

# A PORTAL BETWEEN SPACES

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## ***T H R E S H O L D S***

Influencing Emotion, Mood,  
and Initial Perceptions  
/ **Victoria Young**





# **A Portal Between Spaces**

How does a thresholds influence on a user's emotion and mood change their initial perceptions between interior and exterior conditions?

A 120-point thesis submitted to the School of Architecture and Design,  
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Master of Interior Architecture

Victoria University of Wellington,  
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Victoria Young



*Pivot door - Custot Gallery,  
Dubai, U.A.E.*

# Acknowledgments

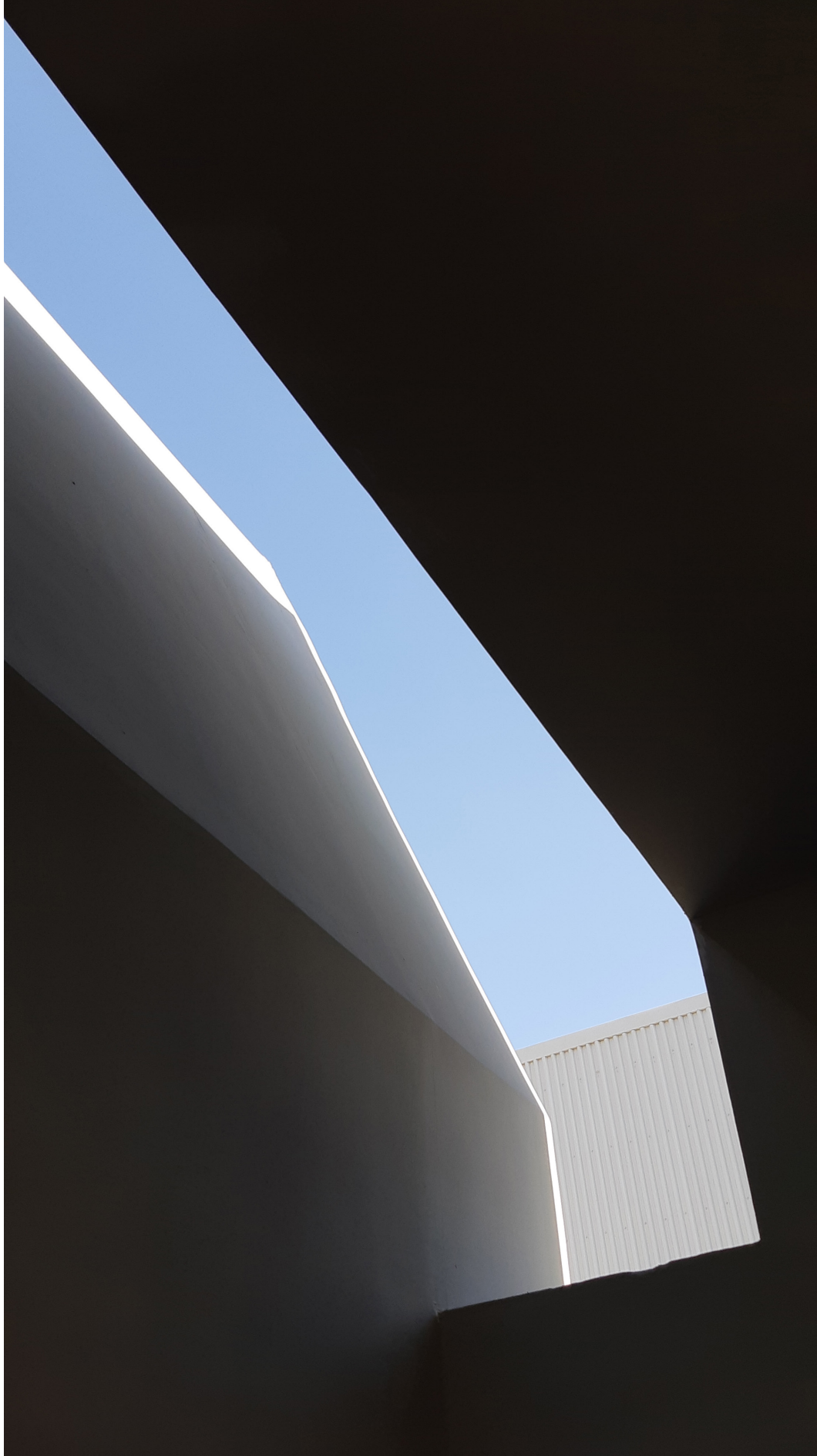
I would like to start by saying thank you to my supervisor, Nat. Your continuous support throughout my thesis has been unwavering, especially through the tough year it has been for me. The coffees and scones never failed to ease my stress levels during meetings, I could not have gone without them

Mum and Dad, thank you for your never-ending encouragement and support. You would always take the time to pick up the phone when I needed someone to talk to, always staying positive and uplifting when I needed it the most. Also, of course, thank you to my brother, just for being who he is.

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*Threshold Installation, Dubai,  
U.A.E.*







# Abstract

Thresholds are an inescapable part of the built environment. The tension created by a threshold is important to the success of the conditions on either side of that threshold. However, its importance is often overlooked for its contribution to the following space that is experienced.

The scope of research for this topic is to be defined as a public hotel buildings spatial threshold that user's walk through and physically interact with. Therefore, these will be the main entrances to buildings along with the changes in material conditions of flooring, walls, ceiling finishes. These will pertain to the interior to exterior and vis versa threshold of a building (residential and commercial). Due to the vastness of this thesis topic and how interiors can be classified, this topic has been simplified to not include landscape or urban interiors but review their role in threshold theory.

Thresholds possess the ability to change a user's emotions and control their perceptions of exterior and interior conditions (Prasetyo & Fuad, 2021). The design of these areas is crucial for the success of the building. There is limited discourse on the theory – namely Prasetyo & Fuad – behind the design and execution of thresholds

through the use of materiality in interior architecture. Expanding this research area would benefit those that design and use buildings, better ensuring the building is used to the full extent of its lifetime.

This thesis topic will use the Research Through Design methodology. Research consists of a literature review of peer-reviewed sources and a precedent review through architecture-relevant websites for different threshold types. Information is analysed and synthesised with an emphasis placed on how different materials, lighting qualities, cultures and threshold types influence the user's emotions. The design phase involves an iterative exploration of thresholds, while simultaneously being informed by performativity and qualitative research methodologies.

The research of thresholds, especially from the emotional perspective of the user, is important as it affects the success of a building and users' impressions of it. The decreased building alteration frequency requires a captivating threshold that elicits positive emotions and moods from the user and change their initial perceptions. Therefore, this thesis aims to create two scales of threshold interventions to demonstrate how their design can perform this successfully.

*Interior threshold space at  
the Casa de Serralves, Porto,  
Portugal.*



*Interior threshold space at  
the Casa de Serralves, Porto,  
Portugal.*



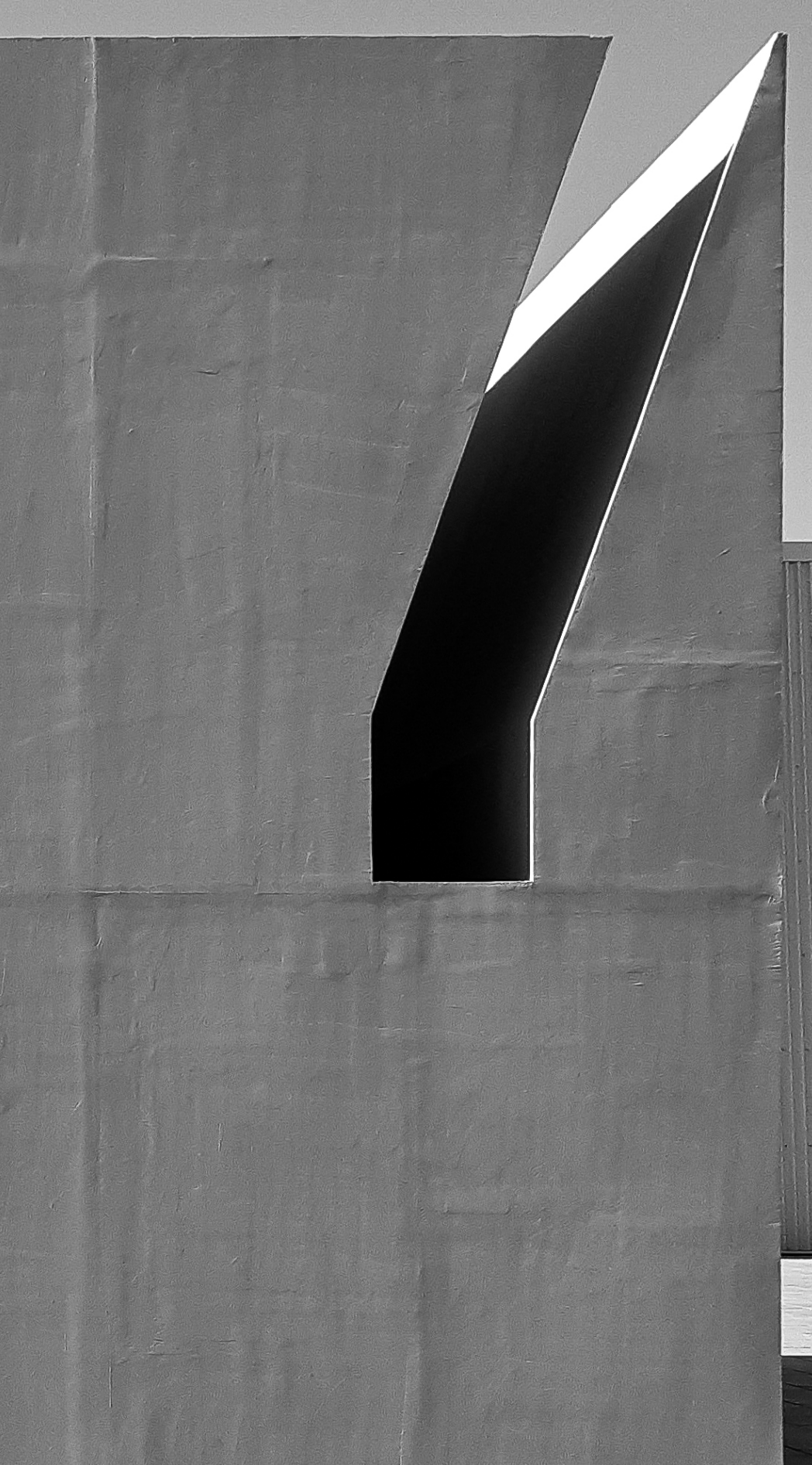
# Preface

The initial interest for thresholds came from researching waiting rooms as intermittent spaces that present as a threshold to the hospital or doctor clinic. Researching into what made those spaces feel sterile, unwelcoming, and uncomfortable was interesting in terms of how this influenced the patient to perceive the next interior condition, usually being the doctor's office for treatment or consultation. Having naturally occurring higher levels of stress in this environment meant that the waiting room would either further increase those stress levels or lower them.

This lead me down a path of personal interest of thinking about hotels and how the lobby is like the waiting room and how the user perceives that space is then perhaps how they will visually perceive their hotel room for their stay. Having travelled around

parts of Europe and Dubai I noticed a small difference in hotel designs between them and New Zealand. Therefore, I wanted to research how they could be designed to create the a memorable and desired impact on the guest/user.

The unreferenced photographs throughout my thesis were taken while travelling and have contributed to my motivations for this thesis topic. They have been captioned to give a brief explanation of my interest in them as well as their location. The intention behind using them is to provide little snippets of my own inspiration throughout the thesis to better show how my experiences have influenced and shaped the process.



*Threshold Installation, Dubai,  
U.A.E.*

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# Chapter One

*Interesting doorway  
composition in Portugal.*

# Introduction

Thresholds frame entrances of interiors. They can be seen as portals to the built environment. Through the lens of the average user, thresholds do not hold much conscious meaning, however, subconsciously they create a large impact on how the next space is received. This tension created between spaces that the threshold holds is vital to the success of the building's ability to elicit the desired emotions from the user. If the threshold is designed to evoke emotions and moods that influence the users to perceive the next interior condition positively and with intrigue, improving the overall success of the building.

Ari Prasetyo, Faculty of Humanities, Department of Literature and Achmed Hery Faud, Faculty of Engineering, Department of Architecture both for the University of Indonesia wrote "Crossing the threshold: understanding spatial patterns formed by threshold space in urban contexts". Within they state,

*"threshold space serves as an introduction to enter a different region and provides an overview of the activity, spatial quality, social and cultural conditions of the space you want to enter".*

They discuss the importance of the effect of the users' perceptions on spatial qualities

and the correlation between interior and exterior transition spaces and the territorial claims that they possess.

The threshold, therefore, is a space of transition and movement between conditions and spatial qualities. A hotel lobby is a transition space between an outside condition and an interior hotel suite condition that can be called a threshold. This is because it holds the tension of quality and influences perceptions of the hotel complex. Therefore, a well-designed lobby dramatically affects the hotel's overall influence on the guest which is crucial for the lifespan of the building.

Research for the literature review and case studies for the design analysis proved difficult as there is a limited amount of discourse in this area. The importance of filling this gap in research is to know what qualities a threshold space possesses to positively influence the user's mood and emotion to change their perceptions of the next condition they are exposed to.



# Thesis Question

|| Threshold ||

How does a thresholds influence on a user's mood and emotions change their initial perceptions between exterior and interior conditions?

*Interior threshold space at  
the Casa de Serralves, Porto,  
Portugal.*





*Interior threshold space at  
the Casa de Serralves, Porto,  
Portugal.*



# Aims and Objectives

For the outcome of this research project, I aimed to analyse and redesign two Wellington based thresholds of different scales that influence the user's perceptions of the next interior condition.

*The objectives were:*

To understand threshold design techniques and the design parameters as a response to research investigating a focus on materiality and lighting on the influence of the user's mood.

Exploring, through conceptual design iterations, what makes tension between spaces possible including how the materiality influences a user's mood and perceptions, a thresholds overall success, and, how these ideas can be translated in thresholds at different scales.







*Colour coded flats down a street  
in Mourao, Portugal.*



# Methodology

The Methodology strategies selected for this research project were the performativity and qualitative methods, and were both used throughout the design phases.

Performativity gives the opportunity for threshold exploration within the Welling-ton vicinity to document and analyse the different types and affects they have on the buildings they belong to. Qualitative analysis gives the opportunity to survey, question and gather information from the general public on how the threshold is affecting them on an emotional level as well as how they perceive the building based on the threshold they are encountering.

Combining these two methods will provide information to influence my designs of thresholds and create a framework to design within. Preliminary Design consisted of creating conceptual iterations and testing them through physical and digital modelling and drawing. The use of a mapping matrix will give the opportunity to organise and analyse research to conceptualise iterative designs and develop the design process.

# Methodology Diagram

## Literature

## Case Studies

Background Research,  
Motivations, Definitions

Define Scope

Tangible & Intangible

Mustafa Arıkan, Effects of  
Lighting in the Creation of the  
Character of Spaces in Hotel  
Environments: The Case  
Study of Lobbies of Hotels  
Designed by the Idea Mimarlık

Lily Clara Fidzani, First  
Impressions of the Interiors of  
Hotel Lobbies as Influences  
on Perceptions of Hotels.

Cathrine Slessor,  
Contemporary Doorways.  
  
David Seamon,  
The Phenomenological  
Contribution to Interior  
Design Education and  
Research: Place,  
Environmental Embodiment,  
and Architectural Sustenance

Subliminal Architecture

Prasetiyo and Fuad, Crossing  
the Threshold: Understanding  
Spatial Patterns Formed by  
Threshold Space in Urban  
Contexts.

Simon Unwin, Doorway

Beach House



David Boyle

Pxathens - Six  
Thresholds



Buerger Katsonta Architects

Requiem Laundry's March



LUKSTUDIO

The Folded Arcade



LUKSTUDIO

Blur Building



Elizabeth Diller and Ricardo Scofidio

Threshold



Allison Urban

Sub/Surface: Encoun-  
ter and Domustalgia



Elizabeth Parker

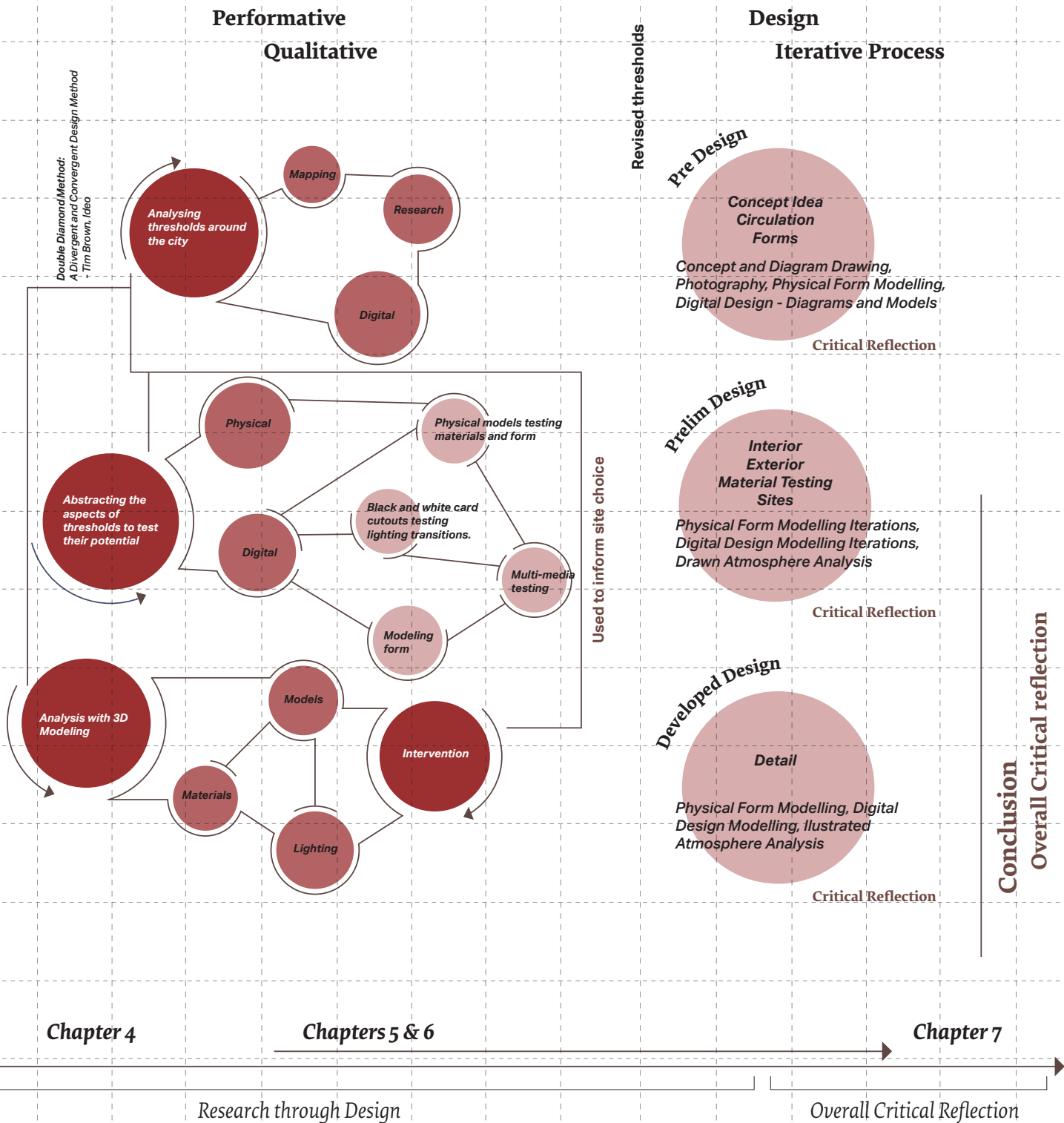
Chapter 1

Chapter 2

Chapter 3

Design Research





## Scope

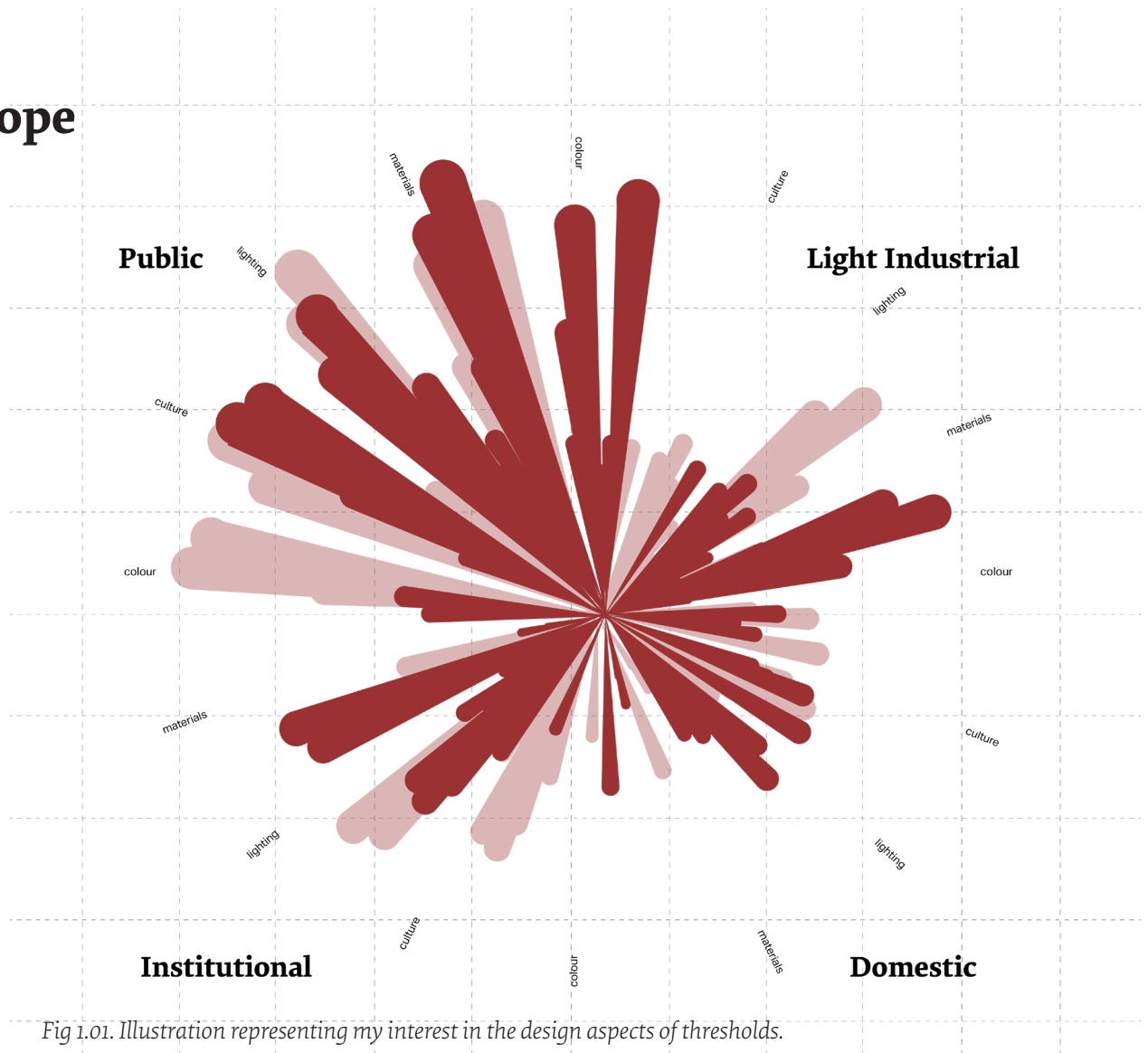


Fig 1.01. Illustration representing my interest in the design aspects of thresholds.

These illustrations show the public aspect of the threshold scope being the most interesting to me as this is what influences and sets up people's perceptions of the interior condition within the building. The threshold has many aspects that are intertwined that creates the emotional impact

or lack thereof, as someone moves through space. Initial research suggests materiality, colour, and phenomenology are the most influential aspects that influence spatial qualities. This is due to how these all flow into each other and tend to go hand in hand with how the threshold creates its impact



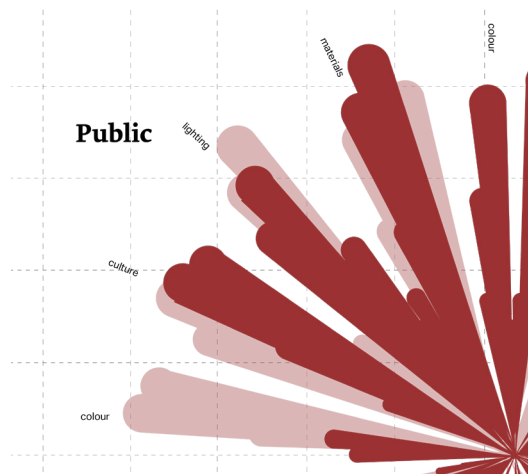


Fig 1.01. Illustration representing my interest in the design aspects of thresholds.

on the user. Lighting and a sense of privacy are sub aspects that are also closely related to the threshold experience but not aspects that will be deeply explored in this thesis.

Hotel designs overall in Wellington typically aren't unique to the city. They exude no individuality and lack aspects that cause people to remember the hotel or how it sets the atmosphere for the rest of the building and area that it resides. The hotel lobby/entrance to the reception is a place that should create a memory and add to the experience of staying in Wellington city. These hotels are either boutiques or have an international design style that could be seen anywhere in the world. Scoping of the research project presented the need for thresholds to create that memorable moment and set a precedent for the rest of

the building.

The objective of this research is to understand threshold design techniques and design parameters that are direct responses to research done such as the focus on materiality, and the influence on user's emotions. This is explored through how tension between interior conditions is made possible and how materiality influences the user's mood, how emotions and perceptions are experienced. This influenced how these aspects were translated to thresholds at different scales and different locations.

The overall structure of the research project, as it is based on the Research Through Design method, is proportionately 70% on the conceptual design iterative process, and developed design. Up to 30% of the time spent was writing on background research and precedent design exploration and analysis. The research presents three thresholds that sit in three different sites and scales to create thresholds that carry an emotional impact that influence the user's perceptions to create a positive lasting memory of the hotel.

As threshold types are vast the focus is on public entrances. This research will exclude thresholds of any other type with the exception of using a range for the purpose of extracting important ideas and aspects to direct the focus to public entrances.

# Thesis Structure

## Chapter - One

This chapter defines the research topic illustrating how it came about. It outlines how the research project was structured and how it should be interpreted. The scope is defined, it sets the aims and objectives, along with the methodology and methods to complete the research.

## Chapter Two - Literature Review

Chapter Two delves into the theory and relevant literature of thresholds and how they can influence the user's mood and emotions as well as how they perceive the following interior condition. The aspects of thresholds covered here are Phenomenology and Psychology, Culture, Materials and Lighting. The unreferenced images, taken by me, throughout this section illustrate the aspects I am interested in and how they influenced the thesis question.

## Chapter Three - Case Studies

### *Chapter 3.1 Subliminal Architecture*

This section investigates subliminal architectural precedents and critically reflects on aspects that are considered important to the project, namely; The Blur Building, Sub/Surface: Encounter and Domustalgia and Threshold Installation.

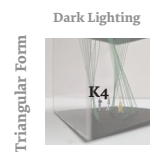
### *Chapter 3.2 Tangible and Intangible Architecture*

Presents an investigation of the tangible and intangible aspects of architectural precedents and evaluates and critically reflects on them in relation to the research topic, namely; Pxathens - Six Thresholds, The Folded Arcade, Requiem Laundry's March, and Breezeway House.

## Chapter Four - Context

Chapter Four introduces The Mapping Matrix structure (see fig 1.02) and explains how it drives the design aspects and potentials exploration for conceptual design phases throughout the project.

The Mapping Matrix allows for creative and divergent thinking investigations to occur rather than a more pragmatic approach through the specific choice of aspects. The context in which the research sits is large, therefore, narrowing the scope with this matrix allows for the divergent and convergent thinking to happen throughout the investigative and exploratory design methods presented in Chapters Five and Six. The icon to the right is distributed throughout the thesis and refers back to the Mapping Matrix on page 109. This chapter also explores, analyses, and presents the potential and



		Atmospheric Aspect Tests				
		Noticeable Temperature Changes	Bright Lighting	Medium Lighting	Dark Lighting	Sound: High Reverberation Space
Physical Aspect Tests	Rough Material	A1	A2	A3	A4	A5
	Soft Material	B1	B2			
	Hard +Smooth Material	C1	C2	C3	C4	
	Transparent Material	D1	D2		D4	
	Repetition	E1	E2	E3	E4	E5
	Symmetry	F1	F2	F3	F4	
	Zoning with Form		G2	G3		G5
	Rectilinear Form		H2	H3		H5
	Circular Form			I3	I4	
	Arch Form		J2	J3	J4	
	Triangular Form		K2	K3	K4	

Fig 1.02. The Mapping Matrix Structure from pg 109.

chosen sites for the two scales of explorations and final threshold designs.

This chapter also explores and analyses the potential and chosen sites for the two scales of explorations and final threshold designs.

## Chapter Five - Small Scale

This chapter presents the investigation of the design phases of the Small-Scale threshold design for Naumi Hotel, street entry on Dunlop Terrace, Wellington. The design explorations in Sections 5.1, 5.2, and 5.3 use The Mapping Matrix as a guide for the aspect exploration that assist the progression, shown in Section 5.4., of the Developed Design and exploration of the threshold space.

## Chapter Six - Large Scale

This chapter goes through the design phases for the Large-Scale threshold design for the West Plaza Hotel, 110 Wakefield street, Wellington.

The design explorations in Sections 6.1, 6.2, and 6.3 use The Mapping Matrix as a guide for aspect testing that develops into Sections 6.4, where a Mood board is presented. Sections 6.5 and 6.6 present the Design Concepts through to the final exploration of the threshold space as a Developed Design concept.

## Chapter Seven - Conclusions

Chapter Seven is the overall critical reflection of the two scale of thresholds designed in the Naumi Hotel and the West Plaza Hotel lobbies. The design outcomes and processes are discussed in specific detail looking at what was discovered throughout the design process and highlighting the strengths, weaknesses and further possibilities that present themselves.









*Interesting screens in the  
entrance to the Louvre, Abu  
Dhabi.*



## Definition

|| Threshold ||

A choreographer of spatial experience creating a permeability that influences the atmosphere between interior and exterior space.

“The particular characteristic of a threshold space is its ambiguity because it lies in between the interior and exterior space. Thus, it has the quality of both spaces as the threshold acts as bridge between interiority and exteriority.” (Maheswari et al., 2019)





## Chapter Two



# Literature Review

This review presents and discusses a threshold's influence on the user's emotion and mood. This then links to how this can affect the initial perceptions of the next interior or exterior condition being received. These ideas are critical for the overall success of the building the threshold is representing, especially as it needs to elicit the right emotions from the user to trigger the right response from the next interior condition they are met with.

The published books and peer-reviewed articles provide the research and knowledge for how the threshold affects the user based on how the materials and lighting were used in combination with the phenomenological and psychological information that creates the understanding of these physical and visual aspects. The importance of gaining this knowledge allows designers to create thresholds that hold more of a purpose to the user and the building than to simply be protected from the elements like the wind, rain and cold weather.

This review includes the phenomenology and psychology of the threshold being investigated as well as lighting and materiality aspects, with the cultural aspects of the threshold being the combination of these. This review looks at how these aspects intertwine for a successful threshold that will create the desired perception of the next interior or exterior condition.

The scope of this review includes the four main aspects of the threshold that interact together and will be supplemented with aspects such as colour, privacy/security and location however are not the main focus of this review as this would broaden the scope too far.

# Method

To conduct this review peer reviewed journal articles and published books were found through the use of Google Scholar, Avery, ProQuest and Te Waharoa of Victoria University of Wellington Library. The terms used to complete the search were **threshold, entrance, transition/al space, door and doorway in combination with lighting, culture, phenomenology, psychology, material, hotel, lobby, architectural, interior, design, adjacent.**

A search through all the relevant articles references was done as well to find other relevant articles through an ancestry search. The articles and books were vetted on whether they had an architectural and interior focus that had credible authors that either practiced architectural design or been educated in similar fields. Most of the sources required an experimental aspect

to provide proof of their conclusions and ideas they were presenting for thresholds. It did prove difficult to find enough sources of high calibre and completely relevant to this reviews thesis so finding sources that related more loosely to the topic was important.

The review was decreased to nine journals, research articles, and books that were absolutely key to the aspects that needed to be investigated and portrayed. It started with 16 relevant journals, research articles, and books that was cut down from a larger number that was vetted at the time of research.

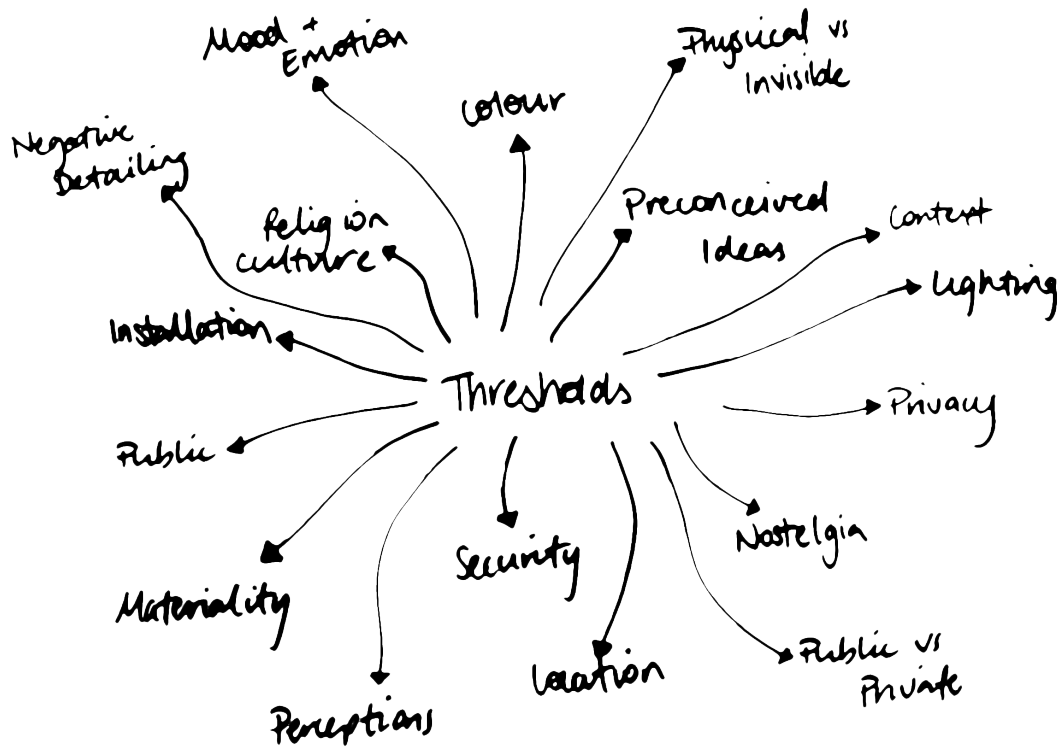


Fig 2.01. Illustration representing the design aspects of thresholds.

“threshold space serves as an introduction to enter a different region and provides an overview of the activity, spatial quality, social and cultural conditions of the space you want to enter.”

(Prasetyo & Fuad, 2021, p. 3)



*Negative detailing in this  
Doorway in Al Shindagha  
Historic District, Dubai, U.A.E.*



# Phenomenology + Psychology

Our sense of threshold develops as early as nine months as there has been research done to show that at five months we aren't wary of the threshold of space at all but at nine months there is a clear realisation of threshold as the material quality greatly affected the ability for the child to move through the threshold quality to the mother. The sense of threshold seems to be closely tied up with human morality. An example of this is a child moving to an area higher or out of reach away from the adult. By doing this the child is crossing the threshold it "senses, leaving the place it sees as being occupied by their parents,"(Unwin, 2007, p.81) to enter the area they believe is empty. This idea can be applied to many different aspects of our lives right through to adulthood. The invisible thresholds we cross are everywhere but most obviously the ones that influence our behaviours and perceptions on the next condition we are faced. (Unwin, 2007) It is this acute sensitivity to thresholds that "seems part of an innate caution we carry with us as part of our mechanisms for self protection."(Unwin, 2007, p.81) The threshold represents a boundary that influences how people and makes them think about how to move beyond them.

The phenomenology of human behaviours

is to study the human experiences, behaviours, situations and meanings as they arise in the world of everyday life. Phenomenology of thresholds is important to acknowledge as it is a part of the description and interpretation of human experience. For example we can look at occupational therapy and how a person's everyday world is taken for granted and typically unnoticed and therefore is hidden as a phenomenon. This can be applied to how we perceive thresholds, they are taken for granted in everyday life and a part of the world as a whole that goes unnoticed and therefore is hidden from our view as a phenomena. Understanding a person's world different from our own, is quite difficult and to try to understand and interpret how they will then perceive space is more difficult again. (Seamon, 2015) This is important to recognise as we can't begin to design a threshold that interrupts and changes peoples perceptions without this understanding being acknowledged.

The way that thresholds begin to change people's perceptions is through how they frame our view and influence the lens in which we look at the world. As Unwin states that "doorways affect our emotions and influence how we behave; sitting on a doorstep, we can find peace just watching the

world go by.”(Unwin, 2007, p.0) They frame transient moments and “they can stand as reminders of the ‘between’ in which we live.”(Unwin, 2007, p.0). Thresholds “form an intermediate space that reduces the differences between two spaces and forms a continuous human experience.” (Prasetyo & Fuad, 2021, p. 3) The threshold moment is one that creates the understanding and acknowledgement of the in between we constantly look through to the interior from an exterior quality and vice versa.

The territorial claims of a threshold is typically more than two; at the simplest form they are interior and exterior qualities meeting the threshold point. This is due to the threshold creating a dialogue between two different spaces. The two spaces, whether the materials differ between them or not, encounter each other and belong to two different regions. The threshold is what symbolises the point of the exchange of spatial quality and the meeting of two worlds. This can also be described as the “presence of a threshold space reducing the difference between two regions with different territorial claims” (Prasetyo & Fuad, 2021, p. 3).

Thresholds punctuate every aspect of our existence. Whether it's between interi-

or – interior, interior exterior or exterior – exterior: thresholds create the existence of beginnings and ends as well as the in between with the use of light, materials and spatial qualities they have using these elements. (Unwin, 2007) “Thresholds are points of introduction and control, where separated places meet. They are also points of anticipation and trepidation. They establish the discipline and art of space. They set the starting lines as well as the goals and finishing lines for the journeys we make and the games we play” (Unwin, 2007, p. 79). The threshold qualities determine separations between areas, where there can be a shift in conditions, like privacy vs sociableness.

A threshold space also provides the key to the transition and connection between areas that isolates territories as well as determining the preconceptions of the next interior quality. “This makes the threshold space an interesting condition to see the correlation between interior and exterior spaces.” (Prasetyo & Fuad, 2021, p. 2) The idea that the user can feel more comfortable approaching a threshold that is more common or familiar to them is important when looking at the longevity of the buildings use. The more familiar the user feels using the building the more it will get used.

This is called the feeling of outsideness where a situation or group feels separate or alienated from an area in some way. (Seamon, 2015)

Thresholds can also manipulate people's movements with how different design elements are presented to influence the perception with how the interior space is going to be navigated. The "threshold space serves as an introduction to enter a different region and provides an overview of the activity, spatial quality, social and cultural conditions of the space you want to enter." (Prasetyo & Fuad, 2021, p. 3) Thus, creating a threshold space that is memorable and knowing that thresholds have qualities that influence people's movements through an urban environment is important.

Due to people typically commuting in to the city from the suburbs for work, the thresholds of city buildings are becoming more important. Having thresholds that create a 'landmark' type of presence to those that either commute to the city or are visiting from overseas, creates a memorable experience through the threshold design alone. The threshold becomes a space of dialogue between the interior and exterior spaces that have different territorial claims. (Prasetyo & Fuad, 2021) This allows for the user

to quickly orientate themselves to way find in the new space with ease and quickly orients people through playing "a role in shaping the identity of the city" (Prasetyo & Fuad, 2021, p. 2) This exterior threshold is an important aspect to consider when investigating

Territorial claims come in many forms that can be interpreted as holding more or less value depending on the building the threshold is associated with. "From time immemorial people have believed that thresholds in space and life possessed some magical association. Because of this, thresholds have been, and are still, seen as places for ritual and ceremony, for encounter and affirmation." (Unwin, 2007, p.79) The idea that rituals and customs change by passing through the threshold, is evident for all cultures and religions.

The customs are implemented through the act of moving through the threshold as well as the approach, the way the threshold is presented lets the user know when to begin the customs of the space as well as what is expected for example there might as obvious as a coat and shoe rack right by the door to a house that infers the act of removing those items before entering or a negative detail that infers a condition



change. The role of the threshold remains present even when other elements are being used to create this threshold space. The difference in elements influence how the user perceives the space when they pass through it. Placement and design of these elements have an important impact on how the threshold is perceived when people use it.

Thresholds can also manipulate peoples movements with how different design elements are presented to influence the perception with how the interior space is going to be navigated. The “threshold space serves as an introduction to enter a different region and provides an overview of the activity, spatial quality, social and cultural conditions of the space you want to enter.” (Prasetiyo & Fuad, 2021) Thus, creating a threshold space that is memorable and knowing that thresholds have qualities that influence peoples movements through an urban environment is important.

*Threshold Installation, Dubai,  
U.A.E.*







*Favourite threshold space in  
Sheikh Zayed Grand Mosque,  
Abu Dhabi, U.A.E.*



# Culture

The entrance threshold of the building differs between cultures depending on what concerns they had as a society over time. The design of these thresholds also evolved over time while consistently differing between cultures. Examples of these ideas can be seen in Indian cities where they had to design to withstand the strength of elephant, in the Mediterranean where they have thresholds that provide different degrees of visual privacy but continuing to allow and even encourage conversation between friends and most importantly how Marae's are designed to reflect Maori traditions that differ between tribes and tell the stories of the iwi.

Thresholds' culture goes far beyond these aspects of resilience and conversational influence, they also create doorways to other worlds between the living and dead even. Unwin, from *Doorway* says that "through human history and across all cultures, doorways have possessed great symbolic power and had ceremonies and rituals associated with them." (p.79) thresholds can be held in high regard depending on the cultural significance and therefore have a large impact on the user as they approach and pass through. The culture influencing the thresholds design therefore also affects the perception of the rest of the building

on the user, ultimately influencing their actions with their interaction. (Slessor, 2002)

Mythology tends to mark thresholds as the in-between of different worlds. They have a door representing mystery that alludes to unknown powers and forces on the opposing side. There are also many stories that reference the importance of thresholds like "Alice in Wonderland, Milton's Apocalyptic description of the gates of hell in *Paradise Lost*." (Slessor, 2002, p. 8) as well as "In Roman mythology, Janus is the God of the doorway, and holds the keys to the power of opening and closing." (Slessor, 2002, p. 10) Thus suggesting that architecture with the intent of creating suspense and mystery within a threshold, can create the sense of this unknowing tension to build curiosity for what is coming next.

