

**A LIGHTING PRODCUTS APPLICATION  
FOR A DESIGN STUDIO MOTHER GONE MAD**

A PROJECT REPORT

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS  
FOR THE AWARD OF THE DEGREE OF

MASTER OF DESIGN  
IN  
**INTERACTION DESIGN**

Submitted by:

**MS LOVELY VERMA  
2K21/MDPD/07**

Under the supervision of

**DR. RAVINDRA SINGH**



**DEPARTMENT OF DESIGN  
DELHI TECHNOLOGICAL UNIVERSITY**  
(Formerly Delhi College of Engineering)  
Bawana Road, Delhi – 110042

MAY, 2023  
**DEPARTMENT OF DESIGN**

**DEPARTMENT OF DESIGN  
DELHI TECHNOLOGICAL UNIVERSITY**  
(Formerly Delhi College of Engineering)  
Bawana Road, Delhi – 110042

## **CANDIDATE'S DECLARATION**

I, Ms. Lovely Verma, Roll no - 2K21/MDPD/07 student of Masters in design (Product design, hereby declare that the project Dissertation titled "A lighting products application for a design studio – Mother gone mad" which is submitted by me to the Department of Design, Delhi Technological university, Delhi in partial fulfillment of the requirement of the award of the degree of Masters of design, is original and not copied from any source without proper citation. This work has not previously formed the basis for the award of any degree, diploma associateship, fellowship or other similar title or recognition.

Place: Delhi

Date:

Ms. Lovely Verma

**DEPARTMENT OF DESIGN**  
**DELHI TECHNOLOGICAL UNIVERSITY**  
(Formerly Delhi College of Engineering)  
Bawana Road, Delhi – 110042

## **CERTIFICATE**

I hereby certify that the project Dissertation titled “A lighting products application for a design studio – Mother gone mad” which is submitted by Ms. Lovely Verma, Roll no 2K21/MDPD/07, Department of design, Delhi Technological University, Delhi in partial fulfillment of the requirement of the award of the degree of Masters of design, is a record of the project work carried out by the student under my supervision. To the best of my knowledge this work has not been submitted in half or full for nay Degree or Diploma to this University of elsewhere.

Place: Delhi

Date:

Dr. Ravindar Singh

**COMPANY'S CERTIFICATE**

## **ACKNOWLEDGEMENT**

As student, I am unexposed, inexperienced and learning. My notions and views of various matter are primarily based on presumptions and imagination that considerable differ from reality. It is only through experience that I realized what really exists. I offer my sincere gratitude to Mrs. Ritika Nanda, who gave me this opportunity to experience the vitality of a design studio. She had been with me throughout my Internship Project guiding me about design, material and machinery. Also a big thanks to every artisan and production people to help me gain material knowledge, functional knowledge and other practical based knowledge during the period of internship. I am highly indebted to Dr. Ravindra Singh, for his guidance and constant supervision and this opportunity to express my profound gratitude and deep regards to my teacher for their exemplary guidance, monitoring and constant encouragement throughout the course of this project. The blessing, guidance given by them from time to time shall carry me a long way in the journey of my life on which i am about to embark. I am obliged to staff members of the department for the valuable information provided by them in their respective fields. I am grateful for their cooperation during the period of my assignment. Lastly, I thank my parents, sister and friends for their constant support and encouragement without which this Internship project would not be possible.

## **ABSTRACT**

A design project of lighting products created by following a design process to generate the final product. The product define a sense of future sustainability by using recycled material and the aesthetics define a trend inspired mood board along with solving a problem discomfort to eyes caused by the glare created through the light source form the lighting fixture functionally and finding a balance of luminance in the light. Exploring the side of recycled materials, organic forms, colors, textures inspired from mood board and a problem solving functionality to the product gives great opportunity to design a vast set of concepts and explore with different materials and functionality.

## **KEY WORDS**

Lighting, glare, discomfort to eyes, sustainable, Balance of luminance, Light disturbance, diffusion and reflection, Light source placement, Surface finish and texture

# TABLE OF CONTENT

Sr No.	Title	Page No
a.	Candidates certificate	i
b.	Certificate	ii
c.	Companies certificate	iii
d.	Acknowledgement	iv
e.	Abstract	v
1.	Introduction to project	1
2.	Introduction to company	2 -3
3.	Design process	3
4.	Discover / Empathize	4 - 9
	4.1 Research and background study	4 - 5
	4.2 Mind mapping	6
	4.3 User and customer study ( Needs and requirements)	6 - 7
	4.4 Market study and comparative analysis	7 - 8
	4.5 Trend study in forms, colors and technology	8 - 10
5.	Define	10 -12
	5.1 Design Brief	10
	5.2 Design Criteria	10
	5.3 Customer profile/persona	11
	5.4 Problem statement	11
	5.5 Value generation	11
	5.6 Mood board	12
	5.7 Concept note	13
6.	Ideate	14 - 16
	6.1 Initial concepts and sketches	14
	6.2 Final concepts and detailed drawings	15 - 16
7.	Prototype ( final product) - Testing	17 - 22
8.	Conclusion	22
9.	Bibliography	23

# 1. INTRODUCTION TO PROJECT

In this design project, I'll be exploring a creative range of lighting products like suspensions lights, floor lamps, table lamps and more of the decorative lighting. The design process flows a consecutive stages for initial research and discover to defining the design brief and ultimately creating a final product. To begin, I will conduct primary and secondary research to understand the current lighting market, as well as emerging trends in lighting design. Later conducting user studies to gain insights into the needs and requirements of our target users, and comparative and market studies to identify gaps in the market and potential opportunities.

Once the research stage is completed and have gathered the findings, moving onto the define phase of the design process where I'll be specifying the design brief, criteria, a user persona, meanwhile creating a problem statement and generate ideas for value creations. Following to this stage, ideating and sketching few design concepts and refining them further considering the priority list of aspects to be considered while selecting a final concept that justifies a design process and problem statement and generating a value form the final product. Throughout this phase, accounting factors would be, forms, shapes, colors, materials, textures etc. inspired from a mood board, functionality form a problem point of view and an output that ensures my designs are both functionally and aesthetically appealing.

Later once a concert product concept is finalized, stepping into the production phase of making the final product. At the end, the main ail revolves around ensuring that my product justifies and validated the complete design process and come out to a functionally and aesthetically appealing to the viewer.



## 2. INTRODUCTION TO COMPANY

The logo for Mother Gone Mad Design Studio is displayed on a bright yellow rectangular background. The text is arranged in four lines: 'MOTHER', 'GONE', 'MAD', and 'DESIGN STUDIO', all in a clean, black, sans-serif font.

