Emotional Attachment

Through Imagination

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Abstract

The fast-paced nature of our world has led to a culture that consumes rapidly and unsustainably. This practice-based design research explores how triggering imagination can facilitate opportunities for emotional attachment between the user and the object. Schon's process of action and reflection (Schön 2) through drawing and prototyping allowed an experimental design exploration of the ideas behind emotional attachment and imagination in the development of a wall light. Play and manipulations of light can trigger engagement, imagination, and moments of reflection to create a space for the mind to wander. Time taken to discover our reflective imaginings can help create a deeper connection to ourselves, others, objects, and space.

Figure 1

Acknowledgement

To Symone, Ashley, Clara and Yueyun. Thank you for always being around to bounce ideas off of and for saving me in the last minutes. I hope I wasn”t too distracting.

To Lynn, Deb and Yueyun. Thank you for your guidance, ongoing support, and all the fruit and cake.

To Mum, Dad, Steffi, Gabby and Tabitha. Thank you for always being there for me. Your constant love and support really got me through.

List of Images

All images are taken by the author unless specified otherwise.

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Introduction

The light on the wall, divided by the parallel slats, fills the space within it’s cosy warmth, facilitating a sense of secureness and community. The area illuminated by the light created from the ribbons comes to life with conversation and connection. At the same time, the space hidden in the ambiguous shadows facilitates exploration, allowing for an absent-minded and unfocused gaze to wander, exploring the depths of our imagination and our minds.

Rapid population growth has led to the production of large amounts of waste. This waste has found its way into our earth, forests and oceans. The idea of sustainability is one of the more critical issues we as designers face when developing and designing. As we are a part of the problematic system, we have the potential to make substantial change. The more quantifiable impacts of a product’s design are already addressed by designers, such as the material choice and quality, recyclability, and the effect of manufacturing. In conjunction with these ideas of sustainability, we need to explore how we can slow the consumption rate and produ

“Waste is a symptom of a failed relationship” (Chapman 65). It is our role as designers to seek ways to extend the life of products, ensuring that they don't end up as waste. This approach to sustainability leads us to ask: How can we create an emotional attachment to products by facilitating a deeper level of engagement and lasting interaction with them, thereby extending the product's life?

Increasing the chances of users forming an emotional attachment to an object, increases the potential for extending the life of the product by creating durable relationships between the product and the user (Schifferstein and Zwartkruis-Pelgrim 2). Emotional attachment can be described as the “emotional bond a user experiences with a product” (Schifferstein and Zwartkruis-Pelgrim, 2). This emotional bond can help develop a drive to repair, upgrade or reuse the object for much longer than intended. Or even in cases of a strong emotional attachment, users may keep the object around even if it no longer fulfils its original function (Schifferstein and Zwartkruis-Pelgrim 2). Through looking at how design can strengthen this bond between user and product. want to explore how we could use light within the context of our homes to evoke our imagination thereby triggering an emotional attachment. I initially explore the core elements that make up our interactions with objects and how this can lead to the possibility of emotional attachment. I then explore our imagination, how it is key to helping us understand our experiences, and how it can help enrich our experiences to make them more fulfilling. This leads to the idea of light and ambience as a trigger for our imagination, which I explore through my design practice.

My final design is an interactive wall light. The drawstring invites users to play with the form of the bamboo strips, which have LED lights on the back. This enables users to create abstract forms through shadows and lights and facilitates different ambiences. These forms allow for viewers to engage their imagination, whilst the different ambient lighting helps facilitate social connection.

Context review

Product Interaction and Meaning

We interact with objects every day. Some of these objects we may feel a deep connection to; these connections are personal and may differ from person to person. A person's previous experiences, background, culture, age, and mood may affect how they view, interact, and connect with the object. Schifferstein Zwartkruis-Pelgrim noted that people use objects to “define the self, create a sense of identity, to remind themselves of who they are or who they would like to be and to protect and enhance their self-concept” (2). When objects are aligned with a user's concept of self, users may form an emotional attachment with them as the object becomes an extension of who they are.

This project has made me look deeper at the products that make up my life. Which products do I keep around solely because of the function they serve and may become waste after they stop performing their functions? Comparatively, which products do I keep in my life because of my emotional attachment to them?
I analysed the relationship I have with my film camera (figure. 2). The film camera limits how many photos can be taken per roll and requires the images to be developed. Technology enhancement has led to our experiences with objects becoming more streamlined. The streamlining of experience is apparent in the developments between film and digital cameras. Jonathan Chapman describes this streamlining of experience as creating “object interactions that are surface-level and short-lived” (Chapman 70). The delayed gratification associated with the experience of using film can allow for the possibility of emotional attachment to the photos and the camera. The first roll of film I shot was during

Figure 2

my fourth year of uni. I did not develop these photos until months later. This delay led to me forgetting the pictures and creating a moment of reflection, as I remember and relive the experiences, encouraging me to want to use the camera more. However, an events photographer may feel negatively towards a film camera as they require a camera with a more streamlined experience and may feel more positively towards a digital camera that serves its function well. From this, we can understand that emotional attachment is subjective. This subjective nature needs to be considered as this project looks to evoke an emotional attachment between the user and the object. Within that, there is the possibility that someone may feel nothing towards the final design. By understanding these concepts of attachment, we can design a higher probability for attachment to be felt.

Levels of Processing

Don Norman suggests that we form emotions in objects through the three levels of processing. If an object can satisfy our needs at each of the three levels, then the possibility for emotional attachment can be formed. These three levels are the visceral level, the behavioural, and the reflective level (63–98).

The visceral level of processing is our “immediate emotional impact” (Norman 65). This level of processing can be understood as our “lizard brain” and is used to make quick subconscious judgments over whether something can be perceived as safe or as a threat. The visceral level helps organise our experiences into categories of importance, such as threats, food, and shelter (Norman 66). Due to the fast-paced nature needed to process things, the visceral level is conducted subconsciously. Previous lived experiences can help enhance the speed our mind processes situations and objects. This makes it subjective to each person. In designing a lighting solution for the visceral level, I will need to keep in mind how someone may view the initial form as well as how the effect of the lighting quality may influence the visceral processing of our brains to make us feel safe or alert.

The behavioural level relates to how easy an object is to use and how well it functions at its purpose. If a product fails at its primary function, it could potentially impact the amount of emotional attachment between the user and the product. As designers, we are always looking to design objects which are

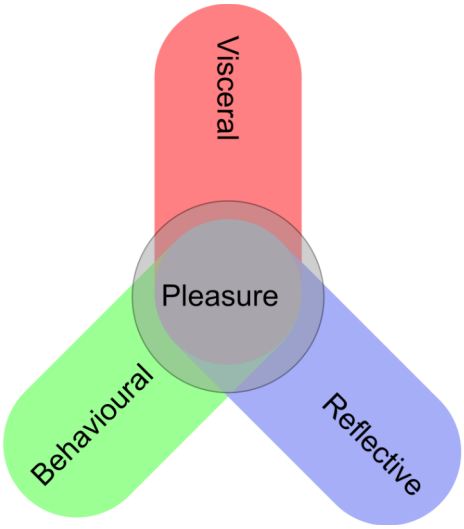

Figure 3

Figure 4

easily understood by their form language. An object’s grip will help communicate to the user where to place their hands and how to hold the object. Unlike the visceral level, it is a lot easier to design for the behavioural level as it is less subjective and can be evaluated to get something that best fits most users.

Through our imagination, we analyse an object on the behavioural level. When we perform a movement, our minds subconsciously predict the outcome. At the same time, the brain will issue commands to our body to perform the action (Choudhury and Blakemore 39–49). A difference between the actual and predicted outcomes may elicit error signals in the brain. These error signals can show in the form of different emotions, from satisfaction and gratification to disappointment. An object that feels nice in hand can allow for processing at the behavioural level. At the same time, unexpected materiality could provide pleasure or surprise by enhancing the difference between the expected and actual outcome (Choudhury and Blakemore 39). It is through designing for the behavioural level that we want to ensure that the use of the lighting design will be easy to understand and could also hold the potential for play.

The reflective level of processing is concerned with the product’s meaning and message. It is how we remember and evaluates an experience. The reflective level can reach elevated levels of emotion

through the ability to connect the design to our self-concept. A piece of jewellery may express our culture or align with your desire for expensive things. Norman states how “the real value of products can be found through the way they fulfil people’s emotional needs, most notably how they establish one’s self-image” (84).

Suppose you look at the products that lie about your room, office, or lounge. How many objects are chosen solely for the function they serve? As I write this, I remember the decision to purchase my alarm clock that sits under my monitor. I bought it because I needed an alarm clock. However, the minimalistic design and proportions attracted my visceral level to that alarm clock. On a reflective level, it aligns with my desire to be seen as a designer. The overall impression of the alarm clock is determined using the reflective level. It is the evaluation of the product characteristics and how they align with my self-context. The strength of the emotional response is determined through retrospective memory and reassessment of the product’s appeal and the experience of using it.

By ensuring the ideas of Norman’s three levels of processing are being targeted and met, we as designers begin to have a people-first design approach. By meeting the user's needs, a positive experience is more likely to occur. The convergence of the visceral, behavioural, and reflective levels is where positive experience has the highest likelihood of being felt.

“It is through interaction where we have experience” (Desmet and Hekkert 2). The different types of product interactions can be described as instrumental interaction, which refers to the usability of an object. Non-instrumental interaction refers to an interaction that is not key to the function of an object (the texture, shape and colour of an object). In contrast, non-physical interactions refer to how we may think about interactions. Such as how we may remember, imagine, or anticipate an interaction (Desmet and Hekkert 2).

The product experience is informed by the interaction between us and the object. The ‘context’ of our lives and what we bring to the table impacts the experience. Our personality, skills, background, cultural values, and motives make up our lives and influence whether we may find an experience pleasant or unpleasant. Jean-Paul Sartre refers to this idea of context as our “human Intention” (Sartre 22).

Each product interaction can lead to a product experience in the form of aesthetic pleasure, attribution of meaning, and emotional response (Desmet and Hekkert 3-5).

Aesthetics Pleasure

Looks at how an object may appeal to one or more of our senses. The experience of our senses determines the effect of the object. Don Norman discusses how, at the visceral level, our sensory experience determines the immediate emotional impact, helping us to understand a situation rapidly. Due to the rapid nature of this level of processing, there is little room for cognition and conscious thought. Desmet mentions the work of Kees Overbeeke and Stephen Wensveen and their ideas surrounding pleasure through aesthetic interaction (qtd. in Desmet and Hekkert 3-4). Aesthetics pleasure focuses on the interaction between our senses and how an object may elicit pleasure through evoking our sensory receptors. However, Overbeeke and Wensveen look at how the function of an object may stimulate aesthetic pleasure through interaction and play (qtd. in Desmet and Hekkert 3-4). This not only refers to the behavioural level of processing, where Norman discusses how pleasure is harder to obtain if an object fails at its core function, evoking emotions of frustration.

Aesthetic pleasure can be seen as the ease of use and satisfaction one may have while performing a product's function (Locher et al. 70-79). We can understand that aesthetic pleasure is not only solely connected to our visual sense but is a combination of the pleasure our senses feel through interaction. The pleasures felt by our sensory organs are noted as being our physio pleasures (Jordan 12). Car designers pay a lot of attention to the detailed interactions within a car. Through designing the sound, a door makes when closing, the feel of the switches and dials and even the smell of the interior (new car smell). It is the combination of pleasures felt by our senses that can allow for aesthetic pleasure.

Attribution of Meaning

Unlike an aesthetic experience, an experience of meaning is more cognitive. It requires us to make conscious thoughts to make interpretations, retrieve memories and make associations to understand the meaning of an experience (Desmet and Hekkert 4). At this level, we are more likely to be influenced by our personal contexts due to the requirement of conscious cognition. An attachment is likely to occur as we connect the characteristics of our human intention with those of the product. This interaction between our internal context and the context of that product is where meaning and attachment begin to develop.

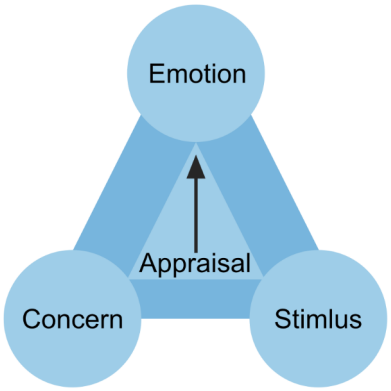

Figure 5

For example, while shopping for a new coffee table, we may be attracted to a design influenced by the context in which the coffee table is intended to be used. We could be influenced by a table as it is like the one your parents had as a child. Or the coffee table's shape, form, construction, or colour could speak to you as it falls in line with your personal preference. These are examples of how an object may undergo an appraisal. It is the collaboration of your self-identity with the object's identity which can lead to meaning and attachment.

Emotional response.

"Emotions can pull us towards certain people, objects, actions and ideas" (Desmet and Hekkert 5). It is understood through the ideas of appraisal theory that we attach emotions to object situations and experiences. Appraisal theory is the evaluation process we undergo to gain an emotional response from a situation or object. Desmet states that the "interpretation of the event can elicit an emotional response rather than the event itself" (5). Appraisal theory comprises three key components—concern, stimulus, and appraisal. These three components lead to the elicitation of emotions. The level of concern is related to the individual.
"It is their motives, goals, wellbeing and other sensitivities" (qtd. in Desmet and Hekkert 5). The stimulus can be regarded as the product or the event.

Understanding this process, we can consider how a person may feed into their interaction with the object. Understanding what goals and attitudes may fall in line or be enhanced through the design of the object may help to foresee the outcome of a person's interaction with the object and the strength of the emotional response felt.

While discussing the ideas of aesthetic pleasure I discovered Patrick W. Jordan, who defines four pleasures which can be evoked through products. These are physio-pleasures, socio-pleasures, psycho-pleasures, and ideo-pleasures (Jordan 12-15). As described before, the physio-pleasures are the pleasures felt through our sensory receptors.

On the other hand, socio-pleasures are the pleasures associated between people (Jordan 13). Products can elicit socio-pleasures through encouraging discussion (Jordan 13). Objects that are centre pieces can evoke discussion around them. They create conversation points and can create feelings of excitement within the owner as they get to show off their product. We can think about how classrooms and lecture theatres are designed differently to encourage different levels of discussion.

Psycho-pleasures are "the cognitive and emotional reactions one gain through interaction with a product" it requires users to learn and overcome challenges (Jordan 13). This overcoming of challenges can give users a sense of satisfaction and pride that they have intimate knowledge of the

product. An example of this might be using a film camera, which takes time and practice to know how to use it.

The final form of pleasure Jordan describes is that of ideo-pleasures. This level of pleasure is gained through “theoretical entities” (Jordan 14). It is the values that the object embodies or symbolises, similar to the ideas behind the reflective level of processing. The values an object embodies can connect to our values and enable the possibility of pleasure. For example, someone who values sustainability might find pleasure in objects which are sustainably made.

This project hopes to look at how we can increase the longevity of products by enhancing the product experience to allow for the potential for product attachment to occur. Through the ideas of Normans levels of processing Appraisal theory and the concept of four pleasures (Jordan 13), we can understand how to develop a deeper level of experience and fulfilment within the products that make up our lives.

Imagination, Assoiciation and Play

My intention to explore emotional connection is through activating our imagination and how we can utilise our lived experiences to enabling a deeper relationship between us and the objects that make up our lives.Our imagination can be categorised into eight different classes (Barron). These being:

- Effectuate/reflective

  Remembrance of lived experiences

- Constructive

  Visualisation of 3d forms within the mind

- Speculative

  Imagining something without it ever existing

- Dreams
  An unconscious generation of ideas, emotions, images, and sensations that occur while we are asleep

- Empathetic

  Imagining how others may feel, “putting ourselves in their shoes

- Emotional

  Extending our thoughts and feelings into emotional scenarios

- Memory reconstruction

  The reconstruction of an experience within the mind can be influenced by memory

- Strategic
  Exploration of outcomes for a scenario, the mind's ability to weigh up the possible risk’s opportunities and outcomes

This project looks at our reflective imagination and how it can allow us to connect our lived experiences with what we are currently experiencing to form deeper meaning and enable an emotional

connection with objects to occur. Our imagination is integral to how we perceive, understand, and reflect on our world. The philosopher Plato first conceived the idea of imagination (Schau, 50-56). Plato considered our imagination as a “mental mechanism to interpret the world we live in” “it is the way we can experience and attach meaning to the sensations that make up our lives” (Schau, 50-56). Through the work of John Dewey, who saw the role of our imagination, as “a venture into the unknown” (qtd. Nygaard Folkman 67), it is how we experience, a mental space where we “dissect, pull apart and explore new possibilities” (Nygaard Folkman 69). But for us to utilise our imagination to attach meaning, Dewey suggests that we need to take a moment and reflect on the experience (Dewey 39-40). “As imagination takes form, the work of art is born” (Dewey 39-40). From this, we can understand the relationship between our imagination and its ability to create meaning. The workings of the imagination are a collaboration between the world and our minds. You must allow time for this collaboration to see and understand a work of art or design. Mads Nygaard Folkman looks at this collaborative relationship through the concept of internalisation and externalisation (Nygaard Folkman 69). Folkman refers to internalisation as an “inward gaze” (69). It is the act of having an experience and allowing our minds to “dissolve, diffuse and dissipate” (Nygaard Folkman 69) what we experienced. This will, in turn, lead to externalisation in the form of the creation of meaning.

Jean-Paul Sartre describes the concept of internalisation and externalisation through the idea of “faces in the fire” (Sartre 49). Sartre looks at how our eyes may see one thing, but our imagination would project our human intention onto what is being seen and create an interpretation that differs from what is present. We may be in the light of a fire, but while gazing into the flames, we may be presented with an image of a face. Sartre discusses how at first, the seen images appear meaningless and only become symbolic once they become incorporated with the knowledge of the user. This knowledge reflects our lived experiences and the fire, and the obscure images seen within the fire may serve as a trigger for our imaginations (Sartre 49). Our imagination internalises the image seen within the fire. Through internalisation, our minds associate and connects our human intention to what is seen, exploring our lived experience, and allowing for the externalisation of meaning, such as a face within the fire. This project hopes to tap into this concept of internalisation and externalisation much in the way we may see faces in the fire. I want to explore how light, and shadow can trigger our imagination, allowing for a moment of reflection between the user and the light produced.

