The Porirua Transcripts

Atmosphere, Architecture and Place

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0.01 Atmosphere extraction drawing of the 'tension between interior and exterior' in Porirua.

Abstract

Porirua is a young city in many respects, but the relationship this city has to the landscape in which it lies is deep-rooted. The connection between the harbour water, the land and the people that dwell there contribute to a sense of place. But, the extensive development of Porirua's urban realm in the recent times has resulted in inner-city planning schemes and architectural projects that turn the city's back on the natural landscape and the ephemeral qualities that evoke a sense of place. What remains is a disenfranchised population that is unaware of the relationship between land and water within Porirua's urban centre, and is consequently unable to recognize the effect that further urban growth will have on the landscape in years to come. Therefore, the research in this thesis explores the proposition that architecture holds a vital role in facilitating and amplifying the relationship between people and a place. This proposition is explored through a design-led research methodology that adopts and employs both analogue and digital design methods for the *extraction, design, and occupation* of ephemeral and atmospheric qualities of place. Furthermore, the methodology in this thesis requires the use of both *research for design* and *research through design*. This will provide the basic structure whereby a literary and physical context is established that situates the research in an existing theoretical body of knowledge. Design chapters follow this context chapter utilizing the information to generate a body of architectural work that responds to the research proposition. The body of architectural design work consists of three iterative experiments that increase in scale and complexity, architectural interventions include: an installation, a house and a public building. In each design iterative methods of representation were fundamental in the process of extracting, amplifying through design, and occupying atmospheric and ephemeral qualities. Architectural outcomes and iterative design explorations demonstrate the importance of drawing from ephemeral and atmospheric qualities of a place in order to generate architecture that can amplify the connection people have to Porirua.

for Mum, Dad and Anna

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Chapter 1

Introduction

1.01 Boats anchored in the Pauatahanui arm of Porirua harbour.

Background

In contemporary architectural practice atmosphere is recognized as part of a subject-object relationship that bridges between affects and emotions (Kidd and Smitheram, 2014: p. 82) where “thinking through an expansion of the affectual and emotional begins from an alternative attunement to affect as a transpersonal capacity which a body has to be affected (through an affection) and to affect (as the result of modifications)” (Anderson, 2004: p. 735). Through the presence of a sensing body atmospheres become quasi-objective feelings. While feelings are generally understood as subjective, “...atmosphere is, by contrast, something external and thereby accessible to many subjects” (Böhme, 2014: p. 93). Atmospheres are spatially extended feelings that are experienced through entering into a space and expressed in a subject as an emotional response. According to architect Peter Zumthor atmospheres are generated and exists within architectural space. Zumthor makes the assertion that atmospheres are temporally contingent and subject to change as a body moves through a designed space. Another important aspect of atmosphere in architecture is the role of the designer. Gernot Bohme, Julieanna Preston, and Mark Wigley believe “atmosphere might even be the central objective of the architect” (Wigley, 1998: p. 18) where it is the responsibility of the architect to explore ways of generating and controlling atomsphere. The intention of this thesis is to produce atmosphere in architecture that considers the processes of *‘extracting atmosphere’*, *‘designing to amplify atmosphere’*, *‘occupying atmosphere’* and the *relationship* between all three. Atmosphere has an inherent complexity but through architectural design I aim to understand this complexity in order to develop a means for amplifying the connection between people and place.

1.02 Early extraction notation exploring thresholds in Porirua.

Scope

This thesis does not attempt to find an architectural solution that represents affect, nor does it attempt to ‘build’ or ‘construct’ affect in a contemporary architectural context. Instead, an investigation into multiple positions regarding affect and atmosphere from the field of architecture and outside of the discipline will provide the necessary platform for driving design decisions within a design-led research methodology. This methodology tests a research proposition within the limits of three separate but interrelated scales of architectural intervention to generate a rigorous and cohesive ‘body of work’. Architectural interventions include:

1. Installation – *Installation*
2. Domestic – *Poet House*
3. Public – *Cultural Centre*

The three design outcomes are speculative projects, but will be tested within the established cultural, social and physical environment of Porirua. Design outcomes offer alternative architectural visions for Porirua unrestricted by local governing policy, planning and monetary concerns. Both visual design and written material will be presented, where seventy-five per cent is allocated to design and twenty-five per cent is allocated to writing as per the course outline for this design-led research thesis (Marques, 2016: p. 7).

1.03 Amplification of atmospheric and ephemeral qualities of place through drawing.

Research Proposition

This thesis explores through shifting scales how the ephemeral and atmospheric qualities of a specific place might be extracted and amplified through architectural intervention. A design-led research methodology will be employed that explores methods and processes for the 'extraction of atmosphere', 'designing to amplify atmosphere', 'occupying atmosphere' and the relationship between all three. The purpose of this being to design speculative architecture that can facilitate and amplify relationships between people and place.

Methodology

This thesis uses a research methodology where *research for design*, *design as research* and *design evaluation* are used to explore experimental design outcomes. Peter Downton explains design is positioned as an “... activity-based set of skills that produces means for achieving ends through using researched knowledge” (2003: p. 56). The diagram in figure 1.06 shows the process that will be used to test the research proposition through this methodology. An iterative process will follow three separate phases – research for design, design as research and design evaluation. Before commencing this thesis I developed a body of research through an independent directed study, which provided the theoretical foundation to drive subsequent design iterations. This altered the approach from the normal stream practice. However, the way design work is produced does not change and follows the customary ascending scale approach. At the end of each scale iteration an evaluation will critique the design outcome based on how it responds to the research proposition, methodology, and theoretical positioning material. Once the evaluation is complete, design as research will resume at the next scale of intervention. The thesis is structured in a traditional and linear manor for the purpose of reading, but the way design is carried out is through a non-linear movement between varied analogue and digital design methods.

Shifting between scales is a method used during *design as research*. Frequently repeated moves, such as ‘scale up’ ‘scale down’ “compose a rhythmic conduit through which the building develops (Yaneva, 2005: p. 870). Three architectural scales (Installation, Domestic and Public) will be presented as separate, but iterative design projects where analogue and digital design methods will be used to extract atmospheric and ephemeral qualities of place, amplify atmosphere through design, and represent the occupation and experience of atmosphere within an architectural context.

1.05 Methodology diagram.

The process of ‘making’ is vital to conducting design-led research and in designing architecture that draws on the process of ‘extracting atmosphere’, ‘designing to amplify atmosphere’, and ‘occupying atmosphere through representation’. Design methods such as Perry Kulper’s ‘strategic plot’, Mark Smout and Laura Allens’ synthesis of drawing and physical modeling, and Peter Eisenman’s ‘superposition’ are employed during design to aid in the making process:

Firstly, Perry Kulper’s speculative drawing method known as a *strategic plot* is a precedent for ‘extracting atmosphere’. Conceptual frameworks, territories, actions and relations are “...delineated, or plotted over and through time” (Spiller, 2013: p. 59) where unpredictable and speculative opportunities are bred through graphic representation. Pro-spatial marks, notations, and indexes allow ephemeral and atmospheric qualities of place to be extracted and presented in a field or matrix of relations to generate speculative design.

1.06 Perry Kulper’s ‘strategic plot’ for David’s Island overlays notations, drawings and diagrams relating to place.

Secondly, architects Mark Smout and Laura Allen also use drawing in conjunction with physical modeling to “...examine the dynamic force of environmental and architectural processes” (Spiller, 2013: p. 88). In their experimental architecture research drawing is a reflective activity that generates and informs speculative design in multiple states through a palimpsestic design process (Spiller, 2013: p. 93). By moving between drawing and modeling (both analogue and digital) extracted atmospheric and ephemeral qualities of place are transformed and augmented through design processes into architectural space. The movement between analogue and digital modes of production is fundamental to generating design-led research:

...products, landscapes or buildings are analogue phenomena, and so are models of them. Language descriptions of real or intended objects resulting from designing are digital. Drawings of them are analogue (although produced through digital processes in a computer), but introduce gaps and overlaps by being partial and concerned with pieces that they represent more than once at different scales and in different ways (Downton, 2003: p. 66)

This method will be used in subsequent design chapter to develop architecture that ‘amplifies atmosphere’ and facilitates the relationship between Porirua and its people.

1.07 (Top) Atmospheric and ephemeral qualities are extracted through a model and represented in a drawing by Smout Allen.

1.08 (Bottom) The model by Smout Allen consists of various small kites that react to and document stereoscopically the flow of air across the landscape

Thirdly, architect Peter Eisenman explores how a process of overlaying diagrams that represent site information can generate affective architecture. Eisenman explains:

[A]s a generative device in a process of design, the diagram is also a form of representation. But unlike traditional forms of representation, the diagram as a generator is a mediation between a palpable object, a real building, and what can be called architecture's interiority (Garcia, 2010: p. 94).

Eisenman uses a method known as *superposition* where visual representations of a place, including historical maps, site topography, symbols, images et cetera, are engaged with iteratively to produce form and consequently architecture. Representationally extracted site information gives value and meaning to the resulting architecture, which generates 'affective effect' (Anderson, 2006: p. 736). This process of form finding and architecture generation that 'amplifies atmosphere' will be explored in the subsequent design chapters of this thesis.

1.09 (Top) Peter Eisenman generates form through the superposition of maps, site information and images related to the specific place.

1.10 (Bottom) Superposed drawings are translated into a three-dimensional architectural model.

Thesis Structure

Chapter 2.0 – Context

The context chapter will explore and discuss notions of affect and atmosphere for the purpose of positioning the design-led research in this thesis within an existing theoretical body of knowledge. This section will trace two distinct lines of discourse with regard to affect. Also, a discussion of atmosphere in an architectural setting will tie together context and its application for design experimentation.

Chapter 3.0 – Case Study Analysis

In this chapter three architectural case study projects will be analyzed. Taeg Nishimoto's 'Re-f(r)action' Installation, CJ Lim's 'Guest House' and Steven Holl's Nelson Atkins Museum of Art will be evaluated with respect to the 'extraction of atmosphere', 'amplification of atmosphere' through design and 'occupation of atmosphere'.

Chapter 4.0 – The Place: Porirua

The second chapter approaches Porirua as a physical, social and cultural environment for driving design experimentation. Three sites located within the wider context of Porirua will be explored and analyzed based on social, cultural, historical and physical conditions.

1.11 Drawings by CJ Lim of his speculative dwelling 'Guest House'.

Chapter 5.0 – *Design Iteration 1: Installation*

The first design iteration exhibits the design development of an installation that facilitates the ‘extraction’, ‘amplification’ and ‘occupation’ of atmospheric and ephemeral qualities of place.

Chapter 6.0 – *Design Iteration 2: Poet House*

The second iteration explores through the process of extracting atmosphere, amplifying atmosphere through design, and occupying atmosphere in a domestic scale building. Design experimentation will result in a speculative dwelling on an existing site in Porirua.

Chapter 7.0 – *Design Iteration 3: Cultural Centre*

The third design iteration presents the design development of a public scale building. Working through the process of extracting atmosphere, amplifying atmosphere through design, and the occupation of atmosphere will result in a speculative cultural centre in Porirua. In order to facilitate development the method of shifting scales will be employed during this iteration.

Chapter 8.0 – *Conclusion*

The conclusion chapter provides critical evaluation of the experimental design process with respect to affect and atmosphere in facilitating and amplifying the relationship between people and place.

1.12 (Top) Installation diagram.

1.13 (Middle) Poet house diagram.

1.14 (Bottom) Cultural centre diagram.

Chapter 2

Context

2.01 Interior of existing Waka Ama canoe storage structure in Porirua.

Introduction

Architecture is a medium through which affect can enable both interpersonal relationships and meaningful connections between people and place. To begin I will discuss key theories of affect in architecture for the purpose of positioning myself within an existing theoretical body of knowledge and research. Work by theorists in architecture such as Jan Smitheram, Akari Kidd, Peter Eisenman and Hélène Frichot will be drawn on to situate the research in this thesis. Using the work of Smitheram and Kidd as a precedent, the discussion will then focus on the contemporary discourse of affect in the field of cultural geography. Several lineages of thought exist, however in this discussion I will trace two distinct lines of theoretical research. Geographers such as Alan Latham, Derek McCormack, Ben Anderson, and Nigel Thrift seek to achieve autonomy in the discipline, while Deborah Thein, Clare Hemmings and Sara Ahmed offer an argument that engages with the relationship between the body and affect. This lineage is important to this thesis because it offers an alternative means for understanding the relationship between humans and non-humans that has implications outside the field of geography. The final and most critical part of this context review will explore contemporary notions of atmosphere and its relationship with affect, looking specifically at how affect operates through the creation and occupation of architecture. Theorists including Ben Anderson in cultural geography, Gernot Böhme in philosophy and Mikkel Bille in anthropology are reviewed in conjunction with literature from architecture. For instance, individuals discussing atmosphere in architecture including Julieanna Preston and Peter Zumthor and Mark Wigley will provide insights into the potential to generate atmosphere through the creation of architectural space.

Affect in Architecture

The divide between rational (Cartesian) and affective epistemology has existed for a long time and is historically gendered. Consequently, the primacy of the rational mind has held hegemonic dominance over the comparatively insignificant non-rational body, where the “cartesian mind-body dualism privileges the rational mind and relegates the passionate body to subordinate status” (Reber, 2016: p. 5). The past two decades has seen a definite shift towards affect in a number of disciplines including architecture (Clough, 2008: p. 1). The search for an understanding of how affect operates in architecture has become a recent subject of critical thought and discussion.