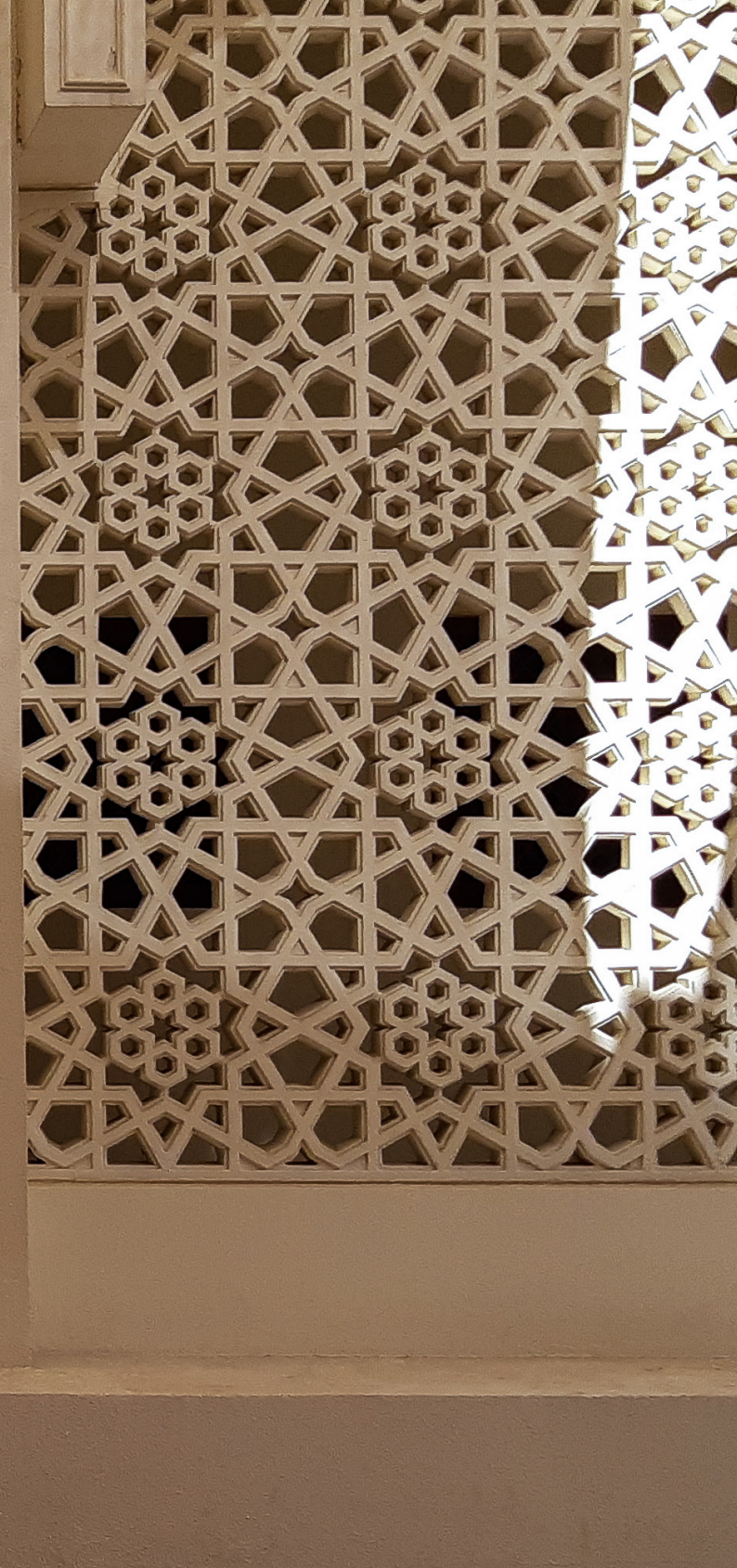
The openness of a threshold doorway can symbolise opportunity and liberation. This idea is prevalent in the use of the gates to heaven and hell, from the Christian bible depictions. The opposite can be said for a closed door representing the expulsion of Adam and Eve from the Garden of Eden. The entrance to a building or urban interior in this religious example displays the severity in which the threshold can influ-





*Screens along a walkway -  
Dubai Old City, Dubai, U.A.E.*





ence the users mood and emotion through the consequences it infers by being there. (Slessor, 2002)

On the other end of the spectrum there is the international culture of the hotel threshold. This is where the threshold of a hotel tends to be culture-less or have an international culture that is designed to appeal to anyone that comes to stay from around the world. This in turn creates a hotel culture of its own that is a bubble that doesn't consist of the culture specific to that of the city the hotel is located. One of the only ways to distinguish hotels from each other are through the services they provide. (Arıkan, 2012)





*Interesting material choice  
and junction at Casa de  
Musica, Porto, Portugal.*

# Materials

*Atmosphere itself and the qualities the materials create:*

Materiality is a key element of a threshold space as this is one of the most noticed and therefore influential. “Material is an important element because it will affect the atmosphere and human experience within the threshold space.” (Prasetyo & Fuad, 2021, p. 4) The material of the threshold set the precedent for the atmosphere of the next interior quality. So, having the materials of the threshold reflect that, sets the tone for the experience of the threshold and therefore creating the right atmosphere for the interior to influence the right mood and emotion of the user.

*Atmosphere and the invisible barrier it creates:*

Thresholds can create spaces of spatial zoning that change the transitioning of atmosphere that influences the perception of the next condition. We can then say that we perceive the transition of materials as an invisible barrier between interior and exterior conditions. The type of material also influencing the atmosphere of the space will also imply and reinforce and specific function of the space. This in itself shows the importance of materiality choice for a threshold. It can heavily influence a

persons mood as well as influence the way the space is then used and interacted with. (Prasetyo & Fuad, 2021)

The subtle nuances associated with the opening of the threshold reinforce the role as an interface between interior and exterior conditions. Examples of subtle material changes to infer a threshold could be a slight gap in a pavement, carpet changing to tile or a step being a strip of wood; it could be a frame that the door closes against or just a change in texture on the floor. These could also be here for functional reasons like a line of stones against a doorway to act as a drain for rain so it doesn't enter the building, this also creates a threshold of clear interior and exterior qualities that imply the threshold of social constructs for the users to follow. (Unwin, 2007)

*Ambiguous quality of the material:*

Having a material that sits between the interior and exterior going through the threshold space creates “a continuous use of materials presents an ambiguous quality of a threshold space.” (Prasetyo & Fuad, 2021, p. 6) This makes the threshold appear invisible and have a gradual and subtle effect on the user. The blurring of the threshold between conditions can make both the inte-





Left: Abandoned steel threshold in, Portugal.

Right: Masdar City terracotta panels, Abu Dhabi, U.A.E.

rior and exterior simultaneously appear to be elongated and bring either of the desired conditions through into the other.

*Examples of materials on a threshold and how this affects the use:*

These subtle thresholds that lie on the floor separating the interior and exterior qualities can be made more intentional with the use of design that makes these areas more influential for how the threshold is used. An example if this would be use a line of stones at the doorway there could be paver's or tiles that create stepping stones for where to put your feet that influence how the building is entered. The use of materials is important to consider, not only from an aesthetics stand point but also for how the user will interact with the threshold and therefore the next condition they are faced with. The way the threshold functions must reflect how the rest of the building functions. (Unwin, 2007)

Negative detailing can be shown subtly to give a sense of passing through a portal like space that transforms exterior to interior. An example of this is a small chapel in Song Benedikt where the steps up to the tear drop shaped building have a small gap negative detail to give the sensation of the user stepping off a grounded surface onto a floating one. This gives the illusion that of a boat rather than a building standing on blocks, grounded. (Arikan, 2012)











# Lighting

Maged Youssef the Associate Professor for the Faculty of Architecture, Design and Built Environment of the Beirut Arab University talks of the role of artificial lighting in emphasising the entrance approaches, discusses how an architect's failure in representing an entrance to a building is usually done with the use of lighting. The insufficient use of lighting fails to control the user's perception of the entrance and therefore impacting the traffic and use of the building this entrance is representing. This misrepresentation of the entrance threshold of the building negates the well-designed aspects of the rest of the building as the first impressions of the approach affects the preconceptions made for the rest of the building continuing on from that point. (Youssef, 2020)

The building approach begins the threshold which then sets the tone of the user's experience for the rest of the building; using lighting as one of its main sources of atmosphere and aesthetic. This setting displays the importance of lighting to introduce the user to the hotel using the lobby as a threshold to show the character the hotel has. The lobby creates a transitional space that intentionally informs the users' perceptions to receive the rest of the hotel

through the use of lighting. (Arıkan, 2012) (Fidzani, 2003)

The idea of space is tightly linked to that of lighting. There is a high necessity for the correct amount of light in the space for it to be perceived in the intended way. Low lighting for the sense of smaller spaces and high amount of lighting for the sense of a larger space, however, too high and too low means the contrast levels are low. Gordon from Interior Lighting for Designers says the "Perception of the world around us is based not on the quantity of light entering the eye, but on the quantity of contrast". (p. X) This goes alongside the use of material and colour as some will absorb more light than others changing the spatial qualities of the area. These align into the idea of aesthetics which is how the manipulation of lighting can serve as an object form or layout. (WBDG Aesthetics Subcommittee, 2012)

Light is an important aspect to remember as we cannot perceive things as they are supposed to be without it. This aspect must be addressed as a component to the materials, culture, public/private and religious qualities I am going to explore as they are all dependant on the light qualities present. We attain information from our environ-

*Apple store screens filtering heat and light, Dubai Mall.*

ment through the lighting seen alongside our other sensors to clearly perceive our physical environments. (Arıkan, 2012)

The lighting of the hotel lobby as a threshold should be unique to the hotel itself through the use of fixtures and light colours and levels. This would create a memorable space that is defined as the lobby of the hotel in the location it is in. (Arıkan, 2012) The lobby space having a unique lighting pattern creates a defined atmosphere that is then unique to the experience of creating first impressions of the hotel and influencing how the place is perceived and then remembered by tapping into the users emotions.

*Serralves Museum lighting,  
Porto, Portugal*







## Discussion Conclusion

This study of the entrance thresholds to hotels found four main aspects of discussion, phenomenology and psychology of thresholds, as well as the materiality, lighting and culture of the threshold.

The phenomenology and psychology of the threshold are the main aspects of threshold that create the largest impact on the user. The phenomenology of thresholds is that they shape and change the users perceptions of how the next interior space will be interpreted through the frame that the threshold creates. The materiality of the threshold is then used in different ways to create and manipulate (or influence) the user into perceiving the entrance of the next interior space with the intended way for it to be received properly.

Lighting is used to enable the threshold to be perceived by the user and is usually under represented and under developed by architects. The lighting can alter how the threshold is presented and with this, a misrepresentation of the design of the threshold happens which then creates a miscommunication between the user and the perception of the interior condition following it. The atmosphere that lighting can create is incredibly important for creating the desired impact on the users emotion-

al response to the condition following the threshold.

Culture involves all of these aspects to build up the presence of a culture within the threshold. The aspects can therefore either elevate or eliminate the overall cultural design of a threshold dramatically and with that comes the atmosphere that elicits the users emotional response.

The first impression on the user is important for how the next interior condition will be perceived. This means that the psychology and phenomenology of the threshold through the lighting, materials and culture that these create, is also important. The design of the threshold done by the architect needs to be thought thoroughly and done so carefully in order to create the desired impact on the users emotion and mood. This investigation displays a need for there to be a strong design intent when designing a threshold as an entrance of a space. There was a lack of well-rounded articles that discussed the threshold as an entrance that analysed the light, materiality and culture interconnecting to the phenomenology and psychology of the user.

There were several articles that focus and analysed one or two of the aspects at

*Favourite threshold space in  
Sheikh Zayed Grand Mosque,  
Abu Dhabi, U.A.E.*

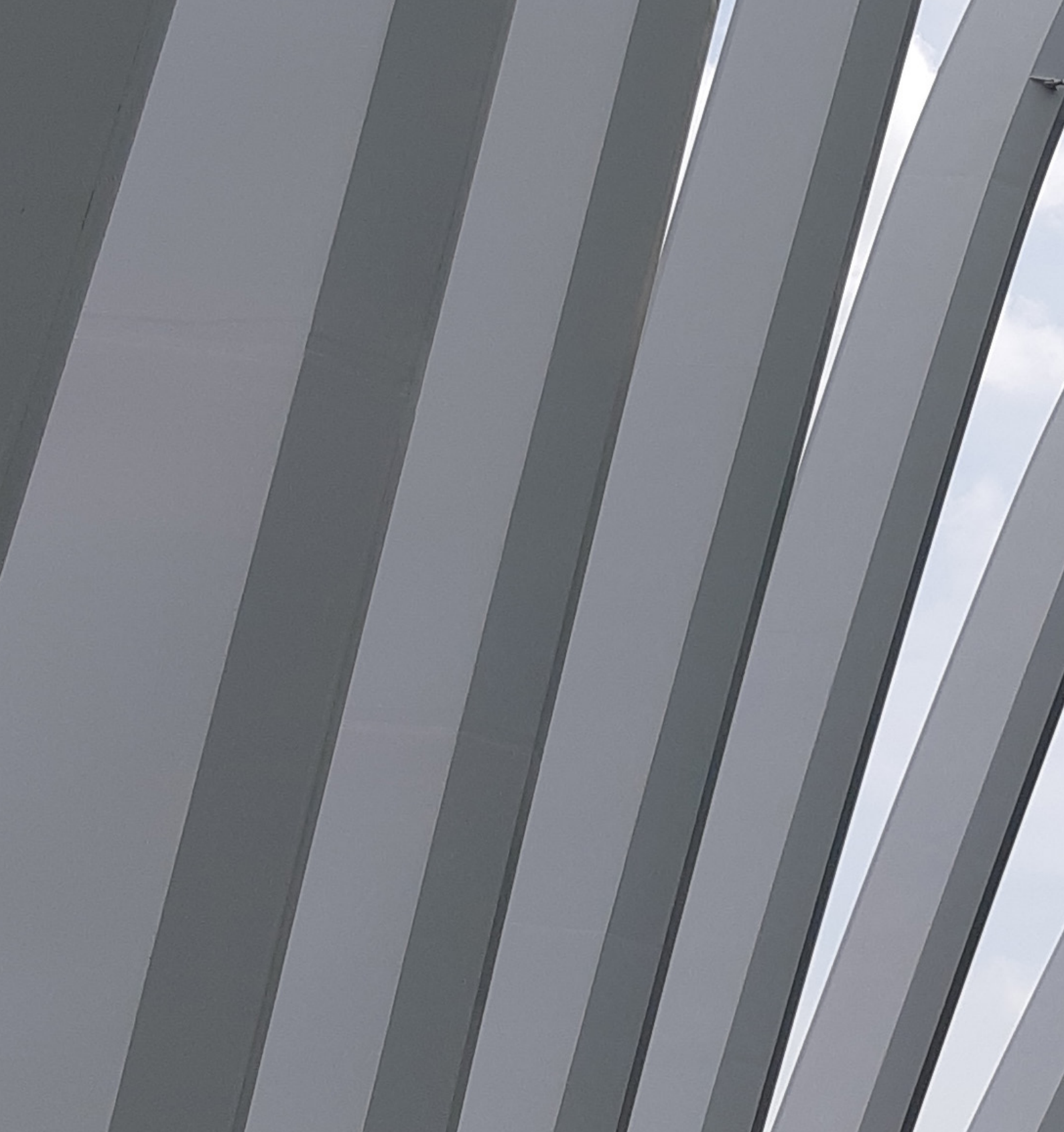
once which meant that this review then able to collate and draw parallels of these aspects to bring the aspects together. This technique of analysis can then be brought through into the design phase to analyse the different design aspects of thresholds to create a well-rounded investigation.

The aims and objectives of this research will be explored through the use of analysing aspects a couple/few at a time to fully understand how changing them slightly can create an impact. Case studies will also be analysed and investigated with this process to be better understood and address the thesis' aims and objectives.





Doorway in Faro, Portugal.







*Repetition in the Mall in  
Singapore.*





## Chapter THREE

*View through thresholds,  
Dubai, U.A.E.*

## Case Studies

Chapter three presents the investigation and analysis of architectural as well as installation type precedents. It has also been divided into two topics: subliminal architecture, and tangible and intangible architecture. This organisational system was used in order to create a well-rounded study of the right precedents to analyse all the critical aspects chosen throughout the scoping process and literature review at the beginning of this thesis. The decision of having installations to analyse as well as traditional architectural designs was important to cover the aspects presented in the literature review as well as expand and explore what I learnt while writing it.

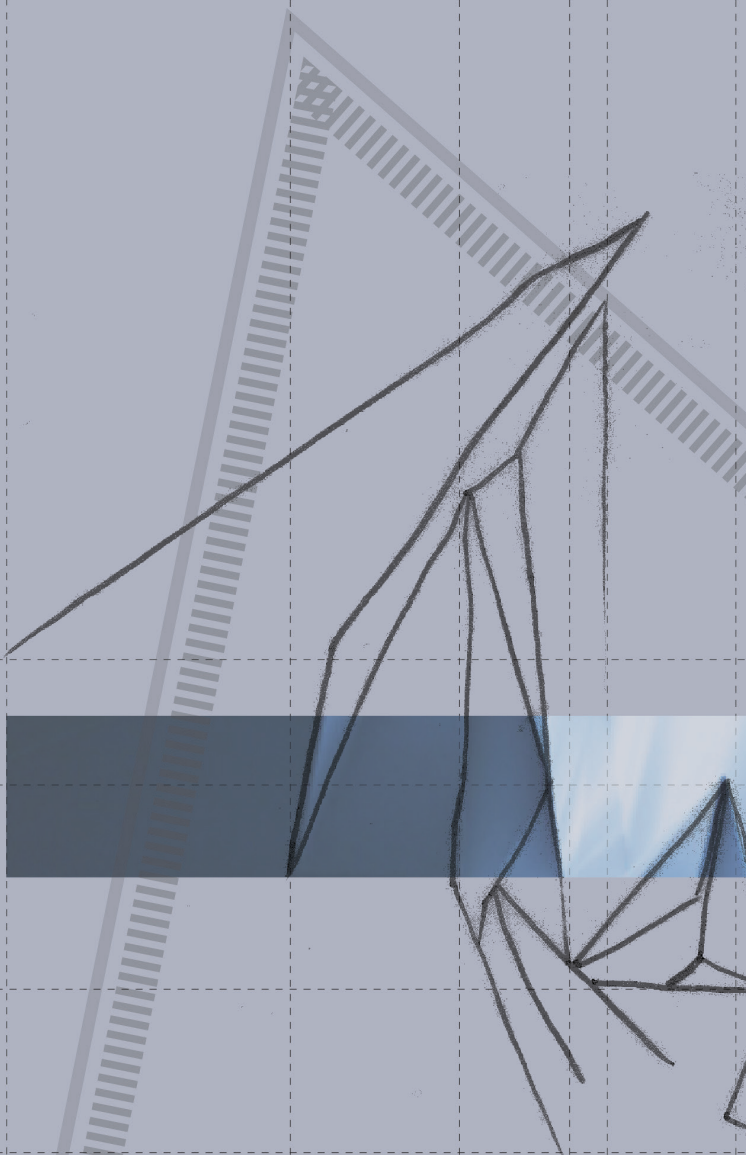
Subliminal architecture precedents were important to investigate as the threshold has a primarily subliminal effect on the user that experiences the space. As this thesis looks at the spaces in-between as a threshold, investigating the subliminal architecture was crucial as to identify what lighting, material, and formal aspects they possess that impact on the user in an atmospheric sense.

The Tangible and Intangible architectural and installation precedents completed the

aspects of the investigation in a physical sense. These precedents display physical architectural aspects such as spatial layout as well as the subtleties in movement control through their design. Materiality and form were the most prominent aspects that came from this section that interacted with natural and artificial lighting to inform the user of the spatial layout and improve the wayfinding of the space.

A range of different types of precedents were chosen from public urban interiors to private homes to ensure a broad investigation of threshold aspects was taken place. This allowed me to extract aspects from the overall precedent investigation that was presented frequently or created a significant impact on the user to carry through the rest of this thesis' design phases.





**Subliminal Architecture**  
**THREE.1**



The following section has taken precedent images that display subliminal architecture in order to investigate and analyse different design aspects. It also investigates how these aspects can be creatively analysed and break down their components.

## Blur Building textural / immersive



*Fig 3.01. Exterior Approach to the Blur Building, Swiss Expo 2002. An example of subliminally immersive Architecture.*

Partners: Elizabeth Diller and Ricardo Scofidio

Project Directors: Dirk Hebel and Eric Bunge

Design Team: Charles Renfro, Reto Geiser, David Huang, Karin Ocker, Andreas Quadenau, Deane Simpson, and Lyn Rice

Swiss Expo 2002, Yverdon-les-Bains, Switzerland

The blur building that was in Switzerland for the Swiss Expo in 2002 is an immersive pavilion through the use of visual and physical textures. The immersive space gives the users of the space an opportunity to be transported from the real world through the absorptive feeling the threshold creates. This building looks at the threshold as a physical mist that touches the user as they move through the space.

Mist creates a threshold quality different from what is found in a normal building found in an urban context. The lake that this pavilion sits on is where the mist is pumped from to create the atmospheric vapour that creates the visual white-out effect that the user walks through. The idea

is that the user walks through the pavilions mist, removing your sense of smell and sight to emerge out the top to the stark blue sky above. It is also expected that the user drinks the building so the space has a sense of taste so it isn't just visual.

The experience then becomes more than just the sense of sight and touch to taste that is one that isn't typically acknowledged from an architectural point of view.



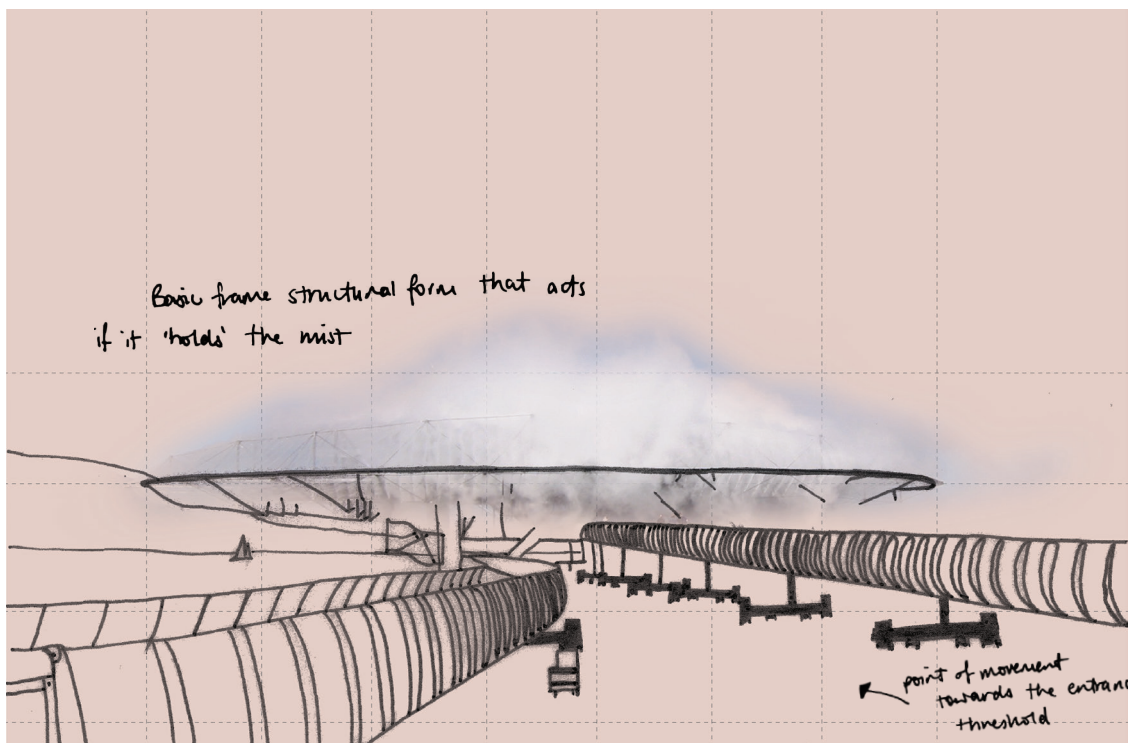
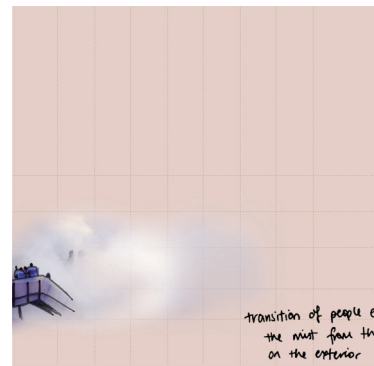
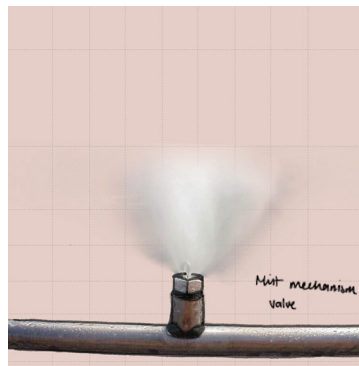


Fig 3.02. Illustration exploring subliminal architecture through the Blur Building.

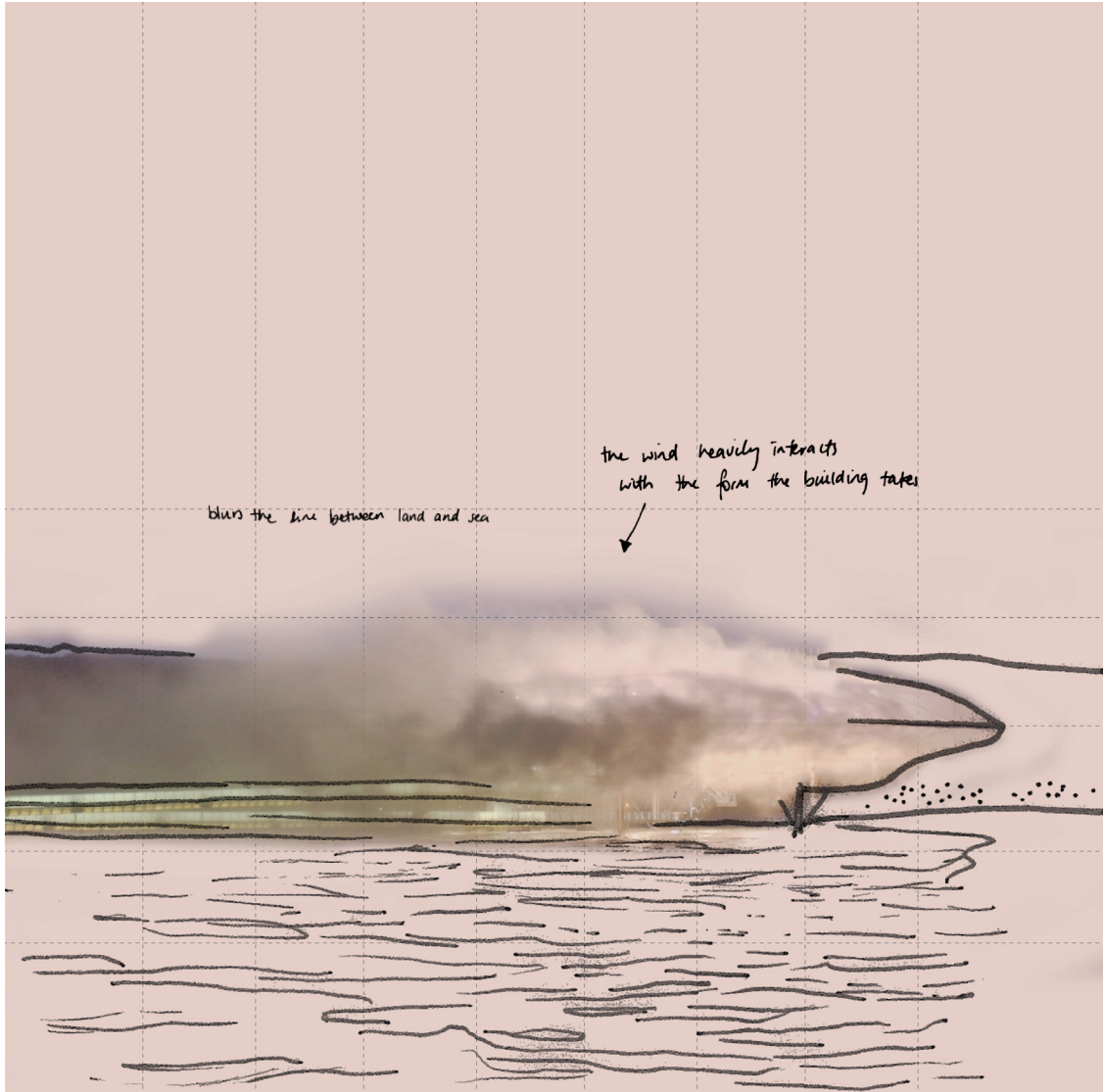
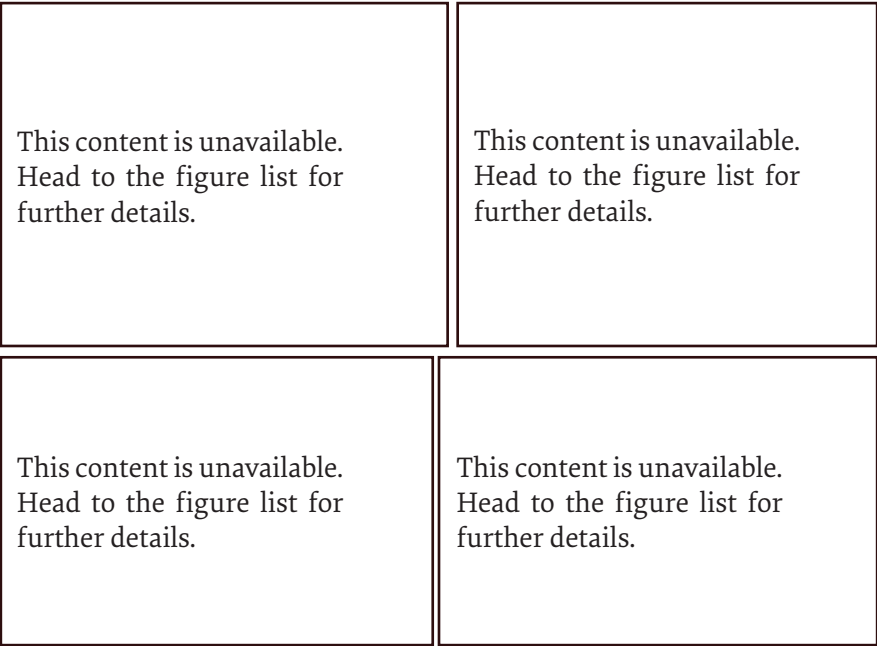


Fig 3.03. Illustration exploring subliminal architecture through the Blur Building.

Sub/Surface: Encounter and Domustalgia    installation / moments



*Fig 3.04. Sub/Surface: Encounter and Domustalgia installation representing subliminal architecture.*

Experiments in Reconnecting the Self to an Unmediated Experience of Place  
Built and Designed: Elizabeth Parker  
Thesis Advisor: Jonsara Ruth  
Secondary Advisor: Alexa Griffith-Winton

2012, Parsons The New School for Design New York



These installations test how we live in increasingly digital worlds and we are becoming less connected to our homes. These look at how interior design can start to reconnect us to the domestic interior we call our home. The adjustments to the interior qualities create different feelings and interactions between rooms of the home and how the threshold treatments play that role.

Eye line through areas that are usually thought as permanent are being gauged out to create a new frame to view the interior through. These areas notches create an artistic quality that is otherwise overlooked in terms of how, for example, a window or door frame should be moulded. By chang-

ing the texture and material quality of the door there is an innate sense of unease that comes along with it because of its peculiar nature.

The reflectivity of the door that creates the illusion that it is translucent makes the room its in feel more open and exposed as well as the next room it pass to less private. The use of cords coming out of the worn threshold displays a juxtaposition between old and new that is intriguing as well as unapproachable.

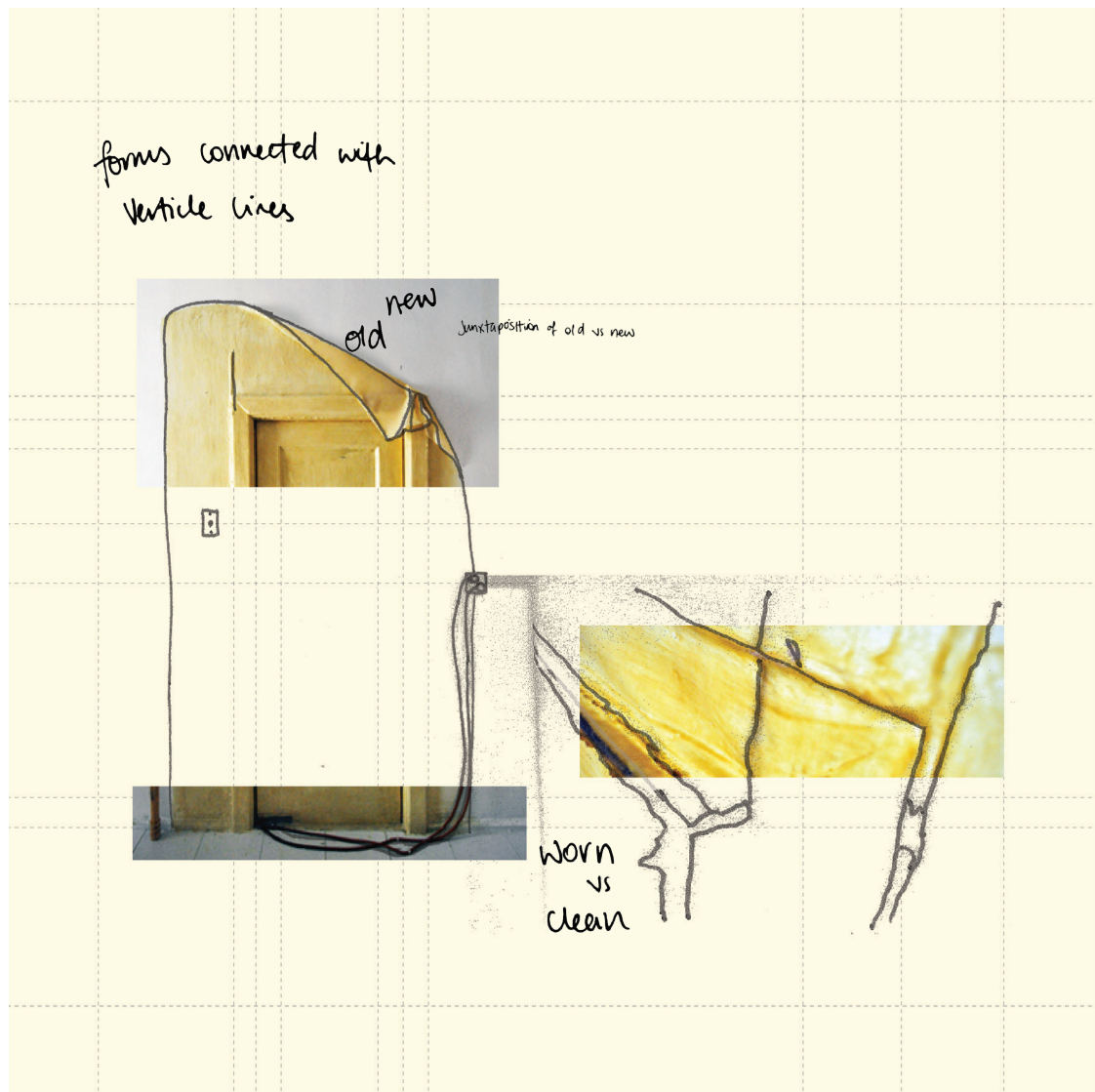


Fig 3.05. Illustration exploring subliminal architecture through the Sub/Surface: Encounter and Domustalgia installation.

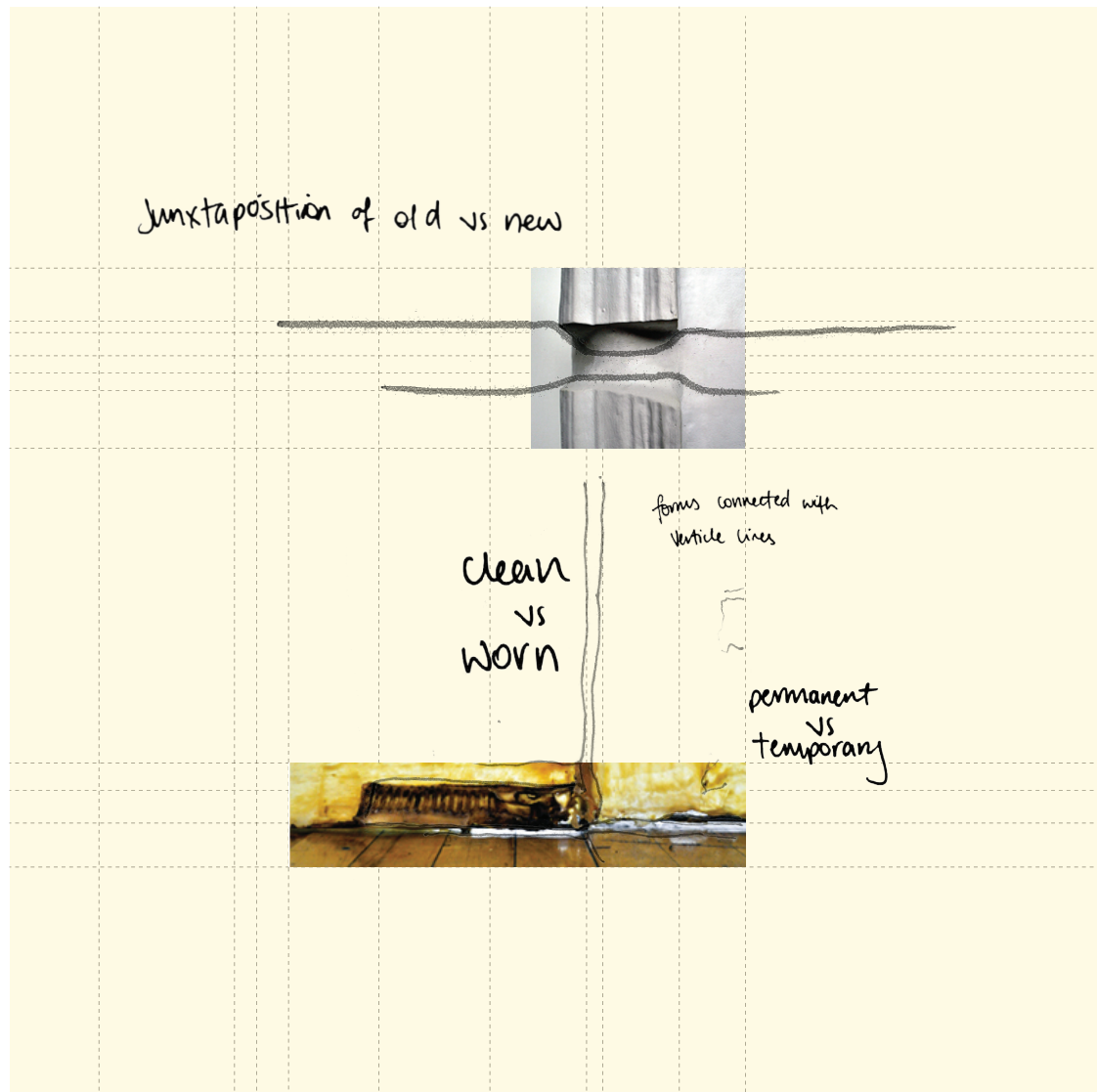
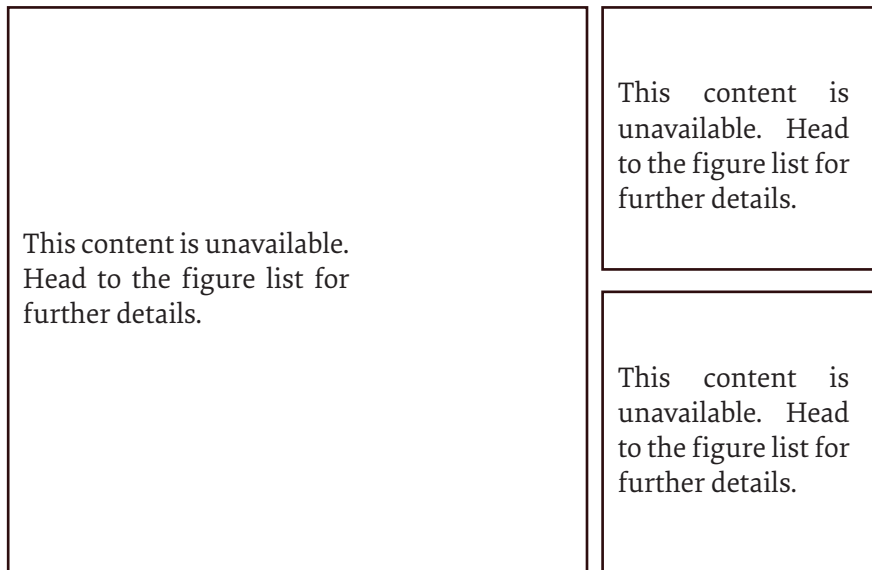


Fig 3.06. Illustration exploring subliminal architecture through the Sub/Surface: Encounter and Domustalgia installation.



## Threshold installation / immersive



*Fig 3.06. Threshold installation representing subliminal architecture.*

Spaces for play are the fundamental public spaces in which social development, movement skills and team spirit of the youth are enhanced.

Designed: Allison Urban

2009, Washington USA

This threshold installation combines the immersion of the blur building through the visual aspect with the installation qualities that Sub/Surface: Encounter and Domustalgia has. This space is designed successfully to make the user intrigued to approach and interact with how the lighting and shadow interact with the geometric forms of the sculpture.

There is a sense of tension that is created from the intrigue of the sculpture that is created from the obstruction of light source. This sculpture emulates the tension that the threshold possesses as a critical component of an interior. The simple form and function of the sculpture creates the impact through the

use of directional light and shadow that is required to create the mystery of the threshold. The singular plain materiality type used, emphasises the form and light to create the intrigue that draws in the viewer to find the source of the light.

