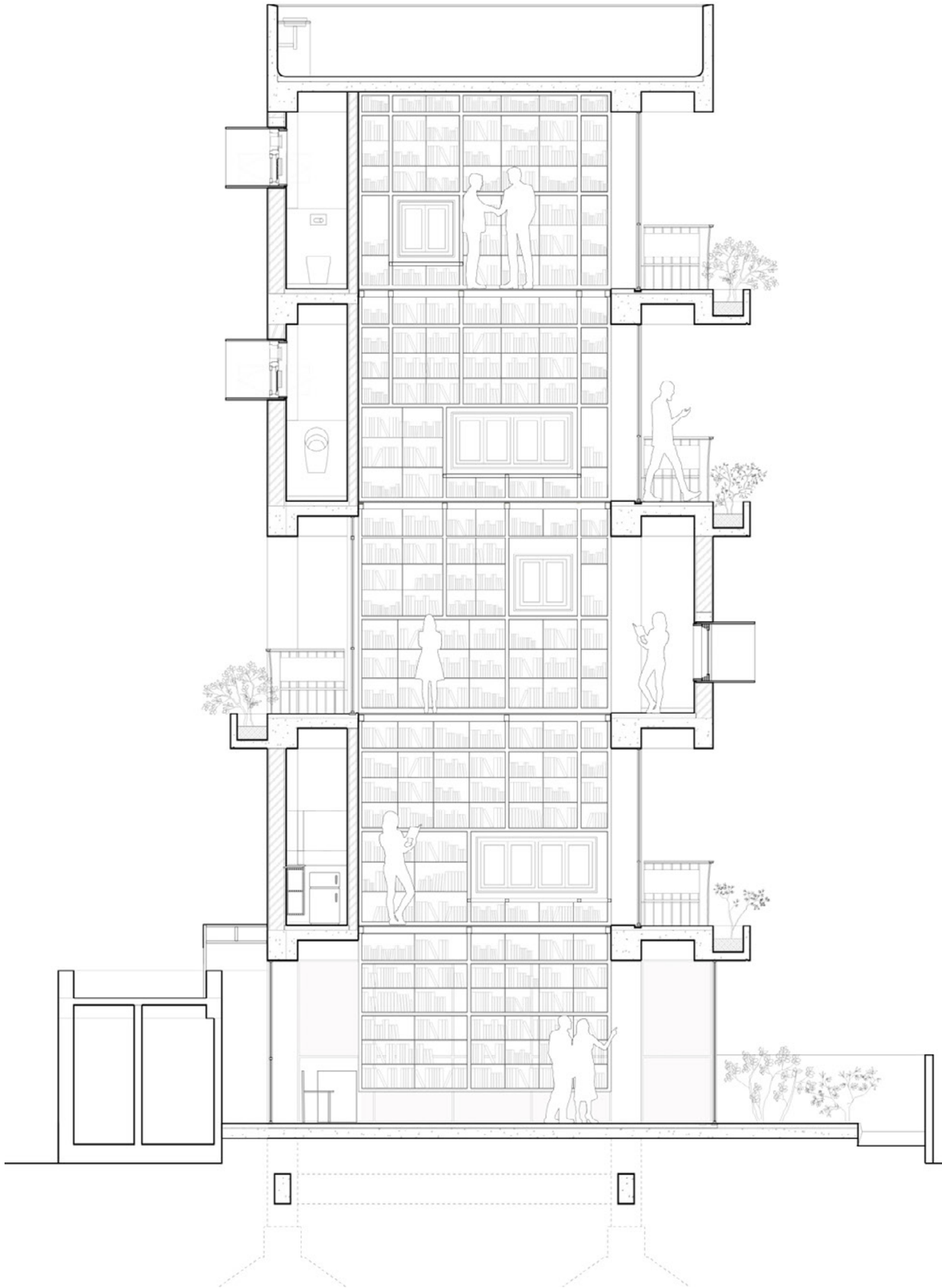


PORTFOLIO

SELECTED WORK 2018-2023

ANISHA PANESAR //
anishapanesar1999@gmail.com

CONTENT

01

THE OASIS AT OMR

MIXED USE CENTRE: SHOPPING + WORK

PROJECT DATE
Jan '20 - May '20

PROJECT TYPOLOGY
Mixed Use Building

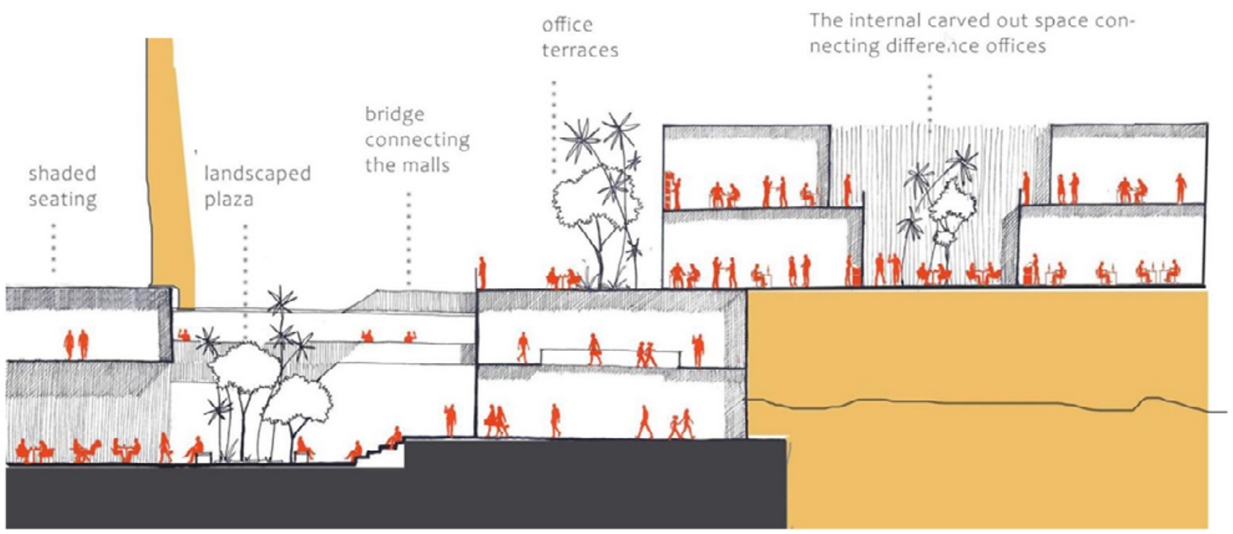
SEMESTER
Semester VI

PROJECT LOCATION
OMR, Tamil Nadu

PROBLEM:
Combination of a Variety of uses within one building. Defining traffic per user group. Maintaining integrity in Facade Design that affects the visual ecosystem.
