid the global pandemic and seeing it through without the love and support of all the wonderful people around me.

I want to express my deepest gratitude to Dr Luke Hespanhol and Dr Jennifer Kent. They are my supervisors, mentors, and allies. It is with their guidance I have been able to achieve this professional development and growth. Their profound expertise and willingness to challenge my ideas have pushed me to exceed my expectations. Beyond their academic supervision, they have shown me remarkable patience, understanding, and encouragement during the many unforeseen challenges of this doctoral journey. I am particularly thankful for their ability to balance providing direction while encouraging autonomy in research. They are also brought great influence in helping me explore and embrace my identity in the academia, a transformation I would not have anticipated a few years ago when I was still a practising architect.

It was my first time conducting research interviews with so many participants. From 2023 to early 2024, I met and spoke to many people who were so kind and brave to share their personal experiences on public architecture, art, and mental health. Without these participants, I would not have been able to progress on this thesis. Thank you for your time.

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公公 (Gung Gung), I miss you so much. This thesis is dedicated to you.

One time my friend and I just sat there and watched the sunset in silence.
It was so beautiful: the sky was pink, and the lights were just switched on.
Sometimes you just want to be in the present and enjoy the view.

Evelyn, Darling Square participant.

Darling Square, Sydney, October 2024.

1. Introduction

This chapter starts with personal background and motivations to pursue a research journey resulted in this doctoral dissertation. It then summarises the basic structure of this thesis, including research questions and objectives, methodology, and contributions.

1.1 Personal Experience

The global COVID-19 pandemic has claimed nearly seven million lives in the past four years. Like many others, I lost loved ones during this period. Even though it is a painful yet inescapable experience many of us need to endure, the pandemic lockdown made the grieving process excessively agonising. I could not talk to anyone face-to-face. I could not hug my family or friends. I could not say goodbye to my grandpa and best friend one last time.

For a time in 2021, I thought I could never find happiness again. My healing journey began when the pandemic lockdown was finally lifted. The pain of losing two of the most influential people in my life was still overwhelming, but it became more manageable. After spending 107 days alone in a small apartment, I finally met with my friends at Darling Harbour's Tumbalong Park. For the first time in months, I found a smile on my face.

This experience led me to reflect deeply on the nature of grieving and healing. While I understand that loss and grief are universal human experiences, the global pandemic brought these themes to an unprecedented way. With millions of lives lost in the global pandemic and countless others still grappling with pandemic-related physical and psychological aftermath, there is a pressing need to search for a more sustainable and accessible approach to healing and therapy.

Research has shown the critical role of positive emotions in recovery and personal well-being. The feeling of joy and pleasure is the most crucial principle in finding happiness (Frey et al. 2008). Many authors have also identified the connection between the quality of social relationships and happiness, which is often interchangeable with subjective well-being (SWB; Ryff and Singer 2008). This thesis builds upon the ideology that public open space is more than a gathering place; it also carries a positive communal meaning through repeat visits (Carr 1992). Visiting a public open space can often be a sentimental experience. I became more aware of this after what I went through during COVID-19. The perception of

happiness is crucial to an individual's SWB. Even though happiness is a highly abstract concept, it is generally considered to have both affective and cognitive effects. It is both an emotion that accumulates through positive experiences and a cognitive evaluation of one's life (Veenhoven 2015). Many research studies consider SWB and happiness to be interchangeable concepts. However, positive psychologists proposed that happiness is a crucial component of SWB, along with *life satisfaction* and *emotional well-being* (Seligman 2011).

Meanwhile, SWB is the subjective measurement of quality of life (QoL), a significant indicator of one's overall well-being (Diener 2009; Diener et al. 2013). Happiness and healing go together in positive psychology's therapy approach and searching for life's meaning (Burns 2009). In positive psychology, therapy sessions focus on finding positive feelings in one's life and building on motivations to pursue happiness in the future (Erickson 2009). However, therapy does not always require an intervention from a mental health professional. If someone is experiencing short-term loneliness, anxiety, or other types of mental distress, it does not mean clinical treatment is always necessary. Public architecture's healing and therapeutic effects can be both temporary and potentially even long-term (though the long-term positive psychological impacts of public architecture still lack empirical studies). Still, public architecture can significantly influence one's search for meaning, purpose, and happiness. Through repeat visits and reoccurring social interactions, visitors are likely to experience positive interpersonal relationships facilitated by public open spaces – which, in turn, can lead to a more excellent quality of social interactions and increased well-being (Gehl and Rogers 2013). Other than interpersonal relationships, the relationship between people and public architecture can also be therapeutic (Peters et al. 2017).

People project emotions onto both organic and inorganic forms. They associate their subjective perceptions with the surroundings, including the built environment. A photograph of an 80s brick house might not be significant to some, but to others, it may remind them of their childhood home. As soon as they see such images, they will likely recall memories and sensitive experiences. This type of perception reflects how people can empathise with inorganic forms, a theory first proposed by Robert Vischer and then modified by Schützeichel about the likelihood of forming a sentimental bond between a subject and an object (Schützeichel 2013; Vischer et al. 1994).

1.2 Academic Background and Inspirations

In architectural studies, we discuss emotions and subjective experience less. My architectural education was more about practical skills and training for a future job. The program taught us how to design functional and efficient public infrastructure and housing, but how our design might subjectively impact people was discussed less frequently. In other words, even though the discipline of architecture often values a human-centric approach, it does not extend a similar emphasis on SWB, neighbourhood engagement, and social life in a community. During my studies in art curating and psychology, I continued to realise that architecture, especially public architecture, is more than a functional built project but also a form of community social service. It should cater to subjective experiences as well as practical functions.

I first encountered architecture and healing in a case study of Peter Zumthor's the Therme Vals (the Thermal Baths) in 2014 during my undergraduate study in architecture. It was a brief but insightful moment that revealed how public architecture could emphatically nurture well-being. I also learnt that public architecture has a lot of overlapping characteristics with site-specific art installations, which emphasise the expression of the connections between human bodies and space (Finnane et al. 2008; Puwar and Sharma 2012). Jane Rendell (2009), a prominent researcher and writer in architectural theory, advocated merging the boundaries of public art and architecture by emphasising subjective spatial experience. Rendell also examined the overlapping artistic expressions between sculptural architecture and public art installations. Her investigation of the architectural installation work of Katrin Bohm and Andreas Lang proposed an understanding of the "social occupations that produce it as a space" (2017, 180). This case study discussed how public art created at an architectural scale can promote the connectedness between people and places, which has supported one of the main objectives of this thesis.

Much of the existing research emphasising the potential impacts of public spaces or public realm engagement on SWB and happiness has focused on case studies in Europe and North America (Barbiano di Belgiojoso et al. 2022; Fry 2024; Card and Hepburn 2022). Although some existing guidelines in major Australian cities (Sydney, Melbourne, Brisbane, and Perth) include the significance of design for QoL and general well-being, they do not discuss the length of the relationship between specific design strategies and perceptions of SWB

(Brisbane City and Council 2023; City of Melbourne 2018; City of Sydney 2017; City of Perth 2024). In addition, the current urban public art strategies in major Australian cities need to include more discussion on how public art can be an integrated architectural design element and how to curate a pro-social spatial experience by presenting public architecture as art. The current practice and research gaps drew my attention to the need to conduct comparative case studies in Greater Sydney.

It was a timely moment to initiate a project like this. Researchers and practitioners across disciplines have discussed for decades how public open spaces are vital to physical well-being and mental health. The extensive deprivation of social interactions has brought more attention to the relationship between public spaces and the perceptions of SWB (Poortinga et al. 2024). A healing place is not necessarily *happy*; it should be empathetic and encourage people to pursue happiness (Atkinson et al. 2012). Providing a nurturing public environment is considered therapeutic and healing for human physiological and mental states (Barton et al. 2015).

This Ph.D. project has encouraged me to explore my interests in public art, architecture, and positive psychology together in a way that I could not imagine happening in other circumstances. By writing this thesis, I have been on a therapy journey myself. I have learnt to converse, interact, and care for others. I have learnt that public architecture can be *therapeutic*.

1.3 Research Questions and Objectives

This thesis explores the conceptualisation of public architecture through the lens of public art and environmental psychology. It discusses the potential impacts of public architecture design in promoting SWB in urban communities. The following diagram outlines a few key terms and their relationships, which are relevant to creating a new value system of public architecture practice (Figure 1).

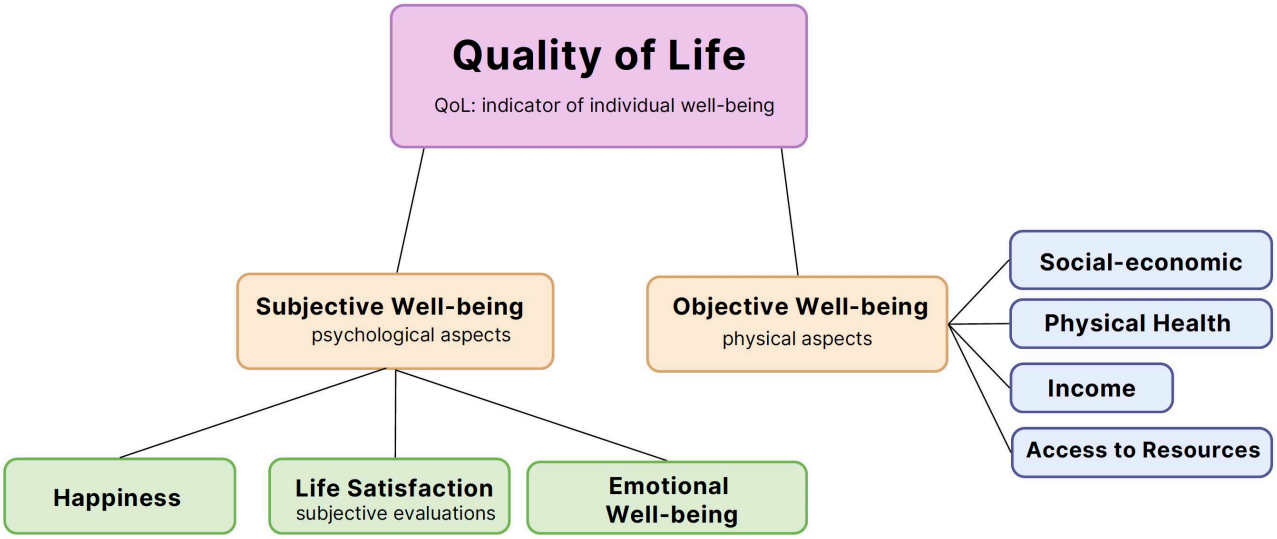

Figure 1 A network of key terms.

The following research proposes that public architecture contributes to promoting SWB and investigates how to curate positive social experiences in public open spaces. Relevant methods are developed to examine the potential outcomes of the following research questions:

1. What is the conceptualisation of public architecture?
2. What is the relationship between public architecture and SWB?
3. What are some key design strategies in public architecture to promote SWB at a neighbourhood scale?

These research questions are based on the following hypotheses:

1. Public architecture design can promote SWB through incidental comfort and positive social interactions.
2. Perceptions of SWB and subjective experiences in public open spaces relate to public architecture design strategies.
3. Curating public architecture as public art is a critical design strategy and can contribute to social resilience.

This thesis has developed the following objectives:

1. Examine and redefine the conceptualisation of public architecture in an urban built environment.

2. Establish a design framework for public architecture promoting positive social engagement and SWB.
3. Identify relevant concepts and initiatives across disciplines to develop a combined understanding regarding how public architecture could foster SWB as a social sustainability strategy.

This thesis aims to advocate a new value system for public architecture practice. It focuses on fostering communal life, positive experiences, and individual SWB at a neighbourhood scale.

1.4 Gaps and Opportunities

More existing research on promoting SWB with public architecture needs to be conducted using a cross-disciplinary approach. Many existing research studies only focus on the objective aspects of well-being with quantitative methods. The ones conducted using qualitative methods often offer insights into psychology-oriented perspectives, which are challenging to translate or reflect on in the practice of public architecture. Even though prestigious researchers like Jan Gehl and Jane Jacobs both discussed in length the principles of designing for well-being and urban social life, their work remained within the contributions of public art or positive psychology.

There are also gaps between public art curating and public architecture design. The recent literature shows that art curating is an essential relational practice rooted in social interactions facilitated by public space (Marstine and Kay 2021). However, limited research studies and existing design guidelines within major Australian cities apply curatorial strategies to promote positive social interactions in urban placemaking or public realm engagement projects (Matthews and Gadaloff 2022; Salzman and Yerace 2018). Instead, the public art strategies in the four case studies of this thesis focus on including public art to present cultural identities. Indeed, public art can be essential in cultural representations, a common practice in building community connections and public engagement. However, the four case studies in this thesis have yet to discuss the contributions of public art as part of the public architecture design scheme in promoting positive social relationships.

The core research questions of this thesis involve sensitising concepts from a social representation perspective, aiming to explore nuances in understanding different

conceptualisations rather than the definitive concepts (Liu 2004). Existing studies including Bouayed and Abdelmoula (2023) and Rehn et al. (2022) have expressed focuses on the relationship between public architecture and mental health, but there is limited recent research in Australia investigates SWB-oriented public architecture design with interdisciplinary perspectives (Marans and Stimson 2024). This thesis did not aim to look for a solution or a definitive result but to advocate for a sensitising concept that can potentially inform future research.

1.5 Methodology

Psychologists and public health professionals have developed various scales to measure SWB. The Australian Centre of Quality of Life indicated that most questions are about self-perceived life satisfaction and the ability to categorise one's emotions and feelings (ACQUL 2017).

These questions ask participants to quantify their subjective feelings and abstract perceptions, such as personal achievements and community engagement, on a scale from 0 to 10. There have been concerns about the validity of these self-reporting quantitative indexes (Krueger and Stone 2014). The global policy platform Organisation for Economic Co-operation and Development (OECD) has also developed a series of well-being indexes to measure the QoL in seven categories (OECD 2015). Cummins (2018) proposed certain set points or thresholds to demonstrate the perceptions of SWB.

However, many existing studies using these indexes rely on self-reporting and oversimplified subjective experiences on a numerical scale. Many scales that measure SWB in contemporary literature adopt a 10-choice (1 to 10) or 11-choice (0 to 10) end-defined scale to ask the participants to self-evaluate their emotions and subjective experiences and convert them into a number (Bhatnagar 2023; Zadworna et al. 2023). The questionnaires often do not elaborate on subjective indicators like "excellent", "satisfied", or "happy", which leads to potential issues in validity (Cummins 2018, 41–42). In contrast with quantitative methods, qualitative methods like ethnographic observations and interviews can provide insights into participants' perceptions and experiences in a fuller and deeper social context (Fry 2024).

The literature above and the reviewed literature in Chapter 2 indicate that further interpretation of the relationship between public architecture and SWB using qualitative methods can be crucial in providing an in-depth understanding of the topic based on ethnographic data. Thus, this thesis proposes a two-stage qualitative approach to studying how public architecture can promote SWB at a neighbourhood scale (Chapter 3.3). This thesis's interdisciplinary perspective called for integrating mixed methods to answer the research questions. The third and fourth chapters will discuss these methods and case studies in more detail.

The first stage of this research is naturalistic observation in four Sydney case studies, which aims to collect real-time data on social interactions that occur naturally in the selected sites, with minimal interference in the activities of the individuals (Mehl 2017). Naturalistic observation is one of the qualitative research methods in social sciences focusing on data collection when the researchers do not interact with the participants (Demiray et al. 2019). Observing people and their interactions in a natural setting reduces the issues that come with self-reporting surveys or questionnaires and can allow researchers to develop in-depth insights into social behaviours (Mehl 2017). Case studies with multiple locations can provide more confidence in data collection and analysis in various categories, which is common in public health research (Dinour et al. 2017). Conducting naturalistic observations in comparative case studies can be beneficial to investigate spatial, visual, and social data at the same time, which is crucial to establish a preliminary analysis on site characteristics and provide a context for understanding the relationship between public architecture and individual SWB (Chapter 3.4).

The second stage of the qualitative study is semi-structured interviews, a popular qualitative method for studying public health. Conventional quantitative methods are unsuitable for collecting data regarding SWB (Oman 2021). Self-reflection questions in quantitative questionnaires can often prevent participants from reporting genuine opinions on subjective issues since the questions are fixed, and participants often anticipate what the researcher wants to hear (Oman 2021). Both Oman (2021) and Cieslik (2017) are recent studies that used semi-structured interviews to research happiness and well-being. They indicate that research methods on happiness and SWB should focus on investigating the bodily experience of one's social life, as evolved from Bourdieu's ethnographical practices that were popular with social scientists (Harker et al.1990). This research study builds upon the framework

from key literature and adapts the qualitative methods of studying SWB. Semi-structured interviews allow the participants to elaborate on their experiences and feelings with minimised interference from the researcher. Qualitative interviews can also benefit the study by sensitising the "consequences of human fallibilities" with an in-depth interpretation of SWB (Cieslik 2021, 95).

1.6 Originality and Contributions

Designing for well-being and mental health is not a new concept. Environmental psychology is a discipline dedicated to studying the relationship between the built environment and psychological impacts. Existing literature and practices in public realm projects and placemaking have also discussed the contributions of spatial design on mental well-being (Cain and Petermans 2020; Roe and McCay 2021; Rehn et al. 2022). However, the cross-interdisciplinary perspective in this thesis demonstrates originality in promoting well-being in public spaces by combining art curating and public architecture design. In recent years, it has become more common for design professionals to work with public art curators to deliver participatory-oriented public space design. However, it is a niche practice to consider the contributions of mental health and positive psychology as part of the design framework. Indeed, many design prompts have used words like "neighbourhood engagement" and "encouraging social connections" in the recent projects (ASPECT Studios 2024; Studio Hollenstein 2024). However, a comprehensive design framework combining art curating and positive psychology is a refreshing attempt to respond to a well-being-oriented public architecture practice.

1.7 Thesis Outline

This thesis collected and analysed data from September 2021 to May 2024, with a writing period from November 2021 to November 2024. This thesis commences with a thematic review of the literature surrounding well-being-oriented public architecture design. The review includes crucial literature that has influenced the research within this Ph.D. and serves to contextualise the Ph.D. findings within the recent academic literature and architecture practice. The thesis consists of five parts in nine chapters (Figure 2). The first part is the first chapter, which introduces the research proposal and objectives and provides relevant context. The second part is the second chapter, a thematic literature review that builds a theoretical

framework for methodology, fieldwork, and data analysis. The third part discusses methodology in two chapters, with one chapter dedicated to case study selection and how each case study is relevant to answering the research questions. The fourth part consists of findings and discussions divided into three groups of themes. The last part is a two-chapter synthesis and discussion of future opportunities.

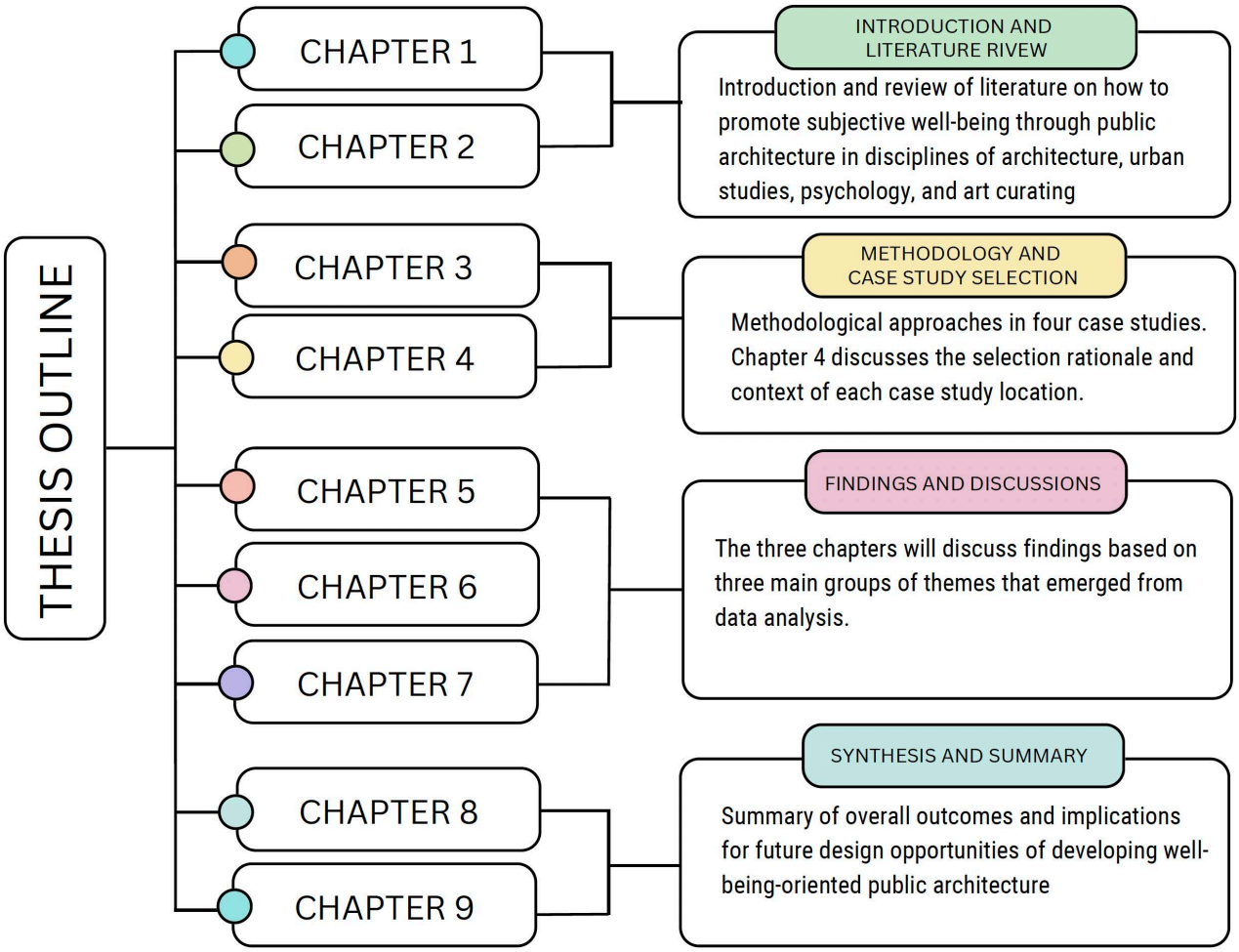

Figure 2 Thesis outline diagram.

2. Literature Review

Preamble: The introduction, methodology, and some parts of the thematic review in this chapter were included in my previous publication, "Public Architecture as Therapy – a Literature Review". It was published as a conference proceeding under the e-book *Repurposing Places for Social and Environmental Resilience*, 178–179.[2] I am the sole author of this publication.

Introduction

For many people, the word "therapy" comes with negative connotations. "Therapy" may sound clinical, implying the sense that those seeking therapy are somehow "abnormal" (Owen et al. 2013, 859). However, the COVID-19 global pandemic has brought attention to therapy's positive social derivations beyond the clinical context. Vulnerable groups started to seek mental health help on social media platforms, and many publicly expressed their negative experience with social isolation (Bak et al. 2023). At the same time, extended lockdown periods across the globe during COVID-19 also prompted renewed reflection on the therapeutic effects of urban open spaces. This growing awareness of subjective contributions in urban social life has carried on post-COVID and led to a recent focus on the research and practice of public architecture. Research literature has long investigated the relationship between mental health and architecture (Marcus and Sachs 2013). Research on healthcare architecture has demonstrated the positive contributions of architecture in promoting psychological well-being (Barrett et al. 2022; Bouayed and Abdelmoula 2023). Recent developments in research and practice have shown interest in promoting psychological well-being beyond healthcare institutions and studied sociality in urban public spaces (Schebella et al. 2019). The following thematic literature review explores the relationship between placemaking and SWB in architecture, art curating, and positive psychology. It provides a way of thinking about the links between public architecture and mental health in the post-pandemic context.

[2] Edited by Anastasia Karandinou, 2023, ISBN (eBook): 9781739268107

2.1 Methodology

The thematic review of literature critically explores how public architecture could promote SWB in urban public spaces. The first objective of the research was to conduct a literature search to identify the scope and potential research opportunities using a conceptual matrix (see Figure 3 below). The review continues with the following steps:

1. Focus on the research topics based on the research questions proposed in Chapter 1.3 Research Questions and Objectives.
2. Develop a search strategy and search terms for each topic.
3. Perform the literature search within relevant databases.
4. Review, synthesise, and discuss.

2.1.1 Focus on the Research Topics

The research questions were formed based on a theoretical framework of three critical disciplines and research topics that share relevant to two of the three disciplines (

Figure 3). These relevant areas inform the scope of this literature review.

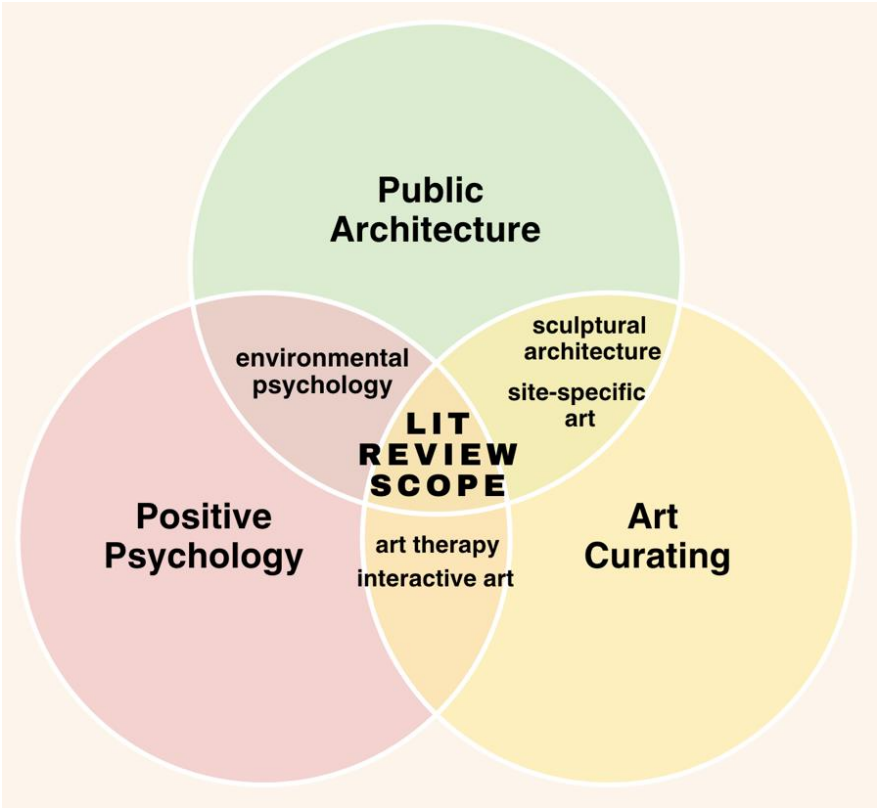

Figure 3 A theoretical framework diagram concerning three critical disciplines in this thesis.

A preliminary literature search was conducted on the University of Sydney databases, which involved a primary and a secondary conceptual grid in structuring scope and thematic topics (Table 1). This preliminary search revealed a large volume of literature on relevant areas in architectural theories, urban studies, positive psychology, environmental psychology, and public art curating. However, the conceptualisation of public architecture within the literature searches needs to be better defined. It often overlaps with the concept of civic architecture, which aims to provide civic functions in a common area accessible by the general public (Glazer and Lilla 1987). It is challenging to find clear links highlighting how public architecture incorporates psychology and curating to initiate a series of social engagements and potential long-term contributions to SWB. The prolonged impacts of the global COVID-19 pandemic also challenged architects and designers to re-orient their design thinking and adapt to the changing social environment after the lockdown periods. This review then poses the following four questions, seeking to answer each as a foundation for the research in this thesis:

1. What is the conceptualisation of public architecture in this thesis?
2. What is SWB, and why is it important in this thesis?
3. What is the relationship between public architecture and SWB?
4. What are the critical factors for public architecture in promoting SWB?

2.1.2 Developing Search Terms

Reviewing titles and abstracts from scoping searches informed critical terms for use in the database searches. Nine groups of word chains were determined, resulting in nine search strings that could be combined into a complete search term and tested in five databases across three disciplines. The key terms in the various word groups are arranged in a concept grid shown in Table 1.

Table 1 Essential Concept Grid: key terms tested for search inclusion and final search strings chosen as search terms.

	Key Concepts	Facet of Key Concept (Word Group)	Key Words and Related Terms Tested
Primary concepts	public architecture	terminology	public architecture, urban architecture, urban design, public space design, architecture design

	architecture and subjective well-being	research question	architecture and mental health, architecture and mental well-being, urban design and mental health, positive mental influences of architecture
	promoting positive psychology at a neighbourhood scale	related fields	subjective well-being and public social relationships, coping with loneliness, stress, and anxiety, psychological impacts of neighbourhood and community engagement
Secondary Concepts	curating public architecture	further explanation of terminology	contemporary curatorship, curating architecture, curating public space, urban public space curatorial practice
	environmental psychology focuses on social engagement	conditions	urban public space engagement, participatory design, architecture, and social engagement, built environment and neighbourhood engagement, built environment and community evolvement
	How do people perceive subjective well-being when they visit public architecture?	focus group	perceptions of subjective well-being of residents and users in urban neighbourhoods in the Greater Sydney area, social engagement strategies in post-pandemic public spaces
Final Search terms	Abstract:	(Public architecture) AND (public open space);	
	AND		
	Search all fields:	(Positive psychology) AND (subjective well-being); (urban public spaces) OR (urban public realms) AND (subjective well-being); (positive psychology) OR (subjective well-being) OR (psychological impacts) OR (coping mechanism) AND (post-COVID19) OR (post-pandemic) AND (urban neighbourhoods); (contemporary curatorship) AND (public architecture) OR (urban public space); (environmental psychology) AND (public architecture) OR (urban public space); (subjective well-being) AND (urban public space) AND (social engagement)	

2.1.3 Search Results and Synthesis

The final search term was entered into five databases, and the University of Sydney Libraries used filters to return 709 initial results (see a summary of the database search in Appendix A). The databases used are: 1) ProQuest Central; 2) Art Source via Ebsco; 3) JSTOR; 4) Scopus; 5) ScienceDirect. An English-based language filter and a publication date filter

between 1990 and 2023 were applied to locate more relevant literature on current issues. Filters were also used in all databases to limit results to peer-reviewed journals. Following the initial search, a screening process removed irrelevant studies based on key terms in titles and abstracts, generating a more focused volume of literature for further assessment.

All remaining results were exported into Mendeley Reference Manager and screened as full text for relevance. In the shortlisting process, journals focused on theory and criticism, case studies, and literature reviews were prioritised. Papers unrelated to the fundamental concepts developed in Table 1 were excluded. 37 peer-reviewed journal articles remained, and these form the basis of the review presented in the rest of this chapter (see the summary and thematic breakdowns of reviewed literature in Appendix B).

Following the search terms developed in Table 1, the reviewed literature has formed three thematic groups: 1) the potential positive impacts of promoting mental health and well-being with architecture and public spaces, 2) the merging boundary between public art and public architecture, 3) curating public architecture as a form of relational practice to promote social connections.

Among 18 journal articles with thematic breakdowns relevant to architecture and mental health, 17 emphasised that incorporating architecture in promoting mental health has become an urgent and critical issue for architects and public health professionals. 24 of 37 reviewed journals discussed how architecture and urban environments could promote mental well-being post-COVID-19. The high percentage of database search results indicates the timely issue and importance of addressing mental well-being in this unprecedented social climate. Another two discussed environmental health and architecture while at the same time including architectural contributions under environmental psychology (Fleckney and Bentley 2021; Joye 2007). Six relevant journal articles discussed the importance of landscape and greenery in promoting mental well-being after the pandemic (Ahmadpoor and Shahab 2021; Sia et al. 2022; Xie et al. 2020; Yang et al. 2023; Moglia et al. 2021). Four argued about the impacts on urban environments and the shifting relationship between people and cities during the pandemic (Adey et al. 2021; Alraouf 2021; Bil et al. 2021; Orii et al. 2020). Another five journals discussed loneliness during pandemic lockdowns and how isolation could have adverse effects on mental health (John et al. 2021; Labrague et al.2021; Millán-Jiménez et al. 2021; Peters and Halleran 2020; Waters et al. 2022).

Eight out of the 37 reviewed journals discussed the expanding boundaries of architecture and proposed an interdisciplinary approach to promote social engagement and interpersonal relations. Five proposed a curatorial approach and discussed the critical connection between art and architecture (Bishop 2004; Kampelmann et al. 2018; Searing 2006; Rendell 2009; Widrich 2016). Another two pieces of literature discussed the collaboration of urban design and architecture in activating social engagement within urban environments (Palich and Edmonds 2013; Donovan 2016). Rendell argued the inherent connection between art and architecture that "transdisciplinary operations" are significant to minimise "dispersed and fragmented" research (Rendell 2009, 16).

Bishop (2004) reviewed a series of site-specific installations and argued that the relationship between art and its trigger on participation is not new. Treating public art as a "social form" promoting positive human relationships could be an innovative approach to art curating (Bishop 2004, 62). Two journals discussed the practice of architecture curating and how a curatorial perspective could facilitate an interaction-prompt relationship between people and architecture (Searing 2006; Widrich 2016). Another piece of literature proposed a familiar series of language and terminologies for interdisciplinary discussion about the quality of urban public space and architecture (Schreurs 2007).

The pertinent disciplines of the reviewed literature have shown interdisciplinary connections across these areas: architecture, urban studies, art curating, public health, and psychology, and 14 publications have presented collaborations across two or more disciplines (please refer to Appendix B for the main disciplines of each review literature). Among 37 reviewed literatures, 22 are relevant to the discipline of urban studies with research topics focused on urban open spaces and public realm engagement (Figure 4). The prevalence of reviewed literature under the discipline of urban studies also reveals that these recent studies consider public architecture as an integral part of the urban social environment.

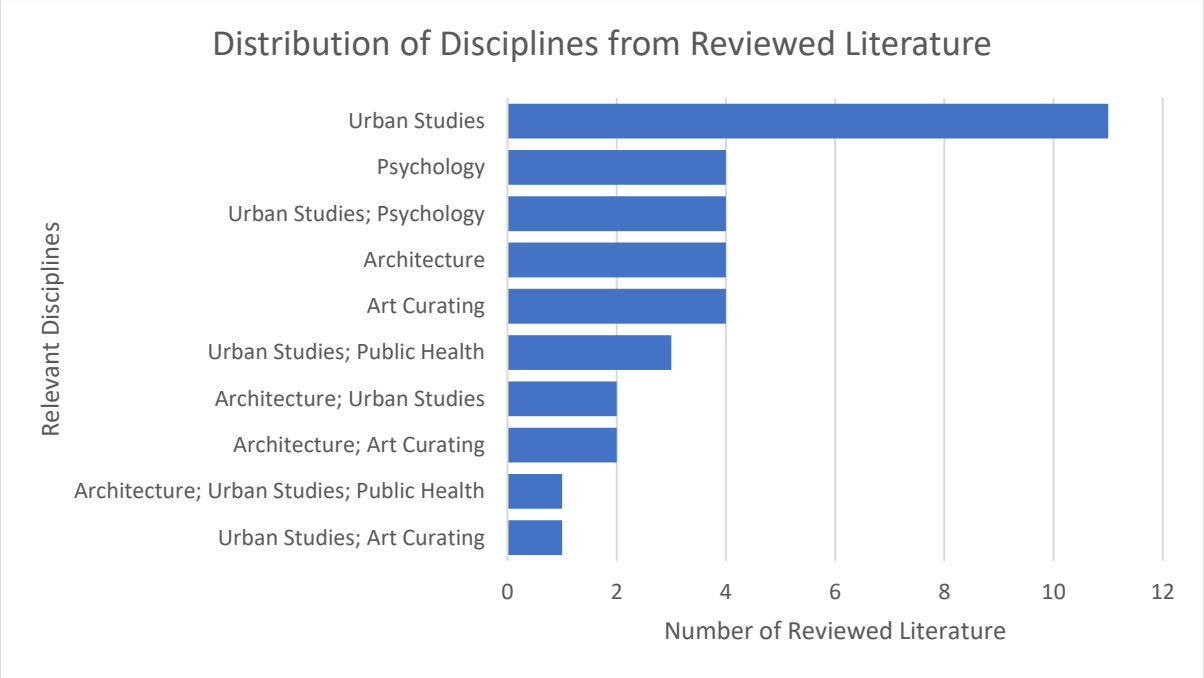

Figure 4 Distribution of Disciplines from Reviewed Literature.

2.2 Thematic Review of Literature

This section discusses the key themes that emerged from the reviewed literature. It aims to build a theoretical framework for the four research questions and a reference to apply in methodology and research design. The key themes include:

The conceptualisation of public architecture was investigated in relevant research areas, followed by sub-themes in 1) architecture and placemaking, 2) architecture in urban open spaces, and 3) architecture as public art. These three themes aimed to understand:

1. The relevant conceptualisation of SWB to this thesis.
2. The healing and therapeutic effects of public architecture.
3. The positive impacts of spending time in public space and SWB.
4. An emerging understanding of well-being-oriented public architecture after COVID-19.

2.2.1 Conceptualising Public Architecture

Public architecture is not a new term – many authors have proposed it in literature and applied it to various projects. However, the definition and annotation of public architecture have varied over time and in the reviewed literature. The standard annotation across the reviewed journal articles is that public architecture is associated with an urban public place and provides a crucial interaction between people and their living environment (Abu-Dayyeh

2018; Crewe 2001). The term public architecture is often used interchangeably with civic architecture. However, there is hardly a universal definition of what public architecture should be across research literature and practice. One core value of public architecture summarises architectural practices in *public space*, which all citizens can access without barriers. As Madanipour (2023) wrote, the meaning of public space changes depending on the social, political, and economic contexts. The conceptualisation of public architecture also changes according to the social environment. The recent conceptualisation was highly influenced by the global pandemic, which has prompted different ways of thinking in public architecture practice (Yaneva 2023). Design professionals have started exploring new design frameworks for post-pandemic public architecture, focusing on togetherness and positive social experiences (Buttazzoni and Minaker 2023; Yaneva 2023).

2.2.1.1 Public Architecture as a Spatial Practice in the Public Realm

Shirvani (1990) proposed that public architecture demonstrates how architects could engage more significantly with public interests rather than designing corporate symbolism and fragmented urban fabric under real estate developers. A group of architects and designers have been practising "public realm engagement" projects since the 2010s, parallel to Shirvani's ideology. This type of project emphasises social engagement and participatory activities throughout the design process. St Hill (2019, 6) interviewed 12 groups of architects and designers who considered "public realm engagement projects" not as pavilions but "a cathartic process" fostering collective engagement. They also agreed that such projects should not be refined within one discipline (St Hill 2019, 10). Public architecture conceptualises this type of project and, at the same time, emphasises participatory-based spatial practice.

Another aspect of conceptualising public architecture with an emphasis on promoting public engagement is considering it as a "spatial practice" that "engages broadly with how architecture is enmeshed in practices of power" (Rendell 2009, 253). It represents the initiative to design an architectural space beyond the essential functions and uses. More importantly, it goes beyond the general design process that considers people as users. Rendell built upon this concept and proposed "critical spatial practice", a space interpreted by both art and architecture (Rendell 2009, 11). It employs an interdisciplinary approach to understanding the type of spatial practice that expands from the conventional sense of architectural practice, which is dedicated to a space and the relationship between people and

such space. Rendell's idea aligns with how Shirvani (1990) described an urban public space as an open outdoor space that does not include civic projects or institutions. He also proposed that it is necessary to differentiate public architecture from civic architecture, as it is not a form of architectural project and indicates more than civic functions (Shirvani 1990).

Graham (2006, 248) argued that public architecture "must both serve and give architectural expression to functions that the members of a civic society as such can appropriate" while stating that public architecture is limited to the built environment projects. Five other groups of authors emphasised the theoretical framework of engaging urban public spaces without assigning terminologies related to *public architecture* (Abu-Dayyeh et al. 2004; Alraouf 2021; Campos 2021; Moglia et al. 2021;Orii et al. 2020).

2.2.1.2 Public Architecture as Placemaking

Public architecture is often more than a built environment project. Its embedded social functions mostly overlap with the contemporary practice of placemaking, which Jacobs (2012) describes as a place for both safety and sociability. Placemaking often occupies an urban site, incorporating elements with both functional and aesthetic expression to promote social interactions (Furtado and Payne 2023). Public architecture acts as a design device to stimulate social activities when associated as a part or type of placemaking, usually within a neighbourhood or street-block area (Talen et al. 2015). It emphasises the social responses from its immediate urban-social community. It creates a social space for the neighbourhood, inviting interaction without barriers. Crewe (2001), Siu et al. (2014) and Talen et al. (2015) have conducted case studies in the U.S. and Hong Kong, indicating that placemaking projects often involve collaboration between architectural elements and landscape. They explore beyond traditional public spaces like parks and civic squares and sometimes focus on underutilised spaces like street fronts and pedestrian footbridges (Figure 5).

Figure 5 Streetscape conceptual design at Santa Fe Art District, Denver, Colorado, U.S, 2015. Note: This district was mentioned as a "great neighbourhood placemaking" case study in Talen et al. (2015). Source: Denver Art District (2015).

Public architecture aims to engage in critical or aesthetic reasoning, focusing on interpersonal relationships (Winters 2007). It shares specific characteristics with urban architecture regarding the urban engagement initiative and design-driven spatial strategies. Still, it is more adaptive to evolving social needs. Public architecture can be used as an umbrella term for relating concepts like "placemaking", "urban architecture", "urban place regeneration", and "civic engagement" (McVicar 2020; Rosso et al. 2022; Kim et al. 2020; Matsuoka and Kaplan 2008).

2.2.1.3 Public Architecture as Public Art

One distinctive characteristic of public architecture revealed by this literature review is how public architecture cooperates with the contemporary curatorial practice of "performative curation", which offers a pathway toward a therapeutic design framework with interdisciplinary thinking (Watson 2021, 23). Performative curation demonstrates an emerging curatorial approach toward architecture and design originating at the 2018 Venice

Biennale (Watson 2021, 25). Watson argued that the architectural pavilions transcended themselves beyond architectural replicas into "a layered mise-en-scène with an intent to reveal over time the ideas and process that resulted in this piece of architecture" (Watson 2021, 56). "Performative curation" encourages curators to embrace architecture as a performative element and an integral part of the core conceptualisation of a curatorial project, which then opens possibilities for a sensorial relationship with architecture long after the temporary display (Watson 2021, 57). Watson (2021) also discussed how exhibition spaces allow curators to "activate" the public interaction and engagement environment. Galleries and museums are civic institutions with expected public functions contributing to "societal good" (Watson 2021, 3). From the International Exposition to the MoMA PS1 annual commission, prestigious architects like Mies van de Rohe and Daniel Libeskind have experimented with ideology in architectural expression. The spatial practice involves architects contemplating new ideas and is generally referred to as pavilions or architectural pavilions (van Schaik and Watson 2015). Architectural pavilions first started as large-scale, temporary structures presented in international "expos" (short for expositions), beginning with Ludwig Mies van der Rohe's Germany pavilion at the 1929 Barcelona International Exposition (Watson 2021, 32). Architectural pavilions are 1:1 scale display structure testing new modes of design expression and experimentation (Watson 2021, 33).

Blau (2010, 22) also discussed how public architecture can be a form of art and express its aesthetic values through its form. Blau (2010, 24–28) analysed the practice of SANAA, a Japanese architecture firm acclaimed for its curatorial approach to public architecture design. This case study also proposed that sculptural architecture is more than a temporary pavilion or installation that is part of an art exhibition; it is a long-term site-specific project constantly reflecting "the floating identity of materials and space" (Blau 2010, 28).

While Waston and Blau examined the contemporary practice of public architecture as art, their work still considered sculptural architecture a sub-genre of public art within one building and one site. Kampelmann et al. (2018) proposed that curatorial techniques can also be applied to urban planning and include urban spaces as artefacts.

2.2.1.4 Summary of the Definition of Public Architecture

2.2.1 has summarised three themes in conceptualising public architecture among the reviewed literature:

a. As a public realm spatial practice.
b. As a form of placemaking.
c. As a form of public art.

The literature above has presented various perspectives on public architecture. Yet, the three key themes and related literature have indicated that design strategies involving architecture and open spaces can promote social engagement, interpersonal interaction, and interaction between people and space. While these various perspectives on public architecture highlight its social dimension, examining how architectural spaces can specifically contribute to psychological well-being and positive social experiences remains necessary. This connection between architecture and well-being has become increasingly relevant with the emergence of positive psychology as a field of study. The following section summarises key literature on understanding public architecture through the lens of positive psychology, a discipline dedicated to studying SWB.

2.2.2 Subjective Well-being – A Multifaceted Construct

In the past few decades, positive psychology emerged as a new area of psychology. It focuses on SWB and positive sensitivity in social life (Seligman 2011). SWB has developed as terminology to describe positive emotions and experiences at both individual and social levels.

There is a growing understanding of the significance of well-being in social life (Cain and Petermans 2020). In 2011, the OECD (2020) launched a pioneering guideline, the "Better Life Index," listing SWB and social connections (or "Life Satisfaction" as shown in the index) as essential factors in society's progress.

Given that the initial concept of well-being dates from ancient Greece and there are continuous interpretations across various disciplines, it is challenging to reach a consensus on the conceptualisation of well-being. Cain and Petermans (2020, 5) suggested that the current researchers generally agree that well-being contains objective and subjective components. SWB is often used interchangeably with "happiness". SWB is usually measured by self-reporting evaluations of emotions, life satisfaction, and psychological well-being, while relevant measures of objective well-being mainly concern QoL, which objective and physical

indicators could measure (Veenhoven 2015; Schoeps et al. 2023). In this literature review, the contribution of designing for SWB aligns with the types of intervention Seligman (2011) and Ryff (1989, 1071) suggested that can foster long-term "human flourishing", such as positive emotions, positive social relationships, and a combination of those. Huppert and So (2013) proposed that psychological research focusing on human flourishing should fall under the term positive psychology as it emphasises the research on positive perceptions and relationships rather than the negative topics in other clinical psychology areas.

Since the last decade, there has been a rising focus on designing for well-being and happiness with architecture (Petermans and Nuyts 2016). Desmet and Pohlmeyer (2013) proposed a positive design framework as a generic conceptualisation of how design should contribute to human flourishing (Figure 6). Advocates of positive design believe that incorporating positive psychology in the design process could encourage people to engage in meaningful activities and contribute to some extent to public well-being (Cain and Petermans 2020). Environmental psychologists have developed similar interests in people-environment relations for the last 25 years, exploring how public buildings and infrastructures influence social relations (Després and Piché 2017). Despite the interdisciplinary aspects of environmental psychology imposing challenges on research methodologies and extended corporations across multiple disciplines, there are still potential research opportunities for implementing a positive design framework in urban built environments, especially in considering the input of public art and artistic expressions of architecture.

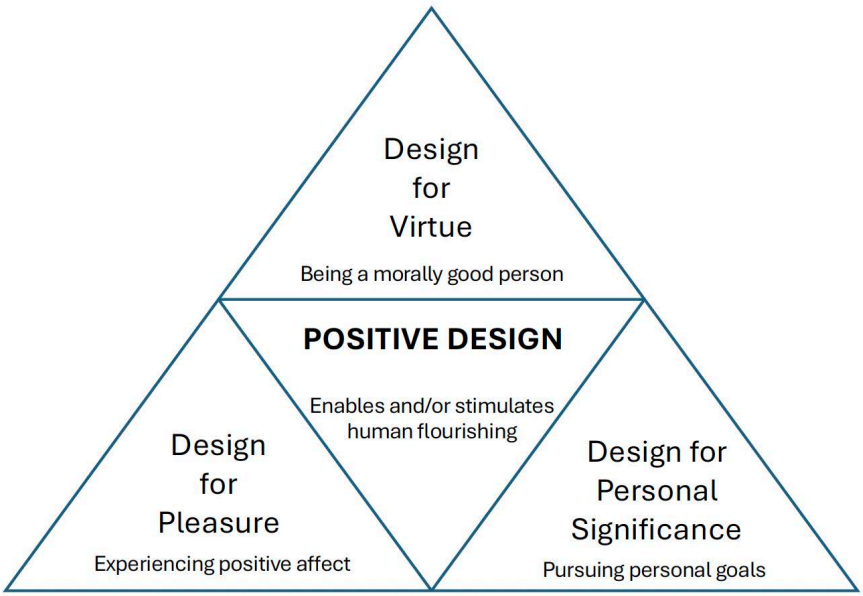

Figure 6 Positive design network proposed by Desmet and Pohlmeyer (2013), recreated by the author for readability.

2.2.3 Healing Effects of Public Architecture

The link between the built environment and health has been recognised for years, though historically, this understanding has primarily been applied to healthcare architecture in hospitals and rehabilitation centres (Marcus and Sachs 2013). However, this perspective has recently broadened, with urban planners and designers increasingly exploring how the built environment contributes to subjective and social well-being in broader urban contexts (Kent and Thompson 2014).

Several relevant concepts have emerged from this expanded understanding of architecture's healing potential. Environmental psychology research, exemplified by Cervinka et al. (2014) Austria-based case studies on therapeutic hospital gardens, demonstrates the need for interdisciplinary approaches when considering architecture's healing effects. Another significant concept is *biophilic architecture*, which posits that natural-based forms and organisations in architecture benefit human emotional and cognitive functioning (Joye 2007). Biophilic architecture evolved from environmental psychology and was first proposed by Kellert and Wilson, focusing on promoting the fascination and positive sensory experiences when interacting with nature (Barbiero 2024). Almusaed (2011) commented that it is crucial to differentiate biophilic architecture from "green buildings". A green building emphasises sustainable strategies on a construction level, while biophilic architecture emphasises the local microclimate on an architectural scale and improves human physical comfort (Almusaed 2011).

Building upon these two areas, Peters introduced the concept of "super-architecture", referring to a category of contemporary architecture that offers "positive benefits for both human well-being and the environment" (Peters 2017, 25). A critical aspect of super-architecture is that it expanded the conventional framework that only healthcare architecture should promote well-being. Instead, super-architecture represents how architecture positively associates living and the working environment in a broadened urban realm. Peters (2017) continued to review case studies in Copenhagen and Toronto, demonstrating how sustainable design strategies could provide healing and therapeutic experiences. Peters' concept of super architecture aligns with what this literature proposes is "public architecture" to some extent. Still, it falls under the paradigm of biophilic architecture and environmental psychology,

which focuses on landscape elements rather than the process of spatial practice (Marcus and Sachs 2013).

2.2.4 Perceiving SWB in Public Spaces

Furtado and Payne (2023) proposed a community-led project that combines public art with architecture to promote neighbourhood engagement and QoL. They claimed this project is an example of "creative placemaking", which uses participatory-based community art projects to promote positive social connections (2023, 311). This short-term community art initiative also encouraged residents from minorities to build connectedness and a sense of belonging by expressing their cultural identity in public art. This case study used semi-structured interviews and fieldwork observations to analyse cultural life and perceptions of SWB through the community-scale participatory art project (Furtado and Payne 2023).

On the other hand, Siu et al. (2014), Xu et al. (2022), and Orii et al. (2020) created a quantitative framework of existing indicators and methods to measure how SWB is perceived in urban public spaces. Orri et al. (2020) developed a well-being index with five indicators: community connectedness, safety and security, physical health, mental health, and diversity. This index was inspired by five existing indices popular in the research literature. Unlike other case studies included in this literature review, Siu et al. (2014) was the only literature that considered pedestrian bridges as a social gathering public space. Due to the unique geography and culture of Hong Kong, pedestrian bridges provide a vertical interactive space in a highly dense urban area. The informal setting of these bridges created a unique streetscape that "substantially encourages broad social engagement and communication between strangers" (Siu et al. 2014, 9). They also discussed the importance of fleeting interactions that happened exclusively on the pedestrian bridges. The site-specific experience demonstrates a "social inclusion" resulting from active participation and repeating routines (Siu et al. 2014, 11).

2.2.5 Placemaking in Post-COVID19 Urban Neighbourhoods

Since the global pandemic began in 2020, the social needs of communities and urban open spaces have drastically changed. The global pandemic has brought tremendous hardship to every country's public health, economy, and well-being (Bil et al. 2021). Addressing the social issues arising during and after the pandemic lockdowns is a pressing challenge. The world has experienced extensive social deprivation with social distancing, reduced physical

activities, and isolation. The unique post-pandemic social context has created unprecedented challenges for rebuilding social interaction and re-engaging with urban open space. The norm of social and physical distancing has continued to impact how people interact with urban open spaces, even after the pandemic lockdown periods, and it is likely to contribute to the increase in social isolation and loneliness (Smith and Lim 2020). In addition, living in urban neighbourhoods is believed to be a critical factor in the high prevalence of stress and anxiety in major OECD cities (Lederbogen et al. 2011). Matthews and Gadaloff (2022) was the only case study proposing public art as a key design strategy in urban placemaking, also one of the few reviewed literatures focusing on marginalised neighbourhoods and promoted community engagement with local culture and art.

The reviewed literature reflects on the growing recognition among research literature that connecting and re-connecting people to places through interdisciplinary collaborations have become significant in promoting positive social experiences and well-being in post-COVID 19 urban placemaking.

