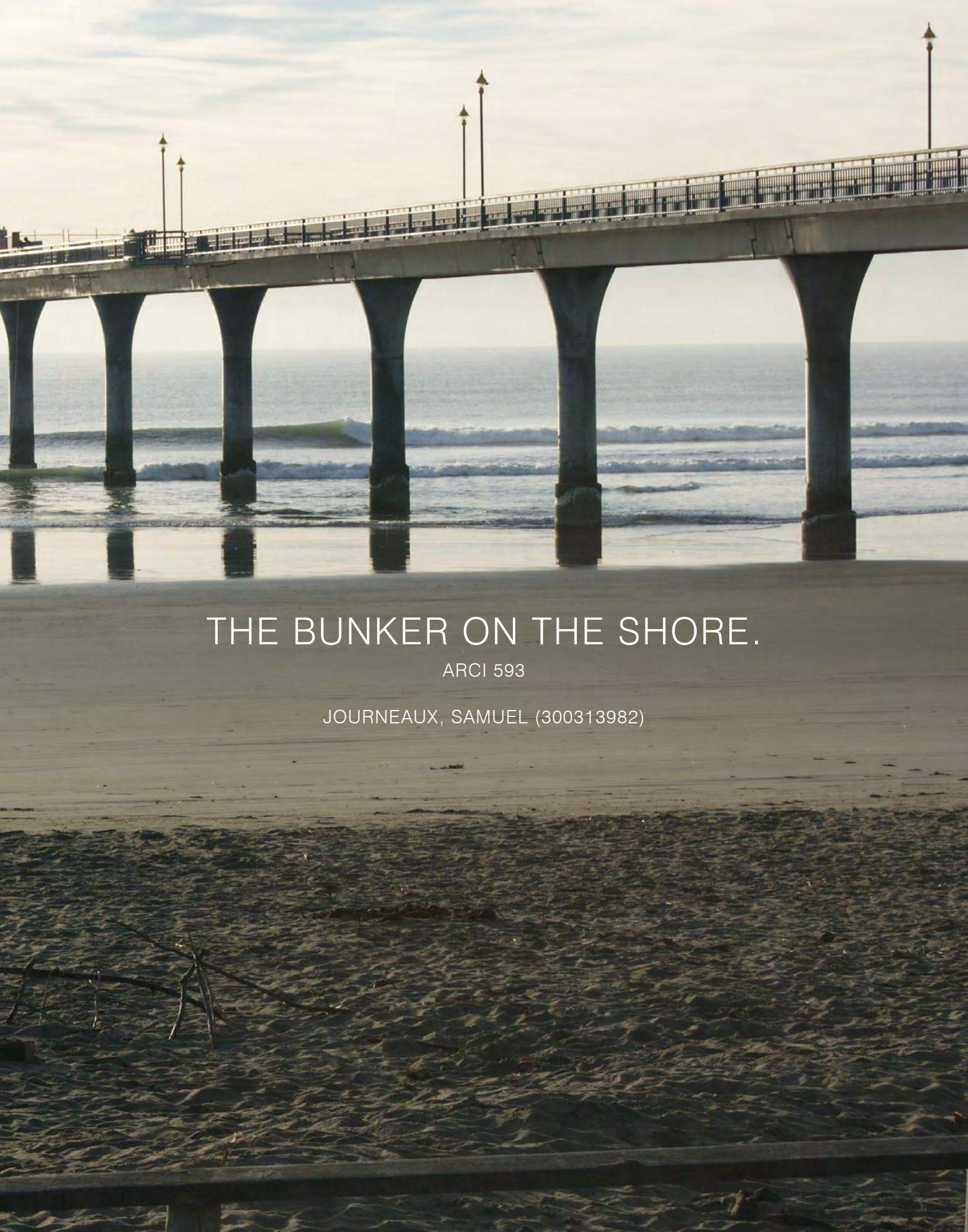


THE BUNKER ON THE SHORE.

ARCI 593 / Design Portfolio

Sam Journeaux / 300313982





THE BUNKER ON THE SHORE.

ARCI 593

JOURNEAUX, SAMUEL (300313982)



PREFACE.

Moments of serenity often define experience, allowing the mind and body to appreciate their surrounding environment. The notion of this sparked the exploration into how these ephemeral moments can be created in an architectural context.

This poses the question: *Can a Fixed Architecture Foster Ephemerality?*

Woven into this proposition was the tension between fixed mass and temporal atmospheres, using a play between, and amplification of scales, to delve into the conditions of the ephemeral.

Acknowledgements.

Thanks to my supervisor, Dr. Simon Twose, for your fresh outlooks on my research and consistent guidance throughout the year.

Dr. Jan Smitheram for you input and facilitating of colaborative review sessions throughout the research.

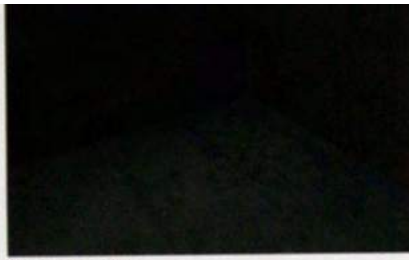
My parents for helping fund my years of university and continually supporting my studies.

To Meghan for putting up with my complaining around university hours and costs and supporting me through it.

And lastly, to myself for putting in the early mornings and late night for not only this research but also the previous four years of study.

A 120 point thesis submitted to the School of Architecture and Design, Victoria University of Wellington, in partial fulfilment of the requirements for the degree, Master of Architecture (Professional)

February 2019



Transition Space Interior



Micro Photography Abstractions



Entrance Space

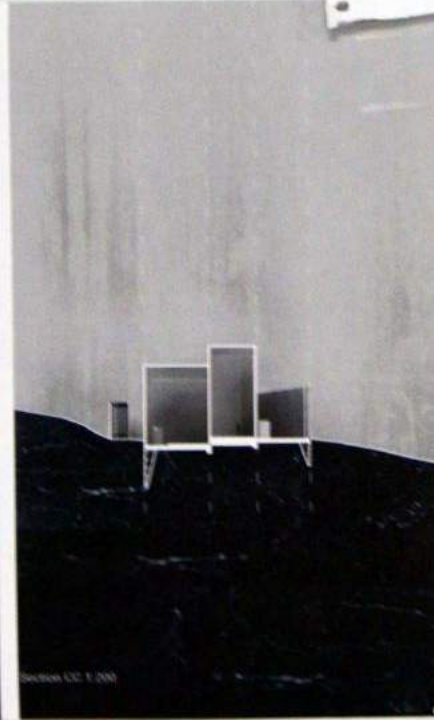
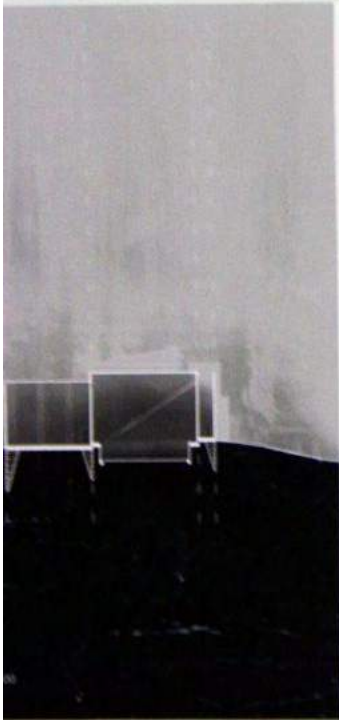
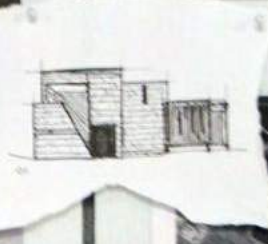


Exhibition Space II

Site Section One

Site Section Two

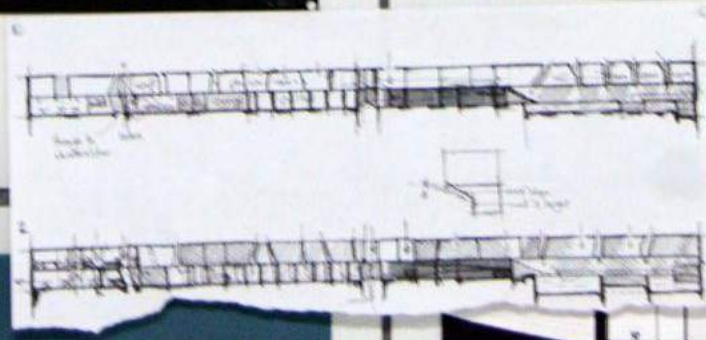
Site Section Two



Section C-C, 1:200



Context Map



ABSTRACT.

This thesis seeks to investigate the role of architecture in distilling of ephemerality within a fixed geometry; using the variables of light, texture, context and atmospheric conditions as experimental catalysts. Consequently, this research explores the notion that a rigid architecture can play a central role in the creation of temporal atmosphere. It investigates this proposition by developing a method to represent ephemerality through architectural form and medium with an iterative design process as the overarching methodology.

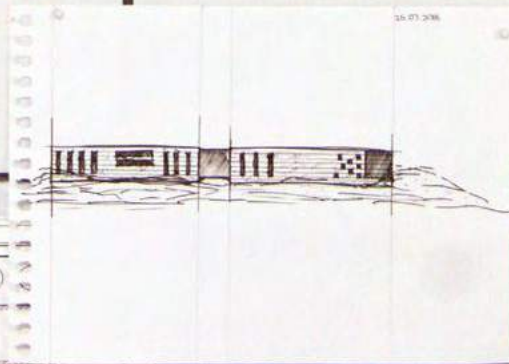
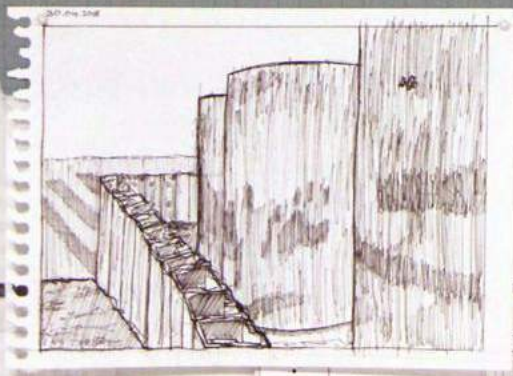
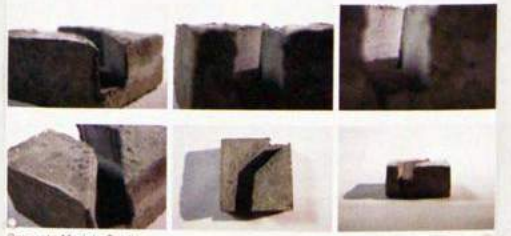
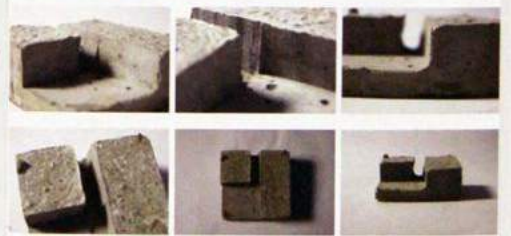
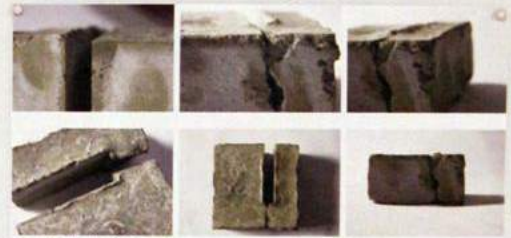
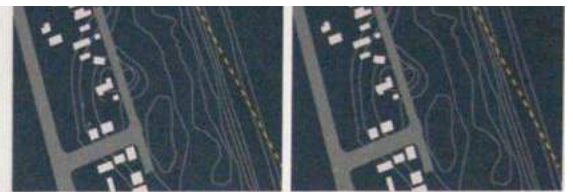
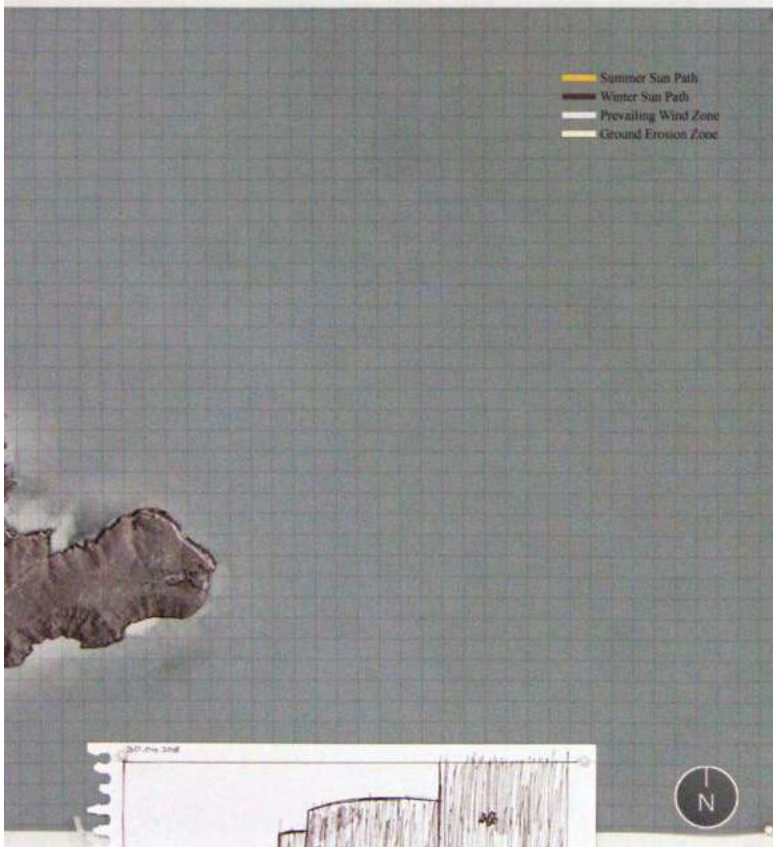
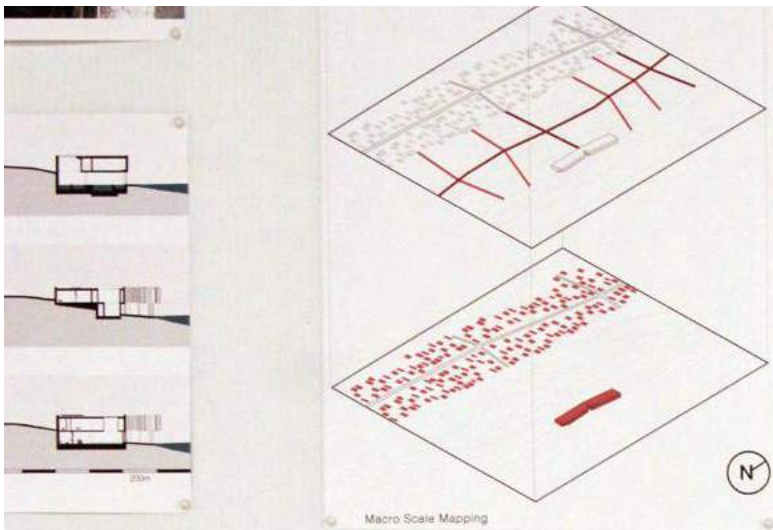
The design research begins with establishing the literary and physical context of projective geometries, abstraction of 'place' and atmospheric manipulation. This follows onto a three-part design-led exploration, with each test increasing in scale and architectural complexity. These include a site less installation, a gallery and a rehabilitation centre site on the rugged South Brighton coastline.

This series explores the relationship between the temporary and the constant, with lessons learnt from each previous experiment translated into the later. These develop a range of architectural techniques for distilling ephemerality within fixed geometries with social response and programmatic factors being supplementary factors.

The research recognises the already well established study into the ephemerality of spatial conditions within the architectural discourse and seeks to build on this through abstraction of place and site specific design responses.

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INTRODUCTION.

Tadao Ando states that “a simple geometric form is static, but with natural interaction and human participation its existence can achieve vibrancy in its meeting with concreteness” (Ando 1991, 10). This thesis develops and understanding of the relationship between the components that begin to define the two poles of; ‘fixed’ and ‘ephemeral’, posing the question *Can a Fixed Architecture Foster Ephemerality?*

This research builds upon an already well established architectural and theoretical discourse. Key areas in which this study bases itself include; the creation and manipulation of atmosphere, the abstraction and projection of ‘place’ within architecture and the intimate relationship between the body and material finishes. A review of the literary and visual context was implemented in defining these areas of focus and research findings were developed through three stages of design research.

These design phases included an Installation, a Gallery and a Rehabilitation Centre; with each phase increasing in project scale and scope of research. Throughout the Gallery and Rehabilitation phases the experiments took place on the dunes and foreshore of South Brighton, Christchurch. Situated on the eastern coastline of Christchurch this testing ground became an integral part of the design research, with its unique lighting conditions, undulating topography and harsh environmental factors informing the design outcomes. While on the edge of residential sprawl, the testing ground proved to have a spatial language of rugged isolation, an aspect actively acknowledged by the design experiments, employing an architecture of both resistance and acceptance.

The design experiments projected onto this physical context ultimately sought to address the design proposal, examining the relationship between an architecture of fixity and the ephemeral atmosphere.

SCOPE OF DESIGN.

The scope of this design-led research falls within the existing literary and visual context, with the three design phase chapters cementing the central position of this thesis.

This thesis creates a unique and project specific definition of 'ephemeral' for the design experiments that is based on literary and visual precedents discussed in this body of work. The research address the relationship between the body, site, material and atmospheres; with political, monetary, council and large scale social response being outside the scope of this research.

A definition of ephemerality is informed by the literary and visual context; with body perception and temporality appropriated from artist Olafur Eliasson, representation and light informed by architect Luis Barragan and materiality and abstraction of place taken from the work of Peter Zumthor.

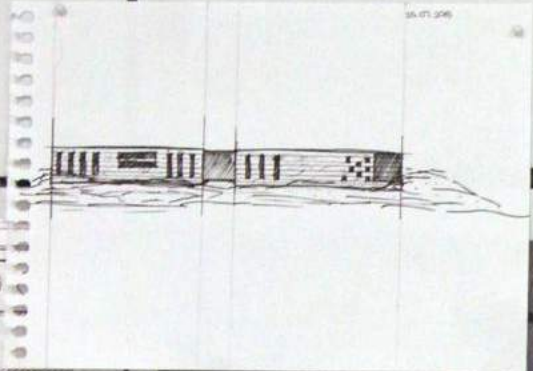
This discourse related context helped to inform the design research; engaging the architectural experiments in the round, rather than being an inquiry based study on theoretical/literary understandings of ephemerality.



Concrete Module Set IV



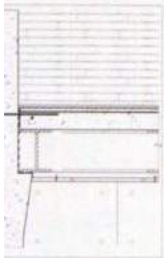
Material and Void Testing



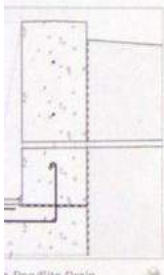
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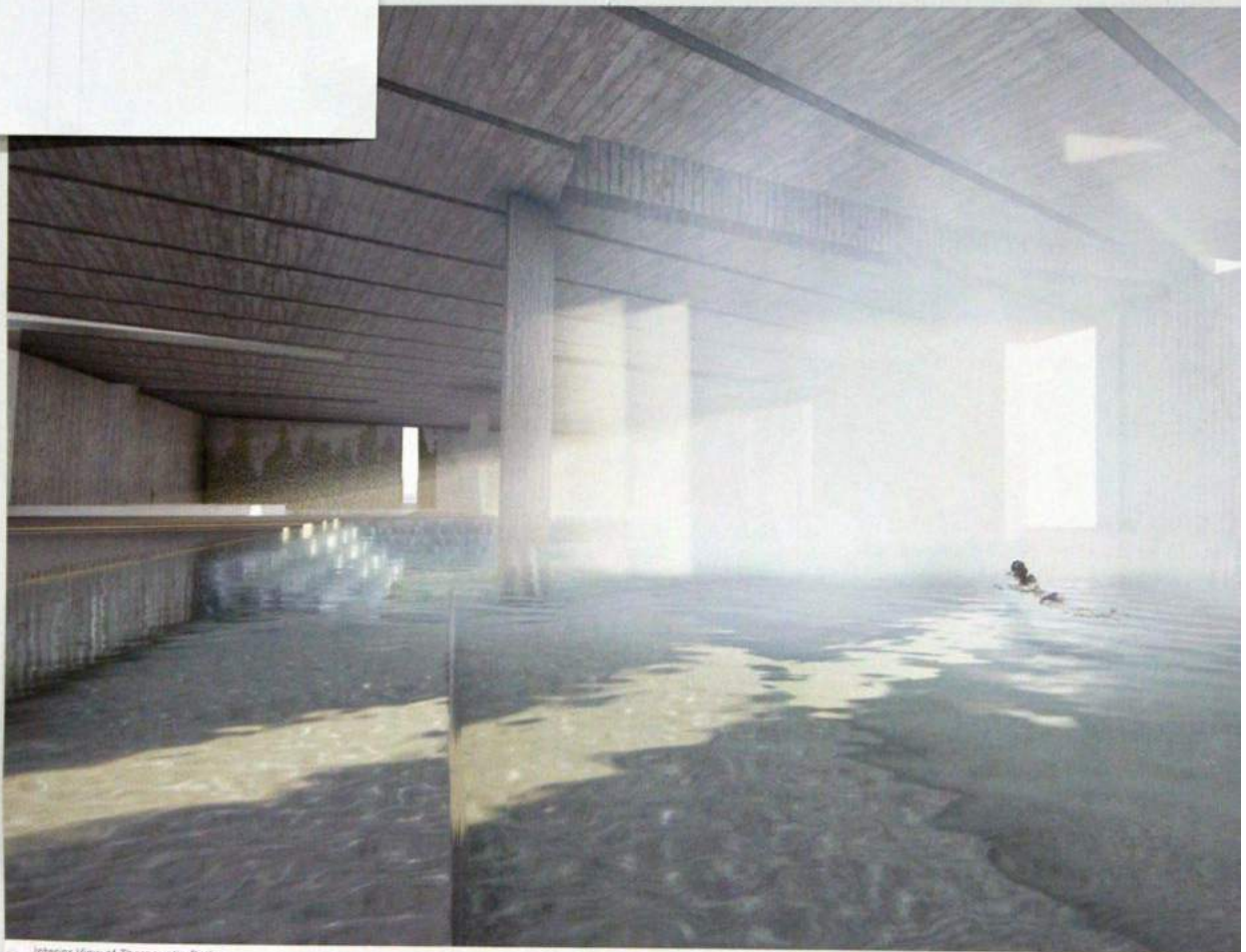
ht-Well to Roof



ht-Void to Floor



Pool/Site Drain



Interior View of Therapeutic Baths



South Corridor Atmospheric Test



North Corridor Atmospheric Test



Eastern Exterior



METHODOLOGY.

Architectural research cannot be conceived as synonymous with architectural practice, rather a seam of design exploration through insight and investigation (Fraser, 1). This thesis employs both a research for design, and research through design methodology. As stated by Murray Fraser, architectural research cannot employ the predetermined methods of practice, rather, this thesis allows for a range of temporal design outcomes as a reaction to the structuring of their experiments.

The framework of this design-led research hinges around the changing of architectural scales including a 1:1 human scale installation, a medium scale gallery and finally a public scale rehabilitation centre. Research through design is active since the thesis initiation, with the literary and visual context being established concurrently, using the key authors and precedents. These provide a context within which this design research is positioned along with the architectural discourse in which the design phases were measured against and drew inspiration from. A brief description of the design exploration phases is below:

Body Scale – An installation comprised of a hanging sculptural screen playing with form and atmosphere. Physical models and photography were the primary design methods used.

Mid-Scale – A concrete light gallery set amongst rugged sand dunes experimenting with atmosphere, materiality and place. Physical models, site abstraction and digital projections were utilised.

Public Scale – A large-scale monolithic building on the shoreline acting as a rehabilitation centre reacting to site, inhabitants and temporal atmospheres. Physical models, material tests, site abstraction and digital projection tests were the methods used in this phase.

Throughout the three design phases of the research, the literary and visual precedent review continued to ground the designs and provide a contextual framework. At the conclusion of each design phase, experiment reflection was carried out, with lessons learnt brought through to the next stage of the design research.

THESIS STRUCTURE.

Chapters 2 - 3 follow the introduction by establishing a literary and visual context in which provided a discourse framework for the design experiments.

Chapter 2 - *Literary Context*, discussed a theoretical background of temporal atmospheres and how architecture has responded to these conditions. Due to the broad scope of conveying ephemerality, the literary review only addressed key authors considering light, texture and atmosphere.

Chapter 3 - *Visual Context*, investigated three key precedent studies. These precedents considered the role of art and architecture in distilling an ephemeral spatial quality and how this may be achieved.

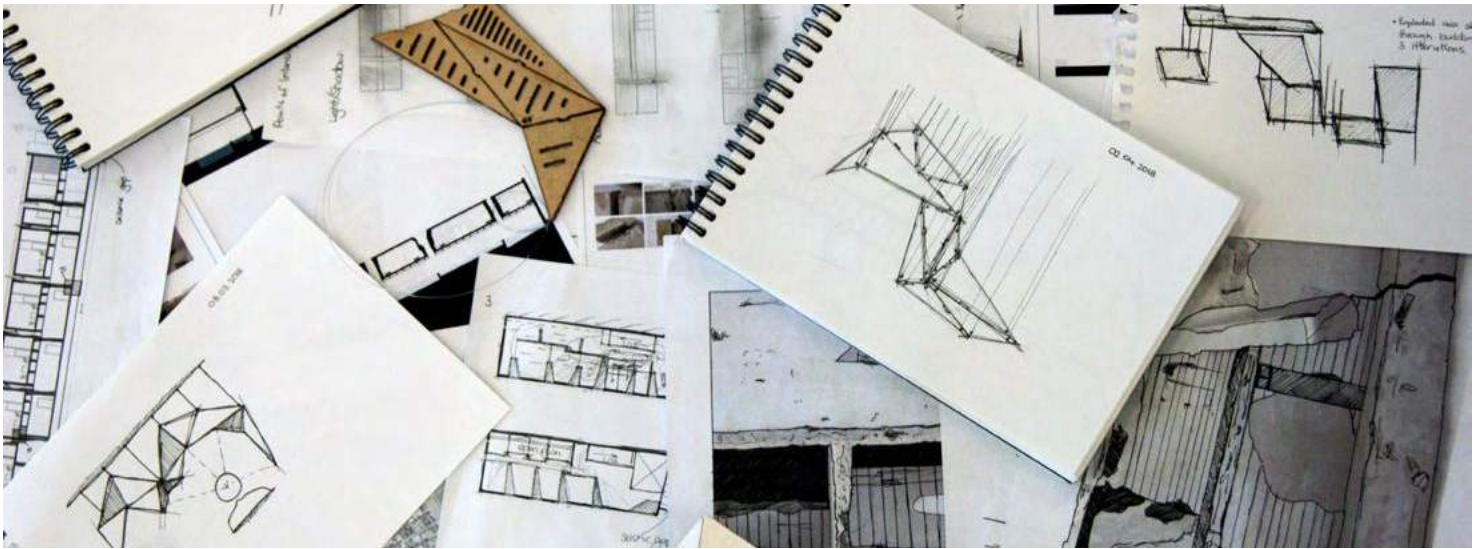
Chapters 2 - 3 are followed by the design experiment chapters. These work through a range of scales, with each chapter detailing the aim, method and outcomes from each test.

Chapter 4 - *Experiment One: Installation*, comprises the details and design of a 1:1 scale architectural installation concerned with how ephemeral atmospheres may be created in a controlled setting. Physical models and photography experiments acted as the primary design methods.

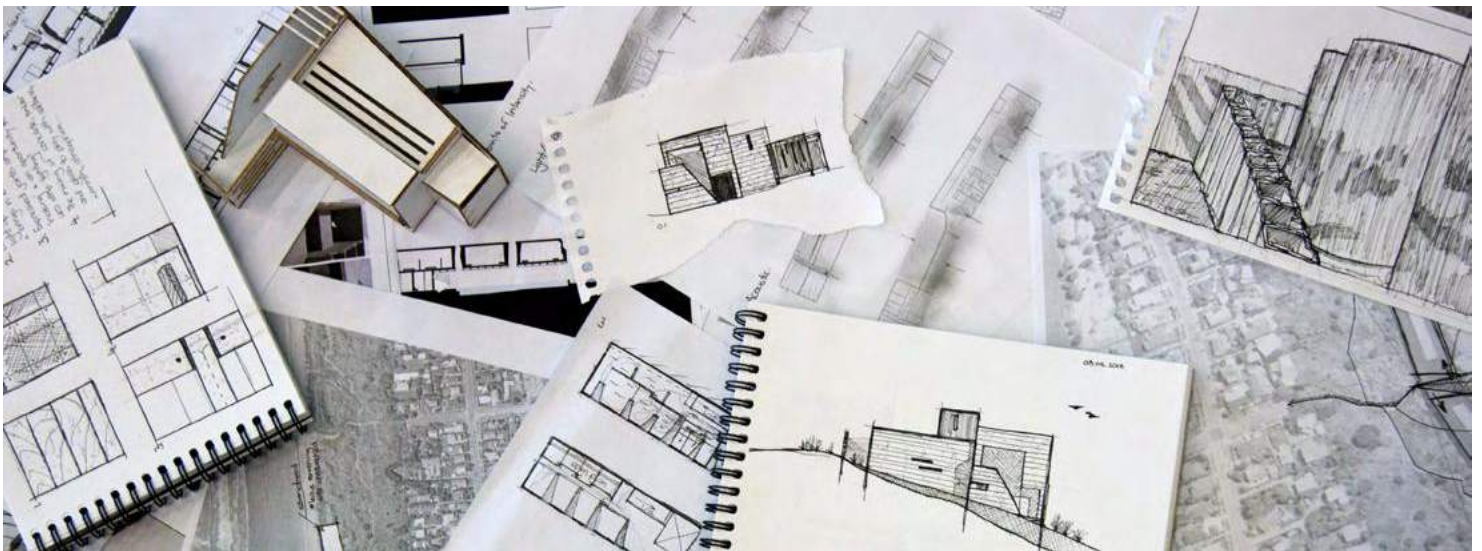
Chapter 5 - *Experiment Two: The Gallery*, explored how an mid-scale architectural shell could create temporal interior spatial conditions in a rugged, coastal site. Physical modelling, site abstraction and digital design were implemented at this stage.

Chapter 6 - *Experiment Three: Rehabilitation*, investigates how a large scale, monolithic building could react to and enhance the ephemeral aspects of the coastline in a provocative and tangible manner. Material tests, site abstractions and digital experiments were utilised throughout this stage.

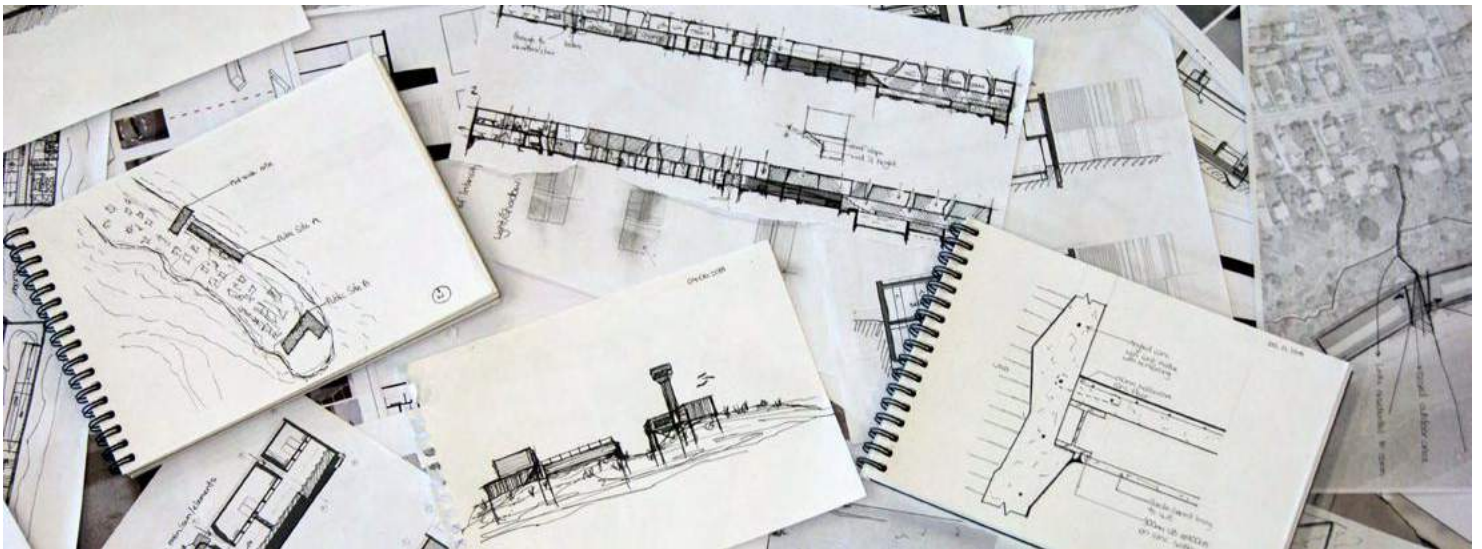
Chapter 7 - *Discussion*, reflects on the relationship between the rigid architectural experiments and the ephemeral environments they responded to. It provides a summary of the work and discusses the success and failures of the research.



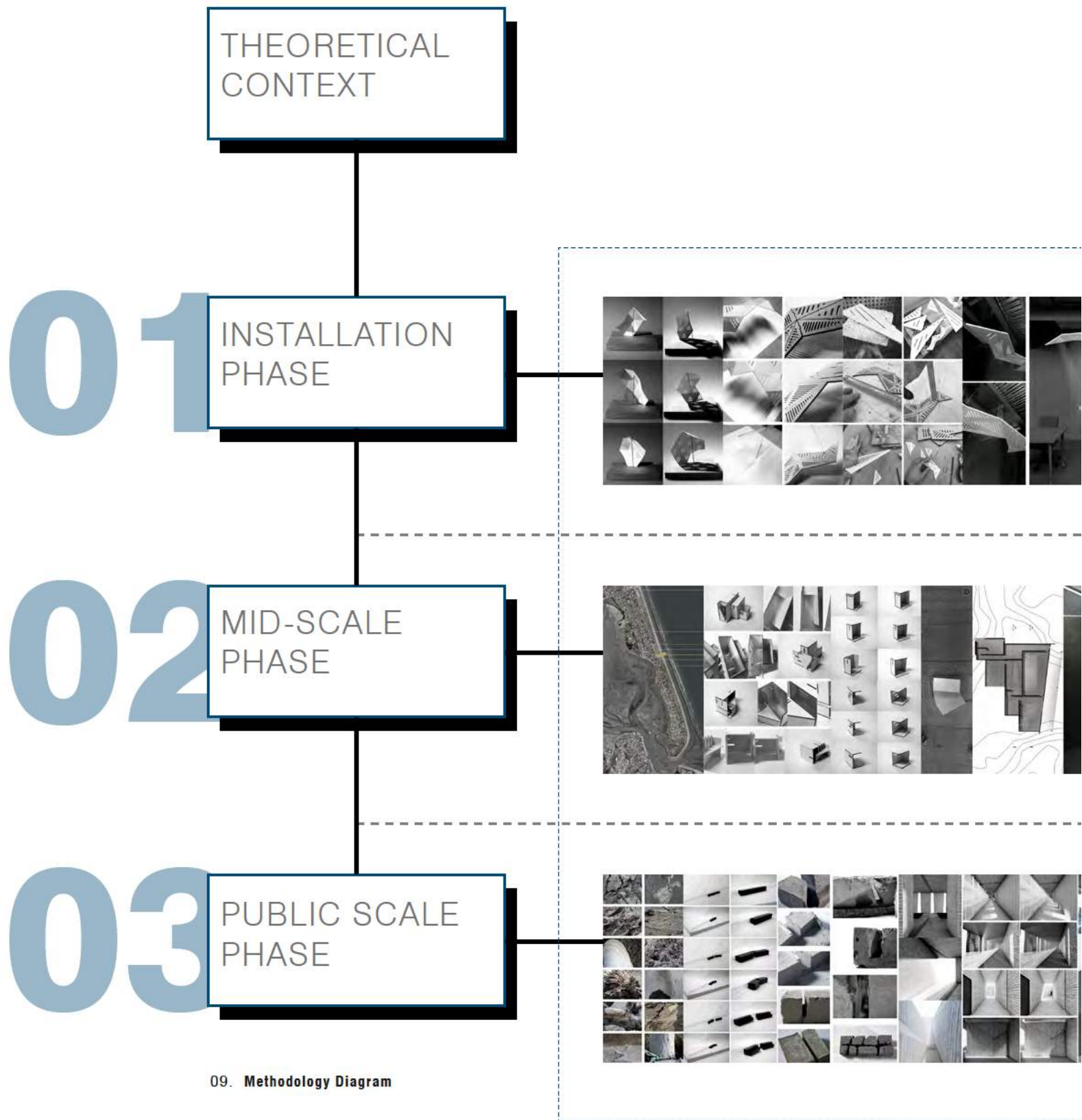
06. Installation Process Sketches



07. Gallery Process Sketches



08. Rehabilitation Process Sketches



09. Methodology Diagram



REFLECTION:

Intro of Materiality.
Sense of Occupancy.
Atmosphere.



REFLECTION:

Contextual Grounding.
Environmental Aspects.
Ephemerality and 'Place'.

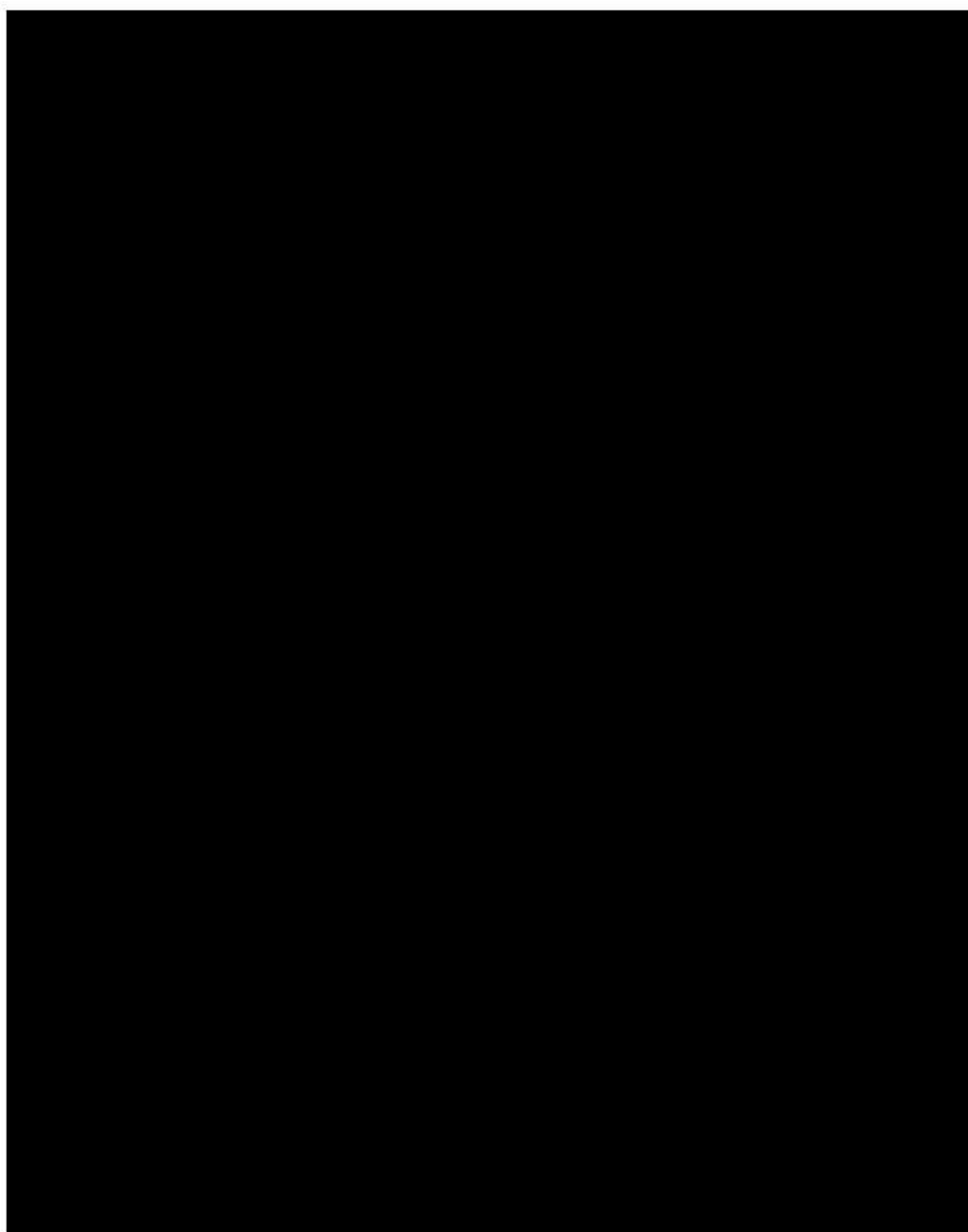


REFLECTION:

Tangible ephemerality.
Form responding to site.
Ingraining user in 'place'.

CONCLUSION:

The notion of ephemerality within fixed architecture hinges on the immersion of building and user into the context. Translating material properties and imperfections, lighting qualities and allowing the form and finish of the architecture to react to the ever changing elements of 'place', the elements that make the physical context fundamentally unique.



10. Staal, **De Telegraaf**

LITERARY CONTEXT.

This chapter provides a literary and theoretical background for the architectural responses to temporality of space. It begins with addressing the concepts discussed and tested throughout the thesis document. These being; *ephemeral condition, the condition of light and material and context*. Subsequently, key architectural authors have been focused on. The selected sources focus on the key areas previously discussed in more depth and provide alternative perspectives on the matters raised. The chapter closes by addressing the potential implications of the literary context in regard to the intended research of how the aspects of perspective and space can impact and distil the concept of temporality within a fixed architecture.

EPHEMERAL CONDITION

Ephemeral atmosphere is something elusive and in this sense, is beyond grasp, unable to be fully represented (Karandinou 17). This stance is resonated in the work of Tadao Ando, Peter Zumthor and Leslie Kavanagh, with the authors breaking down the ephemeral state into the aspects of place, light, shadow, form and body. Zumthor breaks down the atmosphere of space into the elements of interaction, materiality, sound, temperature, inhabitation, intimacy and the tension between the interior and external environment (Zumthor 2006, 23). While the temporal state remains difficult to distil within architectural space, the theoretical breaking down of the phenomenon of ephemerality can provide concrete steps towards a coherent representation. Anastasia Karandinou considers the contemporary emphasis on the intangible, recognising the increased research within architectural discourse over the past two decades; linking it with the evolving intellectual and architectural culture (Karandinou 4).

CONDITION OF LIGHT

Light is the ultimate spatial instrument, providing depth, field shadows and reflectance to the physical geometric realm (Evans 108). Throughout the literary review the general consensus of the profound impact light; in particular natural light, has on the built environment is held, in regard to material, atmosphere and occupancy. Tadao Ando argues that light attains significance

within the relations among physical objects, that the instance of light provides fluid relationships between spatial reading and form (Ando, 458). The concept of light as a means of reading space and in many examples, of reading context is discussed throughout the reviewed literature. In regard to texture and occupation, Zumthor discusses the therapeutic condition of natural light sources, allowing the user to contextually orient their body and react to the materiality of the architecture in an organic means (Zumthor 2007, 140).

MATERIAL AND CONTEXT

In architecture there are two possibilities of spatial compositions; the closed architectural body which isolates space within itself and the open body, which embraces and area of place that is connected with the endless contextual continuum (Zumthor 1998, 21). The link between material and context has been a long-standing architectural relationship. The concept of ephemeral aspects of site and culture being able to be abstracted and translated into an occupied shelter can communicate formal, historical and sensuous elements of place (36). Materials react with one another and have a radiance. As such material composition can combine and manipulate these qualities and create something unique (Zumthor 2006, 25). Materiality and the users interaction with materials and lighting conditions can define a spatial atmosphere, representative of place and the contextual make-up (Ando, 458).

ANASTASIA KARANDINOU

Ephemeral Condition

Anastasia Karandinou examines the relationship between form and atmosphere, treating geometry as a framework for the ephemeral (Karandinou 20). This position assists in the concrete understanding of the conception of desired and temporal atmospheric conditions.

Karandinou's text, *No Matter: Theories and Practices of the Ephemeral in Architecture* (2013) explores the make up of temporal space, with acoustic facets considered along with the visual. Karandinou states that atmosphere is what is experienced by the user, the ever changing state that is conceived by the object form (20). This position is reinforced by architectural philosopher Brian Massumi, stating that form and matter can be regarded beyond their binary position; considered to be an exchanging of forces instead of a stationary object (11). In regard to ephemeral space, this viewpoint considers space as dependant on setting and individual perspective, seeing the culmination of these multiple factors resulting as atmosphere. When discussing the representation of ephemeral architecture Karandinou discusses the difficulties, with the complexability, changeability and potentiality of space making its experience often being abstract and non-representable (1). The text alludes to atmosphere 'clinging' to the tangible building geometry and materials, emanating from these elements (18). While the elemental position is considered, Karandinou argues that the breaking down of a space can disrupt the overall composition, contradicting the unity of the space (52).

TADAO ANDO

Condition of Light

Unlike the other authors discussed, Ando was analysed through both his written content as well as others accounts of his professional work. This approach presented multiple viewpoints of the subject matter; giving insights into relationship between light, space and form along with architectures reaction to nature.

In the text, *Tadao Ando/Colours of Light* (1996) by Richard Pare and Tom Heneghan, the relationship between light and the reading of space is discussed. Heneghan notions that the apertures between vertical and horizontal planes within Ando's work not only distinguish the two axis' but render natural fluidity through the space (Heneghan 16). Along with the distinguishing of space, Heneghan considers the spatial measure of time through movement of shadows; uniting the life of the space with the human occupants (16). Pare argues that this fluidity of form and space can transcend the utility of function, engaging the 'present' (Pare 223). In Ando's essay *Light, Shadow and Form* (1995) the role of light and surface is examined; Ando considering the significance of light within its relations with objects. Stating single instances of fluid relations between light and form reverberate through space, conceiving a reading of atmosphere (Ando 458). Overlapping light patterns translate size and expression along with a sense of 'present' softening the elemental edge of materials. He states that "a beam of light, isolated within architectural space lingers on the surfaces of objects, evoking shadow and depth (458).

MOHSEN MOSTAFAVI

Material & Context

Mohsen Mostafavi considers both the subtractive and additive effects of weathering on materials. These concepts become applicable to this thesis through its contextual placement and exposure to such changes in architectural surface.

Mostafavi's text, *On Weathering: The Life of Buildings in Time* (1993) addresses the condition of the external architectural shell, proposing that weathering can be considered an additive force as well as subtractive (Mostafavi 6). This concept considers the effect of material erosion, along with staining and site build-up on the exterior of a building. Mostafavi discusses the integration of weathering into project finishes, combining human and environmental finishing into the aesthetic (16). He references Otto Wagners' 1899 Karlsplatz Station in regard to emphasized weathering through the medium of thin granite panels, showcasing a physical recount of the history of the architecture (59).

Mostafavi considers project value and the inevitable erosion and abrasions to surface as the imprint of the site and location upon the built form. Translating the qualities of place wherein the architecture is site (69). This concept extends to not only the physical imprint on site but also the built up atmosphere within the design. Mostafavi's research primarily applies to the relationship between the built experiment and place. The idea of site imprinting its will on the architecture is something that cannot be avoided and, as discussed in *On Weathering* should be a variation that is celebrated and considered from the outset.

JONATHAN HILL

Material & Context

Jonathan Hill discusses the role of tactile experience in relation to represented and natural space. This work relates to topics throughout this thesis through the distinguishing of the characteristics of conceptual and physical in regard to process and result.

In the text *Immaterial Architecture* (2006) Hill states that immaterial is the concept and representation of the building working in theory and spatial concepts. Material alludes to the physical presence of the actual building and its relation with occupant (Hill 8). The binary opposition between the two forms often blurs the lines between representation and matter. Hill argues that such terms are interdependent and inseparable with representation and concept only achieved through the physical architecture (72). Hill discusses Plato's theories in; that just as a shadow in an inconsistent, inaccurate and reductive representation of an object, so too is nature an inconsistent, inaccurate and reductive representation of the realm of ideal forms. (40).

In regard to the architectural context this theory begins to highlight the need for materiality and occupancy to be prioritized throughout the conceptual stage of design. In the text the idea of wear in regard to idea and matter is discussed. Scuffed and marked, the habitual, tactile experience of a building blurs the line between idea and matter, creating a tension between the two and the opportunity to create a fragmentally evolving work as a reaction to time, occupant and social changes (51).

LESLIE KAVANAUGH

Ephemeral Condition

Leslie Kavanaugh explores the relationship between body, space and their ever shifting relationship. Kavanaugh's work around the body and its position within field proves useful when testing occupancy throughout this thesis.

Kavanaugh's text, *Space is not a Thing* (2013) suggests that the body is not just in a space, but part of a space. With their presence affecting the form and atmosphere of space (Kavanaugh 166). Alluding to the contextual exchange between form, user and setting, she states that the temptation to see form-making as something separate to its environment is seductive (162). The disconnection between form, place and occupant often removes the malleable relationship between the three variables.

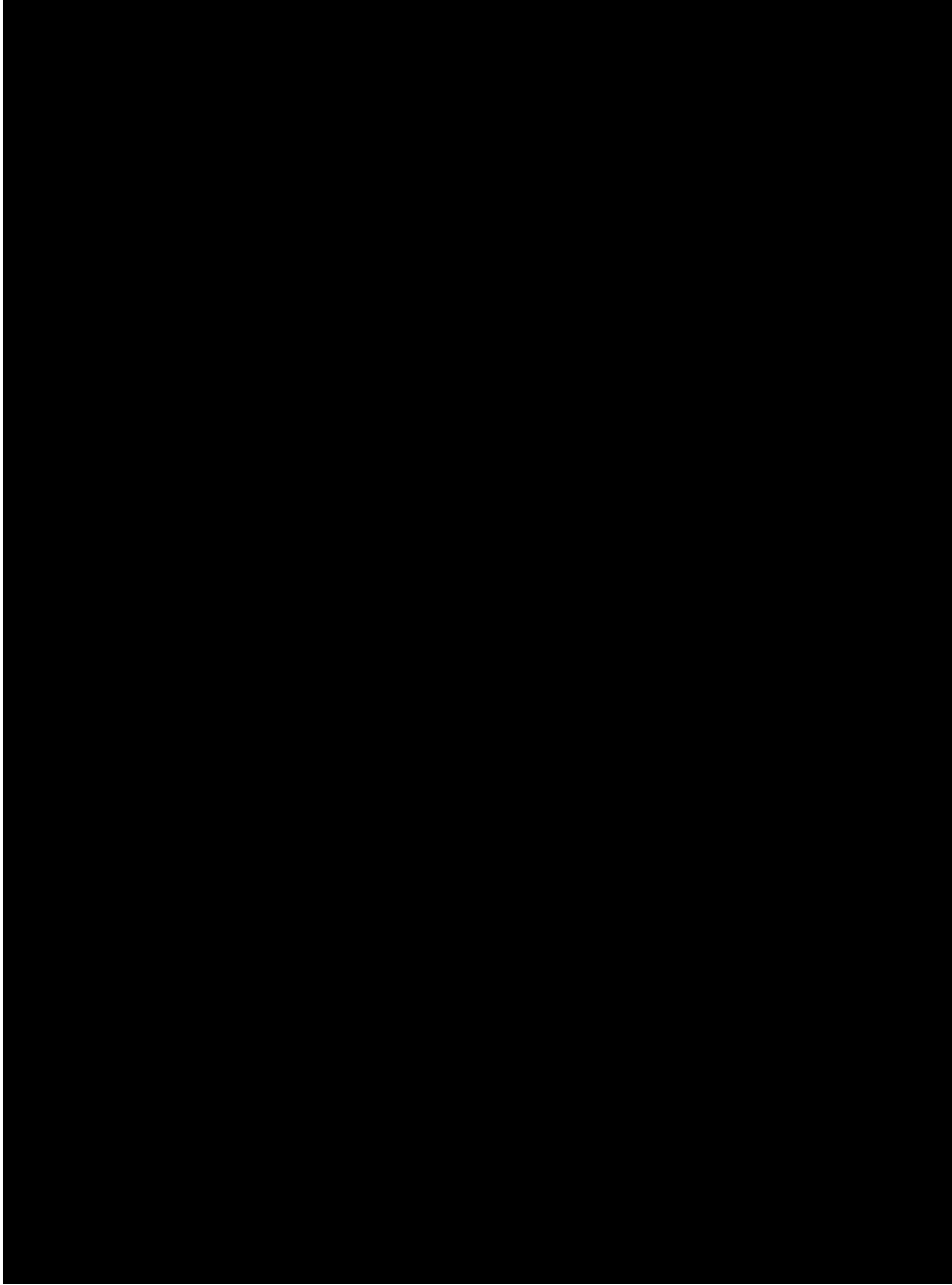
Kavanaugh raises the question of spatial intent along with user intent. Asking if either parties portray intentionality or inter-subjectivity; the choice between directional intentions or susceptibility to new spatial relationships (162). This notion becomes applicable to the research, with the relationship between the two states within architecture being a pivotal balancing act. The marriage between space and user is disclosed by Kavanaugh; "Think not of objects, rather the 'between' which the world is not a static container but merely the relation between things; perpetually and continually becoming one thing after the other (162). This viewpoint places an emphasis on not only the exchange between the body and architecture but also the constant state of temporality within our environment.

Occupancy and spatial relation is a static prospect, a freeze frame in respect to space, allowing on to only speak of the position of an object at a certain time and perspective (166). The concept of temporality as a static position in time heightens the need for well informed context, form and user, with the several conditions needed to achieve this state.

CONCLUSION

The literary works and authors discussed in this chapter contributed to an understanding of ephemerality. Due to the complexity of the subject, each section of this review examined a facet of the overall research topic. These comprised of light condition and materiality, atmosphere, context, perspective and spatial composition. Each qualitative condition and literature surrounding it provided a unique theoretical grounding from which to launch further research from.