📷 mother\_gone\_mad | 🌐 mgm design studio | ✉ ritika.mgm@gmail.com | 🌐 <https://www.mothersgonemaddesign.com>

### 2.1 About

The company motto is "who wants bright daylight when you can turn the lights on" MOTHER GONE MAD DESIGN STUDIO creates custom lighting that is outside the box and modern. Our products aim to add warmth and character to a completely neutral interior. They reflect personalities who follow their hearts, not trends in home decorating. Our handcrafted, limited edition range offers exclusivity to all the trendy coffee shops we love and identify with our crazy designs. Industrial, retro vintage or shabby chic with a theatrical flair, Mother Gone Mad Design Studio has a story or two to tell. Each room has its own personality, its size. Its shape, the colors of the people in the room define the whole personality. A wide range of materials from metal, marble, wood, rust and fabric. Clay, plastic, etc. they love to create something and an idea.

### 2.2 History and achievements

The company has a history of working since 2014 and has successfully completed projects by brightening their space and lives. The company has been appeared and written about in many magazines and been praised for their work and performance. It has appeared in the following.

- The yellow sparrow in 2014
- The curated magazine blog 2014
- The home review in 2015
- The Casa viva magazine 2015
- AD architectural digest 2014-15-16
- India today homes 2016, 2019
- Home and trends 2018
- Pool 2018

### 2.3 Company functioning and Design process

The company is a small scale design studio that produces customized lighting with null machinery setup or manufacturing unit. The production takes place at outside dealers and only the assembling, packaging and shipment for the products is held at the working space of the company. The company follows a simple design process. The design studio's work flow and design process is shown as follows in fig 2.3.1

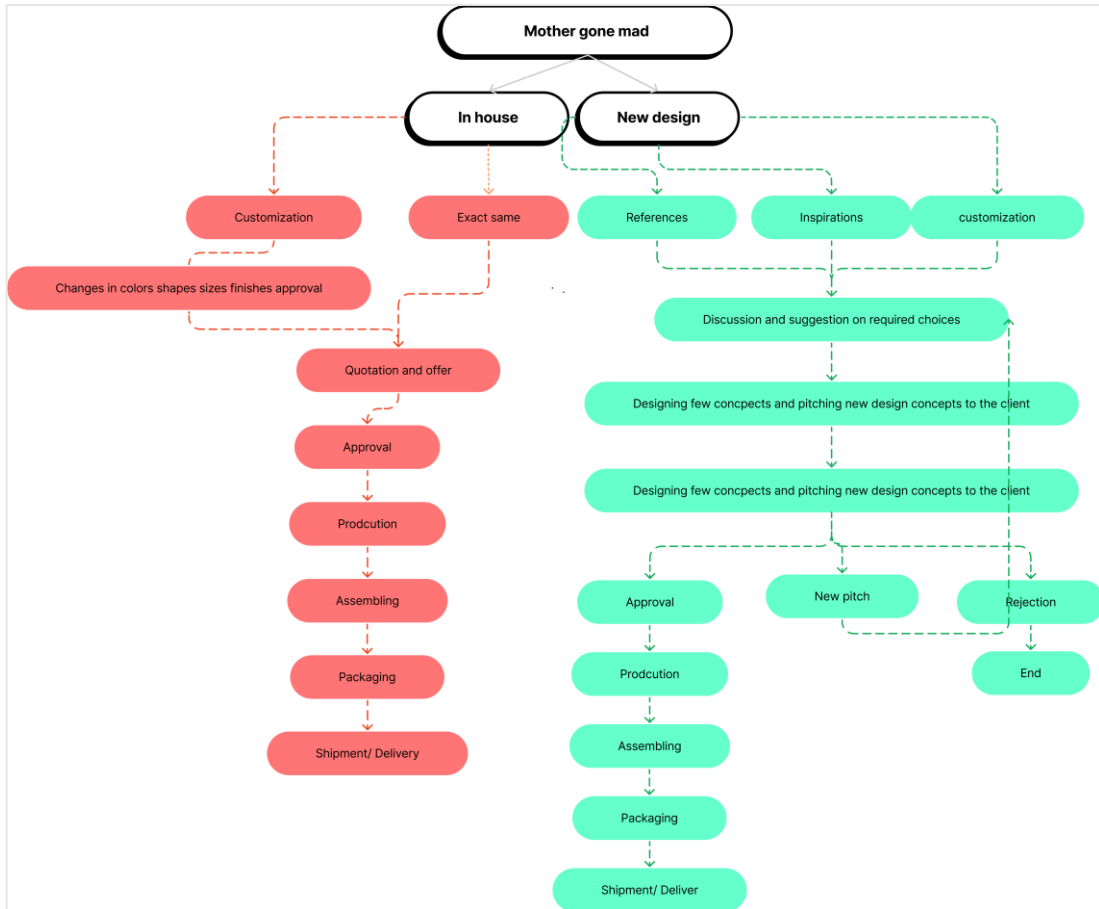


fig 2.3.1 – Work flow and Design process of MGM Design studio

### 3. DESIGN PROCESS

Design thinking is an approach to problem-solving that focuses on finding solutions. It is particularly valuable for addressing complex, undefined, or unfamiliar problems, as it helps to understand human needs, reframe problems from a human perspective, generate numerous ideas through brainstorming, and develop practical prototypes for testing. The process consists of five key stages:

**Discover and empathize:** Engage with users to gather information from their perspective and conduct comprehensive research on the topic.

**Define:** Organize the data collected during the empathy phase and identify the main problems that need to be addressed.

**Ideate:** Challenge assumptions, generate new ideas, and develop concepts through activities such as sketches, material studies, and contextual exploration.

**Prototype:** Create prototypes and refine them to develop the best possible solutions for the problems identified in the previous stages.

**Test:** Evaluate the final product or solution to identify areas for improvement and make necessary changes. This iterative process helps to rule out alternative solutions and refine the design further.

## 4. DISCOVER & EMPATHIZE

### 4.1 Research and background study

Lighting design is the art and science of creating lighting schemes for various environments, including residential, commercial, and public spaces. The purpose of lighting design is to enhance the aesthetic appeal of a space while also providing adequate lighting for its intended function.

A lighting designer works closely with architects, interior designers, and other professionals to ensure that the lighting complements the overall design of the space. The designer considers the use of the space, the desired mood or atmosphere, the natural light sources, and the type of fixtures and bulbs to be used.

There are several different types of lighting used in lighting design, including ambient, task, and accent lighting. Ambient lighting is the primary source of light in a space, while task lighting is used to illuminate specific areas for specific tasks such as reading or cooking. Accent lighting is used to highlight certain features or objects in a space, such as artwork or architectural elements.

Lighting designers must also consider energy efficiency, sustainability, and maintenance requirements when designing a lighting scheme. They may use a variety of lighting technologies, including LED, fluorescent, and incandescent bulbs. All in all, lighting design is an important part of interior design and architecture that can greatly influence the look and feel of a space.

