

## Case Study Project

Design Thinking & Innovation  
Case Study: Ideation



D'source Project



Open Design School



MoE's Innovation Cell

Section: C9, Week 9



**THINK!  
DESIGN**

# **Design Thinking & Innovation (DT&I)**

Section: C9  
Week 9



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DESIGN**

# **Design Thinking & Innovation (DT&I)**

**Presented by:**

**Prof. Ravi Poovaiah**

IDC School of Design, IIT Bombay



# DT&I Case Study

## C9 Case Study Project: GeoLights - Applied Photovoltaics Explorations

Module C9:

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C9.1

# Geo-Lights

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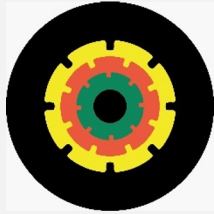


# DT&I Case Study Content:



## DT&I Process

- > Research
- > Analysis
- > Ideation
- > Prototyping
- > Feedback
- > Implementation



## DT&I Tools

- > Brain-Storming
- > Mind-Mapping
- > Interviews
- > Affinities
- > Spatial Mappings



## DT&I Project

- > Secondary Research
- > Primary Research
- > Tools for Ideation
- > Prototyping
- > Validation



## DT&I Case Study

- > Case Study
- Project Product Design
- **Geo-lights**

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**Mentor for Case Study Example:**

Prof. Avinash Shende

**Student:**

Kiran G.

IIT Guwahati

GEO  
Lights



## Geo-Lights: Introduction

The project started with looking how sunlight could inspire and produce design for capturing energy. Later it was discovered that by arranging them in geometrical patterns in space can lead to create enormous number of forms. In the study phase a lot of details of geometrical patterns have been perceived and other things were also explored about the origami, energy, organic forms, new experience, creativity and detailing. In this project an approach of modularity was also explored. It was quite interesting to learn different elements in two geometric shapes and more interesting was the way it has been perceived and interpreted. Different explorations have also been tried and while exploring these, constraints were also clarified.



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## Geo-Lights: Future Scope

Geo lights can be a new dimension of creating forms for architectural fields where light and energy is said to be one of the constraints. It can also be seen as street lamps in future. Geo also can take modularity into another world of creativity in people.

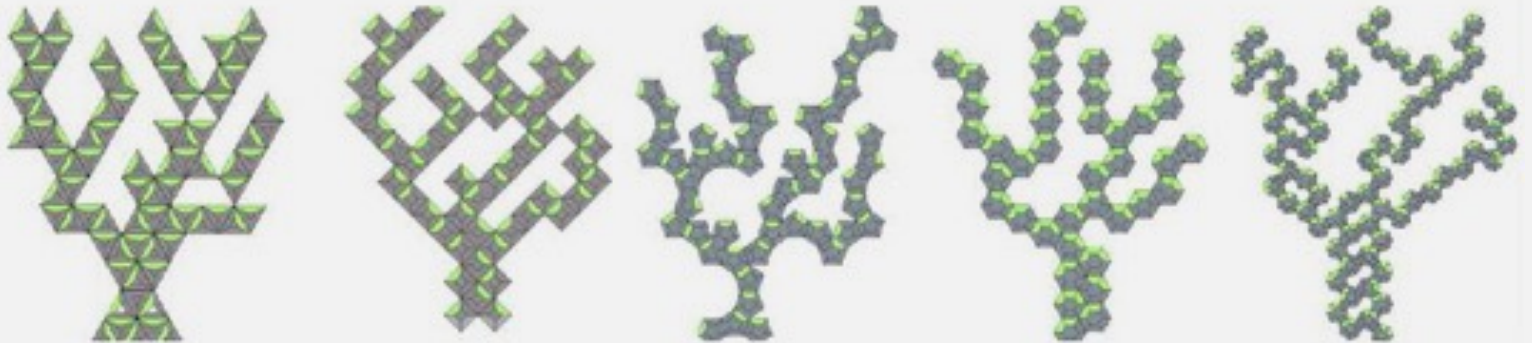
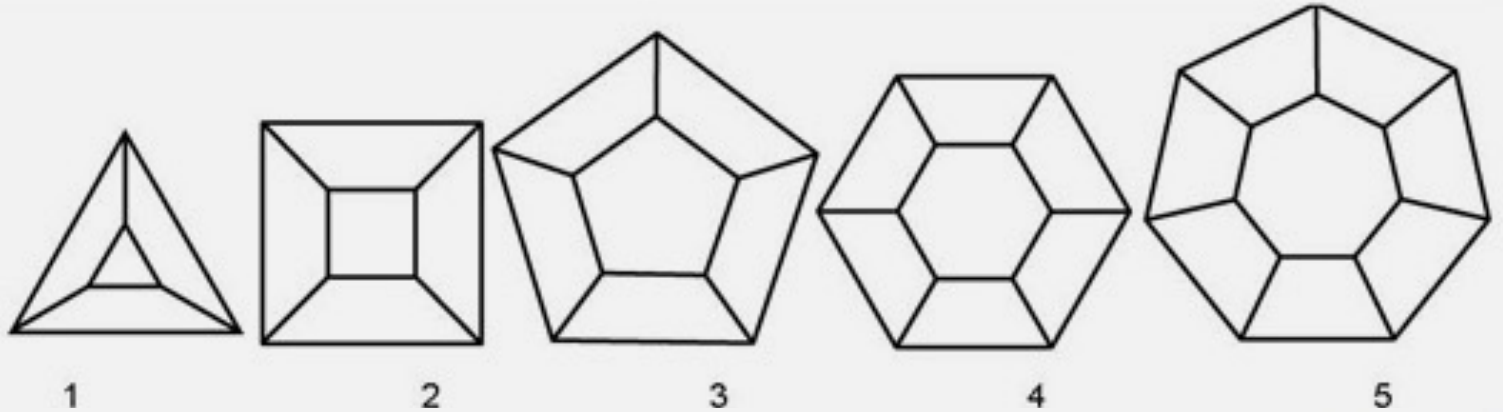