Peter Eisenman in his research makes the distinction between ‘effect’ and ‘affect’. In architecture *effect* is the “...relationship between some object and its function or meaning...” whereas *affect* in architecture is “...the conscious subjective aspect of an emotion considered apart from bodily changes...” in response to a physical environment (2007: p. 20). Eisenman uses anecdotal evidence to discuss the loss of affect through modern forms of reproduction. The advent of more ‘effective’ mediated environments has resulted in “the loss of the individual response to unmediated stimuli” (Eisenman, 2007: p. 20-23). The research carried out by Akari Kidd and Jan Smitheram draws on the connection between affect and emotion. In this respect “affect precedes emotion and therefore maintains a degree of autonomy from the subject” (2014: p. 82). When affect is framed in this manner the ‘pre-conscious’, ‘pre-intentional’ and ‘pre-verbal’ processes that occur between bodies and objects in architectural space can be analysed and understood critically (Kidd & Smitheram, 2014: p. 82). Kidd and Smitheram use this framing of affect to discuss projects such as Olafur Eliasson’s interior installations and Philippe Rahm’s *Hormonarium* (figure 2.02) where these thresholds of experience between bodies,

2.02 Rahm's *Hormonorium* affects the body by establishing a continuity between the physical boundaries of the space and the organism based on stimuli outside of the senses and skin.

objects and space are amplified. Smitheram and Kidd are interested in the intersection between affect and emotion, and in that respect focus their attention on looking at how these particular projects can support this exploration. Hélène Frichot in her discussion of Olafur Eliasson's installations finds "...affects and percepts are combined to constantly circulate an intimate relay between the artwork and those who enter into contact with it" (2008: p. 32). In the midst of charged spaces like Rahm's Hormonarium and Eliasson's Weather Project (figure 2.03) "affect becomes active rather than passive" qualifying encounters between architectural bodies, natural bodies, bodies of water and air and human bodies (Frichot, 2008: p. 35). Here I have explored writing on affect in an architectural context facilitates an approach to discussing affect in cultural geography.

2.03 Eliasson's Weather Project generates a constant and intimate relay of affects when a body occupies the installation.

The Non-residency of Affect

The work of Akari Kidd and Jan Smitheram provides a precedent for using theoretical discourses of affect in the humanities and social sciences to inform research in an architectural context. In their paper 'Designing for affect through affective matter' the scope is focused towards the works of Manuel De Landa, Karen Barad and Sara Ahmed to discuss affect and new materialism in a university design course (2014: p 83). Here I will trace two lineages of affect: The works of Nigel Thrift, Brian Massumi and Ben Anderson are reviewed in relation to notions of affect explored by Deborah Thein, Eve Kosofsky Sedgwick and Sara Ahmed.

Nigel Thrift's understanding of the everyday happenings within an urban context offers a glimpse into how affects play a vital role in experiencing space. As such, "cities may be seen as rolling maelstroms of affect. Particularly affects such as anger, fear, happiness and joy are continually on the boil, rising here, subsiding there, and these affects continually manifest themselves in events which can take place either at a grand scale or simply as a part of continuing everyday life" (Thrift, 2004: p. 57). In this observation Thrift does not differentiate between affect and emotion, they instead function as a concurrent process that modifies and shapes human experience within space. Brian Massumi makes a distinction between the two terms pointing out that affect, or affects, are "...virtual synesthetic perspectives anchored in (functionally limited by) the actually existing, particular things that embody them" (Massumi, 2002: p. 35). Though often misinterpreted or misunderstood to be an expression for emotion, emotion is understood to be of "...a subjective content, the sociolinguistic fixing of the quality of an experience which is from that point onward defined as personal" (Massumi, 2002: p. 28). Although affect and emotion transpire as two parts of a single process, affect exists before the presence of a

perceiving body and emotion occurs through the sensing of an affect. Here affect is based on a subject-object relationship where an intangible, yet corporeal, 'field' is generated by and encompasses objects that exist in space. Where as, an emotion is a consciously embodied perception of an affect, which is psychologically associated with a socially and culturally constructed norm (McCormack, 2008: p. 414). But, in order to translate the experience of ephemeral and atmospheric qualities of a place into architectural space, affect and emotion need to be considered two sides of a single dynamic and mutable process (Massumi, 2002 qtd in Anderson, 2006: p. 735). Emotions are "...part of a rhizomic flow of affects that may coerce, discipline, habituate, subjectify, provide meanings or otherwise territorialize bodies and the social world. Those such as love, anger or fear may be powerful motivators of action" (Fox, 2015).

In order to attune to less metaphorical and symbolic readings of affect, Deborah Thein draws on Irene Mathis's recent development of Sigmund Freud's notion of affect as an 'impulse'. From this interpretation Mathis likens affect to "...a matrix that encompasses both feelings and emotions, and as such that it is a 'higher order' level of organization" (Thein, 2005: p. 451). In relation to Mathis's reading of Freud, Thein employs Eve Kosofsky Sedgwick's notion of affect as an "immediate instrumentality, the defining orientation toward a specified aim and end different from itself, that finally distinguishes the drives from the affects" (Sedgwick, 2003: p. 19 quoted in Thein, 2005: p. 451). These key terms – impulse, matrix of higher order organization and instrumentality – called upon by Thein discuss affect as a process, more specifically the 'how' or 'motion' of emotion (Thein, 2005: p. 451). Like Thein, Sara Ahmed understands affect as part of a process. For Ahmed "emotions work as a form of capital: affect does not reside

positively in the sign or commodity, but is produced only as an effect of its circulation.” (Ahmed, 2004: p. 120). Ahmed is interested in the non-residency of affect, which gives it its ‘binding’ capability (Ahmed, 2004: p. 119). Thus, the non-residency of affect is comparable to the immediate instrumentality referred to by Thien following Sedgwick. Both positions allude to a form of exchange occurring between subject and object. Affects are absorbed and contained in a subjective body and temporarily experienced as an emotion or feeling. Thien and Ahmed observe affects as fluid, atmospheric, dynamic and constantly in motion occupying the ‘in-between space’ that joins together subjects and objects. By framing affect in this way traditional notions of the body and its relationship to spatial environments can be called in to question. As such, architectural bodies and natural bodies are no longer fixed or isolated entities in space. The subsequent section explores further this relationship between bodies through atmosphere and architecture.

Atmosphere in Architecture

In the following part of this context chapter I will; firstly, discuss affect in relation to atmosphere; and secondly, consider notions of atmosphere in an architectural setting. Atmosphere in architecture is observed by way of a sensing body that can experience atmospheric qualities of space. Similar to the relationship between affect and emotion, atmosphere and affect are two parts of a process that involves the body. Ben Anderson notes, “in everyday...aesthetic discourse, the word atmosphere is used vaguely and interchangeably with mood, feeling, ambience, tone and other ways of naming collective affect” (2014: p. 137). There is a relationship between affect and atmosphere, but as anthropologist Mikkel Bille reveals the two terms are not necessarily synonymous:

Thus, atmospheres, rather than being taken for granted or working as a proxy for affect, offer through their ontological and epistemological vagueness a means for bridging between emotion and affect, the personal and the general, and the discursive and non-representational (2015: p. 36).

2.04 (Above) Natural light filters through a single penetration in Architect Peter Zumthor's Bruder Klaus Field Chapel

2.05 (Right) The play between natural light and the interior materiality of Peter Zumthor's Bruder Klaus Field Chapel generates an atmosphere of presence, composure and self-evidence.

Bille does not class atmospheres as exclusively psychological phenomena, or existing as object things ‘out there’ to be experienced. Instead atmospheres, varying in thickness and intensity, occupy the spaces in-between subjects and objects where the emotional and sensory experience of a perceiving body is fundamental (2015: p. 32). The presence of a moving body and embodied experience Bille argues is vital to the understanding of atmosphere in architecture, implying that “they [atmospheres] are essentially temporally contingent; atmospheres change as the body moves through space and is exposed to changing sensory stimuli...” (Bille, 2015: p. 36; Zumthor, 2006: p. 41-5; Anderson, 2009: p. 79).). Zumthor discusses nine ‘atmospheres’ that transpire within architectural space. These include, 1. *The body of Architecture*, 2. *Material Compatibility*, 3. *The Sound of Space*, 4. *The Temperature of Space*, 5. *Surrounding objects*, 6. *Between composure and seduction*, 7. *Tension between Interior and Exterior*, 8. *Levels of Intimacy*, and 9. *The Light on Things* (Zumthor, 2006: p. 20-62). Atmosphere for Zumthor is perceived “...through our emotional sensibility” (2006: p. 13) where architecture sets the stage for these dynamic and intimate interactions between human and non-human bodies to unfold. Anderson, Bille and Zumthor acknowledge the presence of atmosphere and its potential to affect human subjects within space, but through what process does atmosphere come to exist in architecture? And “...how does it coincide with the spatial art of performance whereby event replaces function as a temporal descriptor of inhabitation?” (Preston, 2008: p. 8). Julieanna Preston considers such propositions by opening up discourse around contemporary architectural projects that produce real and tangible affective effects:

[W]hat seems most emphatic is our ability to recognize and create atmosphere, an ability demonstrated within a wide range of architectural works and creative practices in which atmosphere appears unfettered by its ability to assume multifarious ambient forms or influence spatial perception and experience (2008: p. 7).

2.06 Qualities of light, material compatibility and the staging of different movements contribute to the affective effect within the interior of Peter Zumthor's The Therme Vals.

“Atmospheres are attuned spaces” (Böhme, 2014: p. 92) functioning in the same way a stage set might where certain moods are allowed to pervade the performance space affecting perception and experience. Böhme defines “atmosphere” as an “interstitial condition” (1993: p. 114) that are of neither a subjective or objective origin, fostering ephemeral and affective conditions. Therefore, as designers questions need to be raised with respect to material qualities of atmospheres, in particular to understand their “agencies and relational processes” (Böhme, 2014: p. 94). For Mark Wigley “atmosphere might even be the central objective of the architect...” (1998: p.18). Both Böhme and Wigley consider atmosphere to exist in the indeterminate space between subjects and objects. Atmosphere “...surrounds a building, clinging to the material object...” and emanates from it. It is the “climate of ephemeral effects”, mediated by a synthesis of architectural qualities such as form, spatial organization, surface, materiality and light, which envelops and affects the inhabitant (Wigley, 1998: p. 18). At the core of architecture is atmosphere, but at this core there is a complexity that is not simply addressed or controlled (Wigley, 1998: p. 27). Therefore, it is the role of the architect or architectural designer to develop methods to address and control this complexity.

2.07 Interior Architectural elements manipulate and direct natural light in Therme Vals designed by Peter Zumthor.

Conclusion

Affect can provide a means of deconstructing historical and conventional notions of the body and its connection to spaces, offering an alternative politics of the body. Through affect the focus is shifted from a relationship of distance to one of proximity, a relationship that is more supple and flexible in nature. Ultimately, what affect enables us to question is the boundary condition that exists between human and non-human, body and non-body, living and non-living. The implications of affect and atmosphere for the architectural discipline are grounded in terms of how designers mediate space. Architectural precedents including Philippe Rahm's *Hormonarium*, Olafur Eliasson's *Weather Project*, and Peter Zumthor's *Bruder Klaus Chapel* and *Therme Vals* demonstrate the inherent complexity of affect and atmosphere. Over the course of this thesis I intend to understand this complexity through design-led research. Therefore, a design framework will be used that considers the tripartite process of 'extracting atmosphere', 'amplifying atmosphere' through design, 'occupying atmosphere' and the relationship between all three (Rose, 2010: p. 334). The next chapter identifies and discusses three case study projects from the architecture discipline. A project for each scale of intervention (installation, domestic and public) is evaluated in relation to these three terms relating to atmosphere and how the process of extracting, amplifying and occupying atmosphere can facilitate and amplify relationships between people and place.

Chapter 3

Case Study Analysis

3.01 A boat shed in Onepoto delicately extends into the harbour.

Case Study Projects

In this case study analysis I will evaluate a series of projects from the architectural discipline. Evaluation will be conducted through analysis of the design approaches, used by architects and designers, to generate atmospheric spatial environments that facilitate relationships between people and place. The relationship between ephemeral qualities, atmosphere and affect is complex. But in this analysis, I will argue that Architecture can help to understand this complexity through bodily experience. How this relationship operates will vary depending on the scale of intervention and the techniques that are employed and for that reason this case study analysis will be structured around three architectural scales – Installation, Domestic and Public space. The following case studies will be discussed:

1. Taeg Nishimoto – Re-f(r)action (figure 3.02)
2. CJ Lim – Guest House (figure 3.03)
3. Steven Holl – Nelson Atkins Museum of Art (figure 3.04)

Projects have been chosen because the relationship between ‘extracting atmosphere’, ‘designing for atmosphere and ‘occupying atmosphere’ can be observed in either the design techniques or in the spatial outcome. Discussion will be centered on this relationship and the extent to which architecture that is designed using this process facilitates connections between people and place.

3.02 (Top) Taeg Nishimoto’s Re-f(r)action installation.

3.03 (Middle) CJ Lim’s ‘Slow House’ occupying an artificial landscape.

