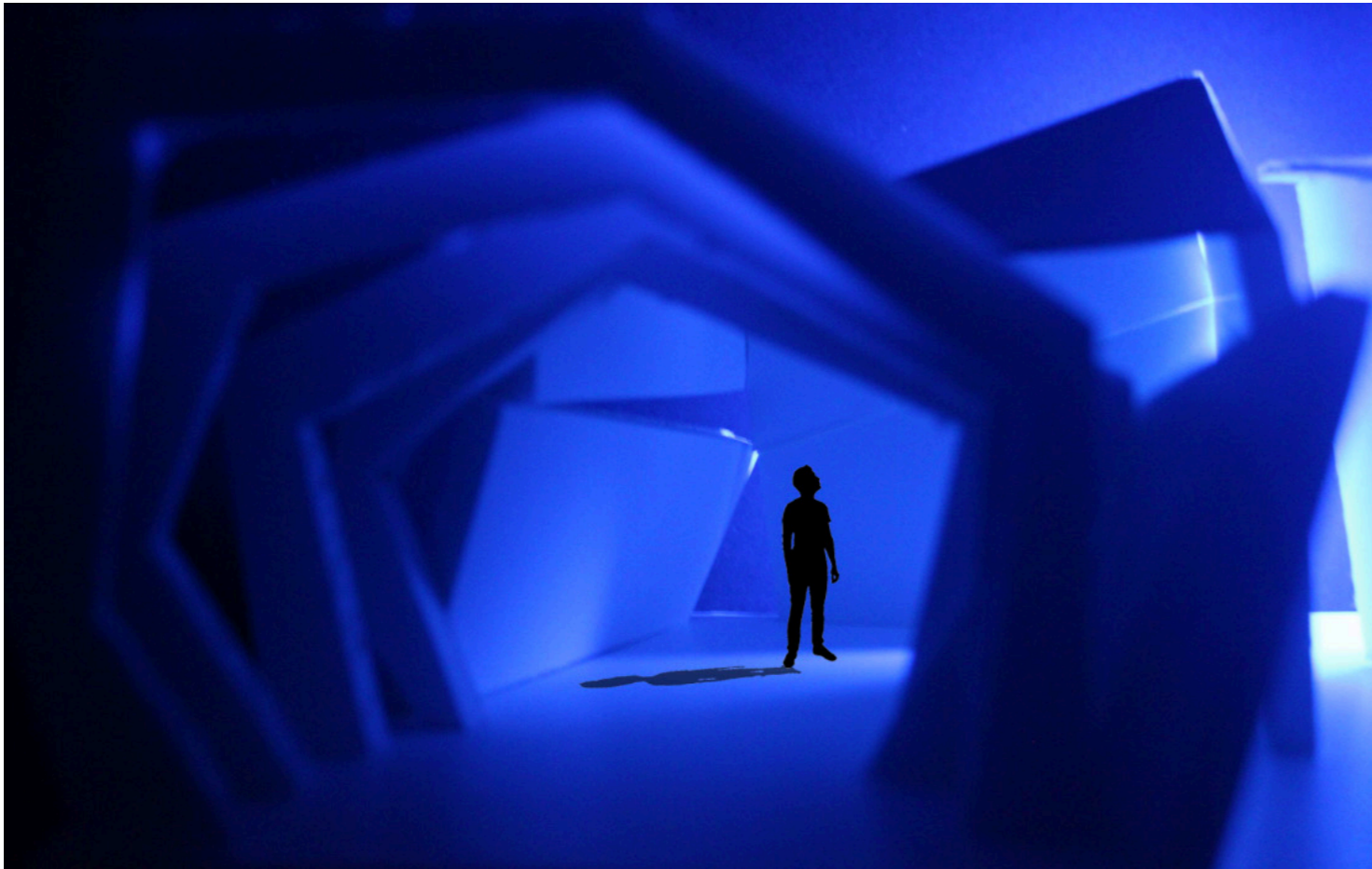


Experimental Architectural Space

logan clay



Title page

Experimental Architectural Space

The study of architectural space, creating immersive environments that evoke powerful
emotional engagements

A thesis submitted to Auckland University of Technology
in fulfilment of the requirements for the degree of
Master of Architecture and future environments

logan clay

Tkj2050

Lodgement year-2024

School Department- Master of Architecture and future environments

Abstract

What is space? If we strip all the materiality, the finishes, windows, doors and systems of function, what is space? A volume? A mass? My definition is simple... a volume of void we experience consciously through our internal human senses and subconscious mind. Now, the impacts of space can have powerful interactions and conversations with our mind, soul, and body. This can evoke memories or emotional responses. Today, architecture is a conversational topic that requires in-depth discussions and targeted iterations. Its sense of being in our societies, its use and designed intention, lacks human affiliation; it seems it struggles to function in parallel with our natural functions and humanistic features. This poses a huge threat to society, human growth and quality of life. Now more than ever in our world, mental health, societal complications and environmental impacts are at their highest. A common denominator is the quality of life, our mental state and functional health. By understanding space at its core and how we can interact with it, we can redesign in new and abstract ways, ways that elevate life. The issues to address in this thesis are the understanding of space, what it is, and how we can manipulate space in ways that create these powerful and impactful emotional connections and responses to the designed space around us. Why? I want to contribute to the new wave of design, architecture and art.


I want to find out the depths of space and how we can make people feel the architecture and space around them, or if that is even possible effective technique. In this research, I undergo extensive research and experimentation of space through model making and immersive experience stimulation. I create modelled space, play with scale and think about ways to deeply immerse humans into architectural space so that they may form a bond in connecting with their environment. I find this connection to our surroundings imperative in being able to live in the moment, sense life and engage across the multiple dimensions of life.

Attestation

I hereby declare that this thesis submission is my work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which is substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

The work and models created were done by myself, at my personal financial expense. The models created are evidence of a personal experiential process of design.

Student name: logan clay

Signature:  _____

	2
Title page	
Abstract	3
Attestation of authorship	4
Acknowledgments	9
Glossary	10
Chapter 1: Introduction	11
Positioning statement	
Chapter 2: literature review	12
2.1. Introduction	13
2.2. Light as a design tool	13
2.3. The use of natural light in architectural design	13
2.4. Strategies for using daylight In a modern setting	14
2.5. Artificial light in architecture	15
2.6. Light as a poetic entity in space.	16
2.7. Light and spatial dynamics	16
2.8. Architecture as a visual and emotional communication tool	17
2.9. Light connecting to social narrative	17
2.10. Architectural atmospheres	17
2.11. Frequencies of light and space	18
2.12. gaps in research	18
2.13. Conclusion	18
Chapter 3: methodology	19
3.Introduction	19
3.1 Research question and hypothesis	19
3.2 Research design	20
3.3 Approach	20
3.4 Rationale for Methodology	20
3.5 Reflective Practice	20
3.6 Explorative tools	20
3.7 limitations of methodology	21
3.8 Summary	21
Chapter 4: Artistic Design Experimentation and Analysis	22
Phase 1 : visual excavation	23
Phase 1: excavation of space through perspective, light and photography	23
- 1.1 introduction	23
- 1.2 Analysis process: light is a transformative element of architecture	23
- 1.2.1 natural light in these spaces	23
- 1.2.2 The implication of artificial light	23
- 1.3 Spatial awareness through the use of photography: from room to corner	23
- 1.4 conventional use of space: the power of overlooked spatial elements	23
- 1.5 conclusion of phase 1: future directions and key insights	24

Phase 2: Replicating space	25
Phase 2: Replicating and understanding space through abstract modelling and interaction with light	25
- 2.1 introduction	25
- 2.2 abstract representation through charcoal sketching: unpacking spatial features	25
- 2.2.1 defining the lines in a spatial dynamic area	25
- 2.2.2 occupied and dead space	25
- 2.3 Physical modelling: understanding space through light and paper modelling	25
- 2.3.1 the process of physical representation	25
- 2.3.2 Adding light: Dynamically transforming static models	25
2.4 The power of light and manipulating perception	25
2.4.1 emotional and psychological impact of light	25
2.5 further exploration: expiation of the technique	26
2.6 concluding phase 2: Insights and next steps	26
Phase 3: Making space	27
3.1 The Exploration of space through the use of cardboard models	27
- 3.1.1 the manipulation of the cardboard casings	27
- 3.1.2 The role of natural light	27
- 3.1.3. The experimentation involving artificial light	27
3.2 Space and human scale	27
- 3.2.1 introduction of human characters	27
- 3.2.2 Peter Zumthor Atmospheres and Cinematic Qualities	27
3.2.3 Spatial and Emotional Association	27
3.3 The power of space in its complexity or simplicity	27
- 3.3.1 Reflection in space with emotional responses	27
- 3.3.2 Static space and non- static space	27
3.4 Conclusion: The interactive display of light, form and emotion	28
Phase 4: Spatial depth	29
Phase 4: spatial depth: the interaction between light and space	29
4.1 introduction to spatial depth	29
4.2 using photography to investigate spatial depth	29
- 4.2.1. exploring domestic spaces and identifying the subtlety of light	
- 4.2.2. light as a non-physical entity but being able to interact with solid space	29
4.3 model making: the exploration of layers, loops and depth.	29
- 4.3.1. the construction of layered paper models	29
- 4.3.3 Creating a 3-dimensional sense of depth from a two-dimensional image	29
4.4 sound as unseen energy: investigating the impact of frequencies	29
- 4.4.1 exploring how sound might impact the perception of space	29
- 4.4.2 visualising space through sound	29
4.5 the concept of space within space: potentially redefining architectural design	30
- 4.5.1 small passages, gaps and corners as potential spaces	30
- 4.5.2 inspiration from James Turrell	30
4.6 concluding phase 4: nonphysical energies and the redefining of space	30

Phase 5: Understanding space	32
5. Understanding space: subconscious and conscious explorations	32
- 5.1 introduction: exploring occupied space and space within space	32
- 5.2 the model: Spaces representing life's environments and engagements	32
5.3 detailed analysis of each space	32
Space 1: congested and constricted urban space	32
Space 2: transitional, structured domestic space	32
Space 3: transitional, public or retail space	33
Space 4: free-flowing organic space	33
5.4 visual stimulation: how light can affect each space	33
5.5 combining the spaces: creating a unified environment	33
5.6 conclusion re- visualising daily environments	34
Phase 6 : Thinking space installations	35
Concept 1	
6. Phase 6: thinking installations- concept 1	35
6.1 Task overview	35
6.2 initial exploration: sketching imagined spaces	35
6.3 first conceptual model: curves, loops and light manipulation	35
- 6.3.1 Light as a spatial manipulator	35
6.4 impact of curves and light on the emotional response	35
6.5 conversations and reflections on the installation models	35
6.6 Second model: the concept of exploration and discovery	36
- 6.6.1 Journeys through the passage	36
6.7 the dialogue between the two lighting conditions of natural and artificial	36
6.8 Redefining the hallway: a journey through space	36
6.9 conclusion of phase 6: the cinematic experience of space	36
Phase 7: Making light the subject in architecture	37
7.1 Introduction	37
7.2 Model one: Initial exploration of light and geometry	37
- 7.2.1 Conceptual foundation	37
- 7.2.2 Tunnel effect and visual dynamics of natural light	37
- 7.2.3 Investigative insights	37
- 7.2.4 Emotional resonance	37
- 7.2.5 Forced perspective and imagination	37
7.3 Potential applications and symbolism	38
- 7.3.1 Design innovations	38
- 7.3.2 Design Presentation 1 exhibition	38
7.4 Rethinking design: A space for movement and experience	38
- 7.4.1 Sketching and concept development	38
- 7.4.2 Final model production	38
7.5 Presentation strategy: cinematic immersion	38
- 7.5.1 Creating an engaging atmosphere	38
7.6 Presentation Setup Foreshadowing	38
7.7 Conclusion	38

Chapter 5: Discussion of research	41
5.1 Discussion of artistic design experimentation: light as a subject in architecture	42
5.1.1 What did I find	42
5.2 What was difficult	42
5.3 What did I learn	42
5.4 What could this experimental journey lead to?	43
5.5 final model and future directions	43
5.6 Conclusion	43
Chapter 6: Conclusion	44
6: Conclusion statement of final experimentation	44
References	46
Appendix	47
Appendix A- Phase 1: Visually excavating space through photography	48
Appendix B-Phase 2: Replicating space	49
Appendix C-Phase 3: Making space	50
Appendix D- Phase 4: Spatial depth	51
Appendix E- Phase 5: Understanding space	52
Appendix F-Phase 6: Thinking space- Installations	53
Appendix G- Phase 7: Making light the subject in architecture	54
Appendix H-Phase 7: Final model draft at 1:50 scale	56
Appendix I: Extra images of interest	58
Appendix J: Images from literature review	59
Appendix K: Final Model	60
Appendix L: Final Presentation	62
Appendix M: Final Presentation and reflection	63

Acknowledgements

A small group of people have contributed to me throughout this project. First, I would like to thank the Auckland University of Technology for allowing me to conduct this study and providing services to make this thesis and experimental research happen.

A select few individuals have gone to lengths to ensure I could conduct this research and complete my thesis to a high professional standard. To complete such an in-depth, abstract experimental project, it takes unique individuals and perspectives to understand my vision for this research. For that, I would like to thank Francis Joseph, Dermott Mc Meel, Nick Sargent, and Micheal McCabe. First off, I have to give a big thanks to Francis Joseph and Dermott Mc Meel for being my primary supervisors throughout the year. I would like to thank Francis for providing amazing insight and feedback regarding my written work, design work and overall presentation. She helped me articulate my writing and delivery professionally; she helped me grasp the ideas for my project, provided locations and extended her time for my research. I would like to thank Derrmot for his brilliant vision and ideas regarding how I visualise my work and insight into ways of viewing it. I would also like to extend my thanks to Nick and Micheal for providing comments and opinions in the early stages of my work to develop ideas. They also provided unique research material and insight into external perspectives and narratives. Dermott and Francis have extensive backgrounds and brilliant minds who helped me hone in on the big idea for this project.

I would like to thank all the architects, designers, artists and researchers whose work I have studied and grabbed both inspiration and information that helped guide and accelerate my research. I would like to thank Timothy for organising a space in which I could present my work to the examiners. He provided information and a platform in which I could visually display and present my way in a compelling and impactful way.

Finally, I would like to extend my thanks to students, parents and friends who have viewed my work, shared their perspectives and given insight into how they perceive my work. They helped shape and transform my articulation and delivery of the narrative and impact of this project. I would like to end this expression by saying how fortunate I am to be a part of this architectural school and be granted the opportunity to conduct this study and further my knowledge in the context of architectural space.

Glossary

Terms	Definitions
Space	The voids of volume surrounding us that serve functional or non-functional purposes. In the architectural context, buildings, houses, and any space are designed and built.
Dimensions	An alternative reality or an alternative space that is within another but is not overly visible due to it having a layered effect. A series of layers that are arranged to exist in one space all at one given moment
Energies	Forces that aren't necessarily visible or physical but can affect or alter the physical state obeying
Frequencies	Wavelengths that are either compressed or decompressed that give off an auditory response of high and low pitch. Vibrations that are caused by these wavelengths have effects on the physical.
Multi-diverse ecosystem	A living environment with a large array of living organisms that live collaboratively despite many differences and physical properties.
Conscious/subconscious	Conscious- the ability to be awakened and make decisions at free will- the ability to make a move in a state of knowing. Sub-conscious- the state of mind that occurs unknowing or behind the scenes- in the back of the mind.
Geometry	The shapes, angles, orientation and basic structural properties of shapes that create structural architectural space

The use of light in architecture is a crucial aspect that shapes the atmosphere and influences our visual perception and emotional experience. This project explores the unique experimental techniques found in model-making space, using light to manipulate the atmosphere. By investigating these near-illusion effects, I aim to study how architectural spaces can be transformed into tool that can create impactful, powerful and memorable learning experiences. In this process, I will investigate the potential architecture has to become a vessel to bring meaningful connections between people and habitable space to discover new perspectives of the interaction and experiences within space.

Positioning statement

Architecture is a complex and unique collaboration of theory, design and built systems that create habitable space. However economic priorities and environmental pressures have driven the field in a more profit-based fashion at the sacrifice of human connection and wellbeing. The richness of architectural history shows diverse and complex structures that take into consideration the multiple energies that make up life, from spirituality and mindfulness to enhancing a meditative state of mind. The design of architectural environments needs to pay greater attention to the multiple factors and entities that make up our living world - from microorganisms, energies, sounds, frequencies, emotions, conscious and subconscious mind and spirituality. All of these factors have a direct correlation to how we experience and interpret space - from what we like or dislike or feel more comfortable in. Often, these thoughts and feelings are a subconscious phenomenon that occurs without us realising the detrimental impact of putting ourselves in spaces that break us down and don't allow for imagination and spiritual expansion.

Architecture today has become a profit-based system that has its main goal set on maximising occupancies and growing financial returns. This is particularly true in residential properties that have small, closely packed apartments on small blocks of land aimed to maximise occupancies and profit per housing unit. These dwellings generally lack the space required for people to live comfortably, engaging and promoting less cognitive interaction and less creativity. Such spaces don't elevate our everyday lives; they don't leave us excited to come home from work and unwind- mentally, spiritually and wholeheartedly. Holidays and the concept of nature escapes give people a release that relaxes them, however, if such qualities were designed into our everyday home, work or school setting. The need for constant 'escapes', increased stress, and decreasing wellbeing would be minimised to give us a chance to restore our wellbeing naturally. The first step would be to understand how to manipulate architectural space to cultivate the presence of high-energy design in the context of architectural infrastructure.

The aim of the project is to challenge the current architectural practices by reimagining space as a vessel that is able to connect us on a more in-depth level. Using a cinematic approach of visualisation and communication that will evoke emotion and a narrative drive through the use of light and geometry, I will be able to explore how architecture can be used to enhance mood, mental health and spiritual being. My goal is to create modelled spaces that go beyond the traditional functionalities of architectural space and demonstrate a fostering emotional and cognitive growth, adding a restorative experience with space we use.

Chapter 1

Introduction and positioning statement

Chapter 2

Literature review
Light in architecture

Contents:

- 2.1. Introduction
- 2.2. Light as a design tool
- 2.3. The use of natural light in architectural design
- 2.4. Strategies for using daylight In a modern setting
- 2.5. Artificial light in architecture
- 2.6. Light as a poetic entity in space.
- 2.7. Light and spatial dynamics
- 2.8. Architecture as a visual and emotional communication tool
- 2.9. Light connecting to social narrative
- 2.10. Architectural atmospheres
- 2.11. Frequencies of light and space
- 2.12. gaps in research
- 2.13. Conclusion

2.1. Introduction

This literature review addresses the main topics and ideas that inform this research and unwraps this experimental thesis project. I will unpack some of the theoretical frameworks that have been considered. This review includes discussions of atmospheres in an architectural spatial context, light, techniques of cinema and its relation to architecture, as well as some examples of how these theoretical ideas have been applied by other practitioners. The use of light in architecture has an important role in how space is visually perceived and emotionally experienced. Its psychological appeal affects users as well as allows them to engage in a personal manner and form their judgments based on their experiences. The use of light in architecture has long been employed to add visual appeal to buildings, to bring purpose, and a sense of aura to demand a sense of presence to elevate our human senses. This literature review explores the relationship between light and architecture and how and why designers have made conscious design decisions using the element of light in specific areas to gain attention. This review is intended to help understand the natural and artificial use of light to discover their roles and effects in diversifying a space. This review looks at theoretical explanations, key research approaches, historical phenomena, and key moments in present times that show the practice of light in architecture. They help enhance the understanding of why light in architecture should not be accidental but rather a carefully considered, deliberate choice. Architects can design with light, creating atmospheres and influencing emotions within a space, expanding and enhancing spatial experience..

2.2. Light as a design tool

Light has been a part of even the earliest architectural phenomenon, specifically ancient Egyptian temples. Light was used in temples like Amun-Re at Karnak (c. 2055-1650 BCE). Natural light was used to enhance spiritual experiences in sacred places (Arnold,199) Its dynamic and diverse array of uses is endless to elevate and dramatise space. In ‘The Architecture of Light: Recent Approaches to Designing with Natural Light’, Steane (2011) analyses the work of Le Corbusier’ and his emphasis on light as a mechanism to elevate architecture. “Study the way the walls of the room receive light.” (Steane, 2011, pg. 12). The word study is used in an observational context in which we take in the visual attributes and reflect. This quote highlights the significance of ‘studying’ the way light interacts with a counterpart of space, a wall. The term descriptive “receive” implies the walls of a building have some ability to nurture, absorb or react to its presence. It gives a sense of life to the wall as it reacts to the movement and presence of the all-powerful ‘light’. “How light is handled is key to the architect’s role as a choreographer of events which decide the ‘distances and atmospheres’, the ‘rhythms, dimensions and tempos of everyday life.” (Steane, 2011) Here light is discussed as the object that is moving and architecture is static but, a well-designed space will take into account this movement and be designed in a way to invite the light to elevate or exaggerate its presence to create ‘events’ within space. So, natural light was used as a focal point to be designed around where architects choreograph their visual displays through design. From Le Corbusier’s perspective on light in architecture, he believed that it was a prominent aspect that brought a relationship between interior and exterior spaces, and it was a play that brought shapes together to create architectural forms and light to define its purity in existence.

From the perspectives of many other designers and artists, light is also viewed as a principal highlighting element of space. The artist James Turrell writes, “The experience of light reflects the wondrous and complex nature of human perception”(Turrell, 2014, p. 13) He goes on to describe, “light is not so much something that reveals, as it is itself a revelation”(Turrell, 2014, p. 13). So, in James Turrell’s works, he subjects light, making the spatial elements subtle but so complex that the two combined create a beautiful narrative that visually communicates to the viewers. His works play on using geometry and light combined to create these interesting, engaging spaces that portray the relationships between space and light in a comprehensible manner. This work relies on the senses and the visual experiences to elevate the depth of space, exposing shadow and light working in space to create nearly its architecture, allowing us to integrate with the space. In my experimental journey, light and geometry have been key elements to focus on and use as a tool to portray the message of the power space has on us humans. This sense of power that comes with the illumination of light in space is used by me to elevate and create a deep sense of emotional impact parallel to a psychological experience.

2.3. The use of natural light in architectural design

In historical context, natural light was not only used to bring illumination to objects and space but also to create a bridge between the natural world and the built environment. For example, in many churches and cathedrals, natural light is used to shine through stained glass windows, creating a kaleidoscope effect that brings out the colours that shine into the interior of the space, creating an exaggerated, beautiful array on the interior. This occurrence symbolises the divine presence of spirituality and helps portray the transcendent experience of the holy place (Natural Light in Medieval Churches, 2022). This idea of using a medium that acts as a filter between space and light is extremely interesting in the sense that it can alter and affect natural light manually without interfering, removing the factor of human interaction and adding a more natural effect. So, to extend this idea in my project, I added a light filtering medium in a few of my models that changes the perception of the received light, altering it and changing the interior of modelled spaces that I have created.

In terms of modern architecture and how light is used, Frank Lyold is a great example, specifically his work ‘Fallingwater’ (1935). It personifies how the use of natural light can be implemented into a living space, how nature and the built environment can play off of each other’s qualities and be one space having an intermediate element, ‘light’, to be subjected as a glue or connecting attribute. The way that the flowing water of nature contrasts with the flowing built blocks of space, the way the forest encompasses the building, like the walls encompassing the interior space, are all highlighted and elevated with natural light.

We can also notice that Frank uses large window openings and cantilevered terraces that create a seamless connection from interior to exterior, visually inviting the surrounding environment and enhancing the space's overall presence in nature (Appendix J, figure 1). So we can see the use of light, specifically natural light, being used to invite nature in and create a serene environment, but the intensity and gravity I would like to see this style of design in doesn't exist. The intense enslavement of surrounding energy to be directed to a single aspect in space is the intention of this experiment. Taking into account the way he contrasts space with light is a useful tool to help articulate a design technique to help elevate the designed space (Hoffman, 1993). In terms of my project, I found this idea of natural light and natural scapes to have this sense of beauty, purity and natural form. This natural tranquility is something I wanted to portray in my experimental spaces, as it has a harmonic tone that flows with our natural state of being. It helps us connect to our surroundings and be present within a moment. This key idea of being present within a space is what will elevate the experience of a designed space that people can connect with on deeper levels.

Figure 1 (Appendix J, figure 1)

Frank Lyold Wright's Falling Water House



Note: Frank Lyold Wright's Falling Water House (1935) is a house he designed in collaboration with nature. From 'Frank Lyold Wright's Falling Water: The House and its History (pg 22), by Donald Hoffmann 1993.

2.4. Strategies for using daylight In a modern setting

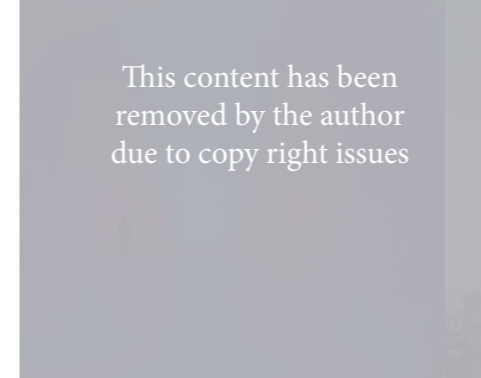
Nowadays, in architectural practice, there are ever-growing efforts to maximise daylight and use light for sustainable living. Research efforts made by Edwards and Torcellini (2002) highlighted in (Day, 2012) the overwhelming benefits daylighting strategies have on wellbeing, sustainable living standards and efficient living. So much so passive house design techniques have become a standard for design and for the way forward in building living spaces. In basic terms, the use of daylight in modern design mitigates the need for using artificial light that relies on energy and high consumption. Not only is it a financially beneficial choice, but increased use of daylight has been proven to increase overall mood, productivity, well-being and quality of life, whether in a home setting or workplace. Taking these elements into account when designing spaces for the public has huge effects on how we live and continue to live in a population-growing, global-warming environment. So, in a modern setting, in this example, we can see the light being used as a tool to create more self-sufficient, built spaces that have characteristics of nature and mimic its functions to perform the same and outperform old ways of designing.

Passive house design involves the use of solar energy as a primary source of energy. This function plays on the orientation of the building, taking into consideration the sun's path throughout all seasons to maximise the light that can be used to light the building naturally all year round. An example of this in practice is 'Herzog & De Meurons Elbphilharmonie in Hamburg' (archdaily), which is a beautiful building that has a large array of glass façade that absorbs light into its interior to prolong the use of daylight to illuminate its interiors. Not only is it an efficient example, but it is also extremely powerful in the sense of its design collaboration with light. Similarly, the Louvre in Abu Dhabi (Appendix A figure 1-4) is an art museum that has a façade feature that has a filtered roof that allows minimal light in with maximum shading and aesthetic attributes on its interior.

This also acts as a device that cools the space beneath from extremely damaging temperatures. These ideas of using planes or material surfaces that interact with light and act as a medium between interior and exterior are similar to that of the church pane windows. They are such important counterparts that allow this translation of light to be passed on and communicated with architecture and its occupants (figure 2,3,4), so, in terms of my experimental phases, I have looked into this concept of daylight and experimented with how it can be expanded upon. It, in a way, deepens its symbolic use like film does, I used two different types of daylight from different times of the day to be infiltrated into my spaces to create a narrative of a changing atmosphere, a living atmosphere that is constantly changing like the day as it shifts to night.

Figure 2 (Appendix J, figure 2)

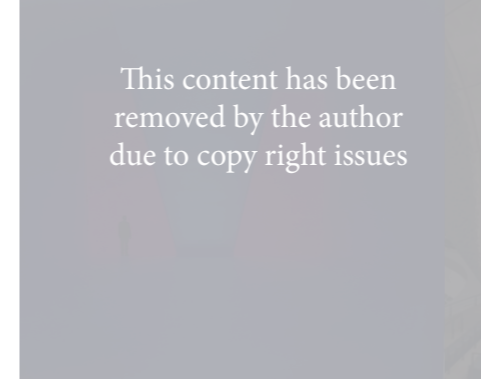
Exterior of Herzog & De Meurons Elbphilharmonie in Hamburg



Note: Herzog & De Meurons Elbphilharmonie in Hamburg from the website Arch Daily displaying the contents of glass building

Figure 3 (Appendix J, figure 3)

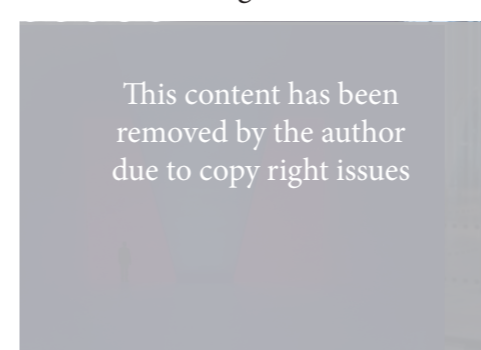
Interior of Herzog & De Meurons Elbphilharmonie in Hamburg



Note: The Interior of Herzog & De Meurons Elbphilharmonie in Hamburg displays its intricate structure that carries on from its dynamic exterior

Figure 4 (Appendix J, figure 4)

Interior of Herzog & De Meurons Elbphilharmonie in Hamburg



Note: The Interior of Herzog & De Meurons Elbphilharmonie in Hamburg displays its intricate structure that carries on from its dynamic exterior

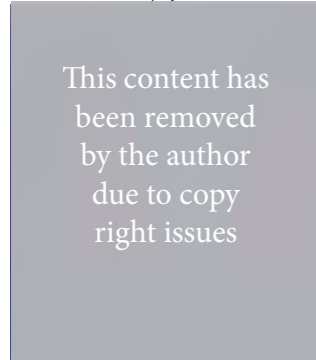
2.5. Artificial light in architecture

Advancements over the years in artificial lighting have led to new and interesting ways that designers can implement lighting into architecture. Specifically, the advancements in LED light have led to users being able to engage with light in a new profound manner, being able to control lighting, colour, lighting distribution and intensity. This has allowed for the control form of lighting that elevates spaces to a new level. Designers like James Turrell have used lighting in ways that bring a poetic attitude to light in architecture and set moods. (Appendix J, figure 5,6) architects can have a empty room that is lit in a specific way that changes its atmosphere and phycological appearance to the user. This is where light in architecture becomes a form of art, where users now experience space from the perspective of the designer and respond to their cues of conscious spatial decisions. Like in le Corbruisers work, light playing off these structural features creates its dynamic event or form of 'space'. (Appendix J, figure 7,8)

This form of artificial light has moved to interactive features that can self-adapt or change on demand, allowing for a space to have consistent lighting in an Interior space regardless of exterior influences like weather. This is evident in Apple Park- Foster+ Partners headquarters (Appendix J, figure 9). This place can adjust lighting based on the surrounding natural lighting, creating this diverse and dynamic collaboration between the natural and artificial lighting forms. This idea opens doors to having spaces that elevate moods and enhance well-being regardless of surrounding phenomena. I attempted to include this interaction of natural light and artificial light in my experimental space, as I find this contrast to be a transformative experience that brings people from one space to another. This contrast helps outline the differences and impacts of each setting with the different inflicting atmospheres.