2.3 Summary: Conceptual Framework of Therapeutic Public Architecture

2.3.1 Synthesis of Findings and a Proposed Concept

This review synthesised the current state of research regarding the relationship between public architecture and SWB as a critical area of investigation in urban design and environmental psychology. While existing literature has extensively studied the built environment's impact on mental health and well-being, the specific role of public architecture in promoting SWB in urban neighbourhoods requires further theoretical development.

To reflect on the findings and analysis in this chapter, the author proposes the term *therapeutic public architecture*, which can be defined as an evidence-based public realm engagement design that applies positive psychology and curatorial techniques to promote restorative experiences and SWB.

The concept of therapeutic public architecture builds upon existing concepts in the reviewed literature, including therapeutic architecture (Mazuch and Stephen 2005), healing landscapes (Cervinka et al. 2014), and therapeutic parks (Trojanowska 2019).

2.3.2 Limitations and Methodological Considerations

The literature review has limitations: there was ambiguity in the key terms public architecture and SWB, which means the reviewed literature may represent some groups of mainstream understandings of the terminologies; only one-third of the reviewed literature focused on architectural theory and criticism, which might compromise the balance of interdisciplinarity; and since COVID-19 has lasting impacts on research and practice, there have been publications of new literature dedicated to discussing the long-term implications of the global pandemic not included in this review due to the limited production timeline of this thesis.

The reviewed literature in this Chapter has demonstrated a focus on marginalised and vulnerable groups including the aging population, people from socio-economic disadvantages, and people who suffered from COVID-19-related mental health conditions (Matthews and Gadaloff 2022; Xu et al. 2022; Thorpe 2021; Sepe 2021; Yang et al. 2023; Waters et al. 2022; Yang and Lo 2021). However, only 8 of 37 reviewed literature conducted studies in non-Western countries, and only three were in under-developed regions – Jordan, India, and the Middle East (Abu-Dayyeh and Johnston 2018; Alhusban et al. 2022; Dhar and Dash 2022).

2.3.3 Conclusion

One of the strengths of this review is the investigation of fragmented discussions across disciplines of architecture, urban studies, art curating, and psychology. The challenging social environment requires innovative thinking, and the focus on an interdisciplinary approach provides comprehensive perspectives from a wide range of resources.

The continuing discussion suggests new aspects to conceptualising SWB and public architecture in the post-pandemic context. The gaps in the reviewed literature on the relationship between public architecture and SWB also provide a research opportunity to observe the positive outcomes of a social-engagement framework of public architecture in empirical studies. A therapeutic design framework of public architecture could promote positive social interactions and SWB in urban communities in the long term. This new design framework could adapt to the changing social environment with a multidisciplinary approach, which provides a more comprehensive understanding of the emerging design challenge for promoting SWB at a neighbourhood scale.

3. Methodology

Introduction

This chapter discusses the qualitative approach of this thesis. A multidisciplinary theoretical framework was first developed based on the research questions and literature review results, leading to the rationale for applying mixed qualitative methods. The first part is a naturalistic observation of four case study sites to examine how the design of public architecture may influence social interactions in public open spaces. The second part is semi-structured interviews with users and practitioners to identify which aspects of public architecture are related to promoting perceptions of positive emotions and SWB. The third part is data analysis across the two data sets to understand how to deliver well-being-oriented design objectives in the current practice of public architecture.

The methodology has core interests in understanding the conceptualisation of public architecture and developing a design framework for public architecture that promotes SWB by encouraging positive social interactions and life satisfaction. The following chapter first reviews some critical literature and recent studies that inspired the principles of the three-part qualitative research study. Then, it discusses the data collection procedure and analysis for the research design. Finally, the chapter discusses the ethical considerations and limitations of the methods.

3.1 Research Theoretical Framework

This thesis investigates the positive impacts of public architecture and urban open space on interpersonal interactions. The literature review (Chapter 2, 17) identifies three core characteristics of well-being-oriented public architecture: 1) features design strategies that emphasise social connections; 2) applies interdisciplinary techniques, especially in social psychology and art curating, to promote lingering and repeat visits; 3) considers individual perceptions of comfort and enjoyment.

3.1.1 What Makes a Good Public Space?

Jan Gehl and his associates are some of the best-known urban researchers who study how to promote social connections and individual well-being in urban public spaces. In their publication *How to Study Public Life*, Gehl and Svarre created a systematic overview of

public social life and urban spaces (Gehl and Svarre 2013, 1). This literature becomes a critical foundation of the theoretical framework of this thesis. It also explains that the definition of public architecture should extend to the in-between spaces: street fronts, alleys, and other "left-over" public spaces in between buildings (Gehl and Svarre 2013, 3). American theorists and critics Jane Jacobs (1961, 62-64) and William H. Whyte (1980, 20) advocated those positive social connections are the key to designing a great city. Researchers have followed their ideology in developing systematic reviews and case studies for decades (Fitzpatrick 2016). Gehl was one of them (Gehl and Svarre 2013, 5). Gehl and his team have conducted decades of case studies in major cities across the globe, and the core foundation of each study was that cities cannot be "good" without people (Gehl and Svarre 2013, 13). Gehl's studies were considered influenced by psychologist Ingrid Gehl, who proposed a social sustainability network that has provided a reliable evaluation system in designing for well-being based on eight psychological needs (Peters 2016). Ingrid Gehl's framework also highlights the contributions of purposefulness and play, echoing some of the key aspects of experiencing SWB from a positive psychology perspective ((Burns 2009).

Beyond research literature, WHO and Australian Institute of Health and Welfare (AIHW) have also published guidelines to evaluate a place's public health and well-being based on social determinants, stating the impacts from income and social protection, education, employment, working life conditions, food insecurity, housing, early childhood development, social inclusion, structural conflict, and access to affordable health services (AIHW 2024; WHO 2025).

3.1.2 Well-being-oriented Placemaking in Sydney

Australia has many existing studies dedicated to promoting health and well-being in the public realm (Kent and Thompson 2019). Shields et al. analysed the data collected from the HILDA Survey (Household, Income, and Labour Dynamics) in Australia, which found social support and positive interactions at a neighbourhood scale are "significantly correlated with individual life satisfaction" (Shields et al. 2023, 421). In 2007, Gehl and associates conducted a detailed case study of urban social life in Sydney (Gehl and Svarre 2013). It included behaviour mapping and systematic observations of pedestrian activities (Gehl and Svarre 2013). This study concluded that the City of Sydney urgently needs a "walkable pedestrian network", which led to a six-year transformation project initiated by Gehl Architects (Gehl

and Svarre 2013, 137). The contributions of well-being-oriented urban planning have a long-term impact on the City of Sydney's urban design, and the Sustainable Sydney 2030 Strategies continued to follow and build upon Gehl's study (Kornberger et al. 2021).

These works provided a foundation for conducting case studies in Sydney to answer the research questions. The next chapter (4.3, 64) will discuss the rationale and context of each case study in detail.

3.1.3 Measuring SWB with Qualitative Methods

The research study's interdisciplinary theoretical framework builds upon the findings from the thematic literature review in Chapter 2.2 regarding the conceptualisation of SWB and how public architecture can contribute to it.

Martin Seligman founded positive psychology, the subfield of psychology dedicated to studying SWB, in 1998 (Seligman 2011, 333). SWB focuses on an individual's QoL (Seligman 2011, 334). The study of SWB and QoL are often related and have similar methods (Gullone and Cummins 2002). Due to the subjectivity and complexity of conceptualising SWB and QoL, the key indicators of these two terms sometimes vary in different evaluations and methods.

Within the context of positive psychology, Seligman (2002) proposed three domains of conventional understanding of SWB: 1) the pleasant life; 2) the engaging life; 3) the meaningful life. Seligman (2011) then proposed the PERMA (Positive Emotion, Engagement, Relationships, Meaning and Accomplishment) model to summarise the critical factors of SWB. One group of researchers, including Goodman, Disabato, Kashdan, and Kauffman, used this model and other psychological scales to study subjective data quantitatively (Seligman 2018). Other researchers like Cieslik (2017) proposed a multidisciplinary research framework featuring in-depth interviews as the primary technique. Cieslik suggested that the contemporary sociology approach in SWB and QoL research emphasised positive associations with work, leisure, health, and development (Cieslik 2017). Past literature suggests mixed-method research can provide a more comprehensive discussion of SWB indicators than quantitative methods (Weismayer 2021). Shankland et al. (2017) commented that the quantitative-only studies of SWB have three main limitations: 1) evaluating SWB with only quantitative data might be subject to "over-representation of the

researcher's perspective" instead of understanding the participants' perceptions; 2) quantitative methods tend to generalise and over-simplify the deep and complex meanings of happiness and SWB; 3) commonly used scales and indexes in measuring SWB do not reflect cultural backgrounds and tend to represent a Western-centric value. The qualitative methods in positive psychology focus on emotional experiences and subjective indicators of QoL (Sayer 2010), which are more relevant to the research objectives: to investigate the personal interpretations of users toward the case study projects and how these projects impact their experiences in positive social connections and emotions.

In fields of urban studies and social sciences, naturalistic observation is one of the foundational methods in qualitative studies, which often entailed "opportunity-based site selection" to observe people interact in "natural" settings (Angrosino 2016). Gehl and Svarre (2013) also applied naturalistic (direct) observation as the primary tool in their extensive research journey over fifty years. Observing people and their interactions in a natural setting reduces issues in self-reporting surveys or questionnaires, allowing researchers to develop in-depth insights into social behaviours. A multiple case study based on non-participant observation provides more confidence in data collection and analysis in various categories, which has gained recognition in recent studies regarding placemaking and well-being (Aletta and Xiao 2018). Unlike participant observations, naturalistic observations allow researchers to become "complete observers" that detach from the observed people, with the intention to maintain objectivity. Furthermore, it prevents the researcher's identity from being revealed throughout the process (Angrosino 2016, 22). This research aims to observe informal gatherings and incidental interactions in urban open spaces where becoming a "member" or active participant may be challenging. Thus, the non-obtrusive and non-reactive approach of naturalistic observations seems appropriate for the preliminary stage of the project.

Although both quantitative and qualitative methods are widely applied in studying well-being, conventional quantitative methods can be unsuitable for collecting contextual understanding regarding momentary SWB and experienced well-being (Oman 2021; White 2015). Self-reflection questions in quantitative questionnaires can often prevent participants from reporting genuine opinions on subjective issues since the questions are fixed, and participants usually "anticipate what the researcher wants to hear" (Oman 2021, 162). Both Oman (2021) and Cieslik (2021) are recent studies that used semi-structured interviews to research happiness and SWB. They indicate that research methods on happiness and SWB

should focus on investigating the bodily experience of one's social life, as proposed by Bourdieu (Harker et al. 1990). Semi-structured interviews allow the participants to elaborate on their experiences and feelings with minimised interference from the researcher. Qualitative interviews can also benefit the study by sensitising the "consequences of human fallibilities" with an in-depth interpretation of SWB (Cieslik 2021, 95).

3.1.4 Public Open Spaces and Perceptions of SWB

When evaluating the impacts of the built environment and design strategies on well-being, urban studies researchers including Gehl and Svarre (2013) and Oswald and Wu (2010) often design indexes or scales to examine the objective indicators of SWB. Gehl and Svarre developed the Twelve Urban Quality Criteria to summarise sensory-based public space design into three categories: protection, comfort, and enjoyment (Gehl and Svarre 2013, 40; Figure 7).

Badawy et al. (2024) formulated a collective framework and identified hundreds of indicators in six matrices for measuring happiness, well-being, and QoL. They concluded that the built form of public architecture and spatial design features can promote SWB at a community level. Further, Weijs-Perrée et al. (2019) focused on momentary perceptions of SWB in public spaces. They discussed how temporary and fleeting social encounters impact SWB for a short period and how the repetition of experiencing momentary SWB potentially promotes long-term SWB at a community scale.

These pivotal studies have provided an insightful foundation for formulating the observational template and interview questions.

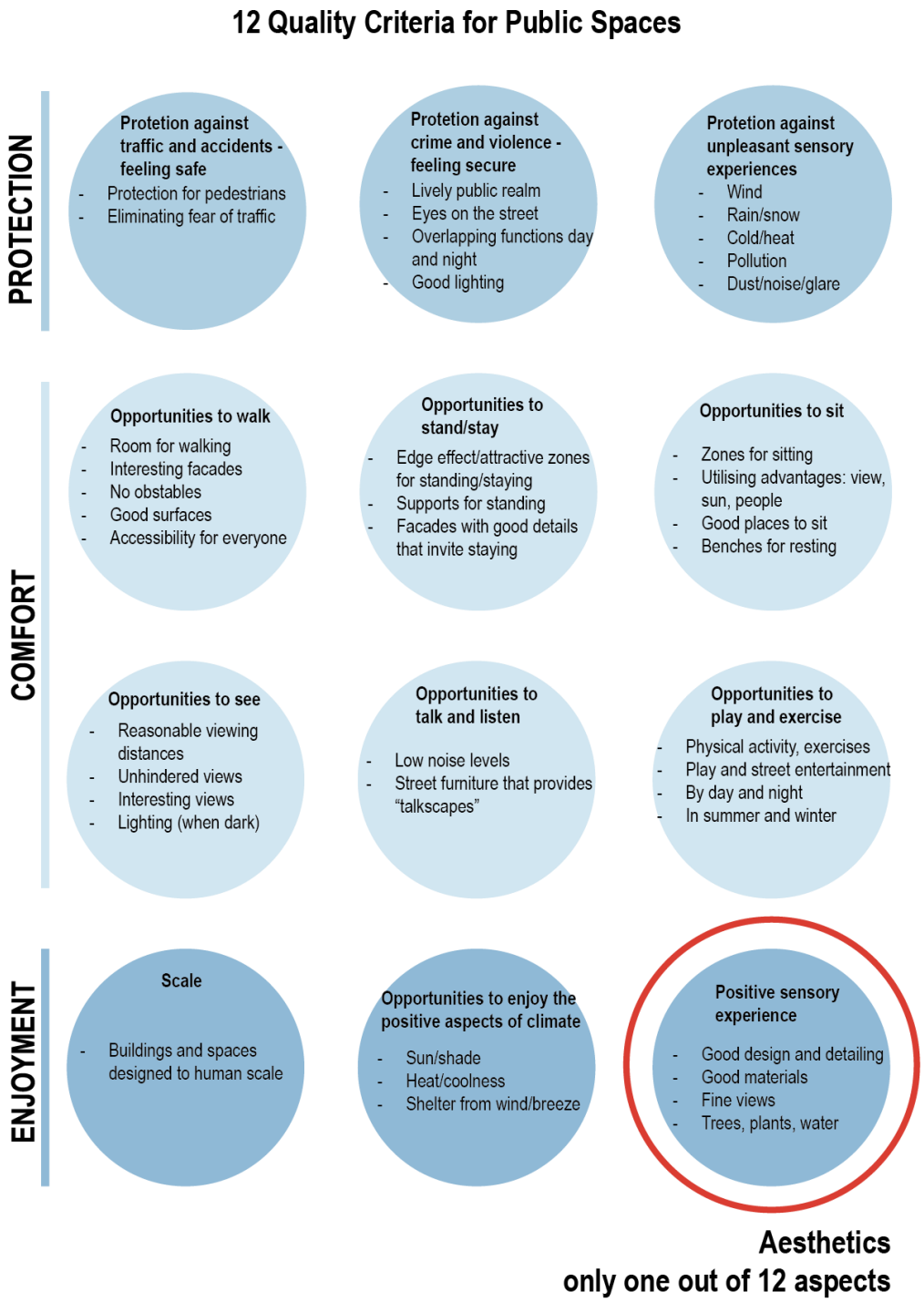

Figure 7 Quality Criteria for Public Spaces, Gehl and Svarre (2013). Recreated by the author for readability.

3.1.5 Highlights of the Theoretical Framework

1. The key to good public architecture is to promote social dynamics in the city.
2. Critical subjective indicators of SWB are comfort, enjoyment, and a sense of purpose (meaningfulness).

3. Positive social connections and subjective experiences can promote SWB at a neighbourhood or community scale.
4. Observations and interviews are effective methods to evaluate the design of public architecture and how it promotes SWB.

3.2 Research Questions and Objectives

This research was designed to explore the therapeutic effects of public architecture, with a particular focus on promoting SWB. The research study was based on the research questions proposed in Chapter 1:

1. What is the conceptualisation of public architecture?
2. What is the relationship between public architecture and SWB?
3. What are some key design strategies in public architecture to promote SWB at a neighbourhood scale?

While Chapter 2 focused on understanding the conceptualisation of public architecture by reviewing key literature and proposing a new term, therapeutic public architecture, the research design proposed in this chapter concentrated on research questions #2 and #3. The outcome of the methodology will evaluate public architecture's design features and help establish a design framework that further fosters SWB as a potential social sustainability strategy, which can then be incorporated into different urban environments.

3.3 Research Design

This section starts with an outline of the methodology and is followed by a discussion of each stage of the mixed-method research (Figure 8).

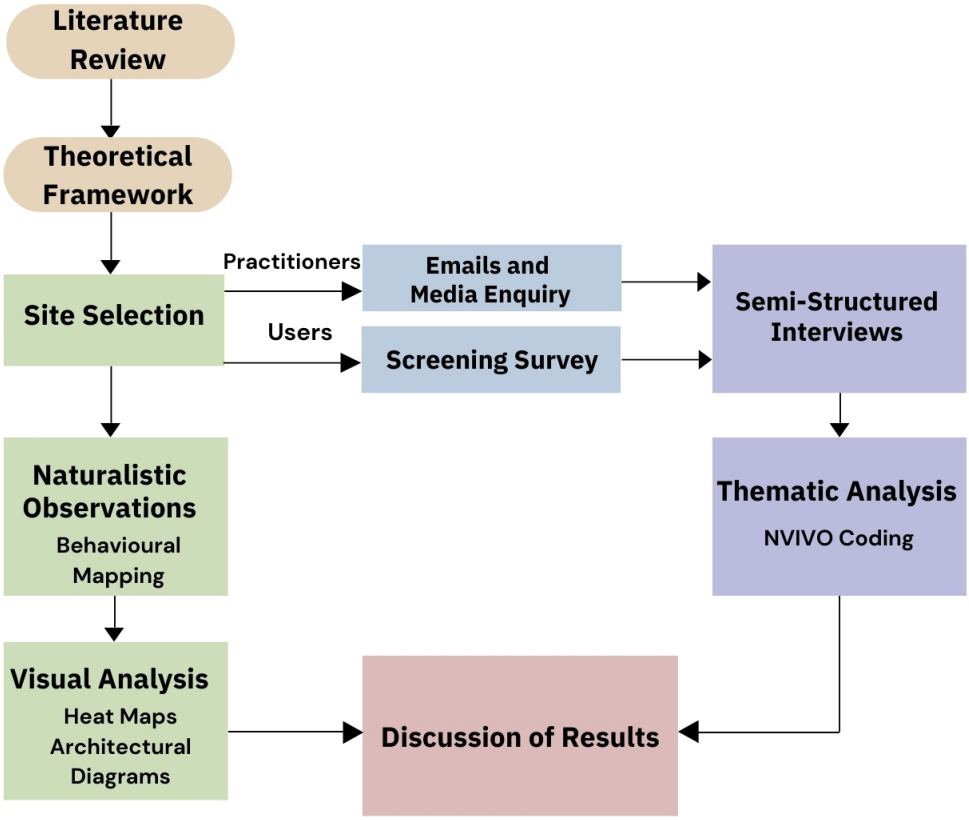

Figure 8 Research design and methods flowchart.

3.3.1 Measuring SWB with Qualitative Methods

The following research design builds upon the theoretical framework discussed in Chapter 3.1 and develops a three-part study to answer the research questions.

Part One: Naturalistic Observations

1. Construct a criterion for site selection to identify case study sites for naturalistic observations and semi-structured interviews.
2. Gather in-depth information about the selected sites, including demographics and cultural context, neighbourhood architecture styles, environmental contexts with solar studies, wind, rain, circulation, and connectivity analysis.
3. Review relevant well-being-oriented design strategies in planning documents.
4. Conduct naturalistic observation and collect data on the following categories (more details on 3.3.2.1): a) spatial data, b) visual data, and c) social data.
5. Data analysis with heat maps for social data and architectural diagrams for spatial and visual data.

Part Two – Semi-structured Interviews

1. Develop two sets of interview guidelines for users and practitioners.
2. Develop a participant screening survey for user participant selection; develop a recruitment email for practitioners.
3. Distribute the survey and analyse responses.
4. Contacts users and practitioners for interviews.
5. Collect and archive interview transcripts for thematic coding.
6. Analyse key themes and patterns from two rounds of coding.

Part Three – Synthesis of Findings

1. Compare and discuss two sets of analyses from Part One and Part Two.
2. Interpret the analysis and propose a SWB-oriented therapeutic public architecture design framework.

3.3.2 Part One: Naturalistic Observations

To investigate how public architecture design can contribute to SWB by promoting social interactions, I proposed a naturalistic and ethnographic method as the preliminary stage of fieldwork. Naturalistic observations allow researchers to observe social behaviours and interactions associated with an urban public space without disrupting those behaviours (Horgan et al., 2020). It is also frequently used by social scientists who focus on neighbourhood contexts with ecological, physical, and social aspects (Morrison et al. 2016). Naturalistic observations enable passive data collection, which is critical to understanding how activities are facilitated in the public realms, including incidental interactions with other people and self-reflection. These activities are deeply embedded in human well-being and flourishing, and observation can add to the knowledge of the type and design of public space that enables them. Participants must have a low awareness of the observation and assessment. In this case, consent was not sought for naturalistic observations because seeking approval detracts from the observation process since the observation practice has negligible risk and is unintrusive (Eubanks-Carter et al. 2012).

3.3.2.1 Site Selection Criteria

Before conducting naturalistic observations, a rationale was developed to select representative sites that demonstrate existing characteristics for observation (Chapter 4.3). To answer research question #3, “What are some key design strategies in public architecture to

promote SWB at a neighbourhood scale?", the case study locations should be recent public realm projects that have established design objectives on published documents that aim to promote positive social connections on a neighbourhood or community scale, and integrate design strategies to foster social sustainability as a long term goal. Another selection factor is that the chosen sites need to be at neighbourhood scale and within the metropolitan area of Sydney to establish contexts for comparative studies. The selected projects should be recently built public architecture or public realm projects demonstrating multidisciplinary collaboration across architecture, public art curating, and urban placemaking, with core design objectives to promote social interactions and perceptions of SWB at a neighbourhood scale. Their explicit intentions to promote positive social interactions and community well-being have made the selected sites representative case studies to examine the relationship between design intention and design experienced by users. After screening for case studies, four sites were selected: 1) Darling Square, 2) Green Square Plaza, 3) Westpac Place, and 4) One Parramatta Square, also known as 1PSQ (Table 2). The next chapter will explain the rationale for case study selection and the context of each case study site.

Table 2 Summary of key characteristics of the four case study sites.

Notes: The demographic data on population density and the most populated age group was based on the Australian Bureau of Statistics (ABS) census in 2021. Source: ABS (2021).

Characteristics	**Darling Square**	**Green Square Library and Plaza**	**Westpac Place**	**1PSQ**
Open area is free and accessible 24/7	Yes	Yes	Yes	Yes
Located in a residential neighbourhood	Yes	Yes	No	No
Located in the Central Business District	Yes	No	Yes	Yes
Population density at a precinct scale	17,117/sqkm	15,560/sqkm	5,876/sqkm	6,037/sqkm
Most populated age group	20 – 34	25 – 39	25 – 39	25 – 39

Public transportation within 10 minutes of walking[3]	Light rail; Bus; Train	Bus; Train; Metro	Light rail; Bus; Train	Bus; Train
Main functions for the case study	Community centre; public library; food and beverage	Town square; public library	Pocket park for nearby office buildings	Recreational area for the Western Sydney University (WSU)

3.3.2.2 Observation Period

The naturalistic observation periods were conducted on six different days at each site to achieve sufficient data collection. The chosen days were three weekdays and three weekends without any scheduled public events within the proximity to generate samples close to the natural state of activities occurring on sites. The six observational periods aim to cover different weather and natural lighting conditions. One sample period consists of two intervals (9 am–1 pm, 2–6 pm). Observational periods are designed to be at similar times to allow for comparison across observations, and the observational timeline for The Darling Exchange and Westpac Place ranged from 22 May 2023 to 10 January 2024, with 96 hours of on-site observations (48 hours in warmer days, and 48 hours in colder days). Green Square and 1PSQ each have 48 hours of observations (48 hours during warm seasons only), ranging from 14 November 2023 to 20 February 2024. Test-walking and pilot studies revealed that Darling Square and Westpac Place had significant differences in social interactions related to seasonal changes. Extended observations were conducted at these two sites, at the same time of the day but in different seasons, to ensure the relevant data was documented. In contrast, this difference was not observed in the other two sites. Observations also revealed that sufficient levels of social data were achieved after six observational periods (48 hours); thus, only data collected within those periods were analysed in the later chapters.

3.3.3 Part Two: Semi-structured Interview

This research stage aimed to complement and further interpret the preliminary data collected from naturalistic observations to understand the impacts of public architecture on SWB from the participants' perspectives.

[3] The walking radius to public transportation was established based on estimated routes from Google Maps.

3.3.3.1 Participant Groups

There were two groups of interview participants: users and practitioners. I conducted semi-structured interviews with these two groups to investigate the gaps and connections between the well-being-oriented design and the perceived subjective experience of visiting case study sites. “Users” are identified as people over 18 years old who have visited one case study site more than once in the past month or more than three times in the past five months. The participant needed to feel comfortable being interviewed in English and be able to give informed consent. There was no screening process for age, gender, or ethnicity. “Practitioners” are identified as professionals involved in any case study site’s architectural design, public realm design, art curating, or public art installations.

3.3.3.2 Development of Interview Guides

An interview guide was developed for each participant group based on their relevant expertise as assessed by the research questions (Appendix F; Appendix G). Each interview guide consists of seven open-ended questions and two or three follow-up questions. The sequence of questions was developed based on the Australian Unity Wellbeing Index, which evaluates psychological comfort and personal well-being (Cummins et al. 2003).

The questions for the user group aimed to collect contextual information, social interactions facilitated by case study sites, and subjective experiences relevant to perceptions of SWB (OECD 2015). Questions for the practitioner group aimed to identify each practitioner’s expertise, conceptual development, SWB-related strategies applied to case studies, and their comments on developing future SWB-oriented public architecture.

The order of questions asked during interviews was based on the answers, and flexible adjustments were made to respond to individual reactions.

3.3.3.3 Recruitment Process

For the user group, the author first posted the recruitment posts on social media platforms, including Instagram and Facebook groups, with hashtags relevant to the case study sites. The author also printed recruitment flyers and distributed them on-site. After completing interviews with the first few participants, the author recommended the participants forward the interview recruitment to their contacts. The recruitment posts and flyers had an embedded

REDCap-generated screening survey with seven questions to identify eligibility for inclusion (Appendix C). The last question on the survey asked the participants for their contact information, which led to a standardised email for scheduling an interview (Appendix D). The author drafted a recruitment email for the practitioner group and submitted it as a media enquiry on case study project websites. Once the organisation's media representative redirected them, the author emailed relevant personnel (Appendix E). The recruitment email was distributed directly on LinkedIn to relevant practitioners who did not disclose contact information on public websites but were available on LinkedIn. Finally, a "snowball" strategy was applied to both participant groups. Upon completing the interview, the author asked each participant to recommend another contact suitable for the research study.

3.3.3.4 Sample Size

All user screening surveys were recorded and archived on REDCap (further explained in Chapter 3.4.3). There were 72 survey entries, and 38 answered "Yes" to schedule an interview with contact information. 22 participants emailed the author, stating they would like to schedule an interview after seeing the recruitment flyer or hearing about the study from word-of-mouth. From June 2023 to May 2024, 48 interviews with users were scheduled, 42 were completed, and 40 were selected for data analysis. During the initial coding process, two interview transcripts indicated non-significant results that did not contribute sufficient information to answer the research questions. Thus, one interview with a Darling Square user and one with a 1PSQ user were removed from the analysis process.

For the practitioner group, 14 recruitment emails were sent as media enquiries and LinkedIn messages. 11 written replies were received, and eight interviews were scheduled and completed.

3.3.3.5 Summary of Participants

Practitioners

The identities of the practitioner participants were published on open-access websites, and they signed a consent form confirming that their identities would be disclosed in this thesis to validate their expertise and contributions to the case studies. The following diagram summarises each practitioner's professional role and relevant case study (Table 3).

Table 3 Summary of practitioner participants.

Case Study Site	Name	Expertise	Role	Company/Representation
Darling Square	Peta Kruger	Public art	artist	Peta Kruger
	Brendan van Hek	Public art	artist	Sarah Cottier Gallery
	Sacha Coles	Landscape Architecture	lead landscape designer; director	ASPECT Studios
Westpac Place	Jet Geaghan	Architecture	project architect	Woods Bagot
	Sacha Coles	Landscape Architecture	lead landscape designer; director	ASPECT Studios
Green Square Library and Plaza	Matthias Hollenstein	Architecture	lead architect; director	Studio Hollenstein
	Sean Cordeiro	Public art	artist	Claire Healy and Sean Cordeiro
1PSQ	Colin Odbert	Architecture	lead architect; principal and commercial sector leader	Architectus
	Owen Craven	Art curating	senior curator; director	Urban Art Projects

Users

Although the recruitment process did not screen for age groups or gender, most people who completed the initial survey were between 18 and 29 (Table 4). 34% of survey responses self-identified as male, 59% as female, and 7% as non-binary. Of the 42 interviews completed, 40 were included in the thematic analysis, which informed the findings discussed in Chapters 5 to 8.

Table 4 Self-reporting gender and age group distributions from the user screening surveys, and numbers of user participants in different stages of data collection.

Self-reporting Gender and Age Group	Number of Responds in Screening Survey	Number of Participants in Completed Interviews	Number of Participants in Thematic Analysis
Female	41	37	35
Male	24	3	3

Non-binary	7	2	2
Age 18 to 29	51	33	31
Age 30 to 39	19	9	9
Age 40 to 49	1	0	0
Age 50 and above	1	0	0

3.4 Data Collection and Analysis

3.4.1 Observational Data

The first data collection stage included field notes and photographs (Lofland 2006). The field notes and photographs are intended to gather and analyse three kinds of observational data: 1) spatial, 2) visual, and 3) social. The categories of each data group were identified based on the 12 Quality Criteria for Public Spaces proposed by Gehl and Svarre (2013; Figure 7) and modified based on relevant literature discussed in Chapter 3.1 and test-walking notes to reflect the characteristics of chosen case studies (see Chapter 3.4.2 for more details on test-walking and other methods to analyse observational data).

1. Spatial data: This includes the design characteristics of the built environment, such as the distribution of open space and green area, the characteristics of urban furniture and equipment, whether public parking is near the site, and other relevant spatial design elements (Table 5).
2. Visual data: includes detailed observations of the visual quality of elements at the case study site, which provides an aesthetics assessment, including public art installations, materials, colour, and texture (Table 6).

3. Social data: includes anything related to socialising facilitated by the site. It covers access points to the site, the circulation design within the site, and indicators of inclusive design, such as whether the site has design elements for disability. This data group also includes observations of how people use the site,

such as how they arrive and depart, where they spend time for static activities and the physical movements they initiate (Table 7).

Table 5 Functional categories of spatial data

Open space	Landscape	Relationship with surrounding architecture
Shading/Shelter	Seating/resting area and design	Connections with public transportation
Land use	Circulation design	Urban fabric

Table 6 Functional categories of visual data

Architectural form and volume	Building materials	Eye-level visual access
Public-facing façade (colours/texture/details/rhythm)	Public art	Aesthetic quality

Table 7 Functional categories of social data

Walking/strolling	Interactions with animals/pets	Interactions with the space (looking/using/passing through)
Sitting	Interactions with other people (Passive/Active)	Time spent on site
Standing	Accessibility (people with accessed mobility devices)	Playful/Creative activities

The data collection listed above followed this protocol:

1. Test-walking: the author walked through the perimeters of the case study sites and observed the surrounding environment to identify observational areas for optimal visual access.

2. Behavioural mapping: Relevant social behaviours for data analysis were documented in preliminary coding of categories of actions and interactions and where they occurred. A pre-developed matrix of daily social activities in urban public spaces was used to aid the process (Figure 9).

3. Fieldnotes: Reflective notes were written in a research journal with details and nuances observed on site for future analysis. Within each case study site, the author assessed whether it was suitable to write field notes with an iPad or a notebook and sat near the corner of the open area as it was expected to minimise reactivity.

4. Photographing: Snapshot photographs were taken every ten minutes throughout each observational period for visual analysis of observational data.

5. Analytical memos: monthly memos were written, combining field notes and preliminary analyses on behaviour coding and photographs.

Figure 9 A template of behavioural mapping during observations. Note: This template was developed based on the social data matrix (Table 7) and themes emerged from test-walking.

3.4.2 Analysis of Observational Data

Lofland (2006) proposed a comprehensive guide for qualitative observation analysis in a social setting. Based on relevance to the research questions, the following studies were completed on observational data:

Behavioural Mapping and Coding

Initial codes were generated during observations on a pre-designed template (Figure 9). Coding schemes were then developed with additional reference to field notes and data collected through snapshots (Table 8).

Table 8 A sample observational data set based on the behavioural mapping template and snapshots.

			Counting from Snapshots					
Site	**Date**	**Snap Time**	**Groups of People**	**Group (with pets)**	**Group (with children)**	**Alone**	**Alone (with pets)**	**Alone (with children)**
Darling Square	22-May-23	17:30	4	0	0	5	0	0
		17:40	5	0	0	3	0	1
		17:50	2	0	0	2	0	0
		18:00	5	0	0	2	0	0
		18:10	4	1	0	1	0	0
		18:20	4	0	1	5	0	1
		18:30	3	0	0	4	0	0
		18:40	4	0	0	4	0	0
		18:50	5	0	0	5	0	0
		19:00	4	0	0	3	0	0
	23-May-23	9:30	1	0	1	1	0	1
		9:40	0	0	1	1	0	1
		9:50	1	0	0	3	0	0
		10:00	2	0	0	2	0	0
		10:10	0	0	0	3	0	0
		10:20	1	0	0	2	0	0
		10:30	1	0	0	3	0	0
		10:40	1	0	0	3	0	0
		10:50	0	0	0	2	0	0
		11:00	2	0	0	4	0	0
		11:10	1	0	0	3	0	0
		11:20	1	0	0	2	0	0

Heat Maps

After coding schemes were developed, heat maps were created to visualise social activities and density trends (Figure 10). The data represented in heat maps aimed to visualise the trends of the most frequent social interactions, which emerged from observations.

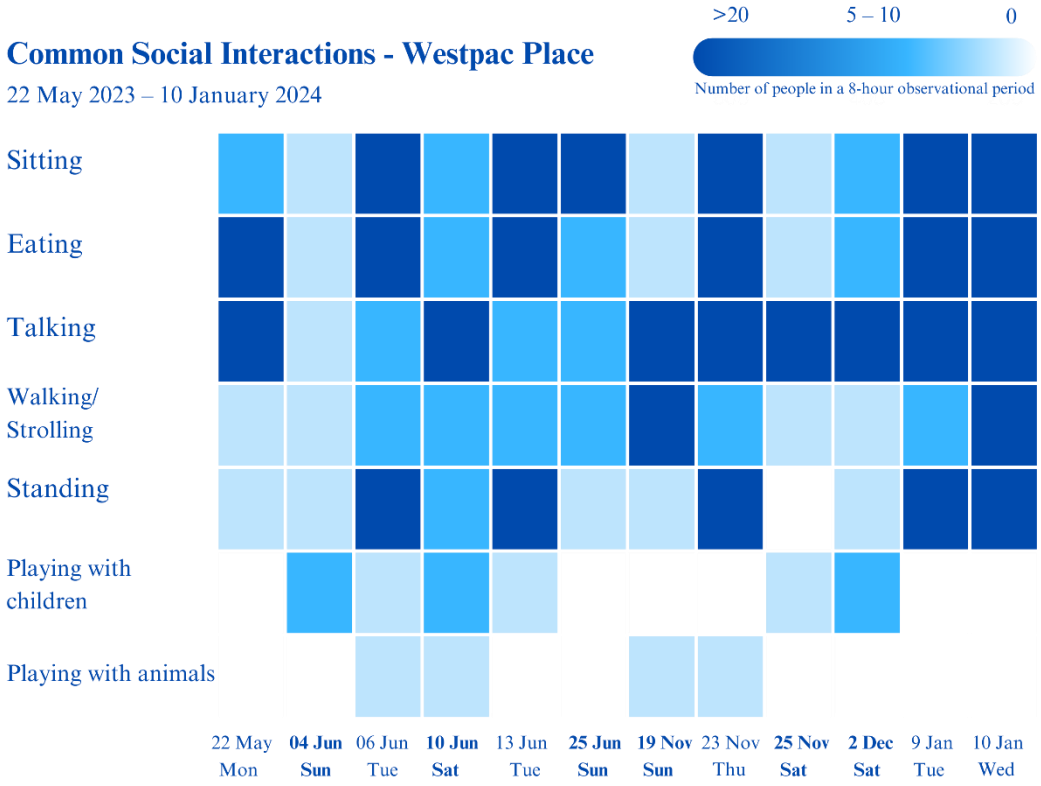

Figure 10 Observational data analysis based on the behavioural mapping template and snapshots.

Architectural Diagrams

A series of architectural diagrams were developed after naturalistic observations. The author summarised relevant data categorised in Tables 5 and 6 and then visualised the findings with site analysis diagrams. These diagrams provided spatial and architectural context during discussions on the characteristics of case study sites (Chapter 4).

3.4.3 Demographic Data from Screening Surveys

The user screening survey contained three questions regarding gender, age group, and ethnicity, which were recorded and archived on REDCap (Table 9). Research Electronic Data Capture (REDCap) is an online research data management platform that secures data collection and analysis, aligning with the University of Sydney and national policy. The

research design did not intend to specify a focus age group, but the diverse cultural backgrounds can provide some insights for the interview data presented in the later chapters. Also, the prevalence of non-Western participants can add to the cultural significance of the findings, which will be further discussed in Chapters 5 to 7.

Table 9 Demographic data collected from the screening survey and assigned pseudonyms for user participants.

Case Study Site	Gender	Cultural and Ethnic Group[4]	Age Group	Assigned Pseudonym
1PSQ	Female	Oceanian	18–29	Georgia
	Female	Multi-ethnics	18–29	Erika
	Female	Oceanian	30–39	Zara
	Female	South-east Asian	18–29	Lexi
	Female	North-west European	30–39	Kaira
	Male	South-east Asian	18–29	Amir
	Female	North-east Asian	18–29	Shiyao
	Female	South-east Asian	18–29	Charu
	Female	Oceanian	18–29	Casey
	Female	South-east Asian	30–39	Rani
	Female	North-east Asian	18–29	Nam
Westpac Place	Female	Oceanian	18–29	Elena
	Female	North-east Asian	18–29	Rachel
	Female	North-east Asian	18–29	Chloe
	Female	South-east Asian	18–29	Min
	Female	Oceanian	18–29	Ivy
	Male	North-east Asian	18–29	Cheng
	Female	South-east European	18–29	Rosie
	Non-binary	Oceanian	30–39	Kai
	Female	Oceanian	18–29	Abigail
	Female	Multi-ethnics	18–29	Leah
Green Square	Female	Oceanian	30–39	Erin
	Female	North-east Asian	30–39	Riley
	Female	North-east Asian	18–29	Luqi
	Female	Oceanian	18–29	Hannah
	Non-binary	South-east Asian	30–39	Ari
	Female	North-east Asian	18–29	Luna
	Female	North-east Asian	30–39	Rie

4 The cultural and ethnic groups listed in Table 9 are based on the ASCCE, which is the Australian statistical standard for classifying cultural and ethnic groups.

	Female	Oceanian	18–29	Selena
	Female	Middle Eastern	18–29	Shyla
	Female	South-east Asian	18–29	Tiya
Darling Square	Female	Oceanian	18–29	Evelyn
	Female	Oceanian	18–29	Millie
	Male	North-east Asian	18–29	Austin
	Female	North-east Asian	18–29	Claire
	Female	Multi-ethnics	18–29	Hazel
	Female	North-east Asian	18–29	Remy
	Female	Oceanian	18–29	Frankie
	Female	South-east Asian	18–29	Maddie
	Female	South-east Asian	18–29	Sara
	Female	North-east Asian	18–29	Elsie

3.4.4 Recording and Transcribing Interviews

The interview time for the user group was between 30 and 50 minutes and between 45 and 90 minutes with practitioners. Audio recordings and initial transcripts were generated in real-time by Zoom and then edited by the author for thematic coding in NVivo 12, a qualitative data analysis tool.

3.4.5 Thematic Analysis with NVivo 12

This thesis used thematic analysis as the primary data analysis method. Thematic analysis has been considered a distinctive method for studying qualitative data (Braun and Clark 2021). The analysis procedure has adopted the six-step guideline developed by Braun and Clarke (2021): 1) familiarising with the raw data; 2) generating initial codes; 3) searching for themes; 4) reviewing themes; 5) defining themes; 6) proposing and discussing findings.

After each interview, the author reviewed and imported the transcript into NVivo, a data management software. The initial coding of interview transcripts was a screening process to categorise raw data related to the research questions. The second round of coding included distilling and collapsing the initial codes to identify key themes and sub-themes. An inductive process was then conducted to understand further how these themes related to research objectives. Five groups of 22 sub-themes emerged during the first round, and three main themes emerged during the second round (Figure 11).

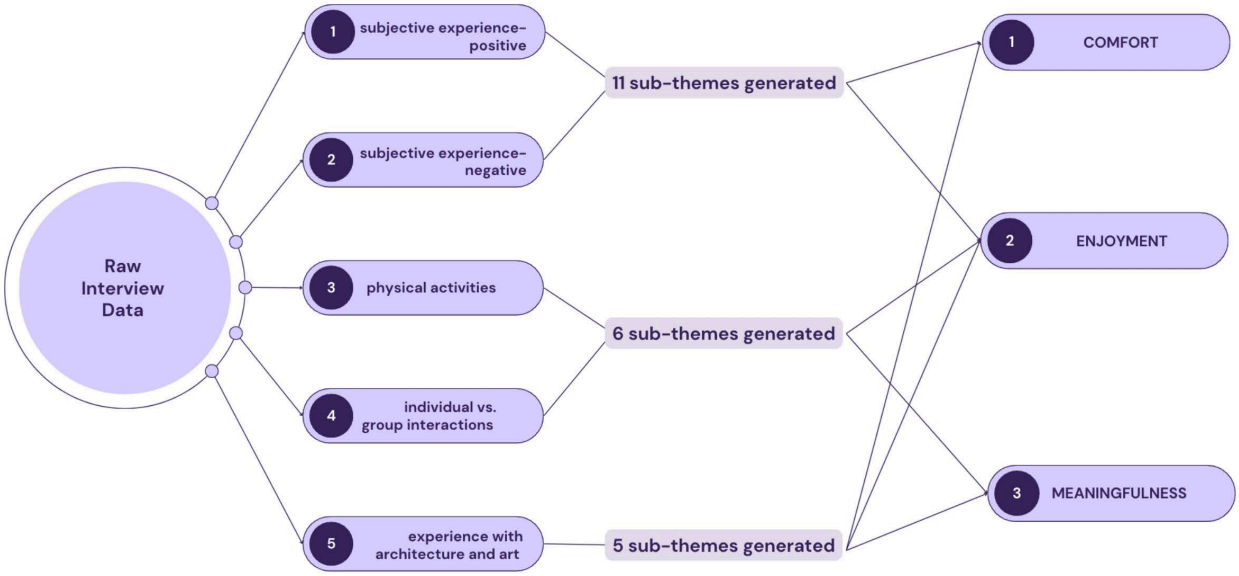

Figure 11 Thematic coding process.

3.5 Ethical Considerations During Fieldwork

The University of Sydney's human ethics committee approved the study involving naturalistic observations and semi-structured interviews. The reference number is 2022/827.

3.5.1 Privacy and Confidentiality for Participants

All user participants in semi-structured interviews were assigned a pseudonym based on their preferred name recorded on the screening survey (Table 9). Basic background information, including gender, age group, and ethnicity, was collected during the recruitment screening survey, and all information was self-identified.

The pseudonym reflected the participant's ethnic and cultural background while protecting their privacy and encouraging in-depth discussions. The author refrained from asking for personal details during observation and interview sessions. All professional participants responded on the consent form that they could be quoted with their names in this thesis. The author also sent this group a read-only copy of the transcript to review within six months of the interview.

Before each interview, the author informed the participant on the written consent form about audio recording and the possibility of being identified. After each observational period and interview, the author produced a behaviour coding sheet and descriptive notes. These materials, photographs, snapshots, interview recordings, transcriptions, and analyses have

been stored as digital copies in high-protection SharePoint under the management of the University of Sydney. All relevant records, including the participant consent forms, have been anonymised and will not be publicly accessible. All data has been stored with private access only and will be permanently deleted upon completion of this thesis.

The author ensured there was sufficient protection of any user's privacy and minimised the observer effect by following these procedures:

1. Descriptive field notes with an iPad or a notebook.
2. Throughout each observation, the author maintained a covert distance of 5 to 20 metres from the visitors. The author also tried to blend in with the environment by wearing appropriate attire and did not disclose any information about the author's researcher identity or the purpose of visits.
3. Photographs of the spatial design and existing equipment during test-walking were taken with a smartphone when the site was unpopulated (Figure 12).
4. Snapshots throughout the observational periods were taken from at least five metres away from the visitors. People's faces were blurred or covered before being stored safely in the protected SharePoint for data analysis.
5. The author ensured the observation was naturalistic, unobtrusive, and discreet and did not interfere with participants' activities.

Figure 12 Initial assessment of spatial design and public architecture layout, Green Square Library, Sydney, November 2023.

3.5.2 Sensitive Issues

During naturalistic observations, the author considered the observed subjects' sensitivity. The author did her best to minimise direct eye contact throughout the observation intervals and remained a safe distance (at least five metres) from other visitors. All snapshots for visual analysis and other relevant photographs were taken from a covert location without disrupting any interaction or activity on site. The author blurred out or covered all faces captured in the snapshots to de-identify visitors before the analysis commenced. During semi-structured interviews, the author stayed on course with the interview guides but did not force the participants to answer.

3.5.3 Resources Access

The primary access to the spatial data mentioned in observational data collection was through project sites published by architects and designers, governmental sources, and open-access archives on library databases (Chapter 3.4, 42). The goal is to gather raw data for the case study's context and observe it effectively. The following are the main categories of accessed data:

1. Demographic and geographical data from open-access national databases.
2. Project information and design objectives from architect firms' websites.
3. Planning documents, development applications (DA), policy, and strategy statements on government websites.
4. Open access literature on library databases, supported by the University of Sydney.

3.6 Limitations

Guba and Lincoln (1989) proposed four criteria for evaluating qualitative research: credibility, dependability, confirmability, and transferability.

3.6.1 Credibility

This chapter articulated an analytical strategy to improve data integrity(Williams and Morrow 2009). The author spent at least one month test-walking and completing pilot studies on case study sites to establish contexts with the sites and tailor the behavioural mapping template before data collection commenced. The data collection period covered diverse scenarios, including seasonal changes and daytime vs. night-time differences. However, achieving sufficient observational data was challenging since there might have been other relevant

information beyond the observation periods. The data registration on selected time intervals did not represent the complete picture of how people interact with the chosen sites. The observational data was only a sample reflecting some trends and themes within a specific timeframe.

3.6.2 Dependability

Occasionally, semi-structured interviews may be questioned on authenticity because the self-reporting answers provided by the participants might not present authentic information (Hammersley 2003). However, Morrow and Smith (2009) suggested that this method is more suitable for studying individual experiences than questionnaires and structured interviews. This thesis addresses this limitation by applying multiple data collection methods to supplement one another to fill any gaps and diversify the views (Patton 1984).

The author conducted two rounds of coding alone without cross-referencing with other coders. This process can limit triangulation to establish dependability. The author applied triangulation within the methods by combining observations and in-depth interviews with two groups to form a more dependable approach (Wong and Ng 2008).

3.6.3 Confirmability

The author collected data from different sources and kept a detailed analytical fieldwork journal to achieve triangulation and reflexivity. Even though field notes are often limited to observing general trends, the analytical memos were discussed during periodic debriefing sessions with supervisors and colleagues to verify data.

3.6.4 Transferability

The observational case study heavily depended on four urbanised areas of Sydney, which might limit transferability. However, the next chapter discusses that the context and strategies applied in the case studies are observed in many other OECD major cities and regions.

The sampling and participant recruitment techniques also have great potential to be transferred into other contexts for future studies.

Despite the limitations outlined above, the mixed-method research design was an appropriate approach for this thesis. The two methods acted as an explanatory sequence in which the observational data informed the scope and strategies applied in the semi-structured interviews. The two data set also complemented each other to provide a more comprehensive understanding of the findings.

3.7 Summary

This chapter discussed the research methodology and theoretical framework. It outlined the qualitative approach employed: a multidisciplinary framework developed to understand the conceptualisation of public architecture and its impact on SWB. The chapter also introduced the principles of the two-stage qualitative research study and the data collection and analysis procedures.

Unlike common social science studies employing multiple observers, the author was the only observer throughout the naturalistic observation periods which might result in a certain level of researcher bias. Although naturalistic observation is a nonintrusive method suitable for documenting social activities in a public open space, observing from only one vantage point can limit the diversity and validity of observational data. The recruitment of the user group revealed that 80% of the user participants were self-identified women under 35, and most of the practitioner group were self-identified males over 35. The study could have benefited from a larger sample size.

Implementing qualitative-oriented methodology has some limitations in generalisability that the research might not be applicable to a broader population. Yet, the proposed two methods were optimal for thematic analysis, and presenting rich contextual understanding from marginalised voices and diverse cultural contexts. Despite its limitations, qualitative methodology is considered the most suitable to study this thesis' focuses on sensitising concepts and meaningful subjective experiences rather than a generalised result.

The next chapter discusses the rationale for selecting case studies, contextual background, and how the proposed methods were implemented at each site.

4. Case Studies – A Sydney Story

Introduction

This chapter discusses the rationale behind focusing on the current practice of therapeutic public architecture in Sydney by following the methodology developed in the previous chapter. It also discusses how the characteristics of each case study might contribute to differences in participant demographics and themes in findings.

Australia is one of the most urbanised countries in the world, and Sydney is one of its two top metropolitan areas alongside Melbourne. The Greater Sydney region is home to over 5.4 million residents (Australian Bureau of Statistics 2024). In line with the OECD's sustainability goals, Sydney has become a hub for pioneering initiatives prioritising well-being and public engagement (City of Sydney 2023). This focus has made studying Sydney crucial to understanding the current state of expertise in Australian well-being-oriented public architecture design. The rationale for case study selections considered the three relevant scales of Sydney: the City of Sydney, the metropolitan area of Sydney, and the Greater Sydney region**.**

4.1 Urban Characteristics of Sydney

Australia has three tiers of government: local, state or territory, and federal. The local government is responsible for the particular needs of a city or local community, including local road maintenance, building regulations, public health, and recreational facilities (Australian Electoral Commission 2019). Local government areas (LGAs) are geopolitical areas governed by an administrative council that usually contains several suburbs. State or territory government is responsible for justice, consumer affairs, education, health, public transport and more. Sydney is the capital of New South Wales, located on the state's eastern coast (NSW Government 2023). The federal government has two houses as a decision-making body – the House of Representatives and the Senate. The federal government is responsible for foreign affairs, social security, immigration, and more.

4.1.1 City of Sydney

The City of Sydney is one of Australia's most progressive LGAs. It is responsible for the Central Business District (CBD) and pioneering strategies for liveable, sustainable communities (Figure 13).