Sustainable lighting is a term used to describe lighting options that are created to use less energy, produce less waste, and have a minimal negative impact on the environment. Energy-efficient bulbs like LED lights, which use less energy and have a longer lifespan than conventional incandescent bulbs, can be used to achieve this. Furthermore, environmentally friendly lighting can utilise natural light sources like daylight to cut down on the demand for artificial lighting. For proper vision, light is crucial. As it travels to our eyes, light strikes the objects. In this technique, we can observe the items. But occasionally, light can impair vision. Glare makes the field of vision feel brighter than it actually is because the human eye cannot adjust to it. This can induce disgust, discomfort, and even a loss of visual acuity. Glare production is directly related to the optical layout, installation height, placement, and working environment of lamps. Glare is possibly the most significant aspect of illumination quality. Glare is a feeling brought on by excessively bright luminance in the visual field. There may be discomfort, annoyance, or a loss of productivity.

Glare is often caused by a bright object against a dark background rather than a bright object alone. Contrast, which is the ratio of an object's brightness to its background, plays a role in this. While higher contrast generally makes visual tasks easier, excessive contrast leads to glare and makes the task more challenging. To reduce brightness or contrast, it is important to adhere to recommended light levels and utilize anti-glare lighting devices. These devices, such as slats or lenses, help prevent direct viewing of the light source. Additionally, indirect lighting or uplighting can create a gentle glow by evenly illuminating the ceiling. Proper arrangement of furniture can also minimize glare on work surfaces or computer screens. Luminaire specifications now often include visual comfort probability (VCP) tables for different room geometries. The VCP index indicates the percentage of people in a room who find the brightness of a lamp acceptable. Commercial premises are typically recommended to have a minimum VCP of 70, while computer rooms should aim for more than 80 VCP. (From citation 1 - January 1995)

The even distribution of light in a workspace, known as light uniformity, is an important aspect of lighting quality. While the overall lighting in a room may be sufficient, there are two factors that can affect uniformity. First, incorrect placement of luminaires based on the distance criteria, where the recommended luminaire distance exceeds the working height. Second, luminaires equipped with reflectors that restrict the spread of light. Uneven lighting can cause several issues, such as inadequate light levels in certain areas, visual discomfort when transitioning between underlit and overlit areas, and distracting bright spots and points of light on walls and floors, which diminish the overall quality of the space.

Another aspect of lighting quality is color representation, which refers to the ability of light sources to accurately depict colors. Different light sources vary in their ability to render colors correctly. The Color Rendering Index (CRI) scale is used to compare the impact of a light source on color appearance, ranging from 0 to 100. A higher CRI indicates better color reproduction and less color distortion. CRI values between 75 and 100 are considered excellent, while 65 to 75 are considered good. A range of 55 to 65 is considered fair, and below 55 is considered poor. Light sources with higher CRI make surface colors appear brighter, enhancing the aesthetics of the room. Sometimes, higher CRI sources can create the illusion of increased light levels. (from citation no 1 - January 1995)

Here are some key points related to the balance of luminance in lighting design:

**Visual Comfort:** An appropriate balance of luminance helps reduce glare and discomfort caused by excessive brightness contrasts. It ensures that the overall lighting scheme does not cause eye strain or visual fatigue.

**Uniformity:** Balancing luminance levels across a space can help minimize uneven lighting conditions. This is particularly important in areas where tasks or activities require consistent lighting levels, such as workspaces, classrooms, or retail environments.

**Contrast:** Controlled contrasts in luminance can be used to enhance the perception of depth, emphasize focal points, or create visual interest. However, extreme contrasts should be avoided, as they can lead to discomfort and distraction.

**Task-Specific Lighting:** The balance of luminance should be tailored to the specific tasks or activities being performed in a space. Different tasks may require varying lighting levels and distribution patterns to optimize visual performance and comfort.

**Ambient Lighting:** Achieving a balanced luminance between the ambient lighting and other light sources (such as task lighting or accent lighting) helps create a cohesive lighting design. This balance ensures that the ambient light neither overwhelms nor diminishes the effectiveness of other lighting elements.

**Surface Reflectance:** The reflectance properties of surfaces, such as walls, ceilings, and floors, affect the balance of luminance. Light-colored surfaces reflect more light and contribute to a brighter overall environment, while darker surfaces absorb light and create a more intimate or dramatic atmosphere.

**Lighting Controls:** Using dimmers, adjustable fixtures, or automated lighting control systems allows for dynamic adjustments in luminance levels, enabling users to adapt the lighting to their preferences and needs.