This project looks at our reflective imagination and how it can allow us to connect our lived experiences with what we are currently experiencing to form deeper meaning and enable an emotional connection with objects to occur. Our imagination is integral to how we perceive, understand, and reflect on our world. The philosopher Plato first conceived the idea of imagination (Schau, 50-56). Plato considered our imagination as a “mental mechanism to interpret the world we live in” “it is the way we can experience and attach meaning to the sensations that make up our lives” (Schau, 50-56). Through the work of John Dewey, who saw the role of our imagination, as “a venture into the unknown” (qtd. Nygaard Folkman 67), it is how we experience, a mental space where we “dissect, pull apart and explore new possibilities” (Nygaard Folkman 69). But for us to utilise our imagination to attach meaning, Dewey suggests that we need to take a moment and reflect on the experience (Dewey 39-40). “As imagination takes form, the work of art is born” (Dewey 39-40). From this, we can understand the relationship between our imagination and its ability to create meaning. The workings of the imagination are a collaboration between the world and our minds. You must allow time for this collaboration to see and understand a work of art or design. Mads Nygaard Folkman looks at this collaborative relationship through the concept of internalisation and externalisation (Nygaard Folkman 69). Folkman refers to internalisation as an “inward gaze” (69). It is the act of having an experience and allowing our minds to “dissolve, diffuse and dissipate” (Nygaard Folkman 69) what we experienced. This will, in turn, lead to externalisation in the form of the creation of meaning.

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I have stated earlier how we can understand how emotions are evoked through appraisal theory. Through the appraisal process, we connect the object and the concern (Attitudes, goals, standards). The similarities between appraisal theory and the process of internalisation and externalisation help us understand how our reflective imagination is a key component in appraising an object. We internalise and connect our lived experiences within our reflective imagination, comparing this with what we are currently experiencing.

Play can help us escape the realities of our everyday life by facilitating a space or activity that allows us to “explore and be creative as well as help to stimulate social interaction and competition” (Tsekleves 1). Play is said to “transcends the immediate needs of life and imparts meaning to the action” (Ruis 2). As we grow up, play is used to help us learn and understand the world around us. However, as we age, we play less as we tend to obtain a “linear, problem-solution, adult mindset” (Tsekleves 2). This can be partly due to how play needs to “transcend” beyond what we deem more important in life. Play is regarded as an activity for children. This idea fails to recognise the need for play at all ages. Through play, we can provide an outlet from the monotony and stress of our day-to-day lives. It has been shown to benefit healthy ageing through “stimulating higher levels of cognitive function, related to positive emotions, and coping with stress” (Tsekleves 2-3).

Play comes through in my project to explore how we can use play to trigger the imagination in the form of our constructive imagination. Our constructive Imagination is how we can visualise 3d structures within our minds. We can utilise our minds' eyes to help construct a mental image of the goal or desired outcome and use this as a guide. Our constructive imagination can help with problem-solving or assist us in the creation process. Our constructive imagination may utilise our reflective imagination to construct new ideas, such as a man-unicorn. If I asked you to imagine a creature that is half-man, half unicorn, your reflective imagination will bring forward your knowledge of what a man and a unicorn are. It is within our constructive imagination that we combine both these ideas to create something new. Our constructive imagination is a playful function and helps in problem-solving. This project looks at how we can incorporate our creative imagination by facilitating interaction, allowing the user to change the look and feel of the lighting design.

Playful objects can be described as “self-motivational” (Arrasvuori et al. 3) through the way they elicit pleasurable experiences with the user. Self-motivational objects can enhance the relationship between user and object as the pleasurable experience can help to motivate and drive the user to interact with the object more. Increasing curiosity and the potential for learning and a more comprehensive range of emotions to be felt. (Arrasvuori et al. 3). These emotions may stem from what a” person may perceive, think, what they do, as well as the reaction of others” (Lazzaro 1). Play that follows rules and demands a level of proficiency can provide a feeling of satisfaction through the act of finding solutions and techniques to reach the end goal. This idea of play is described as Ludus and is similar to the idea of psycho-pleasures (Ruis 2-3; Caillois and Barash 27; Jordan 13). Caillois also conveys the idea of play in the form of Paidia (27). This form of play is “a free and active force that is shaped through interaction” (Ruis 2). Building off these ideas of play came the idea of ludic engagement. This play is driven by a sense of curiosity, adventure, exploration, and reflection (Ruis 3). Gaver describes objects designed for ludic engagement as objects that are “easy to use but difficult to interpret” (Gaver et al. 899). This allows users of the object to use their curiosity, exploration, aesthetic pleasure, and imagination to develop their interpretation and meaning.

There has been an increase in the development of ambient play environments. These environments, such as parks, encourage self-expression, socialising, and physical play. These environments help to supply the opportunity for playful interactions to occur. The context of the environment can restrict play, “we are less likely to play in an environment that pushes the completion of a specific task” (Tsekleves 2). Play is “an instinctive reaction lacking in pressure giving gentle, flexible, self-imposed boundaries resulting in self-expression” (Harvey 8). A work environment may hold back or limit the pleasure and self-expression felt if the act of play were to occur in this environment, potentially resulting in emo-

tions of guilt. Despite the integration of ambient play environments within public spaces, it can be said that there has been a decrease or a growing need for these spaces within the home environment. The recent lockdowns due to covid have people working from home, leading to an “unbalanced lifestyle between work and relaxation” (Working from Home).

Light: Shadow, ambience, and emotion

The ambience is described as the atmosphere of the place. It is how the mood, space and people interact with each other. This project looks at how creating an ambient atmosphere through lighting enhances a sense of coziness and security, allowing the mind to wander and activate our imagination. Juhani Pallasmaa describes how “deep shadows and darkness are essential as they dim the sharpness of vision, make depth and darkness ambiguous and invite unconscious peripheral vision and tactile fantasy” (Pallasmaa 46). It is often documented that our vision can be considered one of our dominant senses. Pallasmaa suggests that by dimming this dominant medium for perception, we evoke our imagination, stimulated by the dim lights and shadows (46). Pallasmaa states how “bright lights serve to paralyse our imagination” (Pallasmaa 46) while “mist and twilight awaken the imagination, making visual images unclear and ambiguous.” (Pallasmaa 46). I want to explore how I can create an environment that facilitates a space that evokes our imagination allowing us to relax, connect with others or help us to reflect on the day. I have discussed how we can have more a fulfilling experience if we take a moment to stop and reflect. Pallasmaa describes this idea of being present as “giving rise to images of memory, imagination and dreams” (Pallasmaa 44). Mikkel Bille describes light as having the ability to carve out space where intimacy and relaxation may be evoked (Bille 57). By creating a cozy and comfortable atmosphere, we can facilitate the connection between people, “shaping a sense of secureness and community” (Bille 56). As the light shapes and facilitates a space that allows for feelings of connection, community, and secureness. The overall mood and ambience may also develop and change as the connection between people feeds into the atmosphere. The individual is therefore not separate from the atmosphere but should be considered an integral part of the atmosphere. Pallasmaa states how “our domicile becomes integrated with our self-identity; it becomes part of our own body and being” (Pallasmaa 72). The exploration of light through my project looks at how light can be more than just a medium to aid perception. It looks at how light is used to create an ambient environment that awakens our imagination and enables an emotional experience.

These ideas of lighting being used to create an ambient environment can be seen in the Conic lamps designed by Form 53. These lamps create beautiful shadows on the floors and ceiling of a space. I have stated early through the ideas of Juhani Pallasmaa, that through dimming our vision, we can awaken our imagination, creating a space that allows our mind to wander. Another design factor that I find interesting is the scale of these floor lights. Their large size can create socio-pleasures within the user in how they demand a person’s attention and facilitate the poten-

Figure 6

Figure 6.1

tial for a conversation to be initiated.The design of these lamps works well in creating an ambient atmosphere with solid lines and shadows that draw your eyes in. However, I find that by having the lighting source inside, you can see it through the gaps in the form. This may “paralyse the imagination (Pallasmaa 46).

The light produced by Form 53’s Conic lamps is that of a neutral white. This is a common choice of light temperature when thinking about increasing or allowing for visual perception. However, “white neutral light is considered more ineffective” (Shahidi et al.) in eliciting emotions and feelings. Cooler and more neutral light temperatures help to enhance performance (Kazemi et al.).

Pallasmaa’s ideas behind shadows, lighting and imagination inspired me to explore how we can facilitate the potential for a person or group of people to have an emotional experience. It emphasises the importance of light being more than just an aid for perception. It can enable us to explore and reflect on our lives or help to enhance the connection and conversation between people.

Other than the Conic lamps by Form 53, I also looked at other examples of lights that focus on interaction, ambience, shadows and interesting forms. I have noted below the key or interesting aspects that I found from my exploration of different lights.

Notes

- Interactive lights that engage with our psycho-pleasures consist of very easy/ simple interactions.
- Lighting pieces that are sculptural in nature use light to enhance the design and draw people's attention.
- Shadows cast by the form of the light enhance the lighting design as well as the environment and ambience.
- Organic forms not only transform a space through their ambience but also through their ability to trigger the imagination and transport the mind to imagine other worlds
- Play and imagination could be triggered through the use of interaction, light and shadows.
- Unconventional lighting designs can allow for socio-pleasures by being a conversation starter.
- Hiding the light source in the design lowers the harshness of the light on the eyes as well as increases the ambience of the space.
- Lighting designs that focus on functional areas (such as kitchens or offices) tend to be a natural or cooler tone comparatively lighting designs that focus on areas that facilitate conversation and relaxation tend to have a warmer tone of light.
- LED light installations engage play and imagination but are often novel and don’t create an ambience suitable for a home environment.
- Warm materials enhance the warm lights and in turn, the ambience of the environment.

Process

Method and Methodology

In my practice, I have used the double diamond design process. The double diamond breaks the process down into four parts; “Discover, define, develop, and deliver” (*Framework for Innovation*). However, for this project, I diverged from the double diamond approach as I find it too restrictive, pushing for a lot of research up front whereas I found my project is constantly fueled through research. The best method that I found was that of the iterative process. As it allows me to be inspired through an idea or learnt concept and then explore and test a prototype born from the research.

The iterative process is a circular design process made up of five parts. Understanding, observing, visualising and implementation (Milton and Rodgers 14-15). The first part, understanding, requires you to understand the aims and goals of the research. It is then taking into the observation phase where we observe how people interact with the problem or situation. Visualisation is where we explore through sketching and rapid prototyping. The outcome of the visual exploration phase is then taken into the review phase. This is where the prototype gets critiqued and compared against the initial aim of the project. If the prototype holds up against the aim of the project, it can then be implemented. If it does not hold up it can then go through this process again building off what was learnt (Milton and Rodgers 14-15).

I would start the iterative process through secondary research and explore how I could implement the ideas learnt through sketching. Through the initial sketching process, I explore a wide range of ideation, followed by developing the sketch with the highest potential and then responding through a prototyping. I tested and reviewed the response against my initial aim and analysed how others reacted to the prototype. The work of Schon come through in the reviewing stage in the form of reflection (Schön 2). Schon describes the ideas of the reflective practitioner and how they may “reflect on the feeling for a situation which has led him to adopt a particular course of action, on the way in which he has framed the problem he is trying to solve, or on the role he has constructed for himself” (Schön 2). Dewey’s idea of taking a “moment to reflect” (Dewey 39-40) is prevalent throughout the review phase. It is by ensuring that we take a moment to reflect on the prototype that we as the

practitioner “may surface and criticize his initial understanding of the phenomenon, construct a new description of it, and test the new description by an on-the-spot experiment. Sometimes he arrives at a new theory of the phenomenon” (Schön 2).

Once reviewed, I would take the prototype through another iterative cycle, starting with what I had learnt and feeding more research into the prototype to help me grasp a better understanding. This process allowed me to make a final design influenced by research and reflection.

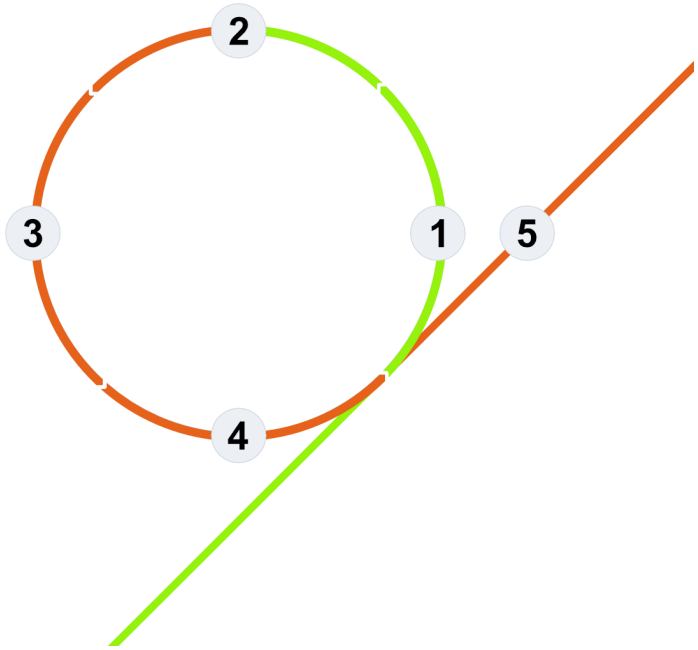


Figure 7. The iterative process.

Key

1. Understanding
2. Observing
3. Visualising
4. Review/ Reflecting
5. Implemation

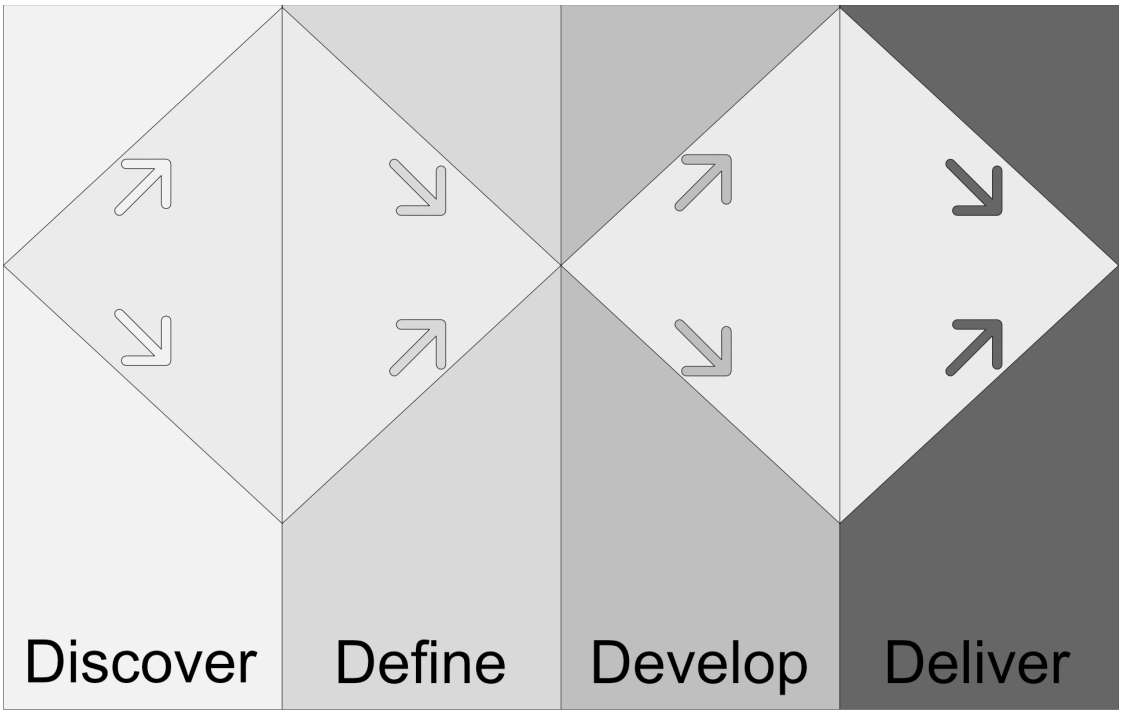
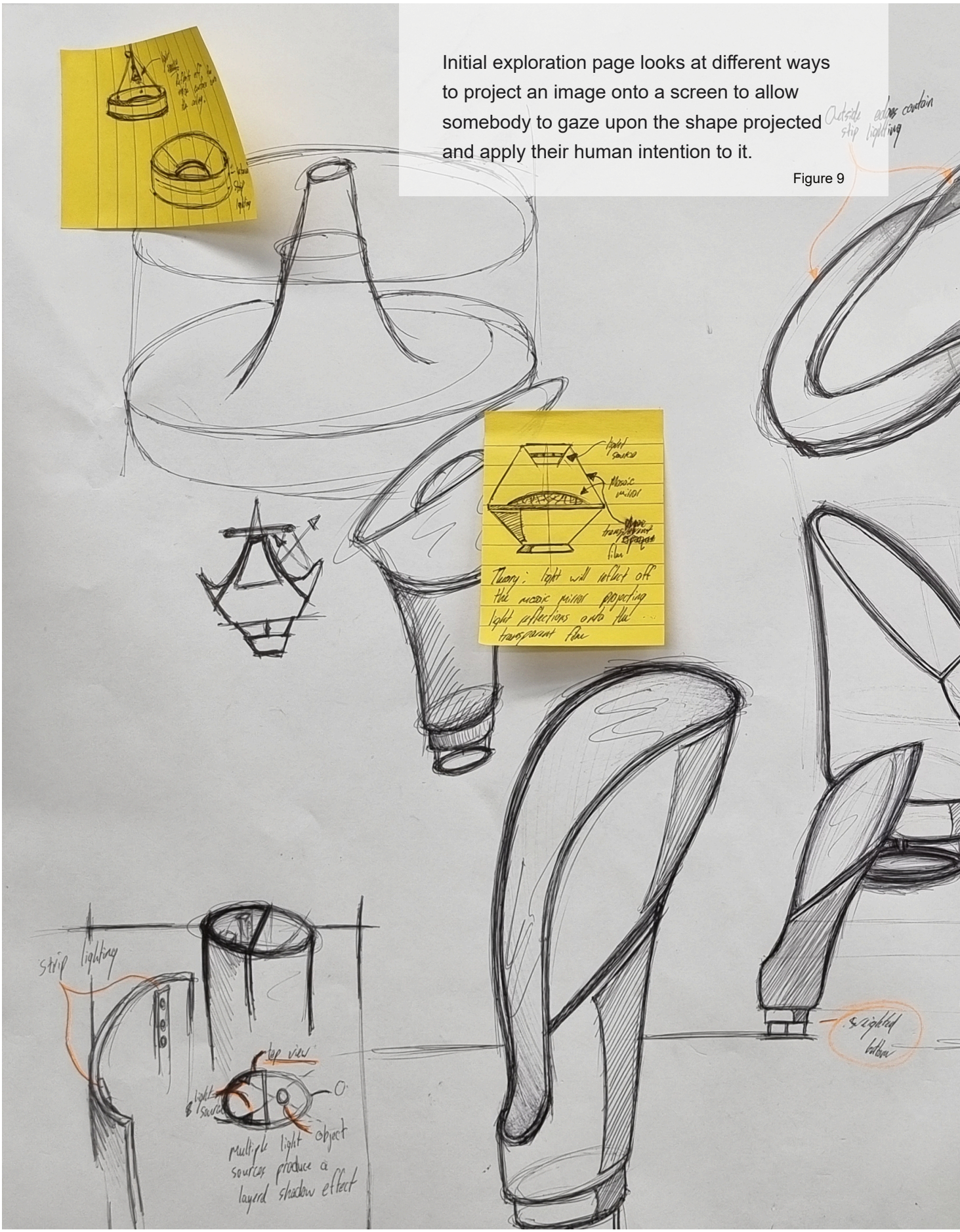