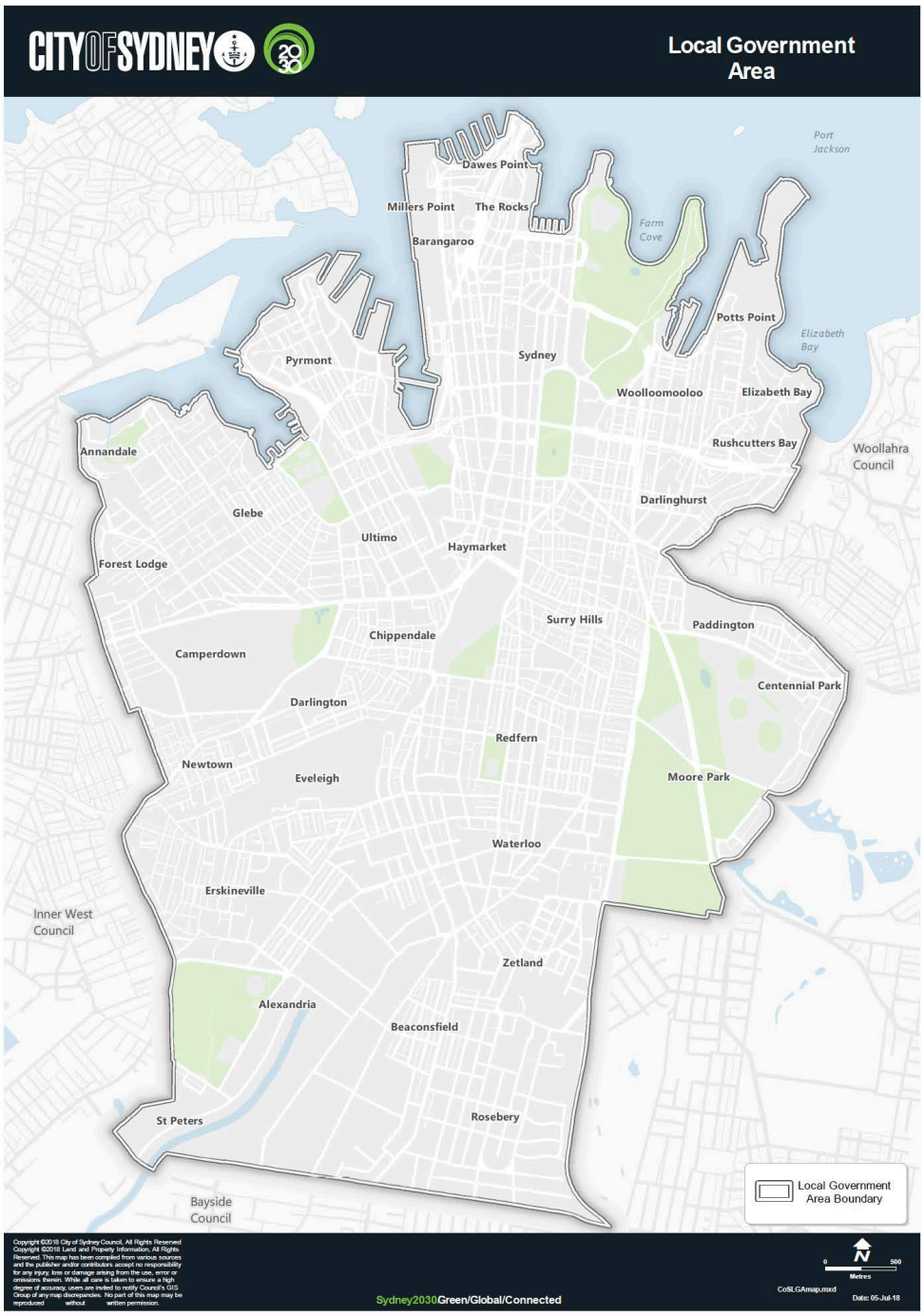

Figure 13 The local government area boundary of the City of Sydney. Source: City of Sydney (2023).

At the City of Sydney scale, Sydney's commitment to sustainability and social engagement is evident in its community strategic plan, which outlines ten directions for achieving the 2030–2050 Sustainable Sydney vision (City of Sydney 2023). Three of these directions emphasise inclusive and accessible public open spaces, and two other directions discuss building a thriving social life in the city. The city strategic plan states that one of the ten targets will be increasing community cohesion and social interaction so that more than 75% of the residents feel a sense of belonging (City of Sydney 2017). Such emphasis on well-being also shines through in several international studies that rank Sydney as one of the most liveable cities in the world:

> In 2023, the Economist Intelligence Unit ranked Sydney as the fourth most liveable city in the world in its yearly Global Liveability Index. The index measures stability, health care, culture, environment, education, and infrastructure factors determining liveability across 173 cities.
>
> *The City at a Glance,* City of Sydney, 2023.

4.1.2 Metro Area and Greater Sydney

Many people think of the metropolitan area or metro Sydney when discussing "Sydney". This area was formed by a railway network of eight train lines and one subway/metro line. Sydney's metropolitan area involves 33 LGAs branching out from the City of Sydney, with Hornsby as the north boundary and the Sutherland Shire as the south.

The Greater Sydney Region is a satellite region that expands from Sydney's metropolitan area to cope with rapid urbanisation. Sydney is Australia's most populated capital city, with a population of more than 5.4 million people, as reported by the Estimated Resident Population report conducted in June 2023 (Australian Bureau of Statistics 2024; Table 10).

Table 10 Population Changes by Capital City 2022 – 23 Financial Year. Source: Australian Bureau of Statistics (2024).

Population Changes by Capital City

	ERP on 30 June 2023	2022 - 23 (no.)	2023 - 23 (%)
Sydney	5,450,496.00	146,702.00	2.8
Melbourne	5,207,145.00	167,484.00	3.3

Brisbane	2,706,966.00	81,220.00	3.1
Adelaide	1,446,380.00	28,057.00	2.0
Perth	2,309,338.00	81,318.00	3.6
Hobart	253,654.00	1,165.00	0.5
Darwin	150,736.00	1,582.00	1.1
Canberra	466,566.00	9,651.00	2.1
Total capital cities	17,991,281.00	517,179.00	3.0

Like many other large-scale metropolitan areas, Sydney has experienced decades of urban sprawl due to rapid urban expansion at a time when private car use was assumed and higher density development unappealing. As a result, Greater Sydney covers a vast area of 12,368 square kilometres, hosting more than 5.3 million residents and 8.8 million annual visitors (id. Profile 2022). Moghadam et al. (2018) pointed out that Sydney's urban structure is influenced by the development of the CBD on the eastern side of Greater Sydney. Due to the high possibility of employment opportunities within the city, Sydney CBD has been constantly densified for the past fifty years (Lin et al. 2015). This process underpins the development of The Greater Sydney Regional Plan, which envisions a 40-year planning for three cities: Western City District, Central City District and Eastern City District (NSW Government 2022). The main objective of this strategic plan is to provide a 30-minute living circle fulfilling the needs of employment, education, public health services, and open spaces for Sydney residents. Implementing this regional plan can reduce the over-reliance on the CBD and slow down the densification within the city.

4.1.3 Geographical Context and Socio-economic Stratification

Sydney is built around one of the world's largest natural harbours, following the Australian pattern of coastal urban development. The urban core spreads around Port Jackson (Sydney Harbour) and its various inlets, with the terrain characterised by sandstone ridges and valleys. As the city extends westward, the landscape gradually flattens into the Cumberland Plain, where summer temperatures can be significantly higher than in the coastal areas – often by 5–10°C. This western region, including Penrith and Liverpool, experiences more extreme temperature variations and less cooling sea breezes (City of Sydney 2023).

Sydney's socioeconomic distribution broadly correlates with its geographical nature (Baum 1997; Hermes and Poulsen 2013). The eastern suburbs and north shore, benefiting from harbour views and beach proximity, are generally more affluent. The western suburbs, particularly the south-west, are more working class and culturally diverse. This east-west divide is Australia's most pronounced example of urban socioeconomic stratification (Baum and Gleeson 2010). To balance the resources and geographical differences, a key announcement in 2017 has proposed City of Parramatta to be the second CBD in the western suburbs with Parramatta Square as the key development to implement this plan (Figure 14).

Figure 14 An online announcement on expanding the Parramatta CBD. Source: At Parramatta (2022).

However, the agenda of creating a healthy, liveable Sydney does not necessarily reflect increased perceptions of happiness and SWB in urban neighbourhoods. Some acclaimed indexes, like the Happy City Index and the OECD Well-being Index, acknowledge the challenges in identifying what happiness means to different people (Happy City Index 2024). Also, many recent studies on major Australian cities focus on evaluating well-being by measuring only the objective contributors to happiness and QoL (Ballas 2013; Ziogas and Ballas 2024).

The current condition indicates gaps in understanding the relationship between urban open spaces and subjective indicators of well-being in neighbourhoods, which offers opportunities to conduct a comparative case study to understand further what happiness and SWB mean in highly urbanised areas of Sydney. This thesis does not discuss a one-for-all solution for designing for SWB but provides a detailed sample of how certain groups of people experience and interact with four current examples of well-being-oriented public architecture

in Sydney. As mentioned in Chapter 3.3.2.1, the selected case studies represent some of the recent neighbourhood engagement projects considered the most relevant to answering the research questions.

4.2 Is Sydney a Happy City?

Living in a highly urbanised neighbourhood can be stressful due to many factors, including dense living environments and pollution (Jalilisadrabad et al. 2023). Research has shown that increased urbanisation correlates with decreased happiness and life satisfaction, particularly in wealthier nations with Anglo-Saxon heritage (Berry and Okulicz-Kozaryn 2009). This negative relationship between urbanisation and well-being can be attributed to unbalanced regional growth patterns that emerge during periods of rapid urban development and economic expansion (Lenzi and Perucca 2018). Berry and Okulicz-Kozaryn's study (2009) also highlighted that the residents of dense urban areas in these wealthy Anglo-Saxon countries reported notably higher levels of dissatisfaction with their living environment.

4.2.1 Understanding the Current Placement of Sydney on the Well-being Spectrum

The World Happiness Report was one of the frequently mentioned studies in research on happiness and well-being at a national scale. It offers comprehensive overview of, covering empirical data from over 150 countries. While Australia rose to the top 10 from #12 (WHR 2022; WHR 2023) in the latest World Happiness Report (WHR 2024) with an average life evaluation of 7.06, Sydney ranked #20 on the WHR 2020 perceived SWB chart, which was the lowest compared to other Australian cities (Brisbane #10, Melbourne #14, Perth #15). In a recent study, Sydney only ranked 116 in the Happy City Index 2024, consistently the lowest among major Australian cities (Brisbane #21, Melbourne #41, Perth #61, Hobart #87). Based on these international indexes, Sydney is not as “happy” as other Australian cities even though the city and the country was ranked as one of the happiest places in the world.

The Australian Centre on Quality of Life (ACQOL) developed the Australian Unity Wellbeing Index (Personal Wellbeing Index or PWI), an acclaimed national survey measuring individual SWB levels in seven domains. The index also provides an extensive directory of all relevant instruments measuring SWB and life satisfaction, the subjective factors contributing to QoL (ACQOL 2024). This index also refers to SWB and happiness as

interchangeable terms, defining happiness or SWB with a “golden triangle” consisting of personal relationships, financial control (standard of living), and sense of purpose (Australian Unity 2024). Despite ranking high in many international studies, the recent report has revealed that Australians have hit a historic low point in 22 years of PWI due to financial challenges (Australian Unity 2023). The 2023 report also noted that 38.8% of young Australians (16 to 24 years old) have endured pandemic-related mental distress in 2022. This report continued to reveal a shocking summary that there was “no tangible improvement” in recovering from the negative psychological impact of COVID-19, and the cost of living might be the number one stressor related to mental distress (Australian Unity 2023).

Even though many clinical psychologists had observed an overall improvement in mental health where people were making a “slow and steady psychological recovery” from COVID-19, young adults (18 to 35 years old) still experienced a much higher level of mental distress than other age groups (Australian Unity 2023). Other researchers also investigated the relationship between age and perceptions of SWB and happiness. Piper (2015) found that young people (16–30) have a downward trend of perceived SWB as they age. The stress of transitioning from adolescence to adulthood and contemporary sociocultural contexts create challenges in individual SWB (Piper 2015).

Though these studies only discussed Australians without comparing PWI in different cities, young adults in Sydney are likely facing similar or more challenges in stress, anxiety, and depression.

4.2.2 Existing Strategies Dedicated to Well-being and Happiness in Sydney

Sydney and other major Australian cities have also implemented a series of strategic planning following the state-city-community structure. Following guidelines to promote healthy and liveable cities, the Precinct Planning and Design Standard (PPDS) is a popular tool in Queensland that guides sustainable master planning and public infrastructure at the neighbourhood scale. The state of New South Wales, where Sydney is, promotes the Local Strategic Planning policy as the guideline for local councils to develop a community-based strategic plan (Planning NSW 2023). Victoria also has announced an Urban Design Guideline to promote the serviceability and flexibility of urban structures. On the state government

level, the Greater Sydney region has aligned with other major Australian cities to establish well-being-oriented guidelines and objectives.

> *Improving the quality of life for all people in our regional urban environments requires better integration of design thinking and problem-solving in planning, project formation, and building processes. This document outlines the importance of urban design and how to approach it – to support everyone involved in the design, planning, and development of sustainable places in regional NSW.*
>
> Abbie Galvin, Government Architect, Urban Design for Regional NSW, 2023.

These regional-scale strategic plans lead to a series of local strategic plans at a community scale (Figure 15). Sydney's metropolitan area has an established planning system, with layers of principles and guidelines drafted by a large team of experts and practitioners. Even though each city has its own planning and practice guidelines, Sydney case studies can represent how strategic planning translates to the practice and delivery of well-being-oriented public architecture.

Figure 15 Local strategic plan process in NSW. LEP stands for local environmental plans, including zoning and development controls. DCP stands for development control plans. Source: Planning Institute of Australia (2012).

Sydney has focused on promoting health and well-being through the built environment and public spaces at state, regional, and local government levels. Although governmental policy and strategic planning have recognised health and well-being as an aim, the mechanisms have yet to be enacted for actual health outcomes to ensue (Harris et al. 2020).

Further, the current strategic planning does not entail how placemaking and the design of public architecture directly relate to positive social interactions and perceptions of individual or community SWB. Even though there is a correlation between physical and SWB established in research and practice, the emphasis on designing a healthy built environment does not guarantee that Sydney will be a happy city[5].

4.2.3 Mental Health Issues in Sydney

There has been a consensus across literature that urban residents face more psychological distress than rural ones (Matiullah et al.2021). High risks in experiencing stress, anxiety and depression are often portrayed as an inevitable outcome of urban living (Rose and Fitzgerald 2022). Yet, it is still necessary to raise awareness of the mental health crisis in highly urbanised cities. Many researchers have focused on how urban living might contribute to mental health issues. Kan et al. (2022) pointed out that the quality of built environments and limited access to urban open spaces create challenges and a high prevalence of elevated stress and anxiety levels. This observation aligns with William H. Whyte's seminal work *The Social Life of Small Urban Spaces*, which identified urban density as one of the fundamental drivers of stress in cities (Whyte 1980, 4).

Recent research has focused on loneliness in urban living (Smith and Lim 2020; Dingle et al. 2022). Studies have also documented the relationship between loneliness and SWB, especially in high-density urban environments. Studies have indicated that residents of high-rise buildings in dense urban neighbourhoods often experience diminished social connections, leading to social isolation and an experience of loneliness, which can impact their SWB (Kalantari and Shepley 2021; Kan et al. 2022; Lai et al. 2021).

[5] "Happy" in this sentence means a high level of perceived SWB and above-average life satisfaction compared to the data presented in the OECD Well-being Framework.

The mental health challenges in modern metropolises have reached an alarming level, as pointed out by Rose and Fitzgerald (2022) in their case studies in Shanghai and Chicago. While urban density can shorten the physical distances among people, the overcrowding of urban spaces can result in excessive and unwanted social interaction, which can lead to a significant increase in psychological and mental issues, including chronic stress, anxiety disorders and depressive episodes (Crume 2019).

4.3 Case Study Selection Rationale

This thesis proposes a conceptual framework of therapeutic public architecture, where public architecture can promote SWB with curatorial and well-being-oriented design strategies. The following section outlines the site selection process for naturalistic observations and semi-structured interviews and how these case studies will contribute to answering the research questions (Chapter 1.2, 4). The primary criterion for a case study location is that it showcases critical elements and strategies for promoting social interactions and neighbourhood engagement through public architecture and public art. Each case study demonstrates forward-thinking in incorporating well-being and interpersonal relationships at the conceptual stage of design development. While it is acknowledged that these selected case studies might only partially cover some aspects proposed in the new conceptualisation of public architecture outlined in Chapter 2.2.1, they stand as representative examples of current well-being-oriented public architecture in Sydney. The aim of the case study selection was to draw attention to the current or recent innovative approaches and thoughtful incorporation of well-being-oriented public architecture design. The following six criteria are the primary prerequisites for site selection relevant to studying the current practice of well-being-oriented public architecture and how public architecture can promote SWB on a neighbourhood scale:

1. Each site needs to be within the metropolitan area of Sydney.
2. Each site consists of one critical public architecture project with adjacent open space.
3. The critical public architecture in each site demonstrates design features within the concept of public architecture defined in (Chapter 2.2.1, 17).
4. The design brief for each site includes core objectives relevant to promoting well-being. It should demonstrate established design objectives regarding social engagement and potential to promote social sustainability that align with Ingrid

Gehl's social sustainability framework and should be suitable for evaluation based on the data collection protocol established in Chapter 3 (Peters 2016)[6].

5. Each site has incorporated public art from early development as an integrated element of the overall architectural language.
6. Each site should be representative of a type of urban living environment in Sydney.

4.3.1 Summary of Selected Case Studies

After applying the initial selection criteria, four case study sites were selected to conduct fieldwork and interviews: 1. Darling Square; 2. Green Square Library and Plaza; 3. Westpac Place; 4. One Parramatta Square (1PSQ; Table 11). These sites then form two layers of a comparative study: a) residential-oriented areas and b) corporate/business-oriented areas.

Darling Square and Westpac Place are within the City of Sydney, demonstrating design responses to the urban fabric of the dense central business district (CBD). Green Square is an inner-south locality three kilometres south of Sydney CBD, one of Australia's most significant urban renewal projects (City of Sydney 2022). One Parramatta Square (Western Sydney University) is in the CBD area of the City of Parramatta, a fast-growing new business district in the Western Greater Sydney Region. All four case studies are considered well supported by local resources and demonstrating design and planning strategies implementing community well-being indicators (City of Sydney 2024; City of Parramatta 2024). The City of Sydney, where Darling Square, Westpac Place, and Green Square are located, has a higher degree of socio-economic advantage than many other areas in Australia (Profile Id. 2021). The City of Parramatta has a lower average in economic prosperity than the City of Sydney, but Parramatta CBD has shown rapid economic growth in the past few years (At Parramatta 2024).

Even though the City of Sydney has great community resources with access to public health, cultural engagement, and economic prosperity, it has a higher-than-average prevalence on mental health conditions. The City of Sydney has 8.5% of the population reported with mental health conditions, the most common long-term health condition in this area (ABS

[6] Though Ingrid Gehl and Jan Gehl have collaborated for many urban social life studies and their research has provided substantial foundation for this thesis's theoretical framework, it is notable that they have different evaluation methods. Please refer to Chapter 3.1.1 for more discussion.

2021). While the City of Parramatta has 6.1% of the population reported with one or more long-term mental health conditions, which is lower than the average 8% in the State of New South Wales (NSW) (AIHW 2024).

The participant recruitment from the previous chapter also revealed that all the interviewees are young adults (18–35 years old), coinciding with the highest population age group of the case studies. In addition, two sites are within residential neighbourhoods and have community-oriented features, while two other sites are more commercially oriented. These differential factors influence data collection and analysis regarding public access, visitor demographics, types of social interactions, and subjective experiences associated with the site.

Table 11 Summary of the main characteristics of the four case studies[7].
The data source for the population density and most populated age groups was the Australian Bureau of Statistics 2022 – 23 financial year report (ABS 2024).

Characteristics	Darling Square	Green Square Plaza	Westpac Place	1PSQ
Open area is free and accessible 24/7	Yes	Yes	Yes	Yes
Located in a residential neighbourhood	Yes	Yes	No	No
Located in the Central Business District	Yes	No	Yes	Yes
Population density at a precinct scale	18,366/sqkm	13,038/sqkm	6,331/sqkm	6,037/sqkm
Most populated age group	20 – 34	25 – 39	25 – 39	25 – 39
Public transportation within 10 minutes of walking	Light rail; Bus; Train	Bus; Train; Metro	Light rail; Bus; Train	Bus; Train

[7] 1PSQ is in the Parramatta CBD, and Darling Square and Westpac Place are in the City of Sydney CBD. There were confirmed constructions of light rail and metro stations in the proximity of 1PSQ, but the constructions were not completed when this thesis was written.

Main functions for the case study	Community centre; public library; food and beverage	Town square; public library	A small park for nearby office buildings	Recreational area for the Western Sydney University (WSU)

4.4 Neighbourhood Attractions

People ignore design that ignores people.

Frank Chimero, designer and writer

The following two case studies are considered cultural landmarks in their neighbourhoods. Many participants shared that these two sites facilitate close social relationships.

4.4.1 The Darling Exchange and Darling Square

Haymarket is a diverse neighbourhood in the central area of Sydney (Figure 16). It is famous for its strong ethnic and cultural representation, with more than 78% of the residents born overseas, much higher than the average 48% in the City of Sydney (ABS 2021).

Cultural diversity

Ancestry, top responses *All people*	Haymarket	%	New South Wales	%	Australia	%
Chinese	3,399	40.9	581,641	7.2	1,390,639	5.5
Thai	1,346	16.2	36,085	0.4	91,942	0.4
English	726	8.7	2,404,990	29.8	8,385,928	33.0
Indonesian	600	7.2	34,181	0.4	85,798	0.3
Australian	318	3.8	2,307,549	28.6	7,596,753	29.9

Note 1: *Respondents had the option of reporting up to two ancestries on their Census form, and this is captured by the Ancestry multi response (ANCP) variable used in this table. Therefore, the sum of all ancestry responses for an area will not equal the total number of people in the area.*
Note 2: *Calculated percentages represent a proportion of the number of people in the area (including those who did not state an ancestry). In 2016 QuickStats percentages were based on total number of responses and will not be comparable to this table.*

More information on Ancestry multi response (ANCP)
Table based on place of usual residence

Country of birth, top responses *All people*	Haymarket	%	New South Wales	%	Australia	%
Australia	1,076	13.0	5,277,497	65.4	17,019,815	66.9
Other top responses:						
China (excludes SARs and Taiwan)	1,775	21.4	247,595	3.1	549,618	2.2
Thailand	1,452	17.5	31,633	0.4	83,779	0.3
Indonesia	931	11.2	37,907	0.5	87,075	0.3
Malaysia	246	3.0	39,555	0.5	165,616	0.7
Korea, Republic of (South)	235	2.8	53,046	0.7	102,092	0.4

More information on Country of birth of person (BPLP)
Table based on place of usual residence

Figure 16 Census statistics on cultural diversity and country of birth for Haymarket residents. Source: ABS (2021).

Darling Square is a residential complex with vibrant commercial components that has become a landmark in the local neighbourhood and the broader Sydney context. It is also part of the district-scale Darling Quarter regeneration, which has involved many planning and design development resources over the last decade. Darling Quarter is adjacent to Darling Harbour, a multi-use destination in Sydney CBD, offering attractions, like playgrounds and retail, and large-scale events, like cultural festivals at Tumbalong Park and conferences at the International Conference Centre (Planning NSW 2023).

The Darling Exchange, or the Exchange, is a multi-functional community building that serves as Darling Square's anchor (Figure 17). The architects are Kengo Kuma and Associates, and the open space is designed by Kengo Kuma and ASPECT Studios, which Lendlease commissioned. Both Darling Square and the Exchange were open to the public in 2019, and they soon became a popular destination for leisure and recreation. However, the architecture itself is more popular than the name of the building. Most participants cannot recall its name correctly and instead refer to it as *"the bird-nest building"*, *"the library"*, or *"the one with restaurants and a library"*. Even on the City of Sydney website and the Darling Square community official page, The Exchange is introduced as "Darling Square Library", even though the library occupied only one floor of the five-level building (City of Sydney 2023).

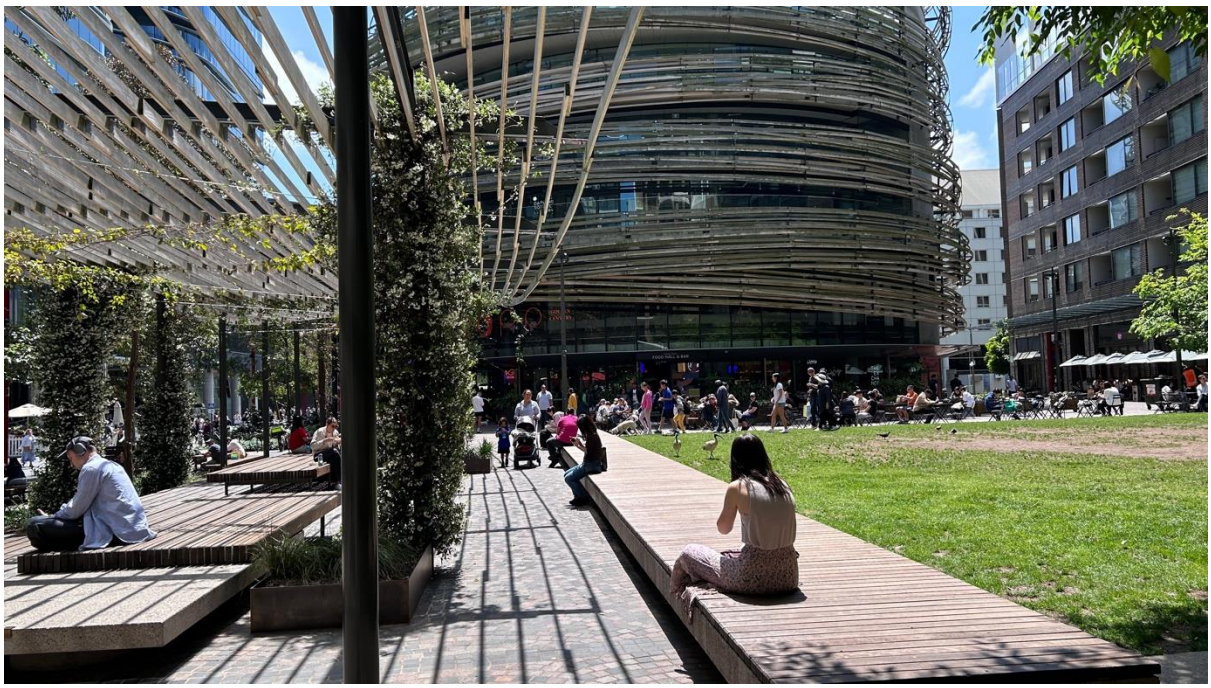

Figure 17 The Exchange and its wooden pavilion, Darling Square, Sydney, February 2024.

4.4.2 Green Square Library and Plaza

Green Square, located in the inner-southern part of the Sydney's CBD, represents a transformation from an "industrial heartland" to a residential neighbourhood that exemplifies the city's commitment to sustainability and modern urban living (City of Sydney 2022). At the intersection of four suburbs – Alexandria, Waterloo, Zetland, and Beaconsfield, Green Square is a vibrant hub combining residential, commercial, and recreational spaces with a strong focus on environmental consciousness. This forward-thinking precinct boasts cutting-edge green infrastructure, including energy-efficient buildings, sustainable water management systems, and ample green spaces. It serves as a model for sustainable urban development, showcasing how cities can integrate nature into their design while meeting the needs of a growing population. The precinct renewal on Green Square also transforms this area into a highly diverse place, with nearly 60% of residents born overseas and 43% of the population arriving in Australia within 5 years prior to 2021 (Profile Id 2021). The multicultural composition calls for considerations in community identities when designing for the Green Square Plaza, the main gathering space of the neighbourhood.

The Green Square Plaza was the first stage of urban renewal planning of the "Green Square Town Centre" (City of Sydney 2023). Currently acting as a landmark and community centre for the neighbourhood, Green Square Library and Plaza have provided communal services and open spaces for 35,549 current residents and are expected to host more than 60,000 by 2030 (Profile.id 2022). Both the library and the civic plaza were designed by Studio Hollenstein, who won the global design competition in 2015 and completed construction in 2018 (Figure 18). The commission required a lot more than a library with some open space. The design brief asked the architects to combine community functions and a civic plaza with a certain proportion of public art installations. Studio Hollenstein maximised the open space footprint by hiding most of the library functions underground except for the entrance and the multi-functional tower. The result is a generous open plaza, 8,000 square metres in size, surrounding two "pieces" of sculptural architecture.

Figure 18 Green Square Library and Plaza, Green Square, Sydney, October 2023.

The library and its plaza were meant to anchor the entire precinct renewal, accompanied by constructions of the Green Square Aquatic Centre, a childcare centre, a creative centre, and hospitals. The implementation of these projects was planned to be delivered before 2019. However, the unforeseen impacts of market forces and other financial difficulties have caused subsequent delays in all surrounding projects (Paine et al. 2021). It left the Green Square Library and Plaza as the only completed and functioning community-based public architecture in Green Square until stage one of the Gunyama Park Aquatic and Recreation Centre opened in 2021. No other planned community infrastructures were completed when this thesis was submitted (December 2024). The gaps between planning and implementation have affected residents' experience and interactions with the space, which might contribute to how they perceive SWB in their neighbourhood (discussed more in Chapters 5 and 6).

4.5 Oases in the CBD

The following two selected sites are commercial-oriented, providing refreshing open spaces in dense CBD areas.

4.5.1 Westpac Place and Pocket Park

High-rise office towers have become common in many CBDs in large cities. Wynyard railway station, a heritage-listed site, is in the centre of the fast-paced Sydney CBD, surrounded by national banks and high-profile financial institutions. Some user participants commented that *"everyone walks with a purpose in Wynyard"* and *"[there are]so many well-dressed people here that [it] makes me feel like I have to fit in"*, describing the corporate culture in this area. The pocket park at 275 Kent Street is a rare open area for such a purposeful and business-driven precinct. Apart from being one of the most densely developed neighbourhoods in Sydney, Sydney CBD is also a diverse area with many cultural affiliations, and it is a crucial part of the LGA to have the highest population of LGBTIQA+ people in Australia (City of Sydney 2023). Wynyard station, Cahill Expressway, and the Westpac bank towers frame the space, forming this petite oasis among skyscrapers. Before the 2019 renovation, the pocket park was more like "*a cafeteria with a lawn*", as one user participant at Westpac Place recalled. This participant also said it was "*doing its job*," but the renovation "*really brought it to life*". Designed by ASPECT studio and Woods Bagot, the renovation project transformed the entire ground level, including the food court, the escalator entrance, and the pocket park (Figure 19). ASPECT Studio director Sacha Coles shared that the peak pedestrian traffic at this park can reach over 20,000 people per hour, making it challenging to accommodate everyone's preferences in a public space. The high volume of pedestrian traffic also poses potential design problems in limited open space, which can impact user experiences and design modifications (further discussed in Chapter 5.2). Even though the park is located next to the Wynyard train station exit and alongside the primary connection between Wynyard and Barangaroo, many people consider this park a privately owned open area and often overlook its existence during their commutes. Barangaroo is a recently developed high-end business area connecting The Rocks and Wynard, two acclaimed precincts of Sydney CBD.

Figure 19 Westpac Place before and after renovation. (Left) Westpac Space and Pocket Park in 2007. Source: JPW (2020). (Right) Westpac Space, Sydney, October 2023.

4.5.2 Western Sydney University and One Parramatta Square

The Greater Sydney region plan focuses on “a metropolis of three cities”, and the City of Parramatta is considered to anchor the Central River City (Figure 20). Following the regional plan, the NSW government also significantly invested in improving the Parramatta CBD by building the Parramatta Light Rail and Sydney Metro West (NSW Government 2024).

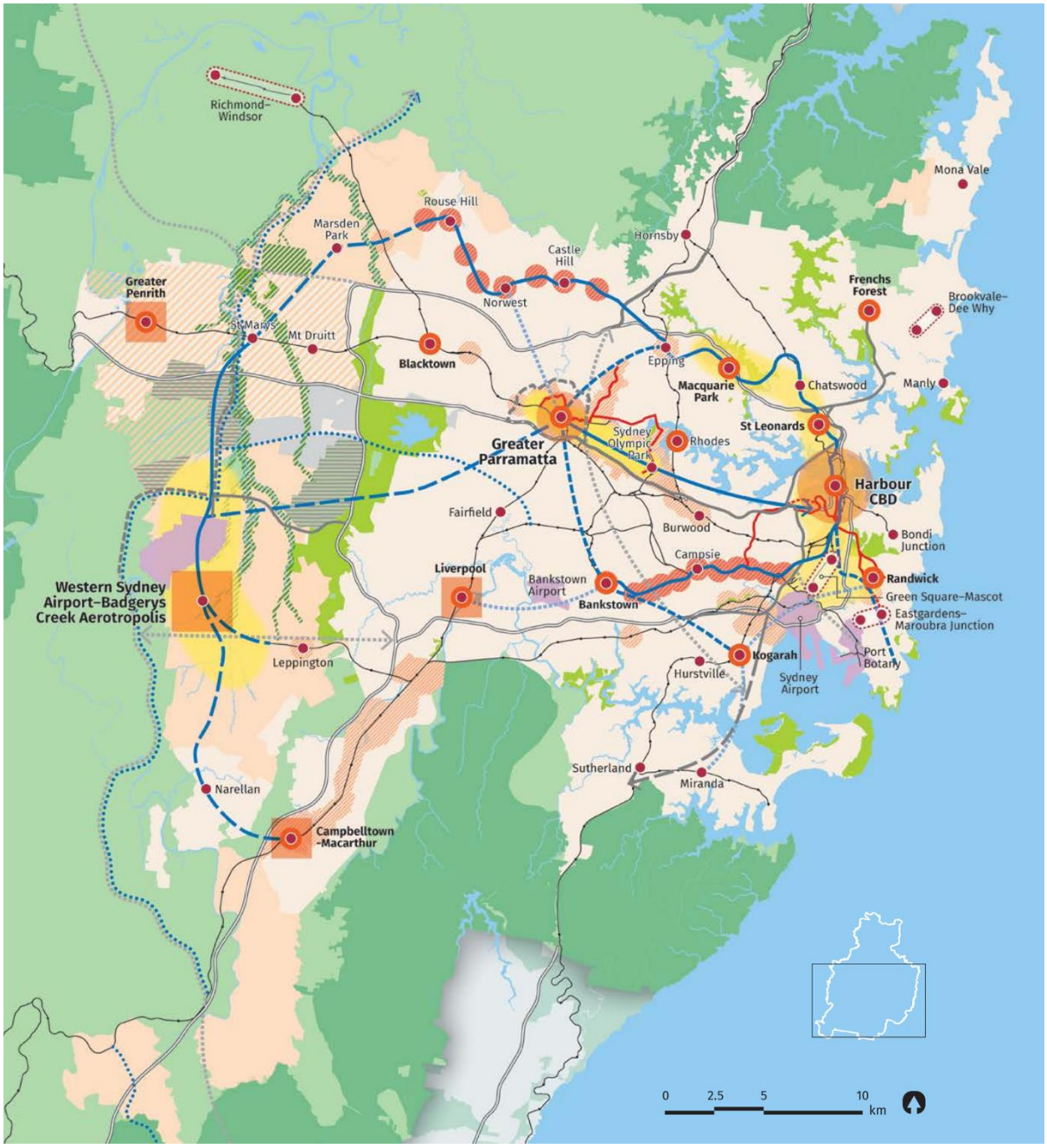

Figure 20 The Metropolis of Three Cities, a Vision to 2056. Source: Planning NSW (2024).

Parramatta Square is part of the 2.8-million-dollar Parramatta CBD transformation project, resonating with Darling Square in the Darling Quarter transformation plan. Like Sydney CBD, Parramatta CBD is also a highly culturally diverse area, with more than 53% of residents born overseas, much higher than the average 38.6% in Greater Sydney (Profile Id. 2021). One Parramatta Square (1PSQ) is the new Western Sydney University principal campus site that opened in 2017 (Figure 21). The 15-storey vertical campus design demonstrates a breakthrough in urban institution design by converting a commercial tower into a public education facility. Commissioned by the City of Parramatta and Charter Hall,

Architectus worked with Urban Art Projects to deliver a public art-oriented amphitheatre for recreation and social interactions.

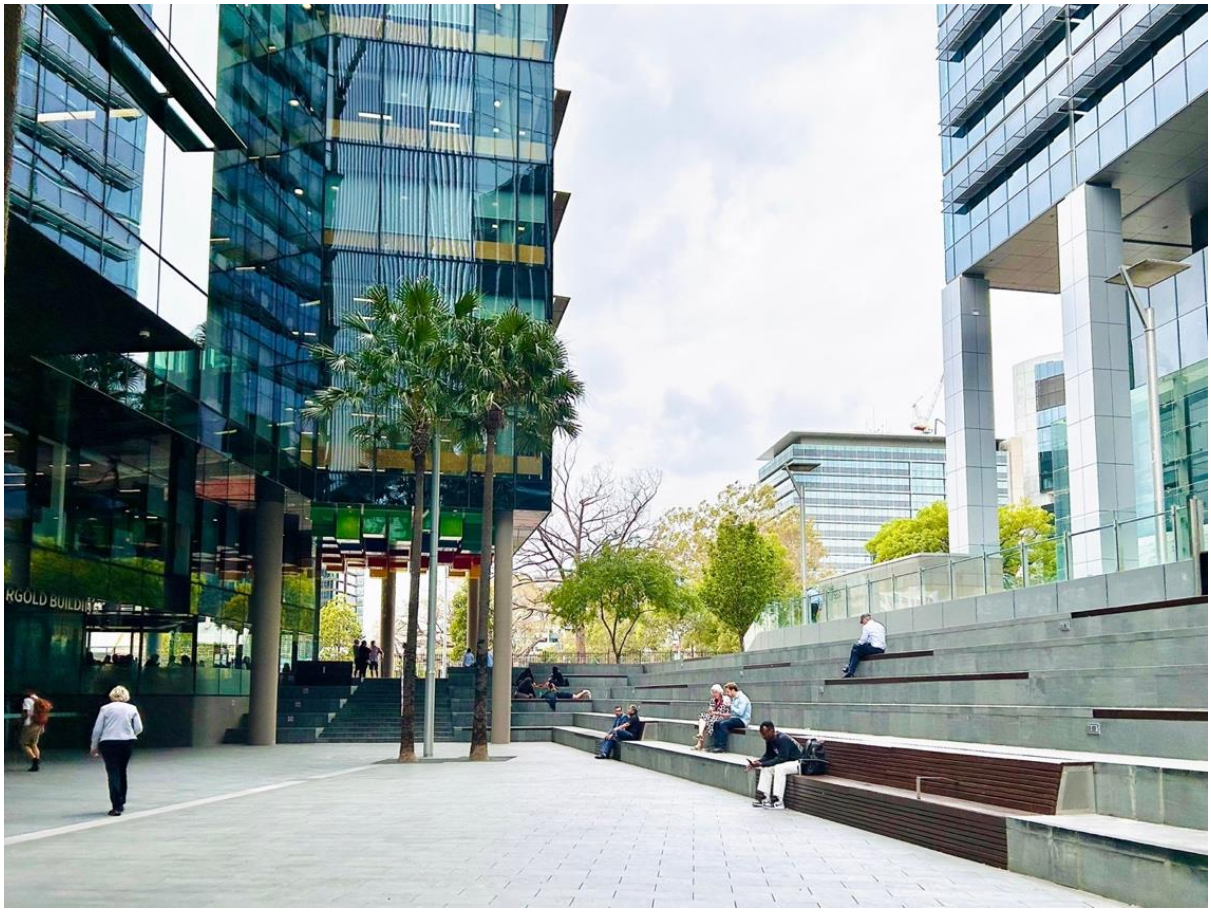

Figure 21 Western Sydney University and the urban steps at One Parramatta Square, City of Parramatta, February 2024.

4.6 One City, Four Lenses

4.6.1 Significance and Opportunities

These four case studies contribute to answering the research questions from these perspectives: 1) demonstrate the current role of public architecture in promoting SWB in culturally diverse urban neighbourhoods; 2) explore how placemaking can impact social interactions and mental health in a non-clinical setting; 3) study the relationship between public architecture and the perceptions of young adults (18 to 35), the vulnerable group facing the most mental distress in urbanised areas; 4) evaluate how therapeutic public architecture can work with Sydney's sustainability and liveability goals with multicultural and ethnic backgrounds.

4.6.2 Residential vs. Corporate-driven Context

The professional participants in semi-structured interviews mentioned distinctive differences in design for residential and institutional/corporate contexts. Different social interactions and visiting times were also shown in observations. This thesis also takes geographical, social, and cultural contexts into account. Darling Square and Westpac Place are in the most populated area in the City of Sydney. At the same time, Green Square Plaza is one of the fastest-growing neighbourhoods, with a 4.2% population growth from 2022 to 2023, and it has shown a consistent growth trend for the past five years (Profile.id 2023). Even though 1PSQ is in the less dense area of Western Sydney, the current peak hour of pedestrian traffic can exceed 80,000 movements during lunch breaks, creating a challenge to accommodate social activities and civic function in limited public open spaces (City of Parramatta 2017). With heavily invested strategic planning and support from local councils, these case studies reflect the current design strategies and frameworks across different LGAs of Greater Sydney.

4.6.3 Gaps in Current Well-being Research

Many current studies focus on quantitative methods to measure how people perceive SWB as a general population (Huang et al. 2019; Ordóñez et al. 2024). Even though some institutes like the NSW Health Stats reports reflect some constructive information based on a community or neighbourhood scale, an in-depth investigation is needed to investigate the relationship across age groups, ethnicity, and local communities. In other words, little research focuses on individual SWB at a community scale in Sydney. Also, even though local councils have emphasised the importance of the built environment design in promoting social well-being and community engagement, the current strategic planning has yet to provide relevant research and studies to support the planning objectives.

4.7 Case Study Site Analysis

4.7.1 Site Area and Boundary

Each case study site is defined by one public architecture location related to the research aims and its adjacent open space. The site boundary lines in the following diagrams indicate the project area mentioned in the interviews and data analysis in the findings and discussions (Chapters 5 to 8). The site diagrams also indicate preliminary observational analysis on case studies based on the relevant spatial data proposed in Chapter 3 (Table 5), including land use,

connections to public transportation, landscape, and urban fabric (Figure 22; Figure 23; Figure 24; Figure 25).

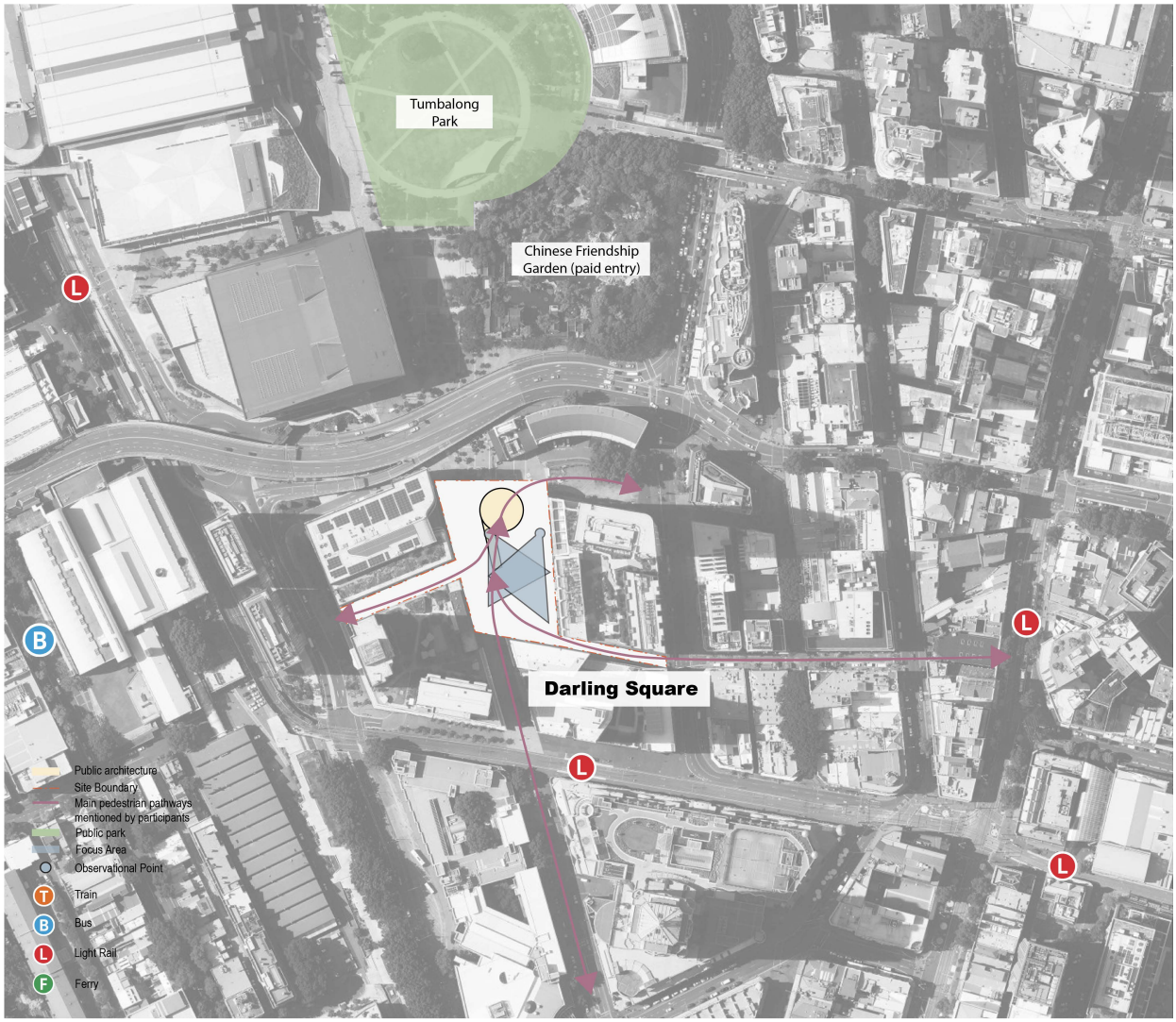

Figure 22 Site diagram of Darling Square.

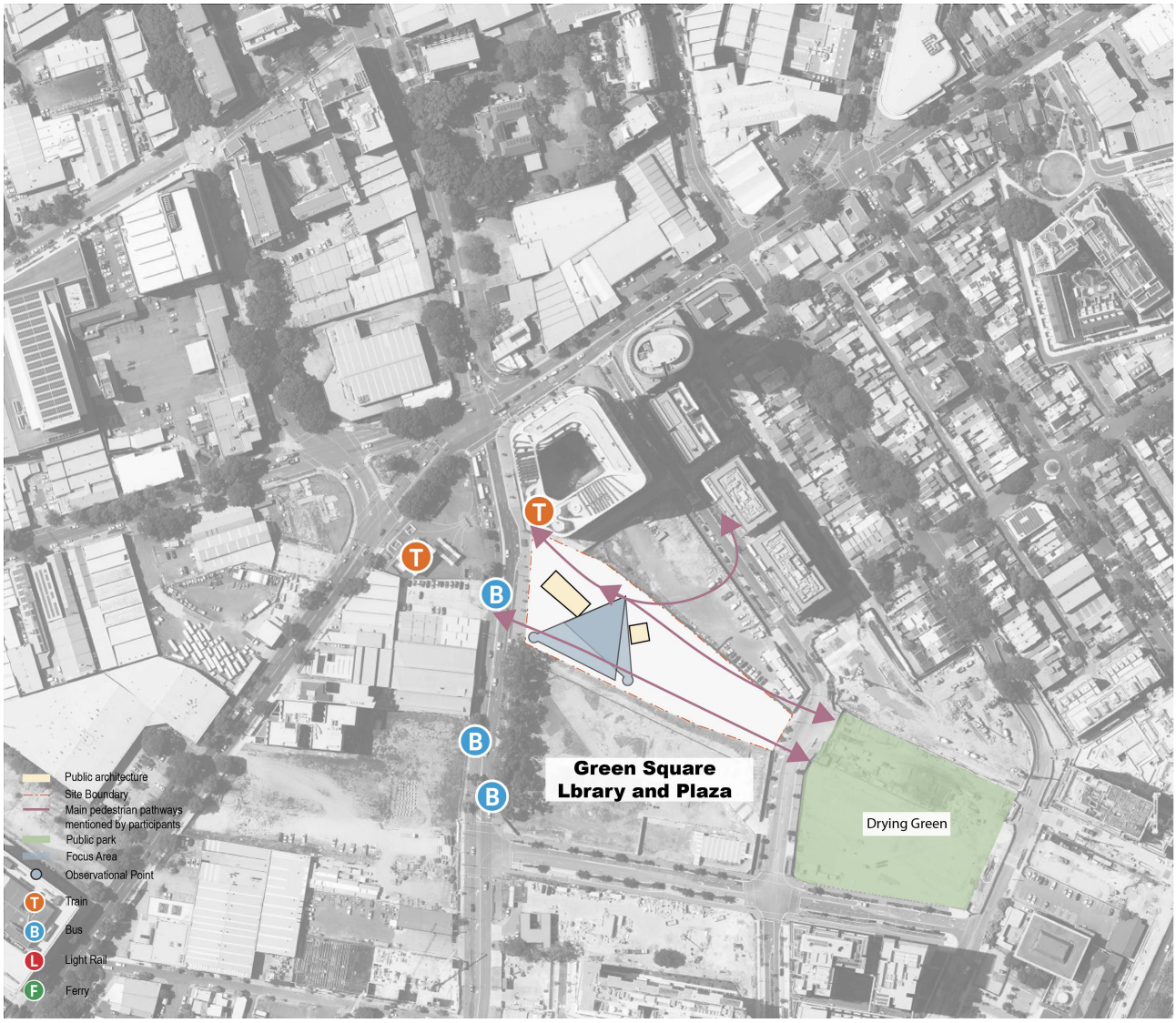

Figure 23 Site diagram of Green Square.

Figure 24 Site diagram of Westpac Place.

Figure 25 Site diagram of One Parramatta Square (1PSQ).

4.7.2 Preliminary Spatial Analyses

Chapter 3.4.1 proposed three categories of observational data for analysis, and the following architectural diagrams aimed to present the preliminary studies on relevant spatial data collected from field notes, test-walking, snapshots, and district planning documents published on the local governments' websites (Figure 26; Figure 27; Figure 28; Figure 29). These diagrams aimed to provide context for interviews and further discussions on observational data in Chapters 5 to 7.

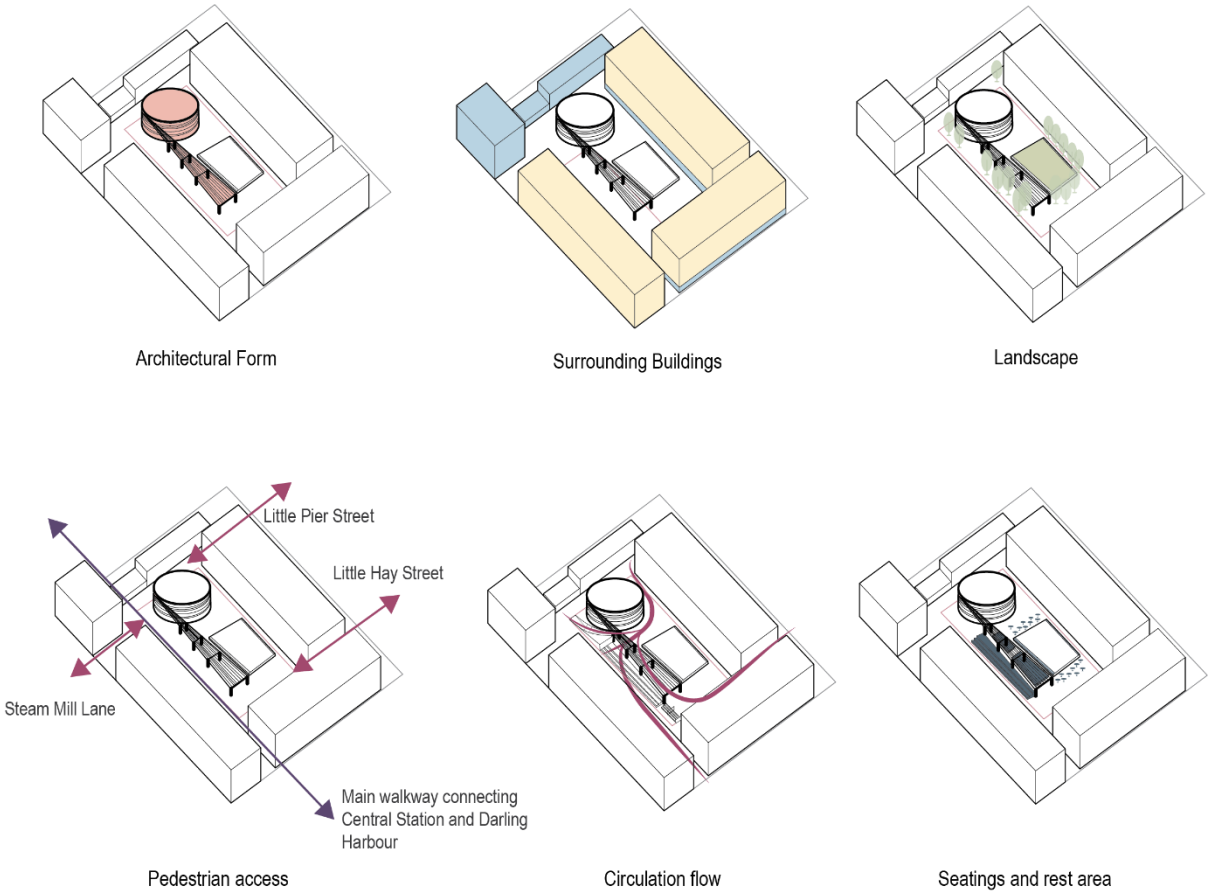

Figure 26 Preliminary analysis of Darling Square.