SOLUTION:
The Design of a Commercial Mixed-Use Building on an IT Expressway. It is a combination of an Office Building and a Shopping Complex. It taught me how to create differentiate various user groups in terms of access to the Built Structure. It was also my first attempt at planning a High Rise Complex.

THE OASIS AT OMR

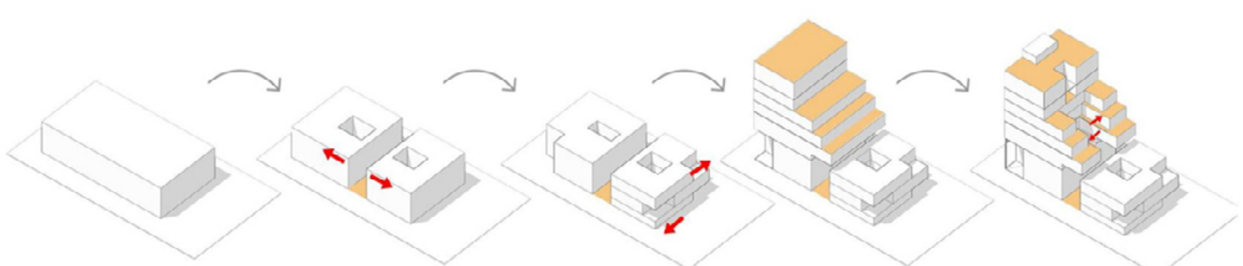
FORM CONCEPTUALIZATION



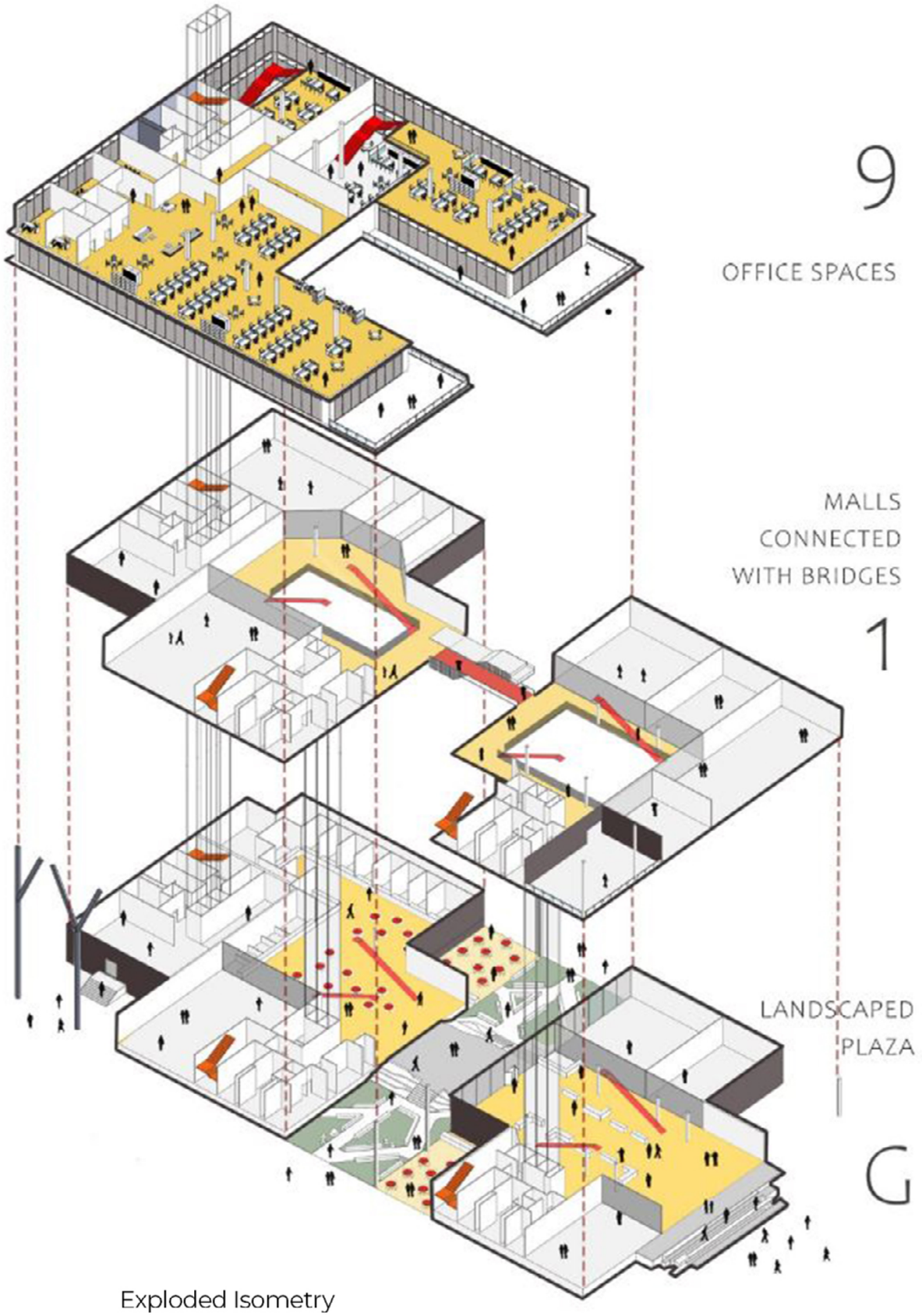
Sectional Sketch To Understand The Courts