3.04 (Bottom) Interior of Steven Holl’s extension to the Nelson Atkins Museum of Art.

Re-f(r)action

Taeg Nishimoto
New York, USA
1993

Description

Taeg Nishimoto's Re-f(r)action Installation (figure 3.06) "explored the idea of absence by translating simple movement into form." (Bonnemaison, 2009: p. 55-6). Nishimoto's tensioned poplar installation was built according to an initial sketch performed by Nishimoto as he moved through the intended gallery space (figure 3.05). Through the act of "weaving in and out of the rooms and around the suspended arcs, the viewer could feel the movements Nishimoto imagined when he drew his first sketch" (Bonnemaison, 2009: p. 56).

3.05 (Above) An initial sketch performed by Nishimoto as he occupied the gallery space.

3.06 (Right) Nishimoto's installation gives form to his sketch where people through suspended timber elements.

Extraction of Atmosphere

Nishimoto extracts atmospheric qualities of the gallery space through a representation of his movement within the existing gallery space. Figure 3.06 (previous page) demonstrates the paper sketch Nishimoto performed during his movement through the gallery. During this process the body and mind form a “resonating vessel” (Massumi, 2002: p. 28) where bodily interactions within an existing spatial milieu extracts atmosphere through a drawing notation.

Amplification of Atmosphere

Nishimoto engages with the notion of temporality, which is instrumental in developing ‘affective effect’ (Anderson, 2006: p. 736). This is amplified through the staging of different movements over time and the compatibility of different materialities (Zumthor, 2006: p. 23-45). The tensioned wood amplifying the artist’s dynamic movement through the gallery; and the contrasting passive white walls of the gallery amplifies these atmospheres compelling people to move and experience the space in a particular way.

Occupying Atmosphere

Nishimoto’s process of amplifying atmospheric qualities has, through affect, the potential to develop an awareness for our own bodily experience. Experiencing atmosphere and developing a connection with a place occurs over time in this installation in a reciprocal relationship between subjects and objects (Bohme, 1993 qtd in Anderson, 2014: p. 153). As the journey through the installation unfolds and different affects are experienced, through material tonality, the staging of different movements and levels of intimacy, the body consequently experience physical and psychological transformations.

Conclusion

Nishimoto’s approach is important because it considers an alternative politics of the body. By amplifying the “...sense of spatial dynamism, tectonically, tangibly and, conceptually...” (Dessauce, 1999 qtd in Bonnemaïson, 2009: p. 56), Nishimoto’s constructed journey facilitates affect, developing awareness between people and their surrounding environment. The boundary condition between subjects and objects is amplified through occupation and engagement because architectural conditions stage particular tacit atmospheric qualities.

3.07 (Top Right) Atmosphere is present in the installation through the staging of different movements and material compatibility.

3.08 (Bottom Left) Tensioned poplar elements weave through the gallery space directing the movement of people and occupation of atmosphere.

3.09 (Bottom Right) Drawing in plan of Nishimoto's installation in relation to the form of the gallery space.

Guest House

CJ Lim - Studio 8 Architects
Artificial Landscape, Japan
1995

Description

CJ Lim's 'Guest House' is a project that speculates on body and place relations through representation. A representational project was chosen because it reflects the speculative design research conducted in this thesis. Lim uses an approach where the forms of the house are in a constant state of flux and have the potential to change depending on the internal programme provided by the occupant and the exterior environment (figure 3.10). Consequently, concepts of the body, landscape and architecture form a single dynamic process of becoming where atmospheric qualities are extracted, designed and occupied simultaneously. Through this process Lim seeks to question and blur the boundaries that exist between the body and architecture, and between body and place. In this example 'place' takes the shape of an unfamiliar landscape, where different atmospheric qualities of site are extracted to generate diverse formal outcomes (figure 3.11).

3.10 (Left) Speculative dwellings exist through the dynamic relationship between site, form and occupant.

3.11 (Above) Drawing by CJ Lim demonstrating the form of a dwelling morphing as an occupant performs a movement through the site.

Extraction of Atmosphere

In 'Guest House' the extracted qualities that Lim uses to generate architectural form are based on the relative locations of forms within the imagined landscape. For instance, in figure 3.12 the form shown hovering above the surface of water is completely different to the form that is airborne. Specific qualities of this 'place' are extracted and directly translated into formal outcomes through sequential drawings and diagrams.

Amplification of Atmosphere

In 'Guest House' Lim establishes a design method that integrates body, place, and architecture in an innovative way. Lim may be dealing with a fictional topography, but ephemeral and atmospheric qualities are amplified through a process of drawing that records the affection of a body through an exchange with this envisioned landscape. Lim's drawings are representations of bodily movement and interaction within specific parts of the site through space and time (figure 3.14).

Occupying Atmosphere

Lim's 'Guest House' is not a built project, thus the occupation of atmosphere of a sensing body occurs through Lim's drawings. Drawing, as Mark Wigley expresses, becomes an 'atmosphere simulator' (Wigley, 1998: p. 27) where an observer occupies and inhabits the movements and the subsequent sequence of forms, generating diverse affects and emotional connections to place. The architecture of the 'house', and the occupation of atmosphere, affects and moves the observer in an interactive and dynamic dialogue that connects people, place and representation.

Conclusion

The idea of temporality is a fundamental part of occupation. It is through Lim's sequential drawings that the temporal relationship between a sensing body and the architecture of the 'house' can be observed and occupied through representation.

3.12 (Top) Lim's 'Guest House' occupies an imagined landscape. The forms of the house are in a constant state of flux responding to site conditions and the spatio-temporal movement of the inhabitant.

3.13 (Middle) The artificial landscape affects movement, occupation and experience. An ever changing pattern of movement generates a secondary topography that informs formal, spatial and architectural configurations.

3.14 (Bottom) Drawings show the process of 'extracting atmosphere', 'amplifying atmosphere' and 'occupying atmosphere' happening instantaneously. The occupation of atmosphere occurs through these sequential drawings.

The Nelson Atkins Museum of Art

Steven Holl - Steven Holl Architects
Kansas City, USA
2007

Description

The third case study that will be analyzed is Steven Holl's Bloch Building extension to the Nelson-Atkins Museum of Art, in Kansas City, USA. Reference will be made to Holl's watercolour studies and their translation into built architectural space. The architecture of the museum extension comprises of five built 'lenses' (figures 3.15 and 3.16) that "form new spaces and angles of vision" (Holl).

3.15 (Above) Steven Holl's Bloch building extension to the Nelson Atkins museum of art viewed from afar.

3.16 (Right) Synthesis of form, structure, materiality, light and space generates atmosphere within the building's interior.

Extraction of Atmosphere

Extraction of atmosphere through the manipulation of light is crucial in Holl's watercolour studies. In his drawings Holl uses a process of 'gathering' where three different types of light – reflected light, direct light and diffracted light through water lenses – are extracted (figure 3.17). For Holl "...light is a material" (Steven Holl: Spaces Like Music) that creates atmosphere in architectural space and prompts the body into altered states of experience (Stephens, 2007). Holl demonstrates the process of extracting the ephemeral quality of light through watercolour drawings that in themselves convey qualities of reflected, direct and diffracted light.

Amplification of Atmosphere

Holl uses watercolour drawings as a method for visualizing the architectural spaces in order to amplify atmosphere (figure 3.18). The careful treatment of light, particularly the soft light reflected onto the smooth curved plastered wall and the play between light and shadow, shown in the watercolour perspective and an image of a 'light lense' amplifies atmosphere, which is translated into a built architectural outcome (figure 3.19). As such, creating a singular density and mood of presence, well-being, harmony and beauty (Zumthor, 2006: p. 2 qtd in Anderson, 2014: p. 154).

Occupation of Atmosphere

Occupation of Atmosphere is spatial and temporal. Holl explains, "As you move your body through space, that's how you really register what an architectural space is...[e]xperiencing it as a sequence of space" (Holl, 2001 quoted in Wong, 2012: p. 275). Holl refers to a 'subject-object experience', which is critical to understanding the relationship between architecture and the people who occupy it (Wong, 2012: p. 274). There is more to architecture than function and pragmatism, it offers an avenue where occupation of atmosphere occurs through movement and interaction with space corporeally.

Conclusion

Holl's representation of the Bloch Building enables the consideration, and occupation, of atmosphere to facilitates relationships between people and place. In this public building architecture stages atmospheres that can be occupied and engaged with corporeally. The mediation of light is a crucial part of this relationship between natural and architectural bodies.

3.17 (Top) Watercolour drawing performed by Holl. The five 'lenses' exhibit the 'extraction' and 'amplification' of light diagrammatically in plan and section.

3.18 (Bottom Left) Watercolour study by Holl showing the envisaged interior of a light lense.

3.19 (Bottom Right) Diffused natural light filters through a light gathering lense into a gallery space.

Case Study Review

The three case studies analyzed – Re-f(r)action, Guest House and Nelson Atkins Museum of Art – range in scale from installations, domestic space and public architecture. Although the architectural instances used in this analysis might be exploring different problems or matters, they help to reinforce the case I have made regarding the relationship between atmosphere, architecture and affect. Throughout this case study analysis I have argued that the process of ‘extracting atmosphere’, ‘designing for atmosphere’ and ‘occupying atmosphere’ plays a fundamental role in generating architecture that has the potential to: firstly, affect bodily experience of space to speculate on the boundary condition between subjects and objects to design architecture of proximity rather than distance; and secondly, to facilitate relationships between people and place. The subsequent design phases of this ‘body-of-work’ will be informed by the methods these architects explore in generating architecture.

Chapter 4

The Place: Porirua

4.01 Boat sheds anchored along the shoreline at Paremata where the two flowings of Porirua harbour meet.

Introduction

In this chapter an analysis of Porirua will provide a background for the siting three design interventions. This discussion will explore firstly, the physical landscape of Porirua as a driver for design experimentation. Specific attention will be given to three sites that establish a threshold condition between land and the water of Porirua harbour. Secondly, the current social and cultural environment of the city will be reviewed to give context to subsequent architectural interventions.

4.02 (Top) Painting by Samuel Charles Brees (c. 1809-1865) of Porirua harbour viewed from Taupo Pa (c. 1843) in present day Plimmerton.

4.03 (Bottom) Painting by Samuel Charles Brees depicts the connection between land and sea in Porirua (c. 1842-1845).

Physical Environment

Located on the southwestern coast of New Zealand's North Island sits a naturally formed inlet, nestled between beautifully rolling hills and home to one of the largest remaining estuarine wetlands. The city centre of Porirua city can be found to the south of the Onepoto arm of Te Awarua-o-Porirua harbour. The name given by Kupe, the Polynesian navigator believed to have originally settled the area means 'The place of two flowing of the tides' referencing the waters that flow between the two arms of the inlet ("Porirua's History Pre-1840", 2009). Three sites located within this physical landscape are places where the tangible connection between land, water and people can be occupied and experienced (see figure 4.03, 4.04 and 4.05). Sites will function as places for 'extracting atmosphere' and as physical locations for siting architectural interventions.

Both Maori and European values were integral in developing the social, cultural and environmental landscape of Porirua. Historically, the livelihood of the Maori that dwelled in the Porirua basin was centred on their connection to the land and sea. Access to sustainable and abundant sources of food and water allowed Maori settlement to flourish. The entire region became a strategic location for trade and the cultivation of kumara and other vegetables (Penman, 2015: p. 15). The harbour waters and shoreline would have been teeming with life:

The first humans to settle on the shores of the harbours many hundreds of years ago would have found them to be an enormous food larder. In addition to the fish, shellfish were to be found around the shores. The bush, which reached the water's edge, was inhabited by many species of birds, and in prehistoric times moa roamed the Paremata lowlands ("Porirua's History Pre-1840", 2009).

4.04 (Top Left) Repairing and maintenance of Waka Ama canoes.

4.05 (Top Right) Abandoned boat shed in Onepoto.

4.06 (Bottom) The heart of Porirua looking towards Porirua stream.

1. Onepoto Boat Sheds

Te Awarua-o-Porirua
(Porirua Harbour)

2. Waka Ama Storage, Maintenance
and Launch site

Takapuwahia Marae

Elsdon

Porirua City

Porirua Stream

3. Porirua city centre

4.07 Map of Porirua highlighting three key sites for
extracting, amplifying and occupying atmosphere.

4.08 (Top) Map of boat sheds at Onepoto located north of the city centre.

4.09 (Middle) Map of the Waka Ama canoe storage, maintenance and launch site located east of Takapuwhia.

4.10 (Bottom) Map of Porirua city centre.

Social and Cultural Environment

Maori culture in Porirua depends greatly on the connection between the shoreline and waters of Porirua harbour to this day. The Ngati Toa, a Maori tribe led by their famous chief Te Rauparaha, that settled in Porirua between 1819-1820, built their settlement Takapuwahia close to the abundant shoreline in present day Elsdon (see figure 4.06) (Maclean, 2007: p. 14). The Ngati Toa also carry on the proud tradition of Waka canoe building through Waka Ama racing. One site in particular for the storage, repair and launching of these vessels is located just East of Takapuwahia (see figures 4.06 and 4.08).