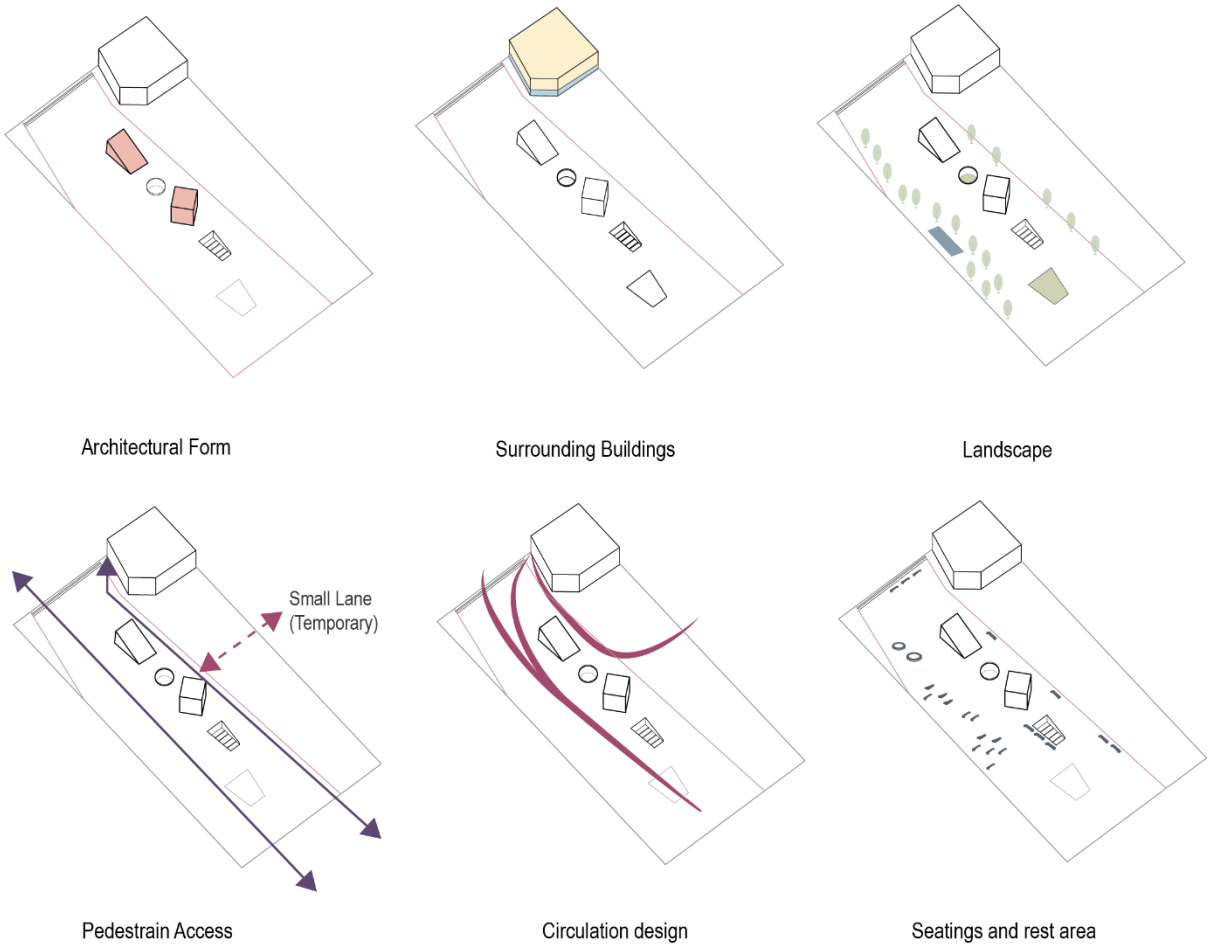

Figure 27 Preliminary analysis of Green Square Library and Plaza.

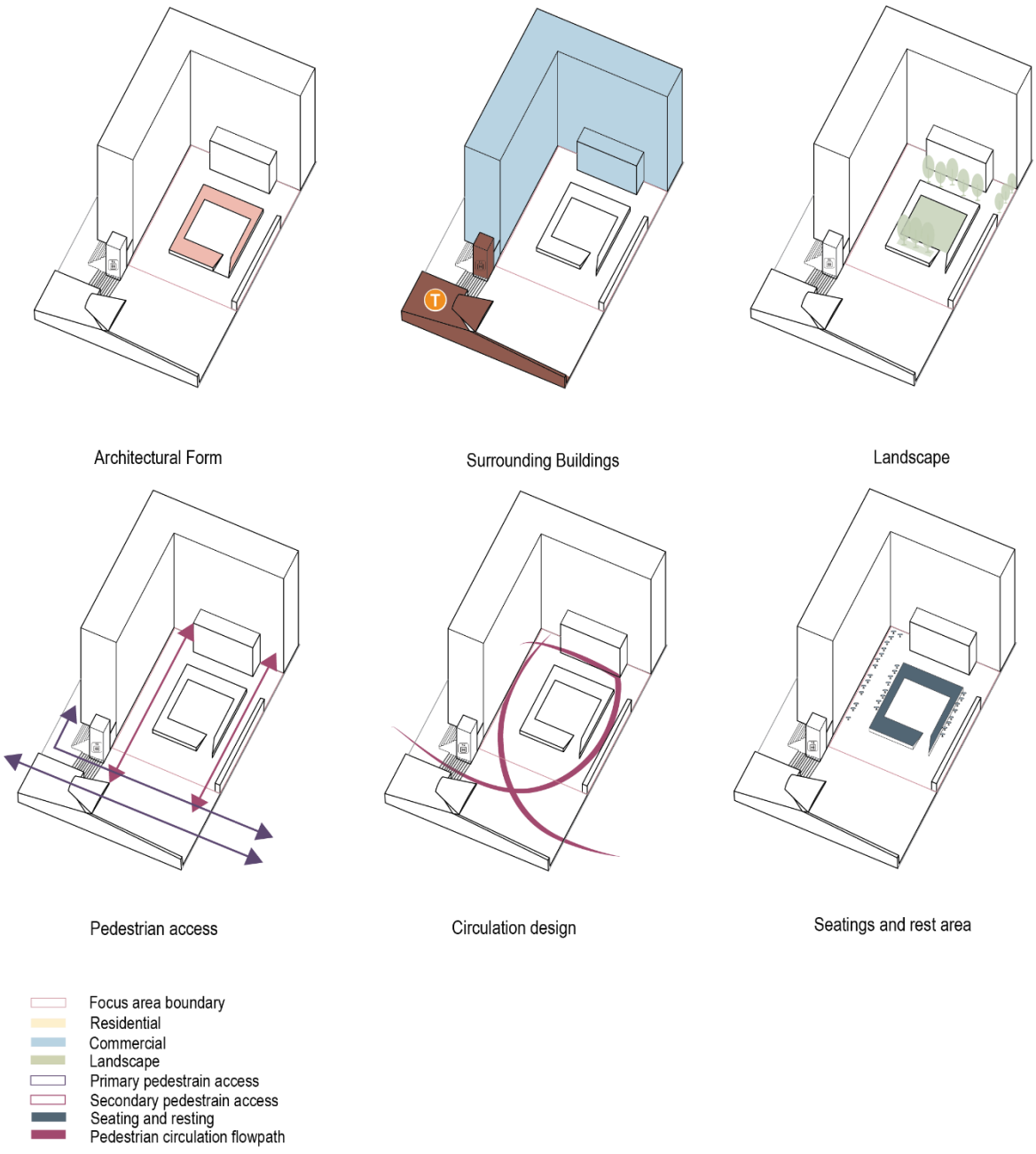

Figure 28 Preliminary analysis of Westpac Place.

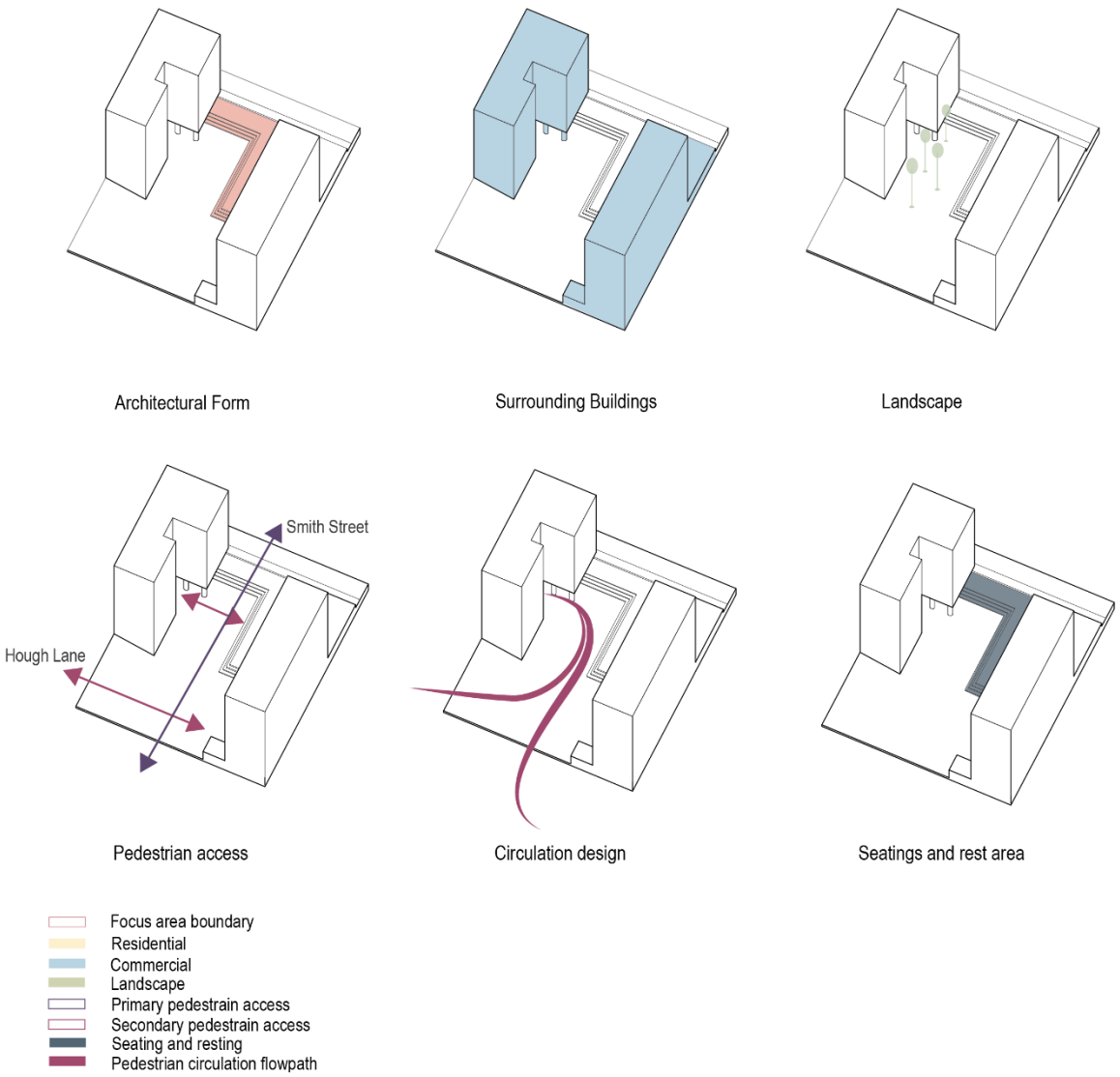

Figure 29 Preliminary analysis of One Parramatta Square (1PSQ).

4.7.3 Focus Area for Observations

Due to the limitations of having only one researcher for fieldwork, the author developed one focus area where social interactions and activities are most likely to happen for naturalistic observations. Focus areas are developed during test-walking and pilot observations to establish a focus area for optimal observations. Each focus area would have approximately the same footprint and several observational spots suitable for different conditions. The author also established two observation points for each site after test-walking (see more in Figures 21 to 24).

4.7.4 Field Notes

Field notes documented trends and reflections during each observational period, which were then compiled and archived into NVivo12 for data analysis. Combined with photographs, these notes were cross-referenced with observational data and key themes that emerged in interviews (Chapters 5, 6, and 7).

4.7.5 Analytical Memos

Snapshots were taken during a fifteen-minute interval for each observation to document the social interactions and activities facilitated by case study sites. These photographs were then combined with field notes in the analytical memos to interpret behavioural data and trends of activities further.

4.8 Summary

This chapter explained the rationale behind focusing on Sydney's urban neighbourhoods for this thesis. Sydney has set a leading example of how a large metropolitan area pursues well-being goals by designing healthy, liveable spaces on its three geographical dimensions (the City of Sydney, the metro area of Sydney, and the Greater Sydney).

Living and studying in Sydney also provided the author with first-hand experience in understanding the characteristics of case studies, which led to a comprehensive background knowledge when interviewing participants. This chapter also discovered the gaps between the design objectives and the subjective experiences of residents. Also, the existing sustainable strategies discuss SWB and psychological health at a relatively superficial level, heavily depending on self-reporting numerical indexes that might risk over-generalisation (Chapter 3.1.3, 30).

The research design proposed two qualitative methods to create an in-depth case study instead of a generalising approach to the research questions. The four case studies also highlighted a few precedents of well-being-oriented public architecture in Sydney, which provides contexts for observations and interviews. The site analysis revealed three themes related to data analysis: comfort (and discomfort), enjoyment, and meaningfulness (sense of belonging). The case studies also provide a framework for implementing methods to evaluate how public architecture can promote SWB at a neighbourhood level. The following three chapters will continue to discuss these findings.

In conclusion, these case studies offer an invaluable opportunity to analyse how public architecture influences individual SWB, particularly in Sydney's urbanised areas. They explicitly addressed specific aspects related to promoting positive social interactions and SWB, which warrant them as exemplars of well-being-oriented public architecture design. This set of exemplars was not meant to be exhaustive, rather representative of the diversity of such sites in metro area of Sydney. This thesis finds opportunities to establish a therapeutic design framework for public architecture by studying the case studies' positive impacts and limitations.

5. Comfortable Places to Linger in Public Open Spaces: Seating, Shelter, and Accessibility

Introduction

This chapter discusses the first of three key themes derived from observations and interviews: therapeutic public architecture can promote SWB in urban neighbourhoods by 1) designing comfortable places to linger, 2) creating enjoyable and playful spatial elements, and 3) providing an inclusive place to promote meaningfulness and a sense of belonging. The first group of findings outlined how public architecture design promotes comfort with seating, shelter, and accessibility. The analysis presents relevant data from 288 hours of observations and 48 semi-structured interviews, leading to behavioural mapping, visualisation of architectural analysis, and thematic analysis. These analyses were compared and discussed based on the literature review and methodology established in Chapters 2 and 3. Having defined the concept of public architecture in Chapter 2 and addressed the first research question, this chapter uses themes to answer the third research question: What are some key design strategies in public architecture to promote SWB at a neighbourhood scale? The findings provide insights from three perspectives: users, professionals, and the author.

5.1 Comfortable Places for Lingering

In this thesis, "linger" and "lingering" mean spending idle time and dwelling in public architecture without pre-established plans or intentions (Gehl and Rogers 2010, 20). Individuals need to spend adequate time in public open spaces to observe improvements in their well-being (White et al. 2019; Garrett et al. 2021; McCartan et al. 2023). White et al. (2019) stated that the exposure-response relationships between time spent and well-being improvements are under-researched. Yet most users have shared they had visited their relevant case study site at least two to three times a week for the past five months before the interview and spent at least half an hour every time. On average, the user participants reported feeling *"much better"* and *"more positive"* after spending around 90 minutes per week visiting case study locations, either in one visit or from several visits. This estimation was close to what White and associates observed in the UK study: spending 120 minutes per week with nature and open spaces leads to "significantly higher reports of health and well-being" (White et al. 2019, 7).

Recent research has investigated the importance of designing public spaces for comfort, emphasising ways perceived comfort can contribute to overall well-being (Shafray and Kim 2017; Ambrosini et al. 2018; van Ameijde et al. 2022). van Ameijde et al. (2022) proposed a series of critical features to design for a comfortable public space, including shaded seats, durable shelters/canopies, visibility that promotes quality viewing, and open lines of sight for feeling safe and in control. The findings in this chapter concur with van Ameijde et al. that seating and shading/shelter were key indicators that emerged from the analysis and promoted the longest lingering time in case studies.

The analysis presented in this chapter emerged from observational data. Based on the data collection and analysis proposed in Chapter 3.4.1, heat maps collected raw data and were generated to visualise trends in social activities, revealing three primary factors that promote lingering: seating, shelter, and accessibility (Figure 30; Figure 31; Figure 32). Additional subthemes emerged through thematic analysis of interview data (Table 12). This chapter examines these spatial and social patterns to identify key design strategies for comfort.

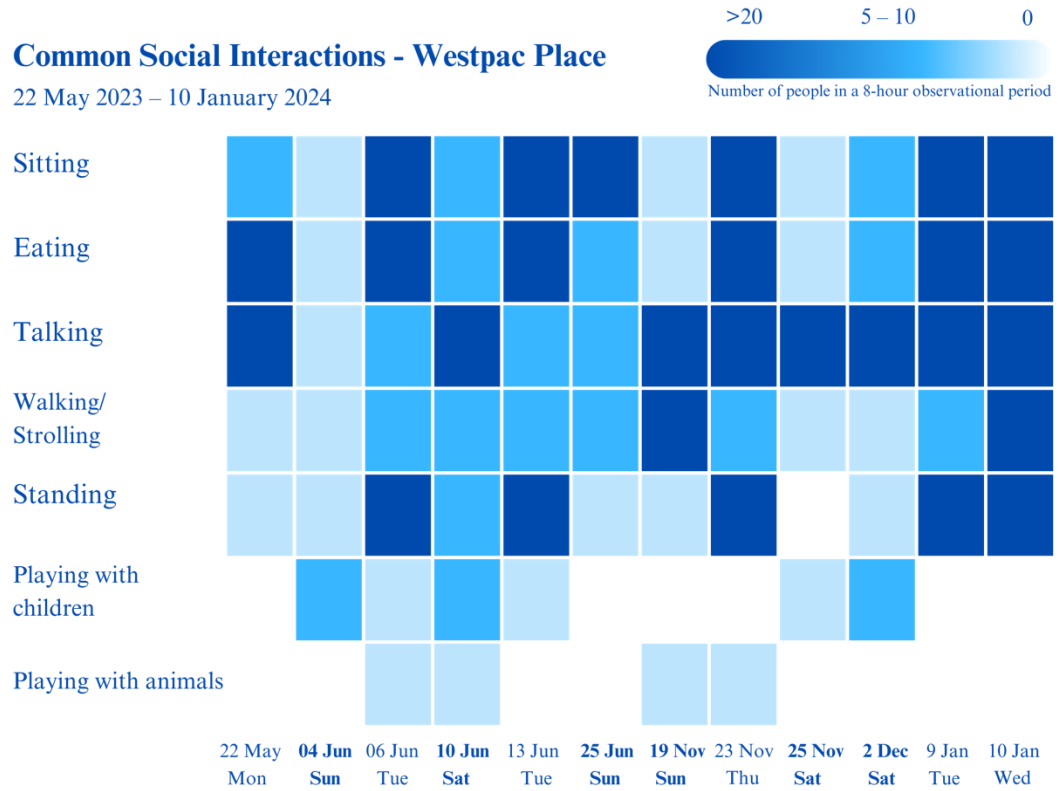

Figure 30 Heatmap for main social activities documented in observations, Westpac Place.

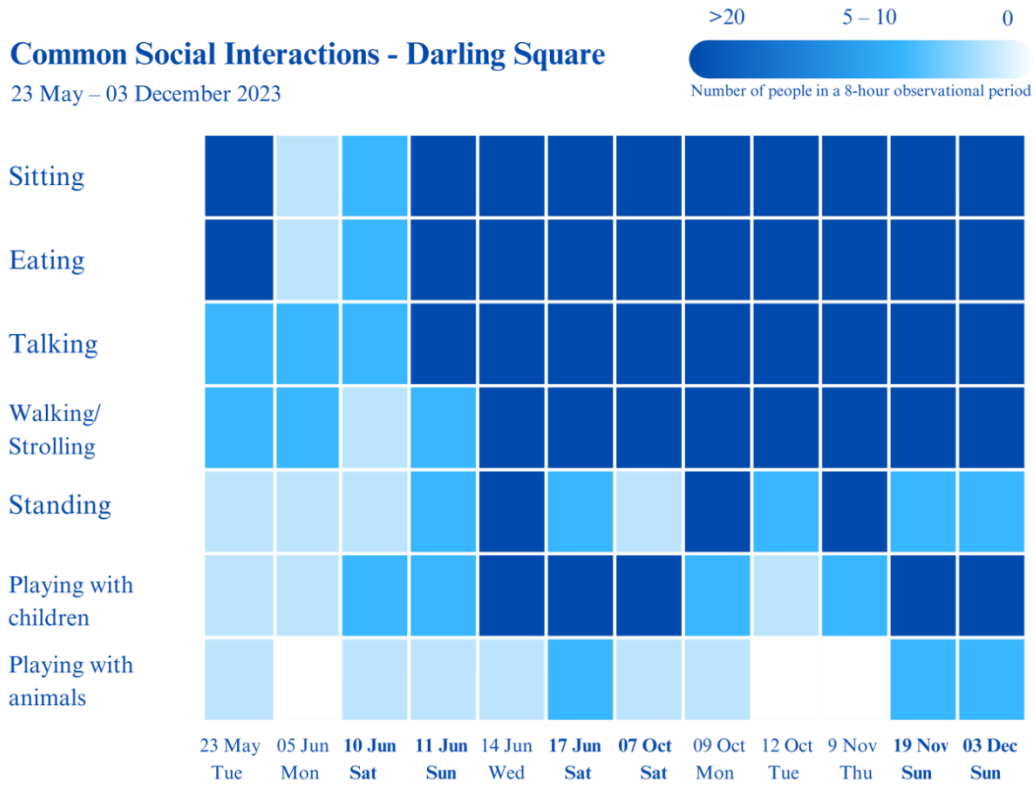

Figure 31 Heatmap for main social activities documented in observations, Darling Square.

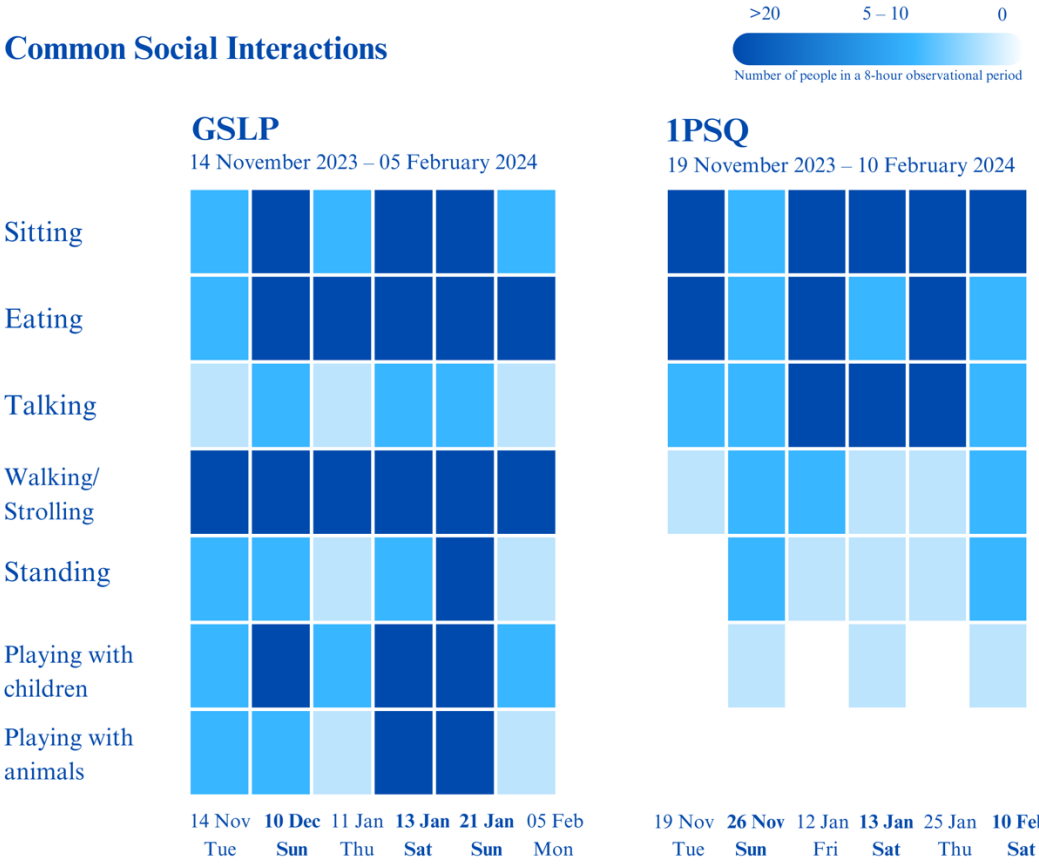

Figure 32 Heatmap for main social activities documented in observations, Green Square Library and Plaza (GSLP) and One Parramatta Square (1PSQ).

Table 12 The main themes of *Comfort* with pertaining subthemes or nodes and relevant case studies[8].

Main Themes	Subthemes or Nodes	Relevant Case Study
Seating	resting	DS, GSLP, WP, 1PSQ
	sitting	DS, GSLP, WP, 1PSQ
	eating	DS, WP
	lying down	DS
	jumping/playing	DS GSLP
Shelters	shading/shades	DS, WP, 1PSQ
	covers for the sun	DS, WP
	shelters	WP, 1PSQ
	roof/extended roof	DS
Accessibility	convenience	DS, GSLP, WP, 1PSQ
	walkable	DS, WP
	atmosphere/vibes	DS
	views and visibility	DS, GSLP, WP
	safety and security	DS, GSLP, WP, 1PSQ
	proximity to public transit	DS, GSLP, WP, 1PSQ
	easy to get to	DS, WP

5.2 Seating

Gehl and Svarre's (2013) work concludes that more seats and seating options meant more people sitting and spending time in a public space. Through naturalistic observations, the author observed most people spent about twenty minutes to an hour during each visit to the case study sites. The most common activity seemed to be simply sitting down – perhaps for a break. The preferences for sitting areas and social activities associated with sitting demonstrate intriguing similarities and differences across the four case studies. The following section discusses the impacts of seating design and its relationship to public architecture.

[8] The abbreviations DS, GSLP, WP, and 1PSQ refer to Darling Square, Green Square Library and Plaza, Westpac Place, and One Parramatta Square.

5.2.1 For Resting

Benches combining conventional park furniture and urban sculptural forms were the most common design features of the case studies that occupied a significant site area. The emphasis on seating reflects the primary activity of people using public open spaces: having somewhere to rest, for some alone time, or to hang out with others.

Darling Square was the only case study with a wooden pavilion extending from the anchor public architecture (Figure 33). The lead landscape designer, Sacha Coles, commented that project architect Kengo Kuma insisted on adding the pavilion to the original plan because, in Sacha's words, they felt *"it will become the signature place drawing people in."* Many participants echoed this statement and mentioned they preferred to rest under the pavilion because of the flexible options and pleasing visual qualities.

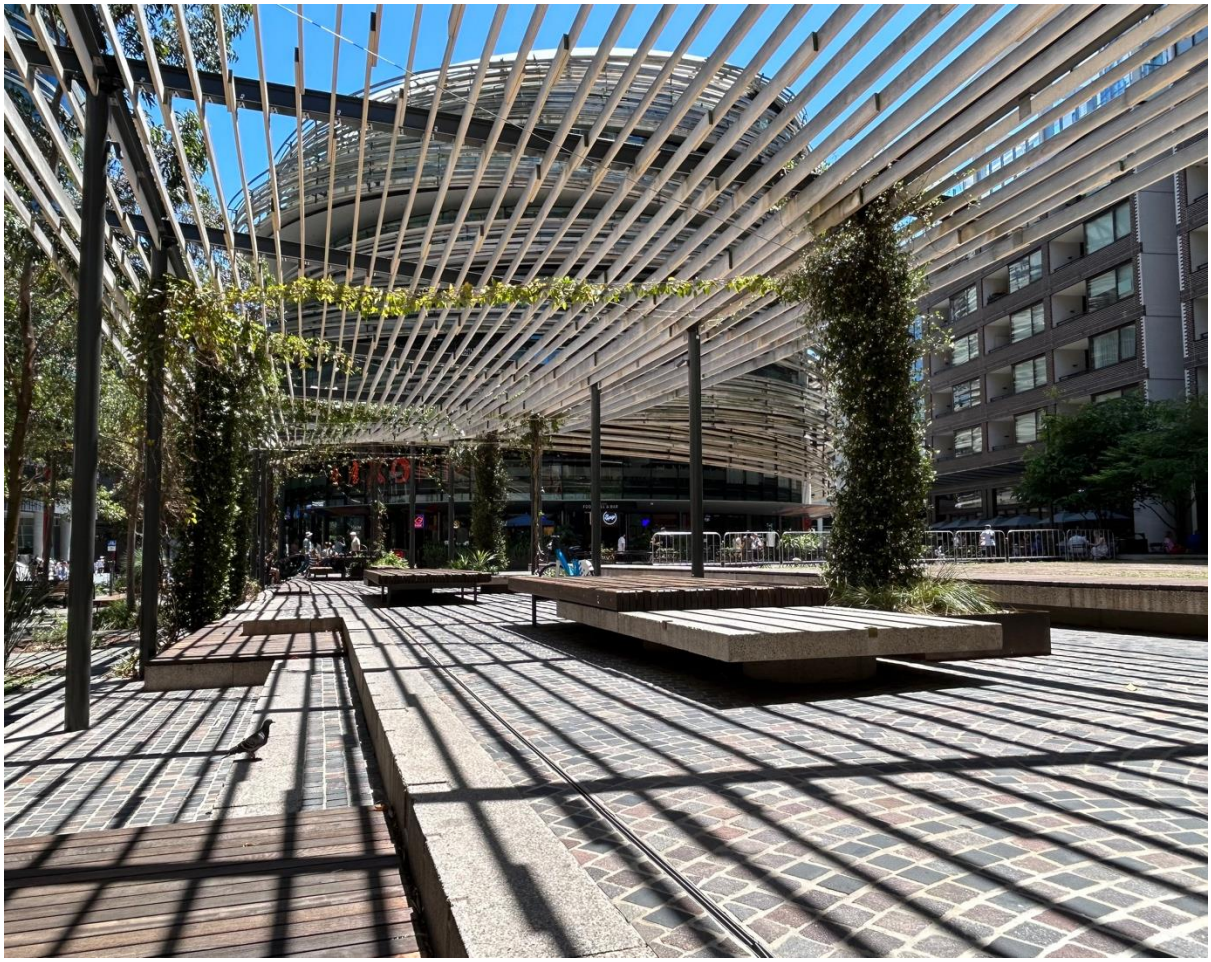

Figure 33 Wooden pavilion of Darling Square and various seating options. January 2024.

When asked about their primary purpose for visiting these sites, many participants across four cases, including Nam, Rosie, Shyla, and Sara, all mentioned *"for a break"* or *"taking a*

breather". This kind of break was spontaneous and informal, usually between university classes or work.

Darling Square and Westpac Place offered continuous platforms for people to enjoy in non-conventional ways. These platforms were lower than conventional chairs, and people sometimes stretched their legs while talking to their companions (Figure 34).

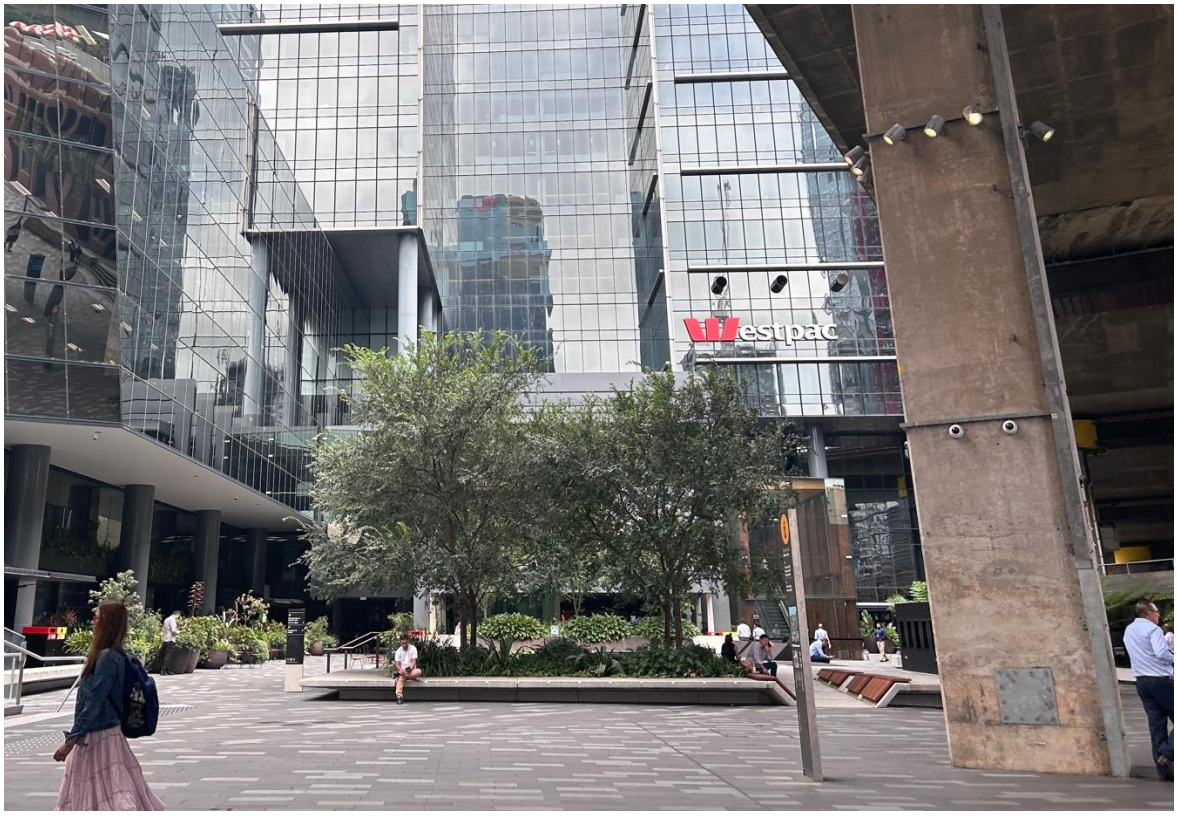

Figure 34 Westpac Place pocket park offered various seating options.

1PSQ has generous urban steps (identified as an "amphitheatre" in design and planning documents, according to the project architect Colin Odbert) with six layers of continuous surfaces. The wooden panels weaved between the stone tiles, offering flexible seating for individual and group visitors. Visitors usually preferred to sit on the wooden area instead of the stone tiles, regardless of the weather conditions. Some participants mentioned that they preferred the wooden area because it looked cleaner than the rest of the steps and "*looks a bit more comfortable*".

There were dozens of charging outlets paired with wooden seats to encourage lingering (Figure 35). Colin Odbert from Architectus mentioned this as an *"innovative design element to encourage people, especially students, to spend more time outdoors"*. However, observations and user interviews did not find a clear connection between outdoor charging ports and extending visiting time. Some participants who were university students mentioned they would *"hang out"* or take a study break at the urban steps without using or plugging in digital devices. Some office workers nearby said they usually visited for lunch breaks and would not bring laptops or work-related devices *"to detach from work for a break completely"* (Rani, 1PSQ participant).

Figure 35 Outdoor charging outlets were installed at 1PSQ, City of Parramatta, Sydney, December 2023.

Green Square Plaza was also equipped with smart urban furniture. The set of reclining wooden benches with power outlets was popular throughout observational periods. During observations, these seats were also popular among delivery drivers. They usually took their break around 2 pm, parking their delivery bicycles against the benches. Most of these drivers would spend their entire break scrolling on their phones. One driver tried to charge his phone by plugging it into the external charging outlets next to the reclining benches. However, it

was the same situation as 1PSQ: most outlets did not work. Following up on this occurrence, the author found that most charging outlets were not working after testing them during observations, suggesting a strong reason why these particular power outlets do not necessarily support lingering. Most users did not mention how smart urban furniture and charging outlets contribute to their visits, contrary to what Odbert suggested. Some commented they would bring their laptops and smart devices to work or study occasionally, but most users visited case studies to rest and take a break without needing to plug in their devices.

5.2.2 For Eating

Lunchtime across all four sites was always lively and consistently the peak visiting period, weather permitting. Eating was also the most frequently mentioned reason the users spent time at case study sites.

In modern corporate culture, social interactions facilitated during lunchtimes indicate “soft organisational behaviour”, essential to promote effectiveness and productivity (Altman and Baruch 2010, 128). For corporate-oriented environments like Westpac Place and 1PSQ, there was a sharp contrast between lunchtime and the rest of the day. These two case studies had only a few visitors who did not actually eat during the lunch break. The open area in these sites becomes an outdoor cafeteria for office workers. Many office workers queued up at the ground-level food court of Westpac Place, and the outdoor seating area was quickly filled up. The open area had two types of seats: metal folding chairs with a round table for every three chairs and urban furniture with continuous surfaces with wooden or stone finishes (Figure 36). The fieldwork journal noted that the lunchtime crowd, especially office workers, preferred the metal chairs with tables in the middle, as many people were heading straight toward them after getting takeaway food. The sunny spots in the open area were always popular among visitors and were the first to be occupied during observations in May and June 2023.

Figure 36 Metal chairs and stone surfaces at the Westpac Place pocket park, Sydney, November 2023.

The Westpac Place pocket park had the smallest site boundaries of the four case studies but offered six seating options for people to spend time together. The design scheme evolved intentionally around a central lawn area with flexible seating options around all four sides, including reclining urban furniture, continuous surfaces alternating between wooden and stone finishes, stone benches, wood benches, and conventional metal chairs with round tables. In addition, as noted proudly by the Director of ASPECT Studios, Sacha Coles, sitting on the grass is another option.

1PSQ was generally less crowded during observations than Westpac Place, likely because more seating was available in other parts of Parramatta Square, and it does not have an open food court like Westpac Place. Like Westpac Place, many group visitors preferred conventional metal chairs and urban furniture further down Parramatta Square. Charu mentioned that her preferences for sitting depended on whether she was alone or spending time with others:

I like to spend time at the 1PSQ steps (amphitheatre)to unwind, but I prefer to sit somewhere else (at Parramatta Square) for my lunch breaks. It is just easier to get takeaways and sit on the benches next to the restaurants. Also, I always have lunch with my work friends. It is nice to sit around the big table as a group.

Charu, 1PSQ participant.

Darling Square is close to some high-profile corporate buildings and was packed with office workers during lunchtime. Even though there was plenty of seating in the overall Darling Square area, the long communal table in the focus area was usually the last space to get filled up during lunchtime, generally only occupied by people visiting in large groups (more than five people). Some people dined alone yet still shared the communal table while keeping at least one to two metres between each other. One interesting observation note is that these individuals were likely to sit on the same side of the table, possibly to avoid direct gaze with strangers while spending time at a shared table. Some individual diners occasionally shared the communal table with one or two other smaller groups (fewer than four people). When a larger group (more than five people) sat at the communal table, it was common for individuals to interrupt their visits and leave, even though the communal table should be able to sit up to twelve simultaneously.

Green Square Plaza was much quieter than the other case studies, even during the lunch rush hour. Despite the generous open space available at Green Square and benches placed throughout the plaza, lunchtime visitors almost always gathered around the reclining benches under the trees and beside the ground fountain (Figure 37). This type of urban furniture provided larger surfaces, making it seem more convenient to have lunch than the conventional narrow benches without a flat surface to rest.

Figure 37 Visitors eating and resting on reclining furniture, Green Square Plaza, March 2024.

Many visitors enjoyed their lunchtime alone. No apparent interaction between strangers was observed on site. However, the social distance between sitting strangers was usually closer than in Darling Square and Westpac Place. The communal sitting design and the rush-hour pedestrian traffic likely contributed to this decreased social distance between strangers while sitting. In the case of Darling Square, since the outdoor sitting dimensions were broader and longer than the conventional benches, visitors gravitated toward the outside edge of the wooden benches with closer social distance in between, which made it easier to sit down and get up. These individual visitors were usually scattered around the open space between groups (Figure 38).

Figure 38 The social distances between individual and group visitors observed at Darling Square, Sydney, 2023.

This part of the findings also revealed the significance of pro-social dining experiences that catered to positive interactions, which will be further discussed in Chapter 6.

5.2.3 For Napping

It was intriguing to see how people felt safe and relaxed enough to nap in public open spaces. Though not the most frequently observed and discussed activity, napping or dozing off on urban furniture was a recurring behaviour observed in Darling Square, Green Square, and Westpac Place. Seating suitable for napping was often more sculptural and flexible in appearance, with a wide surface to stretch out one's body.

The reclining benches were the most popular place for people to gather in Green Square, where they usually spent the longest time. These recliners were wide enough for two or three people, and some visitors enjoyed their downtime by lying down (Figure 39).

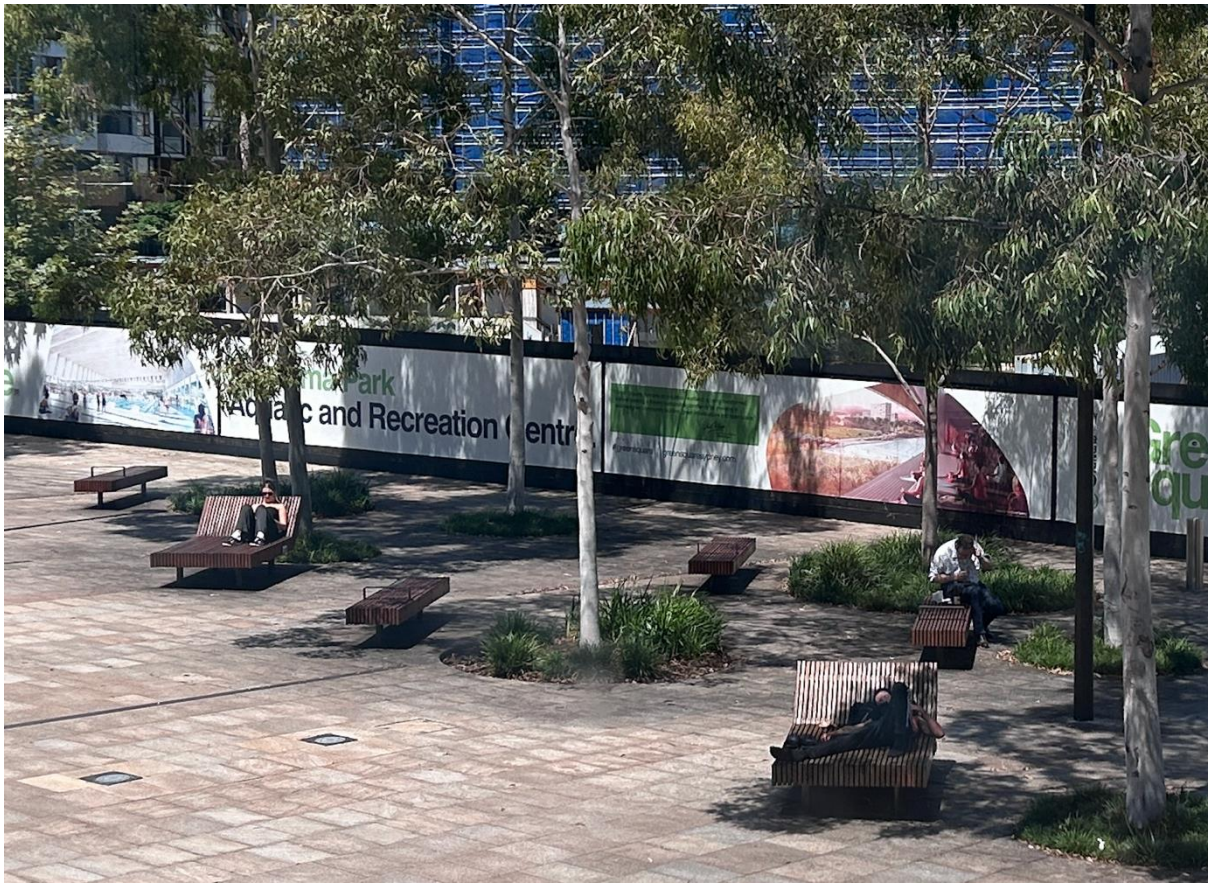

Figure 39 Reclining wood benches at Green Square Plaza, Sydney, October 2023. These reclining benches were usually the most populated seats during observations.

Westpac Place also offered a large piece of urban sculpture with a long, continuous wooden surface suitable for sitting and napping. Landscape architect Sacha Coles commented that this reclining urban furniture was *"the star of the pocket park"* and that it *"encourages people to lean back and relax"* (Figure 40). As Coles anticipated, a few visitors were dozing off on this sculptural lounge during observations. However, some user participants shared something different.

> *I have seen people comfortably stretching out and dozing off on the (reclining) wood benches, but I don't have the luxury to relax like that during my shifts.*
>
> Rosie, Westpac Place participant.

> *Whoever had time to actually lean back and enjoy this park is one of the lucky crowds. I don't know anyone from my office who has time to do that, but probably*

some people with flexible work schedules. Also, my work clothes wouldn't let me relax or nap on the park furniture.

Chloe, Westpac Place participant.

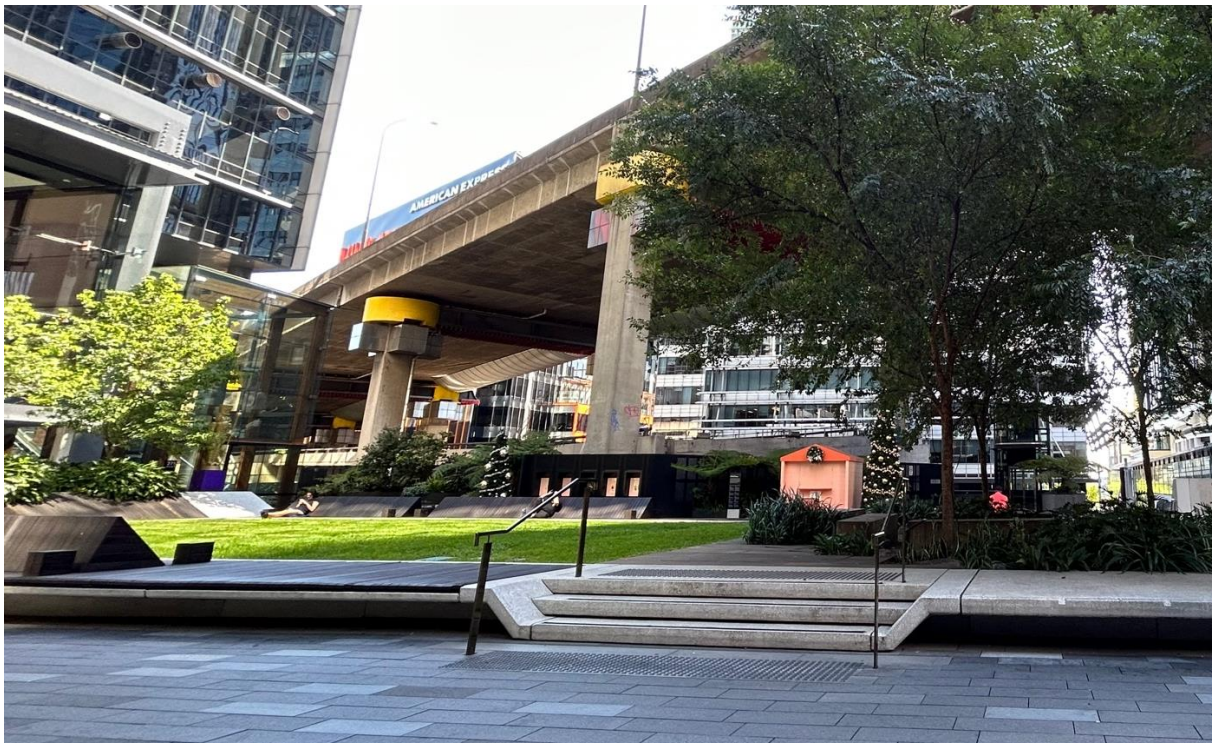

Figure 40 Visitors stretched their legs and napped on the Westpac Place urban sculpture, Sydney, November 2023.

Indeed, when the author conducted the observation on a Wednesday afternoon in November 2023, and the pocket park was mostly empty after 3pm (Figure 40). The only visitors who spent time and relaxed on the park furniture did not appear to be office workers. Darling Square did not have reclining furniture, but some people would nap on the floating platforms under or near the wooden pavilion (Figure 41). Frequent visitor Min also mentioned sometimes they and their friends would picnic on these platforms while *"lying down in all kinds of weird postures"*.

Even though 1PSQ also provided long continuous surfaces suitable for various activities, it was the only case study in which napping was not observed or discussed in interviews.

Figure 41 Darling Square pavilion floating platforms encourage flexible uses, including napping, November 2023.

5.3 Shelters

Openness is the fundamental spatial experience of a public open space. However, a completely open, airy space needs shading or shelter design to accommodate different weather conditions and cultivate a comfortable public space. Data from observations and interviews indicates that design elements for shading and shelter would significantly impact time spent on site.

5.3.1 Shading for Hot Weather

Green Square Plaza has the largest open area of all four case studies. Matthias Hollenstein, founder and director of Studio Hollenstein, shared that the core objective of the design scheme of Green Square Plaza was to "*free up the plaza to maximise open space*" by moving most of the library functions underground. This award-winning design created two transparent pavilion-like buildings in 8,000 square metres of open space. Hollenstein also commented that this generous, airy space "*created an inviting community space in this dense neighbourhood*". However, some participants expressed a desire for more shading. Neither the library buildings nor the trees provided sufficient shading during the day, which left the plaza quiet and empty during many observations, especially on warm sunny days. Residents Luqi and Riley said they would often detour to the adjacent street instead of walking across the open plaza to avoid the intense sunlight.

> *(*In summer) the sun can get so intense sometimes, and the walk (across the plaza) around noon feels like it can take forever".
>
> Riley, Green Square participant.

The existing trees were planted along two sides of the plaza, only providing shade for a few benches directly under them. Some participants did not mention shading directly, but they recalled how they always chose to sit under the trees because this area "*looked nice*" and "*there were other people*", reflecting how other visitors preferred to spend time in the shaded area of the plaza. It was also consistent throughout observations that nearly none of the visitors would sit on the benches exposed to harsh sunlight around noon in most observations from December 2023 to February 2024, even though the same area was the preferred space to spend time in other weathers (Figure 39). The Green Square Library provided some shaded areas, but none of the seating benefited from the shade. An interesting observation was that the telescopes (part of the Cloud Nation public art installation) were mostly covered by architectural shading when it was sunny, and during warmer days, families would "park" their prams at the telescopes and stand there to chat (Figure 42). Chapters 6 and 7 will continue to discuss findings about how children and families enjoyed public architecture and unplanned interactions with public art.

Figure 42 Families with young children gathered on the shaded side of Green Square Library.

On the other hand, users from Darling Square, Westpac Place, and 1PSQ did not mention similar experiences. These three sites all have partial shading from nearby buildings and landscapes throughout the year. Westpac Place and 1PSQ also have cantilever roofs extending from the ground level ceiling, providing sheltered open space.

5.3.2 Shelters for Rainy and Cold Days

Sydney experienced more rainy days than usual during the observation periods in 2023. Having a sheltered place can significantly impact how people experience public open spaces. Building upon the previous section on preferred shaded areas by participants when the sunlight was intense, it was also natural to seek shelter when it rains or gets windy or cold. It is intriguing that some visitors would still spend time in public open spaces during unfavourable weather.

The morning observations (9–11 am) in May and June were usually quiet. However, Darling Square was frequently visited even on winter mornings, with sometimes more than four groups of carers with prams walking around together, as well as some elderly people stretching and basking in the sun. However, no design elements sheltered them from the cold wind, resulting in a much shorter visiting time than average.

Early mornings in Westpac Place during cold weather were particularly quiet and empty. Most visitors to the Westpac Place pocket park were office workers nearby. When the weather became unsuitable for outdoor activities, most people retreated to their indoor workspaces and food courts. Westpac Place also had a covered public corridor connecting the food court to the pocket park. Yet, some users commented that this corridor was usually dark, and the circulation path was insufficient to accommodate the lunchtime crowds.

5.3.3 Landscape as Shading/Shelter

Research literature has discussed that landscape and greenery can provide physical comfort, especially thermal comfort, in public spaces (Ambrosini et al. 2018; Pozo and García 2022). Landscape elements like trees and planters on building facades can provide natural shading, improve air quality, and create an inviting and comfortable environment that encourages repeat visits (Sayigh and Trombadore 2022). Both professional and user groups mentioned that landscape design is critical to a public open space to promote comfortable visits.

As mentioned in Chapter 5.3.1 Shading for Hot Weather most visitors flocked towards benches under the trees in Green Square Plaza during the daytime, especially during warmer days. The landscape design created an area with both reclining benches and natural shading, which were observed to encourage people to linger longer than any other areas on this site.

Further, landscape design's scale and spatial experience can also contribute to psychological comfort. Kai and Abigail commented that the greenery at the Westpac Place pocket park offered aesthetic values such as "*a treat for sore eyes*" while providing "nice areas to sit during lunch". Green Square users often mentioned how they enjoyed the circular garden of the Green Square Library (Figure 43). Some compared the garden with the plaza and preferred it because it "*felt very cozy*" and was easy to access when they needed a short break.