Figure 5 (Appendix J, figure 5)

Coconino by James Turrell



Note: Coconino, 2007, installation view at Hausler Contemporary, Zurich, 2007, from James Turrell the retrospective(pg 278)

Figure 6 (Appendix J, figure 6)

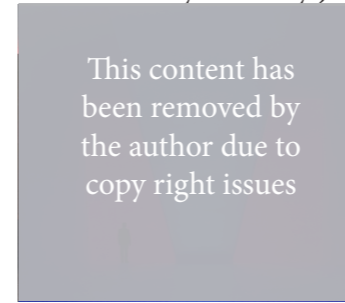
James Turrell, Bridgets Bardo installation



Note: Bridget's bardo, 2009, installation view at kunstmuseum wolfsberg,Germany,2009, the retrospective by james turrell (pg254)

Figure 7 (Appendix J, figure 7)

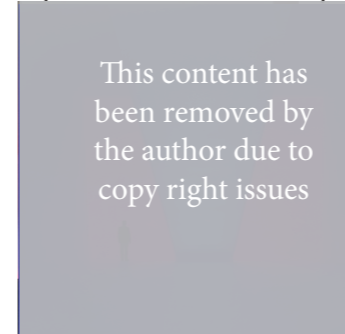
Interior of 'sky mass' by James Turrell



Note: Sky Mass,2003, Valley of the Moon Ranch, Clinton, MT, from the retrospective (pg 168)

Figure 8 (Appendix J, figure 8)

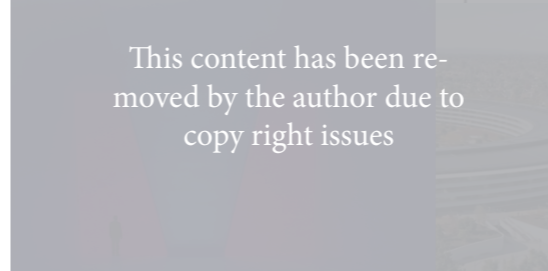
Sky view at sunset of 'Skymass' by James Turrell.



Note: Sky Mass,2003, Valley of the Moon Ranch, Clinton, MT, from The Retrospective (pg 168) by James Turrell

Figure 9 (Appendix J, figure 9)

Apple Park- Foster+ Partners headquarters.



Note: exterior view of Apple Park- Foster+ Partners headquarters, illustrating how it is integrated into its environment

2.6. Light is a poetic entity in space.

In both film and architecture, there is this recurring theme of light that follows its basic form of illumination however, in other contexts, it transcends with a more poetic perspective, transforming and communicating with the surrounding space. In film specifically, directors use light as a symbolic tool that evokes tone and atmosphere supporting the setting narrative. Darkness is used similarly to bring and retract attention, which creates sensitive emotion disruption. In the film *Hacksaw Ridge*, directed by Mel Gibson and based on WW2 events, we see many examples of this. In suspenseful moments in the film, lighting is made flat and dim, dark and mysterious, evoking that something is about to happen that isn't good (figure 10). In the same essence, the opposite is true, at the end of the film, when the main character is being raised on a gurney because of injury after heroic acts, the main character is seen being raised high in the sky with the sunset in the background proposing a majestic atmosphere. Here, an energy of heroism, relief, and spiritual transcendence is pushed onto the audience, convincing them of the character's innocence. We are manipulated to feel a way by what we visually absorb from a character created in a world we cannot physically touch or be a part of. This idea of giving the audience a space that they can feel a part of but not be in is where an architectural space, using those same techniques from cinema, can portray an even more in-depth personal connection in my research and the models created. I experimented with this idea of evoking an emotional tone through light effects and setting the tone and mood in space using the techniques of the film (Appendix J, figure 11).

'A Reflection on Cinematic Architecture Through Light, poetic imagery, narrative and Social Issues' by Keiichi Ogata 2022 is a text that reflects on the use of light and its importance in the cinema context. It gravitates towards the importance of light and darkness co-existing to rely on each other to create an impact, where it reflects on light's ability to pass through and darkness to eventually fade away. One key note from the text highlights that "this fascination with light and shadow Tanizaki admired comes from all that is left behind when light passes through darkness, and that light, therefore, cannot be absolute but always temporary and exists only to disappear." (Keiichi, 2022, p. 11). This highlights the nearly 'cat and mouse' chase; light and darkness play together to elevate space. The way that these two either cancel out each other or peacefully coexist, yet the conscious decision of the designer or director to choose the intended blend or balance to create the perfect setting for that specific moment brings us context. This balance is a scale I played with when experimenting with spatial installations to figure out what blend I would need to portray for specific emotional or psychological events to occur. My research response to this idea is to highlight the significant similarities architecture and cinema have in terms of social connection and emotional enhancements. This cinematic approach to space, using techniques of perspective, lighting and setting to capture the character and bring out the audience's emotion to form a bond and connection, is the idea I went with to expand within architectural context and space. Experimenting with these technical tools to evoke an emotional response and connection to occupants to structure in the same way that directors connect the audience to characters can bring powerful re-connection and re-invention to how space is used, perceived and experienced. Using a digital platform that portrays architectural language and ideas in a comprehensible visual way would be able to help people connect with its true intention and powerful impact and give architectural space a sense of narrative in my designs.

Figure 10 (Appendix J, figure 10)

Desmond Doss in the film *Hacksaw Ridge*

This content has been removed by the author due to copy right issues

Note: Desmond Doss in the film *Hacksaw Ridge*, scene of suspense as he is under sniper attack, image portraying setting and lighting depth

Figure 11 (Appendix J, figure 11)

Desmond Doss in the film *Hacksaw Ridge*

This content has been removed by the author due to copy right issues

Note: Desmond Doss in the film *Hacksaw Ridge*, a scene of tranquillity and angelic setting, highlighting relief and character innocence

2.7. Light and spatial dynamics

This movement of light and dark is specifically true in architecture, where natural light shifts across the face of a static structure. James Turrell explores light presence as a poetic value in space and plays on its ability to manipulate our mood and change perspective. He creates these spaces that allow people to experience this collaboration of light and structure and give them a platform to reflect and form this relationship. This is evident in all his work, specifically in the Roden Crater Project, James Turrell. This interior space has a stairway that leads to an opening to the sky, drawing our attention to the exterior. It's a beautifully designed space that directs focus through stairs to a focal point. This focal point has the dynamic nature of a changing event as the sky turns from daylight to sunset, and it's a beautiful play in how the structure stays static, yet the nature around is ever-changing (Appendix J, figure 12) It's an interesting contrast as a building absorbs the rising sun setting a morning setting, mid-day and sunset, all providing different atmospheres that project different tones of colour on the walls and in itself creates new contextual spaces. So, in architecture, we can see the light being used to guide our perspective, bringing our attention to key details to grasp the space's intent. My research response to this idea is to highlight static and non-static space. I think that there is a powerful nature of space that promotes static and non-static movement of the occupants and space that is static compared to space that moves. This idea of space being static but promoting movement through explorative flow and nature is an attribute I modelled and sorted out to see if I can expand its delivery effectiveness and test whether it was effective in engaging occupants. Turrell's work specifically helped me orientate my design perspective in a creative and awoke a sense of realising.

Figure 12 (Appendix J, figure 12)

Roden Crater Project James Turrell

This content has been removed by the author due to copy right issues

Note: Roden Crater Project James Turrell interior with early morning view, from the book retrospective, (pg226), by James Turrell

2.8. Architecture as a visual and emotional communication tool

So, in the same way that cinema uses visual displays of imagery to portray deep emotional and social messages, architecture does the same. It's nearly a form of storytelling in which people can use their perspectives and experiences to form those psychological connections. Architectural design and film are artistic compositions of imagination, space, emotions and dimension driven by the intelligence of the director and the designers perspective. In Olafur Eliasson's work, we can see this specifically in 'The Weather Project' for the turbine hall of Tate Modern (Appendix J, figure 13). The people in this space aren't just looking at a scene in a two-dimensional plane but nearly become the characters of this scene and experience it first-hand. The elements in the play of light, atmosphere, senses and mood are elevated as they are experienced in the first person. This adds a whole different view as the user's perspective and affect depends on where they stand, how they interpret and how they respond. This installation has ceiling mirrors that force the audience to lie down, sit and view the space from a different perspective to create their realm of imagination. The artificial mist slowly carries the light from the artificial sun, generating this majestic illusion that the heat is travelling from the artificial light, posing as an indoor sun. The idea I want to bring into my work is This idea of bringing the setting to the viewer, allowing them to feel a part of the space and experience it themselves, leaving a long-lasting memory that carries on to project into their mind and heart. The energy of the space transcends into them, building this connection and relaying the message across with a powerful delivery.

So, in this example, the key element is movement. Movement in the film leaves the viewers static, and in architecture, the movement is the viewer, and the space is static. This adds a dynamic attitude to the space, where free-roaming and personal interaction is a huge aspect at play. In my project, using an installation over a video display might be a more effective practice as the experience is more personal and psychologically challenging, forcing the occupants to observe and conduct their analysis through movement and sense. This shift of movement is interesting to me as it allows people to have different outlooks, perspectives and engagements that lead to new and unthought-of conversations that elevate moods and grow spiritual and emotional function in simple spatial exploration, which I tested in future experiments.

Figure 13 (Appendix J, figure 13)

Olafur Eliasson's, The Weather Project

This content has been removed by the author due to copy right issues

Note: Olafur Eliasson's, The Weather Project shows its powerful atmosphere and occupant experience. The Turbine Hall, Tate Modern, London. From *Architectural Atmospheres: On Experience and Politics of Architecture* (pg 28) by Christian Borch

2.9. Light connects to the social narrative.

In both mediums of cinema and architecture, light not only sets the atmosphere but helps social context. In architecture, light brings out social complexities, bringing occupants' attention to how space is interacted with by different people, carrying narrative from surrounding environments, cultural influences and purpose. Light in cinema is used in a more theme sense, highlighting opportunities for character empathy, social issues and allowing for political conversation. It's an important aspect that illuminates physical properties and metaphorical dynamics, posing diverse inset of use and deployment.

In 2011, there was a text done by (Steane, 2011) that covers the modern architectural use of light, both artificial and natural, in its setting. This highlights the ever-growing desire to find ways to elevate the use of daylight in architectural settings not only to illuminate the space but to find more creative ways to include it in our daily light to change the way we live, think and design. The idea is to cognitive challenge occupants experience in space using daylight and our natural surroundings, as the benefits are extremely positive and overwhelming considering our current standard for building and designing.

Now, this being the challenge at hand allows me to conduct research that elevates and expands upon these ideas and challenges issues with conversations. A space that can naturally incorporate light, connecting us to our deeper selves, and architecture that has powerful connection strategies and lifelong effects.

2.10. Architectural atmospheres

The atmospheres in architecture are both a physical and poetic term used to describe the quality of settings. It's a very important attribute of what makes up space as we perceive it. Atmosphere is the aura that a space produces that we humans will interpret and then formulate an experienced opinion and feeling of how that space is viewed in our perspective. Whether we are safe, happy, uncomfortable, etc, this can also change the way we interact with the space, which can play on the space's intended use or take away importance to its significance. So, for my research, designing with consideration to intended atmospheres is extremely important. Some sight already has a perceived or existing atmosphere, and it's up to the designer to decide whether that atmosphere is portrayed within and incorporated or if it's designed with the intent to isolate and recreate a new atmosphere.

There's a book by Christian Borch titled 'Architectural Atmospheres on the Experiences and Politics of Architecture' (Borch, 2014). It explores the idea of sensing and feeling a building through the powerful impacts of design, he states, "We instantly sense a building and its features upon entering it" (Borch, 2014, p.7). He investigates the 'atmospheric dimensions' of space and looks at its intentions and delivery in design. This book and research opened the idea of deeper thinking of space and what the potential is for the discovery of other dimensions of space. It directly relates to the thesis questions at hand of "multi-dimensional living" and the possibilities at hand if we manipulate space to build powerful interactions and relationships within space.

In the chapter 'Why atmospheres,' Borch brings relevance to Peter Zumthor, a renowned architect who indulges in the idea of atmospheres in architecture and designing with atmospheres effectively. When talking about Zumthor's work, he says, "two things are important- one relates to how we perceive or experience spaces. Thus, he asserts, we perceive atmospheres through our emotional sensibility." (Zumthor, 2006, p. 7). He goes on to talk about how we can instantly walk into a room and determine how we feel about it, as it's an instant response, and we sense the building for what it is. I found this extremely evident as I walk through spaces, capturing their essence in digital form, sketch or memory, key elements of what makes up that space are prominent and orientate my perception of that space. But when going to that space again, it sometimes isn't exactly how I recorded it. This is due to my mind subconsciously capturing certain highlighted elements, compiling them together and giving an overall image or general depiction of what the space is.

In his book *Atmospheres: Architectural Environments, Surrounding Objects*, Zumthor discusses "the sound of space" (Zumthor, 2006, p.29): "Interiors are like large instruments, collecting sound, amplifying it, and transmitting it elsewhere. This relates to the unique shape of each room, the surfaces of the materials they contain, and the way those materials have been applied" (Zumthor, 2006, p.29). I find this concept fascinating. It is both a practical science and poetic, as it allows us to perceive the spaces we inhabit as living instruments that absorb and recreate their sounds, engaging in auditory communication with us. In my research, I aimed to investigate whether spatial atmospheres are as powerful, impactful, and captivating as described. Atmospheres became a key focus of my study, and I explored their presence and composition extensively. This concept was also a tool I used to evaluate all the modelled spaces during the experimental phase of this project.

2.11. Frequencies of light and space

The website 'Inphinity Design' presents extensive research done with biohacking and creating spaces that heal, transform and elevate our surroundings using frequency studies. The idea of designing space that focuses on natural design vibrations and coordination space to resonate with our mind, body and spirit is the way forward to re-designing how we use architecture. Energies constantly surround us, from the space we occupy to what we are made up of. Every object, natural and unnatural, has a resonance and a frequency that constantly oscillates and reflects off other objects. Even our body communicates with surrounding frequencies and has both positive and negative effects. Rooms that we walk into have energies that are made up of all the surrounding objects and structural objects that combine and resonate with each other. Sound has this same effect, and when walking into tight, narrow spaces, these energies have less space to travel from surface to surface, leaving less travel time and a confined sound. The opposite is true in larger spaces where sound can amplify and bounce and travel back, creating an Ecco. Earth below our feet has a natural frequency of 8hz, and the human body is believed to have a frequency of 5hz-10hz. When a space is peaceful, and the energy is balanced, a space has frequencies that are balanced and at equilibrium. When I am designing and experimenting, I make sure that it's important to consider this as it has huge effects on us that aren't immediate but can overall affect our well-being. Having a harmonised space creates a space of tranquillity that can elevate and relax natural bodily functions, having psychological benefits. Taking into account such ideas and research, this has been applied in simple modelled terms in my thesis to create a module that is, in practice, an example of design we can create for our future(Griffin, 2012).

2.12. Gaps in the research

In this literature review, there has been an explanation of natural and artificial forms of light and its potential benefits. I have looked at texts about atmosphere importance in architecture and the research covering the ideas of dimensions of space. While there are examples of application and implementation in the real world that scale and vary that are used, this, I feel, doesn't comprehensively target the emotional and psychological effects of well-articulated design. The use of artificial lighting to enhance human life living in space using emotions and cognitive targeting can be expanded upon. As we grow with architecture having to be adapted to our changing world, mental health and well-being are at risk, with architecture being less focused on this subject. Using artificial lighting as a tool to create transcendent spaces on demand to elevate space is a field of research that should be continued. That is similarly true with the expanding 'dead' architecture that is focused on profit and not inhabitants; we need to experiment with the idea of space, its fundamentals and the complex dimensions of what it is made up of. The way that light, space, and narrative are articulated to communicate emotions, social issues and perspectives in cinema and architecture brings up deep, interesting parallels between the two. By looking into key elements in both film and architecture, we can extract the significant part light plays in elevating architecture and cinema, its poetic tone and the narrative that brings forth grabbing context.

2.13. Conclusion

In conclusion to this literature review, the unpacked research explains the dynamic array of dimensions of space that is at play. When breaking down space in an architectural context to its bare bones, there are spheres, light geometry, frequencies, and sound that makeup what we see and feel. The idea of taking these counterparts and manipulating them in a way that exaggerates space enough to leave the occupants with an impactful memory or message is the intended goal. By understanding how these devices of space work within, we can begin to see how we can elevate space; this is the goal for the experimental path of this thesis. This research has profound value in adding credibility to the abstract and powerful connection between multi-dimensional design. Design that incorporates overlooked attributes in space that we will extract and break down in the experimental part of this thesis. It's so important because these values create a huge impact and have an "instant" effect on us as we walk into a space. The use of light in architecture is a constantly growing field of design. It has become a form of art in the way we can respond to it, like a painting that brings forth emotions. From historical uses of light to the modern twist of light on design, it is evident it's used to elevate space and add a transcendent quality to the space. Whether spiritually, visually, or plain aesthetics, it is clear light is important within space. Light in architecture can be used to help us psychologically and advance our well-being; it's able to allow us to interact with space in new, profound ways rather than just inhabiting or existing in space. It adds depth and a perspective to the built world that has the potential to form relationships with users and their environment, which is why I am choosing light to be the manipulation tool to experiment with in architectural space and models.

Chapter 3

Methodology and Approach

3. Introduction

This methodology chapter details the approach and practices chosen for conducting the research, its order and method. The main method of visualising this theoretical, experimental process of spatial manipulation is model-making and observatory response that is, both visual and artistic. This approach helps capture the perspective, design intent and emotion of the creator in the creation and anticipates the experience the spectators or participants will undergo in a potential installation.

The potential of contemporary architecture to evoke emotional and cultural significance through atmosphere is often overlooked. This research explores the notion of architecture as a transcendent experience as a form of art that enhances and transforms human experience. By being able to engage human senses and evoke conscious awareness, space and architecture have the power and ability to heal, inspire, and transform our lives.

This practice-based methodological approach aims to capture the personal connection and emotion behind the designs by both the creator and participants viewing it. It seeks to enable individual experience and reflection within these architectural experiments.

3.1 Research question and hypothesis

Designing with energies

This research employs and develops an approach to designing with energies, which involves the use of light, sound, frequency geometry, design strategies and tools. These elements are articulated in unconventional ways that take traditional architectural perspectives and challenge them, aiming to explore architectural space as a lively, experiential entity.

Main question

How can space be manipulated to create powerful and memorable human experiences?

Secondary questions

How can dimensional layers of space be configured to impact and form a human emotional attachment?

What is the relationship between light and solid space, and how do they interact?

These questions were used as a guide throughout this exploration of space. These questions serve as a baseline to explore the various directions of this thesis and the orientation of space in terms of context in architecture.

3.2 Research design

This research is practice-based (Candy,2006) and has taken an explorative approach to developing a series of displays that explore and model theoretical concepts of space and manipulation. The way that this experimentation was conducted was through a personal and interactive journey, allowing for a hands-on making process that translates abstract ideas into physical forms. By creating models playing with the scale of spaces that are inspired by past experiences-, this research investigates their ability to evoke emotional and psychological responses.

This study began with sketching, taking 2-dimensional language, and converting it to a 3-dimensional plane of models at a smaller scale. Model-making is recognised as a core method for creative design development in architectural practice (Zhao, 2020). Using these initial explorations of personal emotional journeys through space, I crafted models intended to challenge conventional design and the perspective on how we perceive space and its use. Each of the models was evaluated for its potential impact, broken down and tested to determine whether or not it serves a meaningful message or has the qualities that represent a transformative experience within its presence.

The interactive nature of this design process sought to create a personal connection between the creator and participants. This produces an environment where there is a shared experience that can deepen the understanding and meaning of space. The process of making and creating bridges the gaps between abstract ideologies and tangible outcomes, which visually and physically convey a message with its power of presence. This offers the viewers or participants a tangible and visual opportunity to experience the perspectives and iterative design outcomes I, the creator, did.

3.3 Approach

I have drawn from theories of human psychology and sensory response from (Turrell,2014) and (Borch,2014). Each text highlights the importance of carefully orientated design and its powerful impact on human psychological experiences. The nature in which Turrell talks about his work inspired me to give a talk about my work with a specific language, tone and intention. Taking their principles and extending them into practice by creating spatial experiences conveying an artistic, cognitive response. The book 'Architectural Model Making' (Dunn, 2010) served as a clinical exemplar for powerful model-making techniques and examples of the power of creating.

The approach to each phase of experimentation can be broken down into four stages that will guide the process of experimentation:

Execute model: Create a physical model that replicates a space in the context of its form, atmosphere or orientation.

Examination: analyse the modelled effectiveness of its narrative, considering how light, space and emotional response are manipulated.

Report: document the results and model through photography, focusing on the model's ability to communicate, alter and transform spatial perception.

Reflect: evaluate the model's ability to contribute to the pressure of spatial manipulation, determine whether it advances the research and serve as a potential stepping stone for deepened exploration.

By using this structured reflection process for each phase of the design process, I was able to distinctively extract information and come closer to determining a conclusion in this spatial experimentation research.

3.4 Rationale for Methodology

This idea of creating space that model's spatial idealism and theories in an architectural context is evident in James Turrell and Olfa Elisson's work, where they model social experimental spaces. This is the model of work I have followed as I am interested in being able to experience these theoretical techniques in practice in a directed, focused installation that pivots focus and perspective to see the implication and effectiveness at scale.

The creation of models that have a physical form allows me to abstract from nature, becoming tangible and perceivable. This hands-on experimental process of modelling enabled me and the views of the models to engage with the research from an emotional and sensory perspective, which eliminates the gap between theory and practice.

3.5. Reflective Practice

The process of reflective practice (Schon, 1984) was critical to analysing and evaluating the experimental phases of this project. After each model was created and photographed, it will be viewed at scale by editing and reviewed with every physical aspect under scrutiny. If the goal for that specific model was to be a social space with participant interaction, then the scale was important, as well as the location and surrounding entities. If the model was just an explorative idea that displays certain mediums as a lesson, then the discussion around its effectiveness in portraying those ideas through its existence was also reviewed. Reviewing these models visually involved a consideration of non-physical properties, such as atmosphere, spatial energy, mood and tone setting.

Participant interaction: as well as all the models being created at a smaller scale, the final stages of this research involved experimenting with scale and a life-size installation. Here, the final curated results are to be tested and experienced by participants, playing on their emotions and cognitive inclusion in a spatial experiment.

As each phase progresses and new information is gathered and experimented with, the next phase of experimentation emerges and forms. This carries on a narrative structure guiding its ongoing development. From here, I created a conclusive space that reflects my learnings and findings in physical form at scale, demonstrating that space can be manipulated in powerful, impactful ways, evoking an emotional and psychological experience.

3.6 Explorative tools

The following tools and methods are used to help develop and curate the experimental phases of my research.

Model making this was the primary method used to translate abstract ideas into comprehensible forms that can be experienced visually. The 'diverse range of possibilities that emerge through making models'(Zhao, 2020, n.d.) was critical in this exploratory project, enabling experiments to bring together theory and practice.

Books and papers: literature on architecture, psychology and sensory experience helped me gain insight into the theories surrounding current architecture and the context of ideas in the architectural world. Giving me examples of how to analyse, talk about and engage with space in a poetic and powerful sense of language(Turrell,2014).

Videos/films: I studied videos and films to better understand spatial techniques used by directors to connect the audience to the character and to create a sense of immersion. I was particularly inspired by Hacksaw Ridge, directed by Mel Gibson. Another director whose work was particularly interesting was Michael Bay. Both these directors use lighting in such an intentional and gratifying way. They persuade the audience through visual appeal to engage emotionally with the character, scene and situation at hand. Micheal Bay specifically uses lighting to immerse and add a raw sense of presence for the audience to feel as if they were there in the film, experiencing everything. It adds a deep element of connectivity and visual brutality to the experience.

Field trips: visiting spaces that have the potential to inspire my research and display examples of the theories in deployment. Some key spaces included an overseas trip to Dubai, where I visited Burji Khalifa, future museums, and the Louvre in Abu Dhabi.

Photography: a tool used to capture and document. A technique used to change perspective and analyse space in a different light. Using a designated Canon camera and iPhone camera.

Video technology: video was also used to explore the models, to document them and give another sense of dimension. In addition, advanced video technology will be used in the final installation to create a larger-than-life-sized sense of scale and immersion.

Installations: To test and create a space that has implemented all experimental findings, displaying and hopefully answering all the thesis questions at the final stages of research. Applying a human scale and exploration factor into the experimental spaces to add context, validity and a sense of reality.

3.7. limitations of methodology

The subjective nature of my research as a personal journey means that understandings and insights gained are based on personal experience. Participants' responses to the visual model, image, and spaces may not be the same as mine, making it difficult to establish conclusions that may be agreed on. However, the creative work intends to form environments that gravitate or persuade viewers to feel, see and respond to how I engaged with this experimental journey.

Scale of models: working with models on a smaller scale had the potential to limit the full experience of a real-life installation. This may have limited this study's ability to elevate the potential message of this design experimentation. To minimise this, I added human scale in the models. The final model was created at a much larger scale, and video technology was used to create and explore the space at life-size in the installations.

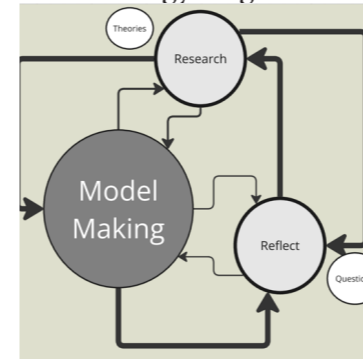
Time constraints: the number of exploratory models generated was limited by time constraints. In addition, the ideal number of experimental models required was unknown and was only determined as the process progressed. This may mean some effective spatial configurations have not been identified or explored, as the potential is limitless.

Access to materials and technologies: Some of these models would require expensive lighting or advanced technology or construction that I do not have access to due to availability or budget to be built to scale. While I would have liked to construct, install and experience many of the models built to life size, the video installation allowed me to create a sense of space and performative engagement for people viewing the work.

These are limitations that could have had impacts and effects that might have limited the research's overall potential. However, they should not undermine the project but should be taken into consideration when reviewing the solutions created along the journey of experimentation.

Figure 1 (Appendix I, figure 1)

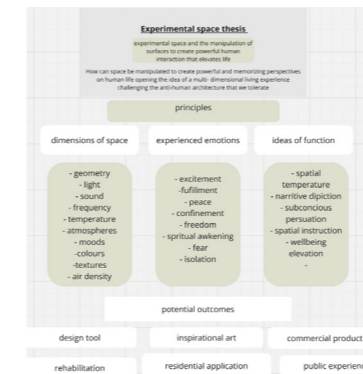
Methodology diagram



Note: A diagram I created illustrating my methodology process

Figure 2 (Appendix I, figure 2)

Theoretical framework diagram



Note: A framework I created highlighting key outlines, principles and engagements

3.8 Summary

In conclusion, this project methodology is designed to explore how architecture can be manipulated through the use of light, geometry and other energies to evoke powerful and emotional, sensory responses through experience. By using hands-on model-making and the visual display of design, I created personal, interactive works that investigate how mediums such as light can transform space into a more meaningful and impactful iteration of the environment. Through a combination of artistic exploration, psychological theory and sensory design, this research aims to explore and challenge perceptions of space, challenging traditional architectural methods and concepts. This chapter has addressed the research questions, design research methods, and a rationale for the implementation of this methodology, providing a roadmap that guided this experimental research.

Chapter 4

Artistic design process experimentation
analysis

Phase 1

Excavation of space through perspective, light and photography

1.1 Introduction

At the beginning of stage 1, I embarked on a journey to extract photography from space to explore the interaction of space, perspective, and light, deepening my understanding of how these elements communicate and transform architectural environments. I wanted to understand the influence of these components in an architectural context on viewers' emotions, perceptions, and connection to space. I began this examination of space by looking at how natural and artificial light interacts with static structures, altering their overall appeal and appearance and potentially evoking emotional resonance. This idea, initially starting when I began immersing myself in the work of Caravaggio, had a significant impact on my perspective on how light was used to illustrate narrative and space. His ability to use light and manipulate it in a spectacular way to create visibility and emotion in the room through perspective was my approach and key piece of photographic inspiration. His work "The Calling of Saint Mathew" (1600) was a pinacol piece that captivated how he used light as a central element to bring forth narrative, illuminating the image and adding depth and a sense of personality to the scene. The idea of light being more of a tool to direct perspective and narrative is a concept of my foundation that started these explorations.

In this phase of the design work process, I wanted to capture how light can potentially transform space using photography as the medium to portray this visually. This photographic journey took me to many cultural and architecturally significant spaces, particularly in Dubai and Abu Dhabi, over the summer break of 2023, when I started my exploration. The locations I photographed were the Grand Mosque, the Frame, the Museum of Futures, the Louvre Abu Dhabi and the Burji khalifa. These locations provided the perfect start that gave external context to how light is a factor that can transform static architectural space into dynamic and emotionally conscious spaces.