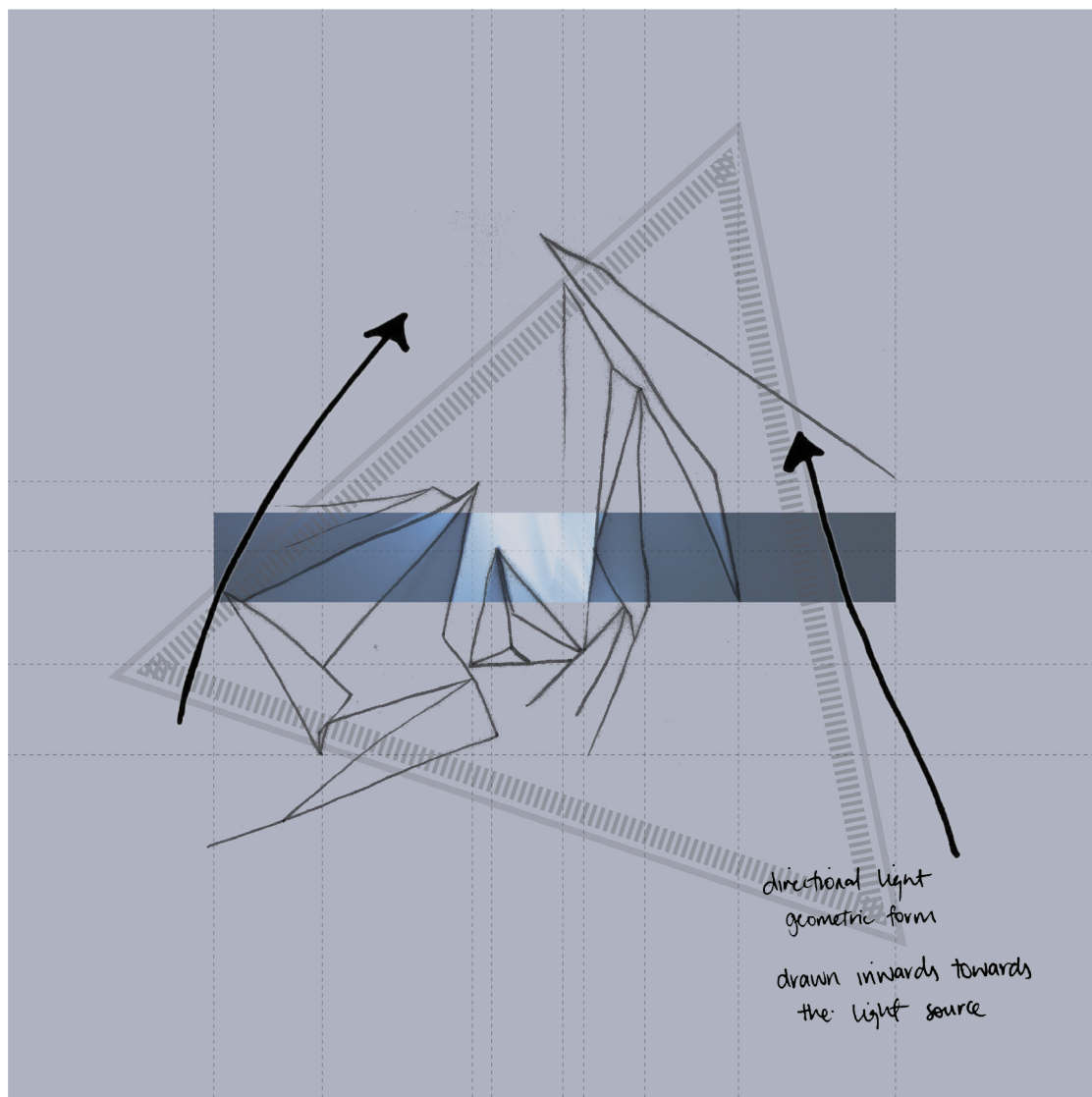


Fig 3.07. Illustration exploring subliminal architecture through the Threshold installation.



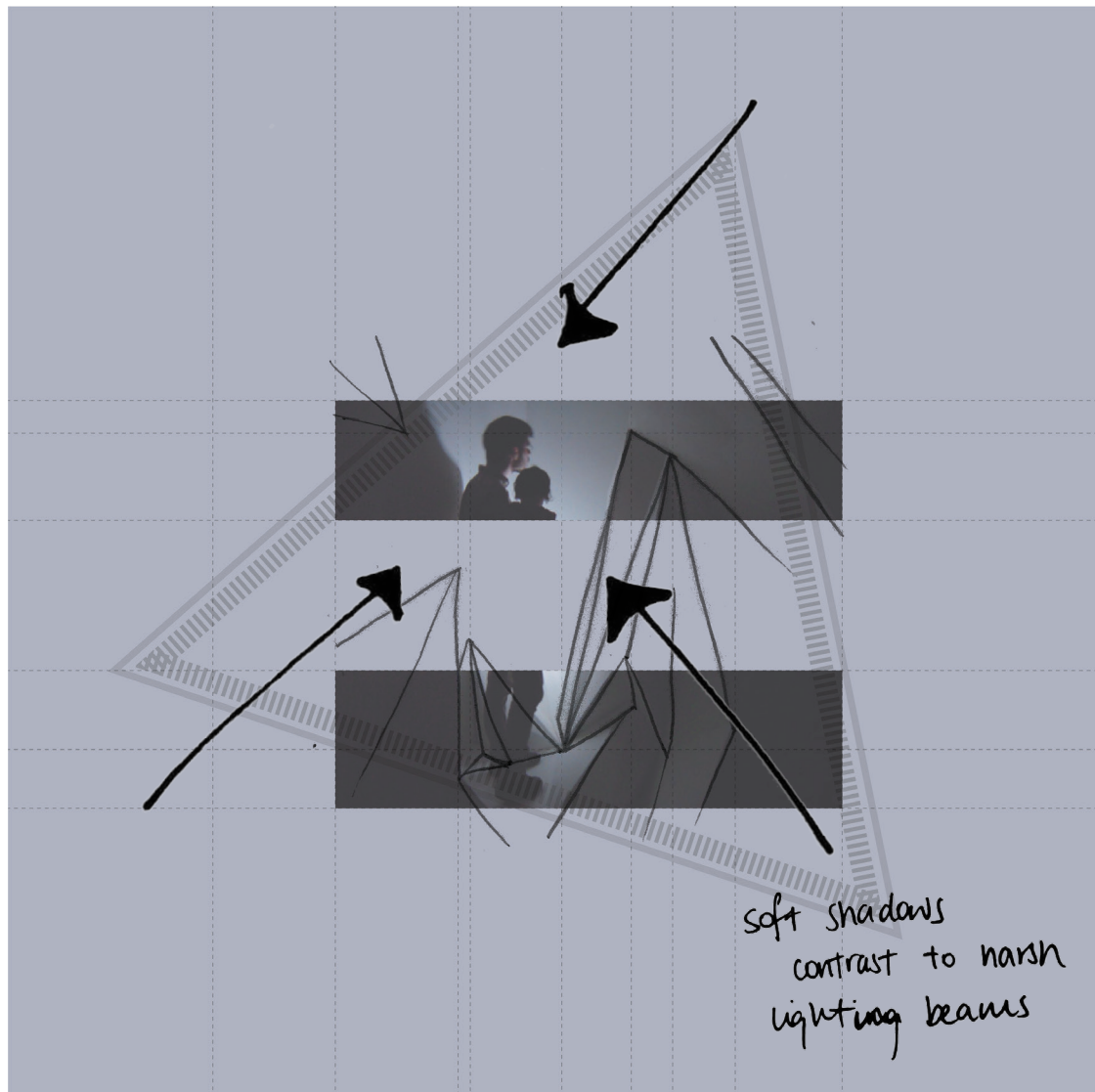


Fig 3.07. Illustration exploring subliminal architecture through the Threshold installation.

## Critical Reflection - Subliminal Case Studies

*The design attributes were found through these methods which were chosen to complete the comprehensive design investigation of these precedents:*

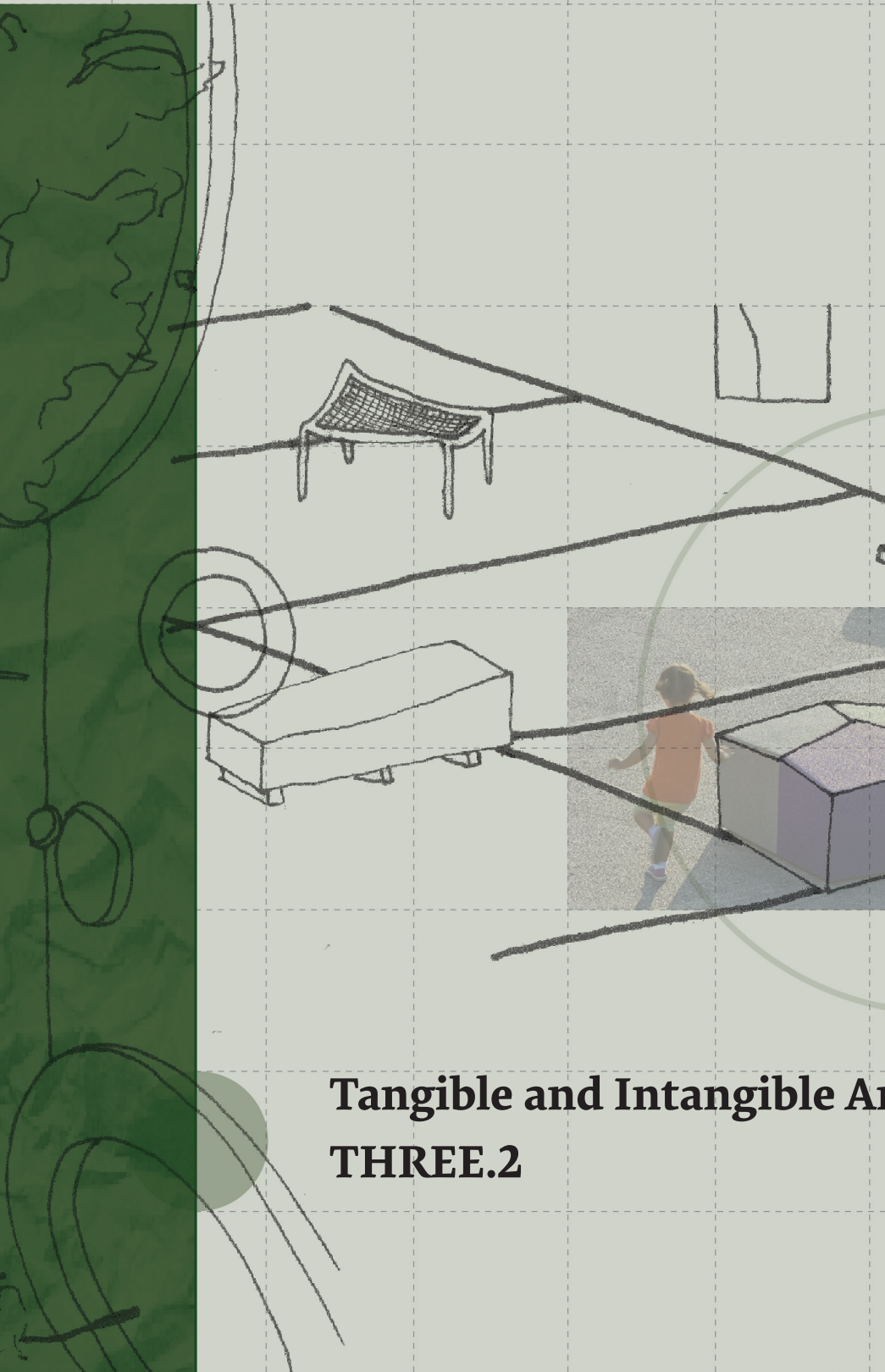
- The use of drawing and then abstracting the forms from the line qualities found using digital media helped to investigate the precedent image
- Using a mix of grids and images alongside the hand-drawn image allowed for an abstracted investigation of sensory qualities that created an atmosphere
- A careful selection of pieces of images within these investigations gives an abstracted hint at how the lighting with restrained use of materials harmoniously creates an atmosphere.

*Key considerations and attributes in relevance to the Subliminal effects on the user of interior thresholds include the following:*

- The Blur Building immerses all the senses with the mist it produces, similar to this is the threshold installation where it immerses the sense of sight, with dramatic lighting qualities.
- Sub/surface: Encounter and Domustalgia use light and aging of material to set an atmosphere to the threshold, looking at how reflectivity and age can warp the user's perception of the space. The Blur Building also warps the user's perception of how space can be interpreted as where it begins and ends.
- Threshold installation uses light as its point of intrigue whereas the Blur Building and Sub/Surface: Encounter and Domustalgia surface treatments or lack thereof.

This precedent section analysed the subliminal architectural aspects that these chosen precedents have. These three precedents all have immersive qualities that affect the physical senses to create a captivating atmosphere that changes the user's perceptions of what the next interior condition will be. By immersing the user's senses, the threshold influences their moods and emotions in ways they cannot anticipate. This creates a memorable and influential threshold space.



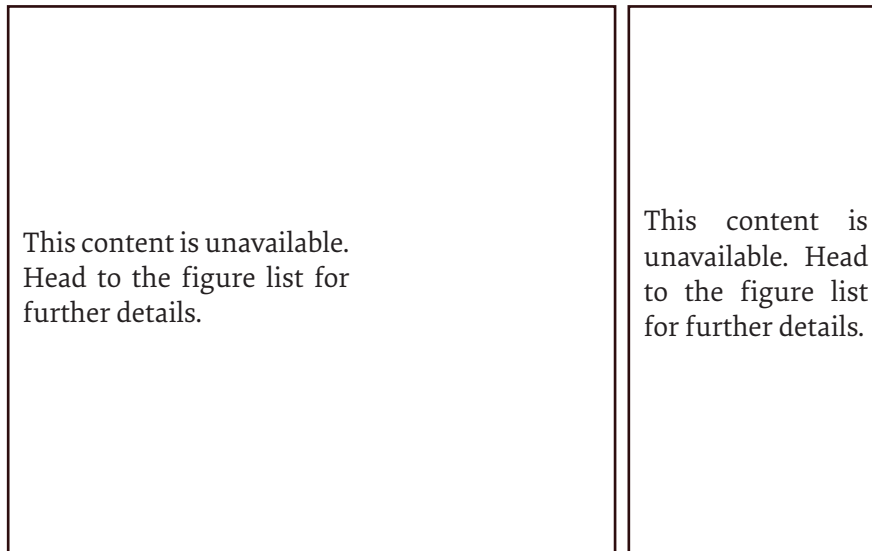


## **Tangible and Intangible Architecture**

### **THREE.2**

This section explores the tangible and intangible architectures of the threshold. These precedents have been chosen as they display a range of different tangible architectures that influence the intangible architectures that evoke the feeling of transition and movement through the threshold space. It also investigates how these aspects can be creatively analysed and break down their components.

## Pxathens - Six Thresholds landscape / exterior



*Fig 3.08. Pxathens - Six Thresholds representing Tangible and Intangible architecture.*

Spaces for play are the fundamental public spaces in which social development, movement skills and team spirit of the youth are enhanced.

Designed: Buerger Katsonta Architects

2013, Athens - Greece



This urban interior space has six thresholds that are all of different qualities to attract different types of play and interaction between people of different demographics. The idea of these thresholds is to create areas of tension and release. The length of the play area draws the users along and through the space that is unique to the city of Greece.

Investigating a threshold of this type is critical to finding the potential other entrance thresholds for how they are designed to draw the users along the street path into the building using that innate sense of direction that can be tapped into through the use of interior architecture.

The use of material qualities changing along the ground combined and separate

from drawing patterns on the ground to inform movement and indicate types of play possible for those areas are critical for the use of the threshold and how it is used to connect these areas together smoothly.

The way the urban interior is designed away from where the building thresholds are designed is an important part of the design. This allows for there to be spaces to 'breathe' and move into a space of play if the user so wishes rather than being thrust into an area that isn't desirable. This is similar to placing interior programming strategically for the users comfort, for example ensuring bathrooms are not opening onto oncoming busy areas like a kitchen, dining or lounge area, this play space recognises the need for building entrances to be protected from the busyness of play.



Fig 3.09. Illustration exploring tangible and intangible architecture through the Pxathens - Six Thresholds architecture.

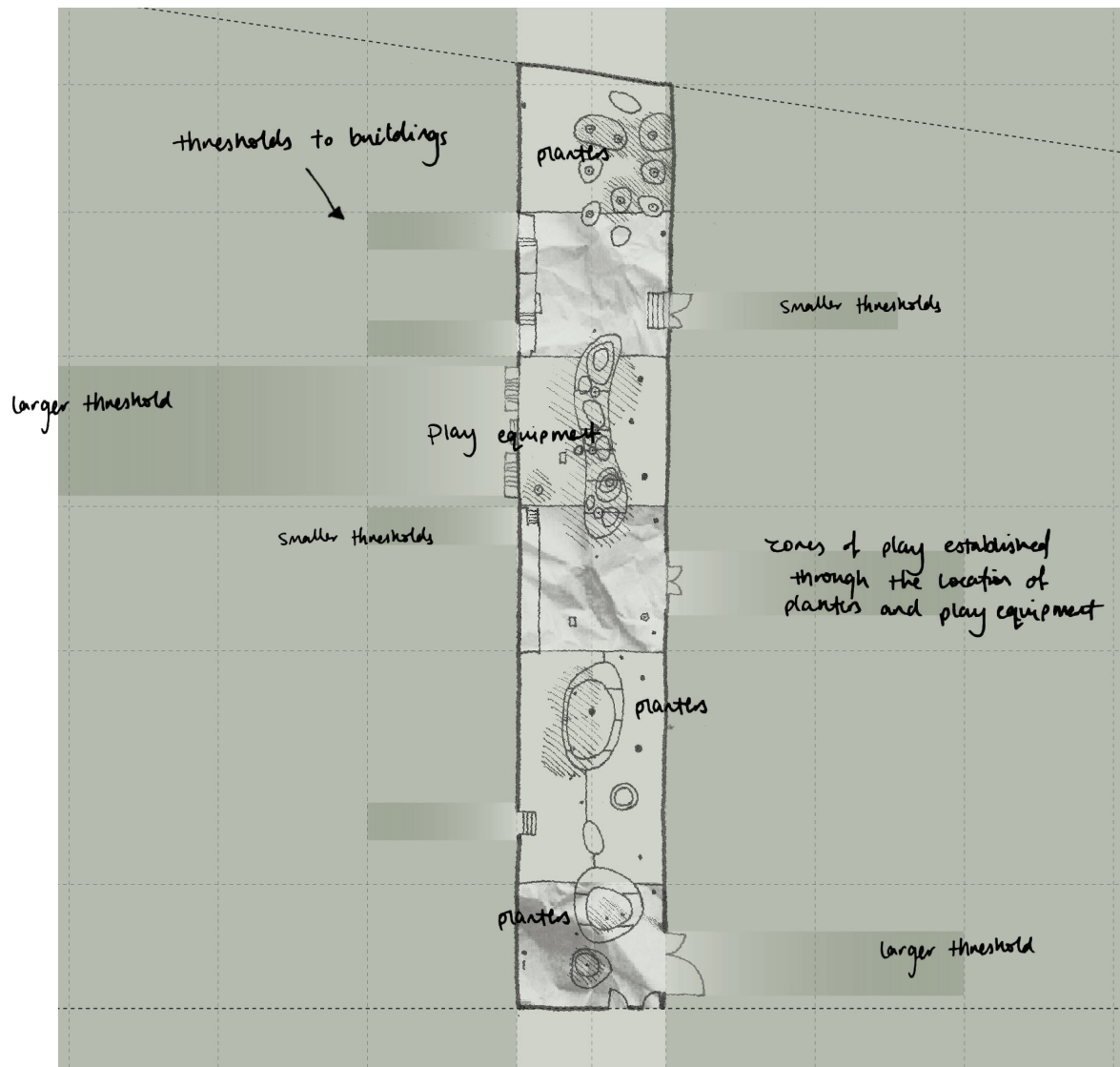
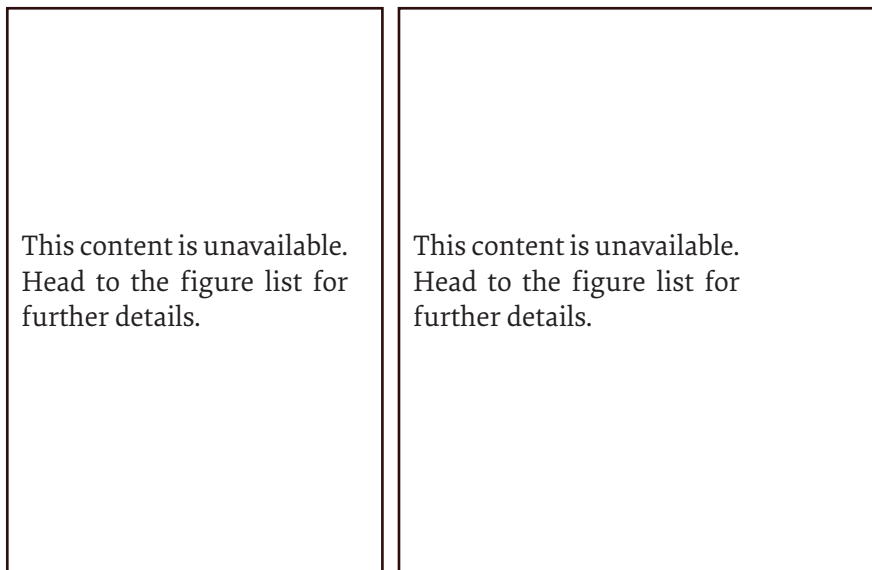


Fig 3.10. Illustration exploring tangible and intangible architecture through the Pxathens - Six Thresholds architecture.



## The Folded Arcade material / semi-public + retail



*Fig 3.11. The Folded Arcade representing Tangible and Intangible architecture.*

A folded arcade to channel the surrounding civic energies into a semi-public retail experience.

Designed: LUKSTUDIO

Design Team: Marcello Chiado Rana, Leo Wang, Melody Shen, Yiren Ding, Mamo Ho, Sissi Wang

2018, 1F Shanghai Poly Sunny Walk Mall Shanghai China

This retail space is made almost exclusively from threshold like forms that define spaces for different programmes to occur and organise them so they can all function together. The only typical thresholds that are doors or programmes changing are through the use of materials changing or the use of thin black steel frame glass.

The archway system that is used through the interior of this retail space for the use of indicating space division and framing specific sight lines that create intrigue.

There are specific uses of material types that indicate movement through the interior and under the archway thresholds as well as the direction the materials are placed in indicate the direction of movement for

example, the use of timber flooring and the direction that the timber slats are placed in indicate the direction of movement.

The regular structure creates the folds of the interior space that makes the passers-by intrigued by the space and want to interact with the interior spaces provided. This multi storey, mezzanine space creates a feeling of verticality that maximises the floor space as it is a small building.

The design allows for a dynamic interior that can be easily adapted for different retail or gallery displays that the sellers want the space for.

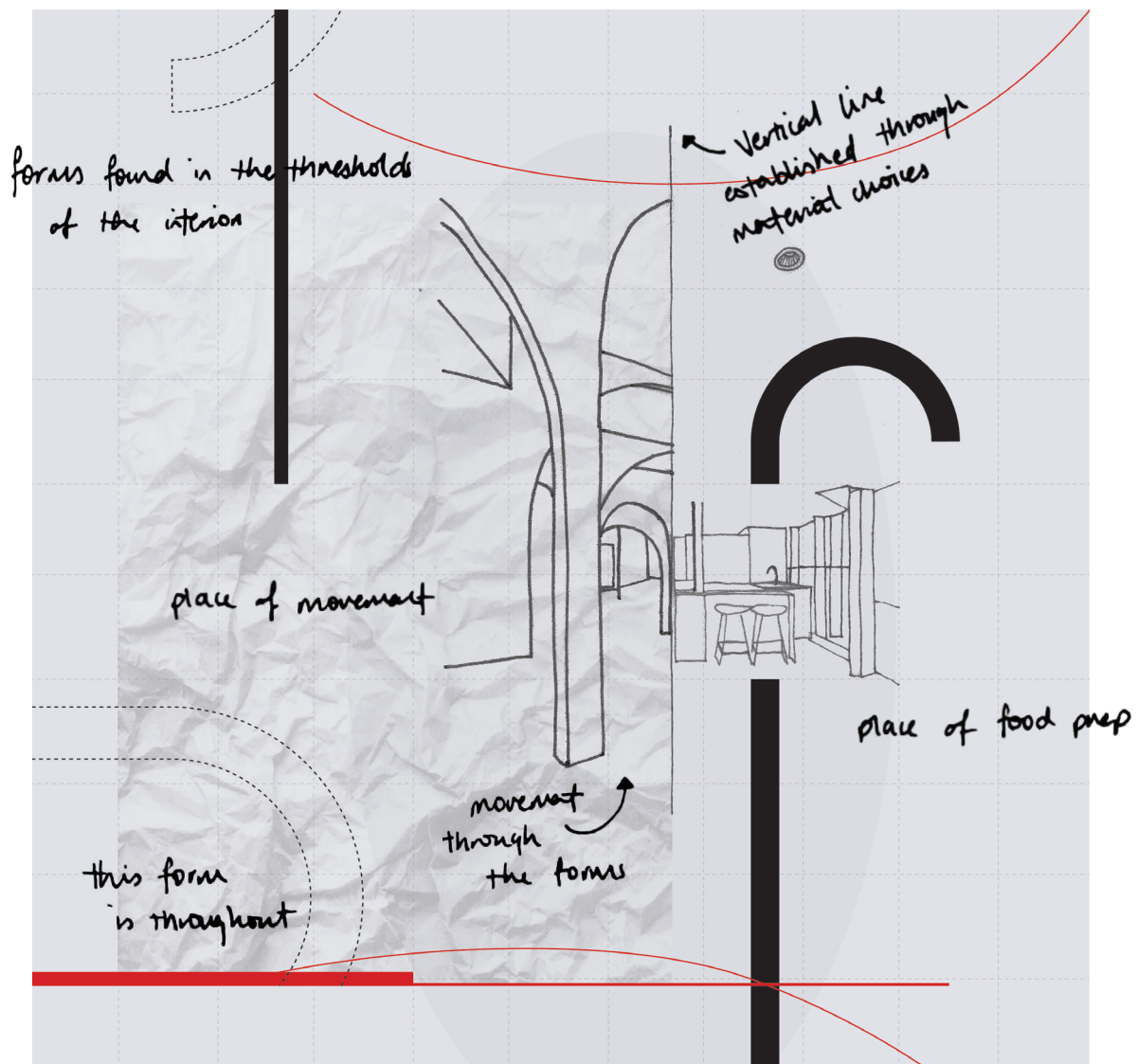


Fig 3.12. Illustration exploring tangible and intangible architecture through The Folding Arcade architecture.



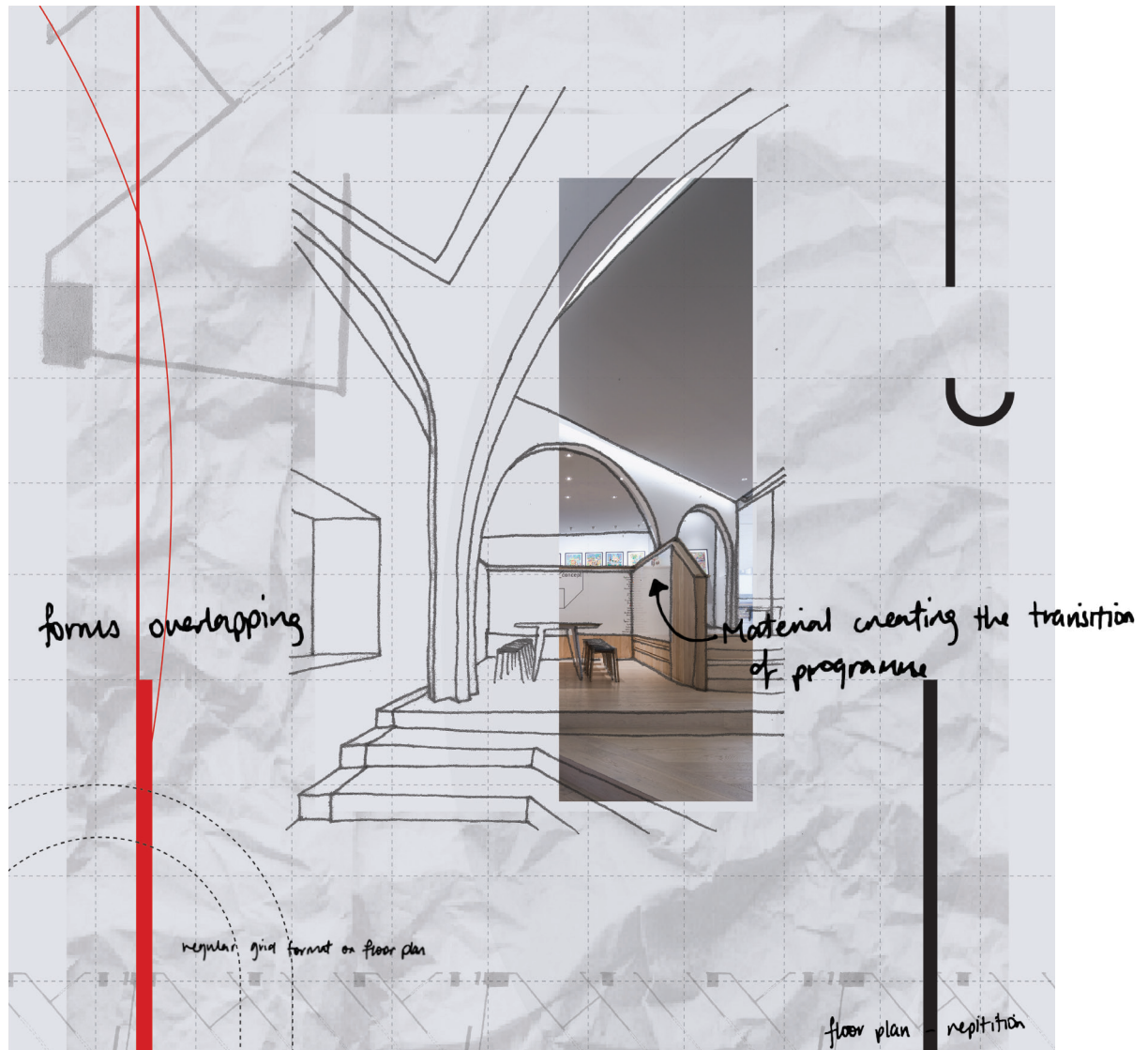


Fig 3.13. Illustration exploring tangible and intangible architecture through The Folding Arcade architecture.

## Requiem Laundry's March installation / public

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Head to the figure list for  
further details.

*Fig 3.14. Requiem Laundry's March Installation representing Tangible and Intangible architecture.*

Paying tribute to the lilong context and its habitants' lives, Lukstudio created a tunnel with familiar objects – hanging laundry on bamboo rods.

Designed: LUKSTUDIO

Curator: Jeremy Cheval

Design Team: Christina Luk, Alba Beroiz Blazquez, Cai Jin Hong, PaoYee Lim, ShanYun Huang, Yiye Lin

2015, SiWenLi Lane Shanghai China

This installation uses a space that is typically underutilised in urban settings. The idea of this installation is to take the mundane activity of doing laundry and turning it into an urban interior threshold for people to pass through and become immersed in the culture of the area. This is to make a statement and tell the story of the elderly of the area that want to pay tribute to the inhabitants lives that have been defined by this village. This threshold is intended to make an impact on those that view it through the use of texture, light and shadow.

So taking this old unused urban interior of the alley way and using it as an installation space creates an impact to the viewers as it is a dramatic and drastic change to the space.

The impact of this installation adds to the impact of the cause this is promoting and shedding light on. This is a great example of how the choice of site adds to the installation in an important way.

The simplicity of the materiality chosen also increases the impact of the installation due to the form being expressed through repetition and mirroring to create a regular pattern.



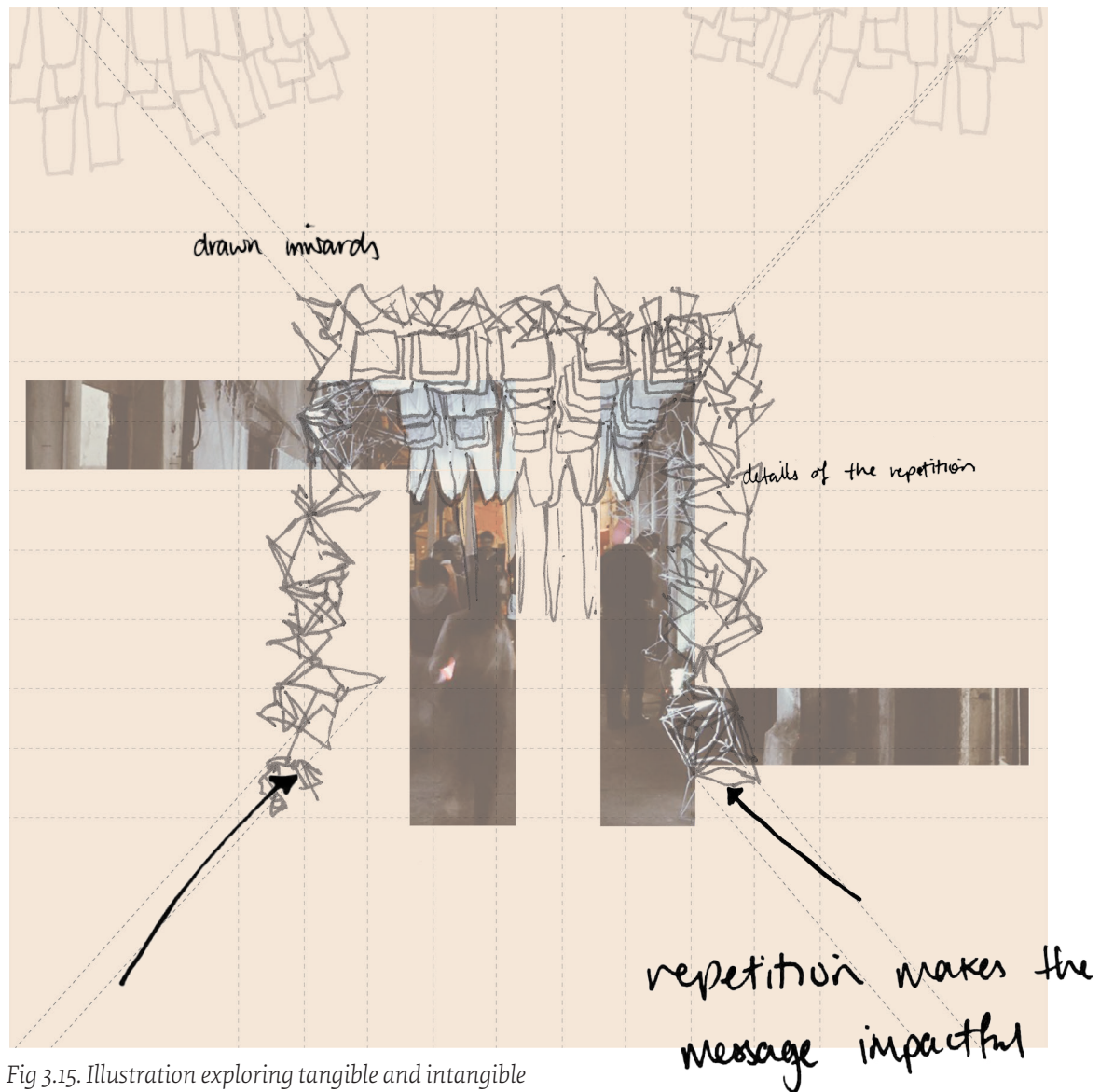


Fig 3.15. Illustration exploring tangible and intangible architecture through Requiem Laundry's March Installation architecture.

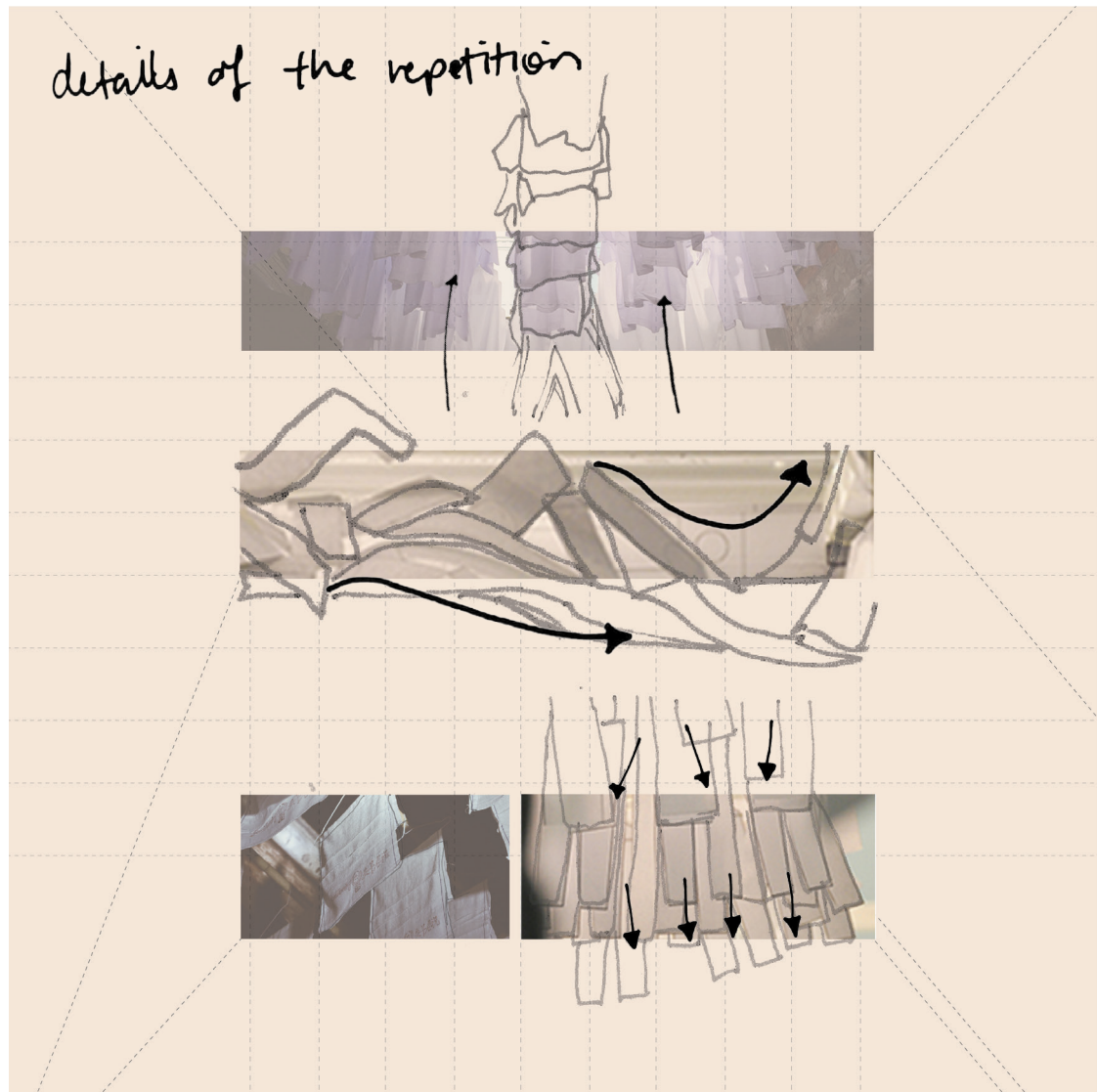
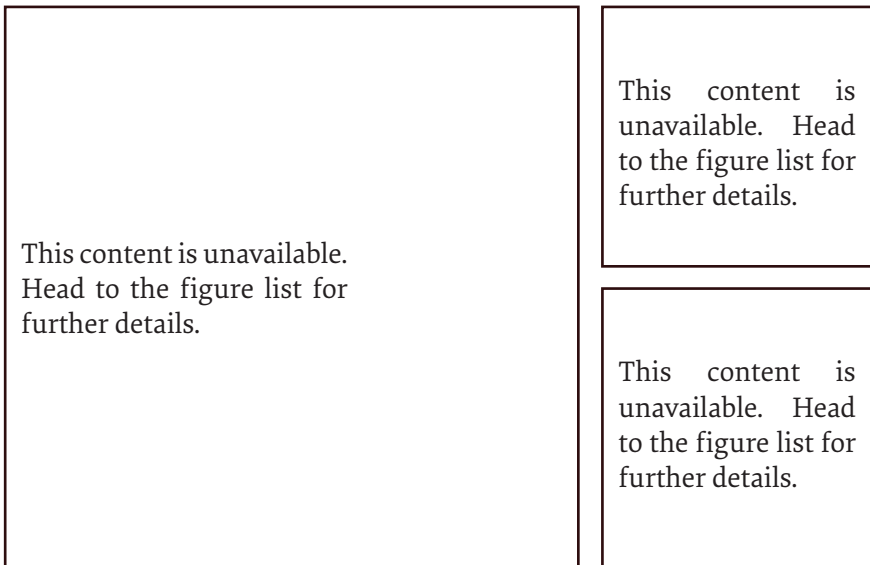


Fig 3.16. Illustration exploring tangible and intangible architecture through Requiem Laundry's March Installation architecture.

## Breezeway House material / domestic



*Fig 3.17. Breezeway House representing Tangible and Intangible architecture.*

Timber-lined walkway allows sea breeze into Australian.

Designed: David Boyle

2020, Macmasters Breezeway Australia



Breezeway House explores the use of different cultural ideas of a threshold by applying them to the interior of the building to create the desired atmosphere and tension between spaces.

The open quality of the thresholds frame views and allow for free movement between programmes that influence the spatial qualities and therefore atmosphere and tension. Material decisions become a critical part of the threshold to create or interrupt continuity between spaces. How the materials mould between spaces creates that sense of continuation, especially

through the manipulation of light making the spaces feel lighter a more open and warm with the material palette. This is also an important part of creating a sense of ambiguity between what is interior and what is exterior.

The clean lines influence the direction of physical movement as well as how the space directs the user's eye around the interior which also add to the ambiguity of the spaces. There are many points of movement through the architecture for the user of the space to define the programme of the interior through restriction or expansion.

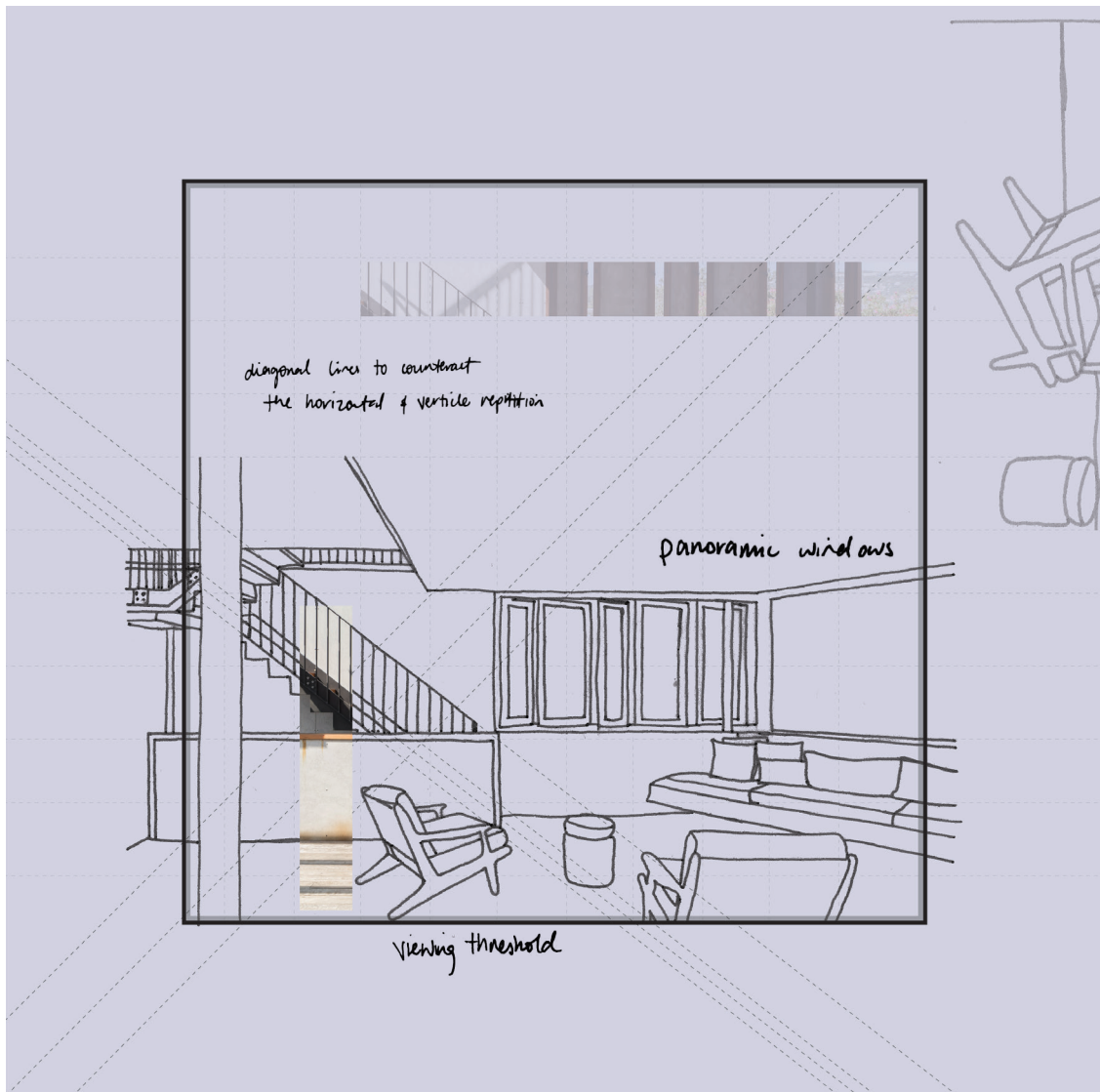


Fig 3.18. Illustration exploring tangible and intangible architecture through the Breezeway House architecture.