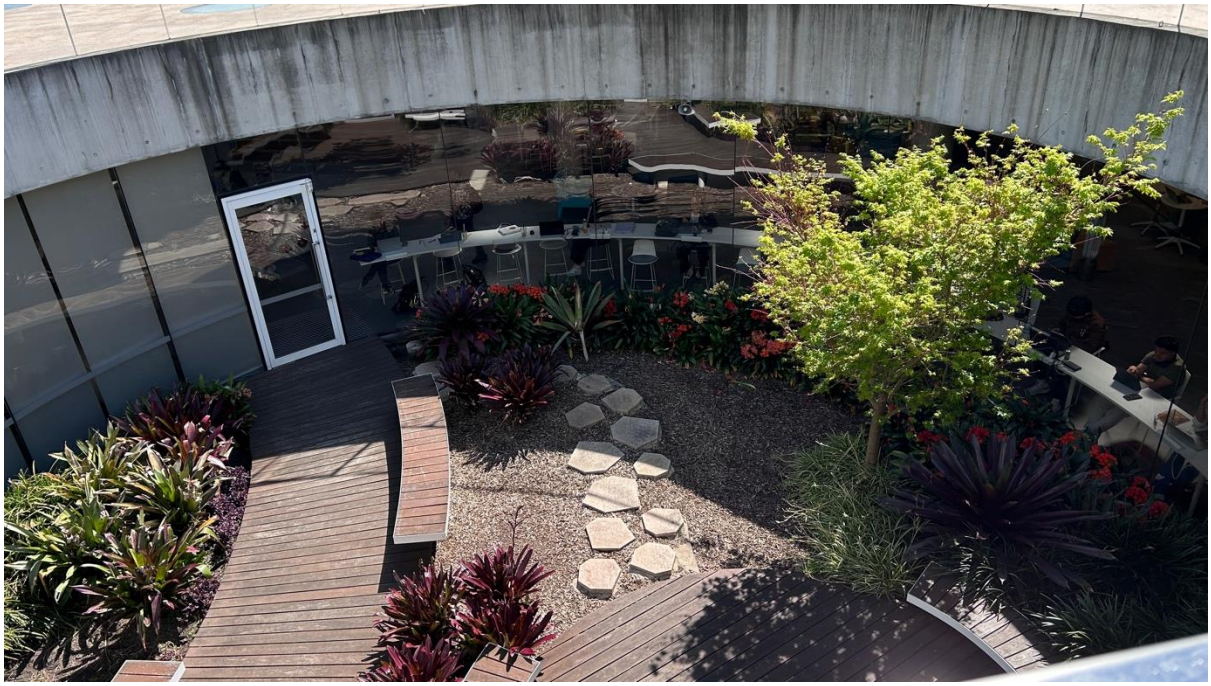

Figure 43 Circular Garden of Green Square Library, December 2023

5.4 Accessibility

A consistent theme relevant to physical comfort across four case studies is convenience, which is most related to walkability, connectivity to public transport, pedestrian circulation design, and lighting. A key theme of accessibility emerged to summarise the crucial design strategies related to associating a case study with convenience among user participants.

5.4.1 Walkability

A walkable and well-connected pedestrian-only space is essential to encourage spending more time in public open spaces (Shafray and Kim 2017; Tira et al.2020). Strolling and walking around frequently occurred in observations for all four case studies, as summarised

in the heat map analyses (Figure 30; Figure 31; Figure 32). Many Darling Square and Green Square participants also confirmed that walking and strolling were the main activities they preferred during visits, often accompanied by sitting down for a short break. Compared to these two sites, walking and strolling were less common in Westpac Place and 1PSQ (Figure 40; Figure 44). Some also commented that the limited placement of ramps reduced accessibility for prams and others with limited mobility. Despite Darling Square's prime location and popularity, it was uncommon to see people with walking devices and wheelchairs. The observational snapshots estimated that an average of two to three people with mobility devices would visit during an eight-hour observational period, a stark contrast with the average of sixty visitors within the same period. Frequent visitor Elsie also mentioned her observations of visitors with prams:

> *Many people enter Darling Square from this walkway (the main pedestrian path connecting Central Station and Darling Quarter), and people with prams seem to struggle sometimes because I have seen them carrying the prams up the stairs. It is a lot of effort. I know there is a ramp at the back of The Exchange, but they (caregivers) probably don't know about that, and the tall building hides the ramp.*
>
> Elsie, Darling Square participant

5.4.2 Connectivity to Public Transport

Many Darling Square user participants commented on how well-connected this site was to public transport, which contributed to a convenient arrival experience and led to repeat visits.

Both corporate-oriented cases provided flat and spacious pedestrian walkways connecting major transportation hubs (Wynyard and Parramatta) to adjacent neighbourhoods. However, only Westpac Place was popular with families and caregivers during weekends, which differed from the weekend observations of 1PSQ (Figure 44). Many visitors with prams strolled around Westpac Place on weekends, and most of them stopped by the pocket park for a short break before heading towards the next destination. The lawn and urban furniture of the pocket park also attracted children to play and explore (Chapter 6.1.3, 120).

Figure 44 Urban steps of 1PSQ, January 2024. The urban steps of 1PSQ were barely occupied on a Saturday, even though there were many visitors in the other parts of Parramatta Square during that same observational period.

5.4.3 Circulation Design

Participants discussed the circulation design in case studies that indicated the importance of considering how people move through public spaces.

Westpac Place participants often mentioned the “traffic” at lunchbreak, which made it challenging to spend time at the pocket park as planned. The pedestrian circulation at the ground-level food court can block the main walkway to access seating, causing congested pedestrian traffic, and was observed to have turned away potential visitors.

Darling Square participants were the only group commenting on wayfinding design. They considered Darling Square one of the major cultural destinations in Sydney CBD, and wayfinding design has helped them navigate between nearby attractions like Tumbalong Park and the IMAX movie theatre. However, a few participants also mentioned that it can be challenging to navigate at night due to the dark colours of wayfinding and signage.

5.4.4 Lighting

User participants often mentioned how they enjoyed the "vibes" when visiting case studies. Interpretations of the transcripts found that this theme relates to public architecture's ambience design, particularly lighting.

Although the observational periods focused on daytime activities, many users across all four case studies mentioned extending their visits well into night-time, and lighting design has significantly contributed to night-time visits. Darling Square users mentioned activities at night (after 6pm) more than users from the other three case studies, and many of them have noted how the lighting design has created a "*soft and cozy*" ambience that promotes longer visiting time (Figure 45). They also pointed out that the string lights were not a fixed feature but a temporary installation with various designs based on seasons and cultural festivals that offered "*a nice surprise*" for returning visitors. (Chapter 7.3.2, 164) will further discuss how artistic ambience design and public art with lights can contribute to playfulness and enjoyment.

Well-distributed lighting ensures visibility and creates a sense of safety, and it can also become a functional wayfinding system (Chapter 7.3.1, 161). On the contrary, if the public space is dimly lit at night, some users feel unsafe or unwelcome, which was the case for Westpac Place (Figure 46):

> *The (Westpac Place) park is dark after 4 or 5 pm, even during summer. It gets empty when I finish work around 6 pm and feels almost eerie. I can't help but rush towards the train station – I never wanted to wander around here after work. It looks so different from the daytime.*
>
> Rachel, Westpac Place participant.

> *I don't know why they didn't put more lights on the lawn, but the park looks really dark after the food court is closed around 4 pm. I know lights are coming out from the offices, but the entire space just feels so cold and empty. One time, I was waiting for my friend after work and was the only one there for at least 20 minutes. I can't stay there anymore and wait for her inside the station instead.*
>
> Ivy, Westpac Place participant.

Figure 45 Darling Square pavilion with string lights, July 2023.

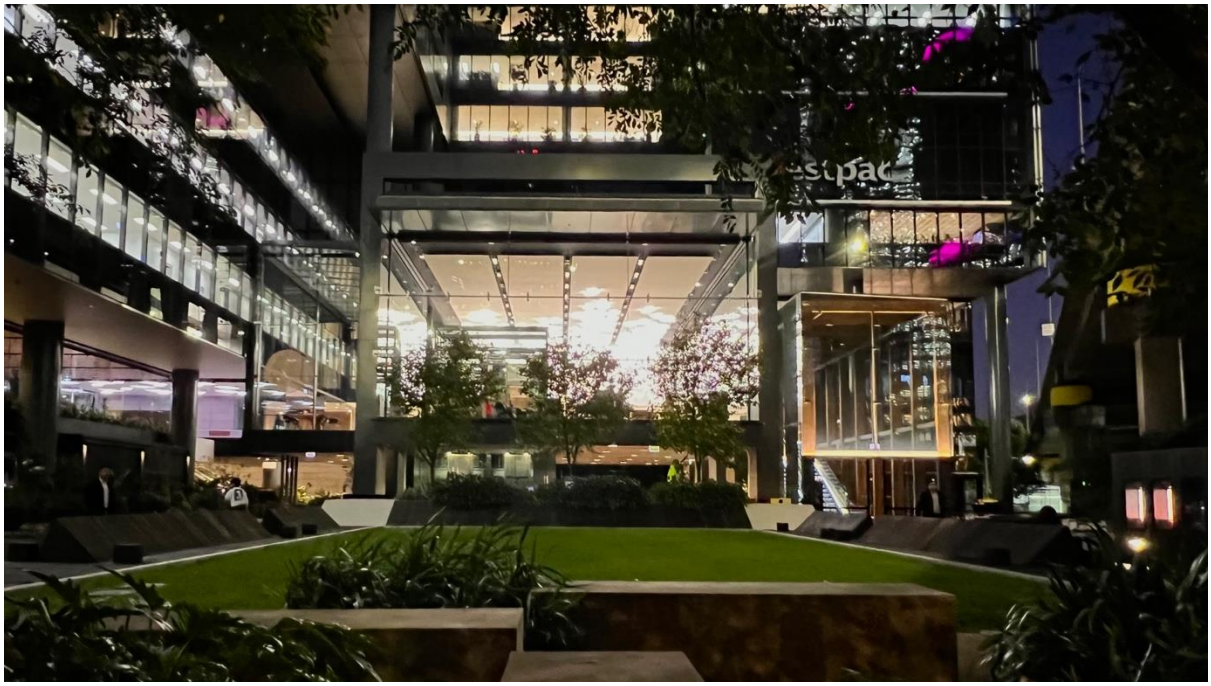

Figure 46 Westpac Place pocket park at 5 pm on a Monday, June 2023.

5.5 Limitations of Current Design

This chapter presents many positive indicators of comfort with public architecture. However, the data analysis also revealed some limitations of the current design strategies. Sometimes, unfavourable behaviours and other negative environmental factors can compromise comfort, resulting in reduced lingering time and fewer interactions with public architecture. Villanueva

wrote, “A good case of placemaking is both promoting the positive aspects and eliminating the negative ones” (Villanueva et al. 2015, 112). It is critical to design to promote comfort while reducing discomfort. Research in psychopathology has shown that physiological and psychological symptoms can have transferrable impacts. For example, the physiological discomfort experienced in intense urban heat can result in discomfort, which might lead to psychological distress and perhaps even illness (He et al. 2022; M. Lin et al. 2024). On the other hand, prolonged experiences of psychological discomfort can manifest physical discomfort and illnesses (Schildkrout 2014; Leyro, Zvolensky, and Bernstein 2010; Valentine et al. 2022).

Some 1PSQ user participants said they would sometimes deliberately avoid the 1PSQ urban steps.

> *It (1PSQ open area) has become a smoking point, even though there was a big non-smoking sign on the pillar. I felt uncomfortable having my break there; the smokers made me cough, and I had to get up and leave.*
>
> Casey, 1PSQ Participants

Determining whether specific design elements contributed to this space becoming a smoking corner was challenging. Parramatta resident Erika said that before the “*full upgrade*” of Parramatta Square, smokers tended to scatter around alleyways or the terraces of the office buildings, but “*one day, they just decided to all gather at 1PSQ and stayed*”.

As mentioned, Westpac Place and Green Square Plaza offered ergonomic urban furniture with reclining surfaces, encouraging various physical activities, including sitting with crossed legs and napping. However, Claire and Hazel mentioned that Darling Square’s seating was too low and needed more support. Austin also mentioned that he found himself “slouching a lot” when he sat around the Darling Square wooden canopy, which resulted in finding different areas to hang out with his friends and family “after a few minutes”.

Participants concluded that these were minor comments about what they did not enjoy when visiting Darling Square, confirming that the physical discomfort was mild and did not impact their overall positive association with this site.

Even though many user participants provided positive feedback for the library, they only visited the open space occasionally, far less frequently than the other neighbourhood facilities. The plaza was more like a place for many participants to take study breaks or pit stops between grocery trips and daily commutes. Matthias Hollenstein, the director of Studio Hollenstein that designed the Green Square Library and Plaza, admitted it was "a challenge that is out of architects' control" since the competition brief had detailed requirements anticipating spaces for a future light rail and high-rise apartment buildings. Unfortunately, Transport for NSW (TfNSW) has postponed the development of the light rail track for over five years, and the current contingency plan is to construct a temporary "Small Lane" connecting the plaza to the adjacent street.

The generous open space at the Green Square Plaza was designed for events and festivals (Studio Hollenstein 2020). Still, it did not facilitate a stable third place as expected. "Third place", proposed by Oldenberg (1989), describes an informal neighbourhood space for people to gather and interact with others outside of home (first place) and work (second place). Oldernberg argued that having a network of third place is one of the most contributing initiatives to foster a thriving social life in urban neighbourhoods (Oldenberg 1989; Hickman 2013). The essence of a third placeis its inclusivenes, which should make it a centre of socialisation that is free to enter and constantly available. Soja (1996) wrote about a related yet more comprehensive concept "Thirdspace", which included Oldenberg's three types of places under "Firstspace (Real Space)". Soja's thirdspace represents the "other" that is "lived" (Soja 1996, 53). These two concepts have provided theoretical contexts for understanding whether a community gathering space can promote SWB.
Green Square Plaza was often left unoccupied during observations, despite having many residences in the vicinity. Some participants commented that they would only spend time in the open space when there were community events, which were an occasional occurrence, and they felt discouraged to spend time there in the absence of a crowd. Field notes confirmed that most weekday observations at the plaza felt quiet and empty in an almost eccentric way, and many visitors would prefer to stay inside of the library.

> *The weather was quite good today, but the Plaza was so empty and quiet this afternoon (Thursday, 11 January 2024), which usually would be packed with young students and commuters in the other three case studies around this time. I saw many*

young people inside the library, but they did not spend time outside – they did not even step out to the circular garden.
I can see many people exiting from the train station, but they headed straight towards the grocery store in the next street. The pedestrians who walked through the Plaza mostly walked along the perimeters, and they were rushing to their destinations.
I am surprised that there was only one child spent time here, riding a bicycle with her family. I did not see any people walking their dogs either – do they usually visit later at night?

Retrieved from the author's reflective journal.

The observation demonstrates resemblance to *kenopsia*, a social phenomenon indicating that the "eerie, forlorn atmosphere" when people visit an empty open space where it is usually or supposed to filled by people and activities (Bille and Schwabe 2023, 26). Jacobs (1961) also wrote about how the presence of people can attract others, and this effect has been a fundamental element in shaping the contemporary urban design practice. Yet, the feeling of discouragement to spend time in the overtly should be differentiated from seeking solitude and self-reflections in public spaces, which will be discussed in Chapter 6.2, 129.

In current practice, it is often challenging for architects and designers to anticipate how public architecture will be managed in the long term. Still, the gaps between design objectives and delivery of Green Square Plaza show that offering an open space does not equal efficient use. The case studies also reflected the discrepancy between the two types of interview participants. Professional participants, especially project architects, often describe their design strategies as "effective" because "people are using the space frequently" without following up on whether repeat visits resulted from subjective experiences or other reasons.

WSU was our client, and their students were stakeholders we didn't have direct communications with. WSU conducted their own surveys with the students and reported what they wanted during the conceptual design stage. For example, the university liaisons communicated that their students wanted more informal study spaces in the initial stakeholder meeting, and we delivered that in the design. It is beyond our expertise to follow how students feel about this place.

Colin Odbert, 1PSQ project architect.

Indeed, most architects and designers only participate in conceptual design and construction without following up on user experience or maintenance upon completion. That means they leave considerable room for expectations and assumptions when designing for future interactions. Westpac Place designer Jet Geaghan noted that seeing people enjoying the space was *"a great relief after the extensive pandemic lockdowns"*. However, many Westpac Place visitors, especially the office workers nearby, had mixed feelings about this place. Some user participants stated frequent visits resulted from a *"lack of better options in the proximity"*.

5.6 Summary: Designing Comfortable Places to Promote SWB

Designing for physical and psychological comfort is critical to promoting positive associations with public architecture, which can increase the perception of SWB by transferring momentary encounters into long-term ones (Cattell et al. 2008).

This chapter has explored the critical role of therapeutic public architecture in promoting comfort in urban open spaces and reviewed relevant design strategies in case studies across Sydney. Three main findings regarding comfort include:

Seating

Flexible and diverse seating options are crucial in public architecture to promote comfort and encourage more extended stays. Seating that accommodates various activities and flexible uses was the most popular among users.

Shelter

Providing adequate shading and shelter is essential for comfortable experiences in various weather conditions. Natural shading from landscape and greenery also plays a vital role in extending physical comfort to psychological comfort since it conveys a soft layer that connects people and places.

Accessibility

Design elements ensuring accessibility, such as connectivity to public transport, walkable areas, and ambience design, are essential to promote lingering and more extended visits in public open spaces. Users often described accessible features gave a sense of convenience,

contributing to repeat visits, and further extending the positive association between subjective experiences and public architecture design.

Furthermore, the research identifies limitations in current design strategies. Inadequate lighting can lead to discomfort, potentially shortening visits. Some case studies suggest enhancements to inclusive design features that could attract a more diverse range of visitors. In summary, this chapter emphasised the first key theme of fostering SWB through therapeutic public architecture, focusing on comfort. The next chapter then discusses the second and third themes, design for enjoyment and promoting meaningfulness to foster SWB at a neighbourhood scale.

6. Enjoyment and Meaningfulness in Therapeutic Public Architecture

Introduction

As mentioned in Chapters 2 and 4, recent research suggests that social well-being is embedded in perceptions of SWB and happiness, which are shaped by place and local communities (Ballas 2013; Oswald and Wu 2010). This chapter dives into the thematic groups of "enjoyment" and "meaningfulness" that emerged from data analysis. These two parts of the findings discuss how pro-social design promotes enjoyment for group and individual visitors and impacts how they find meaningfulness in public architecture. The findings in this chapter aim to answer research questions 2 and 3:

2. What is the relationship between public architecture and SWB?
3. What are some key design strategies in public architecture to promote SWB at a neighbourhood scale?

The findings were discussed based on the hypothesis and theoretical framework developed in Chapters 2 and 3, which state that positive social connections are impactful and desirable outcomes of therapeutic public architecture interaction.

6.1 Enjoyment and Socialising in Public Open Spaces

Social activities and connections facilitated by interacting with public architecture in urban public spaces can contribute to SWB in both incidental and long-term ways (Chapter 2.2.4, 25). In interviews, user participants considered socialising as the primary reason for visiting case study sites. Although the contemporary practice of public realm design and placemaking focuses on fostering social interactions and connectedness, some case studies were more popular for spontaneous gatherings than others. Social gathering is one of the most common and intrinsic uses of public open space (Low 2023). Eating and talking emerged as the most common social gathering activities observed across the sites (Table 13). Many visitors reported that these spaces were favourable locations for lunch breaks and casual conversations with colleagues or friends. The design of these spaces has encouraged people to linger and engage in social interactions beyond the utilitarian purpose of mealtimes. The

following section will also discuss playful and creative interactions with the case studies among three specific groups of users.

Table 13 Main themes on *Enjoyment* with pertaining subthemes or nodes and relevant case studies[9].

Main Themes	Subthemes or Nodes	Relevant Case Study
Eating	eating	DS, GSLP, WP, 1PSQ
	lunch	DS, GSLP, WP, 1PSQ
	grab a bite	DS, WP
	snack	DS
	foodie places	DS, GSLP
	restaurants to celebrate	DS, 1PSQ
	brunch	DS, GSLP
	food court	DS, WP
	café(s)	DS, GSLP
Talking	chatting	DS, GSLP, WP, 1PSQ
	gossip	WP
	catching up	DS, GSLP, WP, 1PSQ
	conversations	DS, GSLP, WP, 1PSQ
Playful/Creative Interactions	skateboarding	1PSQ
	filming social media	DS, GSLP
	taking pictures/videos	DS, GSLP
	dancing	DS, WP
	playing/walking with dogs	DS, GSLP
	children playing	DS, GSLP, WP
Enjoying Alone Time	people-watching	DS, GSLP
	clear my head alone	DS, GSLP, WP, 1PSQ
	quiet time to myself	DS, GSLP, WP, 1PSQ

[9] This table's abbreviations DS, GSLP, WP, and 1PSQ refer to Darling Square, Green Square Library and Plaza, Westpac Place, and One Parramatta Square.

6.1.1 Eating

Chapter 5.2, 89, discussed how seating options catering to eating outdoors were essential to enhancing time spent and comfort in public architecture. This section further explores the enjoyment of social interactions while eating in public open spaces.

For corporate-oriented Westpac Place and 1PSQ, participants noted they spent most of their work breaks eating and getting food.

> *I do not work at Westpac Place, but my work friends and I always walk down from Wynyard Park to spend our break there, even though it takes us at least 30 minutes round-trip. I like this routine of getting out of the office and getting food together somewhere we all enjoy.*
>
> Ivy, Westpac Place participant.

> *I only have 30 minutes for lunch breaks, but I would still go to the food court to grab a bite if the lines are not too crazy. I don't like to have lunch at my desk. It's just nice to step out for some fresh air, even though I have to wait in lines for most of my break.*
>
> Rachel, Westpac Place participant.

Darling Square user participants frequently mentioned how public architecture provided an enjoyable experience while eating outside:

> *I always come here to eat. There are just so many options here. I like how they have easy-to-grab food that you eat without too much effort. I usually just want a quick bite after (university) classes, and I would sit outside while waiting for my friends. Then we would hang out here, chat, study, etc.*
>
> Millie, Darling Square participant

> *I really like the food court at the ground level of The Exchange (Darling Square community building). It has many options and [is] fairly affordable. They have charging ports so I can study there and grab a bite in between. When the weather is nice, I would also sit outside to eat to enjoy some fresh air.*
>
> Austin, Darling Square participant

While Chapter 5.3 discussed the importance of designing for different weather conditions, naturalistic observations showed that sometimes enjoyable community gatherings can motivate people to overcome minor discomfort in unfavourable weather. Green Square Plaza participants have shared that the diverse community events in the open area and inside the library have expanded their social life. Since March 2024, Cambridge Market has started a new branch at Green Square Plaza to host weekly markets with food vendors and live music performances, an initiative resident like Erin and Hannah described as a *"delightful community event"*. The positive impacts of these community gatherings were particularly documented in how visitors responded to different weather conditions. While observations confirmed that people generally stayed longer in open areas during warmer seasons, they showed adaptability in less favourable conditions. For instance, one Saturday observation in March 2024 started with pouring rain, but people quickly returned to the plaza around 1 pm and sat down for their meal as soon as the rain stopped (Figure 47). Some visitors sat on top of their clothes, and some would wipe off the benches with napkins provided by food vendors. The minor discomfort and inconvenience caused by the rain did not stop visitors from eating outdoors and enjoying the community gathering. It also shows how eating outdoors can be a powerful incentive to encourage people to spend time in a public open space (Kent and Thompson 2019; Kim 2019).

Figure 47 Visitors returned after the rain at the weekend Cambridge Market, Green Square Plaza. The Green Square committee and the Cambridge Market organisers set up the temporary tables and benches, March 2024.

6.1.2 Talking

Most frequent visitors mentioned visiting the case studies with colleagues and friends, usually within a small group of fewer than five people (

Figure 48). While eating may have drawn people to the sites, many lunchtime visitors stayed

behind and chatted after eating and this was common across all four sites.

Figure 48 Westpac Place pocket park during lunch rush hour at 1:30 pm on 23 Nov 2023.

The pocket park of Westpac Place and the terrace/amphitheatre of 1PSQ were popular destinations for a work lunch. Some Westpac Place participants mentioned that they enjoyed casual chatting with co-workers during their visits. They also noted that casual conversations during lunch were part of their routine *"to get through the day"* for many office workers like them:

> *I can't tell you how important it is to have a "gossip" time outside of the office. Everyone needs to vent sometimes.*
>
> Elena, Westpac Place participant.

> *In my line of work, we can have a lot of overtime. I don't know how I can get through the intense workload without talking it out with my co-workers. That's why I never*

have lunch alone. I really need to step out of the office and talk to someone, even when the weather is bad.

Leah, Westpac Place participant.

I usually pack my own lunch because the restaurants here (Parramatta Square) are quite expensive, but I will always walk with my co-workers to get their food so we can all enjoy our lunch together and catch up a bit. There is always a line (for getting food) during lunch break, but we also chat while waiting.

Kaira, 1PSQ participant.

Talking became an essential part of these lunch breaks. As mentioned by Kaira, some visitors also brought their packed lunch to join their social groups so they could enjoy some talking during lunch. People worked hard to accommodate these chats. The fieldwork journal noted an example observation at 1PSQ when four grown men squeezed onto one wooden surface (no more than two metres wide) to continue their conversation as a group.

Sacha Coles (Darling Square and Westpac Place professional participant) mentioned that providing flexible options and encouraging visitors to explore each is critical to promoting social interactions in public open spaces. Thus, Darling Square followed the same design strategy as Westpac Place in offering various seating options. Coles continued explaining that providing flexible and creative options throughout the space can encourage visitors to occupy different areas and facilitate various activities. The opportunity to explore inspired many participants to initiate engagement with the place and likely to inspire a variety of activities based on curiosity. All but three Darling Square user participants had to travel at least thirty minutes to visit. However, many of them said *"it was worth the travel"*.

I don't mind travelling to Darling Square. It's the go-to place to meet up with my friends (from university), whether after classes or during weekends. All my friends like to hang out here, too. So we just keep coming back even though we all have to travel at least 40 minutes to get here.

Austin, Darling Square participant.

Evelyn and Frankie also talked about similar experiences and how they have spent most of their free time *"talking and chilling with friends/classmates"* at Darling Square for the past

two years. What these participants described reflects the importance of having peer social support to promote mental well-being among young adults, especially university students (Demetriou 2024).

6.1.3 Playfulness and Creativity

Some professional participants mentioned how playful interactions were sometimes a "fun surprise" they did not anticipate.

> *We expect that the amphitheatre will be used by WSU students since it's the immediate extension of the campus. However, it was nice to see some urban youths enjoy gathering here.*
>
> Colin Odbert, 1PSQ project architect

> *I visited Darling Square with my family after the project was completed. I was so surprised and thrilled to see so many kids enjoying this place. It warms my heart as a designer. "Soft" layers were a big part of our design intention to encourage different visitors to explore the place freely, but it is always lovely to see how children come up with creative ways to play with the design.*
>
> Sacha Coles, Darling Square lead landscape designer.

Observations confirmed that the following three user groups often interacted with the case studies in a playful and creative way: 1) children (under 12 years old); 2) people with companion animals (mostly dogs); 3) skateboarders and street dancers.

Children and Caregivers

The reclining urban furniture at Westpac Place was popular among young children who usually visited during weekend afternoons. It provided a place to run and slide, and the lawn area was also preferred by young children to interact and play together. Noted from observations, some caregivers with prams would visit the pocket park for a 20- to 30-minute break before heading towards the next destination, usually the water-front boardwalk at Barangaroo:

It is so touching to see kids making friends with each other even though they just met a few minutes ago. This family of four brought a beach ball with them, and the boy chased it around the lawn. Another girl saw him and was encouraged by her family to say hi. She hesitated momentarily but approached him as the boy's family encouraged him to share the ball. They played together for almost forty minutes, the longest interaction between strangers I have observed at Westpac Place. It was also an uncommon encounter in a corporate context.

Extract from the reflective journal.

Although none of the interviewed visitors were caregivers to young children, Elena and Leah mentioned that they also saw some people who would visit with young children during the weekends but *"have never seen any family on weekdays".* Some caregivers would stop by briefly at the pocket park during weekdays, but only after 4:30 pm, when most office workers had left the site.

For Darling Square, the caregivers visited in the morning and usually came in small groups to spend time conversing while standing in a small circle. Some would sit down along the continuous wooden surface next to the lawn, but that was rare among this user group since most caretakers chose to follow the children when they moved around. Similar activities were observed in the afternoon (3–5 pm). Darling Square usually became popular with families with prams and young children starting around 3:30 pm on weekdays and 1 pm on weekends, consistent in different seasons. Most families and caregivers spent only twenty minutes within the focus area. They usually walked past the area and stopped for a short break before heading along the pathway to Tumbalong Park and Darling Quarter, where larger-scale children's playgrounds were located. During this period, families with prams also preferred the long, continuous wooden surface along the lawn to the other urban furniture. Some caregivers would "park" the prams against the wooden platforms while holding the guardrails when they sat down.

Chapter 5.3 discussed how the Green Square Library tower provided shading and resting spaces for caregivers and children (Figure 42). The shaded area also featured two monocular telescopes that were popular with children. Artists Claire Healy and Sean Cordeiro designed these telescopes as part of the interactive art installation *Cloud Nation* so that visitors can explore the details of miniature art on the aeroplane (Figure 49). However, most visitors were

unaware of this intention and pointed the telescopes randomly. Also, the telescopes seemed too high for young children, so some would climb and play with the supporting poles instead.

Green Square Plaza was the only case study including a floor fountain - an interactive water play feature popular with children (Figure 50). This fountain was semi-surrounded by urban furniture and landscaping, making it preferred seating for caregivers to watch over children who were playing with the fountain. The fountain was not operating daily and did not follow a regular schedule. Most children were observed to play somewhere else when the fountain was closed, but once, two kids interacted with the stones instead (Figure 51). Their caregiver encouraged them to keep playing while filming with a smartphone.

Green Square user participants did not mention interacting with the fountain, but some noted that listening to the running water can be soothing and *"makes the space more enjoyable"* (Ari, Green Square participant).

Figure 49 Telescopes were installed on the Green Square Plaza as part of *Cloud Nation* so visitors could look at the miniature details of the aeroplane, a public art installation by Claire Healy and Sean Cordeiro, image taken in November 2023.

Figure 50 The interactive water feature and sculptural urban furniture at Green Square Plaza, November 2023.

Figure 51 A child played with stones from the floor fountain at Green Square Plaza, January 2024.

Companion Animals and Owners

None of the user participants visited case studies with their companion animals. Still, some mentioned how watching other visitors walking their dogs or interacting with others' pets boosted their moods and created enjoyable moments (Figure 52). The pet ownership rate is high in Australia with more than two-thirds of Australians having pets, 48% of which are dogs (RSPCA 2023). Koohsari et al. (2020) have also examined how high-density urban living can impact dog-walking behaviours. They concluded that designing walkable open spaces in dense neighbourhoods can promote dog walking, even though dense areas tend to discourage dog ownership (Koohsari et al. 2020). Participants have mentioned their friendly interactions with dogs in case studies, especially at Green Square Plaza.

> *There are so many dogs in this neighbourhood. The owners usually hang around dinner time at the lawn (near the end of the plaza). I love sitting on the bench and watching the dogs run and play. Sometimes, the owners would let me pet their dogs. It was nice.*
>
> Hannah, Green Square participant.

> *I don't have any pets here in Australia, but my parents own two dogs back home (in China). I miss them whenever I see others walking their dogs. I would just stop and watch them for a bit before heading home.*
>
> Tiya, Green Square participant.

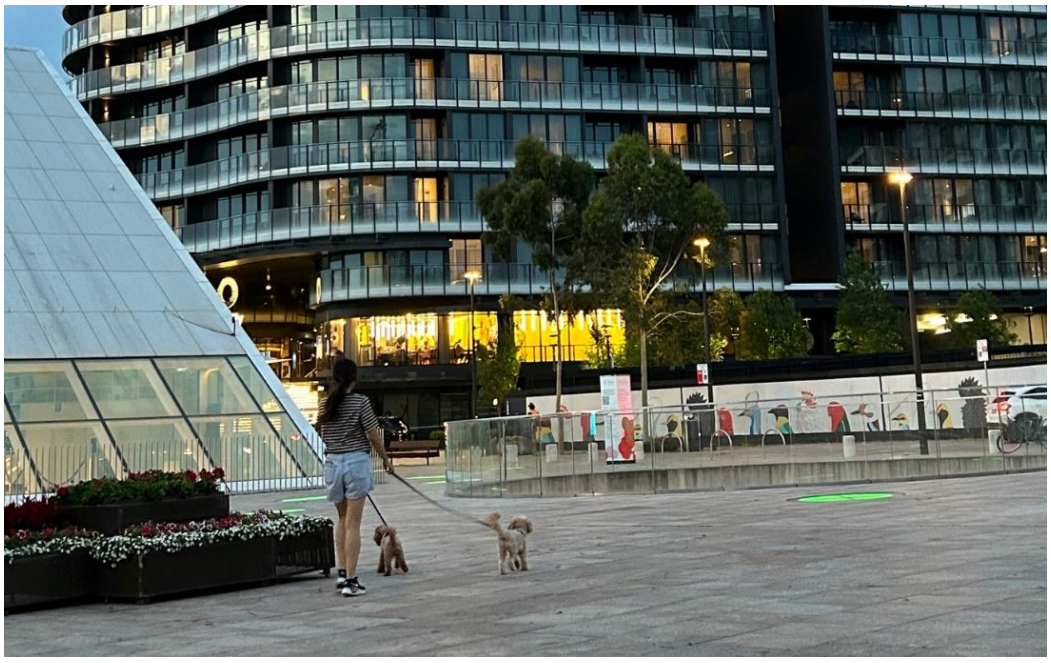

Figure 52 A visitor was strolling around Green Square Plaza with dogs, February 2024.

Skateboarders and Street Dancers

1PSQ was the only case study where both user and professional participants pointed out the frequent visits of skateboarders. A few participants that were WSU students mentioned the skateboarders have become *"a view during study breaks"* since their movements were *"something different"*. Project architect Odbert expressed the uncertainty about having skateboarders in the public open space because some visitors might find them *"distracting",* and some designers have expressed concerns about the potential damage to the architectural materials. Odbert described skateboarding as a subversive activity that is often marginalised in many Western societies, and its controversial social image has led to both "supporting and subverting" governmental rules (Glenney and Mull 2018, 441).

On the other hand, street dancers at Darling Square and Westpac Place were more acceptable for most participants. They were considered a *"nice impromptu performance"* (Remy, Darling Square participant) that attracted many other visitors to linger and become their audience. These dancers interacted in open spaces differently from people who filmed video-based content with their devices in a few ways. Street dancers often utilised more spaces than average visitors, especially when they worked with a videographer to document their choreography. This usually led to temporary re-adjusting of the pedestrian flows since spectators would form loose circles surrounding the dancers and stay until the dancing was completed, as documented in the observations:

> *People can quickly become the dancers' audience, even though these dancers are not buskers – they don't expect people to gather around while dancing because they don't perform for monetary gain. Whenever a videographer is present, the street dancing becomes "serious", as some pedestrians might think the dancers are famous. Many pedestrians would applaud for the dancers when they finished, and some even asked for photographs with the dancers. It was particularly lovely when young children observed the dancers, and the caregivers often encouraged the kids to initiate conversations with them.*
>
> Extract from field notes and the reflective journal for a Sunday afternoon at Westpac Place, June 2023.

These dancers also intended to capture public architecture as a supporting background for their movements rather than taking "Instagram-able" videos focused on the existing

environment. This group of movement-based users was also observed to often engage with filming social media. The prevalence of social media and online interactions has changed how people connect with public spaces, as discussed below.

6.1.4 Filming Social Media Content

Following the discussion regarding skateboarders and street dancers, interviews and observations also revealed that featuring public architecture in social media has become highly prevalent and reshaped how people interact with curated public spaces. Social media platforms are increasingly significant in the lives of many. Noticeably, many people engage in social media filming in public spaces with convenient access to smartphones and the internet (Huang and Zheng 2024). The global COVID-19 pandemic has also drastically changed how people engage in public social relationships online. Recent public sociology research has acknowledged that the era of social media has reshaped the idea of "public" to align the "new normal", which considers digital platforms to be the emerging types of public spaces (Carrigan and Fatsis 2021, 2). Being *public* does not mean people need to be present in the physical realm of public spaces anymore. In contemporary placemaking, filming and posting social media content has become an active participation in urban public spaces (Degen and Ward 2022). There were two types of active interactions regarding digital participation: 1) place-based interactions, when visitors focus on spatial and cultural elements like architecture, food, and public art; 2) human-based interactions, when visitors film themselves and use public architecture as a background.

Some participants said they considered Darling Square a *trendy* destination on social media, and its digital popularity encouraged their repeated visits. Many university student participants discussed how they first discovered Darling Square through social media content. Clare was among the many younger generations that would search on social media before visiting a new place:

> *I love exploring those "Instagram-able" places during my free time, and Darling Square has plenty of them. I first noticed some posts on my (social media) feed, so I decided to check Darling Square out. I keep coming back because there are always exciting places to explore. I love grabbing a bite and spending time just looking at the building (The Exchange). Everything looks good here*
>
> Clare, Darling Square participant

Visitors like Clare usually follow up with new social media posts and express their reviews on the place, which often inspires other online users to visit the sites in person. This type of place-based digital content has become a prominent influencing tactic for recent placemaking projects (van Schaik and Watson 2015; Villanueva 2022). The developers of Darling Square and Green Square have developed official social media platforms to connect with online audiences and promote community retail options (Figure 53).

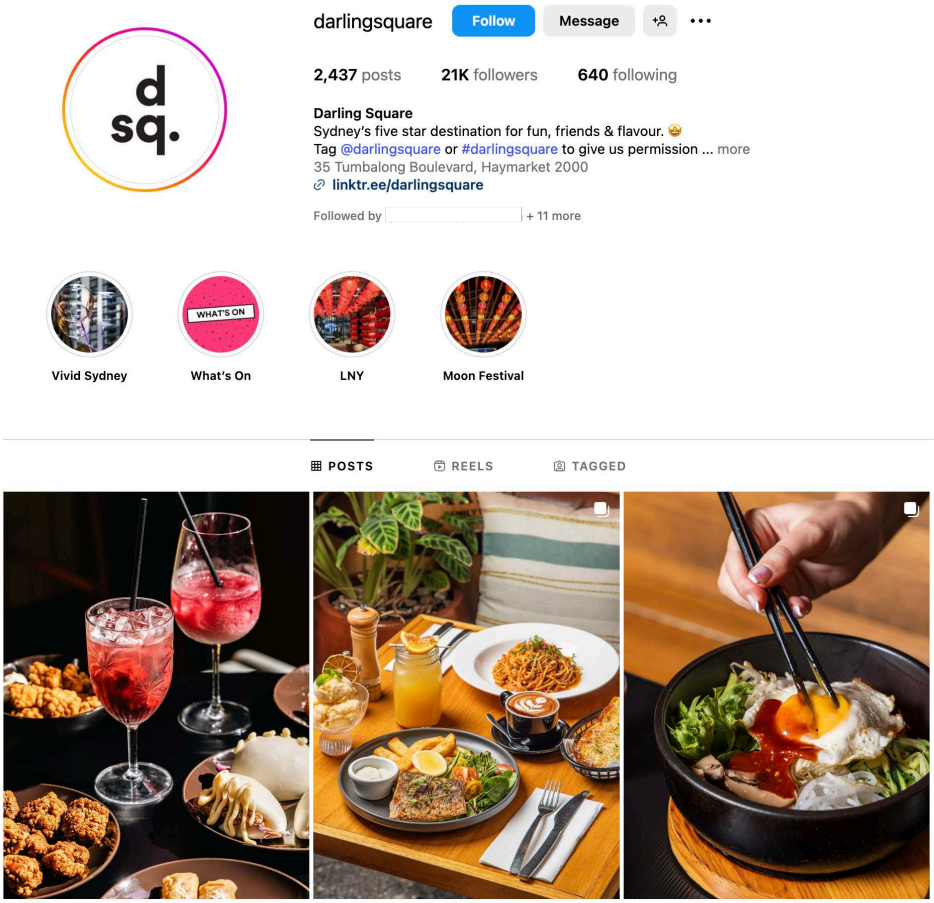

Figure 53 The official Instagram account of Darling Square, created and managed by the developer Lendlease.

The previous section mentioned how dancers interacted with public architecture creatively. Some participants also explained why they preferred filming content at Darling Square. Sara and Remy regularly filmed and posted creative content on TikTok, Instagram, and YouTube. They shared that Darling Square's architecture and open space are a *"beautiful backdrop for filming"* and that *"content filmed here usually gets more views and likes."* Sara also mentioned that night-time at Darling Square was *"more attractive and more photogenic"* for content filming with soft ambience and pop-up light installations (Figure 54).

Figure 54 A visitor took pictures of the pop-up light installations during the Lantern Festival. February 2024.

6.2 Enjoying Alone Time in Pro-social Placemaking

Greg (2017) synthesised the essence of contemporary placemaking, which is its pro-social nature and aim to promote gathering. The previous section discussed how people interacted within their social groups when visiting the case studies, echoing the fundamental intention of these placemaking projects. However, public space is often also a gathering place with clusters of passing strangers. While Demerath and Levinger wrote about how public spaces are primarily "a forum for interacting with friends, not strangers", many users have reported passive interactions with strangers in case studies (Demerath and Levinger 2003, 228). Professional participants commented that to provide comfort and enjoyment in public architecture, design strategies should provide various options considering group and individual visitors. Thematic analysis from user interviews has complemented this statement and furthers the understanding of enjoyment when visiting public architecture alone with the following themes.

6.2.1 Serendipitous Encounters and Passive Interactions

Observational data revealed that when visiting in groups, people usually engaged in active interactions, such as chatting, playing, and filming social media content. On the other hand, social encounters were often fleeting and passive among strangers spending time alone in a public open space (Figure 55).

Figure 55 Visitors spent time alone and kept their distance from each other at Darling Square, June 2023.

Watson and Sendra wrote about how spontaneous and serendipitous encounters can be critical to constructing enjoyable and engaging sociality in a public space yet often overlooked in many placemaking projects (Watson 2009; Sendra 2015). Interpretations on interviews suggested that user participants enjoyed serendipitous encounters with strangers, even during fleeting moments and passive interactions.

> *I always have my lunch break alone while sitting outside. I sit with other office workers who also enjoy their alone time. I never talked to anyone, but eating silently in this outdoor cafeteria-like setting is nice. I can tell they are hardworking people who just want some fresh air just like me.*
>
> Hazel, Darling Square participant.

Further analysis of this theme has led to the following three sub-groups of passive interactions: 1) people-watching and casual observing; 2) mimicry of positive emotions; 3) seeking solitude in the presence of other people.

6.2.2 "People-Watching" and Social Distancing with Strangers

Prolonged social isolation during pandemic lockdowns has been considered to have extensive neuropsychological consequences, even after COVID lockdowns have been over for over two years in Australia (Encheva-Stoykova et al. 2022). Even though the interview questions did not prompt participants to compare their visits with case studies during and after the pandemic, many participants shared how they "craved" face-to-face interactions and enjoyed spending time in public spaces without pandemic-related regulations. Some mentioned consciously adjusting to more people-watching and passive interactions after COVID-19. They also mentioned keeping their distance from public spaces and how the case studies have created positive experiences only through visual interactions.

> *I was afraid to go outside (during lockdowns). I know we were allowed to go to groceries and parks, etc, but I was still scared. It calmed me down a bit to see some people hanging out or walking their dogs at the plaza. I could see them from my balcony, which is how I got my fresh air during breaks. The colourful lighting at night looks great, too. I enjoy the space even when I am not physically in it.*
>
> Luqi, Green Square participant

> *I work in hospitality, so I don't really want to deal with any more people after work. I do like watching them from my balcony, though. It's a habit I picked up during lockdowns, but I guess I still do that. I can see the lawn and the library from my balcony. When I see kids running around, laughing, and playing, I feel good, too.*
>
> Erin, Green Square participant

Gehl (2010, 35) proposed the spatial design baseline for "people-watching" based on Edward T. Hall's *The Hidden Dimension* (1966), which demonstrated that 25 metres is a significant threshold for decoding emotions and facial expressions. Another critical distance is 100 metres, the threshold for seeing people in motion (Gehl 2010, 35). The two thresholds provide a baseline for a people-watching distance, the most frequently mentioned activity during interviews with users who spent time alone in case study sites.

People-watching describes one of the most naturally occurring behaviours when spending time outdoors: observing others (Quadflieg and Koldewyn 2017). Rishbeth and Rogaly

(2018) have pointed out that people-watching and passive interactions among visitors can be effective self-care strategies.

> *I am a very introverted person. I love spending time alone to recharge after a long day at university. I usually just sit here (wooden pavilion) and watch others. I don't want to talk to anyone, but just quietly watching others can make me feel calm and relaxed.*
>
> Frankie, Darling Square participant

6.2.3 Emotional Mimicry among Strangers

When asked about the different experiences of visiting the case studies alone and with others, many participants mentioned that they would be more aware of other strangers' behaviours and emotions, particularly the positive ones.

> *I don't mind spending time alone because I don't feel like talking when I am tired. I don't need to interact with anyone to feel good. I feel good when I see others having a good time, and when I see them laugh, I feel better about myself as well.*
>
> Remy, Darling Square participant

> *I like watching people go on with their days. It is strangely comforting to see how others are enjoying their life. When I see kids and dogs running around looking very happy, I feel peaceful just sitting there.*
>
> Tiya, Green Square participant

What Remy and Tiya described can be a response to emotional contagion, the effect caused by emotional mimicry after observing other people displaying emotions and, in Remy and Tiya's cases, positive emotions (Olszanowski et al. 2020). This social phenomenon indicates that non-verbal interactions and passive observations can also become a form of socialising in public spaces, which Olzaznowski et al. (2020) suggested can promote rapport and affiliation even among strangers.

6.2.4 “Alone Together” – Seeking Solitude in Public

“Alone together”, or “together alone”, was a popular phrase during COVID-19 and refers to those who endure or enjoy solitude while keeping social distance yet still feel the presence of social companionship (Morrill et al. 2005; Smith and Lim 2020). Recent studies have taken an interest in how people experience loneliness (Klinenberg 2016; Heu and Brennecke 2023). While Klinenberg (2016) argued that urban open spaces should design for individuals, Heu and Brennecke (2023, 3188) discussed the seemingly contradicting notions of “public” and “solitude” and found that many participants, especially urban citizens, actively seek solitude in public spaces that make them feel safe and invited without the pressure to socialise with others.

Across four case studies, most visitors wore headphones and stared at their screens while eating or resting when they spent time alone, and some would work on their laptops or read a book. These visitors all utilised objects as a partition between themselves and the outside world (Figure 56). Unlike group visitors who engaged in conversations within proximate social distance, lone visitors often kept a discernible distance from others.

Figure 56 A mix of group and individual visitors at the 1PSQ urban steps, February 2024.

Recent literature has shown increasing interest in addressing loneliness through urban design and placemaking as a response to the post-COVID-19 social environment (Smith and Lim 2020; Dingle et al. 2022). Jing et al. (2024, 8) conducted case studies in Stockholm and found that simply being present at a community gathering place can create an inclusive third place to alleviate loneliness, which was based on Oldenberg's theory (first mentioned in Chapter 5.5, 108). Heu and Brennecke also argued that people can benefit from spending time by themselves in a public space with the presence of other people because if the public open spaces are only designed for sociality and active interactions, they can worsen loneliness by signalling "lonely people are alone with their experiences and [it] can exclude them from the community of people using the same place" (Heu and Brennecke, 2023, 3187).

6.3 Searching for Meaningfulness When Interacting with Public Architecture

This section intends to investigate how public architecture can have therapeutic effects and discusses meaningfulness when interacting with public architecture alone. The following section will expand on this discussion and further investigate searching for meaning and other relevant subthemes in therapeutic public architecture (Table 14).

Table 14 Main themes regarding *Meaningfulness* with pertaining subthemes or nodes and relevant case studies[10].

Main Themes	Subthemes or Nodes	Relevant Case Study
Place Attachment	nostalgic/nostalgia	DS
	familiar	DS, GSLP
	keep coming back	DS, 1PSQ
	a special place	DS, GSLP
	my go-to choice	DS, WP
Sense of Belonging	feel sense of belonging	DS, GSLP
	feel included	DS, GSLP
	I am one of them	DS

[10] This table's abbreviations DS, GS, WP, and 1PSQ refer to Darling Square, Green Square Library and Plaza, Westpac Place, and One Parramatta Square.

	friendly neighbours	DS, GSLP
Resilience	temporary escape	WP, 1PSQ
	deal with my emotions	WP, 1PSQ
	get away from negative situations	WP, 1PSQ
	get through the day	WP
	keep going	DS, GSLP, 1PSQ
Recuperation	meditate	DS, GSLP
	let go of my mind	DS, GSLP, 1PSQ
	recharge	DS, GSLP, WP, 1PSQ
	connecting with nature	DS, WP
	unwind	DS, GSLP, WP, 1PSQ
	healing	DS, GSLP
	peace/peaceful	DS, GSLP
	feel better	DS, GSLP, WP, 1PSQ

6.3.1 Sense of Satisfaction and Place Attachment

Participants spoke about their positive experiences and the projection of positive emotions onto spatial elements. Although not articulated verbatim, interviews suggested that design strategies engaging with the human scale can create human-space embodiment with public architecture, which leads to building a meaningful place attachment (Lewicka 2010; Arijit and Silverman 2014)

> *I feel close to this place. Maybe because I keep coming back every week, and I have so many happy memories here.*
>
> Hazel, Darling Square participant.

Jack proposed that feeling connected to a place means the place can become a symbolic representation that ties deeply with emotional well-being (Fuller et al. 2012). Further, Gehl wrote that the human-place connection is rooted in spatial dimensions. He proposed that the experience of comfort is rooted in "how city space harmonises with the human body, human senses and corresponding space dimensions and scale" (Gehl and Svarre 2013, 162). Such

dimensions foster communication between people and places by catering to human eye-level engagement, the most essential scale for city planning and design for well-being (Gehl and Svarre 2013, 118).

> *All my past visits were really positive. I can only think of nice things about here. Watching sports games, talking with classmates, and taking walks during exam cramming, etc. These are all very lovely moments.*
>
> Amir, 1PSQ participant.

Positive associations with place-based memories can encourage visitors to establish place identity, which connects an individual's identity with a place (Budruk and Stanis 2013; Halpenny 2010). When people align their values and positive emotions with a specific place, visiting the place can lead to a feeling of satisfaction, which then will likely become a motivation for repeat visits to re-experience the positive emotions (Landon et al. 2021; Hashemi et al. 2023; Sun et al. 2024).

6.3.2 Sense of Belonging and Inclusiveness

Chapter 4.1 discussed the diverse cultural and ethnic backgrounds of Darling Square and Green Square residents. Some international student participants shared how visiting the case studies made them feel invited and a sense of belonging.

> *I like to see how many young people similar to my age are having a good time here. There are a lot of East Asians, too. It brought me comfort when I first arrived in Sydney. I don't know them, but I feel like one of them.*
>
> Elsie, Darling Square participant.

Some participants connected their meaningful experiences with a sense of belonging and often mentioned the feeling of *home* after friendly encounters with other community members.

> *Everyone here is so nice. The library staff, the service people at the cafes, and even passing strangers I met at the plaza are all friendly. I feel welcome here. It means a*

lot because I came to this country to pursue my education alone. I didn't know anyone when I first moved into this neighbourhood. They make me feel at home.

Hannah, Green Square participant.

Building a sense of belonging also means shaping a cultural identity as a community member, especially in multicultural neighbourhoods (Wise 2005). By engaging in community gatherings, participants expressed a sense of belonging through active participation in public architecture. Active participation takes many forms, and simply co-existing in one space with strangers can also be effective in creating a sense of ownership (Kohon 2018).

6.3.3 Sense of Resilience and Recuperation

Recent immigrant Rie shared how watching sunsets at the Green Square Plaza after a long workday inspired healing and resilience:

I moved to another side of the planet and started a new life after 30. It was a lot to deal with. I work and study at the same time, so I barely have time for myself. Every day after my long shifts, I sit here at my favourite bench and watch the sunset. It is so beautiful. It heals me in a mysterious way and it gives me strength to keep going.

Rie, Green Square participant (Figure 57).

Figure 57 A few young visitors watched the sunset at the Green Square Plaza, September 2023. It was the same bench mentioned by Rie in her interview.

Some participants also shared that they actively seek some alone time as a temporary escape from their busy lives.

> *I just want to clear my head for a moment after studying all day.*
>
> Ari, Green Square participant.

> *Sometimes, I don't want to go home immediately after a long day. I just sat down on one of the benches and rested. I want to be alone for a while.*
>
> Shyla, Green Square participant.