Due to the range of topics discussed and differing stances held by many of the authors it is important to define Ephemerality as a term. In this research, the ephemeral conditions are defined as the temporary composition of the immediate environmental context. This definition spans over several timelines specific to site, including aspects such as, the momentary displacement of sand and vegetation, the daily tidal cycles and terrain shifts and the significant breaking down of fixed materials over extensive time periods

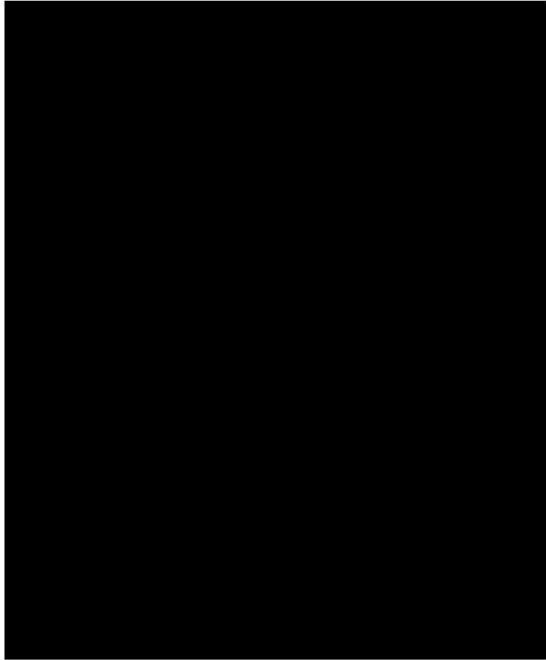


11. Zumthor, **Therme Vals**

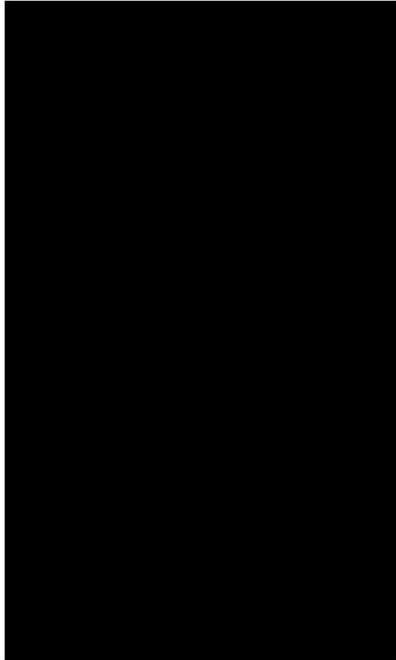
VISUAL CONTEXT.

This chapter critically analyses three case studies, each one contributing a different facet of both conceptual and practical precedent to the design research. While recognising comparable concepts as the literary review, this stage of the research analyses these in real world environment and considers the effect of occupant and context. The chapter concludes with a reflective statement, comparing and contrasting the arguments raised throughout the precedents and raising possible implications in regard to the intended research.

12. Eliasson, **Your Sun Machine**



13. Eliasson, **Your Orbit Perspective**



14.

OLAFUR ELIASSON

Ephemeral Condition / Condition of Light

The work of Olafur Eliasson has been examined under the scope of 'ephemeral condition' and the 'condition of light'. While no architectural projects of Eliasson have been selected as a case study, the following exhibitions provided valuable source material in regard to light manipulation, perspective and occupancy. By removing programme and site restrictions from this set of case studies, a better understanding of core concepts was achieved.

The first of the installations studied was the 1997 exhibition, *Your Sun Machine*. While a simple piece, the strong notion of natural light movement within a fixed interior is strongly conveyed. The light source acts both as effect and occupant, providing context, scale and perspective. This installation exhibited the role of targeted natural light within a controlled space. Themes within the artwork included movement and absorption, allowing the viewer to explore their perception of depth and duration (Ross 168).

The second of Eliasson's exhibitions researched was *Take Your Time*, 2009. The focal point of this exhibition was the installation *Beauty*. The piece utilised the reaction between light, shadow and water; creating free-flowing atmospheric forms. In this piece the role of perspective projective optics are key contributors. Historically the controlling of light source has been seen greatly impact the field of perspective (Gomez, Pelletier 82), coupled with the uncertainty of the water element, resulting in a dynamic and ephemeral space.

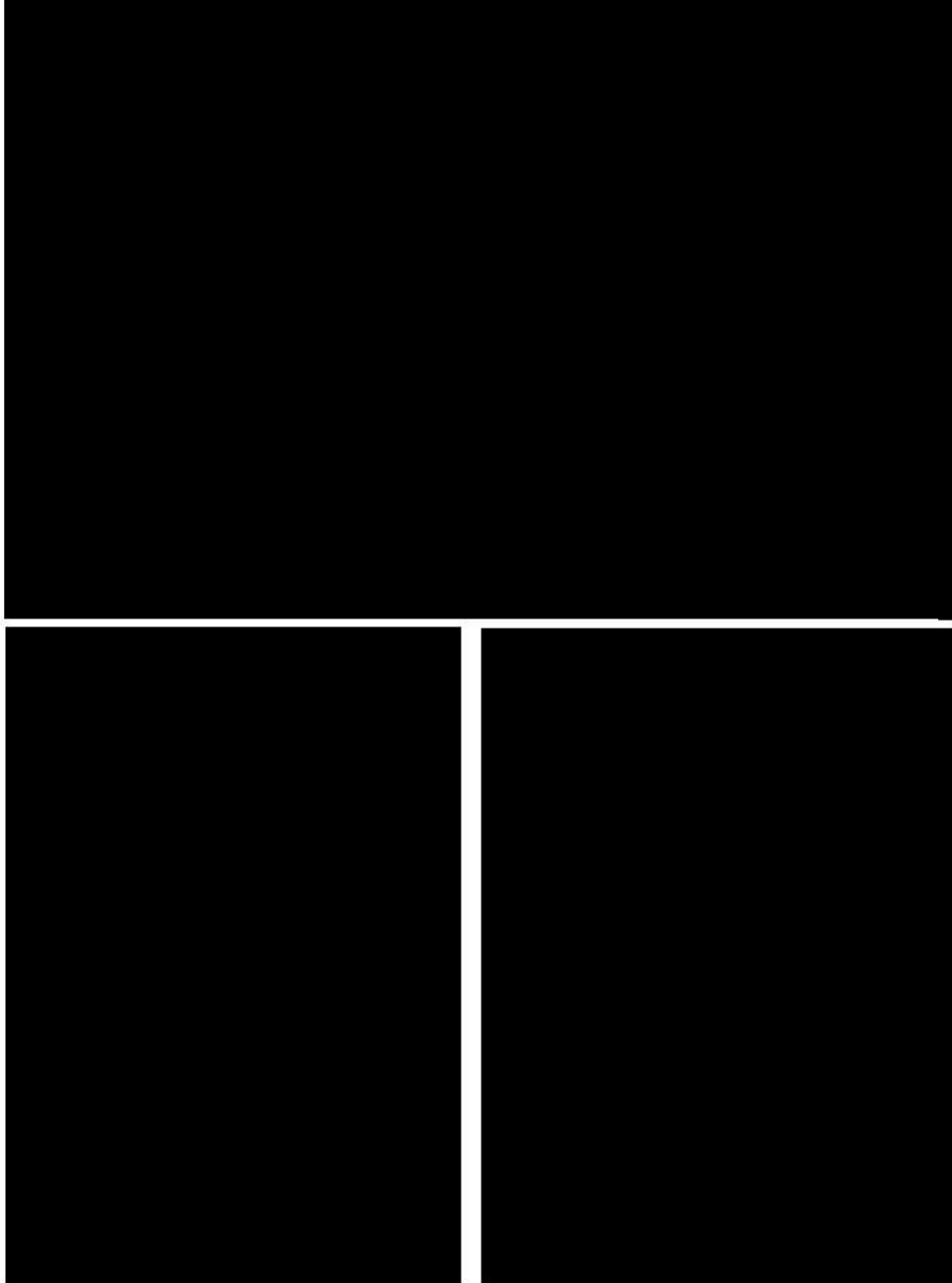
Light intensity, water density and distance are all key elements within the exhibition while occupancy has effectively been removed. *Your Orbit Perspective*, based in Sao Paulo in 2013 is the final installation studied, in particular, the *Your Uncertain Shadow* piece. Strong themes of occupation, light manipulation and temporality are seen in this example with the relationship between body and source light creating the projected outcomes. Due to the screen element, traditional occupancy is not seen but the in-between space is a key factor, with the relation between body and geometry providing important links back to Kavanaugh's theories (Kavanaugh 162)

CONCLUSION

Eliasson states that within natural occurrences there is no truth, only the occupant and their construct of what they believe (Eliasson 127). The exhibitions studied provided insights into the temporality of space at a quintessential level. Elements of light, shadow, position and embodiment contributed to elastic results that played with the concept of perspective and projection. The spatial relations studied were at a basic and concise level, granting lessons to be taken forward within this research.

Implications within this thesis are vast, with themes of atmosphere and embodiment from the discussed exhibitions intended to play major roles in the following three experiments.

15. Barragan, **Casa Gilardi**



LUIS BARRAGAN

Condition of Light / Material & Context

Mexican architect, Luis Barragan is renowned for the use of colour and light throughout his projects (Pesquera). As a case study he provided aspects of inspiration throughout the design and research process in regard to light manipulation and spatial significance under the scope of 'condition of light' discussed in the literary context.

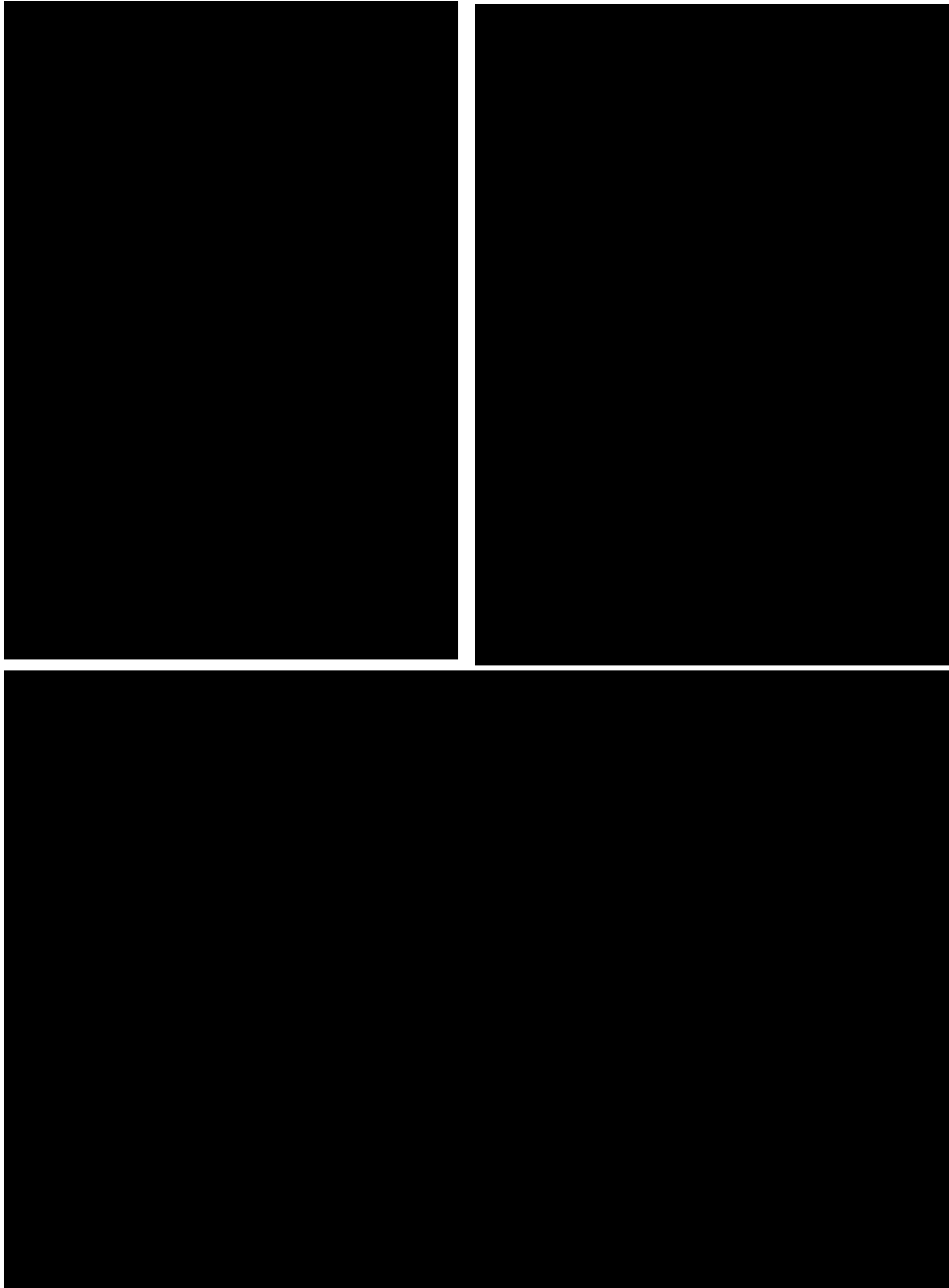
Of particular significance was his final project; Casa Gilardi, Mexico City. A residential project for Pancho Gilardi and Martin Luque, this design provided important lessons around the manipulation of natural light, the inclusion of nature into an occupied space.

The use of colour in the space contributes a key aspect to this project but is not the focus of this study, rather the movement of body and light, along with the championing of natural elements within a pure form. The key theme throughout Casa Gilardi is the movement of natural light. The use of small focused penetrations in solid elements to create representative light patterns within the interiors of the architecture while minimising over-heating in a temperate climate (Pesquera). These penetrations, combined with the internal water elements result in unexpected organic moving light projections on internal walls. While the internal pool acts as a reflective surface for the natural light, it also provided links to the natural surroundings; in the case of Casa Gilardi the Jacaranda Tree providing inspiration and parameters in which the overall design followed (Pesquera). No spaces were painted green with Barragan stating "I don't paint greens, I

leave those to mother nature" (Pesquera). The simultaneous recognition and disassociation with nature is an interesting facet of this design, drawing borders on what an architect should and should not have control over. While the spaces within the design were left to be adaptable and elastic, the occupant, Martin Luque instinctively found himself adapting his lifestyle to suit the architecture. Aligning his movements and behaviour with the movement within the house (Pesquera).

CONCLUSION

Although extremely visual, the architecture stimulates the full range of human perception. There is nothing silent here. The space is vibrant with a psychic resonance that does not depend on the ephemeral view. The material reality of this architecture cannot be separated from the phenomena of light (Brillembourg 52). Barragan and Casa Gilardi present concepts around the target use of natural light, the balanced integration of nature within design and the representative inclusion context. The implications within the design-led research revolve primarily around the treatment of light and atmosphere in regard to a temporal occupied space. The inclusion of natural elements as a introduction of colours along with the ephemeral relationship between architecture and nature are seen a supplementary factors to be carried through to the design tests.



16. Zumthor, **Therme Vals**

PETER ZUMTHOR

Ephemeral Condition / Material & Context

Peter Zumthor was viewed through the medium of his written work along with a practical example of his architecture in the project *Therme Vals* (1996). This work was examined under the three categories discussed in the literary context chapter. This precedent section begins with a discussion of Zumthor's use of materiality and detailing through his written texts *Thinking Architecture* (1998) and *Atmospheres* (2006). Following this consideration, the case study of *Therm Vals* is analysed and reviewed in regard to environmental context, materiality and the relationship between body and the ephemeral.

In the text *Thinking Architecture*, Zumthor teases a multitude of concepts around materiality, place and embodiment. He discusses the temporal nature of certain materials, stating that a material can assume poetic qualities within the context of an architectural object. It is the designers job to construct a meaningful situation in which their ephemeral nature can be shown as, on their own, materials are not meaningful (Zumthor 1998, 11). Zumthor then relates this relationship to the micro level of the architecture as well as the process of making, discussing the notion of every joint and connection attributing to reinforcing the overall concept and placing the architecture within a wider context (14). The act of making and detailing is seen to bring a multi-faceted narrative to a design; with form and construction, appearance and function now being joined in an overarching acknowledgement to its environment (25). When discussing 'place', Zumthor states that when concentrating on a

specific site, the formal, historical and sensuous depths must be extracted. Ensuring additional forms and spaces effectively react to the context they are conceived (36). Throughout *Atmospheres* Zumthor discusses the impact of contextual ephemerality in regard to the atmosphere of space, the culmination of the visual, oral, textures and intangible, resulting in the occupant being 'moved' (Zumthor 2006, 17). The variation of mood, material and form has the potential to create an atmosphere. The text examines materiality, stating that materials react with one another, having a radiance so that the material composition gives us something unique (25). The implications of an architecture embracing its 'place' and material opens up doors to other facets of situational ephemerality and are teased through the project of *Therme Vals*.

Therme Vals proved to be an important case study due to its dedication to site integration and the treatment of materials in regard to ephemerality. Contextually, the project is set in the Vals Valley of Graubünden in Switzerland. With the structure of the baths set into the slope of the surrounding mountains, the project creates an architectural attitude, relating to the topology and external materiality (Zumthor 2007, 23). Zumthor notes that through site abstraction, the gneiss stone was indicated as representative of Vals Valley and pushed towards a more ephemeral architecture with its aesthetic and form being shaped by the waters of the valley. This provided the notion of the baths being timeless and in a sense, ancient (25).

The means of expressing the stone was through the relationship of geometric blocks and the void between them. While digging the site, the act of shifting and moving masses resulted in the flowing of mountain water, providing a recognition of a vast, interconnected context to the project (38). The stone envelope of the project was seen not only as a representative link to the site context but also a link between the material and the occupant. Warmed by the water and natural light, the gneiss stone caresses the body as it moves through the maze of blocks and brings external aspects into the intimate interior (140). While the block geometry's form crucial aspects of the project, it is the voids between these that allow the creation of atmosphere and intended reading of space. Apertures of 60mm width line the exterior blocks with the vertical light from the block-roof joints being perceived primarily as an illumination of the walls and floor, intended to act like a sundial, tracing the course of the sun (67). In many parts of the design these apertures between the blocks and roof slab were devised so that twice a day natural light at differing angles would wash the walls down to the baths water (64). The floor plan and changing in levels throughout the design defined user movement and the framework of the narrative but the influential relationship between block and void is what links the interior spaces back to the environmental context. These small moments capture the ephemerality of the 'place' and provide a reference point between the occupants body and the space in which they inhabit.

In the text *Atmospheres*, Zumthor states that throughout the baths it was incredibly important to induce a sense of freedom of movement, a milieu for strolling, a mood that had less to do with directing people and more to do with seducing them (Zumthor 2006, 41). Evoking a sense of discovery within the occupant as a reaction to the space was seen as a key factor, the concept of letting go, granting freedom (43).

CONCLUSION

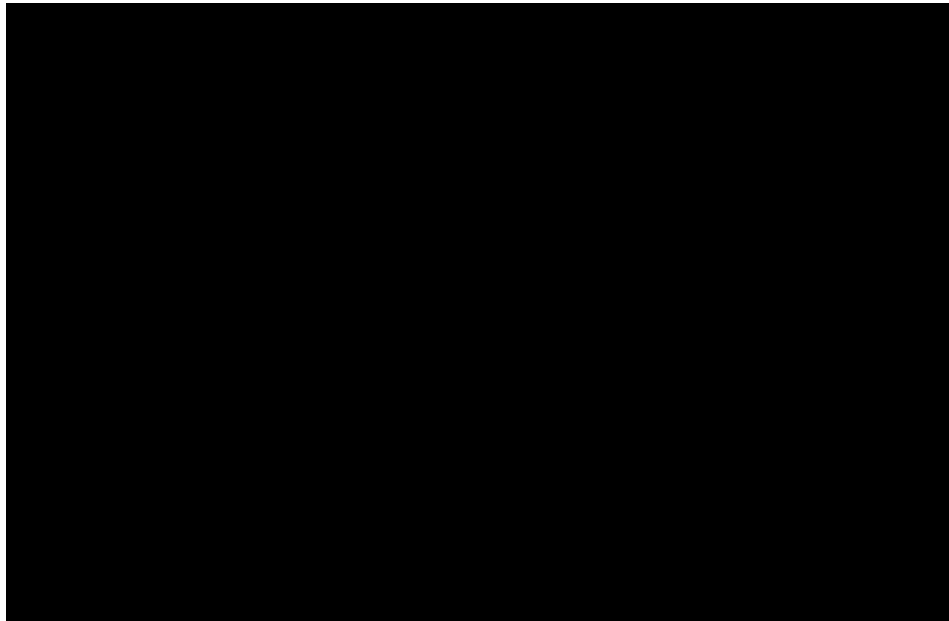
The written work of Zumthor discusses the concepts of contextual extraction and considers the archetypal relationship between the micro and macro along with the contributing factors to the atmosphere of space. These concepts are clearly illustrated in the 1996 project *Therme Vals* with site integration, significant detailing and the championing of materiality as a reaction to context and occupant. The balance between these factors result in an array of intimate, ephemeral spaces that speak of the environment they are placed in (140).

Relating this study to the design-led research, key aspects revolve around this balance discussed above. The creation of temporal space as a reaction to its contextual aspects has the potential to take architectural studies further than enquiring disconnected light based studies with the link to site grounding a project within an existing framework.

REFLECTION

The capturing of ephemerality is no easy feat and is not easy to replicate throughout projects. As a result the visual context studies illustrate the concept of temporality through three unique outcomes and methods. The Eliasson examples showcase the creation of atmosphere as a reaction to body and light without external environment playing a key role. Contrary to this, both Barragan and Zumthor's studies heavily embedded their projects within their context and used multiple factors such as light and material to project ephemeral spaces. While the three examples created intimate atmospheres within a larger environment, Casa Gilardi and Therme Vals successfully translated external ephemeral elements

into the architectural spaces. This chapter has considered three case studies with the visual analysis forming the basis of the design research. Implications for these case studies are to span across the following three design experiments. Following the framework of the case studies, the Installation experiment is to take influence primarily from Eliasson's exhibitions in regard to creation of atmosphere and perspective. The later two experiments in Mid-Scale and Public Scale are intended to draw heavily on Barragan and Zumthor's abstraction of contextual ephemerality along with the ideas of perception and light discussed through the literary review and through the analysis of Olafur Eliasson.



17. Zumthor, **Bruder Klaus Chapel**

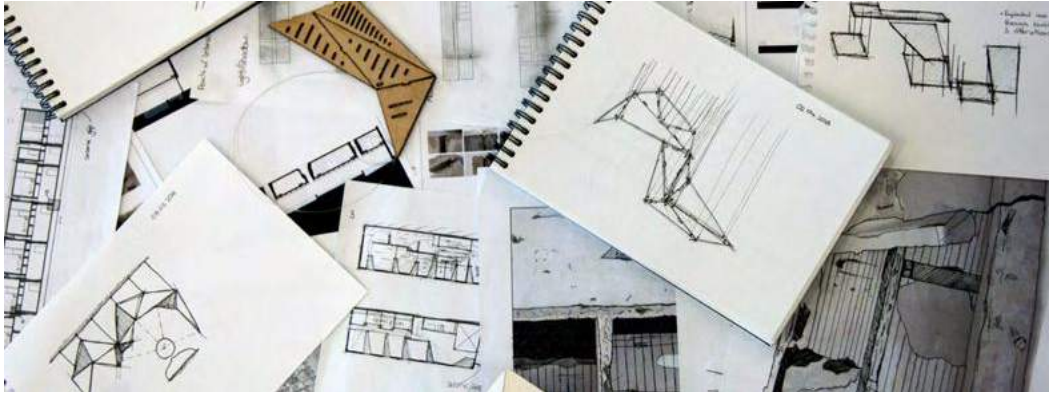
EPHEMERAL EXPERIMENTS.

- Installation
- Gallery
- Rehabilitation





18. Design Phase One



INSTALLATION.

EXPERIMENT ONE.

The Installation experiment marks the first phase of the research through design series. This chapter explores the relationship between a controlled environment, fixed geometries and the body within space. These iterations were left purposefully site-less and to a degree void of materiality, focusing on the relationship between the fixed forms and temporal projections. Throughout these tests the work of Olafur Eliasson was considered in the creation of atmosphere in a controlled environment and reaction of installation to the body.

AIM

The first experiment tests how an ephemeral atmosphere might be able to be constructed through a controlled form and environment. Taking influence from Tadao Ando and Olafur Eliasson; projection, perspective and light movement were of key consideration.

The aim for the final installation was that of a hanging sculptural shell, able to be inhabited to a basic level that emitted projections as a result of a light source and interaction of the occupants body.

METHOD

While a final outcome was targeted, the methodology uncovered throughout this initial experimentation process was of huge importance.

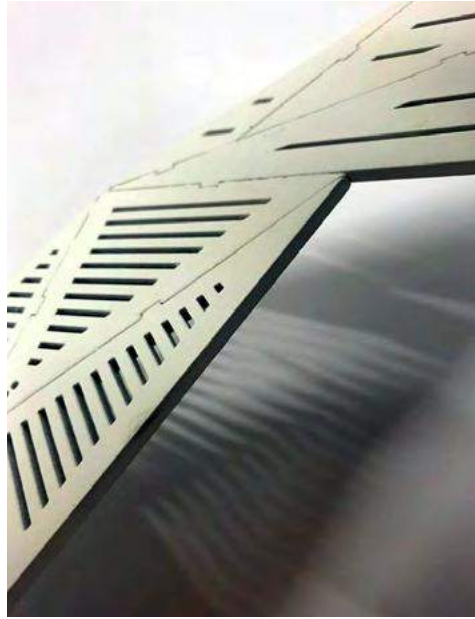
Initial findings were generated through physical modelling with foam and card and extracting relevant information through photography. As the experiment progressed, a moving light source and transparent materials were introduced, developing more dynamic and generative outcomes. At this stage, a relationship between physical and projected geometries was established, challenging the viewers perception (Evans 353). This relationship was used to inform the forms of the final models which were tested physically and in digital programmes.

Concluding small scale testing, a 1:1 timber Installation was built. This stage of the experiment looked to translate ephemeral theories into an occupied space with the variables of light, position

19. Moving Projection Test



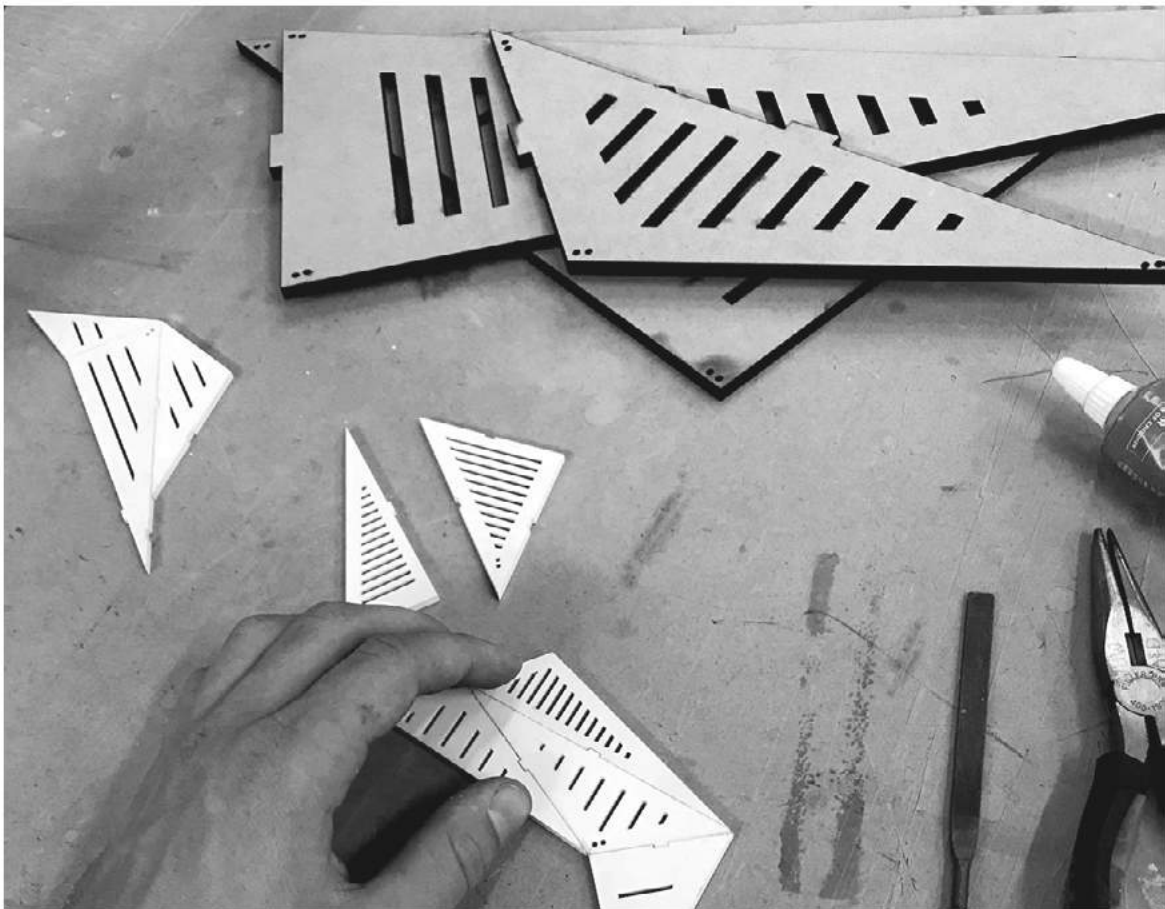
20. Scaled Installation Test



21. Installation Design

CONTENTS

- Shadows
- Folds & Projection
- Movement
- Digital
- Installation

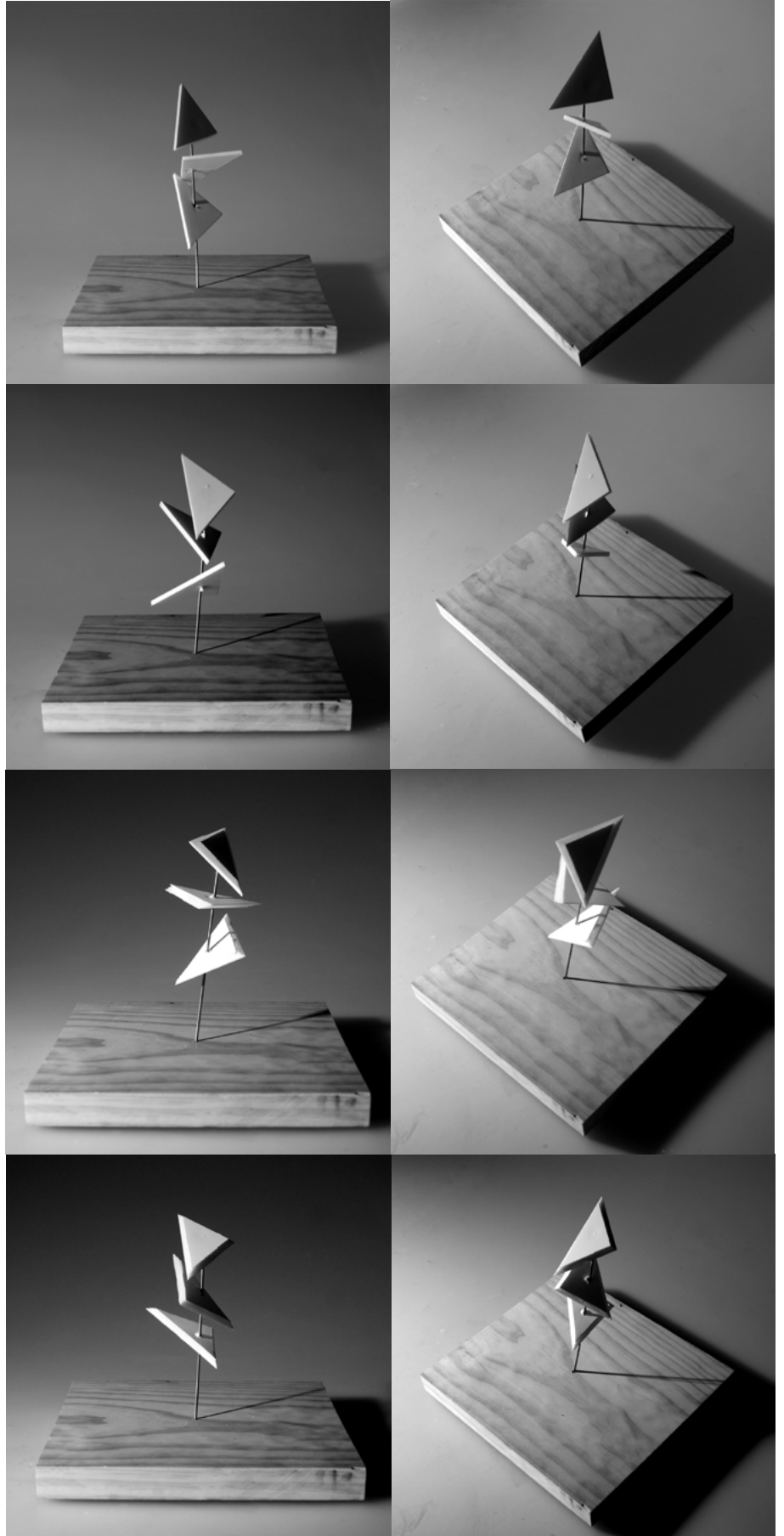


22. Making The Installtion

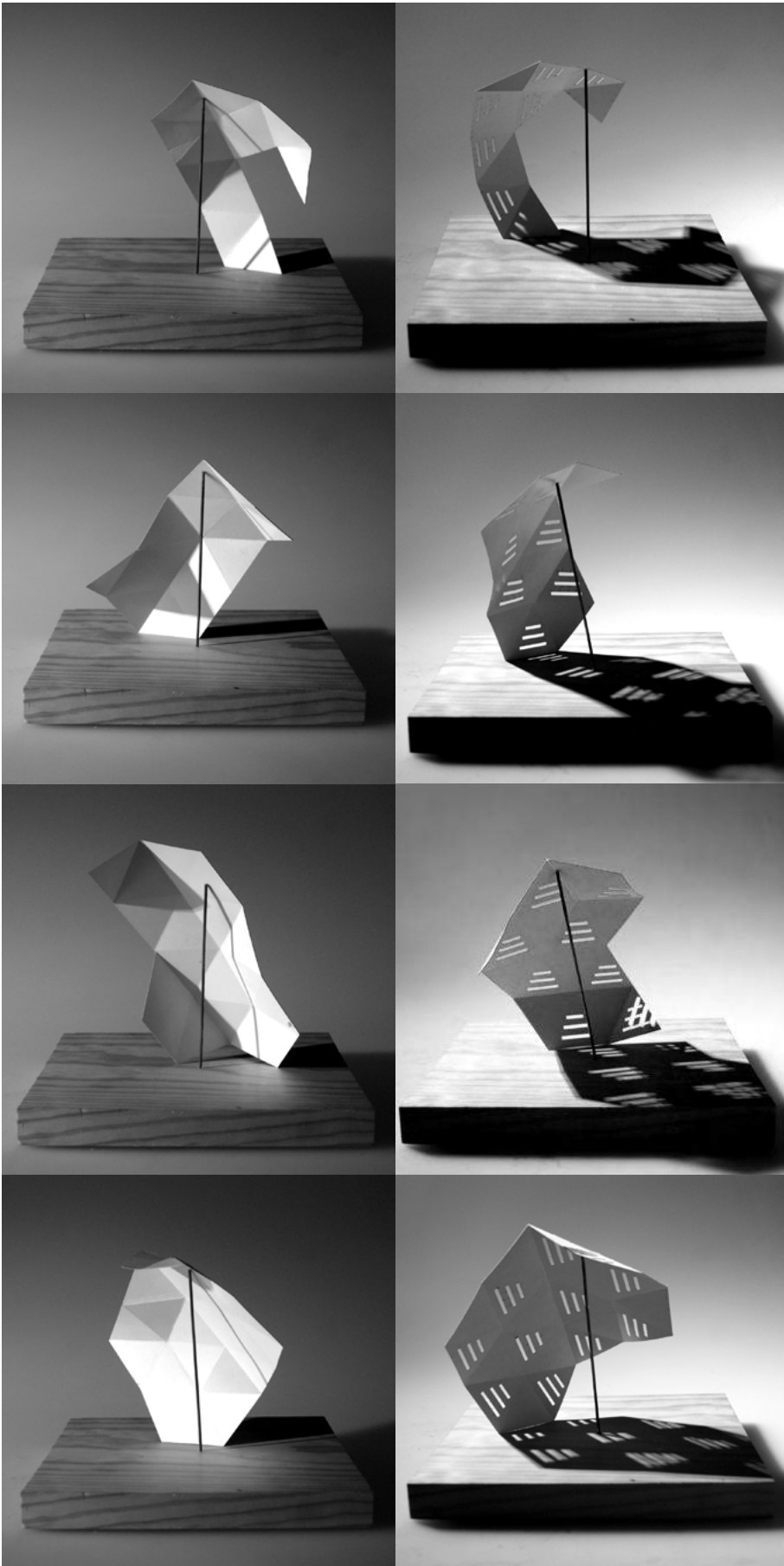
SHADOWS

This initial set of sketch models was tested in regard to shadow, absorption and positioning of geometry. This set, constructed from a steel post and foam board was tested through twisting triangular cut sections with a single light source and photographing the results.

Differing edge angles were introduced through the set and helped express the nature of absorption and reflection, taken through to later sets.



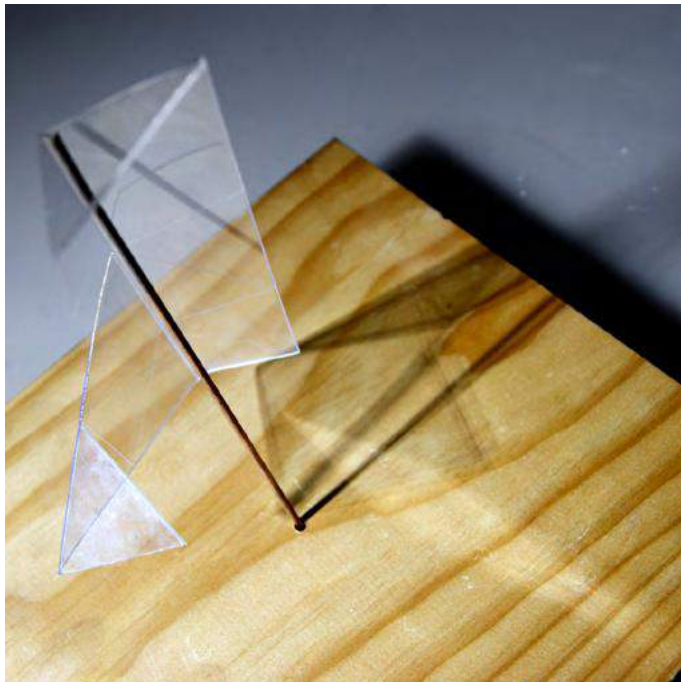
23. Form & Shadow Model Set I



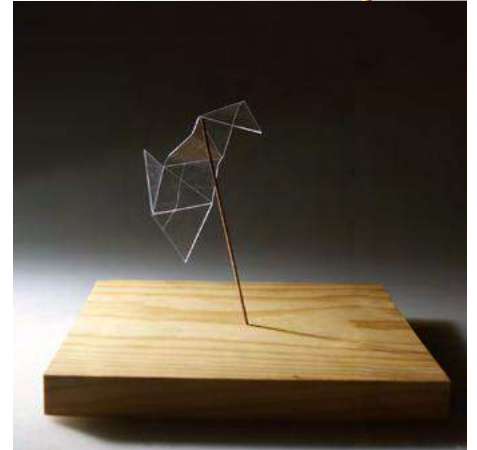
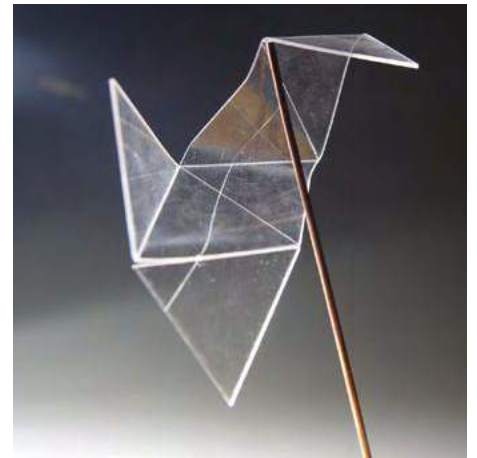
FOLDS & PROJECTION

The second model set focused on the creation of basic shelter through folds of card. Elements of shading and absorption were present in the initial models but were secondary to the shadows projected onto the base. These were the focus of the testing and were created by a single light source. This generated clearly defined shadows but were largely predictable and alternative methods of testing were sought out.

Following the folded card models, a set of distorted acrylic models was made. This set tested the same variables as the card models but proved more successful in generating unpredictable outcomes. The results however were harder to translate into a fixed geometry due to the uncertainty of the translucent material so further iterations were built from thick card.

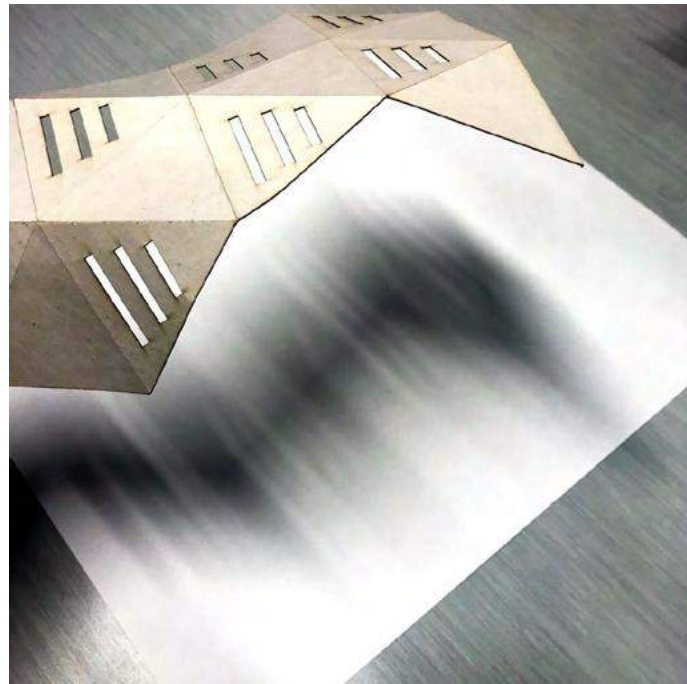
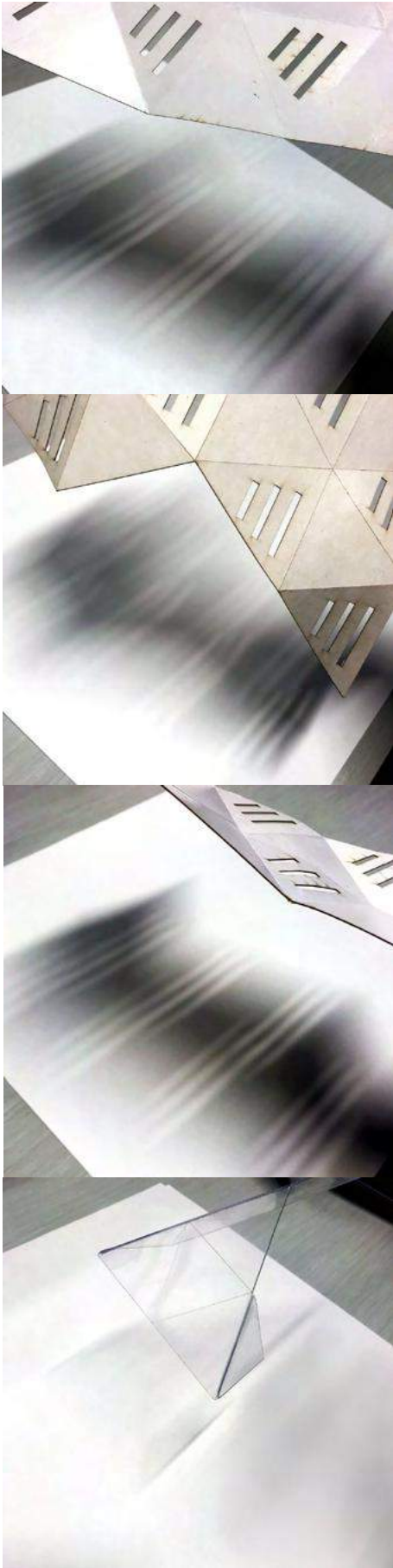


25. Acrylic Model Projection



26. Form & Shadow Model Set III

27. Model Set Five



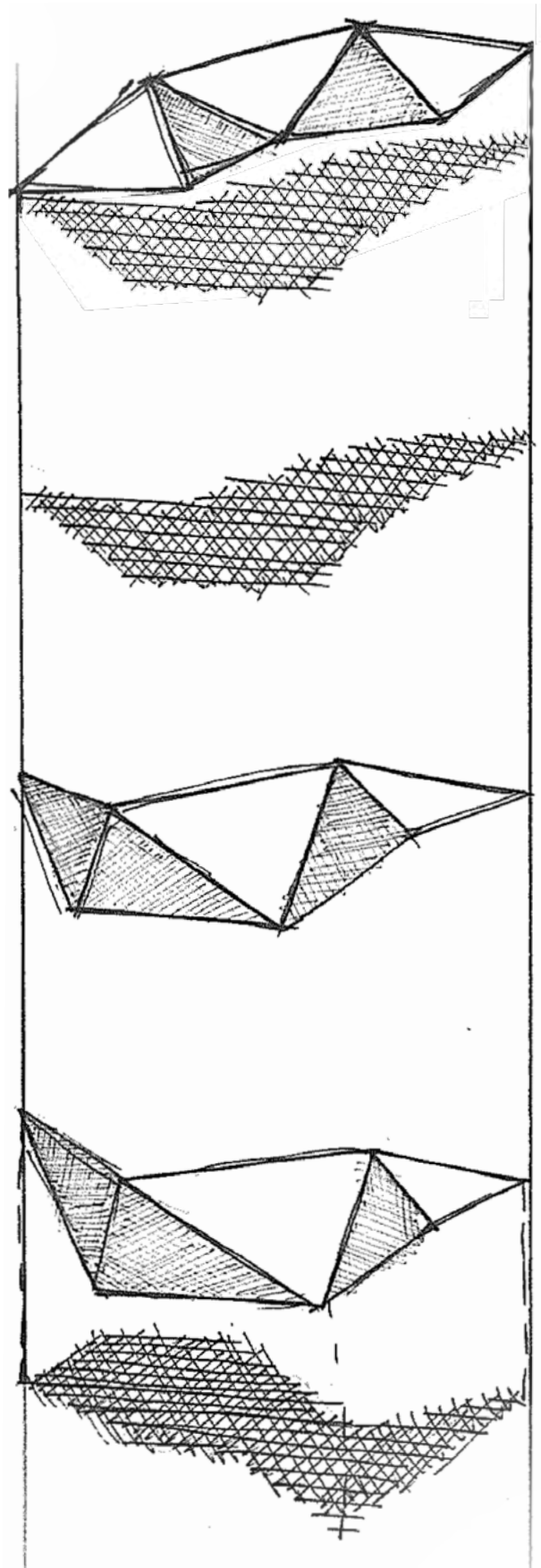
28. Projected Geometry Model

MOVEMENT

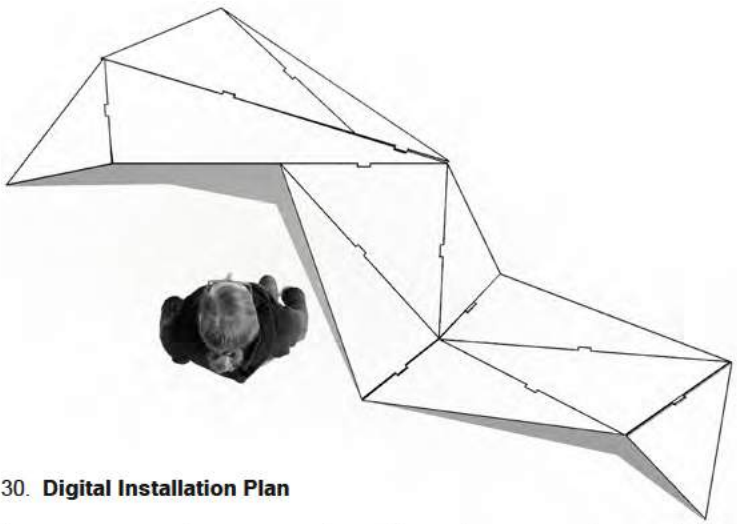
Concluding the testing of the 1:10 scale models in terms of flexibility, form, atmosphere and temporality, a 1:2 model was built. Primarily constructed out of medium density fibreboard (mdf), wire and industrial adhesive, the final outcome championed the treatment of the surrounding atmospheric conditions over its own complexity or form. The mdf was painted white to eliminate the influence of materiality in this stage of the design experiment.

FORM MAKING

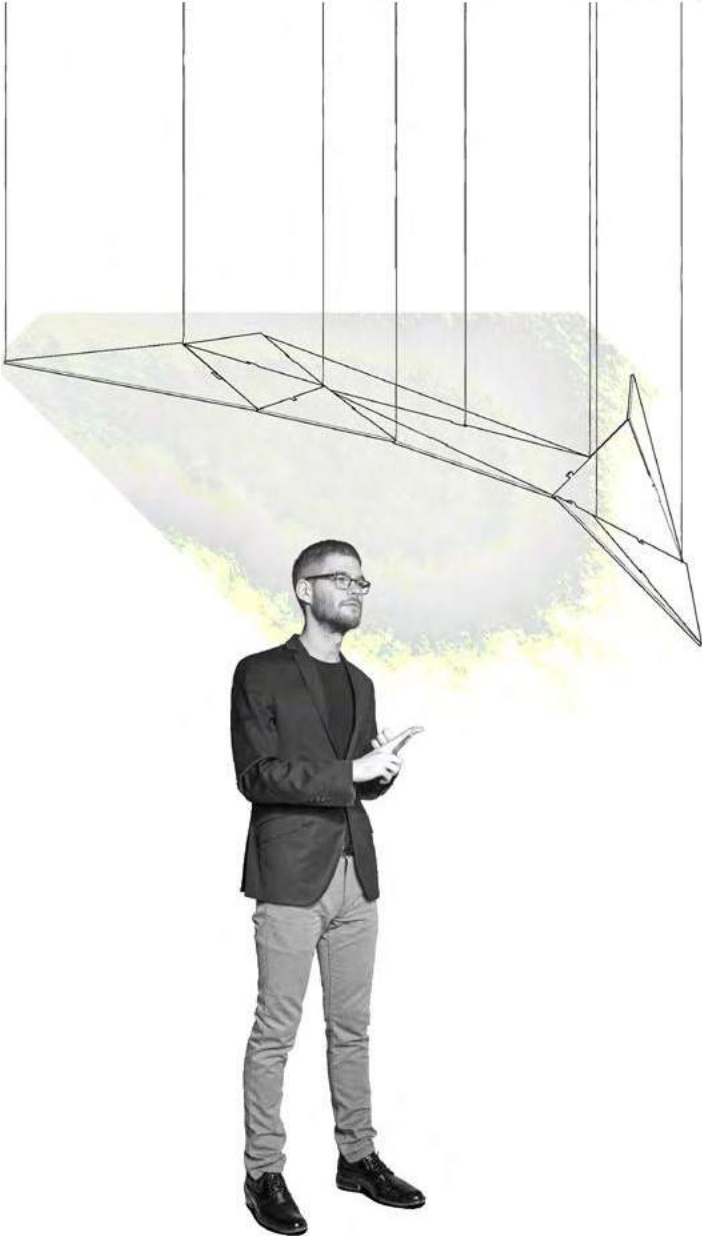
Due to the single stationary light source producing limited results, three models from the previous sets were tested and photographed under multiple, moving light sources. This finding proved to be a catalyst for further tests with fixed physical geometries creating dynamic projected forms. Solid materials were chosen for further experimentation due to the highly visible nature of their projections opposed to the acrylic examples.



29. Form Making Methodology



30. Digital Installation Plan

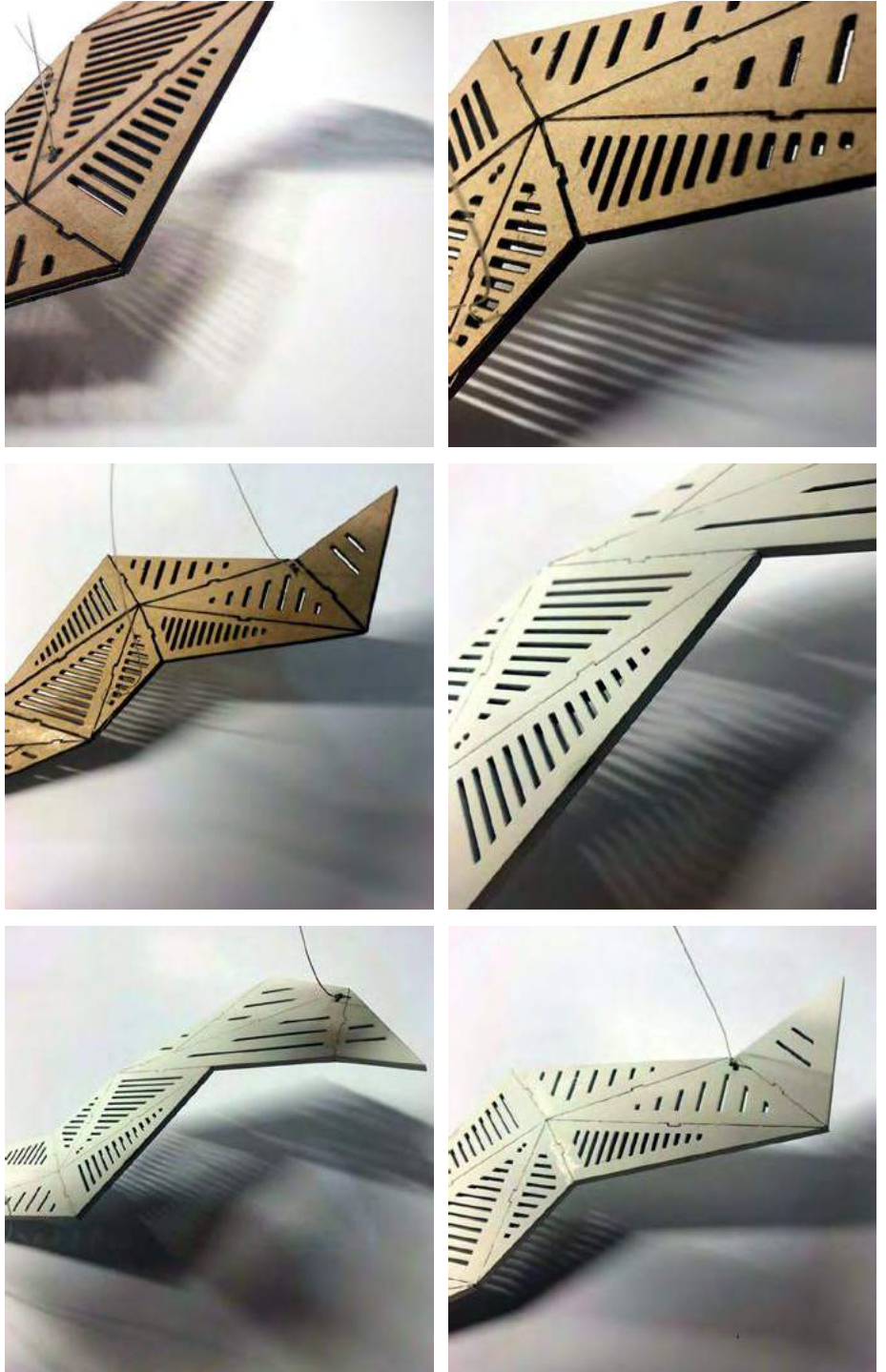


31. Digital Installation Elevation

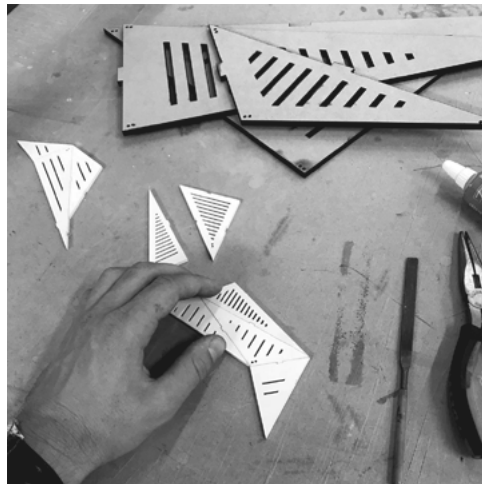
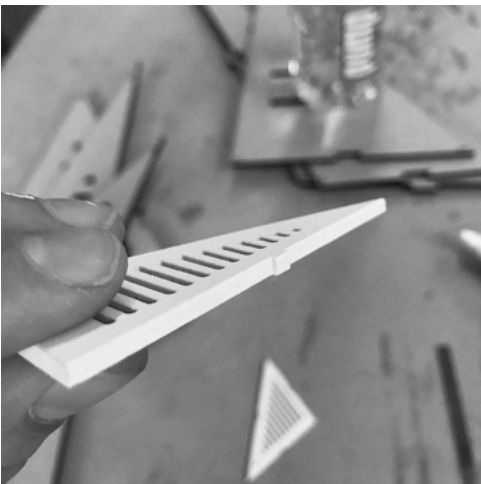
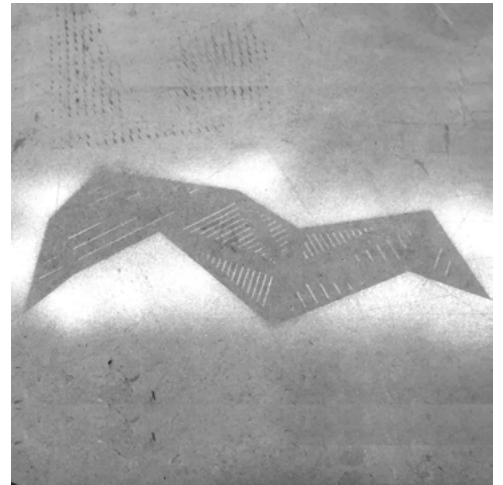
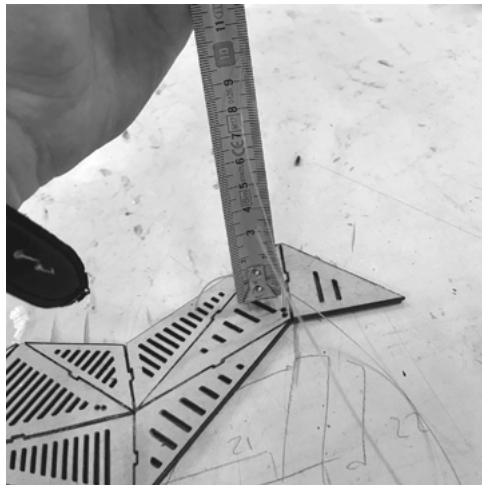
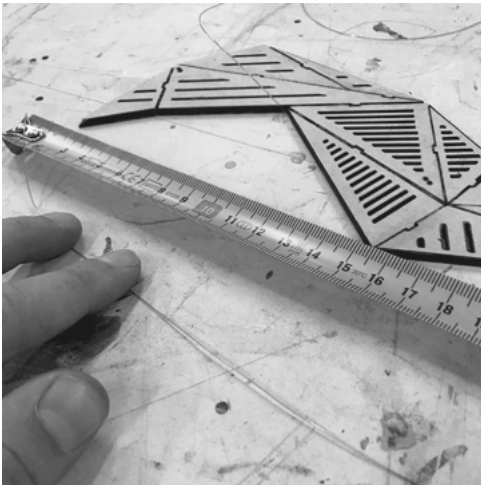
DIGITAL TESTING

The sketched concept was taken into Rhino modelling software and translated into a physical geometry. This stage abstracted the angles and created a series of modules that could be cut and fixed together to create the final Installation. Limitation with this phase was the lack of gravity and material weight within the model. These factors provided restrictions throughout the making process of the final Installation.