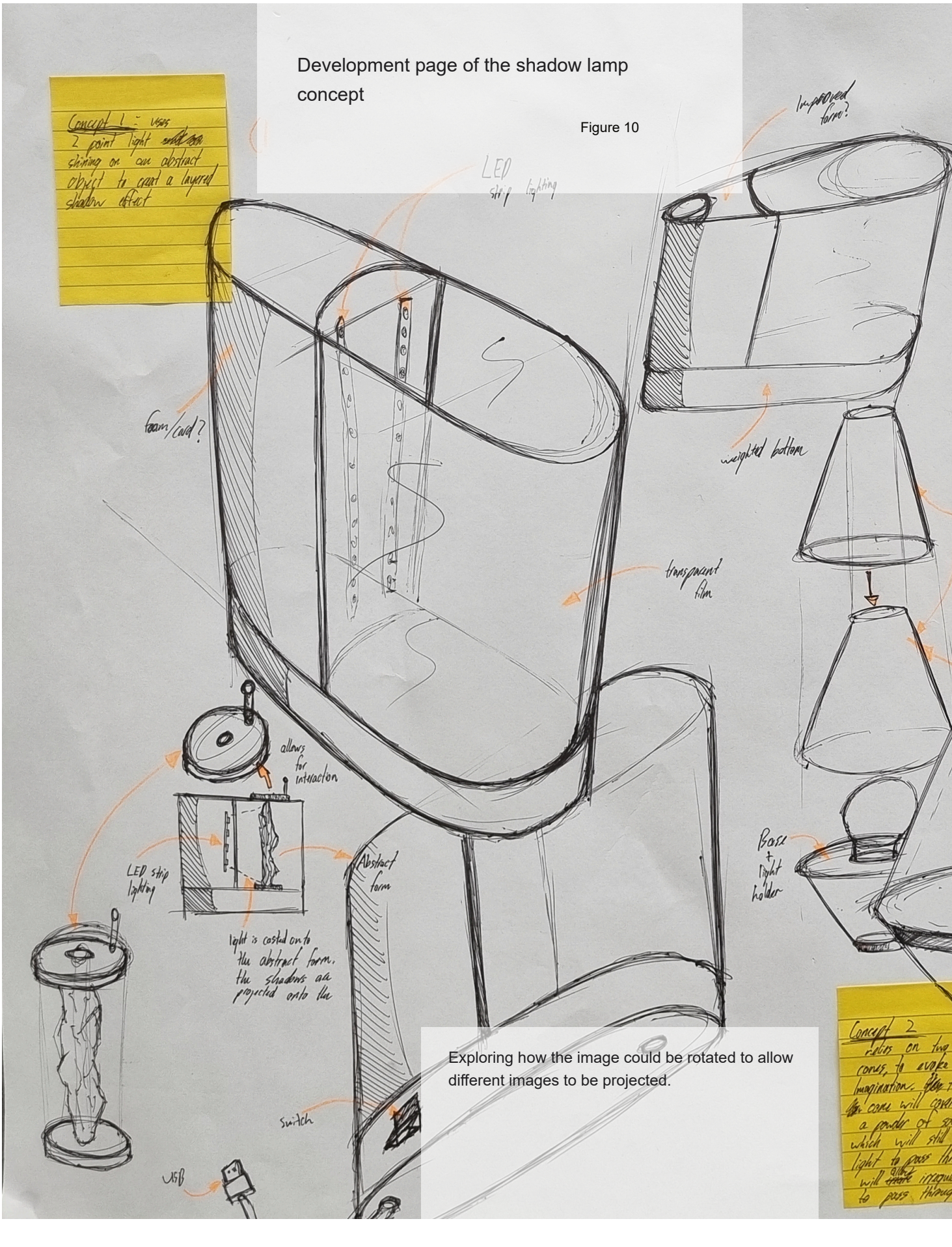
Figure 8. The Double diamond design process.
The discover and the developing stage can be seen as explorative stages while the define and the delivering stages are stages of refinement (*Framework for Innovation*)



Initial exploration page looks at different ways to project an image onto a screen to allow somebody to gaze upon the shape projected and apply their human intention to it.

Figure 9


Reflecting surface
light source
Reflects onto the ceiling
disco ball effect



Development page of the shadow lamp concept

Figure 10

Exploring how the image could be rotated to allow different images to be projected.

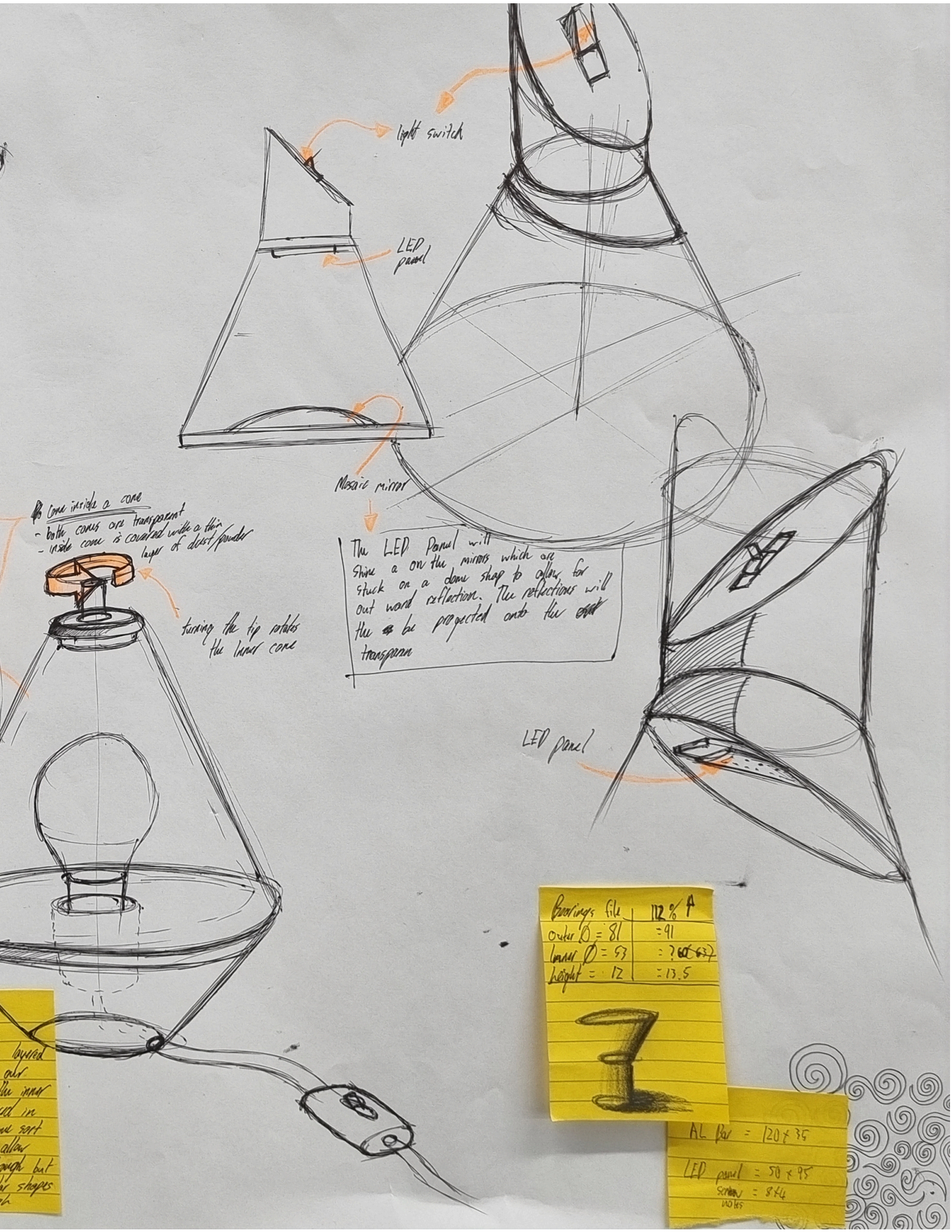

light switch
LED panel
Mosaic mirror
The LED Panel will shine a on the mirrors which are stuck on a dome shap to allow for out word reflection. The reflections will the be projected onto the
transparn
Cone inside a cone
- both cones are transparent
- inside cone is covered with a thin layer of dust/powder
turning the tip rotates the inner cone
LED panel
Bearings file
outer Ø = 81
inner Ø = 53
height = 12
112 % A
=91
=13.5
AL Bar = 120 x 35
LED panel = 50 x 95
screen = 84

Figure 11

Figure 12

Figure 13

Abstraction of Shape and Association

I initially looked at how to trigger the imagination through exploration of our reflective imagination and how we can recall images of our previously lived experiences to understand the experience currently before us. I was inspired by how children will gaze upon the clouds utilising their internal knowledge of the world to see images out of the obscure shapes produced by the clouds discussing and comparing the different things they may see. This projection of our previous lived experiences is our reflective imagination at work.

As a starting point, I ideated ideas through sketching. I explored how I could create an image. The image would have an element of obscurity that allows individuals to gaze upon it and let their imagination explore what is being seen. Thus, allowing for the application of their human intention onto what is seen.

From my sketches, I developed the “Shadow lamp”. This lamp was inspired by Chinese shadow puppetry. The shadow lamp utilises a backlight to enable a projection of a shadow upon a screen. To increase obscurity, I added a second light source. This helped produce a layered effect that increased the obscurity of the object being projected.

Alongside the shadow lamp, I also developed the fluff lamp. Instead of having an obscure form inserted behind the screen of the lamp. I used cotton wool glued to the screen itself to give the lamp a softer feel. The different thicknesses of the cotton wool allow an individual to gaze at the lamp and explore either the gaps between the cotton wool, the clumps of wool themselves, or a combination of both.

The initial response (from fellow master students) to the shadow lamp was varied. Some people could see an image within the light noting how “the layered effect is making me think of hills or the countryside”. However, I found that most people either could not or struggled to connect the seen images with anything from within. This made me wonder whether this concept would have any imaginative response within an environment such as the home. Upon reflection of my prototype, I wondered if an imaginative response, such as hills, is a one-time thing due to the static nature of the design, leaving the projected image forever classified as hills and lowering the level of engagement, allowing the light to become novel.

John Dewey discusses how allowing a moment of reflection can give way to a more profound emotional experience (Dewey 39-40). Through observation, it was found that the shadow lamp tended to require the

assistance of a question to initiate this moment of reflection. This question, “What does the lamp make you see, feel, think?”, felt too structured, leading to a paralysis of imaginative thought.

On the other hand, the fluff lamp was able to stir up images within the minds of viewers. These images represented the lamp as a whole. Instead of the intended aim of the users seeing images presented within the gaps of the wool. Most viewers saw smoke or clouds and struggled to see anything else. This could be due to the visceral level of processing Norman discusses. Through our visceral level of processing, we utilise our reflective imagination on an unconscious level to help understand and classify objects by their “immediate emotional impact” (Norman 65). The cloud-like nature of the Fluff lamp leads people to see smoke or clouds as there is no need for conscious thought and exploration to help analyse and understand what is being seen.

Through exploration of the Shadow and Fluff lamp, it was observed that there was a clear need for deeper engagement as both lamps only explored our visual receptors leading to a surface-level experience. A deeper level of engagement could potentially cause the users to naturally stop and reflect on the experience at hand, thereby elevating the experience and potentially allowing for exploration of their reflective imagination.

The activation of our reflective imagination lies on a scale of obscurity and visceral. An image positioned on the level of obscurity leads to a lack of engagement and causes the user to see the image before them as nothing more than a smudge or shadow. An object on the visceral end of the scale may be too easy to classify and lead to a subconscious activation of the reflective imagination. The user may only see the object as nothing more than how they initially experienced it.

Figure 14.
The Fluff lamp. Using cotton wool to create areas of light and shadows to allow an individual to see an image within the lamp.

Figure 15
The Shadow lamp. Uses two strips of LED’s to project a shadow on to the screen as seen in figures 11-13.

Figure 16
Using tinfoil in the shadow lamp to create interesting reflections on the screen

By designing an object that sits in the middle of the scale, the individual has the potential to consciously explore their reflective imagination and mentally see and connect their human intention to the image before them. It also allows for a deeper connection between the user and the object as it speaks to the user.

Tactile Experience

In my next iteration, I explore how adding a tactile element can allow for a greater level of engagement, based on the idea that our brains make subconscious predictions on the outcome of an action (Choudhury and Blakemore 46). The predicted outcome is then compared against the actual outcome, if the actual outcome differs from the predicted outcomes. In that case, error signals are initiated within the brain, and the action comes forward out of the subconscious. Here, we have a conscious experience as we analyse the interaction to help our mind grab and understand the experience.

Considering this, I looked at various materials and textures to use the texture to draw in engagement. The aim was to have the user engage in a moment of reflection triggered by the unexpected nature of the materials and textures. I used silicone with a shore hardness of 10 and 30A.

The 30A silicone allowed a user to bend the silicone to their will, and it would return to the original shape. I molded the silicone in the form of twelve “nubs” in a grid-like fashion. The nubs led to people responding to the sample through flicking, pulling, twisting, bending, and brushing their hands through the nubs. It is the playful nature of the material that invites the users to engage and explore. It is the ability to explore which evokes a moment of reflection from the user encouraging a sensory exploration in combination with a mental exploration.

The 10-shore hardness silicone was molded with popsicle sticks inserted within it. This enables the silicone to maintain some form while also providing the silicone with a texture. The parallel layout of the popsicle sticks gave it a lot of flexibility vertically but was stiffer horizontally. The silicone itself had a sticky feel to it. This caused people to pick it up, squish it and state that it felt “yuck.” This resulted from the user analysing and comparing their subconscious predicted outcome with the interaction and texture of the actual outcome. Some users found the stickiness of this sample extremely fun as it could stick when thrown at walls. From these two reactions, a level of difficulty needs to be accounted for while looking at a person’s initial reaction, as a person’s background and personality impact the reaction to the object (Desmet and Hekkert 4). The level of surprise gained through the subversion of expectation was successful in causing people to reflect on the experience.