European settlement of the region after 1840 saw changes to the social, cultural and physical landscape of Porirua. Until the 1950's Porirua existed as a small town occupying the original landscape. However Neil and June Penman note, in the month of June 1959 approval was granted to construct the Porirua Town Centre. The official plan was to design Porirua to be a “self-contained entity, complete with civic and administrative agencies, shopping, cultural and recreational facilities for the planned population target of 70,000 people” (Penman, 2015: p. 117). Before construction commenced the landform that Porirua village and the Takapuwahia marae occupied was a constantly flooded marshland through which the Porirua stream meandered until it met the harbour. To avoid future flooding issues Porirua stream was straightened, and to ensure heavy commercial buildings had solid ground for foundations planners raised the level of the terrain one to two metres in depth with heavy material, radically altering the physical and cultural landscape (Penman, 2015: p. 118). Extensive land reclamations of 46.5 hectares at the south end of the harbour extended the usable land area for civic development (Penman, 2015: p. 119). ‘Big box retail’ and Whitireia tertiary institution now occupy this area of the city centre.

4.11 Map of Porirua during extensive land development and reclamation (c. 1962).

The motivation for this design-led research thesis is centred on the effect that this large scale planning and development has had on Porirua as place and the connection that people experience within the built environment. In creating a ‘self-contained entity’ the city and its architecture has turned its back on the harbour and the qualities that contribute to the unique character of the place. The design interventions in the following design chapters intend to redirect the focus of Porirua and its people back to the harbour through architecture’s amplification of atmosphere.

Chapter 5

Installation

5.01 Waka Ama canoes sit quietly on the shore of Porirua harbour.

Introduction

The following chapter is the first of three design phases that explore how relationships between people and place can be amplified through architectural intervention. Design for this installation began with an investigation that explored a process of extracting, recording and amplifying ephemeral and atmospheric qualities of three sites within Porirua City. This chapter will be presented as five iterative design explorations. These include; first, the testing of drawing as a method for extracting ephemeral and atmospheric qualities of place through occupying and experiencing specific sites in Porirua. Second, a series of drawing notations were developed that use Peter Zumthors atmospheres as a conceptual base. This exploration tests another drawing method that extracts and amplifies ephemeral and atmospheric qualities. Third, the process of collapsing extraction notation into a single compositional field that maps relations of affective force. Finally, the fourth and fifth explorations investigate the physical act of making an installation which transforms two-dimensional extraction notation into formal and spatial entities where atmospheric and ephemeral qualities are occupied temporally by way of the body.

Aim

The aim of this phase of design is to investigate through design-led-research how an architectural intervention at installation scale can extract and amplify a sense of 'place' within the built environment of Porirua City.

Method

Methods in this section include drawing, collage and physical modeling were predominant in the following explorative design process. Exhibited in this chapter are five explorations that demonstrate the application of these design methods within a design-led research methodology. Mark Smout and Laura Allen advocate for a process of design that “requires the development of a new working methodology that is as adaptable and varied as the landscape it investigates” (Smout and Allen, 2008: p. 1). Moving between analogue and digital methods and techniques is vital for speculative design enquiry of this nature. A series of design explorations extract and amplify atmospheric and ephemeral qualities of place. These include (in chronological order) serial drawing, extraction notation, mapping, and spatialization. Through tracing Bob Sheil it is found that:

Visual representation by means of drawings and models is a fundamental mode of design enquiry that provides, in varying degrees, a register of the investigation, the object of the investigation and its product. Drawings of this kind are not necessarily intended as an end in themselves; instead the drawing is a tool for the creative process from which things begin to take form (2008: p. 82).

This chapter explores a generative process that transforms ephemeral qualities of place into representational drawing notations that can be occupied and experienced. The process for each exploration is described alongside visual representations of design outcomes which provide a progression that can be viewed and critiqued to inform subsequent design decisions.

Exploration 1

Extraction of Atmosphere

The first exploration tested drawing as a method of extracting and amplifying ephemeral and atmospheric qualities of places within Porirua. A process of extraction began by occupying each of the three sites and recording serial trajectories (figure 5.02). Serial perspectives are temporal in that they depict the view of the observer during a movement through the site over time. Each sketch denotes a particular threshold or moment of pause where atmospheric and ephemeral qualities of site are experienced. Serial perspectives are shown in relation to a diagrammatic site section that demonstrates the journey between land and water in each case mediated by built form.

5.02 The atmospheric and ephemeral qualities of three sites in Porirua are extracted using serial perspective sketches drawn in relation to longitudinal site sections.

Exploration 2

Extraction of Atmosphere

The second design exploration looked at the extraction of ephemeral and atmospheric qualities of place through generating a series of drawing notations. Notations use Peter Zumthor's atmospheres including "Qualities of Light", "Tension between Interior and Exterior (Thresholds)", "Levels of Intimacy", and "Between seduction and composure" (Zumthor, 2006: p. 44-61) as the conceptual basis for generating these representations. Thus, through developing a method for extracting and formally recording site qualities "a "syntactical" approach develops operational procedures towards a formal architectural grammar, driven by logic and a sequence of rational, formal operations... "notation," "index," and "diagramming," structure relationships through abstract means, implicating spatial composition indirectly while supporting a range of ideational, conceptual and perhaps even temporal frameworks" (Kulper, 2013: p. 272). Bernard Tschumi has a similar opinion and believes the purpose of notation is to understand such things as experience, time, movements, intervals and sequences. For Tschumi notations that explore these aspects of a place arise from "...a need to question the modes of representation generally used by architects: plans, sections, axonometrics, perspectives" (Tschumi, 1981: p. XXIII). The notations used in this project, are the result of adopting specific methods used by architects such as Perry Kulper and Bernard Tschumi. Analogue drawing explorations are developed using photography, collage, drawing and diagram (see figures 5.03 – 5.06).

5.06 Drawing notation represents levels of intimacy. Diagrams and drawings explore and record the organization of intimate moments in each site. Recorded events are mediated by built form and the occupation of the threshold between land and sea.

5.05 A negative-positive collage represents the extraction notation for the qualities of light experienced within each site. Complex geometries show how different qualities of light and shadow are created through the interaction with built form within each site. The negative region represents the forms found within each site that light interacts with, while light areas show how these forms alter the light qualities.

5.04 Drawing notations explore the tension between interior and exterior. Different qualities of line and tone create texture and materiality in these drawings. Here, the atmosphere of specific threshold conditions such as the movement from land to water, the relationship between a craftsman and a vessel, or progressing from enclosed to open space are extracted and represented analogously through drawing notation.

1

2

3

1

2

3

1

2

3

1

2

3

5.03 A notation was developed where atmospheric and ephemeral ‘events’ are transformed into diagrammatic sequences. Photographs correspond to a diagrammatic representation of the site and the event that occurred. Each sites is a stage where movements transpire and contribute to the atmosphere of place. The diagramming process used by Bernard Tschumi in his *Manhattan Transcripts* (Tschumi, 1981: p. 16-23) was a precedent for this extraction notation.

Exploration 3

Amplification of Atmosphere

The third exploration investigates the implications of collapsing and mapping the previously extracted notations into a single compositional field of place relationships. By using a similar approach to Perry Kulper, the collapsed drawing shown here (figure 5.08) employs a number of specific tactics, through the medium of drawing, which oscillate between concrete spatial proposals and notations for further development (Kulper, 2009). The process of overlaying extracted notation maps connections and relationships for design in a visual representation. Unlike a diagram, which is often explicit in the idea it conveys, this drawing overlays and superimposes multiple diagrams simultaneously that communicate information at multiple scales.

5.07 (Above) Diagram shows the ‘collapsing’ of extracted notations.

5.08 (Right) Extracted notation is collapsed into a single compositional field of atmospheric place relations.

Exploration 4

Amplification of Atmosphere

The fourth design exploration investigated a technique for spatializing extracted notations. This was achieved by laser cutting extracted geometries from 3mm sheets of clear acrylic. The layering up of these extracted geometries produced formal outcomes that generated new and unexpected material qualities (figure 5.10). Photographs were taken to capture light qualities that occur as a result of reflection and refraction of light through the irregular surfaces and geometries of these forms.

5.09 (Left) Diagram of extracted geometry demonstrates the intention was to spatialize the drawing horizontally rather than to layer vertically.

5.10 (Above) The irregular geometry of clear acrylic forms amplifies light through reflection and refraction.

Exploration 5

Occupation of Atmosphere

In the previous design exploration the amplification of reflected and diffracted light was explored through layered acrylic models, but the main problem with this outcome was how to generate a spatial experience of these qualities. This exploration investigated a second method for making the extraction notations spatial and occupiable. Drawing notations from the second exploration were formed into a series of transparent panels. Notations were printed onto transparent acetate and inserted between two 3x594x390mm clear acrylic panels which stand vertically (see figure 5.11). Each panel displays a specific extraction notation in a way that introduces temporality to the drawings due to the spacing out of the notations in a linear arrangement. The result is installation that allows people to occupy and experience atmospheric and ephemeral qualities of Porirua through visual representation (figure 5.12).

5.11 (Left) Diagram showing the construction and organization of the installation panels.

5.12 (Right) Installation panels are organized in a linear array to create a spatial and temporal experience. The relationship between a natural body and the installation is facilitated through the amplification of atmosphere in the notation.

Design Evaluation

This design chapter follows an iterative process that explores methods for extracting atmosphere, designing for atmosphere and the occupation of atmosphere. The value of this process is in the creation of a drawing method for extracting and representing atmospheric qualities of places within Porirua. In designing for atmosphere, attempts were made at translating these representational codes into formal and spatial environments where physical modelling tests aided in these explorations. Two different approaches were explored to give spatial qualities to the drawings. One exploration looked at the extrusion of geometric forms in clear acrylic, whereas the other exploration places the drawings between sheets of clear acrylic which are separated linearly as to facilitate occupation. The problem with this approach is this outcome does not culminate in a strictly architectural installation where the atmosphere of the drawings is experienced as opposed to occupying the atmosphere of an installation that has form, space and materiality. It would have been useful to have developed the form extrusion method to generate an installation at a 1:1 scale in order to examine the occupation of atmosphere. This way atmospheres such as qualities of light and the tension between interior and exterior could have been amplified and experienced to a greater extent. To begin the next design iteration the panels will be used as devices for actively engaging with and occupy the atmospheric and ephemeral qualities of each site.

5.13 Atmosphere extraction notation for 'levels of intimacy' printed onto textured paper and photographed in natural light.

Chapter 5

Domestic

6.01 An abandoned boat shed in Onepoto looks out over Porirua harbour.

Introduction

This chapter is the second of three design phases that explores how relationships between people and place can be facilitated and amplified through architectural intervention. Design for this domestic intervention came about through an initial exploration of extracting, recording and amplifying ephemeral and atmospheric qualities of three sites within Porirua City using the installation from the previous iteration as a tool for design generation. In each of these sites attention will be given to the threshold condition between land and sea, where the means of experiencing atmospheric and ephemeral qualities are mediated through different forms of built environment. The main body of this chapter consists of the presentation and discussion of explorative design actions for the development of domestic scale architectural interventions. These interventions are designed through a process of amplifying atmospheric and ephemeral qualities within the threshold condition of each site. Architectural elements such as form, space, materiality and programme are used to generate atmosphere, which in turn amplifies the relationship between people and place. The chapter will conclude with a discussion that evaluates the strengths and weaknesses of both the design methods that were used and architecturally designed outcome. Furthermore, the evaluation will be used to determine a course of action for an architectural intervention at the Public scale.

Aim

The aim of this phase of design is to investigate through design-led-research how an architectural intervention at domestic scale can extract and amplify the essentially qualitative characteristics that belong to ‘places’ (Malpas, 2014: p. 4) within Porirua City in order to strengthen relationships between people and place.

Method

Methods of analogue drawing, superposition, physical and digital modeling, narrative and hybrid drawing (combination of digital and analogue) were implemented in this design iteration. Six explorations demonstrate the “...awareness of varied design methods...” (Kulper, 2013: p. 271) where the active dialogue between analogue and digital design methods plays an integral part in generating architecture.

At the outset this methodology is conducted through analogue techniques, including notation generation through drawing and physical modeling through folding. Shifting into the digital modeling program Rhinoceros further developed the architecture of the house. Digital modeling used in conjunction with analogue drawing and narrative helped to develop programmatic requirements for each house in relation to specific site qualities.

Exploration 1

Extraction of Atmosphere

In this exploration the extraction of ephemeral and atmospheric qualities of sites began by occupying and engaging with each site through the installation that was generated during the first design iteration. The panels became a device for ‘filtering out’ and extracting ephemeral and atmospheric qualities of each site. Photographs were taken through the panels as a way of experiencing each site. This technique draws from the design work of Smout Allen where models are transported to site to document certain qualities and characteristics. For example, in their Retreating Village project “...instruments were devised that could expose the nature...” of an ephemeral environment (Smout, 2008: p. 83). Instead of capturing qualities of site through regular photography, this approach yielded interesting and unexpected visual results that are event recordings from each site (figure 6.02). Following this active site reading a series of drawing notations based on the two-dimensional compositional studies trace and extract atmospheric and ephemeral qualities of Porirua (figure 6.03). Drawing is the primary method of extracting ephemeral and atmospheric qualities of each specific site. Three sites (figures 6.04, 6.07, 6.10 and 6.13) in Porirua will be the subjects of further examination during this exploration. Drawn notations are once again based on two of Peter Zumthor’s atmospheres which include ‘Qualities of Light’ (2006: p. 56-63) and the ‘Tension between Interior and Exterior (Thresholds)’ (2006: p. 44-49). A notation or trace was generated from each event composition where events, or singular moments associated with a certain program, are recorded without employing functionalist forms of notation. Thus, the notations exhibited here (figures 6.03) attempt to question preconceived meaning given to particular actions and experiences of these sites (Tschumi, 1981: p. xxiii).