1.2 Analysis process: light is a transformative element of architecture.

As I walked through these spaces, I became aware of how light, whether it was a natural occurrence or an artificial substance, changed the environment and became a pivotal aspect of taking photos. I was able to observe that light was entirely a passive element, more living in the sense it was able to move and had an active role in altering the perception of what was viewed as space. It constantly interacted with the resonance of my emotion as a shift around, drawing my attention in and guiding my eye. The architecture I experienced was static in an architectural context, it contrasted with the constantly changing light, creating a diverse, dynamic setting, which added this sense of complexity to the space and triggered a positive emotional awe response.

1.2.1. Natural light in these spaces

In the presence of the Louvre Abu Dhabi and the Grand Mosque (Appendix A, Figure 15,16), I was able to observe how this natural light inflicted its presence into the structures, giving the static nature of these architectural spaces a sense of fluidity and movement. It was as if the structure came to life and became a living entity that automatically demanded respect and order in its presence. In the Louvre Abu Dhabi (Appendix A, figure 1,3), the dome that covers it acted as this intermediate medium between the exterior and interior of the space, filtering light and casting intricate shadows that shifted throughout the day, from lineage to time, creating a sense of life and movement. These shadows that the dome created added a beautiful texture to the floor, and the walls under the dome added a dynamic nature that had an artistic nature, evoking feelings of relaxation, peace and disbelief (Appendix A, figure 4).

In the Grand Mosque, not only did the dynamic curvature, arches and structural elements play with the light, but the reflective materiality of the marble columns, floors and walls and its interaction with sunlight strengthened this ethereal glow.

This interaction of light off the walls and floor had a radiant immersion quality that brought me and other occupants to a surreal state, a state that had an angelic nature, a raw element of attraction. The natural light added to this space's transcendent quality and created a meditative, contemplative atmospheric tone.

1.2.2. The implication of artificial light

The Burji Khalifa and the frame, in contrast, had a different approach, using artificial light to emphasise and elevate its presence using a dramatic tone. The lighting that these structures used was used to enhance their appeal and monumental scale, especially under the setting of the night sky. This was able to define their curvature and lines, bringing focus to their details among their monstrous scale. This brings me to the conversation of having this contrast of bright illumination in a dark environment, creating a sense of dominance and giving the viewer the ability to focus on the space in more depth. This same technique was used in the Museum of Future Dubai (Appendix A, figure 11,12,17), where a mix of coloured lights added spatial complexity and outlined simplism. The dramatic shift from hard, intense light to soft and gentle created this shifting atmosphere that helped transition between exhibits. It was clear that light wasn't only being used to highlight and bring significance to the architectural elements but also to give an emotional response, manipulating the viewer's mood to guide them on how to feel in these specific spaces.

1.3 Spatial awareness through the use of photography: from room to corner

While using my camera as a device to guide my exploration, it became clear to me through the Lens that light not only altered the space I looked at but was able to guide my spatial awareness. My general understanding of space was to use queues of doorways and passages to access one room to the next and then from one level to the next, keeping my eyes only on what was in front of me or what was displayed consciously. However, the use of my camera forced me to engage with the space more consciously, slowing down and altering how I engaged with space. I observed often overlooked detail, joineries, corner, and shadow gaps and the intention of these shifts between architectural elements and fundamentals. These overlooked spaces became a focal point or perspective for my exploration. I began using the Lens to guide me to experience these corners and narrow passages that aren't necessarily designed to be inviting. By positioning myself in these areas and unconventional spaces for perspective, I capture the 'spaces within space', a concept that emerged during the exploration of these architectural environments that light was able to uncover. These dimensional layers of architecture were one that not many tried to experience or absorb as they navigated space (Appendix A, Figure 7,8,11,14)

1.4 Conventional use of space: the power of overlooked spatial elements

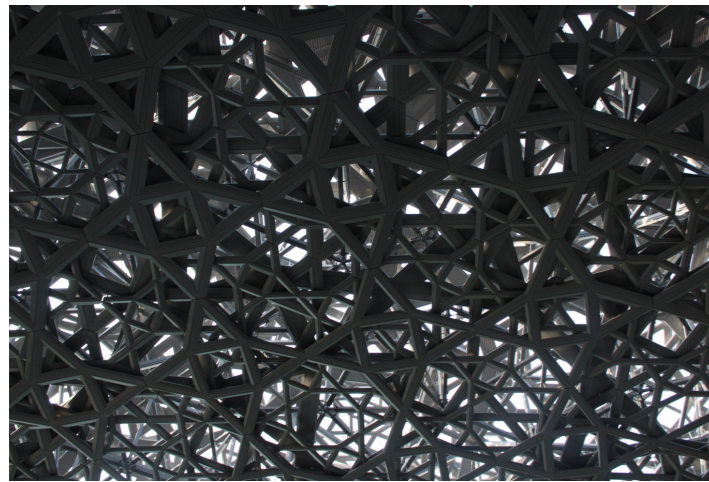
Throughout my spatial investigation of these sites, I began to become extremely fascinated with the idea of underutilised space, like corners, roofs and overhangs. Their potential to be utilised as interest points for general viewers was vast. In the grand scheme of architecture, these elements are considered insignificant and underwhelming; however, I observed that when natural light and artificial light interfered, they had a new life and a perceived nature of illumination. This interplay of shadows and illumination gives us this perception of intimacy and mystery that the public can interact with.

In the grand mosque, the courtyard, doorways and archways are passed through without too much thought, but through the Lens of the camera, they became significant sites of interest, a point of visual intrigue, especially when light would shine through and highlight this beautiful composure of space. Natural light adds an extravagant tone and filter that brings out the materiality and structural features that are always there but not necessarily brought out. This idea of 'non-contemporary spaces' forced me to think about contemporary architecture and how designers could potentially take these areas and unused elements and incorporate them in ways that highlight their pure presence in space and their ability to be a point of significance or beauty through the consequence of architecture. This can be used to furthermore bring out this traditional emotional response that courtyards or consciously designed spaces do and bring it to an area that is a product of its creation (Appendix A, Figure 15).

1.5 conclusion of phase 1: future directions and key insights

To conclude phase 1, I was able to gain a profound understanding of how natural and artificial light impact and alter space. By using photography, I was able to gain a different perspective of space and how architecture has multiple layers of symbolism and resonance emotion, its pure existence. The communication between static architectural space and dynamic lighting becomes a pinacol focal point that changes how I perceive space, giving me a perspective that I have been able to gain a sense of deeper spatial awareness, observing how architectural environments can be altered and become a more experienced journey. This concept of 'space within space' that I was able to uncover became a key theme that has guided this exploration and can be the outline for the next face. I found that by taking into consideration underutilised space, I was able to create these perspective images that challenge the idea of what constitutes a significant space or beautiful spatial features. Light, like in Caravaggio's work, is a theme of narrative power that persuades the perceived emotion within a space, guiding viewers around. As my thesis investigation continues, I will use these findings to serve as a foundation to guide further research. In the next phase, I plan to take this emotional and psychological response to light and spatial interaction to the next level to see what I can further uncover. The images that I curated will serve as insight into a re-imagined perspective of space and a contextualised idea of designed space.

Appendix A Figure 1



Appendix A Figure 4



Appendix A Figure 9



Appendix A Figure 14



Appendix A Figure 15



Appendix A Figure 16



Appendix A Figure 17



Phase 2

Replicating and understanding space through abstract modelling and interaction with light

2.1 introduction

During phase two, I extended the experimental factor by shifting my focus of exploration from documenting and capturing the essence of existing space to modelling and replication space to understand these themes in another layer of creating. By using phase 1 documentation images, I investigated these as a starting point to now create these spaces with my hands and discover the dynamics of space to figure out how occupants gain spatial perception and interactive nature. Now, instead of scaling this model at a 1:1 level, I decided to take a more abstract approach that brings out a cognitive response and emotional reflection rather than its physically scaled dimensions. This not only breaks it down into a manageable scale but also helps viewers to be able to digest the raw content and understand its underlying context in an architectural sense. By doing this, I can capture the vague, yet powerful impression space has on us, exploring this idea of perception of space in an unconscious state of mind. For this explorative task, I used charcoal sketching, paper modelling and layering techniques, which gave me the ability to communicate these complex spatial ideas and themes in a more artistic, comprehensible, stripped-down representation (Appendix B, Figure 1-10).

2.2 abstract representation through charcoal sketching: unpacking spatial features

I used charcoal sketches first, as it's a medium that encourages freedom and movement. I started with this to attempt to re-create and capture the essence of the photographs I took in phase one. Charcoal has this unique ability to define and outline key elements, lines, curves and shadow its great dominance, which helped capture this structure of themes all in one image by taking out the element of colour and other distracting features to bring the key points across clearly (Appendix B, Figure 2,9,10).

2.2.1 defining the lines in a spatial dynamic area

These sketches primarily focused on this idea of highlighting. These curves in the space and lines helped guide movement through the space, and by extracting them, it becomes clear of their intention and power. These lines and curves serve as a structural backbone that provides spatial communication to the occupants, guiding their eyes and sense of direction through visual cues. I was able to observe through this exercise that if I removed these lines, the space quickly lost its appearance of dimension and illusion of depth and distinction. Doing this, it was evident how important this visual communication was in architecture and functional space. The lines I extracted represent architectural functioning features that intuitively guide movement within a space, form slopes, the edge of a pathway, or the curve or outline of a wall. Through this exploration, I was able to grasp the idea that space isn't just boxes that we occupy but a living collaboration of elements that have structural and guiding intentions to create a functional space that we move through and perceive.

2.2.2 occupied and dead space

The sketching process that I engaged in helped me understand the concept of 'dead spaces' spaces that promote stillness or static. These spaces are either occupied by people or objects and opposed to a space that has constant movement and interaction. Using shading with charcoal, I could emphasise these areas, which showed the contrast and balance between the movement and static space. These spaces encourage people to stand, sit or lay and indulge in a meditative, contemplative state. These spaces contrast with those that promote the opposite, flow, movement, travel and a pathway and move people into the next area.

2.3 Physical modelling: understanding space through light and paper modelling

Using charcoal allowed me to capture key dynamics to space in a 2-dimensional plane. However, I decided to add depth to this type of iterative process by explaining physical handmade models. The paper was the decision I have made many models in the past before using its textile appearance, its soft nature allows for rapid configuration and easy manipulation (Appendix B, Figure 4,5).

2.3.1 the process of physical representation

My next use of the medium was paper to block mass and layer different architectural elements. Its soft nature allows for rapid configuration and easy manipulation. The creating process of cutting, folding, gluing and layering allowed me to physically now interact with these spaces in the replication of its essence, translating the same dynamics from the 2-dimensional plane into a three-dimensional model that can be held and manipulated. I took the image from the Future Museum of Dubai and replicated its passages and archways using the curvature of paper and layering. Once I lined up the perspective to re-create the photo, I was able to see the space in a new light; I could observe how light and perspective worked in collaboration to guide the movement and functionality of the space and how they created that image. The model I created was able to retain the main features of the photographed space with only the key elements intact that created the most impact on the sense of flow, dimension and enclosed space (Appendix B, Figure 3).

2.3.2 Adding light: Dynamically transforming static models

Although the model was able to capture the architectural features and structural elements, I noticed that the space felt dull and lifeless, missing the component of the atmosphere without using lighting. To achieve the atmospheric tone that the photographed space had, I introduced the use of LED lights, specifically red and blue, to explore how I could capture this space lighting conditions and investigate how it would change the perception of the paper-modelled space. As the two lights touched the white paper, I observed that they made an entirely different appearance. They had different atmospheres based on their colour, intensity and angle. When the two lights were mixed, they produced a pink hue. Similar to that of the real-life space. This completely transformed the model from a dull, lifeless, sterile environment to a vibrant space. As I changed the intensity at which these lights interacted with the paper, I was able to manipulate the emotional, atmospheric tone from soft, warm and inviting energy to a harsh, dramatised colourless shadow space. So, although I was able to create an atmosphere in this model and manipulate the intensity of its presence, I was able to exaggerate and highlight structural elements that gave them superiority and power over other components, giving this sense of realism and depth (Appendix B, Figure 6,7).

2.4 The power of light and manipulating perception

This experiment and the inclusion of light unveiled a crucial discovery: The power of light to manipulate space. This results in the ability to evoke emotional responses from viewers and occupants who interact and experience the space. Although the model itself remains static in terms of its architectural counterparts, light gives a sense of movement and journey that can become an emotional trip and discovery from within.

2.4.1 emotional and psychological impact of light

This power in the ability to shift feelings between warmth, coziness, vibrancy, emptiness and loneliness, only with the change in angle or orientation of light and colour, is extremely interesting. So, I was able to discover the ability that light obtains to illuminate structural features uniquely, which gives it life and power over its surroundings, as well as builds an emotional narrative that persuades us to feel a certain way. When the light was not present and dull, the space felt flat and undesirable, whereas when the light was added in a pink hue, it made the space feel inhabitable and exciting, and it completely shifted its dimensional perception of depth and endless discovery. I was able to gain this sense of reinforcement in the idea of atmosphere in space as a result of this experiment. The intensity of the light was the deciding factor that determined the strength of the emotional interference.

The focused, stronger colour made the space feel more exciting and brightening, whereas the dull, low intensity promoted this slow, gentle ambience and movement that, in a way, is cautious.

2.5 further exploration: expiation of the technique

These experiments and findings left me in a curious state of mind, wondering how I could expand on this exploration in the following phases. As I used models and light as a tool to manipulate this model, it became clear that this was an effective tool for understanding space, the emotional perception and the implications and consequences of playing with space. Moving forward, it will continue this model, making exploration, playing with scale and integrating materialistic properties and compositions of light that further affect the perceived space. As well as creating these abstract models, I intend to test these models in a real-world architectural application to bring forth deeper context to emphasise this relationship to connect and evoke emotion.

2.6 concluding phase 2: Insights and next steps

In conclusion, phase 2 revealed the use of light to transform static spaces and can form deep connections to occupants to emotional responses. While using paper modelling, charcoal sketching, and light, I was able to replicate photographs of spaces and highlight their essence and architectural qualities that portray functionality. The use of an abstract model presented a simplistic module that displayed key themes and digestible context that shared narrative and the shift between settings of altering light dynamics. This experiment overall highlighted the important role of light as a directive narrating tool in architectural space to illuminate spatial function, features and how we feel within. As I proceed with the next phase, I will intensely investigate how these techniques can be developed through iteration in architectural design and spatial planning. This can help achieve the overarching goal of creating and designing space that elicits an emotional response and provides guidance through experienced space by detailed manipulation of light.

Appendix B Figure 3



Appendix B Figure 9



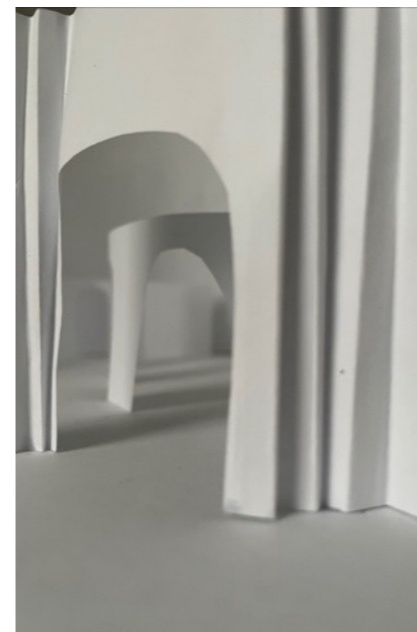
Appendix B Figure 1



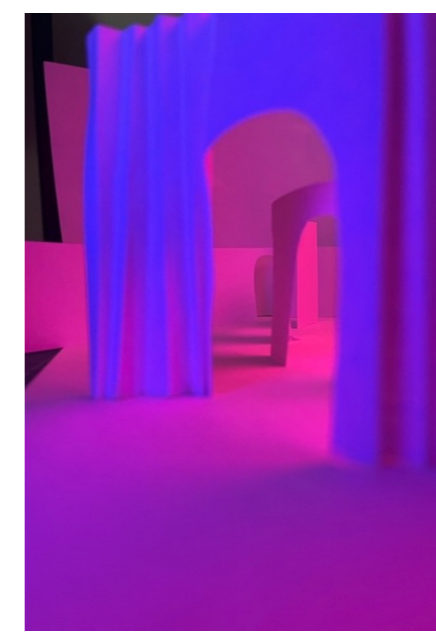
Appendix B Figure 2



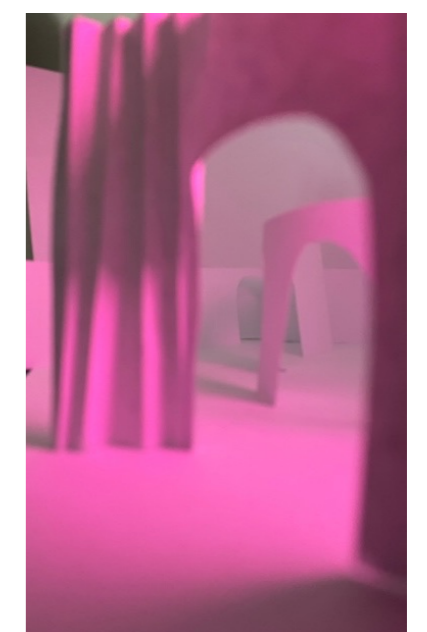
Appendix B Figure 5



Appendix B Figure 7



Appendix B Figure 6



Phase 3

Making space

3.1 The Exploration of space through the use of cardboard models

During phase 3 in my thesis research, I came across an unexpected source of inspiration for modelling that came from the recycling of cardboard casings from a coffee machine box. The peculiar structure and intriguing form of this recycled material gripped my attention. Intrigued by its potential to be an endless source of creation, I used them as a medium to investigate the concept of space, form and light. The idea was to photograph these cardboard models in a way that I could experiment with various configurations and orientations for these two pieces to create dynamic and fluid spaces (Appendix C, Figure 1).

3.1.1 The manipulation of the cardboard casings

I began this experimentation by adjusting the orientation of these two pieces, slightly shifting and rotating them in a variety of ways that would illustrate distinct spaces between their shell-like structure. Through these light movements, I was able to bear witness to the interplay of curves, shapes, and sharp, jiggered corners that emerged through its position change. Every spatial adjustment created a new space. The subtle surface shifts and the models harsh texture become a prominent feature under the lens perspective and right lighting. This interaction with the model and its surrounding environment became the foundation on which this exploration was built (Appendix C, Figure 2-9).

3.1.2 The role of natural light

The use of daylight was the primary source of light At the beginning of this project. It brought this sense of tranquillity and vibrant peace along with it. I used it to introduce dynamic effects and depth into the original models. The pure quality and intensity of the daylight allowed me to see how the interplay of shadow and light would change the original perception of the cardboard casing spaces. I would repeatedly notice that even the slightest shift in angle or the proximity between the two masses would dramatically alter the photographed space's appearance. I was able to observe that as the two pieces decreased in distance between them, the natural casting shadow created a majestic beam of light that shone through. This beam, subtle and gentle at first, gradually intensified as it approached the light source, giving the illusion of depth and an experience that is both powerful and transcendent. The spaces that I was able to create between these two pieces of cardboard casings became living, breathing entities that transformed with each adjustment and shift in daylight.

3.1.3. The experimentation involving artificial light

So, to further expand upon the interplay between light and space, I decided to introduce a form of artificial light in the use of LED light. I used red and blue LEDs in separate settings to observe the atmosphere shift within the spatial models and how they change in different colours. The models, under red light, produced an intense, warm, and sort of ominous atmosphere, whereas, in the presence of blue light, it created a cooler, more serene, contemplative space. The final experiment conducted was with the combination of both colours of light in collaboration with natural shadowing of the cardboard models. This created a whole other layer of diverse complexity in the exploration of how light can affect spatial perception in coordination with its orientation (Appendix C, Figure 10-15).

3.2 Space and human scale

3.2.1 introduction of human characters

After conducting the experimentation with the lighting and structure with the cardboard models, I introduced the idea of scaled human figures into the photographed models to add context and a sense of scale to the space. This inclusion of human scale instantly transformed the abstract space into a basis that the viewers could relate to and digest the message. The figures, dwarfed by the towering complex mass of cardboard models, added this deep sense of drama, loneliness, and a sense of power to the images. The overwhelming structural scale of the models about the small figures evoked emotions of awe, isolation and contemplation.

3.2.2 Peter Zumthor Atmospheres and Cinematic Qualities

This exploration that I conducted aligns with Peter Zumthors theory of 'Architectural atmospheres'(2006), which outlines the power that architecture has to evoke emotion and create immersive spaces that provide an experience. The images I created using the interplay of light, shadow and human scale in the cardboard models created a sense of cinematic scenes. The photographs I made of these models reflected the way people might experience space in real life- walking, standing or exploring environments that seem to engulf their physical. The atmosphere that was created through the interaction of light and shape produced this visual narrative where occupants appeared to be lost, contemplative, and overwhelmed by the mass and intensity of their environment.

3.2.3 Spatial and Emotional Association

The photographed models invited viewers to project their emotions with the scaled figures, which gives them the ability to experience the space vicariously. In the way that film uses camera techniques, lighting and characters to bring out emotions in the audience, this model, with the integration of human presence, does the same effect. The complex form of the models and its dramatic lighting gave me a perspective that encouraged emotional association with that space. I could see myself in the figure, navigating these dramatic and vast spaces, reflecting on feelings of isolation, awe and disbelief in the surroundings.

3.3 The power of space in its complexity or simplicity

3.3.1 Reflection in space with emotional responses

Through the process of this experimentation, I was able to discover that space has a direct relationship to emotional reflexes, depending on its complexity in form. The spaces that I created with the models had a dynamic nature with sharp corners, complex forms, and transcendent lighting able to evoke feelings of loneliness and introspection. By introducing human scale in these interesting spaces, I observed how viewers could experience a reflective state of mind and self to digest the intricate nature of their environment. The complex nature of these models forced the figures, and by extension, the viewers of the image, into an introspective state, in which they are now placed in the position to engage and absorb the space, reflecting on their presence within the space.

3.3.2 Static space and non- static space

I was able to observe that a simple, more static-natured space (Appendix C, Figure 12,17) allows us to focus inward, promoting a meditative state of mind. In these spaces where movement is in a minimised state, people are encouraged to experience space from a still position, sitting or standing, reflecting on inner thoughts. Non-static spaces do quite the opposite, encouraging us to explore via movement and instinct. The irregularity of the form in these models, shifting shadows, and various intensities of lighting create a non-static space, compelling individuals to explore both physically and mentally. State, as they interact with the changing environment. This movement creates a non-static nature which is controlled at the hands of the occupants (Appendix C, Figure 8,16).

3.4 Conclusion: The interactive display of light, form and emotion

To conclude, the use of cardboard models to experiment with the interplay of light, human scale and form in this third phase of the design process revealed that there is a power in which architecture and space play in bringing forth emotional response. It was a response of amazement or gaze of awe that is able to leave the audience physically still and let their imagination run wild. As I was manipulating the orientation of the cardboard pieces and different lighting conditions, I was able to create this sense of dynamic space that was heavily affected by even the slightest change of light and proximity between solids. In addition to these techniques, the introduction of human scale added a third dimension to which viewers can repose emotionally, adding context and relatability. They can project their feeling of feeling overwhelmed, lost and in a state of introspection as they respond to space. This experiment of spatial interference and added components illustrated how complex space can become. The difference between static and non-static space revealed the intensity of their evoked emotion and explored interaction. This experiment aligns with Zumthor's idea of atmospheres in an architectural context but also introduces the consideration of lighting, human scale, form and its implication on emotional response within space. During this experiment I found that when light was interacting with solid space/ walls and floors, shadows and contrasting lighter spaces gave the perception of solid and open space. I found that light would in a sense alter the forms visual appearance to the point it would add a sense of mystery and inquisitive nature. This idea of depth leaves occupants for a monstrous visual presence to absorb visually. It leaves them time to sit, stare and try absorbing the vastness of the space bringing this captivating sense of depth and layers to space that are beyond surface level. A idea of spatial depth and layers of space brought me into my next phase of trying to understand this vast nature or layers space can form from the interplay between light and solid forms.

Appendix C Figure 1



Appendix C Figure 5



Appendix C Figure 6



Appendix C Figure 9



Appendix C Figure 14



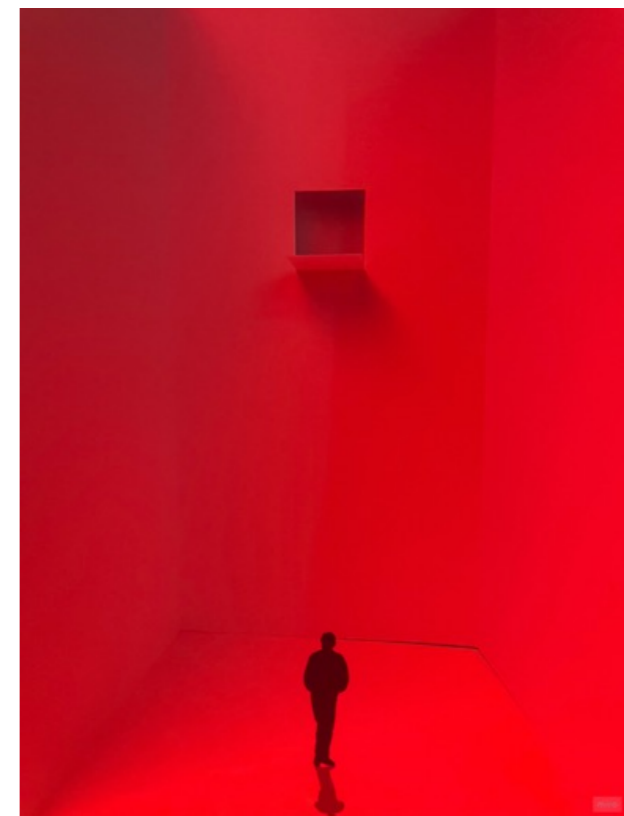
Appendix C Figure 16



Appendix C Figure 10



Appendix C Figure 12



Phase 4

Spatial depth: The interaction between light and space

4.1 introduction to spatial depth

During phase 4 of experimentation, I focused on this quite delicate and intricate relationship between light and space that I was able to capture. I tried to observe the frequency at which these two aspects communicated and complemented each other's existence, where they manipulated solid space. The question I had formulated from the past phases was: What is the relationship between light and solid space? How do they interact with each other to shape our spatial dimension and perception of depth? I sort out to explore this question and expand on previous phases by intervening in this concept of continuum space, or spaces that can be altered and redefined to the interaction between immaterial forces like light and possible sound. This experiment started with the combination of photography first, then followed by model making to create this series of experiments that visually illustrate this connection between non-physical energies that can manipulate spatial perception. This stage of design helped me explore these possibilities and insights into how space can be visually perceived and re-designed using the theme of non-physical forces.

4.2 using photography to investigate spatial depth

4.2.1. exploring domestic spaces and identifying the subtlety of light

So, as I found success in previous phases in terms of capturing moments, I pivoted back to photography to capture these moments of subtle spatial interactions or communication between components. I started at the place I spend the most time, home, and began to take notice of all the areas I take advantage of, corners, gaps between doors, ceilings and surfaces- where, in some cases, light found its way to creep in. The play of light on these solid forms, cast a harsh and soft shadow, illuminating certain elements you wouldn't normally take notice of. The duration of all these photos was put together in a collage, which again altered its appearance as a whole image, helping illustrate this idea of space within space, areas I constantly took advantage of its subtle beauty with offer its spatial presence and depth often demanding attention (Appendix D, Figure 1).

4.2.2. light as a non-physical entity but being able to interact with solid space.

As I curated and observed these images, I could visualise just how light was able to intervene with solid space tangibly. This interplay of light and space brought out this conversation between light and shadow, which was a dynamic relationship of this physical and projected no physical form. In each of these spaces captured in still shots, light is present in space. It became evident how light in space could either enhance or diminish the perception of a space's volume and depth. In these images, there's a subtle and static nature in these spaces that light portrays and invites the viewer to visually explore with their eyes and imagination. This directly illustrates how, if these specific elements were highlighted and taken into account, it could have a direct response from occupants, encouraging them to experience space through visual and mental exploration, despite the light being a non-physical entity but having an authority presence in these spaces.

4.3 model making: the exploration of layers, loops and depth.

4.3.1. the construction of layered paper models

Expanding upon the idea of photographs, I decided to now use these images as inspiration to create the next paper models, but this time, I focused more on the idea of loops, layers, depth and dimensionality. I constructed a model that was inside a paper box, which I flipped upside down to change its spatial orientation, giving me the ability to interact with the space in a different perspective with interesting angles, using gravity as an element to give the model structure and form (Appendix D, Figure 6,7). This model illustrated a sense of organic flow with an atmosphere of transcendence, while this model was solid in its form. This model's loops and layers gave this space a sense of continuum and endless space, making the space feel bigger than it was. It illustrated a sense of movement and permeability within a static form. Now, with the introduction of both natural and artificial light, I began to experiment with its perceived appearance and perception of atmosphere. The results were compelling as I was able to make the space feel both tangible and otherworldly by inflicting a sense of ethereal spatial depth. The interaction of light and solid space in this model nearly blurred the line and boundaries between the real and the imagined realm of space; this showed the internal power light had in transforming this model.

4.3.3 Creating a 3-dimensional sense of depth from a two-dimensional image

To take this concept of spatial depth to the next level, I started turning more two-dimensional images into three-dimensional modelled spaces. This started by taking a previous photo of a model, printing it out, and I began to cut along the lines of shadow, folding and extruding the model to create a 3-dimensional model that appeared to create depth. I intended to create a visual illusion of an image that seemed to be a space that you felt as if you could enter when looking at it while this idea had potential. It captured that sense of dimensionality but didn't do it effectively as I thought it would, this failed attempt did, however, enforce the idea that if the influence of light and shadow is manipulated by correcting in a precise collaboration, it will affect the occupant's physical engagement with space (Appendix D, Figure 8-11).