Figure 17

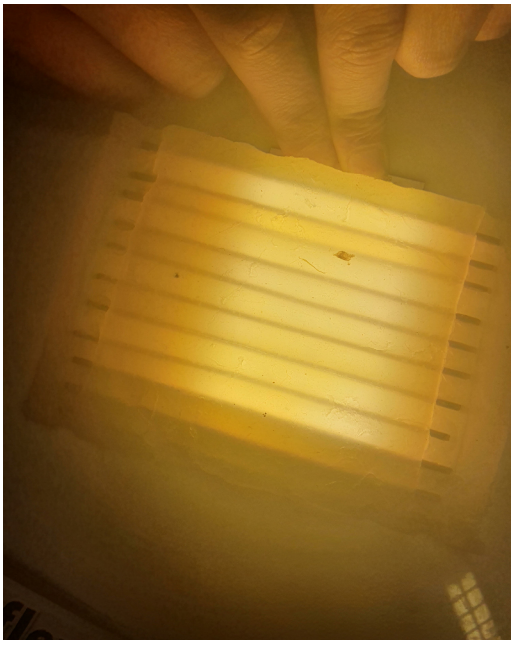


Figure 18

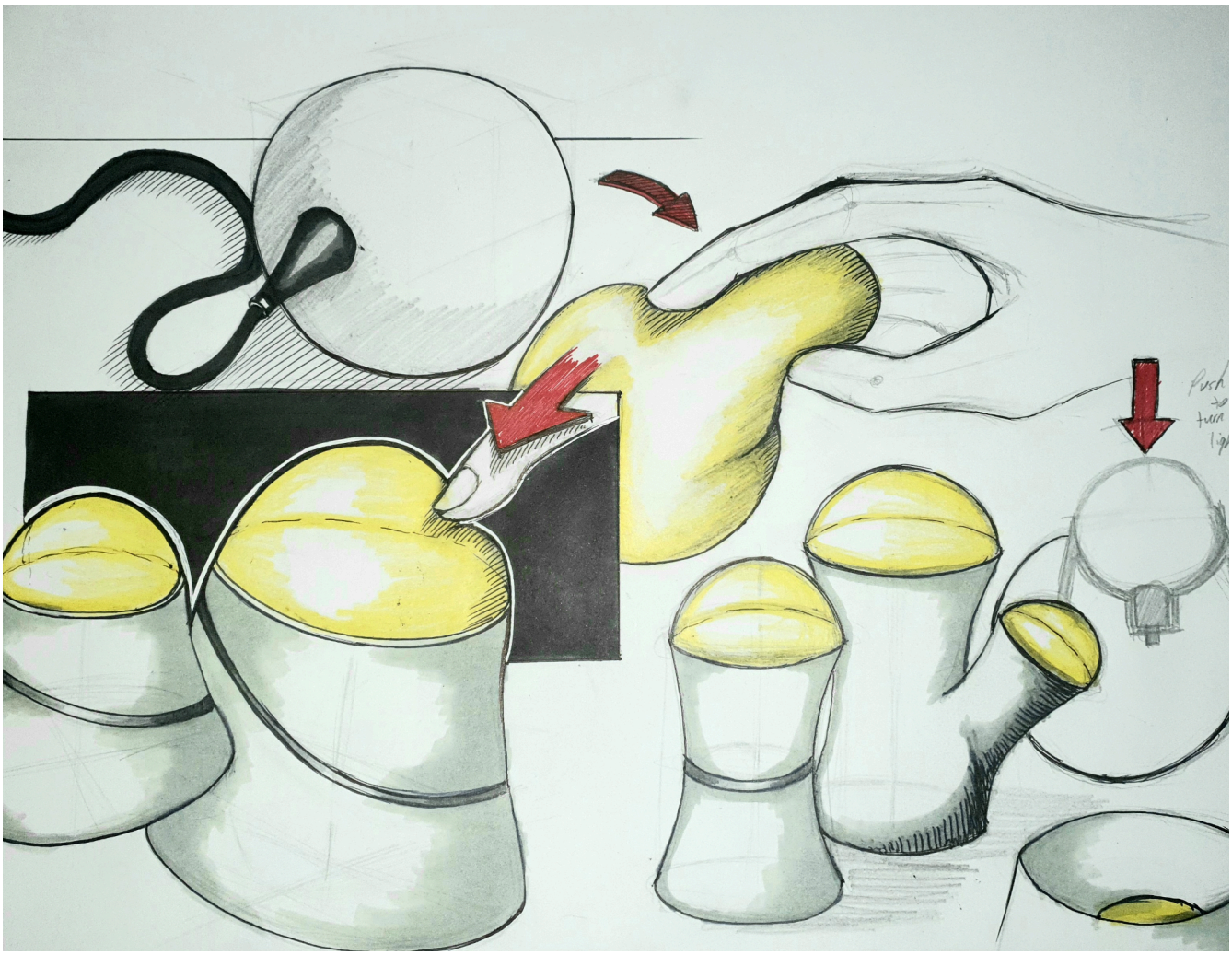


Figure 19

Alongside the silicone tests, I also looked at how I could incorporate the materiality of silicone into the form of a lamp. Taking what I learned from both the shadow lamps and the initial silicone tests. I decided to look at how I could encourage engagement through interaction rather than through the physio-pleasures (Jordan 13) of the tactility and materiality of the object.

I explored the idea of the Orb light. The idea behind the Orb light was to explore how I could make a key interaction with the light interesting or different. The malleability of the 30-A shore hardness silicone enabled me to explore how it could be used to turn on the light by squeezing or pressing into the Orb.

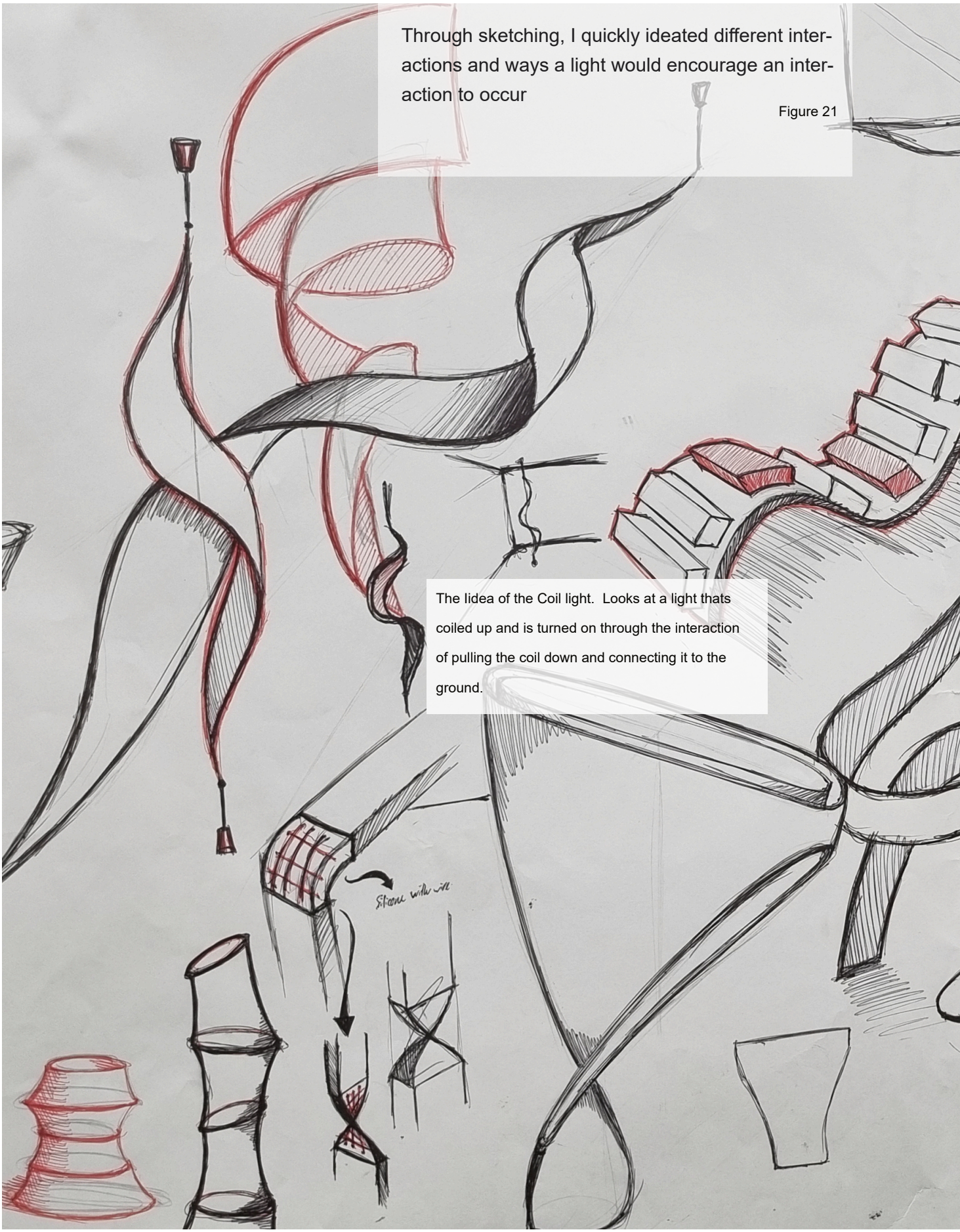
The interaction was further enhanced as the initial interaction is driven through the user's visceral level as their minds try to understand the object in front of them. It is as they begin to explore and touch the light that they get a moment of surprise.

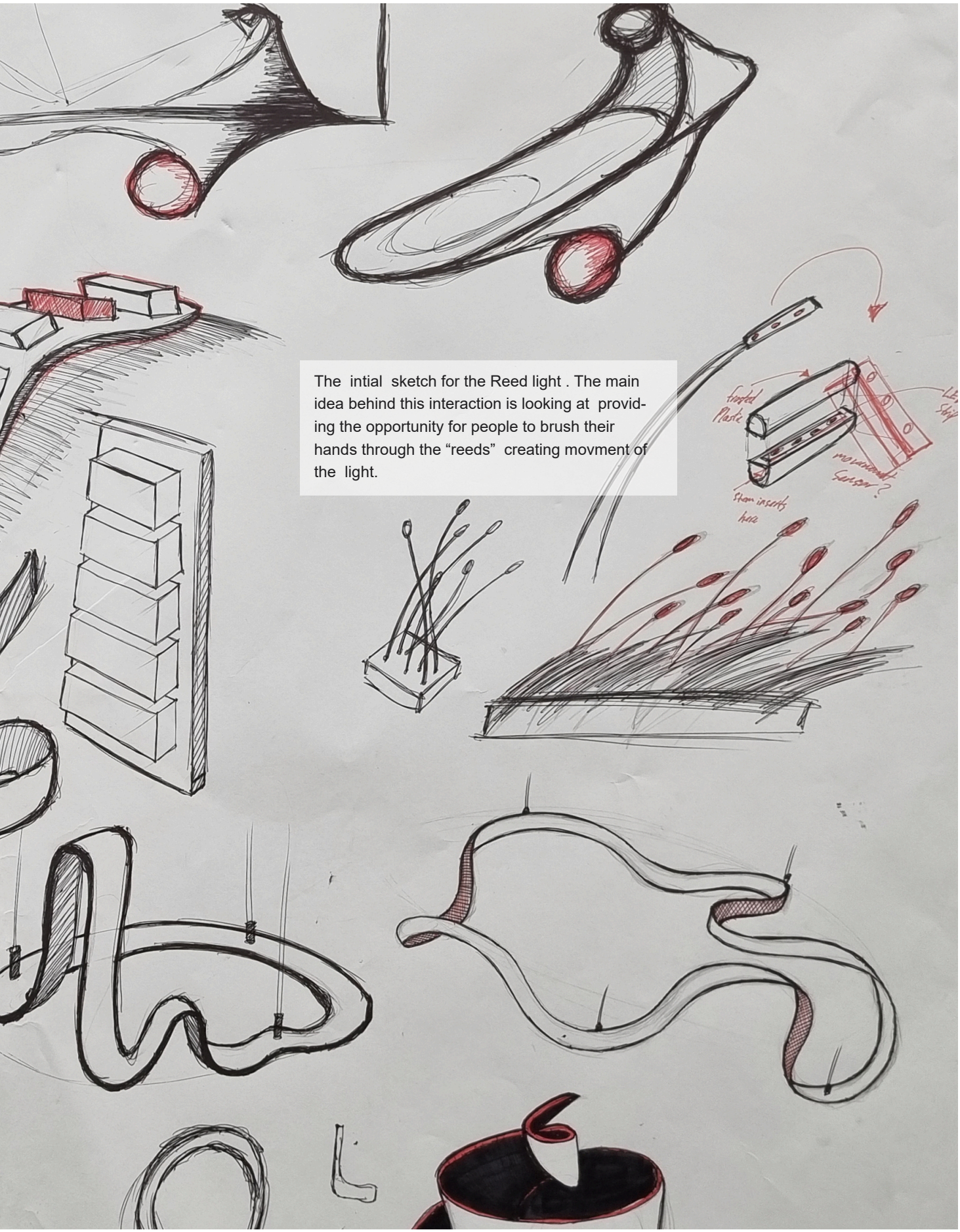
I found the level of interaction with the Orb was fun at first, however, after a while, it became a bit novel as the interaction was the same each time. This interaction could be made deeper by allowing psycho-pleasures (Jordan 13) to be felt as the users have to learn how the design works providing them with a sense of satisfaction.

Figure 20

Through sketching, I quickly ideated different interactions and ways a light would encourage an interaction to occur

Figure 21





The intial sketch for the Reed light . The main idea behind this interaction is looking at providing the opportunity for people to brush their hands through the “reeds” creating movment of the light.

Interaction, Touch and Movement.

Due to the engagement seen within the sticky silicone test, I decided to explore the idea of play, most notably ludic engagement. Ludic engagement is a form of play driven by a sense of curiosity, adventure, exploration, and reflection (Ruis, 2).

Through my sketching, there were two main outputs, the Coil light, and the Reed light. The Coil light explored different movements and diverse ways of turning on lights. The Coil light was a ceiling light that would coil up into the ceiling and require the user to reach up and pull the light down, connecting it to the floor. The light would be activated through this motion. This light aimed to explore the concept of socio-pleasure (Jordan, 13) within the user. The unconventional way of operating the light may create a sense of excitement within the user as they get to show others how to operate the light, therefore also creating psycho-pleasure as it would require familiarity to operate it (Jordan, 13). This, coupled with the intended scale of the light, allows it to become more than just a functional piece but a centre of discussion.

Inspired by plants and nature, I looked at creating a light that can activate the reflective imagination and bring distant worlds into the home. The ludic engagement of the Reed light enables an individual to use their curiosity and adventure to motivate them to interact with the object. It is through the form of the light that evokes the user's reflective imagination adding them to potentially see the light as a plant. However, much like the Fluff lamp, the visuals of the Reed light may be too visceral, activating the reflective imagination but on a subconscious level. It is through the combination of the light produced and the form of the light that may allow the user to imagine themselves in a world far from ours.

Figure 22

The struggle with the Coil lamp was finding a way to keep the coil retracted as gravity would work against us and pull the coil down. I also struggled to find material that would allow for this coiling action. The extension of the coil was an exciting idea. However, as a prototype, I struggled to advance the design further due to the limitations of the material, and I was not convinced that the movement itself would be more than just a novelty. I was also concerned that performing the action required to turn on the light may become unfavourable due to the interaction needing us to reach up high, followed by bending right down to turn it on. This may hinder the emotional attachment felt towards the object as the behavioural level suggests that it is harder to connect emotionally to an object if it is poor at fulfilling its function.

On the other hand, the Reed light had a lot more potential as it facilitated the possibility for people to be transported to another world via their imagination. Due to this, I decided to run with the concept of the Reed light further.

Figure 23

First iteration of the Reed light.

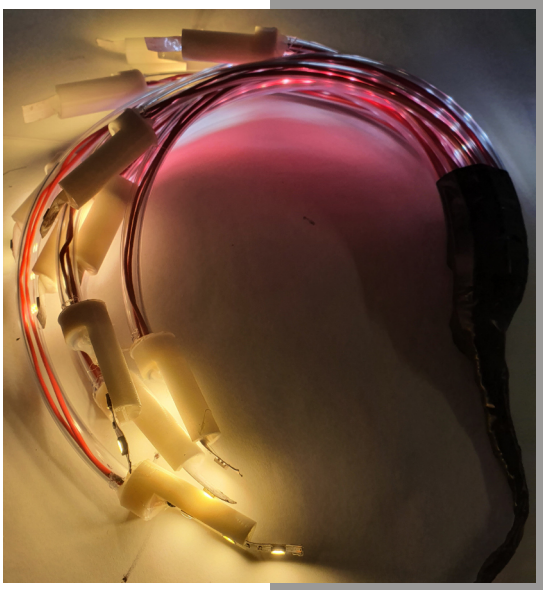


Figure 24

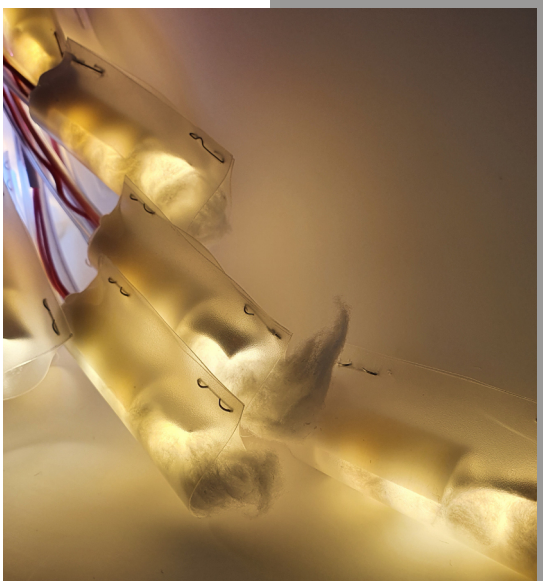


Figure 25

Transportation of the Mind

As an inspiration to take the Reed light further, I looked at plants. The flower of a plant is connected to the roots via the stem. If you disconnected the flower from the stem, it would become self-reliant and wither and die. The stem still attached to the roots, may grow another flower in place of the missing flower. The original flower, however, can be placed back into another pot and continue to live.

This idea of flowers as a system drove the next iteration of the Reed light. It looked at how we can use individual nodes and connect them to a base or a stem to give each node power. Building onto other nodes allows the user to create and make the lighting solution their own. There could also be other bases, similar to having different plants around the house. The user will therefore have the ability to change their environment, activating their constructive imagination and allowing them to transport their mind into another world.

Inspired by plant walls and how they encourage you to stop and take them in. I looked at how I could develop the Reed light into something of this nature. Something that makes you stop and reflect on the experience at hand. The flower wall holds the possibility of enhancing the level of ludic engagement by allowing multiple ways to explore and change the design to your will. The flower wall explores this idea of creating a centrepiece that purses our socio-pleasures, pushing the design to be a part of the environment and the conversation.

From this, I developed the Reed light to be integrated into the form of a pillar. I transitioned from designing a piece for the wall to creating a pillar as a pillar would enhance the plant-like imagery of the Reeds as the curve faces of the pillar pushes the individual Reeds out at different angles. In contrast, the wall light may cause the individual Reeds to become relatively flat.

The Reed lights explored how we can transform and transport the user to another world through changing the environment. The scale and form of the lights guided the user into evoking a moment of reflection. However, due to the form of the lights it demands the user to imagine themselves in another world. In conjunction with this, the customization of the light may fall into the realm of the mundane as the user may find a layout they like and not feel a need to change it. The interaction of the lights needs to be more integrated with the most basic of functions the light serves as this will encourage the user to operate and change the way the light functions whenever they want to use it.