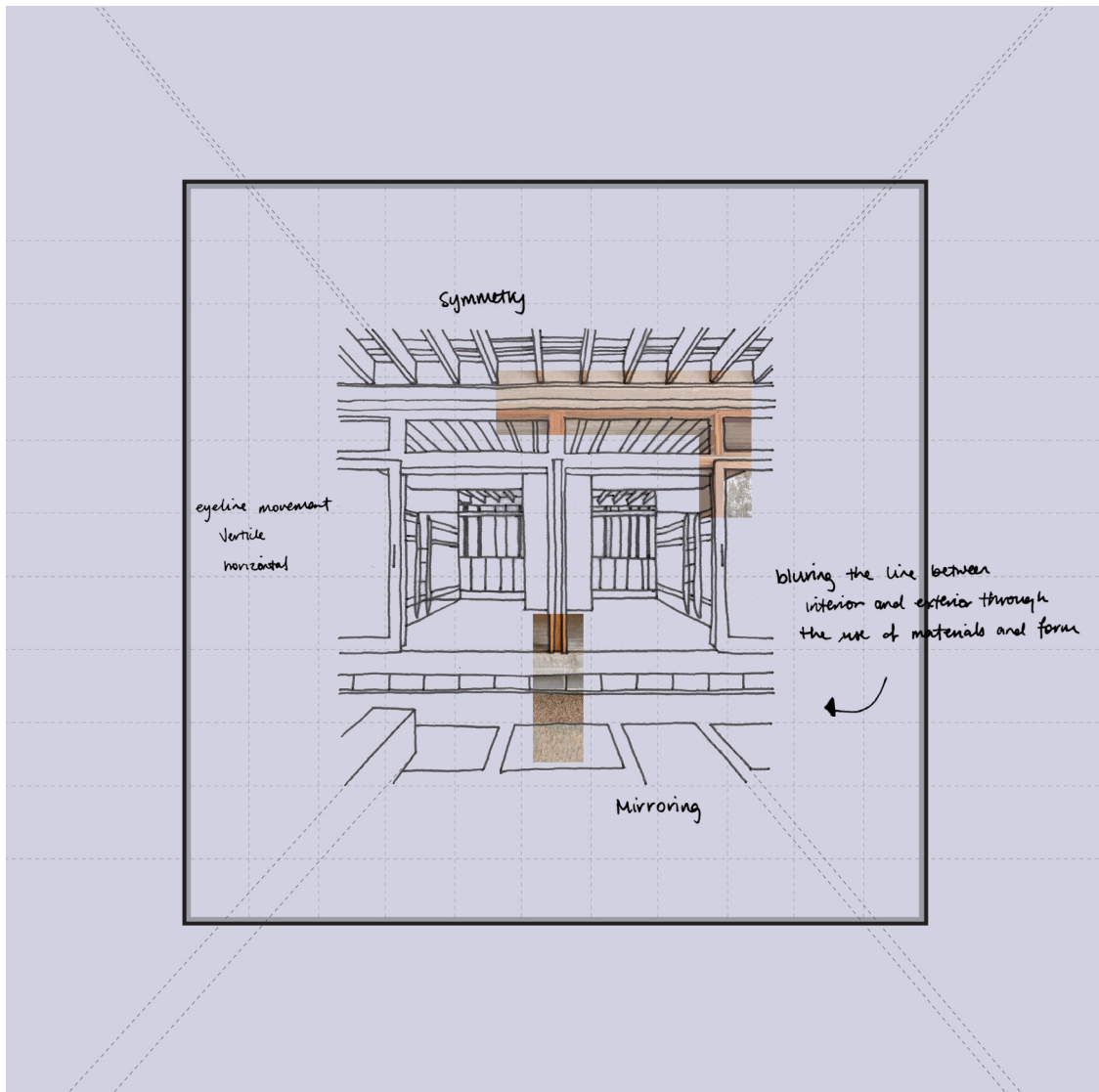


Fig 3.19. Illustration exploring tangible and intangible architecture through the Breezeway House architecture.



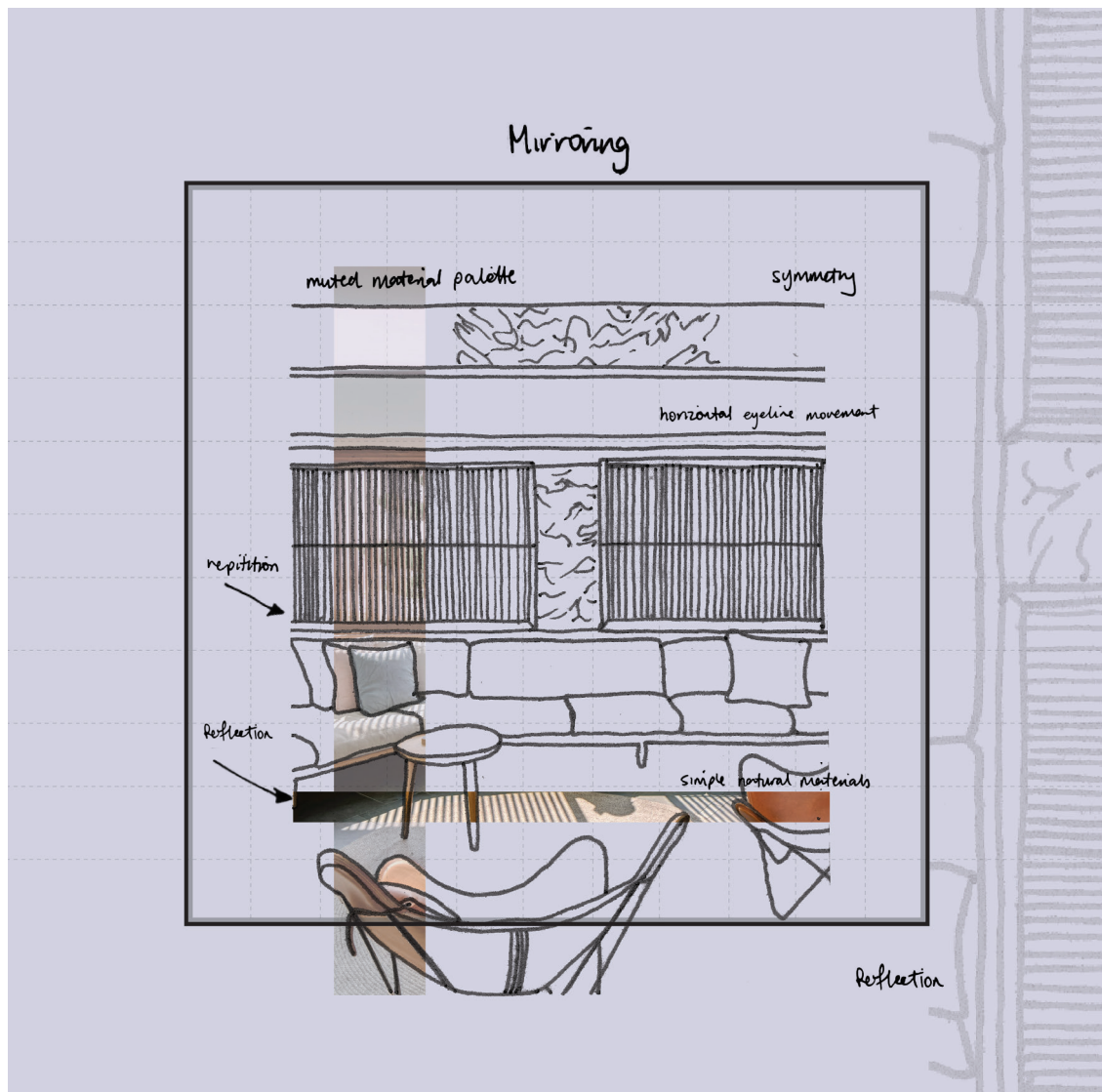


Fig 3.20. Illustration exploring tangible and intangible architecture through the Breezeway House architecture.



## Critical Reflection - Tangible and Intangible Case Studies

*The design attributes were found through these methods which were chosen to complete the comprehensive design investigation of these precedents:*

- The use of drawing and then abstracting the forms from the line qualities found using digital media helped to investigate the precedent image
- Using a mix of grids and images alongside the hand drawn image allowed for an abstracted investigation of form with materiality and colour
- Sliced images in the investigations give an abstracted hint at how the materials harmoniously create an atmosphere.

*Key considerations and attributes in relevance to tangible and intangible effect on interior thresholds include the following:*

- Six thresholds has zoning like the folded architecture
- The folded architecture has repetition like the Breezeway house
- The Breezeway house blurs the line between thresholds like folding architecture
- Six thresholds uses materials on the floor to zone like folding architecture
- Requiem laundry's march uses material and form and repetition like Breezeway house and folded architecture

This summary shows the similarities in the aspects used between the vastly different precedents that were analysed.



This precedent section analysed the abstracted architectural form of the threshold against the material and the formal qualities that they present such as repetition, symmetry, and zoning. These qualities analysed how the form impacts the users movement through the thresholds that make up the spatial experience of the buildings. Investigating the range of precedents from interior retail to outdoor public courtyard, an installation and private home, a wide range of user types is involved. Comparing and contrasting the precedents different aspects is important for assessing how different aspects will translate and be received in a threshold installation in a public hotel lobby area.









*Entrance Threshold, Dubai,  
U.A.E.*



# Chapter FOUR

# Context

This chapter is broken into 4 sections.

Section Four.1 is The Mapping Matrix Design. This discusses the importance of analysing the physical and atmospheric aspects through the works of Gordon Cullen's *The Concise Townscape* and Juhani Pallasmaa's *Eyes of the Skin*.

Section Four.2 is The Mapping Matrix. This discusses the design of the Mapping Matrix and how it is used throughout the thesis.

Section Four.3 is 2 Threshold Scales. This is an explanation for how the design phases of this thesis will occur and how this impacts the outcome of this thesis investigation.

Section Four.4 is the Site Analysis. This discusses how the sites were chosen: Naumi Hotel and West Plaza Hotel.

# The Mapping Matrix Design

## FOUR.1

***Gordon Cullen - The Concise Townscape***  
***Juhani Pallasmaa - Eyes of the Skin***

The investigations matrix combines different sensory aspects and investigates how they perform against and alongside each other. They are broken into 2 types of aspects, atmospheric and physical. They get paired up and explored through doing visual investigations with media that best explores the aspects and tests them alongside other relevant designers' work to analyse and draw conclusions.

Looking at Juhani Pallasmaa's *Eyes of the Skin* and Gordon Cullen's *Concise Townscape* works individually, there was a clear correlation between the aspects of the threshold that this thesis is investigating and a method in which this can be done. The matrix has been designed to create an investigation of aspects that can be directly compared and evaluated against each other to form conclusions that will create the research to apply to the final threshold intervention.

*Eyes of the Skin* talks about how the skin has memory and the tactility of archi-

tecture is a way in which we sensorially remember the architectural experience of a building. The sense of self is strengthened through architecture and allows us to engage fully with the mental dimensions of dream, imagination and desire.

The sensory impact of architecture is subconscious and more intense than the average person will give it credit for. Pallasmaa says that "the ultimate meaning of any building is beyond architecture; it directs our consciousness back to the world and towards our own sense of self and being" (Pallasmaa, 2005, pg.13) which is an apt way of describing how architecture can also inform our interpretation of the space we are in. Gordon Cullen interprets the human interaction between architecture and oneself as "the human mind react[ing] to a contrast, to the difference between things, and when two pictures (the street and the courtyard) are in the mind at the same time, a vivid contrast is felt and the town becomes visible in a deeper sense. It becomes alive through the drama of juxtaposition." (Cullen, 1971, pg.9)



The Concise Townscape convinces the reader that the city is to be built for the moving person as we are always moving through the city, towards it or away from it. The idea that everything needs to be built for the movement of the person and how the sense of enclosure and widening areas assists with this idea of creating/enforcing movement. Also, how the ideas of colour, texture, scale, style, character, personality, and uniqueness influence how people feel in the space and move through it (in the context of the city).

These two architects bring together the ideas and techniques that create the matrix method for investigating design aspects. The techniques for analysing the townscape aspects are used for the atmospheric aspects as well as the physical. By graphing these aspects against each other they can be tracked and allow for investigations to be done through many different techniques, whether it's through drawing and journey photography like Cullen does or through the analysis of multimedia imagery and photography of elements for analysis.

# The Mapping Matrix

## FOUR.2

The Mapping Matrix was designed to help me investigate the most important aspects found in the literature and the case studies I have reviewed and analysed. – ‘Important’ being defined as the aspects that came up most frequently throughout the literature and case study reviews – As there were so many different aspects showing up repeatedly in these analyses’, I realised I needed a way of collating and representing them visually to ensure I was exploring all the most important aspects throughout my design development and iterative processes.

The aspects chosen for the Mapping Matrix have been divided into physical and atmospheric, to be combined and investigated together, and further arranged to have aspects of similar types next to each other. This allowed me to explore and directly compare aspects to create concepts that evoke emotional responses.

The case study analysis images also got put into the Mapping Matrix as this allowed me to see what I had already visually analysed and investigated. Lots of these investigations can be placed in multiple different areas of the Mapping Matrix; however, I have placed them in the position that has the most significant aspects within the concept image.

In using this Mapping Matrix throughout the thesis, I kept it in the back of my mind for what aspects and potentials I wanted to test when iterating and analysing threshold elements. As I went through designing installation type threshold aspects through an iterative process, they were inserted into the Matrix to fill the appropriate spaces. Due to the time restraint of this thesis, not all the aspects have analysed, however, the most important ones have been.

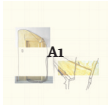



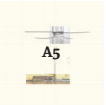
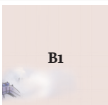

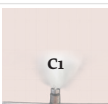








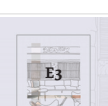

















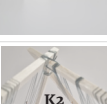


		Atmospheric Aspect Tests				
		Noticeable Temperature Changes	Bright Lighting	Medium Lighting	Dark Lighting	Sound: High Reverberation Space
Physical Aspect Tests	Rough Material					
	Soft Material					
	Hard +Smooth Material					
	Transparent Material					
	Repetition					
	Symmetry					
	Zoning with Form					
	Rectilinear Form					
	Circular Form					
	Arch Form					
	Triangular Form					

Fig 4.01. The Mapping Matrix.



## 2 Threshold Scales

### FOUR.3

I will be exploring the findings from the literature review and case study review through designing 2 different scale thresholds of hotel lobbies. Comparatively small and large thresholds will be used in order to then reflect on how these investigation findings will be able to be applied to thresholds that fall between those sizes.

These thresholds will investigate how influencing peoples perceptions can be done in 2 scales with how different lighting and

materials change the atmospheres of the hotel lobbies. This will then have a significant effect on the users emotions and mood towards the hotels overall experience.

The exploration of the smaller and larger style thresholds will give a well rounded analysis of the hotel lobbies impact on the user that can be applied to those at either end of the size spectrum as well as those inside it.

*Entrance to a dark void, NZ  
Academy of Fine Arts Gallery,  
Wellington.*



# Site Analysis

## FOUR.4

Choosing the small and large scale sites for the threshold design was done based on personal interest in the sites as well as their diversity in design styles. To make the overall decision which buildings thresholds would get redesigned there was a search done to find hotels within the Wellington CBD to improve.

I was limited to Wellington CBD due to COVID-19 and taking pictures of the interiors of the hotels was near impossible due to the restrictions of the city at the time. This meant that I had to choose sites that were easy to get to, had mostly public access through or around them and weren't being used as managed isolation or quarantine facilities.

Figure xx shows the chosen sites in relation to each other as well as other notable thresholds around Wellington City. The notable thresholds were chosen for their forms and lighting qualities that can be seen in the black and white images placed near their locations. The small brown dots show the potential thresholds that were

considered, and the larger brown dots show the 2 thresholds that were chosen.

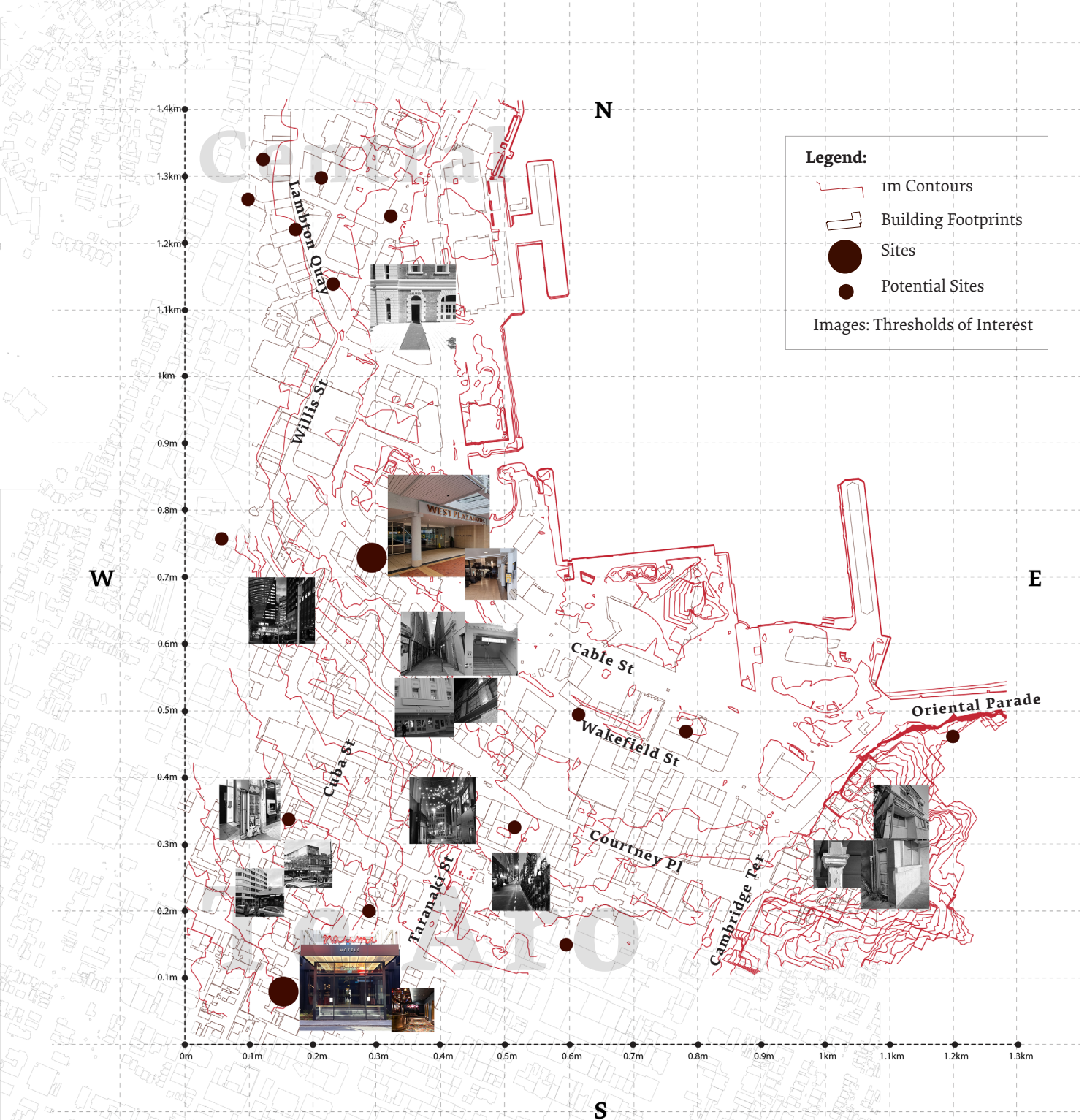
### *Small Scale Threshold: Naumi Hotel*

The decision was made to use the Naumi Hotel as the small scale threshold as there are two entrances that link Dunlop terrace to Cuba street creating a thoroughfare through the hotel. The Naumi Hotel was also renovated in October of 2020 by Material Creative, in an art deco style unique to Wellington. One of the most important aspects of a threshold is to change the user's initial perceptions of the following interior qualities and the threshold design for this hotel is not unique or impactful.

### *Large Scale Threshold: West Plaza Hotel*

The West Plaza Hotel was chosen for its outdated luxury design and poor spatial planning of the lobby space. It was last renovated in 2015 by the Conolly Corporation and presents itself as bland and without any defining features. The threshold lacks originality, memorability and does not influence the user's perceptions of the next interior quality to be accurate.





Potential Sites (some of which did not make this map):

- Bolton Hotel
- Boulcott Suites
- CityLife Wellington
- Copthorne Hotel Wellington
- Distinction Wellington Century
- DoubleTree By Hilton Wellington
- Grand Mercure Wellington

- James Cook Hotel Grand Chancellor
- Naumi Hotel**
- Novotel Wellington
- Oaks Wellington Hotel
- QT Wellington
- Quest Wellington
- Rydges Wellington

- Sofitel Wellington
- The Intrepid Hotel
- The Marion Hotel
- U Residence Hotel Wellington
- Wellesley Boutique Hotel
- Wellesley Gardens
- West Plaza Hotel**

Fig 4.02.: Wellington City, New Zealand. Site Map.









*Serralves Museum lighting,  
Porto, Portugal*





## Chapter FIVE

*The ceiling structure of The  
Louvre Palace, Paris, France.*

# Small Scale

This chapter goes through the design phases of the Small-Scale threshold design for Naumi Hotel.

The design explorations are in Sections 5.1, 5.2, and 5.3 use The Mapping Matrix as a guide for the aspect testing that assist in Section 5.4 for the Developed Design and exploration of the threshold space.

# Naumi Hotel

*Small Scale Threshold*



Fig 5.01. Photograph of the Dunlop entrance to the Naumi Hotel.



## Case Studies

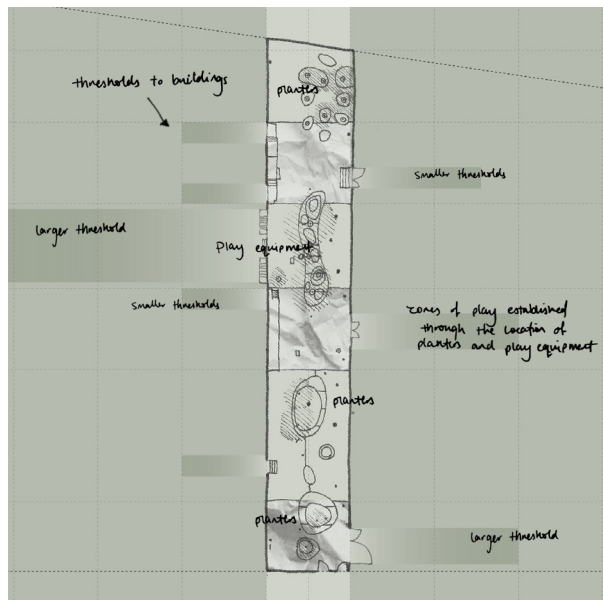


Fig 3.10. Illustration exploring tangible and intangible architecture through the Pxathens - Six Thresholds architecture.



Fig 5.02. Cunningham House, Christchurch Botanical Gardens



Fig 5.03. Glasshouse Interior, Walled Kitchen Garden and Palm House and Vineries

Pxathens - Six Thresholds was chosen for its threshold zoning. The Naumi Hotel threshold branches programmes off it similar to this case study, therefore, using this to properly create the thresholds between was important. The glasshouse images from the Cunningham House and Walled Kitchen Garden and Palm House and Vineries, display structural framing precedents to let light in and bring plants inside the threshold space.

## The Entrance

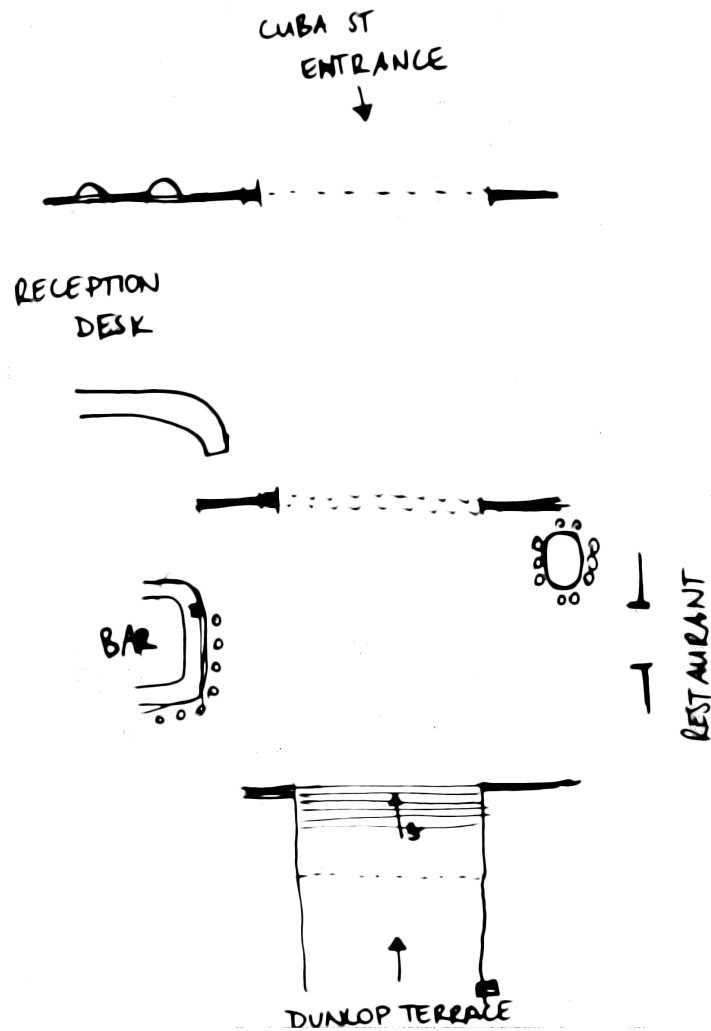


Fig 5.04. Illustration of the Naumi Hotel threshold space.

## Existing Materials

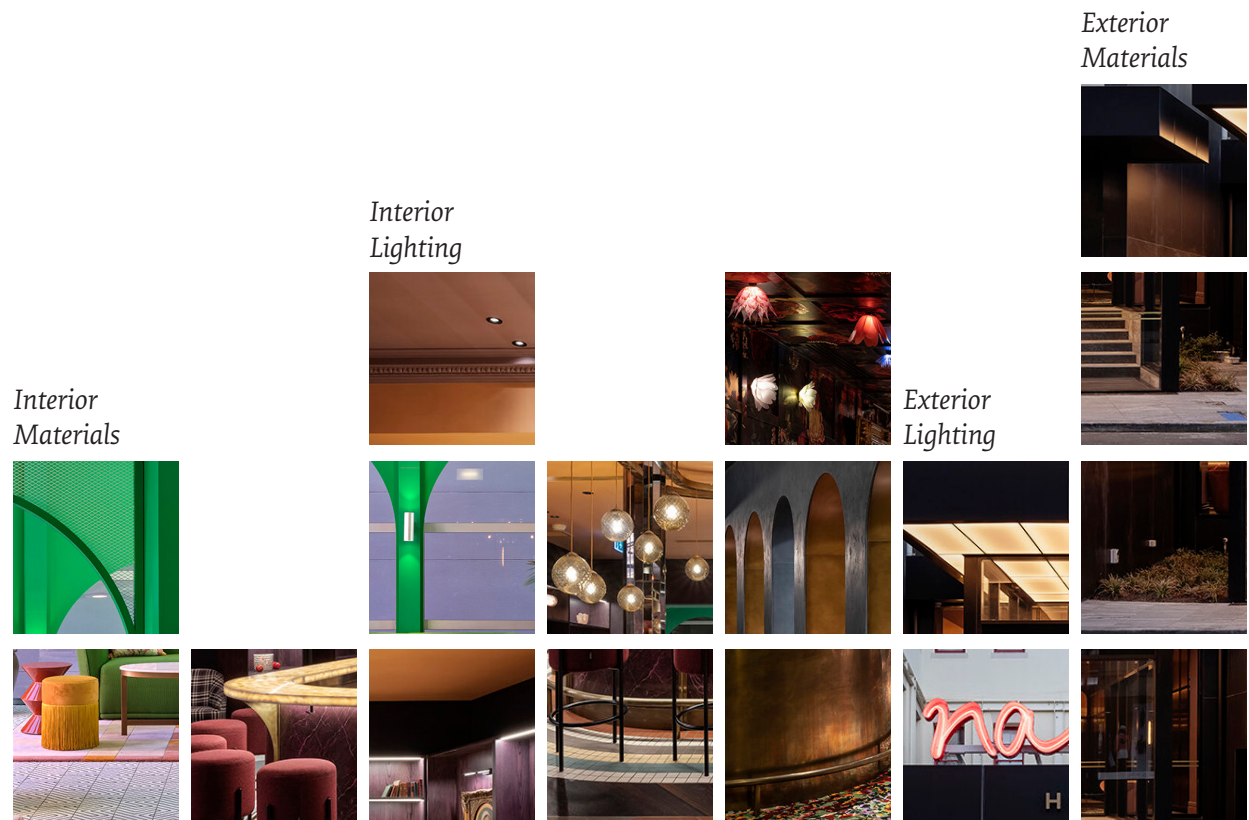


Fig 5.05. Naumi Hotel's Existing Material Palette.



The background features a light beige grid on the left side. Overlaid on this are several thin, curved orange lines that sweep across the page. At the bottom, there are large, flowing, organic shapes in shades of light green and yellow. The text is positioned in the upper left area, partially overlapping the grid.

# **Digital Illustration Series - Montages**

## **FIVE.1**

This section explores the aspects of form, colour, material and atmospheres of the Naumi Hotel, Dunlop Terrace, Wellington Entrance. The aim of this section is to analyse what is present and evaluate it to begin designing improved concepts.



Fig 5.06. Illustration exploring form.



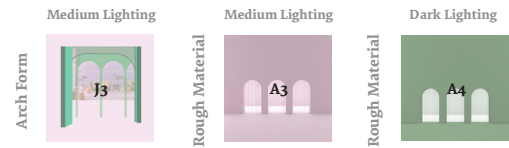


Fig 5.07. Illustration exploring light and form.



Fig 5.08. Illustration exploring light and form.

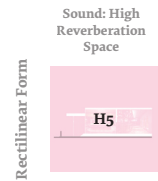
The left page montage explores the forms that the Naumi Hotel Dunlop terrace entrance threshold needs to visually connect to. The forms and the monochromatic nature of this threshold is strikingly different from the bar and the reception spaces. This has been identified as a problem through the lack of design flow and continuity in the lobby space.

The exaggeration of the length of the forms within the montage explain their importance and visual hierarchy within the space.

The 2 images above is an investigation on how the light and colour can change the atmosphere within the forms and colours of the montage on the left page. A quick render test to see how the light reflects colours from a hard matte surface and how behind lighting can also affect the colour. The brighter the light, displays a brighter more saturated colour and darker lighting displays a deeper, darker more rich colour. This effect of lighting is evident in the art installation *Threshold* precedent that explores light and colour interacting to create a threshold.



Fig 5.09. Illustration exploring programme.



The transition between exterior to interior is important to investigate to get an idea of the journey that the user will take through the lobby into the hotel and how this effects their perception of the hotel itself.

Moving from left to right through the montage the user goes from Dunlop terrace a small street with a small footpath and very limited parking, up a flight of stairs, straight into a bar, with the reception desk hidden behind. The long hallway, this section is cut through, connects Dunlop Terrace to Cuba Street. This montage shows the important programmes within the threshold space.



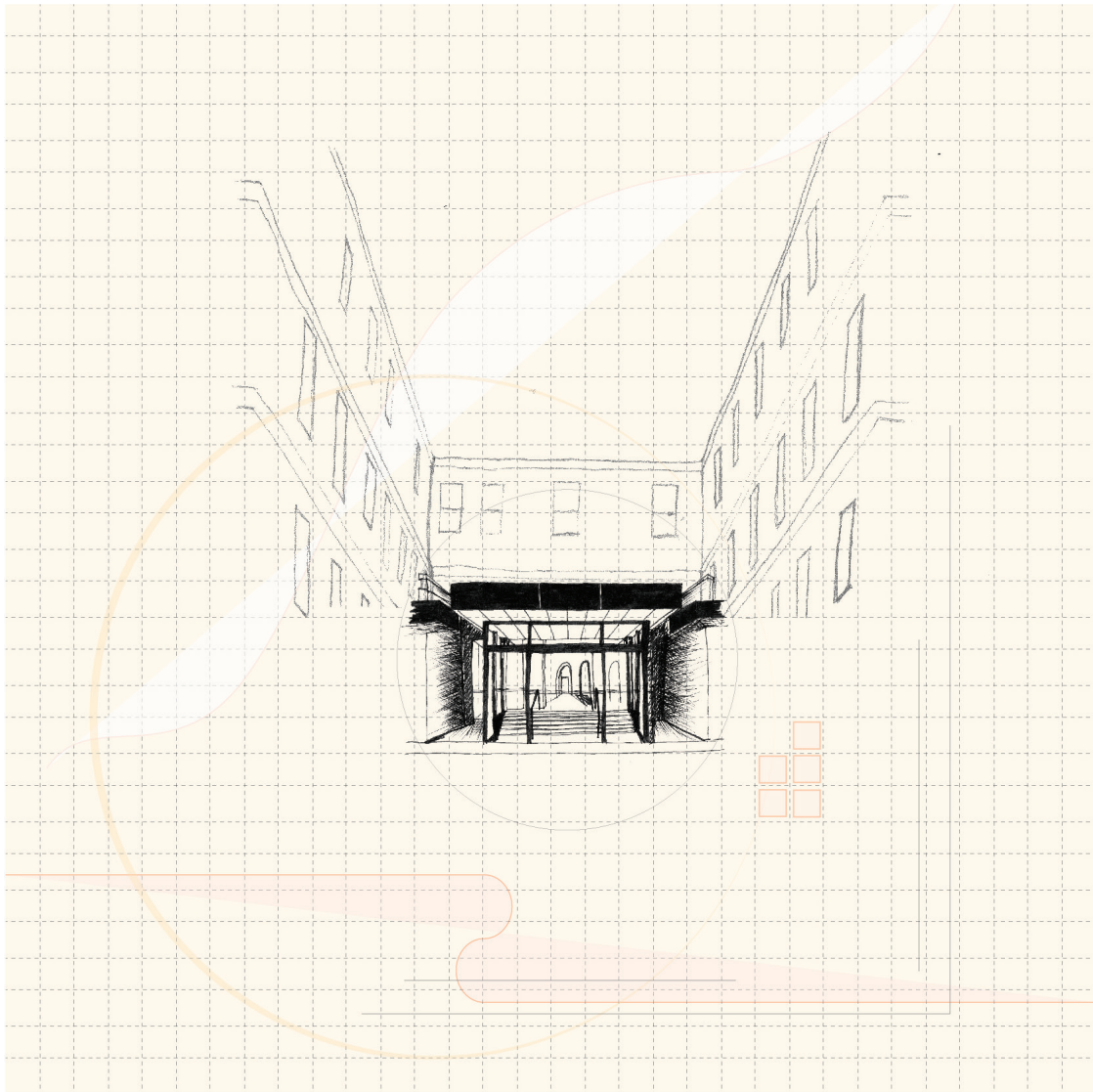


Fig 5.10. Illustration exploring form.

### G3 - Zoning Form, Medium Lighting

- Higher Elevation
- Rectilinear Forms
- Movement drawn in with form

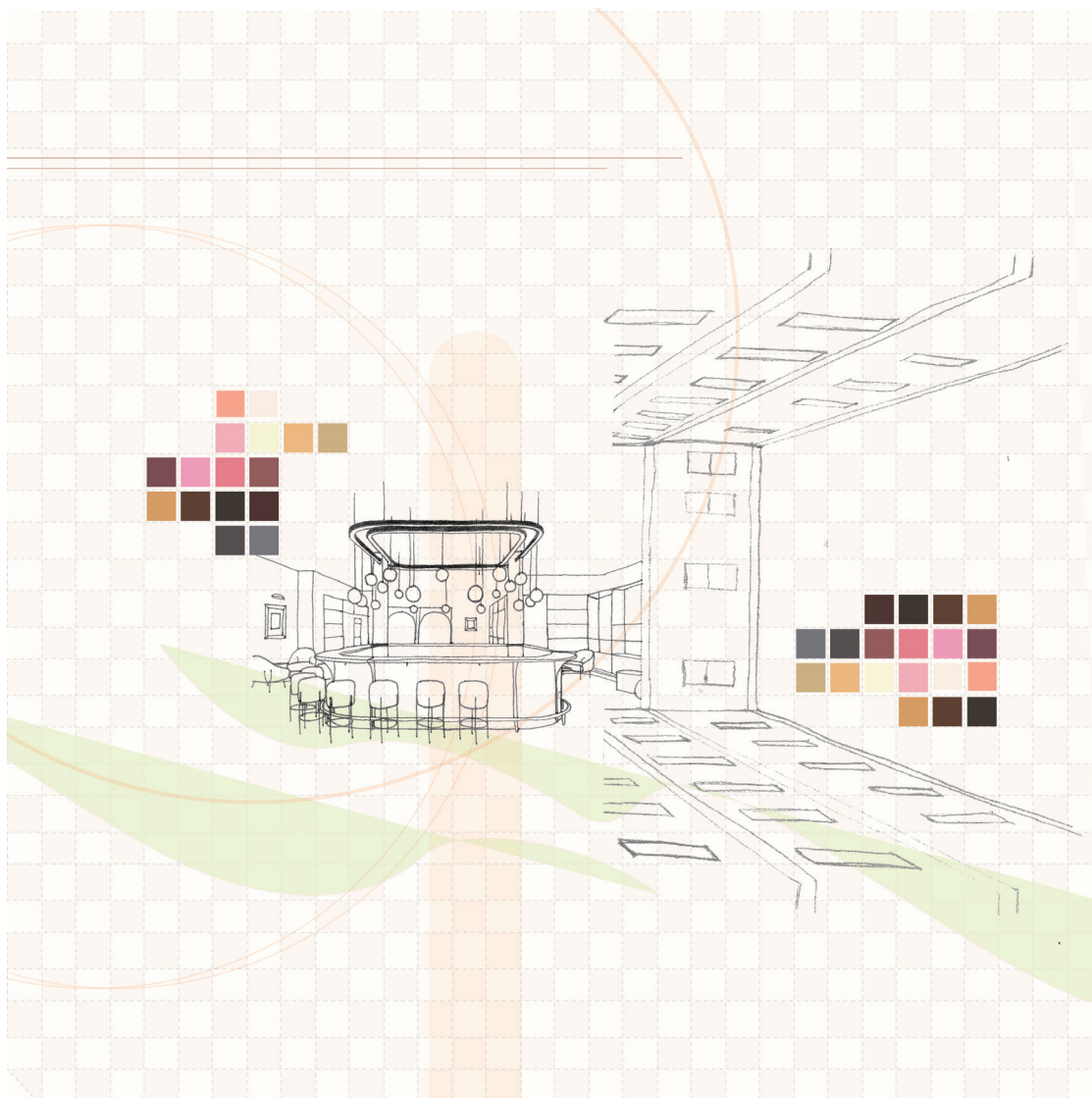


Fig 5.11. Illustration exploring form, colour and light.

#### I4 - Circular Form, Dark Lighting

- Dark lighting that enriches colour
- Circular Forms
- Movement drawn in with form

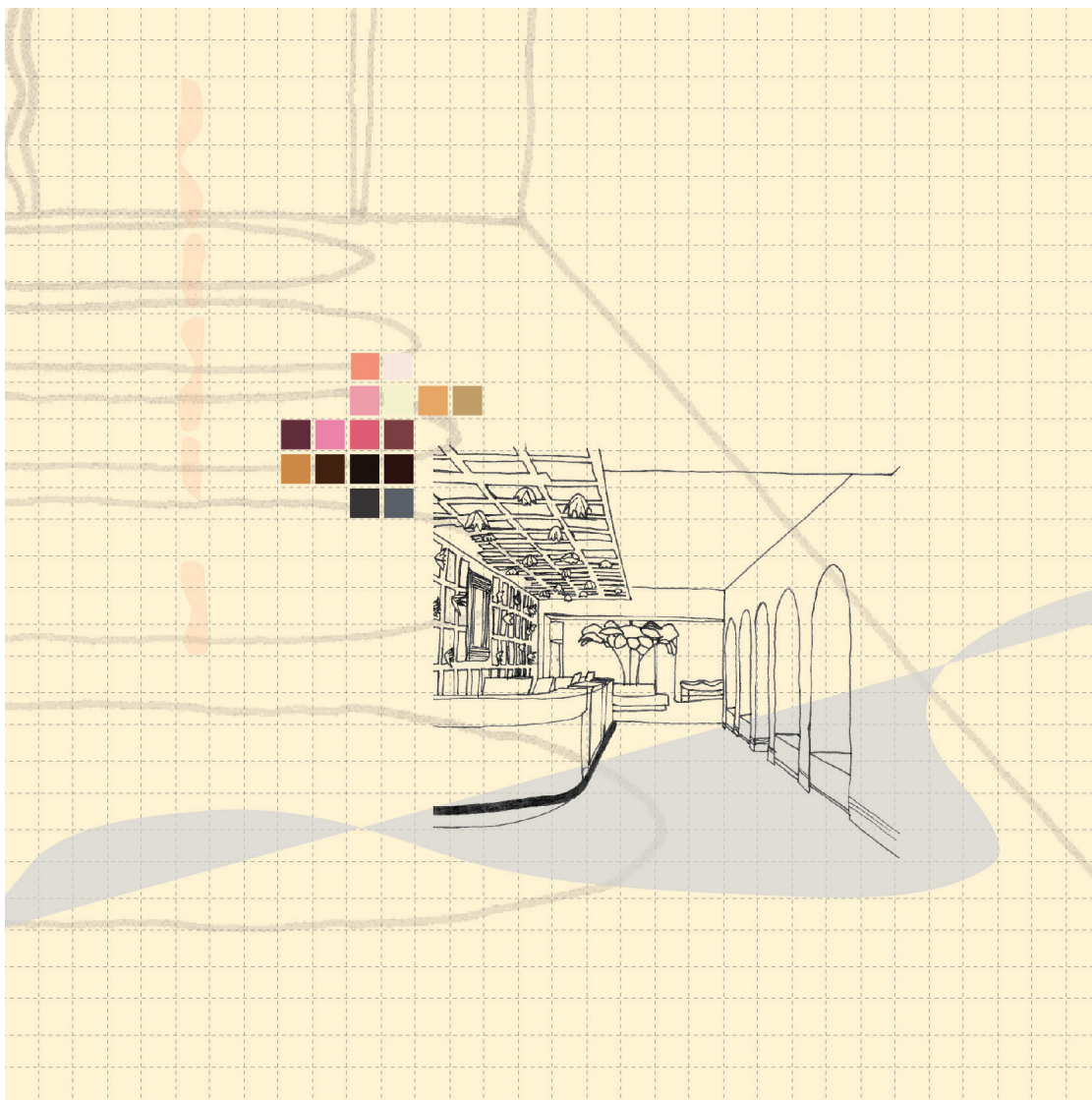


Fig 5.12. Illustration exploring form, colour and light.