The Intent behind the design was to create an iconic Landmark that would be distinguishable from the other high rise buildings in the locality. The plan of the space was to suction users into the building while creating adequate areas that act as breathing spaces for natural ventilation

The entire IT Corridor is distinct from the usual avenues of the city with it's tree canopies that fall over the pathways. The creation of terraces with landscaping was to protect the interiors from te harsh sun-rays. A facade element was also created to act as sun shades to ease the effect of the tropical climate to the structure



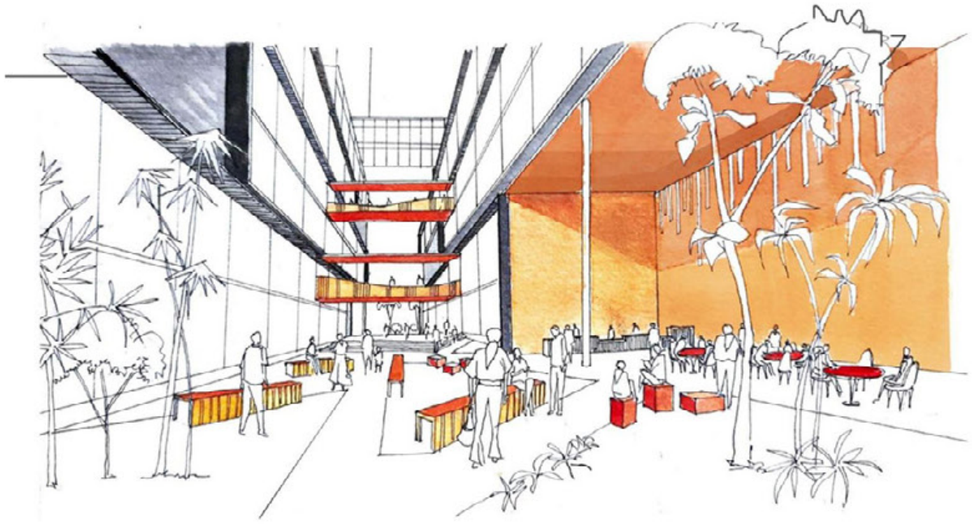
Massing To Indicate Form Evolution



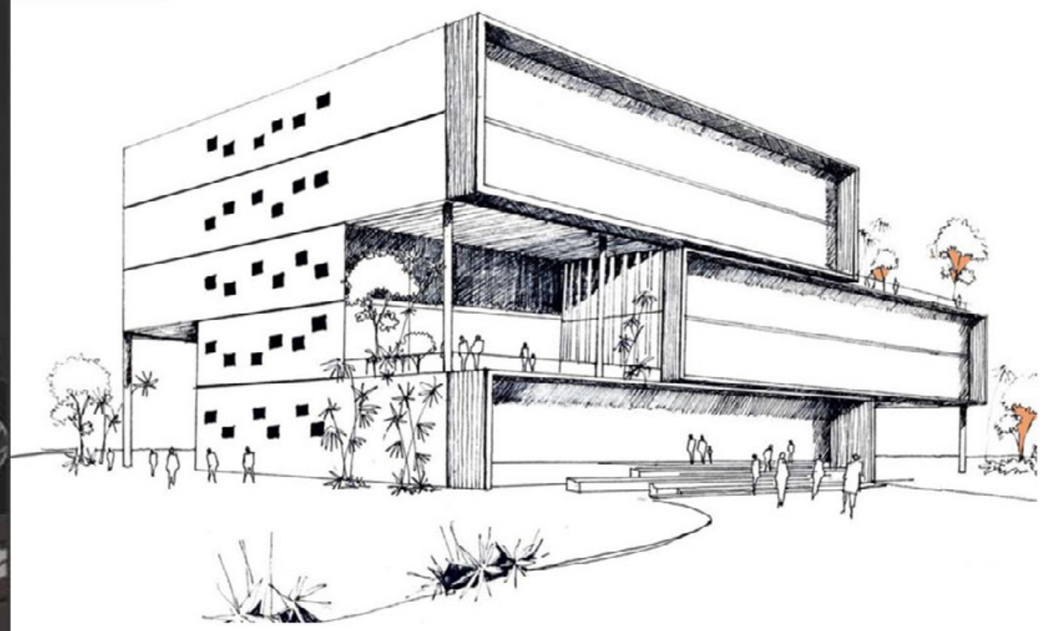
Exploded Isometry

THE OASIS AT OMR

Facade Design and Terraces



The western Facade has been scooped out to create extended teraces. It is integral to be concious of the environment and the impact pf the space onto it's surroundings. The hybrid program of an intertwined contemporary market and events space; signature restaurants and designed urban living are injected into the rather neglected IT Hub of the city with the clear ambition to redirect its inevitable transformation. We build for the people and create spaces that elevate ones lifestyle.