## 4.2 Mind mapping

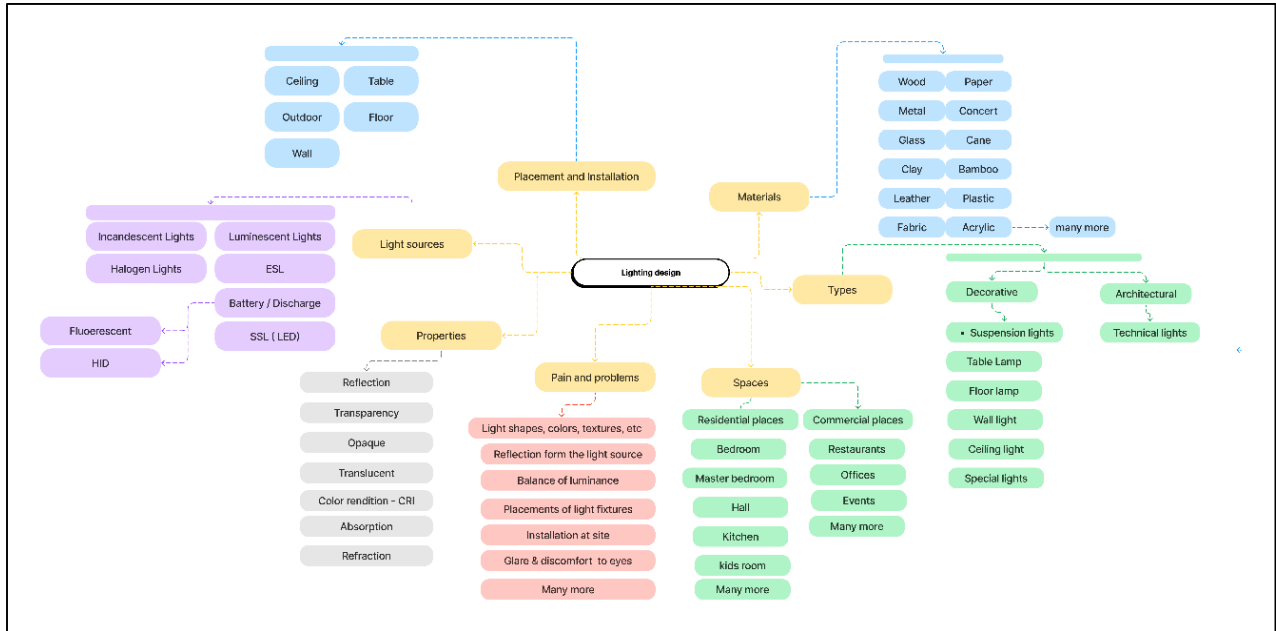


Fig 4.2.1 – Mind mapping

## 4.3 User and customer study (Needs and requirements)



fig 4.3.1 – Feedback on users

## Uncovering the information from the above analysis (fig 4.3.1)

The responses from users/clients were somewhat unexpected. The majority of users preferred ambient lighting that was comforting and soothing, rather than disturbing lights that could potentially strain the eyes. They also expressed experiencing some level of visual discomfort and eye strain due to glare from light fixtures when entering a space. However, they mentioned that as eyes are adaptive, they initially found the lighting in a new space to be annoying and disturbing. But with more time spent in that particular environment, their eyes gradually adapted and became comfortable with the lighting.

All users (100%) found the light fixtures to be annoying and causing discomfort and glare to their eyes. When purchasing lighting for their dream homes, 56% of users prioritized aesthetically appealing designs, followed by 22% who preferred sustainable and energy-saving lighting products, and another 22% who desired both sustainable and aesthetically appealing qualities.

The responses from architects and interior designers were sought to understand the problems faced by their clients (users). It was found that clients often faced challenges related to sizes, materials, and finishes when selecting light fixtures for their homes. Many clients reported problems with glare, reflection, and luminance in the space after light installation. Interestingly, glare in daylight was less likely to be a problem for clients. A significant percentage (62%) of architects acknowledged that clients often realize at a later stage that the lighting in a particular space is discomforting to the eyes and subsequently complain about it. Only 12% of clients were aware of the issue beforehand, while 25% had no awareness at all. All architects (100%) agreed to become a source of awareness regarding the problem of discomforting light fixtures and glare, using it as a selling point.

One of the challenges faced during light installation is the placement and spacing criteria, such as the height of suspension lights.

## 4.4 Market study and comparative analysis

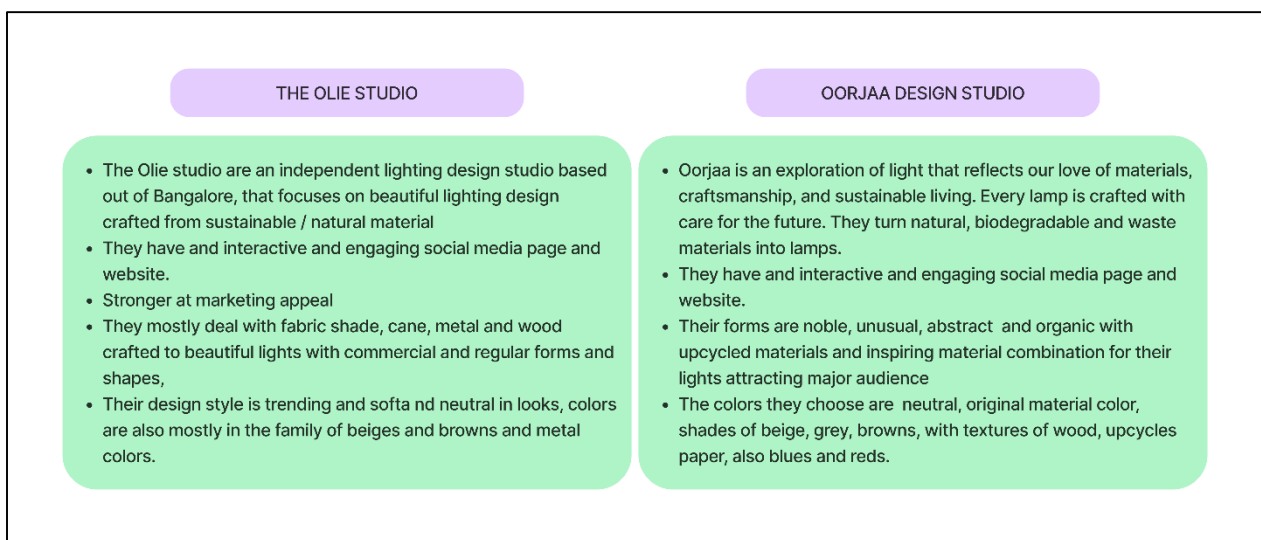


Fig 4.4.1 – Analysis on competitors

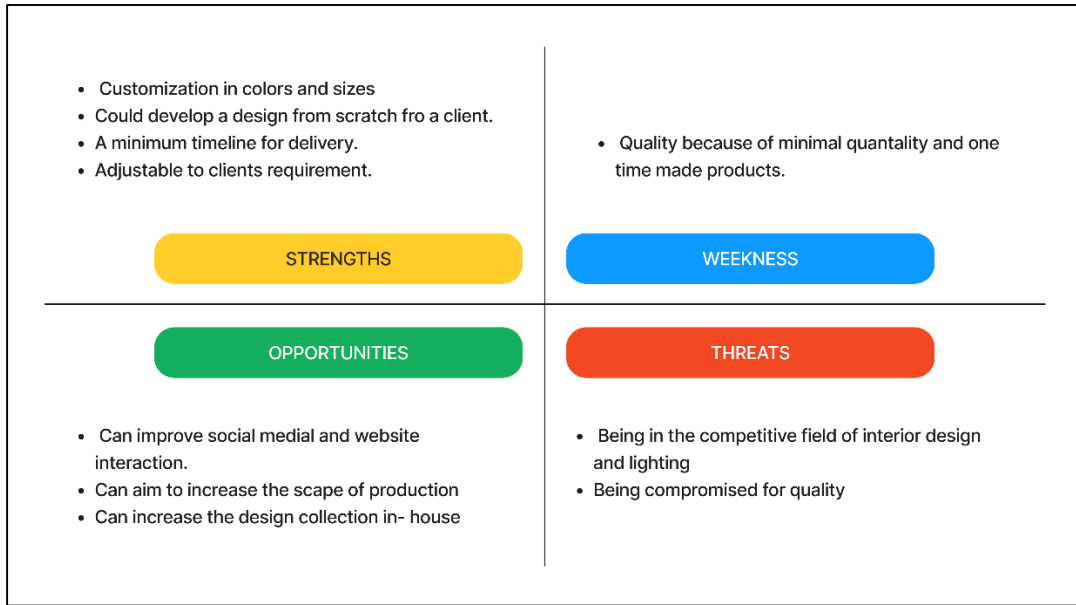


Fig 4.4.2 – SWOT Analysis based on the competitor study and market study

Outlook on the above study.