I have discussed how my earlier iteration can become a point of discussion increasing the socio-pleasures as well as transporting the imagination to envision ourselves as part of an alien world. This idea of creating an environment that can facilitate an exploration of our imagination was a key idea that I pursued into my next iterations. Instead of evoking our reflective imagination through creating a form that pushes the user into a moment of reflection. I instead look at a lighting solution with the primary purpose of facilitating this moment of reflection. The individual can embrace the light allowing their mind to wander, reflecting on their day or on what they are feeling. I wanted to explore this idea while still allowing the individual to be able to interact with the lighting solution giving them the ability to create the space and change it to how they want it.

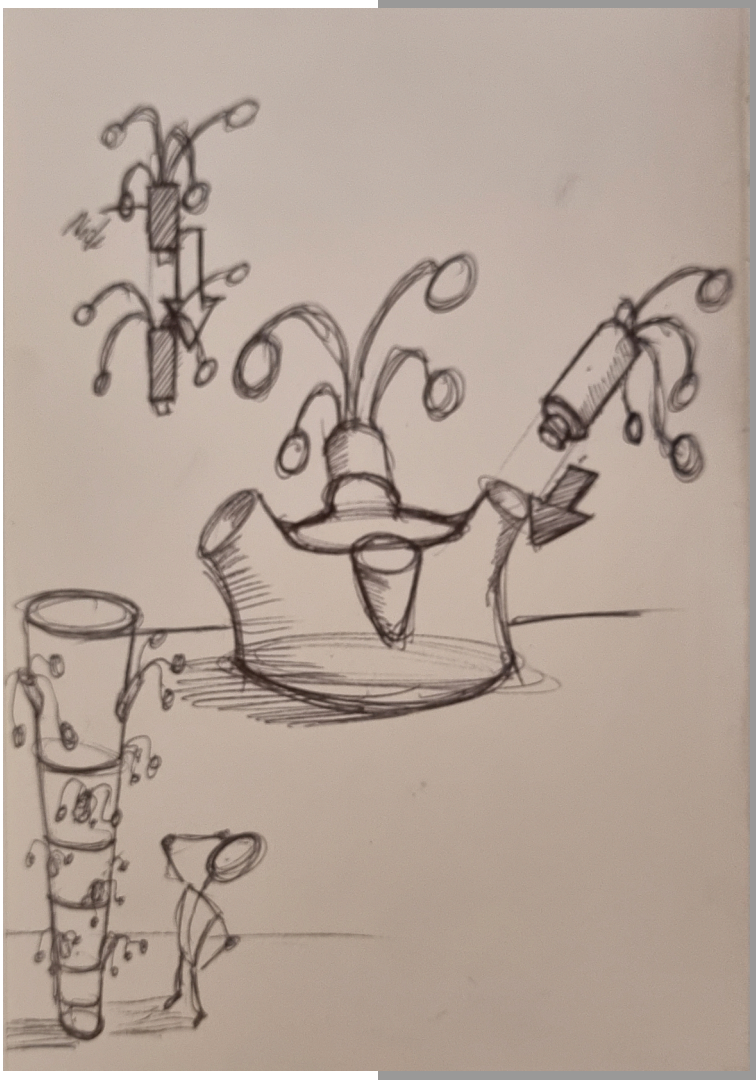


Figure 26
Sketch exploring the idea of having the reed lights be connectable as well as the idea of having a “pot” as a base

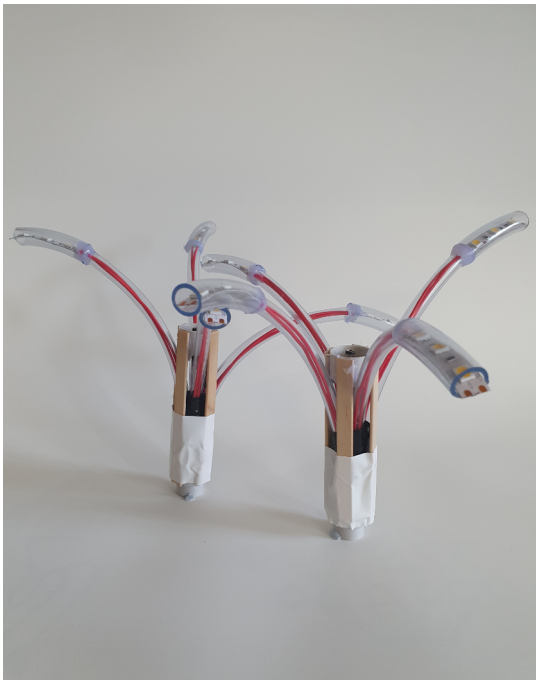


Figure 27

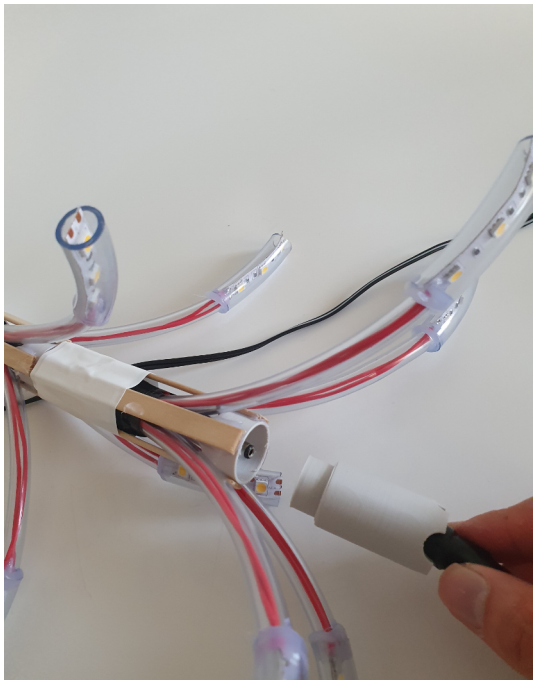


Figure 28

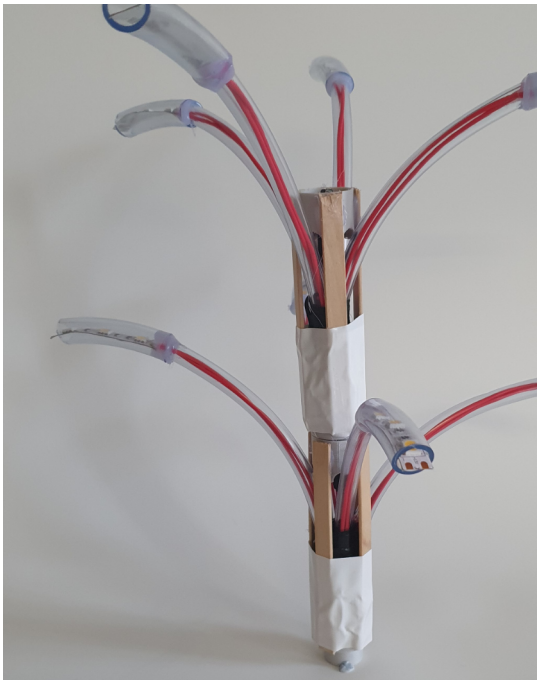


Figure 29

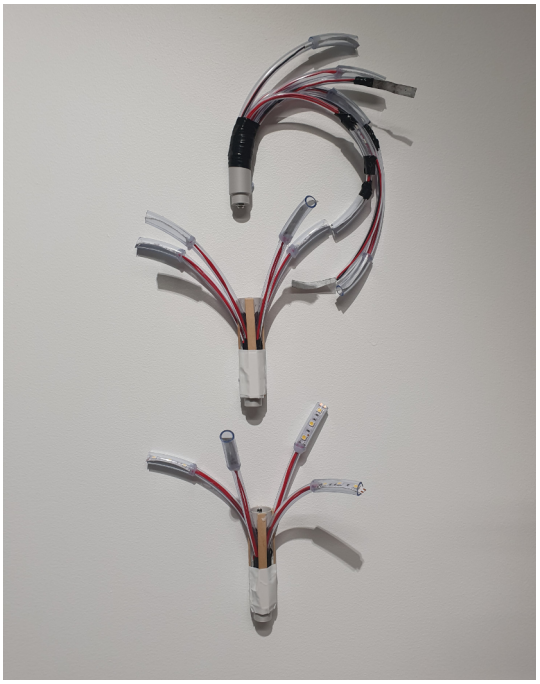


Figure 30

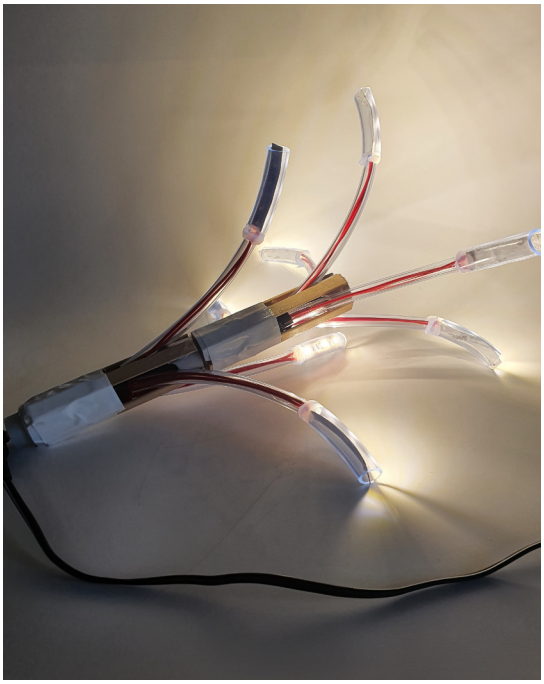


Figure 31

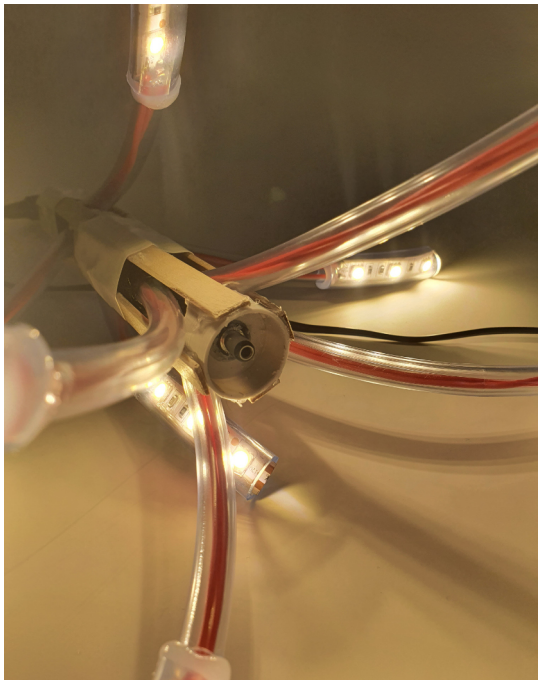


Figure 32

Figure 33

Figure 34

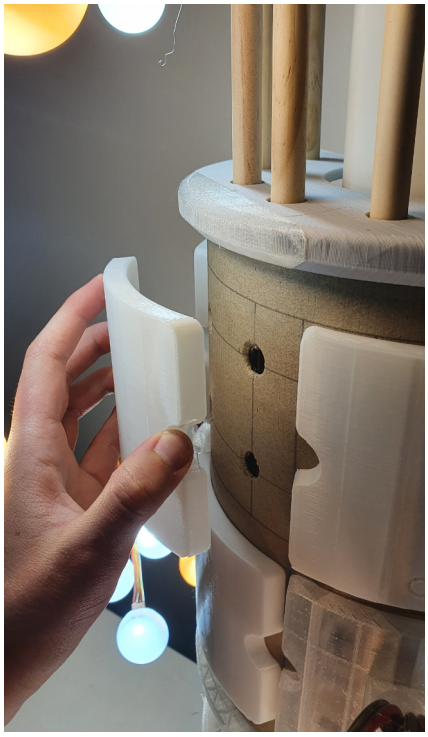


Figure 35
The Pillar is made of flat panels and Reed light panels. These panels are able to be removed and replaced allowing the user to change the design to how they want. Encouraging interaction and giving the user a sense of psycho-pleasure.

Figure 36

Figure 37

Figure 38

Figure 39

Figure 40

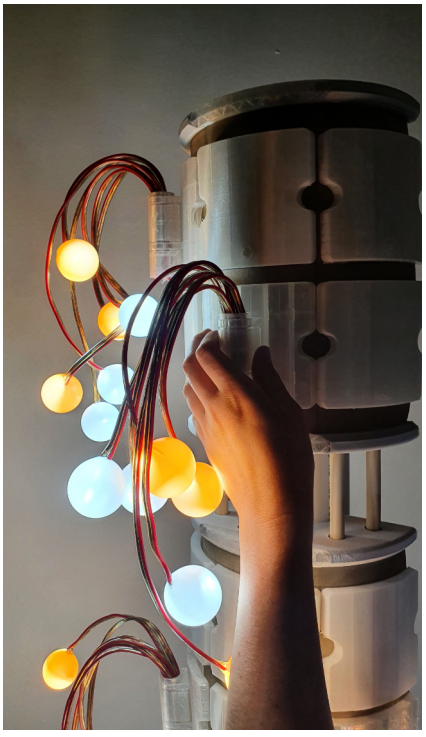


Figure 41

The Wandering Mind

I looked at kinetic architecture, which uses facades on a building that can be manipulated to change the environment without affecting the structural integrity of the building. An example of this can be seen on the Al Bahr Towers (*Al Bahar Towers Responsive Facade / Aedas | ArchDaily*). This building utilises an active façade that responds to the sun, shading the building from the heat. This is an example of how we can incorporate technology into our lives to make our environment more comfortable.

With the advancements in smart technology, changing the colour, temperature and brightness are much more accessible. By changing these aspects of lighting, we can have “control of our visual perception, mood, and performance" (Shahidi et al.). Within my bedroom, I have multiple sources of light. Two of these are “smart lights”.

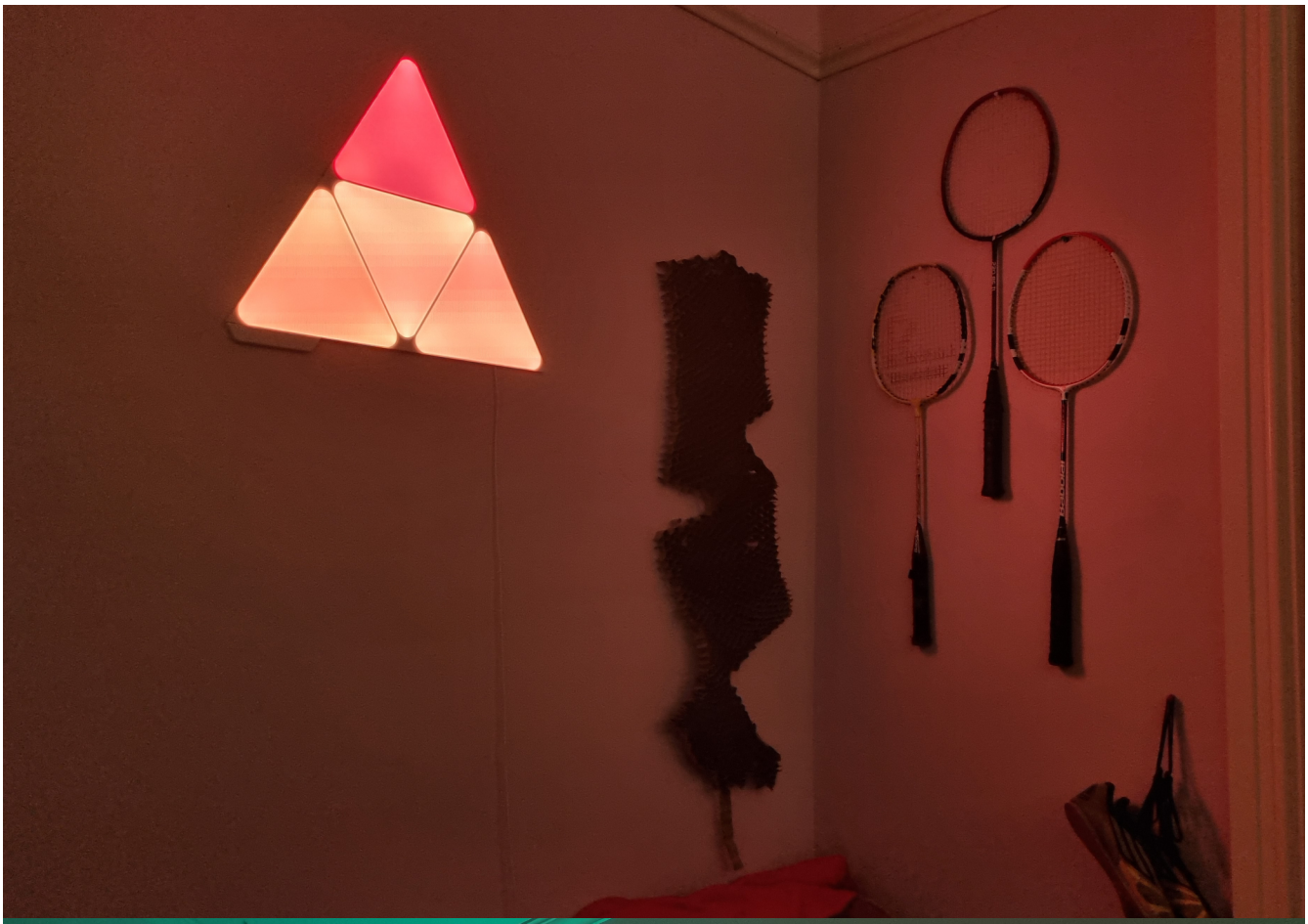
The first smart light I got was the Nano leaf light. This light comprises five triangle panels that can be arranged to make a pattern of your choice. It can react to music and physical interaction. The second light is an adjustable lighting strip that can be used however the user may see fit (such as lighting a display cabinet or the underside of a bed or desk). I have it on the wall opposite to the Nanoleaf lights.

These lights are engaging as I can change the mood, atmosphere, colour or ambience depending on the situation. Having people over, may encourage a more playful/colourful environment. In the morning, I have it set to activate at the same time as my alarm with a soft, warm white to help ease me and my eyeballs into the day. Right now, I have it set to a solid cool white to help encourage me to stay awake and focus while I type.