02 CENTRE FOR LEARNING

RURAL SCHOOL BY DAY: COMMUNITY CENTRE BY NIGHT

PROJECT DATE
January ‘18 - March ’18

PROJECT TYPOLOGY
Low Cost Rural Institutional Building

SEMESTER
Semester IV

PROJECT LOCATION
Kodimangalam, Tamil Nadu

:PROBLEM AND SOLUTION
The aim was to construct a rural school in India with locally sourced materials is crucial for several compelling reasons. By utilizing materials found within the region, this school become not just structures for education but also embodiments of local culture and heritage. It not only minimizes construction costs but also ensures sustainability by reducing environmental impact and fostering resilience against local climatic condition. Ultimately, a well-designed school leads to
holistic development

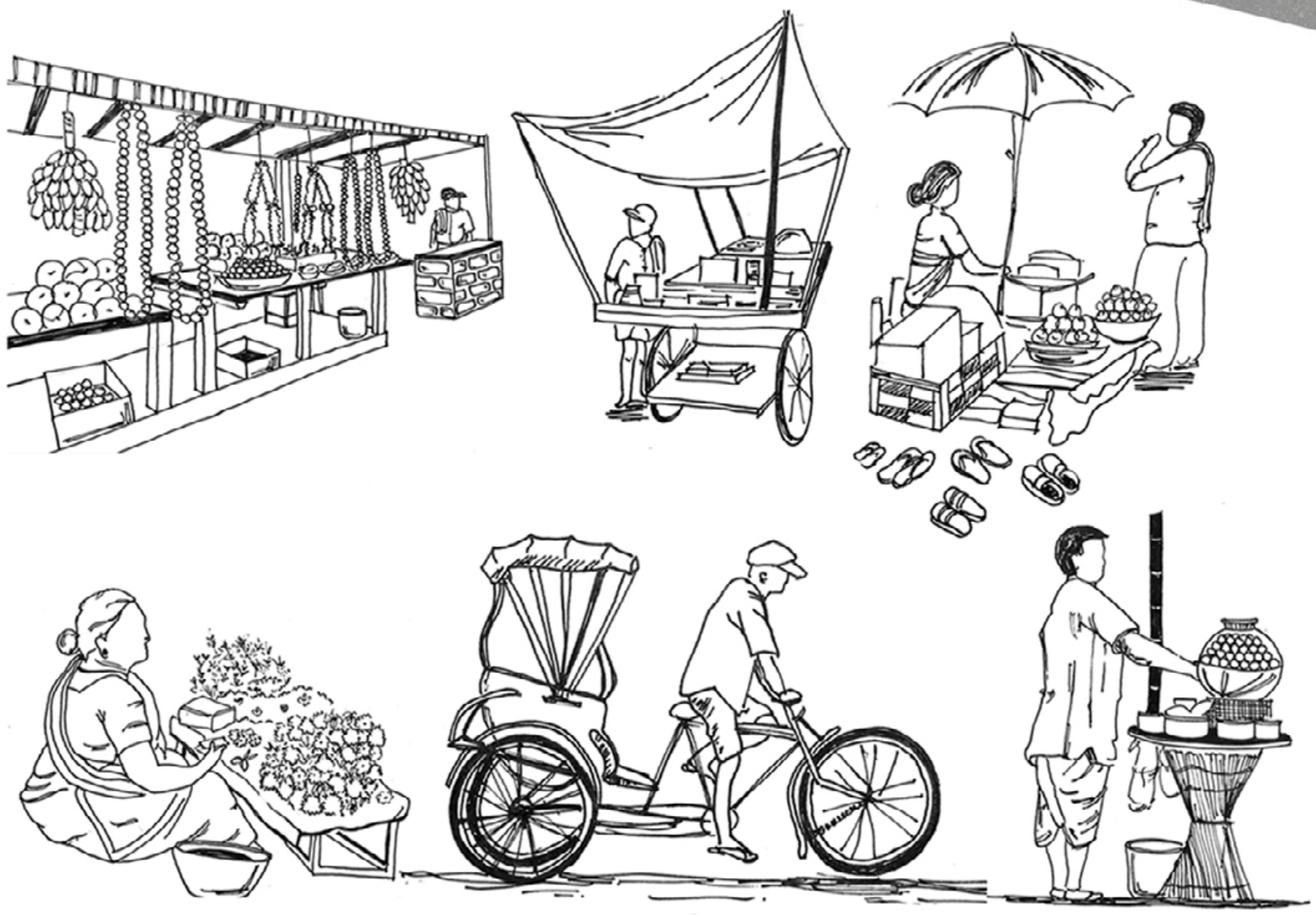
CENTRE FOR LEARNING

RURAL SCHOOL BY DAY: COMMUNITY CENTRE BY NIGHT

The existing stores in the vicinty encrouched the roads creating a hap-hazard environment

The streets were encrouched and over-crowded

Upon studying and analysing the congestion of Kodimangalam, the current school could not house the growing population. With good infrastructure being a valuable commodity for the entire locality, the school had to have more functions. One of the functions derived was a space to accomodate a weekend market.