6.02 Event recordings extract atmospheric qualities from sites in Porirua.

6.03 Drawing notations trace qualities of light and the tension between interior and exterior within four unique sites that occupy the boundary condition between land and sea.

1

2

3

4

a

b

a'

b'

6.04 (Top) Site plan locates where extraction took place in Porirua's city centre. The point of extraction took place in the threshold between the urban fabric of Porirua and Porirua stream.

6.05 (Middle) Site plan locates the point where extraction happened in this Waka Ama repair, storage and launch site on the shoreline of Porirua harbour.

6.06 (Bottom) Site plan locates where extraction emerged within a specific point near the Onepoto boat sheds.

6.07 Extraction notation draws out moments where light interacts with the site. Extraction was conducted at 10:00 in the morning.

6.08 Compositional study records the relationship between the extraction panel and qualities of light at Porirua stream.

6.09 Extraction notation generates a series of light thresholds through the use of line and tonality.

6.10 Compositional study records the relationship between the extraction panel, qualities of light and forms within Porirua's city centre.

6.11 Notation is generated that uses a figure ground method of representation to record the form and geometry of threshold conditions.

6.12 The tension between interior and exterior is recorded through a compositional study created by occupying a waka ama canoe storage, maintenance and launch sight in Porirua.

6.13 Different qualities of line and tonality are used to generate a notation for representing the tension between interior and exterior in this site.

6.14 Atmosphere is extracted through the tension between interior and exterior where boat sheds at Onepoto occupy the threshold between land and the waters of Porirua harbour.

Exploration 3

Amplification of Atmosphere

The second exploration began with an investigation into the method of superposition, which assisted in a form finding process. There are a number of terms associated with superposition that must first be discussed; these include trace, index and codex. Peter Eisenman understands an index to be the trace of an event that bares both a physical and temporal relationship to its referent:

...indices are physical marks, traces, imprints or clues concerning some real event rather than a transcendental truth or signified...[W]hether as a palimpsest, a photograph, or a cut in a building, indices are precise records of former presences... (2007: p. 134-147)

A series of codices (Coded Indices) in the form of drawn notations were developed during the previous iteration that generate meaning and signification through code as opposed to language. “In this sense codes operate differently from ordinary language usage (excluding poetic and literary forms) because they have a different interiority, a different relationship of sign to signified” (Eisenman, 2007: p. 144). Superposition thus introduces a generative or transformative agent to the diagrammatic strata of the codex. Eisenman refers to superposition as a “...coextensive, horizontal layering where there is no stable ground or origin, where ground and figure fluctuate between one another” (Eisenman, 2010: p. 96). The process of superposition (figure 6.16) is transformative in that it facilitates a transition from coded index to an intermediary stage for form generation.

1. Initial atmosphere extraction notation.

2. Line tracing of the threshold condition between land and sea.

3. Superimposition of form generated from line tracing.

4. Rotation and Superposition generates a formal agent.

5. Superposition is transformative process where figure and ground oscillate to become a formal agent.

1

2

3

6.16 Superposed forms are generated with respect to the three sites in Porirua.

Exploration 4

Amplification of Atmosphere

The third design exploration investigates how physical modeling through the method of folding can generate formal and spatial outcomes. Following on from the previous exploration, the superposition studies are used to generate three-dimensional formal studies (figure 6.19). This process was completed twice for each site. A superposition study was chosen and traced manually onto plain white card. The traced superposition was then removed from the card using a craft knife. Scoring and cutting specific internal lines allowed the two dimensional trace to be folded which could generate new spatial forms. See figure 6.18 for images of this process.

6.17 (Above) The transition from superposed agent to physical three-dimensional form happens through cutting and folding white card.

6.18 (Right) Two physical models are generated for each site. Models are photographed objectively using eight intervals of directional light.

0600

0800

1000

1200

1400

1600

1800

2000

6.19 (Above) The initial notation that records the extraction of atmosphere in Porirua's city centre.

6.20 (Right) Close up perspective of the third CBD model exhibiting qualities of light and threshold conditions created through the method of folding.

6.21 (Above) The initial notation that records the extraction of atmosphere at the existing Waka Ama canoe storage and launch site in Porirua.

6.22 (Right) A close up perspective of the first model created for this site explores through the process of folding the amplification of qualities of light and threshold conditions.

Exploration 5

Amplification of Atmosphere

The method of narrative was introduced to develop spatial, architectural and atmospheric qualities for the models generated in the previous exploration. Narrative was able to introduce a specific programme or use associated with each narrative to assist myself, as the designer in “making wise concrete decisions about complex and abstract phenomena” (Ganoe, 1999: p. 2). During this exploration three narratives related to each site were chosen where a specific character was used to develop formal, spatial, material and atmospheric qualities of each ‘house’. The application of this method requires the house to be understood as a mechanism of representation (Wigley, 1993: p. 163). Each house, depending on the site, becomes an instrument for representing the associated narrative through architecture (figure 6.22). One character and their narrative is determined for each site, these are:

Site 1: Drifter

Site 2: Boat Builder

Site 3: Poet

Design provides the visual context for meaning to be expressed and experienced (Bruner, 1991 qtd in Ganoe, 1999: p 6-7). The process of augmenting semiotic and phenomenological domains of ‘place’ experience was iterative and conducted through drawing iterations.

6.23 Iterative drawing tests develop formal, spatial and atmospheric qualities of the speculative ‘dwellings’ in relation to the initial form, specific narrative characters and site dynamics.

Exploration 6

Amplification of Atmosphere

The fifth exploration was conducted in conjunction with the narrative studies. The importance of iteratively testing the placement of the dwellings on their respective sites is critical in terms of developing programme, materiality, atmospheric qualities and the relationship to land, harbour and existing built form. Moving between the methods of digital modelling and analogue drawing is an essentially part of this exploration. The use of light as a driver of design became an important way of developing form and space. Following Holls process, analogue drawing enables form to be developed quickly, through which a process of “...weaving form, space, and light, architecture can elevate the experience of daily life through the various phenomena that emerge from specific sites, programs, and architecture” (Wong, 2012: p. 274). Light is an unambiguous phenomenon and modifies experience depending on the specific place and the means through which it is influenced.

In each site three domestic iterations are generated based on the location, context, narrative and scale of occupation:

Site 1: Porirua City Centre to Porirua Stream (figure 6.23)

Site 2: Whitireia Waka Shelter and Launch Site (figure 6.24)

Site 3: Onepoto Boat Sheds (figure 6.25)

Three experimental dwellings were designed, however the house for a poet in particular was subject to more extensive development. In this case, the Poem “Wavesong” written by New Zealand Poet Sam Hunt was used as a semiotic for place that is represented through the interior architecture of the house. Hunt’s repetition of the line “I want to come back as a wave” signifies his relationship to Porirua and gives meaning to occupying the threshold condition between land and sea.

6.24 (Top) Diagrammatic site section from Porirua city centre to Porirua stream.

6.25 (Middle) Diagrammatic site section of the Waka Ama canoe storage, maintenance and launch site.

6.26 (Bottom) Diagrammatic site section of an abandoned boat shed in Onepoto.

1

2

3

6.27 Iterative drawing tests explore the architecture of the 'drifter house' in order to amplify atmospheric and ephemeral qualities of place, in particular 'Qualities of Light' and 'the tension between interior and exterior'.

6.28 The architecture of the 'boat builder house' is designed through iterative drawing to amplify atmosphere. The speculative dwelling explores the occupation and inhabitation of the threshold between the reclaimed land of the canoe site and Porirua harbour.

Wavesong

I want to come back as a wave
that in summer breaks in on beaches
full of people and fibrolite baches;
stroke delicate down, slowly
slip off your tiny bikini.

I want to come back as a wave
That scatter among the bathers
Go down as they come up for breathers
Splatter and spume at their ankles
Make every body beautiful.

I want to come back as a wave
so always near, so out of reach
so when they run back up the beach
their glowing bodies fading home
my salt will still be upon them.

I want to come back as a wave
that in winter moves on.
No one will know where I'm gone.
I will cruise some desolate part
Say Shag or Puysegur Point.

I want to come back as a wave,
regather forces, spend myself;
in the spring, move in on estuaries
attend to the mating of sting-rays –
tidal, lengthening days.

I want to come back as a wave.
And though I love the estuaries,
bare coasts and autumn memories –
I want to lift you now and float you
as you, too, come as a wave.

Hunt, 1985: p. 68-9

1

2

3

6.29 The 'poet house' is explored through three iterations within this site in relation to a poem written by New Zealand poet Sam Hunt. Stanzas in the poem talk about the experience of 'coming back as a wave' in summer, winter, spring and autumn. This interpretation of the poem is expressed through drawing iterations that develop form, space, programme and materiality in order to amplify 'qualities of light' and 'the tension between interior and exterior'.

Exploration 7

Amplification of Atmosphere

The subsequent design exploration investigates the use of digital modeling software as a tool for developing a dwelling that would allow atmospheric and ephemeral qualities of place to be occupied. Three speculative dwellings each occupying a different scale of intervention within this site were modeled using the digital modeling software Rhinoceros and Grasshopper. The process of testing the architecture of each dwelling is presented through axonometric diagrams (figure 6.30).

6.30 (Above) Sections of each 'poet house' iteration.

6.31 (Right) Digital modelling iterations allow the architecture of the speculative dwelling to be developed at multiple scales.

1

2

3

Poet House

Occupation of Atmosphere

6.32 A site plan contextualizes the 'poet house'.

Poet House

Occupation of Atmosphere

Programme

1. Entrance
2. Summer Room
3. Winter Room
4. Spring Room
5. Autumn Room
6. Wave Room
7. Main Stair
8. Balcony
9. Writing Room
10. Lookout
11. Roof Lookout

6.33 (Top) Ground Floor Plan

6.34 (Middle) First Floor Plan

6.35 (Bottom) Second Floor Plan

Poet House

Occupation of Atmosphere

6.36 Longitudinal Section – Occupying the threshold condition between land and sea, the speculative dwelling extends out into Porirua harbour

Design Evaluation

First of all, 'Poet House' was designed using a process of extracting atmosphere, designing for atmosphere and occupying atmosphere. The extraction of atmosphere was performed through actively recording ephemeral qualities of places within Porirua, where the installation became a device to enable extraction and an active recording of site. Next, methods of drawing, superposition, physical modeling, narrative and digital modeling were tested iteratively in order to translate extracted place information into a designed architectural space. However, in designing an atmospheric interior journey of form, space and light the final dwelling has become disconnected from the site and place that aided in generating the architecture in the first place. In this respect the occupation of atmosphere is not being communicated in these images as clearly as possible. The presentation lacked a series of perspectival images that: firstly, demonstrate both the richness of multi-sensorial experience within Porirua; and secondly, enable different ways of looking that creates a feedback loop between occupants of the dwelling and Porirua as a wider contextually environment. Although the final architectural solution for this scale of intervention may not adequately address the relationships between people and place, the design explorations in this chapter demonstrate an iterative working process that can translate atmospheric and ephemeral qualities of place into architecture. This process will be explored further during the subsequent chapter of this thesis with awareness on refining methods and techniques. A greater level of attention will be given to generating an architectural solution that exhibits occupation and experience, and explores the feedback relationship between people, architecture and its

6.37 Atmosphere extraction notation for 'the tension between interior and exterior' printed onto textured card and photographed in natural light.

Chapter 7

Public Scale

Part 1

7.01 The threshold between Porirua's urban realm, the stream and the harbour.

Introduction

This chapter is the third design phase that explores how relationships between people and place can be activated through architectural intervention. Presented is the documentation of a third iteration of explorative activity where processes of extraction, recording and amplification allow ephemeral and atmospheric qualities of three sites within Porirua City to enrich and enhance the experience of place. Further attention will be given to the threshold condition between land and water, where the means through which the experience of atmospheric and ephemeral qualities are mediated through different forms of built environment. The main body of this chapter is an iterative process of explorative design activities demonstrating the development of a public scale architectural intervention, the outcome being a cultural centre for Porirua city. Due to the scale of this intervention there are moments where the scale of design development and experimentation will be shifted. The purpose of scaling down will enable the body and occupation to be considered with regard to testing the proposition. Atmospheric and ephemeral qualities, specifically qualities of light and the tension between interior and exterior, are amplified through the process of 'scaling down'. Design is focused on specific moments in order to develop the cultural centre as a whole. The architectural intervention demonstrates an amplification of light qualities and threshold conditions in order to facilitate the relationship between people and place. The chapter will conclude with a discussion that evaluates the strengths and weaknesses of both the design methods that were used and the architecturally designed outcome. As this is the final scale of intervention the evaluation will be used to determine the strengths and weaknesses of the process that was undertaken and to understand the potential application of this design-led-research.

Aim

The aim of this phase of design is to investigate through design-led-research how an architectural intervention at public scale, alongside a shifting scale, can extract and amplify 'place' within the built environment of Porirua City and ultimately strengthen relationships between people place.