Once the physical geometries were arranged two 1:10 scale models of the Installation were lasercut and constructed. The models were built from MDF board, with the second of the two being painted white. The rationale behind this step was to remove the notion of material from the experiment, focusing solely on the projections and atmosphere the geometry generated. The scale models testing followed the methodology of the previous projective model set testing.



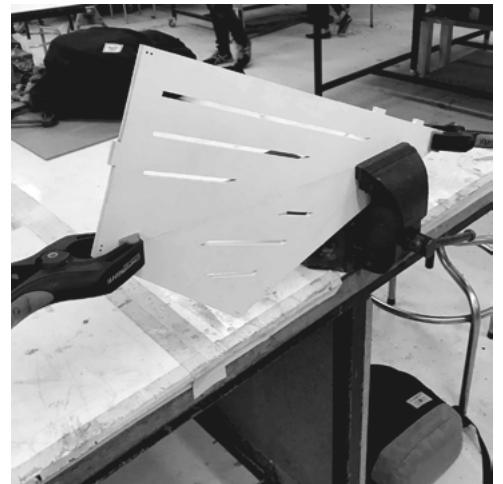
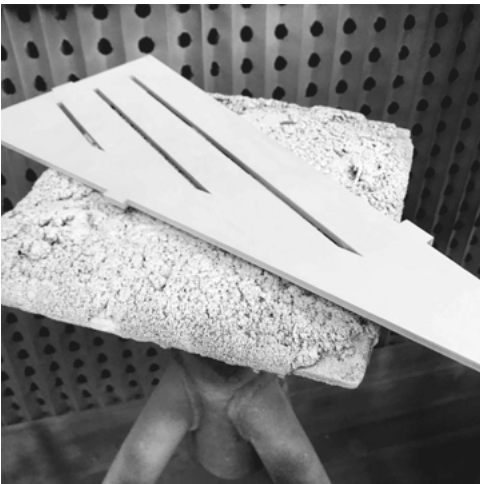
32. Projected Geometry Model



33. Making the Installation

INSTALLATION

Concluding the testing of the 1:10 scale models in terms of flexibility, form, atmosphere and temporality, a 1:2 model was built. Primarily constructed out of medium density fibreboard (mdf), wire and industrial adhesive, the final outcome championed the treatment of the surrounding atmospheric conditions over its own complexity or form. The mdf was painted white to eliminate the influence of materiality in this stage of the design experiment and focus more on the atmospheric qualities as they passed through the shell-like installation. Once the form of the installation was fixed together, it was hung at approximately two metres from the ground under a light source. This was aimed at creating a simple form of occupied space where the temporal atmospheric qualities could be experienced.





34. Installation Atmosphere Views



35. Installation Interaction

REFLECTION

Throughout the iterative modelling process in this stage the final outcome was entirely a product of the design exploration, with unexpected outcomes and discoveries informing the result in the form of the projections. Successes within the experiment came predominantly through the treatment of light and shadow as a reaction to the physical geometries. Through all the model sets, light source, or external context, became equally as important as the models themselves, with many of the penetrations, edges and angled surfaces becoming expressive and compelling through the change of depth and field. While the projected geometries were the focal point of this investigation, the formal language of the physical elements became key contributors to the projections.

This relationship was not fully explored in the installation stage, with occupancy within form failing to be entirely tested throughout the models. The notion of temporality through occupation and perspective is seen as a crucial relationship within the physical environment (Kavanaugh 166).

Along with the further exploration of the formal moves made, the inclusion of site is a key aspect of the next design phase. The Installation test helped to focus the scope of the research but with the exclusion of place, materiality and architectural planning, this phase had its limitations. These three aspects are to be addressed in the mid-scale design experiment.

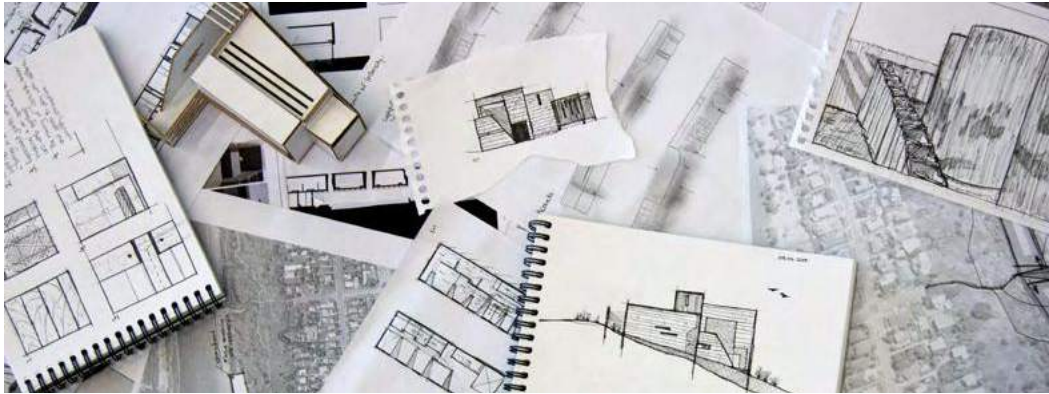


36. Installation Interaction





37. Design Phase Two



GALLERY.

EXPERIMENT TWO.

The Gallery experiment marks the second phase of the three design experiments in this thesis. This chapter investigates the relationship between a fixed architectural space and the ephemeral external environment of the South Brighton dunes. Expanding on the Installation phase, this mid-scale experiment takes into consideration the outcomes of the Installation and seeks to thrust these findings into an inhabitable architectural scale. Throughout the testing of The Gallery the tension between the rigid architecture and temporal physical context were of key concern.

AIM

Located in the rugged dunes on the east coast of South Brighton, Christchurch, the Gallery experiment investigates how a monolithic architecture could foster an ephemeral interior spatial condition. This phase expands on the installation experiment, considering how environmental conditions can shape not only the exterior form of a rigid architecture but also the internal journey throughout it. Consequently the design test shows how an architecture of solidity could inhabit an ever changing environment.

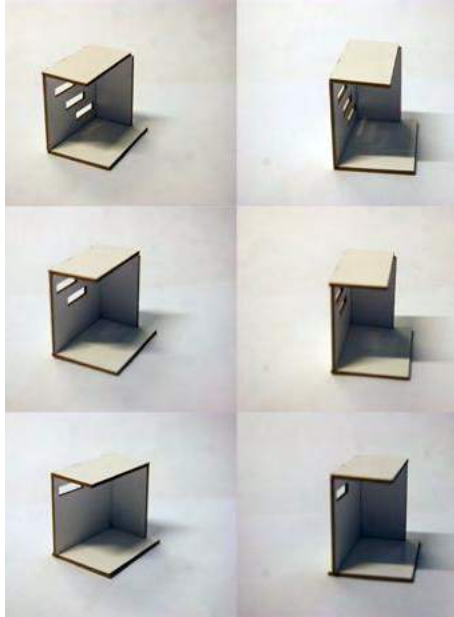
METHOD

The design of the gallery initially was fixed around the formal language established in the installation phase. This was explored through physical concept models, aimed at testing form and interior conditions.

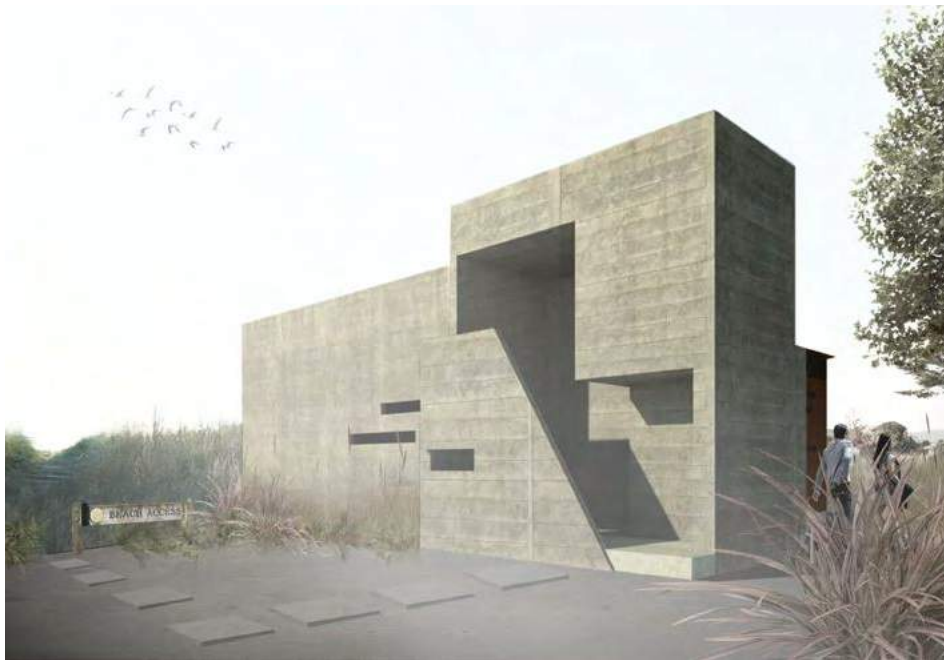
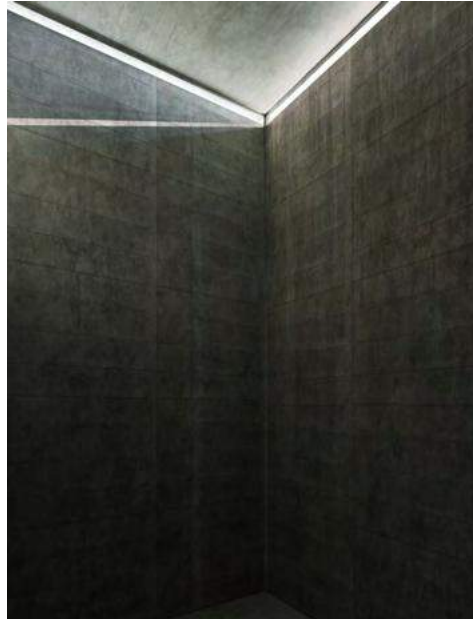
Temporal aspects of place and environment were recorded through an extended time on site. These primarily concerned the macro scale and, in addition with the installation formal language; provided the architectural framework of the experiment.

Outcomes from the physical models and on site observations informed the planning of the gallery and the targeted atmospheric conditions. The program revolved around ephemeral interior conditions, dependent on the formal language of the architecture and physical environmental aspects surrounding the design. These moments were captured through renders and provided insight into the inhabitation of the spaces.

38. Testing Modules



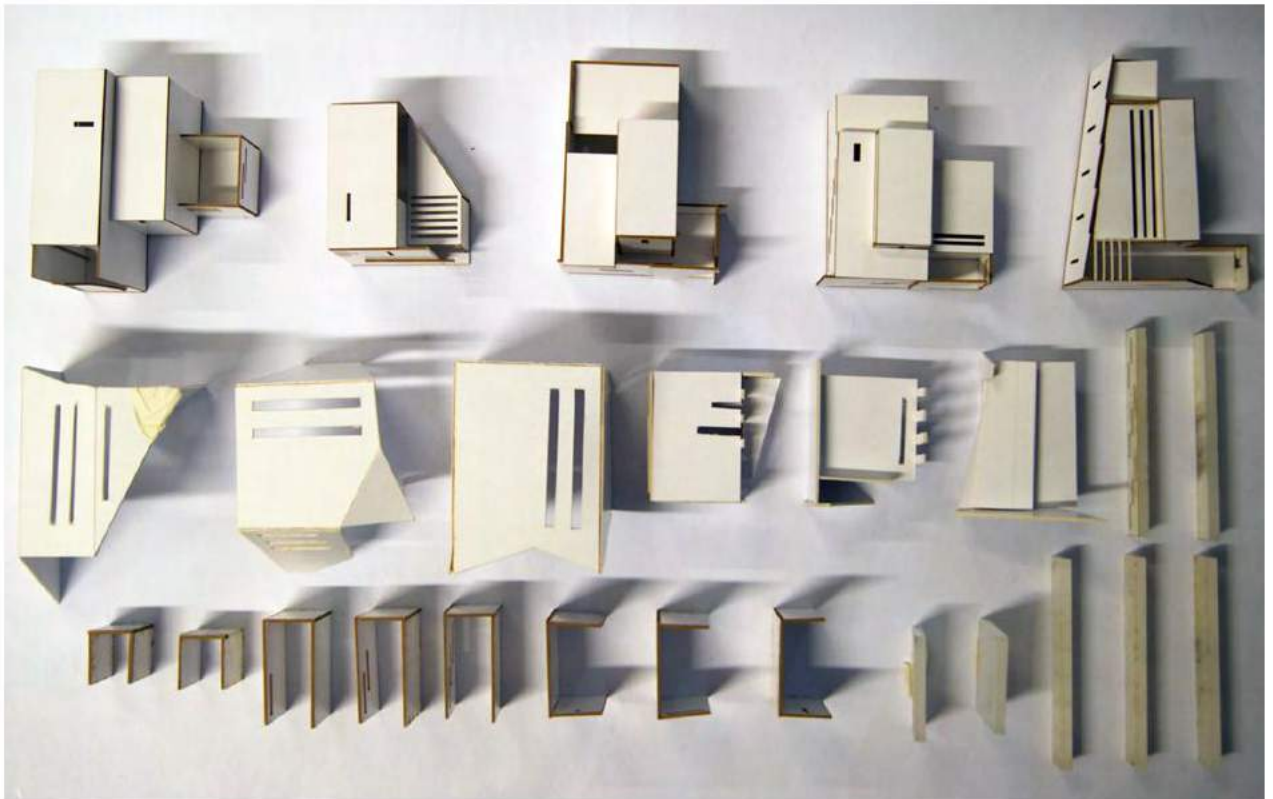
39. Gallery Interior



40. Gallery Exterior

CONTENTS

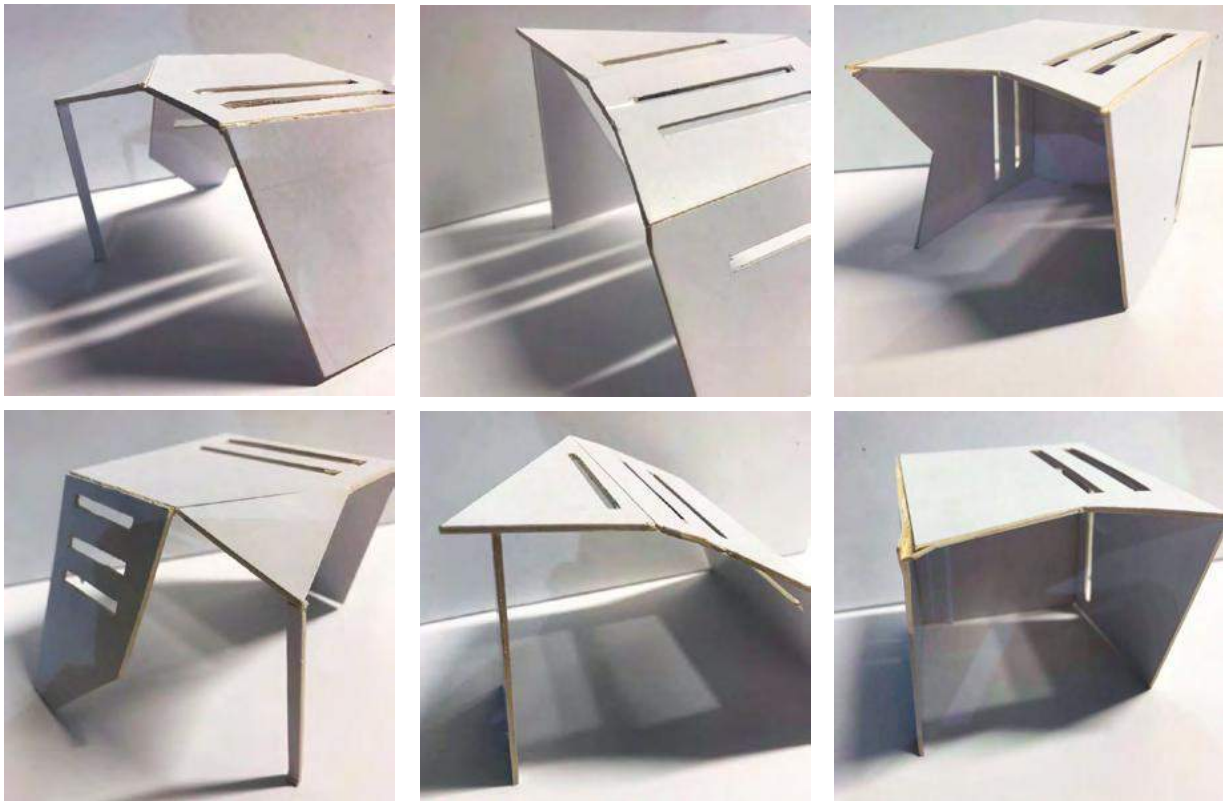
- Installation Models
- The Site
- Sketch Models
- Programme
- Elemental Models
- The Gallery



41. Process Gallery Models

INSTALLATION MODELS

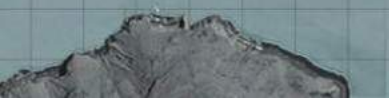
As an initial design exercise, a set of sketch models drawing on the formal language of the Installation were made. This set created a basic shell and tested the interior lighting and spatial conditions of an architecture reminiscent of the Installation. While the effect of slit windows and depth of space was the focus of this set, a lack of context and program provided limitations with this test.



42. Installation Based Models



- Summer Sun Path
- Winter Sun Path
- Prevailing Wind Zone
- Ground Erosion Zone



3

5

6

1

Site

4

2

Contextual Factors:

1 Sun Position

2 Material Decay

3 Existing Materials

4 Micro-Interactions

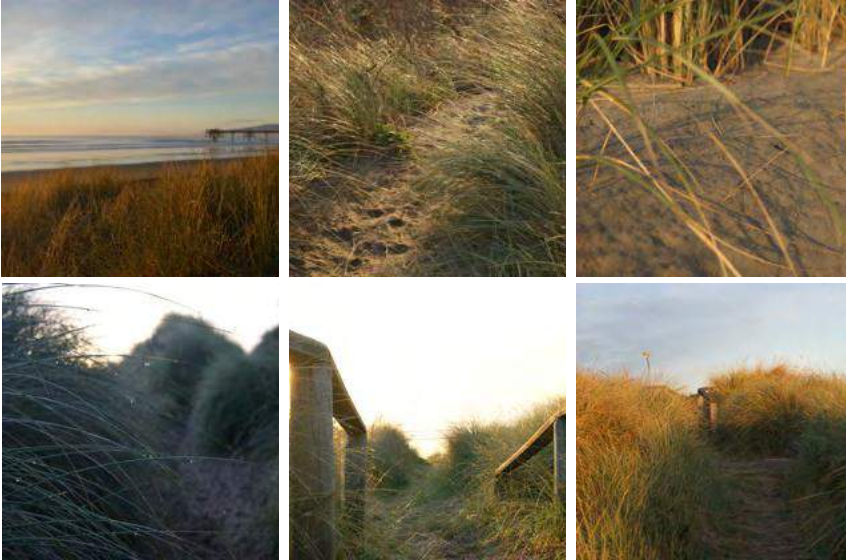
5 Relation to Site Cover

6 Visibility of Building

3. **Site Mapping**

THE SITE

The site for the proposed mid-scale project sits on the threshold between the eastern coast of Christchurch and the flat land recovery zone; exposed to the natural elements as well as situated in an area of recent historical significance. Visually exposed to the public around the northern edge, the site has the potential to impact the surrounding community and therefore is expected to adhere to a certain design language, informed by the surrounding forms and materials. While the surrounding typology speaks more to the beach bungalow style of the area, occurrences of expressive concrete and rusted steel along the beach are seen. Along with some extracted forms from the residential sample, these materials are to create the framework of the gallery space geometry. Along with the larger trends seen around the site, small instances seen through the adjacent sand dunes are intended to play a pivotal role in terms of the interior atmosphere of the designed space.



44. **Lighting Conditions - Sunrise**



45. **Lighting Conditions - Sunset**

Site observations were taken at different times of the day, with sunrise and sunset being key focus points. Both periods exhibited different intensities of natural lighting, with the sunrise providing strong illuminance opposed to the more vivid shading seen in throughout the sunset. The other major observation was the duration of period. The intensity of the sunrise lasted between 30-45 minutes where as the sunset was stretched out over an hour or more. These variable periods granted site specific lighting conditions which are intended to significantly inform the experimental design outcome.

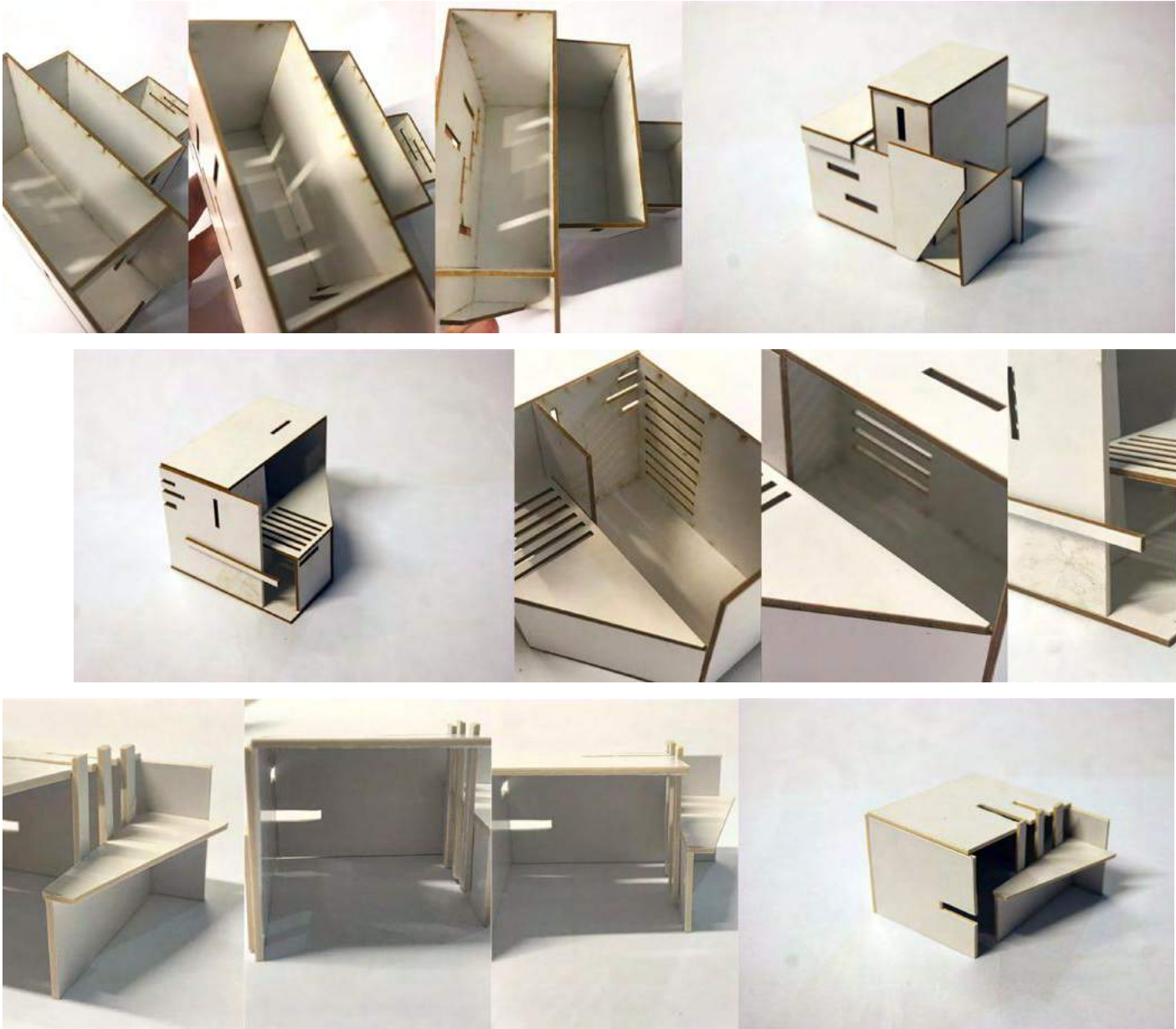


46. Site Materiality

Contextual materiality and typology were influencing factors. The target materials were those found on the coastline, being corroded iron, steel and concrete. This palette showcased the visible effects of the ephemeral site conditions on materials. Contrasting with these were the timber bungalow's found on the edge of the suburban grid. While differing in materiality; the dominance over the land, implied by the placement on top of past dunes, resonated throughout the residential typology. Material density and decay is intended to be abstracted from site recordings along with the strong orthogonal edges seen in the images.



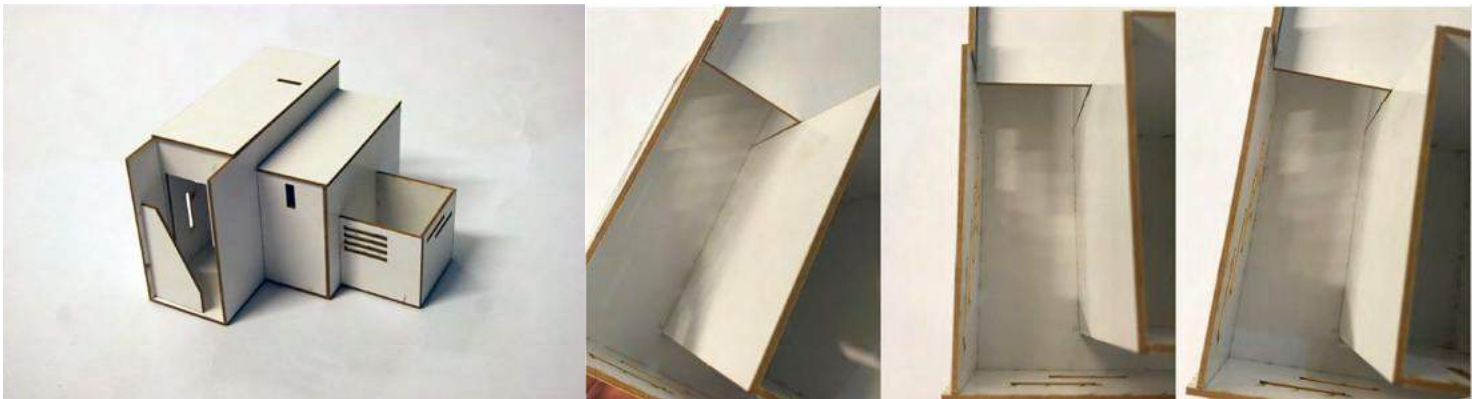
47. Surround Typologies



48. Sketch Model Iterations

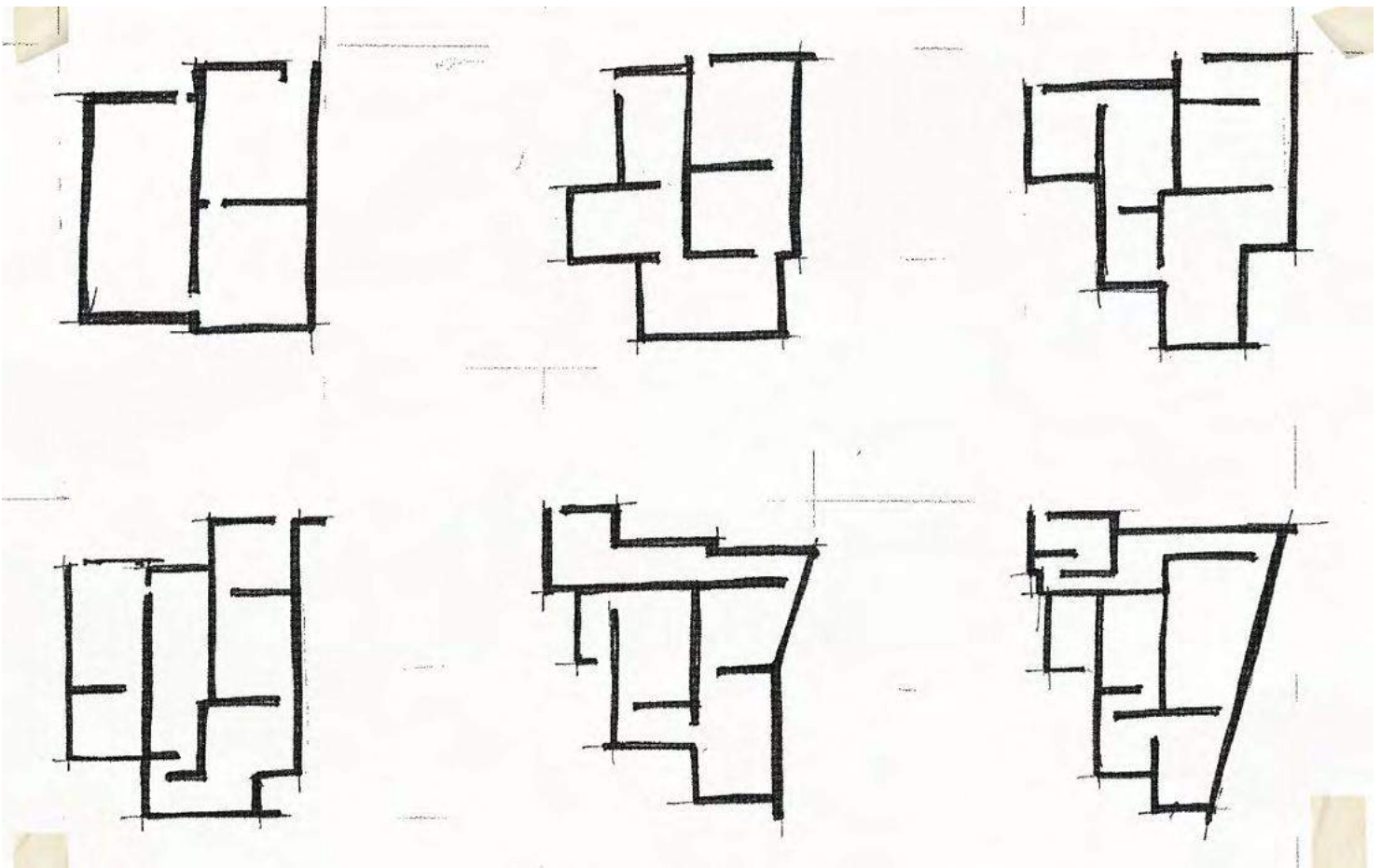
SKETCH MODELS

Given the natural lighting qualities of site as a reaction to time and the organic forms seen on the sand dunes, a set of iterative sketch models were made with the aim of translating site conditions into occupied spaces. While open planned, these spaces were designed to express one key lighting condition through exterior penetration and treatment. These were then photographed at a close up scale to explore how the role of different light sources effected the interior atmosphere of the space with orientation, penetration position and scale being key factors.

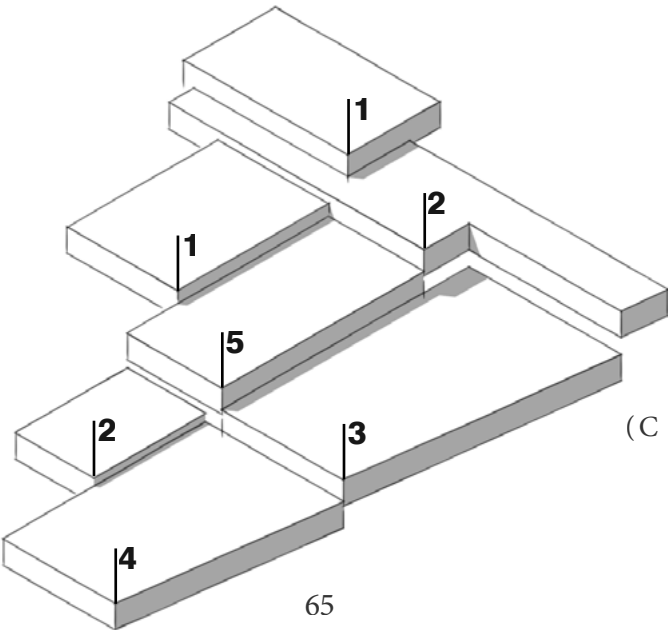
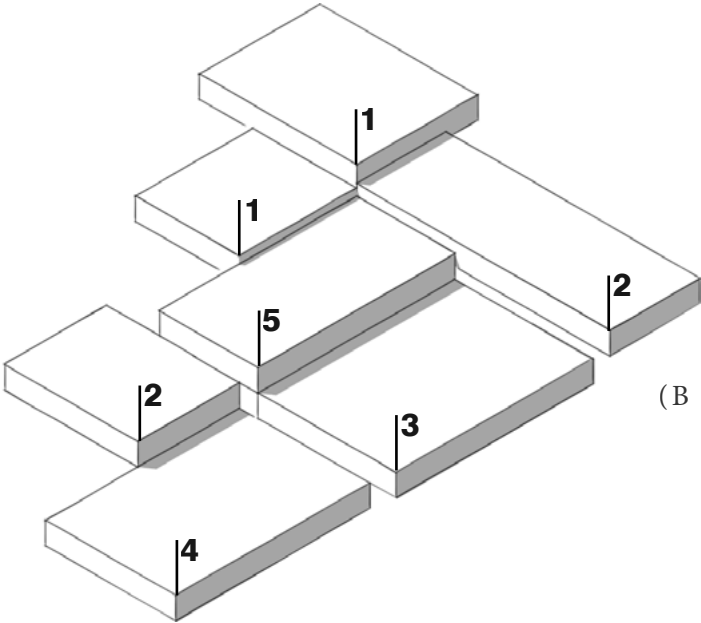
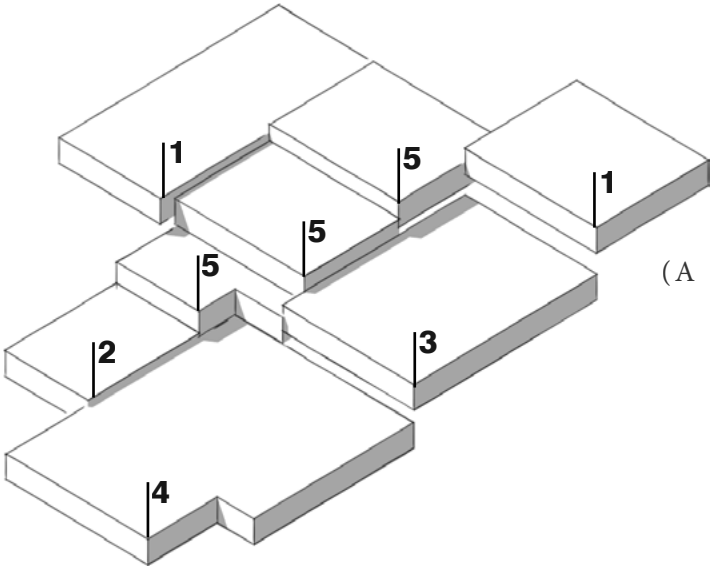


PROGRAM

Following the initial set of sketch models, a number of sketches were produced positioning the experimental programme on the site. Aspects such as sun-path, sea breezes and user access were considered and provided the framework for the building footprint. The programme developed over time but the idea of descending the user into the architecture has remained a key factor. As the occupant reaches the end of the journey the levels raise them back up to near their original entry point. The concept of distorting the users perception of space through the implementation of contextual ephemeral aspects is heightened by the shifting in levels and the sequence in which the spaces follow.

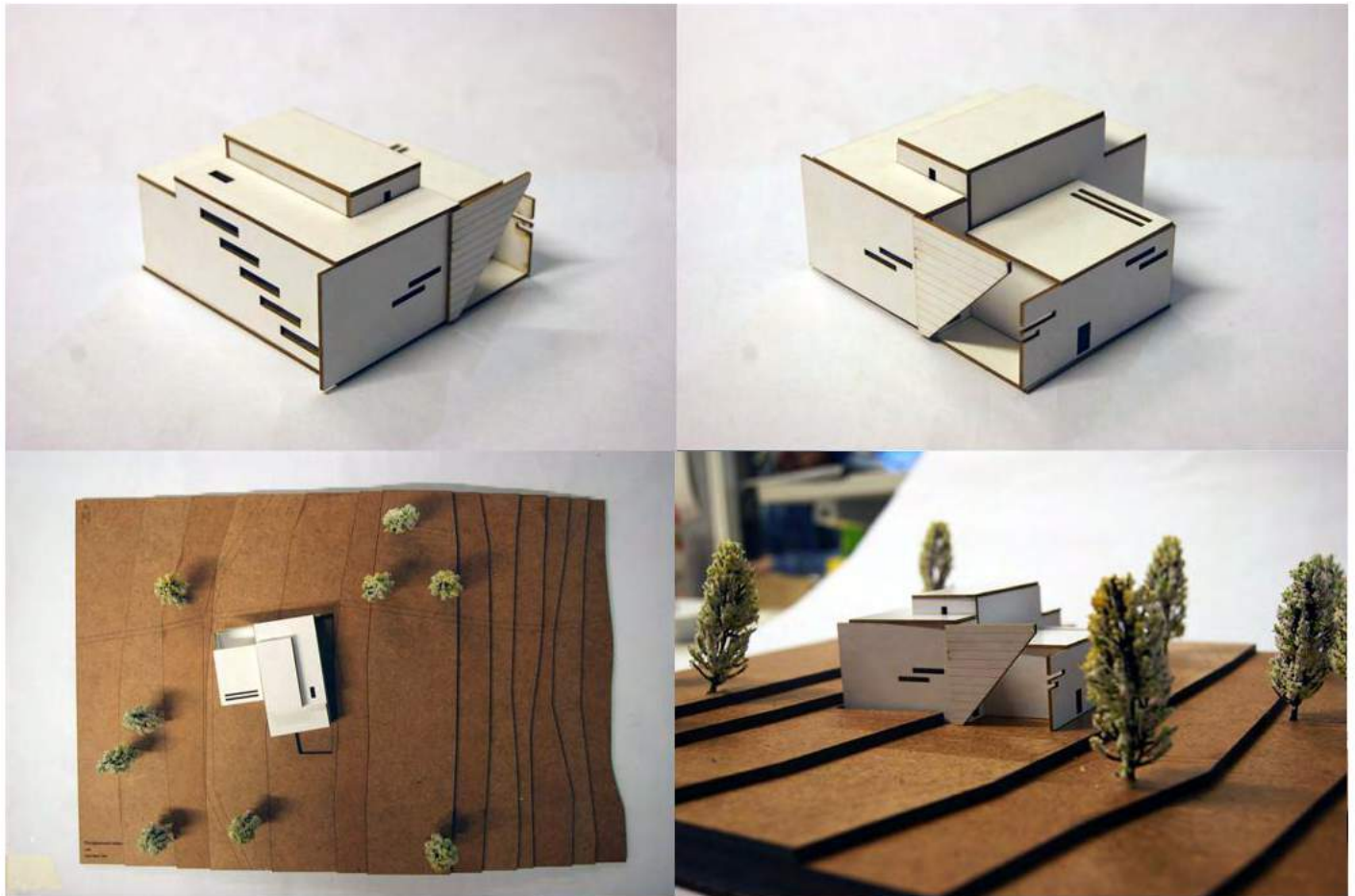


49. Planning Iterations



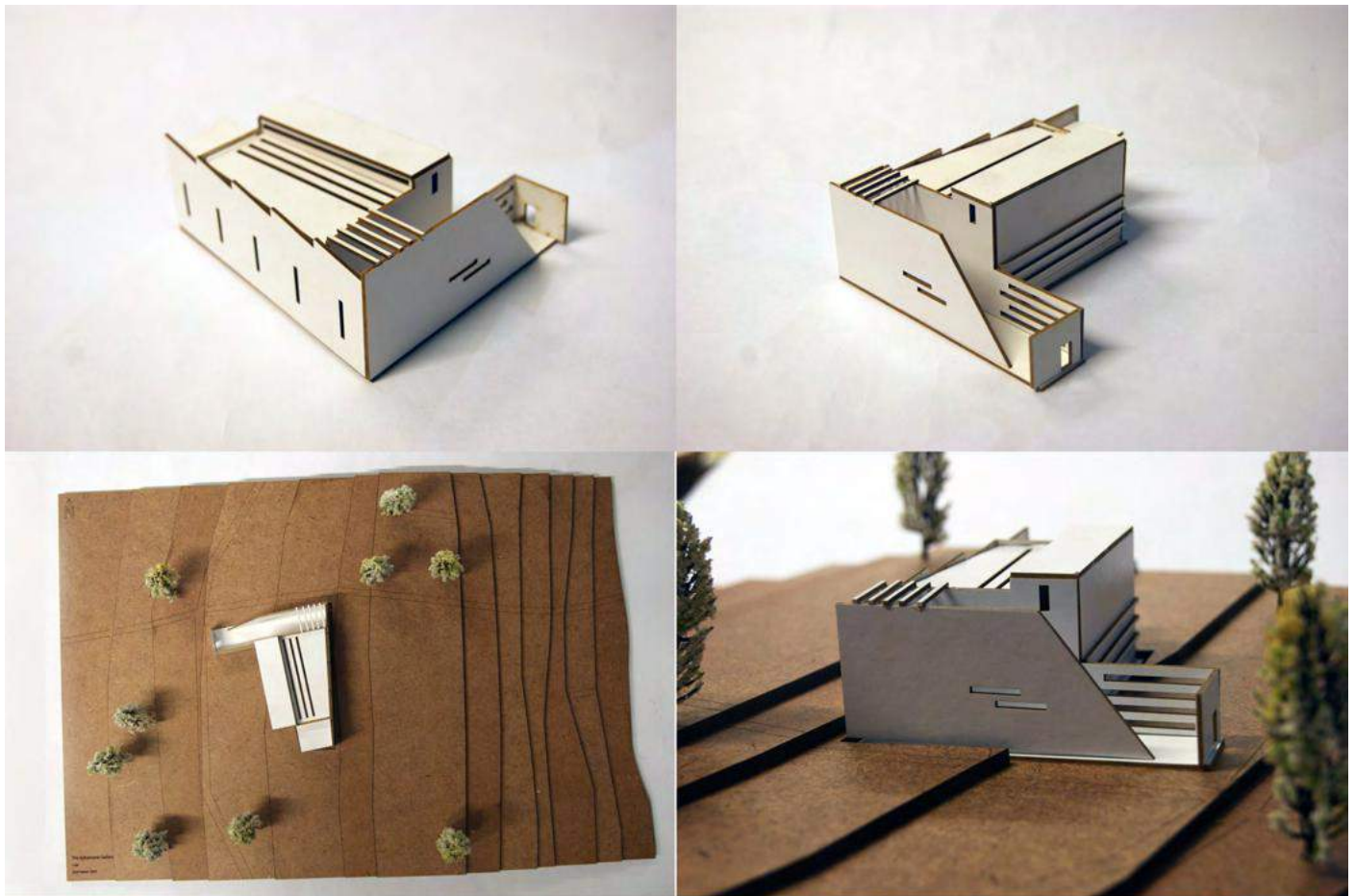
- 1** Entry/Exit point
- 2** Transition points
- 3** Reflected light room
- 4** Distorted light room
- 5** Directed light room

Physical models were then built using the final programmatic diagram as a formal base. This footprint was then combined with the formal language of the Installation and previous sketch models to create two developed physical models.



51. **Iteration Model One**

These iterations sought to create an architecture that provided a fixed, resilient external shell to its environment, as well as a form and profile that is sympathetic to site. The angles and stepping down roof levels lower the profile of the Gallery, minimising its visual impact on specified edges.

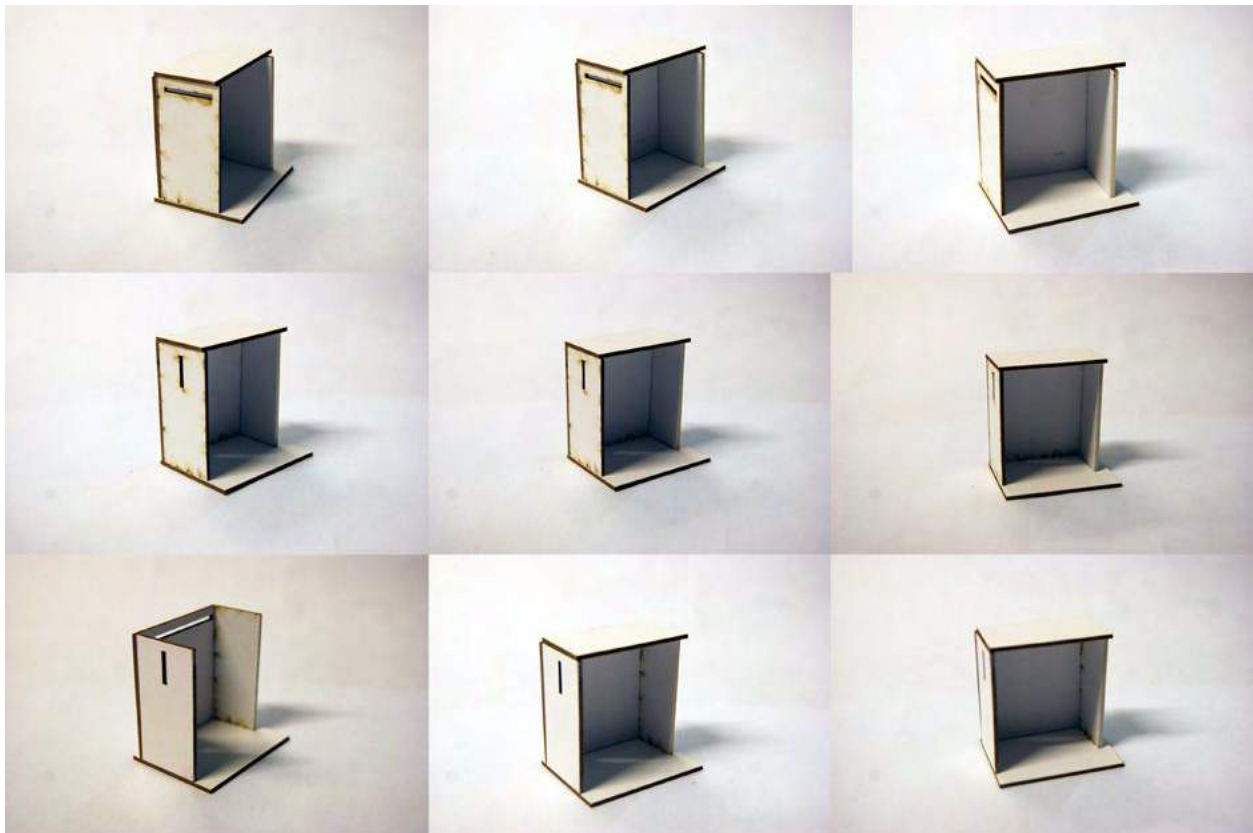


52. **Iteration Model Two**

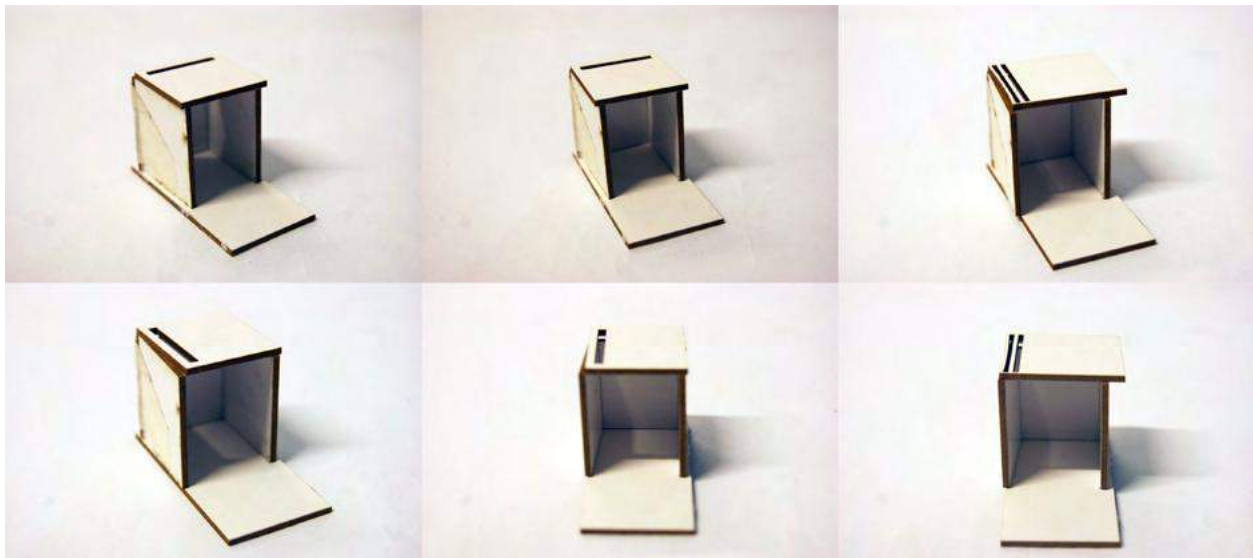
ELEMENTAL MODELS

At this point of the experiment, the direction of the test models began to become more programme dependant opposed to testing ephemeral atmospheric qualities of site. With the focus on distilling the lighting qualities within the space in regard to time and perspective, an iterative set of elemental models were made. These simple test models engaged one facet of light penetration being tested throughout the previous concept models over a range of time and light sources.

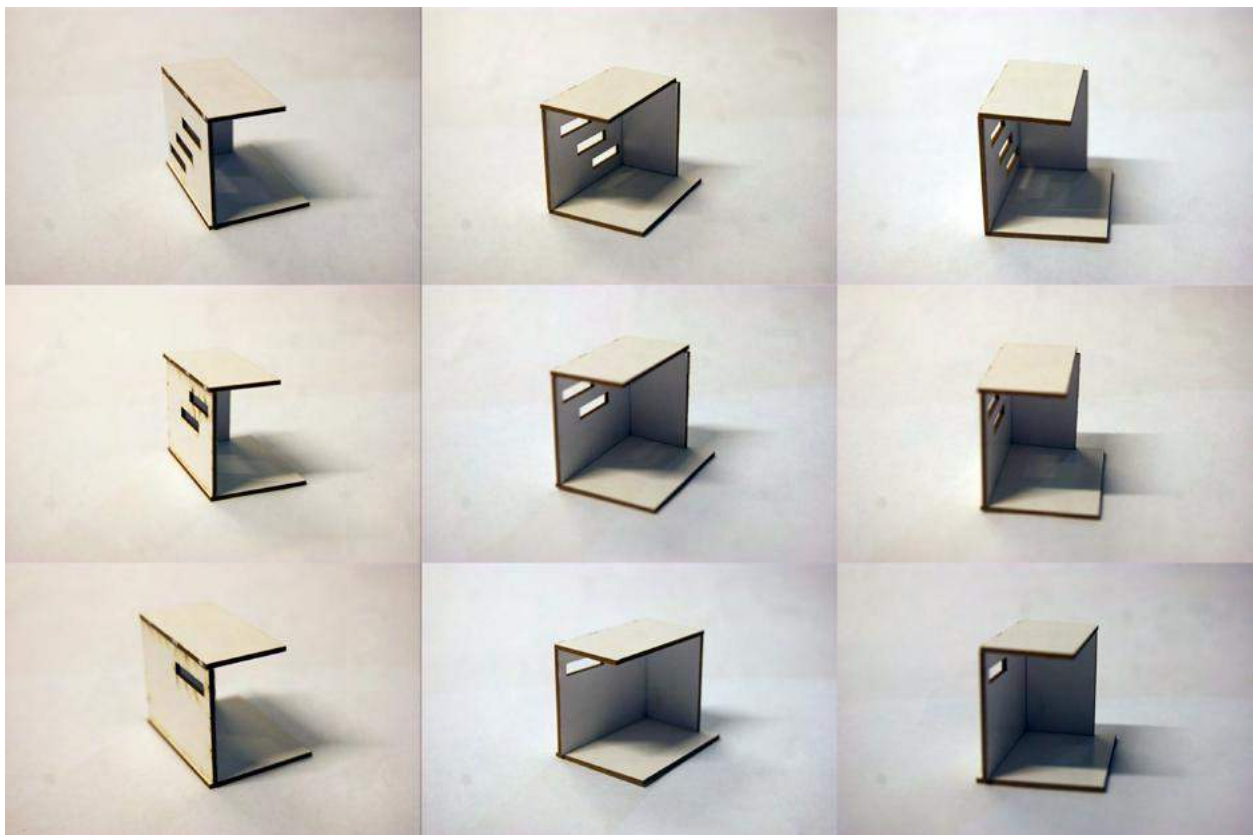
On reflection, the lack of materiality limited these test modules. This marked the point in the experiment when digital testing began, introducing materiality and the play between light, form and texture.