Temporary escapes from stressful environments can be essential in regulating and managing emotions alone. The opportunity to recuperate and seek psychological restorativeness is highly valued when coping with work-related stress and anxiety (Curcuruto et al. 2023). De-escalating stress and anxiety from workplace encounters emerged as a key theme relevant to healing and resilient self-care in corporate-oriented cases Westpac Place and 1PSQ.

This section indicates how therapeutic public architecture can be introduced as a coping mechanism to navigate stressful events from daily life and the potential to prevent the worsening effects of such negative encounters.

Cattell et al. (2008) wrote about opportunities to raise spirits by creating temporary relief from daily routines. When accumulated over time, this short-term boost can lead to the fulfillment of diverse social needs. Low (2023) also concurred with the healing effects of building social contacts and a sense of resilience through interacting in quality public spaces.

6.3.4 Healing with Restorative Nature

Well-maintained and managed greenery that corporates with the architectural space can promote enjoyment in public architecture (Douglas et al. 2021). While all four case studies incorporate landscape elements as one of the leading design strategies, only user participants at Westpac Place and Darling Square mentioned that connecting with nature was one of the main reasons they found the case studies enjoyable.

ASPECT Studios designed the landscapes for Westpac Place and Darling Square. Coles shared that the lawns have become the centrepiece for both places and have facilitated various social activities.

> *I was so happy to see when some people would even take off their shoes to walk on the lawn, a rare scene in Westpac Place.*
>
> Sacha Coles, Westpac Place lead landscape designer.

Although neither observations nor interviews confirmed Coles' comment, some participants did reflect on the healing impacts of spending time with nature and landscape elements.

> *We have a little walking group in our office—just a bunch of people who would love some extra Vitamin D during lunch breaks. We walk across Wynyard Walk to Barangaroo or sometimes to Wynyard Park. It is so lovely to enjoy some fresh air and take our eyes off the screens we have been staring at all day*.
>
> Abigail, Westpac Place participant.

> *I love having lunch at Westpac Place instead of the food court at my own building – an underground food court – how depressing! It almost feels like a luxury to have a cozy park like that in the CBD. I like that it [Westpac Place] has trees and nice seats*

but it does not look like your traditional parks. It looks really modern and well-thought-through.

Cheng, Westpac Place participant.

The comments from these participants also led to discussion on the aesthetic values of therapeutic public architecture, which suggests that visual quality can also be essential in promoting SWB in public open spaces (Hoyle et al. 2017).

Many Westpac Place users compared the pocket park with the Barangaroo waterfront park. Though many people mentioned the necessity of connecting with nature, some participants shared that it can also be problematic sometimes:

I have to fight off seagulls to protect my lunch more often than you think. I like spending time with nature, especially during my lunch break, but too much nature can also be a problem – I don't want to share my lunch with wildlife! That's why I prefer going to Westpac Place for lunch even though walking back and forth takes up half of my break. I like manageable nature that you can enjoy well-designed and well-maintained greenery.

Kai, Westpac Place participant.

6.4 Limitations of Current Strategies

Fieldwork and analysis revealed a few limitations for improvement regarding promoting enjoyment and meaningfulness in public architecture:

Gaps Between Design Visions and Construction Impacts

The unexpected delays near Green Square Plaza left the open space surrounded by construction sites that some participants found impacted their sensory enjoyment. The popular design features mentioned earlier in this Chapter were primarily installed close to each other and adjacent to the construction, where some participants reported noise and dust, leaving them feeling the lack of better options to enjoy their time in the open space.

Despite the inconvenience, some participants pointed out that the local council has utilised "Small Lane", a temporary laneway cutting through the large construction site and

connecting the Green Square Plaza to the adjacent Ebsworth Street. The developer and local council have hosted weekly community events and decorated the laneway with street arts to encourage community engagement (see more discussion in Chapter 7.3.2). The unfinished construction site next to Small Lane was also transformed into a temporary parking lot to compensate for the inconvenience brought by the delayed construction (Figure 58). These strategies indicate the emphasis on community gathering can promote positive and vibrant experiences even though minor discomfort and disturbance remain.

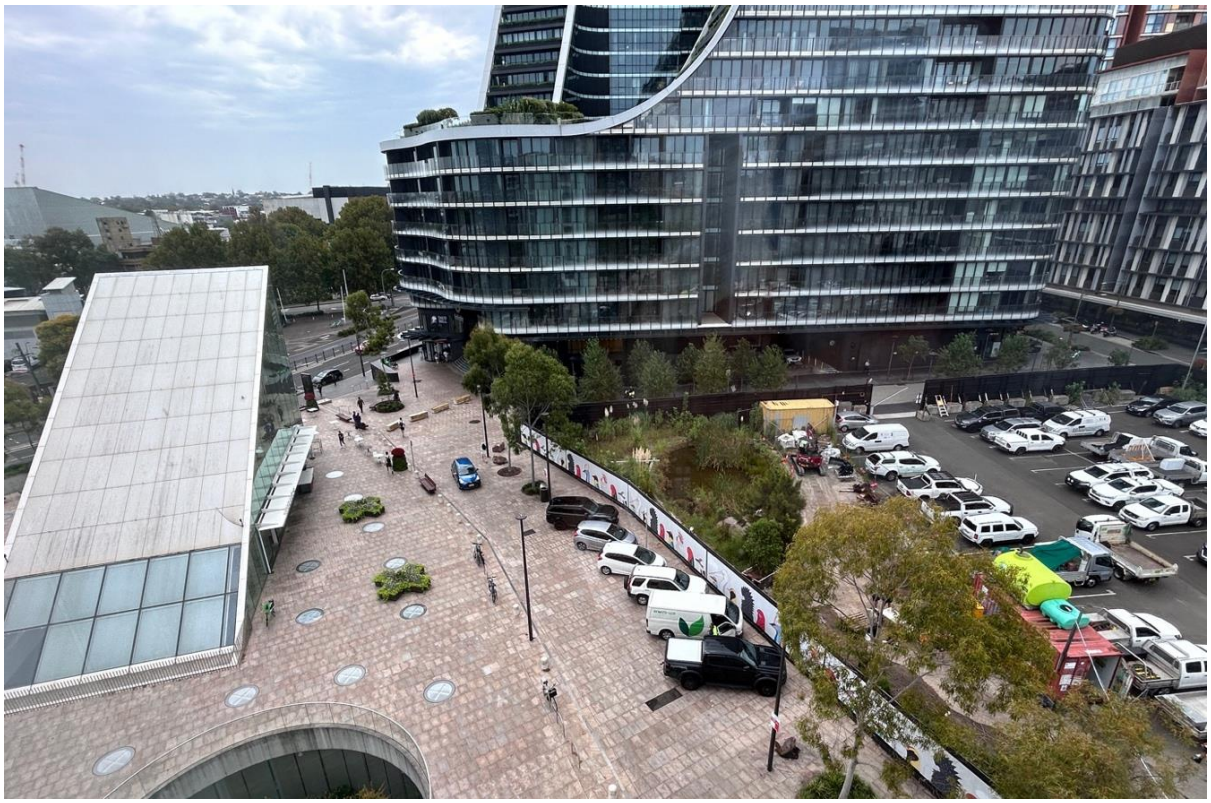

Figure 58 The pedestrian-only zone at the Green Square Plaza was not fully protected from the driveway, June 2023.

Challenges with Civic Engagement and Ownership in Corporate Context

Interviews revealed that well-designed public architecture can be impactful in mitigating occupational stress in dense urban spaces, echoing what Calogiuri et al. (2015) proposed. Despite reporting enjoying the greenery and social spaces for collegial interactions, many participants commented they could not wait to leave Westpac Place and 1PSQ after work. Westpac Place participant Elena shared her work-life separation mindset, *"I would never come here to relax or visit for any reason in my free time. I want to separate my work life and personal life as far as possible."* This disconnection revealed that many corporate workers

near these sites identified themselves as temporary *users* rather than civic owners or active community participants. A contributing design decision related to this limitation can be the minimal initiative for community engagement beyond business hours. Observations noted that while nearby Westpac Place and 1PSQ areas often hosted community events and cultural festivals during weekends and holidays, the open areas of these sites usually remained under-utilised during these activities.

Potential Safety Concerns

As Chapter 4.4.2 mentioned, there were some unexpected delays in the construction surrounding Green Square Plaza. These delays resulted in modified automobile pathways and vehicle access to accommodate the ongoing constructions. It imposed a safety concern, especially for caregivers with young children. Family and caregivers were worried when children played too close to the driveway, which had no continuous and clear separation from the plaza (Figure 58). The stone partition between the driveway and the pedestrian-only zone also demonstrated different levels of damage, indicating possible vehicle-induced accidents have happened (Figure 59).

Figure 59 The reflective safety signs on Green Square Plaza were damaged and not visible under some weather conditions, February 2024.

6.5 Summary

This chapter presented two key findings that contribute to answering research questions #2 and #3 (Chapter 1.3). Design strategies promoting enjoyable engagement and meaningfulness are critical to promoting SWB in urban neighbourhoods.

To summarise, some of the key design strategies are:

Flexible social spaces

Therapeutic public architecture must provide various seating options and balanced open areas catering to movements and static interactions. The flexibility in spatial elements can also promote self-autonomy by encouraging visitors to initiate and explore different choices.

Integration of greenery

Chapter 5.3 has discussed incorporating greenery as shading and shelter to promote comfort. This chapter expands on the sensory enjoyment and restorative experiences related to landscape design. Particularly for Westpac Place participants, quality greenery design was essential in regulating workplace-related stress.

Playful and interactive design features

Elements like interactive art, water features, and sculptural urban furniture can encourage exploration and playfulness across age groups and foster a sense of joy and discovery through creative interactions.

Catering to both social and solitary moments

Therapeutic public architecture should recognise diverse social needs and preferences to promote inclusiveness and community engagement. The findings recognised the growing need to seek solitude in urban open spaces, and flexible spaces for both group and individual visitors can cater to multiple psychological functions.

Engaging the human-scale

Emphasising design elements at the human scale can foster place attachment, allowing visitors to build a meaningful and long-term connection with public architecture. The alignment with the human scale indicates that views and scenery cater to human-eye-level engagement, and design features incorporate ergonomics to encourage bodily comfort and enjoyment.

These strategies have demonstrated therapeutic effects by fostering meaningful and positive interactions and encouraging personal contemplation. Whether someone is spending time in the case studies with others or in solitude, these strategies can enhance their SWB. Combining with the earlier findings discussed in Chapter 5, the relevant design strategies in this chapter have presented opportunities to initiate a SWB-oriented design framework for future practice and research. Together, these insights have developed a groundwork for SWB-oriented therapeutic public architecture. Chapter 7 will extend the investigation by examining how public art and curatorial techniques can further enhance SWB in urban neighbourhoods, connecting to relevant themes discussed in Chapters 5 and 6.

7. Public Art in Therapeutic Public Architecture

Introduction

Although public art was not emphasised as a design strategy to promote SWB in the selected case studies, there was active engagement with artists and curating professionals in the case study projects to promote community connectedness and social interactions. Both user and professional participants have discussed the role of public art and artistic expressions of public architecture pertinent to fostering social interactions. The thematic analysis indicates the contributions of art-curating strategies in answering research question #3: What are some key design strategies in public architecture to promote SWB at a neighbourhood scale? This chapter presents a multidisciplinary approach to understanding curatorial strategies in therapeutic public architecture across three lenses: 1) the concept of public architecture as an interactive sculpture; 2) the relational architecture demonstrated in case studies; 3) site-specific art installations in case studies and their role as an integral part of public architecture.

7.1 Public Architecture as Sculptures

Architects and artists have long explored the boundaries between architecture and art (Day 2017; Winters 2023; Schützeichel 2013). Some practitioners and researchers have critiqued sculptural architecture as objects disassociated from the surrounding environment (Güleç 2023). At the same time, some argue that architecture is always sculptural because both architecture and sculpture "exist in three dimensions", and there is always "architectural conception of sculptures (Faulkner and Lepine 2016, 433). This section first discusses the development from exhibition pavilions to sculptural architecture. It then investigates how these two types of public architecture can promote interactions and community engagement and their relevance in this thesis.

7.1.1 From Exhibition Pavilions to Sculptural Architecture

Originating in art galleries and international fairs, exhibition pavilions began as an experiment in creating expressive site-specific installations at an architectural scale. The term "pavilions" began circulating in the 1930s after Mies van der Rohe designed the German Pavilion at the 1929 Barcelona International Exhibition (Neumann 2020, 18; Figure 60). Architectural pavilions are a common form of flexible and sculptural architecture. They are

often considered extensions of the gallery space, engaging with the audience to provide recreational shelters (Serpentine Galleries 2019).

Figure 60 Mies van der Rohe, The German Pavilion, Barcelona, Spain, 1929. Source: Fundació Mies van Der Rohe (2019).

One definitive characteristic of architectural pavilions is their temporality (van Schaik and Watson 2015). Unlike many artefacts and artworks that can be stored and archived, architectural pavilions have a fleeting existence. The German Pavilion was demolished after just one year, and many other architectural installations often vanish within only a few months of installation. Architectural pavilions are usually commissioned to create a temporary structure to explore the contemporary gallery space outside the conventional contained interiors (Balmond-Arup et al. 2005). Serpentine Galleries and MoMa PS1 (Museum of Modern Art Parking Structure 1) have set precedents for initiating annual commissions of architectural pavilions (Figure 61; Figure 62). MoMA PS1 selects emerging architects through the Young Architects Program (YAP) each year to actualise their ideas in the parking lot courtyard (MoMA 2019). These gallery-endorsed competitions act like prototypes in testing new modes of future public architecture while promoting “artist-

centred" and "community-driven" initiatives (MoMA 2019). These opportunities can be rare in practice, where architects can embrace artistic freedom without limitations from developers, planning regulations, and stakeholders.

Figure 61 Asif Khan, Serpentine Summer House, London, UK, 2016. Source: Serpentine Galleries (2016).

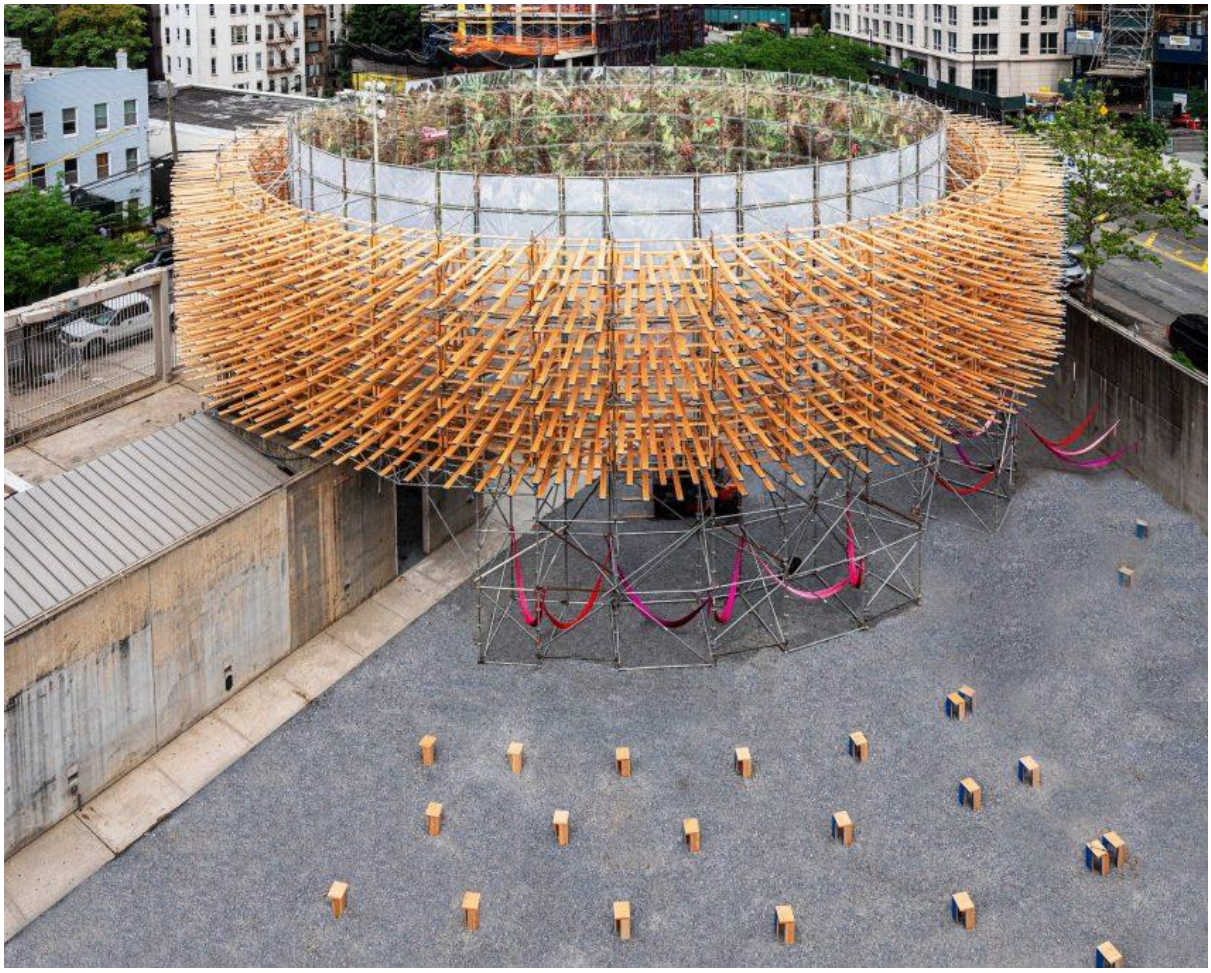

Figure 62 Pedro & Juana, Hórama Rama at MoMA PS1, New York, USA, 2019. Source: MoMA (2019).

Unlike the temporary installations of architectural pavilions within galleries, contemporary galleries and cultural venues have often adopted permanent sculptural forms to represent their artistic identities while promoting public engagement. Many award-winning architects are known for their sculptural approach and organic forms in gallery and museum design, including SANAA (Sejima and Nishizawa and Associates), Frank Gehry, Daniel Libeskind, and Zaha Hadid (Figure 63). These architects often apply abstract and sculptural forms to encourage interaction with materials and engage with spatial experience. Sculptural architecture shares similarities with Art Nouveau and Neo-Gothic architecture in its organic approach to exterior design and emphasis on ornamental expressions. However, sculptural architecture was inspired mainly by deconstructivism, which challenged design formality and rationality in modern architecture (Drozynski and Beljaars 2020; Aljubori and Alalouch 2018).

Figure 63 Frank Gehry, *Walt Disney Concert Hall*, Los Angeles, USA, 2005. Source: LA Phil (2005).

Sydney Modern Project (SMP) is the recent renovation and expansion of the Art Gallery of New South Wales (AGNSW) designed by Pritzker winner SANAA (Figure 64). Completed in 2022, the new addition of AGSNW is considered “the most significant cultural development in the city” after the Sydney Opera House (AGNSW 2022). High-profile sculptural architecture like the Walt Disney Concert Hall (WDCH) and SMP usually involves considerable investments in resources and planning, which aims to create cultural landmarks and attractions (WDCH: USD 274 million; SMP: AUD 344 million).

Figure 64 SANAA, *Sydney Modern Project*, the north wing of AGNSW, 2022. Source: AGNSW (2022).

Recently, sculptural architecture has started to venture beyond the boundaries of galleries and museums and investigate the interactions between people and space in residential and educational projects, including SANAA's Okurayama Apartments and Gehry's School of Business building of the University of Technology Sydney (Figure 65; Figure 66). These developments reflect the shifting objective of sculptural architecture – to be more available and accessible to the public (Sullivan 2019).

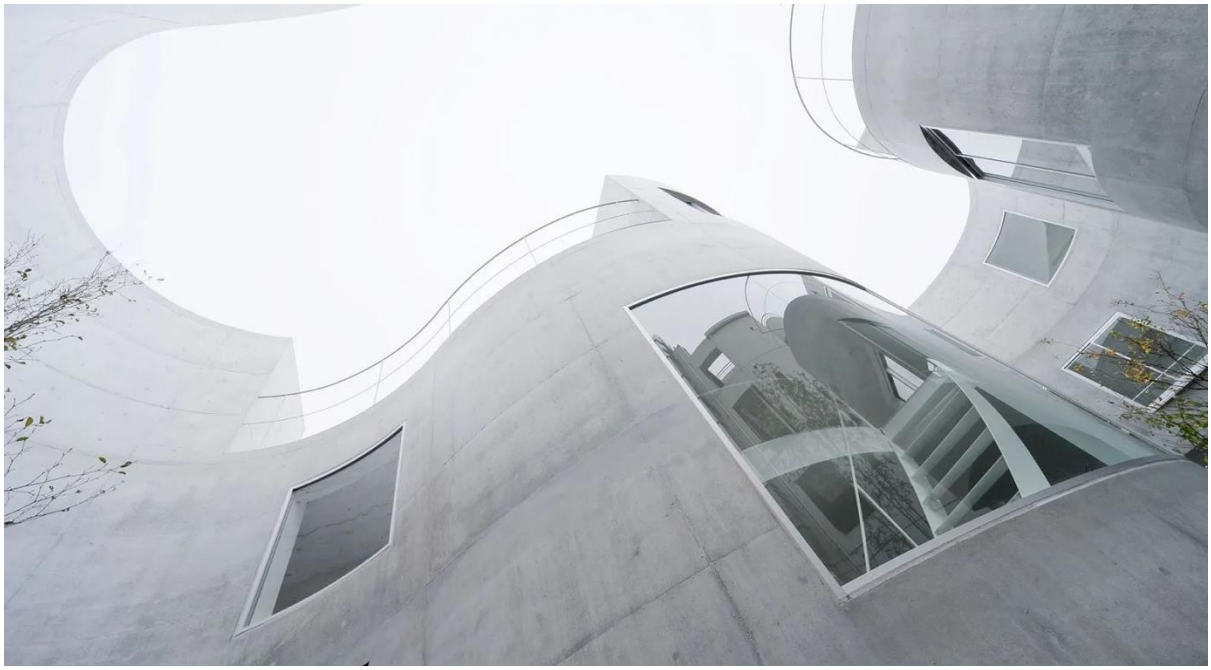

Figure 65 SANAA, *Okurayama Apartments*, Kanagawa, Japan, 2020.

Figure 66 Frank Gehry, *Dr Chau Chak Wing Building*, the School of Business at the University of Technology Sydney (UTS), Sydney, Australia, 2014. Source: UTS (2014).

7.1.2 Decolonising Public Spaces with Sculptural Architecture

Despite the controversy surrounding sustainability and costs, sculptural architecture and architectural pavilions have demonstrated the decolonisation of public art spaces by challenging the Western-centric "White Cube" aesthetics in galleries and museums (Corbet 2019). The White Cube aesthetics represent the traditional art curating methods rooted in colonialism, which often emphasised Western-centric art in a sterile environment surrounded by white walls (Sorokin 2019). This curating style emphasises the pedantic relationship between art and spectators, that visitors should be educated about art.

Contemporary art curating has developed curatorial thinking to decolonise museums and galleries by these key strategies: 1) curating for marginalised communities and acknowledging the contributions of diverse backgrounds and contexts; 2) engaging the public with accessible and interactive public programs that identify viewers as participants instead of patronised attendees in a pedagogy setting; 3) display art in an unconventional setting that embraces architecture and open spaces (Zimmer and Lonetree 2014; Karliner 2022; Giblin et al.2019).

This movement in art curating is one of the most significant contributions to therapeutic public architecture: curating public architecture to promote inclusiveness and community-driven interactions, thereby creating a therapeutic public space. This thesis investigated the shifting conceptualisation of public architecture and its role in promoting SWB (Chapter 2.2). The case studies also witnessed the development of sculptural architecture and its integration into the urban neighbourhoods of Sydney.

7.2 Precedents of Relational Architecture in Sydney

Researchers have explored the merging boundaries between art and architecture based on their understanding towards space and social relations. Nicholas Bourriaud proposed *relational aesthetics* to conceptualise contemporary art that promotes interactions between art and space (Bourriaud 2002). Bishop critiqued and expanded Bourriaud's argument that bare and unfinished architecture can challenge the traditional White Cube curating model (Bishop 2004). Jane Rendell further developed these ideas, suggesting that the boundaries between art and architecture blend when they curate for "human freedom" through the embodiment of sociality in material forms (Rendell 2006, 164). Rendell highlighted that "social

sculpture/social architecture", a terminology proposed by Joseph Beuys (1974), calls for active participation and considers every person a creative being (Rendell 2006, 163)[11]. This theoretical framework was relevant to understanding the diverse perspectives on public architecture from the study's user participants. The background of most of the participants did not include formal training in architecture or art (only four participants had this), which enriched the findings by indicating how the general public interprets and engages with architectural spaces and art without potential pedagogical influences.

The expressive design language of public architecture can bridge the gaps between the built product and users by facilitating engagement. Both users and practitioners considered the Exchange at Darling Square and the library at Green Square Plaza to be iconic sculptural architecture representing their neighbourhoods. They commented on how these case studies have become neighbourhood landmarks and attractions through their sculptural design language. This section investigates the potential of curating public architecture as relational art based on a case study analysis of The Exchange and the Green Square Library.

7.2.1 The Exchange at Darling Square

Many users of Darling Square shared that the expressive and sculptural form of public architecture attracted their attention, motivating them to explore the space. Interestingly, none of them knew The Exchange's real name. Many referred to it as "The Bird's Nest" instead. This reflects that the sculptural form can represent public architecture's essence and foster communications and engagement with audiences. Despite lacking knowledge about the design objectives and architectural language, users interacted with The Exchange and Darling Square with their own interpretations. Evelyn, Millie, Sara, and Maddie are young adults (18 – 22) who frequent Darling Square weekly. They mentioned how they first discovered Darling Square out of curiosity to see the *"funny-looking building" or "building that looks like a nest",* which led to exploration of the area (Figure 67). The abstract architectural form encouraged openness to different interpretations, leading to storytelling and placemaking, connecting public architecture to personal memories, cherished nicknames, and shared,

[11] Beuys' article was originally published in the exhibition catalogue *Art into Society, Society into Art*. London: Institute of Contemporary Art, 1974.

collective memories. In the process, public architecture becomes more personal and intimate, promoting familiarity with users.

Figure 67 The Exchange at Darling Square designed by Kengo Kuma and Associates. Visitors often called it the Bird's Nest, 2024.

The signature organic form of the architecture also became a landmark representing the neighbourhood:

> *It is so easy to locate and meet up with other people here: you simply can't miss it.*
>
> Evelyn, Darling Square participant.

Most participants were not neighbourhood residents in Darling Square. Nonetheless, some commented on how The Exchange's sculptural language has created an identity they can relate to and feel connected to during each visit.

> *I was born and raised in Sydney, so I know the city quite well, but Darling Square and its architecture are truly one of a kind: you just couldn't find anything else like this in the city. At first, I thought the bird-nest building was just another shopping mall, but it offers so much more than that. It has good food and a comfortable space*

to study, and it has become my go-to place to introduce to friends and families. I feel like Darling Square has become an icon of Sydney.

Austin, Darling Square participant.

Darling Square is the first place I can think of when my out-of-town friends visit because I am sure they would enjoy it. It is so iconic. What is not to love? The architecture looks good, the plaza is vibing, and there are many options to go with if you want someplace to eat or shop. I also like you don't really need a purpose to visit there. Sometimes, it is just lovely to sit down (under the pavilion) … just let yourself loose and stare blankly into the crowd.

Elsie, Darling Square participant.

Though expressed casually, Austin and Elsie shared how the aesthetic values of public architecture promote enjoyment and inclusiveness, particularly in showing friends and families a place they feel connected to in hopes of extending and sharing that enjoyment.

Kengo Kuma was the lead architect commissioned for The Exchange. In his book *Architecture of Defeat,* he analysed how Le Corbusier led modernism's transition from "pure forms" to depicting "a communal character" with arbitrary forms, which were considered "impure" at that time (Kuma and Birnbaum 2019, 32). Kuma embraced the ideology of Le Corbusier and Mies that the "impurity" in organic forms and unpolished natural materials represents the core spirit of a community (Kuma and Birnbaum 2019, 35).

Click or tap here to enter text.Sacha Coles, lead landscape designer at Darling Square, commented on how Kuma proposed the human-place connection by adding the wooden pavilion, which was particularly important in his design philosophy as he has critiqued the way contemporary architecture practice can result in disassociation from the human body (Kuma and Birnbaum 2019). The preliminary design brief recommended a complete open plaza without additional architectural elements. Kuma strongly suggested adding this sculptural piece, which now acts as the anchor and focal point of interactions at Darling Square. The wooden pavilion appeared light, airy, and transparent, creating a flowing outdoor hallway connecting the plaza's two sides. Coles suggested the bold expression of the organic form was one of the critical factors in making Darling Square *"popular and successful."* The

pavilion highlighted the floating platforms underneath, which formed a set of flexible seating along with the urban steps along the main walkway leading to Darling Harbour (Figure 68).

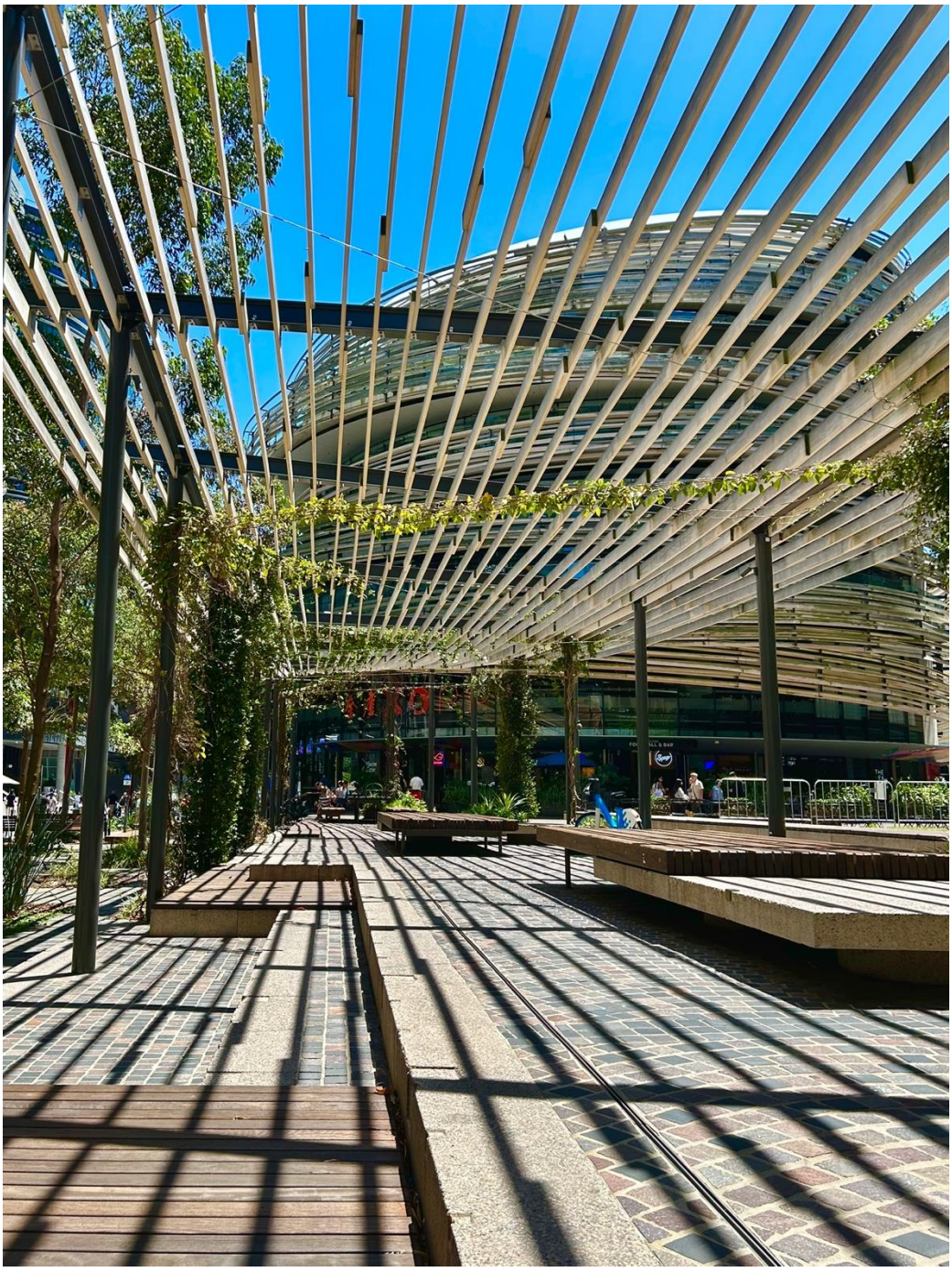

Figure 68 The wooden pavilion provided partial shading for floating platforms and steps, November 2023.

Kuma's Exchange created a precedent for sculptural architecture as a *threshold* space in an urban neighbourhood. Kimmel (2021, 38) described this architectural component, "threshold spaces", as linking public space and accessible semi-public space. Within its dense urban

neighbourhood with diverse cultural representations (Chapter 4.4.1, 65), The Exchange expanded the exterior form of a nest to the symbolic meaning of cultural identity. The metaphorical form of a nest alluded to an intention for the place to shelter its users and nurture the community, yielding new urban life. The curation of architectural scale art as storytelling can create bridges to peoples' feelings and foster a sense of shared familiarity. As demonstrated in Chapters 5 and 6, these design strategies have shaped trends of social interactions with public architecture, where people lingered, mingled, and observed.

7.2.2 Green Square Library

While The Exchange demonstrated organic forms that made an impactful impression to many visitors, Green Square Library offered a different approach to sculptural architecture through its geometric expression. This award-winning public architecture is known to have Lego-like geometry and playful lighting (Figure 69; Figure 70). The main library functions were moved underground to free up more open space for the plaza. Matthias Hollenstein, the project's lead architect, described the library architecture as "lightboxes at night" where people can have "visual access" across the neighbourhood. This design vision was effectively implemented, as some participants noted their enjoyment of the lights and the view when they were reluctant to go out. Visual access to views and activities served as an alternative means of participating and engaging with the community without being physically present, as described by Green Square participant Luqi in (Chapter 6.3.2 Sense of Belonging and Inclusiveness, 136). Luqi also expressed her process of readjustment to interacting with others in public spaces following the pandemic lockdowns in 2022, stating that the lights in the plaza inspired her to re-embrace social life in the community.

Public architecture can become relational art by curating for visual access and views, contributing to comfort and enjoyment (Yanru et al. 2020; Kalichman and Rufino 2021). Another design strategy to curate for visual access is to make it transparent. The floor-to-ceiling glass panels aimed to make the library architecture "as accessible as it can even from afar" (Hollenstein, Green Square architect). Regarding the expressive form, Hollenstein commented that it was a "conscious decision to make the building somewhat sculptural".

Instead of some (conventional) library that ends up blocking your view, it would be great to have something (sculptural) that you want to look at. There is always a discussion on finding beauty in architecture, and I want Green Square Library to be a beautiful building.

Matthias Hollenstein, Green Square Library and Plaza lead architect.

Figure 69 Green Square Library key volumes above ground: triangular pavilion hosting the main entry and a café, and the tower with multi-functional rooms, November 2023.

Figure 70 Coloured skylights at the Green Square Library also acted as floor decorations for the plaza, November 2023.

Hollenstein also shared how creating generous spaces for community events was essential to promote spontaneous interactions and participation.

> *The local council responded well with the amphitheatre (Figure 71). They would host events that are accessible directly from the plaza. Imagine one day you plan to go get coffee or something, and suddenly you see live music and performances happening here, and then you can engage.*
>
> Matthias Hollenstein, Green Square Library and Plaza lead architect.

Figure 71 The amphitheatre connects the library and the open space, Green Square Plaza, January 2024.

The case studies mentioned above have witnessed the development of sculptural architecture and its integration into the urban neighbourhoods of Sydney, expanding the understanding of

public architecture. The following section will discuss site-specific installations in case studies and their role in promoting SWB in urbanised neighbourhoods.

7.3 Site-specific Installations to Promote SWB

> *The future of art is urban.*
>
> Nicholas Whybrow, *Art and the City*, 2011

Site-specific installations are a type of public art installation that is tailored to the space in which it is located and activates the spectator's "consciousness of the whole scene of the exhibition" (Whybrow 2011, 5). Case studies Darling Square, Green Square, and 1PSQ have incorporated site-specific public art into spatial design to promote comfort, enjoyment, and meaningfulness in relevant neighbourhoods.

7.3.1 *Comfort* – Functionality of Public Art

Ambience

Chapter 5.4.4 discussed how ambience lighting can promote comfort and accessibility in public spaces. Darling Square and Green Square both implemented public art installations as a form of ambience. Rather than conventional lighting, the art installations were designed with lighting as a concept (Figure 72; Figure 73).

> *"City Lights" can be seen as a floating lantern, and the small lightboxes with musical notes assemble signage or billboards (Figure 73). They reflect the busy nightlife in the city: music, traffic, and neon lights. They would accompany you when you walk down the alley.*
>
> Brendan van Hek, Darling Square artist.

Figure 72 Brendan van Hek, *City Lights* (2019), neon and metal installations, Haymarket, Sydney, image taken in 2023.

Figure 73 Brendan van Hek, *City Lights* (details), neon and metal installations (2019). The artist mentioned how the cluster of light installations created an enjoyable streetscape, image taken in 2023.

Wayfinding

The suspended light installations at Darling Square also functioned as a wayfinding design.

> *It was a bit hard to figure out how to enter Darling Square if you arrived near the alleyways. There is no clear view to the plaza. The artwork helped me find the place. They were so bright at night, and you can clearly see them across the street.*
>
> Austin, Darling Square participant.

Austin's experience echoed Kruger's intention to "lure the visitors in" with suspended light installations. Artist Peta Kruger mentioned how it was a "delightful collaboration" to have won the commissions and worked with the architects to create her first architectural installations in Darling Square. Known for her work in jewellery design, Kruger conceptualised her installation *Night and Day, Day and Night* as "floating gems" that aimed to promote playfulness in the narrow alleyway (Figure 74). Kruger also described her work as dedicated to the human scale to create a "vibrant contrast with the dark and grey architectural façade".

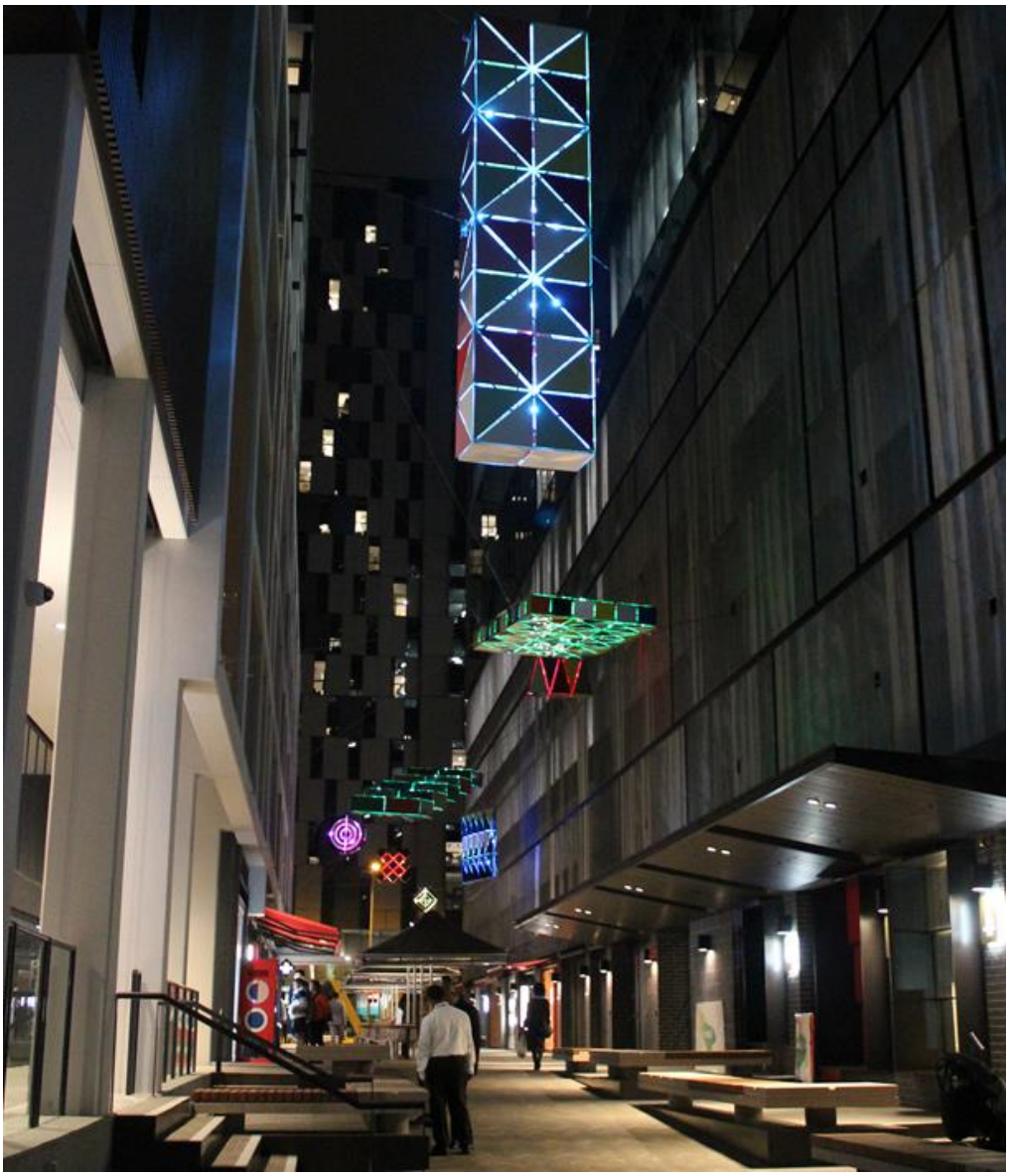

Figure 74 Peta Kruger, *Night and Day, Day and Night*, Sydney, Australia, 2018. Source: Peta Kruger (2018).

7.3.2 *Enjoyment* – Public Art and Creative Placemaking

Researchers have acknowledged the contributions of public art in placemaking to promote enjoyment and community engagement (Courage and McKeown 2018). Markusen and Gadwa Nicodemus proposed the notion of *creative placemaking* in 2010, a community-driven curating technique to "celebrate the arts and cultural capacity in neighbourhoods" (Courage and McKeown 2019, 11). Originating in the U.S., creative placemaking aims to promote diversity of participation (Markusen 2013).

Chapter 6.1.3 Playfulness and Creativityhas demonstrated creative and playful interactions with sculptural installations at Westpac Place. This section further explores the enjoyable interactions with public art at 1PSQ based on the framework of creative placemaking.

Western Sydney University (WSU) and Urban Art Projects (UAP) commissioned renowned Australian artist Emily Floyd to create a site-specific sculpture for the vertical campus at 1PSQ (Figure 75). Owen Craven, director and senior curator of UAP, shared how Floyd's work was an integral part of the public architecture:

> *[The developer (for WSU) and the city council wanted to] ensure that the commissioned artwork would be welcoming and accessible to the open space (at 1PSQ) and would not impede access. We (UAP and curator Callum Morton) investigated how we could integrate the artwork within the building fabric instead of just having a sculpture in the lobby that might impede people's visibility or physical access.*
>
> *The building design was already accomplished, and we had a lot of communication with the architects to figure out the best way to incorporate the installation into the architectural language. We decided that the installation should be suspended from the entry ceiling, and Emily Floyd's work was selected from a shortlist of artists.*
>
> Owen Craven, 1PSQ curator.

Craven's comments also revealed a crucial hierarchy in the effectiveness of public art: its tangible contributions to the built environment must be secured before its intangible benefits can emerge. Physical considerations, particularly accessibility and spatial integration with architecture, create the foundation for meaningful engagement. In other words, only when the installations can add to feelings of comfort and aesthetic pleasantness can their affective qualities be fully realised.

Figure 75 Emily Floyd, *Allegory of a Cave*, paints and wood, 1PSQ, Parramatta, Australia, 2017. Source: UAP 2017.

Craven continued to comment on how educational toys inspired Floyd's work, hence the colour building blocks resembling exploration and curiosity in the *"knowledge cave"*, a gathering place for information and knowledge production inspired by Plato's philosophy (from Craven's interview). Shiyao and Zara, WSU students, have noted the vibrant colours and how they "make the space interesting":

> *I usually wait for the buses here (at 1PSQ urban steps) after classes. I like to sit under the colourful ceiling because it looks nice. It differs from all the other steel and glass buildings around here (Parramatta Square).*
>
> Shiyao, 1PSQ participant

> *I study art therapy at WSU, so I usually pay a lot of attention to the art around me. I like how this artwork [Floyd's Allegory of a Cave] brightens up the main entrance. I feel like it brightens up my mood as well.*
>
> Zara, 1PSQ participant

Chapter 6.4 Limitations of Current Strategiesmentioned that the developer and local council of Green Square have added a temporary laneway called Small Lane to counter the limitations caused by the delayed construction process. Some participants have commented that Small Lane has become their favourite place to visit in Green Square because the variety of community events, street art, and live performances (Figure 76; Figure 77). This strategy aligns with the essence of creative placemaking, and in this case, the developer and local council have provided an effective solution to transform a limitation to an opportunity. Erin, a recent immigrant to Green Square, commented how she was looking forward to the food trucks and musicians on the weekends:

> *I know it [Small Lane] is not technically part of the plaza, but it has become my favourite place to visit during weekends. They have different things happening, and it is fun to find out what kind of food trucks or street performances they have every time I walk by. It is very nice to have these [kinds of community events].*
>
> Erin, Green Square participant

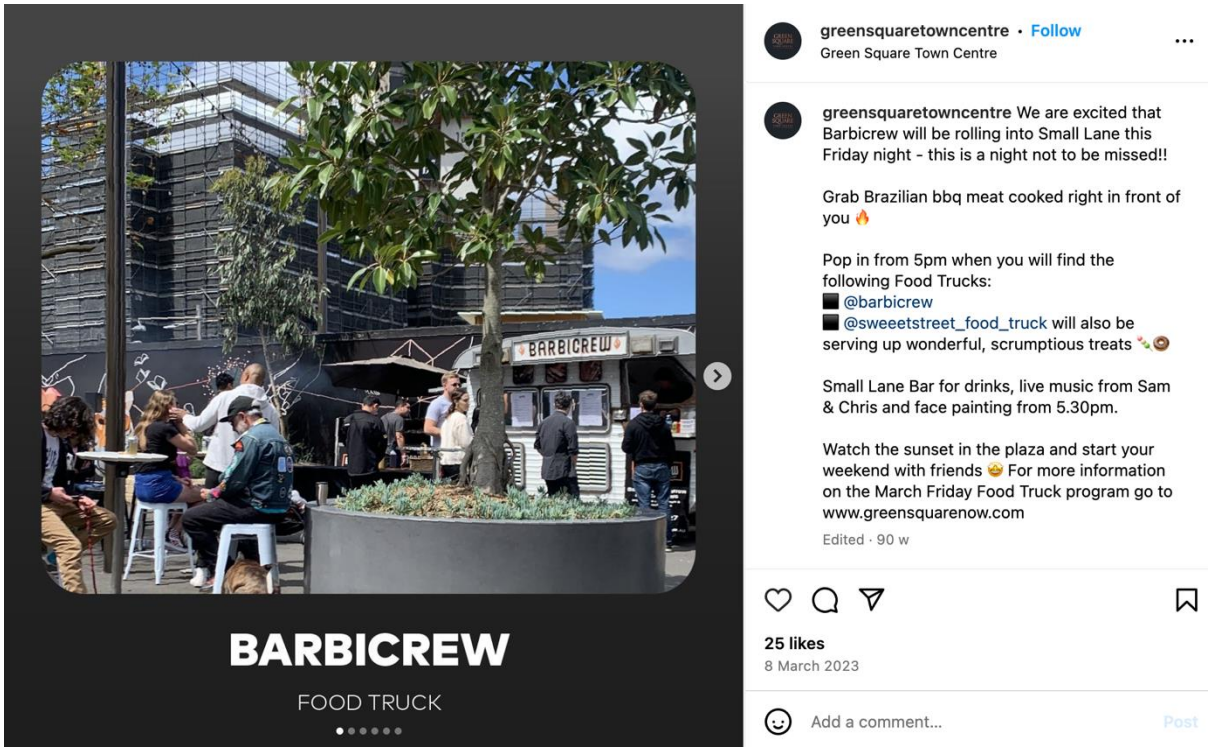

Figure 76 A post from the official Instagram account for Green Square Town Centre. It advertised for the community event held at Small Lane. Source: Instagram (2023).

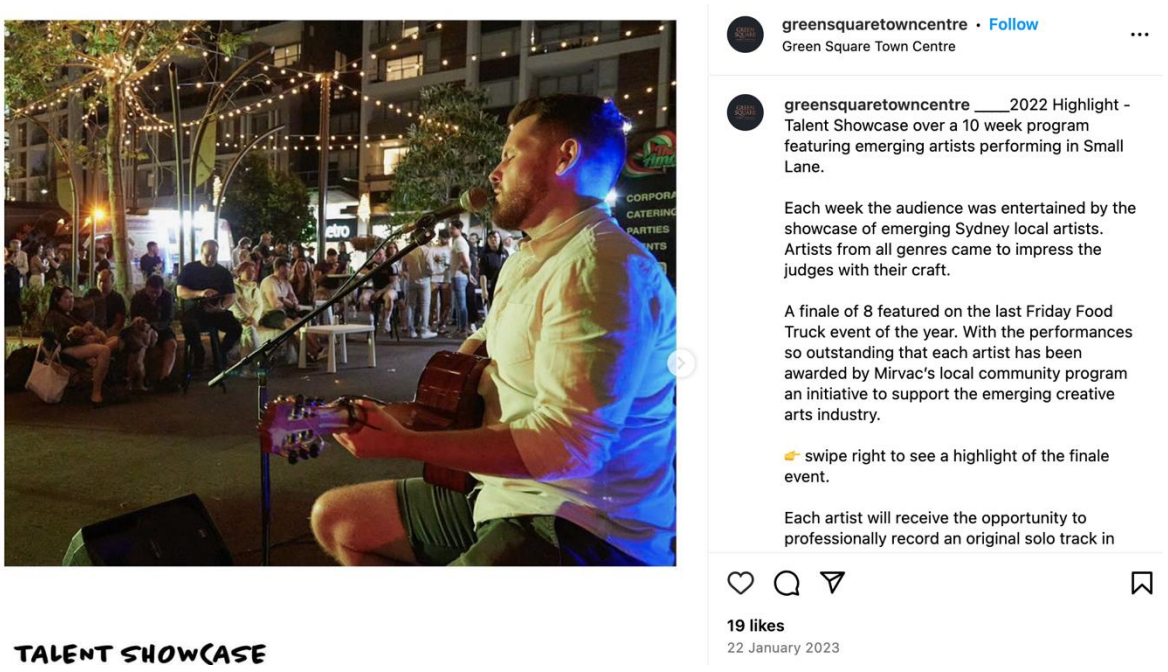

Figure 77 Another Instagram post showcasing that many visitors enjoyed the pop-up live performances held at Small Lane. Source: Instagram (2023).

7.3.3 *Meaningfulness* – Promoting Mental Well-being with Public Art

Chapter 7.1.1 From Exhibition Pavilions to Sculptural Architecturementioned the essence of creating sculptural architecture and architectural pavilions is to promote active interactions and create inclusive places. It builds upon what Chapter 6.3 discussed regarding the theme of *meaningfulness*, which is often related to a sense of belonging and place attachment. Interacting with public art can also promote a sense of purpose by creating a coping mechanism for preventing mental health issues by regulating loneliness, stress, and anxiety (Ghadim and Daugherty 2021; Hartman and Irwin 2021; Sabbaghi 2021). Some main categories in the current practice of art-oriented mental health initiatives include: 1) art therapy within the museum and gallery setting, 2) community-driven public programs, and 3) playful interactions with public art (Ghadim and Daugherty 2021). Playful interactions were observed and discussed in Darling Square, Green Square, and Westpac Place (Chapter 6.1.3 Playfulness and Creativity). However, Green Square Plaza was the only case study offering consistent performance-based community initiatives that promoted a sense of belonging. The library café has hosted community dance workshops and live music sessions for the past few years. With performance arts, the library extended its conventional functions into a community hub with vibrant nightlife (Figure 78; Figure 79).

Figure 78 Live music hosted by the library Café, Green Square Library, Sydney, November 2023.

Figure 79 Visitors spent time outdoors near the library Café, which turned into a bar with live music on weekends, Green Square Library, Sydney, January 2024.

Residents Erin and Riley said they had never attended these dance workshops, yet they felt like *"part of the community"* whenever they saw other people gathering and having a great time. *"I never knew Green Square had so many talented and fun people,"* said Riley, Green Square participant.

7.4 Limitations of Current Curatorial Techniques

As an emerging initiative incorporating public art to promote well-being, it is understandable that there is room for improvement in implementing curatorial techniques in therapeutic public architecture. This section reviews the gaps between art curating and user experiences that emerged from interviews and observations.

7.4.1 Misinterpretation of Public Art

Some participants associated Emily Floyd's work with LGBTQIA+ communities, even though this was not the original intention of the artwork. Georgia, Shiyao, and Kaira noticed the rainbow palette of the artwork and assumed it aimed to promote diversity and acceptance in the university.