4.4 sound as unseen energy: investigating the impact of frequencies

4.4.1 exploring how sound might impact the perception of space

The idea of light being a non-physical force that can impact solid space inspired me to think about other energies that are non-physical or unseen that have this ability to manipulate space. This led me on the journey to find sound as a tool, specifically sound frequencies, and how they might be able to interact with solid spaces. I am conducting an experiment where I filled a bowl with water and covered it with plastic wrap, I placed a speaker beneath this bowl with drops of water on top of the glad wrap and began to play sounds. The water within the bowl and the water on top of the glad wrap had this medium of plastic separation. However, they were able to communicate visually with each other and react to the sound individually and simultaneously. The water began to ripple and vibrate dramatically, reacting to the frequencies. This effect created a sense of fluidity and an everchanging sense of movement and space as the water refracted with the light in the room, creating this beautiful and expanding effect. The reflecting of light through the medium of water in the interior of the bowl created this sense of moving space; it was a sequence of a transcendent environment within the bowl that had its atmosphere. This phenomenon was known as cymatics, which is the visual representation of frequencies displayed through mediums like water, sand and light particles (Appendix D, Figure 5).

4.4.2 visualising space through sound

During this experiment, it was evident to me that sound, much like light, can manipulate space with these powerful visual transformations. In the film, light and sound are used as symbols and visual cues to transport the audience into the realm of the setting and demand an emotional response, similar to these models, these themes and tools used to manipulate space transform the solid space and evoke those same transpire emotions to elevate

the environment. As I examined the water droplets in the photographs and videos I took of the models, I observed their appearance and visual nature that resembled something out of this world, nearly alien-like, as the shadowing created their miniature worlds within. In this experiment, it was clear to me that there were more elements like light, such as sound and frequencies, that can influence space perception to a visual phenomenon, elements that were responsible for translating a sense of beauty and harmony that occupants can respond to on an emotional level (Appendix D, Figure 12).

4.5 the concept of space within space: potentially redefining architectural design

4.5.1 small passages, gaps and corners as potential spaces

As this phase continued to expand, I began to think about how we could redefine space in architecture through the exploration of light and sound. I began to go deeper into this idea of spatial death and unutilised space in traditional architectural settings. Despite most of these spaces being consequences of architecture and a product of design, under the manipulation and influence of light, sound and other unseen or non-physical mediums, they have the potential to create an extravagantly dynamic proposal of space. In alternative for these spaces to be merely traditional areas, dead spaces or hidden, these elements can be re-imagined and meaningful, demanding attention in architectural space. They can be used to elevate areas in a room and create an experience through interaction and visual intrigue.

4.5.2 inspiration from James Turrell

The majority of this exploration between light and space came from the well-known artist James Turrell, who focuses on creating space about light. Turrell's sense of space translates to his ability to turn simple architectural forms into extremely powerful and immersive installations that perpetuate a message. He specifically adds value to my models and experimentation as his work demonstrates that even the simplest forms of space can be elevated and transformed with the presence of light. This is the idea that I expanded upon all my models thus far, designing them and creating environments that transcend their physical limitations, offering the proposal to more meaningful and powerful examples of spatial iterations.

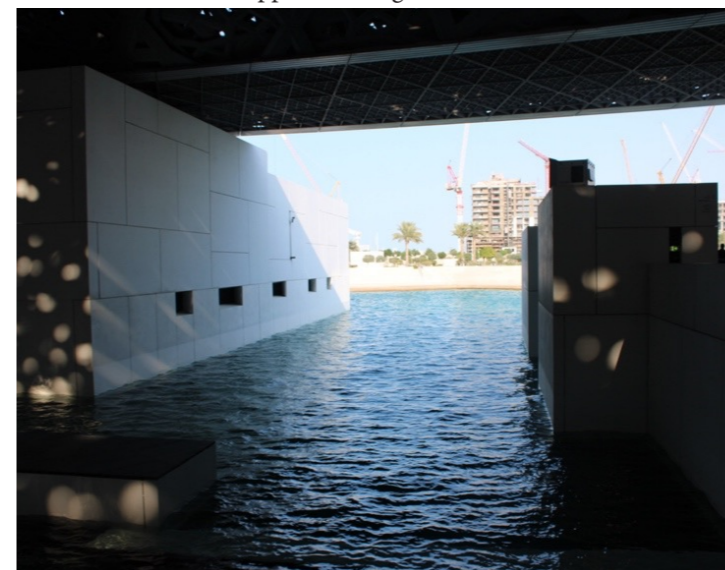
4.6 concluding phase 4: nonphysical energies and the redefining of space

During phase 4, the exploration of these models revealed an understanding of just how effective light, frequencies and sounds alter our perception from non-physical form into the realm of physical solid space. With this diverse collaboration of lighting, modelling, and experimentation, I was able to inadeptly test and expand this idea of experimental space. This interplay of light and solid space revealed more than just aesthetic appearance; it was this constant dialogue between different realms of the physical and immaterial that shaped the perceived modelled space, evoking psychological and emotional journeys. This phase expands areas of research and exploration, defining how unutilised space has the potential to have more significance and how these elements can draw in and elevate excitement internally. As I move on, I will continue to play on this theme of non-physical elements at play in space to redefine this idea of real and imagined space, physical and non-physical perception and practical, emotional connection in architectural balanced environments. Something i could play with to add onto this non-physical idea of space, is the use of shadows to define dead space or a solid form, to deter occupancy or guide the eye/movement. I could also indulge in the methods of using light and reflections to create visible contours lines, and architectural elements that appear solid in nature and give the illusions of a structural components but are only the consequences of light, shadow, reflection and interplay with solid forms.

Appendix D Figure 1



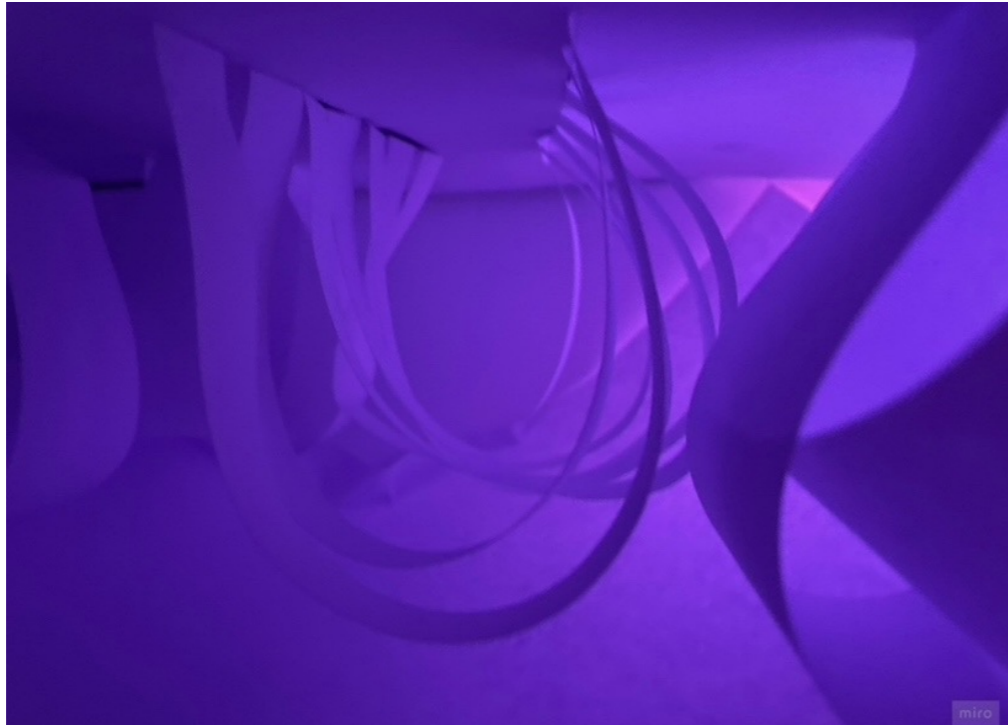
Appendix DFigure 2



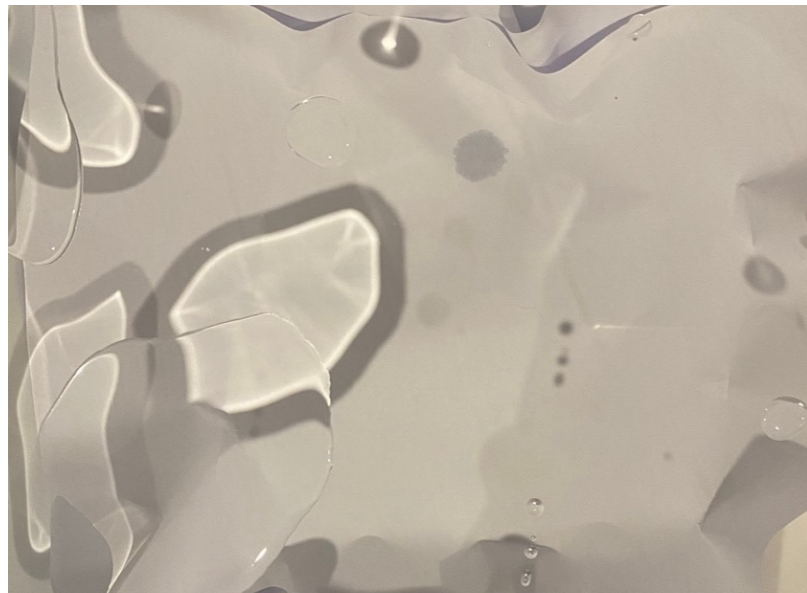
Appendix D figure 12



Appendix D Figure 6



Appendix D Figure 5



Appendix D Figure 7



Phase 5

Understanding space: subconscious and conscious explorations

5.1 introduction: exploring occupied space and space within space

During phase 5, I deepened my investigation of the concept of space by looking into the interaction of the subconscious and conscious presence of the space we occupy. The reason being, is through my experimental phases, I noticed that some elements are picked up consciously and others more subconsciously. I really wanted to understand why and if this could become a conscious design technique that could be employed to have that effect or if it was just a consequence of design and a natural human response to experiencing surroundings. The goal of this exploration was to further understand how we respond to different types of space and what geometrical form certain spaces inflict on our feelings, thoughts and behaviors. I sorted to figure out if we broke spaces down into simple geometrical forms, what reaction it would have on our emotions, and whether it was a positive or negative interaction. The concept was simple: break down spaces we interact with daily, whether it was cities, buildings, nature or a domestic environment, and critique its form and its manifestation in our lives.

To start this experiment off, I concluded a series of miniature models composed of different forms and orientations from foam. These spaces represented generalised spatial forms of common experiences. Forms that stripped scale, colour texture, activity, human scale and any other characteristics other than its general geometric form. They were congested urban environments, free-flowing natural spaces, residential structures, and transitional spaces. The idea was to look at these spaces and understand their basic roots, how they would make the public feel, and how the subconscious mind would dig these forms. I then proceeded to add dramatic light that simulates its structural tone to emphasise how its orientation and proximity can evoke emotional responses and capture their atmosphere.

5.2 the model: Spaces representing life's environments and engagements

This model consisted of several rooms side by side separated by walls, and each room had its unique form that formed specific spaces we encounter daily. In this model, each space was able to reflect spatial confinement and movement. Each space had a different visual appeal and cognitive recognition of the spaces. I further expanded my research to figure out how spatial design influences our sense of freedom, control, anxiety and comfort through geometrical orientation (Appendix E, figure 1).

5.3 detailed analysis of each space

Space 1: congested and constricted urban space

Description: This space was concreted with stiff blocks and squared structure, contrasted with tight corners, narrow pathways, and little space to be occupied. It was created with this sense of deliberate congestion and confinement (Appendix E, figure 2).

Representation: the model was created to represent the urban environment, city, suburban region and shopping centres. This is to engulf the idea of restricted navigation and challenge the idea of free, easy movement.

Emotional response: this space portrayed a sense of anxiety and panic. A sense of overwhelming nature gathered as your eyes moved through the space, imagining yourself inside. The congestion leaves an airiness of stress and uncertainty of a clear exit. The form of this model created a sense of entrapment, reflecting the nature of busy urban environments, where constant movement and lack of permeability and freedom can generate frustration.

Positive/ negative impacts:

Negative: where there is a sense of restricted movement and overwhelming confinement, it is an instinct to want to escape, leaving occupants with potential scales of claustrophobia. In our real world, spaces that reflect this quality force us to rely on speed, rushing and the need for constant escape instead of contentment and wanting to exist in the present moment. While this is on a subconscious level, depending on its severity and consistency, it gravitates towards our daily emotions and actions, creating habits of bad nature.

Positive: on the positive spectrum of this, this model also reflects the energy of the dynamic nature of urban environments that promote movement and have qualities of visual stimulation.

Space 2: transitional, structured domestic space

Description: This space had well-defined walls, doorways, staircases and passages, which are found in homes and residential settings. This design played on the idea of visual guidance that we rely on today to move from one area to another (Appendix E, figure 3).

Representation: This space demonstrated the viability of spaces such as domestic environments, spaces where rooms are connected by hallways and passages, giving us a clear sense of direction and order. This space reflected the organised architectural language we all know and see daily.

Emotional response: in this space, a sense of familiarity and comfort was depicted in its form. It easily navigated our eye, with each space logically moving into the next, creating a series of flow. This presence of doors, underpassing and passages implies a sense of safety and a controlled designed environment for ease of permeability.

Positive/negative impact

Positive: the sense of predictability and order is portrayed in this model, which evokes comfort and security in human movement. There's a sense of intuitive and familiar structure that comes with this model that is reflected in our homes.

Negative: feelings of mundane and restrictivity can follow a space that has a rigid structure, especially reflected in domestic spaces. This can lead to a lack of exploration, excitement and spontaneity in our daily living situations, leading to a decreased living quality.

Space 3: transitional, public or retail space

Description: This space had a general form of neither congestion nor overly open, having a sense of slight chastity but curiosity at the same time. It had a balanced nature of transitional space that would be found in public or retail settings (Appendix E, figure 4,6).

Representation: this modelled space represented spaces we see in public, areas that are mainly transitional, designed to move masses of people through that aren't necessarily boring but are functional.

Emotional response: this space has a neutral impact, neither confined nor liberating to the viewers, but serves only to function as a transitional device. With no intention to emphasise freedom or comfort, it simply didn't have any deep emotional impact, possibly serving as a system to not distract the public, shoppers, or workers from their main goal or target.

Positive/negative impacts:

Positive: efficiency and purposeful movement was the goal of this space in its nature of neutrality. This space represented navigation and clarity in its function to inform. It gave the space a sense of control and enhanced directional capabilities.

Negative: with the neutral nature of this space, it lacks its sense of personality and ability to engage occupants. Leaving a cold absence of structural presence on its occupants, there is a sense of detachment from the environment that comes with a space with this orientation and form.

Space 4: free-flowing organic space

Description: in contrast to the previous space, this model was created with organic forms, with a sense of fluidity and curves allowing for free movement, circulation and opened-up areas. There weren't any abrupt corners or harsh flow directions (Appendix E, figure 5).

Representation: This model symbolised natural environments like fields, forests and landscapes. It also took the form of some architectural spaces that reflect the nature of freedom and openness.

Emotional response: moving my eyes through this space, the engagement felt calm and liberating, there was no real sense of urgency to escape. There was a sense of discovery, exploration and excitement in its full form. This space evoked a sense of harmony and peace within the self and its surrounding presence.

Positive/negative impacts

Positive: in this space, the lack of harsh corners and confinement leads the space to feel free and creative. This space's appearance could give potential occupants the ability to explore the space visually and physically and to do so in the present presence. This space encouraged a sense of connection from viewers to their surroundings, offering relaxation.

Negative: the absence of form, structure and boundaries could cause some to feel disorientated. The lack of structural instructions to guide movement or order can sometimes create a sense of being lost, potentially evoking panic.

5.4 visual stimulation: how light can affect each space

To add a dramatic emphasis on these spaces and to understand how light affects these spaces, I used light to impact each space. By manipulating the light under specific conditions of angle and intensity, I can evoke a mass of emotional responses and effects:

Bright, harsh light: in the congested space, the use of hard, strong light created an atmosphere of anxiety as the viewer of the space imagining themselves in that space would feel under constant pressure and scrutiny.

Soft ambient light: this type of lighting conditions in the organic space emphasised tranquillity and played on its ability to encourage exploration. Its dynamic structure created a dynamic lit room with interesting shadows that create excitement and discovery in its essence of flow.

Directional lighting: in the other spaces, by angling the light, I was able to emphasise the sense of order and direction the spaces demanded with their ridged structure and tight passages. This reinforced the idea of guided movement through visual cues, highlighting the shadows as no-go spaces and light as the path to follow.

The lighting simulation allowed for a deeper visual engagement, emphasising the presence of each space implicated on the viewer in its form. It enhanced the emotional connection and dramatic atmospheric tone in the settings. This further added to the power of light in space, shaping the interactions and physical environments.

5.5 combining the spaces: creating a unified environment

Taking critically analysing every space individually, I explored the idea of combining certain attributes of each space in a way that was seamless and organic. This was to create a more interactive and meaningful space that was complex and to be explored visually and physically. The question I came up with was: what combined attributes of each space create something meaningful and powerful and allow for connection?

Merging ideas:

Openness and fluidity of the organic space

Structure and visual guidance, comfort and intuition of the domestic environments

Traditional nature, exploration nature of the public spaces that leave occupants in awe

The idea is that I could create a space that reflects freedom, security, complexity, learning, exploration and comfort. This space could be modelled as my answer for how space can be manipulated to create impact and meaning, becoming a metaphor for daily life. This space can become an experience that emphasises the unique nature of design to implicant emotional and pshycological engagement through exploration.

5.6 conclusion re- visualising daily environments

To conclude phase 5 of experimentation, I was able to deepen my understanding of the space around us and its sub-conscious and conscious appearances. These models provided me with a platform where I could visually and emotionally engage and analyse these spaces on a comprehensible scale. I was able to understand how these geometrical forms, spatial layouts and lighting settings consistently influence our daily absorption and interaction with space. By creating this generalised representation of these experiences, I was able to form and ask myself questions:

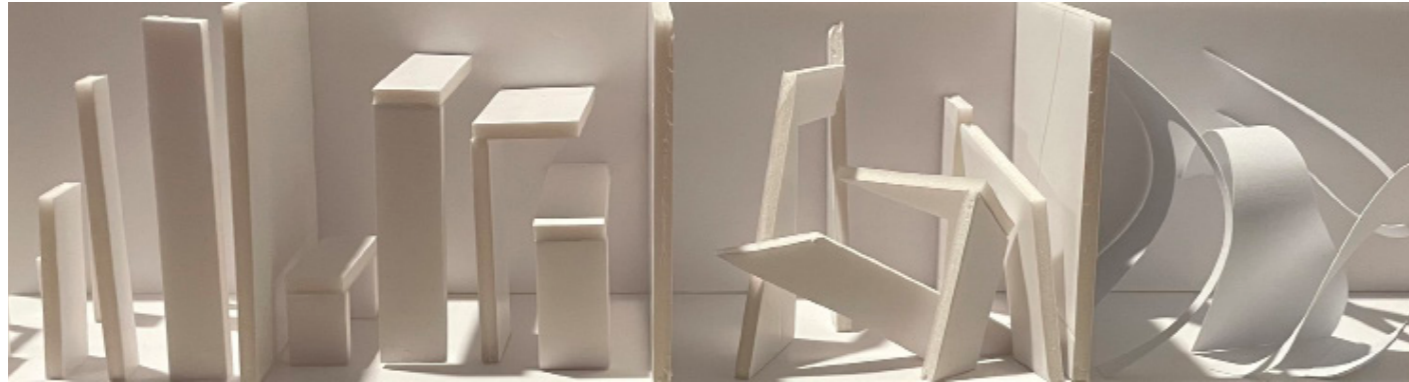
How do people feel in these spaces?

Is this how they want to experience life?

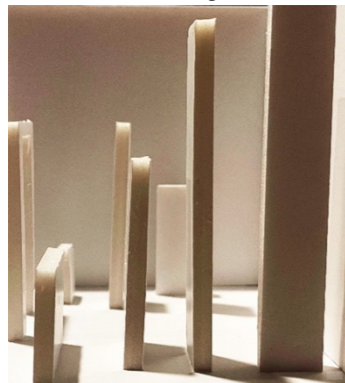
Are they aware of their surroundings and the potential damages that come with them?

This phase highlighted the profound depth of the space around us is detailed in. It outlines the impacts space has on our well-being and opens our thoughts to how we can re-design the spaces around us with more consideration of subconscious feelings and interpretations.

Appendix E Figure 1



Appendix E Figure 2



Appendix E Figure 3



Appendix E Figure 4



Appendix E Figure 5



Phase 6

Thinking space through installations

Phase 6: Thinking installations- concept 1

I entered this new phase of design experimentation with the desire to create scaled models of potential installation spaces. Thinking spaces- installations that provoke introspection, emotional tangibility and the ability to transform the experiences of occupants through light, space and materiality to display a concept of re-defined space. This phase is built on the previous experimental phases that extracted key themes and spatial investigation of perception, manipulation of light and the emotional response to the atmospheric nature of an architectural space. The goal was to use a cinematic approach, merging symbolism, poetic culture and dramatic setting to create a spatial narrative and personal connection to space in the same way film connects character to audience.

6.1 Task overview

Create models that are scaled-down ideas of spatial installations that have a dramatic or cinematic nature that can capture and grab the occupant's attention.

Reflect, compare and record all findings of all iterations of these models to create the ultimate space that creates an emotional and psychological dialogue with occupants.

Investigate how light and darkness communicate to create a balanced space that imposes an ominous atmosphere without the presence of darkness, light loses its power and ability to have a dramatic effect on its setting.

6.2 initial exploration: sketching imagined spaces

I started this phase again at the sketching stage, which always helps me engage deeply with my creative instinct. The goal was to start putting my thoughts and emotions into this space displayed in a 2-dimensional plane to illustrate an atmosphere. For these initial sketches, I took influence from the cinematic nature of the film- where set design, lighting, and colour work together to create mood and emotional connection. I tried to translate this film dialogue into an approach toward architectural context. The goal was to design these modelled spaces so that they could be experienced like any other building but with the powerful impact of the previous models I had created. These spaces needed to evoke feelings and a sense of narrative through a careful process of configuration, manipulation of light, materiality and geometry (Appendix F, figure 1,2)

6.3 first conceptual model: curves, loops and light manipulation

The first physical model I made for this phase experimented with a suspended medium that was created to interact with light from above and alter the perception of space below. His model had curved walls made of paper and a suspended medium held by string and foam support. This suspended medium was held in a way that light would shine through it and cast unique shadow forms below and on the walls. The shadows below created a dynamic setting below that was altered with light, creating a layered, immersive space that transformed the space within (Appendix F, figure 3,4,5,6).

6.3.1 Light as a spatial manipulator

Natural light: as I introduced natural light into these models, it interacted with the paper, giving the viewer the ability to observe its internal structure and texture. The natural light shone through its composition, highlighting its delicate fibres of material, which gave an organic and fragile appearance.

Artificial light: artificial light was where I was able to dramatise the setting and alter the atmosphere significantly. The model's walls and floor became this surface that absorbed the abstract lighting and reflected it in the sense it bounced off and lit its surroundings. I was able to have more control over the mood selection, which gave me the power to determine the intensity and orientation in which the light was inflicted.

6.4 impact of curves and light on the emotional response

The curved walls on this model had a profound significance in how this space was perceived. The curves exaggerated the effects of lighting, which opened the space up to feeling organic but controlled in a sense, allowing exploration and adding a sense of architectural coherence (Appendix F, figure 7-12).

I again used the human scale factor in these models, which added a powerful transformative nature that allowed the space to be perceived as realistic and communicate perspective for viewers to attach to. This helped me design a space that communicated movement and encouraged visual exploration, having light bring out intense emotions based on the interaction of light on the curved walls.

Shadows created in these loops and curves in the model were not just passive byproducts of light but an active counterparts in altering the perception of space, they added this supreme sense of depth, mystery and dramatic tone that encourages occupants to experience the interplay between light and darkness within the space.

The lighting used in these models emphasised the curves, deepening the emotional attraction to the space by the soft gradients between intense brightness and shadowiness, fostering an atmosphere that has qualities of tranquillity and discovery.

6.5 conversations and reflections on the installation models

As I made these models, curated photographs of them and began reflection, I questioned the potential applications.

What could these spaces become?

How could it be used to transform daily living experiences?

What messages do I want these spaces to convey with these characteristics?

As I formulated these questions, they prompted conversations about the potential these models had as installations:

An intermediate space between work and home: these installations could become a space in society utilised as a transition zone. A space between the high pressures and stress of work and the comfort of home and relaxation. They could serve as a place of reconnection to self, meditation and reflection to rejuvenate and come to senses before entering home so that the state of rewinding and relaxing can take place.

Space of healing and reflection: this space can be the environment for the sanctuary of mind and spirit, where the raw nature of light and space allows for purity, deep contemplation, and accelerated healing. This narrative mirrors the ups and downs and complexities that life has, encouraging us to take a step back and allowing for a reflection on deep human senses.

A place of personal expression: this space could have private implications where occupants can manipulate the light and space to accommodate their mood, allowing for a controlled environment that balances the energies of a stressful life. This personal interference with the space could allow individuals to connect with their inner selves more personally and express their feelings privately. This could have powerful and useful applications for clients who seek to achieve a rehabilitation space that allows for rapid setting of mood and tone in an environment.

6.6 Second model: the concept of exploration and discovery

Building upon the experiences from the first model, I created a second model that was more based on the movement of experience. This design incorporated a series of passages that invited movement and exploration through a circular motion. The walls took the same curvature nature, adding a similar sense of drama that interacted with light, highlighting its significance and guiding abilities (Appendix F, figure 13,14,15).

6.6.1 Journeys through the passage

Artificial light interplay: the use of light to illuminate these walls gave it its colour, but also its sense of mystery and anticipation as occupants moved through the space. The light exaggerated the curvature that the walls displayed, which brought a sense of experience as you shifted through a space.

Central space: in the middle of this space was a cone-like structure, which was open at the top that would invite in natural light that was accessed by the curved passages. As the centre was impacted by natural light and the curved passages were impacted by artificial light, it created this dynamic contrast between the two lighting settings (Appendix F, figure 16-22).

6.7 the dialogue between the two lighting conditions of natural and artificial

The central theme in this model was the contrast between natural and artificial light explored in one space through movement. The architecture of this space exaggerated this distinction between the two.

The natural light filtering through the top of the central cone inflicted a soft nature that illuminated it with a diffused glow. This gives this interior space a slow sense of movement and a calming sense of meditation. The artificial light, on the other hand, had a more intense focused light that illustrated a spatial drama in a way. This transition in the space from intense anticipation and exploration to a passive contemplation space gives an emotional journey that covers both ends of the spectrum.

6.8 Redefining the hallway: a journey through space

One of the models in this phase of design incorporated the redesign of a hallway, emphasising its intention to transport from one space to another, making it a more significant journey and experience. Hallways are often overlooked as just a space of transition, however, in this installation, it becomes this beautiful iteration of setting and atmosphere that elevates mood and transitions an occupant to another space with a cognitive engagement. The hallway was transformed into a pathway of discovery and excitement with its curved walls that curved in both the x-axis and y-axis. This gave a traditional hallway a sense of purpose in a narrative sense and was able to illustrate a more profound user engagement to occupants emotionally (Appendix F, figure 19).

6.9 conclusion of phase 6: the cinematic experience of space

During phase 6, there was a deep and personal emotional connection to spaces that had a cinematic and dramatic dialogue from the exploration of light, space and materiality. The implications of both natural and artificial light on the composition of geometry-challenged spaces gave a sense of narrative to the models that invited an immersive attitude. During this phase, I was able to create installations that reflect how architecture can become an emotional, spiritual, and impactful journey. It can serve as a medium for personal and communal expression or as a contemplative space that elevates mood and cognitive growth. Through this phase of experimentation, I observed how these modelled installations have the ability to be made at scale and potentially serve to change how we think, interact with and design space. I truly believe that this model can be scaled up to create this spatial experience that connects us with ourselves, with others and with the deeper meaning of space and spirituality.

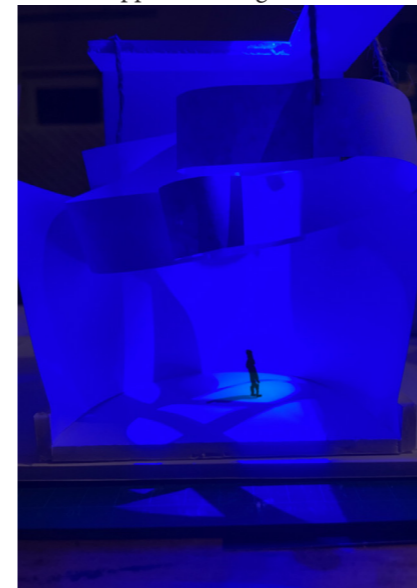
Appendix F Figure 6



Appendix F Figure 15



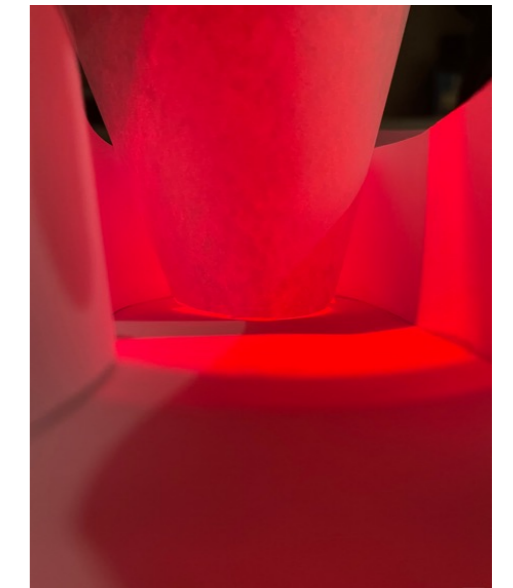
Appendix F Figure 12



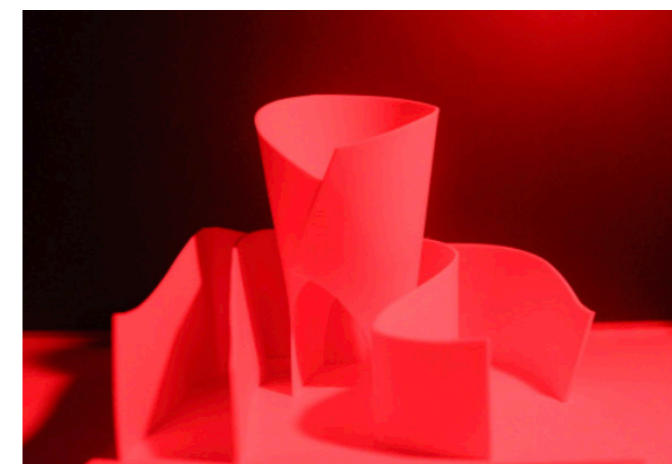
Appendix F Figure 19



Appendix F Figure 18



Appendix F Figure 20



Appendix F Figure 22



Phase 7

Making light the subject in architecture

7.1 Introduction

In this design phase, the exploration I embarked on was centering around the crucial role of light in architectural contexts. By further diving into the interplay and interactions between spatial geometry and lighting, I was able to create several models that investigated purely light, illustrating an emotional narrative perception and experience. The following analysis consists of detailed consideration, design and decisions made from phase 7 first models, subsequent designs and final design thinking for presentation evolution.