53. **Module One**

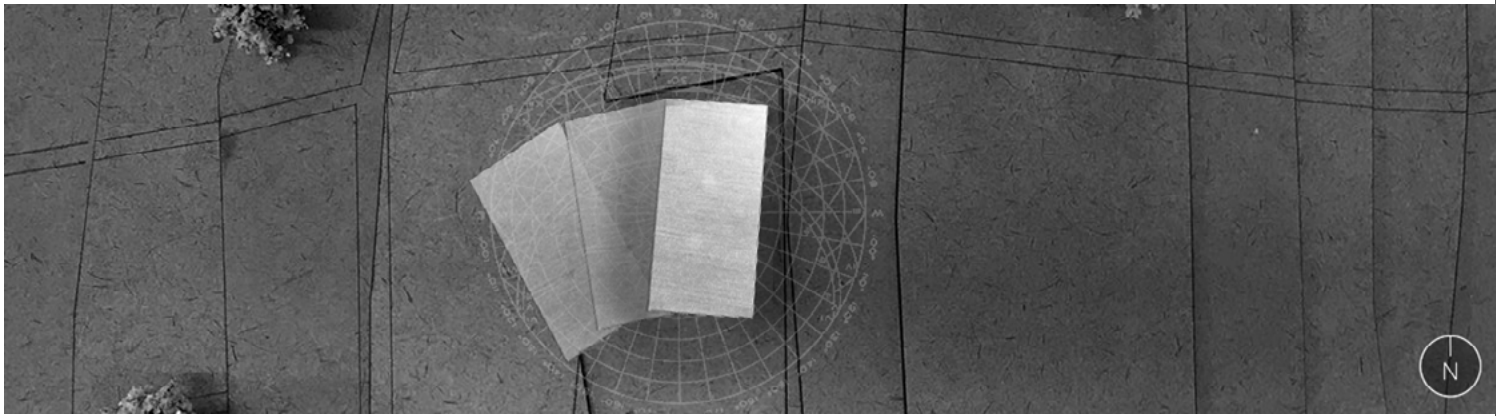


55. **Module Two**

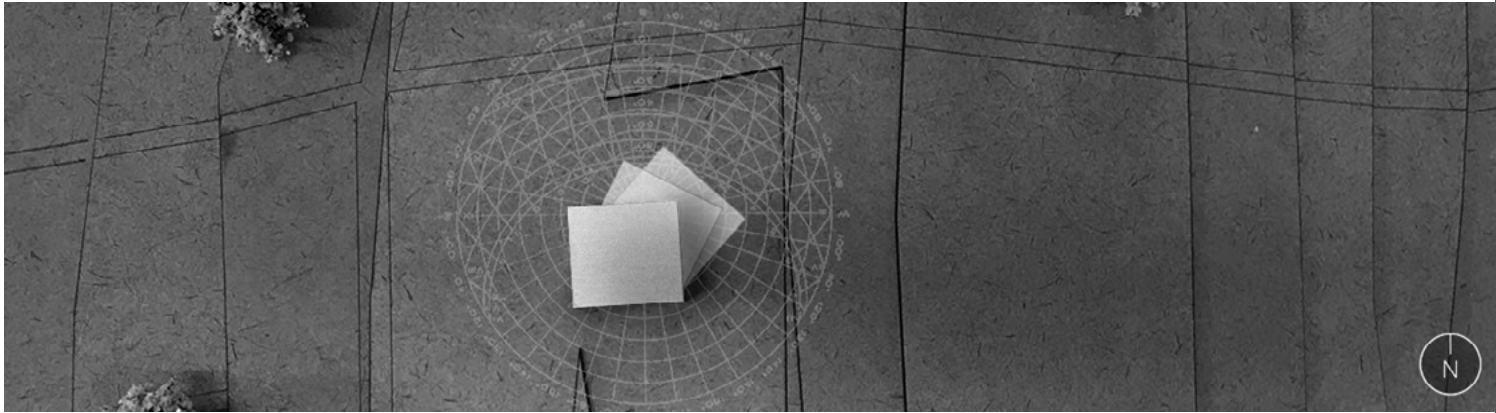


54. **Module Three**

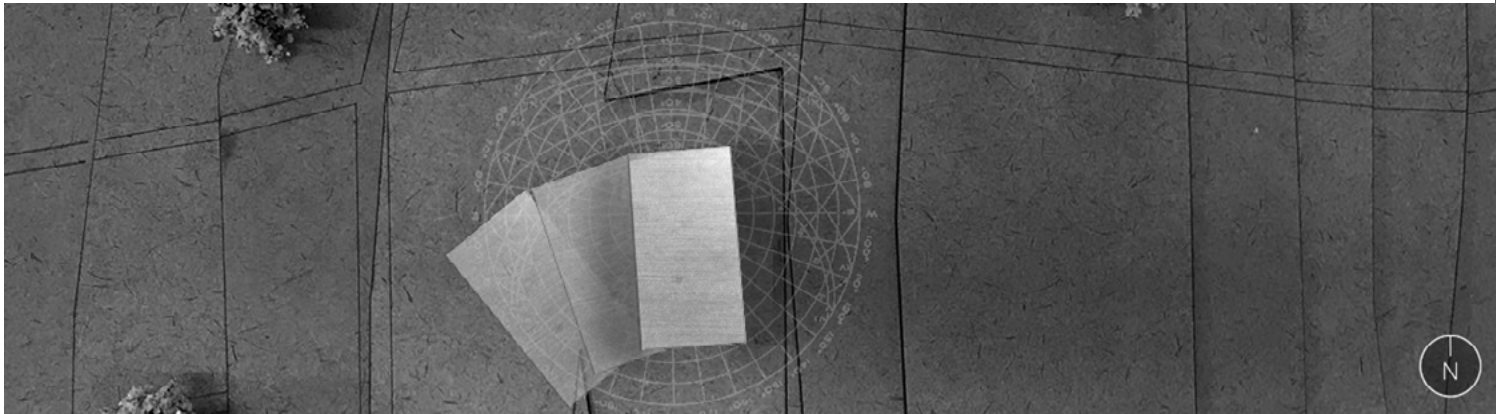




57. **Module One**



58. **Module Two**

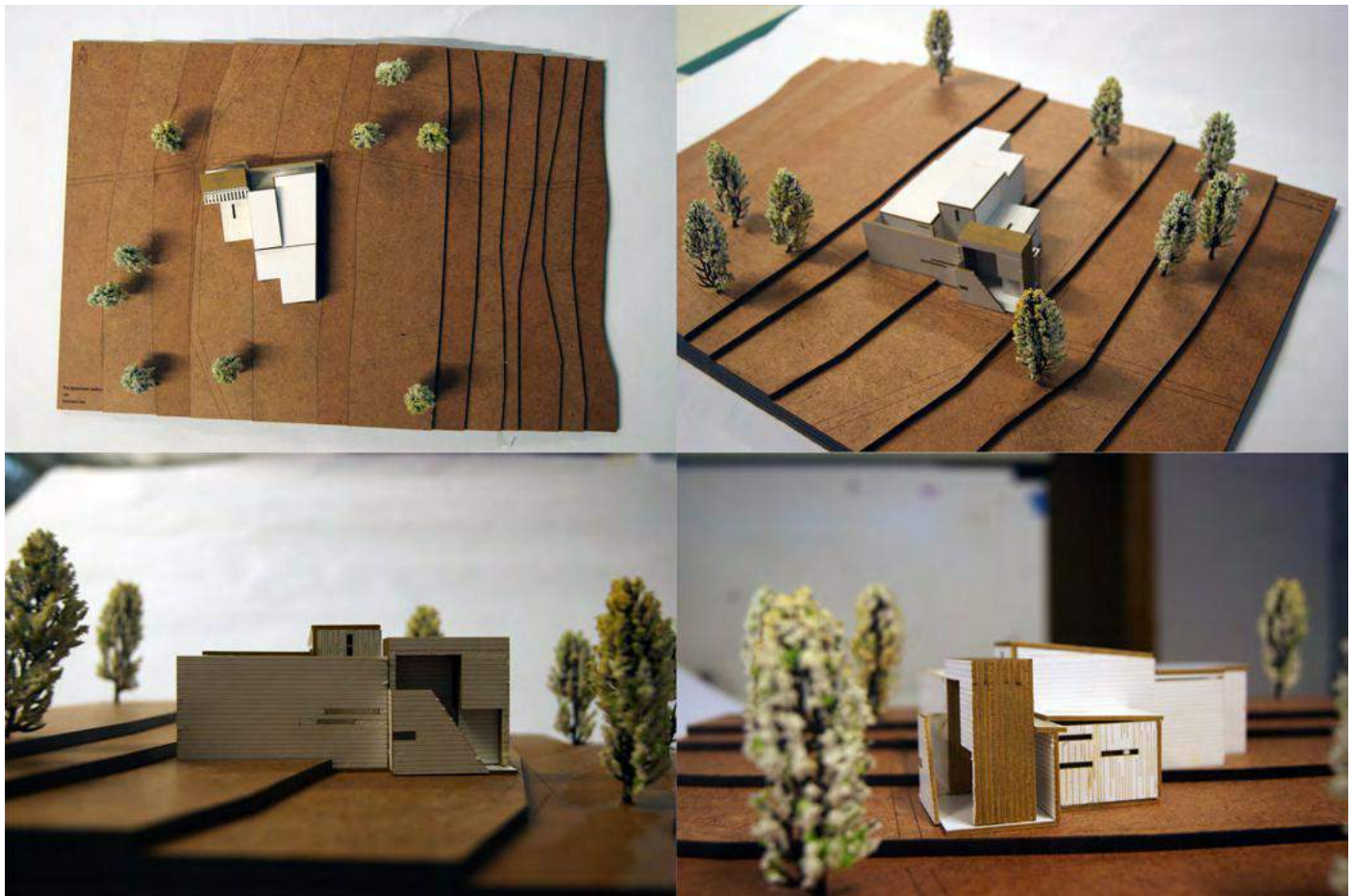


59. **Module Three**

The experimental modules were photographed at three incremental angles, representative of their proposed site positions as a reaction to sunlight and other environmental factors.

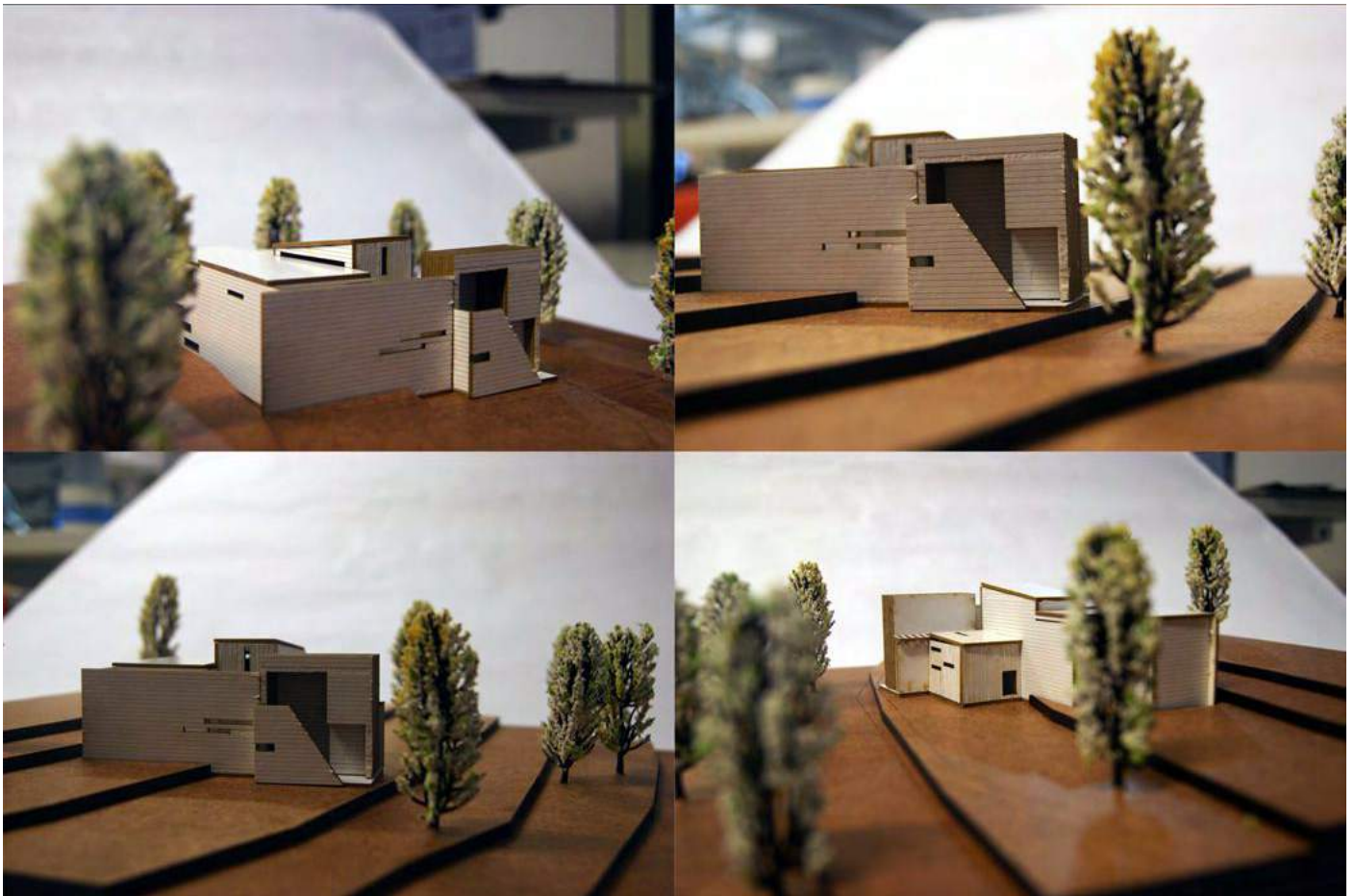
DEVELOPED MODEL

Taking into consideration the outcomes of the test modules, a final design was resolved. This was physically modelled and sited, exploring how the architecture fit into its context and what key formal moves responded to place and atmosphere most effectively.

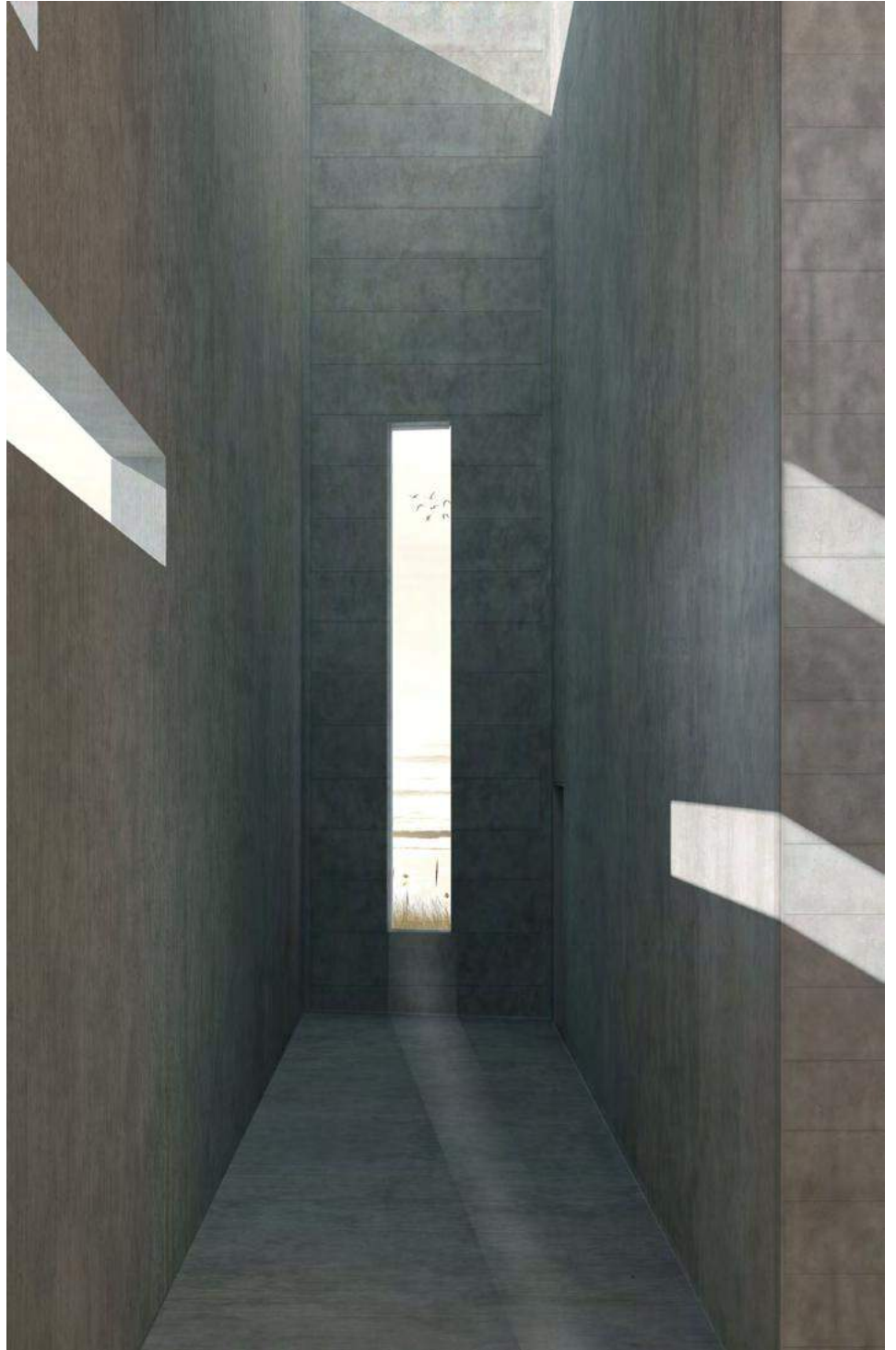


60. **Final Physical Model**

As with the testing modules; the lack of materiality limited the range of outcomes from this experiment. The same form and floor plan were then digitally modelled.



61. Entrance Corridor View

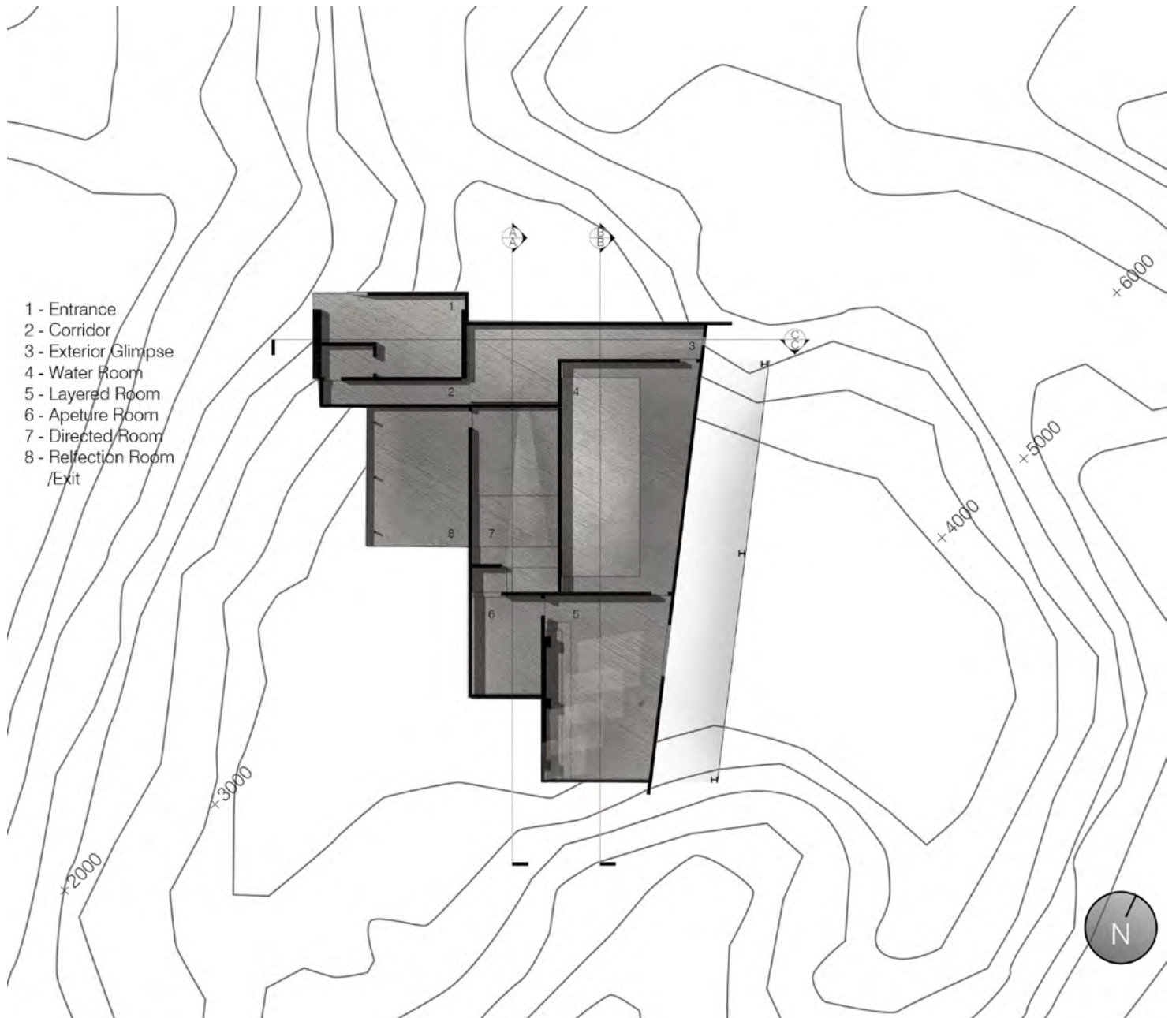


THE GALLERY

A monolithic concrete 'light' gallery established the design outcome for the mid-scale tests. Sited in the South Brighton sand dunes on the threshold between residential grids and open ocean, the experiment sought to allow the unique context to imprint itself on the architecture primarily through light, wind and topography.

62. Site Plan 1:1000





63. Floor Plan 1:500

Drawing on the Tadao Ando text, *Light, Shadow and Form* (1995), the planning of the gallery sought to orient the occupant as a reaction to the penetration external conditions. Instead of using exterior views and horizon lines to place the body within the space, the response of textures and forms to exterior light and wind were the primary means of reading the spaces. Many of the exhibition spaces sought to manipulate external factors, challenging the occupant to experience the space through limited and focused architectural devices such as surface texture and level changes.



64. **Section AA'**



65. **Section BB'**



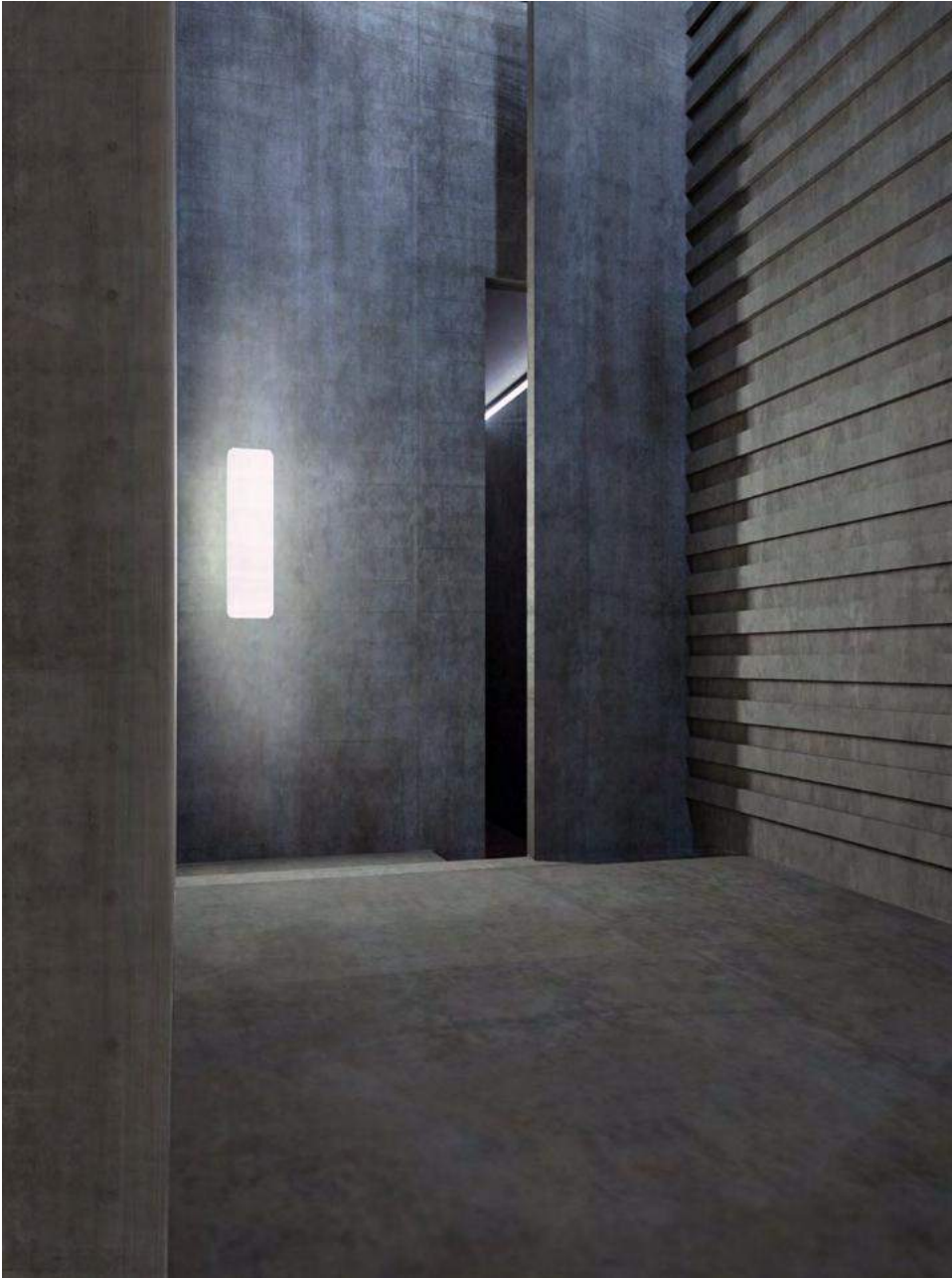
66. **Section CC'**

Level changes and differing roof heights were implemented into the design to further the effect of disorientation within the gallery. Through the sections a hierarchy of spaces can be seen, with the exhibition spaces being larger and more dramatic as to emphasise the effects of the overall experience.

The following perspective views illustrate the journey through the gallery, with the focus being placed on the relationship between surface and light along with the changing of atmosphere throughout the spaces.



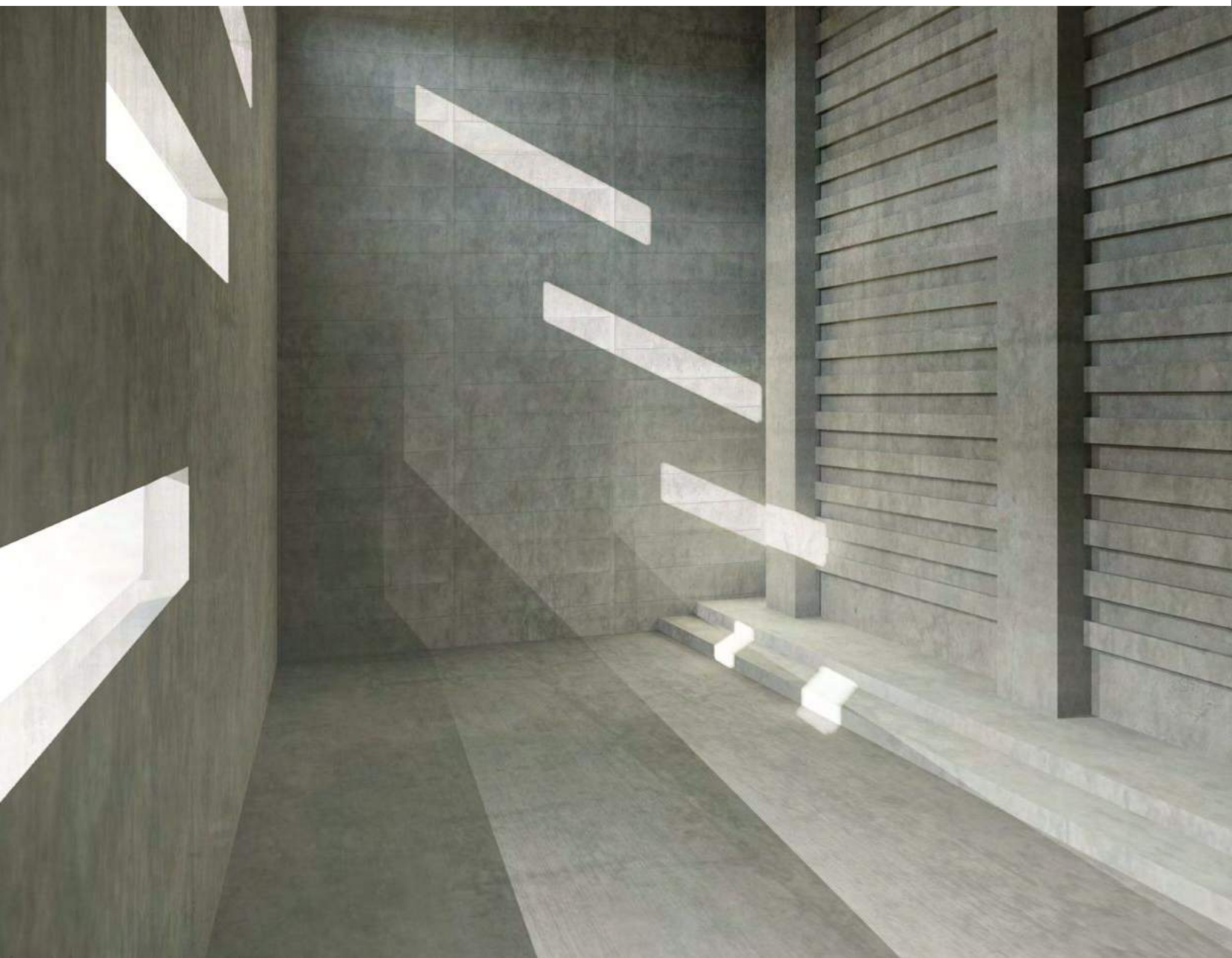
67. **Light Exhibition Space One**



68. **Light Exhibition Space Three**



69. **Transition Space**



70. **Light Exhibition Space Two**

71. Gallery East Exterior



REFLECTION

The Gallery experiment addressed the role of site in creating ephemeral atmospheres and a rigid architecture in response to this.

Macro-scale environmental factors such as sun paths, wind and site topography were considered throughout the form making process. This resulted in an architectural experiment that responded to a massive view of place but failed to project the human experience of site into the spaces. In Mostafavi's text *On Weathering* he discusses the role of site imprinting itself on the architectural finish on buildings; translating the qualities of place wherein the architecture is site (69). This level of contextual integration wasn't fully explored through the gallery experiment and is seen as a real point of opportunity in the public scale design test.

Concepts expanded on from Tadao Ando's *Light, Shadow and Form* were implemented in the Gallery experiment. These were taken as a success of the design outcome, resolved to a higher level than in the Installation and are to be taken forward into the public scale with a greater focus on how site-specific aspects can impact the reading of space.

Theories around light, space and the body in architecture were tested throughout this design phase with successes coming through the response to macro-scale site and lighting qualities. Opportunities for the public scale lie within the human experience of the experiment and site, acknowledging a more holistic view of ephemerality within a site-specific context.







72. Design Phase Three

REHABILITATION.

EXPERIMENT THREE.

The final test in the three part design series is the public scale experiment. A Rehabilitation Centre on the shoreline of South Brighton dubbed 'The Bunker' due to its massive, monolithic form. This chapter investigates the ephemeral relationship between an outwardly solid architecture and the volatile environment it is placed. This experiment expanded upon the Gallery phase with an increased programme, building scale and range of temporal interactions with its surroundings driving the design-led research.

AIM

The public scale experiment shifted the testing ground from the South Brighton dunes to the fore-shore. This experiment increased greatly in scale from the Gallery. This design experiment investigated the main proposition of the thesis; seeking to distil the ephemeral moments of place within a fixed and massive architecture. The 'bunker' took influence from both micro and macro site happenings, imprinting these in its form, texture and planning. This final design test thrust a monolithic architecture into a fickle environment, allowing a provocative relationship between site, mass and atmosphere to ensue.

METHOD

The final design experiment employed a similar method as the previous two experiments with physical modelling and sketches setting the scene for the design. Through the physical iterations, stereotomic concrete tests were investigated. These used a controlled form work to create unpredictable outcomes, defining a design language for the rehabilitation centre.

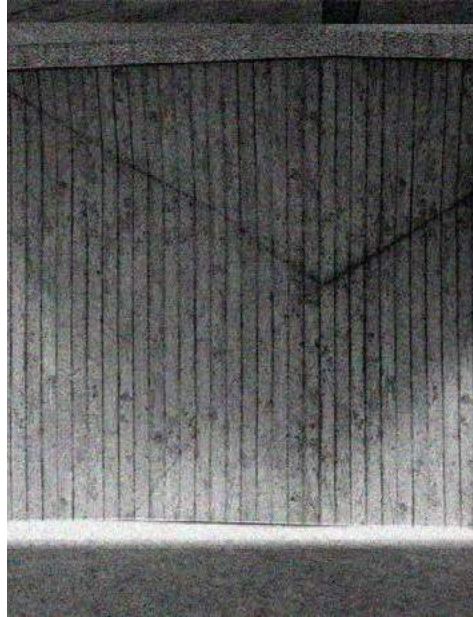
In-depth site exploration was conducted in parallel with these physical tests. Micro-scale interactions between surface and material became the focus and was projected into the details of the design.

Concluding these investigations, a digital model was produced. Used initially for planning the 'bunker', this tool became invaluable in testing the interior changes of atmosphere as a reaction to space, time, form and texture. These images were measured against an ephemeral catalogue, guiding the direction of the final experiment.

73. Concrete Module



74. Atmospheres Testing



75. Rehabilitation Interior

CONTENTS

- The Site
 - Building Form and Mass
- Building Form and Mass
- Defining Ephemerality
- Programme
- How Does It Go Together?
- Atmospheric Testing
- Rehabilitation



76. Micro-Scale Site Photos



3

1

5

6

Site

2

4

Contextual Factors:

- 1 Tidal Shifts/Sea Level
- 2 Erosion of Eastern Face
- 3 Existing Site Weathering
- 4 Shifting Dune Heights
- 5 Residential Urban Grain
- 6 Visibility of Building

78. Site Mapping

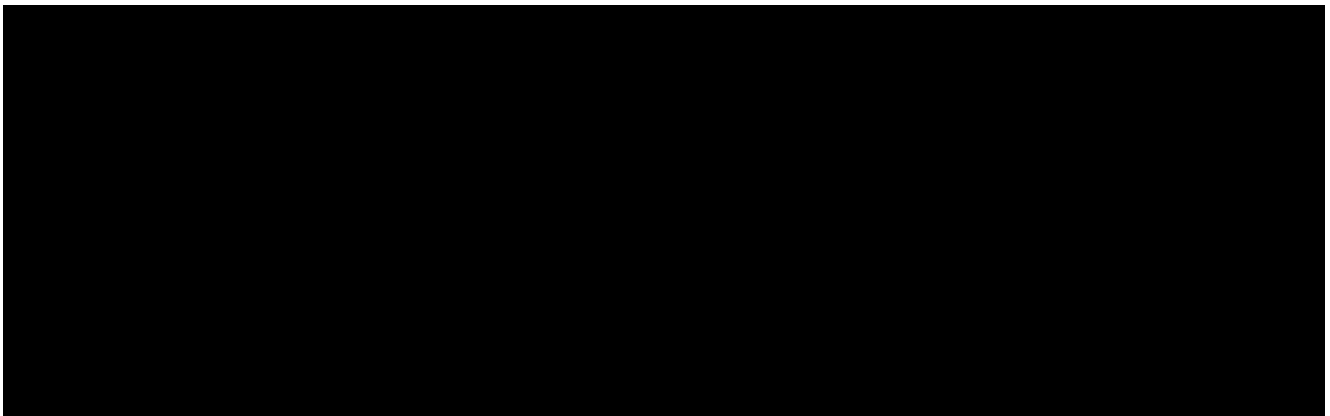
THE SITE

The site for the Rehabilitation makes a key move from the Gallery boundary. Shifting from amongst the dunes onto the fore-shore of the South Brighton coast line. This new testing ground introduces a range of environmental factors such as rising tides and tidal cycles, battering easterly sea winds and undulating ground planes throughout the dune faces. These changeable happenings of site helped to shape the way an architectural experiment could inhabit the coast with formal and textural decision being heavily informed by the external environmental conditions along with recognised uses of the existing site.

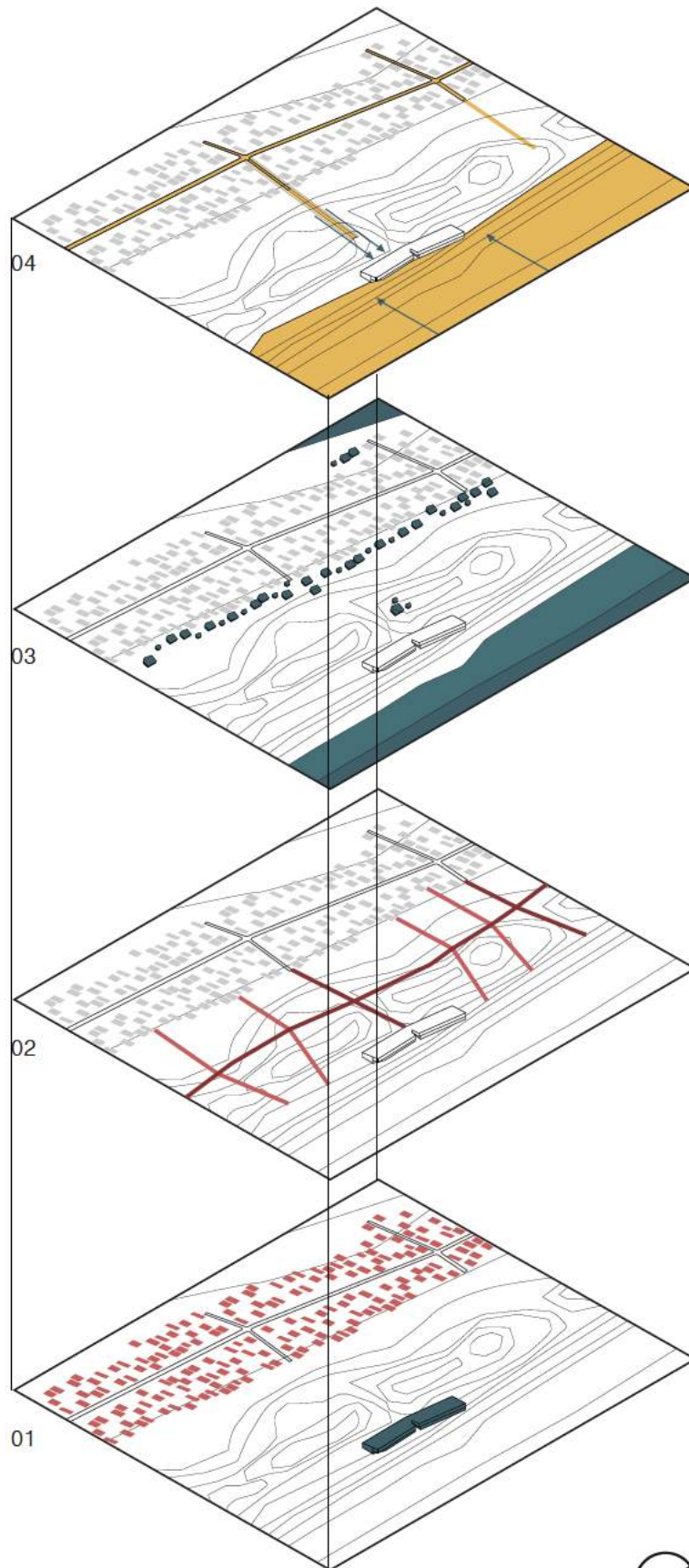
CURRENT SITE USES

The proposed site for the public scale experiment lays on the threshold between urban inhabitation and open ocean, offering a unique dynamic of place. The current uses of site hinge around season, including walking along the beach or dunes, swimming and surfing. All uses are for short periods of time, due to the ever-changing environment and isolation from South / New Brighton amenities.

The exploded axonometric diagram shows a range of influences on site. Layer 01 showcases the urban grain against the proposed mass on site. Layer 02 highlights the primary and secondary walking paths connecting the residential houses with the beach front. Layer 03 addresses the threat of rising tides, with the eastern shoreline and inland swamp-lands being shown. The final layer 04 considers the points of acoustic intensity, primarily coming from the ocean along with traffic to the west of the proposed site.



80. **Site Mapping**



81. Axonometric Mapping

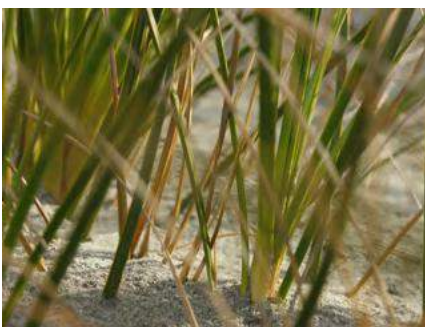


On visiting the site, a measurable way of observing the effects of temporal conditions was identified as ground surface recordings. Moving from suburban to sea-board, the ever changing influences of wind, movement and tidal shifts became stronger. As seen in the photo recordings, as the journey progressed from the built environment to the coastline more ephemeral changes were seen.

The targeted area for the design falls between the edge of the vegetation area and beginning of the softer sand region; interacting with elements of vegetation, inhabitation, material corrosion and tidal changes while still being accessible from the residential area.



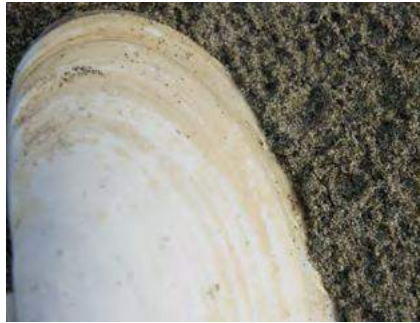
82. **Surface Study**



83. **Vegetation Study**

The first focus area of the site was the vegetation. The ephemeral properties of the vegetation were at a delicate scale small scale photography was implemented to capture the observations.

The key abstraction from this set of images proved to be the distance between the natural forms. This provided a tension between them and allowed for the movement of sand, wind and site occupants to subtly change the composition. This constant ephemeral state provides a sort of rhythm within the site, with small elements ever moving as a reaction to larger forces.



Like the vegetation, the movement and decay of site materials was at such a scale, micro-photography was utilised to capture small relations between masses and materials. The key aspect of this image set was the displacement and degradation of materials. While the images illustrate the condition of displacement on site, the intended architecture will not follow this theme, rather use a rigid face or plane to emphasis the current state of temporality through movement and decay of site elements.

84. Materials Study



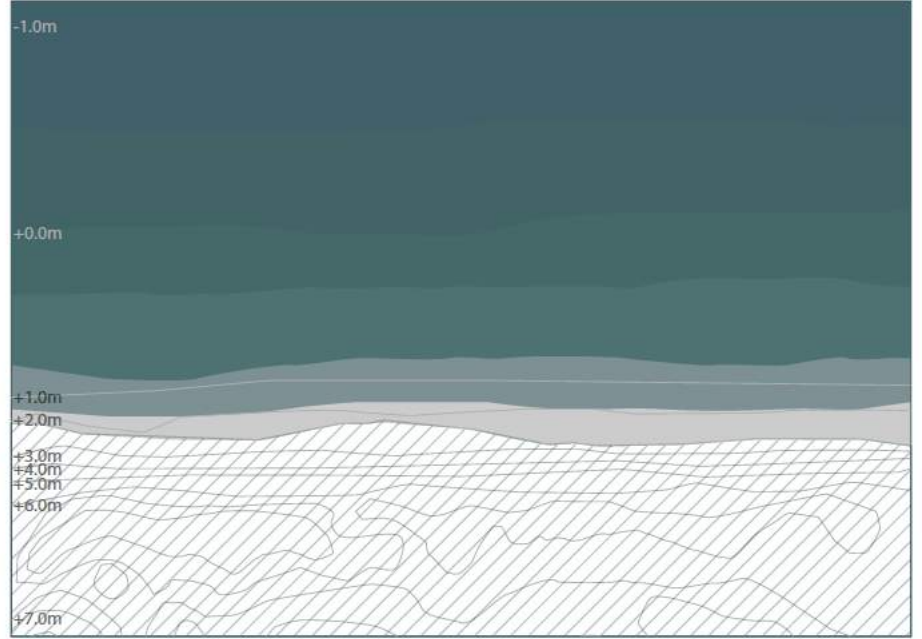
The final focus of the micro-photographic series was the corrosion and decay of man-made elements on site. Due to its coastal location the only beach-front materials observed were small steel and aluminium structures. As seen in the adjacent images the effect of the sea breeze on the untreated metals is a clear indication of the site conditions on structures. While snapshots of these have been taken, the long term erosion of the materials provides an insight into the long term effects of ephemeral forces. This response is targeted to engrain the proposed rigid architecture with the site makeup, opposed to just providing a canvas in which the site can be expressed.

85. Corosion Study

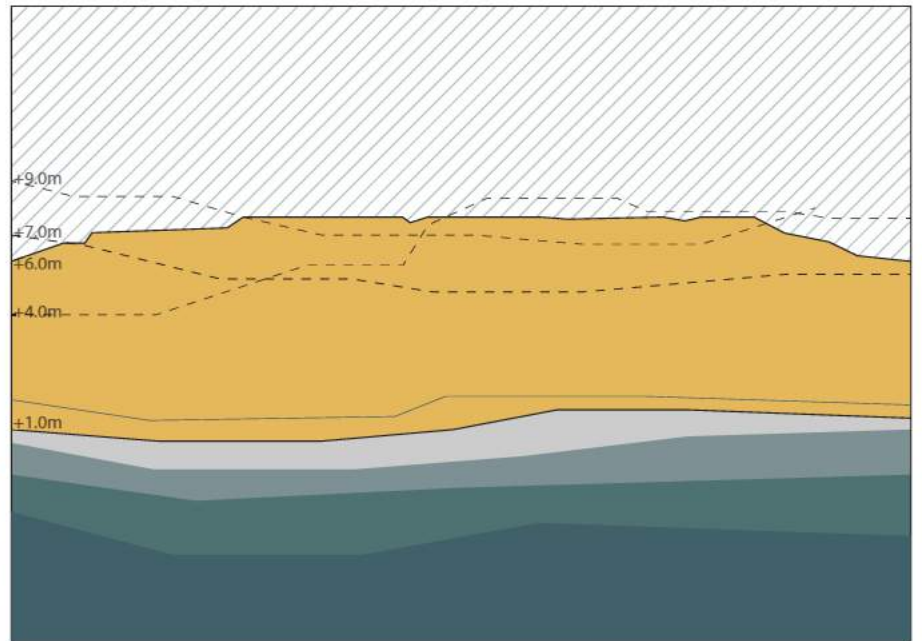
BUILDING FORM and MASS

The public scale experiment relied upon its environmental context to inform its formal makeup. Shown through the diagrams on the adjacent page; rising tides, undulating sand dunes and variable levels of sea-wind were taken into consideration when moulding the form of the rehabilitation centre experiment. Due to the expanse of the site and lack of boundary restrictions, these physical parameters were used to determining the initial formal language of the test.

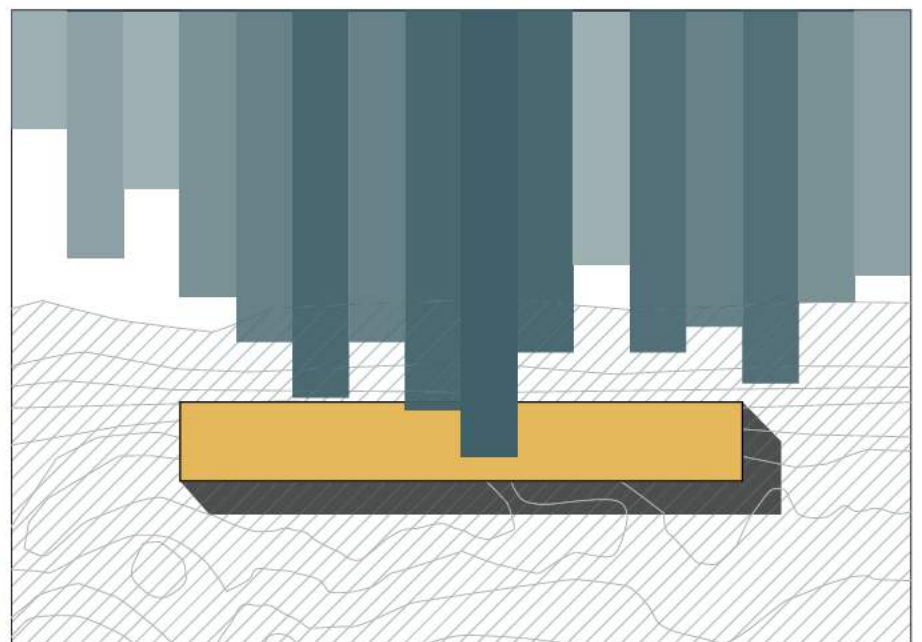
86. Rising Tides Diagram



87. Topography Shift Diagram



88. Site Erosion Diagram



Through modular based digital formal testing with complex angles and faces it became apparent that the most effective form for a changeable site would be a simple one.

The first iteration placed a long orthogonal mass onto the Eastern side of the sand dunes; aimed at providing a large scale canvas in which the site relations can be expressed.



89. **Mass Iteration One**

The second iteration retained the rigid form but allowed a visual link and transition space between the residential area to the water front.

Existing paths on site between the urban grain to the beach front run between this gap in the heavy masses.



90. **Mass Iteration Two**

The third development sought to twist the form to better react to the site light conditions and providing different surface angles to express the nature of corrosion on site.

The twisting nature of this iteration allowed for a more sympathetic relationship between mass and the undulating dunes.



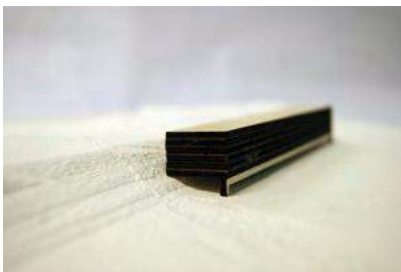
91. Mass Iteration Three

The final iteration of the set employed the idea of erosion and removed a section of the previous form to create a two tiered mass.

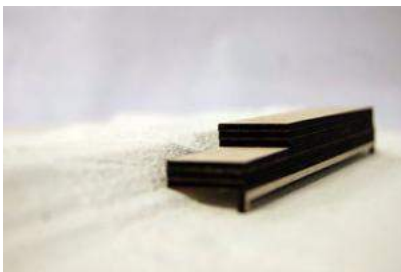
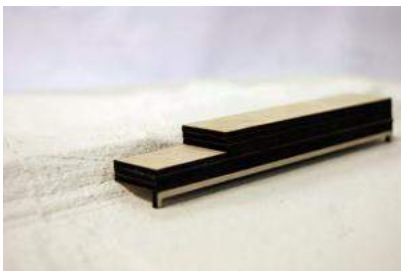
This model brings in a level of complexity to the form that struggles to create tension between the free moving site and architecture. The strong notion of rigidity is diminished in this iteration which weakens its impact on the site to the targeted east face.