Vendors were struggling to sit in the heat

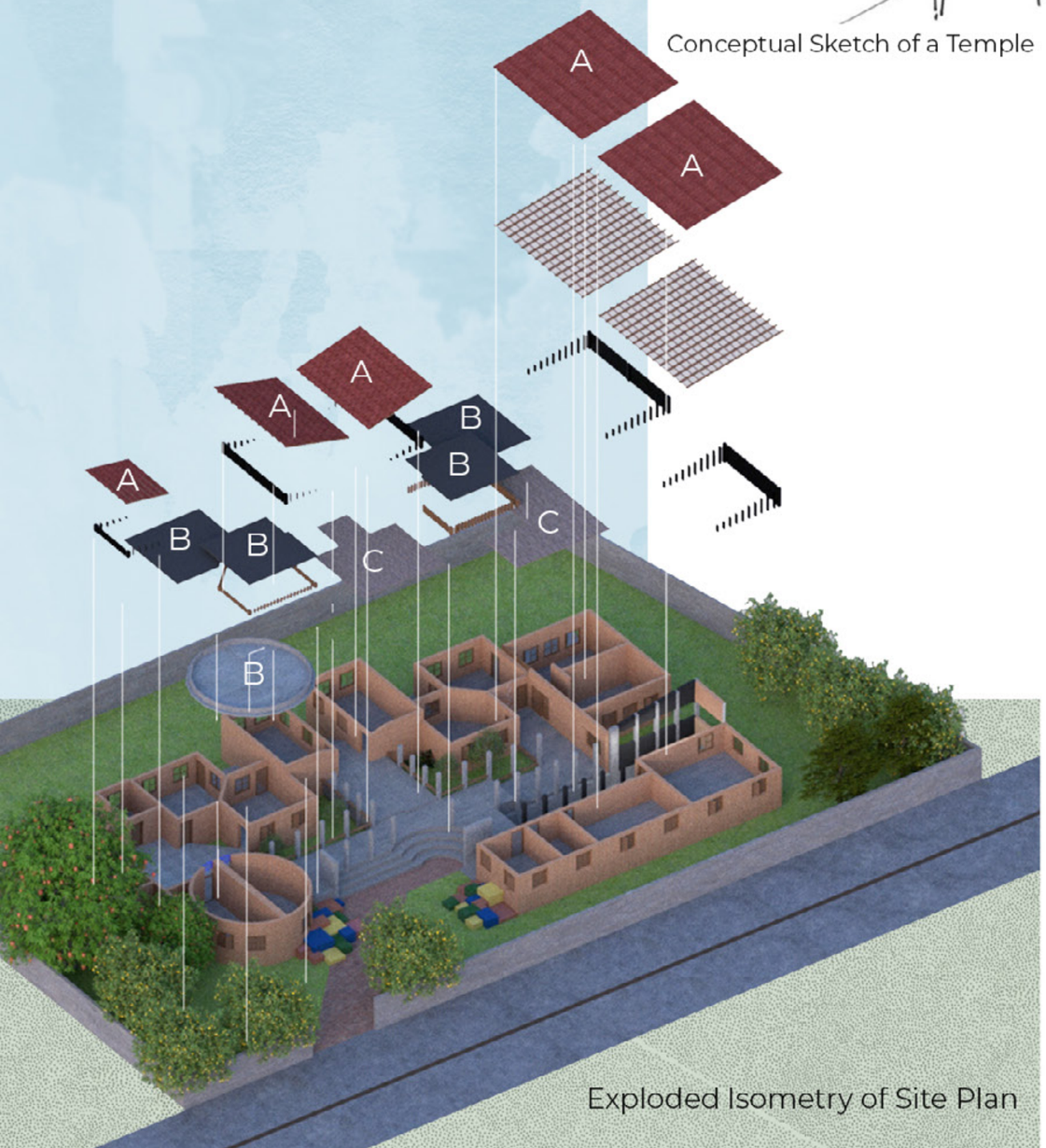
CENTRE FOR LEARNING

MATERIAL STUDY

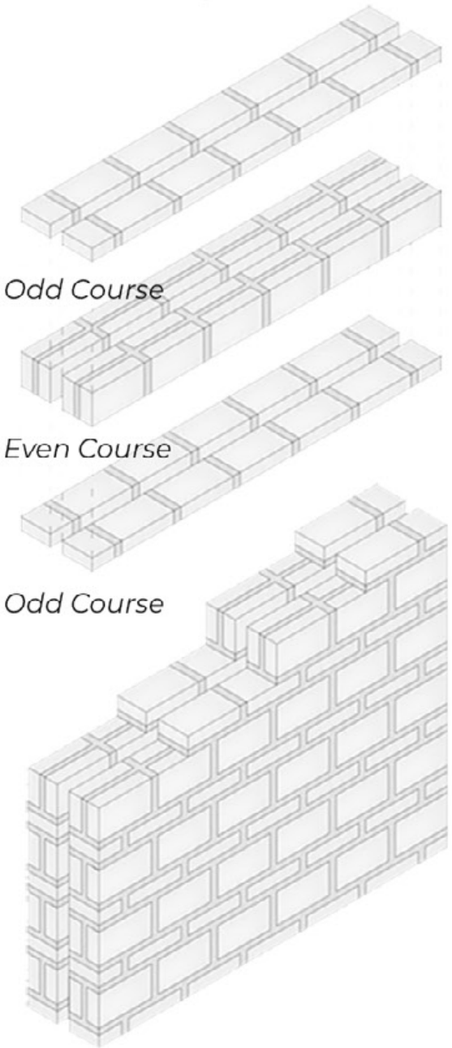
Stone Flooring to mimic the path one takes within Dravidian Temples