7.2 Model one: Initial exploration of light and geometry

7.2.1 Conceptual foundation

My journey began with sketches consisting of vertical lines that are placed in angled increments that shift as the object progresses, giving a curved changing effect. I quickly took this to a physical model to test its visual presence. This started in a foam model; the model has a wide-open entry leading into the interior, characterised by wide opening gaps to allow for more light to enter. As the depth of the model is increased, both the height and the angles decrease gradually, allowing for less light to enter. In the centre of the model, the gaps and angles are non-existent, and then the model's exit repeats the entry with the gradual increase of angle, gaps and infiltrated light. This model became vastly interesting, simple, extremely intricate and dynamic in function. The model was able to control light through its structure, and the movement of the model, the lighting would change drastically, creating this visual excursion (Appendix G, figure 14).

7.2.2 Tunnel effect and visual dynamics of natural light

This model configuration created this natural tunnelling effect that had this visual appeal but served to function as an explorative figure. The model could be held at a certain angle and be looked straight through as a tunnel. Yet this single plane was exaggerated with the face angles, height changes and lighting setting changes (Appendix G, figure 18,19,20). The interesting geometry of this model visually invites occupants to navigate the space physically and imaginatively, prompting an inquisitive intersection. When introducing external light forces, the character of the model was dramatically transformed. The natural light applied seemed to interact with the model in such a way it mirrored its structure in a show that added supreme depth and gravity to the space. In a sense, the shadow added a secondary layer of space within the physical space. This brings reference back to previous phases where I discovered the powerful effect of non-physical depicted space using light. It gave this model a sense of depth and an illusion space. The light highlighted attributes of the model that aren't normally presented obviously in the absence of direct light.

7.2.3 Investigative insights

I conducted an in-depth visual excavation of this model to determine the reasonings of the model's powerful nature. I was able to discover that although at an angle the model could be looked through, because of its shape and abrupt angle cuts, light didn't seem to pass through to the other end. Light started acting interesting and became tamed by the presence of the structure. This led to intriguing thoughts and questions that I had formulated surrounding light behaviour when I intentionally orientate solid structures (foam walls) in ways that resist, redirect and interfere with the trajectory of the light source (Appendix G, figure 1).

What would happen in a space if instead of light controlling the spatial elements and elevating their presence, light becomes the factor that was controlled by the careful orientation and guidance of structural elements?

Would the same or similar spatial manipulation take place?

Could light be controlled, promoted and consciously applied on demand in a space, or when light is applied to a space, does it become the overpowering entity?

These were all questions I began to ask myself upon discovering this model's implications and effects on light. I wanted to see if I could design a space that invites light in, in a controlled and designed manner, controlling its presence to dedicated and designated areas.

7.2.4 Emotional resonance

When the light was applied to the model, both natural and artificial, the model radiated a sense of beauty and tranquility that felt inviting and transformative. This compelling nature resembled attributes of cinematic settings and deliberate dramatised environments. The model had now developed a narrative in the sense of its presence. It took on a near-life-like form, reflecting human qualities of loneliness, sadness and mystery in dark settings and fullness, gratitude, and solitude in lighter grades of lighting. The model took on an unpredictable atmosphere and appeared static but had a sense of movement and life in its presence. Looking at this model, I felt as if I needed to complement its beauty with every contour, angle and shadow seeming to communicate with one another to illustrate this unique array of artistic architecture (Appendix G, figure 2).

7.2.5 Forced perspective and imagination

As I photographed the model from various angles and perspectives, the model seemed to become unrecognisable and appeared to take on a new form each time. The multiple perspectives and lighting conditions highlighted the model's sense of movement as it shifted form and visual presence. I discovered that by photographing this model, I was able to create new models using the power of perspective and photography. I was able to create different settings, moods and spaces that painted new atmospheres, reflecting various emotions. This gave me the revelation to reference it back to Caravaggio's work and how light is used to create perspective and narrative. I was able to capture his captivating method of light in a 3-dimensional plane through modelling. I found power in this stage of phase 7, highlighting every phase that led up to this moment. It was clear to me that manipulation and visual perfection were a two-way interplay between both Light and geometry in the right setting either or could become the overpowering factor of space (Appendix G, figure 3).

7.3 Potential applications and symbolism

7.3.1 Design innovations

With this model, I continued to experiment with light in its form; I found that by putting a source of light on either end of the model, light didn't pass through or interfere with the other. This allowed two different colours of light to be present and not interfered, slit by the centre of the model. This exploration led me to think of this model as a mounted fixture capable of housing two independent LED lights. When the light was shone from the interior, this displayed the model's structural features on the interior of the wall, extending its shadows and non-physical structure into the room extruding the model's presence. This functionality led me to think about the model's real-world application. What could this model become? What architectural roles could it serve? Could it become a form of lampshade or lighting device that took its manipulation factor to the interior of a room? I began to think of this model as a form of symbolism that could be reflected in residential or commercial applications, physically manipulating space as a light source and, in literal form, being a source of illumination. This idea would form as a powerful way to bring application and implementation to a abstract and profound message in manipulating mood a space by bringing out emotional resonance to the viewers in a real-world scenario (Appendix G, figure 4,5).

7.3.2 Design Presentation 1 exhibition

For this stage of my thesis, we had to present our findings and work issuing its trajectory. I designed a 3-plane board pin-up made of ply board showing all my models from phase 1 to phase 6. I designed this presentation with a three-dimensional nature that had the model present of shelves that extruded from the board, images mounted on foam board and an interactive model display. The interactive model display was a three-box design that aligned three models' side by side, separated by walls. The idea was the three models would involve the viewers coming up close and experiencing the space visually, imagining themselves inside. One was a flow form permeable space lit with artificial and natural light; model two was a static space lit with pure artificial light having a strong contemplative nature, and the third was a naturally lit form with obstacles, painting the atmosphere of the space with natural shadows. The powerful models number one and two illustrate components of permeability and contemplation in an overpowering presence (Appendix G, figure 15,16,17).

7.4 Rethinking design: A space for movement and experience

7.4.1 Sketching and concept development

In this stage of phase 7, I transitioned to sketching, reflecting on all the models I had created. I feel as if I have comprehensively conducted an in-depth experimentation of space and excavation regarding the elements that create space as we perceive it. My aim now was to devise a final design and model that could be experienced showcasing everything I had learnt and discovered through exploration. I wanted a design that prompts exploration and movement that allows occupants to engage with their surroundings and absorb spatial features of a space that has been manipulated. The models I took were models one, two and the linear model. I comprised these together in various sketches, taking elements from each to derive a powerful singular model. This singular space is needed to showcase the manipulation and movement of experienced space, a space that embodies my research fundamentals and principles.

7.4.2 Final Draft model production

After sketching alternatives and exploratives, I came up with a model-making concept that was created with foam. It encapsulated key elements from the models I selected as being powerful and most impactful. This smaller model was made at about 1:50 scale to test its validity and potential in encapsulating the message of manipulated space. The smaller scale helped mitigate the high cost of making the model. However, consideration of the final model needing to be at scale was a concern for me at this stage.

The scale of this immersion model needed to be perfect to Trulyly encapsulate viewers and leave them in an explorative contemplative state. I then incorporated lighting into this model, photographing perfectives that occupants would experience in this space. Although this space was simple, I found that the intricacies of this space were highlighted, and the model became extremely detailed. The moments in space that I captured represented every phase of experimental design. Each moment in space is like a scene or piece of art that is reflected upon and experienced by the occupants navigating the space (Appendix H, figure 1-6).

7.5 Presentation strategy: cinematic immersion

7.5.1 Creating an engaging atmosphere

Recognising the importance in the context of this project, my idea was to scale this project to Lifesize, but with costs and structural integrity concerns, it was difficult. My new plan was to make this model at a scale of 1:5, use the techniques of illusion I did throughout this entire experimental phase, and use the power of photography and cinema to portray the model at scale on a screen. I will reinforce a cinematic digital layer of visualisation to enrich the presentation experience of the final space. The aim is to immerse viewers entirely using careful lighting consideration and stage setting to elevate sensory and an environment that stimulates visual perception. The power of this decision to bring the final presentation back to the realm of cinema speaks volumes. It's this collaboration of art, architecture, and cinema that all have a relationship with people and a connection that evokes powerful and mesmerising emotional responses (Appendix H, figure 7-33).

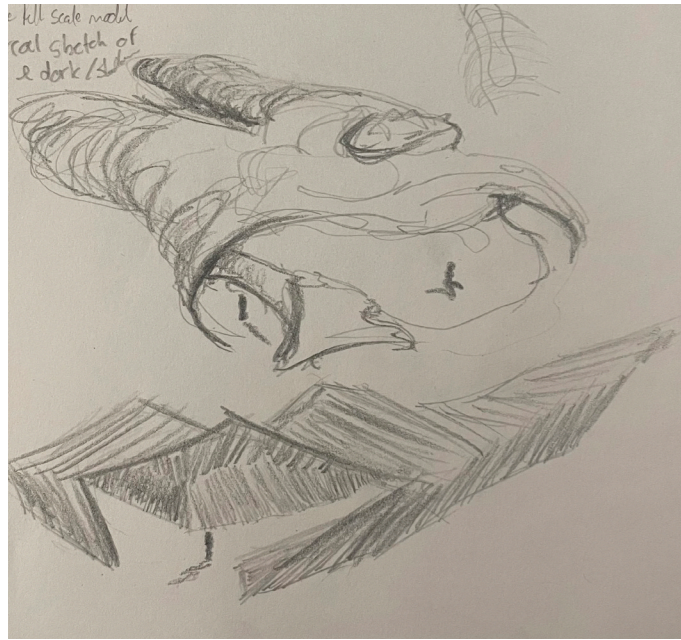
7.6 Presentation Setup Foreshadowing

The presentation will occur in a darkened room, guiding the viewers in with curtains and facades in a sequence of passages. This will lead to an open digital display of the final model installation from a live camera feed. This will follow a pre-created video exploring the movement of the space covered by a verbal presentation in the background speaking to all the components of the model, intentional and narrative. This sequence will then lead the occupants to the next stage, the set-up of the final model on a table with interactive features, opening up, illustrating forced perspective and visual excavation. I will highlight pivotal moments within the model that convey significant values and symbolism. This will be followed by a pin-up of a manuscript displaying development and analytical decisions, providing a conclusive narrative of how everything was conducted. This immersive and inclusive presentation provides depths of experiences across many planes and, in a way, is the pure evidence and real-world immersion experience illustrated by this model. The theme of manipulation, space and immersion, is carried from the making process, final model and the presentation. This I able to overall give a dimension of a diverse collaboration across mediums (Appendix H, figure 19,20,23,32).

7.7 Conclusion

Throughout this final phase of artistic design development, I have understood the transformative role of light in architecture. By using geometry and light to manipulate space, I have created spaces that foster a deep presence of emotional engagement and relationship with the occupants. This project serves as a testament to the power of design in shaping human experiences and perceptions of physical space. It demonstrates how carefully designed architecture can create proudly strong interactions in the built environment, connecting us spiritually. This final phase has led to the conclusive development of a visual representation of manipulated space in architecture serving as a remarkable journey into the realms and dimensions of space itself.

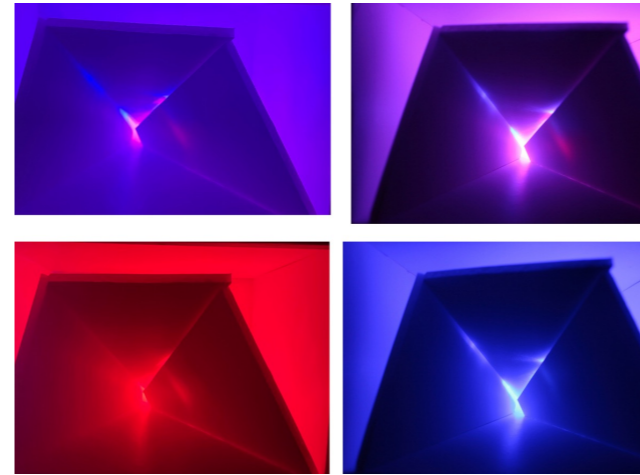
Appendix G Figure 14



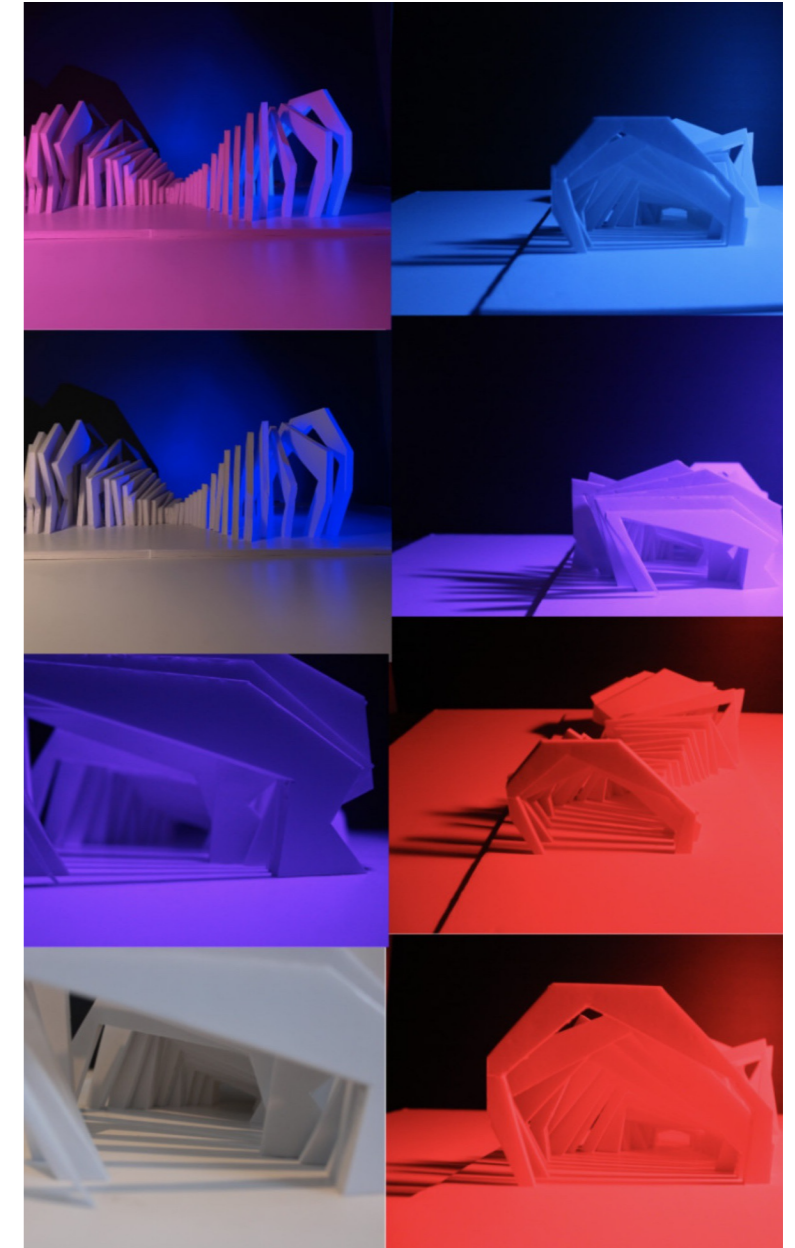
Appendix G Figure 20



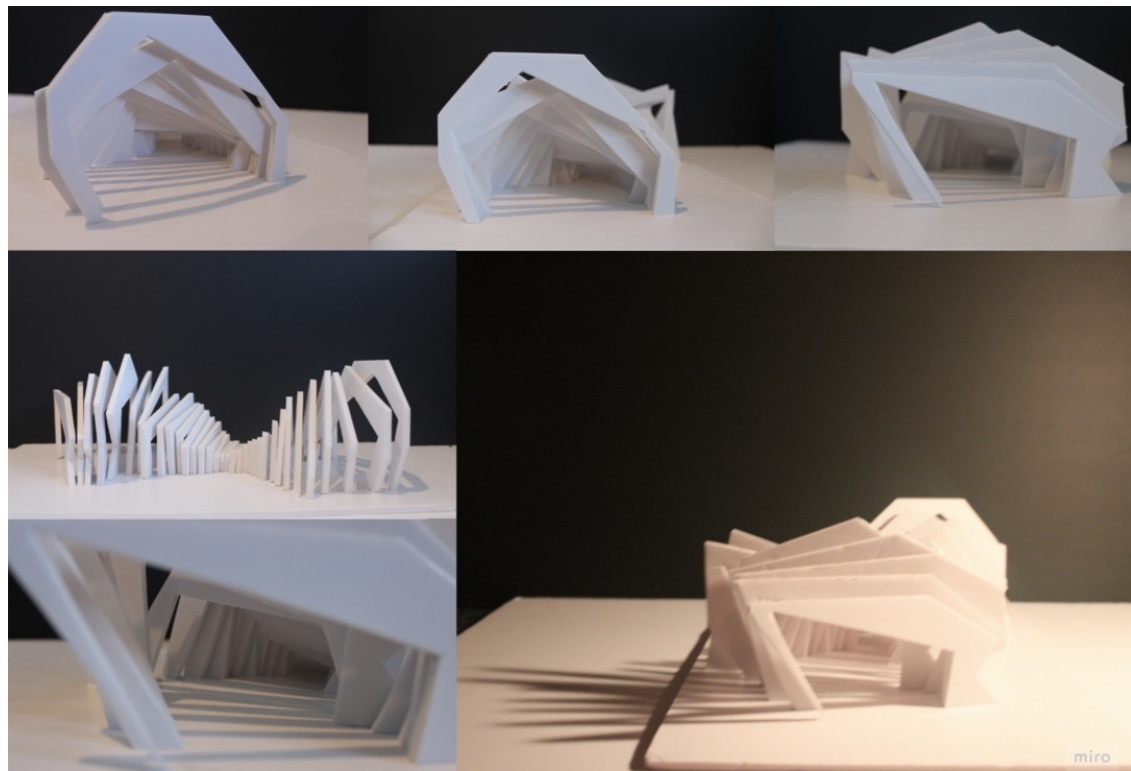
Appendix G Figure 6



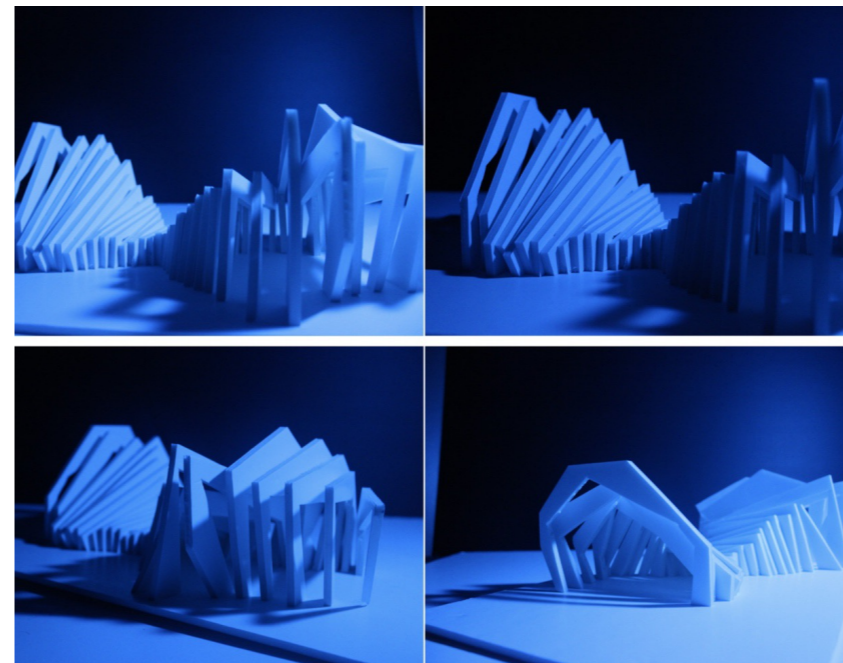
Appendix G Figure 3



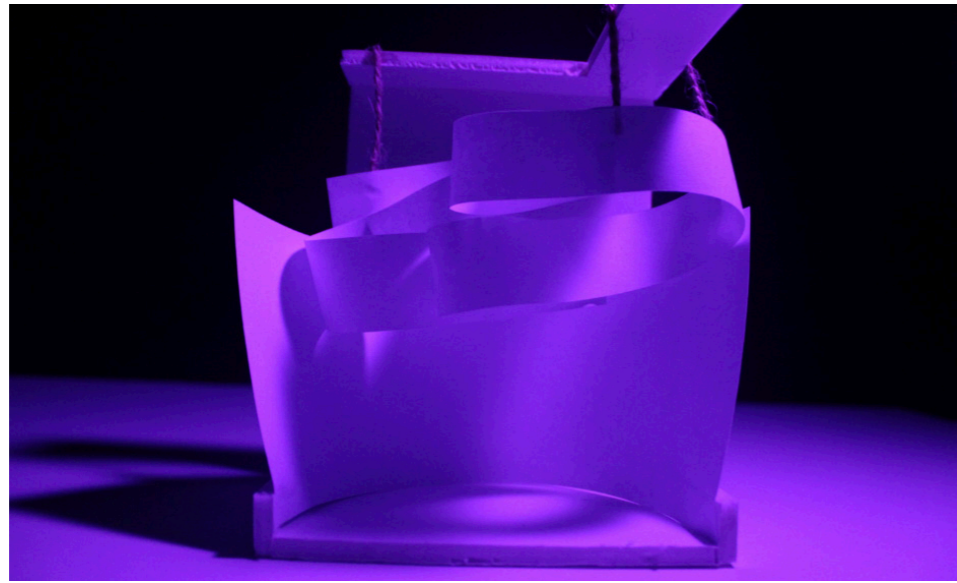
Appendix G Figure 1



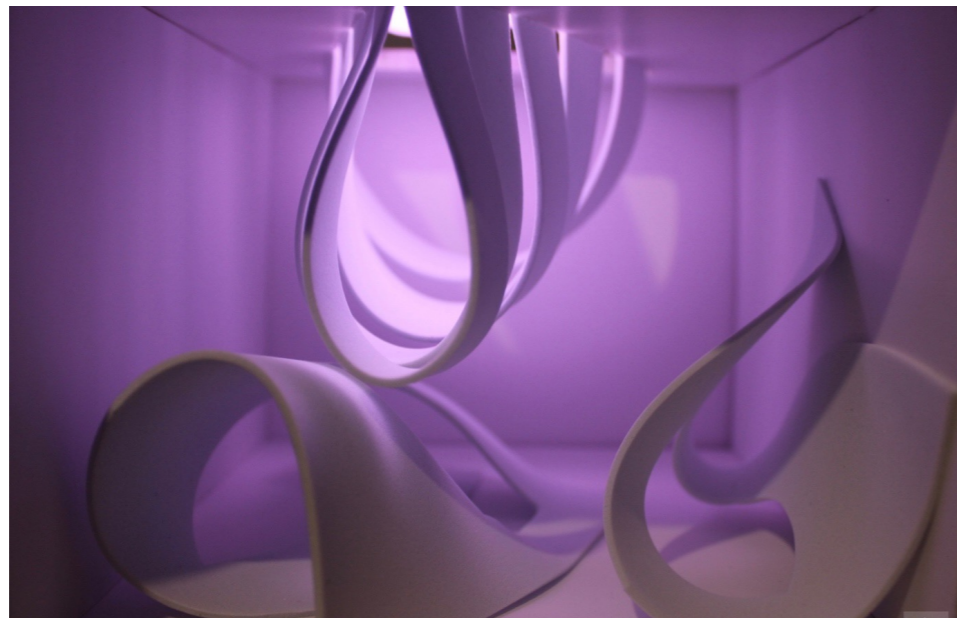
Appendix G Figure 2



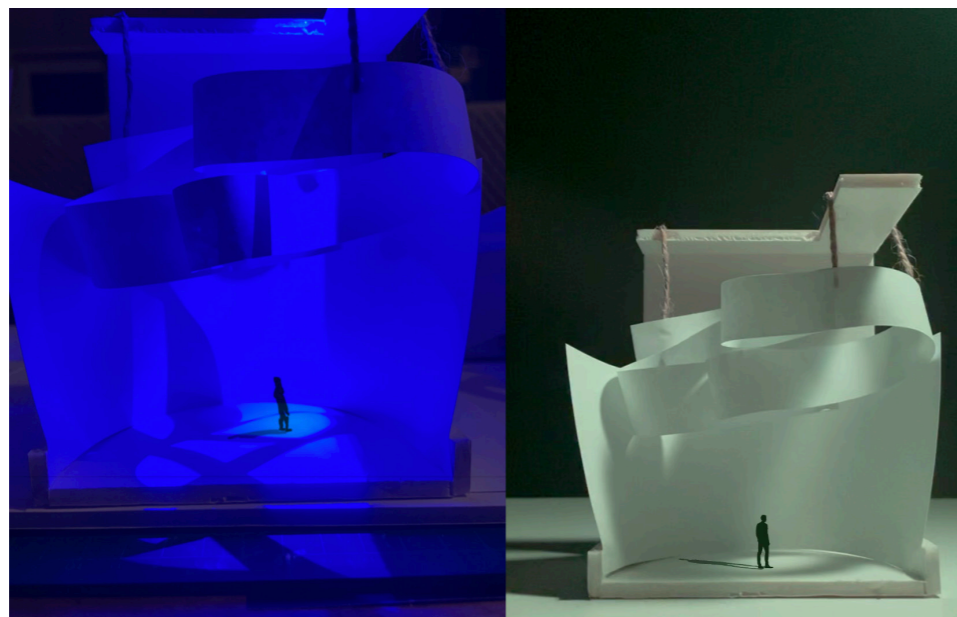
Appendix G Figure 12



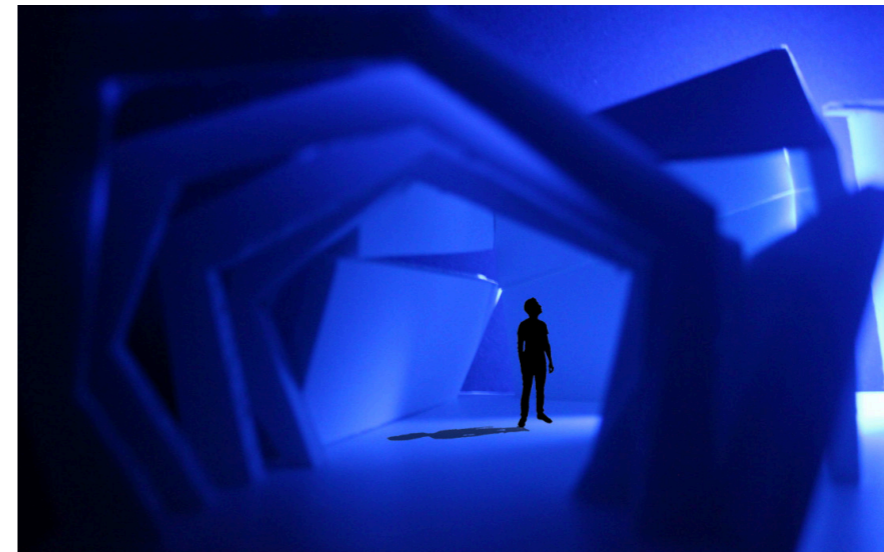
Appendix G Figure 7



Appendix G Figure 9



Appendix H Figure 9



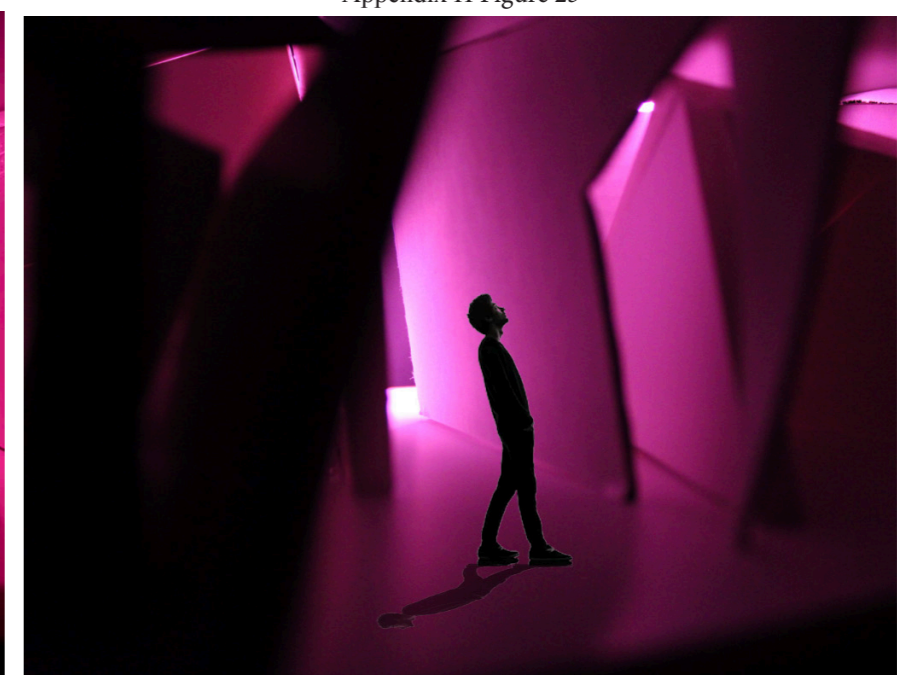
Appendix H Figure 3



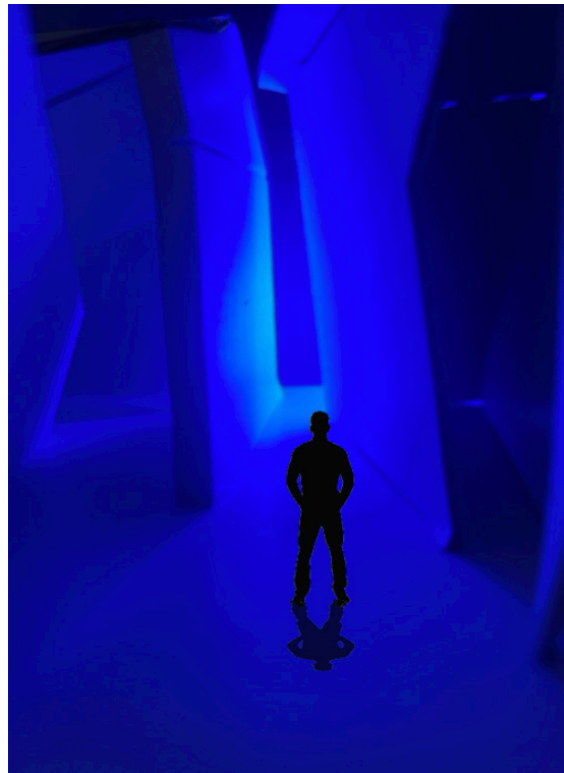
Appendix H Figure 29



Appendix H Figure 23



Appendix H Figure 7



Appendix H Figure 8



Chapter 5

Discussion of Research

Appendix H Figure 16



5.1 Discussion of artistic design experimentation: light as a subject in architecture

5.1.1 What did I find

Through this research practice, I engaged in an experimental journey utilising model-making, artistic exploration, and reflective practice. The model-making process led me to engage with space physically, being hands-on. This gave me a unique understanding of how space is perceived and created, especially when it is manipulated through the devices of light and geometry. By focusing on light as an active ingredient in architecture, I could identify key themes, narratives and several insights.