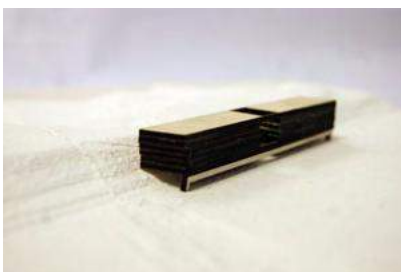
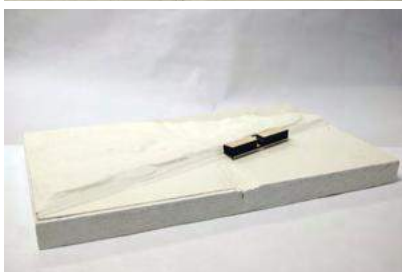
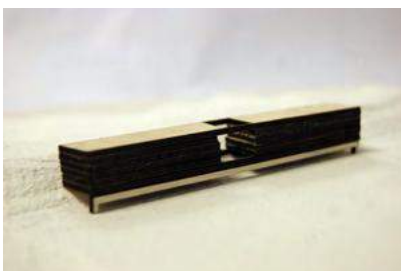
92. Mass Iteration Four



93. **Mass Iteration One**

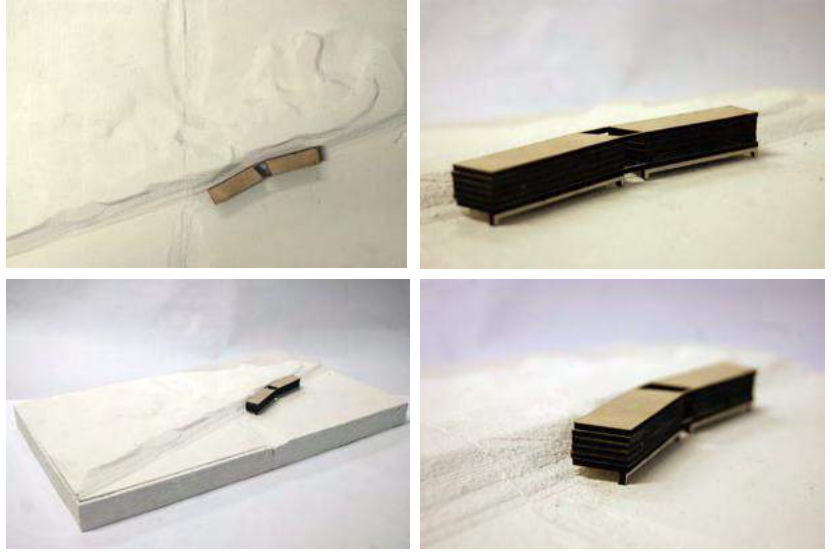


94. **Mass Iteration Two**

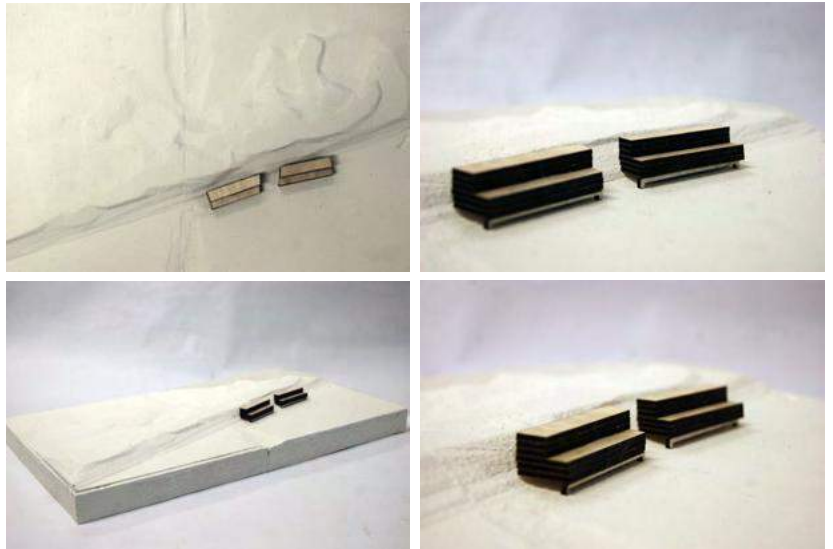


95. **Mass Iteration Three**

96. Mass Iteration Four

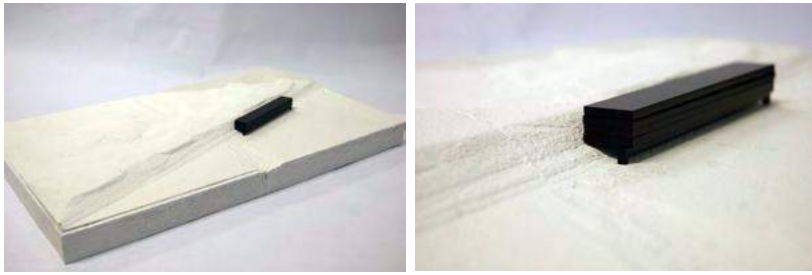
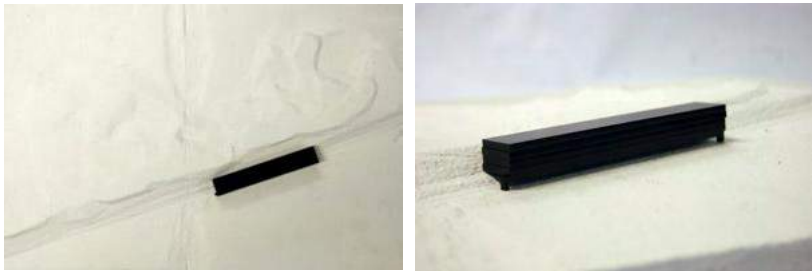


97. Mass Iteration Five

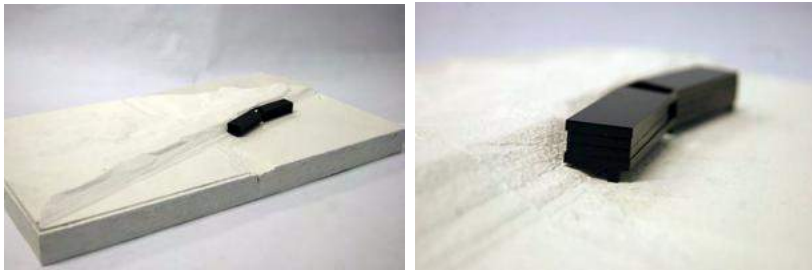
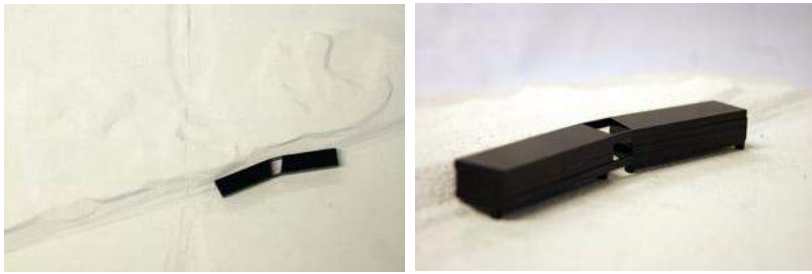


PHYSICAL ITERATIONS

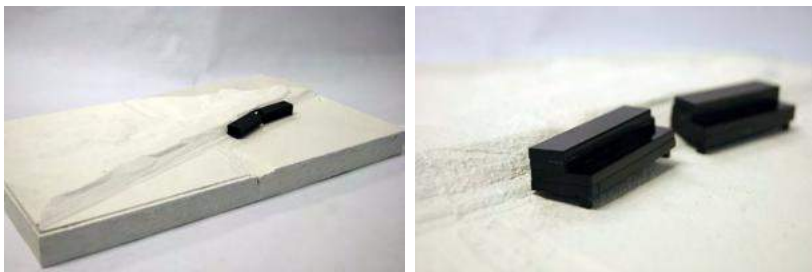
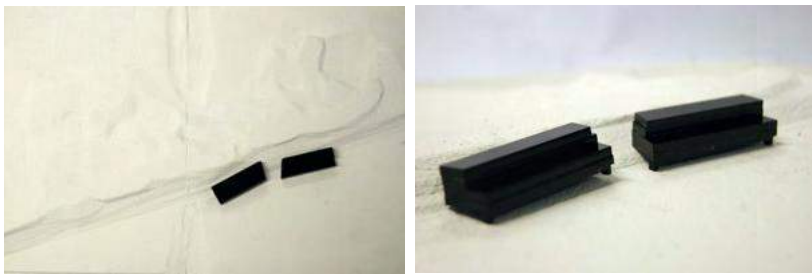
Through physical iterations a long rigid mass was developed to respond to ephemeral site qualities in; movement, erosion and surface change. Iterations One and Two provided a strong canvas for the site elements identified above to be demonstrated on but lacked the complexity to communicate with the other temporal aspects. Iterations Three and Four were similar forms, both proving a strong face while allowing for access between suburban and coastline through a central void. The angle in Iteration Four added a level of complexity and opportunity for different site reactions on surface and mass. While the fifth development added complexity, the step back in the Eastern facade limited the impact of architectural rigidity on the site and lessened the opportunity for tension between site and mass.



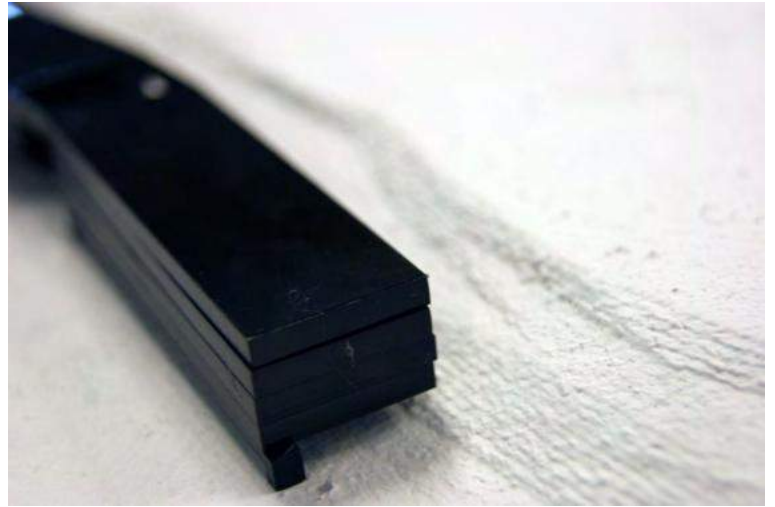
98. **Mass Iteration One**



99. **Mass Iteration Four**

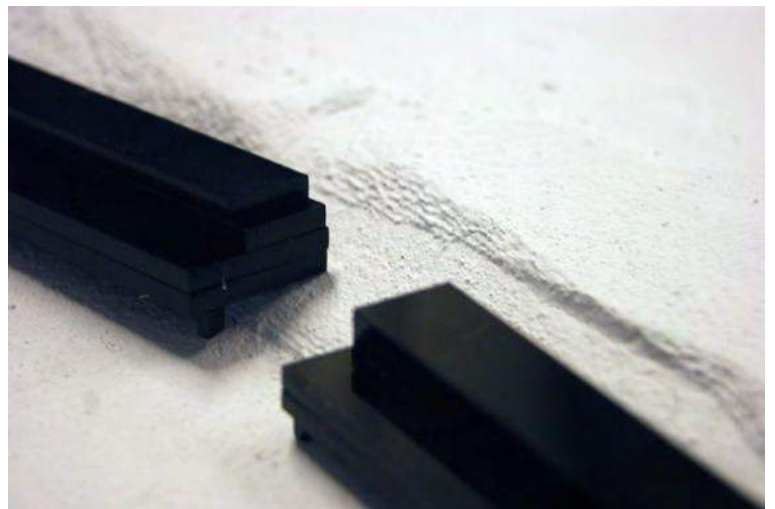


100. **Mass Iteration Five**

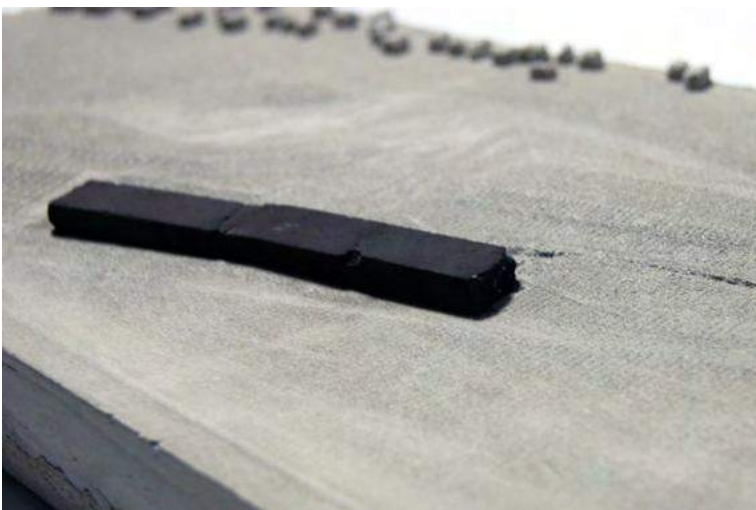
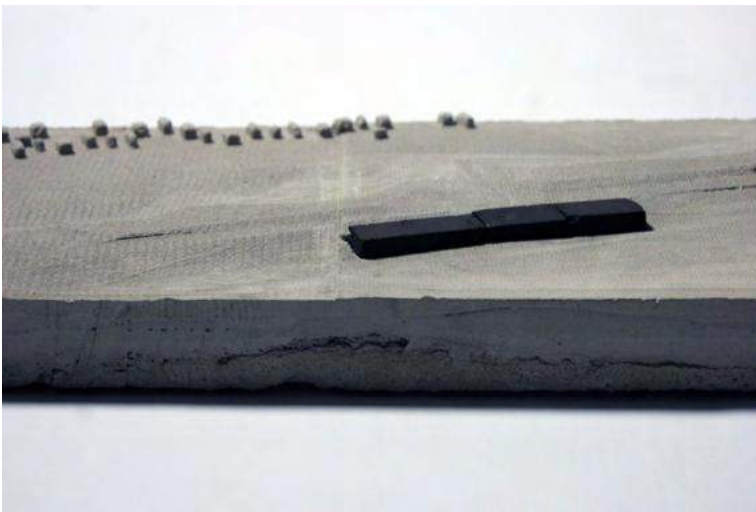
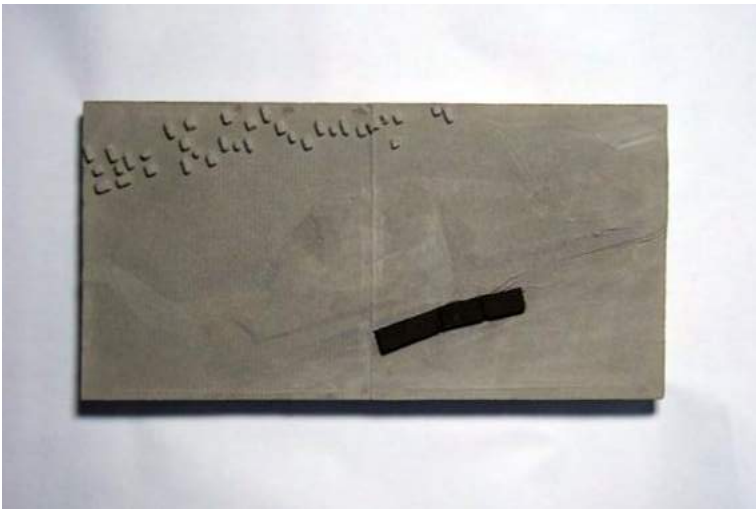


The three most successful iterations (One, Four, Five) were models in black acrylic to provide a contrast with the plaster site model and emphasise the built form.

Iteration Four has been chosen as the mass that will inform later design decisions. The combination of the changing angle, central void and strong, rigid edges allows for the site to effectively react with the architecture as well as creating a tension between organic and orthogonal.



101. Mass Iteration Close-Ups



The developed mass was then cast in oxidised concrete and placed on a 1:1000 cast concrete site model. This refined site model helped to explore how the mass would sit within its physical context and began the testing of materials which continues through the following design tests.

102. **Concrete Site Model**



103. **Concrete Site Model**



104. **Mass on Site**



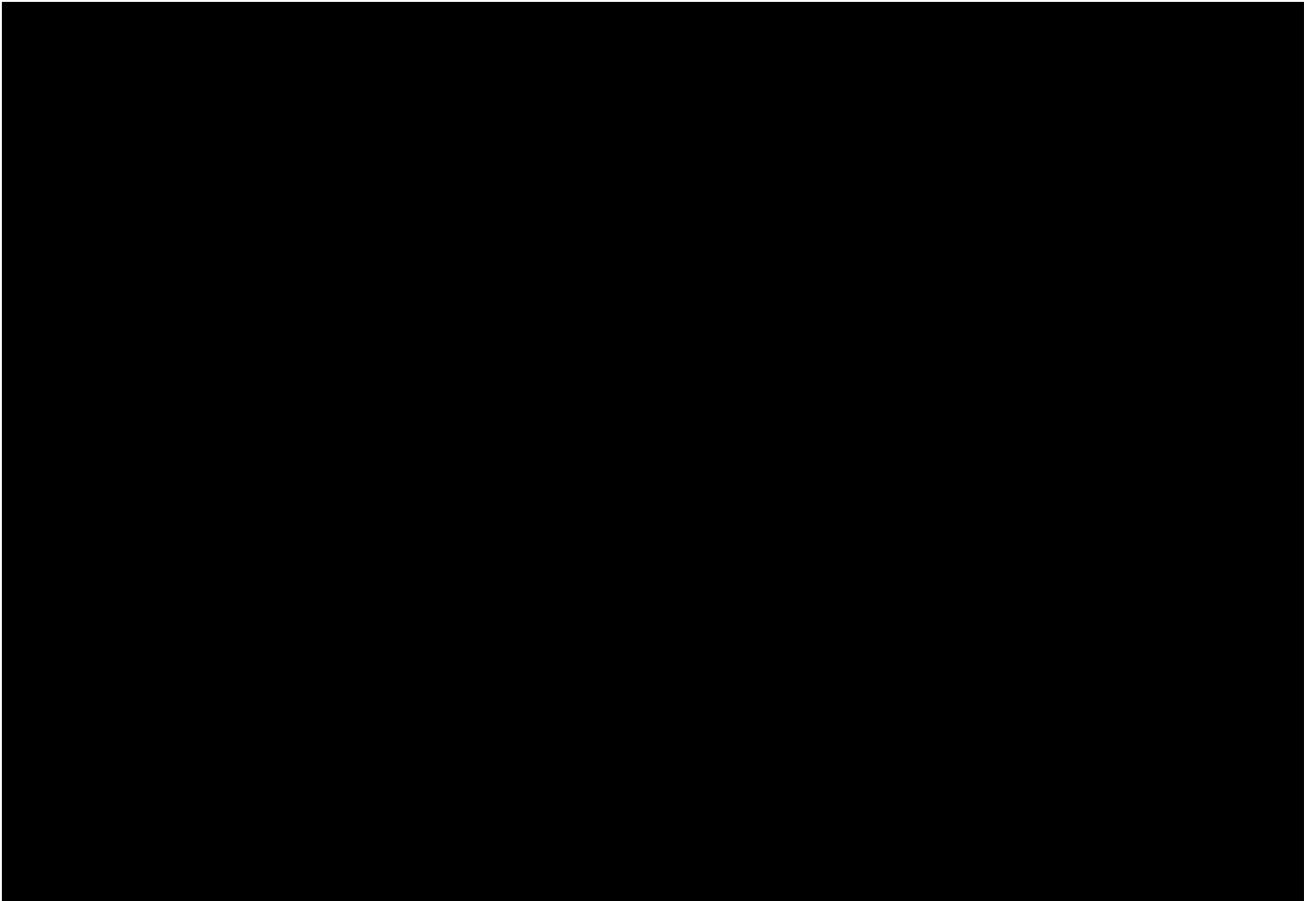
MASS PLACEMENT

With the ephemeral environmental aspects of site at the fore-front, the developed mass was placed between Heron Street and the ocean-front. This positioning allowed for a provocative relationship between the experiment and site conditions along with an accessible face to the road and site paths.

SUPPORTING CASE STUDIES

Following the sculpting of the external mass, the internal planning of the public experiment remained. Balancing thoughtful planning and the inclusion of temporal conditions within the interior of the mass became a challenge through this stage. The visual precedents Casa Gilardi and Therme Vals were used as initial guidelines but due to the scale and nature of the experiment the work of Aires Mateus was examined.

Sines Centre, Grândola Meeting Centre and Houses for Elderly People were three projects analysed in regard to the careful carving of massive blocks. Mateus often employs a technique of Stereotomic Design; slicing mass, which works from a solid form and creates voids opposed to the building up of inhabited volumes. This practice can be seen through the following visual precedents.



105. Mateus, **Sines Centre**

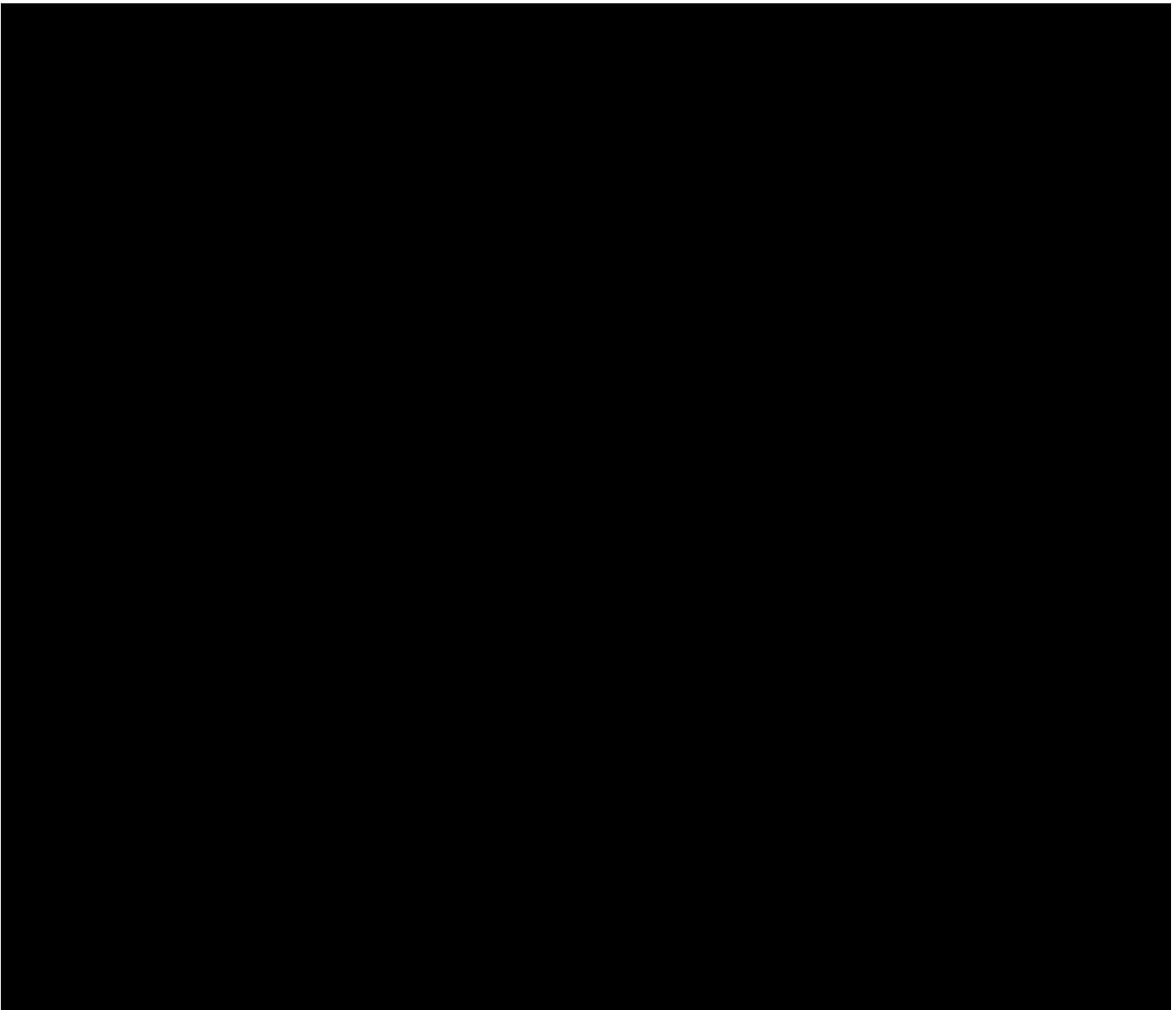
Typical of an Aires Mateus project, the 'Sines Centre' 2011, portrays a simple external form with major architectural notions, working in tension with small scale details; in this case the complex facade materiality and penetration system. The monumental building shell masks a complex internal plan filled with diffused internal lighting and soft materials.



106. Mateus, **Grândola Meeting Centre**

Sited in Portugal, the Grândola Meeting Centre follows similar formal language to the Sines Centre, using large cuts and masses to define the architecture. The pushing and pulling of mass on the building exterior creates penetrations and entrance ways; a formal technique sought to be introduced into the external edges of the public scale experiment.

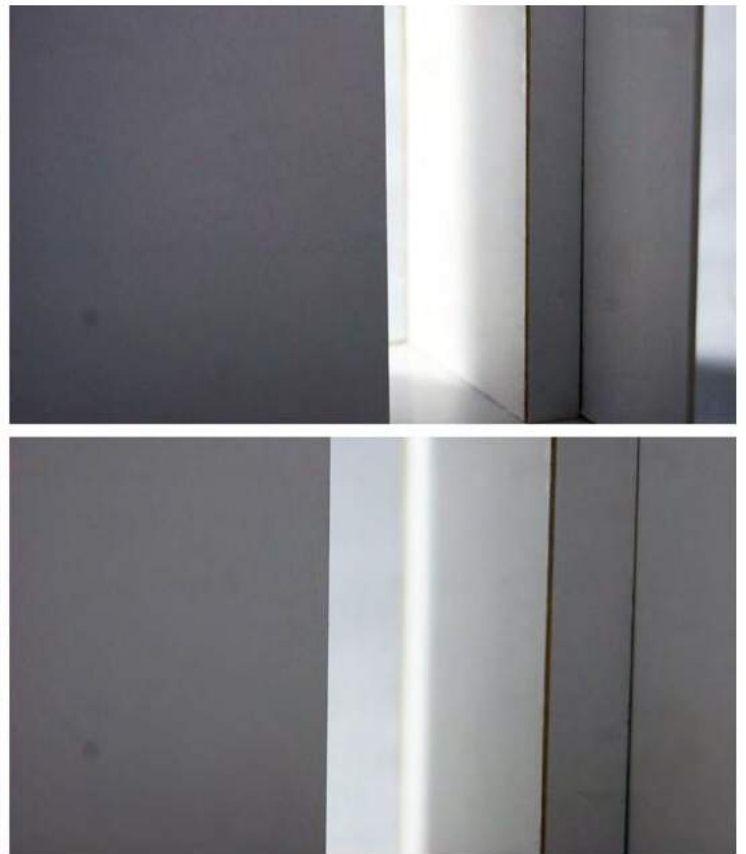
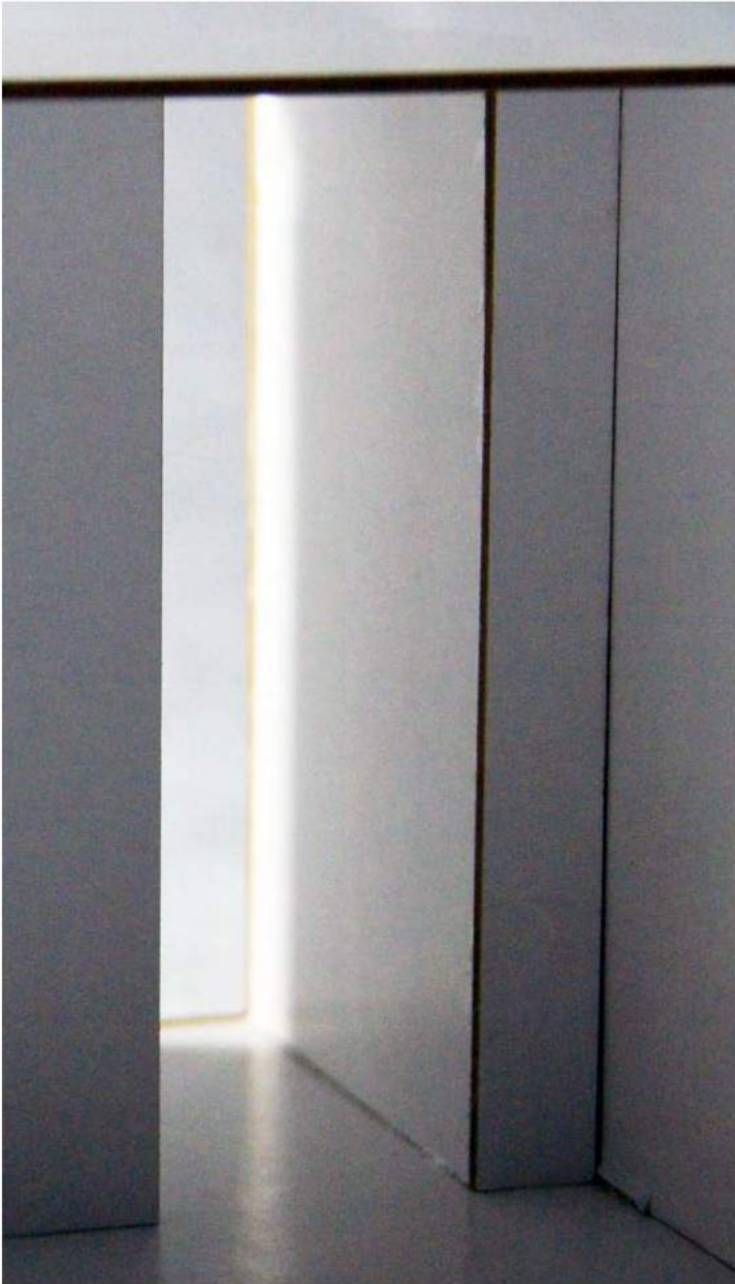
The second Mateus project is the 'Houses for Eldery People in Alcácer do Sal' 2010. Line the Sines Centre, a rigid external form provides an identity for the project with a complex penetration system breaking up the strong orthogonal presence. In this case the deep penetrations extrude so far into the building that whole rooms are created as a result, along with the implementation of indirect natural lighting in a harsh sun environment. The irregularity of the boxed penetrations provides a sense of site response and occupancy in amongst an otherwise strictly ordered scheme.



107. Mateus, **Alcácer do Sal**'

CARD MODEL ITERATIONS

Theories around stereotomic design through the Aires Mateus projects were then translated into some quick-fire card models. These explored light movement through form but lacked the sense of density seen in the precedent projects so a different approach was taken.



108. Void Model Test



109. Penetration Model Test

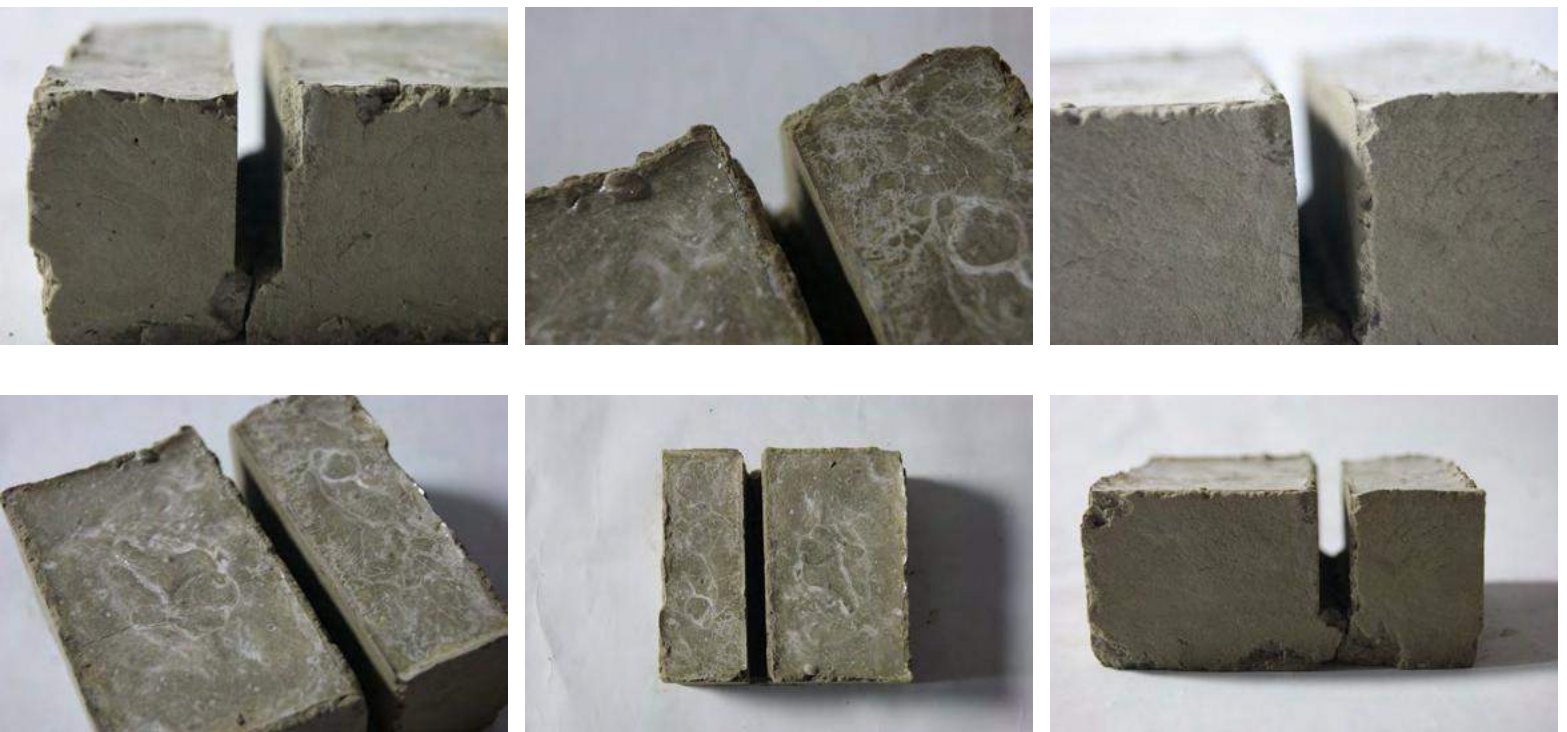
MATERIAL TESTS

Taking into consideration the stereotomic design language in the Aires Mateus precedents, numerous sets of concrete modules were created. Measured and orthogonal formwork moulds were constructed with concrete solutions poured in, dried and release. Concrete was chosen as the tested material due to the nature of this process; beginning with a controlled form and process but achieving an outcome with cracks and imperfections. This imprint of the making process on the tested product drove many of the later material tests.

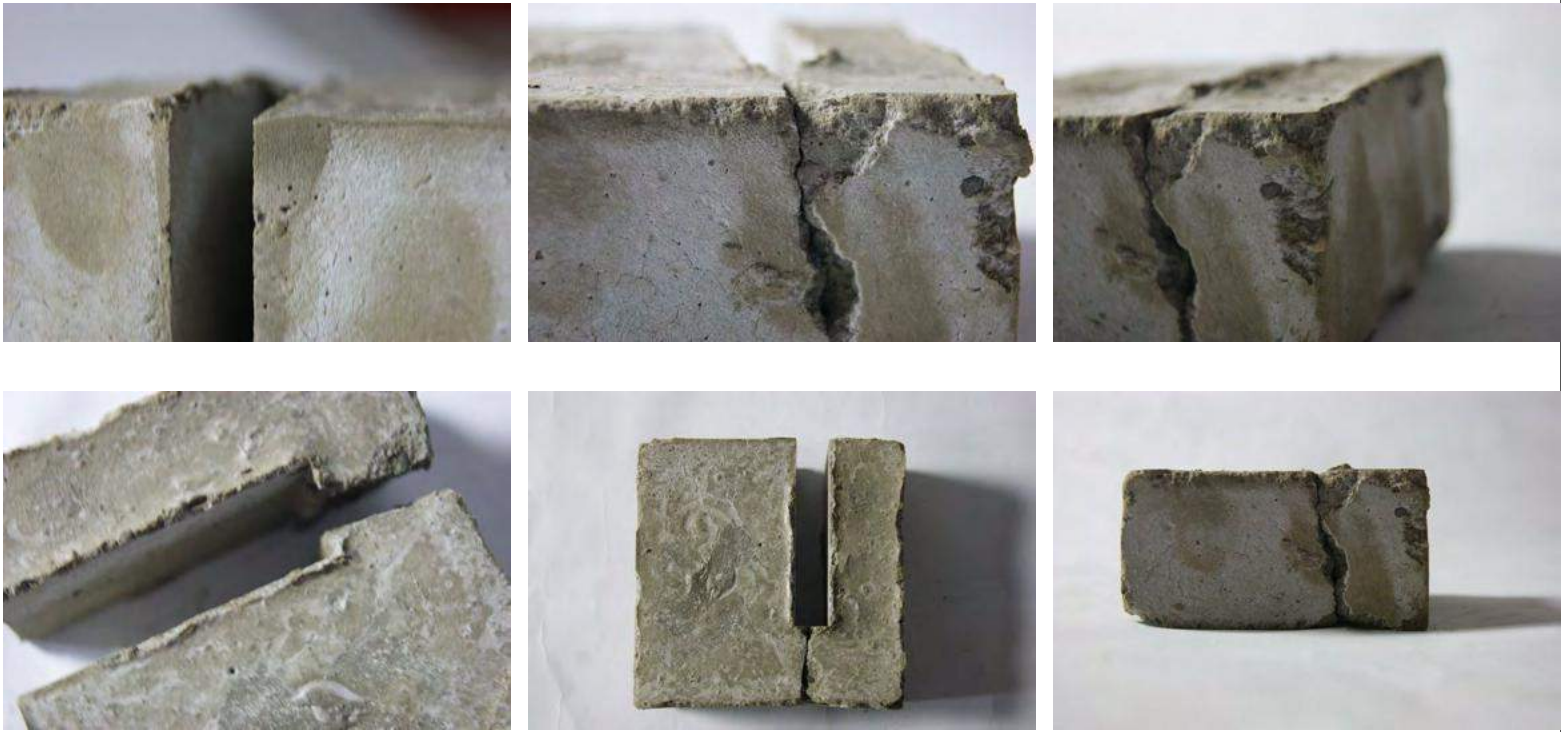


110. Making the Moduls

The first experiment built on the 1:100 deep penetration lighting models with an internal void providing a light well. The external edges of the initial model shows visible cracks and weathering, a condition linked back to the material erosion of the rugged site. While the model cracked due to the weak solution, the way the designed spaces reacted to a single light source provided a valuable outcome. The idea of void in a dense material is a concept that is intended to be studied further.

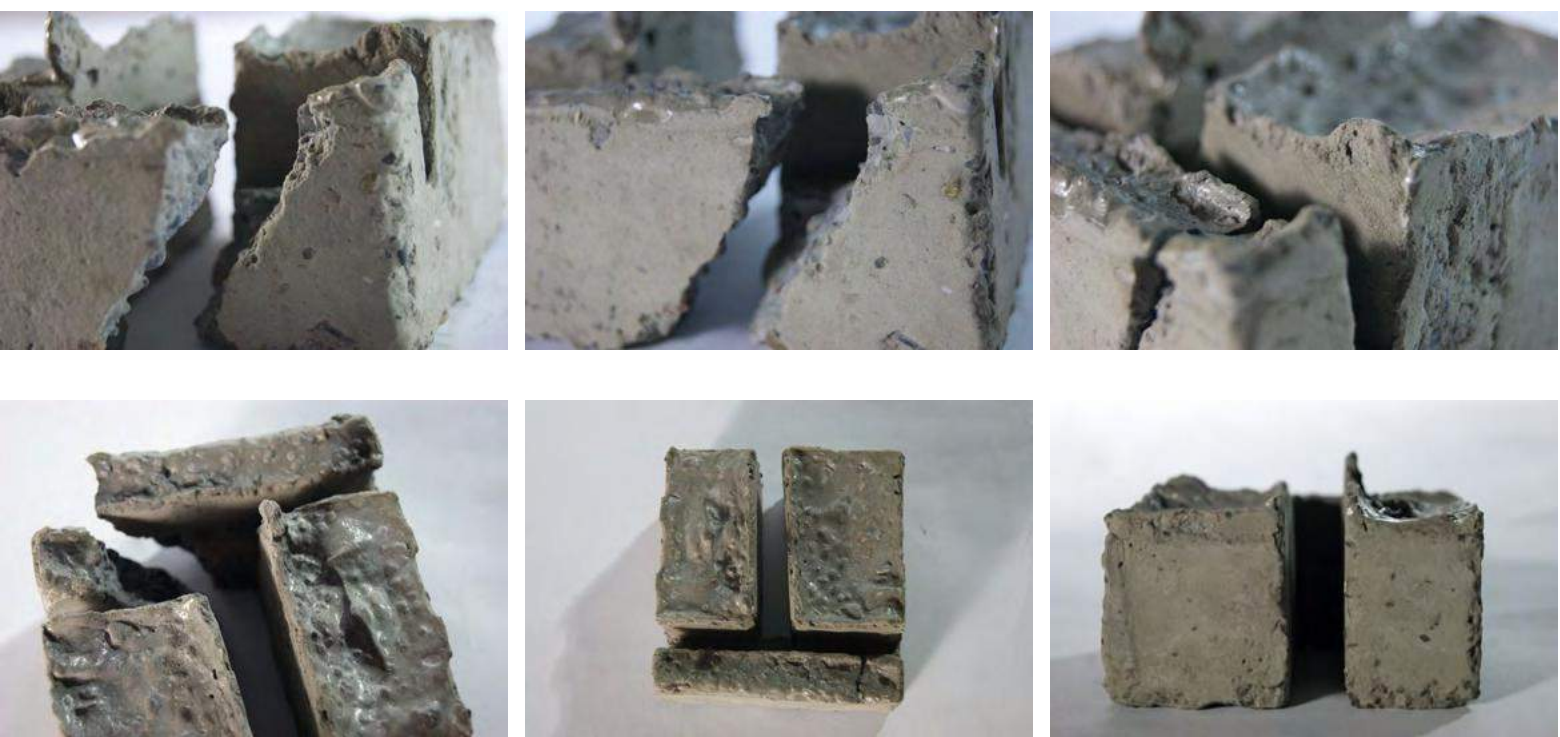


111. Concrete Set 1B



112. Concrete Set 1A

The second concept looked at a light corridor through an internal space. Again a weak solution resulted in a cracked model. The treatment of light within a narrow space surrounded by a brutal, dense material such as concrete is an outcome that is to be abstracted from these initial experiments and planned to be implemented and tested in further models. In a follow up set to these initial two material concepts the consideration of adjacent internal space and to a degree, occupancy are to be of key importance.



113. Concrete Set 1C

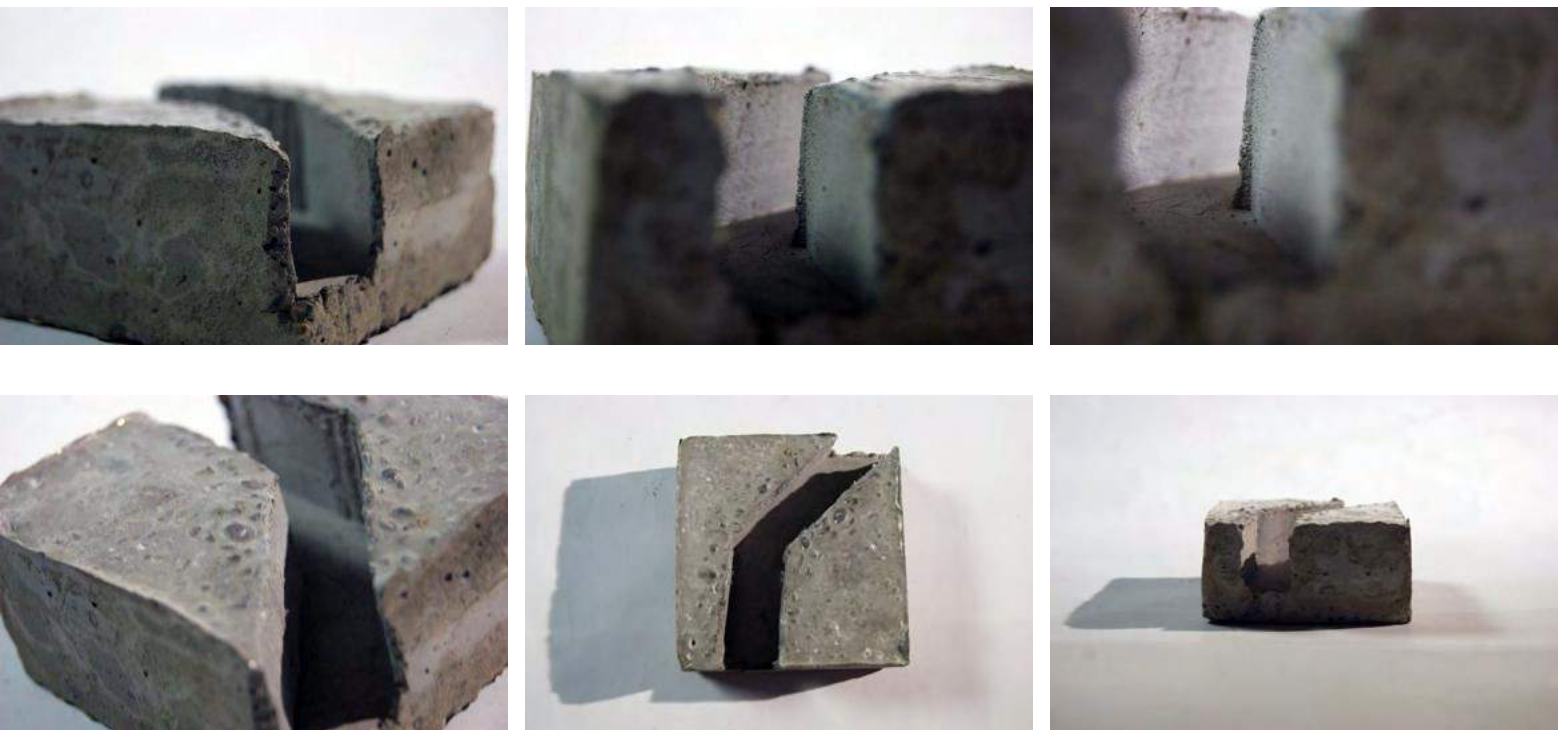
In the next concrete module set negative foam moulds were used, allowing for cleaner finishes and a wider scope of spaces created. Designing through stereotomy allowed for the simplification of idea in each model but provided challenges in the way spaces may be occupied. This model played with the idea of a narrow corridor leading out to a larger courtyard and provided insight into the relation between the two spaces as well as the lighting conditions seen on the different surfaces.

The third experiment tested penetrations from two angles, introducing a more complex layering of light as well as form. Due to the amount of space taken up by the voids this model also cracked when the formwork was removed. This experiment provided the most unexpected outcomes as a result of its 'making' process. While formally unstable, the roughness of exterior and natural angled penetration speak of its rough origins and links can be drawn between this example and the weathered materials seen on site.

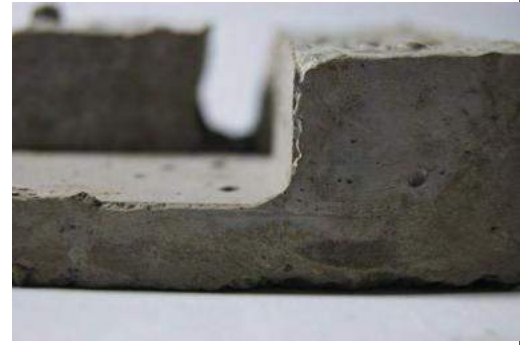


114. Concrete Set 2A

The following iteration utilised a deeper extrusion into the mass which showcased a more effective range of light and shadow. Along with this, the courtyard space was minimised, achieving a more proportional relationship with the corridor space. While the notion of erosion and reaction to site are still focal points of this series, the physical making process has provided a much cleaner product, slightly disconnected from the site abstractions.



115. Concrete Set 2C



116. Concrete Set 2B

In the final experiment of this set, a deep angled cut runs through the module. This design move was made as a reaction to the limitations of the perpendicular experiments in regard to lighting conditions and contextual engagement. By implementing the angled penetration, formal and planning iterations are intended to portray the concept of erosion throughout the solid mass through density and scale of the penetrations. These modular experiments provided key insights into the stereotomic making process, the treatment of natural light through the material and ultimately acted as building blocks in the way the overall form would be planned in the three dimensional realm.



117. Concrete Form

The relationship between controlled form and module outcome drove this stage of the testing process. The initial set was moulded with a more rigid form-work, resulting in a real imprint of the making process through cracks and indents.



118. **Concrete Form**

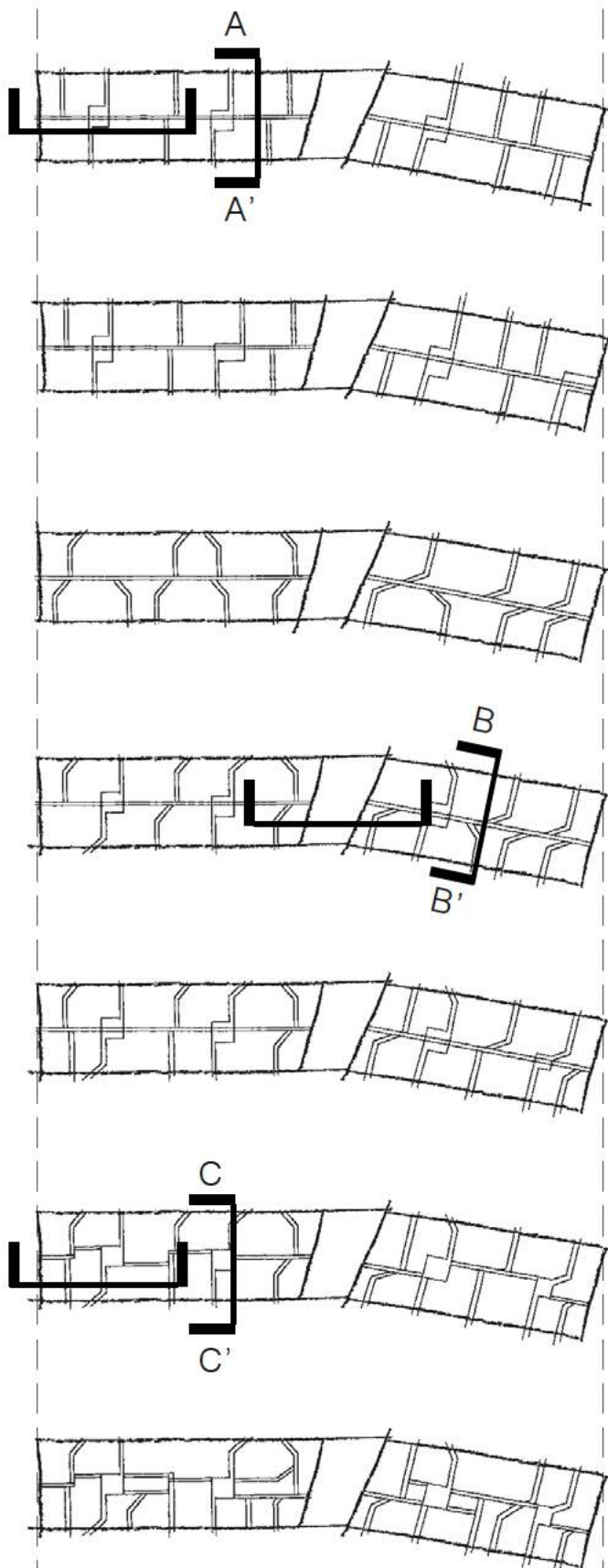
The second set used a more flexible formwork,. The outcome showing clean connections opposed to the jagged lines of the initial set. Small imperfections remained on the surfaces, allowing the imprint of making to still be present in a more controlled design outcome; suited to a larger scale experiment.

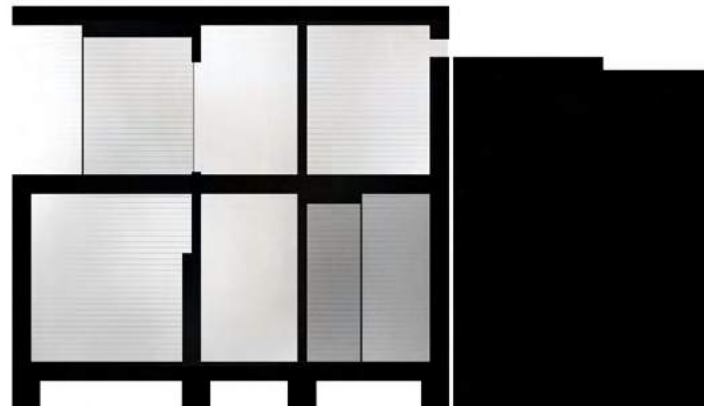
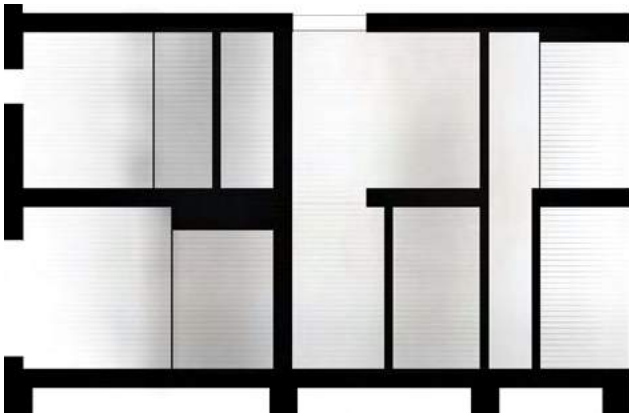


STEREOTOMIC PLANNING

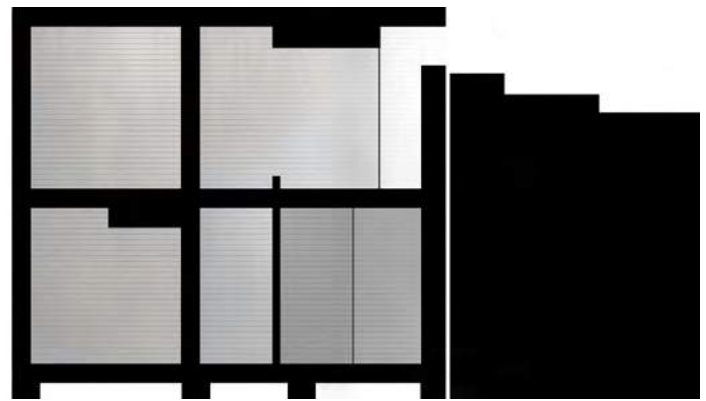
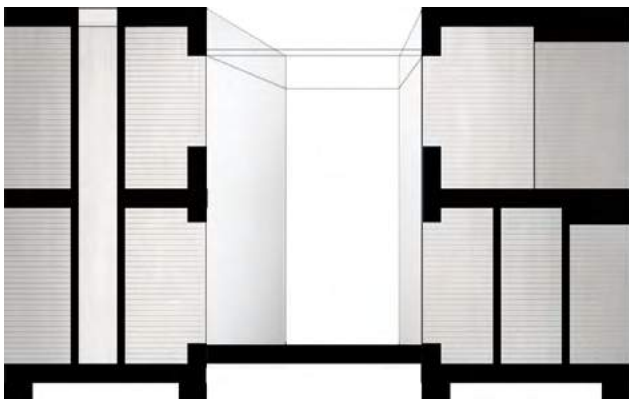
The formal outcomes from the physical modular series were then translated into a sketch series of floor plans. These began as simple schemes, increasing in complexity as an iterative process, with the final outcomes being too complex to fit meaningful programme into.

These planning tests informed the concrete planning models but on further reflection were scrapped in later stages due to their formal complexity, limiting the methods in which ephemeral condition could be introduced into the developed forms.

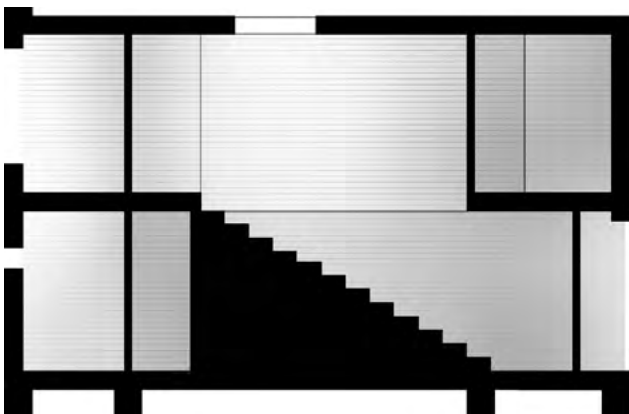




120. Sections AA'



121. Sections BB'



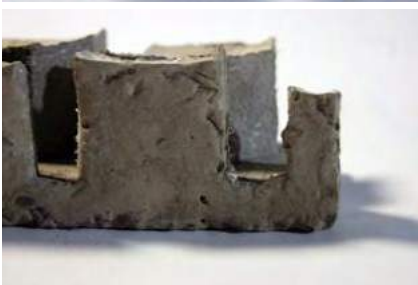
122. Sections CC'



123. Series 3A



124. Series 3B



125. Series 3C

Following the sketched iterations of the potential floor plan, a series of abstract stereotomic experiments were carried out to explore the spatial aspects of the two dimensional drawings along with the combination of several modular experiments. The block forms representing occupied spaces and the void representing transition spaces or deep exterior penetrations.

The 1:200 models provided an insight into a 3d stereotomic planning method in regard to spatial limitations as a result of irregular internal layouts. Due to the scale, a sense of occupancy and mass/void resolution was lacking, resulting in the need for a 1:100 physical set.



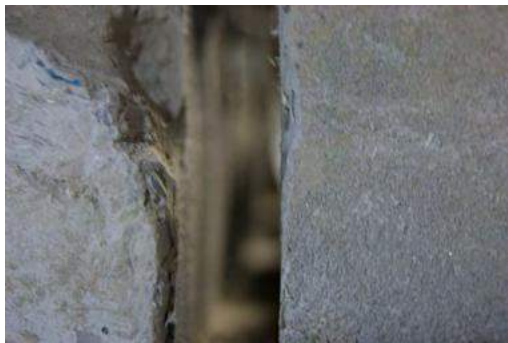
126. Stereotomic Plan Model One

Following the 1:200 experiments, a 1:100 set was produced. This set gave further insight into the interior lighting qualities, possible occupation and the erosive language of the space.