Even though these lights are highly malleable, allowing me to create whatever environment I need, there is no real interaction with the light as the customisation of the lights occurs within my phone. This makes me question whether the lights themselves are smart or just help make my phone smarter as it integrates deeper into my life. Suppose the lights themselves had a design element that pushed the user to physically interact with the light to change the environment. Could this increase the potential for emotional attachment as we can associate the lighting design as the key facilitator for the change in the environment?

Figure 42.(Top right) Image of the Nanoleaf lights in my room. Designed to enable users to change the pattern of the light creating Physco-pleasure as the individual is able to step back and take satisfatcion out of what they created.

Figure 43. (Bottom Right) Addressable strip lighting. I use the combiation of both lights to create interesting and fun environments within my room



After looking at kinetic architecture and the smart lighting within my room, I wanted to look at how the environment can be changed through interaction with the design. Enabling the user to create an environment that allows the mind to wander.

Kinetic architecture is typically made up of repeated patterns that can be changed as it is usually designed for a large area. Taking the idea of repeated patterns, I explored how we could interact with a pattern to allow us to change the lighting environment. I initially started with a honeycomb pattern that can be manipulated by lifting and tilting each honeycomb piece. I found that the smaller the honeycombs, the more possible changes you had. However, the smaller you make the pieces, the harder it is to change one segment without affecting the others.

I transitioned from the honeycomb pattern to that of a grid of squares to allow for faster sketching and prototyping. The grid was designed to enable people to change the angle of each panel, allowing light to pass through the gaps.

Users can engage with the wall light, exploring ways to change the visual look of the light. This ludic engagement between the user and the light enabled the lighting design to become self-motivational as the user has countless possible patterns and images that can be created, pushing the user’s constructive imagination, and motivating a need to try out different combinations and patterns. Since each square will still block the light, even at their maximin tilting angle, the entirety of the wall light will help create an ambience that allows the mind to wander and reflect.

Juhani Pallasama discusses the idea that shadows and dim lighting environments can evoke our imagination by disabling that dominant nature of vision and allowing our other senses to come forward (Pallasmaa 46) The Grid light explores this idea in combination with ludic engagement.

Even though the grid light holds a lot of potential in the various ways, create patterns and images, I found that returning all the panels to being flat was tedious and could negatively impact the user's behavioural level, especially if it is a whole wall of lights.

Looking more at Norman's behavioural level of processing, I wanted to explore ways to maintain the same ideas as the grid light and how it changed the environment through ludic engagement. Through the grid light, I realised that I needed to consider the whole product experience from the initial interaction through to returning the design to its natural state to ensure no points within the product experience can negatively impact the behavioural level.

Figure 44

Figure 45

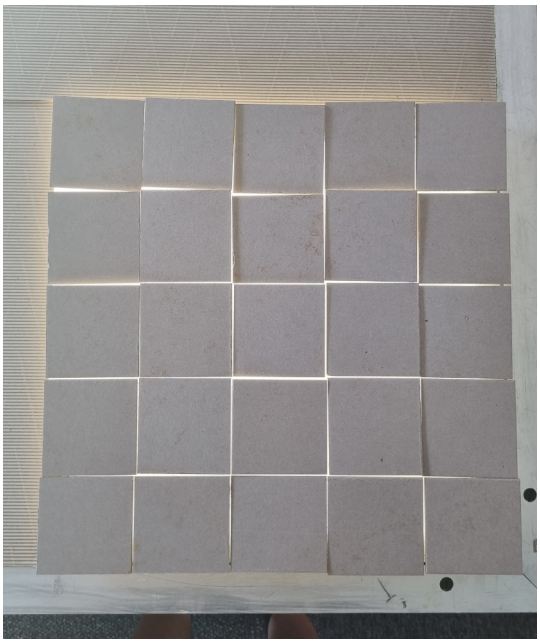


Figure 46

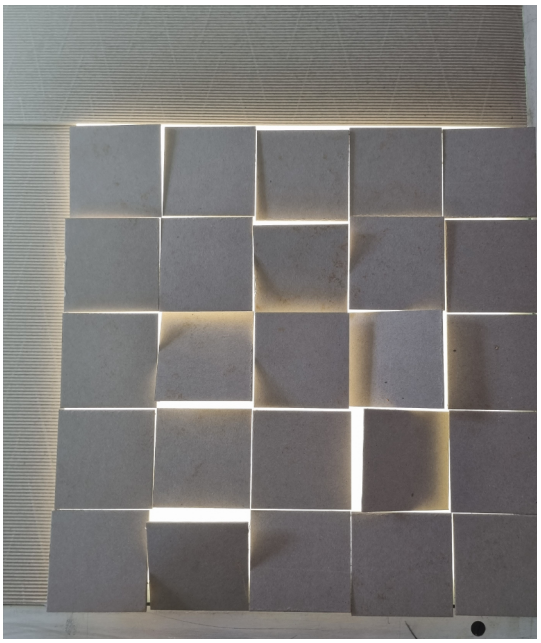


Figure 47

Figure 48

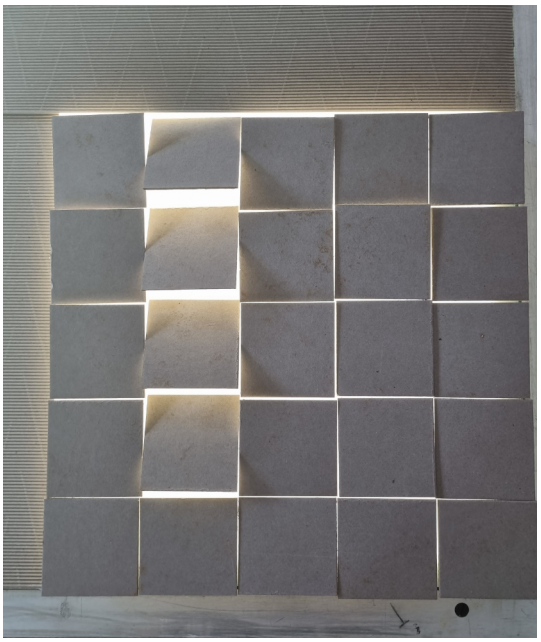


Figure 49

Another form of interaction I looked at was the movements of pulling and compressing a material to reveal the light. Both movements are simple and easy to do, so the action does not obstruct the user experience by having them need understand and interact with it.

The pulling motion had an element of surprise as the slits in the material opened to reveal the light. However, the lighting quality was undiffused and blinding. The lighting strip was separate from the material as it could not perform the same pulling movement as the material. Comparatively, the material that was able to be compressed had a softer lighting quality, and the strip light was able to follow the direction of the material. The shape created by compressing the material was much more beautiful than the pulling material.

I decided to explore the motion of compressing material to reveal the light further as the shape of the material, when compressed, had a level of aesthetic beauty. This beauty could trigger a person's visceral level of processing, pushing them to interact and experience the light.

I looked at having multiple “slats” parallel to each other that could be contracted independently to create a wave-like form. I initially tested the multiple slats without lights as all my previous iterations have only considered the experience of the light in on the state. This would lead to dissatisfaction when they are off. I also believe that if the forms created when the light is off still maintained a level of beauty, then the integration of the lights will only serve to enhance this beauty.

This test was successful in inviting ludic engagement. The different heights created through contracting the slats were found to be satisfying and visually appealing. The knobs at the end of each slate impacted the parallel lines and detracted from the design. I argue that they were there to help communicate the interaction better to the user but agreed that another system might be better. However, before I did this, I wanted to see what the experience was like with lights incorporated. I initially placed the slats on a light table. The slats' bending increased the amount of light in the environment; however, the light did not have the same softness as it did in the initial test.

By attaching the lights on the back of the slats, there was a significant difference in the light produced. The light was softer, but the top of the slats were more interesting as the light would spill out onto the neighbouring slats creating high contrast between the light and shadows.

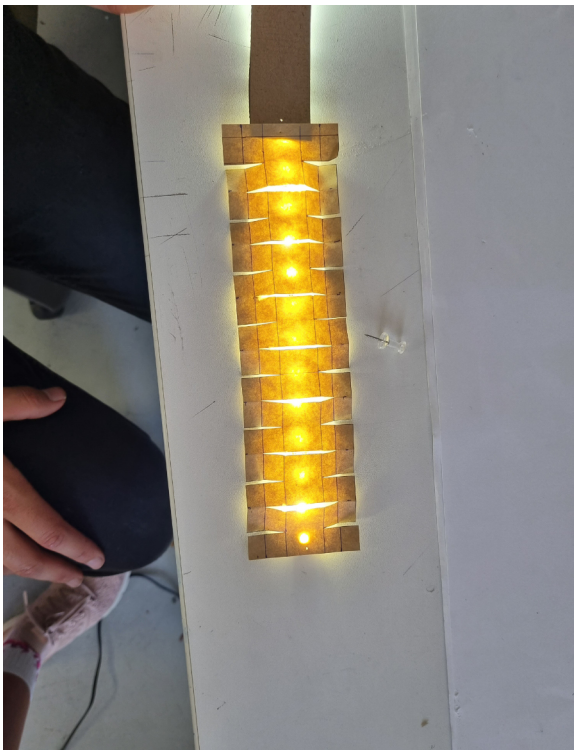


Figure 50

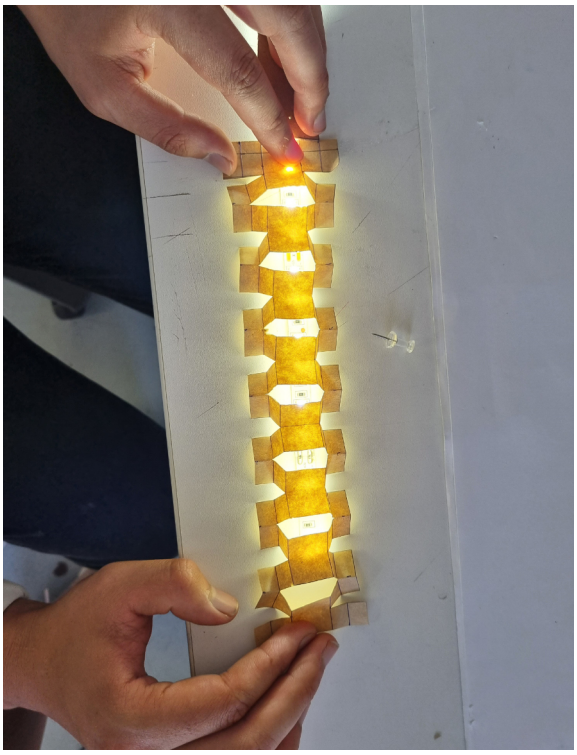


Figure 51. Pulling to reveal light.

Figure 52

Figure 53. Pushing to reveal light.

Figure 54

Figure 55

Figure 54 and figure 55 were digital drawings of how I envisioned the grid and the slats as lighting concepts within a space.

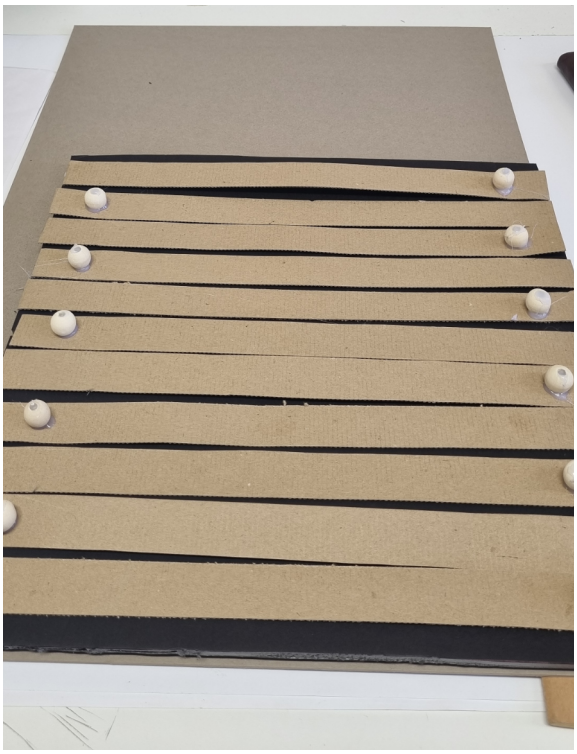


Figure 56.
Looking at how I can create a repetiting pattern that enables ludic engagment encouraging the user to explore and create different patterns

Figure 57

Figure 58

How the lights look with light. As the slats bend and contract more light is able to fill a space

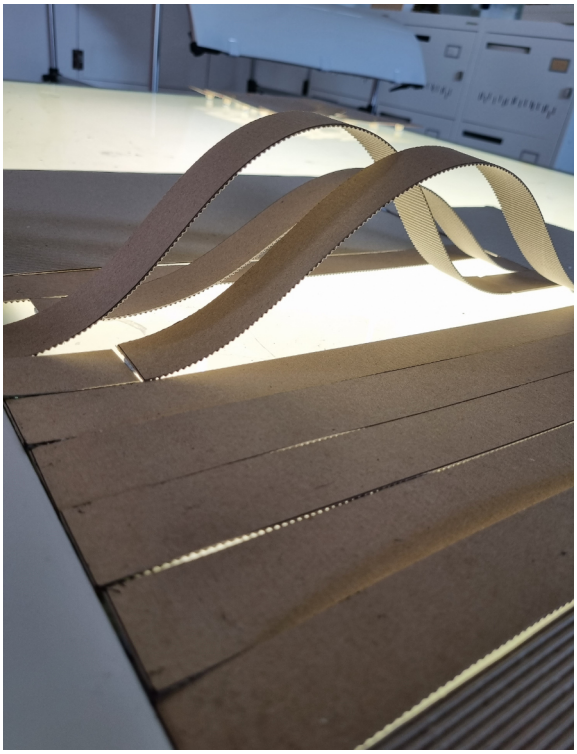


Figure 59

Figure 60

Figure 61

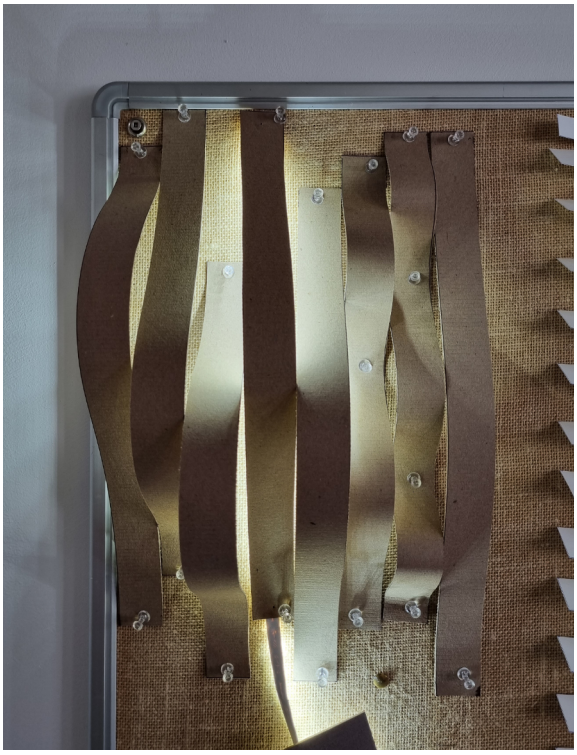


Figure 62

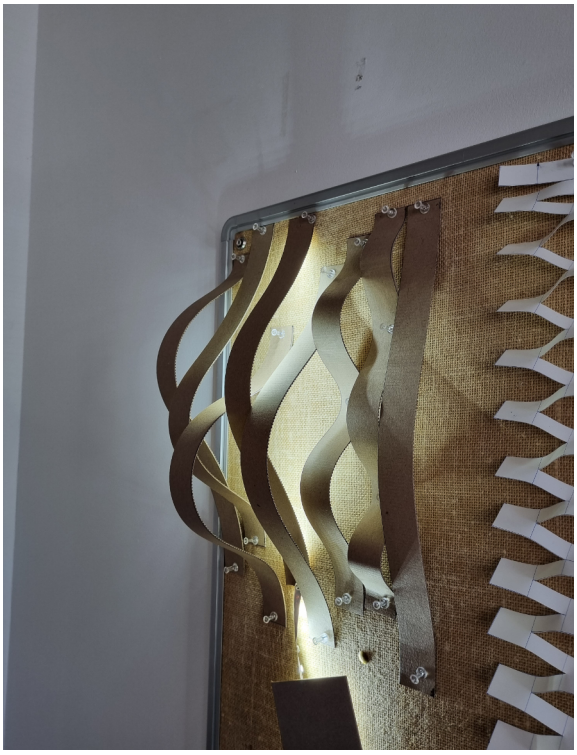


Figure 63
“Pallasmaa states how “bright lights serve to paralyse our imagination” (Pallasmaa 46). Through having the lights on the back of the slats I am able to have the effect on the light without paralysing the imagination

It was at this point that I started thinking more about materiality. I needed a flexible material. I initially looked at different sheet metals. But the cold look of metal would contrast the warmth of the light. I also looked at strips of veneer. They had the warmth I wanted but tended to snap at the size. I then investigated bamboo sheets as bamboo is flexible, easily sourced, and has a warm natural tone that fits most home environment.

As I waited for bamboo, I looked a bit more at scale as I was still worried that the bamboo might snap under stress. It was suggested that contracting a longer stirp would allow the material to let a lot of light pass while not putting a lot of stress on the material. In contrast, a wider strip would enable the strain to spread across a wider area.

I found that by working at a bigger scale, the wall light became more of a statement and felt more integrated with the environment.

It was recognised that there was a need for a way to operate the light that speaks to the user allowing them to use their knowledge of other objects to understand how to use it easily. After looking at different ideas. The idea of using pulleys and drawstrings came to mind.