Based on the above analysis, shown in Fig 4.4.1 and fig 4.4.2, Market and the competitors are much more forward from where the mother gone mad design studio stands. However MGM design studio is not a large scale business, and it having a customize lighting approach for the clients. Still being in the market, dealing with the competitors, MGM has the above mentions (fig 4.4.2) strengths to stand out, weakness and opportunities on work upon and threats to look and plan the future work accordingly. (from citation no 3 & 4)

#### 4.5 Trends Trend study in forms, colors and technology

For starters earth tones—which, due thanks to their calming effects and associations with nature, increased in popularity during the pandemic years—still rule three years in. Shades of brown continue their decor dominance, while romantic mauve, Kathryn M. Ireland and Jake Arnold predict, is the color of the year to come.

Earth tones continue to dominate as we all recover from years of all-gray-everything. Earthy browns were my prediction last year, and that continues. But now red is coming back in spades. From rich oxblood to earthy terracotta red, these nature-inspired hues will continue to dominate design.” - Danielle Colding

“I am seeing a resurgence in lighting made from paper, fabric, or silk with a soft, ambient glow.”  
Athena Calderone

Earthy tones are still a dominant trend in design, but with a shift towards red shades. Rich oxblood and earthy terracotta are predicted to be popular colors, inspired by nature. This trend aligns with a general move away from the all-gray color schemes that were popular in recent years. In terms of design, this trend towards earth tones and nature-inspired hues may manifest in a variety of ways. For example, it could be seen in the use of natural materials such as wood, stone and clay, as well as in the incorporation of natural motifs light Stone erosion and its formations into design

elements. The trend may also be reflected with more muted and organic color palettes being used. Overall, the emphasis seems to be on creating a sense of warmth and connection to the natural world through design choices. Following (fig 5.6.1) explains the whole of the mood defining the trends and mood of the design collection. (From citation No 6 & 7)

Lighting design plays a crucial role in creating ambiance, enhancing functionality, and transforming spaces. To stay ahead in the field, it is important for designers and professionals to be aware of emerging trends. This trend study focuses on upcoming lighting design trends in colors, forms, shapes, materials, and sustainability. By understanding these trends, designers can create innovative and sustainable lighting solutions that meet the evolving needs and expectations of users.

### **Colors**

**Organic Tones:** Natural and earthy colors, such as warm neutrals, soft greens, and gentle blues, are gaining popularity. These colors create a calming and harmonious atmosphere, connecting indoor spaces with nature.

**Bold Accents:** Vibrant colors like deep reds, rich purples, and striking yellows are being used as accent colors in lighting fixtures. These bold accents add a touch of drama and personality to the space.

### **Forms**

**Geometric Shapes:** Clean lines, geometric forms, and minimalist designs are becoming increasingly prevalent. Lighting fixtures featuring geometric shapes, such as cubes, spheres, and cylinders, offer a contemporary and timeless aesthetic.

**Organic and Fluid Designs:** Lighting designs inspired by nature, featuring fluid and organic shapes, are gaining popularity. These designs evoke a sense of serenity and create a connection between the indoor and outdoor environments.

### **Shapes**

**Circular and Curved Designs:** Circular and curved lighting fixtures are becoming prominent. These designs soften the overall look of a space, provide a sense of movement, and add a touch of elegance.

**Asymmetrical Configurations:** Lighting fixtures with asymmetrical shapes and configurations are being embraced for their unconventional and visually engaging designs. These fixtures create a sense of dynamic energy and intrigue.

### **Materials**

**Sustainable and Recycled Materials:** There is an increasing emphasis on using sustainable materials in lighting design. Recycled glass, reclaimed wood, and eco-friendly metals are being incorporated into fixtures to promote environmental responsibility.

**Natural Textures:** Lighting fixtures with textured surfaces, such as woven materials or natural fibres, are gaining popularity. These textures add depth and tactile interest to the design, creating a warm and inviting atmosphere.

### **Sustainability**



**Energy Efficiency:** LED lighting continues to dominate the market due to its energy-efficient properties. Designers are incorporating energy-saving LED technologies into their lighting solutions, reducing energy consumption and environmental impact.

**Smart Lighting Solutions:** The integration of smart lighting systems, including sensors, controls, and automation, allows for efficient use of lighting based on occupancy, natural light levels, and user preferences. This technology helps to optimize energy usage and enhance user experience.

**Circular Design Approach:** Designers are adopting a circular design approach by prioritizing recyclability, reparability, and durability in lighting products. This approach aims to minimize waste and promote a more sustainable lifecycle for lighting fixtures.

As lighting design continues to evolve, staying updated with emerging trends is essential for professionals in the field. The trends discussed in this study, encompassing colors, forms, shapes, materials, and sustainability, provide insights into the direction of lighting design. By incorporating these trends into their work, designers can create innovative, visually appealing, and sustainable lighting solutions that enhance the user experience and meet the demands of modern spaces.

## 5. DEFINE

### 5.1 Design Brief

In the context of creating aesthetically appealing decorative light fixtures inspired by a mood board, one approach to achieve a balanced luminance is by reducing visual discomfort and controlling glare, promoting healthy eyes in a specific space.

### 5.2 Design criteria

Sr. No	Criteria / Title	Description and range
1	Light source	Non hard and energy saving
2	Materials	Sustainable / Recycled
3	Form/ shape/ texture	Inspired from the mood board
4	Surface finish	Controlled and balance reflection
5	Performance/ output	Equally distributed Luminance
6	Space	Residential (Homes)
7	Function	Solving the problem functionally and aesthetically appealing
8	Situation	Designing a new own home

### 5.3 User persona



Name - Ritika Nanda  
Age - 33  
occupation - Professor  
Address - Andheri, Mumbai

Ritika is an independent women with ideal personality. She works as a Professor at University in Mumbai and stays with her husband and and recently married for about 2 years form now. Her life is surrounded by finding a balance between work life and managing a home. Her husband has a restaurant business in Andheri east. Both work efficiently in their work life and earn widely for thier home. They are planning to make a home of their own and designing a beautiful place to stay with a each other and a planned family. She believes planning out things in a particular way to live a not complicated life. They tires to make small and big plans with her husband for fulfilling a desired life. One of her desire is to design a beautiful home with all kinds of comfort requirements.

hardworking and focused



Funloving and Interactive



Introvert

Extrovert



Organized

Jumbled



Goals - Finding a balance between a professional and personal life, taking out time for husband and plan outings for enjoyment, live at a beautiful space designed with all care and love for the family.

Problems she faces - In her daily routine, she faces problems to manage her teaching classes and finding out time for other activities she plans on doing to with her husband like weekend enjoyment plans, trips, home planning etc.