#### J4 - Arch Form, Dark Lighting

- Dark lighting that enriches colour
- Arch Forms
- Movement drawn in with form
- Lighting clusters
- Balance of cool and warm Colour swatches



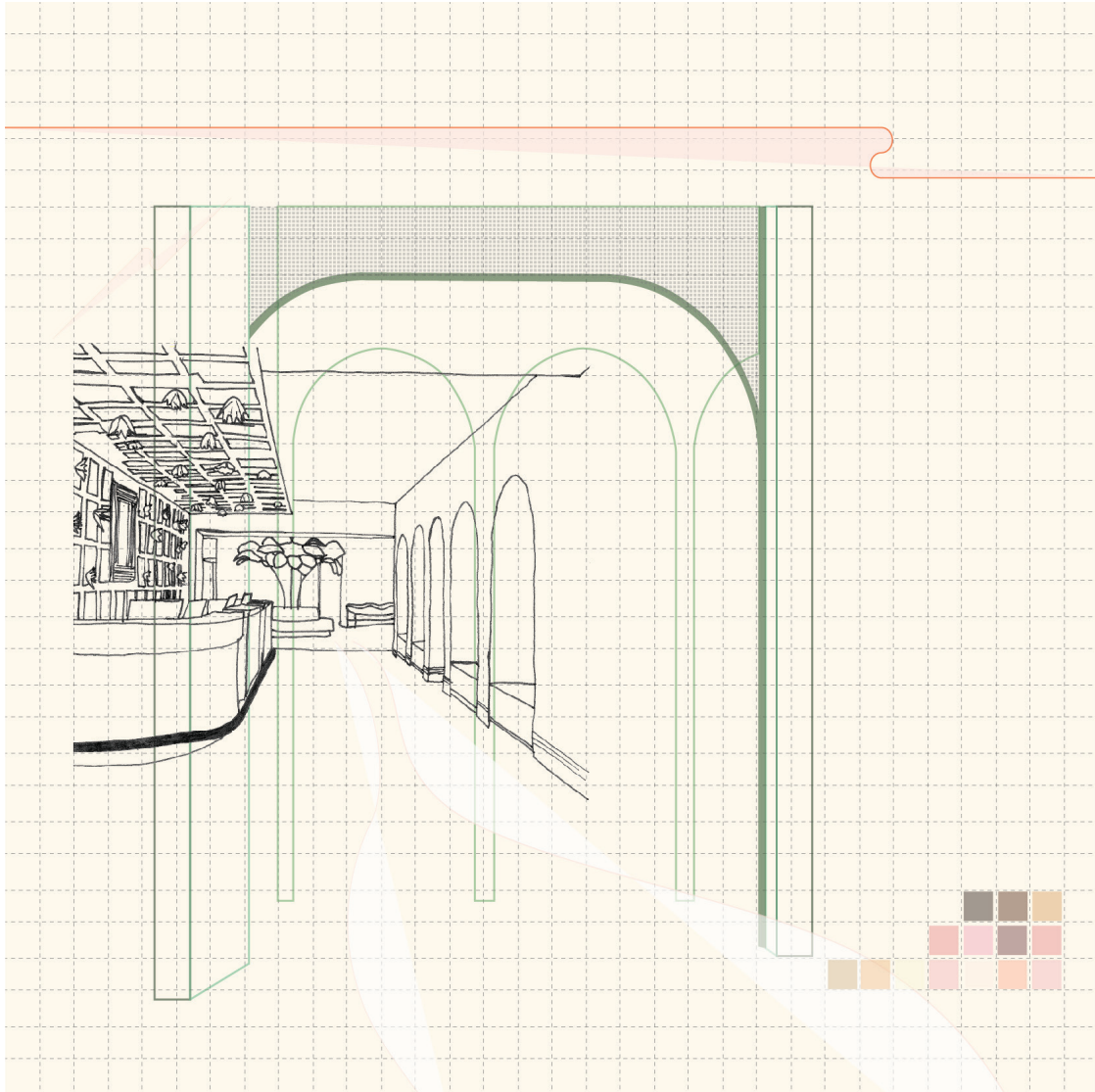
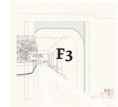


Fig 5.13. Illustration exploring form, colour and light.

### F3 - Symmetry, Medium Lighting

- Dark lighting that enriches colour
- Symmetrical Forms
- Movement drawn in with form
- Lighting clusters
- Balance of cool and warm Colour swatches

## **Critical Reflection - *Digital Illustration* Series - *Montages***

This mini digital montage series assessed the forms of the Naumi Hotel entrance threshold. The purpose of this was to find what aspects the threshold had, find the design language present as well as investigate the lighting, colour and patterns of the space.

This investigation proved to be successful as I was able to then determine all these aspects previously mentioned. Analysing the movement between programmes and forms in between through montage was successful, as I could extract these through distortion.

This sparked the idea to manipulate and extract out forms in a physical modelling series which is explored next.



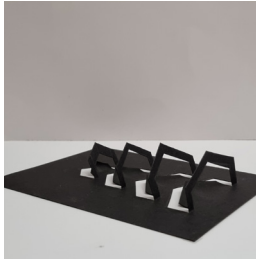


**Mini Physical Series - Modelling**  
**FIVE.2**



This section explores the forms from the previous digital montages, distorting them and exaggerating them to determine which forms are more successful in manipulating the users movement.

1



2



3



4

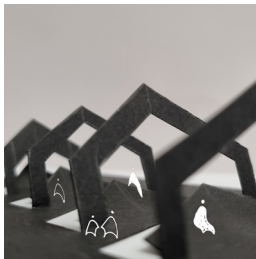


Fig 5.14. Physical modelling exploration.

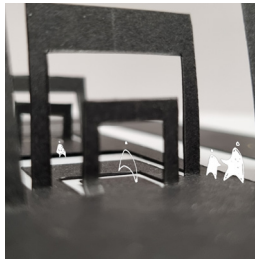


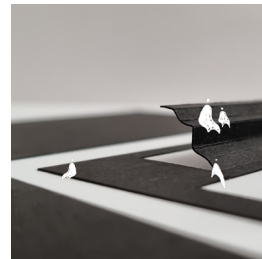
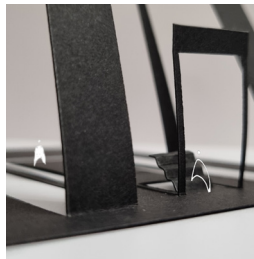
Fig 5.15. Physical modelling exploration.



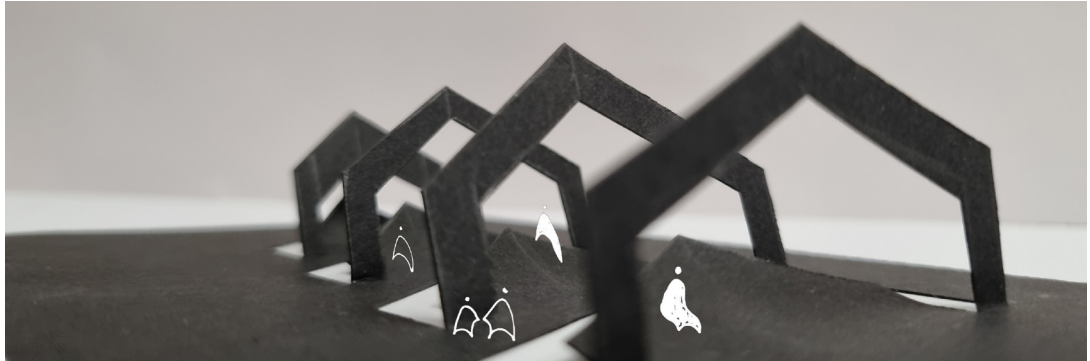
Fig 5.16. Physical modelling exploration.



Fig 5.17. Physical modelling exploration.







*Fig 5.14. Physical modelling exploration.*

These black card models test the forms from the Naumi hotel entrance threshold independently from any lighting and shadow. The aim was to gather information on the proportions of the forms present in the threshold.

Model 1 investigates the floor level rising, how this in-turn impacted the ceiling level also rising and then how people would interact with the space; climbing up the elevation to get to a higher space to sit and navigate the space.

Model 2 investigates the rectilinear threshold space and how this impacted the flooring as there were many thresholds to pass through. This creates a corridor effect with-

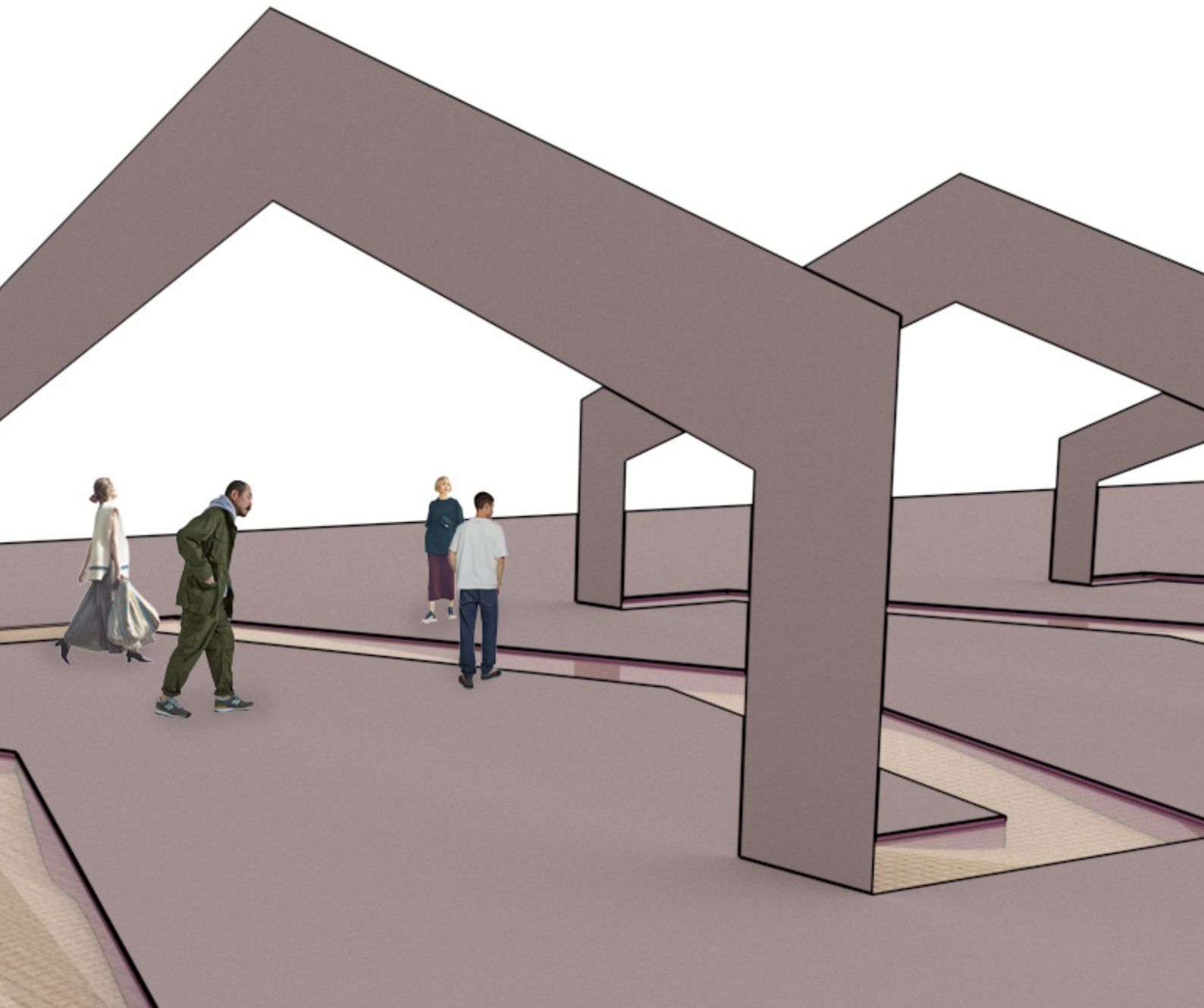
out there being any walls either side of the arches, guiding the space and where the flow of movement is.

Model 3 investigates the immediate presence of a stairway at the threshold point. This can break up the movement into the building appearing as an obstacle.

Model 4 investigates the stairway being pushed further back into the threshold in a response to model 3. This coupled with the floor texture changing creates a sense of intrigue and tension.

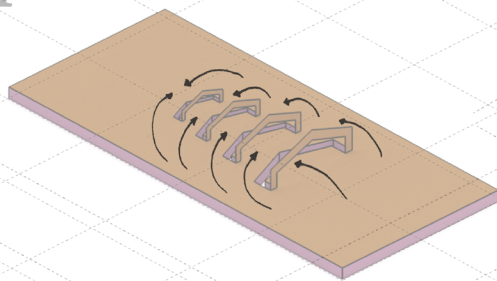
# Digital Illustration Series - Renders

## FIVE.3

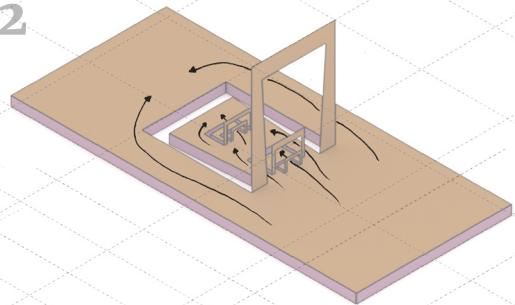


This section explores the forms from the physical models in the digital realm where there are more possibilities for the form to be manipulated alongside the use of materials. Adding materials allows for the forms to become realistic with scale and atmospheric exploration.

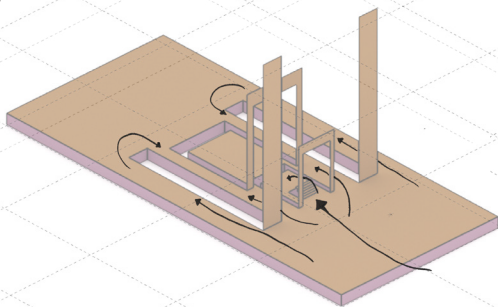
1



2



3



4

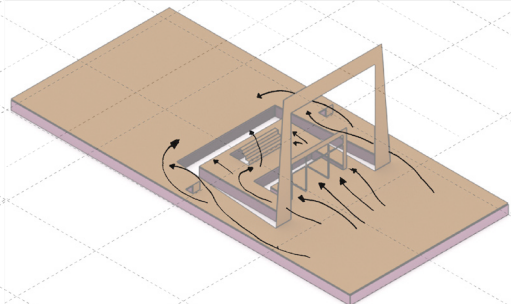


Fig 5.18. Rendered and hand drawn illustration exploring movement.



## Models 1-4

Set 2 models 1-4 are digital models designed from the black card models in set 1. The purpose of this was to investigate the forms in a different medium and give the flooring, from where the vertical elements are pulled from, more depth. This investigates how the change in depth and colour affects the thresholds control of user movement.

As the models progress in complexity the thresholds create different opportunities for interaction and movement. The different frames that the models have influence over the users to move through different areas to get to different destinations. Model 4 invites the user to move around different

areas and to explore the space more than Model 1 for example.

Model 2 looks at funnelling the user through the threshold entrance and guides them further in through the second threshold space in comparison to Model 1 which is dynamic around the sides more than from the front.

Models 3 and 4 provide the opportunity for movement up to different levels from the front frames of the threshold guiding the user in.

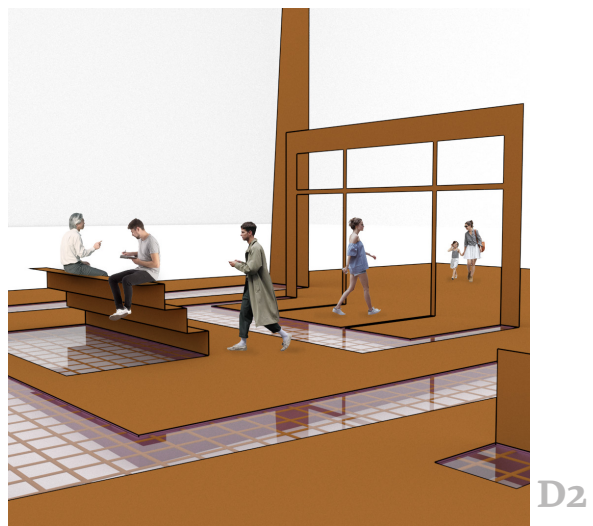
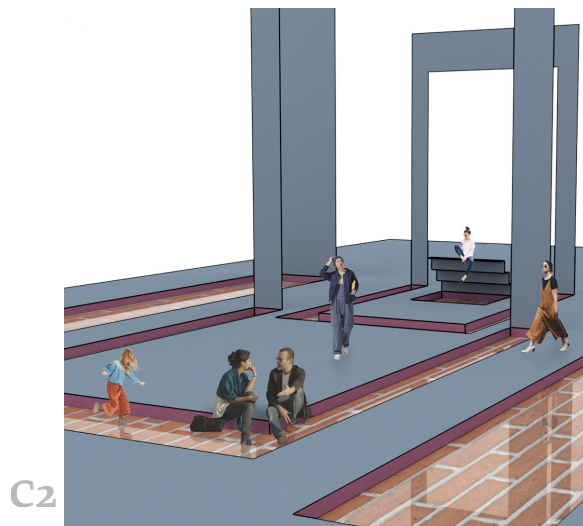
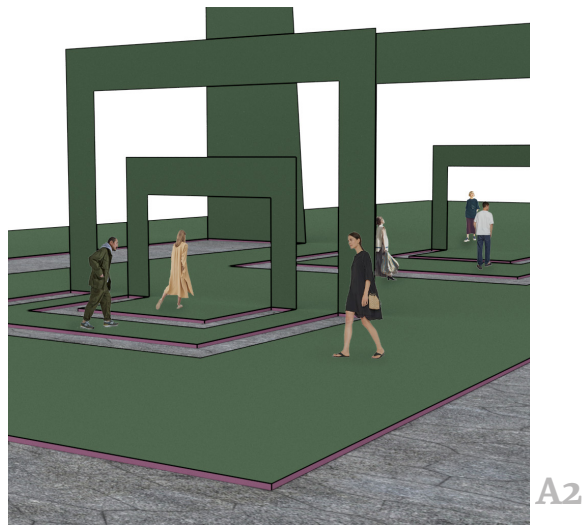
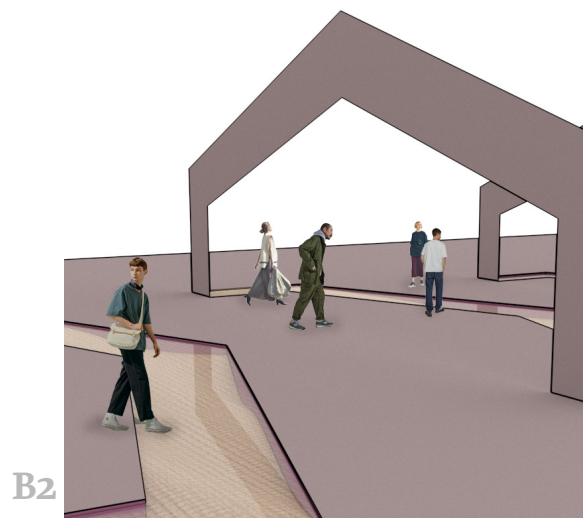
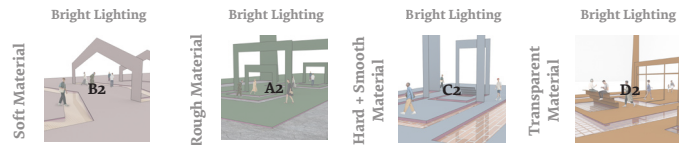


Fig 5.19. Rendered illustration exploring movement and materials.



## Models B2, A2, C2, D2

These digital models are testing how the flooring can influence the user's movement by changing the visual texture as well as the physical texture underfoot within the design of the paper models analysed previously.

Taking what has been learnt in Pxathens Six Thresholds where the flooring treatment throughout the length of the threshold space changed, creating the six different thresholds, the idea of filling the negative space from where the vertical pieces were pulled up from was explored.

The use of hard and reflective materials was of interest due to the already very rigid forms being present. Much like in the Breezeway House precedent, where the forms are all rectilinear with materials of wood, concrete, brick, and glass, and a hint

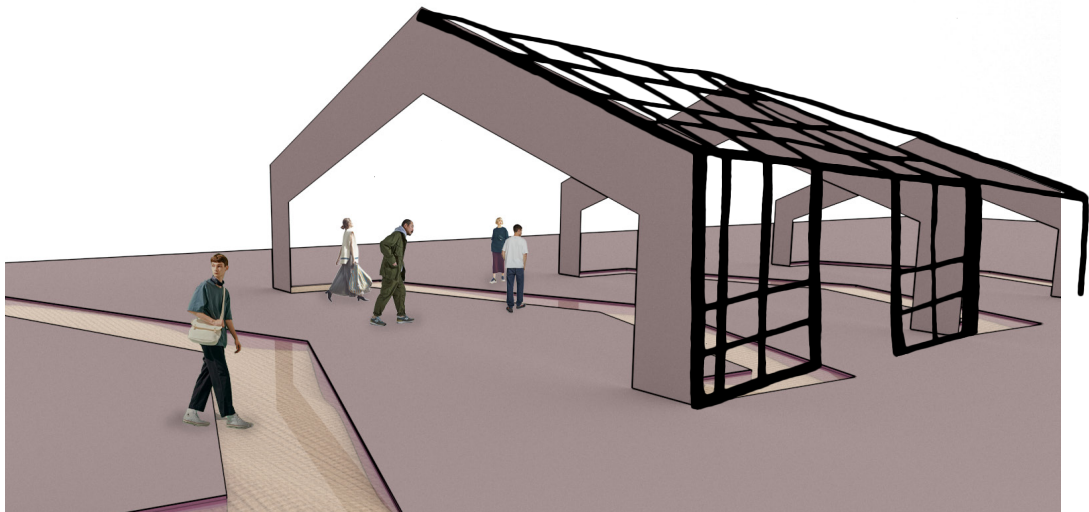
of softness in the linen furnishings.

Success came with the incorporation of hard and soft materials. The brick and glass combination while interesting does not have the same qualities that make the space feel comfortable. Neither does the concrete flooring nor the mesh under the glass as this presents logistical issues as well as an uneasiness that a visually hollow floor brings.

These are shown through the placement of the people in the models. With the assumption that people are moving more freely on the more solid looking surfaces such as A2 and not so much on the hollow looking ones such as D2 as Unwin explains in *Doorway*.



D2



B2

Fig 5.20. Rendered and sketched illustration exploring movement and form.



## Development of Models D2, B2

For the development of these digital models, I sketched over D2 for the successful vertical forms influencing the users movement and B2 for the successful flooring treatment and interesting vertical forms.

The repetition of a grid like form came from the design language already in use by the Naumi Hotel and its presence in the forms of the digital models.

The bright lighting along with forms like these are similar to the successful design of the Breezeway House by David Boyle. The framing styles make the space feel open and control movement, simultaneously. The intention is to make the space connect to the sky and earth making the user feel grounded and familiar while in a unique setting.

The textures used under the flooring give the space a visual movement that alters the atmosphere, changing the users perspective on flooring.

These concepts are typical of botanical glasshouses. Inserting a glasshouse type threshold to pass through into the Naumi Hotel's bar and reception will drastically change the users perceptions of the interior conditions ahead. This is comparable to what Unwin discusses in *Doorway*; more specifically when he discusses framing transient moments.

## **Developed Design FIVE.4**

This mood board is curated with the previous materials, iterative experiments and movement investigations in mind. This mood board directs the conceptual designs atmosphere and aesthetic alongside the previous use of materials to keep the threshold cohesive with the rest of the hotels design.

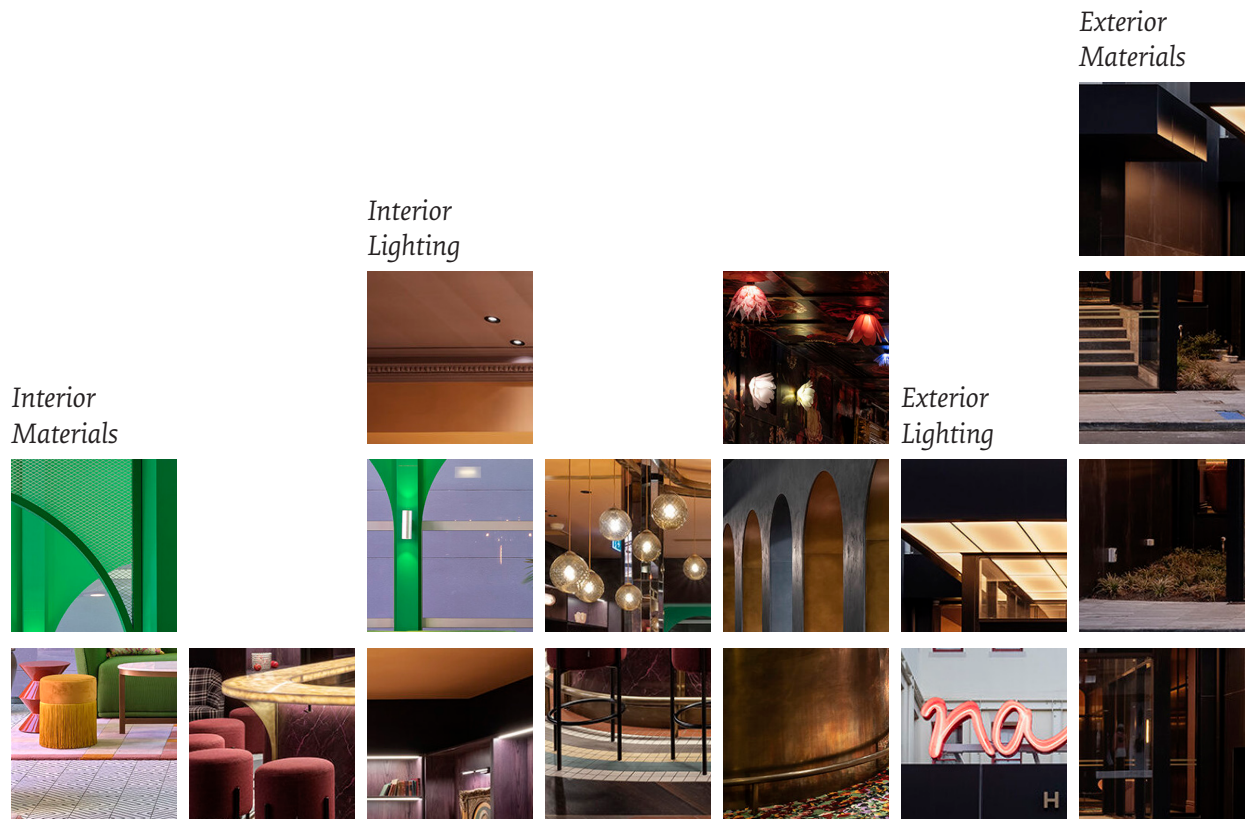


Fig 5.05. Naumi Hotel's Existing Material Palette.

The current materials of the Naumi Hotel Lobby are currently quite dark and moody which creates a unique atmosphere within the Wellington City, however, that does make the space hard to navigate especially with the reception space being hidden from both street entrances (Cuba Street and Dunlop Terrace).

From being in the lobby space, sitting and having a drink as well as walking through it as it connects Dunlop and Cuba st. together, it is not comfortable. Even though the colours and lighting suggests a cosy comfortable space, it does not deliver. The lobby space needs grounding and feeling as if you are being immersed with a central design element that brings all the other spaces together.



Fig 5.21. Illustrated Mood Board for Naomi Hotel Threshold.



*Mood Board Legend:*

- 1 | Linen Fabric
- 2 | Hand-blown Glass Pendants
- 3 | Hanging Natives Plants
- 4 | Regular forms with vertical elements
- 5 | Montage inspiration to be incorporated
- 6 | Caesarstone accents

This mood board concept depicts the atmosphere and ethereal design style that the lobby will portray. The light, bright colour palette will be what allows the light to enter the space and make it feel more open as well as allow the way-finding to be better. These are important aspects to introduce to the entrance of the lobby as it is currently dark and difficult to navigate.

The mood board keeps the cool toned colours as well as transparent accents that the current space has. The vertical lines running through the lighting and balustrades will draw the users eye upward,

creating a visual movement to the lobby that is not currently present.

The incorporation of native plants and light will allow for the already floral and nature inspired lobby to become more in context of New Zealand and create an interior space that feels like an exterior, by blurring the threshold. It will also create a design juxtaposition between the current design of the lobby and the integration of the new threshold that will make the space more inviting.

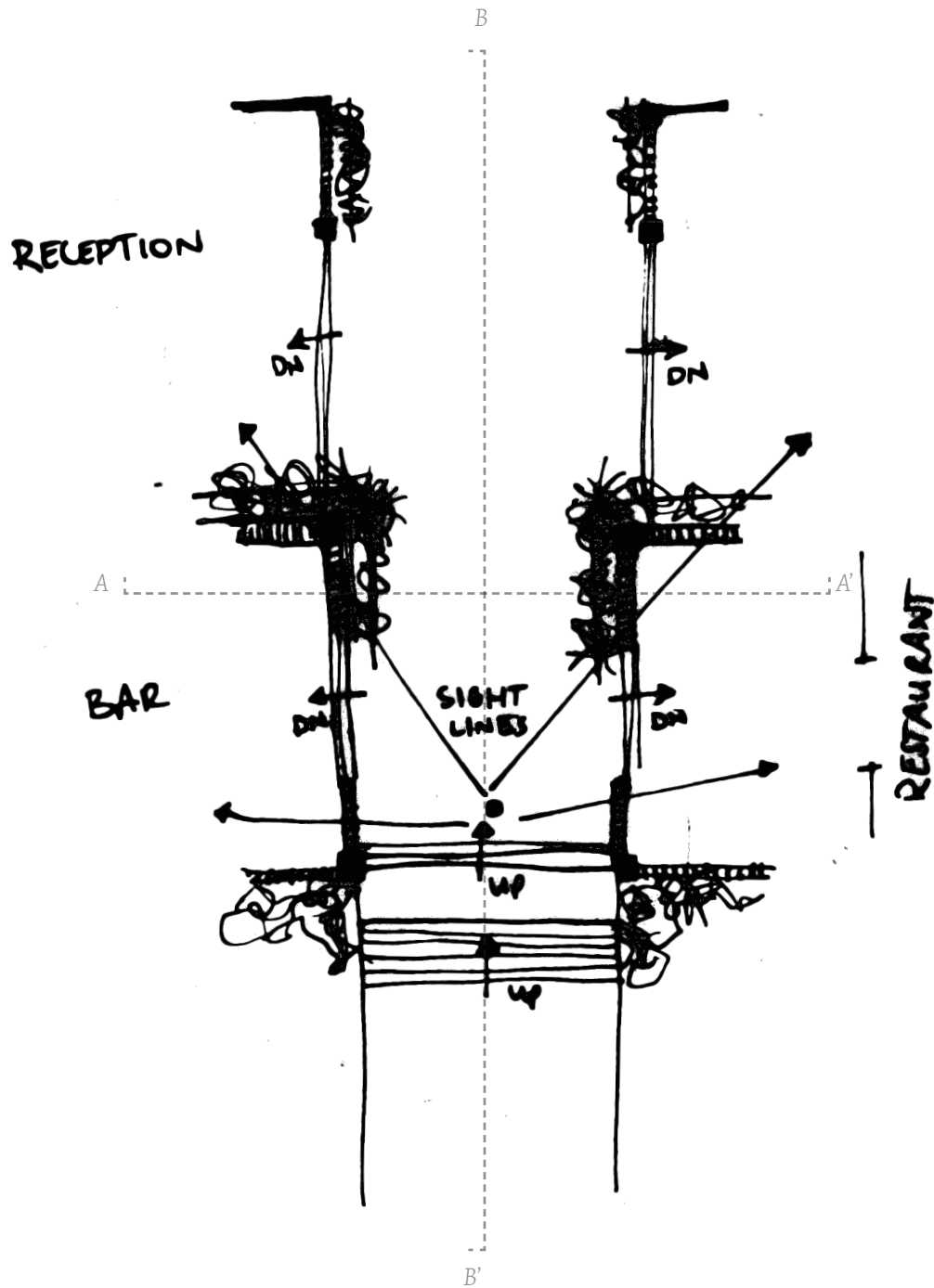


Fig 5.22. Concept Floor Plan.

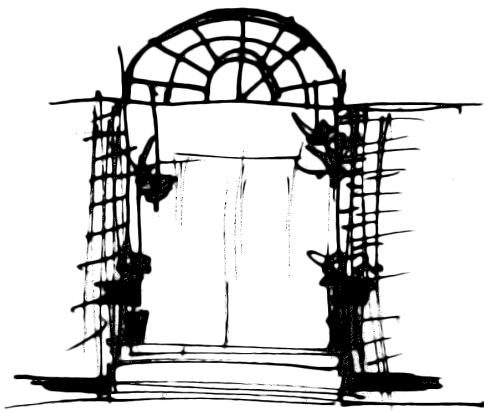


Fig 5.23. Concept Short Section AA'

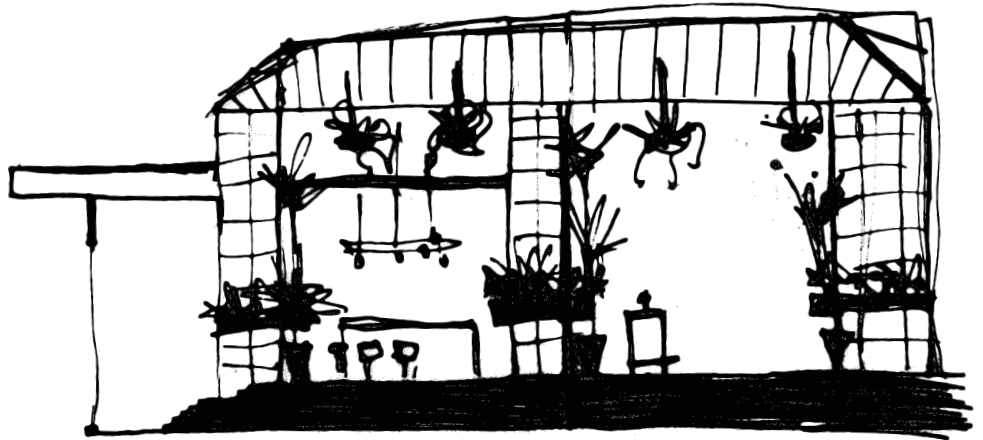


Fig 5.24. Concept Long Section BB'

This concept pulls inspiration from the development of D2 and B2 digital models. The plan shows the sightlines of the threshold from the Dunlop Terrace entrance. This was an important feature to address first as the wayfinding in the current threshold is unclear. The darkness and lack of obvious direction to the reception and main stairs immediately confuses users.

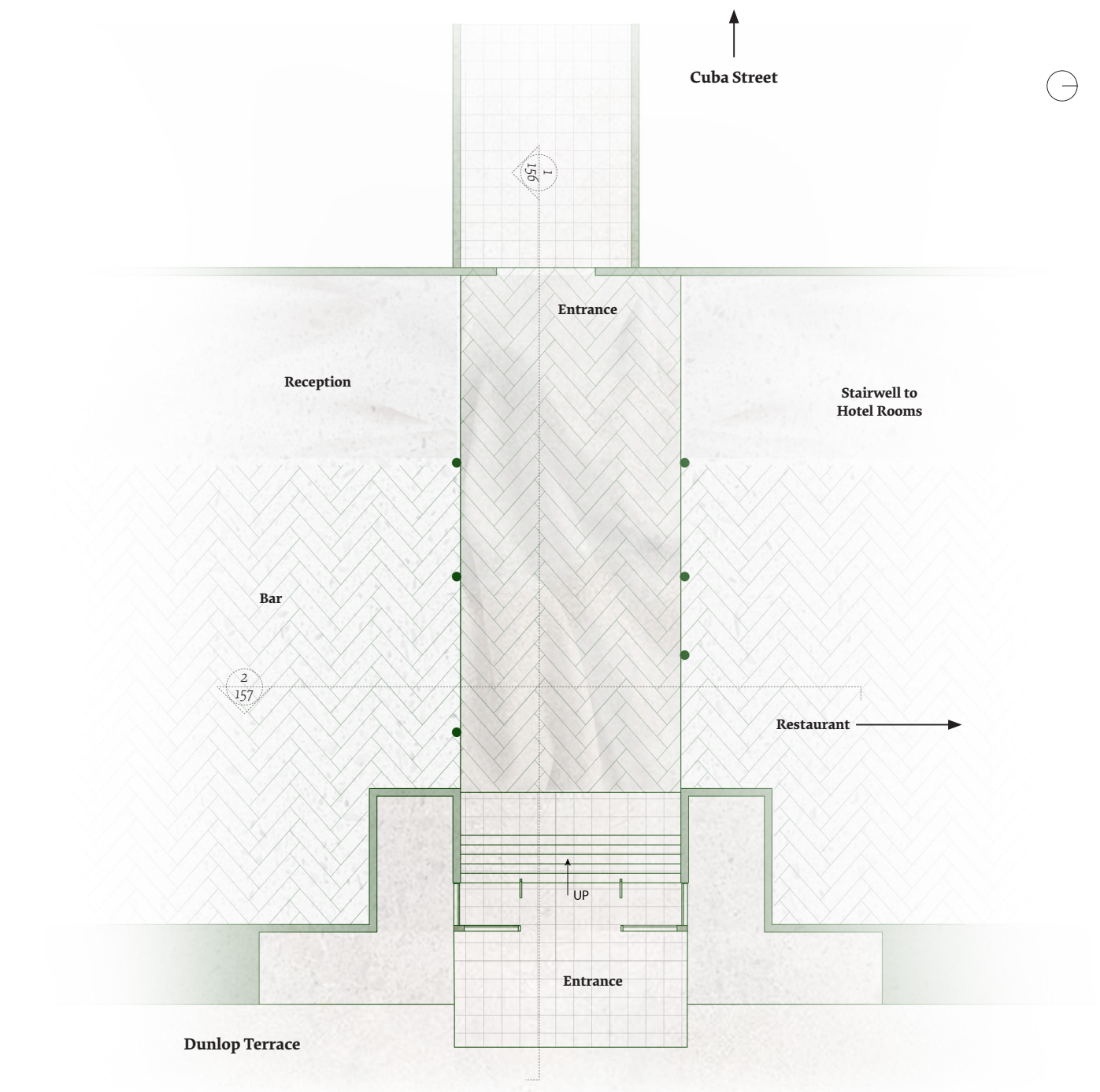
The glasshouse precedence for the threshold allows for more light to enter the space and the repetition in the framing references the brightness of The Breezeway House by David Boyle.

The floor plan draws inspiration from Pxathens - Six Thresholds by Buerger Katsonta Architects. The use of zoning through the layout of the thresholds

increases the quality of movement through the space and with the added ability to see across the space through the corner windows, the space opens up and the quality of wayfinding also increases.

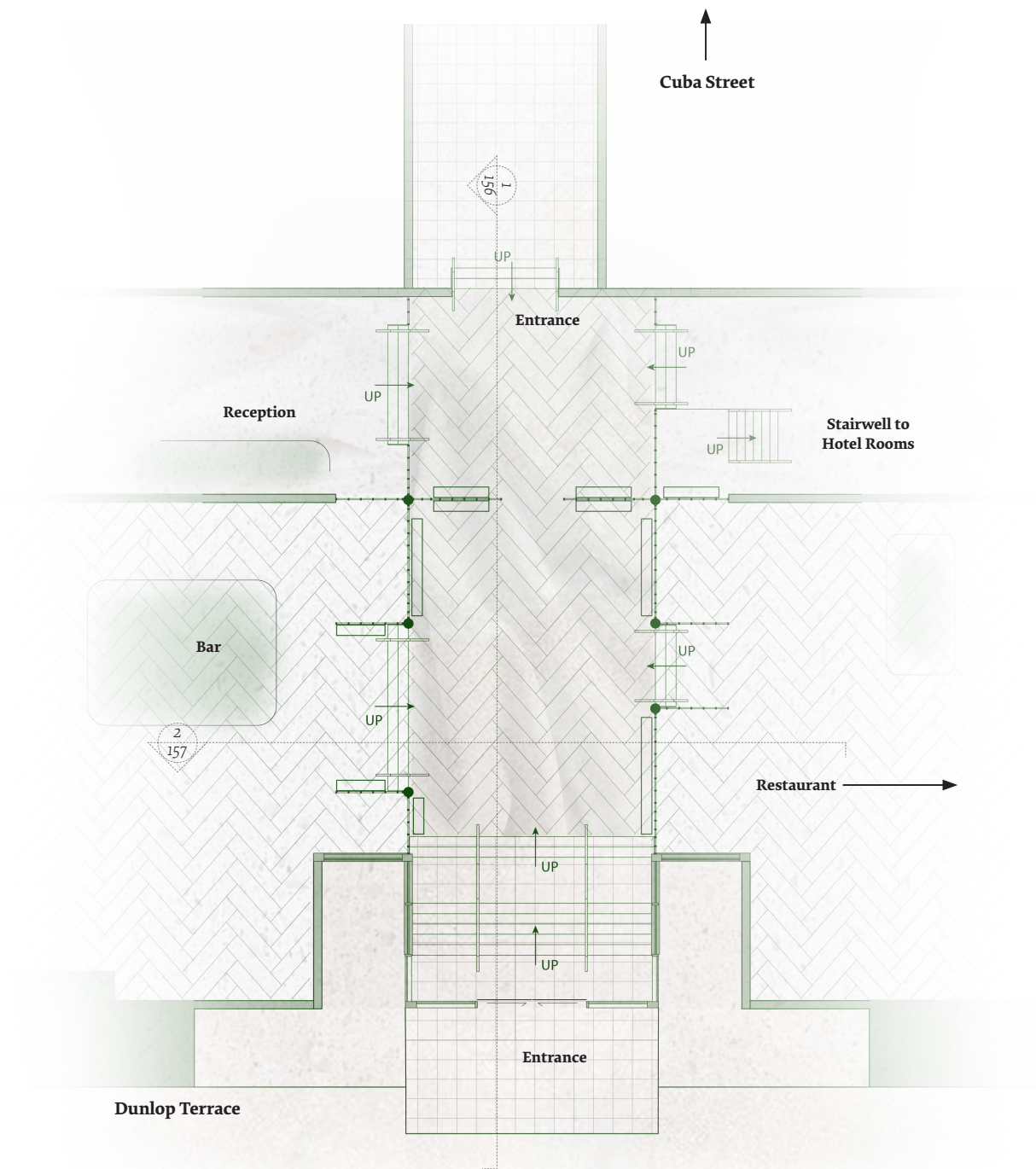
This design also draws inspiration from the Dubai architecture that is open and allows for increased airflow for coolth but still allows for warmth when airflow is controlled.