> *I grew up in a very traditional Christian family. It shocked me a little to see that my uni (WSU) would promote diversity for the LGBT(QIA+). I think it opens my eyes and encourages me to accept people around me, however different they can be.*
>
> Shiyao, 1PSQ participant.

> *I think it is very brave to have that kind of statement as an educational institution. I am very proud of WSU to have a permanent artwork representing the inclusive value.*
>
> Georgia, 1PSQ participant.

The 1PSQ amphitheatre was also the only site to have temporary rainbow-themed decorations during Mardi Gras 2024, so it was understandable that students associated Floyd's installation with a similar purpose (Figure 80).

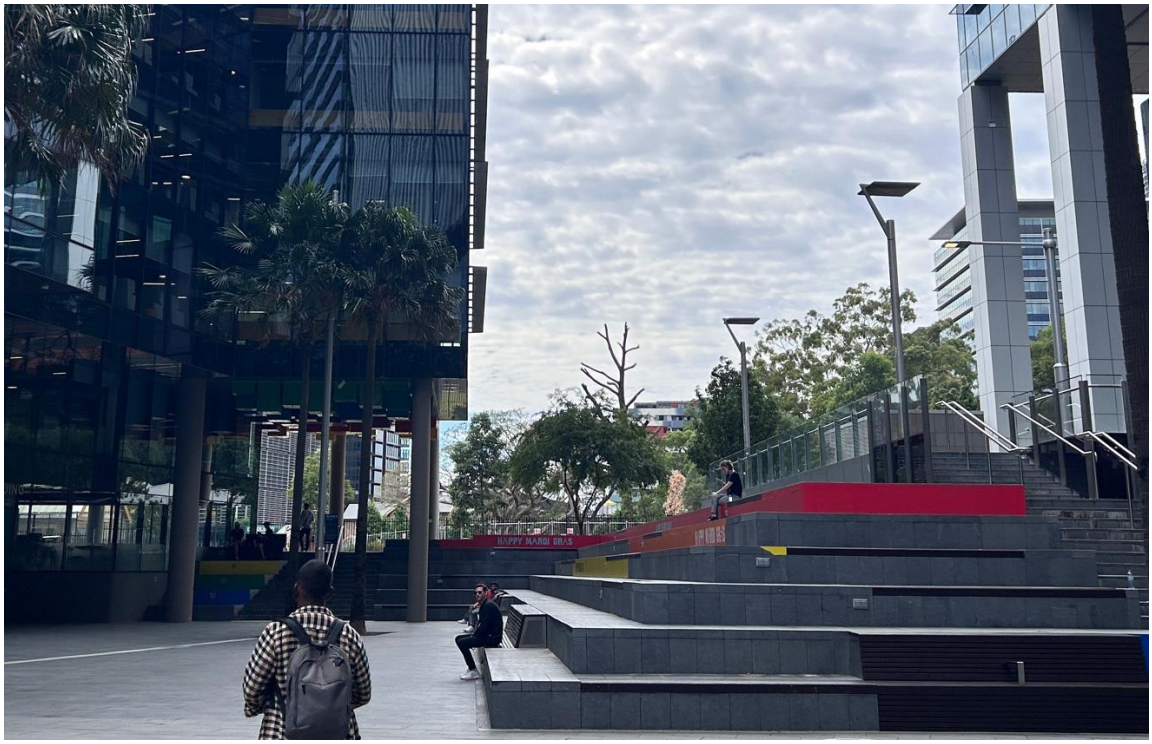

Figure 80 1PSQ urban steps with “Happy Mardi Gras” decorations in March 2024.

One possible reason behind the misinterpretation is ineffective curating techniques. The artwork was not labelled on-site, and the university website only mentioned Floyd’s artwork as “a modular sculpture made from suspended square blocks of varied heights and colours,” which did not explain that its concept came from Plato’s knowledge cave (WSU 2017).

Chapter 6.1.3 Playfulness and Creativityintroduced *Cloud Nation* at Green Square Library as an engaging art installation visitors enjoyed and interacted with often. This artwork consisted of two parts: 1) a suspended aeroplane model inside the library’s main reading room and 2) monocular telescopes installed outside the building. This artwork faced a similar issue as Floyd’s installation: none of the participants connected the exterior to the interior artwork and realised the purpose of the monocular telescopes (to view the indoor artwork in more detail). Green Square resident Selena mentioned pointing the telescopes toward the other park because *“I assume they (telescopes) are for looking at somewhere far away, like when you see telescopes on the top of the mountains or seaside boardwalk.”* Some others questioned the placement of the telescopes but did not try to find more information:

I find it a bit weird to have telescopes so close to apartment buildings. Why would they (designers or artists) want us to peek into other people's rooms?

Shyla, Green Square participant.

The label of this installation was attached to the bottom of the glass window near the aeroplane installation. Nevertheless, reading the label might be challenging since no visitor interacted with it throughout the observations (Figure 81). Also, no information on the label encouraged visitors to interact with the telescopes.

Figure 81 Displayed label for art installation *Cloud Nation* at the Green Square Library, 2023.

7.4.2 Imbalance Between Aesthetics and Function

The sunken circular garden at the Green Square Library was often considered an enjoyable design feature with excellent aesthetics. Elin, Rie, and Selena usually visited the library to study; the garden in the centre was their *"favourite place"* for a short break. Erin preferred

the garden over the above plaza because she thinks it *"can be overwhelming"*, and the weather can get intense on many days: "*It is either too sunny or too windy"*. Selena mentioned how the seats surrounding the garden were usually the most popular (Figure 82).

> *It is so nice to look at something green when you study. It feels cozy and soothing if you want to have some fresh air after studying for so long. The tall stools right against the windows are pretty popular. They were usually the first seats to be filled up when I stepped into the library.*
>
> Selena, Green Square participant.

Figure 82 The Green Square Library's sunken circular garden and the customised desks have a direct view of the garden, 2023.

Even though Rie mentioned she enjoyed studying while looking at the garden, it can be awkward to spend time *in* the garden because *"I feel like people are looking at me. I know most of them are really focused on their studies, but I just can feel people's gaze coming from different directions when I step out to the garden."*

One dilemma with this enjoyable feature is that the blinds often covered the glass windows to avoid intense glare during sunny days (Figure 83). When the blinds were put down to ensure shading function and thermal comfort, visitors lost their view of the garden; when the blinds

were up to offer a direct view, some visitors could feel discouraged from spending time in the garden.

Figure 83 The Green Square Library's sunken circular garden when the blinds were fully closed, 2023.

7.4.3 The Dissociated Engagement with the Human Body

Chapter 7.3 (161) has discussed the significance of sculptural architecture in promoting participation and interactions. However, public art and architecture might not be as engaging as intended when detached from the human scale. Contrary to what the artists and architects anticipated, many visitors and user participants did not notice the existence of public art despite its scale and prominent placement. It is challenging to initiate interactions if visitors are unaware of public art.

Besides the public art installations mentioned above, Green Square and Westpac Place had other site-specific art installed in open areas. Yet only one participant noticed the heritage artefacts displayed along the Westpac Place lawn (Figure 84). And all the participants from Green Square overlooked the light installation by Hill and Hanlee despite its prominent placement and scale (Figure 85).

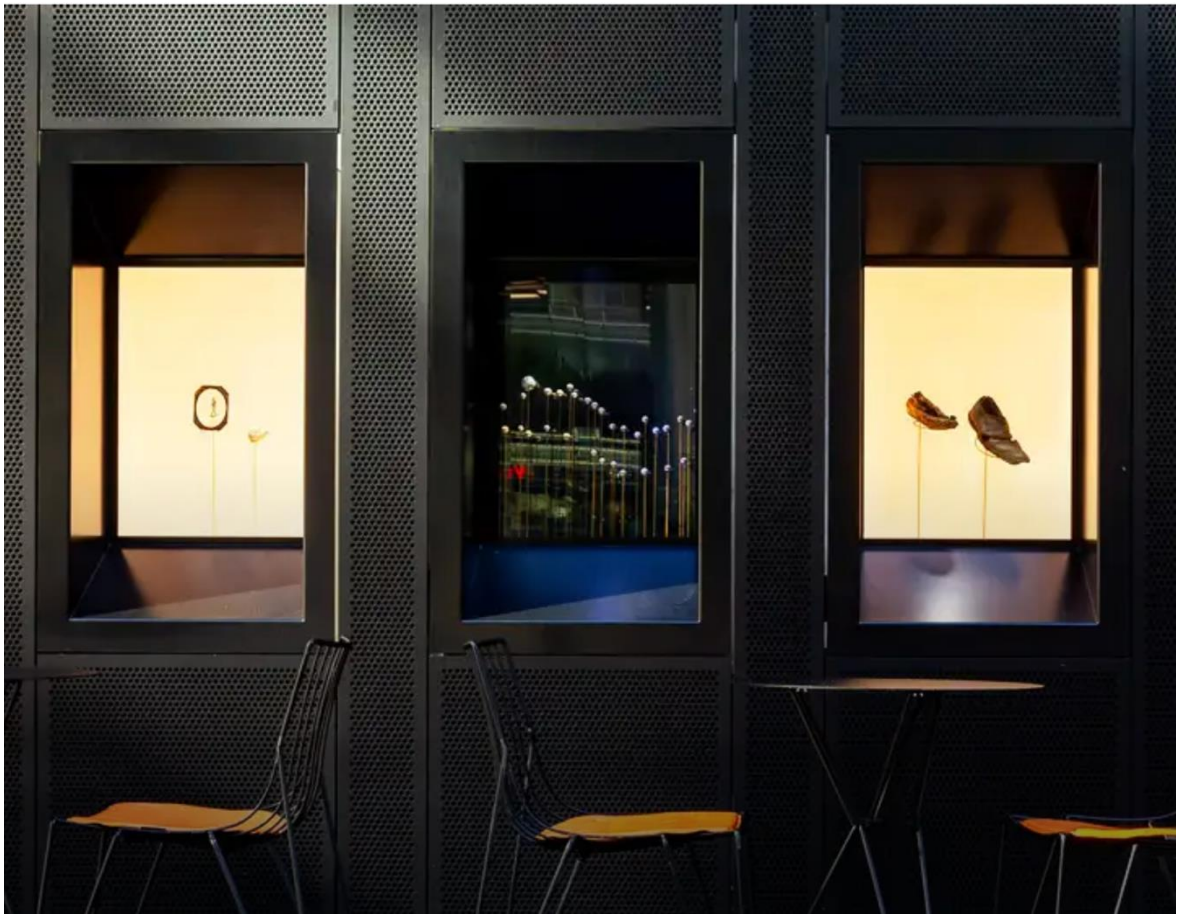

Figure 84 Heritage exhibition at Westpac Place, Sydney, Australia, 2019. Source: Curio Projects (2019).

Figure 85 Michael Thomas Hill and Indigo Hanlee, *High Water* (2018), LED and live weather data, Green Square Plaza, image taken in 2024.

7.5 Summary

This chapter discussed the critical role of art curating techniques in shaping therapeutic public architecture under two contexts: 1) curating sculptural architecture as art and 2) curating site-specific art as architecture.

Building upon existing initiatives like creative placemaking and post-colonial curating in public spaces, this chapter summarises four key strategies to incorporate curatorial thinking in therapeutic public architecture:

1. Embrace artistic freedom in architectural design to promote curiosity and visual experiences, as The Exchange at Darling Square demonstrated.
2. Create semi-open spaces connecting the interior and exterior spaces to encourage community-driven activities. This strategy was practised in the Green Square Library amphitheatre.
3. The limitations of effective communications and curating strategies regarding the public art installations at the Green Square Plaza and 1PSQ indicated that site-specific art should demonstrate playful components that inspire intuitive interactions without instructive information.
4. Both public architecture and art installations should cater to engagement at the human scale. One significant strategy in Darling Square's public art curating is emphasising connecting with the human body and engaging with the human eye level, as both architects and artists mentioned. The dissociated human scale in public art curating might discourage people from initiating contact, like *High Water* at Green Square Plaza.

These key strategies also reflect some gaps between the artistic intent and its perception by users in the case studies. The next chapter will further interpret the findings above and provide a comprehensive review of the key findings from Chapters 5 and 6.

8. Synthesis of Findings: Promoting Happiness with Therapeutic Public Architecture

Introduction

This chapter synthesises the findings and discusses their contributions to current literature and relevant disciplines. Reflecting on the previous three chapters (Chapters 5, 6, 7), this chapter delves into the key findings shaping a SWB-oriented design framework for therapeutic public architecture. These insights lead to a proposed interdisciplinary concept called *therapeutic public architecture*, essentially an *urban placemaking* strategy. As an interdisciplinary design initiative, therapeutic public architecture can be architecture-oriented, expanding the traditional understanding of public architecture to emphasise social impacts and community engagement. At the same time, therapeutic public architecture can be applied to curate the public realm or urban open spaces with interdisciplinary thinking beyond architecture. The following sections summarise the significant findings and then interpret them in the context of the effectiveness of current well-being-oriented design strategies. The contribution and other potential applications of the findings are also discussed.

8.1 Synopsis of Findings

Comfort, enjoyment, and meaningfulness (a sense of purpose) are the three fundamental factors for perceived happiness (Seligman 2011; Miller 2008). This thesis concurs with the literature and discusses the findings accordingly (Chapters 5 to 7). Analyses from observational and interview data have underscored the significance of positive social interactions in public open spaces while acknowledging the limitations of the current strategies. The critical design strategies that emerged from positive themes are beneficial and essential for individuals to experience comfort, enjoyment and a sense of purpose (Figure 86). This understanding is critical to building associations between a sense of healing and public architecture, and it highlights the significant role of the audience in creating these healing public spaces. All four case studies demonstrated effective design strategies to promote individual SWB while fulfilling one or more of the three factors. The following sections will also discuss the limitations of each case study based on the negative themes that emerged from thematic analysis (Figure 86).

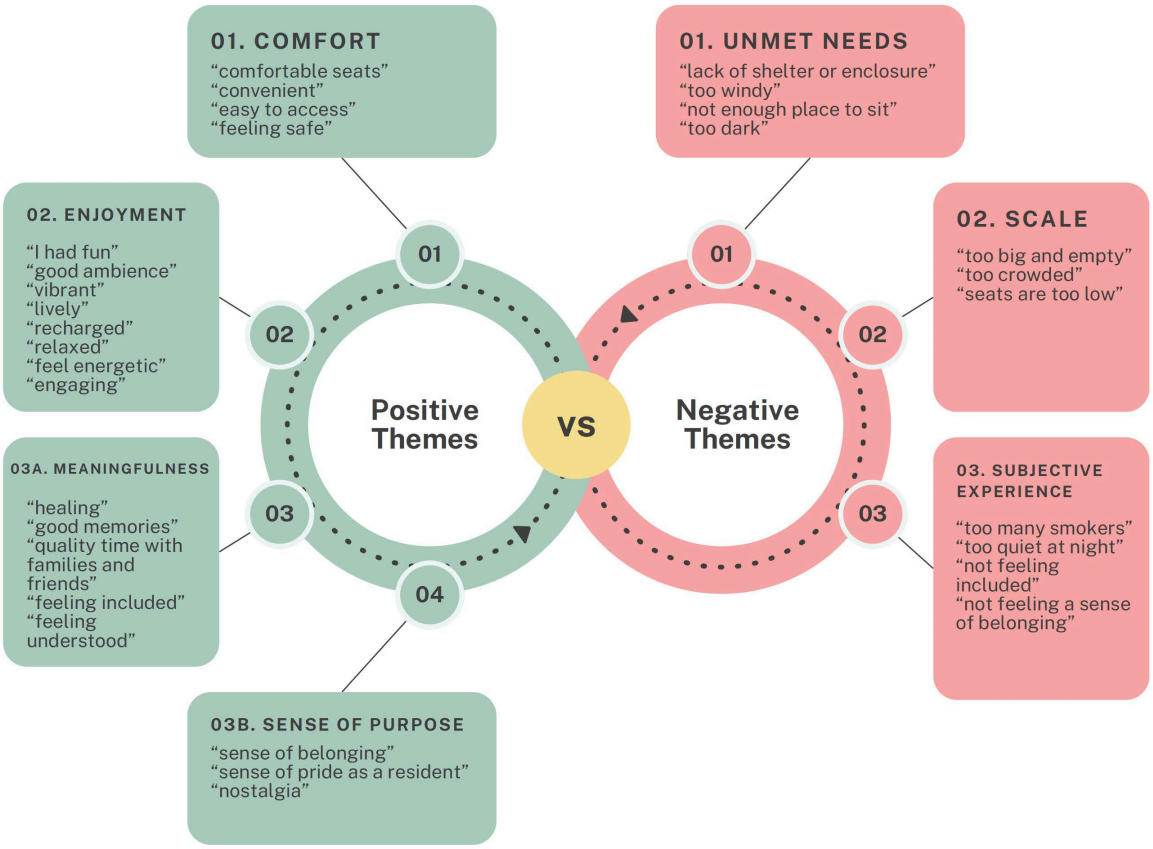

Figure 86 A summary diagram of key themes emerged from the interview analysis.

These significant findings from the previous chapters (5 to 7) address the research questions that guided this thesis. The first question prompts the investigation of an expanded understanding of public architecture. From the literature review and fieldwork, a therapeutic-focused concept of public architecture starts to formulate. It extends the functionality of contemporary public architecture to its subjective relationship with people. It also resonates with many current placemaking projects that promote well-being with design. The author proposes the term *therapeutic public architecture* to differentiate the findings from the conventional understanding of public architecture.

The second aim of this thesis was to understand relationship between public architecture and SWB then establish a design framework to promote individual SWB and positive social engagement with therapeutic public architecture design (Chapter 1.2, 4). Existing literature reveals that the dynamic between people and public open spaces has shifted recently due to climate change and the global pandemic (Berdejo-Espinola et al. 2021; Manahasa 2024; Brunetta, Lombardi, and Voghera 2023). The research study built upon the hypothesis that

therapeutic public architecture can promote SWB through incidental comfort and positive social interactions, which has the potential to develop a long-term sustainable response to address extensive exposure to urban living stressors.

The third aim of this thesis was to identify interdisciplinary concepts and initiatives, particularly in relevance to placemaking and curatorial techniques, to develop an understanding on how therapeutic public architecture can foster SWB as a social sustainability strategy.

8.1.1 Conceptualising Therapeutic Public Architecture

As discussed in the literature review, SWB can be an elusive concept. The ambiguity in defining SWB poses challenges in measuring the impact of public architecture on SWB since there are many indicators on various scales, from individual to collective perceptions. To further interpret the analysis, this thesis proposes *therapeutic public architecture*, a terminology expanding the current understanding of placemaking and public architecture. Placemaking is a growing concept that extends to many connecting disciplines, and it primarily focuses on the positive interactions facilitated in urban public spaces (Chapter 2.2.1.2, 19). Contemporary practice of public architecture has also expanded the concentration on the built architectural projects to consider public architecture as the anchor of connecting people in the public realm (Kamin 2022). Aligning with many placemaking objectives, especially in its emphasis on fostering positive social connections with place-based design, *therapeutic public architecture* can also be viewed as a type of placemaking practice.

This thesis also proposes curating public architecture as art to promote healing and positive experiences in public spaces. Incorporating curatorial thinking into design is also a distinctive characteristic of therapeutic public architecture in that it connects the practices of placemaking, architectural design, and public realm engagement with SWB-oriented curatorial techniques. Therapeutic public architecture also defines public architecture as an integral part of its surrounding public open space, emphasising a holistic perspective on spatial experience in the urban built environment.

Contemporary art methodology encompasses in many socially engaged community-based practices, including the 1970s Community Arts movement (Hulbert 2018). Therapeutic public architecture embraces the contributions of community-based public art, encouraging artists and curators to focus on human interactions and social contexts. For instance, a typical case of therapeutic public architecture can be one or a sequence of interactive installations that promote lingering, flexible seating options for individual and group activities, as well as a suitable landscape-to-open space ratio that balances shading and natural lighting and incorporates artistic expressions of architecture. This chapter will also discuss how art curating techniques are integral to the conceptualisation of therapeutic public architecture. A public open space with the potential to become the anchor of community gathering and socialisation can be the optimal place to initiate and implement therapeutic public architecture. The scale of therapeutic public architecture should align with typical placemaking projects that are between a pocket park and a civic plaza to emphasise the design catering to the human scale. As a place-based intervention, therapeutic public architecture embraces the essence of placemaking to design liveable places based on people's perceptions and experiences (Hu and Chen 2018). Its focus on curating communal third places will count on collaborations and participation across local councils, designers, artists, curators, and residents.

8.1.2 Why Promote SWB with Therapeutic Public Architecture?

Discussion of a renewed understanding of public architecture leads to investigating the relationship between therapeutic public architecture and SWB. This thesis does not conclude a causal relationship between the two but advocates focusing on the positive impacts of public architecture as a therapeutic experience. This type of well-being-oriented design thinking positively correlates with all three main factors to promote SWB. The findings also indicate that promoting SWB with therapeutic public architecture in urbanised areas can be a long-term socially sustainable strategy for facilitating meaningful social connections and curating healing spaces outside healthcare facilities.

The findings also conclude that therapeutic public architecture impacts residential and corporate contexts differently. For places like Westpac Place and 1PSQ, therapeutic public architecture mainly offers an *escape*, a place to temporarily refuge and recover from stressful working environments. For residential-oriented cases, Darling Square and Green Square

Plaza, therapeutic public architecture brings people together and promotes meaningful social connections, including passive non-verbal interactions between strangers. Key themes from the analysis have confirmed the significance of effective therapeutic public architecture and the necessity to expand the positive impacts to more urban areas. These themes agree with recent literature that "restorative" design qualities can promote mental health, especially in dense urban environments (Roe and McCay 2021, 194). The significant findings from these themes also align and broaden Crume's conceptualisation of how social support networks can aid city dwellers' mental health and how urban community projects, like therapeutic public architecture, can be an excellent opportunity to foster "social capital" (Crume 2019, 205). In Crume, Roe and McCay's writings, social capital is defined as "the quantity and quality of formal and informal social networks, relationships, cooperation, interactions, civic participation, reciprocity and trust in others" (Roe and McCay 2021, 90)

Another significant contribution of SWB-oriented therapeutic public architecture can be a practical implementation to promote social resilience. Social resilience, or urban resilience, is the ability of people and communities to cope with and adapt to evolving challenges, including acute shocks like the global COVID-19 pandemic and chronic stress, anxiety, and loneliness (Resilient Cities Network 2022). The design framework of therapeutic public architecture focuses on community engagement and meaningful social relationships, which also concur with what Ji et al. have concluded in their study that positive social activities can alleviate loneliness during the COVID-19 pandemic (Ji et al. 2024)[12].

8.1.3 Design for Subjective Well-being – What Works So Far?

This section elaborates on the *how*. It summarises the effective key design strategies relevant to each factor of promoting SWB and their limitations.

<u>Design for Comfort</u>

[12] The authors have published a correction in 2024 that the *p* values in the 2022 publication were swapped in printing, but the error does not impact the result and conclusion of the study. Source: Ji, Julie L., Julian Basanovic, and Colin MacLeod. "Author Correction: Social Activity Promotes Resilience Against Loneliness in Depressed Individuals: A Study Over 14 days of Physical Isolation during the COVID-19 Pandemic in Australia." *Scientific Reports (Nature Publisher Group)* 14, no. 1 (2024): 3152. https://doi.org/10.1038/s41598-024-53556-5.

Figure 87 highlights some of the design features most often mentioned by users and practitioners as integral to promoting physical and psychological comfort.

Residential Context		Corporate Context	
Darling Square	• Floating platforms • Wooden pavilion/canopy • Ambience lighting	**Westpac Place**	• Reclining urban furniture • Wooden surfaces
Green Square Plaza	• Ground fountain • Reclining chairs with partial shading from trees	**One Parramatta Square**	• Terrace seating

Figure 87 Most frequently mentioned design features in user interviews that contributed to the theme of "comfort".

The summary of findings in Figure 87 indicates that these case studies often include ergonomic urban furniture with wooden surfaces to promote comfort. As mentioned in Chapter 5.2 seating is the most impactful design feature in therapeutic public architecture. A comfortable seat with shading is usually the most popular space to linger across the four case studies. Most social interactions observed occurred while sitting down. The preferred seating users mentioned are often suitable for interactions within a small group (fewer than six people). One notable finding about designing for psychological comfort is considering how people spend time alone in a public space. Effective design strategies cater to group and individual settings and should promote interactions while offering social distancing and time-out spaces. This finding is consistent with recent urban sociology research on creating social cohesion in public spaces through incidental interactions among strangers (Morrill et al. 2005).

Design for Enjoyment

Residential Context		Corporate Context	
Darling Square	• Cultural art installations • String lights on the pavilion • Retail options • Convenience	**Westpac Place**	• Retail options • Circular garden • Convenience • Semi-enclosure
Green Square Plaza	• Temporary addition of "Small Lane" • Street art • Live music performances • Pet-friendly lawn • Convenience	**One Parramatta Square**	• Convenience • Public art

Figure 88 Most mentioned design features contributing to the theme of "enjoyment".

The findings conclude that *convenience* was the common theme mentioned in all case studies as contributing to *enjoyment* for users (Figure 88). The theme *convenience* also covers subthemes of proximity to public transport, accessibility, and circulation layout in the case studies. As discussed in Chapter 5.4 **Accessibility***convenience* in Darling Square and Green Square relates accessibility, which included connectivity to public transport, walkability, and circulation design. The users from these two residential-oriented cases mentioned how the layout of the public space was *"thoughtful"* and allowed easy access to enjoyable site features such as public art and seating with ambient lighting. Green Square residents also commented on how the plaza acts as the community's anchor, connecting civic facilities (public library and sports centre) and recreational places (open plaza and pet-friendly lawn). *Convenience* for Westpac Place user participants mainly means proximity to the workplace, which allows them to save travel time and have a more extended break. The context of *convenience* at 1PSQ is a bit different, however, in that users considered 1PSQ as a convenient gateway leading to *"more enjoyable and interesting features"* in other parts of Parramatta Square, especially the interactive art installations near the Parramatta Public Library.

Another relevant finding is that these case studies, like many placemaking projects, share some overlap between design for comfort and enjoyment. This is likely because these design features aim for incidental interactions and are often linked to functional use. The architectural design of restaurants and cafes and the variety they provide are vital to creating an enjoyable public space. Even though not often considered an architectural design feature,

dining design has become one of the most frequently mentioned reasons to visit a public space. Providing a comfortable and enjoyable dining environment can encourage visitors to spend more time interacting with others in public spaces.

Green Square Plaza is the only case study with an interactive ground-level water feature and a temporary addition called “Small Lane” relevant to promoting enjoyment (Chapter 7.3.2, 162). Urban water features can provide physical and psychological comfort by regulating temperature and providing a recreational feature (Jiang et al. 2024). Including interactive water features is also a typical urban blue-scape design to promote enjoyment and playfulness for children under 12 (Bozkurt and Woolley 2020). During observations, the Green Square Plaza floor fountain was particularly popular with young children and their caretakers (Figure 89 The interactive water feature in Green Square Plaza was popular with children and caretakers.). The urban furniture surrounding the fountain was also the preferred seating area, with reclining chairs and a shaded landscape. The interactive design and comfortable seating made this part of the plaza usually the most concentrated area for visitors. However, the fountain did not operate daily, likely due to energy-saving and costs. Chapter 6.1.3 Playfulness and Creativitymentioned a pattern: many visitors with children or prams tended to stay longer to play and linger when the fountain was functioning. The observations did not conclude whether there was a causal relationship between the operational time of the interactive water feature and visitor behaviours. However, existing literature has studied how floor fountains and interactive water features can improve children’s developmental mobility and overall social experience by encouraging time spent in playful urban design features (Kyttä 2002; Bozkurt And Woolley 2020).

Figure 89 The interactive water feature in Green Square Plaza was popular with children and caretakers.

Chapter 6.4 Limitations of Current Strategiesmentioned the gaps between design vision and implementation, leaving a large construction site around Green Square Plaza that negatively impacted user experiences at some level. Nonetheless, the newly added “Small Lane”, a temporary alleyway cutting through the construction area, quickly became a “trendy” gathering place that promotes enjoyment with live performances, art installations, and comfortable seating, as discussed in Chapter 7.3.2. The 3D graffiti and ambient lighting have created a visually pleasing experience and connected the plaza and Ebsworth Street while reducing the potential negative impacts of the prolonged construction (Figure 90). Interestingly, though the temporary Small Lane was not part of the original public architecture design and will be taken down when the nearby construction is completed, many users discussed how this laneway has become the most enjoyable spatial design in this case study. They also mentioned that the variety of community events and the soft ambient lighting were the main reason they enjoyed this space.

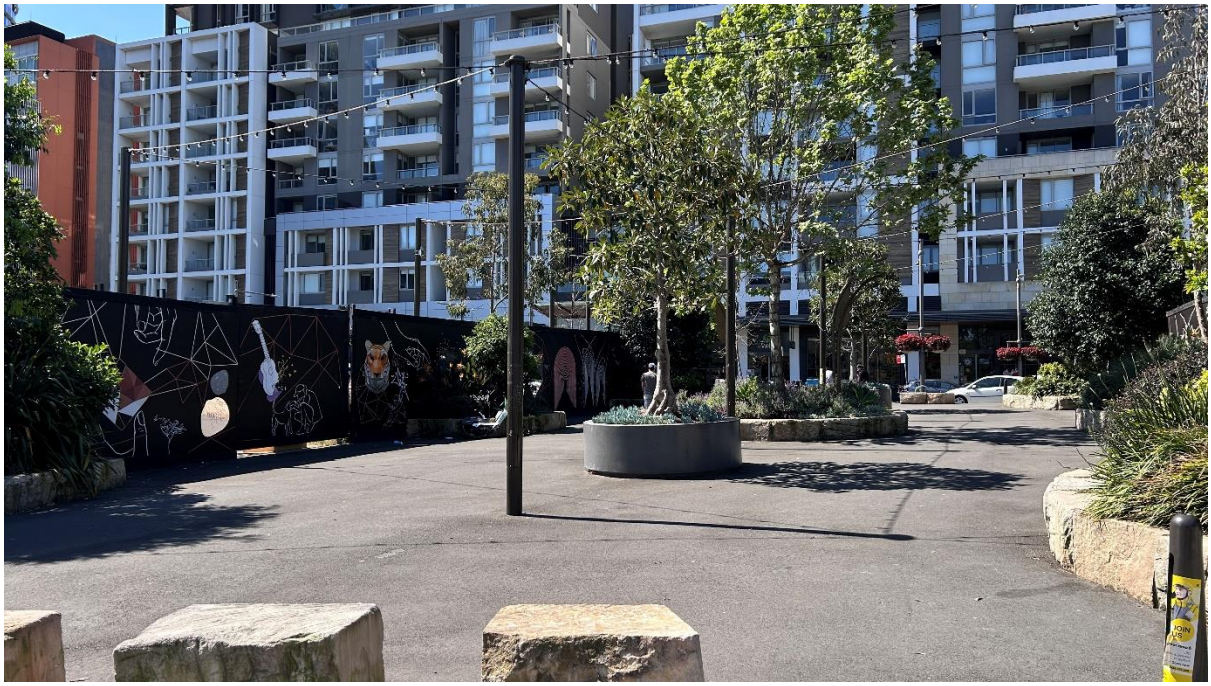

Figure 90 3D graffiti and string lights installed on “Small Lane”, Green Square, February 2024.

Design for Meaningfulness

Residential Context		Corporate Context	
Darling Square	• multiple seating options for different gatherings • eye-level art installations • human scale “cozy” spatial dimensions and circulations	**Westpac Place**	• Greenery • Renovation - “glow up”
Green Square Plaza	• Access and proximity - centre of the neighbourhood	**One Parramatta Square**	• Urban renewal • “bright and open”

Figure 91 Most mentioned design features contributing to the theme of “meaningfulness”.

*Meaningfulnes*s is a complex concept with many interpretations in different research contexts. Chapter 6.3 Searching for Meaningfulness When Interacting with Public Architecturediscussed a group of sub-themes related to meaningfulness and indicated that a sense of belonging could be the most impactful outcome of therapeutic public architecture when designing for meaningfulness (Figure 91). The findings revealed that many users built a strong sense of belonging by observing the transformations and renovations on Darling

Square, Westpac Place, and 1PSQ. Meaningful connections can be facilitated by encouraging people to explore the renovated versions and channel the interactions to self-identity (Scannell and Gifford 2010). The transformation or, as some users mentioned, "*glow up*" of these three case studies also contributes to forming place attachments, likely the main factor in finding meaningfulness and a sense of purpose (Meyrick and Newman 2023; Smith and Kulkarni 2023; Di Fabio 2017).

Comfort and enjoyment are often related to incidental interactions, which can be observed, and participants tended to demonstrate straightforward answers during interviews. Finding meaning and feeling a sense of purpose in public space takes some time to achieve, and it is the most challenging theme out of the three main groups to identify its relationship with therapeutic public architecture. "What do you think this site means to you?" is the last question on my interview guide, and many participants lost their words or hesitated substantially before talking, even though they did not pause before answering other questions. As a result, the analysis of meaningfulness and sense of purpose presented here mostly comes from using the answers to additional questions to determine how the participants viewed these themes. It may include elements of bias because of a particularly subjective interpretation. This part of the findings relates to the self-actualisation stage of psychological needs and sense of self, which is challenging to measure. However, this thesis finds meaningfulness to be the most substantial contribution of therapeutic public architecture.

To recap the findings discussed in Chapters 5 to 7, there are two sub-themes related to meaningfulness:

<u>Sense of Belonging – Social and Cultural Identity</u>

Connecting with other people is the most mentioned purpose across the four case studies, which resonates with the fundamental objective of placemaking: to design places where people can willingly gather. It is the most direct way to initiate a sense of belonging and community (Gyan and Chireh 2024; Magan and Padgett 2021). Chapter 6.2.2 "People-Watching" and Social Distancing with Strangersmentioned that these interactions can often be non-verbal when people seek social bonding with strangers.

Many user participants are immigrants or were born and raised in Sydney but have a different ethnic background to the prevalent white, Anglo-Saxon origins dominating the Australian

population more generally. Visiting the sites of the case studies builds a sense of cultural identity, and the participants recognised themselves as members of the local community by *"just showing up".* This is often discussed in the context of Darling Square and Green Square – two diverse communities with many residents born overseas (Chapter 4.4.1, 67). Participants recalled a sense of belonging and inclusiveness by familiarising themselves with the place. Both participant groups noted how the architecture created a cultural symbol for the neighbourhood and local community. Indeed, a few residents shared that Green Square was not the first neighbourhood they lived in when they first arrived in Sydney, but it was the first neighbourhood that "felt like home". They also mentioned that visiting Green Square Library and Plaza multiple times a week has allowed these residents to connect with like-minded people. This was especially pertinent to many international students (who made up to a considerable portion of resident population in Green Square) that had almost no friends or families when they arrived (Mirvac 2023).

The case studies also promote a sense of belonging when users participate in community events, sometimes even when they are passive spectators. The action of gathering itself can have positive impacts on promoting meaningfulness. However, hosting events alone might not contribute to the sense of belonging in the corporate setting. The user participants from Westpac Place and 1PSQ also mentioned various on-site events, including commercial promotions and cultural festivals. Yet, they consider them as *"entertainment"* while taking breaks from the corporate culture. Further interpretation suggested that this theme reflected the separation between citizens and public space under the corporate context and that these participants identified as *users* rather than *co-owners*. This gap in civic identity might create a challenge in finding a sense of belonging in corporate-oriented public architecture.
Some participants also commented on how contemporary work culture calls for detachment as soon as *"clocking out"* to manage work-related stress and anxiety. They did not want to associate their social life with *"anything related to work"*, even though they found the public space *"genuinely enjoyable"*. The meaningfulness of therapeutic public architecture depends on the context, which leads to the following theme.

<u>Inclusive Third Place</u>

The findings discussed on Chapters 5, 6, and 7 have mentioned the significance of creating third places in urban neighbourhood. The emphasis of therapeutic public architecture on fostering positive social interactions aligned with the essence of third places, a concept

proposed by Oldenberg (1989). Oldenberg and others have suggested that the highly commercialised public spaces in contemporary urban neighbourhoods are killing off the traditional *third place*, which offers "a buffering zone between home and work", whether it be paid or unpaid employment or study (Oldenburg 2009, 22). Many user participants, especially those still at university (mostly under 25), commented how rare it is to have someplace to *"hang out without spending money"*. They appreciated the case study sites and kept going back because it saved them money otherwise spent on using commercial sites. Some also mentioned that these are places where it is *"completely okay to do nothing"*. They felt composed and at ease that they *"do not need to try hard"*.

Another distinctive contribution regarding the inclusiveness is how these case studies have created a safe, welcoming space for diverse communities and marginalised groups, including but not limiting to women, older adults, and culturally and linguistically diverse (CALD) people. As summarised in Chapter 3.3.3.5, 37 out of 42 user participants were self-identified women, and 18 of the 42 users were self-identified with CALD communities.

One of the fundamental objectives of therapeutic public architecture is to allow people to have space to breathe and the autonomy to access and enjoy a break from everyday life. It provides a chance to recover from stressful urban living, a motivation for self-care, and sometimes a temporary escape from other triggering workplace-related events (Greiner et al. 2022). This feature was particularly mentioned by many user participants with culturally diverse backgrounds, who were more likely to experience extensive period of loneliness and anxiety (Crawford et al. 2022).

8.2 Limitations of Current Strategies

Perceiving SWB in a public space is a highly individual experience. Although most user participants commented they generally enjoyed and felt comfortable when visiting, the following three areas of concern were often mentioned across four sites (Figure 86). These concerns primarily reflect limitations in providing comfort and enjoyment but less so on the negative impacts of finding meaningfulness.

8.2.1 Unmet Needs

All four case studies are considered *trendy* gathering places in their neighbourhoods. Users frequently mentioned how crowded Darling Square and Westpac Place can get and how they sometimes had to "*give up and leave"* after failing to secure a seat. Project architects for these two places proudly mentioned the projects' popularity and the way both had constant pedestrian traffic. Still, the unexpected overflow of visitors indicated that the architects and planners underestimated the demand for public space. This prompts reflection on the need to design more places like the case studies to accommodate the growing need for therapeutic public architecture. Also, the findings show that users in 1PSQ commented the least about comfort, whether positive or negative (Figure 87), and the two practitioners who participated in 1PSQ did not specify the intention to provide comfort from architectural and art-curating perspectives. Many users also mentioned how they preferred other parts of Parramatta Square over the open space at 1PSQ due to unmet needs regarding comfort (places to eat and chat face-to-face) and enjoyment (urban play installations and building aesthetics).

8.2.2 The Disconnected Human Scale and Place Design Elements

The findings suggested that the gaps between conceptual design and implementation of the design objectives can lead to an unsatisfactory experience. The case of Green Square Plaza shows that even though the design strategies were well thought through and there were well-being-oriented initiatives in the community, the modified transportation planning on light rail and metro stations left the plaza an overly generous open space and the delayed constructions surrounding the plaza led to many users commented discouraged them from spending time there. Public architecture acts with other spatial elements to foster a community. It needs to work with the surrounding places to create a sequence of spatial interactions, like the curated sequence of gallery exhibits.

The previous section discussed how therapeutic public architecture fosters place attachments with SWB-oriented design. However, user interviews also indicated that it would be challenging to form place attachments when the design strategies do not prioritise spatial experience at the human scale. Westpac Place has the smallest site area of the four case studies. Still, since its ground-level design was mentioned as "engaging", most users did not consider the high-rise office buildings and overhead freeway daunting or stress-causing. However, Green Square residents often mentioned feeling uncomfortable spending too much time in the open plaza unless other people were present. The disassociation between design

delivery and user perception at the human scale reiterated what Buttazzoni and Minaker wrote about the importance of human-scale design that directly connects to whether people will enjoy the place (Buttazzoni and Minaker 2023) .

Office buildings often create this sense of pressure due to their tall and dark appearance. The daunting scale contrast between high-rise office buildings and the nearby open space discourages people from spending time and feeling at ease.

8.2.3 Commercialised Public Spaces

The four case studies are considered prime locations flooded with overwhelming retail options. The highly commercialised spatial strategy chips away at valuable public open spaces that should be free and inclusive. For Darling Square, Green Square, and Westpac Place, some favourable outdoor seating is often for customers only. The *pay for a seat* ratio is the highest at Westpac Place, where a food court takes up all the outdoor tables, leaving users a dim pocket park with no sheltered seating after business hours (Figure 92; Figure 93). Despite the plaza offering such a generous event space, Green Square residents commented that most free community events are held indoors or outside Green Square Plaza. 1PSQ has a similar issue: frequent visitors pointed out that the free cultural festivals embraced the nearby laneways and used the plaza for *"overpriced food"*.

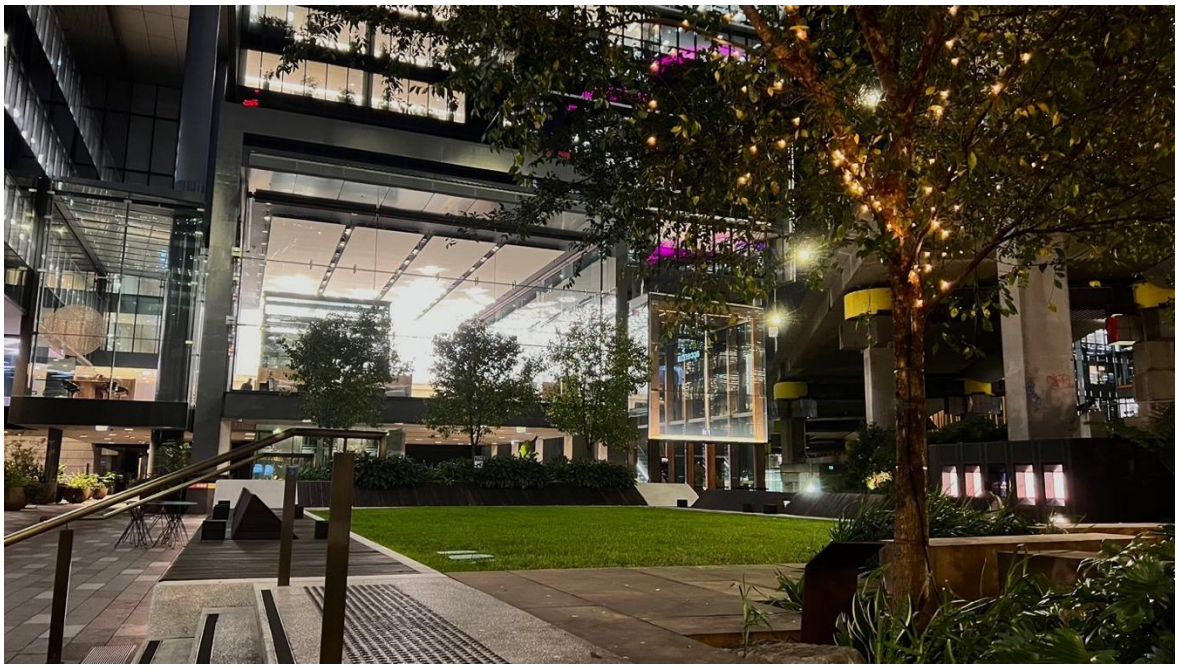

Figure 92 Observational snapshot taken at Westpac Place on 4 June 2023, 4:30 pm.

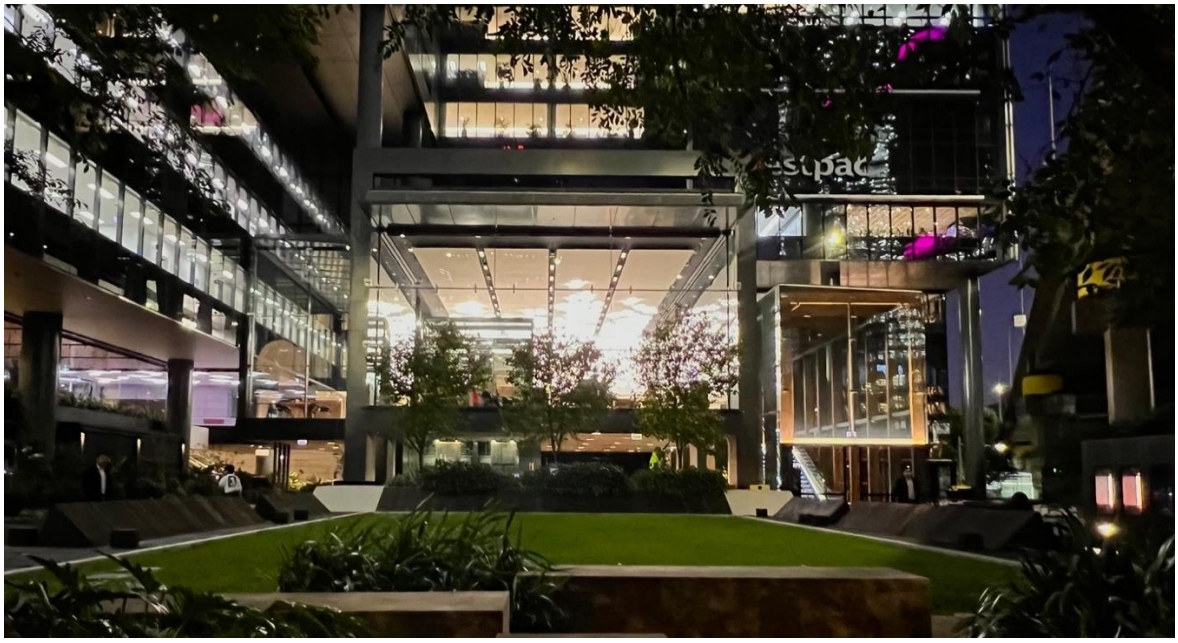

Figure 93 Observational snapshot taken at Westpac Place on 6 June 2023, 4:45 pm.

These three limitations have indicated opportunities for improvement, and public art and curatorial techniques have emerged as critical elements to foster future therapeutic public architecture.

8.3 Public Art and Curatorial Techniques in Therapeutic Public Architecture

This thesis finds that public art curating can be the critical link between public architecture and promoting SWB in three main aspects: comfort, enjoyment, and meaningfulness. Curatorial techniques also differentiate therapeutic public architecture from other public architecture and public realm projects.

8.3.1 Curating for Comfort and Enjoyment

Parallel to curating an outdoor exhibition, therapeutic public architecture emphasises the visual stimulations along pedestrian circulations. Interviews with practitioners revealed that even though many architectural design guidelines have detailed instructions on promoting physical comfort, they often lacked awareness of the significance of design for psychological comfort and enjoyment, which were frequently assumed to have lower priority than physical comfort. Meanwhile, the interviewed artists talked about how their work made the space *"more engaging and more interactive"*, aligning with what Michails (2015) wrote about contemporary art's impacts on public engagement. Chapters 6 and 7 discussed how curatorial

techniques are important to generate enjoyment by creating positive sensory experiences that align with the human body, which extends the experience of physical comfort to potential psychological comfort. Chapter 7.3 also mentioned that engaging visual stimulation with public art can promote psychological comfort and general well-being by encouraging active and receptive interactions in public spaces (Gillam 2018).

These findings reiterated the significance of working with the human scale and incorporating interactive design elements to foster well-being.

8.3.2 Curating for Community Togetherness

Curatorial techniques in contemporary urban neighbourhoods are usually applied to create cultural destinations and attract gatherings. Despite the risks of over-commercialising open spaces, therapeutic public architecture can learn from what attracts people and what encourages them to stay.

Site-specific public art encourages communication between places and people, which can raise cultural awareness and promote cultural identities (Chapter 7.2, 152). Curating architecture as public art means that the spatial strategies prioritise the interactions between people and the space. The spatial sequence should cater to human eye-level engagement, and design elements should attend to neglected spaces like dark alleyways or narrow corners. The most significant curating technique applied to public art and public architecture emphasises connecting places and people through creative engagement with the freedom to express (Vella-Brodrick, Park, and Peterson 2009; Loh et al. 2024).

Interviews with artists revealed that design for eye-level engagement contributes significantly to promoting comfort and enjoyment, which may also create meaningful interactions. Darling Square was the only case study in this thesis that promotes visual engagement by installing artistic elements on the ground and above the first level. This design strategy forms an artistic hallway, guiding the visitors to explore further along the path. It resonates with what Tian
(2023) wrote about the role of public art in urban civic engagement, that art installations should actively respond to the site and offer “a sense of ownership” to the community members (DeShazo and Smith 2015, 4). Chapter 7.1.2 discussed how contemporary

curatorial practice has a growing focus on breaking the colonial gallery setting by encouraging visitors to become co-owners of art and space through interactions and participation (Carter 2021). Most traditional galleries and museums presented decontextualised art and artifacts that did not acknowledge cultural and ethnic backgrounds and often created barriers between visitors and arts to reinforce the colonial power structure (Giblin et al. 2019). By introducing interactive public art as community landmarks and highlighting social/cultural identities in urban open spaces, therapeutic public architecture promotes a sense of belonging and civic ownership through active (creating) and receptive (viewing) interactions.

8.3.3 Limitations of Current Art Curating Strategies

Even though these four case studies all demonstrated forward thinking in elevating the spatial experience with public art, the research has found that the execution of curating and collaboration with public architecture has challenges. One of the most challenging limitations was that many visitors ignored arts despite curatorial inputs and design planning. Users of Darling Square spoke highly of the public art installations and the aesthetic values of sculptural architecture. In contrast, most 1PSQ users did not even realise a site-specific installation was hanging over the main entry. This calls for re-evaluating the public art strategies in placemaking and the necessity of promoting interactions between artwork and spectators. Another limitation of the current curating framework is that it remains an "afterthought" – often excluded during the planning and architectural design stage.

Another area for improvement is the conflict between curating for artistic interaction and accommodating growing visitor capacity. One prominent example is Steam Mill Lane and Little Hay Street, two Darling Square alleyways activated by overhanging sculptures and customised ground tile patterns. Unfortunately, outdoor dining setups with bulky tents interrupted this curated experience on Steam Mill Lane (Figure 94).

Figure 94 Visual access on Peta Gruger's public art was interrupted by the outdoor dining tents, Darling Square, Sydney, July 2023. The growing dining capacity has led to the addition of outdoor dining tents that block half of the pedestrian walking space and interrupt the *ground to air* artistic hallway.

8.4 Significance and Contributions

Through this thesis, the author conducted a mixed-method qualitative study on the current practice of well-being-oriented public architecture to propose a framework of SWB-focused design strategies to inspire and guide future designers and researchers in therapeutic public architecture.

8.4.1 Expanding Existing Literature

This thesis has expanded the conceptualisation of public architecture by emphasising its potential to promote social interactions and SWB in urbanised areas. It proposes *therapeutic public architecture*, emphasising the importance of fostering SWB with public architecture in urban open spaces. Chapter 2.2.1 discussed the shared focus between public architecture and placemaking in fostering community engagement and positive social interactions. The discussions on findings also suggested that *therapeutic public architecture* aligns with some aspects of *therapeutic placemaking* in the context of public realm design. Similar terminologies exist in the current literature, but most stay within the scope of healthcare facilities or landscape design (McLachlan and Leng 2021; Ormond 2011). It is worth noting that while existing literature highlights the physiological and medical application of *therapy* in environmental design, therapeutic public architecture focuses on the role of design in understanding sociocultural contexts and urban community resources.

Some researchers and practitioners have acknowledged the therapeutic value of public spaces and installations in promoting well-being without coining the term "therapeutic placemaking". Markusen and Gadwa proposed *creative Placemaking* in 2010, categorising community-culture-based spatial projects (Courage and McKeown 2019, 11). These projects emphasise neighbourhood cultural identity and promote social interactions by creating artistic attractions. However, creative placemaking highlights the artist-led initiatives and their contributions to local communities, and these authors did not mention how these artworks could collaborate with architecture. Biglin (2020) and Dunkley (2009) also discussed therapeutic placemaking in providing a healing environment for refugees. Both articles used therapeutic placemaking as a landscape design concept and focused on connecting people with nature without discussing architectural design or public art.

This thesis also investigates public art and curatorial techniques and their unique contribution to promoting SWB with public architecture. As discussed in Chapter 7.1 Public Architecture as Sculptures many existing works of literature refer to architectural curation as exhibitions for art galleries and museums. At the same time, sculptural architecture is often considered experimental art in current practice. This thesis recognises the potential of applying well-being-oriented curatorial techniques in public architecture beyond the gallery setting. It also proposes a therapeutic public architecture that can be practised in different urban areas to benefit diverse populations.

Another contribution of this thesis is exploring the application of positive psychology in public architecture. Many existing publications recognise how architecture and placemaking can promote well-being, but very little literature considers positive psychology an embedded factor in design thinking. Although environmental psychology is an existing field studying the psychological impacts of the built environment, and it overlaps with some aspects of what this thesis proposes, it does not explicitly discuss the relationship between design strategies and SWB.

Therapeutic public architecture can be an impactful design intervention, yielding both immediate and potentially lasting effects. The design framework of therapeutic public architecture can be an evaluation tool for practitioners and researchers to study the existing placemaking and public realm engagement projects. For existing projects that demonstrate some well-being-oriented design strategies, local councils and designers can modify the in-use design based on the therapeutic public architecture framework immediately to promote positive socialisation, including adding temporary urban furniture, lighting, and shading devices. For unbuilt projects, therapeutic public architecture can serve as a guideline for practitioners to incorporate well-being-oriented strategies from the conceptual stage.