geo  
LIGHTS

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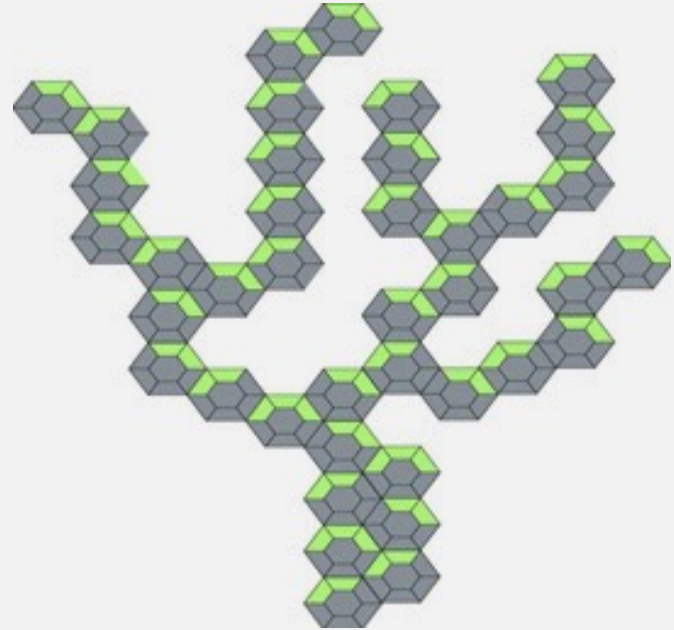
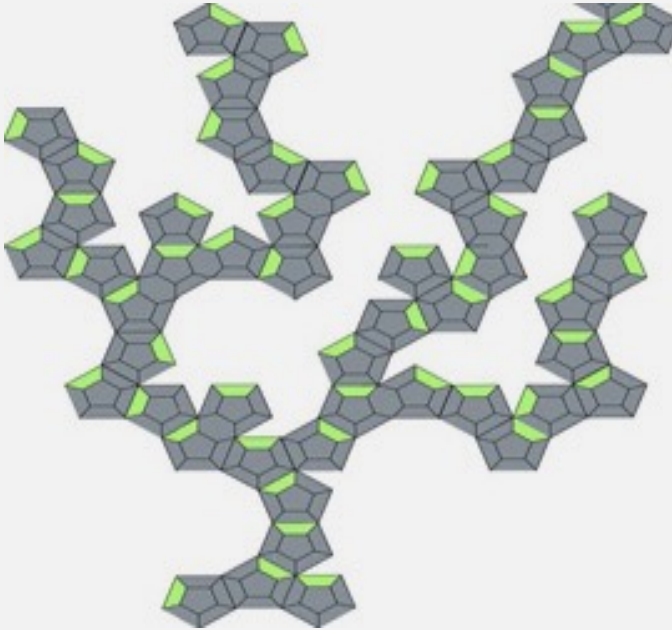


## Phase 1 - Initial Geometry Iterations:

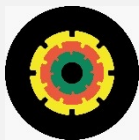




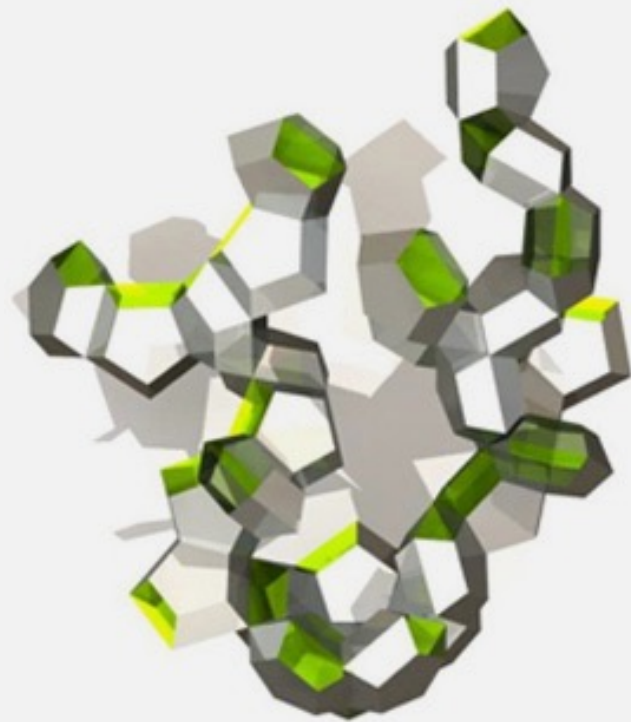
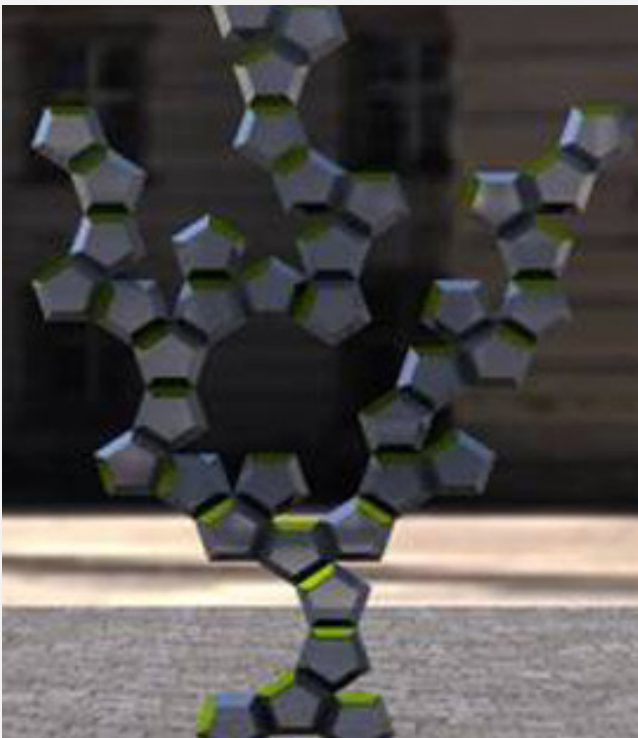
## Finalizing Hexagon and Pentagon Tree:



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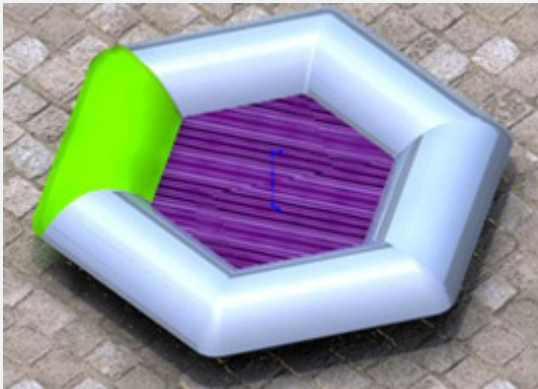
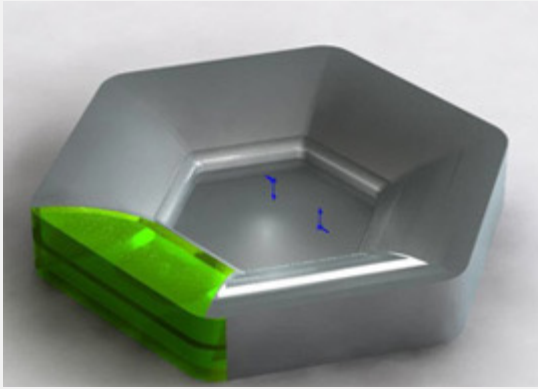
Two Dimensional to third dimension:



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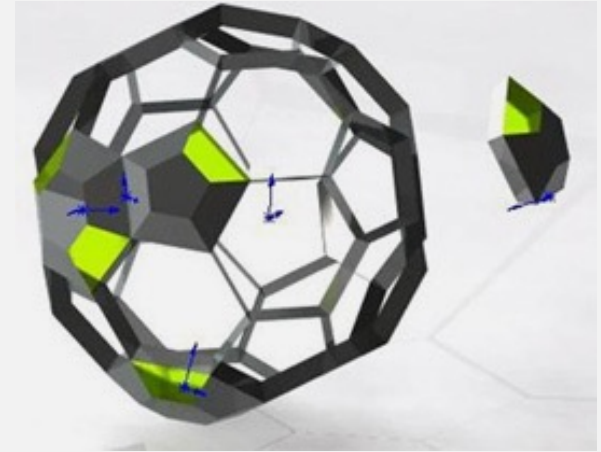
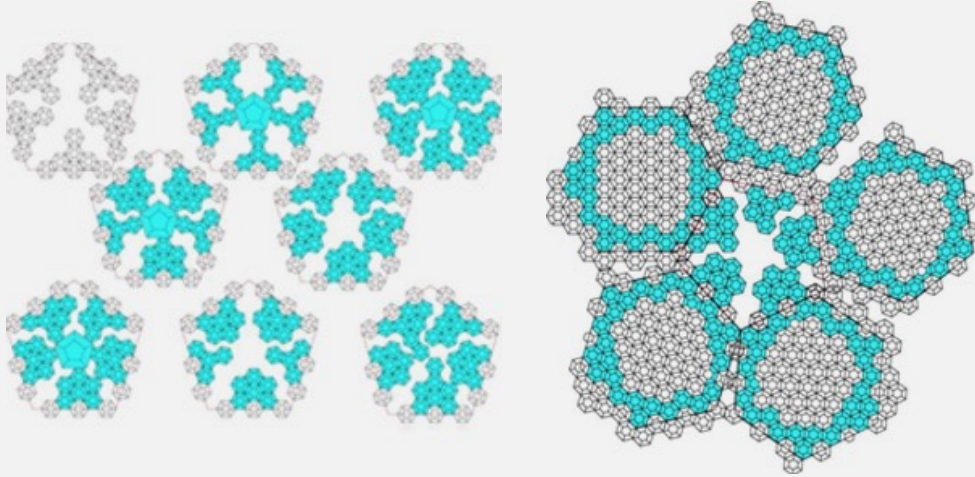
Detailing of the geometrical shape:







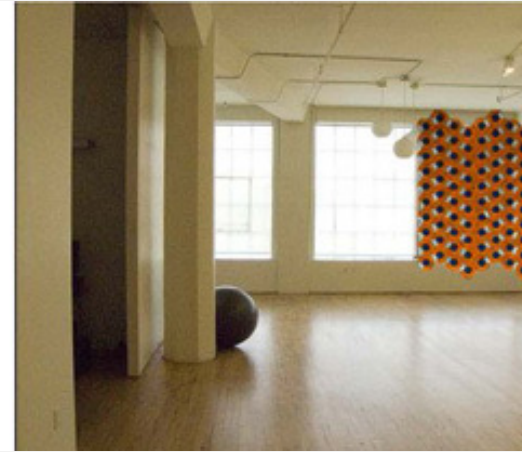
## Dome Explorations:



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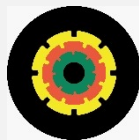


## Phase I: Scenarios:



Blinds for Interior and Exterior Lighting

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## Phase I: Scenarios:



Garden Lamps





## Phase I: Scenarios:



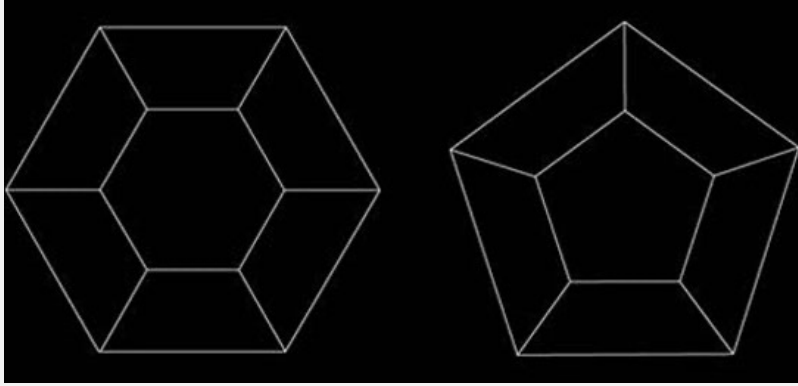
Light installations in Parks



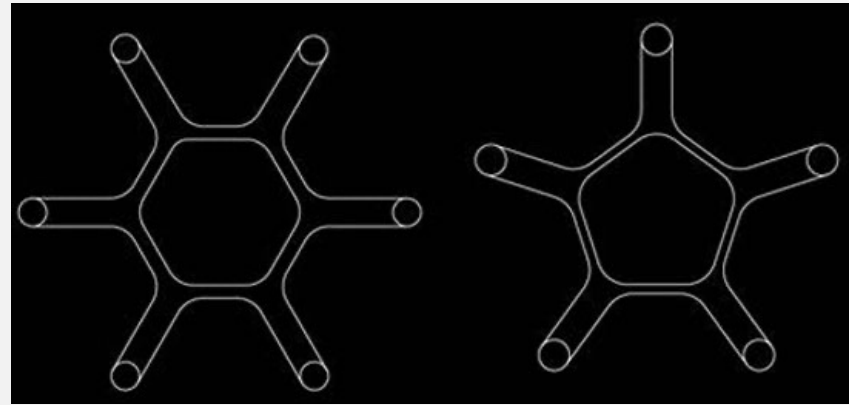
Light installations in Bridges



## Phase 2:

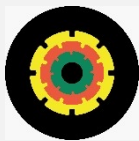


Static Geometry

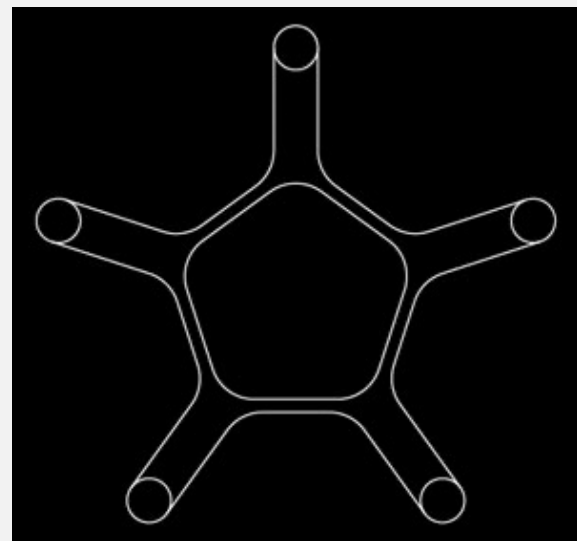
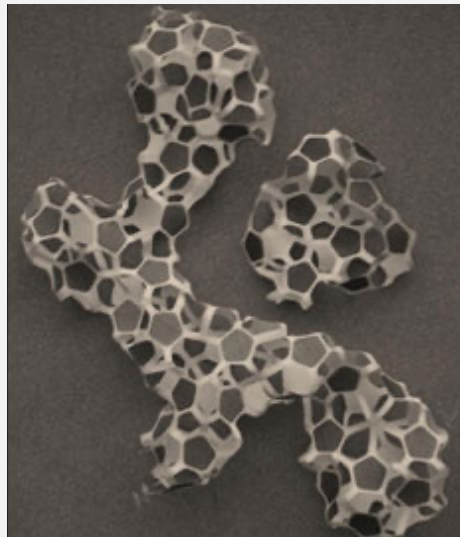
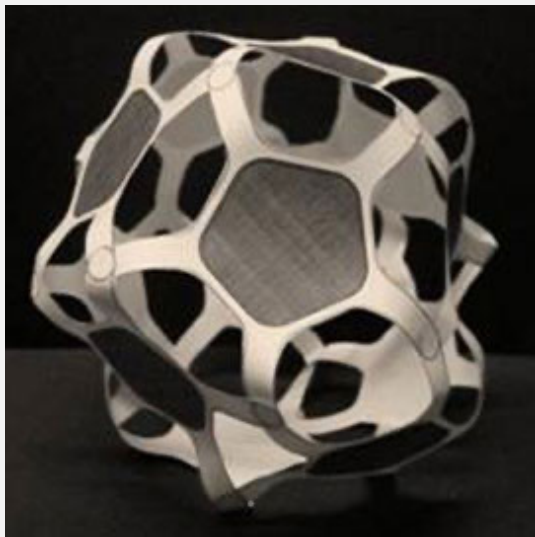


Dynamic Geometry

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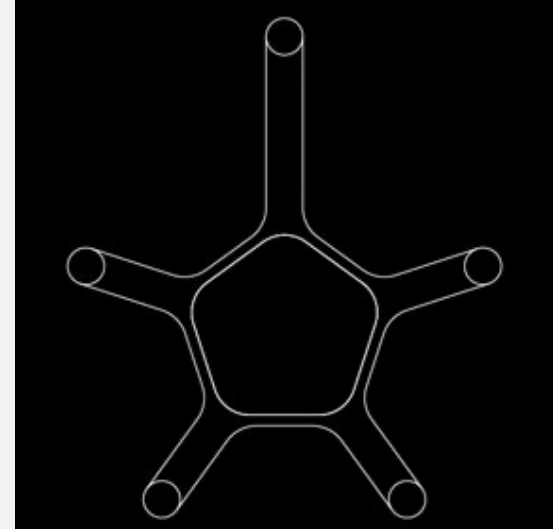
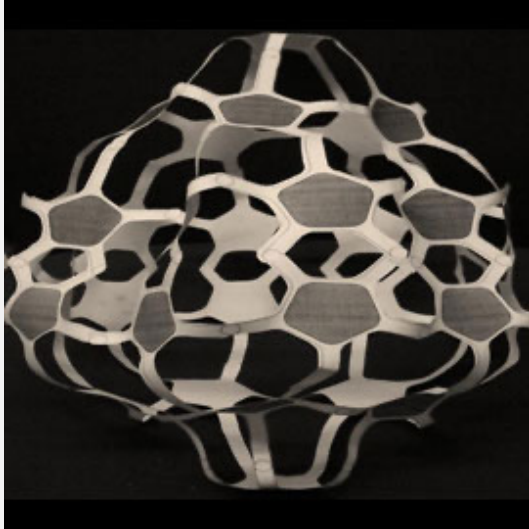
## Pentagon Exploration:



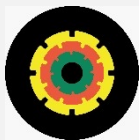
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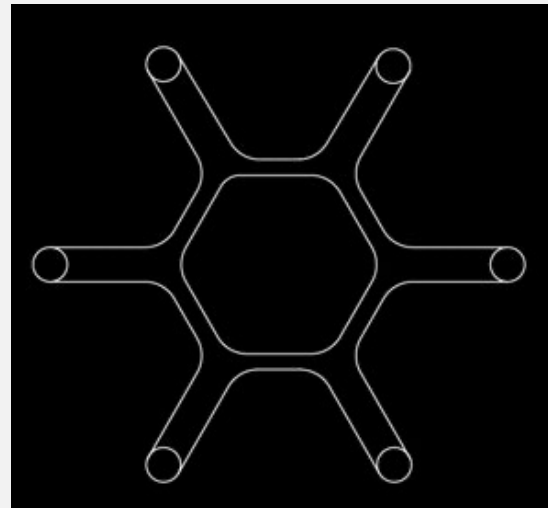
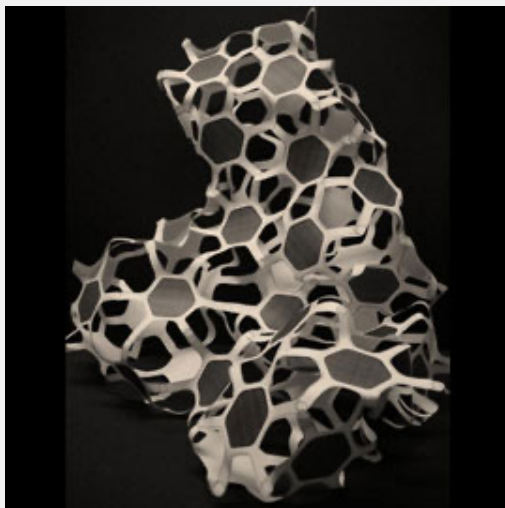
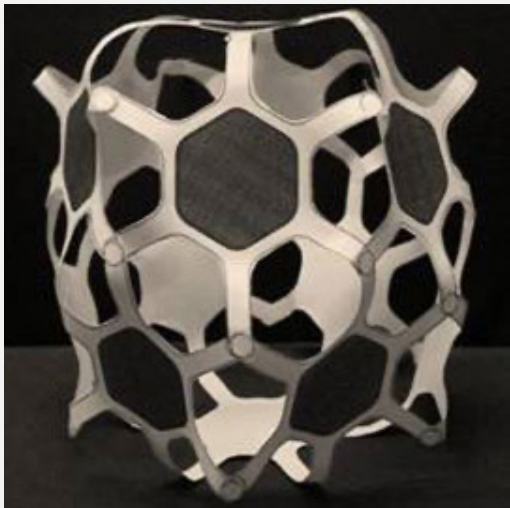
Pentagon with one hand extended:



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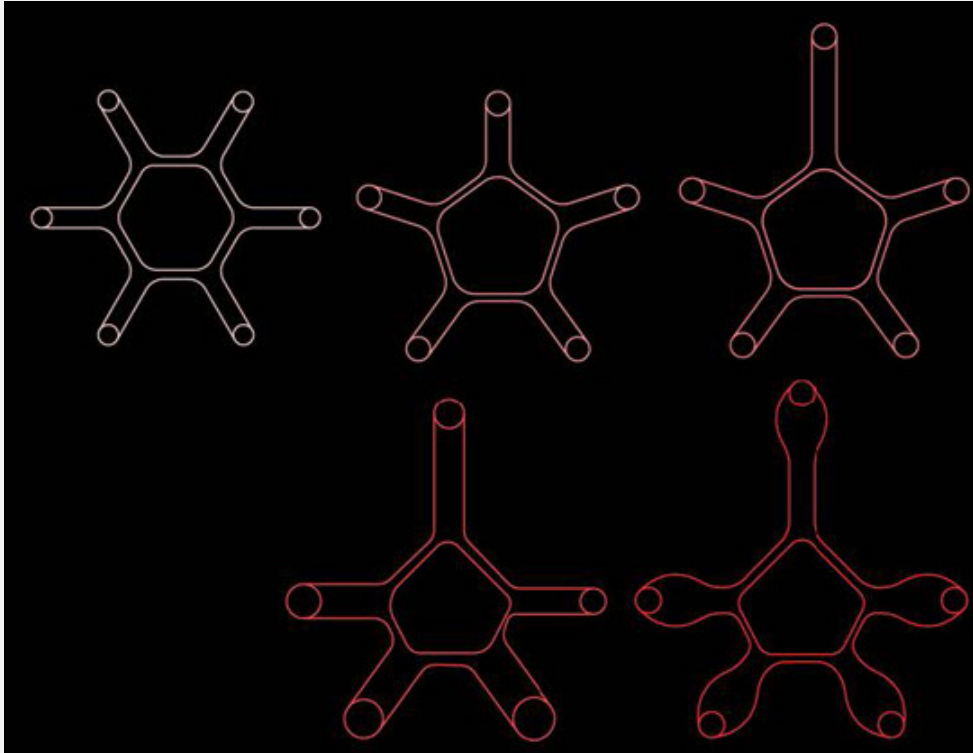
## Hexagon Exploration:



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## Iteration in the Dynamic Geometry:

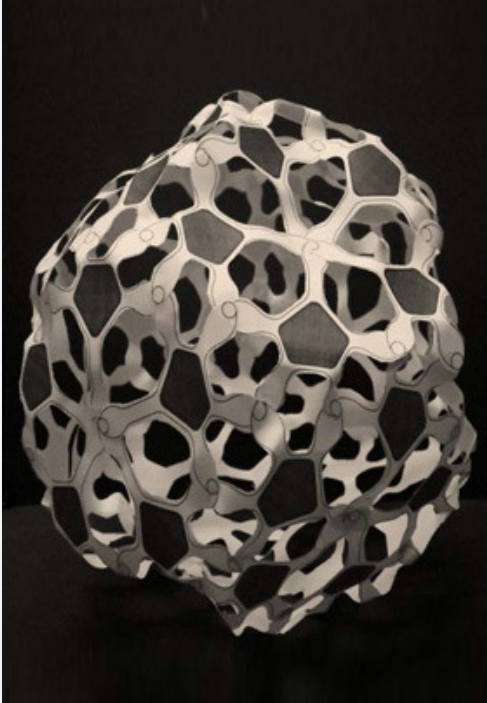




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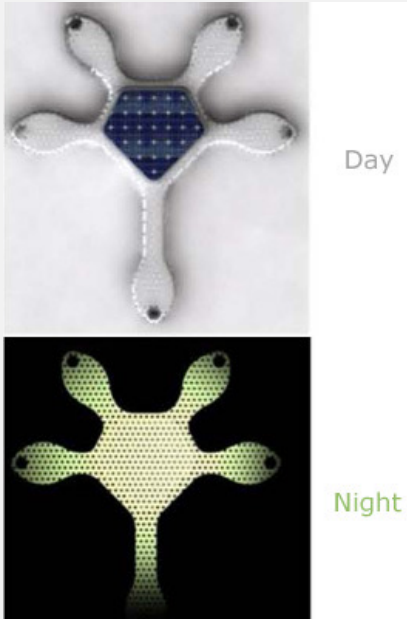
## Revised Pentagon module exploration:



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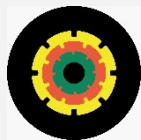


## Phase-2: Scenarios:





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## Installations:



Land



Air



Water



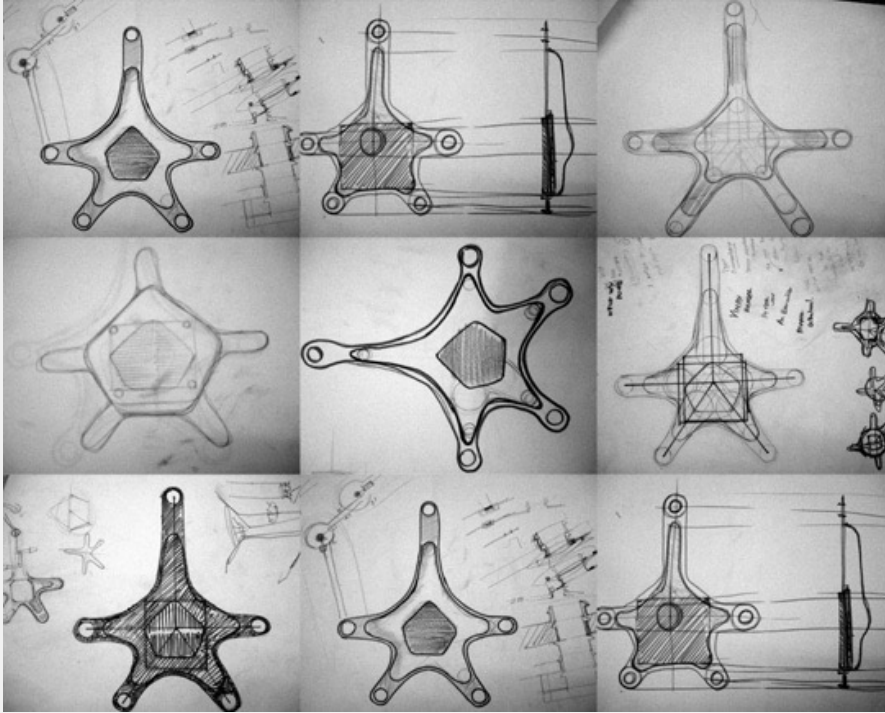
# Feasibility Study of Solar cells, circuitry and Light Emitting Diodes:



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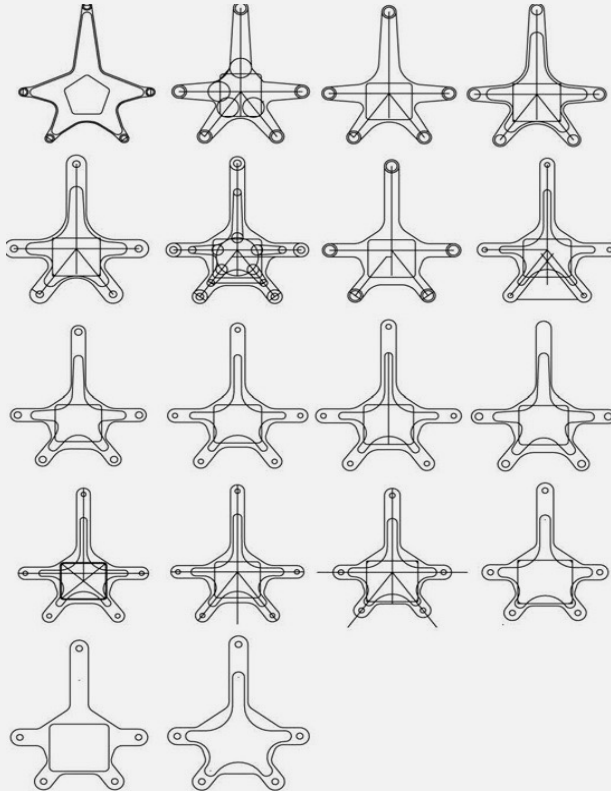
## Phase 3:



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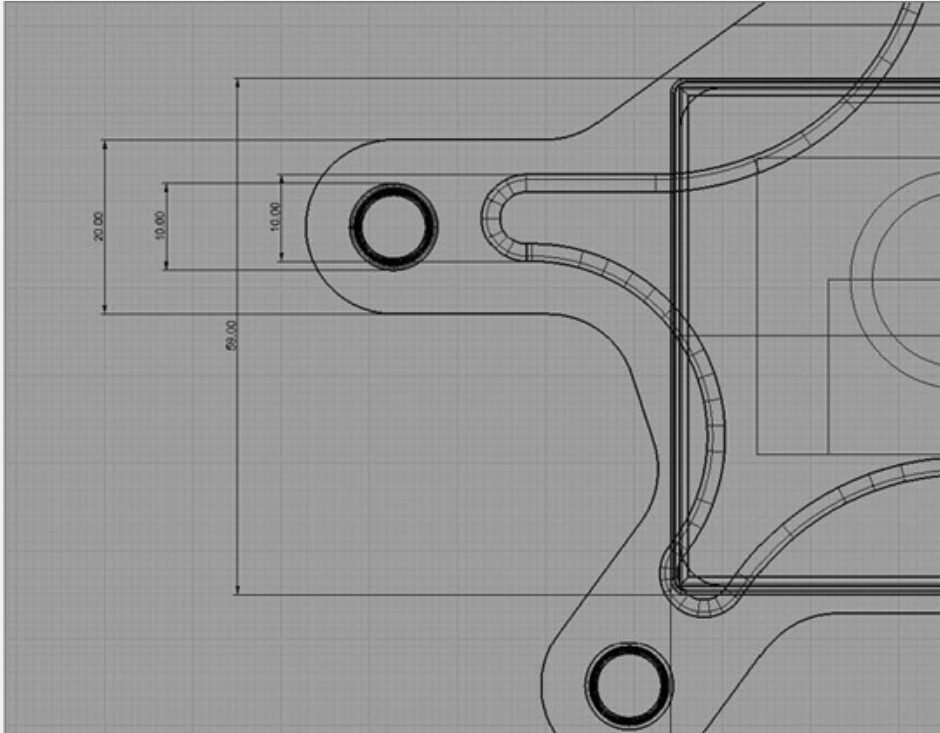
## Fine Detailing:



Final detailing keeping geometric constraints



## Packaging Detail:

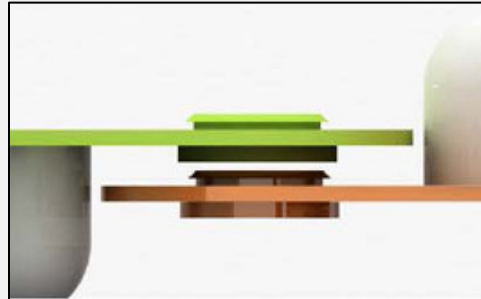
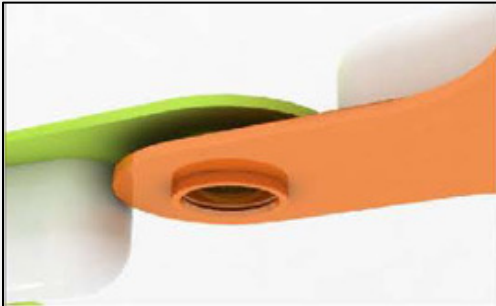
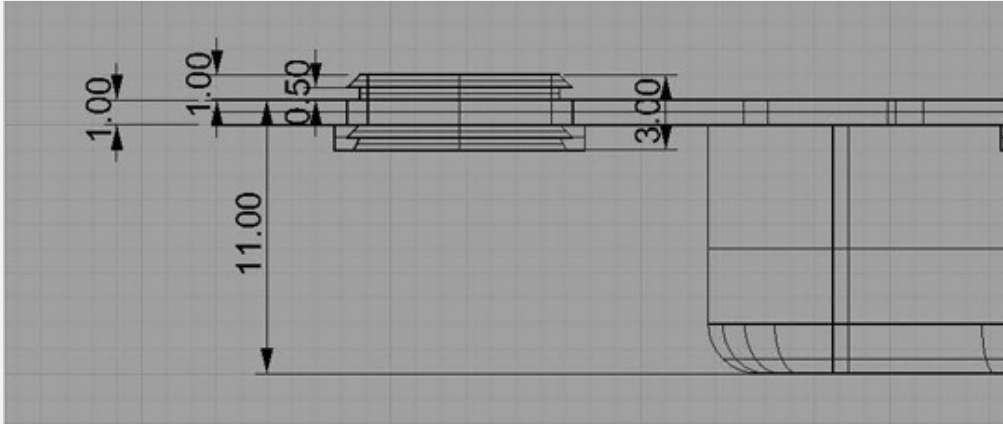


Final packaging detail keeping  
geometric constraints

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## Joinery Details:



Final joinery detail keeping  
geometric constraints





## Phase 4:



Design Scenarios and Renderings



## Final Scenarios and Renderings:



GEO Family



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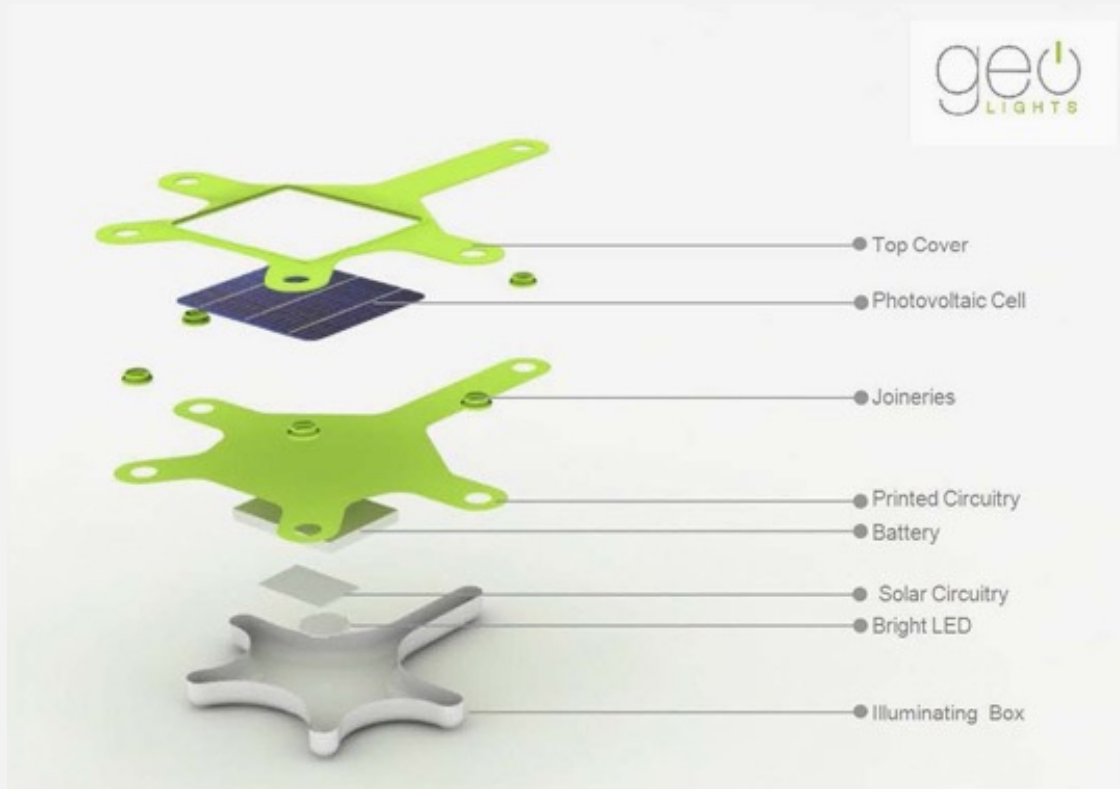
## Working of the mother and children:



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## Detail of Mother Geo:



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## Detail of Geo Children's:



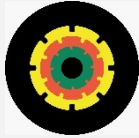
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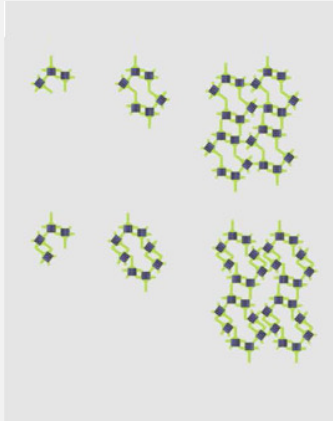
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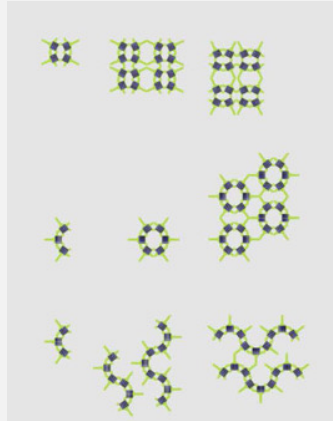
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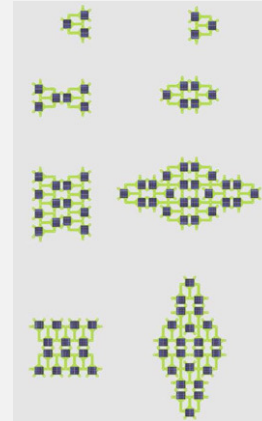
## Permutation and combination of Geo lights:



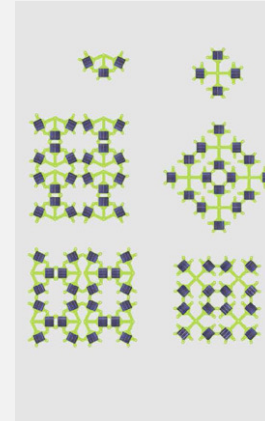
Formula 1



Formula 2

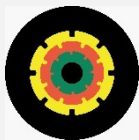


Formula 3



Formula 4

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## GEO lights in different Spaces:

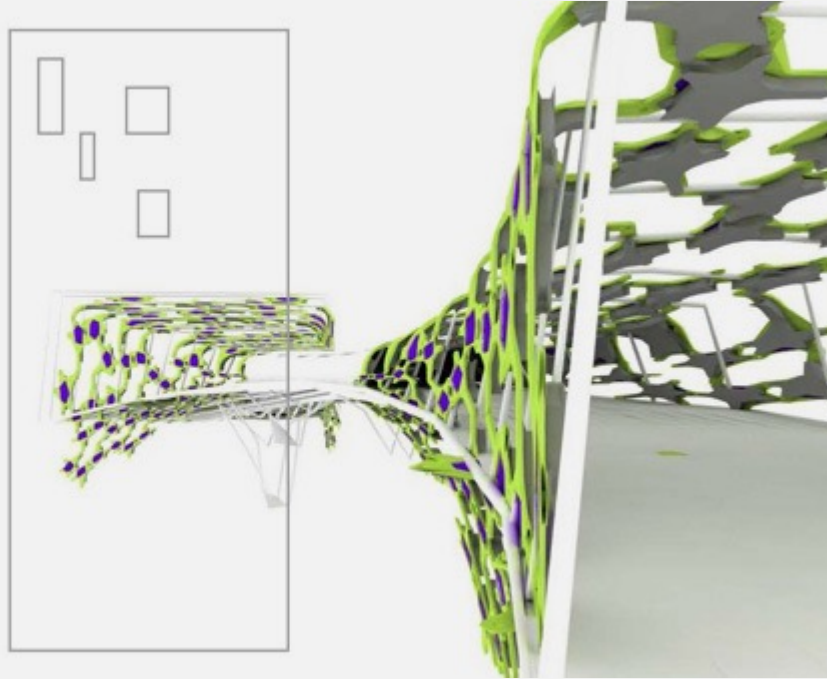


geo  
LIGHTS

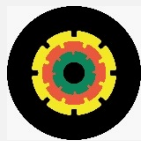


## In-between Buildings:

geo  
LIGHTS



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Cafetaria:







## Future Street Lamps:





## Material used for joineries:



Final prototype making



## Logo and identity exploration:





## Logo Refinement:

geO  
LIGHTS

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**Thanks for  
Listening**

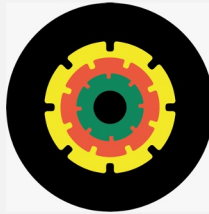
**DT&I Case Study**  
Section: C9  
Week 9

# DT&I Course – Week 9:



## DT&I Process (20%)

- > Ideation – Part 1
- > Creative Concepts
- > Idea Brainstorming
- > Idea Sketching



## DT&I Tools (20%)

- > Idea Sketching
- > Body storming,
- > SCAMPER
- > Lateral Thinking



## DT&I Project (50%)

- > Alternate Ideas
- > Idea Sketching
- > Body storming,
- > SCAMPER
- > Lateral Thinking



## DT&I Cast Study (10%)

- > Case Study  
Project:  
Geo Lights

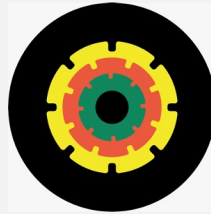
THINK!  
DESIGN

# DT&I Course – Week 10:



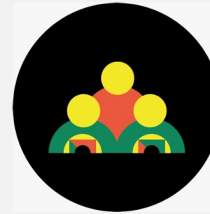
DT&I  
Process  
(20%)

- > Ideation – Part 2
- > Synectics
- > Concept Mapping
- > Concept Evaluation



DT&I  
Tools  
(20%)

- > Synectics
- > Concept Maps,
- > Concept Evaluation



DT&I  
Project  
(50%)

- > Synectics
- > Concept Maps
- > Concept Evaluation



DT&I  
Cast Study  
(10%)

- > Case Study  
Project:  
Ideation 2



## Supporting Organizations:



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MoE's Innovation Cell





## Credits:

**Mentor for Case Study Example:**

Prof. Avinash Shende

**M Des Student:**

Kiran G.



D'source Project



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**Credits:**

**Presented by:**  
Prof. Ravi Poovaiah



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## Credits:

**Camera & Editing:**  
Santosh Sonawane



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## Credits:

Think Design Animation:  
Rajiv Sarkar



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## Credits:

End Title Music:  
C P Narayan



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IDC School of Design

IIT Bombay



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