### 5.4 Problem statement

“A sense of Luminance in the field of vision that the human eye cannot adapt to, which can lead to disgust, discomfort, loss of visual acuity and annoyance to eyes. It is cause due a direct relationship with the product design, installation height and placement and use of light source of light fixture”

### 5.5 Value Generation

Seeing the world with reducing natural resources and its consumption speed, a sustainable approach to a product design will reach at far places and for a live for longer period of time. Here choosing recycled paper as the product material makes the design of more value and saves the environment with minimal resources consumption while production and minimal energy consumption of using LED light source saving energy.

Finding a balance of light distribution and a source of diffusion by playing with the placement of light source, it distance from the reflective surface and the support to the fixed installation (wall, ceiling, floor etc.) creates a great value in terms of solving the problems and keeping the human eyes healthy and comfortable.

Instead of using a regular diffusion techniques and materials, using of cane makes it different and noble, considering the use of cane, it solves the problem of diffusion as well as adds a value to the product by being aesthetically appealing.

Giving an opaque texture to the surface of the products, give the light flow to be absorbed with the rough grainy texture shown in mood board and passing a little amount of light through the cavity holes based on the form and designs.



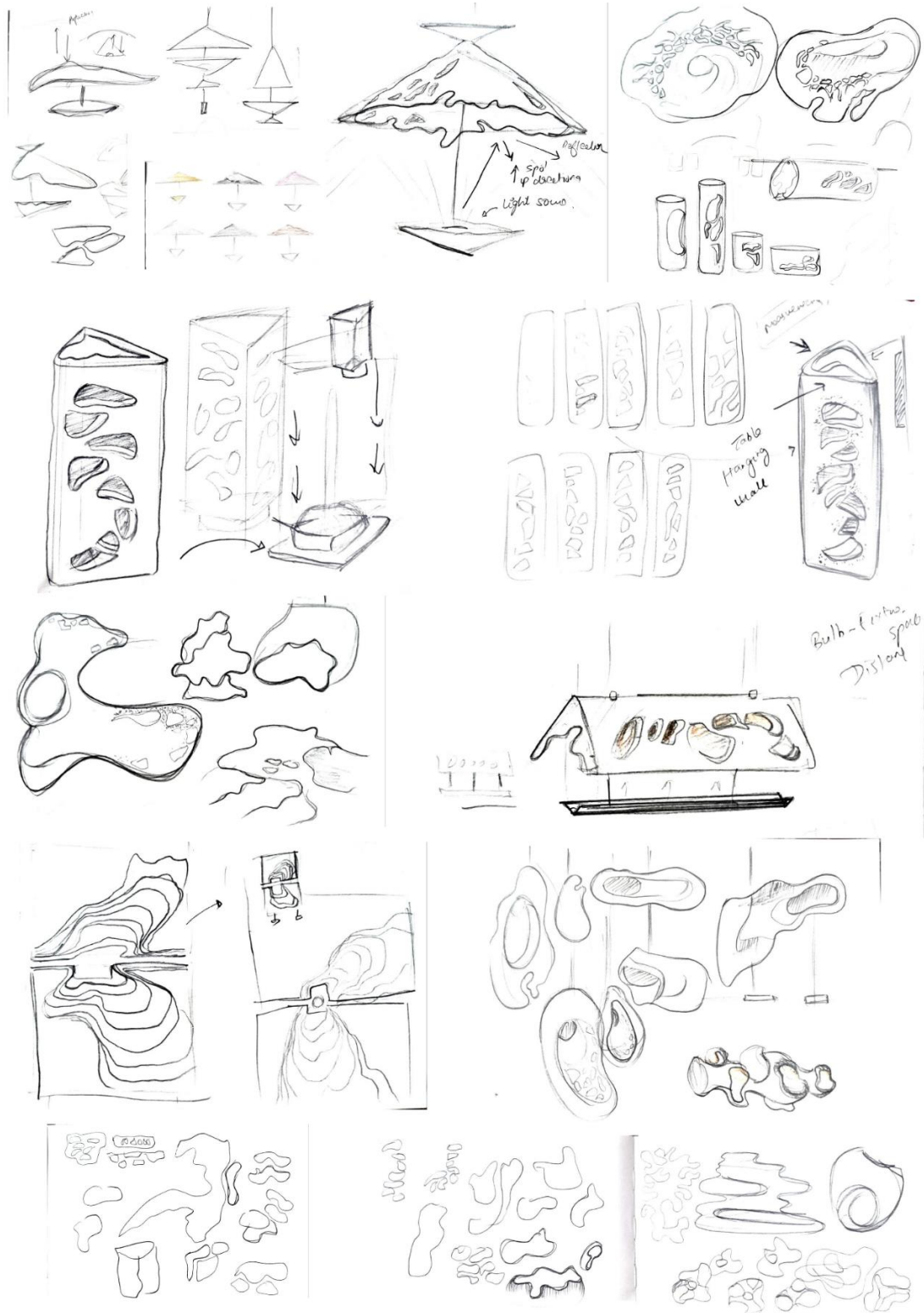
## 5.7 Concept Note

The aim is to create a diffused light effect by separating the light source from the lamp/form/shape/shade, ensuring a comforting light output and a balanced illumination in the environment without causing any glare for individuals present in that space. LED lights, although powerful and intense, can be utilized in a manner where the light source is separated from the shade, allowing for the reconstruction of light that produces a gentle reflection that is easy on the eyes. This involves utilizing indirect light, reflected light, and filtered light, resulting in varying degrees of light passing from the source to the object. The objective is to perceive the luminance without directly seeing the light source from the fixture, deviating from the conventional way of perceiving light.