I initially tested different compositions exploring how they may communicate to the user and how the composition of the drawstrings can be a part of the design and not just hidden away. Taking one of the compositions into the rapid prototyping stage, I looked at the movement of the concept. The light produced fell in line with the ideas of Pallasmaa, creating a dimly lit environment, allowing for the exploration of our imagination. The light helps carve out a space within a room that facilitates the connection between people As light and shadow “stir feelings that are culturally informed enhancing the felling of community and secureness” (Bille 56-57). It allows for ludic engagement by exploring the shapes created when bending the material while allowing the user to change the light depending on their needs.

The pulling of the drawstrings was felt to be fun and intuitive. However, returning the slats to their original form was less intuitive as the slats would maintain their form requiring the user to let go and pull the slate back manually. This was considered awkward as the interaction with the drawstrings was on the left. After interacting with the drawstrings, the user would have to move to the right of the design to pull the slats back.

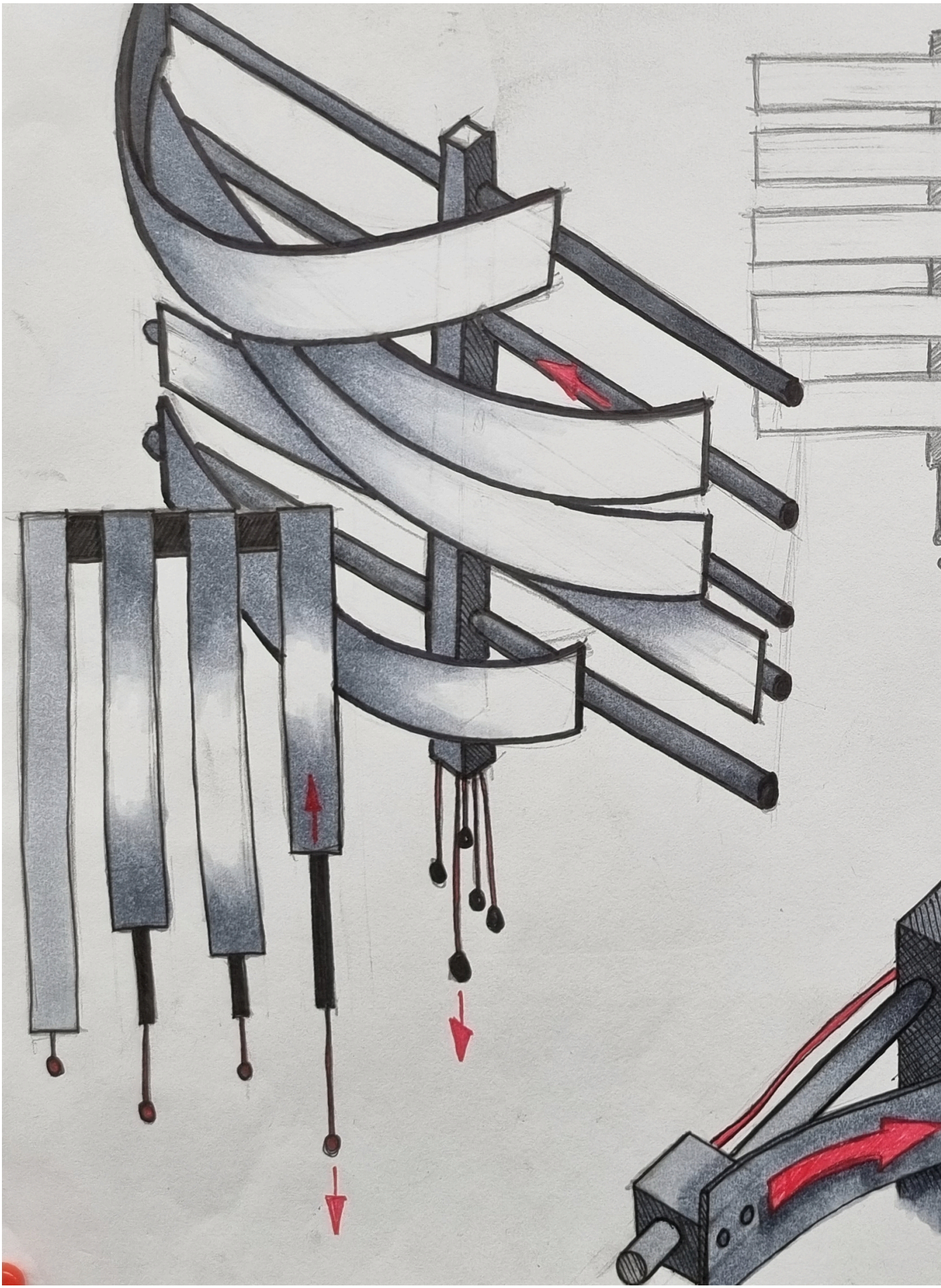
I explored how I could allow the material to return to its original shape by utilising the natural tension of the material. This, however, meant that I needed to find a way to enable the material to stay in the form the user created. I did this by incorporating cord pullers that require the user to depress them to allow them to pull on the drawstring. Letting go of the cord puller created enough friction on the string to stop the slate from returning to its natural form.

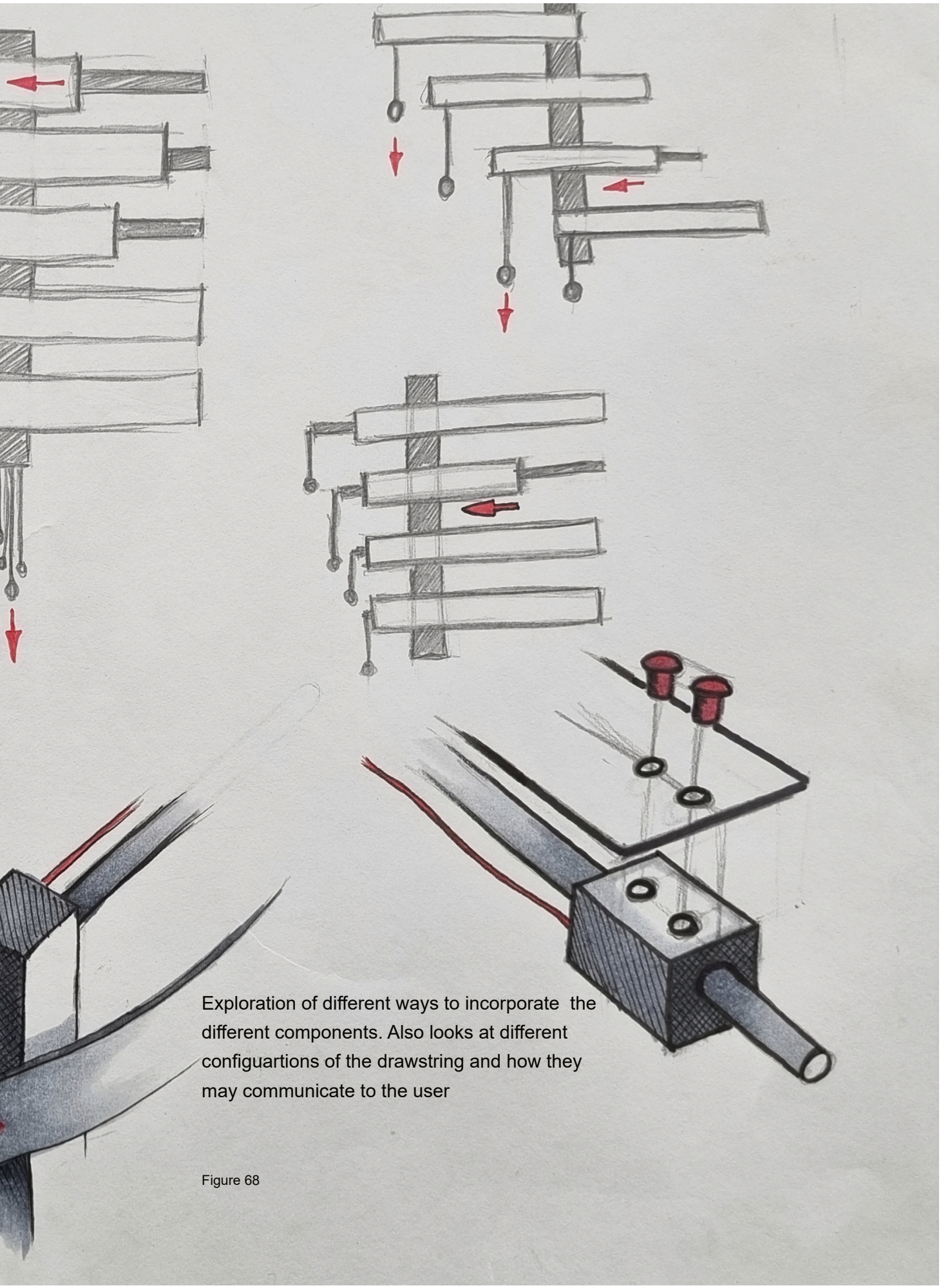
Figure 64

Figure 65

Figure 66 Testing the flexibility of the bamboo

Figure 67. Testing the scale and proportions





Exploration of different ways to incorporate the different components. Also looks at different configuartions of the drawstring and how they may communicate to the user

Figure 68

Figure 11. Scale testing. Looking at the feel of the design at a larger scale.

Figure 69

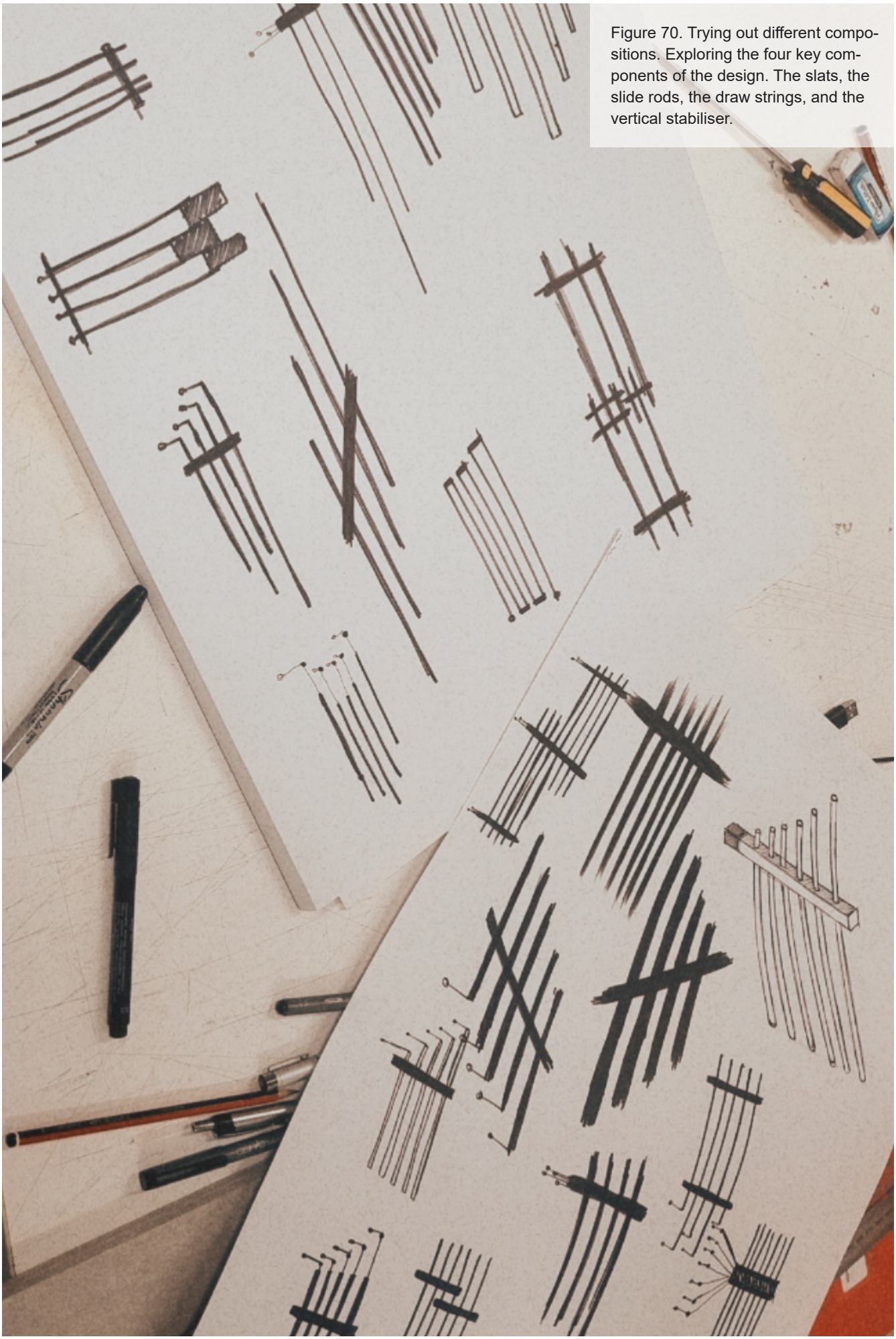


Figure 70. Trying out different compositions. Exploring the four key components of the design. The slats, the slide rods, the draw strings, and the vertical stabiliser.

Figure 71

Figure 72

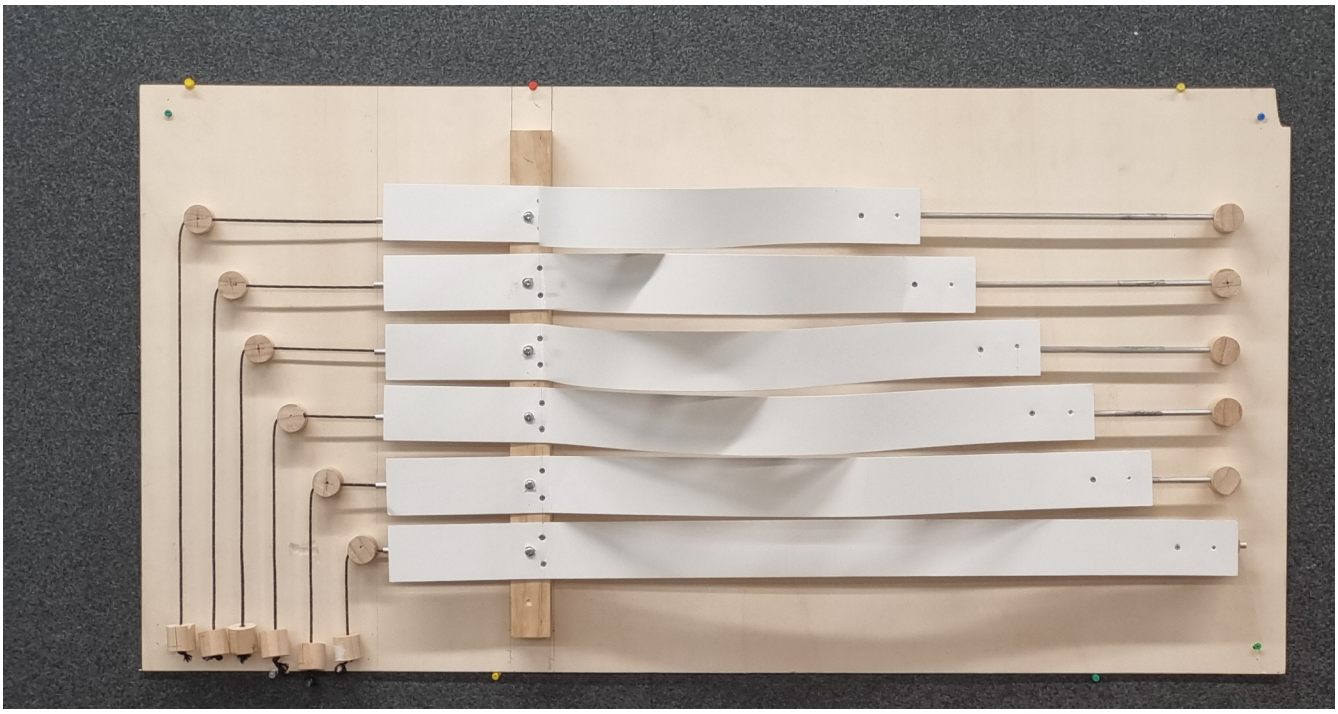


Figure 73

The initial prototype of the design explores how the material bends in combination with the light.

As the bamboo bends it pushes down onto the rod creating a lot of friction which allows the bamboo to keep its shape. However, this means the user has to go to the right side of the design and pull the slats straight.

Refinement of this design looks at simplifying the action required to bend and straighten the bamboo.

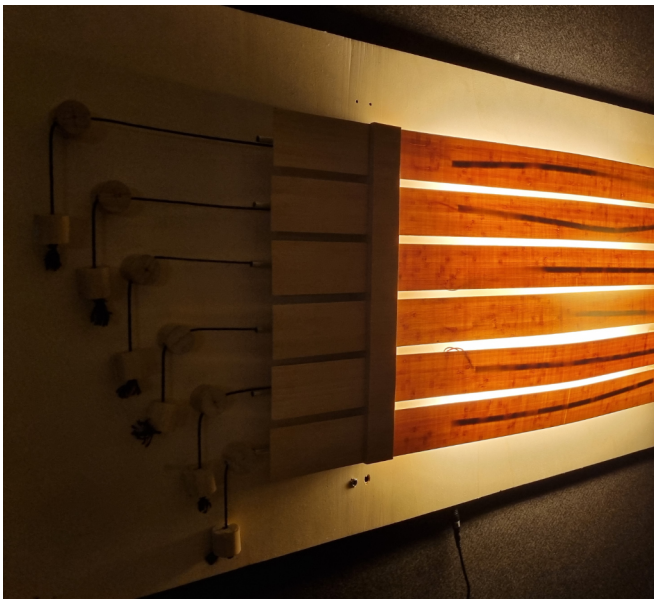


Figure 74

Figure 75

Figure 76

Figure 77

Figure 78

Figure 79. The parts of the final design.