Light as a manipulative force: through the curation of models and in-depth analysis, I uncovered how, when light was added, it became a transformative agent. It was an element that provoked the engagement of emotions, dramatic models, and interactions with occupants that can alter one's perceptions of space.

Geometry as a guide: geometry became a compelling concept to investigate, altering angles, shapes and orientation. Paired with lighting, became a powerful combination that could guide human movement and interaction, suggesting exploration and engagement. The angles and orientation of the structured walls of models split light, contoured it and altered its presence in a natural, beautiful manner.

Emotional depth: as I altered lighting conditions and orientation of geometrical configurations, I was able to manipulate the modelled spaces in such a way it promoted in-depth emotional responses. I was able to create spaces with atmospheres that painted a sound, a space with a sound of peace, loneliness, sadness, contempt and a sense of awe. These techniques had parallel to the realm of cinematic culture, where setting, lighting and perspective illustrated powerful narratives, narratives that translated beautifully into the context of architectural spaces.

5.2 What was difficult

-Scaling limitations: due to a very limited budget, resources and available space for the project, I found it difficult to create some of these models to the monumental scale that their nature implied. Being, in some cases, forced to work at a limited scale often represented difficulties in visualising and experiencing specific models. Some of these models relied on the scale and monstrous scale that their presence gravitated towards.

Translating from smaller to a larger scale: taking the smaller models with immersive attributes and translating that to a larger scale model, something that could be experienced at lifesize, becomes tricky. Although this was a negative, there were some positives; it allowed me to problem-solve and find new ways of visualisation. I found comfort in the digital realm using photography and techniques of cinematography to create an illusion on a monumental scale while adding to human scale. This gave me the ability to engage viewers in an imaginative dimension, forcing them to imagine themselves in these modelled spaces to gain the intended experience. A further scaling up will be explored through using the video wall.

5.3 What did I learn

Throughout my explorative research, several key lessons became clear and pivotal points in guiding my research:

Cinematic techniques in architecture: cinema became a prevalent focus and technique in my approach to architectural space and manipulation due to its connected attributes to people. I used these cinematic approaches to enhance the perception of space, similar in film, how directors use framing, lighting and perspective to create a story and connection between the audience and characters. I connected people to the structure using light to dramatise the setting to form a bond and new relationship that allows people to connect to architectural spaces in a spiritual and personal heightened manner. This analogy created a powerful narrative that evokes an emotional response reflecting the space's atmosphere onto occupants. The idea I formulated and tested of using cinema to visualise space added a different dimension of beauty, illustrating how architecture can be dramatised and emotionally comprehended, creating a foundation of a new dimension of interaction.

Geometry and light as a tool for manipulating emotional responses: through experimentation, I was able to learn that the mediums of geometry and light, when integrated, can become a powerful platform for manipulating space. By individually adjusting these elements, I could potentially lead occupants to feel a sense of deep contemplative mindfulness or gravitate to feeling emotionally moved. These manipulation tactics added great value and context to the architectural spaces I created, allowing them to be engaged across multiple realms of sensing.

Static vs non-static spaces: during my model-making experiences, I discovered that even in static architectural space, a sense of movement is still inspired by careful design considerations. When using intricate lighting and well-designed geometry, I'm able to achieve a sense of visual guidance within a space, aiding physical exploration. I discovered that both light and dark spaces could prompt a state of curiosity, encouraging people to indulge in deeper exploration. With a static space designed to prompt movement, I found this interplay to have an interesting layer of complexity added to a space.

Physical and non-physical realms in space: I was able to investigate how, in architectural models, there was a sense of space that appeared in both physical and non-physical realms. I witnessed the presence of alternate realms within space, which was a byproduct of altering factors of geometry and lighting conditions, which gave me a new realisation of perception. From this, I was able to apply it to other models and learn that when designing spaces that, there is a potential to provide a stimulating cognitive and emotional response that can offer potential occupants a unique sense of meditative exploration.

Light as a controlling element: Through model manipulation, I was able to learn that artificial light gave me large amounts of control over how a space could be set up to achieve a certain spatial perception. I was able to focus attention on certain area elements, alter the atmosphere and promote a mood in a space for a narrative. This put me in the perspective of designers to illustrate the importance of the conscious use of lighting design to shape a sense of reality with a psychological experience.

Traditional architectural experience: Traditional architectural Space can be explored in many different ways, whether it's touch or visual stimuli. In this instance, I found that experiencing space through feeling through emotion and a visually dramatic setting created a beautiful connection and relationship between the inanimate object of architectural space and higher human spiritual functions. This is the idea of communication between the non-living structure and the living entities.

5.4 What could this experimental journey lead to?

The experimental research I have conducted has relevance to both designers and society as a collective. The findings I have curated demonstrate a potential future development process such as the following:

Immersive learning applications: The installations that I create provide a unique perspective and vision for potential future design models, amplifying the importance of atmospheric tones in space, the presence of self and structure and a human engagement factor aimed to target our senses. There is a pull towards highlighting the significance of well-designed spaces aimed to evoke emotional and mental engagement, allowing for deeper human connection and a sensory experience in an architectural context.

Redesigning future spaces: The spaces that I have created and the analysis I have conducted suggest a shift toward designing more in tune with human experience, engaging our emotional response to form a relationship between mind, body, soul and building. This emphasis on manipulating space to evoke these ideas brings relevance to the importance of our surroundings and their effects on our well-being, whether positive or negative, to increase our living quality. This design approach I have taken illustrates how public spaces, residential, and cultural sites could be elevated to make a greater environment for absorbing our surroundings to feel and immerse ourselves.

Cinematic, abstract approach to architecture: An abstract cinematic approach led my work to be focused on perspective, engagement and movement. Not only did it influence my models and the nature of recording information, but it persuaded my presentation to take on an immersive and dramatic display. I feel the future of architecture, art, and film could benefit by blurring the lines between them and bridging them to help architecture by adding a sense of engagement, meaning and life to its static nature. By looking at architecture as a film, we respond differently to it, we see it as a living entity, something we respect and value more sincerely.

5.5 final model and future directions

My final model took form as a culmination of several previous models from design phases where certain attributes were pulled and combined to make one powerful installation.

Materiality and focus: By removing materials, finishes and distracting elements of architecture that add detail and aesthetic, the models took on a basic form focusing on geometry, lighting and spatial orientation. The goal I had for this model was to incorporate key moments and features from previous models and to manipulate this space in such a way that it altered visual perception, demonstrating emotional and experiential impact.

Attributes extracted from previous models:

Model (Appendix G, figure 1,2,3): I took the angled bridging design, its curvature, angle changes and dynamic orientation because of how it interacts with light, in a way that is visually soothing. I took these features to become an entrance as it is inviting, and with natural light, it creates a welcoming, peaceful nature. It helps draw the eye in and provides a sense of comfort. I took from this model the changing height of the ceiling to provide a dramatic sense of enclosure and encapsulation.

Model (Appendix G, figure 7,8): from this model, I took the idea of permeability, exploration and inquisitive nature. The form of this modelled space suggests to a viewer curiosity, movement and a sense of fun or excitement. The flow natural curvature of this model demonstrates a playful nature that occupants could gravitate to, associating this space with physical exploration. I took this model's idea of being able to draw in occupants, allowing them to physically interact and explore visual attributes of the space.

Model (Appendix G, figure 6): From this model, I extracted the static nature of its core presence. The modelled space was designed to stop occupants and make them absorb visual content. This could potentially suggest a state of mind to people that is meditative. This quality was a powerful moment in space as it illustrates directly how light is altered by the orientation of geometry, overall manipulating the space and creating an intriguing atmosphere.

The collaboration of these models' spatial moments creates a spatial journey that is explored through movement between different moments in space. This movement correlates with cinema by translating 2d moving elements into a 3-dimensional experience that is explored physically, evoking emotion and spirituality.

Purpose without function: An intriguing aspect of this final model was that the space itself had no real function other than for occupants to exist inside of, feel, and explore with their eyes and imagination. The space serves to simply exist, teach and communicate between the designer, occupant and space. The idea of a space made to be a communication device, learning tool and space of contemplation is important. It brings a sense of divine rehabilitation in the sense of removing all exterior thoughts, worries and issues. A space that allows for emotions of excitement, curiosity and awe to be exhausted by visual exploration. This leads to another philosophical question: can space have the sole purpose of just existing for an emotional response without the need for a specific function or traditional use?

5.6 Conclusion

To conclude, the design of light and the altering of geometry in space can manipulate architectural space in such a way that it leaves a powerful and impactful emotional response. It's a powerful manipulation tactic that can be used for creating emotionally and experientially charged environments. Regardless of the scale, the emotional and psychological connection to space is essential for adding meaning and intent to an architectural environment. By using a cinematic approach to these experiments, I have demonstrated how perception and narrative of space can be integrated into an architectural context to completely transform how and why we engage with it on a deeper, more personal dimension. In conclusion, I feel as if I have demonstrated that architecture as we perceive it goes beyond the visual and physical realm- it is a sense, a feeling, a journey psychologically and spiritually. It is engaged with multiple energies that we can't necessarily see or physically touch, but they interact and interplay with our physical and visual realm. My final model and its presentation in a hybrid physical and digital installation illustrate this idea, intentionally portraying how architecture can be a profound vessel for people to engage with what surrounds them in an environment and ultimately transforming people exploring space with mind, spirit, senses and emotions.

Chapter 6

Conclusion

Conclusion

To conclude, This thesis is about research and experimental architectural space. The questions I set out to answer were :

Main question

How can space be manipulated to create powerful and memorable human experiences?

Secondary questions

How can dimensional layers of space be configured to impact and form a human emotional attachment?

What is the relationship between light and solid space and how do they interact?

The research I have conducted took the primary form of model making, drawing from theories, ideas and principles of space and cinema, turning them into an experience of physical space. These spaces were scaled with the intention for people to occupy and experience within to grasp the reality and power that carefully designed architectural spaces have.

I have provided evidence of how space can be manipulated and configured so that people can engage within it and respond to its form, existence and intention in a more profound, dramatised and emotional realm. This is possible through the approach of cinematic techniques, providing the setting of a state of out-of-body where physical senses are removed from the equation and soulful, emotional, and spiritual transcendence takes place. This allows us to attach our deeper selves to architectural space and respond to it as it portrays atmospheric qualities and tones. This bond allows us to see architecture through a different perspective, in a new light, that could have many profound uses, intentions and potential knowledge within.

I went into the investigation to understand components of space, breaking it down into core elements and geometry to try and understand its complexity in more than just its physical form. I was guided by questions such as 'What is space Truly? What is it comprised of? What engages humans with it? I took these questions and tried to answer them through model making, using photography to capture these moments, as well as using perspective shots and scale to imagine myself in these spaces. I reflected, emotionalising, closing my eyes, imagining the space, the feeling, the sounds and the presence the space holds. After recognising the power of elements such as light and geometry, I began to compound and grow these spaces, which took on a variety of complex iterations.

Upon reflecting, I noticed these spaces seemed to extend into multiple dimensions of being. The physical, non-physical realm, emotional, psychological, solid space, spiritual and imaginative were all realms or dimensional components of space that the architecture displayed to be experienced.

I found that, in a way, this could make architecture a vessel of interdimensional connection and communication. It makes space an opportunity for endless discovery, possibility and functions, in some sense, it could be seen as a portal in physical form to help us escape reality and encounter spiritual and emotional interactions.

This raises the question of how this might help us. I think being able to create spaces to help transform people to understand the potential of architecture will allow people to open new perspectives. Helping people see how spaces and, in general, life can be experienced in vastly dynamic and extravagant ways. Everything around us exists in more than one state of reality; for example, we hold an object in our hand, look at it, and then close our eyes and picture it in our minds. The details fade, and the general form sticks with us, how it made us feel stays with us and with our imagination, that object can become whatever and however we want it.

Applying this principle to things around us, especially space, gives us the ability to transform our perspective of life. I learned to grasp the concept that, beyond what we can see or touch in architecture, there is a mystical personality to it, a side that goes beyond traditional functional architectural concepts and ideas. I adapted this perspective through this experimental process and immersion by making and experiencing modelled space. I imagine the impact on societies if this perspective was adapted in the same detail in architecture and deep human spatial engagement was made a pivotal priority in a new age of emotionally and spiritually dimensional architectural intervention.

References

list of information used to guide and conduct thesis

- Archdaily. (2024, April 25). Elbphilharmonie Hamburg / Herzog & de Meuron. ArchDaily. <https://www.archdaily.com/802093/elbphilharmonie-hamburg-herzog-and-de-meuron>
- Arnold, D. (1999). *The encyclopedia of ancient Egyptian architecture*. I.B. Tauris.
- Candy, L. (2006). *Practice-based research: A guide*. <https://www.creativityandcognition.com/wp-content/uploads/2011/04/PBR-Guide-1.1-2006.pdf>
- Christian, B. (2014). *Architectural atmospheres: On the experience and politics of architecture*.
- Donald, H. (1993). *Frank Lloyd Wright's Fallingwater: The house and its history*. https://books.google.co.nz/books?id=2q4-DwAAQBAJ&dq=frank+lloyd+wright+falling+water&lr=&source=gbs_navlinks_s
- Dunn, N. (2014). *Architectural modelmaking*. Laurence King Publishing.
- Inphinity Design. (2024, August 19). *The science of resonance architecture*. <https://inphinitydesign.com/the-science-of-resonance-architecture/>
- James, T. (2014). *The retrospective*.
- Julia Day, M. A., Theodorson, J., & Van Den Wymelenberg, K. (2012). Understanding controls, behaviors and satisfaction in the daylight perimeter office: A daylight design case study. *Journal of the Illuminating Engineering Society*, 37(1). <https://journals.sagepub.com/doi/epdf/10.1111/j.1939-1668.2011.01068.x>
- Marry, A. S. (2011). *The architecture of light: Recent approaches to designing with natural light*. https://books.google.co.nz/books?hl=en&lr=&id=xZSn11vaE3EC&oi=fnd&pg=PR1&dq=light+in+architecture&ots=4a0yZbKK-kA&sig=m43LuQTnoCM1SelBGyPXgG4nQEQ&redir_esc=y#v=onepage&q=light%20in%20architecture&f=false
- Natural Light in Medieval Churches*. (2022). (V. I. A. Sullivan, Ed.). Brill. https://www.google.co.nz/books/edition/Natural_Light_in_Medieval_Churches/wXiiEAAAQBAJ?hl=en&gbpv=0
- Peter, Z. (2006). *Atmospheres: Architectural environments, surrounding objects*. https://arhitectura2tm2016.wordpress.com/wp-content/uploads/2019/09/peter_zumthor__atmospheres.pdf
- Schön, D. A. (1992). *The reflective practitioner (1st ed.)*. Routledge. <https://doi.org/10.4324/9781315237473>
- Singh, S. (2021). The impact of architecture in the process of healing & well-being. *International Journal for Research in Applied Science and Engineering Technology*, 9(3), 202–222. <https://doi.org/10.22214/ijraset.2021.33196>
- Zhoa, L. (2023). *The power of making*. Modos.co.nz. <https://modos.co.nz/projects/the-power-of-making>

Appendix

Containing all images and photographs of models i
created throughout this experimental research