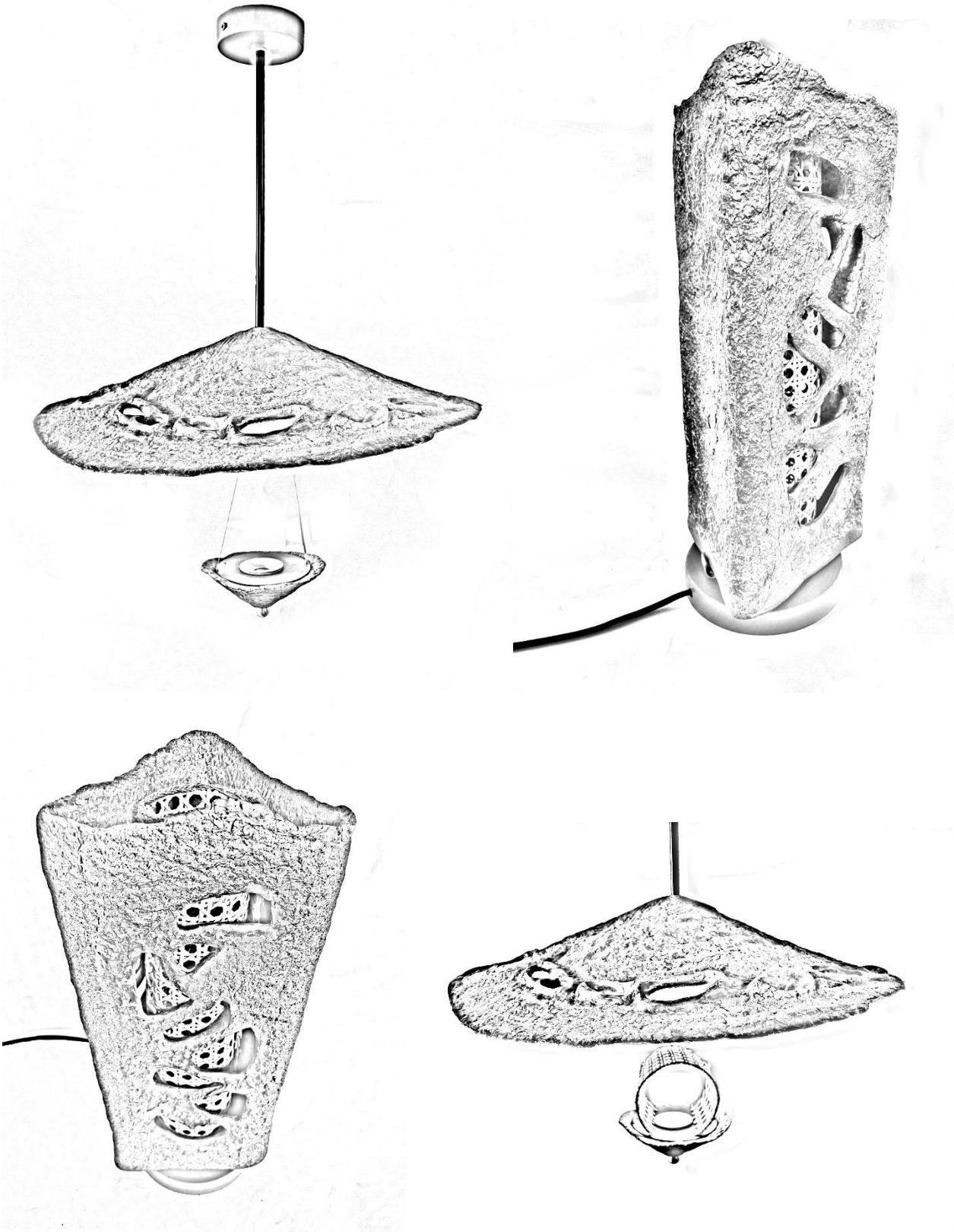
P. T. O.

## 6. IDEATE

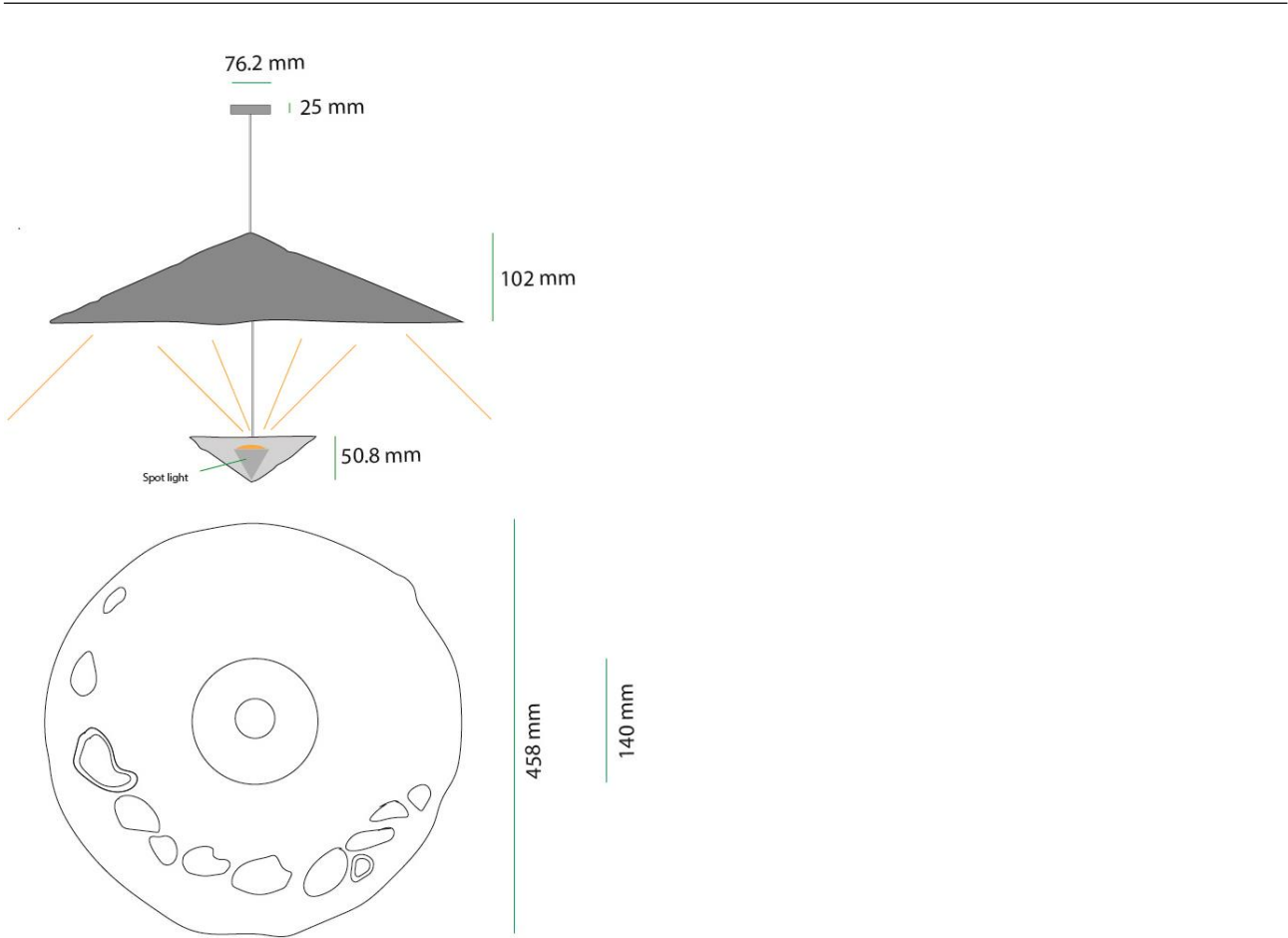
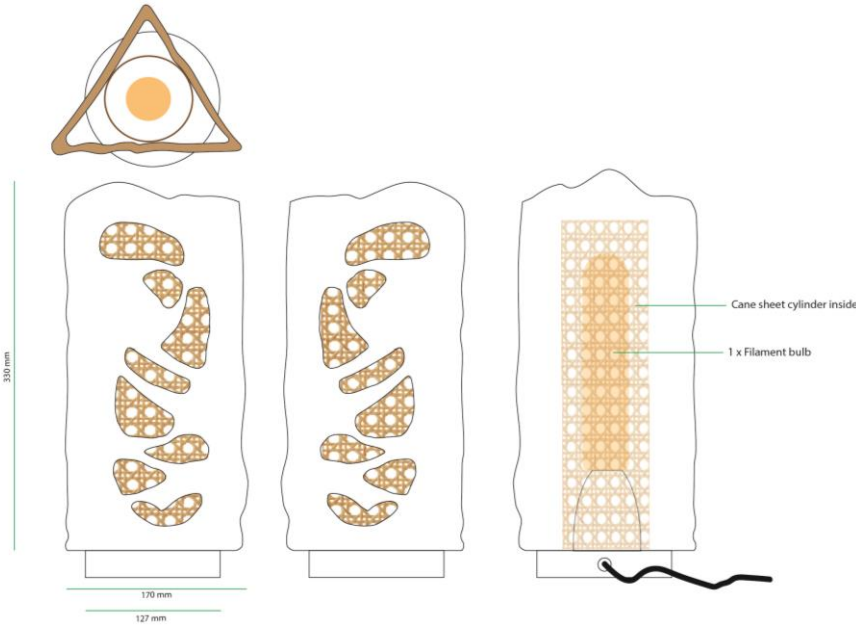
### 6.1 Initial concept and sketches