Method

Methods of analogue drawing, superposition, physical and digital modeling, narrative and hybrid drawing (combination of digital and analogue) were implemented in this design phase. Six explorations demonstrate the application of these design methods where the active dialogue between analogue and digital design methods plays an integral part in generating architecture. The overlaying of drawings and Eisenman's superposition is further developed from chapter six. These methods are integral in translating extracted atmospheric and ephemeral qualities into proto-formal agents.

At the outset design exploration is conducted through analogue techniques, including notation generation through drawing and physical modeling through folding. Following these explorations came a shift into the digital modeling program Rhinoceros to further develop the architecture of the public building. Digital modeling in conjunction with analogue drawing and the application of narrative helped to develop programmatic requirements and to ensure that the building was grounded despite the speculative and experimental nature of the design process.

Exploration 1

Extraction of Atmosphere

During this phase of design the site was understood as a conceptual datum. Initially two historical site conditions were mapped together, the recorded topographical and urban landscape of Porirua from the early 20th century and the urban and topographical condition that exists presently. Using a process of superposition these ground inventions then became interchangeable integers for a new and emergent site condition blurring the relationship between figure and ground (Eisenman; 1999: p. 178).

7.02 Diagrammatic map of Porirua c. 1917 (left) shown in relation to a map of Porirua c. 2017 (right). The historical map is overlayed onto the current map to show the extent to which the physical landscape has changed.

7.03 Site plan of Porirua's city centre in relation to Porirua stream. This urban site will serve as a place for extracting atmospheric and ephemeral qualities and as the site for a cultural centre.

restaurant

Porirua Stream

Map Legend

- - - Existing vehicle parking
- /// Barrier between Cobham Court and Porirua Stream
- /// Buildings to be demolished
- /// Area for potential soft water treatment
- Existing public space
- Threat of continued pollutants entering Porirua Stream

Exploration 2

Extraction of Atmosphere

The second exploration involved investigation and recording of atmospheric and ephemeral site qualities through the use of a physical prototype model. The prototype was generated from the domestic scale design intervention that when placed within specific areas of the site extracted these qualities, in particular qualities of light and the tension between interior and exterior. Photography was the method of recording in this instance. As discussed previously, this process follows a similar working process used in Mark Smout and Laura Allens' Dunstable Downs Kite Farm project from their Landmarks series (Smout, 2007: p. 35). Following this exploration was a process of generating drawing notation based on the atmosphere extraction studies. Drawing is the primary method of extracting ephemeral and atmospheric qualities of each specific site. Four separate but linked parts of the site are the subject of further examination during this exploration. Drawn notation is once again used to record atmospheric qualities of each part of the site and "proceeds from a need to question the modes of representation generally used by architects: plans, sections, axonometrics, perspectives" (Tschumi, 1981: p. 9). By refining this drawing technique and comparing the qualities of light and threshold conditions at two different times of day (morning and afternoon) a more rigorous and thorough consideration of site qualities has influenced subsequent design actions.

7.04 (Top) A series of compositions record the process of extracting atmospheric and ephemeral qualities of place. The site was occupied at two times during the day with a physical model that registers changing qualities of light and tension between interior and exterior.

7.05 (Bottom) Drawing notations were generated from the extraction compositions. Different line types and variations in tone of the pencil and ink amplify extracted atmospheric qualities.

1

2

3

4

a

b

a'

b'

1a, 1b

7.06 Site map showing the location of atmosphere extraction.

7.09 The extraction of atmosphere was recorded in a visual composition while occupying this particular part of the site in the afternoon. Light bounces around the layers of acrylic creating an altered visual field.

7.08 A notation was derived from the composition using pencil and ink. Different line qualities and tonal variation register the atmospheric and ephemeral qualities of light and threshold.

7.07 The drawing notation was superimposed onto the original extraction composition to amplify atmospheric and ephemeral qualities. This experimental process allows the qualities of the drawing to 'filter out' and amplify certain parts of the composition, in particular the contrast between light, dark and the threshold between them.

3a, 3b

7.10 Site map showing the location of atmosphere extraction.

7.13 The process of extraction was used again, but through occupying a different part of the site. This particular extraction composition records qualities of light and the tension between interior and exterior in the morning. The way light is reflected and refracted through the model is noticeably more intense than in the previous extraction due to the angle of the sun at this time.

7.12 A drawing notation generates a trace that documents the intensity of light as it is reflected and refracted through the layers and planes of the model. Variations in line and tone of pencil and ink once again signify these changes in intensity and the subtle thresholds that transpire.

7.11 Through the experimental process of superimposition variations in light quality and intensity are amplified blurring the boundary between site and drawn notation.

4a, 4b

7.14 Site map showing the location of atmosphere extraction.

7.17 Another place within the urban site was occupied with the model allowing atmospheric and ephemeral qualities to be extracted and recorded. This part of the site focuses in particular on the qualities of light that transpire at the threshold between Porirua's urban realm and the water that flows through Porirua stream. The model registers the dappled light from the trees and the reflected light off the water's surface.

7.16 The atmospheric and ephemeral qualities that contribute to the sites threshold condition are translated into a drawing notation that augments variations in light, the geometry of the model and the physical topography of the site simultaneously.

7.15 The simultaneous augmentation of light, model geometry and topography are amplified through the superimposition of the extraction composition and the corresponding trace.

Exploration 3

Amplification of Atmosphere

In chapter six of this thesis superposition was an intermediary stage in a form finding process that transforms coded indices, or codices, into a more formal agent. A process of layering two-dimensional site topography with the atmosphere extraction codices resulted in the generation of complex diagrammatic strata (figure 7.19). This process draws on a design method used by Perry Kulper, which he refers to as a ‘strategic plot’. The strategic plot is a mapping device that records connections and relationships for design in a visual representation. Although this approach appears to do the same thing as diagram where diagrams are explicit in the ideas they convey, Kulper’s plotting device overlays multiple diagrams simultaneously that communicate information at multiple scales. In this case representational restrictions found in conventional drawing techniques are departed from (Kulper, 2013: p. 273; Vesely, 2004: p 349). The strategic plot (see figure 7.24 p. 183-4) is not yet architecture, however it is ‘architectural’ in the sense that a formal configuration will eventually be found. The plot is not a representation of architectural form or space, it is a representation of the parametres that will enable an architectural solution to emerge.

7.18 (Left) Diagram of superposition process for form-finding.

7.19 (Above) Superposition process. 1a-4a are diagrammatic representations of the original topography of Porirua (c. 1917) superimposed at one scale onto the existing urban fabric of the city centre. 1b-4b are drawing notations that represent the extraction of 'qualities of light' and 'thresholds' in each part of the site. In 1c-4c superposed topography diagrams are combined with extraction notations to generate formal moments for atmosphere amplification. 1d-4d are parts of a diagrammatic strata that communicates place information at multiple scales simultaneously.

7.23 An initial diagram is created that superimposes historic cartographic information including building footprints, roads, the original harbour shoreline and path of Porirua stream onto the existing urban condition of Porirua.

7.22 Notations that extract and record atmospheric qualities of light and tension between interior and exterior in this particular part of the site are brought together in a single coded index that represents atmospheric and ephemeral site qualities.

7.21 The superposition of the diagram in figure 7.23 and the coded index in figure 7.22 results in an intermediary stage that bridges between the 'extraction of atmosphere' and the 'amplification of atmosphere through design'.

7.20 This palimpsestic process of overlaying and superposition results in diagrammatic strata that sets up parametres for architecture that is emergent.

7.24 This process of superposing diagrammatic and extracted site information was conducted in four places within the urban site between the city centre (Cobham Court) and Porirua stream. Each part of the superposition possesses and displays a particular formal language that is a result of extracting and recording atmospheric qualities. The palimpsestic process of overlaying, drawing over and superposing results in a productive and generative agent that establishes the parameters for architecture to emerge.

Exploration 3

Amplification of Atmosphere

The subsequent design iteration involved giving three-dimensionality to the diagrammatic strata produced during the previous design exploration. Parametric digital modelling software was used during this form finding process where formal elements within the horizontal strata of the diagram were extruded vertically. This process follows Peter Eisenman's scheme for La Villette (figures 7.25 and 7.26) where the 'palimpsest and quarry method', gives form to a layered stratification of superposed drawings (Eisenman, 1994: p. 194). Geometry from the previous exploration was extruded in areas where form could amplify atmospheric and ephemeral qualities of place. Parametric modelling software converted the static and sharp geometry of the extruded forms into curved and dynamic forms that offered an enhanced instrument for the amplification and augmentation of light qualities and the tension between interior and exterior. In this experimentation the extrusion of formal elements was performed vertically, where the initial stratification was placed directly within the site in plan.

7.25 (Top Left) Superposition drawing by Peter Eisenman for his La Villette scheme is part of a form finding process that transforms historic cartographic information representing place into geometric and formal agents.

7.26 (Top Right) Exploded axonometric by Peter Eisenman exhibits the palimpsest and quarry method used to generate form the La Villette scheme.

1. Vertical extrusions.

2. Curved forms derived from extrusions.

3. Floor planes organized around curved forms.

7.27 An exploded axonometric diagram demonstrates the process for translating the diagrammatic strata of the superposition in figure 7.24 into a pseudo-spatial milieu that weaves through and interacts with the existing urban fabric of Porirua's city centre. Moments are formed where atmospheric qualities (qualities of light and the tension between interior and exterior) are amplified.

Exploration 4

Amplification of Atmosphere

A shift into drawing was made following the digital modelling explorations, which explores how architecture could be designed to amplify atmospheric qualities of place. Three areas within the spatial-formal milieu (figure 7.28) were concentrated on in this next phase of design iteration. Iterative drawing used in conjunction with programme was a technique for testing the material, spatial and atmospheric qualities for each part of the milieu. Three programmes were introduced into this milieu, these include: 1. *Community Theatre*; 2. *Public Gallery Space*; 3. *Waka Ama Canoe Building and Maintenance Space*. Two drawing iterations were conducted for each programme where indeterminate surfaces and extruded geometries are transformed into architecture. The community theatre will be a length of 20 metres from the proscenium stage (Aveline, 1999: p. 4). The layout of the gallery spaces will follow a linear procession that will “facilitate access to collections, information and museum services” (Matthews, 1999: p. 3). In this exploration more attention is given to the intermediary and transitional spaces between the theatre, gallery and canoe building spaces. Figure 7.29 demonstrates how drawing is used as a tool for developing architecture that can amplify qualities of light and the tension between interior and exterior.

7.28 (Above) Axonometric diagram of the pseudo-spatial milieu with section planes displaying the parts that are developed through drawing.

7.29 (Right) Drawings 1a-3b are sectional drawing explorations that translate the indeterminate forms of the pseudo-spatial milieu into architecture. Specific programmatic requirements are developed alongside the amplification of atmosphere. Transitional spaces are designed to amplify and augment qualities of light and the tension between interior and exterior.

1a

1b

2a

2b

3a

3b

7.30 Sectional drawing developing the architecture of the waka ama canoe construction and maintenance area. A single light shaft allows both light to filter through into each space and creates tension between interior and exterior. The architecture generates a constantly changing experience as the body moves through and senses variations in atmosphere.

Exploration 4

Amplification of Atmosphere

Drawing became limited in terms of its ability to develop how the form and materiality of these intermediary spaces could amplify qualities of light and the tension between interior and exterior. Physical modelling tests were used to test surface materiality in relation to the architectural forms generated in the aforementioned exploration. Six physical modelling tests were conducted where three material surfaces (white card, opaque paper, and wire mesh) are attached to two structural forms. Models are derived from the digital model and sectional drawing (figure) of the public building. Qualities of light are tested in relation to threshold conditions formed by the area of each surface and its materiality.

7.31 (Left) A sectional drawing through the community theatre exhibits three transitional spaces that augment and amplify qualities of light and the tension between interior and exterior. Each light shaft captures and manipulates light differently depending on the size of the penetration and the horizontal structure that intersects with them. Transitional spaces 1 and 2 funnel light into artificial canals that allow that allow water to meander through the building. This gesture amplifies the connection between people and place by highlighting a specific quality of Porirua stream before it was straightened.

7.32 (Above) Drawings were translated into physical models to test how the transitional spaces capture and manipulate light. Transitional space 1 was the subject of this exploration where two variables were tested and observed. These included 1. The size of the opening at ground level and 2. The materiality of the light shaft surface. Three surface materials were experimented with to explore the amplification of light: a. Solid white card, b. Semi-transparent paper and c. Metal wire mesh. Light from three different directions simulated the movement of the sun.

7.33 (Top) Light test model with a solid card surface.

7.34 (Middle) Light test model with a semi-transparent paper surface.

7.35 (Bottom) Light test model with a metal wire mesh surface.

7.36 Close up photograph exhibiting the interior of a light shaft model testing the wire mesh surface. The combination of form, structure and the mesh surface pattern create stimulating and affective qualities of light.

Exploration 5

Amplification of Atmosphere

Next methods of superposition, drawing and physical modelling were employed to unify the architecture of the public building and its encompassing urban environment. Previous design iterations have focused on developing the interior, but in doing so the architecture had become detached from the context through which it was generated. Diagrams generated during site analysis for the installation project were superimposed over plan drawings where the public theatre and the canoe building area (figure 7.37) intersected with the existing urban fabric. Superposed drawings were given three-dimensionality and spatiality through processes of folding certain elements and ‘pushing and pulling’ the contoured strata of each diagram vertically in relation to existing formal components (figure 7.38).