The space allows a reprieve from traffic, and introduces the user to the ethereal qualities of a holiday. It makes the user feel as if they are passing through a portal and shedding their existence for an instance, creating an opportunity for an escape.



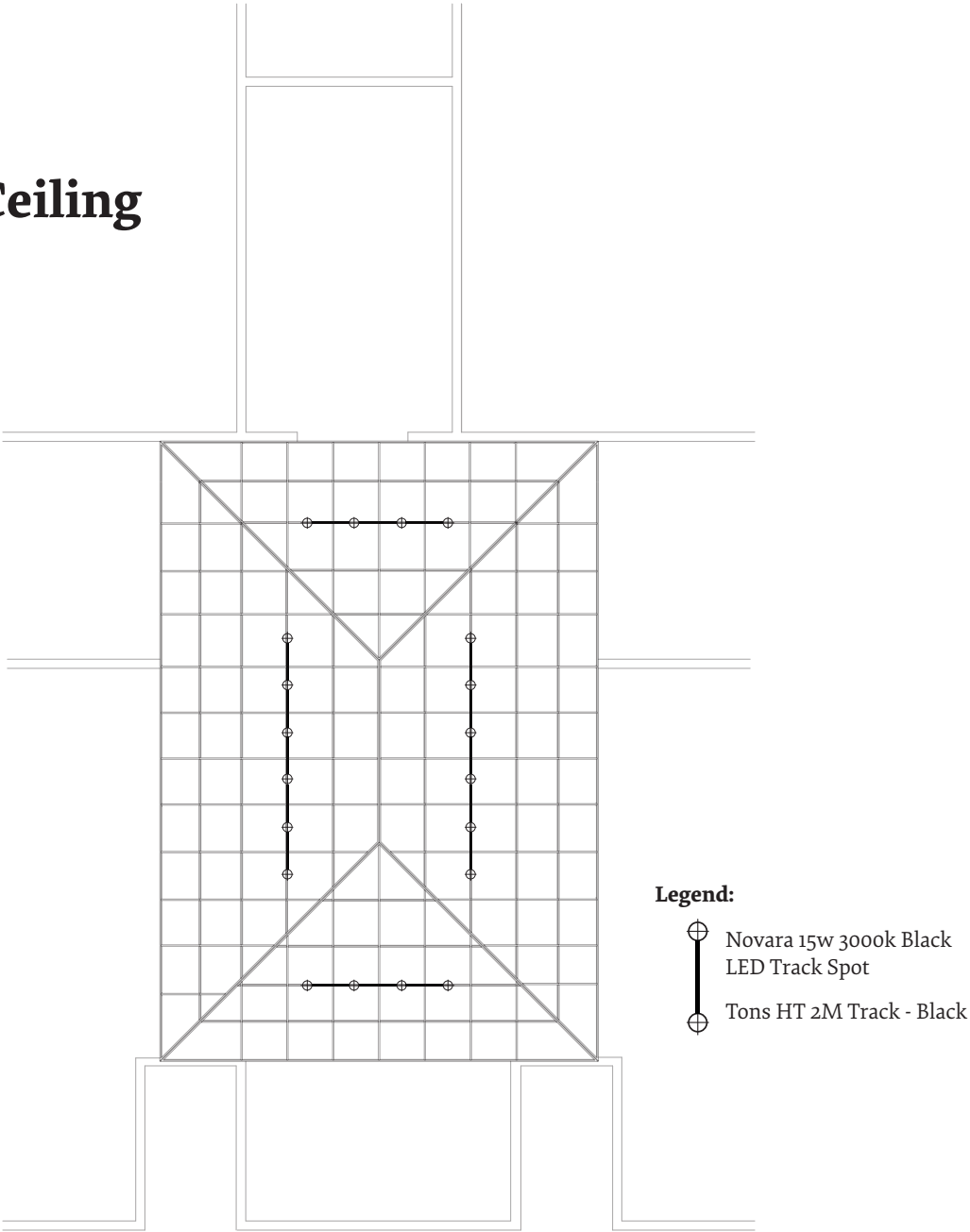
1 Naumi Hotel Ground Floor Plan  
1:100 @ A4





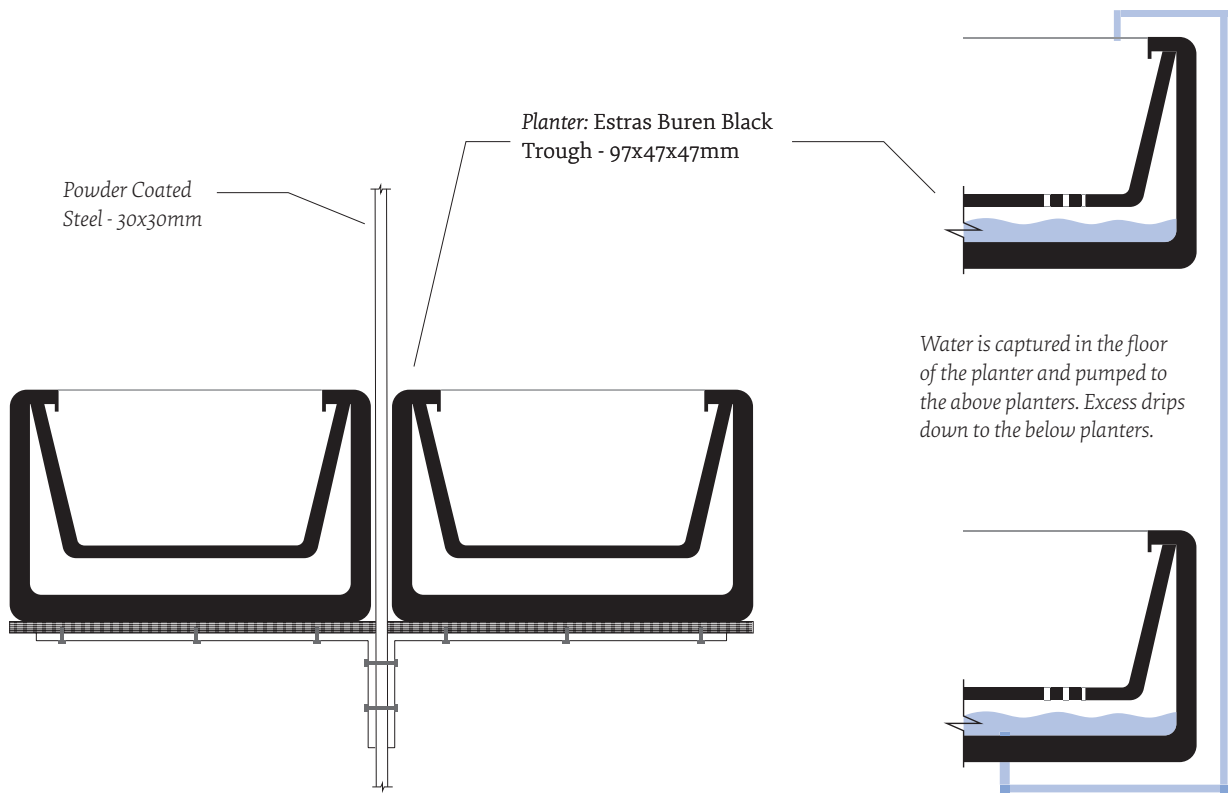
**2** Naumi Hotel Platform Floor Plan  
1:100 @ A4

# Reverse Ceiling Plan



1 Naumi Hotel Reverse Ceiling Plan  
1:100 @ A4

# Details

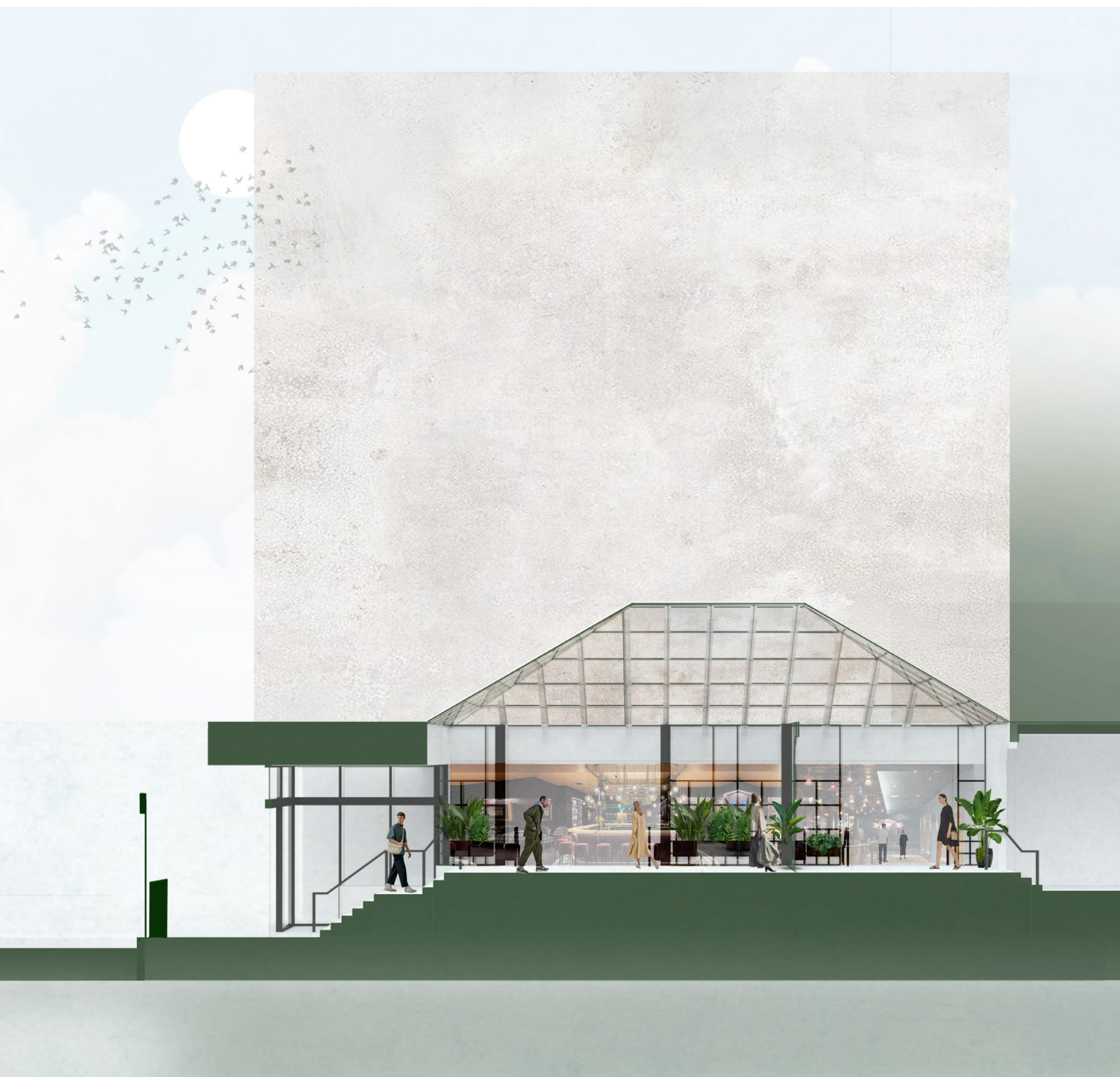


1  
156

Planter Attachments to Steel Framing  
1:20 @ A4

2  
156

Planter Water Reticulation System  
1:20 @ A4



1

*Naumi Hotel Long Section Perspective*  
*no scale*





2 Naumi Hotel Short Section Perspective  
no scale



*Fig 5.25. Naumi Hotel Threshold View From Entrance.*



*Fig 5.26. Naumi Hotel Threshold View Towards Entrance.*









*Exterior of the Casa de Serralves,  
Porto, Portugal.*



# Chapter SIX

WEST PLAZA

*Rear entrance of the West Plaza  
Hotel, Wellington, New Zealand.*

# Large Scale

This chapter goes through the design phases of the Large-Scale design for the West Plaza Hotel.

The design explorations are in Sections 6.1, 6.2, and 6.3 use The Mapping Matrix as a guide for aspect testing that develops through into Sections 6.4 Mood board, 6.5 Design Concepts and then to 6.6 Developed Design and final exploration of the threshold space.

# West Plaza Hotel

## *Large Scale Threshold*

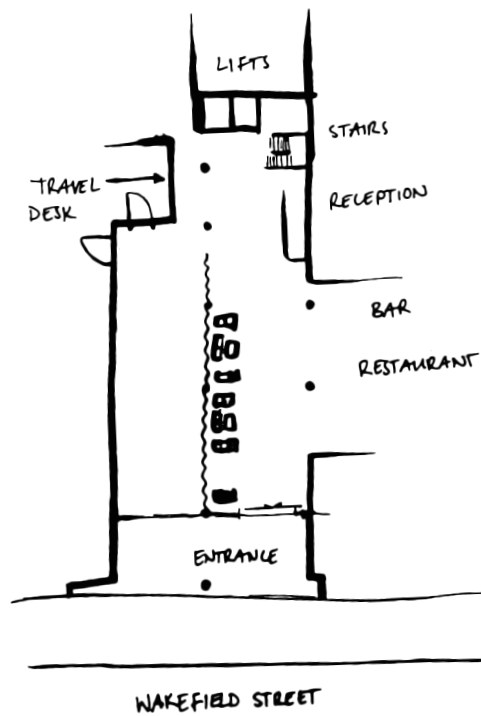


Fig 6.01. Lobby Threshold Plan for West Plaza Hotel - Wakefield st, Te Aro, Wellington, New Zealand.



Fig 6.02. Main Entrance West Plaza Hotel - Wakefield st, Te Aro, Wellington, New Zealand.



## Drawing and Digital Modelling Study

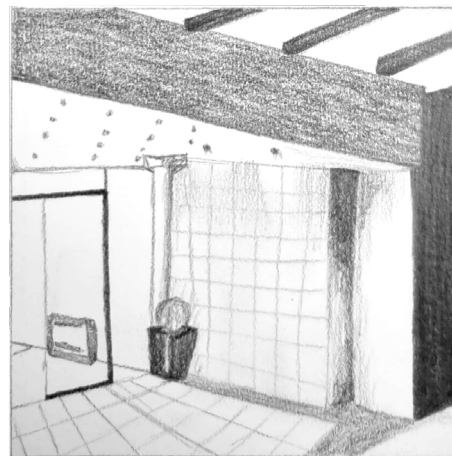
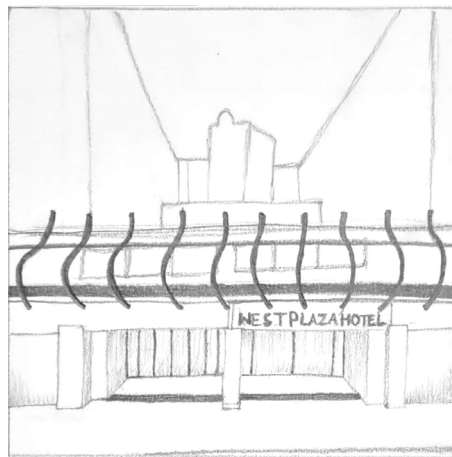


Fig 6.03. Main Entrance - Wakefield st.

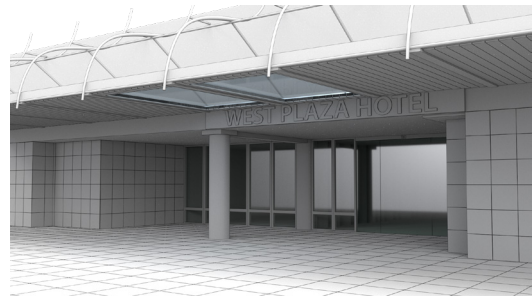


Fig 6.04. Exterior Render.



Fig 6.05. Interior Render - looking from entrance.

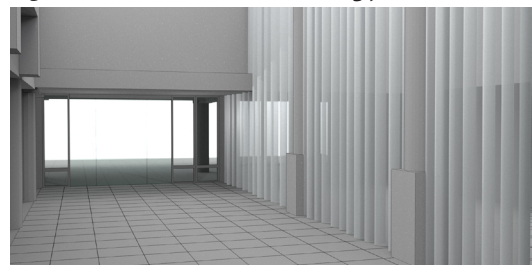


Fig 6.06. Interior looking towards entrance.

Existing Materials

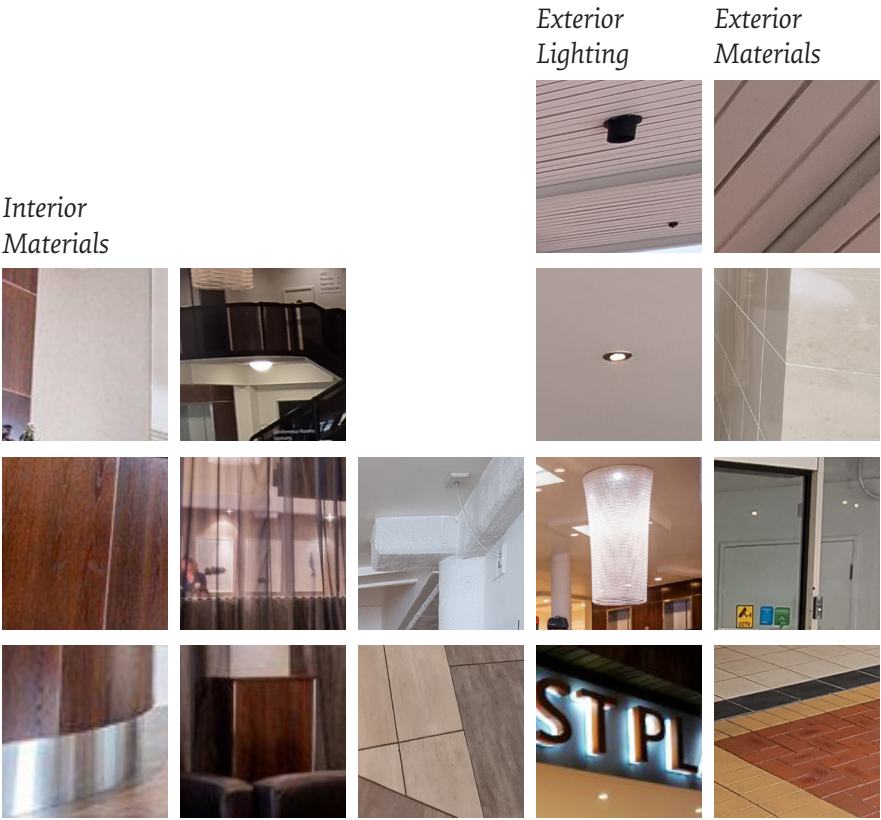


Fig 6.07. Naumi Hotel's Existing Material Palette.

## Case Studies

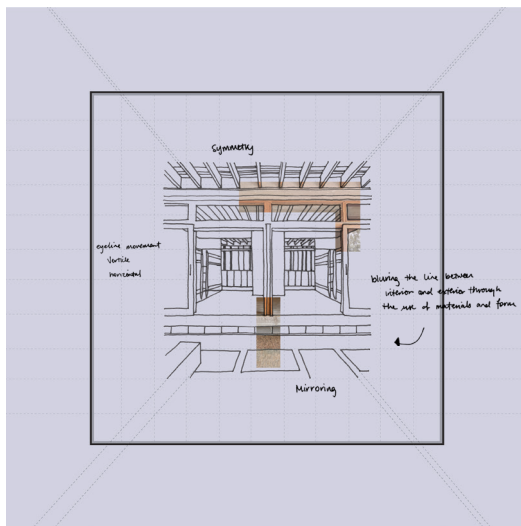


Fig 3.19. Illustration exploring tangible and intangible architecture through the Breezeway House architecture.

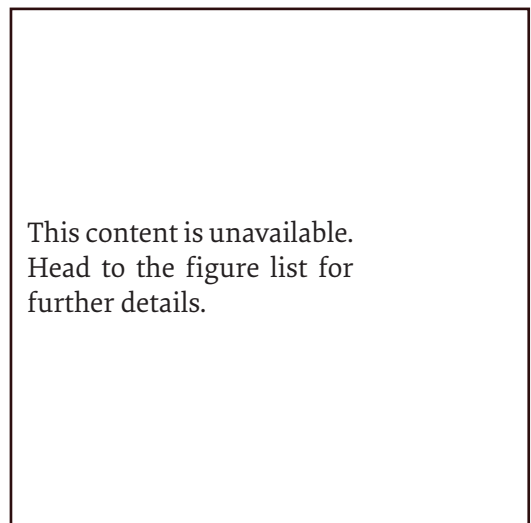


Fig 6.08. Medusa Installation by Sou Fujimoto, London, England.

Breezeway House was chosen for its restraint over the use of materials and the use of vertical lines to control where the user looks and moves. The Medusa installation by Sou Fujimoto in London is a virtual immersive space that was chosen because it morphs as it responds to the viewers movement. These ideas can be translated into threshold designs that control, manipulate as well as respond to the users movement.

**Exploring the Architectural and  
Human Forms - Sketch Modelling  
SIX.1**





This section explores the architectural forms from the design matrix and analyses them against the human form and functions of a threshold.

Movement through a threshold space is explored using formal and lighting aspects from the design matrix with the human form.



*Fig 6.09. Physical modelling exploration of architectural and human form.*



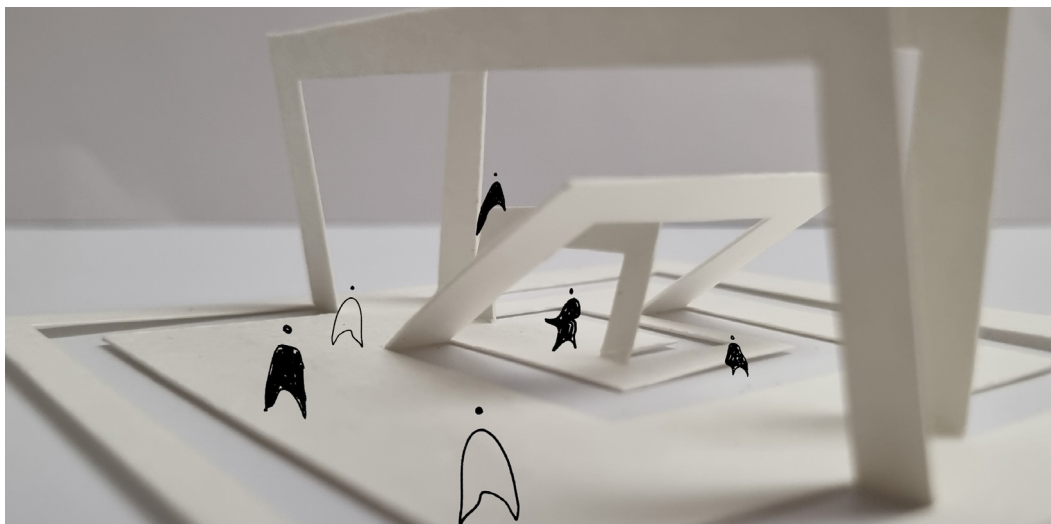
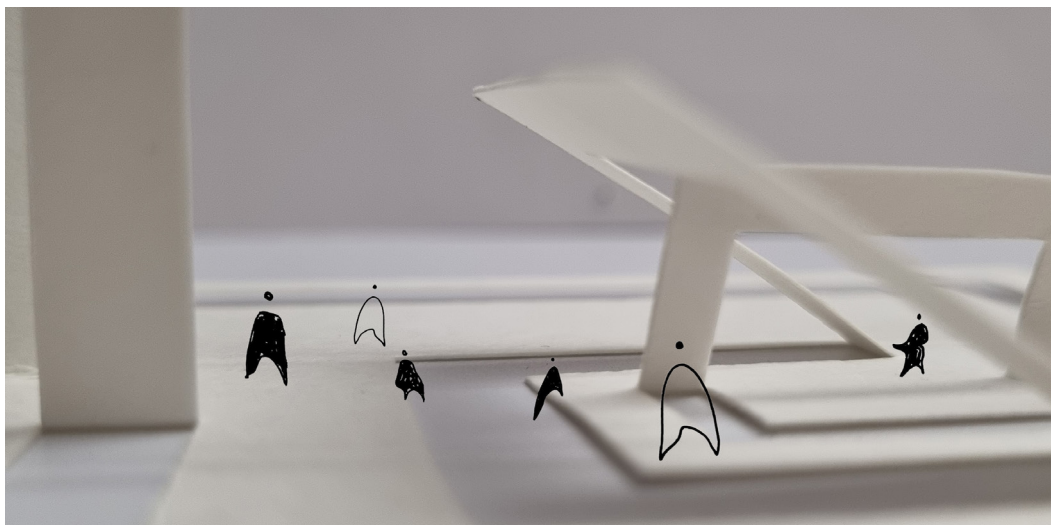
## Sketch model - J2

This first sketch model explores the physical extraction of rectilinear form against a prominent arch form from the existing West Plaza forms. This model shows the complex relationship between interior and exterior and how this threshold space can get blurred.

This blurring was done through the dynamic use of thresholds being at every angle of this model. The threshold was determined by the angle of approach as well as light and shadow that was created from the form of the card.

Simple folding methods were used to create this investigation. The intersections between folds created the new threshold and influenced the users movement through nothing more than the act of curving the card or making a harsh corner to manipulate the light.

The people in this model add the scale intended for habitation as well as subtle programme allocations.



*Fig 6.10. Physical modelling exploration of architectural and human form.*





## Sketch model - H2

This second model investigates how space can be defined through the use of changing the floor quality and pulling it up over head.

The way that the floor quality changes influences how the user navigates the space and how they change their actions based on how the space presents itself.

The simple removing of material creates this floor quality change and through the increase and decrease in light depth is created. The depth of the space allows for users to interact with the space differently as well as changing the use.

Scale is also changing the depth experience within the space as it looks as if the floor has been lifted. This in a larger scale with more mundane recognisable materials applied will have an even larger impact on the users influence of the spatial qualities as *Allison Urban* explores in their *Threshold* installation.

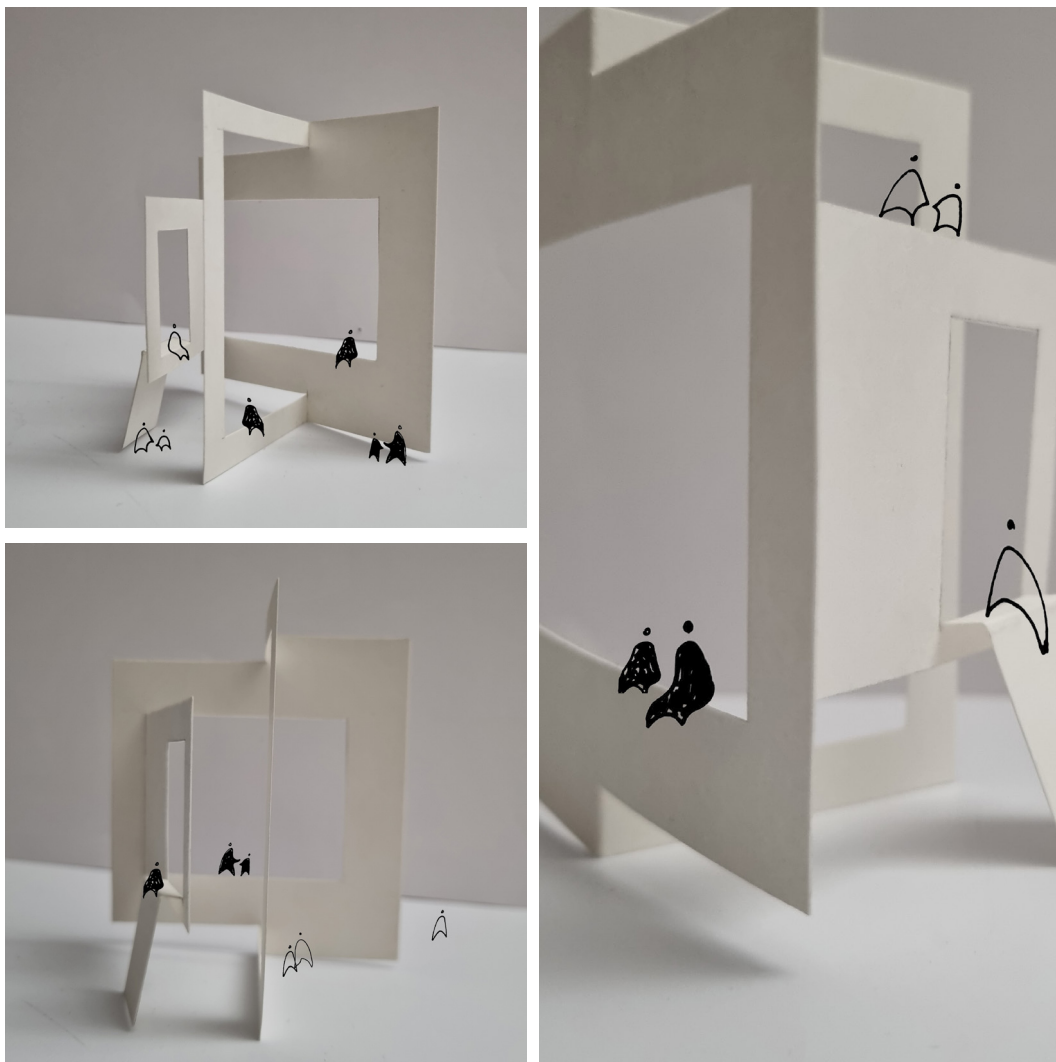


Fig 6.11. Physical modelling exploration of architectural and human form.

## Sketch model - H3

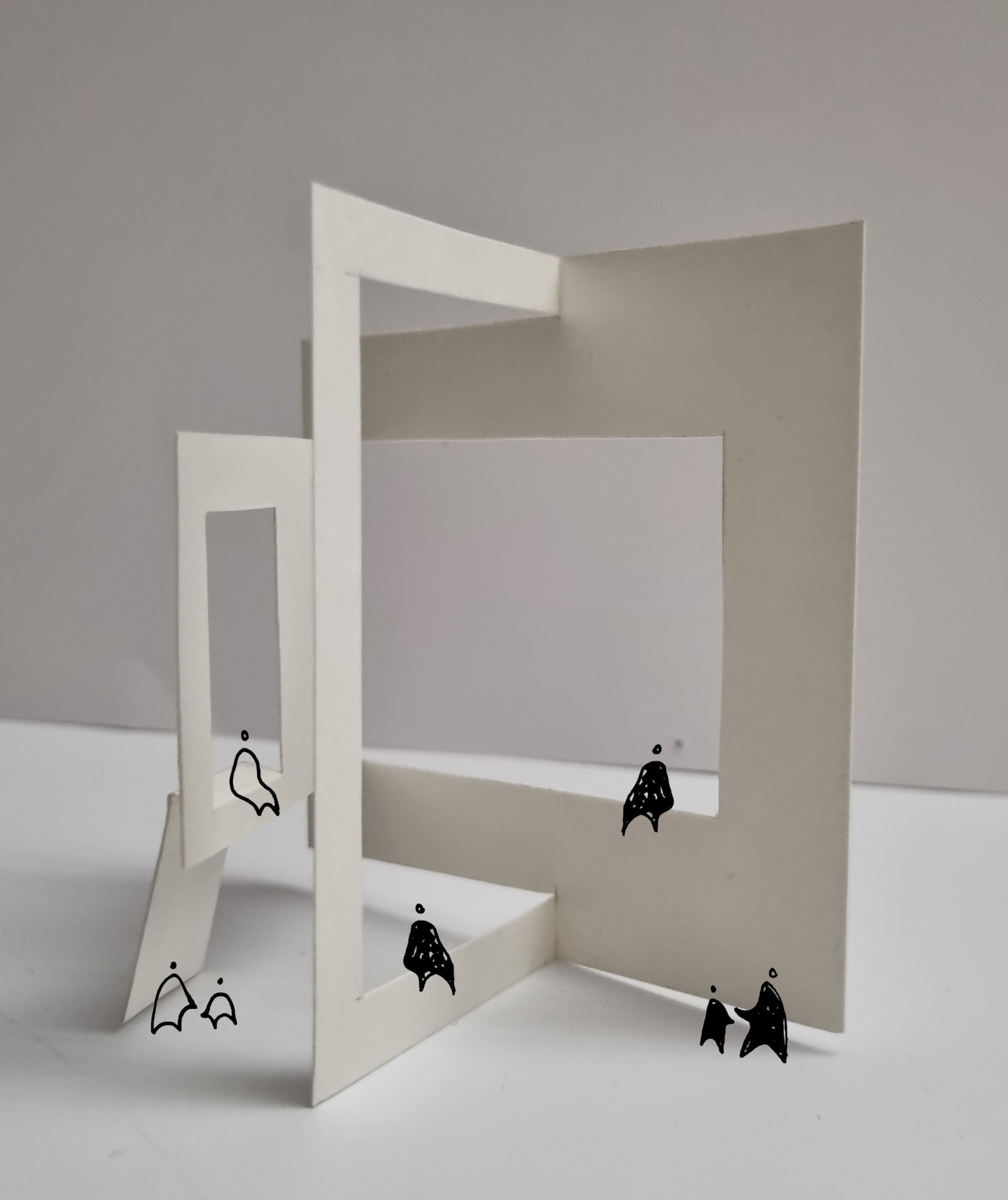
This third model explores how elevation can affect the lighting qualities on either side of the threshold. This explores how light and dark can create intrigue from either side of the space.

The forms themselves, while impractical, exaggerate the use of the threshold. The act of passing through it, whether it be stepping or climbing, changes the experiential quality.

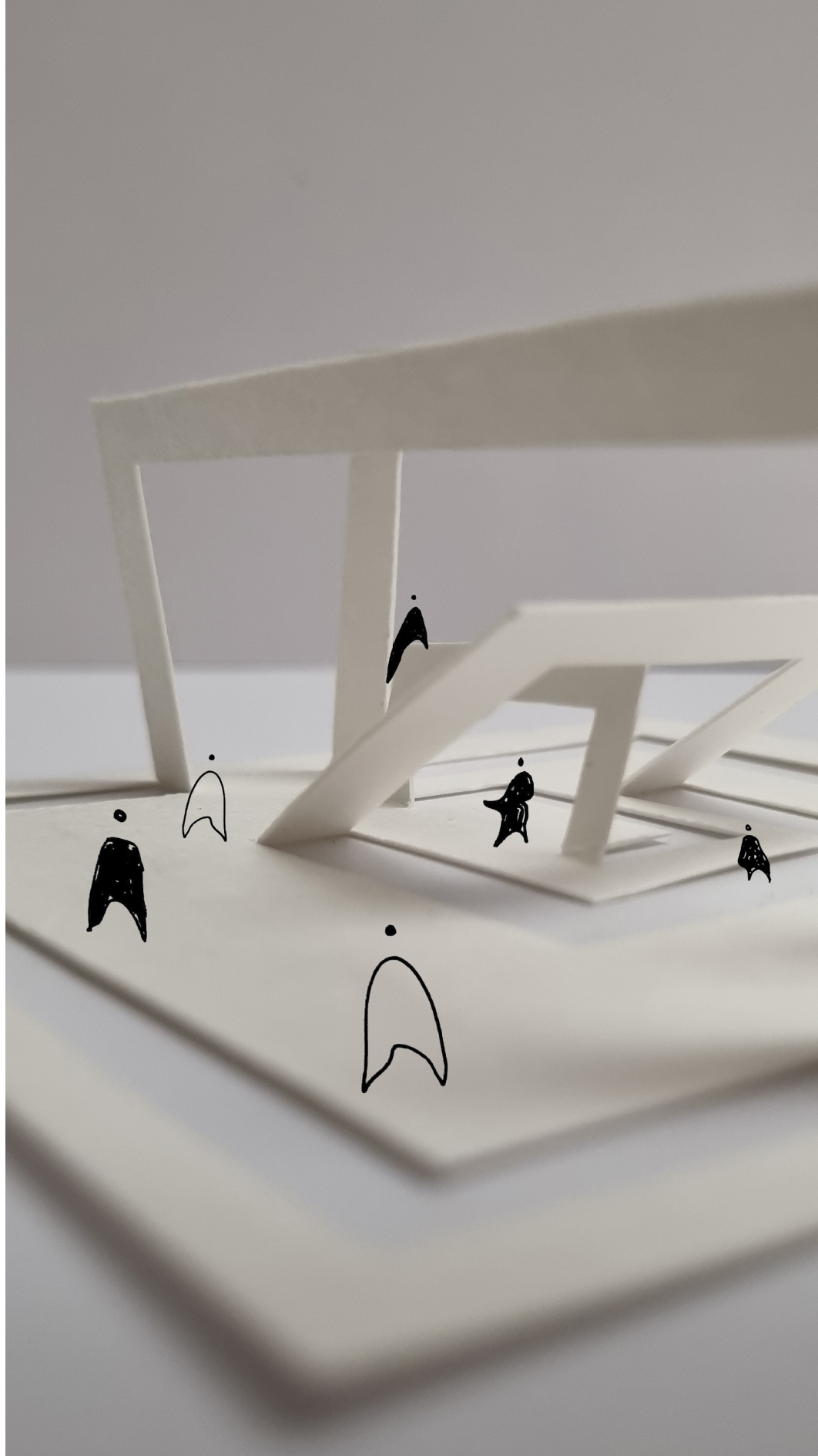
In this model the filled in people represent the darker side of the model where the

light isn't hitting the surfaces. The visual representation of this helps to see how the space will be used and perceived differently to the lighter side.

The dark side is atmospheric and is visually softer. This creates a more welcoming and inviting threshold as explored in the installation precedents - *Threshold* by Allison Urban and *Requiem Laundry's March* by LUKSTUDIO.







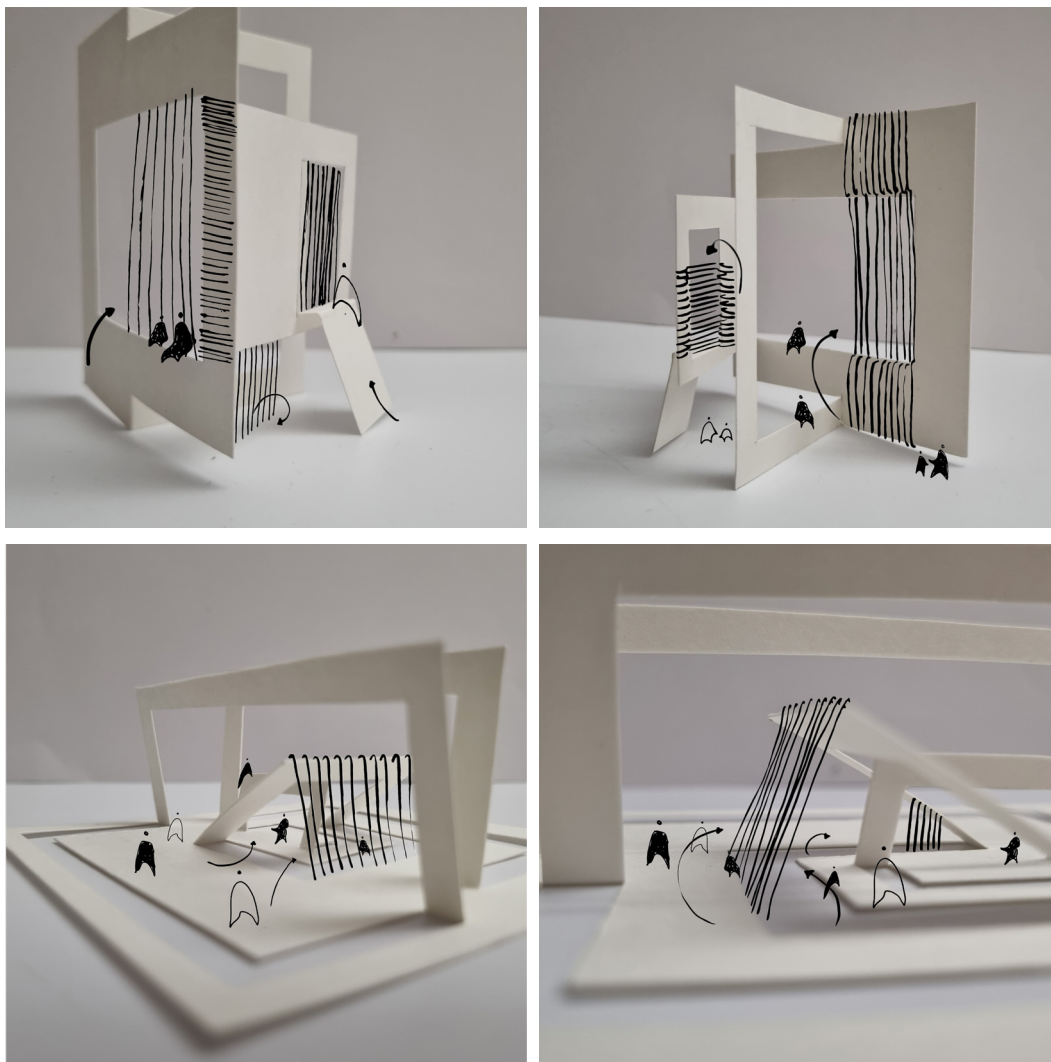


Fig 6.12. Physical modelling exploration of architectural and human form development.

## Development of sketch models - J2, H2, H3

Developing on these card models, I wanted to find a way of incorporating the verticality of the *Breezeway House* precedent by *David Boyle* with the already rectilinear design that these models have.

Sketching over the top was the easiest way to test this idea quickly and effectively while considering scale, movement, and repetition.

By adding the vertical rope like elements, the subtleties of movement were con-

trolled through the models space. It created screens that divided up space but allowed for the visibility and sight lines to remain.

I consider these to be a break through in my thinking as they directly relate and influence the final design of the West Plaza Hotel threshold space.





**Exploring the Architectural and  
Human Forms in an Installation  
Context - Modelling  
SIX.2**



This section explores the architectural forms from the design matrix and analyses them against the human form and functions of a threshold in an installation context. This investigates the use of material and scale in a form that creates a tangible memory for the user. This is laid out in a series of models with reflections developing the aspects in physical models from The Mapping Matrix.