With the scale amplified so was the relationship and tension between the mass and void, creating and indication of possible interior spaces through the corridors and penetrations. Along with this, the sense of weathering was amplified. Large cracks and cavities are seen throughout the model, defining the language of the design through imperfections. In regard to its ephemeral surrounding, this iteration provides a contrasting mass to its environment, amplifying the site weathering and movement. In the interior, the light movement in the voids bounces off the cracks and cavities providing an ever-changing internal environment within a fixed formal composition.

The second development of the 1:100 series explore angled penetrations within the mass. This approach differed greatly from the 1:200 development with the enlarged relationship between mass and void resulting in a heavily fragmented model.

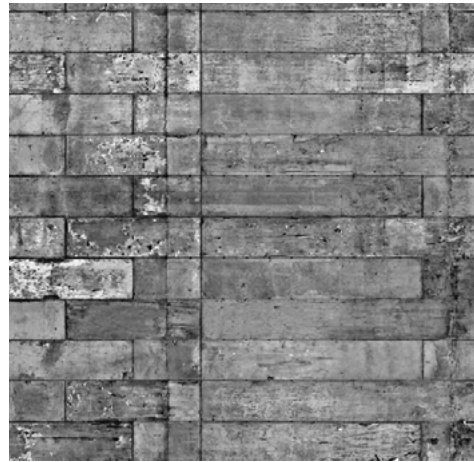
Upon reflection on the tension between building and site, this model was air-blasted in the workshop as an attempt to replicate the strong Easterly winds experienced on site; propelling sand and vegetation into the dunes. As a result of this, significantly more weathering was seen on the model with the perimeter of its base slab being cracked away, offering a site responsive aesthetic as well as unique voids and form.



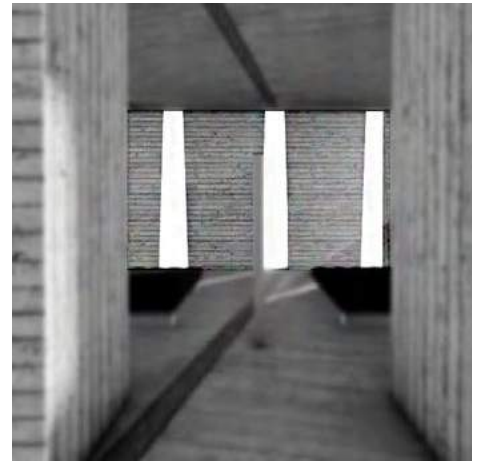
127. Stereotomic Plan Model Two



Imprint of Site



Imprint of Making



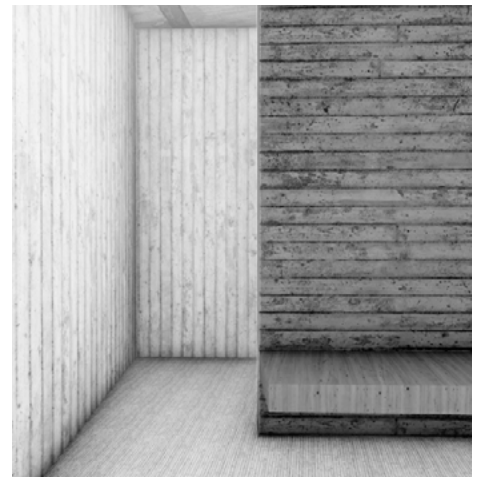
Body and Views



Form and Site



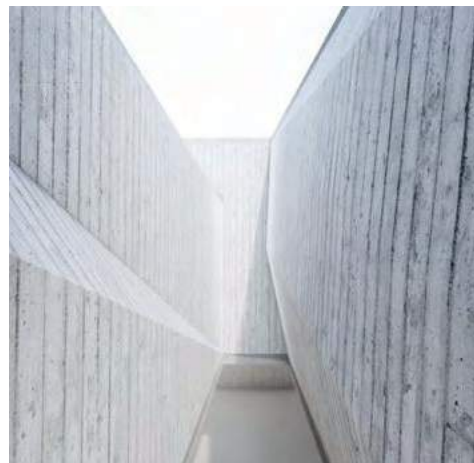
Acoustics of Form



Intimacy of Space



Exterior Threshold



Form and Light



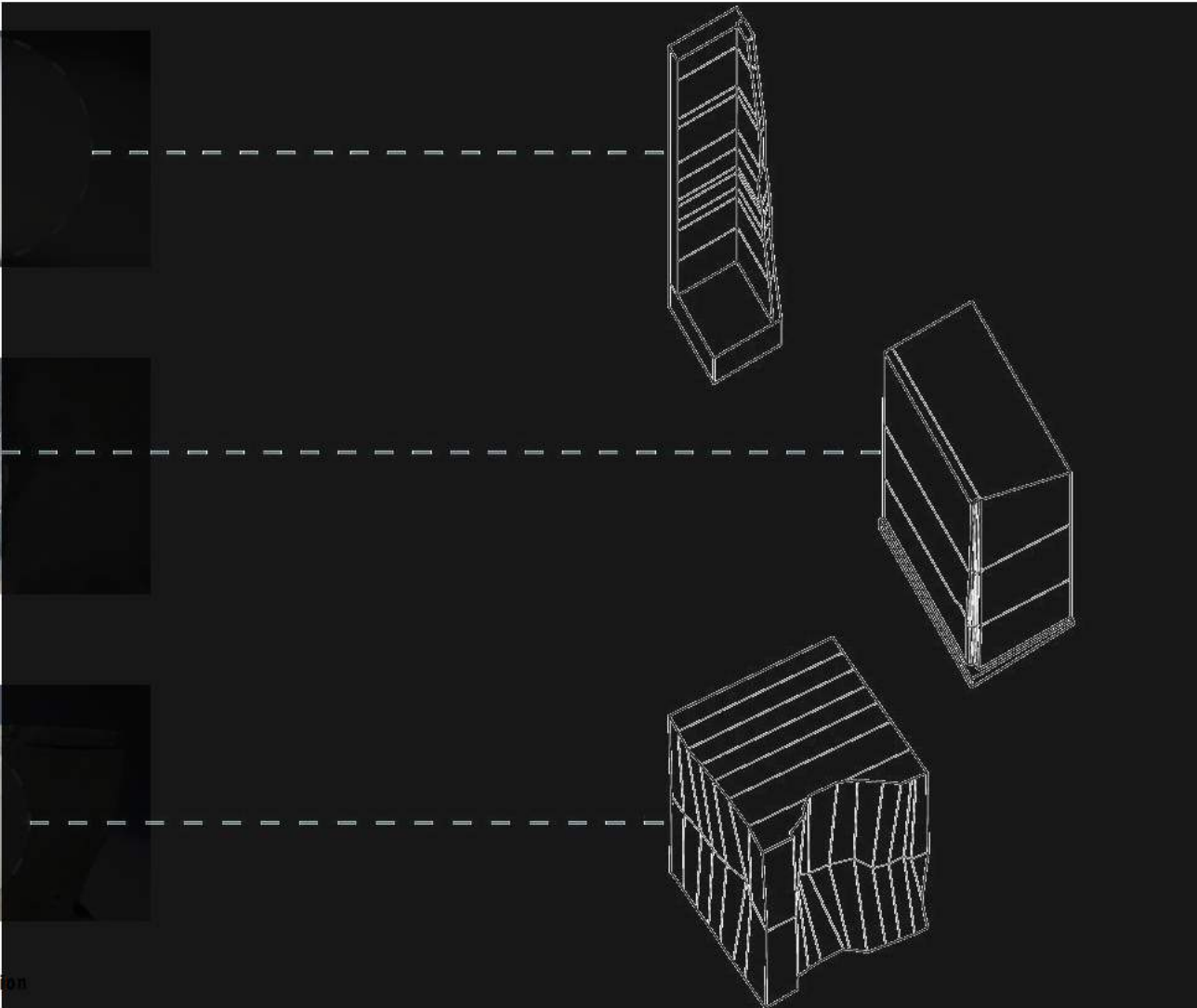
Materials and Light

DEFINING EPHEMERALITY

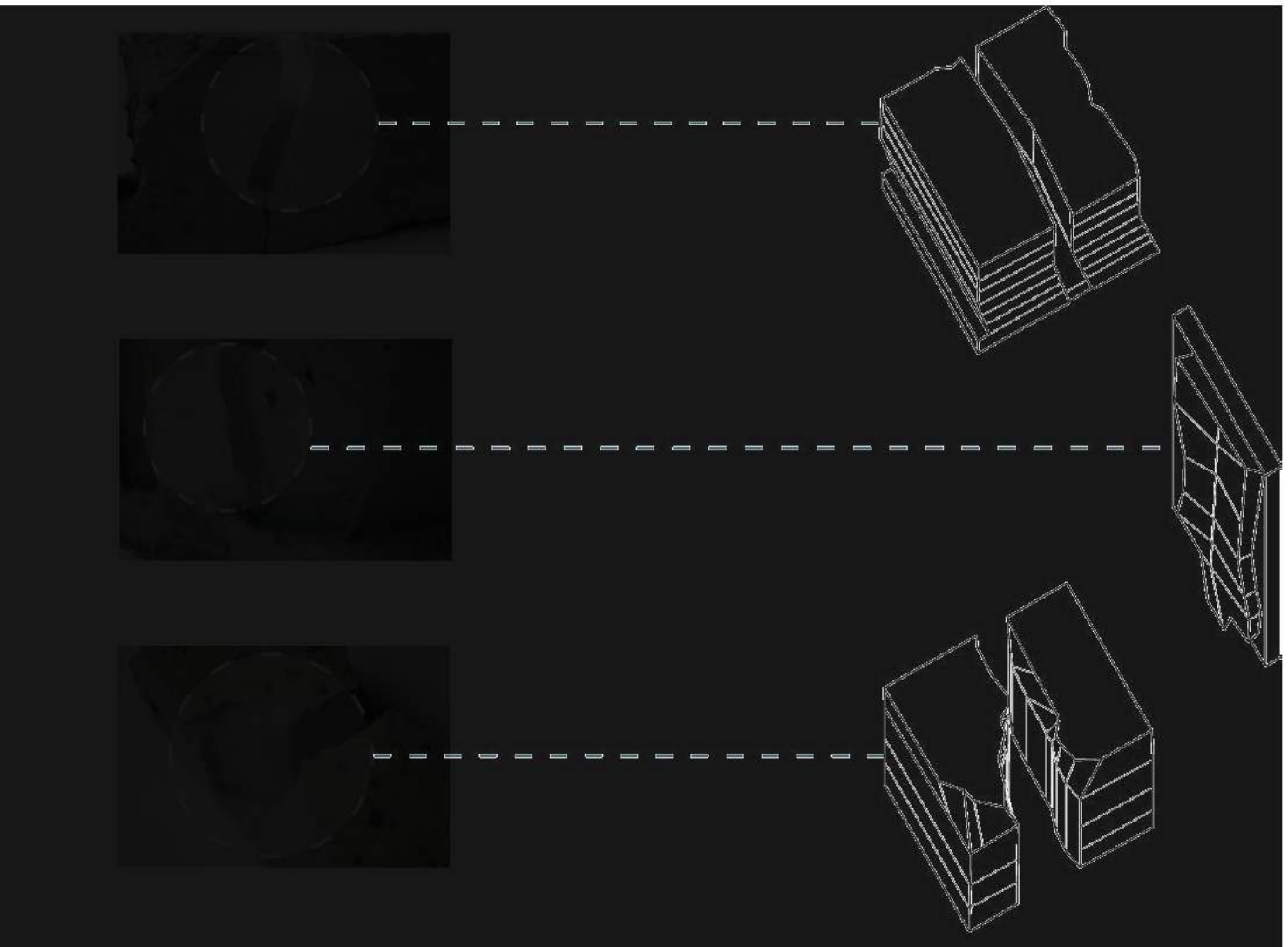
At this stage of the investigation, the definition of ephemerality, built through the design research began to lack a clear and tangible means of measuring. As a solution, the Ephemeral Catalogue was created. In the Peter Zumthor text *Atmospheres*, 'atmosphere', is broken down into nine key aspects. Body as Space, Materiality Compatibility, Sound, Temperature, Surroundings, Composition, the Tension between Internal and External, Intimacy, and the Light of Things (Zumthor 2006, 14). This schedule was then abstracted, altered and applied to the tests conducted in this research with theories around light, texture and contextual exchange being at the forefront.

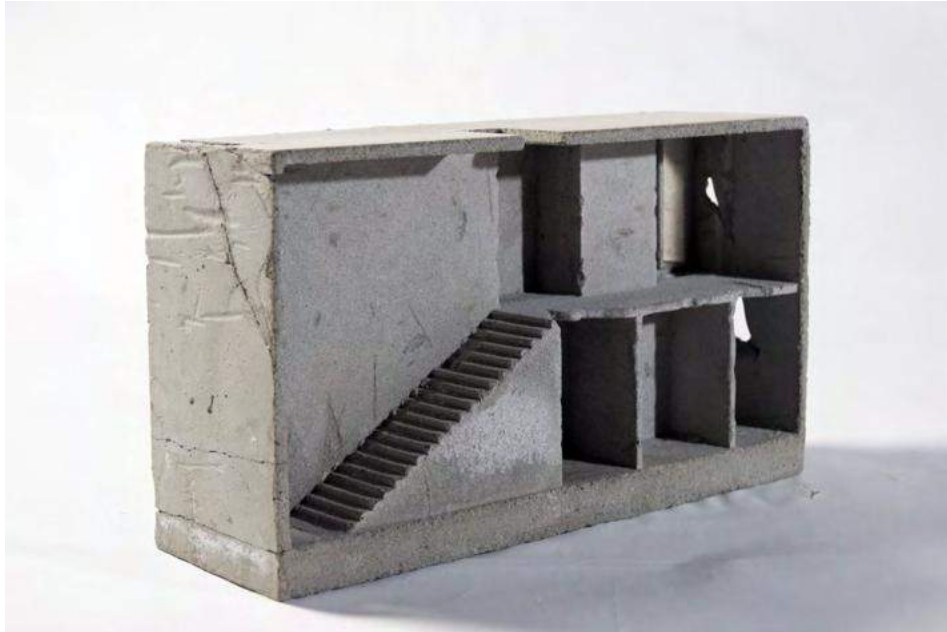
This new schedule, seen in the adjacent images responded specifically to the site and nature of the design while drawing on the original categories seen in the text.

In regard to the imprint of making, and the translation of the stereotomic tests to an architectural realm, the concrete modules were digitally modelled, with their defining features being isolated and shown through line drawings. These elements, shown on the following page created a digital tool box that was implemented throughout modelling the public design as well as further physical experiments.



129. Digital Abstraction





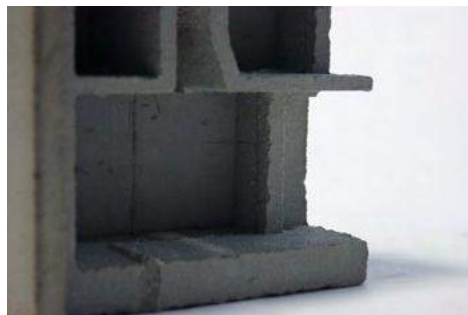
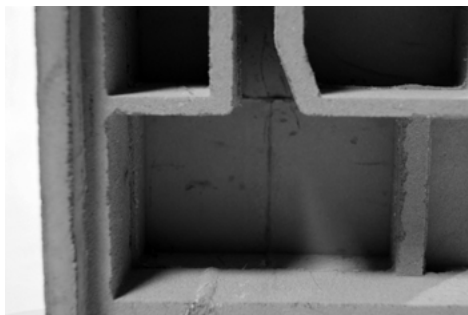
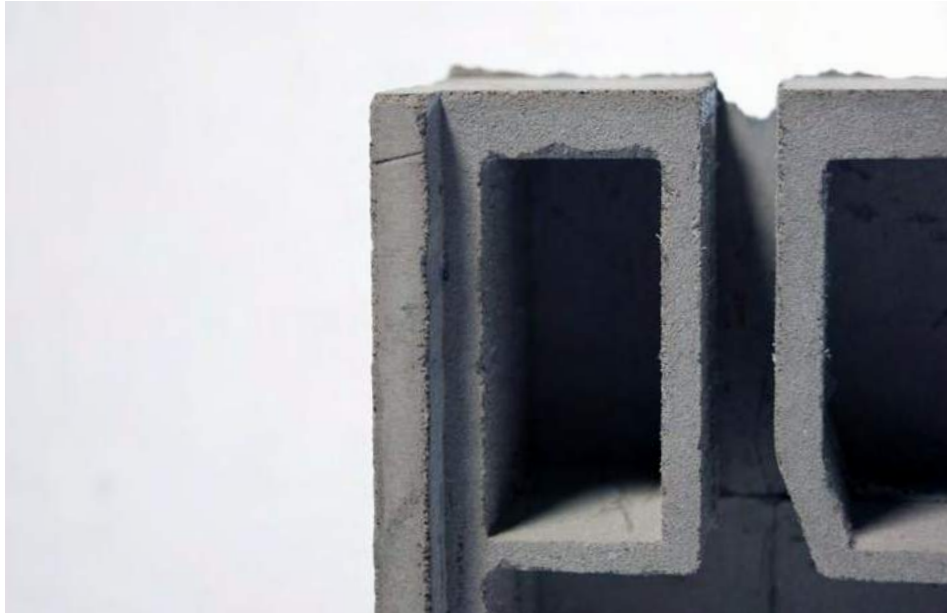
130. Sectional Model One

Concluding the stereotomic plan iterations, a series of 1:50 conceptual section models were built. This model tested the internal spatial qualities with changing mass depths and penetrations being key features. Like the plan models, the 'making' process of this experiment offered unexpected textures, cracks and penetrations creating temporal internal lighting qualities. Models Two and Three worked with the notion of poche design, inhabiting seemingly solid masses. These spaces directed the movement of external light and built on the design language found in the digital abstractions, based on the ephemeral catalogue.

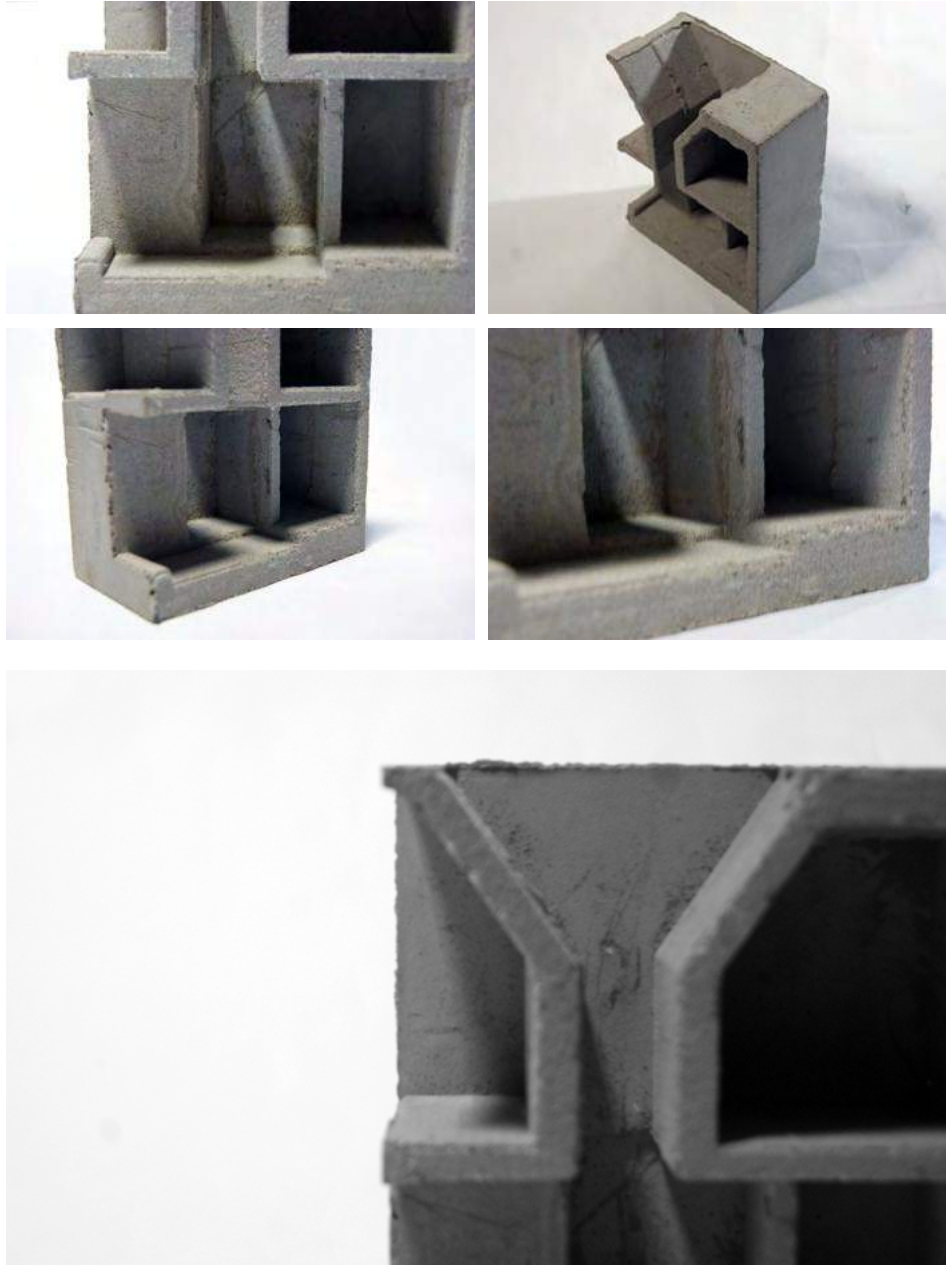
Due to the fragility of the experiment no air or sand blasting was used, with the weathering of the concrete being a result of the de-moulding process.



131. **Sectional Model One**



132. Sectional Model Two



133. **Sectional Model Three**

MATERIAL FINISHES

Following the iterative concrete model sets, large scale concrete finishes were researched; aiming to provide experience within the experiment at both a large, medium and body scale. The three textural finishes researched were board-form, textured concrete and ply-face.

The board-marked timber facing is laid between the ply formwork and the pour, imprinting the texture and making process into the concrete. This pouring technique can add a depth and softness to a solid architectural element (Bennet 19).

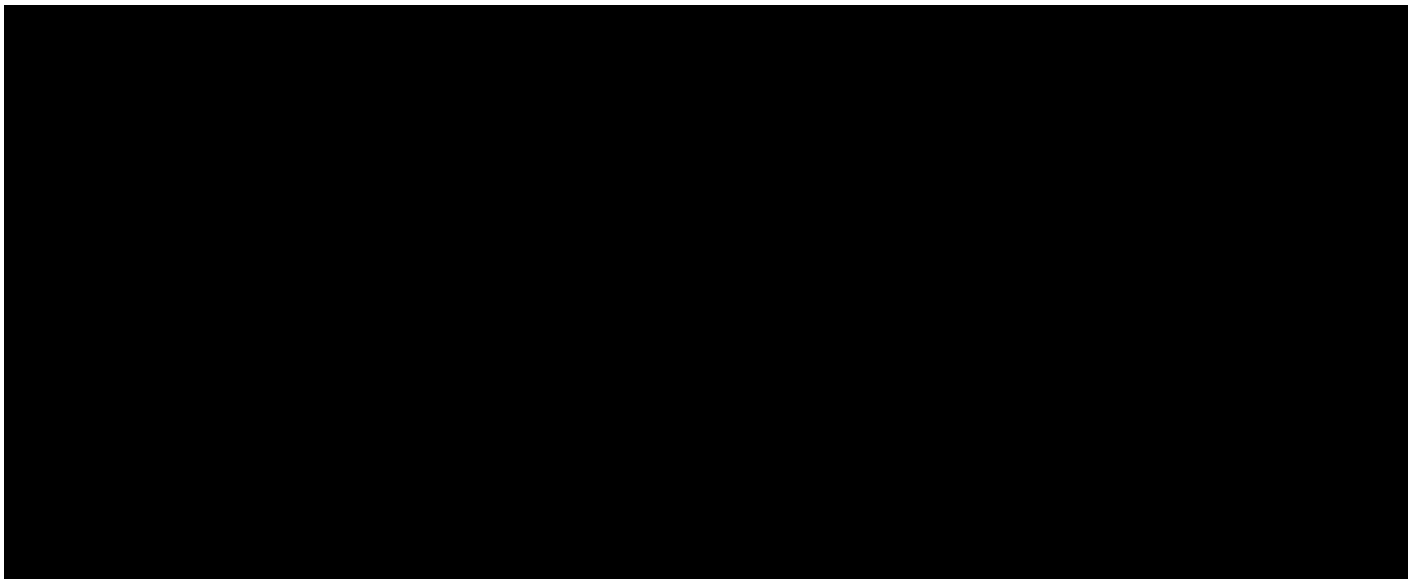
Textured concrete finishes can be constructed through the layering of fabric or sand; again exhibiting the process of making on the finished product. In regard to the public experiment, this finishing technique has the opportunity to imprint environmental conditions of sand, wind and vegetation on the experiments elements.

The final finish considered was ply-facing. This technique can result in smooth finish walls sympathetic to other materials and ephemeral lighting conditions (Bennet 17). All three finishing methods are to be implemented within the rehabilitation experiment, aimed at adding depth and a range of textural experiences within the design.

134. Williams, **Mostyn Gallery**

135. Unknown, **Board Finish**

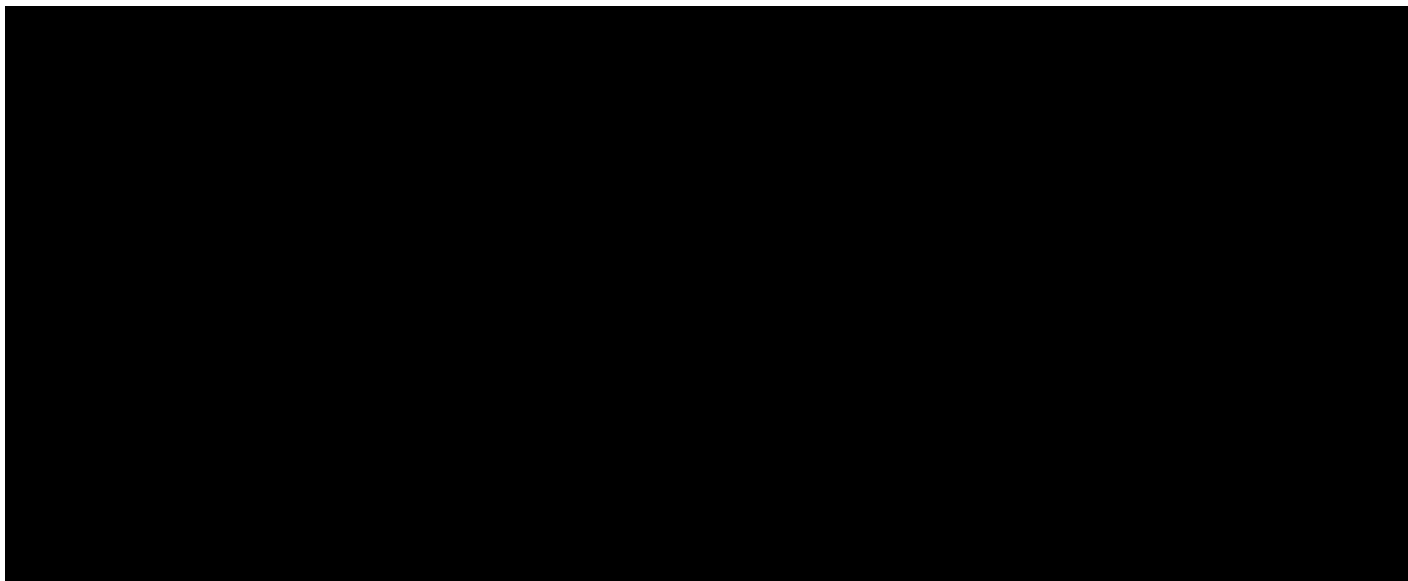
136. Unknown, **Board Concrete**



137. Unkown, **Soft Texture**

138. Unknown, **Module Texture**

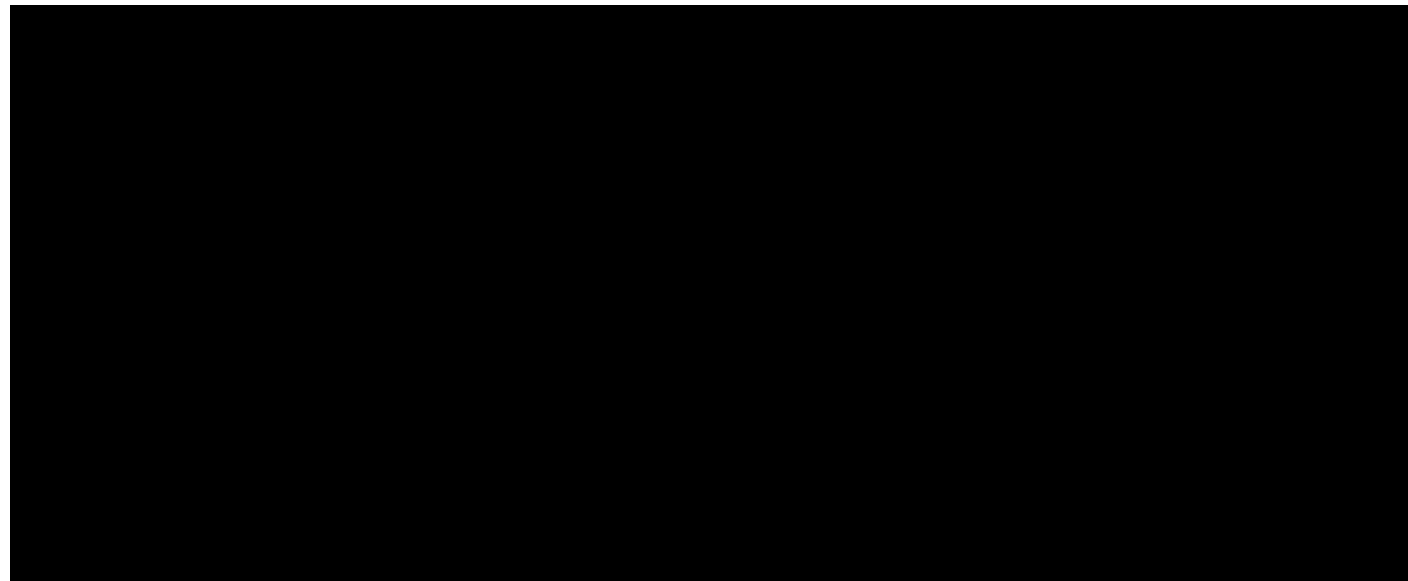
139. Unknown, **Rough Texture**

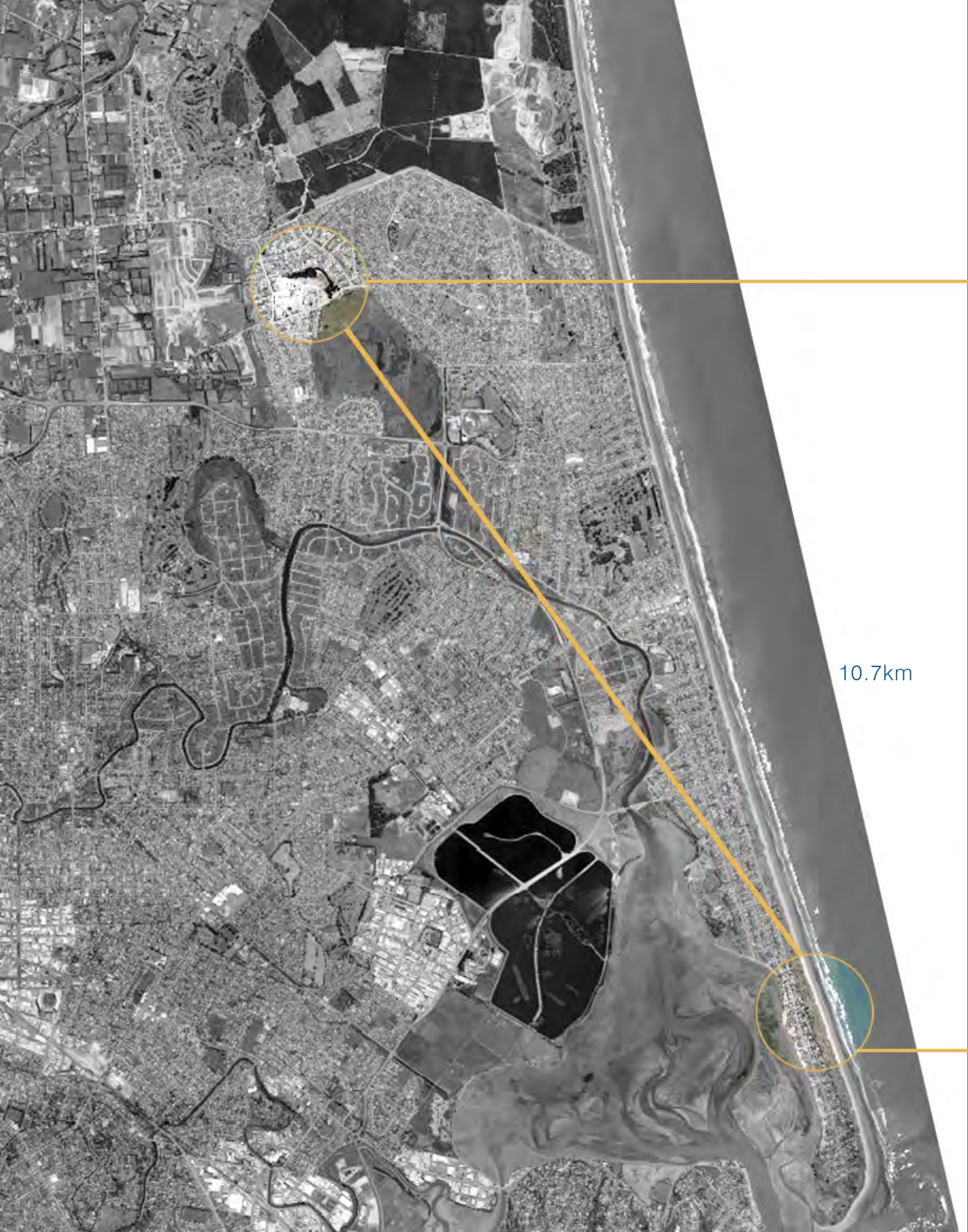


140. K2S Architects, **Kamppi Chapel**

141. Unkown, **Rough Ply-Form**

142. Unkown, **Light Washed Ply-Form**





10.7km

Burwood Hospital - Existing Rehabilitation

PROGRAM

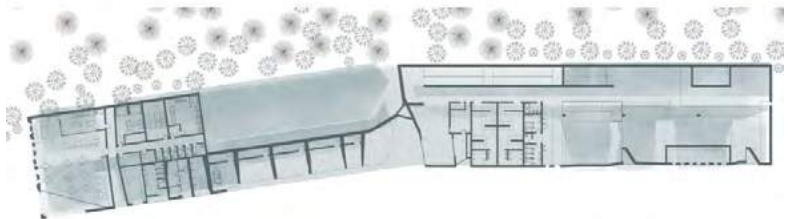
The 'Bunker' program revolves around a physical rehabilitation centre, employing biophilic design principals within its interior spaces linked to the ephemeral catalogue such as; access to natural views, light and space and material relationships (Kellert 9). Links between the orthopaedic department of the nearby Burwood Hospital lend a user group with the most vulnerable of needs within the design experiment. This user group have been considered in the accessibility and spatial performance of the rehabilitation centre.

Along with the rehabilitate spaces of physiotherapy and massage rooms, a public programme of beach shelters, a café and thermal baths are included within the experiment.

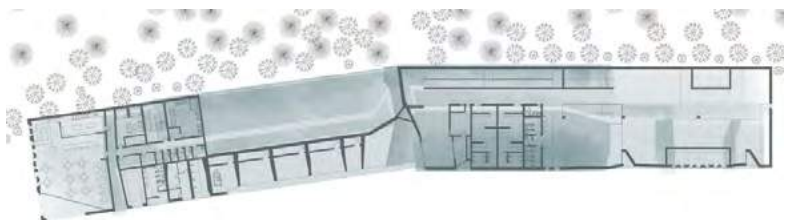
Proposed Site



144. Textural Intensity Overlay Plan



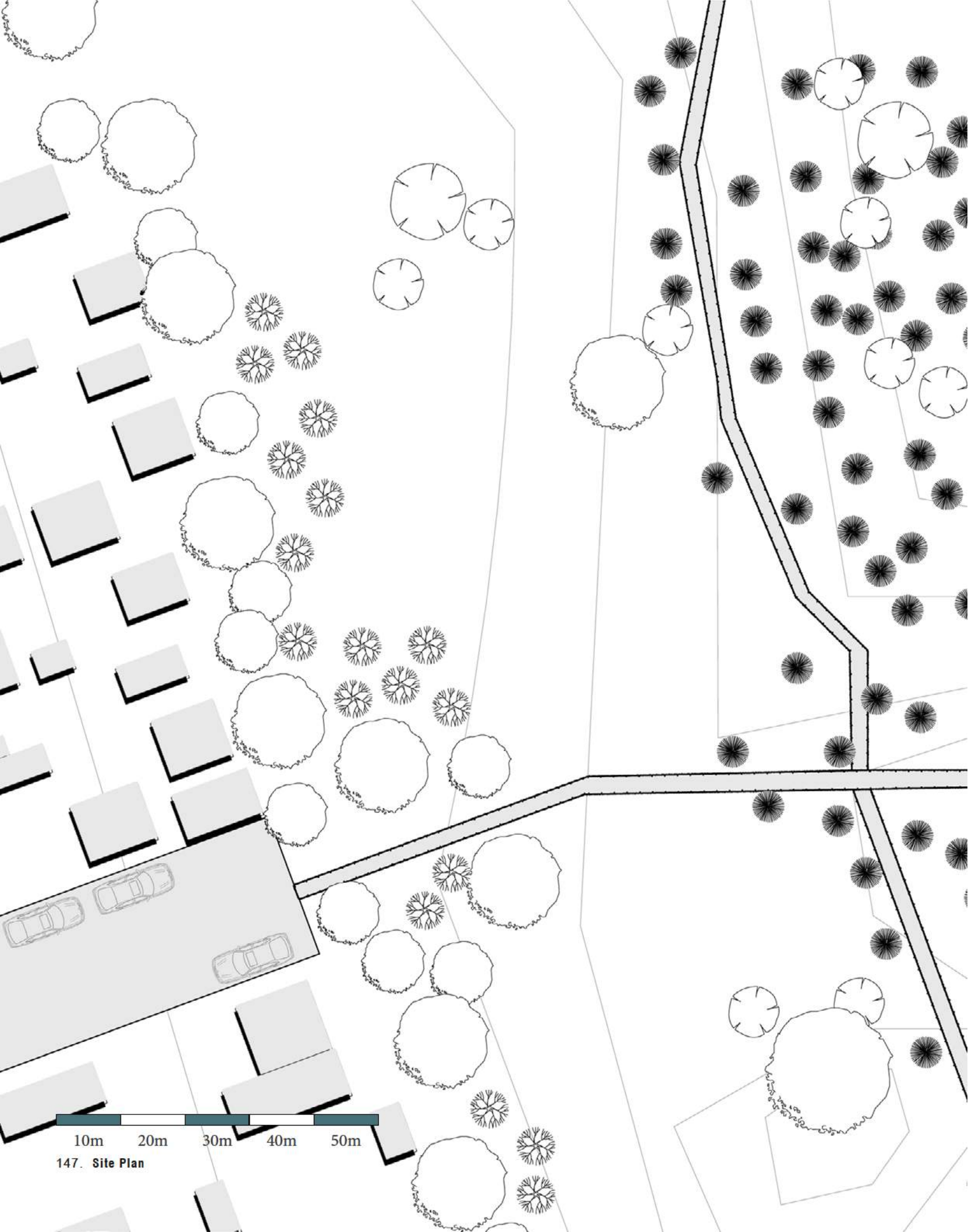
145. Lighting Intensity Overlay Plan



146. Acoustic Intensity Overlay Plan

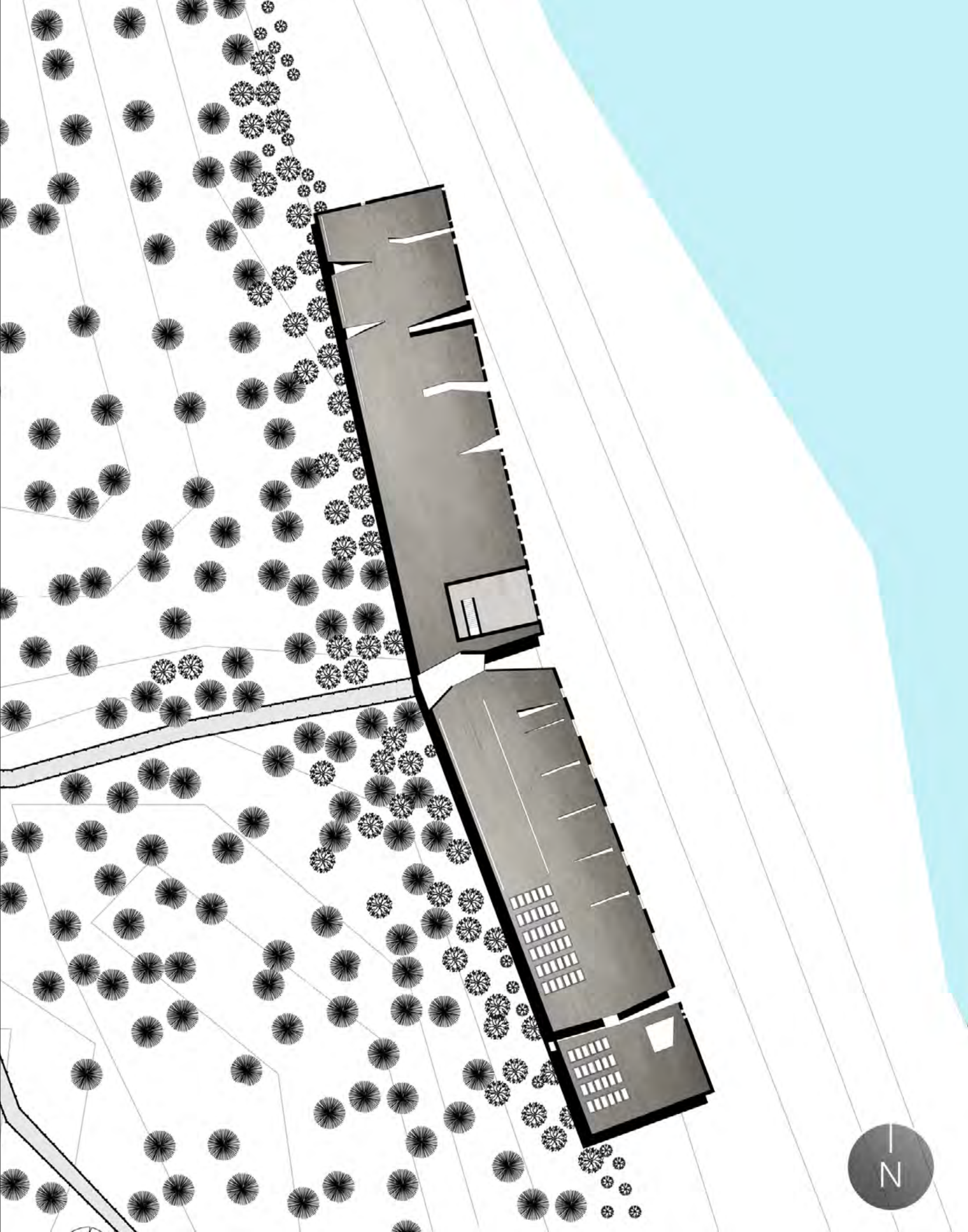
INTERIOR ATMOSPHERE MAPPING

Once a set of base floor plans were developed through sketch iterations, atmospheric elements were mapped. The adjacent images show a spread of Acoustic, Lighting and Textural intensities within the Rehabilitation Centre. These maps informed the surface finishes of the architecture along with minor planning changes.



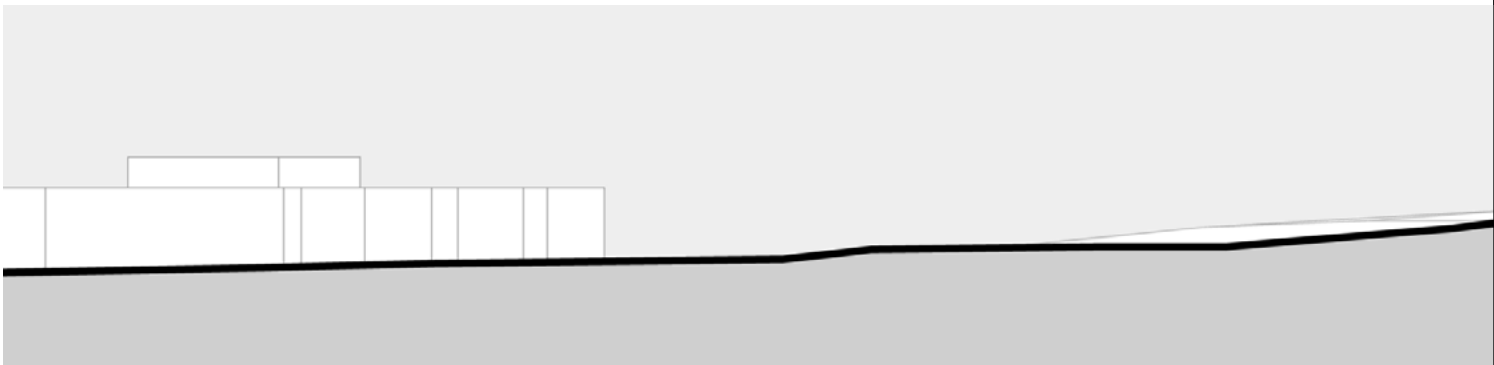
10m 20m 30m 40m 50m

147. Site Plan



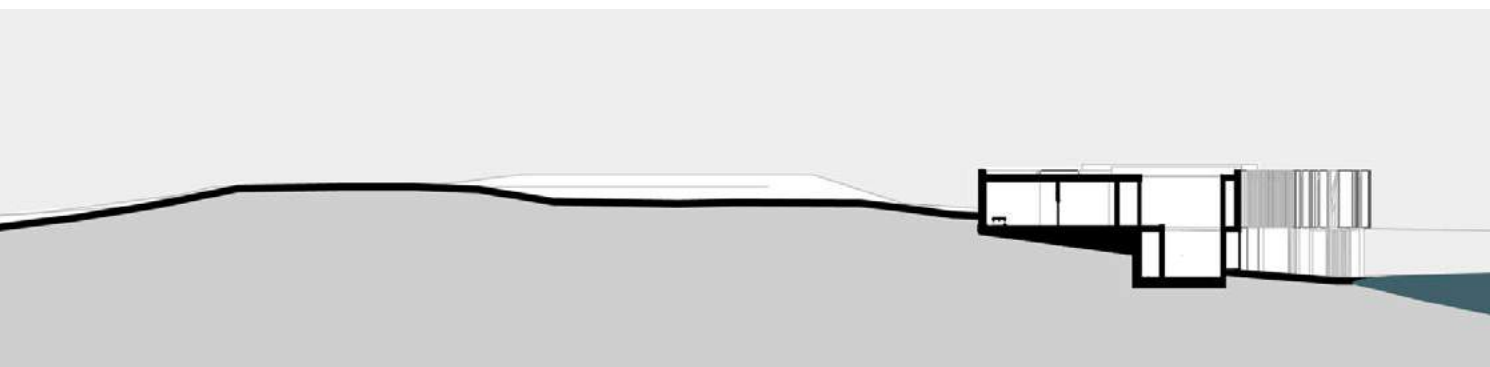
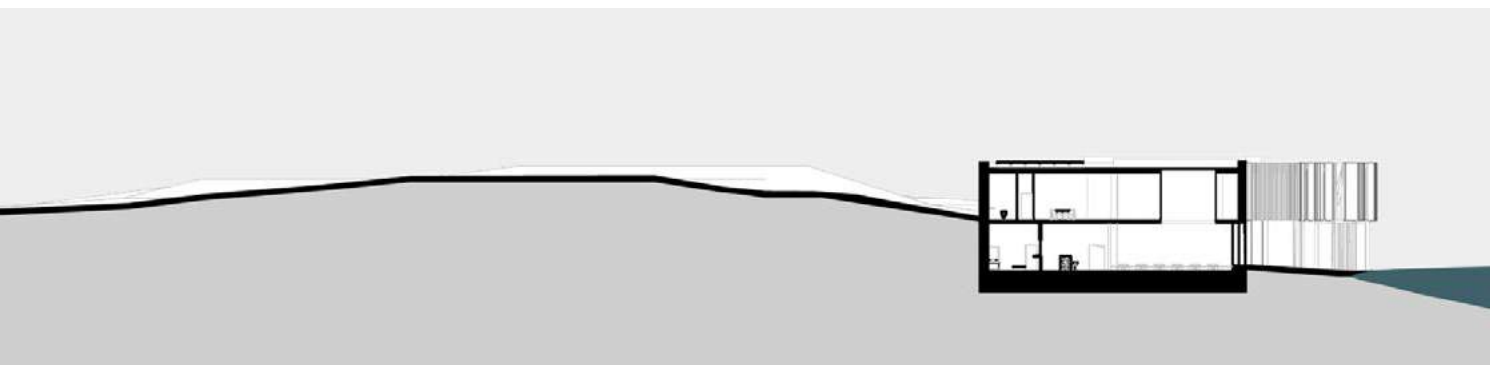


148. 70. Site Section AA'

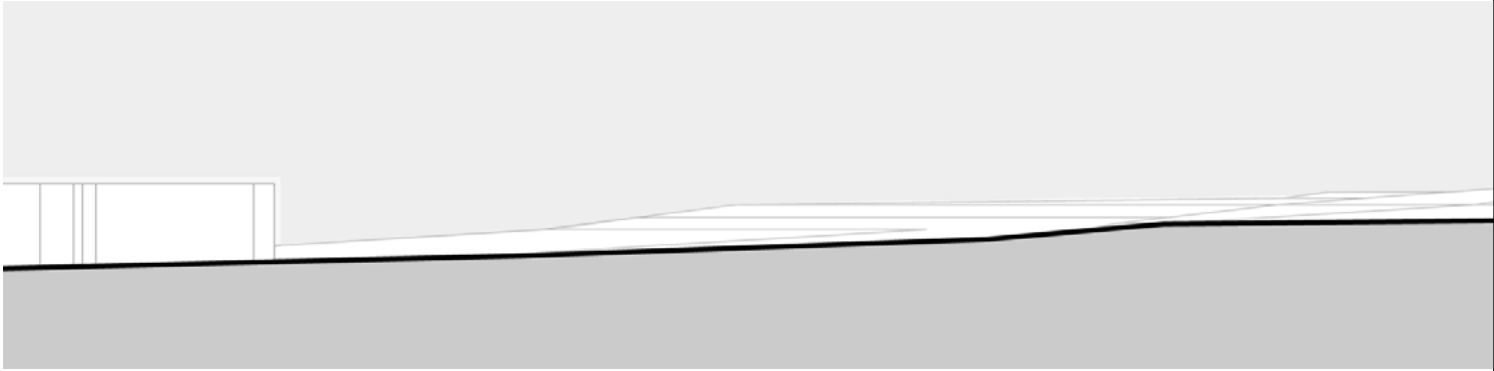


149. 70. Site Section BB'

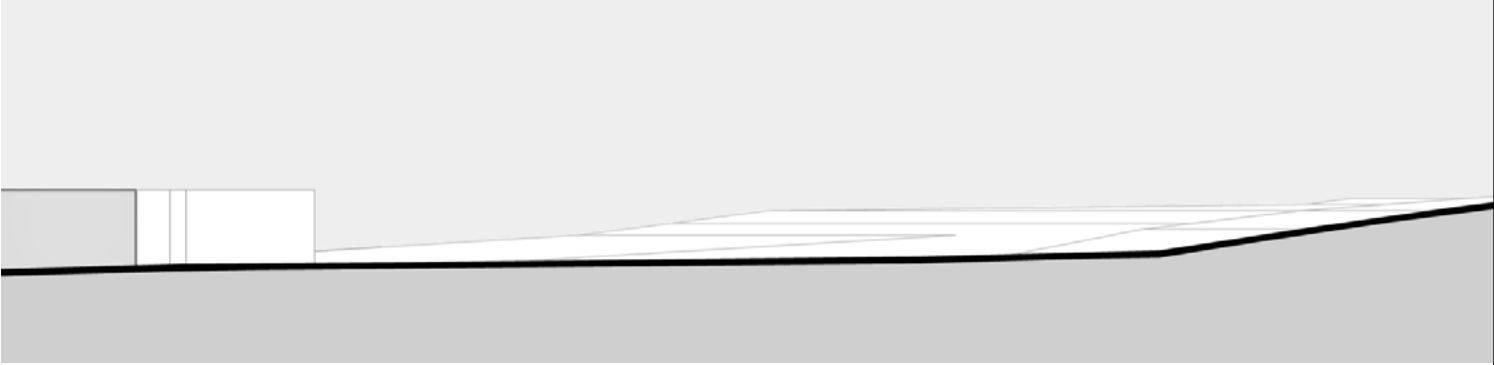
A series of section cuts were taken through the site and rehabilitation centre. These moved South from the therapeutic areas to the more public spaces, with the drawings showing the changing reaction of program to site.



Of key concern was the transition between the four identified states of residential buildings, sand dune, the 'Bunker' and the shore-line. Dampening of acoustics and ease of movement between these spaces were considered.