Figure 1

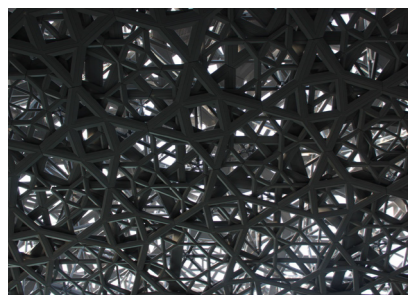


Figure 2

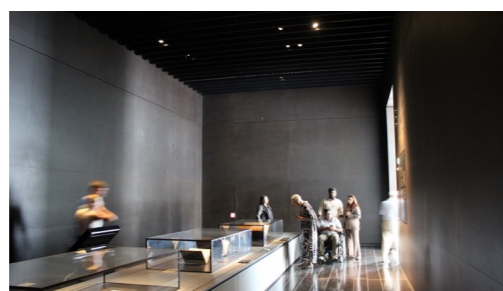


Figure 3



Figure 4



Figure 5

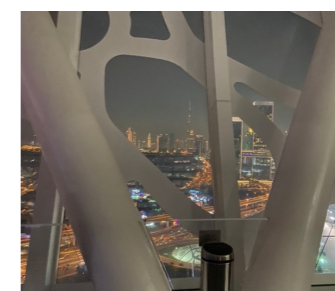


Figure 6

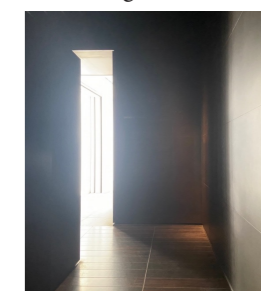


Figure 7

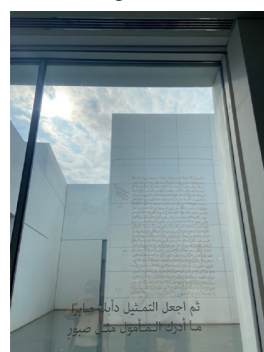


Figure 8



Figure 9



Figure 10

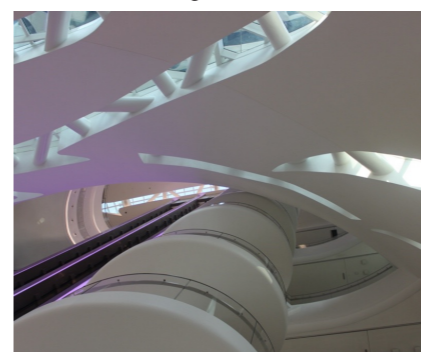


Figure 11

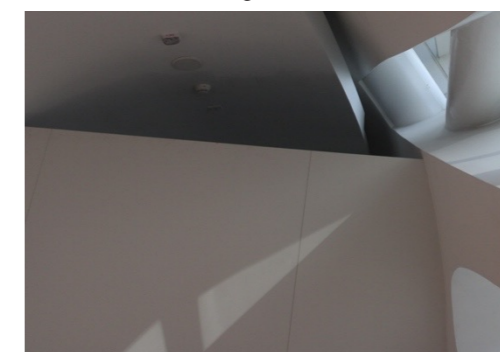


Figure 12

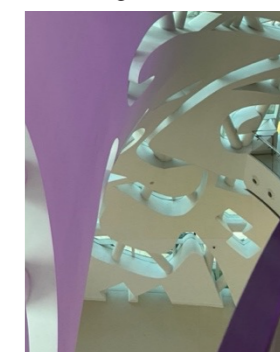


Figure 12



Figure 13



Figure 14

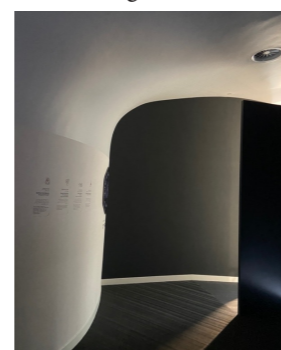


Figure 15



Figure 16

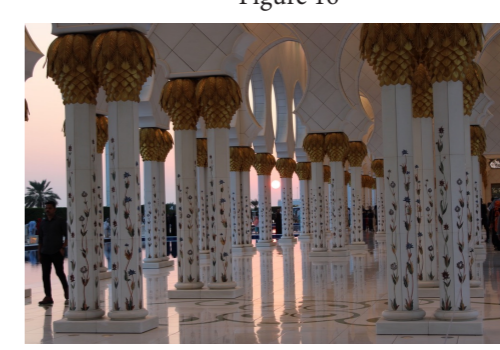


Figure 17



Figure 18

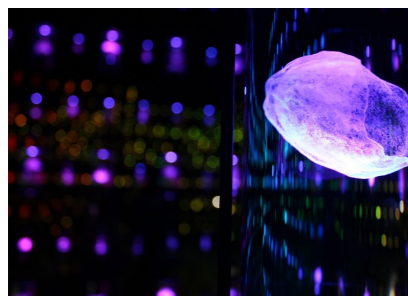


Figure 1



Figure 2



Figure 3



Figure 4



Figure 5

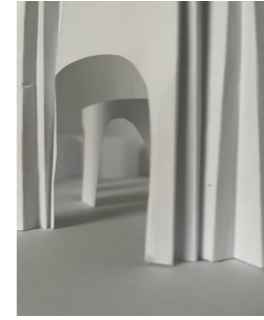


Figure 6

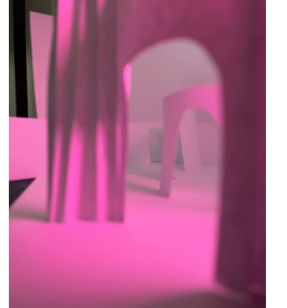


Figure 7

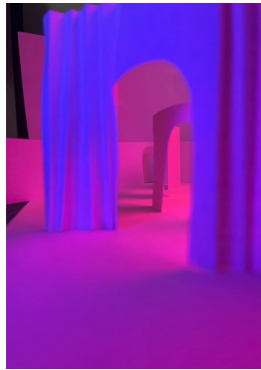


Figure 8



Figure 9



Figure 10



Figure 1



Figure 2

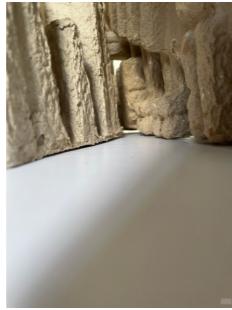


Figure 3



Figure 4



Figure 5



Figure 6



Figure 7



Figure 8



Figure 9



Figure 10



Figure 11

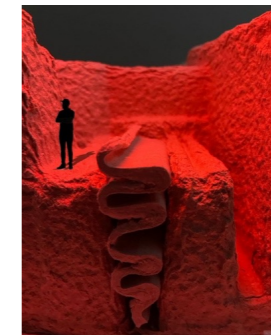


Figure 12

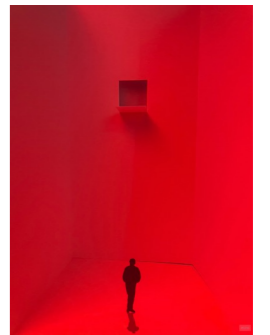


Figure 12

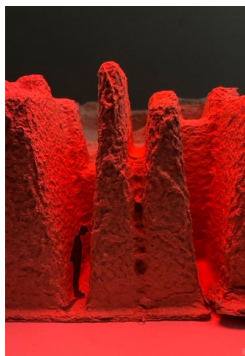


Figure 13



Figure 14



Figure 16



Figure 15

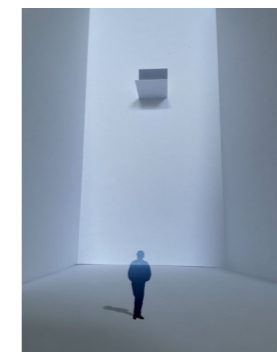


Figure 1

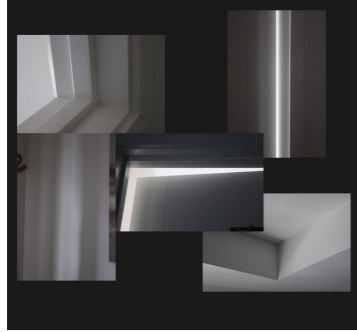


Figure 2



Figure 3



Figure 4



Figure 5

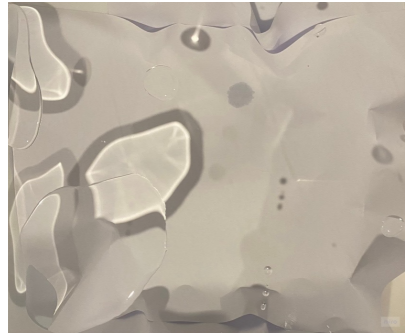


Figure 6

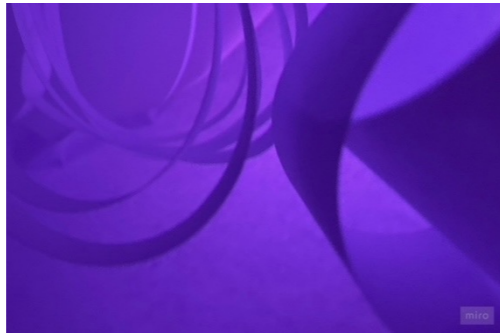


Figure 7



Figure 8



Figure 9



Figure 10

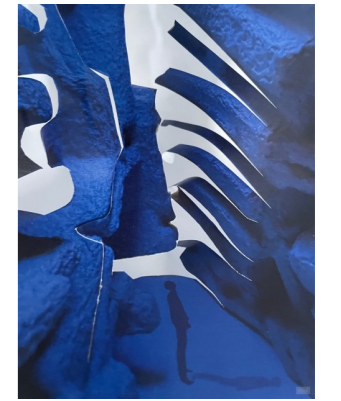


Figure 11



Figure 12



Figure 1

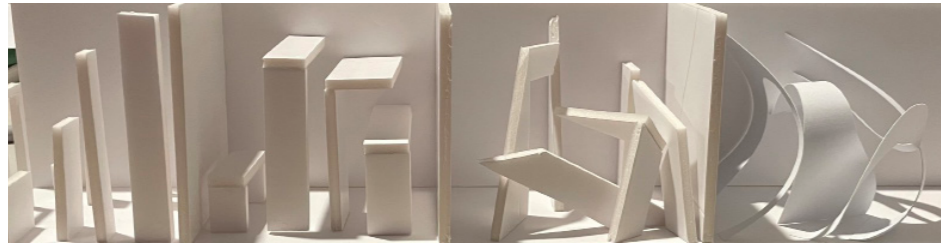


Figure 2

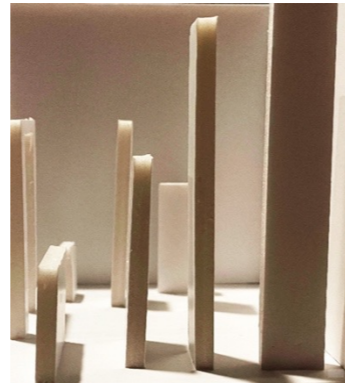


Figure 3



Figure 4

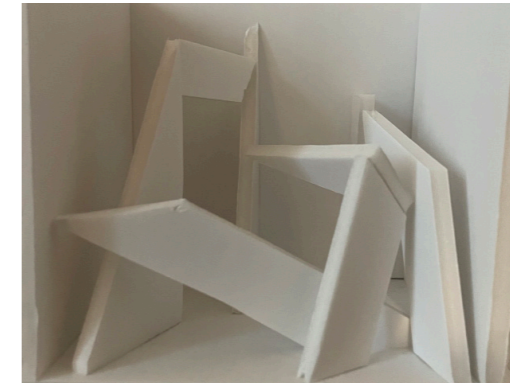


Figure 5



Figure 6



Figure 1

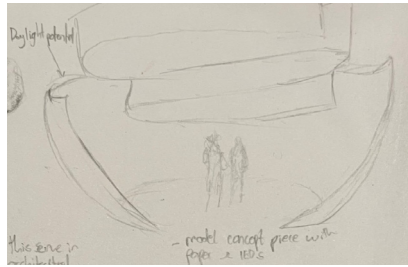


Figure 2

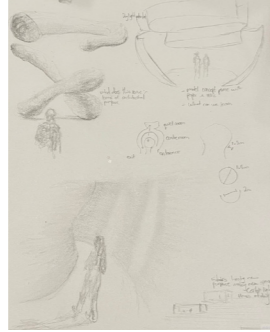


Figure 3

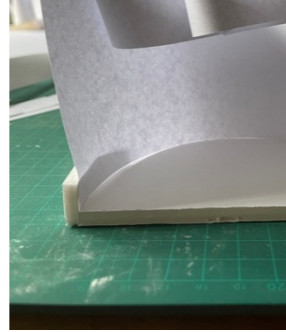


Figure 4



Figure 5



Figure 6

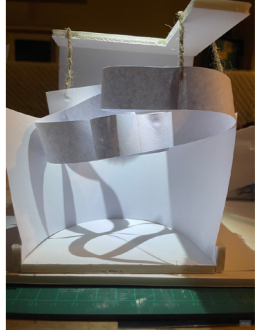


Figure 7



Figure 8

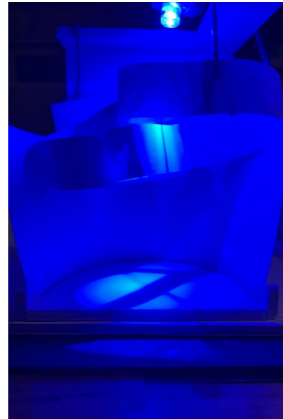


Figure 9



Figure 10

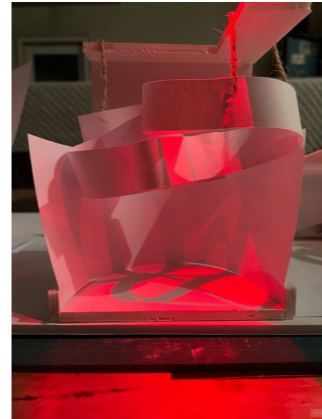


Figure 11



Figure 12

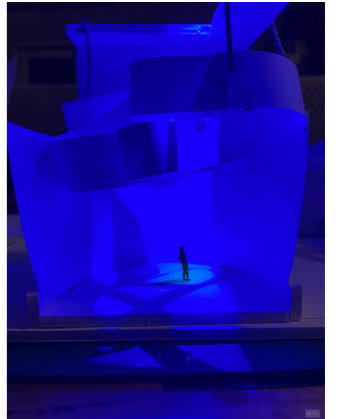


Figure 13

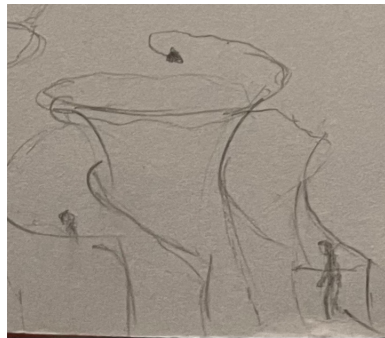


Figure 14



Figure 15



Figure 16

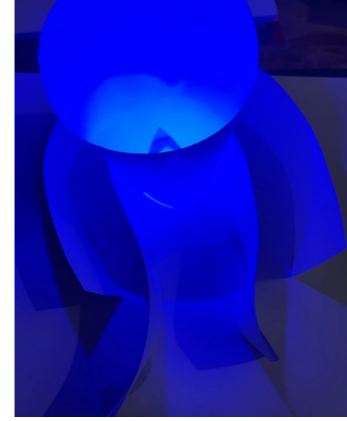


Figure 17

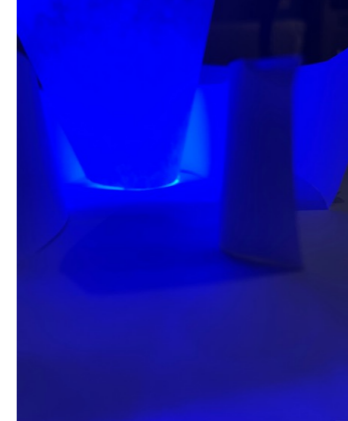


Figure 18

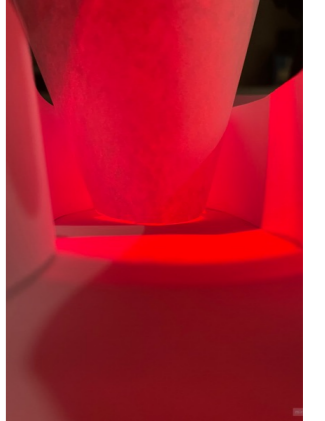


Figure 19

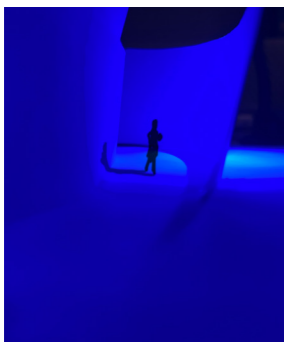


Figure 20

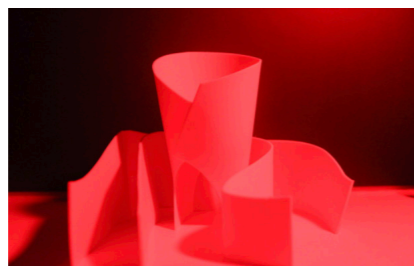


Figure 21

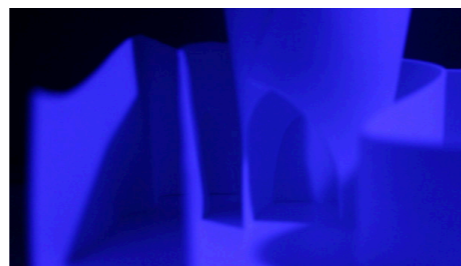


Figure 22



Figure 1

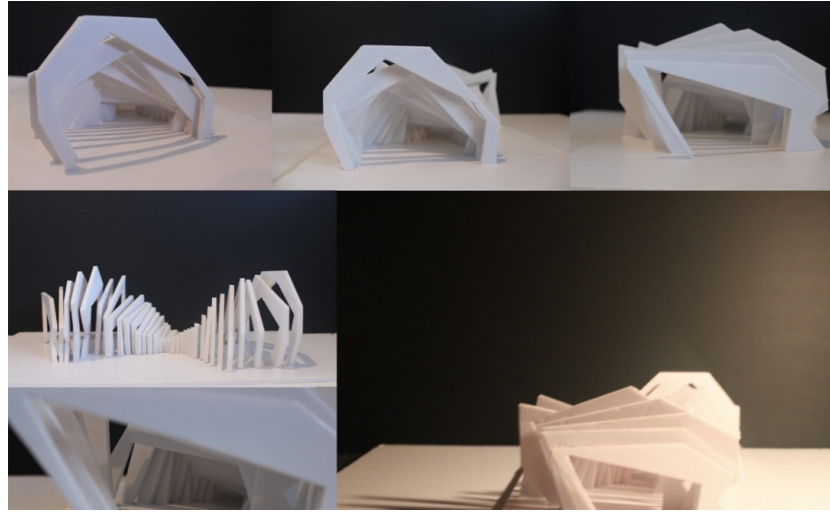


Figure 2

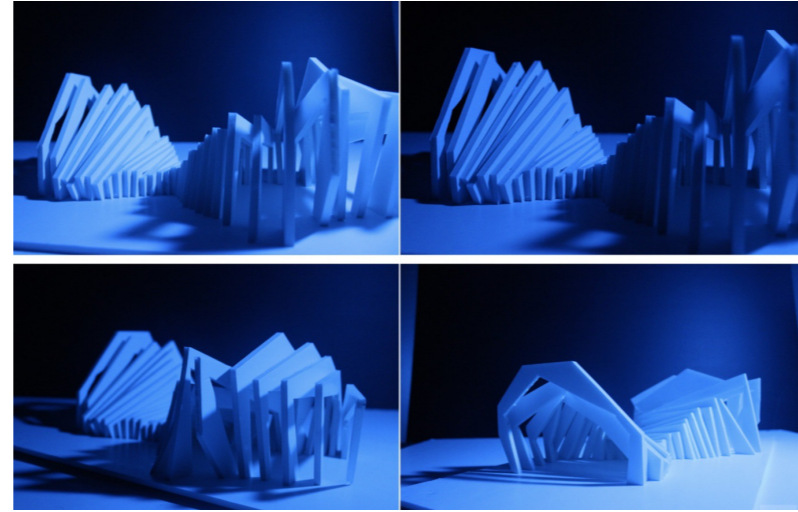


Figure 3

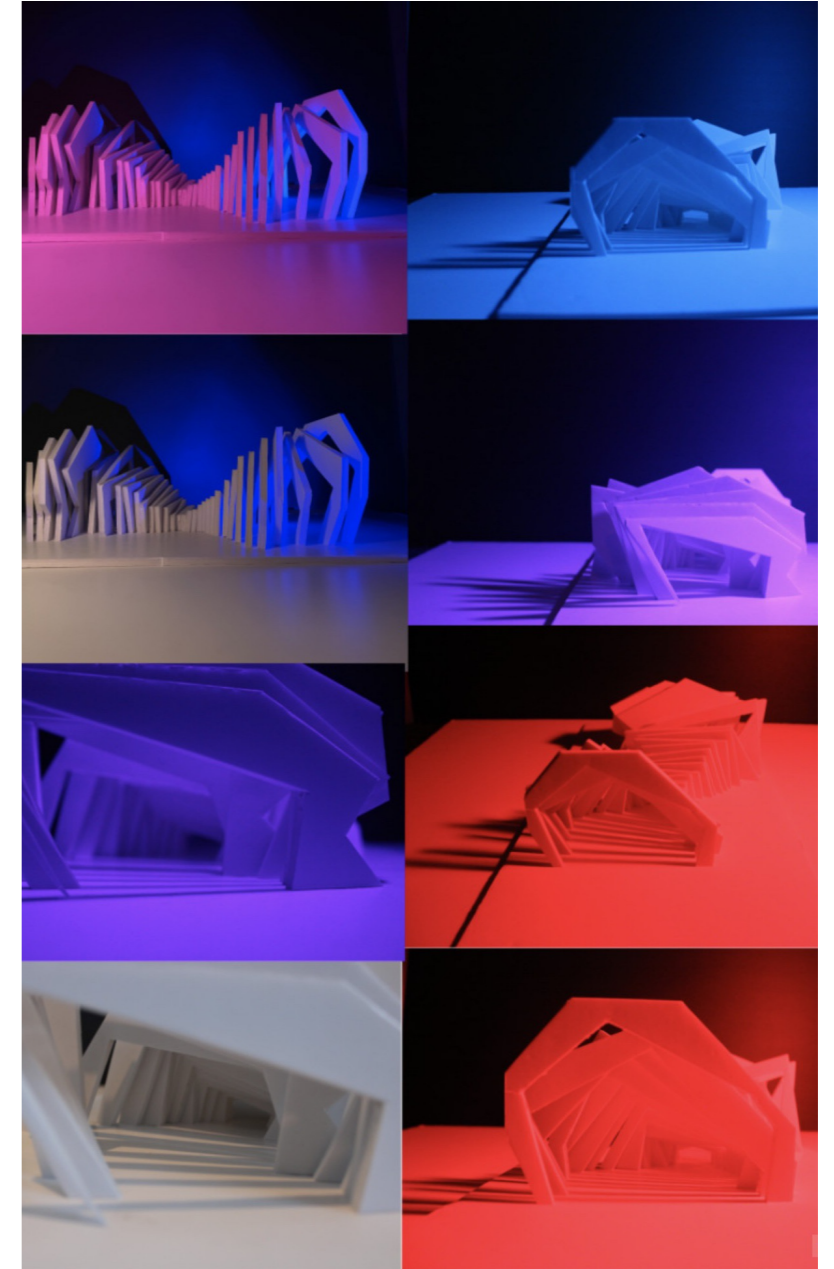


Figure 4

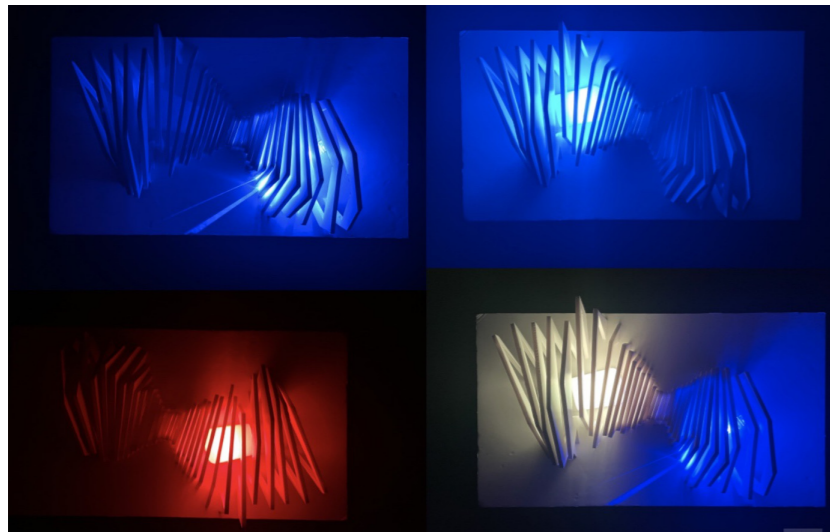


Figure 5

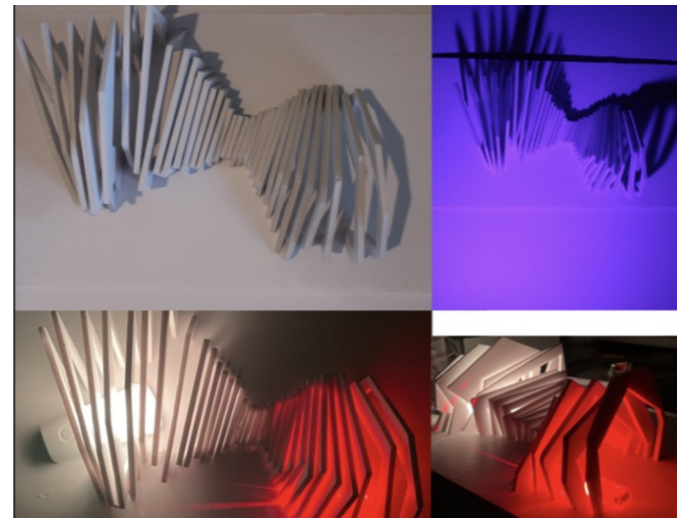


Figure 6

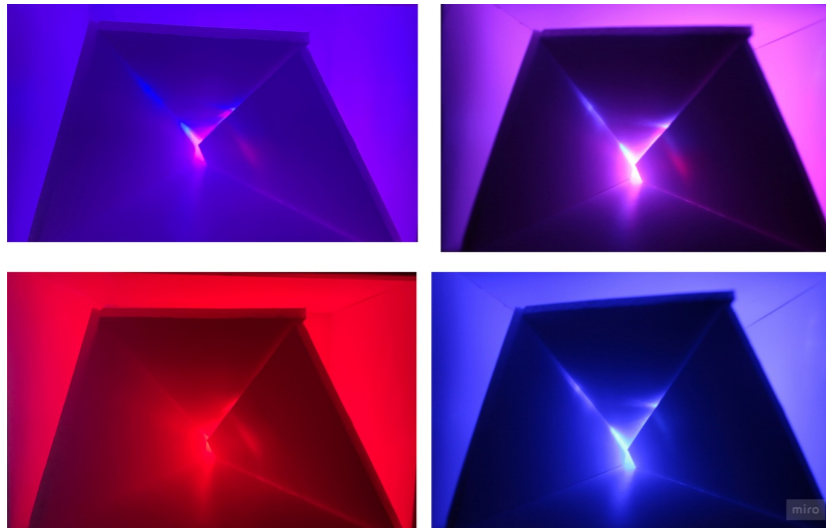


Figure 7

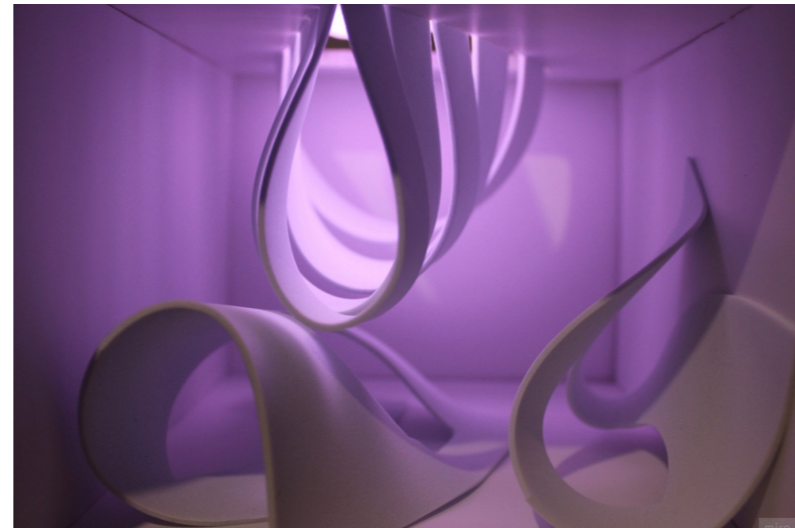


Figure 8



Figure 9

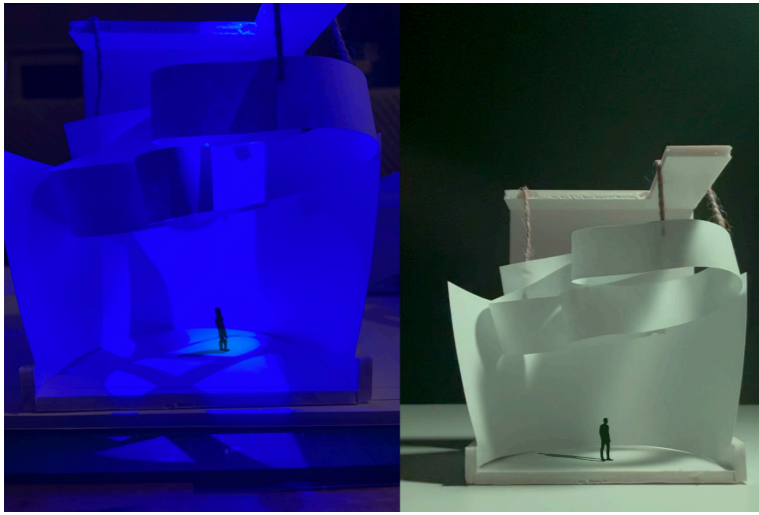


Figure 10

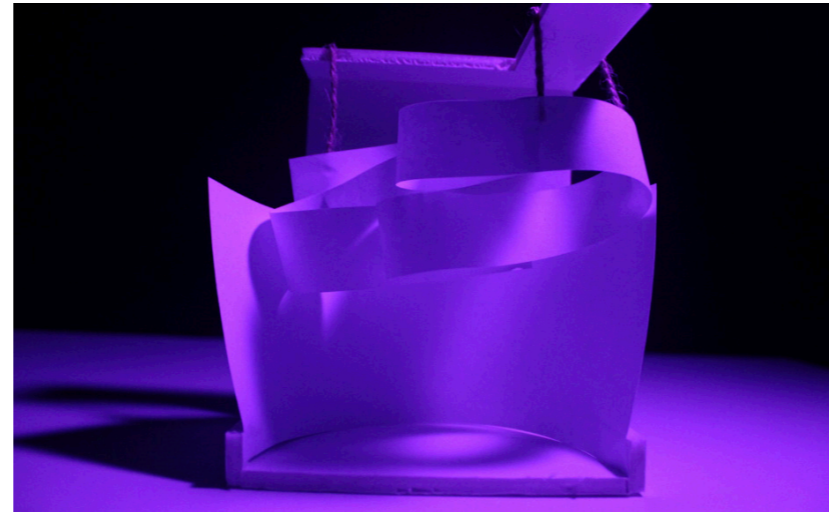


Figure 11

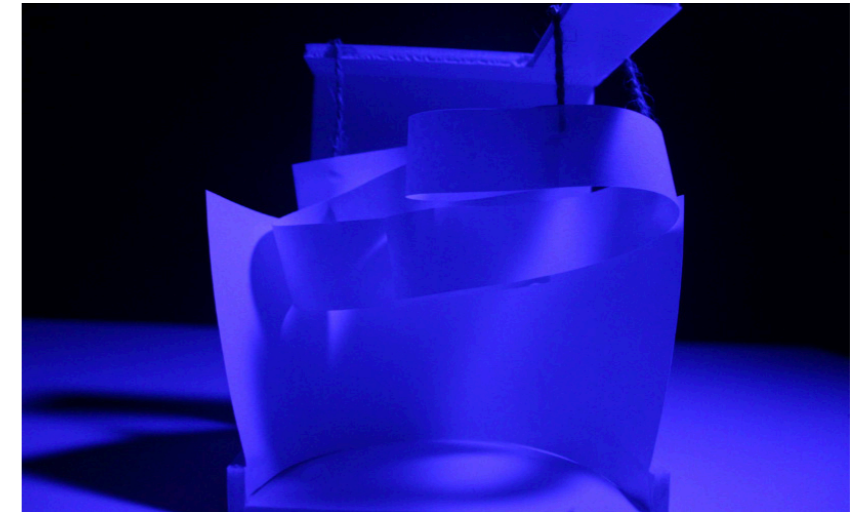


Figure 12

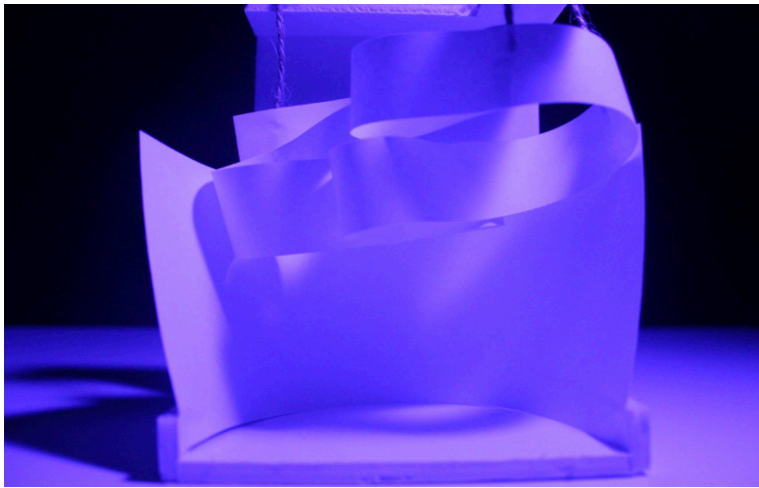


Figure 13

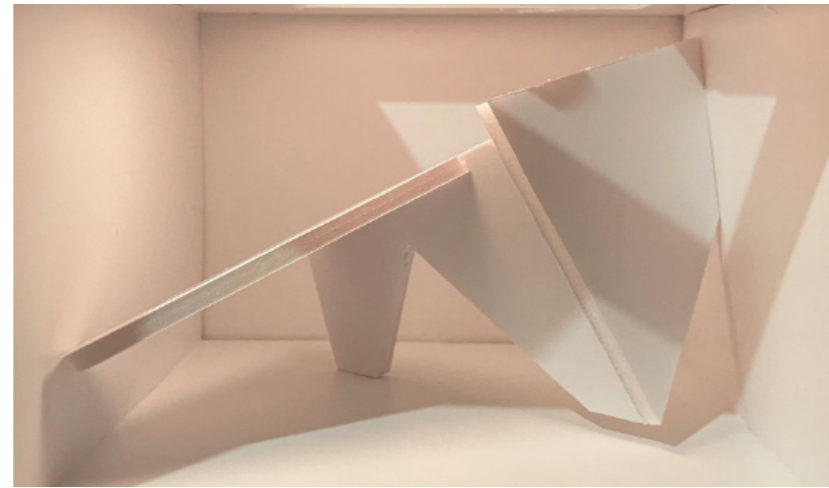


Figure 14

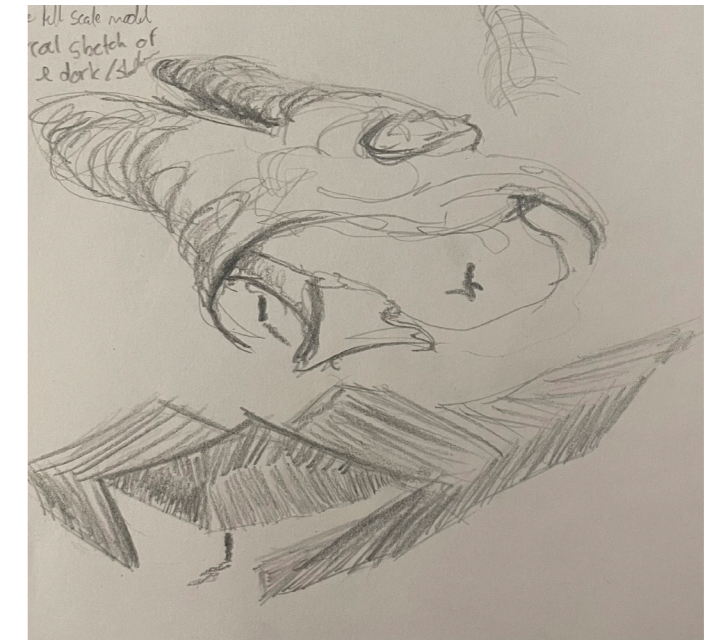


Figure 15



Figure 16



Figure 17



Figure 18

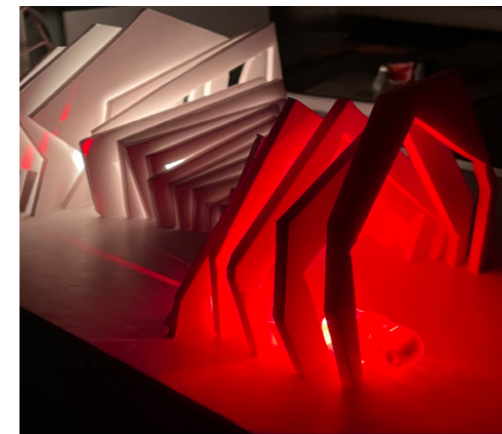


Figure 19

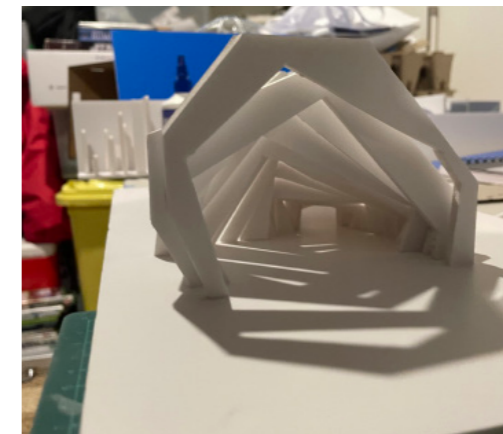


Figure 20



Figure 1

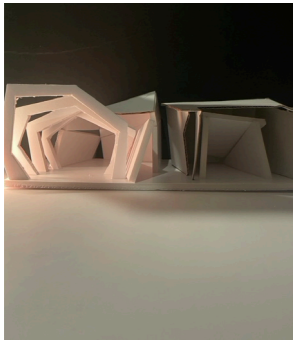


Figure 2



Figure 3



Figure 4

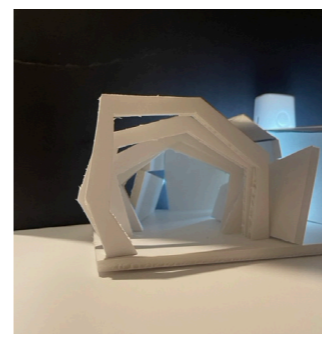


Figure 5

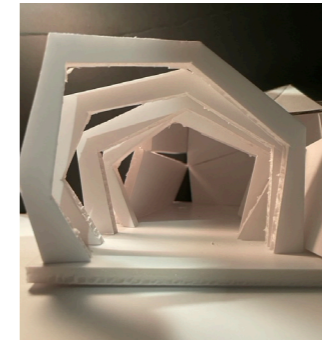


Figure 6



Figure 7

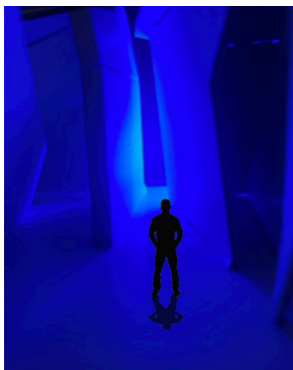


Figure 8



Figure 9

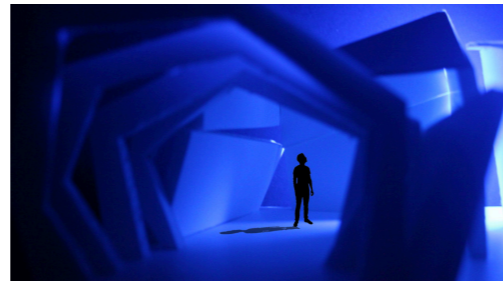


Figure 10



Figure 11

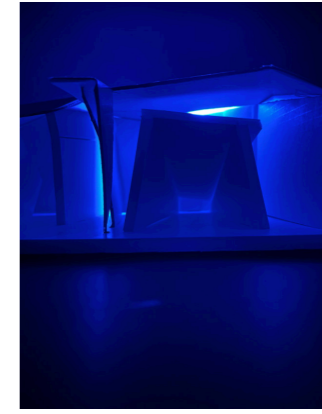


Figure 12

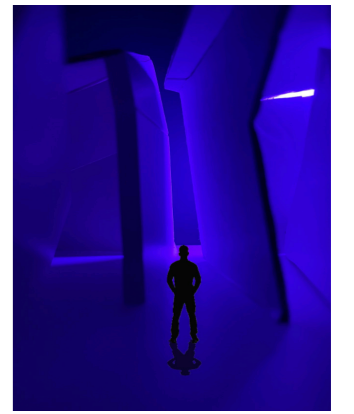


Figure 12

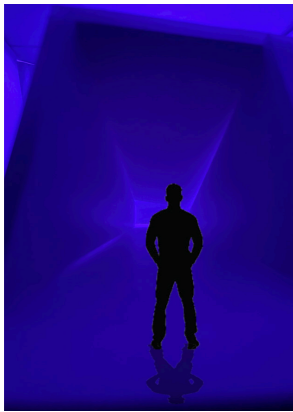


Figure 13



Figure 14

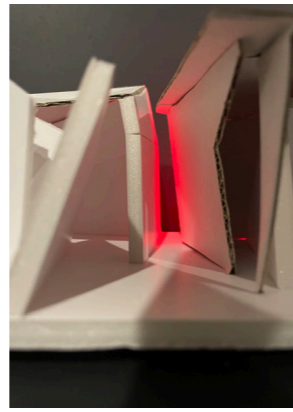


Figure 15



Figure 16



Figure 17

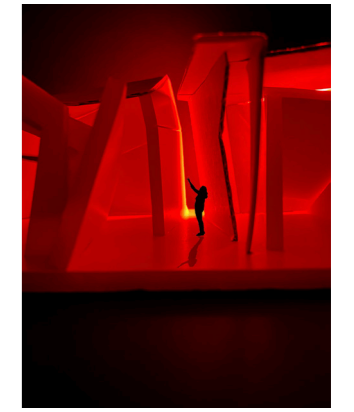


Figure 18

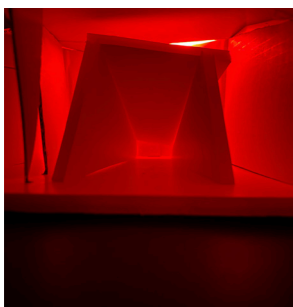


Figure 19

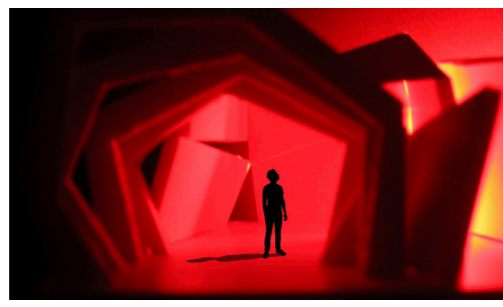


Figure 20



Figure 21



Figure 22



Figure 23

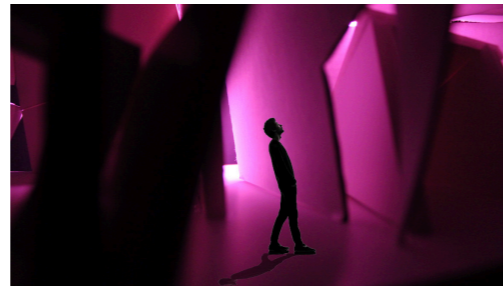


Figure 24

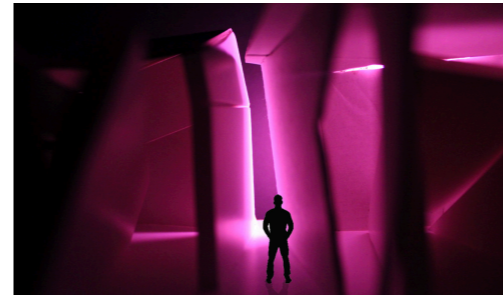


Figure 25



Figure 26

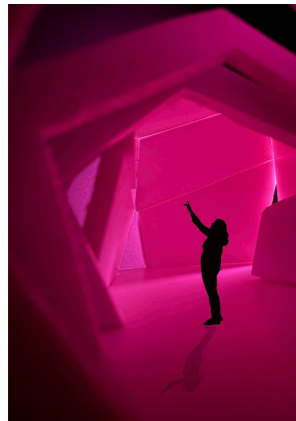


Figure 27



Figure 28



Figure 29



Figure 30

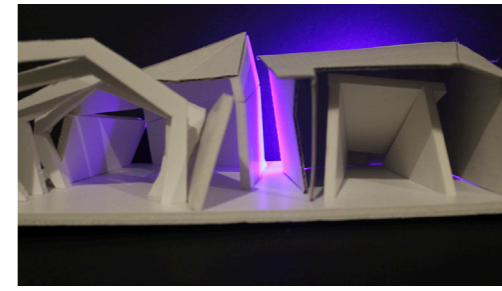


Figure 11

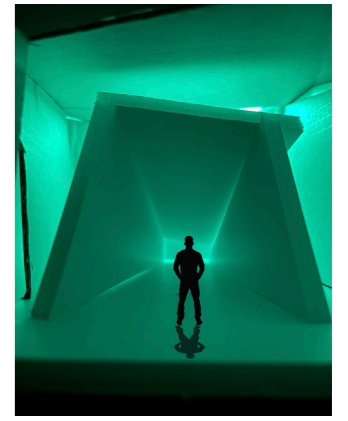


Figure 31



Figure 32

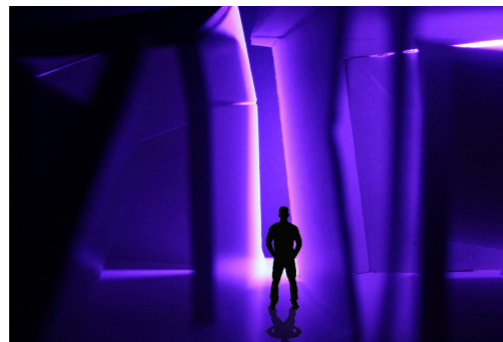
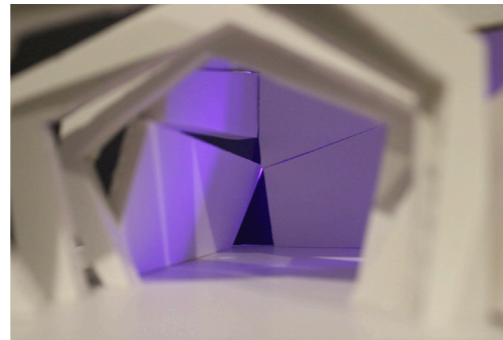


Figure 33



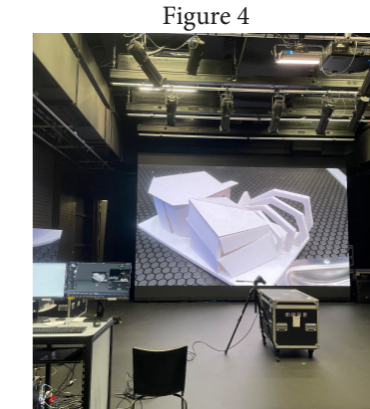
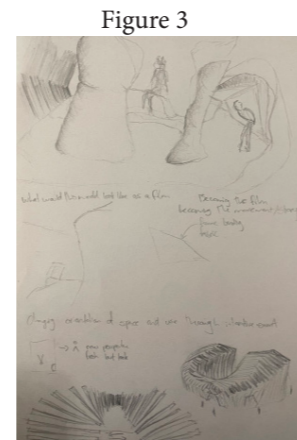
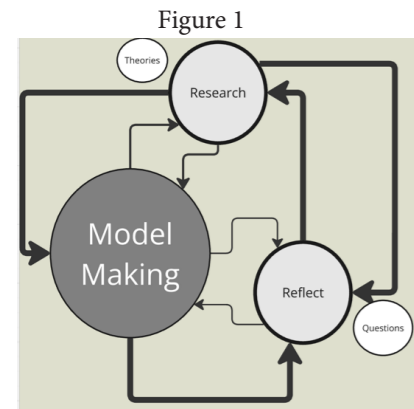


Figure 1

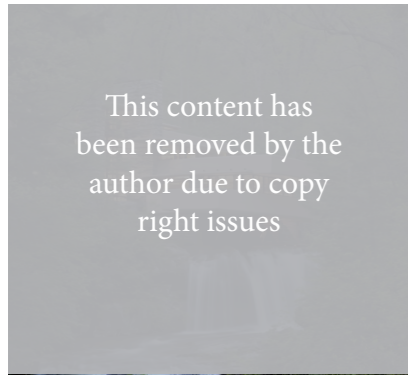


Figure 2

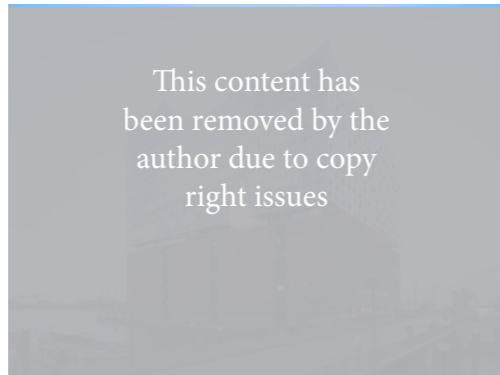


Figure 3

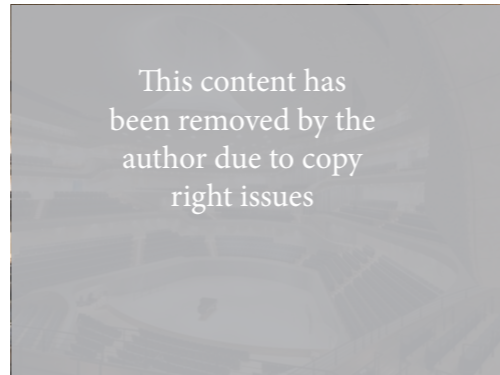


Figure 4

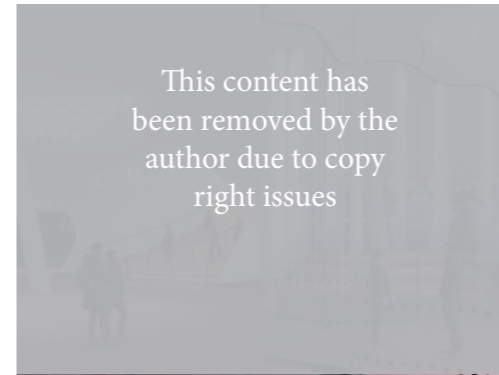


Figure 5

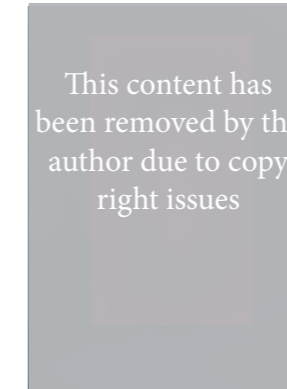


Figure 6

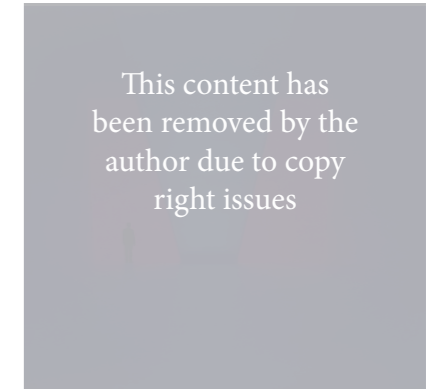


Figure 7

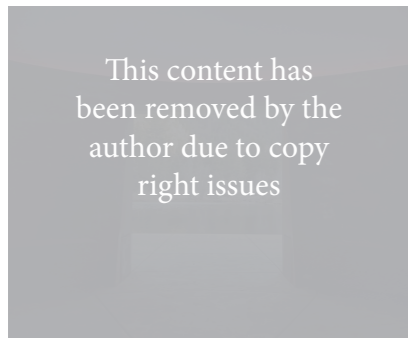


Figure 8

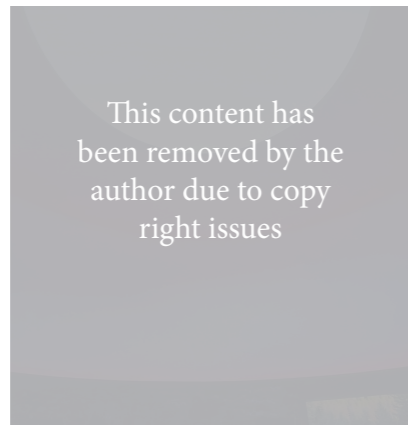


Figure 9

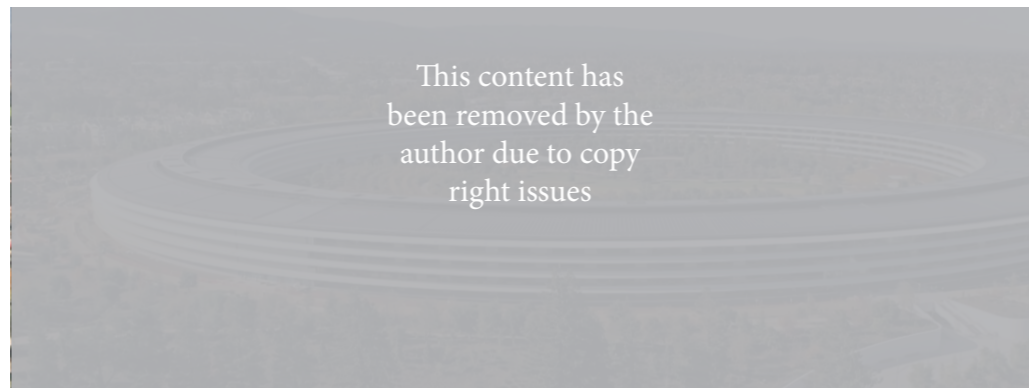


Figure 10

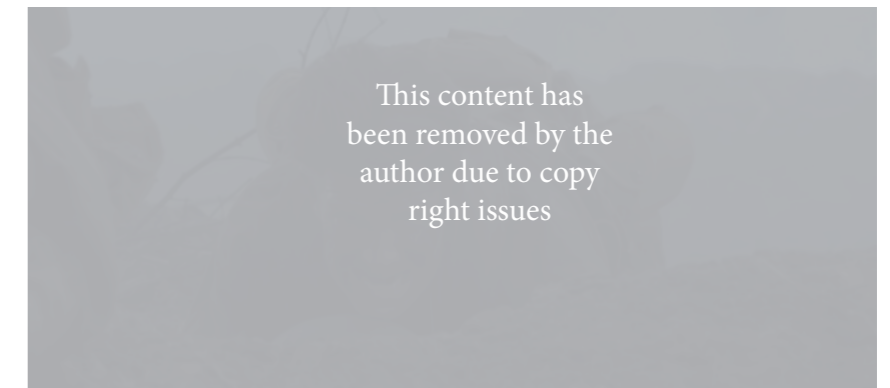


Figure 11

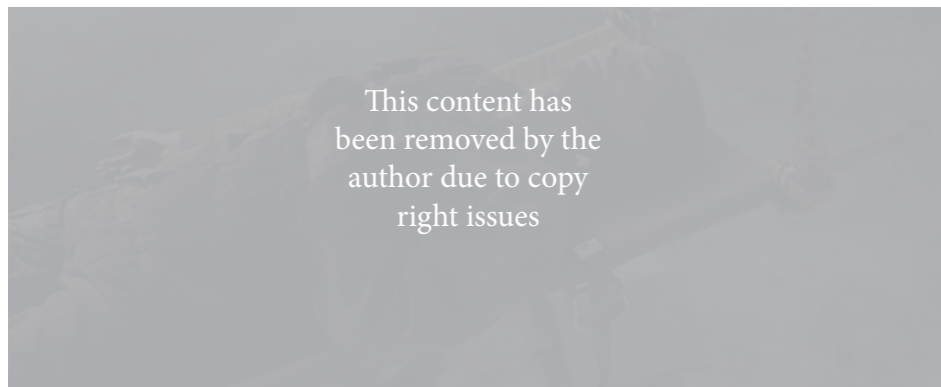


Figure 12

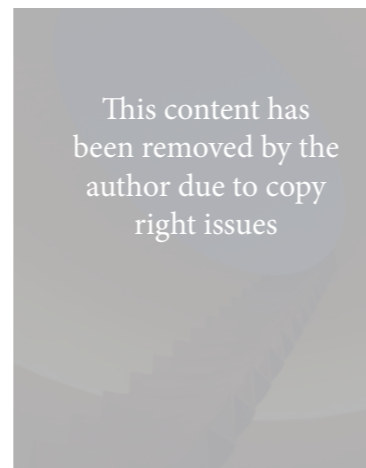


Figure 13

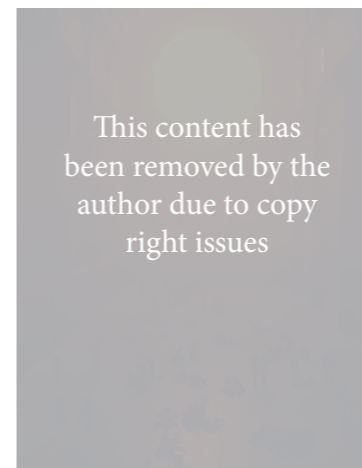




Figure 2



Figure 3



Figure 4

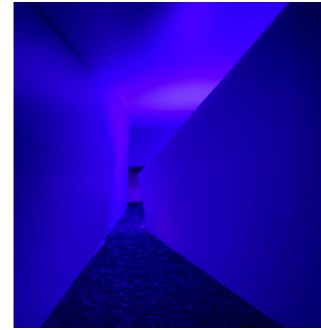


Figure 5

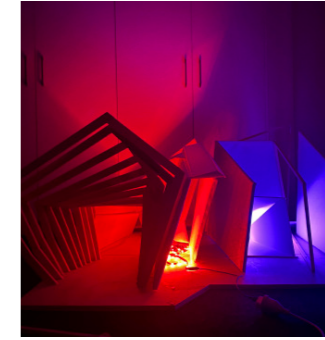


Figure 6

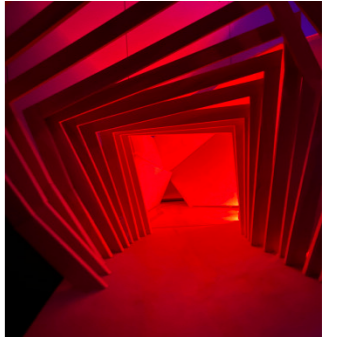


Figure 7

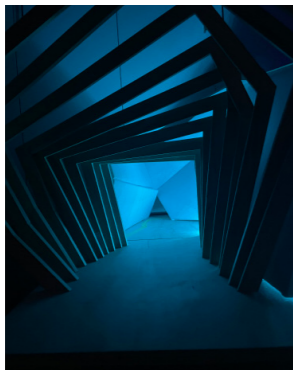


Figure 8

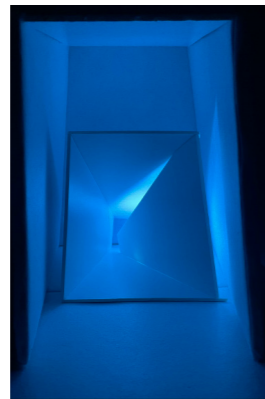


Figure 9

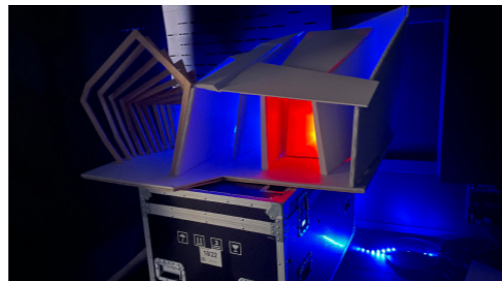


Figure 10

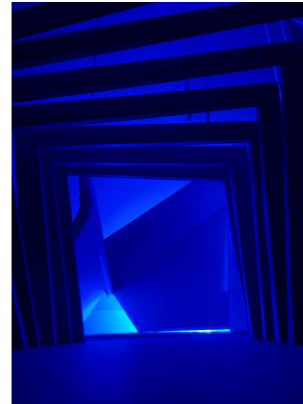


Figure 11

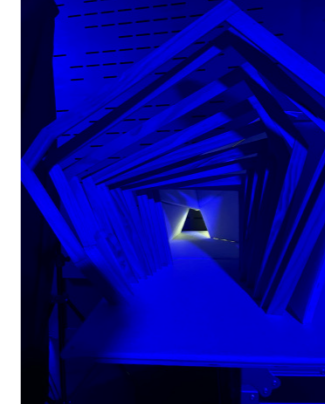


Figure 12