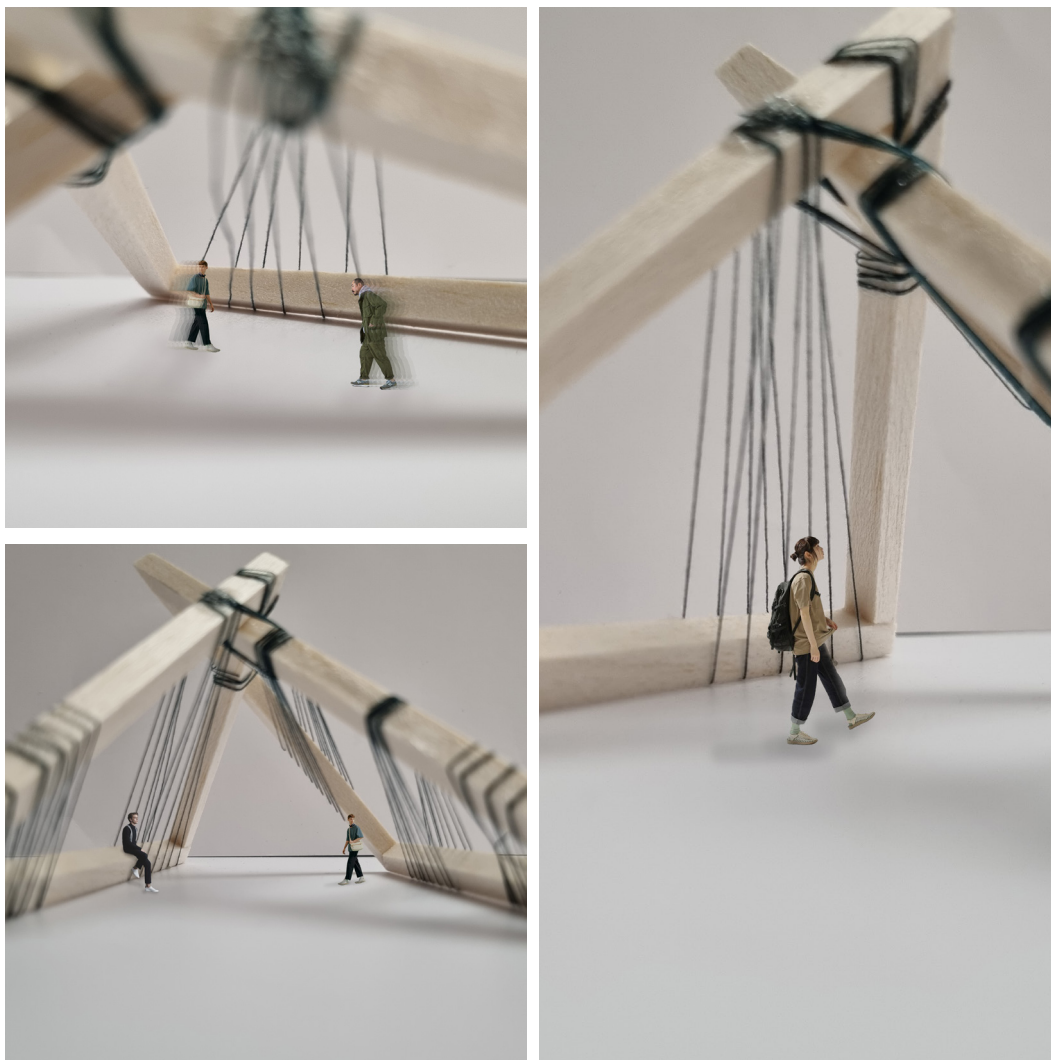


Fig 6.13. Physical modelling exploration of architectural and human form installation context.



## Model Reflection

- Repetition that creates a directional quality for eye movement
- Simple materials for the form to stand out
- Uses larger framing forms to control movement
- The string being on an angle following the frames form to inform the users movement direction
- The frame provides a rest spot while also encouraging movement
- This has sculptural qualities

This first model investigates how movement is impacted by form and repetition. The repetition in this model acts as a guide for where to go as well as where the users eye should go to enhance the spatial experience and awareness of the threshold space.

The materials being simple also give the power of the threshold to the form, allowing the light wood to blend into the background and let the thread stand out. The green thread in this model was intentionally chosen to create a uniform monochromatic look that allows the repeated form to create more of an impact.

The models form allows for places of rest within the threshold but ultimately for the

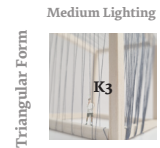
user to keep moving through the space. This is done through the places of rest being leaning areas rather than proper seats for the users to spend extended periods of time in.

The soft shadows the forms cast also influence the users movement and creates a dynamic spatial experience. Lighting creating different forms on the floor makes the threshold atmospheric which informs an emotional response from the user, in contrast to harsh lighting that creates hard shadows. These qualities of lighting is discussed by Gordon from Interior Lighting for Designers.



Fig 6.14. Physical modelling exploration of architectural and human form installation context.





## Model Reflection

- Repetition that creates dramatic verticality within a rectilinear form
- Rest areas to create dynamic movements to climb as well as sit
- Bright lighting making the white environment feel sterile, comparable to a hospital
- The form hitting the environments ceiling creates an interesting vertical quality
- The wire like vertical elements are able to be interacted with by walking through as well as around creating a dynamic space to be interacted with

This second model looks at repetition in a rectilinear form with increased vertical and horizontal elements without the shadows.

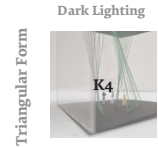
The level of light this model is photo-graphed in was intentionally brighter to eliminate shadows cast to investigate how a user would interact through the space. By placing people in the images that are moving and sitting it is clear how uncomfortable the sitting people appear and how the standing people appear more natural. The hospital like white harsh lighting makes the threshold feel less atmospheric and inviting as it has a sterile quality. (Leather et al, 2003, p. 846)

The form of the model however heavily informs the users movement through the threshold as there is no clear path that offers the movement through. It creates visual intrigue vertically and horizontally but does not offer the same in terms of ease of movement.

This model does explore how the user can create height and walk along a space that is framed with the repetitive thread and places to potentially sit for short periods of time. The idea of climbing and walking along a raised curb in the urban environment is explored by people constantly so investigation into how that aspect of movement can work in a threshold is interesting.



*Fig 6.15. Physical modelling exploration of architectural and human form installation context.*



## Model Reflection

- Vertical elements simply create a directional movement
- Vertical wire like elements draw the eye upwards
- Invisible walls and dark flooring and ceiling surrounding the wire structure enhance the verticality of the installation

This third model investigates how a change in flooring colour can change the quality of atmosphere without changing the lighting quality in a rectilinear form.

This texture and colour change to the flooring makes the threshold feel less stale and more atmospheric. The thread leads the eye up towards the ceiling and creates spatial qualities that guide the user through the space.

The addition of the clear plastic adds structure to the design while maintaining the monochromatic colour scheme of the

threshold to keep the focus on the repetition of the form.

The intersection between the paths of thread creates a movement flow of the space and allows for a division of movement through.

The black textured flooring soaks up the light, diffusing it and allowing for the space to appear more comfortable and therefore inviting, in direct contrast to set 2 - model 2.

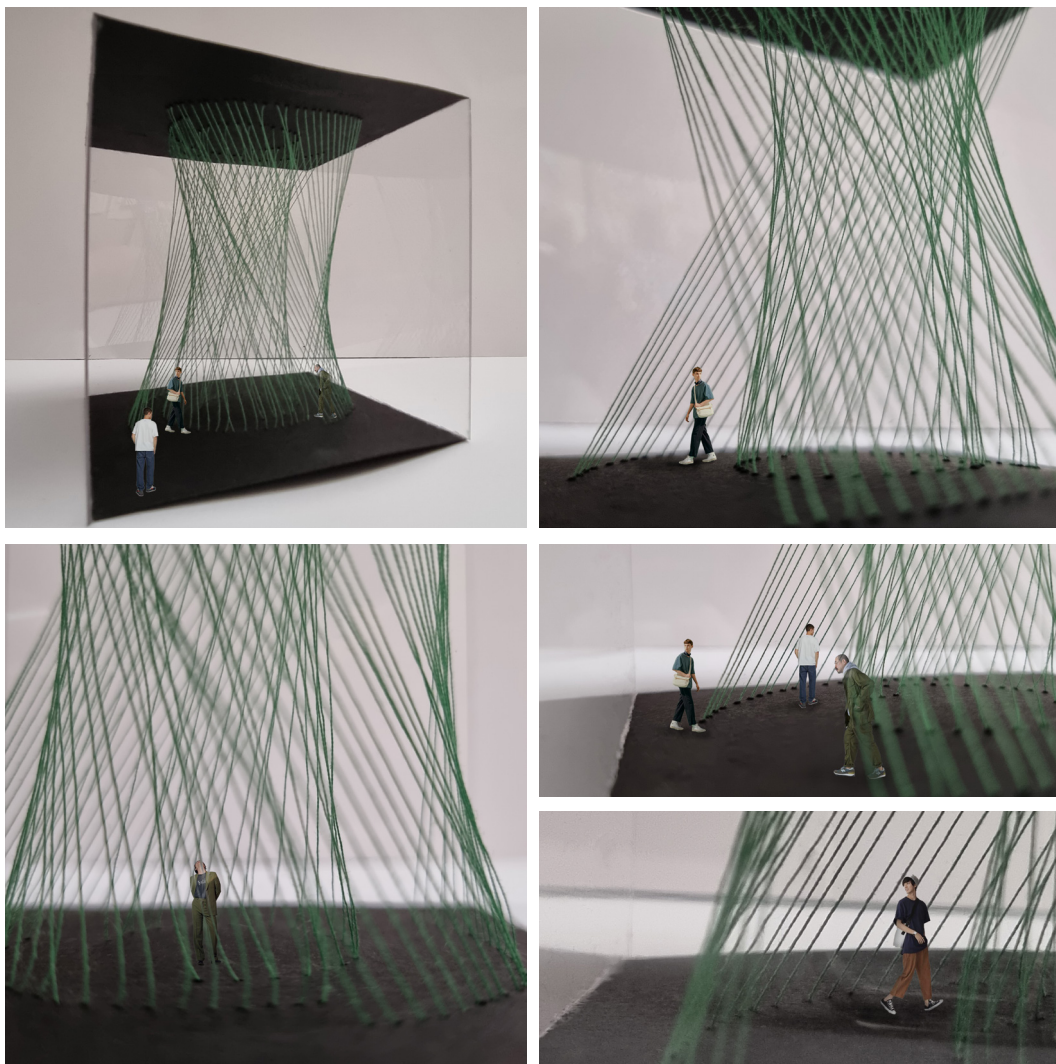


Fig 6.16. Physical modelling exploration of architectural and human form installation context.



## Model Reflection

- A more complex exploration of the vertical forms following Model 3
- The wire creates circular directional movement forms drawing the user inwards to the centre of the installation and through to the other side
- Invisible walls and dark flooring and ceiling surrounding the wire structure enhance the verticality of the installation
- Wire is not directly vertical which creates a vertical movement as well as enhancing the directional qualities influencing the users movement

This forth model investigates how the verticality of the threshold can be stretched and curved to inform the users movement more heavily.

The idea of slowing down the pace of which the user walks through this threshold was important for this model as it explored how to do this by simply twisting the connections of the thread by 90 degrees.

The circular movement that the threshold creates is obvious upon approach and then explored on entry. The thread twists vertically and horizontally along the floor.

The act of walking through the threshold is not direct, it intentionally takes the user on a journey through the space creating a dynamic threshold that demands interaction.

The flooring being black again softens the lighting in the space making it more atmospheric and adding to the drama of the threshold.

The clear plastic acts as the models structure as well as an opportunity for reflections to distort the threshold creating a more interactive space.

## **Critical Reflection - Physical Modelling Installation Series**

This physical modelling section investigates form and scale and how they influence the user's movement and sight lines. It also looks at how simple materials allow the form to create more of an impact, similarly to *The Breezeway House* by David Boyle.

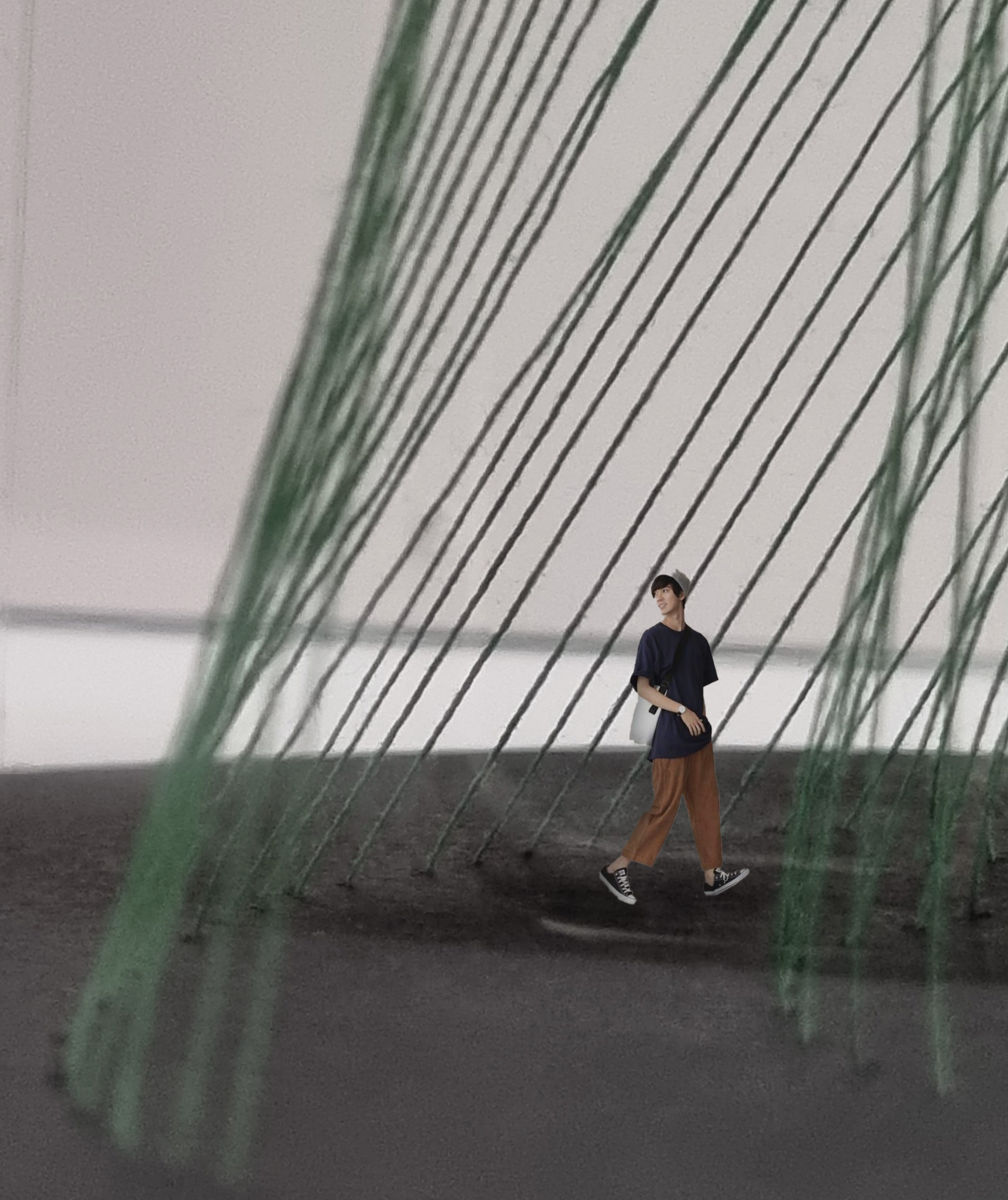
There was success in the vertical elements drawing the eye upwards connecting the floor to the ceiling. This created a simple visual verticality to the space that also influenced a directional movement though the installation horizontally. The simplicity of materiality with a clear hierarchy of material choice (as explored in *Requiem Laundry's March* by LUKSTUDIO) creates a dramatic installation that will aid in how the users will navigate the space.

This exploration will influence how the west plaza hotel lobby will be designed to incorporate what has been learned through this modelling series. Vertical and horizontal elements will be used to create a visually as well as physically dynamic space that influences the users' movements and creates easy way-finding throughout the lobby entrance.











## **Exploring Forms and Compositions of the Lobby Threshold - Digital Montage**

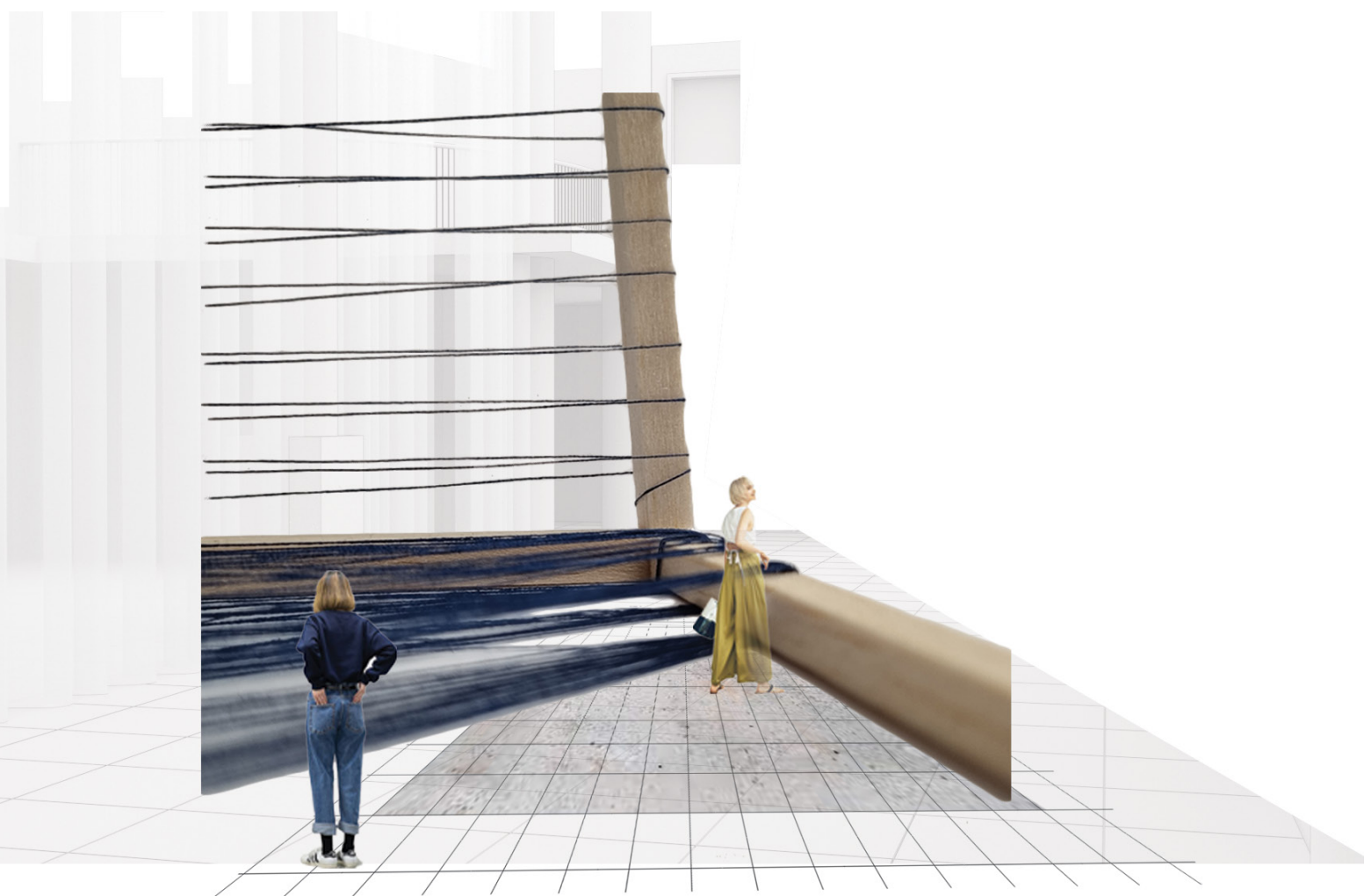
### **SIX.3**

This section explores the interior form of the West Plaza Hotel in Wellington with physical installation models K2, K3, K4 and I3.

This investigation explores form and material qualities and how these affect the users movement and emotions by creating different atmospheres while combining digital and analogue media.

These images show how the lobby of the west plaza hotel can incorporate the installation forms designed in the previous chapter displaying light and spatial qualities.

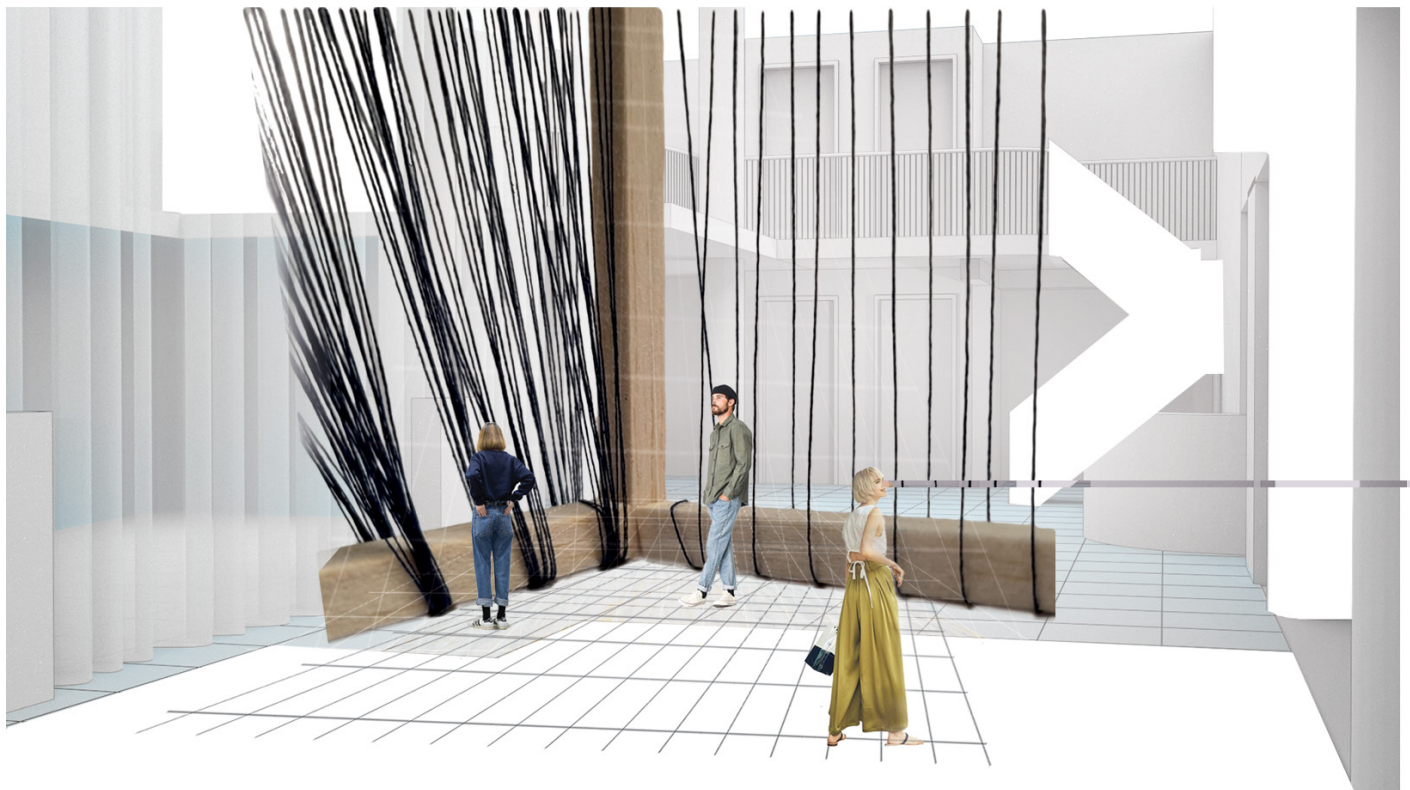




*Fig 6.17. Physical modelling exploration of forms and compositions.*

This montage explores how the form of model K3 draws the user in and influences movement and intrigue. The form itself doesn't draw the user through the lobby though.





*Fig 6.18. Physical modelling exploration of forms and compositions.*

This montage explores how the form of model K3 better draws the user in, through the lobby and incorporates seating and draws the eye up the space.



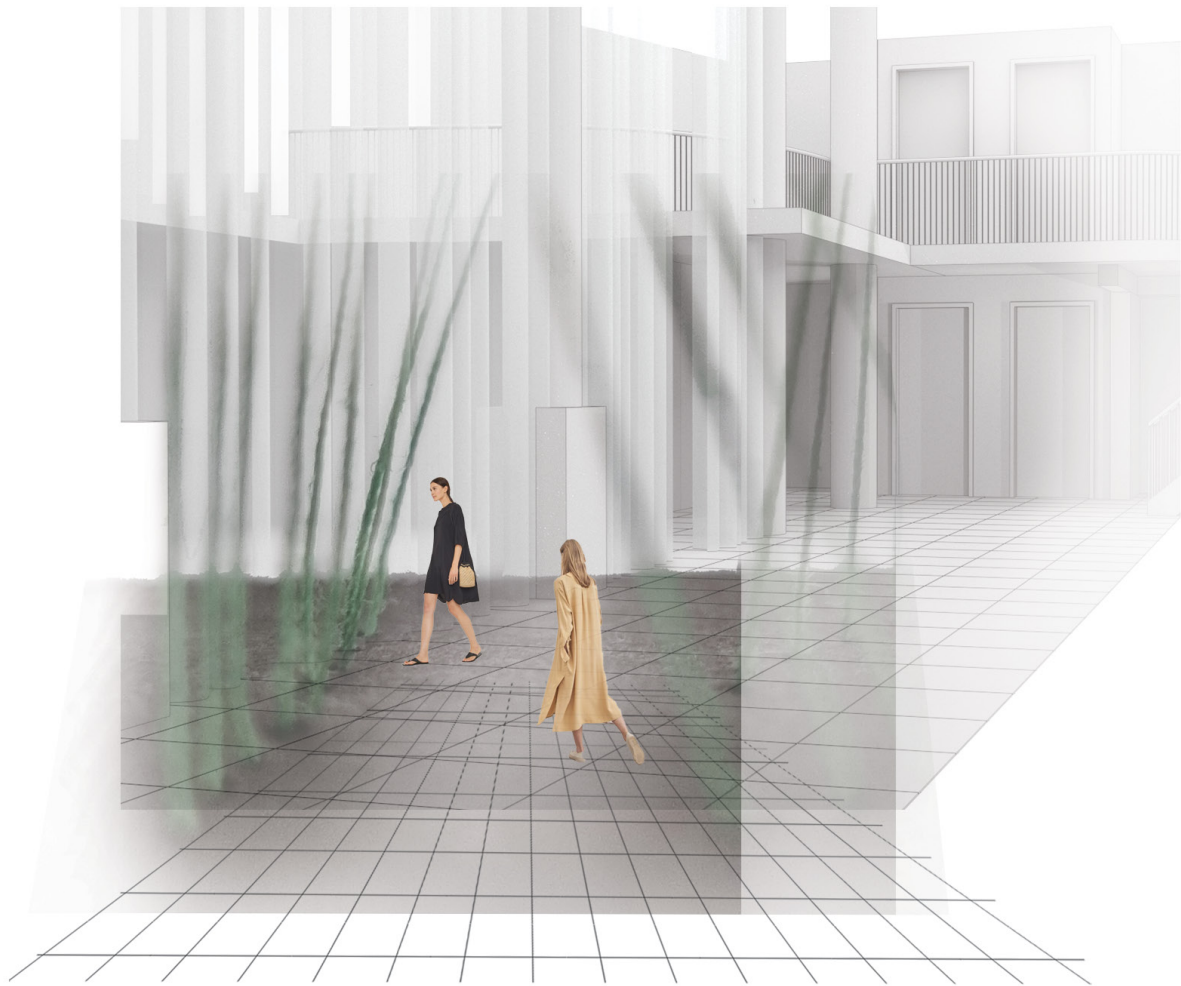
*Fig 6.19. Physical modelling exploration of forms and compositions.*

This montage explores how the form of model K2 frames the entrance threshold of the lobby. This adds seating and somewhat of a vertical element that draws the user's eye towards the ceiling.



*Fig 6.20. Physical modelling exploration of forms and compositions.*

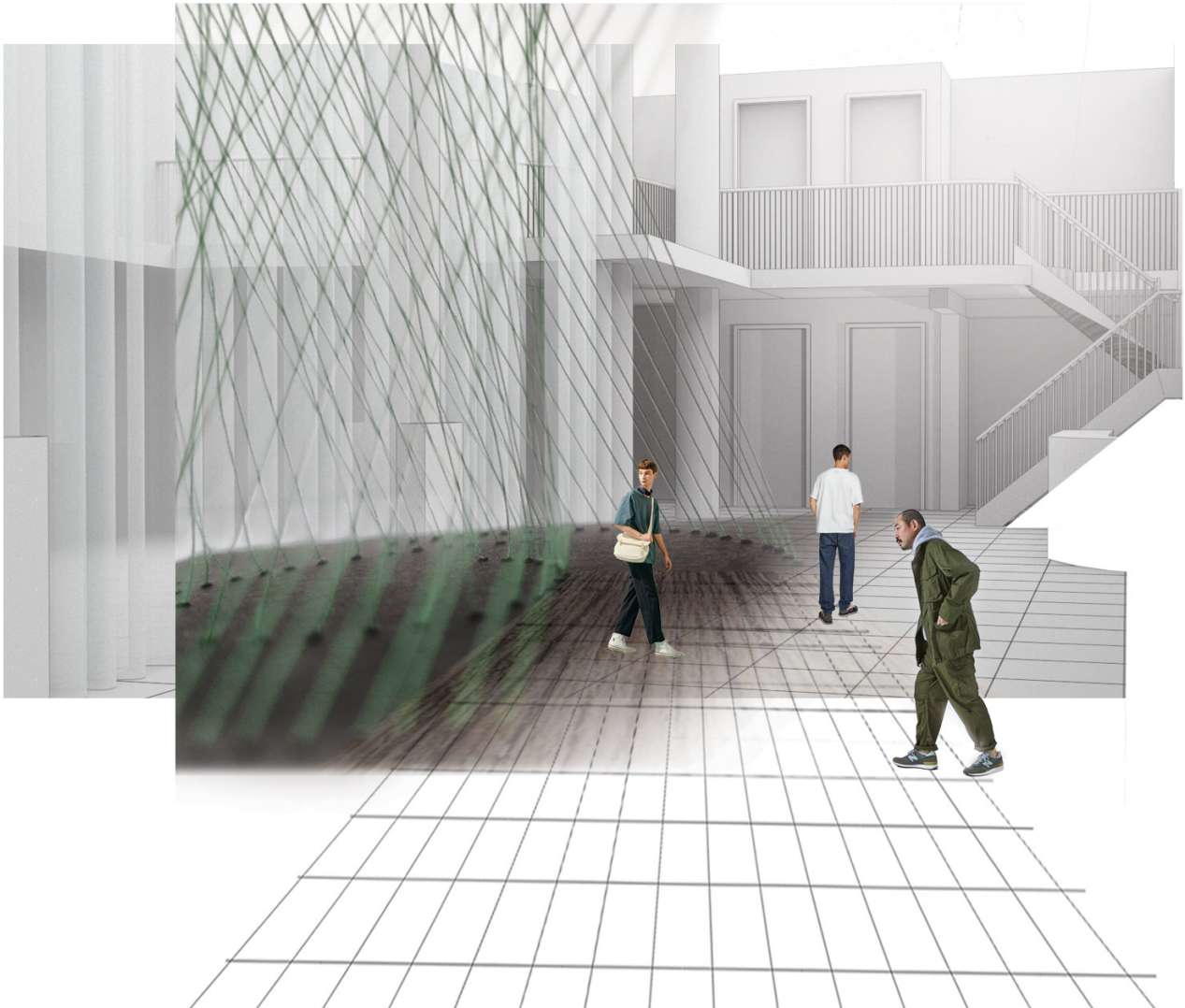
This montage explores how the form of model K4 creates a guided threshold walkway through into the buildings lobby. The flooring texture added influences the user's movement alongside the directional forms.



*Fig 6.21. Physical modelling exploration of forms and compositions.*

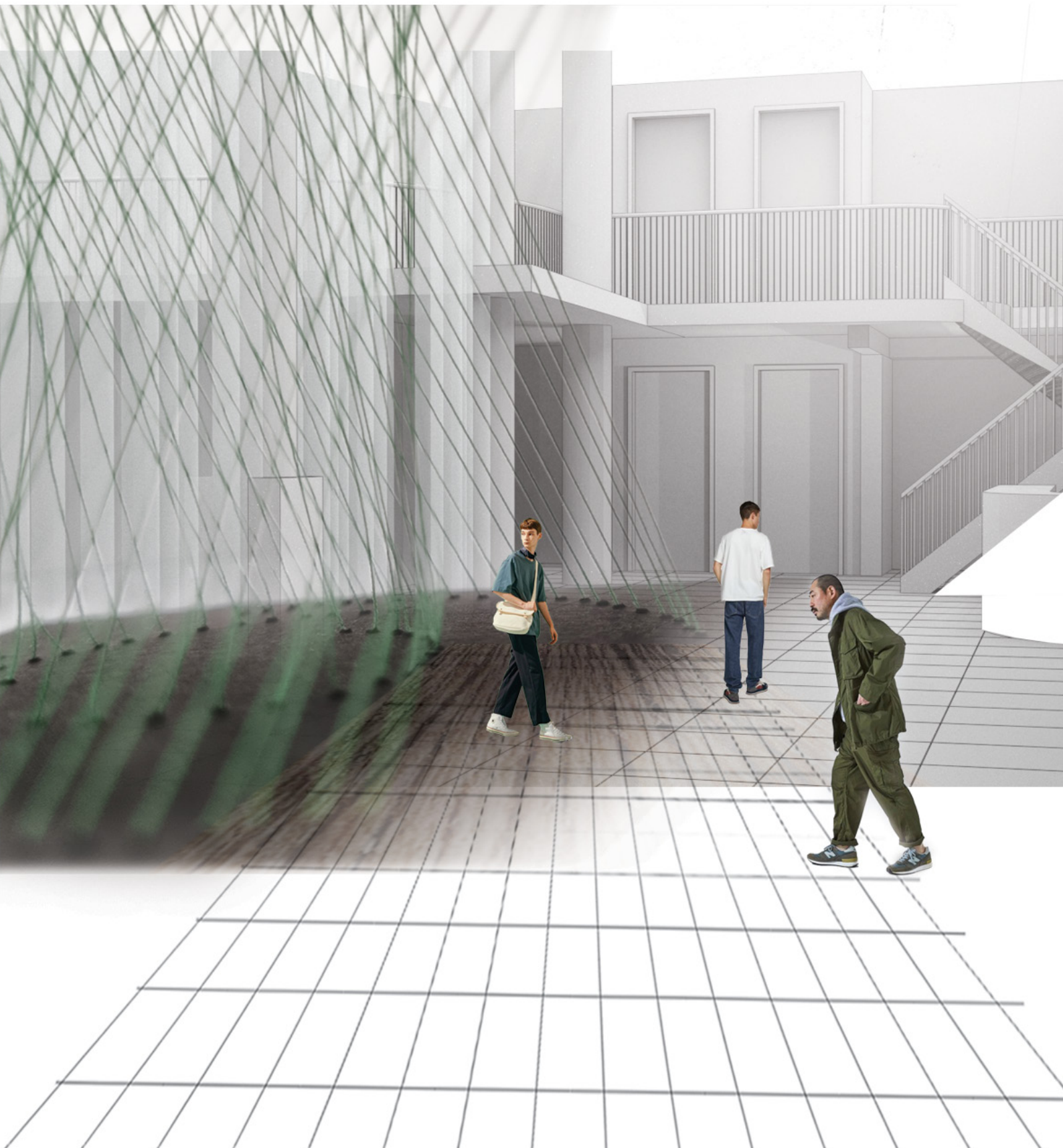
This montage further explores the model K4 but from the opposite angle, looking at how the form and grid patterns influence the movement of the user through and into the lobby space. By changing the contrast between the flooring, walls and ceiling increases the drama to draw the eye upwards.





*Fig 6.22. Physical modelling exploration of forms and compositions.*

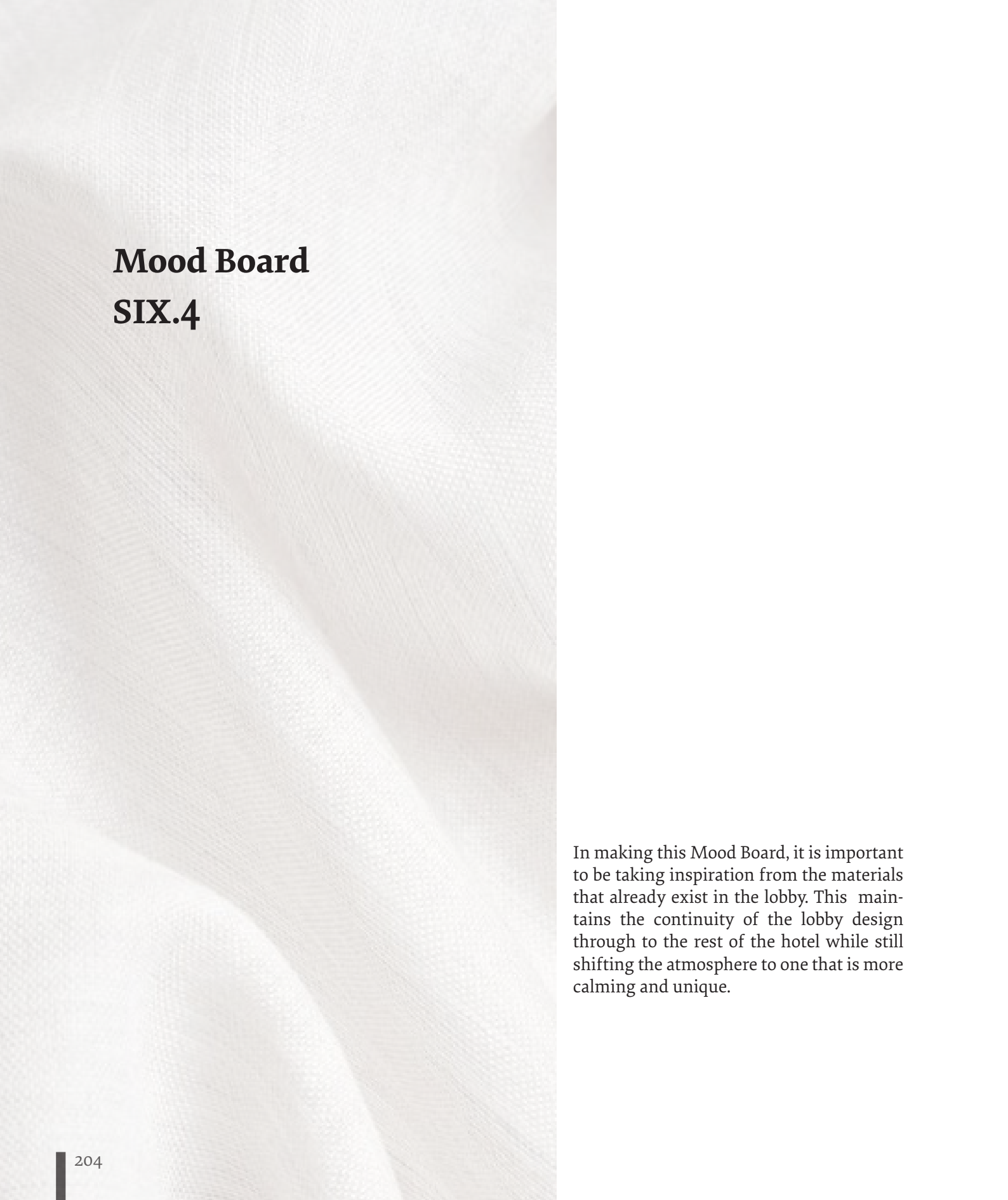
This montage explores how the form of model I3 model starts to engage the users movement more by changing the floor pattern to create intrigue. Making the flooring darker invites a richer atmosphere.



## **Critical Reflection - *Physical Modelling* *Installation Series***

These montages give the threshold space a sense of height and drama as a result. The need for a subconscious guide of movement in a lobby is required for the space, using the vertical and horizontal lines creates this. The more immersive the forms and lighting qualities are, the more immersive the atmosphere is that the images portray.

Texture on the floor gives the space direction as well as a greater sense of a change of space from exterior to interior. This grounds the lobby and gives the user the feeling of stepping into an influential space.



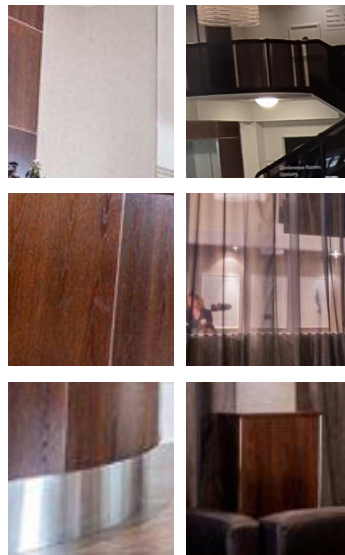
## **Mood Board**

### **SIX.4**

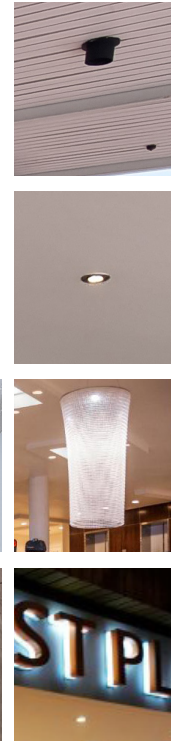
In making this Mood Board, it is important to be taking inspiration from the materials that already exist in the lobby. This maintains the continuity of the lobby design through to the rest of the hotel while still shifting the atmosphere to one that is more calming and unique.



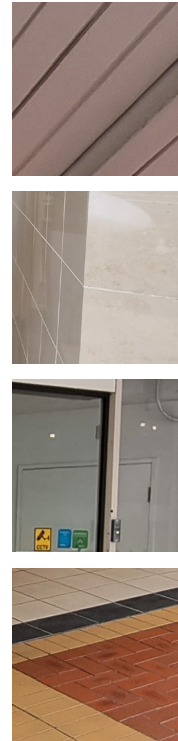
*Interior  
Materials*



*Exterior  
Lighting*



*Exterior  
Materials*



The existing materials from the lobby will be used to influence the new materials and atmosphere. These current materials have very minimal variation in texture and visual surface qualities that makes the lobby feel cold and sterile. The timber veneer attempts to increase the textural warmth however due to its satin finish it still makes the threshold feel cold. The tiled flooring, while practical, perpetuates the cold texture and atmosphere of the lobby.

All the lighting elements are dramatically circular and do not match any of the other design elements present. There needs to be more of a design integration of circular elements for them to feel as if they belong. There is a lot of lineal elements present that can be carried through as well as the overall cool tone colour palette and material types.



Fig 6.23. Mood Board for West Plaza Hotel.