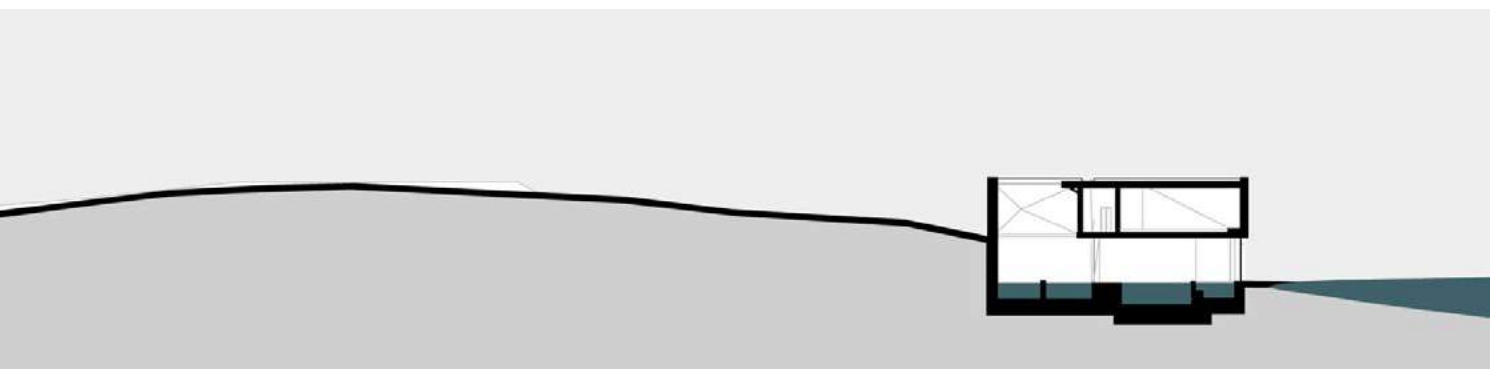
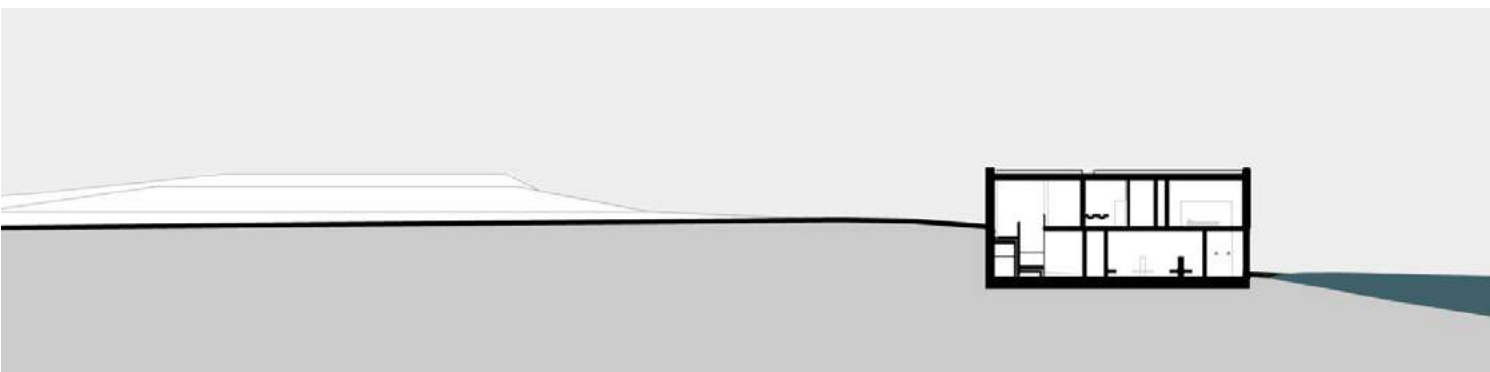


150. 70. Site Section CC'

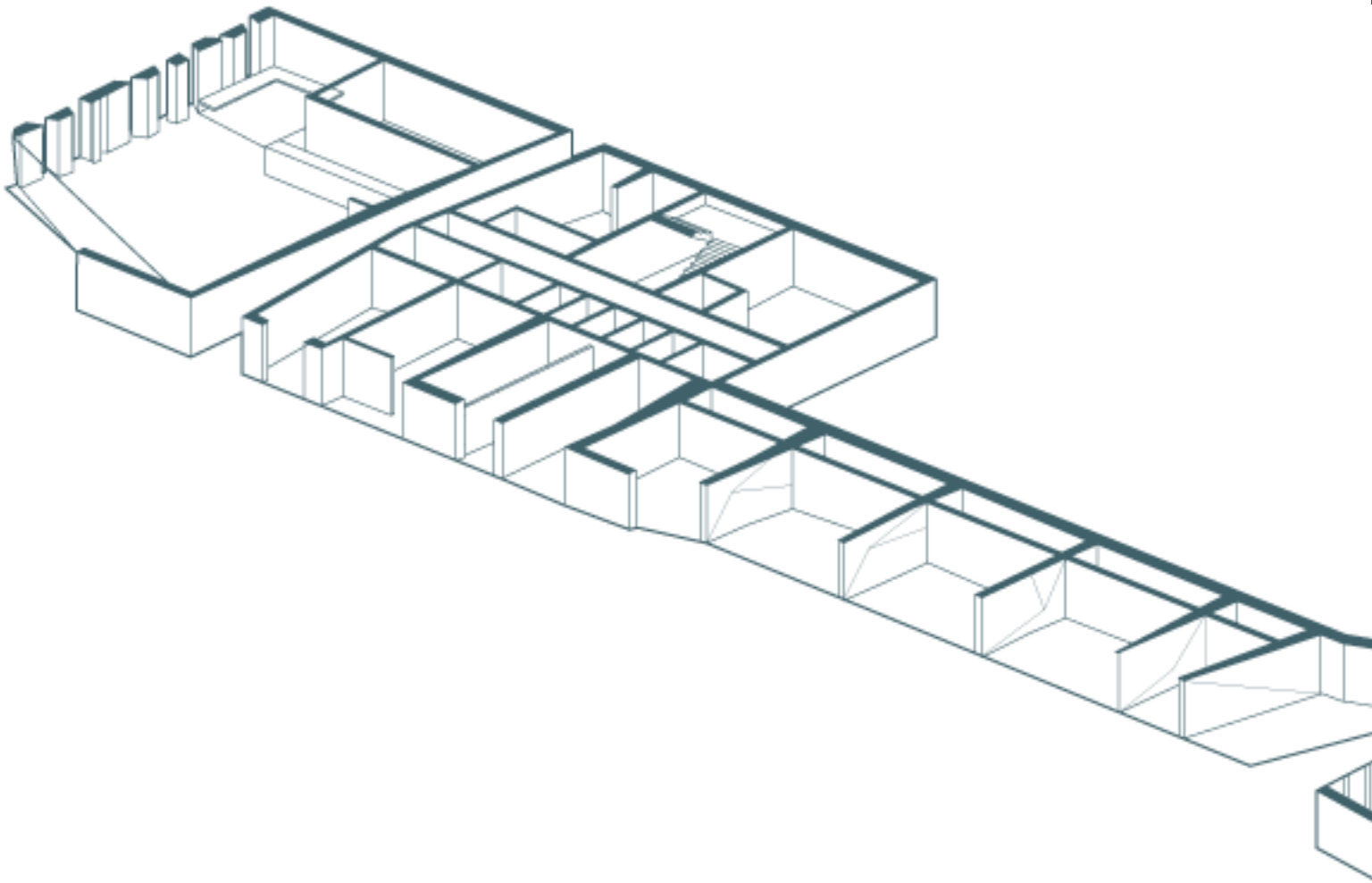


151. 70. Site Section DD'

The key consideration was minimising the visibility of the 'Bunker' from the residential area, while providing a resilient and prominent face on the fore-shore edge. This design move was taken to immerse the project within it's

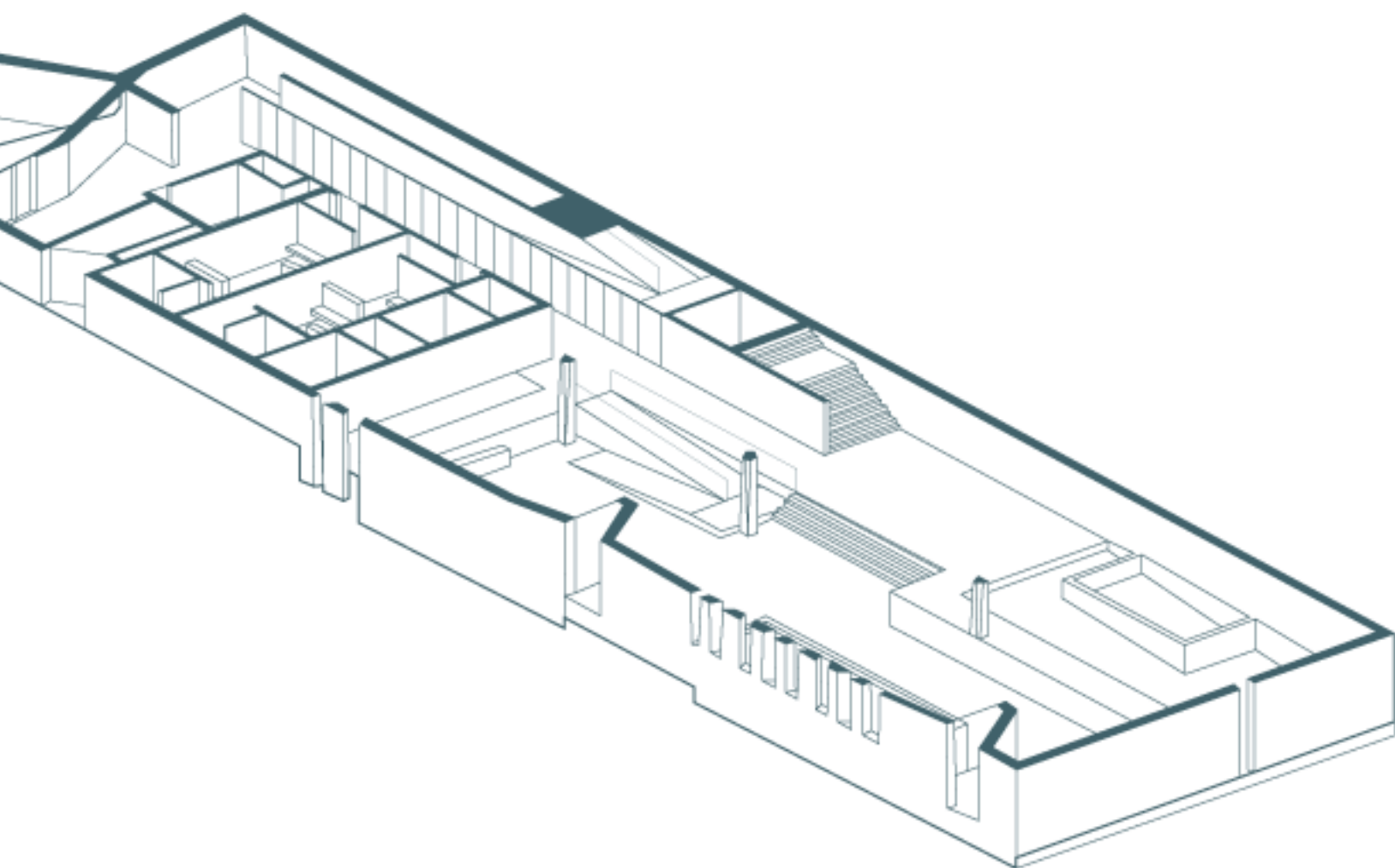


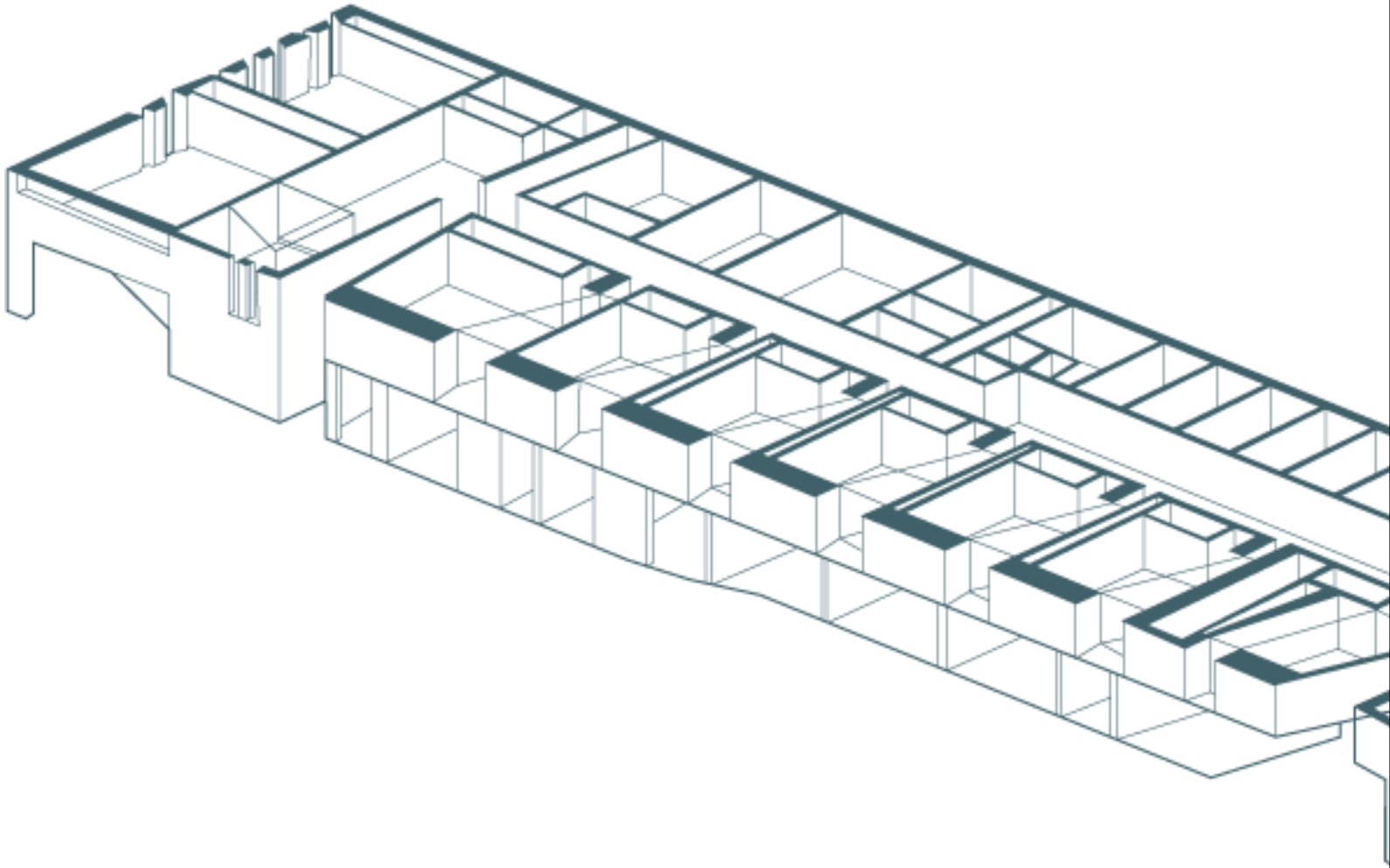
surroundings while still having an element of solidity. On the eastern sea edge penetrations have been detailed to allow the ocean and sand to ebb and flow with the rehabilitation centre.



The resolved public experiment links a range of public and private spaces not only with each other but also with the surrounding context through openings and changing levels. Shown later through the floor-plans, the ground floor program moves from public spaces to thermal baths and rehabilitative areas ingrained within the physical context through openings and atmospheric manipulation.

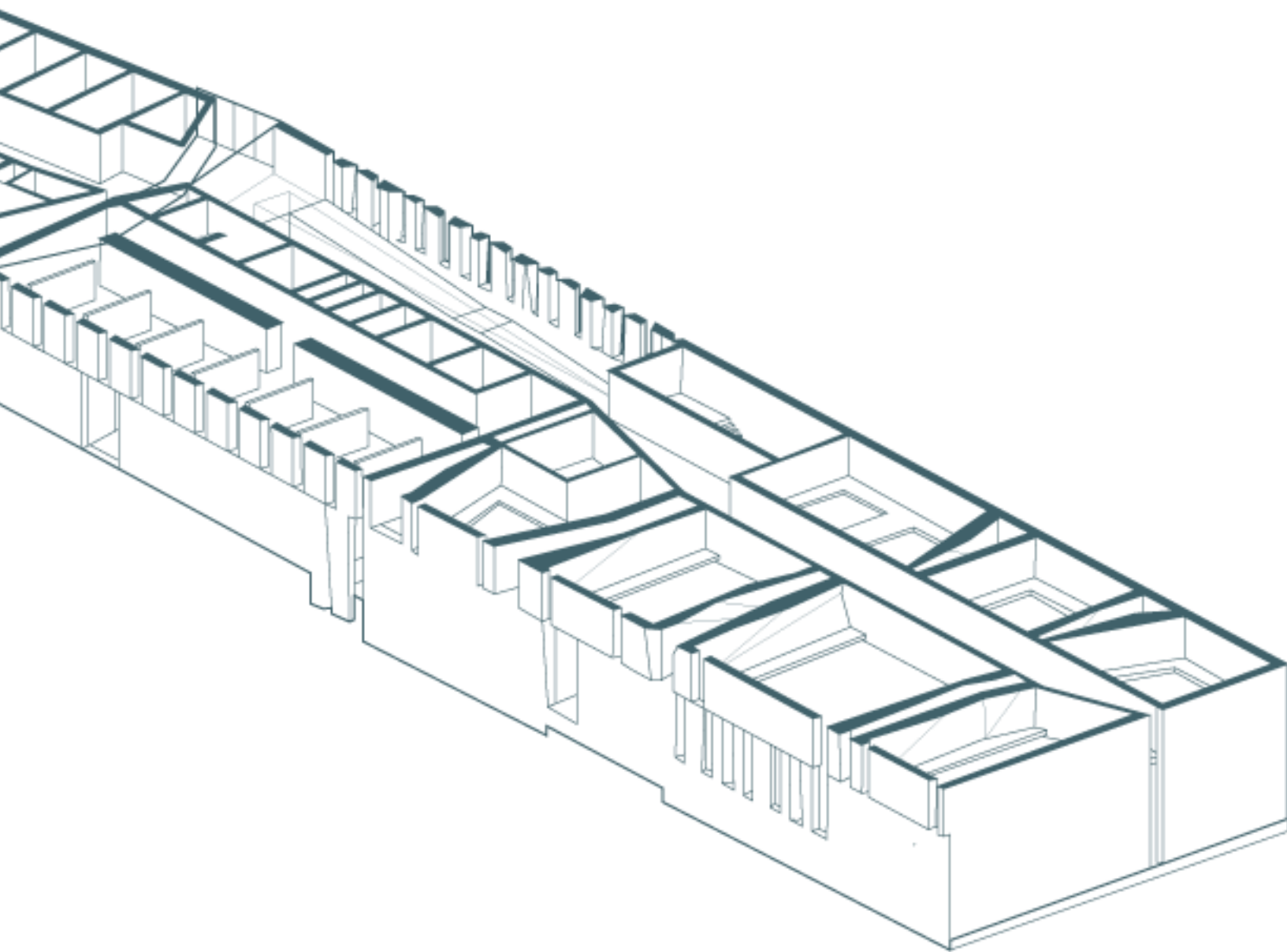
152. Ground Floor Axonometric

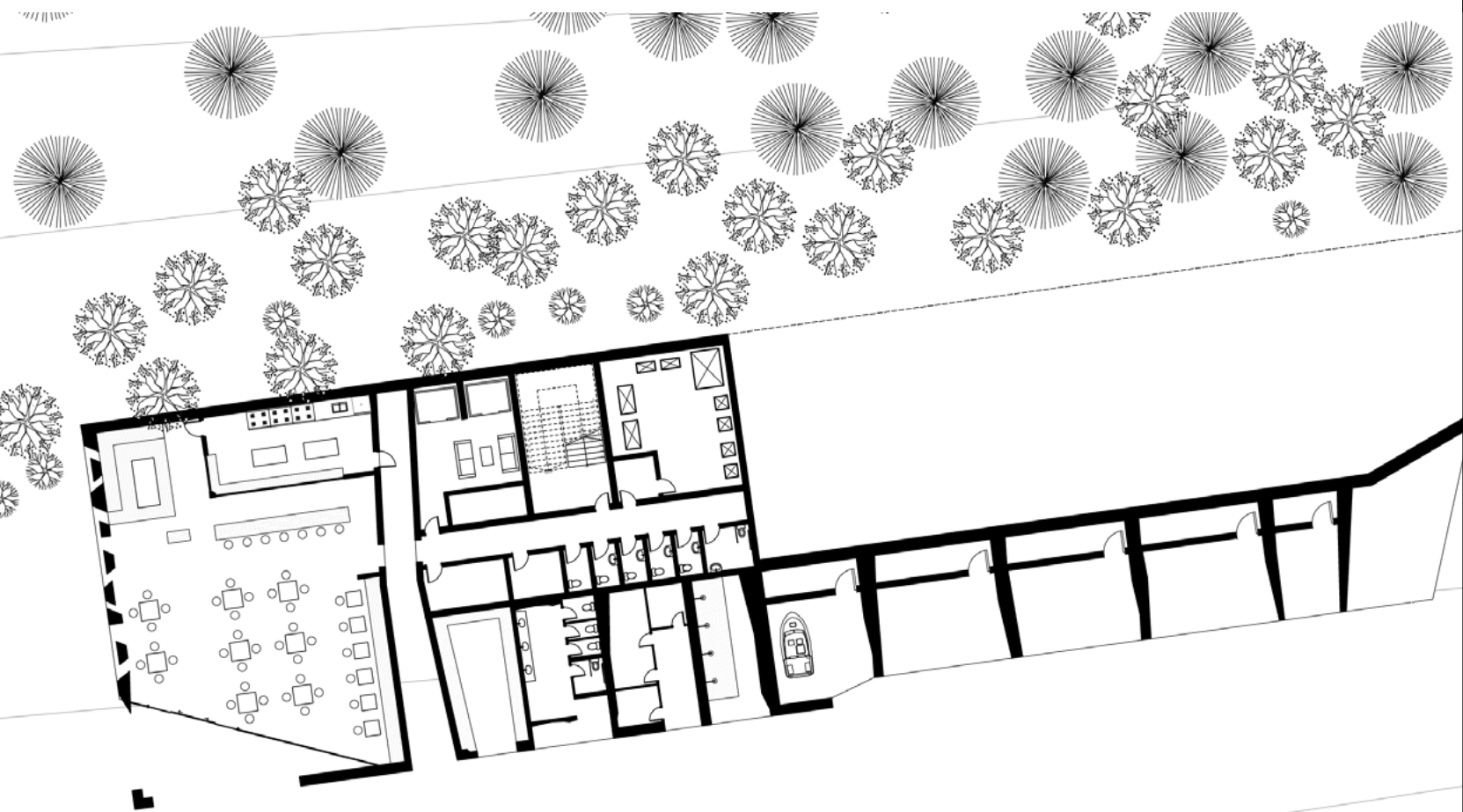




The first floor employs a more tightly planned layout with many intimate spaces along with some larger, more exposed areas. The concept of poche design is seen through the filled in cut areas; these being small areas of services disguised as massive blocks throughout the floor plan. Penetrations and variable levels of exposure inform the planning of this level of the experiment.

153. First Floor Axonometric



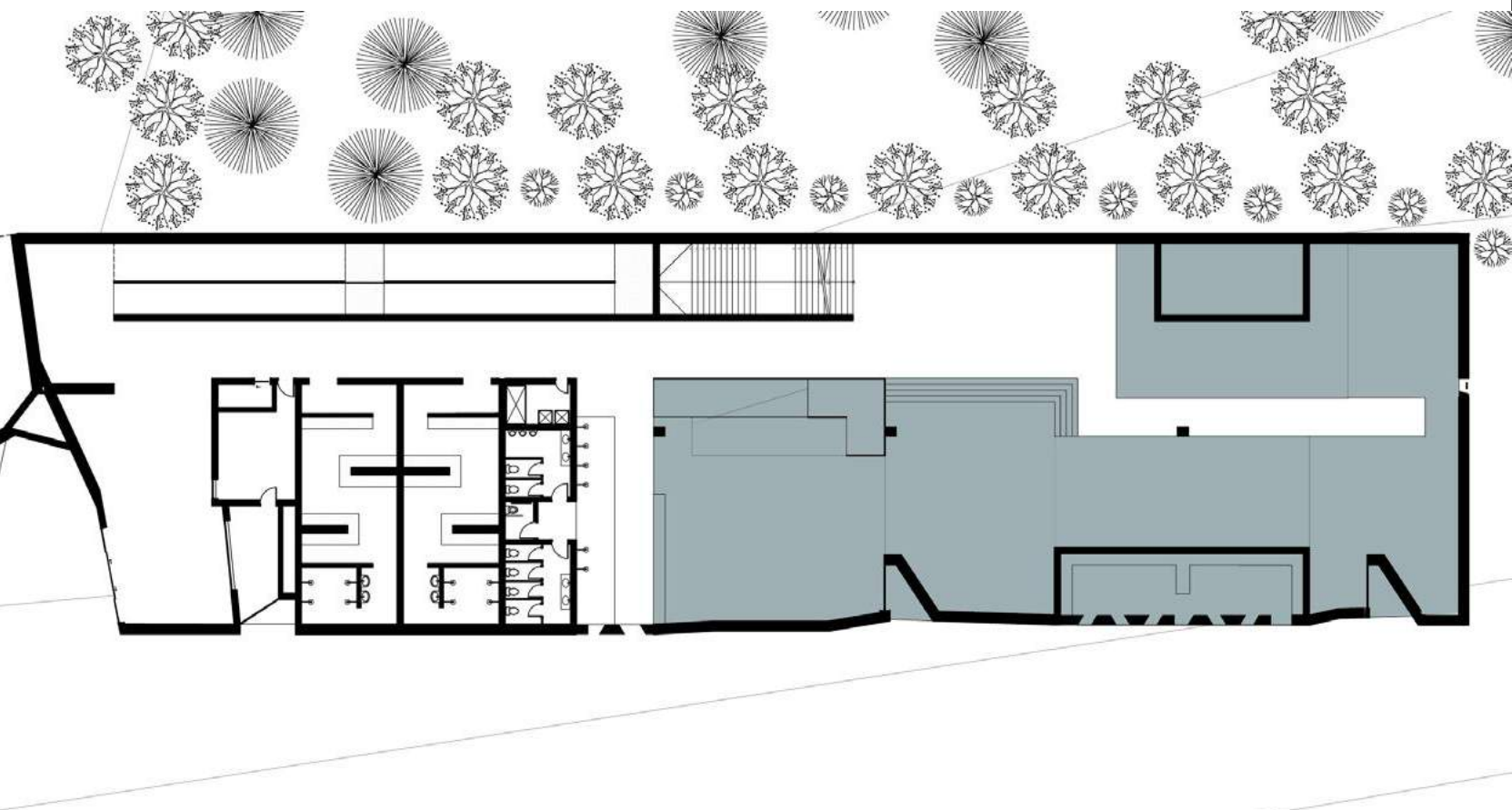


01 - Public Cafe
02 - Kitchen
03 - Vertical Access

04 - Plant Room
05 - Cafe Storage
06 - Public Storage

07 - Public Toilets
08 - Public Change Rooms
09 - Public Showers

154. 70. Ground Floor Plan



- 10 -** Beach Shelters
- 11 -** Main Entrance
- 12 -** Accessible Ramp

- 13 -** Baths Plant Room
- 14 -** Changing Rooms
- 15 -** Baths Toilets

- 16 -** Main Bath 32 C
- 17 -** Heated Bath 38 C
- 18 -** Sea Bath 26 C



19 - Meeting Rooms

20 - Foyer/Light-Well

21 - Vertical Access

22 - Staff Room

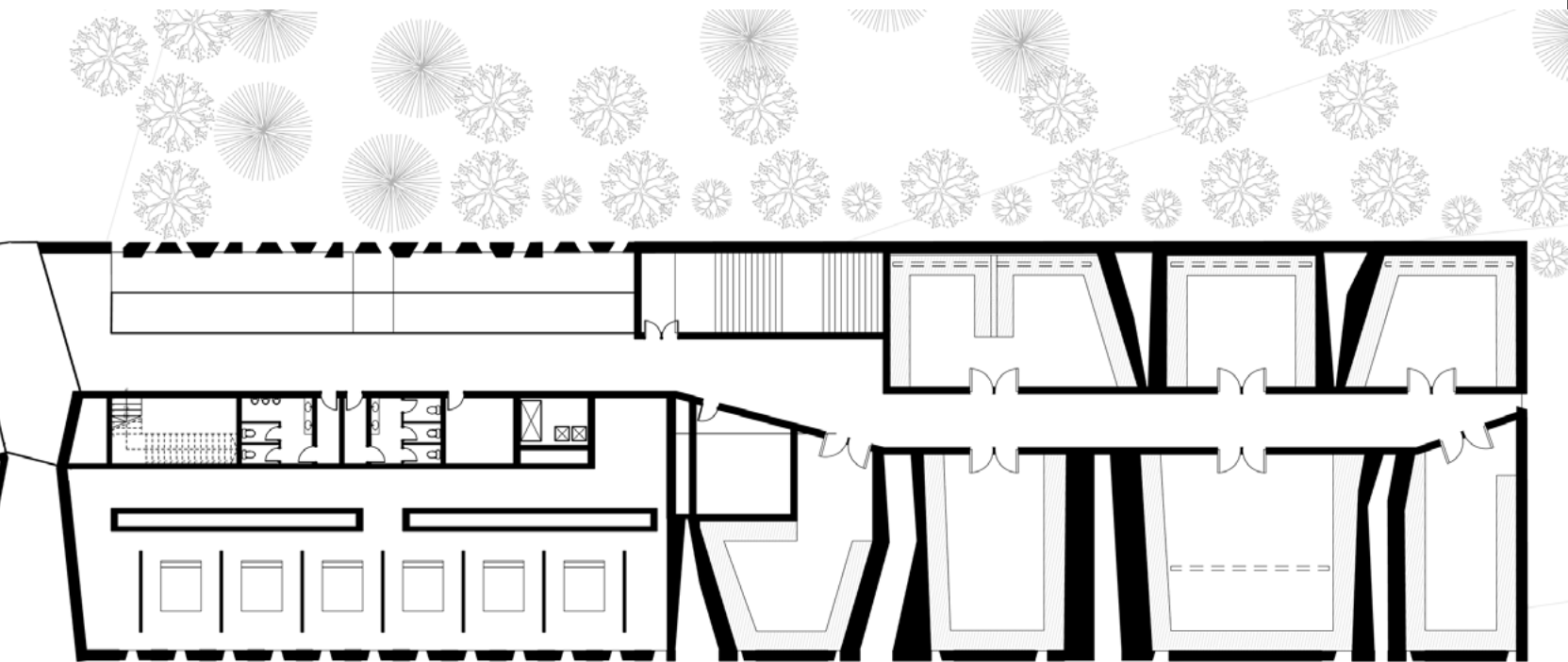
23 - Physio Consultation

24 - Massage Room

25 - Storage Room

26 - Private Entrance

27 - Roof Access



28 - Baths Plant Room

29 - Secluded Relaxation Area

30 - Ice Room

31 - Large Steam Room

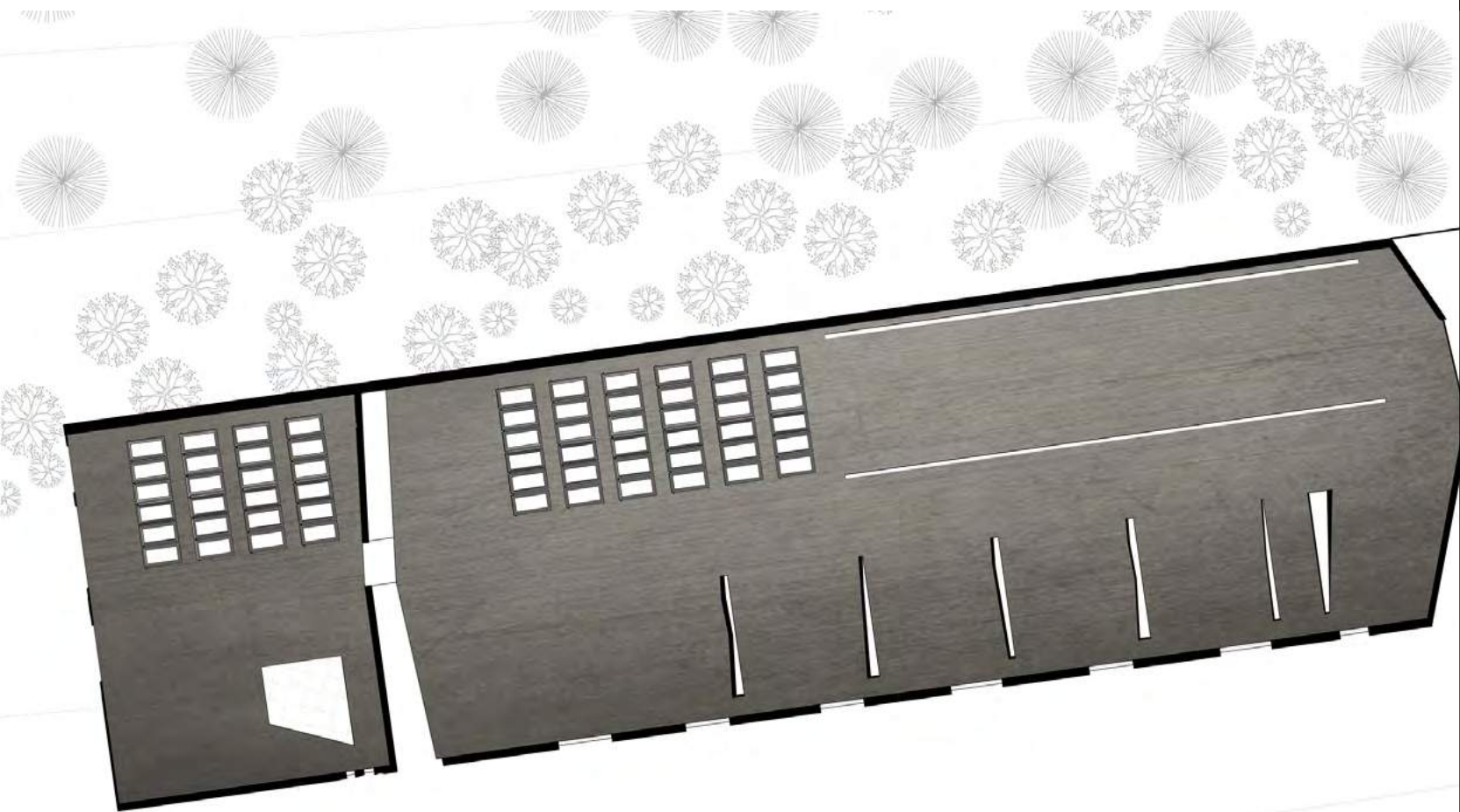
32 - Small Sauna

33 - Small Steam Room

34 - Large Sauna

35 - Hot Steam Room

36 - Hot Sauna



37 - Light-Well

38 - Solar Panels

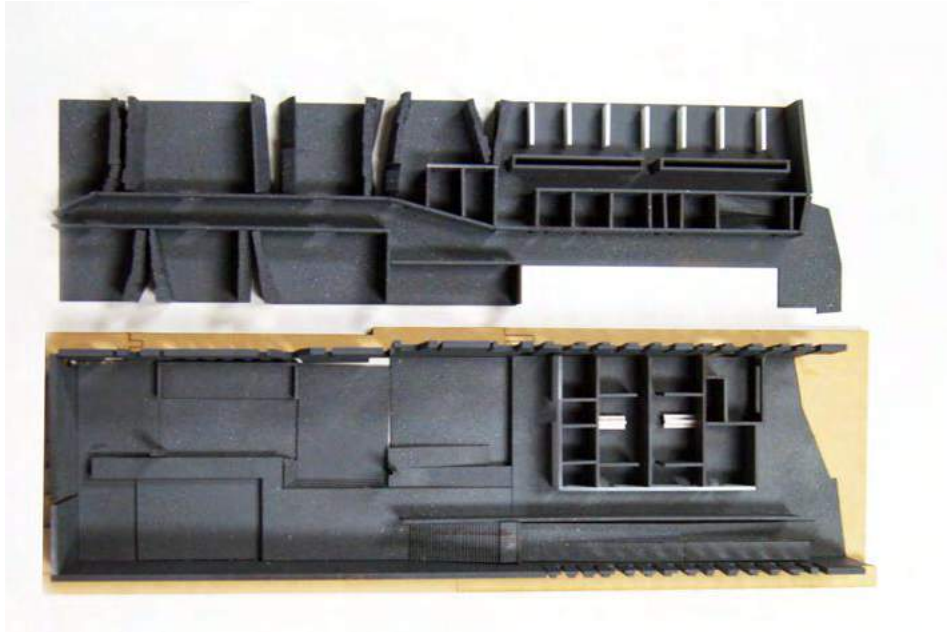
39 - Physio Light-Wells



40 - Connecting Bridge

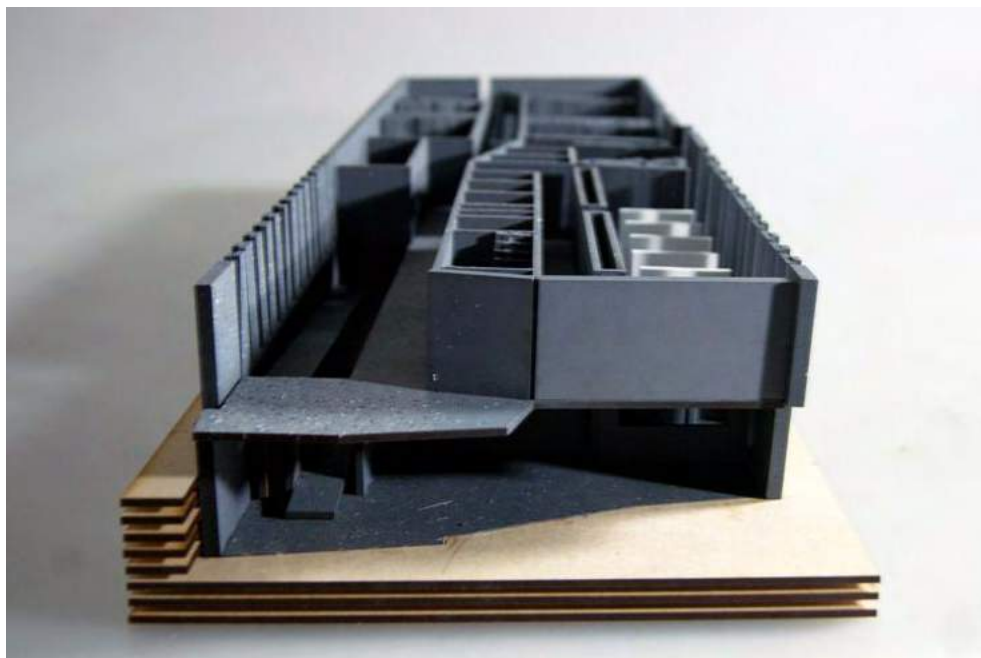
41 - Vantage Point

42 - Light/Acoustic Penetrations



157. North-Wing Physical Model

A 1:100 physical model was constructed to test the lighting and formal qualities that were unable to be shown through the plans. This piece was built as a testing tool rather than a presentation model, giving insight into how the rehabilitation centre may work on site and with light penetration.



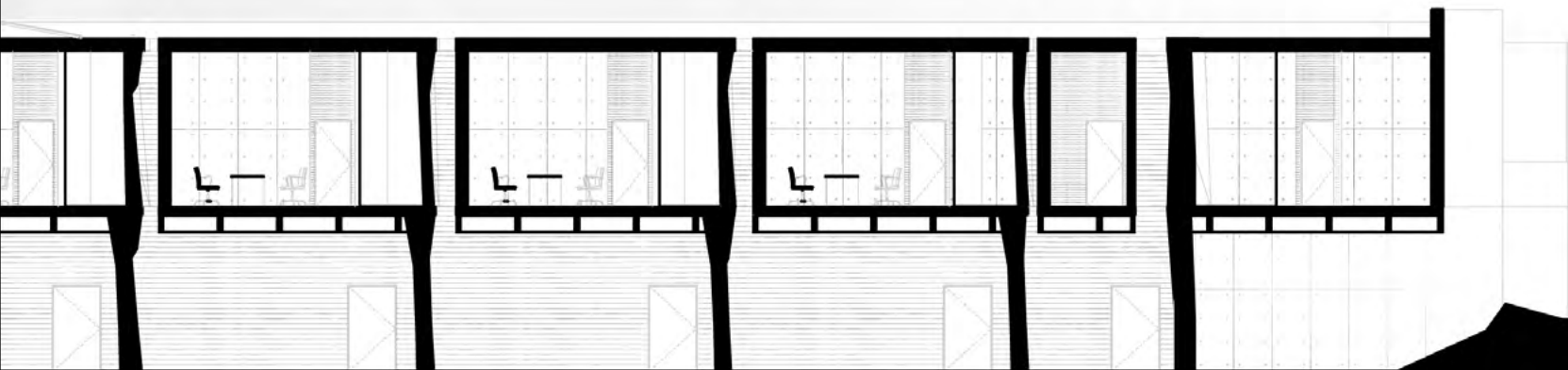
158. Southern View of Model

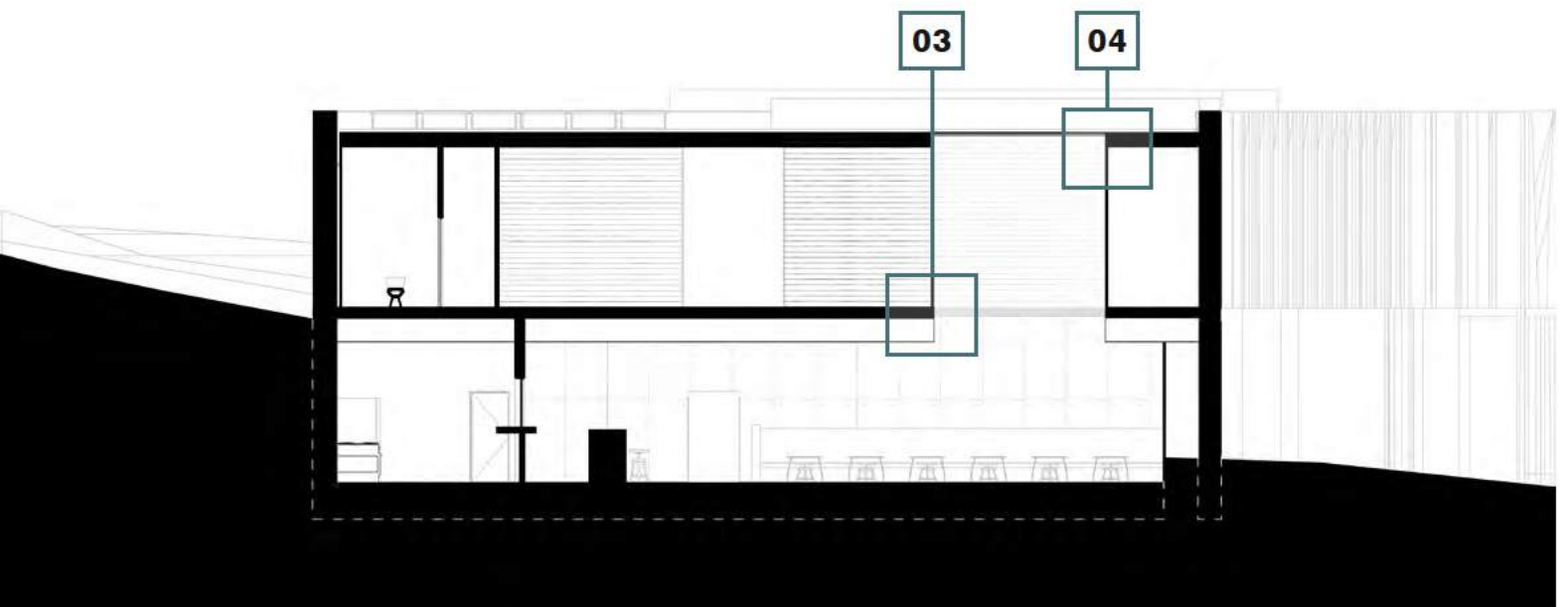
HOW DOES IT ALL GO TOGETHER?

Outlined in the ephemeral catalogue, the intangible goal of temporality was broken down into a set of pragmatic outcomes considering; site, form, light, texture and the body in space. The following research section details how these categories may be achieved through formal and textural shifts along with architectural detailing.

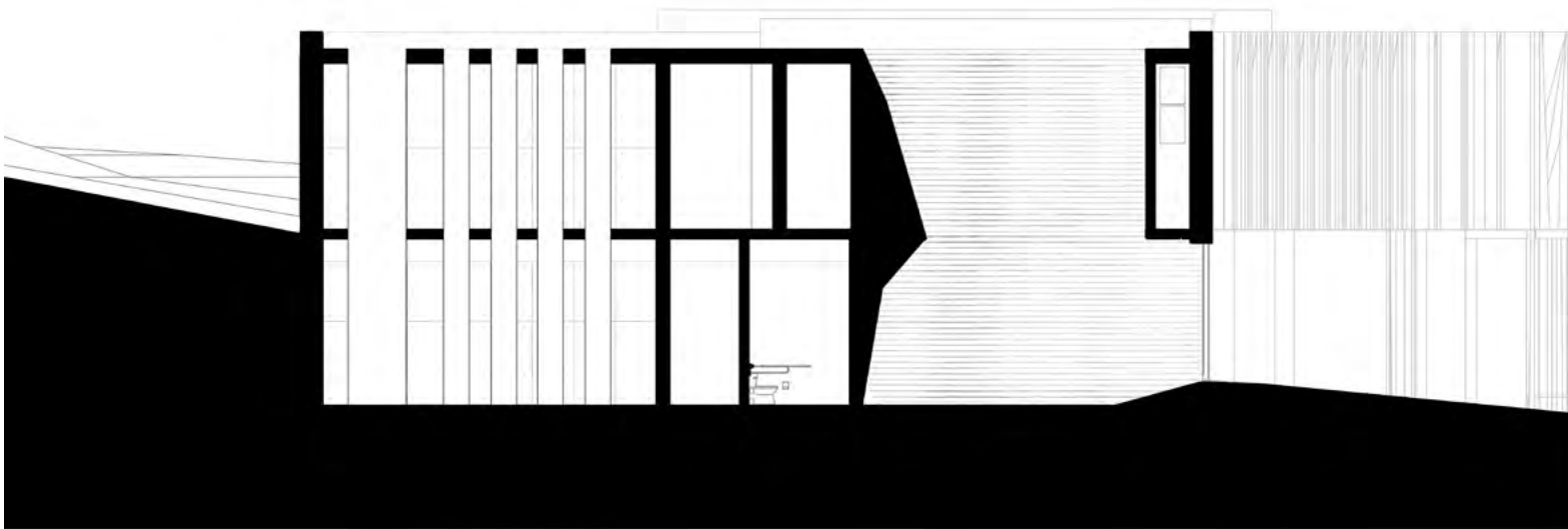


Through the following sections the relationship between form, texture and site is explored. Poche design principals inform the mass and void make-up of the rehabilitation centre, allowing for light, acoustic and olfactory penetration into the design.

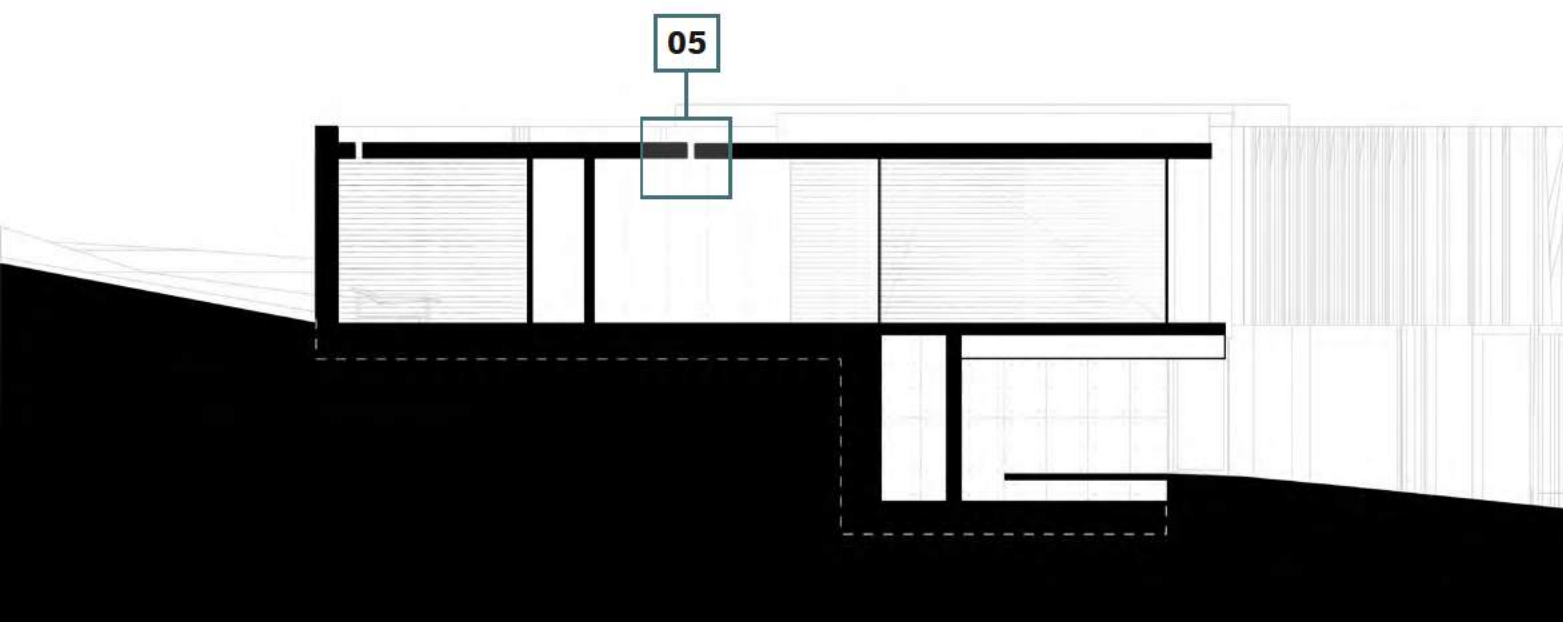




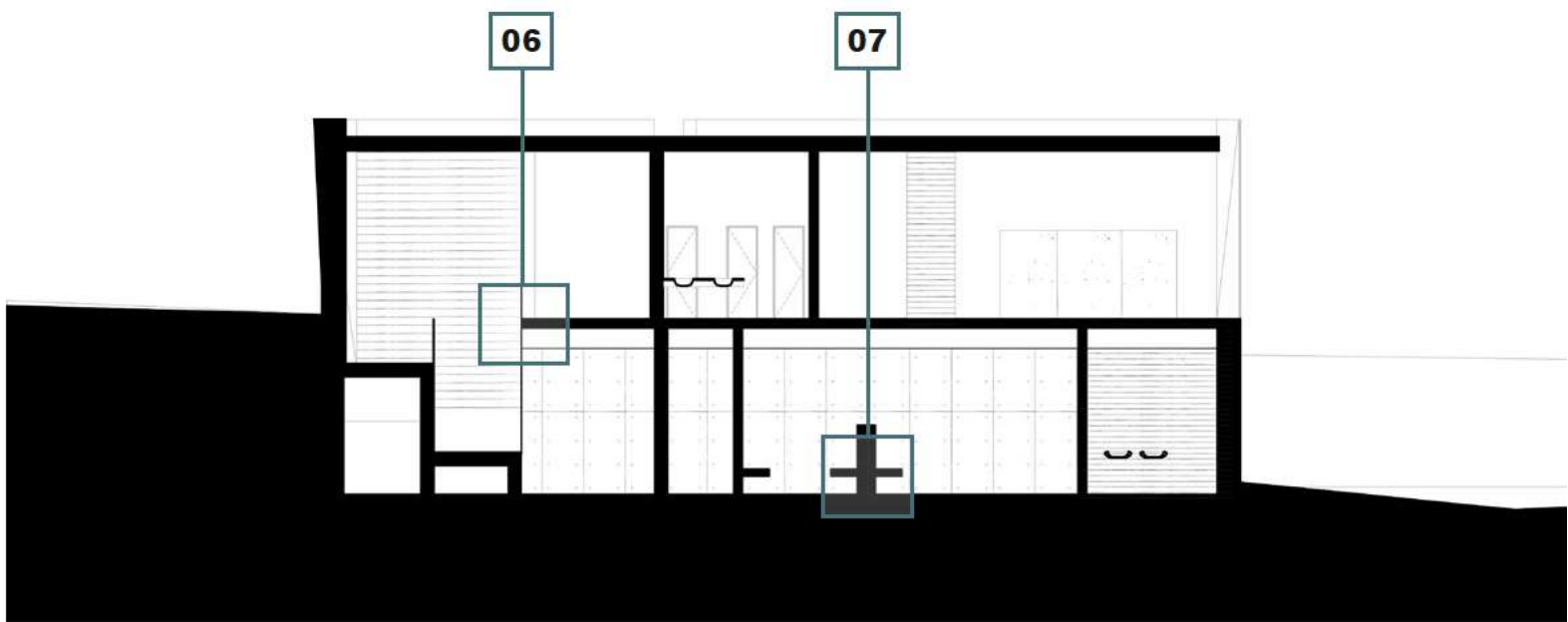
160. Short Section AA'



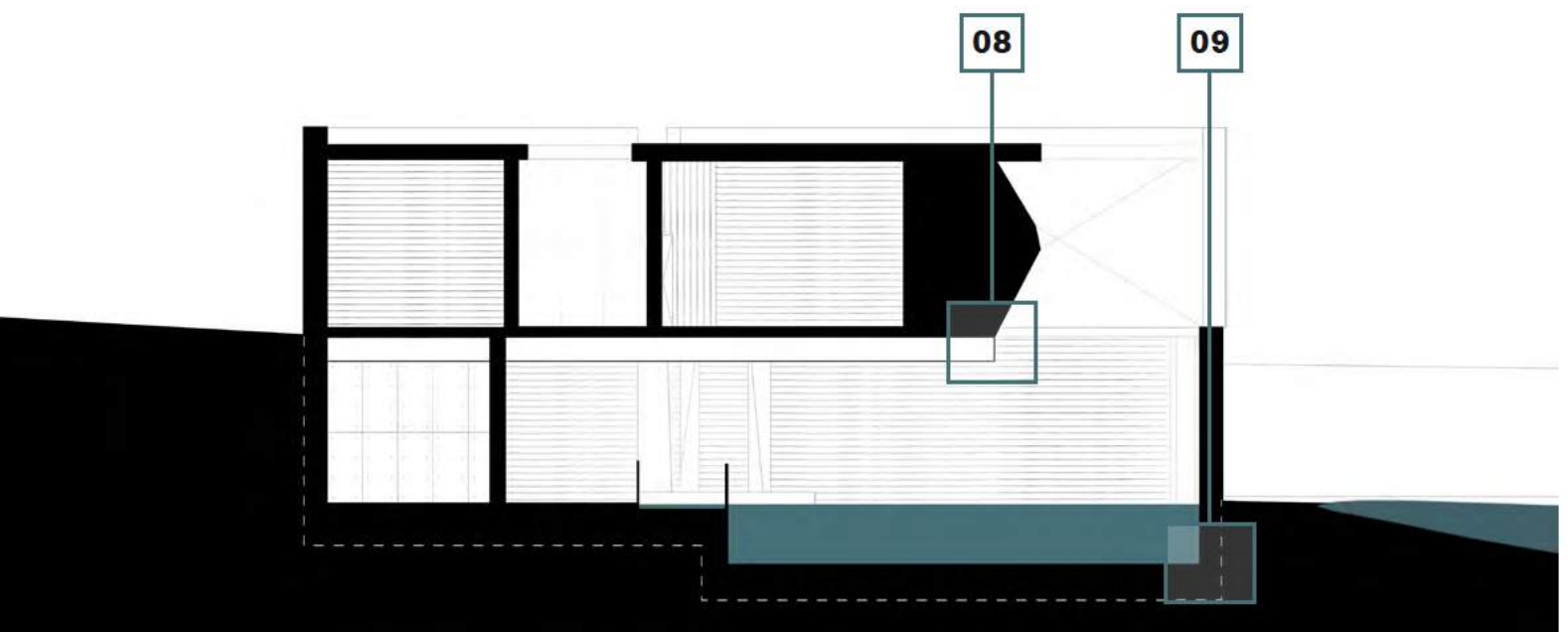
161. Short Section BB'



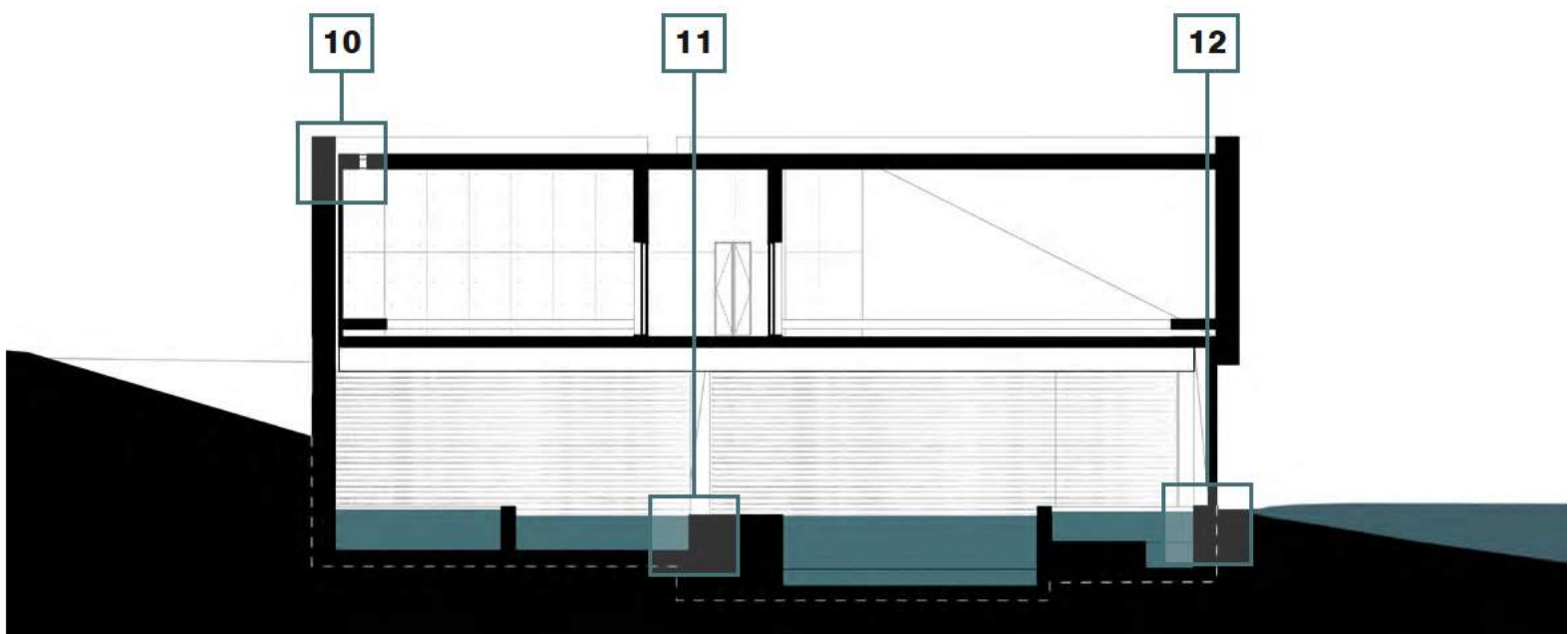
162. Short Section CC'



163. Short Section DD'



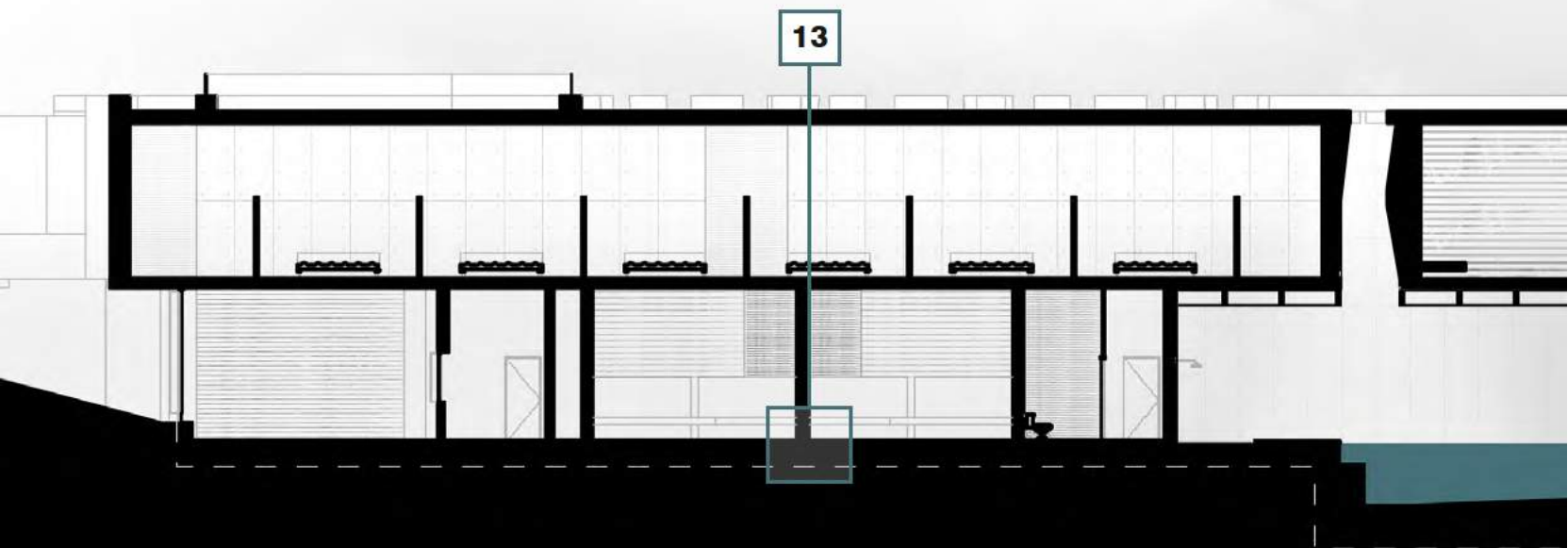
164. Short Section EE'



165. Short Section FF'

The short and long sections provided an insight into the interior make-up of the Rehabilitation Centre experiment, teasing out ideas around texture, poche design and architectural masses. It was identified that this medium was able to identify larger scale ephemeral interactions within the design, but overlooked the human scale details that helped provide temporal links between form and site.