All materials are spin-off's of locally available resources

Conceptual Sketch of a Temple



Exploded Isometry of Site Plan

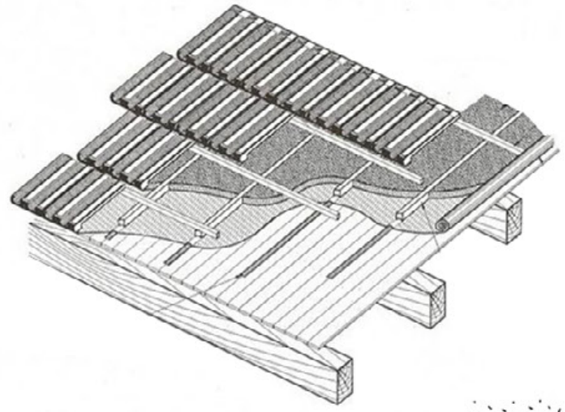


Odd Course

Even Course

Odd Course

Exploded Isometry of Brick Bond



Isometric View of a Mangalore Tiled Wooden Truss Roof

A) SLOPED ROOF

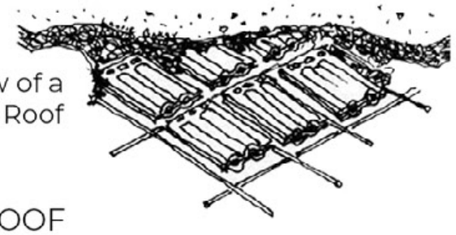
Commonly used in all the houses at the Area. This roof has been used over the classrooms to better suit the climatic environment. The tiles on the roof reflect sunlight instead of absorbing them

B) RAT TRAP BRICK BOND

The purpose of using this type of masonry bond is to reduce the number of bricks and mortar required It also reduces the heat gain of the strucutre. Bricks denote a *pakka* structure

C) JACK ARCHES

Used for the Central Pathway. The Jack Arches reduce the quantity of Steel in a concrete slab. Carried by Stone Columns and Brick Load Bearing Walls

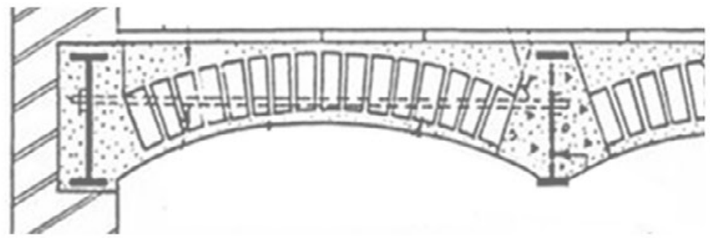


Filler Slab Isometry

Isometric View of Tiles

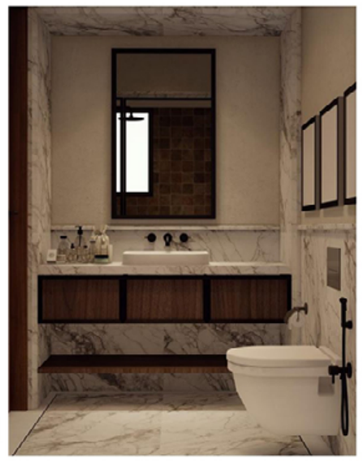
B) FILLER SLAB

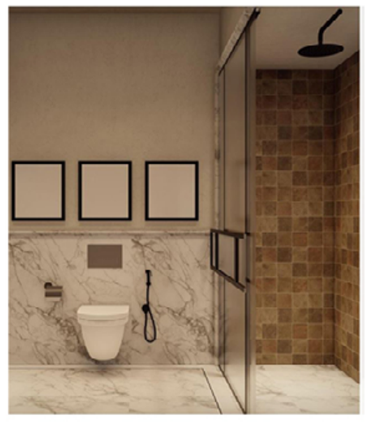
Used over all the flat roofs expect the central walkway. Part of concrete in the bottom of slab is replaced by filler material, in this case with terracotta pots. Mud plaster is recommended on top of shuttering sheets to ensure an even smooth finish of the ceiling. The slab has significantly lower dead weight and reduces steel usage



Section of a Jack Arch

03 THE APARTMENT



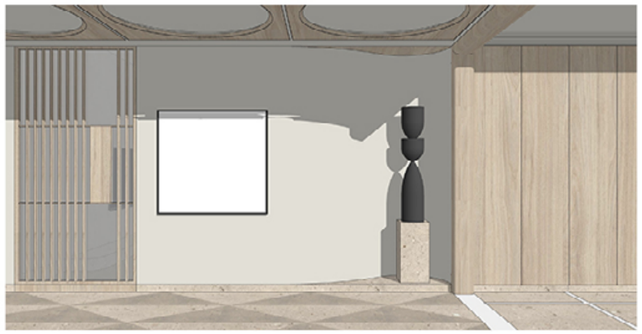


RESIDENCE
by FMDS
Location: Chennai
My Role: Architect

My role in this project was that of a lead architect wherein we were given an empty canvas of an apartment and expected to work on the interior modelling. The client desires a home filled with losts of good light and ventilation. She wishes to combine the practicality of an Indian Household to Modern Contemporary Architecture.

THE APARTMENT

RESIDENTIAL PROJECT



FALSE CEILING AT 2550mm FROM FFL TO ACCOMODATE AC INDOOR UNIT AS PER DRAWING SK/INT/002

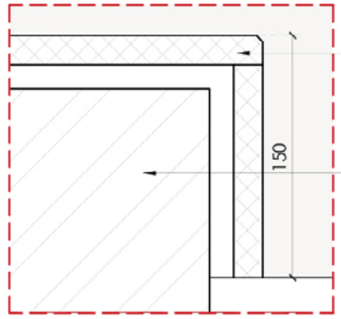
20mm FLEXI PLY BENT AS PER DIMENIONS TO BE FINISHED WITH LIME PLASTER FINISH AS PER ARCHITECT'S SPEC.