*Mood Board Legend:*

- 1 | Soft Linen Fabric
- 2 | Glass Pendant Lighting
- 3 | **Staircase with Directional and Reflective Lighting Qualities**
- 4 | Linear Vertical Design Elements
- 5 | Montage inspiration that will be incorporated
- 6 | Cool Tone Wooden Flooring and Elements
- 7 | Native Potted Plants

The new mood board is constructed while taking the current atmosphere and material palette into consideration. This is because it currently has a similar atmosphere and design style that continues through the hotel guest rooms, conference rooms, restaurant and bar which is important to maintain as that creates the sense of continuity.

This mood board keeps the cool toned colour scheme but changes the surface textures with materials to create a more inviting and calming atmosphere. The ethereal qualities that this palette has is created

with the contrast of rough natural wooden elements against the smooth engineered reflective elements that are both comprised of lineal and repetitive qualities.

The main difference between the current material palette and this mood board is that there is more texture being incorporated that will make the space feel more comfortable and grounded.

**Design Concepts  
SIX.5**

208



This section is the conceptual design process of the interior form of the West Plaza Hotel in Wellington using the aspects and potentials that been explored throughout the physical modelling and digital mounting processes.

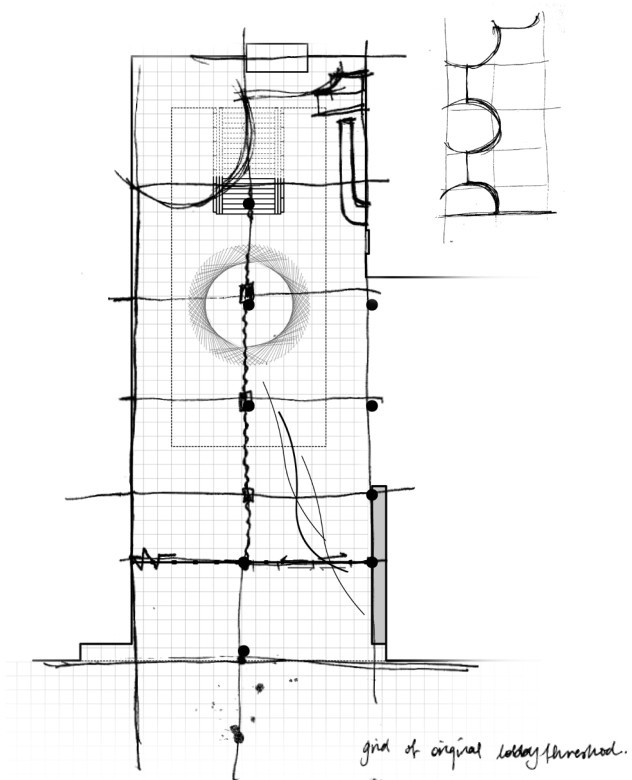


Fig 6.24. Concept 1 Plan.

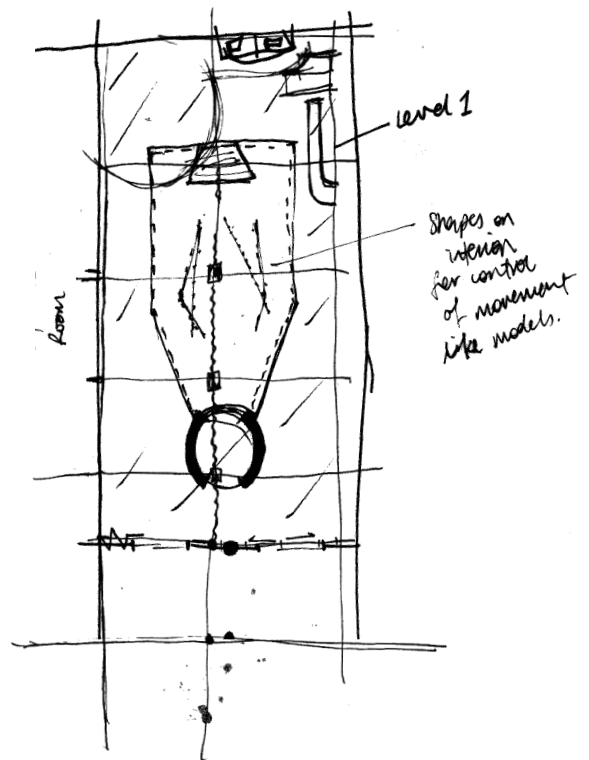


Fig 6.25. Concept 2 Plan.

## Concepts One and Two Evaluation

Concept one addresses the height of the lobby space as well as the grid system that is present in the interior construction. It also uses a central installation that acts as a movement divider as well as a reception desk.

Overall this design concept was unsuccessful due to the lack of spatial division and complexity. This concept did however help realise that the interior spatial composition is made up in grids, this was important to developing the design concepts and desired movement through the space.

This grid was then applied to concept two as it was drawn against the grid. The concept overall was not successful for the same reasons as concept one. However, the central design may be successful in a different location. The movement flow through the middle of the space up the stairs is successful and can be utilised in the final design.

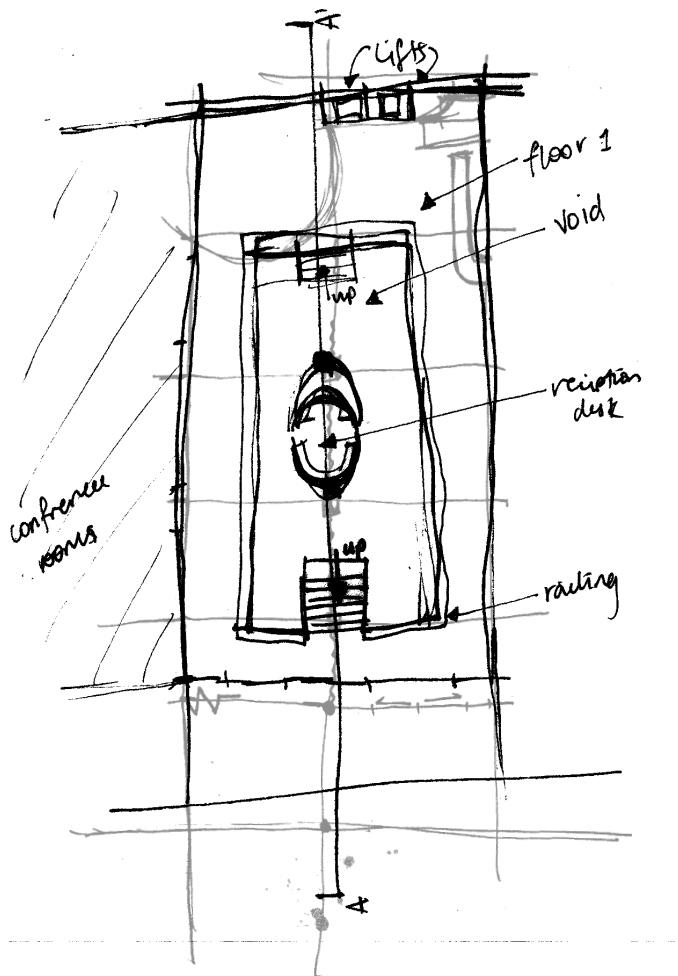


Fig 6.26. Concept 3 Plan.

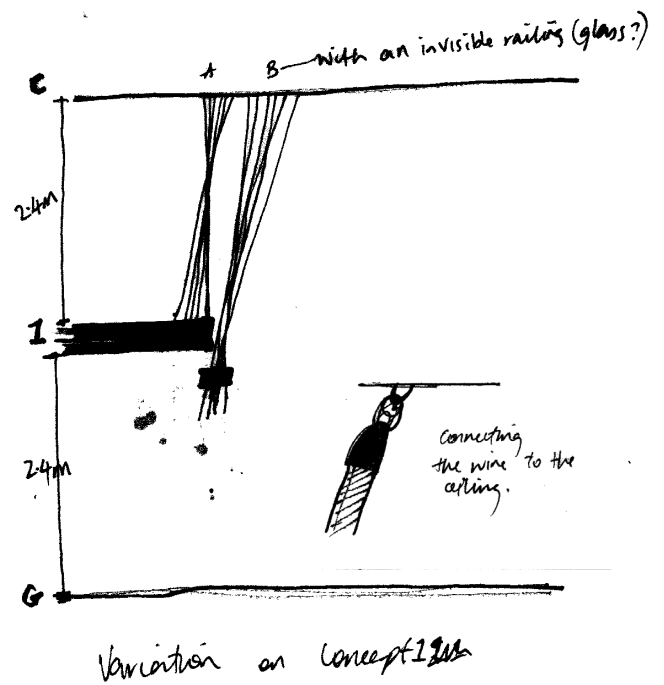


Fig 6.27. Concept 3 Wire Installation Detail.



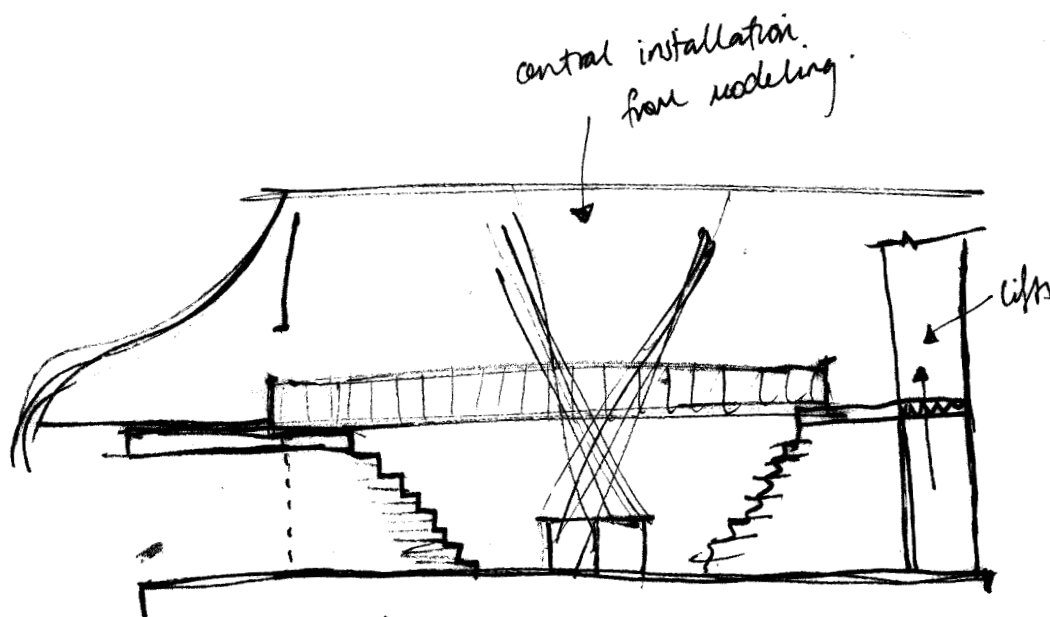


Fig 6.28. Concept 3 Section AA'

## Concept Three Evaluation

Concept three is also drawn against the original grid layout. The central vertical and circular installation form is somewhat successful due to the two staircases reinforcing the symmetry of the space.

The length of the lobby allows for there to be spatial division and for the programmes of the space to be divided into functional areas, similarly to the Pxathens - Six Thresholds

outdoor zoning, that is not successful here.

The section further illustrates the vertical symmetry present as well as the ceiling height being amplified with the installation. These are successful elements as they draw the users eye upwards increasing the drama and intrigue of the lobby's design like in the Breezeway House by David Boyle.

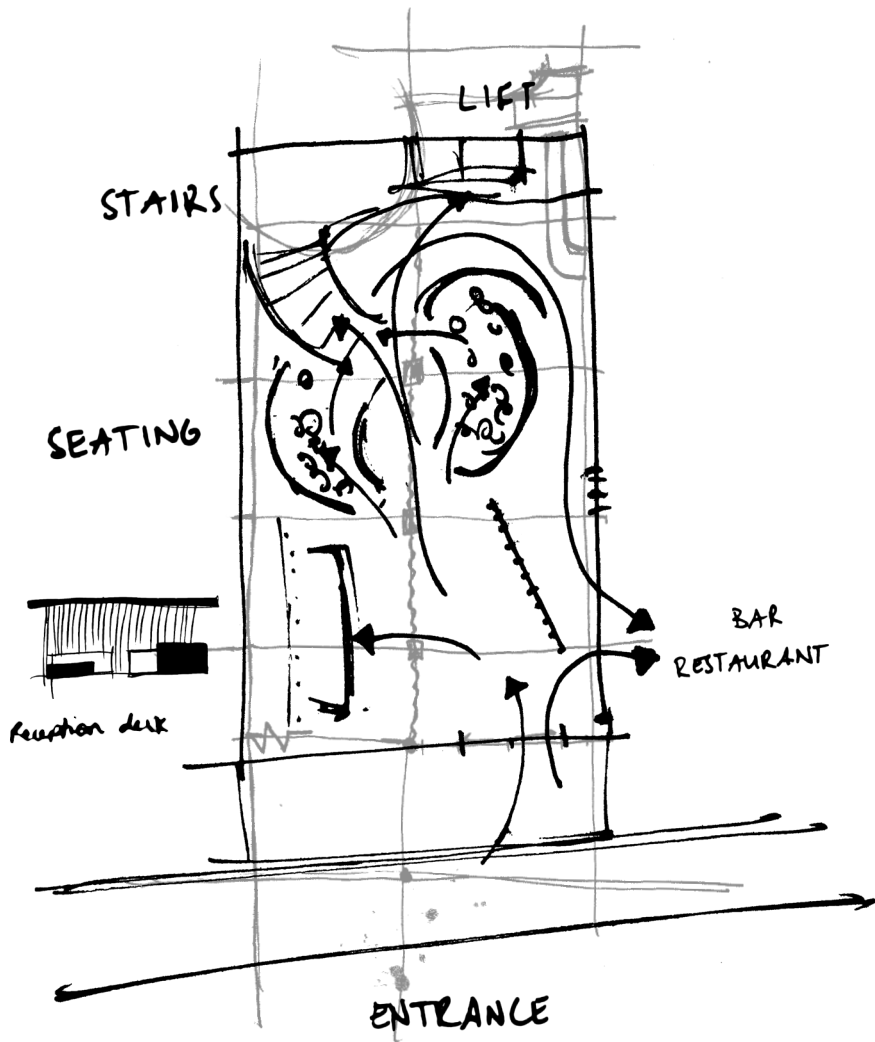


Fig 6.29. Concept 4 Plan.

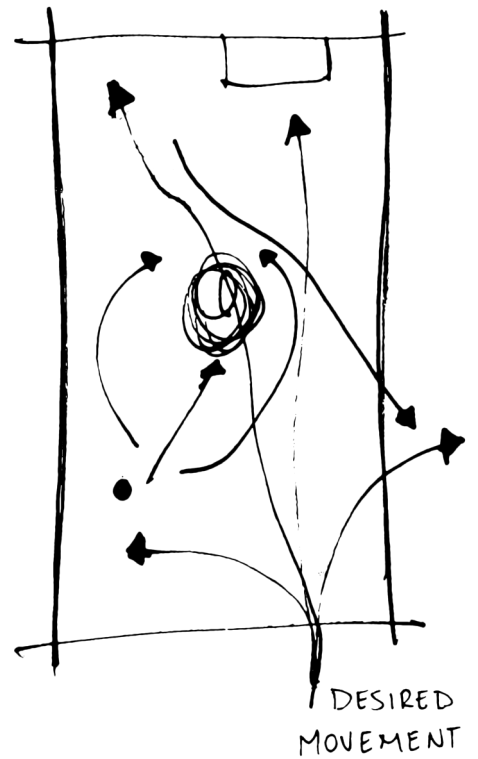


Fig 6.30. Concept 4 Movement Diagram.

BULKHEAD FOLLOWING CURVE OF WIRE  
ALTERNATING WIRE + LIGHTS MIRRORED ON  
FLOOR LIGHTING UP THE WIRE

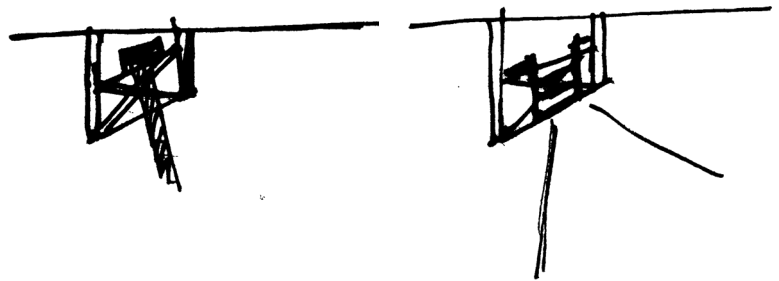


Fig 6.31. Concept 4 Ceiling Details.

## Concept Four Evaluation

Concept Four uses the grid to create zones for programmes and a movement flow through the space. The space was designed to control the movement through it in the order of programmes used to ensure the lobby is navigated efficiently and easily. The reception desk is immediately and easily accessed to the left of the entrance but movement can surpass it straight up to the hotel suites. This is a similar principle for the restaurant and bar area. Seating is available either side of the main areas of movement for guests.

The movement is being controlled with

the installation of wire screens that are anchored at the ceiling and the floor with lights that follow the length. This style of installation comes from the previous digital montages. This has a similar visual affect to David Boyle's Breezeway House where he has designed vertical movement into the panelling of the walls and ceilings that draw the eye upwards and along the interior lining.

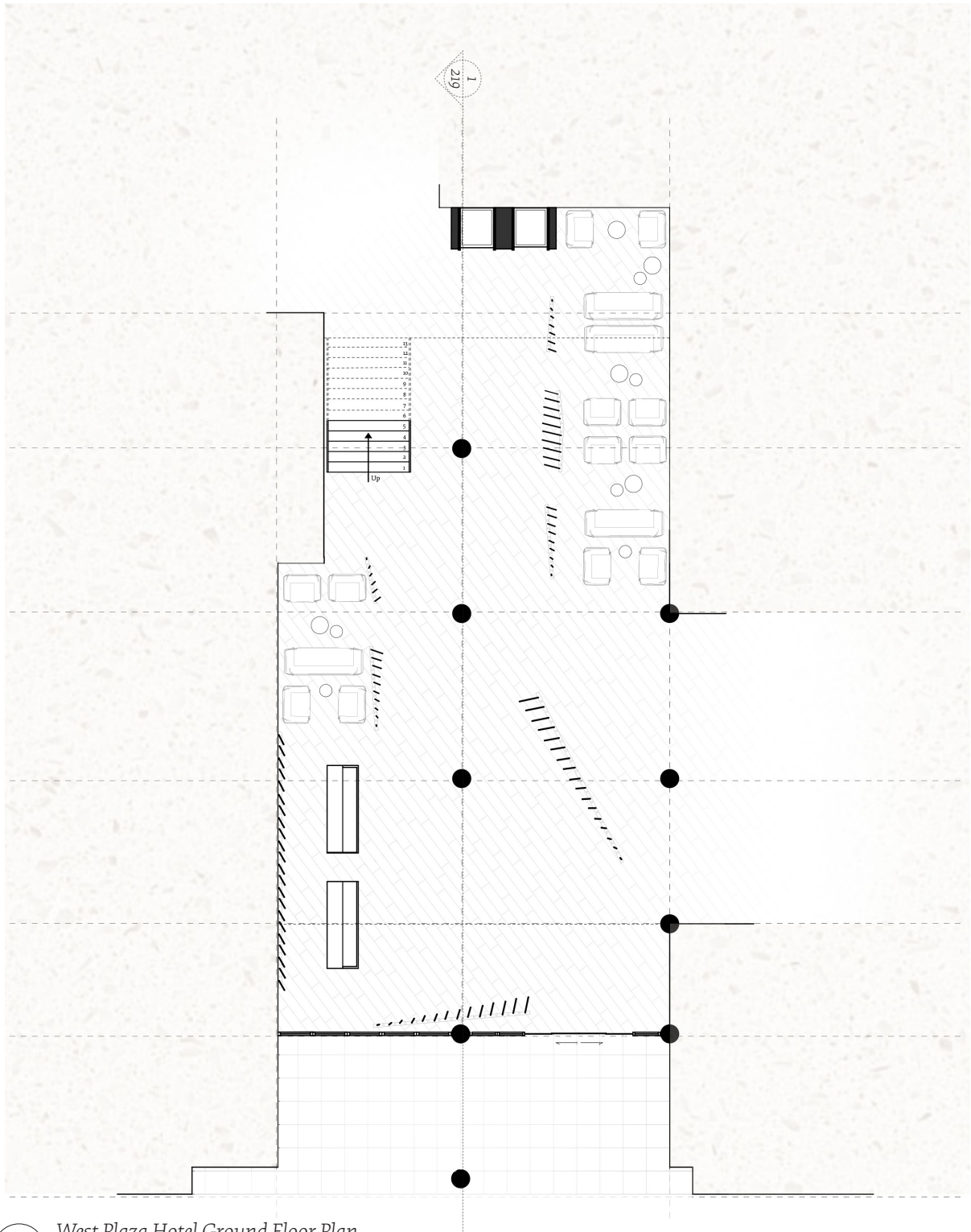


## Developed Design SIX.6

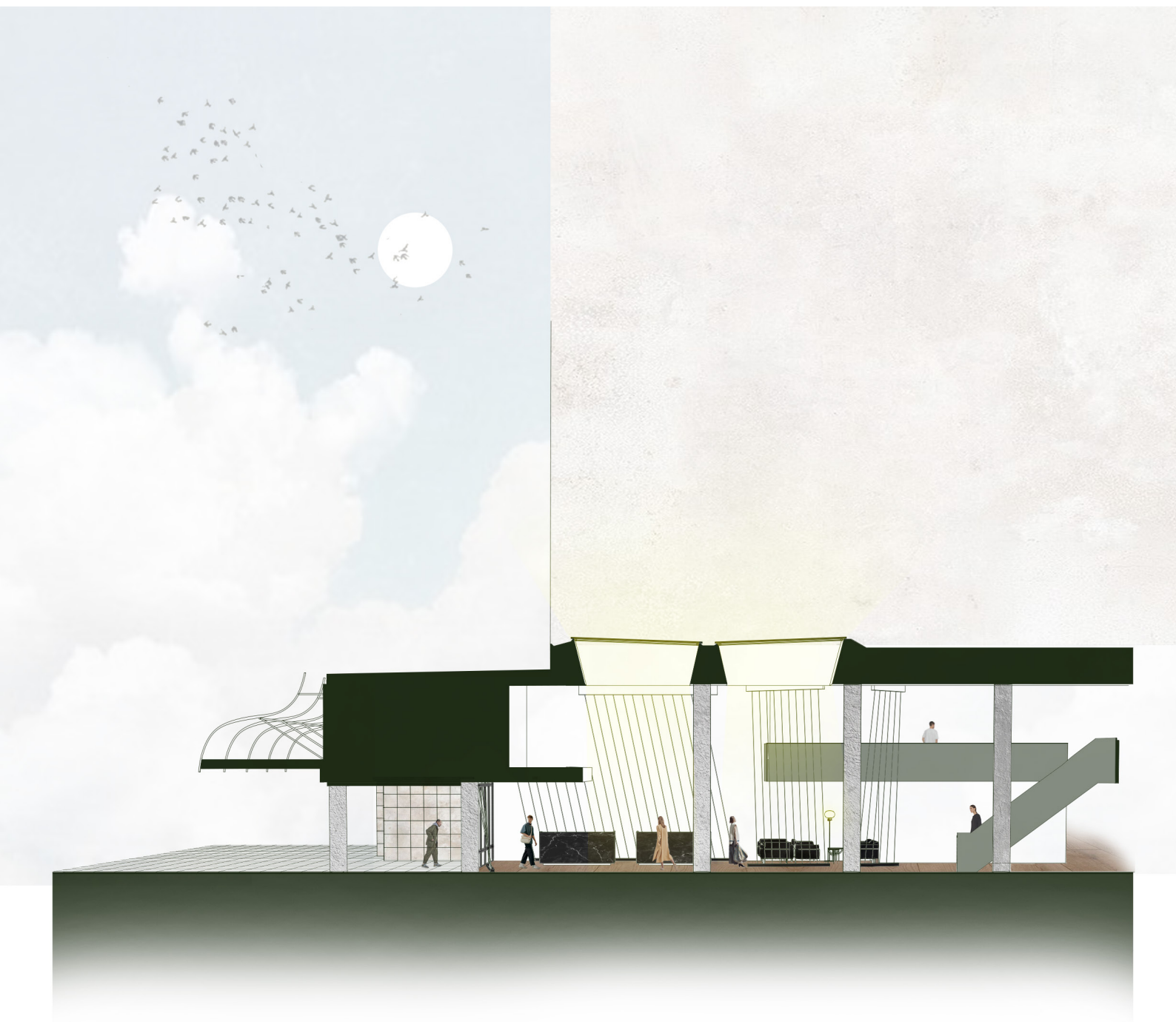
Fig 6.34. West Plaza Hotel  
Threshold View From Entrance.



This section is the developed design from the conceptual design process of the interior form of the West Plaza Hotel in Wellington using aspects that have been explored throughout the physical modelling and digital montaging processes.

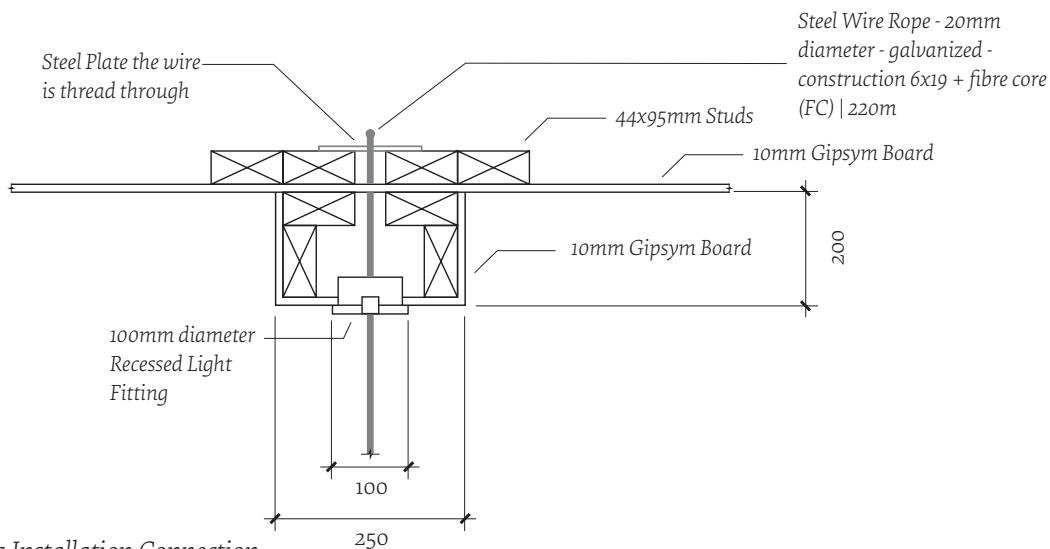


1 West Plaza Hotel Ground Floor Plan  
1:100 @A4

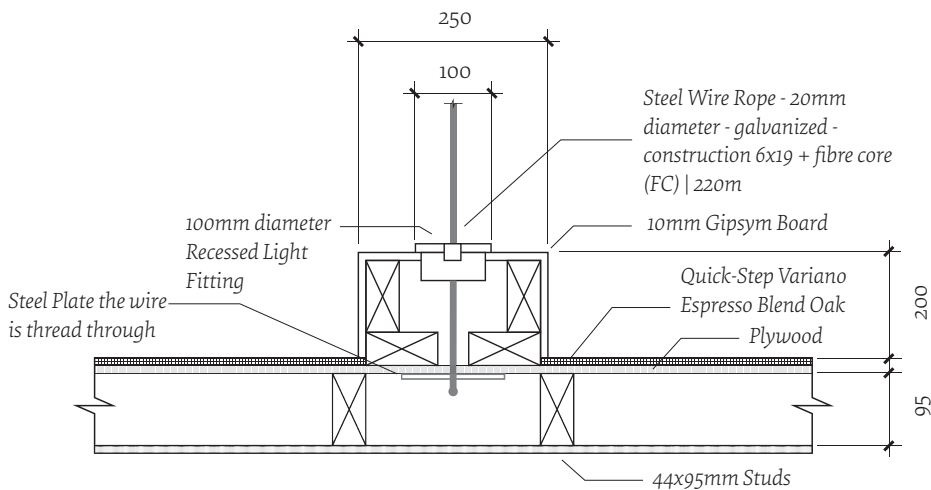


1 West Plaza Hotel Long Section Perspective  
no scale

# Details



1 Ceiling Installation Connection  
221 1:10 @ A4



2 Base of the Installation Connection  
221 1:10 @ A4





Fig 6.32. West Plaza Hotel Threshold View Towards Entrance.





*Fig 6.33. West Plaza Hotel Threshold View From Entrance.*

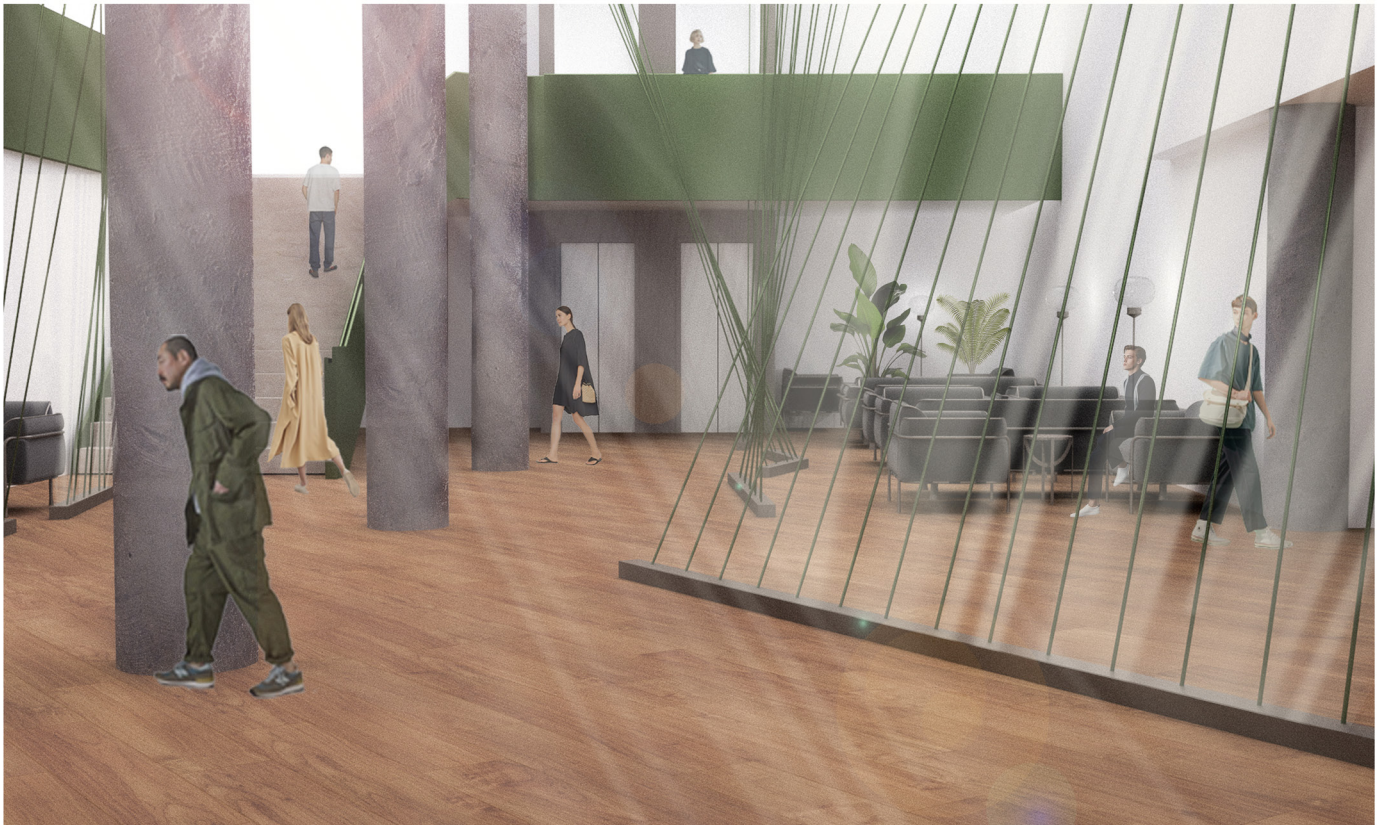


Fig 6.34. West Plaza Hotel Threshold View From Entrance.





## Chapter SEVEN

*Fig 5.26. Naumi Hotel Threshold  
View Towards Entrance.*



## Conclusion and Critical Reflection

Thresholds are an integral and influential part of the built environment that act as a portal into an interior condition. Through the lens of the typical user, thresholds seemingly hold little value, however, they indeed create a large impact on the user's perspective and perception of the interior quality that follows. The threshold as a space gives the user an opportunity for an impactful transition that will shape their experience. This tension that is created within the threshold space influences how successfully the building affects a user's mood and emotion in a desired way. Therefore, it is important to question how a threshold influences on a user's emotion and mood as it has implications for their initial perceptions between interior and exterior conditions.

It is difficult to define a threshold, as an entrance or a spatial quality. They both possess aspects that overlap and both act in similar ways. However, a large threshold space has a larger impact on the user simply because of its size. The large-scale threshold establishes the users' movement patterns, and I designed the small-scale threshold in response to the established movement pattern of the space caused by the programme.

The chosen aspects of research were lighting, materials, and cultural differences. These are complex within themselves but had to be researched together as they all intertwine to determine the main elements. Research through design presents the opportunity for the aspects of the entrance threshold to be used to analyse the qualities of the threshold as a spatial quality. Designing the mapping matrix from Cullen and Pallasmaa's works, in response to the research from key authors such as Unwin, Prasetyo, and Faud allowed me to organise the iterative investigate process through the pre and prelim design phases. One of the successes of this process was in the design of the mapping matrix table, this allowed me to pull together different physical and atmospheric aspects of design to test them with each other to explore their strengths and weaknesses and bring these through to the developed design phases.

The current Naumi Hotel spatial threshold is a pedestrian thoroughfare and designed to hurry people through rather than capture their attention. This meant that the lighting and materials had a greater impact on the user because those were what influenced the movement and perceptions of the following interior condition, whether it be the reception that has increased way-find-

ing presence or the bar that feels more like it has its own space. One success of this threshold is the good wayfinding throughout and the connection that it has to nature with its immersion that allows the user to shed their existence for an instance. The lightness of this threshold space gives the user the feeling of being outside but still protected from the elements by glass. This allows the ethereal qualities of lightness and immersive sound bathing that comes from the rain on the glass roof and the dripping from the water reticulation system for the planters. These qualities bathe the sight and sound senses to make the user feel as if they are stepping through a portal into an immersive space that influences their mood and emotions, changing their perceptions of the following interior conditions.

The large-scale threshold in The West Plaza Hotel increased the overall scale of what programmes the threshold space included, allowing for incorporation of both the reception and the main seating area for the lobby. The aims for this lobby space was to create movement and direction through the use of materials and lighting. However, this is a poorly organised spatial threshold that wastes space and causes illogical movement patterns. Therefore, my aim was to create a more organic flow of

movement through the lobby. I improved the movement through an iterative process that explored the desired movement that came from analysing the current and the iterative exploration of the threshold installation. This installation investigation gave me the opportunity to explore the influence of movement and perceptions through the use of screens, lighting, and constrained material choices. These installations shaped the threshold to influence the users' mood and emotions by focusing on the quality of the materials and lighting to create an atmospheric space. The logical movement through the threshold space gives the user the perception of a quality of stay that will run seamlessly and by proxy, improve the quality of the building's ability to influence the user's emotion and mood.

Limitations of this thesis topic is the vastness of its general scope that had to be narrowed for the sake of time constraints. The aspects of the threshold designs, qualities and atmospheres they possess are broad and incorporate many elements that cannot all be covered in the scope of this research. I narrowed the research to exclude the exploration of aspects such as colour, privacy and security and the institutional, domestic and light industrial types of thresholds. So, for future expansions of this research

topic I would suggest increasing the scope to investigate these other components to investigate how they could also change the users' perceptions and influence their mood and emotions.

Overall, this research highlights how many aspects of the threshold there are to explore. The influence the threshold has as a spatial quality is great, especially for the users' mood and emotions, with implications for how they perceive the next interior quality to be. The application of my research to the two scales allowed me to critically reflect on the findings at two extremes and therefore be better able to apply these findings to spaces of scales in-between. I have met the aims and objectives through the research and design processes and have successfully provided final designs that influence the users' emotions, mood and change their initial perceptions of the following interior conditions.

## Works Cited

Arıkan, M. (2012). Effects of Lighting in the Creation of the Character of Spaces in Hotel Environments: The Case study of Lobbies of Hotels Designed by the Idea Mimarlık Company [Eastern Mediterranean University]. <http://i-rep.emu.edu.tr:8080/jspui/bitstream/11129/684/1/Arıkan.pdf>

Cullen, G. (1971). *The Concise Townscape*. (New ed.). Architectural Press.

David Boyle Architect | Breezeway House. (n.d.). Retrieved 17 March 2022, from <https://www.davidboylearchitect.com.au/projects/breezeway-house>

Elizabeth Parker—Sub/Surface: Encounter and Domustalgia. (n.d.). Retrieved 23 April 2021, from [https://sce.parsons.edu/mfaid\\_thesis/elizabeth.html](https://sce.parsons.edu/mfaid_thesis/elizabeth.html)

Gordon, G. (2010). *Interior Lighting for Designers*. John Wiley & Sons.

Fidzani, L. C. (2003). First impressions of the interiors of hotel lobbies as influences on perceptions of hotels [Oregon State University]. [https://ir.library.oregonstate.edu/concern/graduate\\_thesis\\_or\\_dissertations/dj52w7164](https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/dj52w7164)

Leather, P., Beale, D., Santos, A., Watts, J., & Lee, L. (2003). Outcomes of Environmental Appraisal of Different Hospital Waiting Areas. *Environment and Behavior*, 35(6), 842–869. <https://doi.org/10.1177/0013916503254777>

Maheswari, N. R., Arvanda, E., & Kusuma, N. R. (2019). Permeable interior: Unfolding threshold space within transit corridor. *IOP Conference Series: Materials Science and Engineering*, 523, 012059. <https://doi.org/10.1088/1757-899X/523/1/012059>

Pallasmaa, J. (2005). *The Eyes of the Skin: Architecture and the Senses*. Chichester : Wiley-Academy ; Hoboken, NJ : John Wiley & Sons.

Prasetiyo, A. Y., & Fuad, A. H. (2021). Crossing the threshold: Understanding spatial patterns formed by threshold space in urban contexts. *IOP Conference Series: Earth and*



Environmental Science, 673(1), 012037. <https://doi.org/10.1088/1755-1315/673/1/012037>

Pxathens—Six Thresholds / Buerger Katsota Architects. (2015, January 31). ArchDaily. <https://www.archdaily.com/592618/pxathens-six-thresholds-buerger-katsota-architects>

Requiem: Laundry's march. (n.d.). Lukstudio. Retrieved 17 March 2022, from <https://www.lukstudiodesign.com/zh/portfolio/requiem-laundrys-march/>

Seamon, D. (2015). The Phenomenological Contribution to Interior Design Education and Research: Place, Environmental Embodiment, and Architectural Sustenance (pp. 415–431). <https://doi.org/10.1002/9781118532409.ch24>

Scofidio, D., & Renfer. (n.d.). Blur Building. DS+R. Retrieved 20 April 2021, from <https://dsrny.com/project/blur-building>

Slessor, C. (2002). Contemporary Doorways. Architectural Entrances, Transitions, and Thresholds. London : Mitchell Beazley.

Unwin, S. (2007). Doorway. London ; New York : Routledge.

The Folded Arcade. (n.d.). Lukstudio. Retrieved 26 April 2021, from <https://www.lukstudiodesign.com/portfolio/the-folded-arcade/>

Threshold by Allison Urban. (2009, August 9). Dezeen. <https://www.dezeen.com/2009/08/09/threshold-by-allison-urban/>

Youssef, M. (2020). Role of Artificial Lighting in Emphasising the Entrance Approaches. 27.

## Figure List

Fig 3.01. Exterior Approach to the Blur Building, Swiss Expo 2002. An example of subliminally immersive Architecture. Wikimedia Commons. Norbert Aepli, 17 July 2002, [https://commons.wikimedia.org/wiki/File:20020717\\_Expo\\_Yverdon\\_23.JPG](https://commons.wikimedia.org/wiki/File:20020717_Expo_Yverdon_23.JPG) Accessed: 21 March 2022. Pg. 66.

Fig 3.04. Sub/Surface: Encounter and Domustalgia installation representing subliminal architecture. MFA Interior Design Thesis, Elizabeth Parker, 2012, [https://sce.parsons.edu/mfaid\\_thesis/elizabeth.html](https://sce.parsons.edu/mfaid_thesis/elizabeth.html) Accessed: 21 March 2022. Pg 70.

Fig 3.06. Threshold installation representing subliminal architecture. Dezeen, Threshold by Allison Urban, 9 August 2009, <https://www.dezeen.com/2009/08/09/threshold-by-allison-urban/> Accessed 26 April 2021

Fig 3.08. Pxathens - Six Thresholds representing Tangible and Intangible architecture. Pxathens - Six Thresholds / Buerger Katsota Architects, Yiorgis Yerolymbos, 2013, <https://www.archdaily.com/592618/pxathens-six-thresholds-buerger-katsota-architects> Accessed: 26 April 2021. Pg. 82.

Fig 3.11. The Folded Arcade representing Tangible and Intangible architecture. Lukstudio, 2020, <https://www.lukstudiodesign.com/portfolio/the-folded-arcade/> Accessed: 26 April 2021. Pg. 86.

Fig 3.14. Requiem Laundry's March Installation representing Tangible and Intangible architecture. Lukstudio, 2020, <https://www.lukstudiodesign.com/zh/portfolio/requiem-laundrys-march/> Accessed: 26 April 2021. Pg. 90.

Fig 3.17. Breezeway House representing Tangible and Intangible architecture. David Boyle, 2019, <https://www.davidboylearchitect.com.au/projects/breezeway-house> Accessed: 17 March 2022. Pg. 94.

Fig 5.02. Cunningham House, Christchurch Botanical Gardens, Wikimedia Commons, Michal Klajban, 4 October 2020, [https://commons.wikimedia.org/wiki/Category:Cunningham\\_House#/media/File:Cunningham\\_House,\\_Christchurch\\_Botanic\\_Gardens,\\_Canterbury,\\_New\\_Zealand\\_21.jpg](https://commons.wikimedia.org/wiki/Category:Cunningham_House#/media/File:Cunningham_House,_Christchurch_Botanic_Gardens,_Canterbury,_New_Zealand_21.jpg) Accessed: 21 March 2022. Pg 119.

Fig 5.03. Glasshouse Interior, Walled Kitchen Garden and Palm House and Vineries, Wikimedia Commons, Veggiebacon, 27 October 2017, [https://commons.wikimedia.org/wiki/File:Greenhouse\\_Interior\\_1.jpg](https://commons.wikimedia.org/wiki/File:Greenhouse_Interior_1.jpg) Accessed: 21 March 2022.

Fig 6.08. Medusa Installation by Sou Fujimoto, TIN DRUM AND SOU FUJIMOTO PRESENT 'MEDUSA' Lynne Myers, 20 September 2021, <https://www.designboom.com/design/tin-drum-sou-fujimoto-medusa-virtual-experience-london-design-festival-2021-09-20-2021/> Accessed: 21 March 2022. Pg. 167.

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