6.2 Concept sketches



**Technical drawings**



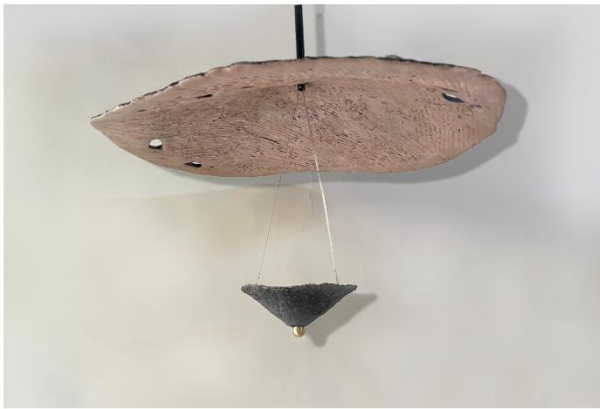
**7. PROTOTYPING ( Final Prodcut )**

**WORN AWAY GLEAM**

Suspension light







**CANE STONE**

Table light







Suspension Light

Paper-mache being a recycled material and with the property of being opaque

**ANALYSIS**

Based on the primary and secondary research, an outlook on focusing on how a strain can be caused to eyes through a poorly designed light fixture or placement of the light fixture at a space.

**STRATEGY**

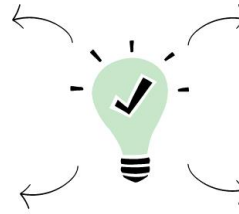
Considering trends, and user requirements, coming up with a unusual outlook to diffuse the light reflection and find a balance in luminance.

**ACTION**

A way to find balance of luminance to decrease the sense of visual discomfort and control glare for healthy eyes in a defined space

**SOLUTION**

A light fixture that reduces the eye glare through an aspect of different surface techniques and materials which reduces the density of light reflection and doesn't hurts the eyes



Trial of using cane as a diffusion technique and shadowing to the reflective surface by using a spot light at the bottom element to give a directional light.

The reflective surface texture to distribute light evenly with the placement of light source to be at a distance of being a up-light and not a down-light disturbing the eye of the viewer

Using of paper-mache as a opaque material in an enclosed form for the light source to pass through the cavities ( designed from water erosions on stones in nature)



Table Lamp



Using cane sheet as a diffusion element inside the design form, creating a distance from light source to the object walls, reflecting light through it.



**Lighting Design Products for Visual Comfort and Glare Control**

In today's world, people spend a significant amount of time indoors, whether it is in offices, homes, or public spaces. Improper lighting can cause visual discomfort, eye strain, and even health problems such as headaches and fatigue. The use of appropriate lighting design products is crucial to achieving a balanced luminance and reducing the sense of visual discomfort while controlling glare in a defined space.

**Objectives:**

1. Balanced luminance for healthy eyes in a defined space.
2. To control glare and reduce the sense of visual discomfort for the users.
3. To incorporate the attributes of placement of light source, product material to be opaque, and surface texture to be reflective in the lighting design product.

**Design Solutions:**

**Placement of Light Source** - A directional light source that is placed strategically to reduce glare and control the spread of light, ensure that the light is distributed evenly throughout the space and does not cause any visual discomfort to the user.

Opaque **material** to minimize the amount of light that is emitted from the fixture, resulting in less and controlled reflection

**Surface texture** will help to enhance the aesthetic appeal of the lighting product and be reflective reflective in nature to help the light to

**Conclusion:**

The proposed products are well designed to achieve the above design solution as described in the images to the left.

## **7.1 Testing**

After many trials and error this prototype has at some level reduce the glare and difussed the light from the source. Adding to this ongoing project, I will be exploring many other ways to solve the problem as this in not where I am fully satisfied with the output, however this attempt has somewhere made me come close to design a better lighting products.

## **8. CONCLUSION**

In conclusion, the lighting design project has partially addressed the problem of glare caused due to strong reflection in lighting and causig discomfort to eyes. The project took inspiration from the trend moodboard and incorporated elements of nature, sustainability, forms and colors into the lighting design. The trials of finding out which materials can me used to give a diffused light and find a balance in luminance by altering the placement of light source in the fixture. Exploring from technical and fucntional aspects to trends and aesthetics of the prodcut, enhanced my knowledge in this field.This project has helped me grow a lot in terms of how a small little aspect of placment on light source can play such an important role in designing lights and make the ambiance look comforting to eyes and appealing to to viewer.

## **BIBLIOGRAPGY**

1. <http://www.boles.de/teaching/mm/pages/light-fundamentals.html>
2. <https://in.pinterest.com/>
3. <https://www.olie.co.in/>
4. <https://www.oorjaa.in/>
5. <http://www.boles.de/teaching/mm/pages/light-fundamentals.html>
6. <https://www.vogue.com/article/interior-design-trends-to-know-in-2023-and-whats-on-its-way-out>
7. <https://www.architecturaldigest.in/>
8. <https://www.google.com/>
9. <https://www.google.co.in/imghp?hl=en&ogbl>
10. <https://www.mothergonemaddesign.com/>