FREESTANDING ART PIECE AS PER SELECTION

WOODEN ARCHITRAVE AS PER JOINERY DRAWING (SK/JD/001)

75mm HIGH MARBLE PEDESTAL TO MATCH WITH THE SKIRTING HEIGHT AS PER DETAIL D

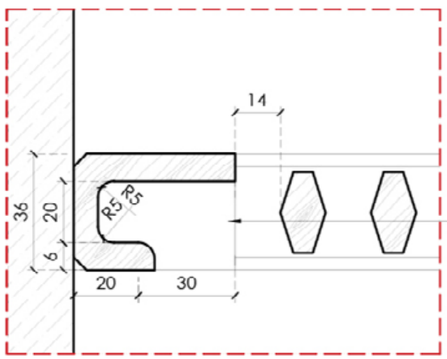
ELEVATION B



150mm HIGH MARBLE PEDESTAL WITH 4mm CHAMFER ON TOP (TOP OF MARBLE PEDESTAL TO MATCH WITH 150mm MARBLE SKIRTING)

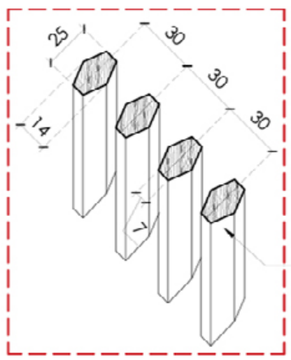
BRICK SILL

DETAIL C



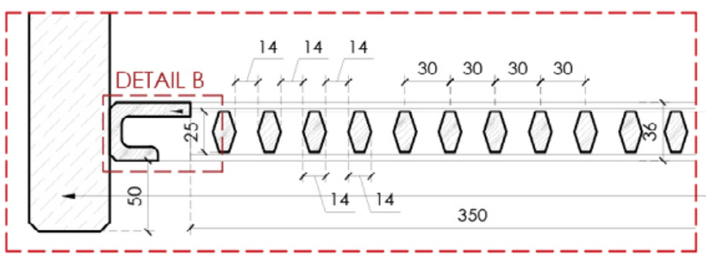
50mm THK OAKWOOD SHUTTER TO BE POLISHED AS PER ARCHITECT'S SPECIFICATION WITH FINGER GROOVE UPTO 120mm FROM FFL AS PER DIMENSIONS

DETAIL B



OAKWOOD SLATS TO BE POLISHED AS PER DESIRED FINISH

ISOMETRIC VIEW



50mm THK OAKWOOD SHUTTER TO BE POLISHED AS PER ARCHITECT'S SPECIFICATION WITH FINGER GROOVE UPTO 120mm FROM FFL AS PER DIMENSIONS AS PER DETAIL

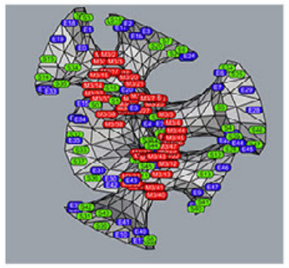
50mm FLEXI-PLY TO BE CURVED WITH 300mm RADIUS AND 5mm CHAMFER ON BOTH SIDES AND PAINTED WITH TEXTURE PAINT AS PER ARCHITECT'S SPECIFICATION AND TO BE EXTENDED OUT BY 75mm

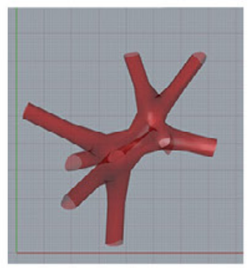
DETAIL A

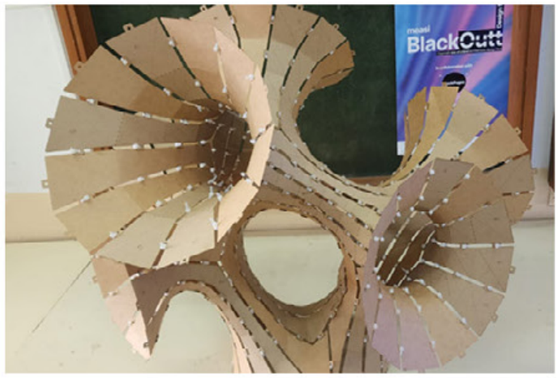
The aim of the project was to create a home for a family of six. I learnt how to process or translate renders, sketches and models into working drawings with details labelled and explained to the contractors on site. I was also in charge of on site management. The collage is from a presentation as approved by the client whereas the drawings are the details for the door to enter this space.