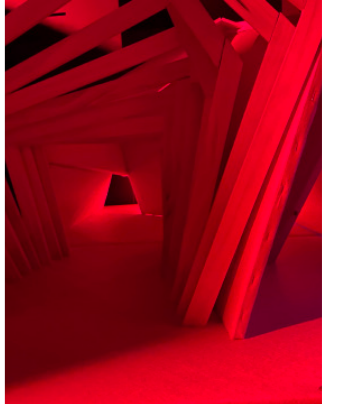


Figure 12



Figure 13



Figure 14

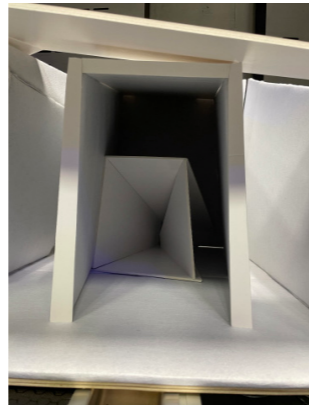


Figure 15

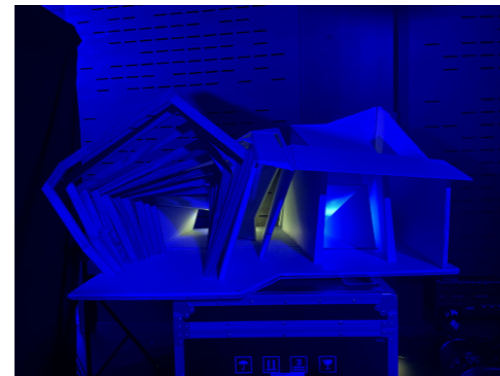


Figure 18

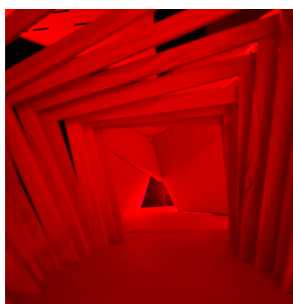


Figure 19

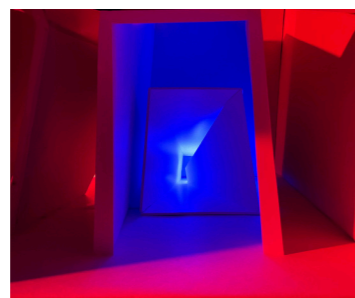


Figure 20

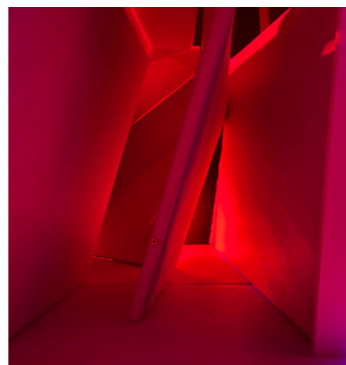


Figure 21

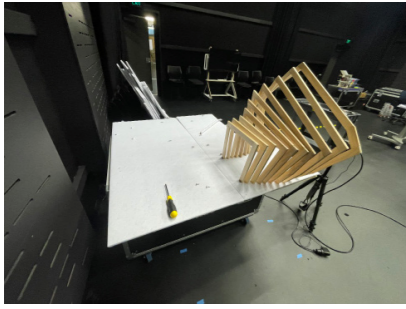


Figure 22

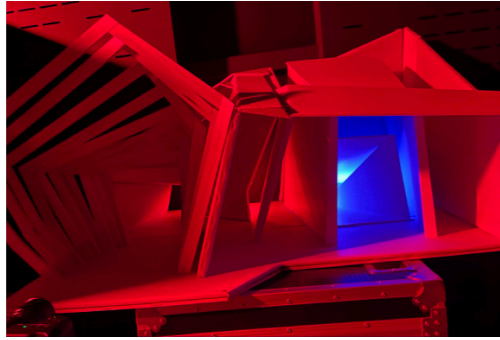


Figure 1



Figure 2



Figure 3



Figure 4



Figure 5



Figure 6

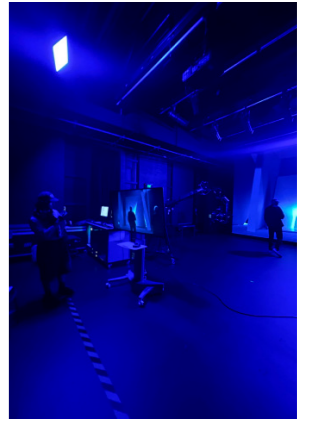


Figure 7

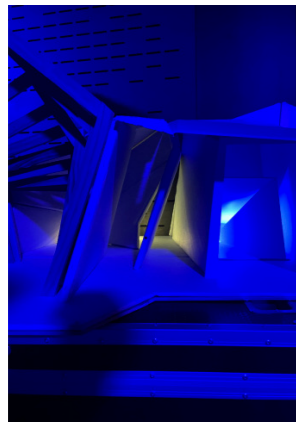


Figure 8



Figure 9



Figure 10



Figure 11

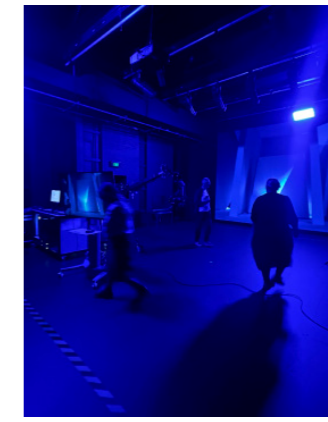


Figure 12

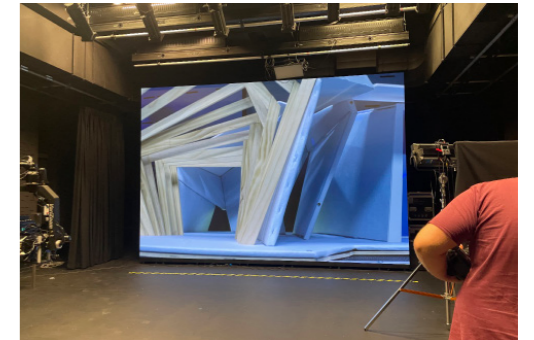


Figure 13



Figure 14



Thesis presentation and reflection

Final model, commentry, Final presentation planning and refelctions of process

The process of experiencing

The presentation :

The idea for this presentation was to create an environment that was both engaging and immersive (Appendix L, figure 1-14). The idea was to scale the model's atmosphere, attitudes and spatial presence into a larger room to give the illusion of the modelled space encapsulation everyone in the room. The idea was to have a sequence and order to how the work was displayed to control how and when the audience would respond to specific components. The idea of a controlled environment and systematic design stems from the function of cinema. Creating a controlled environment in which events can take place to achieve a desired illusion.

Stage 1:

The idea was to have the initial work of the thesis pinned up on the wall outside of the room where the main presentation was. I spoke to the woke giving a visual and verbal depth to the work explaining the key ideas of the project and key functions of the thesis. This gave perspective and set the tone for the next stage.

Stage 2:

I invited the audience into the dim light room that was illuminated by the LED of the model. The accents and atmospheres the model made as it conversed with the light elevated the model at scale. I walked the audience to be seated as I put myself in front of the large screen and into the model on the little screen. I spoked to the model and the three identified spaces of the model that pointed to the key elements of arrival, movement of static space, and discovery through geometrical arrangement. As I spoke of each stage the camera moved through the model giving the illusion I was moving through the space. To each section adding this idea of spatial realm travel, moving between the elements of the model.

Stage 3:

I invited the audience up to experience the space at scale, standing In-front of the screen altering the lighting of the space changing its atmosphere. This stage was important as now it was free for the audience to interpret an experience the space how they perceived it and depending on how they interacted it would vary their perception.

Model:

The model was a 1:4 scale of the space. (Appendix K, figure 1-22)

The conversation of scale and spatial encasement was had, as the original model scale was designed to leave the audience in awe evoking powerful thought and emotional impact the decision was made to make a smaller model and scale it up onto a screen using a camera. However,

AUT provided a space that I was able to set up a 2-stage camera one tv screen and large screen display. This allowed me to set up essentially a 5 dimensional plane evoking this idea of combining three perspectives of visual reality.

Camera 1, fed live camera feed of the model to the screen, and camera 2 fed live imagery of the audience to the screen, the screen displayed the model at one to one scale were the audience could experience the space at scale and the smaller screen merge all the realities into one.

Audience members could watch the examiners on the screen walk into the space as if the space was real, walkable and scaled. It added this depth of film, imagination and endless discovery.

Reflection

This presentation was the pinnacle of this thesis allowing me to explore the realm of architecture, art, cinema and performance. This presentation was not so much set to be informative but explorative, immersive and a show. I feel as if I delivered a powerful visual representation of experimental space adding to the ideas, perspectives and attitudes of architectural space. Experimental space was the purpose of this thesis and the final performance was a illustration of how space can be interacted with and how we can learn from the interplay of light and architecture

Things that become quite clear to me through this presentation was this sense of transition. And movement through space, and the different atmospheres that exist with in a singular. The pragmatic nature of light itself being able to be this literal sense of illumination and source of energy yet a delicate poetic and artistic form. A form that elevates and transforms the very intention of a space.

I used the techniques of cinematic cultures, of perspective, lighting and dramatized setting to create a emotional connection from viewer to space. Responding to architecture with this dramatized nature allows us to see architecture with more sympathy and respect to its presence.

I feel that connecting to our surroundings is a significant value of life, understanding life and being able to exist in the present.

Themes that naturally occurred when modelling space.

- light
- transition
- static
- movement
- Process of phases
- Felt architecture felt space
- Process of accidental architecture and how powerful it became

The essence of this thesis was to push the boundaries of architectural experience, challenging conventional perceptions of space. The final performance illustrated how spatial design can be interactive, adaptable, and evocative. By experimenting with light, movement, and audience engagement, this project demonstrated the profound ways in which architecture can transcend its physical form to become an immersive, ever-evolving experience.