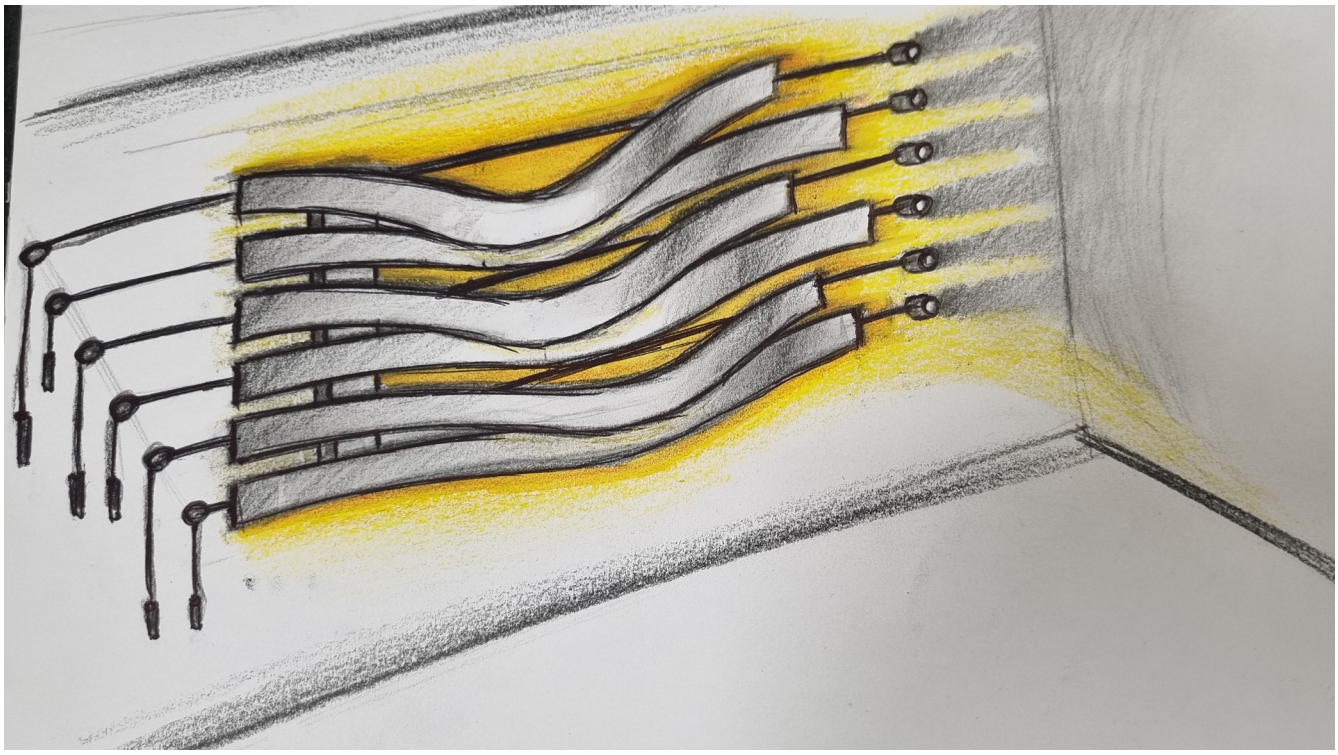


Figure 80

Figure 81

Figure 82

Figure 83

Figure 84

Figure 85

Figure 86

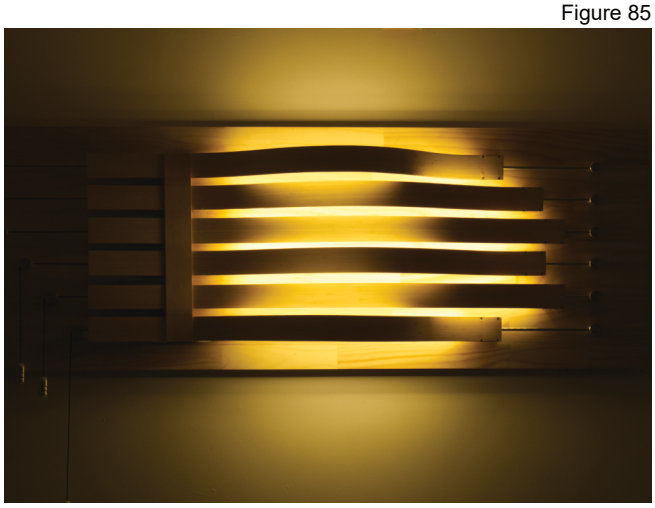


Figure 87

Figure 88

Figure 89

Figure 90

Figure 92

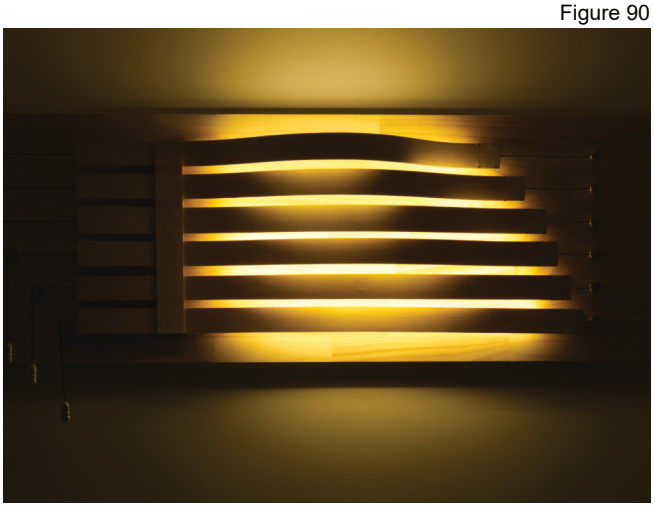


Figure 93

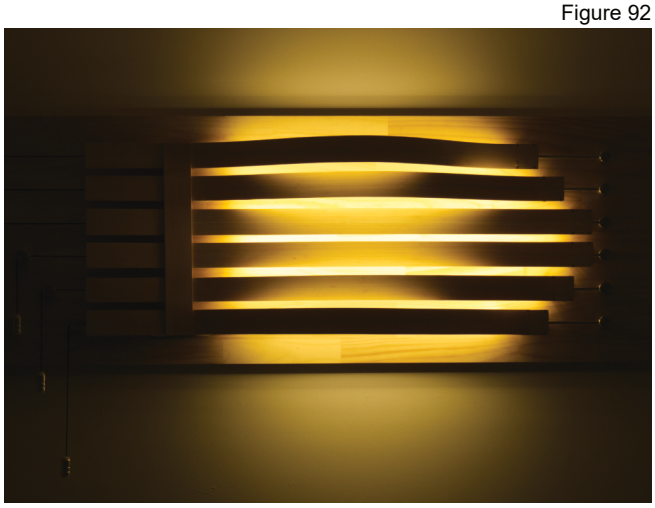


Figure 94

Figure 95

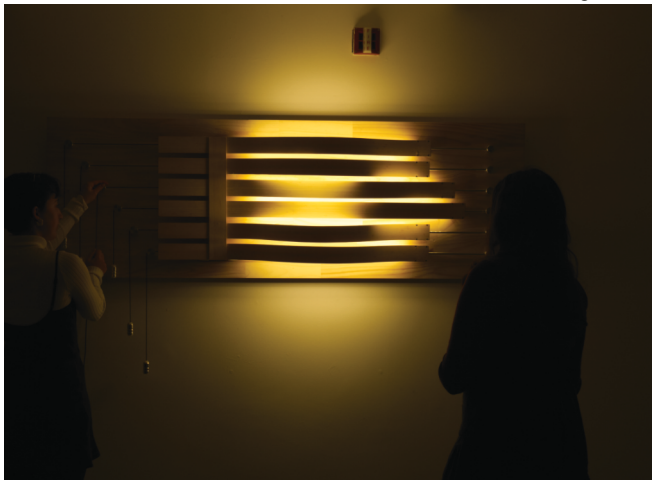


Figure 96

Figure 97

Figure 98

Figure 99

Figure 99

Figure 100.
The string is able to po be pulled down eaily once the individual pushes down on the cord puller, releasing the friction on the string and allowing the slats top be bent

Figure 101

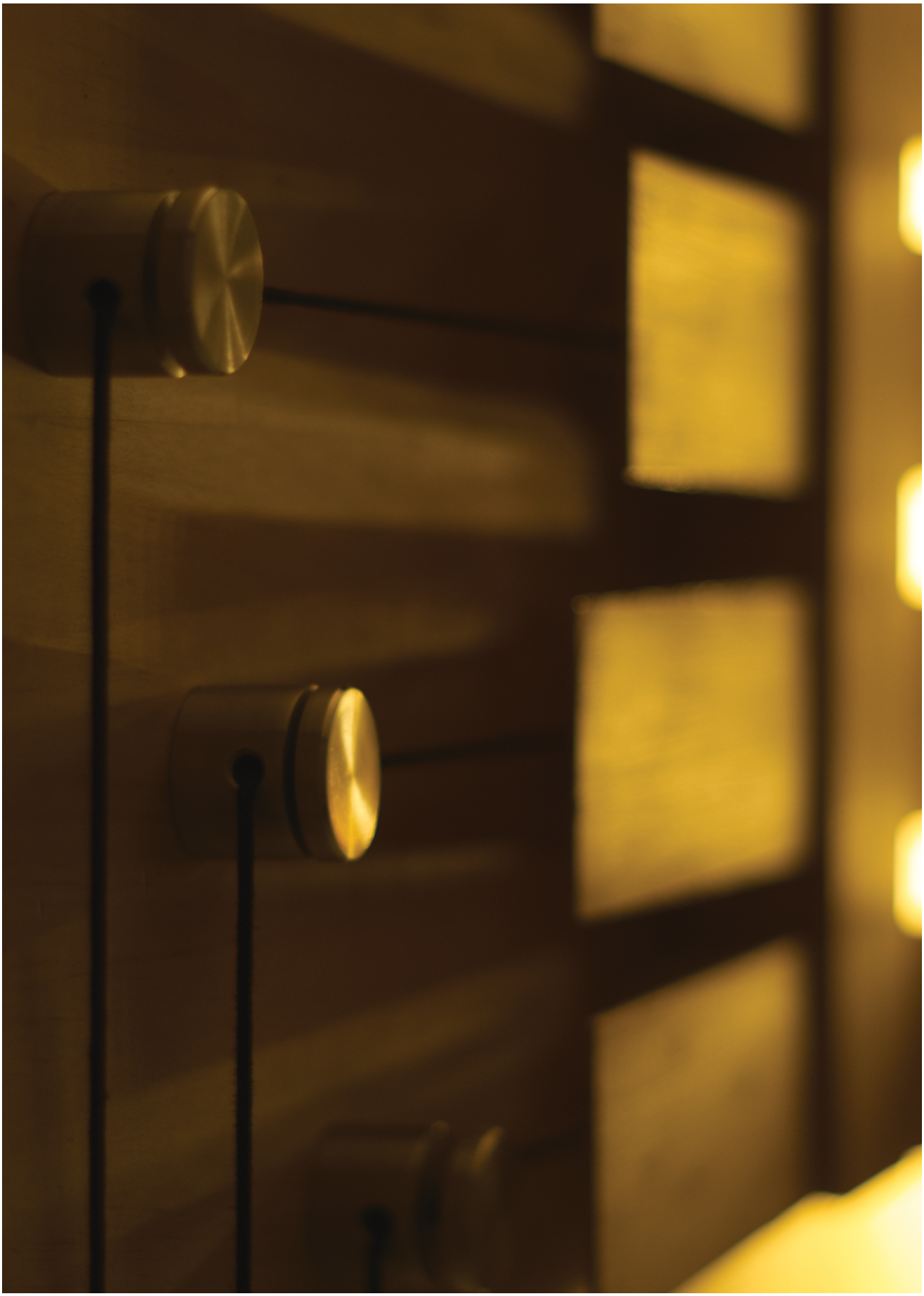


Figure 102

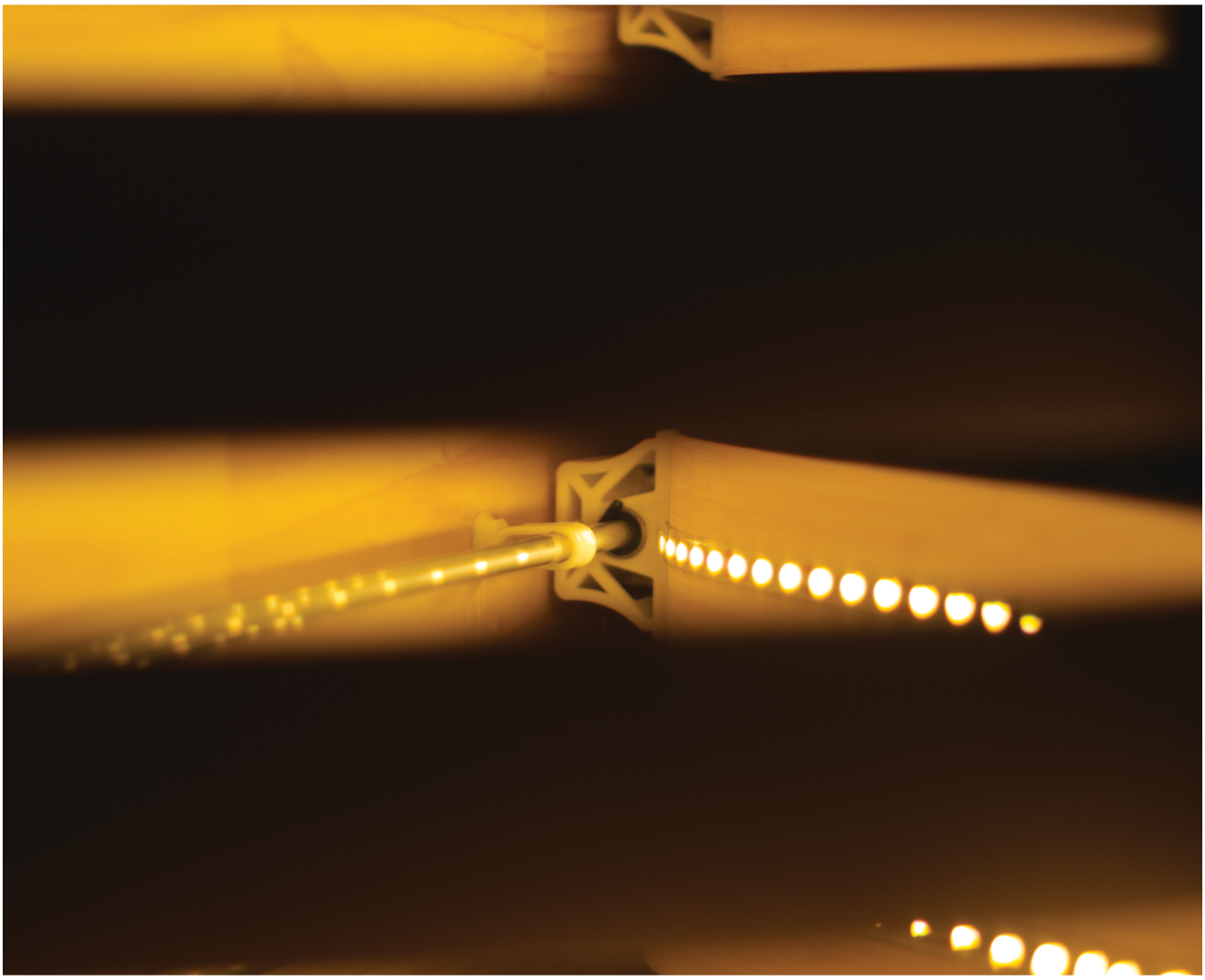


Figure 103

A Moment of Reflection

Through my research, I wanted to explore how we can create potential for emotional attachment to occur by triggering our imagination. Through a reflective iterative process, I was able to explore a wide range of ideas. This project looks at counteracting the rate at which we consume by enabling a connection to be formed. It is the fast-paced nature of the world we live in which has made me realise the significance of my design as it facilitates a space that allows us to slow down, connect with others, unwind and reflect. It is when we take the time to stop and reflect where we are able to create more fulfilling experience.

Juhani Pallasmaa's ideas on the effect of light within a space helped guide my final design to realise the effect of ambience on a space and the interactions that it facilitates. My final design explores how the creation of an environment can create a space for people to connect and converse. This design can be enjoyed by people as a group or by themselves. Through the socio-pleasures the light provides, the design facilitates emotional attachment towards it.

The design can allow people to interact with it through ludic engagement to create a different lighting environment encouraging. For example, an intimate environment between a couple of people may encourage them to have fewer slats open. While a large group may open up multiple slats to allow the light to encompass everyone within the space. In this way it can create different ambiances to suit different situations. As it aims to become the centrepiece of a room, it elicits emotions of attachment through the ideas of socio-pleasure by enhancing the relationship between others, facilitating conversation, and creating excitement by allowing the owner of the light to show people how it works, enabling psycho-pleasure as well.

The interaction with the light can enable aesthetic pleasure in a visual sense by allowing people to change the light to suit their preferences. Interaction with the drawstrings may elicit aesthetic pleasure, both by physically interacting with them on the left of the design and the resulting movement on the right. It is also through this unexpected movement that we may have a moment of reflection. To experience their creation, the user must step back to reflect on the light as you cannot see the shapes and forms created when interacting with the drawstrings. The experience of the light also changes depending on where you are sitting in the room. Therefore, this can enhance a deeper connection between people, pushing them to collaborate to create different shapes, patterns and ambiances.

I would like to continue developing this project and explore how I can create more potential for ludic engagement, socio-pleasure, psycho-pleasure and emotional attachment.

The nature of designing for emotional attachment has meant that my focus was on the experience the light has the potential of creating. I would like to develop this light to resolve technical issues which arose while creating and interacting with the final design. The bamboo slats are somewhat fragile and may break and need replacing, leading to frustration and negative attachment. I would like to explore alternative flexible and durable materials which would enhance the ludic engagement for the user, and by extension enhance the potential for emotional attachment. I would also like to refine the puller system to create a smoother user experience. Further exploration of this project will examine how I could solve these issues and develop the light further.

I also want to look at the potential for having all the components separate, allowing the user to create their own compositions at different scales to suit their space and needs. This would allow for another layer of ludic engagement in the assembly and reconfigurability of the product.

Figure 104

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