7.37 (Above) The process of superposing site analysis diagrams at this scale allowed the connection between the public theatre (Left) and the Waka Ama canoe building area (Right) and the existing fabric in each part of the site.

7.38 (Right) Superposed drawings were translated into space through physical modelling. Folding, pushing and pulling elements of each diagram developed a fluid and dynamic relationship between the site and the building’s interior.

7.39 Drawing iterations are performed palimpsestically by overlaying and 'drawing out' multiple projections simultaneously including plans, sections and perspectives.

Exploration 6

Amplification of Atmosphere

Another iteration of drawing explored the spatial development of the 'landscape' models (figure 7.40) of the previous exploration. Perspectival drawings produced in conjunction with two-dimensional projections of key spaces speculate on and develop the atmospheric qualities of architectural space (figure 7.41). In this case, drawing was an appropriate method for translating the indeterminate forms of the models into architectural space that considers form, structure, materiality, light, the tension between interior and exterior, and speculates on how this might be occupied and experienced.

7.40 (Above) The intersection between the fluid contours and the horizontal planes of the public building generate pockets of space that have the potential to become programmed and occupied space.

7.41 (Right) Drawing iterations explore the amplification of atmosphere through design. Qualities of light and the tension between interior and exterior provides the conceptual context to transform the model iterations in 7.40 into programmed space.

Exploration 7

Amplification of Atmosphere

After conducting a series of physical modelling and drawing explorations, the next step in the process was to re-introduce design through analogue experimentation back into the digital modelling environment of Rhinoceros and Grasshopper. Two key areas within the large scale milieu were focused on during this digital modelling exploration – these included a public performance space located in Cobham Court and a Waka Ama Canoe construction, repair and storage space located closer to Porirua stream. Digital modelling tools enabled the form, space, structure and materiality to be explored quickly and effectively. Figures 7.43 and 7.45 demonstrate the process through which digital modelling enabled architectonic design developments through physical modelling and drawing explorations to be organized and composed for the occupation of atmosphere.

7.42 (Above) Sectional sketch developing the architecture of the public performance space.

7.43 (Right) Axonometric diagram demonstrating the development of the public performance space through digital modelling software.

1. Horizontal floor planes
organized in relation to vertical
curved forms

2. Horizontal circulation (red)
shown relative to areas where
the new public theatre intersects
with the existing urban fabric
(yellow)

3. A public performance space
is designed to mediate between
the existing urban fabric of
Porirua and the public building
amplifying qualities of light and
threshold.

7.44 (Above) Sectional sketch developing the architecture of the Waka Ama canoe building and launch space.

7.45 (Right) Axonometric diagram outlining the development of the space that links between the interior of the building and the existing urban fabric of Porirua through digital modelling software.

1. Horizontal floor planes
organized in relation to vertical
curved forms

2. Horizontal circulation (red)
shown relative to areas where the
new Waka Ama canoe building
and launch space intersects with
the existing urban fabric (yellow)

3. A Waka Ama canoe buiding
and launch space is designed to
bring this cultural art and practice
into the urban fabric of Porirua
amplifying the relationship
between land, water and people.

Cultural Centre

Site Plan
1:1000

7.46 The cultural centre extends from Porirua's geographical centre (Cobham court) to the nearest body of water, the Porirua stream. Two extremities of the milieu are presented including a public performance space located in Cobham court and a Waka Ama canoe building and launch site found on the banks of Porirua stream. Both parts of this public building amplify atmospheric and ephemeral qualities of place through architectural gestures to enhance the relationship between people and place.

Cultural Centre

Public Performance Space

7.47 (Right) Plan of the public performance space.

7.48 (Below) Transverse section through the public performance space. Light shafts funnel light into the interior of the creating varying levels of intensity and tension between interior and exterior.

Cultural Centre

Waka Display, Construction and Maintenance

7.49 (Right) Plan of the Waka Ama canoe building and launch space.

7.50 (Below) Longitudinal section through the Waka Ama canoe building and launch space. A single light shaft allows light to filter through the building's interior illuminating the area where canoes are built and maintained before being launched into Porirua stream.

Cultural Centre

Interior Perspectives

7.51 (Above) Initial sketch of the envisaged public performance space.

7.52 (Top Right) Rendered interior perspective depicting the public performance space that acts. The interactions between bodies and architecture becomes a performance in itself.

7.53 (Bottom Right) Rendered interior perspective of the same public performance space but viewed from underneath. Light filters through the gaps in the elevated planes overhead.

Cultural Centre

Interior Perspectives

7.54 (Above) Preliminary sketch visualising the Waka Ama canoe building and launch space.

7.55 (Top Right) Rendered interior perspective exhibiting the space where canoe building and maintenance will take place. The act of making and repairing the Waka Ama vessels becomes a performance that the people of Porirua can experience.

7.56 (Bottom Right) Rendered interior perspective showing occupation of a transitional space. Light radiates from above reflecting off of the curved surfaces. Qualities of light and the tension between interior and exterior are amplified in this space.

Design Evaluation

The design explorations presented here exemplify an iterative architectural response to a methodology that enmeshes processes of ‘extracting atmosphere’, ‘designing for atmosphere’, and ‘occupying atmosphere’. The work generated in these explorations, along with design outcomes from previous chapters, was presented in the second of three reviews. The review was a positive experience that produced valuable critique and opened up avenues to promote personal reflection and foster development. The main critique of this design outcome was the scale and monumentality of the intervention in relation to the context. This could have been refined further by focusing on designing smaller scale interventions that developed more of a relationship with their immediate context to amplify atmospheric and ephemeral qualities. Rendering and post-production processes were intended to generate atmospheric drawings that exhibit occupation. However, the process of rendering two-dimensional and perspectival projections of the architecture in a digital environment resulted in a flattening of space and materiality. Photoshop was used to introduce site context, light qualities, materiality and occupation into the vignettes, yet the same atmospheric and ephemeral qualities that emanate from the texture of the diagram were not present in these edited renderings. The notion of place is an important driver for architectural design, except that the perspective vignettes presented focus too much on the interior and fail to exhibit the space in relation to place that the architecture is seeking to amplify. Exterior perspective images needed to be produced that exhibit occupation and inhabitation of the public building from street level.

7.57 Superposition drawing printed onto textured paper and photographed in natural light.

Public Scale

Part 2

The second part of chapter seven demonstrates iterative design explorations that took place between the August and November reviews. The processes of ‘amplifying atmosphere through design’ and ‘occupying atmosphere’ allowed extracted atmospheric and ephemeral qualities of place to be translated into a second public building. ‘Scaling down’ focused the design development of the Waka Ama canoe construction and launch space of the cultural centre.

7.58 A craftsman repairs Waka Ama canoes in an existing launch site occupying the threshold between the shoreline and the harbour.

Exploration 8

Amplification of Atmosphere

Following the August review I returned to the diagrammatic strata from earlier analogue drawing and superposition explorations (figure 7.58). Instead of extruding geometric elements in a digital environment to generate three-dimensional form, in this iteration form was given to the diagrammatic strata through the method of folding (figure 7.59). The process involved translating the geometry of the diagram analogously onto a material that could be folded, which in this case was white card. The process of folding created moments where the model intersected with the ground plane forming spaces that started to blur the boundary between designed forms and the site.

7.59 (Above) Part of the diagrammatic strata produced through the superposition of drawings and diagrams that extract atmospheric and ephemeral qualities.

7.60 (Right) The diagrammatic strata was transferred to white card and folded to generate form and space in a 1:200 model that amplifies qualities of light and thresholds. Formal variations in the model gather and manipulate light differently in a constantly

Exploration 9

Amplification of Atmosphere

Iterative drawing explorations allowed the spatial configuration of the first cultural design iteration and the spatial forms generated, as a result of folding and physical modelling, to be superposed and transformed. Programmatic requisites for a cultural centre that embraces socially and culturally relevant qualities of Porirua became spatial metaphors and spatial imaginations that transform “abstract space into partial spaces which can then be invested with signification” (Stjernfelt, 2004: p. 52).

7.61 (Top) Forms generated during folding were superimposed onto the plan and longitudinal section of the Waka Ama canoe building and launch space that was designed in part 1 of this design iteration.

7.62 (Middle) Programmatic requirements develop the spatial and architectural qualities of the cultural centre. Maori culture dictated that places of work needed to be spatially separate from places for preparing and consuming food. Therefore the area where the Waka Ama vessels are built and repaired is becomes indirectly connected to the cafe, kitchen and public toilets.

7.63 (Bottom) In the next iteration of drawing occupation is explored in relation to ‘threshold’ or ‘transitional’ spaces where atmosphere is amplified.

Exploration 9

Amplification of Atmosphere

In order to explore spatial signification further two key areas of the public building were physically modelled. The spaces chosen for this experiment represent interstitial space that explore how architectural form can become places where atmosphere is experienced through threshold conditions, qualities of light and surface materiality. Following Bohme, these spaces are attuned to immediately signify their in-between status:

We are dealing here with quasi-objective sentiments, with feelings that are suspended in the air. While one might be generally inclined to regard feelings as something purely subjective, internal to the soul, atmosphere is, by contrast, something external and thereby accessible to many subjects... (Böhme, 2014: p. 93)

Next, photographs were taken of each model to capture moments where light, threshold and material qualities coalesce. The images are overlaid with material qualities including different grades of concrete finish that create richness, density and presence. Through this process space is designed with a specific atmosphere that is a result of the form, surface, threshold and light coming together in a single observable architectural scene (see figures 7.64-67).

7.64 (Left) Initial sketch focuses development on a particular interior threshold space.

7.65 (Right) A 1:50 physical model developed the spatial and material qualities of a threshold space.

7.66 (Top) Light enters the space through the roof and filtered by a perforated skin leaving constantly changing patterns on the heavy concrete floor.

7.67 (Bottom) The junction between architectural elements results in moments where qualities of light are amplified.

7.68 Atmosphere is explored in this model through the synthesis of form, materiality, qualities of light and the tension between interior and exterior.

7.69 (Left) Moments where light is augmented and amplified relative to surface form and materiality.

7.70 (Above) A second threshold space was developed using a 1:50 physical model that tested formal qualities in relation to the materiality of architectural elements. A glazed skylight in the roof allows light to enter the space where it lands on concrete walls and floors. At certain times of the day light will be directed through the perforated skin causing variations in qualities of light, thus altering the occupation of atmosphere.

Exploration 10

Amplification of Atmosphere

The focus of design moved from the interstitial to areas of the public building that facilitate specific programmatic conditions and allow events to take place in space and time. Sophia Psarra tracing Hillier believes that “a building does not impinge directly on human behaviour,...but *through the realm of space and the variable of spatial configuration*” (Psarra, 2009: p. 236). In this exploration the combination of drawing and narrative informs the spatial configuration of an exterior space and an interior space that are linked through a threshold.

7.71 (Above) Perspective sketch envisages the exterior of the cultural centre.

7.72 (Top Right) Development of the threshold between an exterior landscape space and the interior of the cultural centre. Plans shown at two scales develop this connection by extending landscape elements from the exterior into the interior. A section shown alongside gives develops the connection to the ground and the geometry of the façade.

7.73 (Bottom Right) Development drawings of the space within the cultural centre for the construction, maintenance and storage of waka ama vessels. A plan develops the spatial planning and organization, while the section develops the relationship between the physical workspace, circulation and the main entrance into the building.

Exploration 10

Amplification of Atmosphere

Digital modelling tools in Rhinoceros and Grasshopper were again vital to testing and designing certain architectural elements with respect to surface treatment, materiality, threshold conditions and qualities of light. Three modelling tests were conducted where parametric modelling software in Grasshopper and Rhinoceros enabled the physical composition of particular elements to be tested. The results of this exploration are shown as three-dimensional diagrams that demonstrate the designed configuration and the effect on light qualities (see figure 7.24). A wall separating the Waka Ama Canoe Workshop and an interstitial space became the main area of focus for this design exploration.

7.74 (Above) Sketch drawing of an atmosphere amplification space where parametric modelling was used to test the treatment of the wall surface.

7.75 (Right) Three digital modelling iterations tested the threshold between the Waka Ama canoe construction and storage space and the atmosphere amplification space. 1. Solid concrete wall. 2. Perforated metal wall. 3. Partially perforated concrete wall. An axonometric diagram shows the relative location of this threshold in the cultural centre.

Porirua Cultural Centre

Site Plan
1:500

7.76 Site plan of a cultural centre for Porirua city. The public building occupies the threshold between the city and Porirua stream. The programme provides space for ceremonial waka display, a waka ama canoe storage and repair area, threshold spaces to occupy the atmosphere of Porirua, a café and flexible community spaces to hold public meetings, presentations or temporary exhibitions.

Porirua Cultural Centre

Ground Floor Plan
1:200

Programme

1. Waka Display
2. Waka Ama canoe storage and maintenance
3. Main Entrance
4. Indeterminate threshold space
5. Large community space
6. Small community space

7.77 Ground Floor Plan of the Porirua Cultural Centre.

Porirua Cultural Centre

First Floor Plan
1:200

Programme

1. Waka Display
2. Waka Ama canoe storage and maintenance
3. Main Entrance
4. Indeterminate threshold space
5. Large community space
6. Small community space
7. Streamside cafe
8. Crush space
9. Small community function space
10. Large community function space
11. Public toilets
12. Kitchen

7.78 First Floor Plan of the Porirua Cultural Centre.

Porirua Cultural Centre

Perspective Longitudinal Section

7.79 Longitudinal section through the Cultural Centre demonstrates constantly changing and augmented qualities of light and threshold conditions within the interior of the building.