As a response, a set of construction details of key areas was produced. These employed existing construction methods and materials in a way sympathetic to place within a highly resilient and massive architecture.



The following details take focus on selected, small scale relationships between the 'bunker' and its physical context. A recurring theme throughout the details is the penetration of site into the building envelope, allowing place to imprint itself on the architecture as discussed in Mostafavi's text *On Weathering*. Along with this concept, the covering of inhabited space and structure is seen in the details. Conveying a solid and massive architecture, where as in reality it uses a conventional steel structural system.



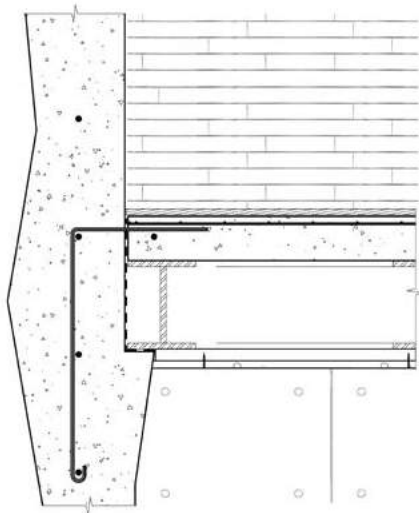
DETAILING THE 'BUNKER'

The following details were designed to express an ephemeral relationship between the architecture and its physical context. The micro-relations photographed on site between vegetation, materials and surface were taken into consideration throughout this design process.

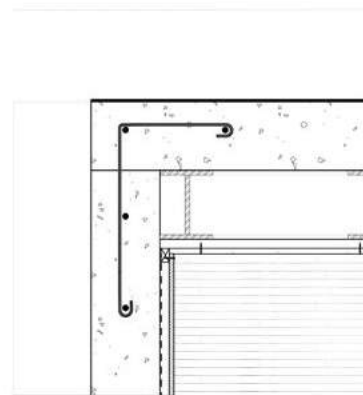
Many of the details hinge around the concept of allowing the site to penetrate the design, letting the surroundings wash over the walls and imprint their mark on what would otherwise be solid, unchanging architectural elements.

MATERIALS KEY

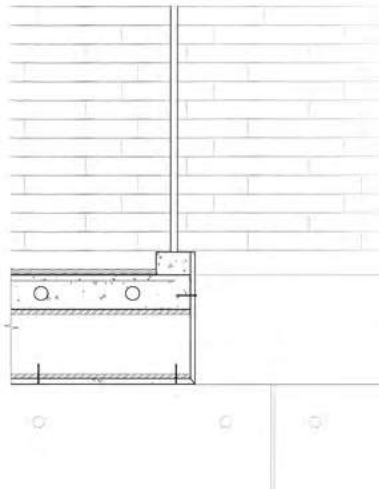
Cut Concrete -	
Cut Steel -	
Insulation -	
Hardfill -	
Cut Ground -	
Board Form Conc. -	
Ply-Facing Conc. -	



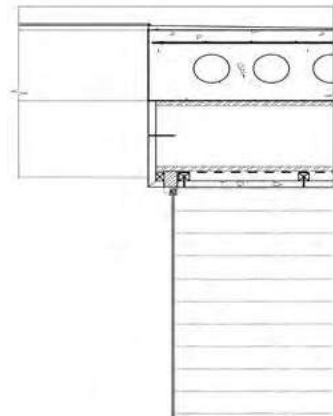
167. 01 Void Seating to Slab Detail



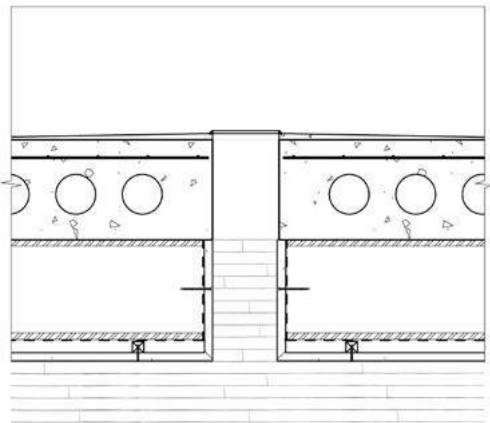
168. 02 Void to Wall Edge Detail



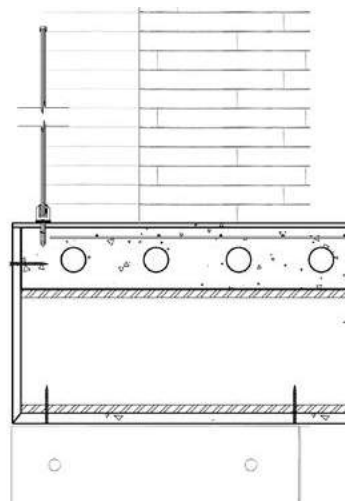
169. 03 Light-well to Slab Detail



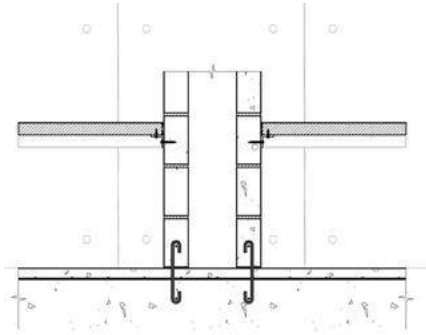
170. 04 Light-well to Roof Detail



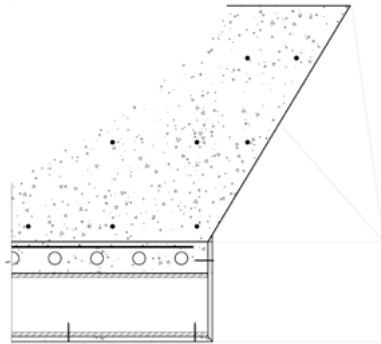
171. 05 Roof Penetration Detail



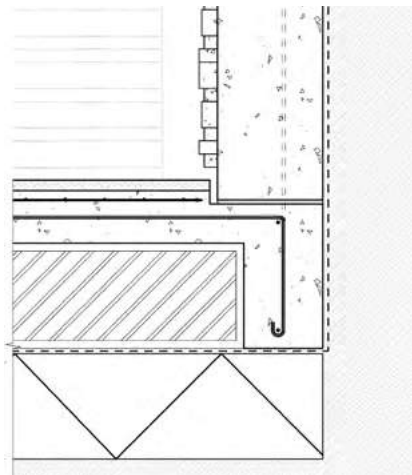
172. 06 Balustrade to Slab Detail



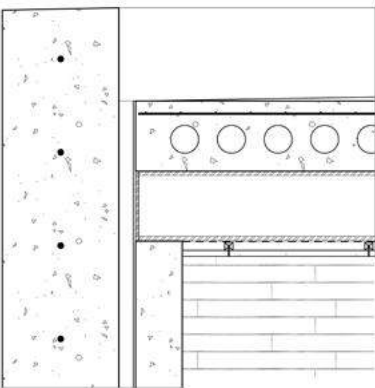
173. 07 Changing Bench Detail



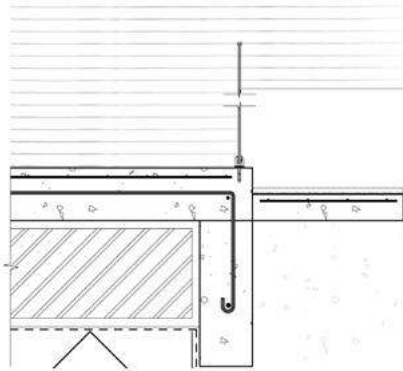
174. 08 Void to Slab Connection Detail



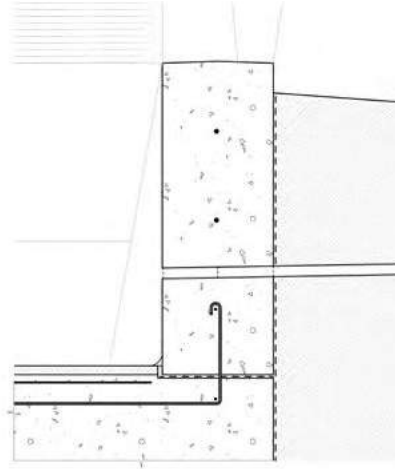
175. 09 Typical Footing Detail



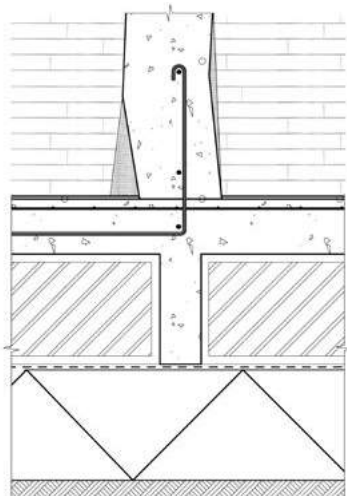
176. 10 Roof Perimeter Drain Detail



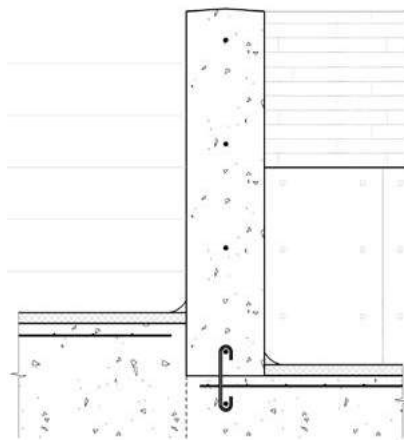
177. 11 Ramp to Slab Detail



178. 12 External Baths Drain Detail



179. 13 Wall to Slab Detail

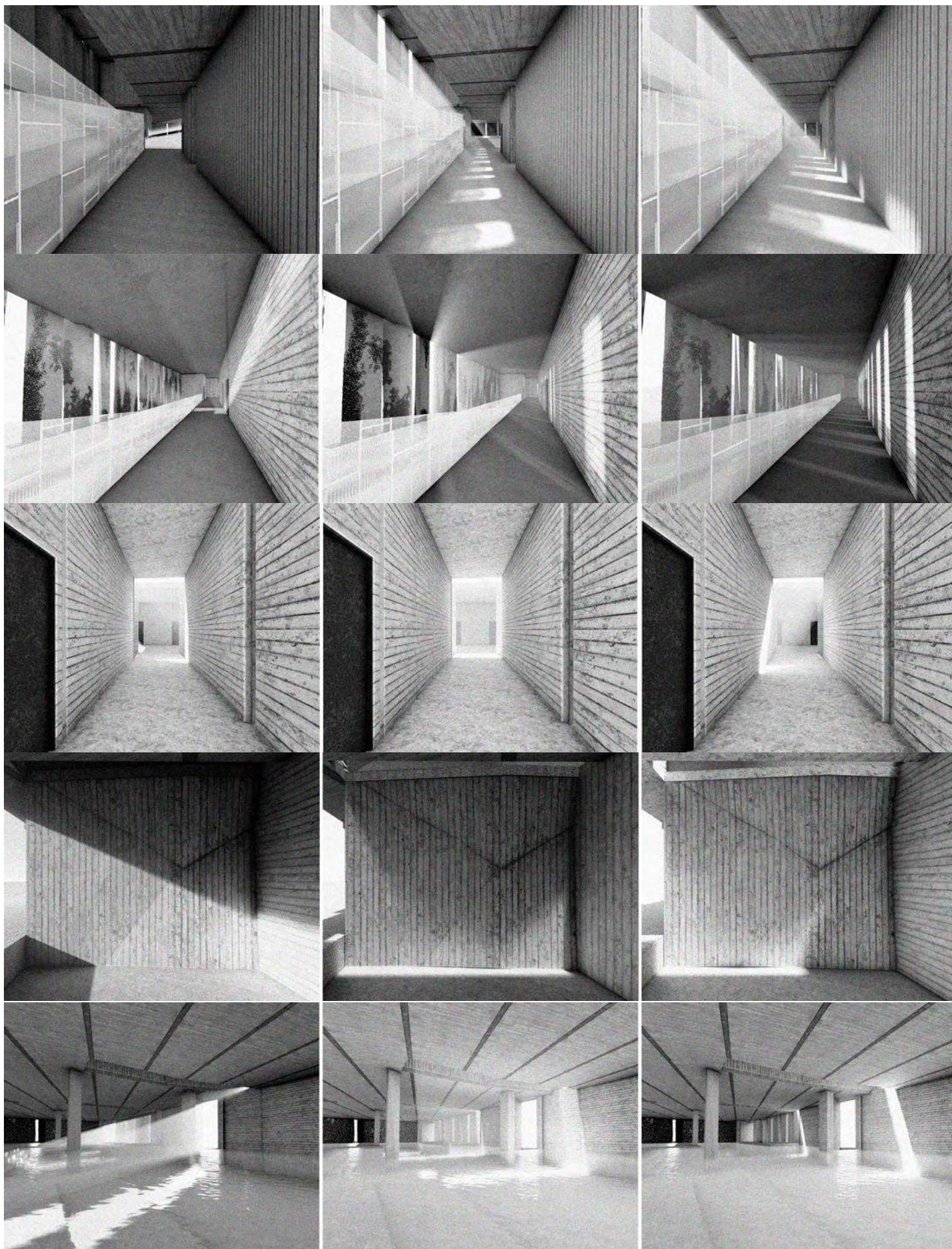


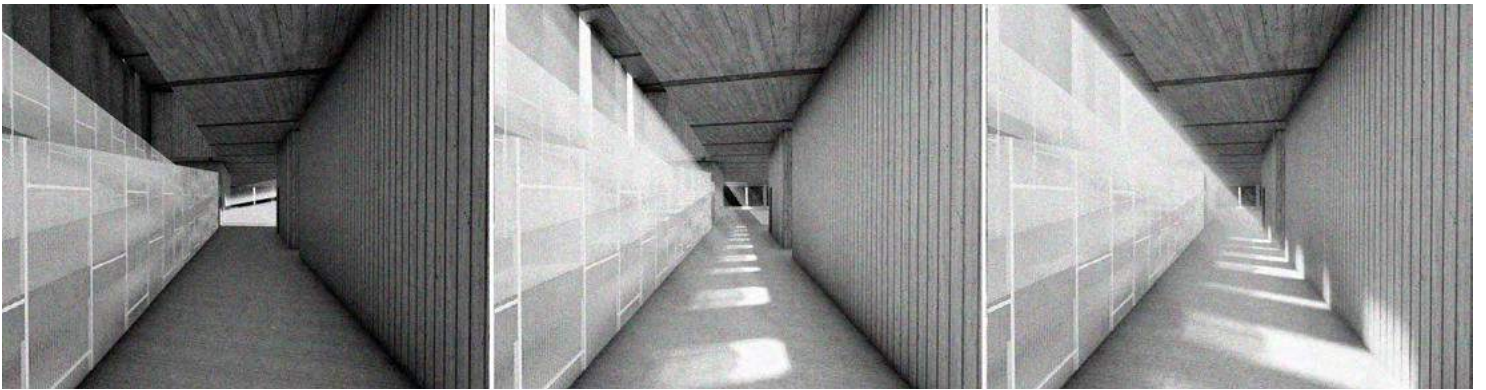
180. 14 Internal Pool Wall to Slab Detail

ATMOSPHERIC TESTING

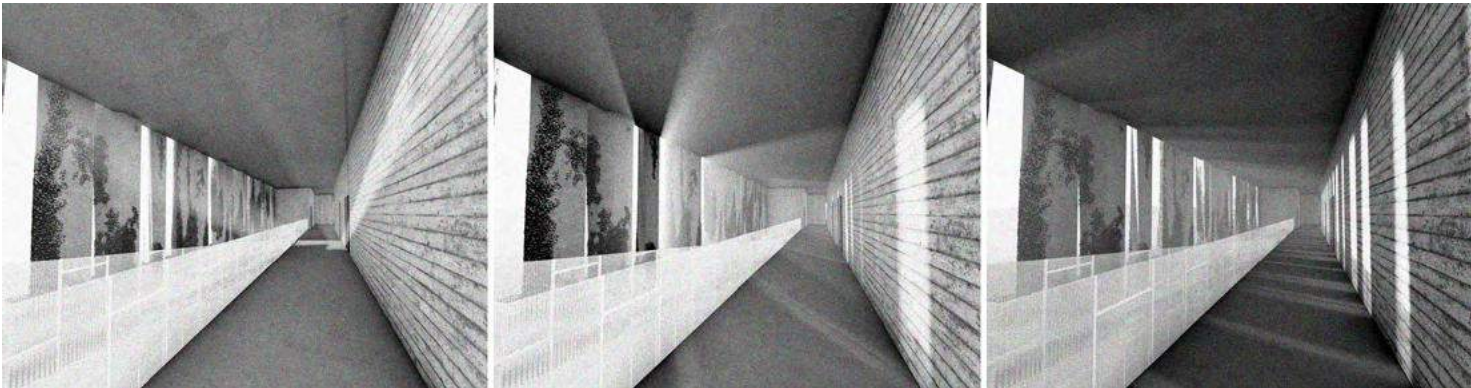
Concluding the detailing of key areas within the rehabilitation centre, a focus was put on the atmospheres within the experimental architecture. As a method of testing the atmospheric conditions, the ephemeral catalogue was used. Based on Peter Zumthor's 'Nine Aspects of Atmosphere', the catalogue took into consideration; materiality, light, acoustics and the body within space.

The following images primarily tested the relationships between material, form and light due to the restrictions of the still image. The 1997 visual precedent 'Your Sun Machine' by Olafur Eliasson was considered in regard to the communication of the images. This highlighted a focus on form and light through a human perspective, with colour and inhabitation intentionally excluded from these images.

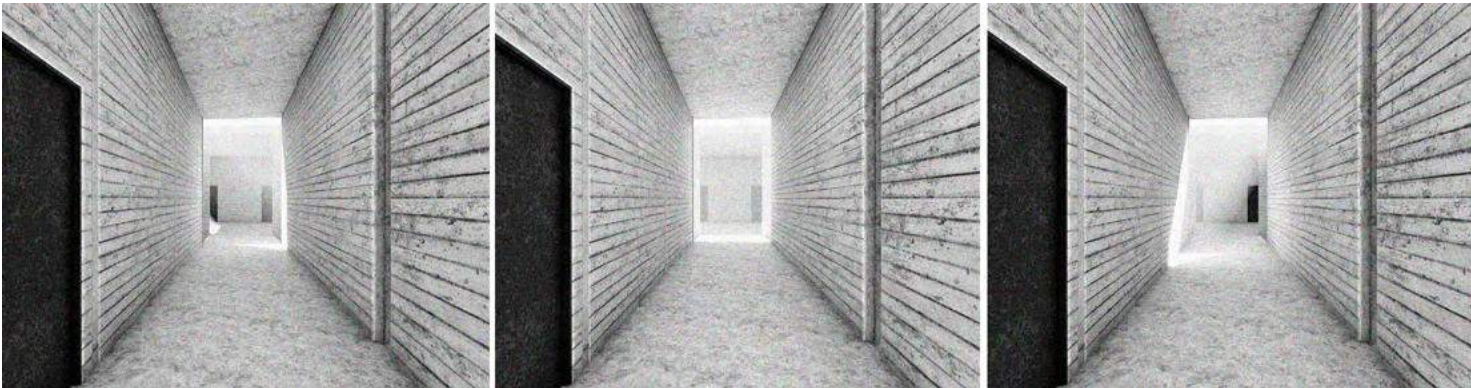




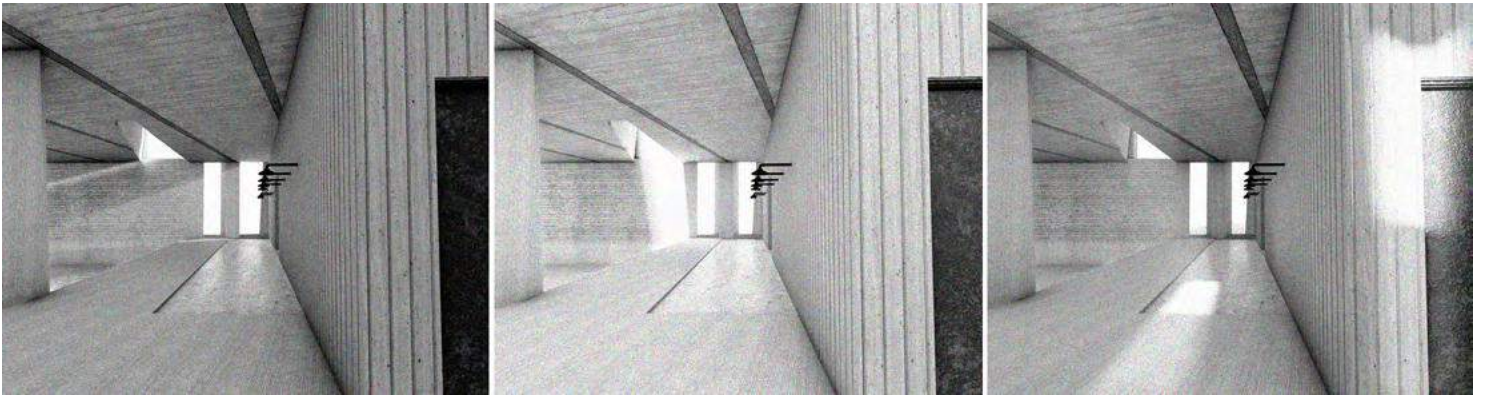
182. 70. North Wing Corridor Test



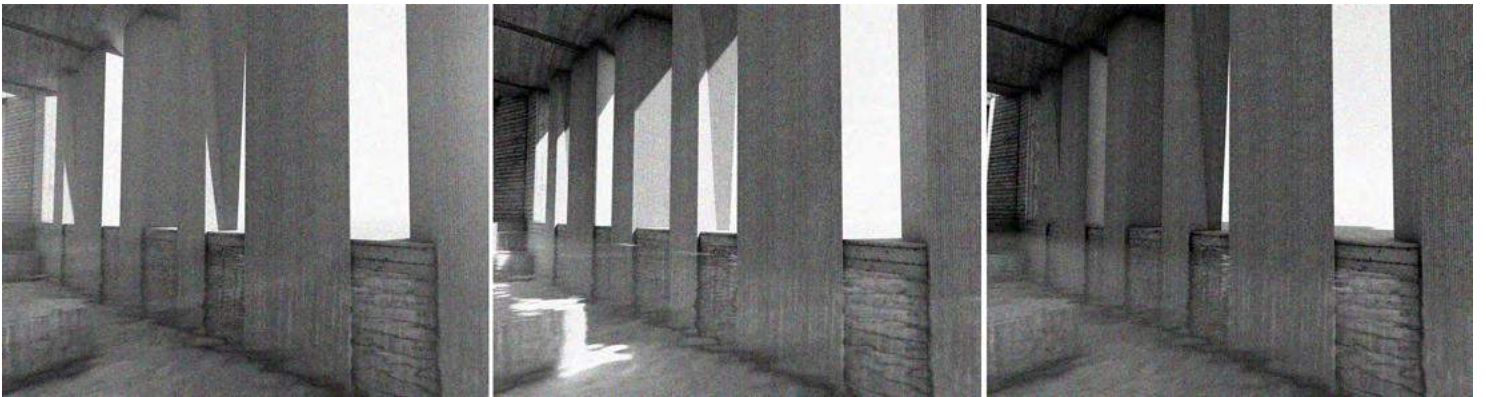
183. 70. North Wing Upper Ramp Test



184. 70. South Wing Corridor Test



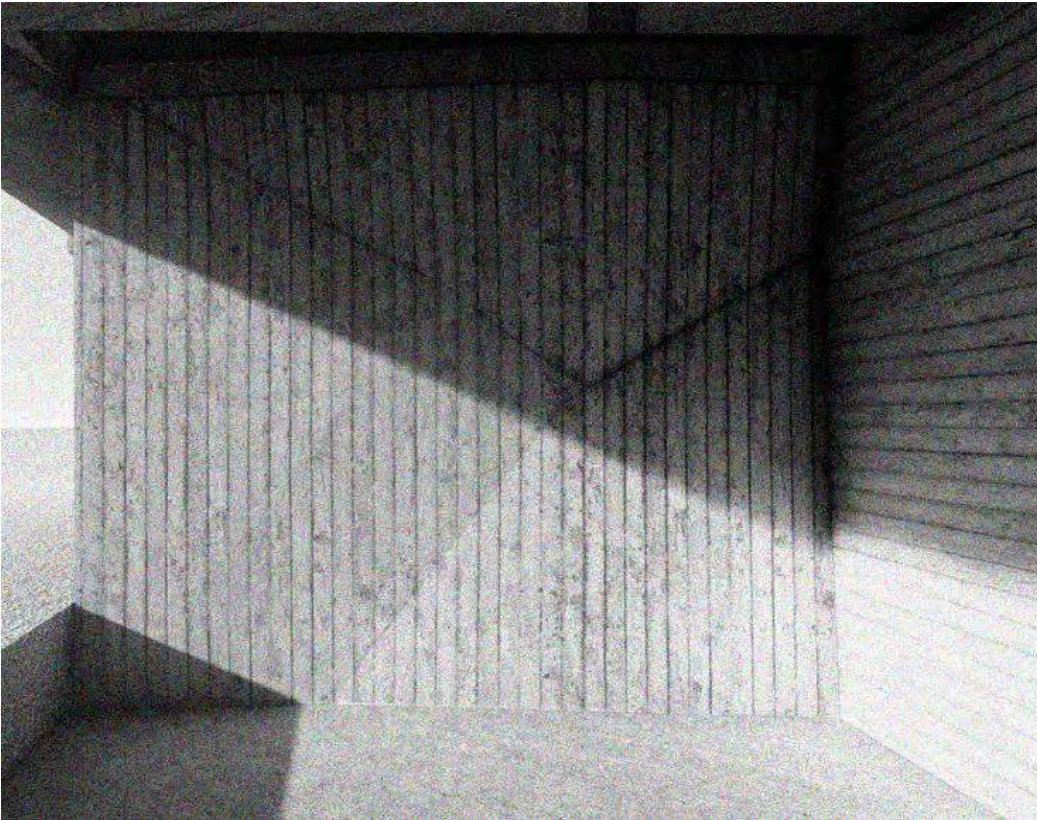
185. 70. Baths Showers Test



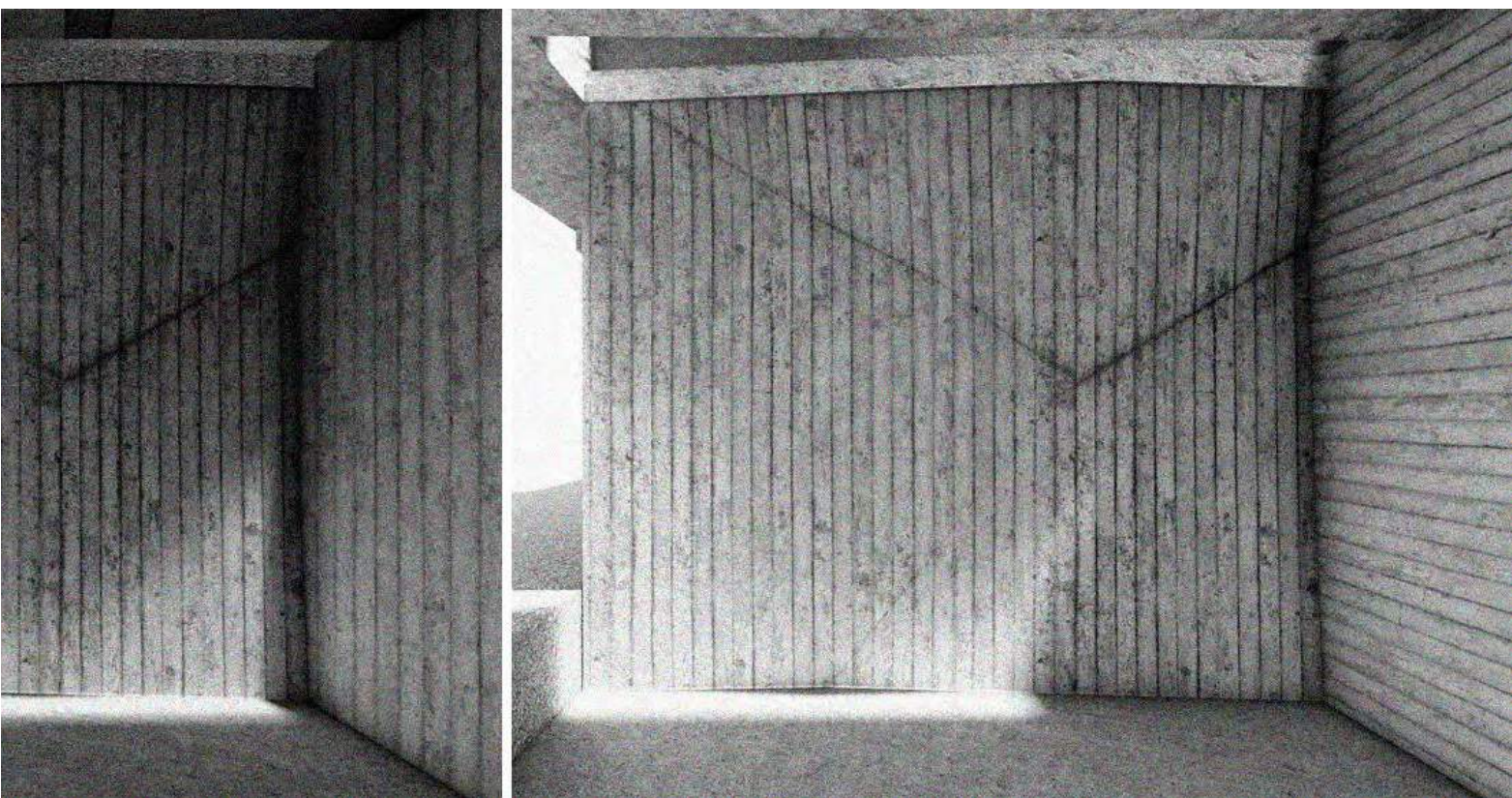
186. 70. Sea Bath Test



187. 70. Heated Bath Test

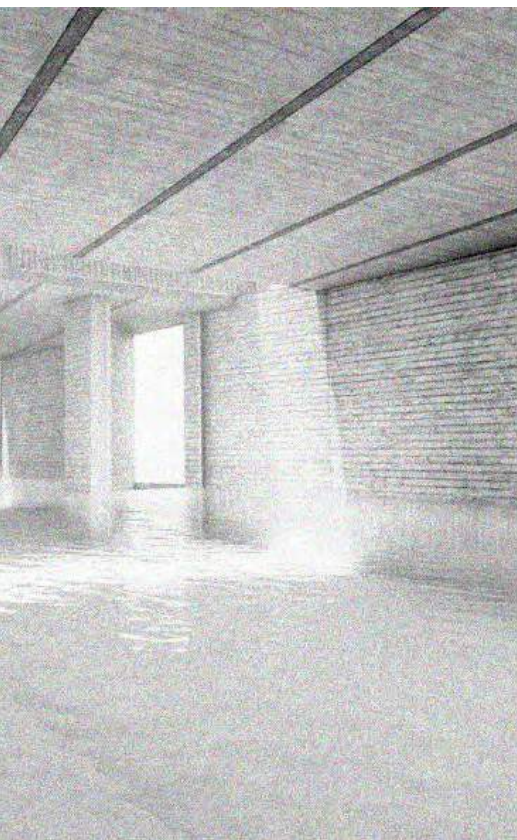


188. 70. Exterior Beach Shelter Test





189. 70. Main Bath Test



REHABILITATION

Following the atmospheric tests on the interior of the Rehabilitation Centre, minor planning and formal changes were made as a reaction to the ephemeral outcomes of the images. These shifts helped to build up an architecture that reacted to its temporal physical conditions as well as creating its own ephemeral moments within.

The programme moves from secure intimate spaces to large public spaces exposed to the surrounding environment, seeking to amplify the temporal effects surrounding 'the bunker'. Through the planning of the rehabilitation centre the ephemeral catalogue defined key areas, expressing the relationship between light, materiality, form, acoustics and the body. These aspects combined to provide an identity for the rehabilitation centre that can be seen through the following images.



190. Light-Well Interior



191. External Bridge View



192. North Corridor Interior



193. **Sea-Pool Interior**



194. **Massage Room Interior**











195. Rehabilitation South East Edge

REFLECTION

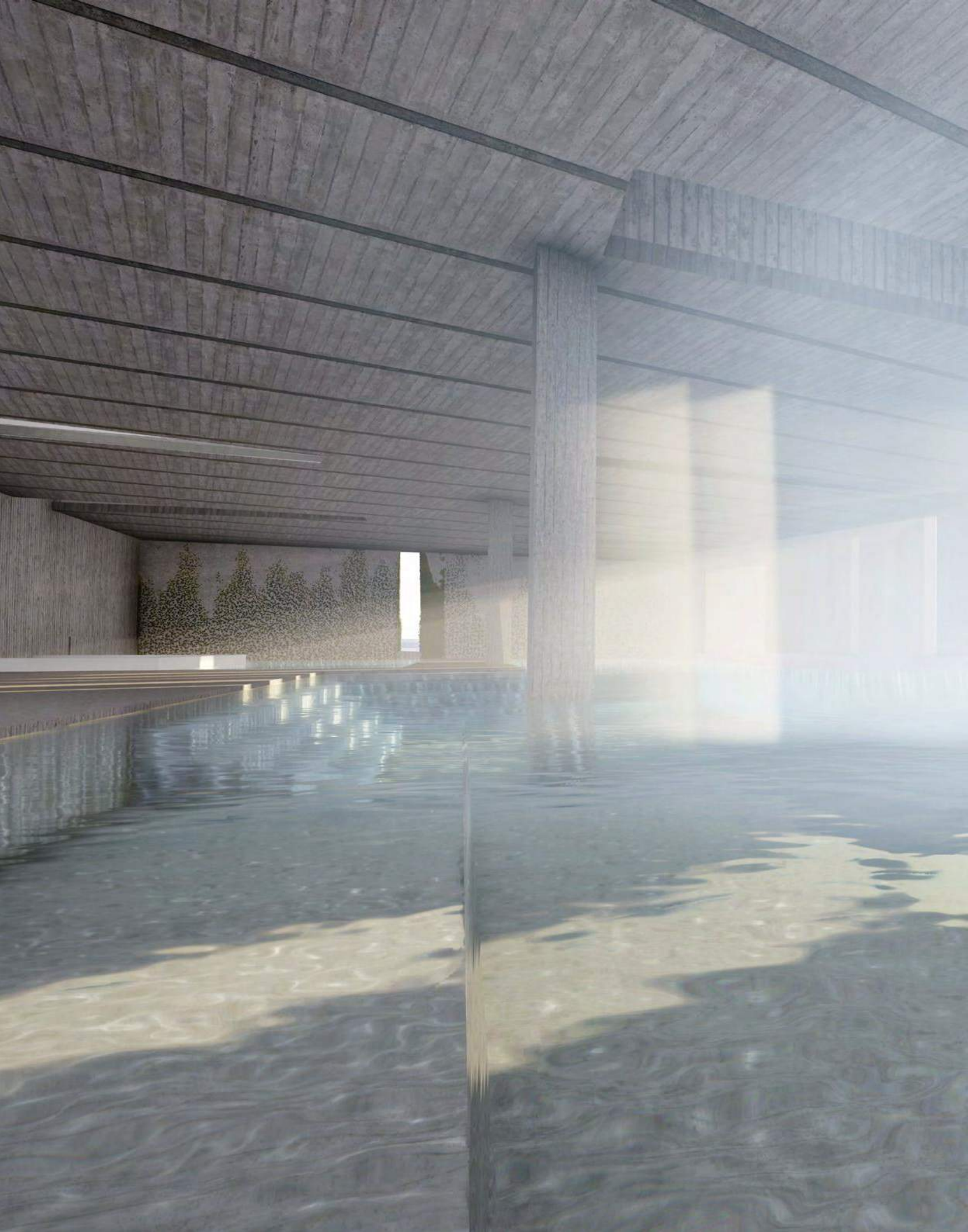
The final Rehabilitation design experiment thrust a bold architectural statement onto the foreshore of South Brighton's eastern edge. The notion of ephemerality within a fixed and massive architecture was primarily achieved through the ebb and flow between mass and place; allowing both resistance and acceptance of site in selected areas of the tested design. Sun position, tidal shifts, undulating ground planes and material weathering provided the key temporal parameters in which the design experiment responded to.

The method of 'making' continued to develop the forms established in the concrete material tests. Coupled with digital projections that tested interior atmospheric conditions, the physical nature of these tests defined a tangible architectural identity of temporality within this final design-led phase. Through the experiment these design characteristics were not only informed by the making process but also by the 'place'.

Limitations in this phase came through the restrictions of scale. With atmospheric, material and acoustic theories put into practice through models and digital projection a true sense of space and scale stemming from a full scale architecture was lacking. This was compensated through human perspective atmospheric tests and a deep understanding of the proposed site conditions.

This experiment employed similar themes to Peter Zumthor's *Therme Vals* (1996) in regard to abstraction of place and atmosphere. Key differences between the final design experiment and Vals come through the heightened response to site along with the methodical breaking down of the site specifics aspects of ephemerality.

This test sought to foster a temporal atmosphere in a fixed and massive architecture. While this intangible condition remained elusive throughout the research, the notion body and site identity emerged as key elements in distilling this state.







196. Presentation Boards

DESIGN DISCUSSION.

This chapter discusses the success and failures throughout the design research. It includes; summary, critical reflection and concluding comments sections that address how the research was carried out, personal learnings and the position this research takes within the greater architectural discourse.

Both research for design and research through design sections are discussed, with the ephemeral experiments being compared and contrasted with the literary and visual contexts.

SUMMARY

This research began with both a survey of the literary and visual context which provided a discussion around ephemerality and a framework within which the relationship between temporal spaces and fixed architecture could be addressed. This ran throughout the research, grounding the design phases. The first experiment was an installation that established a method for testing the relationship between form and atmosphere. This test brought in an architectural tectonic that was used in the later phases. The second and third experiments take place on South Brighton's rugged shore. The second experiment sought to invite macro-scale environmental factors into a fixed, concrete architecture. It began a compelling relationship between the tests and site. Finally, the third experiment sought out the relationship between the ephemeral micro-interaction of site and a massive architecture. This third experiment brought together the methods developed in the early projects resulting in a shore-front rehabilitation centre. The final experiment was intended to be a pragmatic consideration of how fixed and massive architecture can play a part in distilling ephemerality within a unique and temporal place.

CRITICAL REFLECTION

A number of findings emerged through this design-led research. The most significant hinged around the ephemeral relationship between a fixed architecture and its environment, highlighting the value of engaging with place. This research revealed methods in which a massive,

resilient architecture can project place into its ephemeral spatial makeup through a range of pragmatic approaches. The breaking down of ephemerality into a tangible objective through the ephemeral catalogue allowed for the tactile design response to touch on intangible outcomes. This key finding was suggested at the body scale, with formal and textural elements engaging place, atmosphere and occupant in a similar way to Zumthor's Therme Vals. The experiment not only realised the relationship between body and architecture, but that of body and context; seeking to ingrain the occupant within their physical and temporal context.

The method of design research played with the notion of scale, moving from an intimate to a public scope of works. The installation remained site-less, aimed at distilling the research question and focusing the breadth of investigation. As a result, site response wasn't considered until the Mid-Scale gallery. The lack of engagement with place was evident in this experiment, with only large scale environmental impacts considered. With external context providing the catalyst for many of the ephemeral interactions within the fixed architecture, introducing 'place' at an earlier stage of the research could have helped delve deeper into these relationships and further capture the character of site.

Due to the time limitation, the research was tested multiple times on one site. This helped develop a consistent and considered architectural language specific to South Brighton's shoreline. With more time allowed for this research, further

experiments could have been implemented around further sites with similar ephemeral elements, along with more restrictive residential and commercial sites where we typically find our architectural projects.

While the experiments increased in size and complexity the body scale, established in the installation phase was always at the forefront of the tests. This allowed for thorough design outcomes within the interiors of the experiments but left some areas of the exterior shells lacking design resolution. Due to working through an atmospheric orientated brief, the exterior shell wasn't considered a priority within the research, with the design language stemming from the stereotomic concrete tests. Through further iterations, human perspective of the architecture from and external perspective could have greater consideration. This brings up the impression of the public experiment on the surrounding cultural landscape. Due to the scope of the research, this factor was left unresolved with the physical context taking precedence. Being such a provocative and massive architectural project, it is expected public responses would greatly vary. The 'Bunker' has taken influence from nearby public scale projects in regard to material make-up and public needs and expectation. A wider exploration of cultural impact of the experiment could follow in further research.

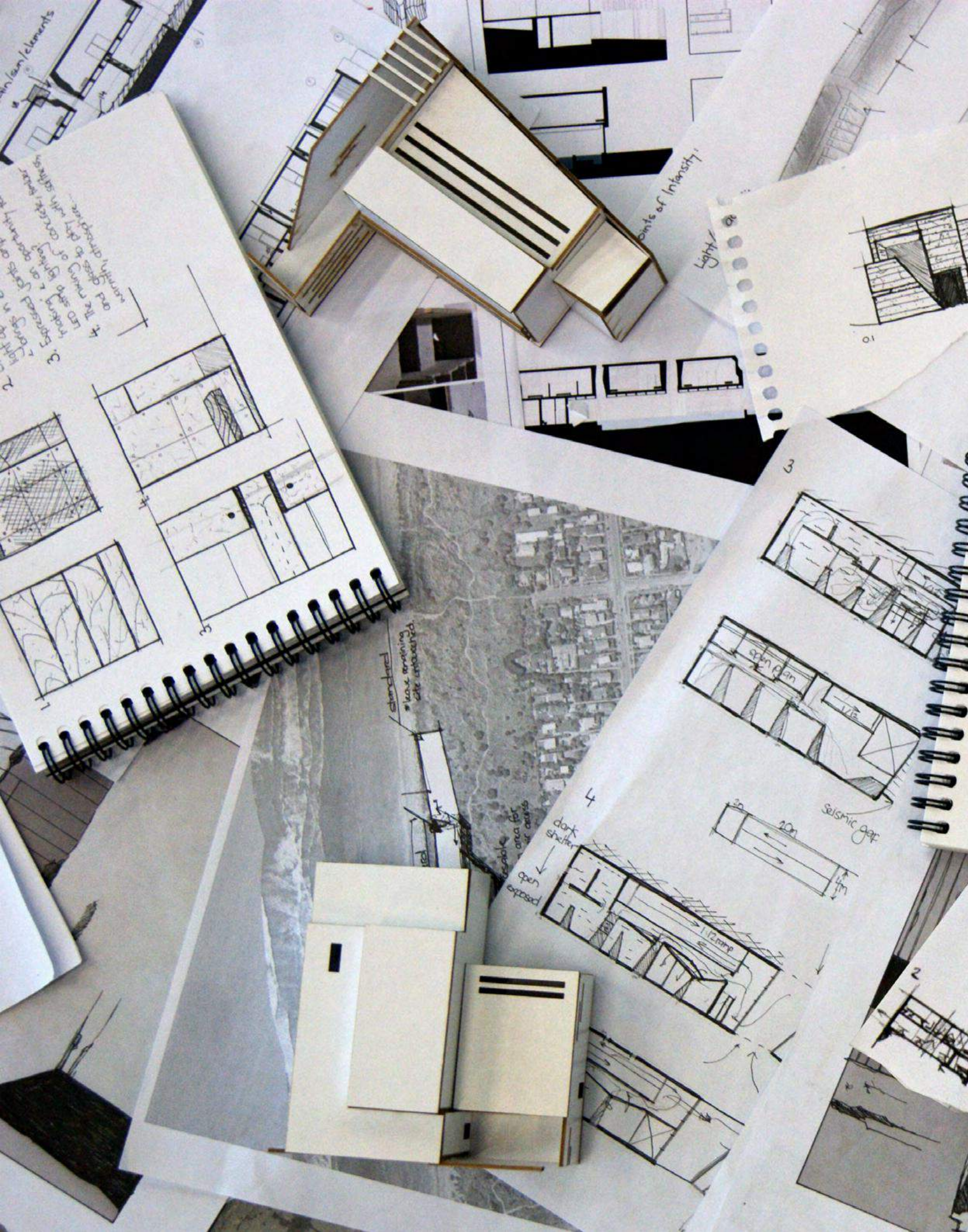
While unique to its physical context, this research expands on the atmospheric and material studies of Ando, Zumthor and Mostafavi. Using these sources as a discourse grounding.

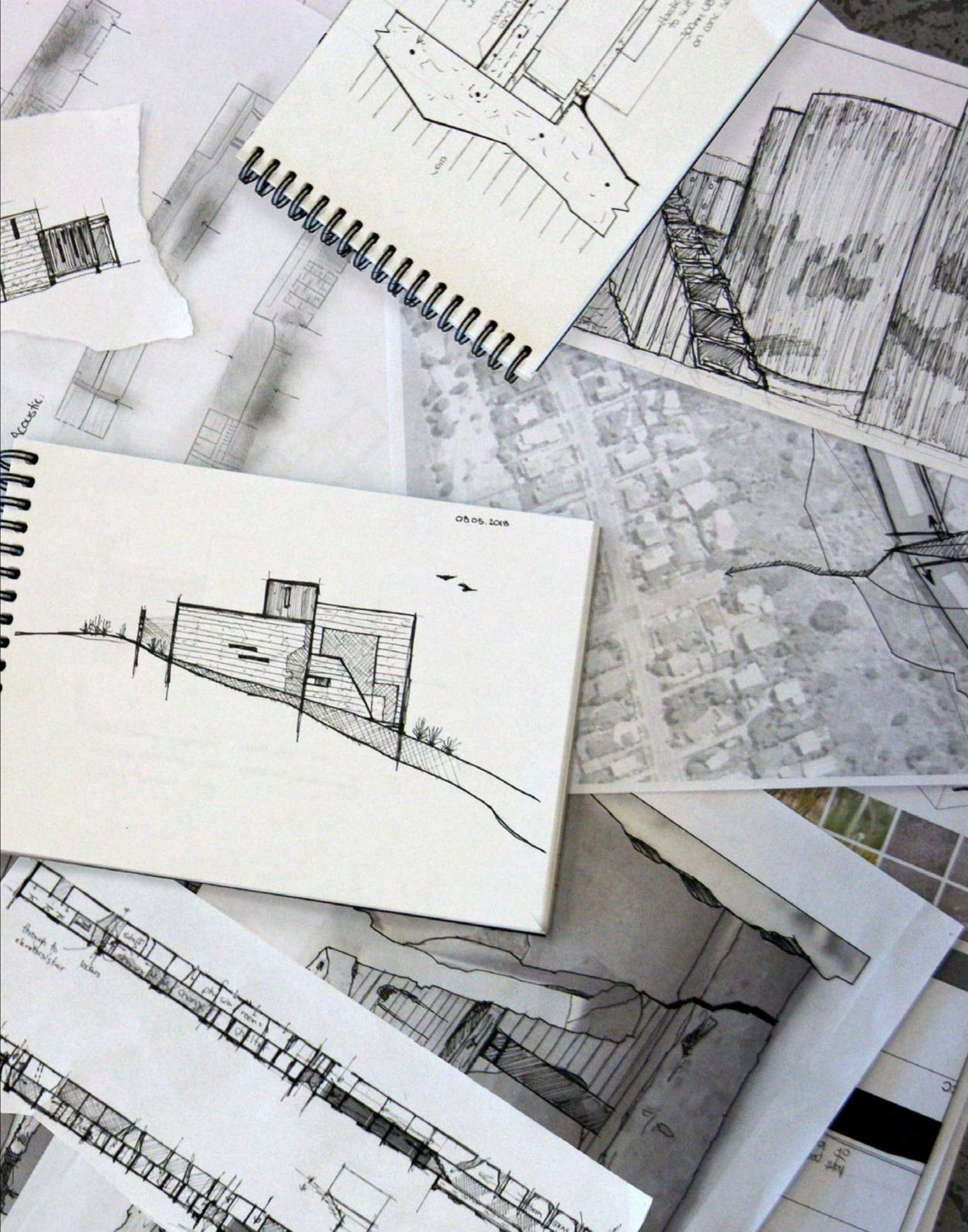
The design tests seek to utilise the existing theories of light, texture, and place, applying these to the series of site specific architectural tests.

CONCLUDING COMMENTS

The design outcomes in this research uncovered a range of methods that aided in representing ephemerality within an architecture of solidity. Working through scale allowed for the growth of the underlying exploration between fixity and ephemerality without the immediate demands of large scale programmes and structural needs, using physical modelling through a range of materials and techniques provided a fresh approach to many of the design obstacles. While the framework in creating the stereotomic and sectional models was measured and controlled, the outcomes often provided unpredictable results, key in defining an architectural language for the Bunker experiment.

With an ongoing interest in architectural moments that induce awe and serenity, the ephemeral catalogue, based on Peter Zumthor's 'aspects of atmosphere', from the 2006 text *Atmospheres*, became the essence of this research. This resource assisted in translating a highly intangible proposal into a somewhat achievable outcome that can be carried through to future projects and facets of research. By breaking down an intangible intention into a tactile outcome; including site, body, form and texture, inhabitants may gain a new understanding of their environment, engaging them with the spaces they occupy.





back to work
300m up
on core 30

Acoustic

08.05.2018

through for
electrical/fur
locks

08.05.2018

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FIGURE LIST

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138	Module Texture (N/A) Unknown. < https://www.google.co.nz/imgres?imgurl=https://i.pinimg.com/originals/59/dd/ba.jpg&imgrefurl=https://www.pinterest.com >	147
139	Rough Texture (N/A) Unknown. < https://www.google.co.nz/imgres?imgurl=https://i.pinimg.com/visual-texture-pattern-texture.jpg&imgrefurl=https://www.pinterest.com >	147
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142	Light Washed Ply-Form (N/A) Unknown. < https://www.google.co.nz/imgres?imgurl=https://i.pinimg.com/www.pinterest.com >	147



197. Concrete Section Model



198. Concrete Module