8.4.2 Social and Cultural Impacts

Recent research and practices have recognised the importance of promoting cultural landscapes with multidisciplinary placemaking (Singh et al. 2023).

Inclusive Opportunity in Searching for Happiness

Time spent in public open spaces can be particularly stressful for the vulnerable groups (Pinkster et al. 2020). Previous experiences with adverse events, such as discrimination, racism, and violence, can lead to stigma, which discourages individuals from visiting these spaces (de Jong and Berkers 2024). While none of the participants reported stigma-related incidents, some participants with self-reported marginalised backgrounds noted that the case studies in this thesis offered a more inclusive and positive experience than similar areas in their neighbourhoods (Chapter 6.3.2, 136).

Although this thesis interviewed a select group of users and practitioners, these individuals provide valuable insights from diverse socio-cultural backgrounds. They highlight opportunities to connect with others without interrupting their daily routines. Therapeutic public architecture can enhance SWB in environments ranging from stressful workplaces to densely populated neighbourhoods. The four case studies illustrate cultural and ethnic diversity (Chapter 4.6.1, 74). By examining these urban neighbourhoods, this thesis studies how people from various backgrounds experienced leading practices in therapeutic public architecture, encouraging future studies on a more diverse population with larger samples.

Social Sustainability

1. Mental Health Initiatives

Self-reporting mental health issues is a sensitive topic for many people. The public stigma towards seeking psychiatric and mental health consultancy can lead to feelings of shame and distress, which discourages people from committing to treatment (Gagné et al. 2023). Recent research has acknowledged the effectiveness of non-clinical methods in preventing and intervening in mental health issues, including designing quality urban open spaces and fostering sustainable social support in communities (Barton et al. 2015; de Jong and Berkers 2024; Shanahan et al. 2019).

Australia's social determinants of health (SDH) models indicate that people can save time and money on primary healthcare and hospitalisations by creating healthy urban living environments (Villanueva et al. 2019; Higgs et al. 2021). The well-being-oriented framework of therapeutic public architecture concurs with the existing studies that advocate a non-clinical and sustainable method to reduce the risks of the onset of mental health issues and prevent the worsening of existing illnesses. This thesis also extends Australia's recent community-based mental health initiatives, expanding the typical workshop-based practices

to a sustainable strategy that does not require many trained mental health professionals (Parker et al. 2021).

2. Community-Scale Strategic Planning

Many current practitioners and researchers recognise the positive impacts of placemaking. The latest Parramatta 2050 Strategy and Sustainable Sydney 2030–2050 have highlighted the importance of building a community engagement framework and proposed creative programs that foster public art development (City of Parramatta 2024). The therapeutic public architecture design guideline can be an excellent delivery program for these objectives. Additionally, many therapeutic public architecture strategies can be integrated into existing placemaking projects and are adaptable to future developments. Placemaking, as a social sustainability strategy, has recently gained popularity in research and practice, but it has yet to be explicitly implemented in many countries (Singh et al. 2023). Introducing a Sydney-based therapeutic placemaking study can expand the understanding of how placemaking furthers social sustainability objectives by promoting SWB on a local community scale.

8.5 Summary of a SWB-oriented Design Framework

This thesis does not seek to provide definitive solutions but proposes several sensitizing concepts, including a summarised framework for therapeutic public architecture intended for future practice and research (Figure 95). Some key design strategies that contribute to SWB include interactive amenities and artistic interventions at a human scale, which promote comfort and enjoyment. These elements are likely to encourage inclusive social participation,particularly among culturally diverse communities and senior residents, as observed and discussed in this thesis.

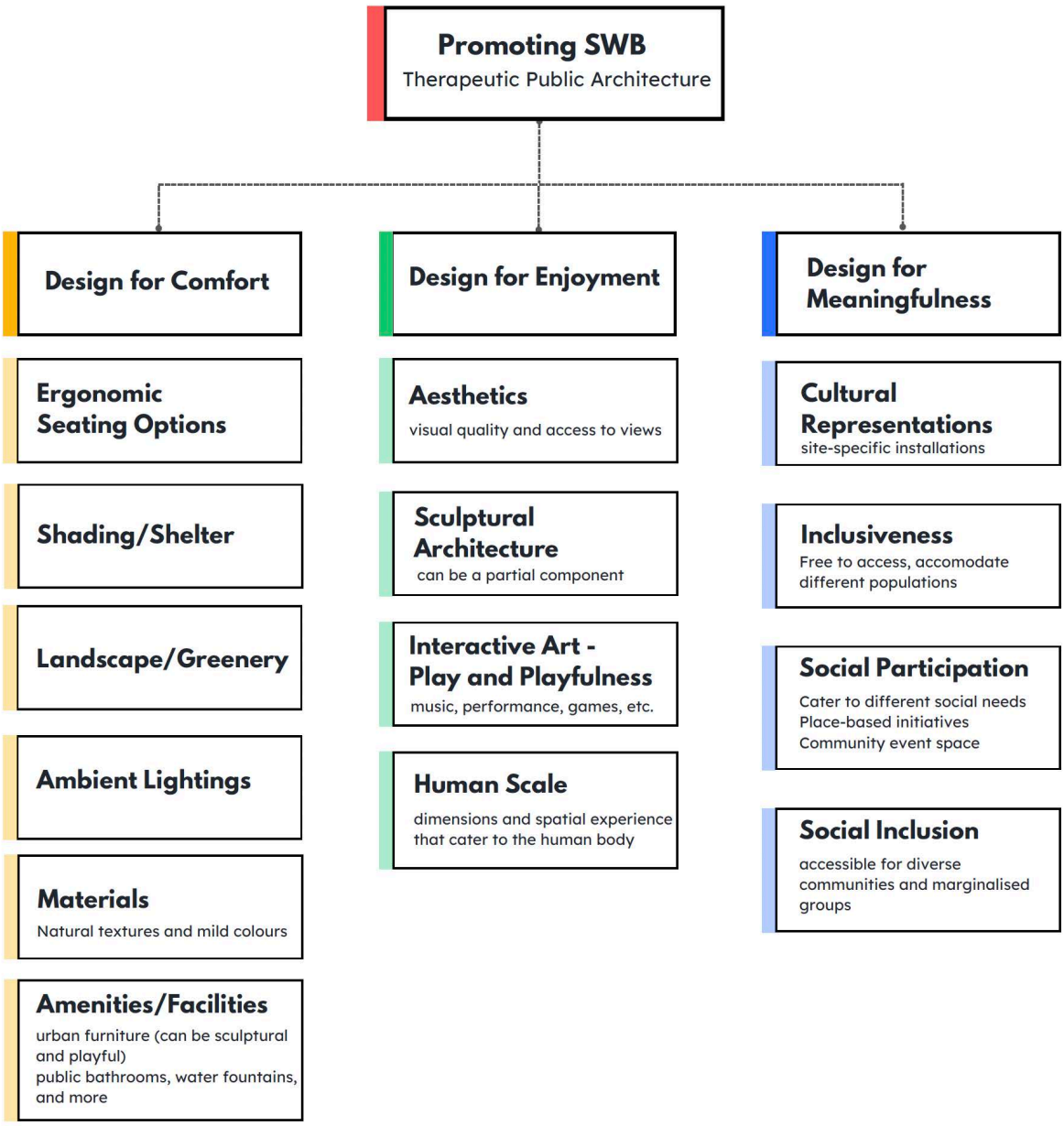

Figure 95 A summary diagram of key design elements for *therapeutic public architecture.*

The next chapter will further explore the implications of this proposed framework and its potential effects.

9. Looking Ahead: Overview and Future Directions

Introduction

The last chapter reflects on the journey of this thesis, summarises the key findings, and looks towards the future of therapeutic public architecture. This chapter synthesises insights from the research development and concludes with recommendations for future directions and final remarks.

9.1 What This Thesis Has Achieved

The contribution of knowledge in this thesis is developing a design strategy framework to promote SWB at a neighbourhood scale by incorporating public architecture, positive psychology, and art curating. The primary outcome of the research study is a detailed sample of how certain groups of people experience and interact with the current examples of well-being-oriented public architecture in Sydney. The findings align with existing literature on the significance of public architecture and placemaking in promoting SWB. The discussion of findings first interprets the expanding boundaries of the conceptualisation of public architecture and investigates its relationship with SWB.

The research development included these five stages:

1. Literature review and theoretical framework
2. Methodology design and procedures for implementation
3. Data collection through fieldwork and interviews
4. Data analysis and interpretation
5. Synthesis of findings and development of key design strategies.

These stages have led to the major findings expanded on below.

9.1.1 Proposing an Interdisciplinary Concept

The first finding answers research question #1: What is the conceptualisation of public architecture? After reviewing relevant literature, this thesis has proposed the term *therapeutic public architecture* to expand the current conceptualisation of public architecture in

emphasising the therapeutic effects of design and its implications for promoting SWB. The proposed terminology also addresses the first objective of this thesis: examine and redefine the conceptualisation of public architecture in an urban built environment.

The conceptualisation of therapeutic public architecture connects the disciplines of architecture, public realm engagement, environmental psychology, positive psychology, and curatorial techniques. This thesis also addresses an emerging topic: curating public architecture as art should be a priority for future projects related to design for well-being and QoL.

9.1.2 Understanding the Relationship Between Public Architecture and SWB

The second part of the findings investigates research question #2: What is the relationship between public architecture and SWB? This thesis finds that a critical relationship between public architecture and SWB is that public architecture, particularly therapeutic public architecture, can most effectively promote comfort, enjoyment, and meaningfulness in urban neighbourhoods, as presented in Chapters 5 and 6. These findings have confirmed the hypotheses proposed in Chapter 1 that public architecture design can promote SWB through incidental comfort and positive social interactions, and public architecture design strategies can contribute to the subjective experiences in public open spaces and perceptions of SWB.

9.1.3 A SWB-oriented Design Framework

Building upon the findings, this thesis proposes an SWB-oriented design framework combining architectural practice, placemaking, and art curating strategies to answer research question #3: What are some key design strategies in public architecture to promote SWB at a neighbourhood scale? This design framework also addressed research objectives #2 and #3:

2. Establish a design framework for public architecture promoting positive social engagement and SWB.
3. Identify relevant concepts and initiatives across disciplines to develop a combined understanding regarding how public architecture could foster SWB as a social sustainability strategy.

The primary design strategy for promoting comfort with therapeutic public architecture is to offer a wide range of seating options, preferably combining conventional outdoor benches with sculptural platforms. The seating options should also balance openness and shading/shelter created by greenery.

One distinctive characteristic of therapeutic public architecture is its emphasis on interactive artistic expressions, differentiating it from other public architecture and public realm projects. Rather than adding art installations as decoration or exhibits, therapeutic public architecture incorporates curatorial thinking from the conceptual planning stage. Curating techniques for interactive art installations, sculptural architecture, and urban furniture in public open spaces are essential to promoting enjoyment and engagement within the framework of therapeutic public architecture. Interacting with the curated public open spaces holds the potential to promote meaningfulness and a sense of belonging in urban neighbourhoods.

Figure 96 is a summary diagram highlighting the main aspects of an SWB-oriented design framework for future therapeutic public architecture projects.

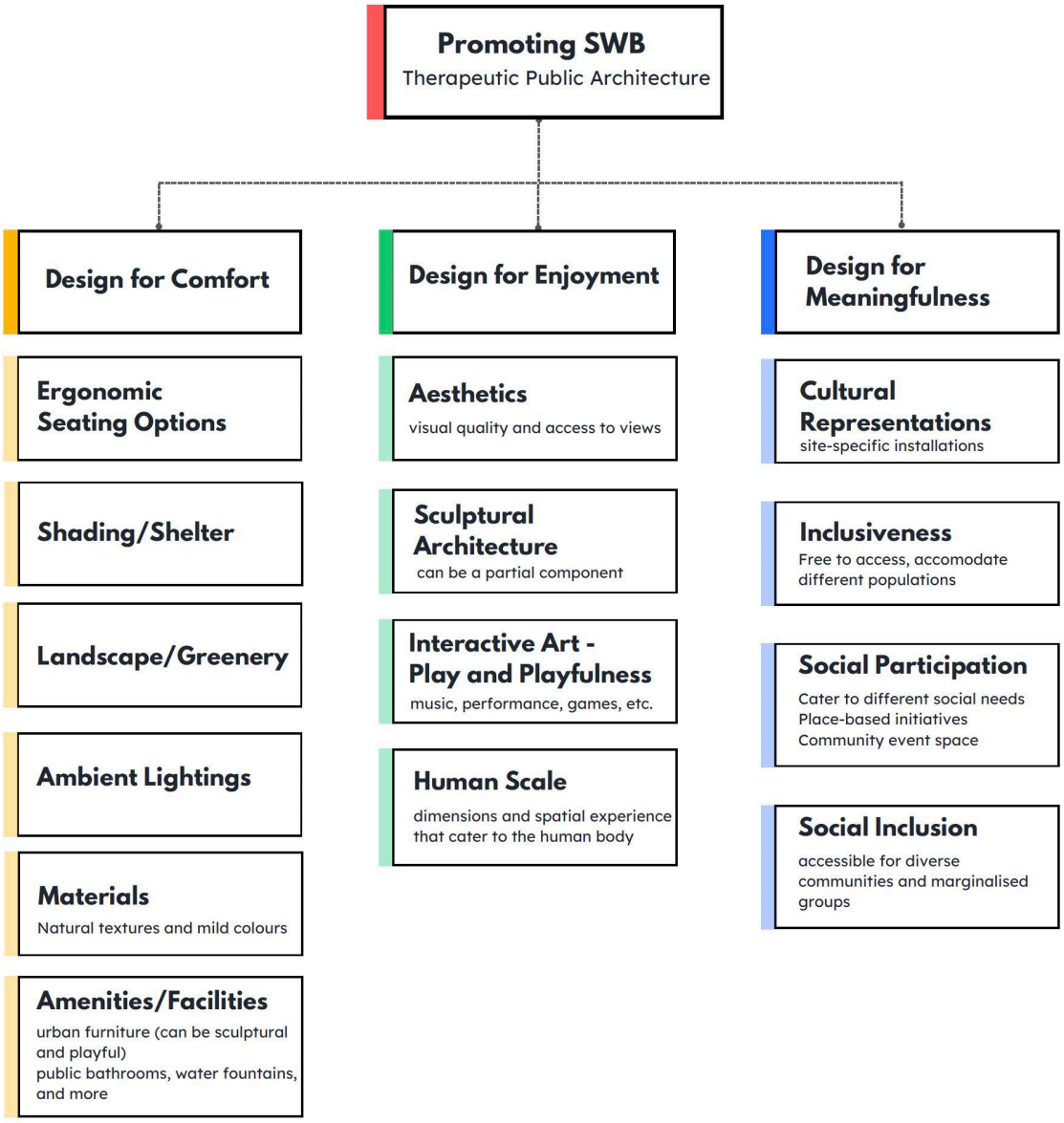

Figure 96 Summary diagram of key design strategies for Therapeutic Public Architecture.

9.2 Reflections on the Field Research

The qualitative methodology of this thesis has allowed the author to "see life through others' eyes", which contributes to a deep understanding towards SWB and "contextualising human emotions" (Gilbert 2001, 9).

The author often became self-aware of the role of the researcher/observer during fieldwork. Throughout observations, the author posed as an ordinary visitor taking a routine break and usually mirrored the surrounding behaviours to blend in. For example, the author would have lunch and sit with other visitors when conducting observations at lunchtime. This strategy has allowed the author to become an *insider* of the community without making active connections with any participants. At the same time, the author had to maintain an *outsider*

stance and refrain from discussing the true nature of her visits with any other visitor. The insider/outsider status balance has also made the author aware of the potential dynamic differences between the observer and the observed (May 2002).

Gilbert (2001, 271) also wrote about the personal and emotional nature of qualitative research and how the subjectivity of qualitative data has "long been under scrutiny". However, personal narratives can offer unique data and perspectives with rich social contexts that are particularly relevant in health psychology research (Rohleder et al. 2015). This thesis's multiple groups of qualitative data have offered rich social contexts and biographical experiences.

The author also reflected on the potential impacts of her gender, ethnicity, and cultural background. The differences between the roles of the "powerful researcher" and the "powerless research participant" often become a concern in qualitative social research (May 2002, 263). As an Asian immigrant identifying as female, the author was aware of the asymmetry of power and the shifting power dynamics when interviewing participants with similar cultural and ethnic backgrounds (May 2002).

9.3 Limitations

The research process has been a challenging intellectual exercise that has brought valuable insights and some limitations. The sample of user participants only represented a small group of people living and working in four urbanised areas of Sydney, and the results may need to be more generalisable to other populations in other cities. The age and gender distributions of the user participants were less balanced than expected. Nevertheless, working with mixed methods and two participant groups allowed the gathering of additional data to complement data collected from user interviews.

Behaviour mapping completed by a sole researcher during fieldwork can also be problematic as it limits the comprehensive representation of the observational data and the ability to check the reliability of interpretations (Billo and Hiemstra 2013). This thesis relies heavily on qualitative methods, which pose challenges to interpreting a large volume of data without risking projecting individual bias and subjectivity.

9.4 Implications

This thesis is relevant today as it takes a proactive approach to promoting SWB in urbanised areas of Sydney based on recent precedents. While generalising themes is not the aim of this thesis, the findings can have implications for a broader population in other major Australian cities and potentially be applicable beyond Australia. The conceptualisation and strategies of therapeutic public architecture can be applied in four different areas: 1) public architecture and placemaking projects, 2) urban liveability strategy planning, 3) place-based art curating, and 4) policymaking regarding social sustainability and resilience.

9.4.1 As a Public Architecture and Placemaking Guideline

This thesis has discovered the crucial role of public architecture in promoting SWB in urban neighbourhoods, both in the immediate future and to fulfill long-term potential. Since the design strategies discussed in this thesis contain conclusions drawn from recently developed case studies in Sydney, these strategies can have immediate implications by expanding the current design guidelines regarding public architecture, public realm design, and placemaking. For example, many design professionals have yet to consider incorporating well-being into design thinking during the early stage of project development. Most current public architecture projects focus on delivering pre-developed objectives, which often focus on functionality and commercial values. As mentioned in Chapter 8.2, one of the main limitations of current placemaking and public architecture strategies is that public art is usually a "required addition" to the projects, and design for SWB is rarely the main objective. The proposed design framework can be added to long-term design guidelines for placemaking and public architecture to address these limitations.

9.4.2 As Part of the Liveability Planning Strategy

Burke and Albert (2014) discussed how many community-scale well-being project practitioners rely on quantitative methods. The qualitative methods in this thesis can complement the quantitative data presented in recent studies, especially those based in Sydney and major cities in Australia (Huang et al. 2019). The existing urban planning strategies in the City of Sydney and the City of Parramatta have highlighted *liveability* and *community engagement* as aims and objectives. The proposed therapeutic public architecture design framework can be a critical strategy for implementing these goals, which was not explained in detail in recently published strategy or action plans. The City of Sydney

published *City Plan 2036* to announce collaborative and accountable planning strategies (City of Sydney 2020). It addresses three goals and six directions regarding liveability and community well-being. The design strategies proposed in this thesis can be essential in delivering these objectives, especially in *creating great places* and promoting *a creative* and *socially connected city* (Figure 97).

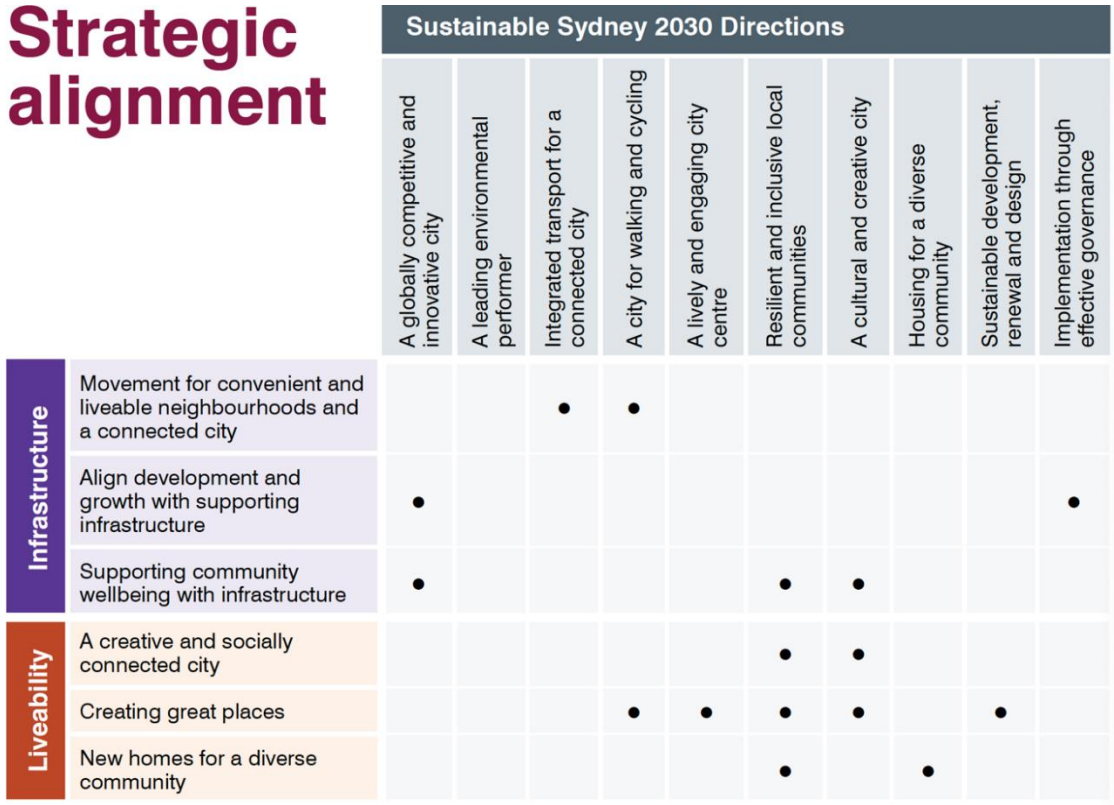

Figure 97 *City Plan 2036 Directions and Goals* regarding community well-being and liveability. Source: City of Sydney 2020.

The City of Parramatta has also announced an initiative, *Parramatta 2050*, describing its long-term strategic vision (NSW Government 2024). City activation (places to gather) and creative initiatives are two of the six new goals concluded in the community participation phase of strategic planning. The feedback from external stakeholders reveals the gaps between current strategy planning and the social needs of local communities. This thesis discusses the significance of community-based art initiatives to encourage meaningfulness and a sense of belonging in urban neighbourhoods in Chapter 7.3.3 *Meaningfulness* – Promoting Mental Well-being with Public Art, which can be implemented in long-term strategic planning to address the two proposed goals.

9.4.3 As a Place-based Art Curating Initiative

Chapter 7.3.2 has discussed the notion of creative placemaking and how art can be integral to promoting well-being in urban neighbourhoods. However, creative placemaking or similar curatorial applications are mostly practised as temporary projects or initiatives in major Australian cities. Even though the interactive art and technology annual festival VIVID has been a thriving cultural event for the past 15 years in Sydney, temporary festivals like VIVID often intend to create short-term tourist attractions rather than emphasising in fostering long - term community engagement. Heard et al. (2023, 1) stated that place-based arts initiatives investigating public art and place attachment remain "largely absent" in Australia's place-based policy and community strategies. The proposed therapeutic public architecture design framework can expand place-based art curating to a neighbourhood scale and collaborate arts initiatives with architecture and urban public spaces to shape the meaningfulness of the place (Edensor and Andrews 2019).

9.4.4 As a Community Engagement Assessment Tool for Local Councils

The NSW community engagement strategy has focused on community well-being and promoting meaningful community engagement (Office of Local Government NSW 2021). The findings support the current strategy and can provide a guideline for evaluating and assessing how residents and frequent visitors perceive meaningfulness and engagement. The summarised design strategies in this thesis can also aid implementation in the processes of *collaborate* and *empower* (Figure 98).

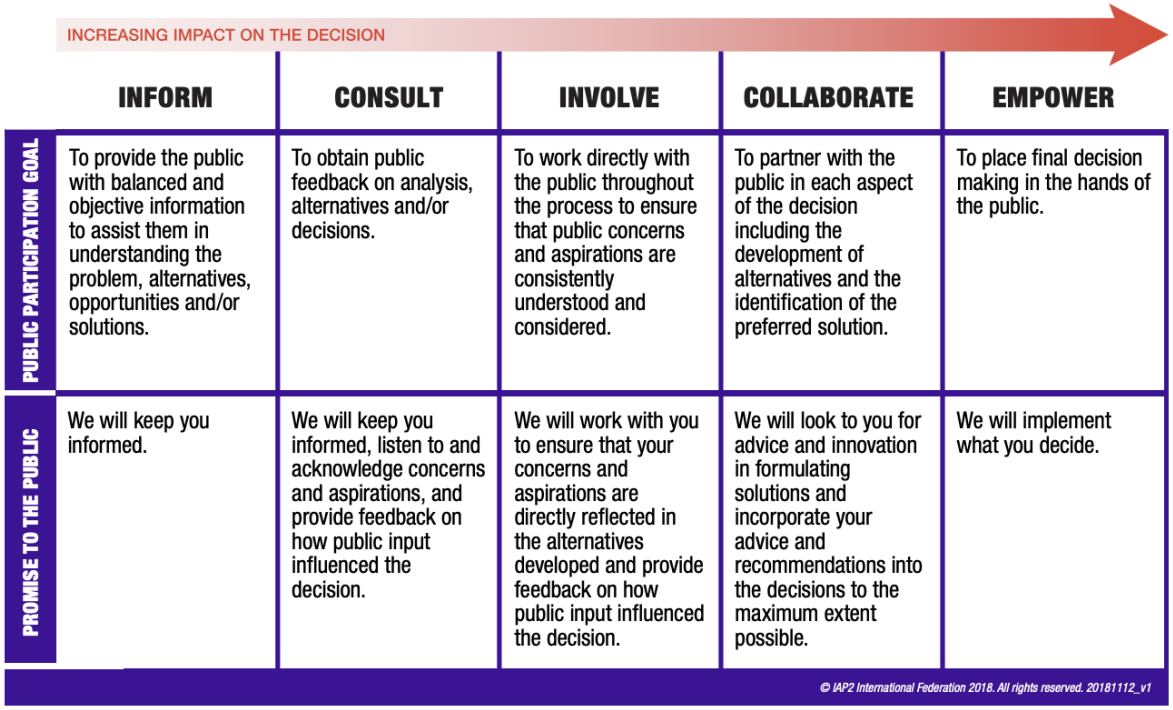

Figure 98 A diagram about the public participation spectrum in the *Integrated Planning & Reporting Handbook for Local Councils in NSW*. Source: Office of Local Government NSW (2022).

9.5 Recommendations for Future Directions

This thesis investigates an emerging area of SWB-oriented public architecture design with an interdisciplinary perspective, presenting opportunities for future researchers and practitioners in different disciplines. Previous sections acknowledged the limitations of sample size and lack of diversity among user participants. This thesis's enquiry can be expanded through further investigations in empirical studies with a diverse population. Likewise, it recommends exploring the research questions with mixed methods, developing the qualitative data presented in this thesis. As Marans et al. have summarised in their *Handbook of Quality-of-Life Research: Place and Space Perspectives*, there are many possible indicators to measure individual well-being and QoL, including objective indicators like individual attributes and subjective ones like life satisfaction (Marans et al. 2024). The three leading subjective indicators adopted in this thesis have aligned with many indicators discussed in Marans et al., including the quality of social connections, neighbourhood walkability, and community engagement. Yet, the diversity in interpreting SWB calls for future research investigating how therapeutic public architecture can promote well-being regarding other indicators,

including objective ones like material resources and social attributes (Western and Tomaszewski 2016).

The case studies of this thesis represent a few affluent urban neighbourhoods with access to resources and high-quality design. This thesis encourages future research on therapeutic public architecture and designing for well-being while analysing different social-cultural contexts focusing on developing areas and marginalised populations. There is also potential in future neighbourhood-scale comparative studies that can build upon the research design of this thesis, which can be applied to study other major Australian cities and potential overseas case studies.

The author also anticipates that this thesis will be a foundation for future place-based initiatives in industry and practice, fostering collaborations on public art, architecture, psychology, and more.

9.6 Final Thoughts – a Message of Hope

This Ph.D. journey has explored the impacts of design on subjective experience. It has investigated the sentimental values of places and theorises public architecture as a communication medium that carries emotions. This concluding part of the thesis restates the significance of understanding the complexity between therapeutic public architecture and SWB. It offers a glimpse into the future of an SWB-oriented design initiative with multiple application scales.

As many large-scale cities like Sydney face rapid urbanisation and its associated challenges, the conceptualisation of therapeutic public architecture and its design framework can offer an opportunity to create more liveable and meaningful urban environments. This thesis invites practitioners, researchers, and policymakers to consider the profound impacts of therapeutic public architecture and its long-term potential to foster individual and collective well-being.

Finally, the author wanted to wrap up with a message of hope. This thesis was written when the world was experiencing some unforeseen dark moments related to the pandemic and ongoing conflicts. It began with some heartfelt personal experience, and it evolved into a

study with the strong belief that the design of public architecture can serve as a catalyst in for the pursuit of healing, resilience, and happiness, even in times of profound hardship. This thesis has shown how public spaces can nurture both individual and collective recovery through investigation and analysis. Therapeutic public architecture, with the emphasis on intention and empathy, can become instruments to foster community connections, provide sanctuary for reflections, and offer a safe space where people can find strength and solace. In the face of uncertainty and difficulty, the transformative impacts of therapeutic public architecture reiterate that there is, indeed, always hope.

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Table Attributions

Table 10 Estimated Regional Population (ERP) for the 2022 – 23 financial year, ABS 2024.

Appendix A Database Search Summary

Journal	Search Terms	Results	Search within Results	Results after Screening
Art, Design and Architecture collection at Proquest	ab(public architecture) AND ab(high density urban area) AND (social engagement) AND (participatory) AND (neighbourhood)	19	4	1
	ab(public architecture) AND ab(high density urban area) AND (positive psychology) AND (subjective wellbeing) OR (human flourishing) AND (urban environment)	66	4	1
	subject(public architecture) AND subject(subjective wellbeing OR social wellbeing) AND abstract(urban public space) OR abstract(urban open space) OR (shared space) AND abstract(stress) AND abstract(anxiety) NOT subject(landscape)	22	3	2
	ab(public architecture) AND ab(definition or define or meaning or description) AND (urban public space) OR (urban open space) AND (neighbourhood) AND (community) AND (activation)	63	8	2
Art Source via Ebsco (1929 - present)	ab(public architecture) AND (high density urban area) AND (social engagement) AND (participatory) AND (neighbourhood)	28	6	5
	(architecture or architectural design or building design) AND (urban dwelling) OR (urban living) AND (high density) AND (stress) AND (anxiety)	0	0	0
	(public architecture) AND (curating) OR (curatorial practice) AND (urban public space) OR (open space)	0	0	0
	(public architecture) AND (definition or define or meaning or description)	22	5	2
JSTOR	ab(public architecture) AND ab(urban public space) AND (contemporary curating) AND (curatorial practice)	17	1	2

	ab(public architecture) AND (subjective wellbeing or psychological wellbeing or human flourishing) AND (urban public space)	35	4	2
	ab(public architecture) AND (subjective wellbeing) AND (high density) AND (urban public space) OR (urban realms) OR (urban open space) AND (stress) OR (anxiety)	28	1	0
Scopus	(public architecture) AND KEY(urban public space) AND (high density) AND (urban public space) AND (neighbourhood) AND (activation)	29	9	3
	KEY(public architecture) AND (definition or define or meaning or description) AND (social engagement) OR (participatory) OR (activation) OR (reformation) AND (neighbourhood)	81	11	3
	(public architecture) AND (high density urban area) AND KEY(subjective wellbeing) AND (urban environment) AND (urban public space)	3	3	1
	(public architecture) AND (high density) AND (urban public spaces) AND (living) AND (placemaking) AND (stress) OR (anxiety)	24	4	3
ScienceDirect	KEY(public architecture) AND (subjective wellbeing) AND (social engagement) OR (participatory) OR (activation) OR (reformation) AND (neighbourhood)	62	20	2
	ab(public architecture) AND (urban public space) AND (curating architecture) AND (urban public space) AND (neighbourhood) AND (activation)	6	0	1
	(public architecture) AND ab(high density) AND (urban public spaces) AND (living) AND (placemaking) AND (stress) AND (anxiety)	74	10	3
	Total results:	579	93	34

Appendix B 37 Reviewed Journal Articles

Literature included for review, including country of origin, case study location, and thematic breakdown									
							Thematic Breakdown		
Author (A - Z)	Title	Year	Periodical Title	Article Type	Discipline of Origin	Case Study Location	Theme	Sub-category	Breakdown
Abu-Dayyeh, Nabil; Johnston, Keith M	Public urban space: The linguistic turn	2004	Cogent arts & humanities	Case study	Architecture	Jordan	defining public urban space	review cultural and social engagement of selected projects in Amman, Jordan	benefit of semiotic public space
Alraouf, Ali A	Breathing Spaces in Inner Urban Neighbourhoods in Sydney: The Impact of Sustainable Open Spaces	2015	The International Journal of Environmental Sustainability	Case study	Urban Studies	Australia	the Victoria Park development and impacts on Sydney CBD	using surveys to gather residents response	diverse social activities in case study sites
Alhusban, Ahmad A, Safa A Alhusban, and Mohammadward A Alhusban	How the COVID 19 Pandemic Would Change the Future of Architectural Design	2022	Journal of Engineering, Design and Technology	Comparative Analysis	Architecture	West vs. Middle East	interviews with practitioners on the changing strategies for healthier homes	local and pedestrian-friendly open spaces with greenery are necessary in the post-pandemic design	in need to provide privacy spaces and amenities in public
Bil, Jakub S ; Buława, Bartłomiej ; Świerzawski, Jakub	Mental Health and the City in the Post-COVID-19 Era	2021	Sustainability (Basel, Switzerland)	Literature review	Psychology	N/A	promoting mental health with spatial development	long-term impacts on spatial development	Multi-aspect of COVID19 impacts on built environment
Bishop, Claire	Antagonism and Relational Aesthetics	2014	MIT Press	Academic journal	Art Curating	N/A	reflect on Nicolas Bourriaud's relational aesthetics	participatory-based contemporary art experiment	the democratic public sphere
Blau, Eve	Curating Architecture with Architecture	2010	Log (New York)	Academic journal	Art Curating	USA	strategies of SANAA-designed art museums	artistic expressions and curating architecture as art	how architects respond to public art spaces with interactive architectural language
Cervinka, Renate, Kathrin Röderer, and Isabella Hämmerle	Can There Be Public Architecture?	2006	The Journal of Aesthetics and Art Criticism	Academic journal	Architecture; Art Curating	N/A	defining public architecture	aesthetic criticism of public art and architecture	appropriations of functions
Crossley, Alexandra Jane, and Alessio Russo	Has the Pandemic Altered Public Perception of How Local Green Spaces Affect Quality of Life in the United Kingdom?	2022	Sustainability (Basel, Switzerland)	Case study	Urban Studies	UK	green spaces can promote QoL	the growing need of quality green spaces would continue after the pandemic	quality green spaces can provide both short-term stress relieve and long-term changes
Dhar, Grishma, and Shanta Pragyan Dash	A Systematic Literature Review on the Impact of Open Spaces on Human Physiological and Mental Well-Being in Post-Pandemic Housing in Urban Context	2022	ECS Transactions	Literature review	Urban Studies	India	inequality in distributing open spaces in urban neighbourhoods	walkability, greenery, and spcaes for physcial activites are the key aespects to promote well-being	comfortable and safe places have long-term potential to promote QoL

Crewe, Katherine	The Quality of Participatory Design: The Effects of Citizen Input on the Design of the Boston Southwest Corridor	2001	Journal of American Planning Association	Case study	Urban Studies	USA	citizen participation in landscape design	qualitative interviews with design professionals	case study evidence in the Southwest Corridor project
Furtado, Lara Sucupira ; Payne, Jessica Morgan	Inclusive Creative Placemaking Through Participatory Mural Design in Springfield (MA)	2023	Journal of the American Planning Association	Case study	Art Curating	USA	placemaking with public art	community-led and participatory art	Decolonising art and community by encouraging minioritised residents to engage
Jacobs, Jane	Urban Geographies I: Still Thinking Cities Relationally	2012	Progress in Human Geography	Academic journal	Urban Studies	N/A	urban policy mobility in modern cities	relational regional geography	neo-librations in urban policy making
Kampelmann, Stephan ; Kaethler, Michael ; Hill, Adrian Vickery	Curating complexity: An artful approach for real-world system transitions	2020	Environmental innovation and societal transitions	Academic journal	Art Curating	Europe	curatorial approach of urban planning	three main solutions to "wicked" planning process	curatorial frames
Kim, Jiwon, Youngjin Ko, Whijin Kim, Gaeun Kim, Jeongmin Lee, Olebogeng Thelma G Eyman, Sarwat Chowdhury, Julie Adiwal, Yowhan Son, and Woo-Kyun Lee.	Understanding the Impact of the COVID-19 Pandemic on the Perception and Use of Urban Green Spaces in Korea	2023	International Journal of Environmental Research and Public Health	Case study	Urban Studies	South Korea	changing perceptions toward urban green spaces	quality urban green spaces can promote emotional stability	rest and leisure facilities are in need to design quality urban green spaces
Largo-Wight, Erin	Cultivating healthy places and communities: evidenced-based nature contact recommendations	2011	International Journal of Environmental Health Research	Literature review	Urban Studies	N/A	pandemic confinement and isolation impacts on university students	evaluate physical and mental health indicators in student housing	perception of wellbeing and "home"
Mathews, Tony; Gadaloff, Sophie	Public art for placemaking and urban renewal: Insights from three regional Australian cities	2022	Cities	Academic journal	Urban Studies; Art Curating	Australia	public art as an intentional placemaking strategy	situating public art as a part of integrated community identity	three concil-led mural case studies in regional Australia
Mazuch, Richard; Stephen, Rona	Creating healing environments: humanistic architecture and therapeutic design	2005	Journal of public mental health	Academic journal	Architecture	UK	design architecture for mental health	psychotherapy methods in architectural design	behaviour studies and mapping in public health architecture
Millán-Jiménez, Antonio; Herrera-Limones, Rafaell; López-Escamilla, Álvaro; López-Rubio, Emma; Torres-García, Miguel	Evaluation Of Hospital Gardens And Implications For Design: Benefits From Environmental Psychology For Architecture And Landscape Planning	2014	Journal of Architectural and Planning Research	Case study	Psychology	Austria	case study on how hospital gardens improve mood of patients	online survey on how patients can interact with each other in these gardens	green space versus blue space in terms of public health benefits

Orii, Lisa ; Alonso, Luis ; Larson, Kent	Methodology for Establishing Well-Being Urban Indicators at the District Level to be Used on the CityScope Platform	2006	Sustainability (Basel, Switzerland)	Case study	Urban Studies; Psychology	USA	social involvement in small urban place	asset-based ethos in the Cardiff case	demanding better quality of a civic place
Palich, Natasha ; Edmonds, Angelique	Social sustainability: creating places and participatory processes that perform well for people	2013	Environment Design Guide	Case study	Urban Studies	Australia	case study of participatory project	social sustainability in Australian context	design principles and practical strategies for architects
Rashid, Mamun, and Rahat Ara Dilshad	Accelerating a green recovery of cities: Lessons from a scoping review and a proposal for mission-oriented recovery towards post-pandemic urban resilience	2021	Developments in the Built Environment	Scoping review	Urban Studies	Australia	maintaining community wellbeing with green spaces	implications of urban resilience	7 needs of cities in post-pandemic era
Rendell, Jane	Architecture And Interdisciplinarity: Modes Of Operation	2009	Building Material (Architectural Association of Ireland)	Academic journal	Architecture	N/A	Conceptualising architecture in related discplines	Three modes of interdiscplainry practices of architecture	intersections, in-between, and criticism
Rosso, Federica; Cappa, Francesco; Spitzmiller, Rebecca; Ferrero, Marco	Pocket parks towards more sustainable cities. Architectural, environmental, managerial and legal considerations towards an integrated framework: A case study in the Mediterranean region	2022	Environmental Challenges	Case study	Architecture; Urban Studies	Mediterranean	placemaking that promotes wellbeing	stakeholders of emerging social-sustainable places	inclusive design led process and examples
Mouratidis, Kostas	Urban planning and quality of life: A review of pathways linking the built environment to subjective well-being	2021	Cities	Literature review	Urban Studies; Psychology	N/A	promoting SWB with urban planning	7 pathways to promote SWB: (1) travel, (2) leisure, (3) work, (4) social relationships, (5) residential well-being, (6) emotional responses, and (7) health.	proposing urban design strategies for each pathway
Schreurs, Jan	Moderation effect of visible urban greenery on the association between neighbourhood deprivation and subjective well-being: Evidence from Hong Kong.	2023	Landscape and Urban Planning	Case study	Urban Studies; Psychology	Hong Kong	greenery and subjective wellbeing	access to urban open space in highly dense neighbourhoods	neighbourhood deprivation and perceived greenery
Searing, Helen	The Architecture Gallery	2006	Building Material	Academic journal	Architecture; Art Curating	N/A	critical architecture practice with expanded boundaries	tranformational movement	flattened diversity of research
Sepe, Marichela	Covid-19 pandemic and public spaces: improving quality and flexibility for healthier places	2022	Urban design international (London, England)	Case study	Architecture; Urban Studies; Public Health	Europe	social interactions in European public spaces during pandemic lockdowns	the new relationship with public spaces impacts children, young, and elder people the most	educational and artistic activities can promote quality social interactions in public

Siu, Kin Wai Michael ; Wang, Weijia ; Wong, Kwok Choi Kacey	Loose Space, Inclusive Life: A Case Study of Mong Kok Pedestrian Bridge as an Everyday Place in a Densely Populated Urban Area	2014	The International Journal of the Constructed Environment	Case study	Urban Studies	Hong Kong	social interactions in street infracstructure	pedestrain adaptation to the urban facility	inclusive design in dense urban area
Talen, Emily; Menozzi, Sunny; Schaefer, Chloe	What is a "Great Neighborhood"? an Analysis of APA's Top-Rated Places	2015	Journal of the American Planning Association	Case study	Urban Studies	USA	"good neighbourhoods" across the U.S. based on APA guidelines	gap between the social goals and design execution	walkability and good amenities being the core elements
Thorpe, Amelia	Reclaiming the Streets? Possibilities for Post-Pandemic Public Space	2021	Town Planning Review	Academic journal	Urban Studies; Public Health	N/A	COVID-19 has changed some car-centric cities	civic ownership and social practices in post-pandemic public spaces	should promote permanent change in inclusiveness and sustainability
Trojanowska, Monika	Assessment of therapeutic qualities of ten public parks in Bydgoszcz	2019	Budownictwo i Architektura	Case study	Architecture; Urban Studies	Poland	Park visits impact on physical and mental health	health indicators in physical and mental aspects	comparative study on 10 parks
Villanueva, Karen, Hannah Badland, Paula Hooper, Mohammad Javad Koohsari, Suzanne Mavoa, Melanie Davern, Rebecca Roberts, Sharon Goldfeld, and Billie Giles-Corti.	Developing Indicators of Public Open Space to Promote Health and Wellbeing in Communities	2015	Applied Geography	Case study	Urban Studies; Public Health	Australia	public open spaces can promote health and individual well-being	quality open spaces can promote positive social interactions, physical activities, and thermal comfort	11 indicators are identified to design for liveability
Waters, Lea; Algoe, Sara B; Dutton, Jane; Emmons, Robert; Fredrickson, Barbara L; Heaphy, Emily; Moskowitz, Judith T; Neff, Kristin; Niemiec, Ryan; Pury, Cynthia; Steger, Michael	Positive psychology in a pandemic: buffering, bolstering, and building mental health	2022	The Journal of Positive Psychology	Academic journal	Psychology	UK	curating architecture	displaying architecture as an exhibition	design language of architectural exhibitions
Xu, Tianrong; Nordin, Nikmatul Adha; Aini, Ainoriza Mohd	Urban Green Space and Subjective Well-Being of Older People: A Systematic Literature Review	2022	International journal of environmental research and public health	Literature review	Urban Studies; Public Health	N/A	Social inclusion and human interaction with physical space	architectural elements inspire social interactions	aesthetics components and human scale
Yang, Xi ; Lo, Kevin	Positive psychology in a pandemic: buffering, bolstering, and building mental health	2021	Journal of Positive Psychology	Academic journal	Psychology	N/A	Contributions of positive psychology during COVID19	Bolstering effects and application of positive psychology	coping strategies during COVID19
Yang, Y., Peng, C., Yeung, C. Y., Ren, C., Luo, H., Lu, Y., Yip, P. S. F., & Webster, C	Moderation effect of visible urban greenery on the association between neighbourhood deprivation and subjective well-being: Evidence from Hong Kong	2022	Landscape and Urban Planning	Case study	Urban Studies; Psychology	Hong Kong	transdisciplinary societal challenge of COVID19	environmental health approach on psychological effects	principles and guidelines of environmental health approach

Appendix C Screening Survey for Users

Data Dictionary Codebook

Screening Survey for Semi-Structured Interviews (PID: 19691)

07-11-2024 12:17pm

	#	Variable / Field Name	Field Label Field Note	Field Attributes (Field Type, Validation, Choices, Calculations, etc.)
Instrument: Public Architecture As Therapy Green Square (public_architecture_as_therapy_green_square) ☒ Enabled as survey				
	1	[participant_id]	Participant ID	text
	2	[title_v2c3]	Hello! I am Sephira, a PhD candidate at the University of Sydney. I am researching how public spaces can encourage social interactions and well-being. The following questions will take only one minute to complete. Thank you so much for your time!	descriptive
	3	[gender]	What best describes your gender?	radio, Required 1, Female 2, Male 3, Non-binary 4, A gender not listed here 5, Prefer not to say Question number: 1
	4	[age]	Please select your age group:	radio 1, 18 - 29 years old. 2, 30 - 39 years old. 3, 40 - 49 years old. 4, 50 and above 50 years old.
	5	[ethnic]	What best describes your ethnic background?	radio 1, Oceanian (including Australian peoples, New Zealand peoples, and Polynesian) 2, North-west European 3, Southern and Eastern European 4, North African and Middle Eastern 5, South-east Asian 6, Norht-east Asian 7, Southern and Central Asian 8, Peoples of the Americas 9, Sub-saharan Afrian

				10 | Multi-ethnicity
	6	[visit_v2c3]	Have you visited Green Square Plaza (outdoor area) in the past FIVE months?	yesno, Required 1 | Yes 0 | No Question number: 2 Stop actions on 0
	7	[residence_v2c3]	Do you live around Green Square Plaza?	yesno, Required 1 | Yes 0 | No Question number: 3
	8	[commute_v2c3]	Do you go to work near Green Square?	yesno, Required 1 | Yes 0 | No Question number: 4
	9	[frequency_v2c3]	How often have you visited Green Square Plaza in the past FIVE months?	radio, Required 1 | 1 time only. 2 | 2-5 times. 3 | More than 5 times. Question number: 5
	10	[interview_v2c3]	Would you like to share your thoughts about Green Square Plaza in a 30-minute interview? You will get reimbursement for your time.	yesno, Required 1 | Yes 0 | No Question number: 6 Stop actions on 0
	11	[email_v2c3]	If you would like to participate in an interview, please provide your preferred name and email. Thank you!	text (email), Required Question number: 7
	12	[public_architecture_as_therapy_green_square_complete]	Section Header: Form Status Complete?	dropdown 0 | Incomplete 1 | Unveri fied 2 | Complete

Appendix D Recruitment Email for Users

Title: Interview Participant Needed for Research Study: Public Architecture as Therapy

Hello [name provided in the survey],

Thank you for providing the email address in your survey response. I appreciate your interest in signing up for my research.

The ZOOM interview will be around 30 to 45 minutes. I will ask a few open-ended questions about your past visits to [case study site]. Your experience and comments will be highly valuable to my research in design for wellbeing. I will forward a digital gift card when the interview is finished.

I have also attached the research statement and consent form for more details on the research study. Please get in touch with me anytime if you have any questions. Thank you for your time! Please let me know your preferred date and time for a meeting between 1 – 20 November 2023.

Kind regards,

Sephira Luo
PhD Candidate
School of Architecture, Design and Planning
University of Sydney
148 City Road, Wilkinson Building, Sydney NSW 2007
+61 0433986063

Appendix E Recruitment Email for Practitioners

Dear [title.name],
Title: Interview Participant Needed for Research Study: Public Architecture as Therapy

This is Sephira, a second-year PhD candidate at the University of Sydney, School of Architecture, Design, and Planning. I am conducting interviews as part of my thesis to investigate how public architecture can promote subjective well-being. As a professional practitioner in the field of [relevant areas] in [case study project name], you are an ideal candidate to give me valuable first-hand information from your expertise. I learned your name and contact information through the [case study] project website and throughout the interview.

The interview takes around 30 to 40 minutes. I am trying to capture your professional input on what design features and design thinking contribute to the social aspects of public architecture in terms of neighbourhood engagement and promoting social connections. I hope to use the information from semi-structured interviews with professional practitioners to generate a new design framework for public architecture.

If you are willing to participate, please select a preferred day and time that suits you on the attached survey form, and I will do my best to be available. There are participant information and consent form attached for more details. If you have any questions, please do not hesitate to ask.

Thank you for your time! Looking forward to hearing back from you.

Kind regards,

Sephira Luo
PhD Candidate
School of Architecture, Design and Planning
University of Sydney
148 City Road, Wilkinson Building, Sydney NSW 2007
+61 0433986063

Appendix F Interview Guide for Practitioners

Thematic Categories	Open-ended Questions	Potential Sub-Questions	Related Research Questions
Contextual Information	Would you mind telling me a little about yourself?	What is your role as a designer/architect/artist?	Establishing context and professional background of participants.
	How long have you been working as [position]?	1. What would you describe as the "highlights" of doing this job?	
		2. What are some of the challenges of this job?	
Design Development and Design Strategies	Can you tell me about this project [case study site]?	1. Can you tell me more about the design process? How were you involved?	What is the relationship between public architecture and subjective wellbeing in the current practice?
		2a. Was neighbourhood engagement a key objective of the design proposal?	
		2b. How did community/neighbourhood engagement affect the design strategies?	
		3. What do you think are the key design strategies on promoting wellbeing and social engagement?	
		4. Were there any challenges during the design process and project development?	
	Have you participated in other projects that are similar to this one?	Can you tell me more about how they are different or similar to this project?	
	What do you think about the site?	Have you visited this area before the project?	What is the gap between design practice and user

	Have you visited the project after it is finished?	(If answers Yes) 1a. What did you think when you visited as an user?	experience in public architecture design?
		1b. How was it different from when you visited as a professional?	
		2a. Can you tell me about things that make you happy or give you enjoyment in your everyday life?	
		2b. Would you say you reflected on your personal experience mentioned above in any of the design decisions?	
New Design Strategies for SWB-Oriented Public Architecture	What do you think is the next step for the practice of public architecture?	1. Do you think design professionals have a new mindset after the global pandemic?	How to develop a new design framework for SWB-oriented public architecture?
		2. Do you think the perception towards urban open spaces is changing?	
		3. What do you think the current practice of public architecture is missing?	

Appendix G Interview Guide for Users

Thematics	Open-ended Questions	Potential Sub-Questions	Related Research Questions
Contextual Information	Would you mind telling me a little about yourself?	1. (For example) Do you work or study, or both? 2. Do you live with other people? Any pet?	Establishing context and participant characteristics.
	How long have you been in Sydney?		
	Do you live around [case study site]?	1. How long have you lived around here? 2. What kind of place is that? A flat/apartment building or house?	
Interactions and Activities	Can you tell me about your last visit to [case study site]?	1. What brought you there? 2. What did you do there? 3. What do you like about the place? 4. What do you not like about the place?	What are some key design features in the urban public space that attract users?
	How often do you visit this place?	1a. Are all your visits similar to one another? 1b. [If the participant answers Yes] Would you say visiting [case study site] is part of your routine? Could you please tell me more about it?	

Subjective Wellbeing and Quality of Life	Can you tell me about things that make you happy or give you enjoyment in your everyday life?	1. What do you like to do in your freetime?	How to promote subjective wellbeing through public architecture?
		2. What do you like to do after a long day / What is your usual winddown step?	
	What do you feel when you visit [case study site]?	1a. Have you ever felt happy when you visit here?	
		1b. Have you ever feel not so happy when you visit here?	
		2a. Do you feel safe when you visit? Why?	
		2b. Have you ever felt unsafe?	
		3a. Do you feel refreshed? Why?	
		3b. Have you ever felt uncomfortable during your visit?	
		4a. Do you think visiting this site makes you feel calm and at ease?	
		4b. Have you ever felt stressed or agitated during your visit?	

	(If any of the previous answers mentions "spending time with others") Why do you think [case study site] is a good place to spend time with others?