Porirua Cultural Centre

Perspective Transverse Section

7.80 Transverse section depicts the occupation of atmosphere within the Waka Ama canoe construction, maintenance, and repair space in relation to wider context of Porirua.

Cultural Centre

Exterior Perspective

7.81 Exterior perspective approaching the Cultural Centre from Cobham Court.

Cultural Centre

Exterior Perspective

7.82 The exterior of the building merges with the surrounding landscape and context of Porirua.

Porirua Cultural Centre

Exterior Perspective

7.83 Exterior perspective exhibiting the amplification and occupation of atmosphere in three spaces within the public building.

Porirua Cultural Centre

Interior Perspective

7.84 Interior perspective of an atmosphere amplification space where qualities of light and the tension between interior and exterior are intertwined, enmeshed and occupied.

Porirua Cultural Centre

Interior Perspective

7.85 The Waka display space is located at the main entrance of the Cultural Centre. The glazed exterior wall allows light to enter the space and sets up moments for view both from within and outside the building.

Porirua Cultural Centre

Interior Perspective

7.86 The Waka Ama canoe construction, maintenance and storage space becomes a place of performance amplifying atmosphere and relationships between people and place.

Design Evaluation

The speculative design developed in this phase is a response to the challenge of facilitating and strengthening relationships between people and place. By introducing a programme that grapples with real and fundamental issues of community within Porirua, the ephemerality and atmosphere of connection between the water's edge, built form and the presence of an experiencing body continues to be an important aspect and driver for design experimentation. The result is a speculative building that accommodates activities relating to the construction, maintenance and display of Waka and Waka Ama canoes, and is simultaneously interspersed with intimate formal and material moments that amplify atmospheric and ephemeral qualities of place.

An ordered and structured approach to the design process was helpful in terms of working through the proposition. The extraction, amplification and occupation of ephemeral and atmospheric qualities provided a tangible framework that was referred to throughout the making process. Moving between methods of drawing and modelling to test design ideas and generate experimental architecture remains to be a vital and necessary driver for a design-led-research methodology.

During the final review of this project the theoretical field of Affect remains to be a problem in an architectural sense where the speculative public building was understood by the reviewers to be an attempt at 'building' or 'constructing' affect. This however, was not the intention. The project was not an attempt at creating a concrete or tangible representation of affect, but instead explores how an architectural intervention at the scale of a public building could affect relations between people and their connection to place. Rendered and photoshopped images present a relatively developed design that shows an attention to the structure, materiality and spatial organization. Yet, during the rendering and post-production process the images clearly lost the valuable atmospheric, ephemeral and material qualities that emerged through analogue drawing and superposition. In order to progress it may be useful to test how re-introducing drawing and superposition into these images could be used to amplify 'affective effect' within the architecture relative to people and place.

Chapter 8

Conclusion

8.01 Boat sheds at Onepoto lightly occupy the boundary between land and sea.

Discussion

This thesis explores how affect and atmosphere can activate and amplify the relationship between people and place by exploring qualities of light, the tension between interior and exterior and shifting scales in three architectural interventions. To explore this proposition the theoretical fields of affect and atmosphere were discussed. Research began by exploring notions of affect in architectural theory. Writings from Peter Eisenman, Jan Smitheram, Akari Kidd and Hélène Frichot were discussed to understand affect in an architectural context. The conversation then shifted to affect in cultural geography. The approaches to affect offered by Sara Ahmed and Deborah Thein provided the theoretical context to support the subsequent design-led research of this thesis. An exploration into atmosphere helped to connect notions of affect and emotion through the interaction between the body and architecture. From the context review came the process of ‘extracting atmosphere’, ‘amplifying atmosphere through design’ and ‘occupying atmosphere’ which provided the foundation for the analysis of three architectural projects: an installation (Taeg Nishimoto’s *Re-(f)raction*), a house (CJ Lim’s *Guest House*) and a public building (Steven Holl’s *Nelson Atkin’s Museum of Art Bloch Building Extension*). This framework assessed how atmosphere was ‘extracted’, ‘amplified’ and ‘occupied’ to strengthen relationship between people and place, even though the designers are not all intentionally looking atmosphere in their work.

An important part of this thesis was the relationship between architectural intervention and place. Preceding the three design chapters a brief chapter gave a background of Porirua's environmental, social and cultural context. The first scale of design intervention, an Installation, explored atmosphere through generating representations or drawing notations that could be occupied physically at a human scale. This installation was problematic because the atmospheric and ephemeral qualities that were extracted from specific places within Porirua were not explored in a spatial outcome. The occupation of atmospheres such as 'qualities of light', 'the tension between interior and exterior', 'levels of intimacy' and 'between composure and seduction' were not experienced by separating of the acrylic panels linearly.

The design process in this thesis was iterative, therefore the installation led directly into the design of a speculative dwelling by scaling up and structuring the process of extraction. To extract atmospheric and ephemeral qualities the panels were taken to each site and photographed through to generate different readings of each site. Through an iterative process drawing, physical modelling and digital modelling a speculative dwelling was generated that occupied one of the three sites that were used for extraction. The dwelling was a 'house for a poet' that occupied the threshold between land and sea extending out into Porirua harbour. Interior spaces were designed to amplify and augment qualities of light and threshold conditions as an occupant navigated through the dwelling. The house was not built, therefore the occupation of atmosphere had to occur through representation. Hand drawn plans and a longitudinal section were used to represent and 'simulate' (Wigley, 1998: p. 10) the variations in atmospheric qualities of light and threshold.

The design for a cultural centre in Porirua scaled up the process of ‘extracting’, ‘amplifying’ and ‘occupying’ atmosphere to the public scale. To extract atmospheric qualities of place in Porirua parts of the site were once again occupied and recorded through a physical model that was generated from the speculative dwelling. Drawing notations recorded atmospheric qualities of light and the tension between interior and exterior which focused on augmenting the boundary between the model, the occupant and the physical site. A process that moved fluidly between methods of analogue drawing, superposition and physical and digital modelling enabled the architectonics of the cultural centre to be tested and developed such as form, space, programme, materiality and structure. Two design iterations were conducted at this scale. The size and monumentality of the building resulting from the first iteration was an issue in terms of how the architecture responded to the immediate context, therefore the second iteration focused on re-testing a section of the building. This shift in scale resulted in the final architectural outcome for a centre that combines amenity for cultural practices and spaces for amplifying the relationship between people and place.

8.02 Notation drawing printed on textured paper and photographed in natural light.

Reflection

The 'extraction of atmosphere', 'designing to amplify atmosphere', 'occupying atmosphere' and the relationship between all three proved to be a vital process for testing and generating atmosphere in this thesis. Methods for extracting atmospheric and ephemeral qualities of place were conducted primarily through drawing. In each of the three architectural interventions specific notations were developed. Whether extraction took place through drawings on site, direct photography, or photography through a physical model, information from three specific places within Porirua was presented through graphic notations that eventually became the human scale installation, a speculative dwelling for a poet, and a cultural centre in Porirua. This active method of recording developed over the course of the three design projects and extractions became less arbitrary and more logical as specific atmospheric and ephemeral qualities needed to be explored.

Amplification of atmosphere was performed through iterative design methods including the 'strategic plot' (Kulper, 2013: p. 274), 'superposition' (Eisenman, 2007: p. 145-150), physical modelling through both extrusion and folding to generate form, and narrative informed programmatic requirements for the dwelling and the public building. Modelling provided a transformative process during each design iteration that bridged between two-dimensions and three-dimension. In the installation notations were given formal qualities through laser cutting which gave the two-dimensional geometries thickness and depth allowing the effects of light to be observed. This line of inquiry did not progress beyond this point, but further development could have produced a more successful installation for occupying atmosphere. At the domestic and public building scales folding was shown to be the more effective method for translating the diagrammatic strata of superpositions in formal and quasi-spatial outcomes. Folding was a more intimate process of making, where changes in how the card was manipulated and controlled had a direct influence on 'qualities of light' and 'the tension between interior and exterior'. Difficulty came in translating the formal and spatial characteristics of the folded physical

models into the digital modelling environment of Rhinoceros and Grasshopper. A process of rotating extruded elements in the digital space performed the same function as the physical modelling. Vertical extrusion in Rhinoceros was used in the first design iteration for the public building, but resulted in a building that was monumental and un-contextualized. This loss of a sense of scale was due to the scale-less digital space of the modelling interface. Drawing in conjunction with digital modelling in the final iteration ensured that the architecture of the house and public building was constantly developed and not lost in the digital space of Rhinoceros and grasshopper.

Atmosphere is occupied in each of the design projects through representation. In the final installation the occupation of atmosphere took place through observing the drawing notations that were conducted during the processes of extracting and amplifying atmosphere. This was problematic because the representations and the spatial arrangement of the drawings did not create an atmospheric environment for occupying such 'atmospheres' as 'qualities of light', 'the tension between interior and exterior', 'levels of intimacy' and 'between composure and seduction' that were extracted from places within Porirua. It would have been interesting to have explored further how the drawings could have become spatial to develop ways of influencing and affecting people. The 'Poet House' was a speculative design project, therefore the occupation of atmosphere took place through representations in the form of hybrid drawings that combined computer generated renders and analogue drawings. The architecture of the house was designed to amplify qualities of light through the treatment of thresholds within the interior space, but the drawings that were used to convey atmosphere presented the dwelling as an object in the landscape. Further development of the relationship between the landscape and the dwelling through perspective images would have helped to convey the occupation of this relationship through atmosphere.

During the public scale two design iterations were conducted that tested the occupation of atmosphere through a cultural centre. In the first iteration atmosphere was represented through computer rendered and photoshopped images. In these representations more attention was given to conveying occupation and inhabitation of significant spaces within the building through an introduction of a specific programme and building use. But, the absence of the context of Porirua in relation to people occupying these spaces of atmospheric augmentation did not effectively support the argument that the architecture could strengthen relationships between people and place. The second iteration of representations exhibited a cultural centre that was better integrated with the context of Porirua through exterior and interior computer rendered and photoshopped images. In this iteration analogue hand drawings were overlaid onto the renders to give the representations depth, texture and a sense that atmosphere was being amplified in these spaces. Atmosphere happens as a result of architectural representation being built, and in that respect the job of representation is to simulate the occupation of atmosphere. Due to the scope of this speculative design project, the final outcome could not be built. Therefore, a comparison could not be made between the atmospheric qualities that were represented through hybrid analogue and digital drawings and the actual occupation of atmosphere in a complete and functioning cultural centre.

8.03 Partial transverse section of the final Cultural Centre in Porirua. A computer generated render is overlaid with analogue drawings to give the image depth, texture and atmosphere.

Conclusion

This thesis has explored theoretical notions of affect and atmosphere to question the role of ephemeral and atmospheric qualities of a specific place in designing architectural interventions. Three scales of architectural intervention were tested using a design-led research methodology which employed methods and processes for the 'extraction of atmosphere', 'designing to amplify atmosphere', 'occupying atmosphere' and the relationship between all three. The purpose of this being to design speculative architecture that could facilitate and amplify relationships between people and place. At each scale of intervention attempts at occupying atmosphere through representation were made, however there were limitation to this approach. Hybrid digital and analogue drawings are able to suggest how the atmosphere may transpire through form, space, materiality, surface and qualities of light. Constantly evolving methods of bridging analogue and digital methods of drawing and representation is an important part of exploring atmosphere in a speculative and experimental design context. Continued research that investigates these tools for design in an architectural context will provide opportunities for atmosphere to amplify and strengthen relationships between people and place.

8.04 Tonal variations and qualities of line further speculate on the role of drawing and representation in amplifying and occupying atmosphere.

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Figure 4.02. ‘Brees, Samuel Charles] 1810-1865 :Porirua Harbour (Between 1842 and 1845)’. Drawn by S C Brees. Engraved by Henry Melville. London, 1847 [Plate] 35. From [Adapted from] *National Library of New Zealand*. Retrieved from website: <http://natlib.govt.nz/records/22338266>. (Accessed 18 January 2017)

Figure 7.25. ‘134, Office of Eisenman/Robertson Architects, Sketch plan showing angular relationship between La Villette grid and Canaregio grid of el structures, with the plan of Venice, between January 30 and August 1986. Red felt-tip pen on a photocopy on vellum, 43.2 x 28.0 cm’. From [Adapted from] *Cities of Artificial Excavation: The Work of Peter Eisenman, 1978-1988* (p. 212), by Jean-François Bédard (Ed), 1994: Centre Canadien d’Architecture.

Figure 7.26. ‘113, Office of Eisenman/Robertson Architects, Presentation Drawing: Exploded axonometric, between January 30 and August 1986. Transparent colored adhesive film with gold paint and silver adhesive foil on Photostat, 112.0 x 76.2 cm’. From [Adapted from] *Cities of Artificial Excavation: The Work of Peter Eisenman, 1978-1988* (p. 193), by Jean-François Bédard (Ed), 1994: Centre Canadien d’Architecture.