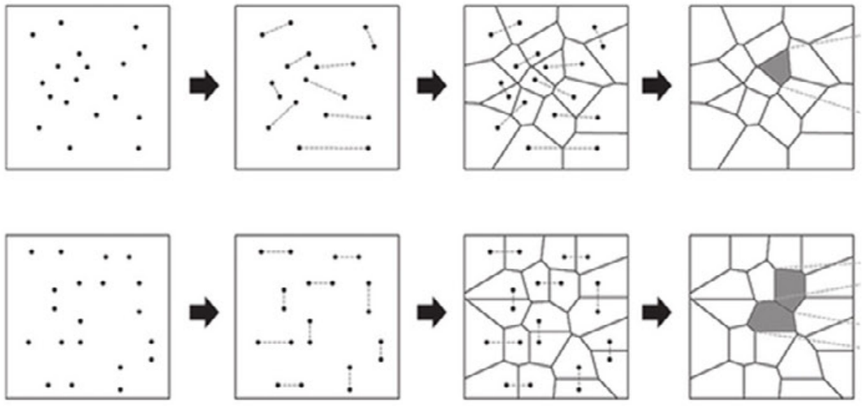
04 WORKSHOPS

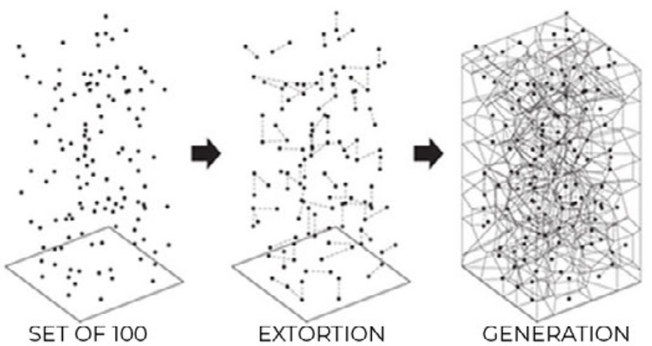
EXPLORATIION OF CONCEPTS AND FORMS





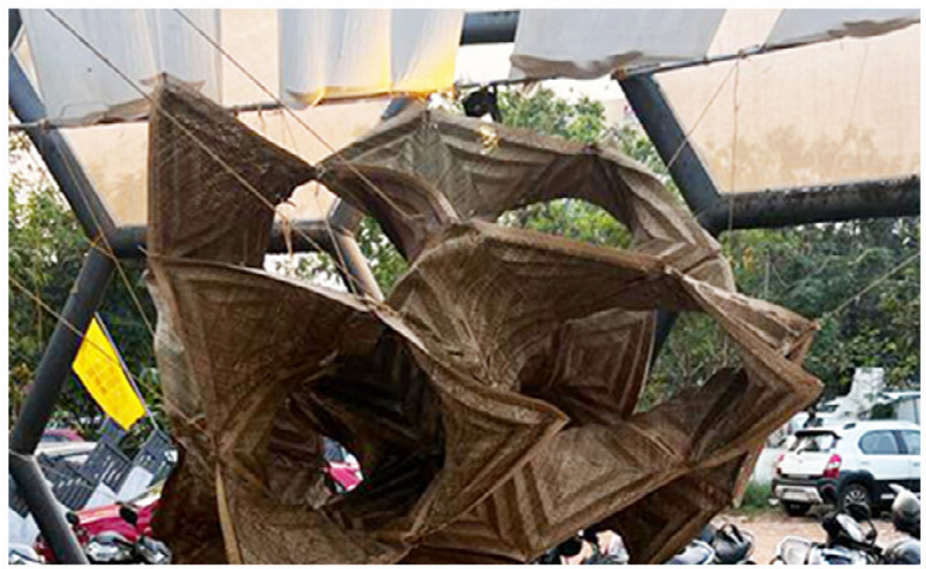






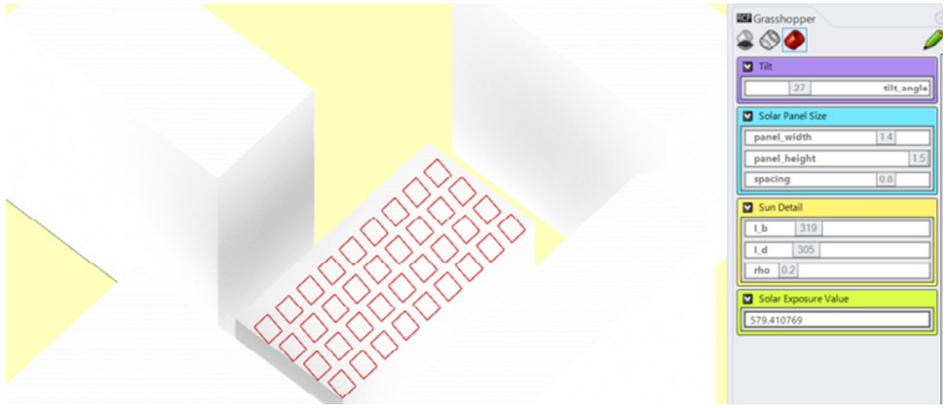
The agenda of the design workshop was to explore static Architecture. Voronoi's were the base concept of this design and utlizing them we came up with a series of shapes through grasshopper and split up into sections. Following this we digitally printed and laser cut the pieces and combined them using tacks to create a sculpture

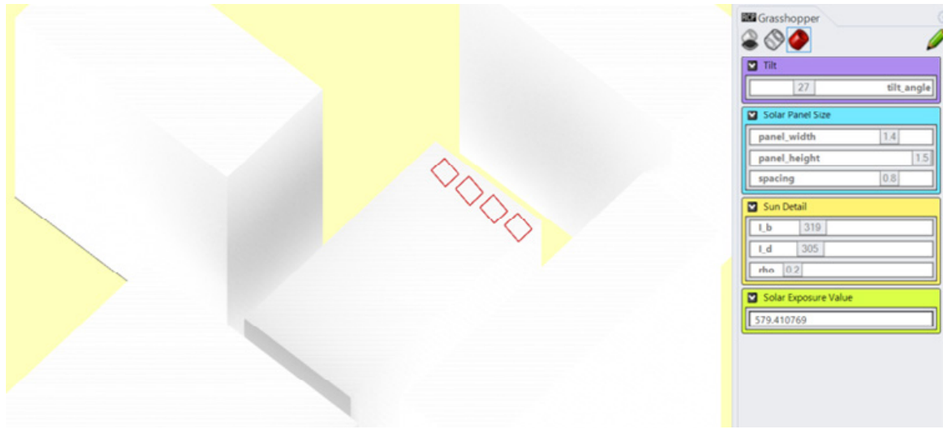
Through the year 2020 until now I have participated in various workshops to explore form, materials and origami. These explorations were done under the supervision of well-known architects in various regions of India such as Auroville, Kozhikoda and Chennai. All these workshops were hands-on and invovled using materials such as millboard, soil, bamboo, bricks, wooden slats and granite were the base materials of this workshop.

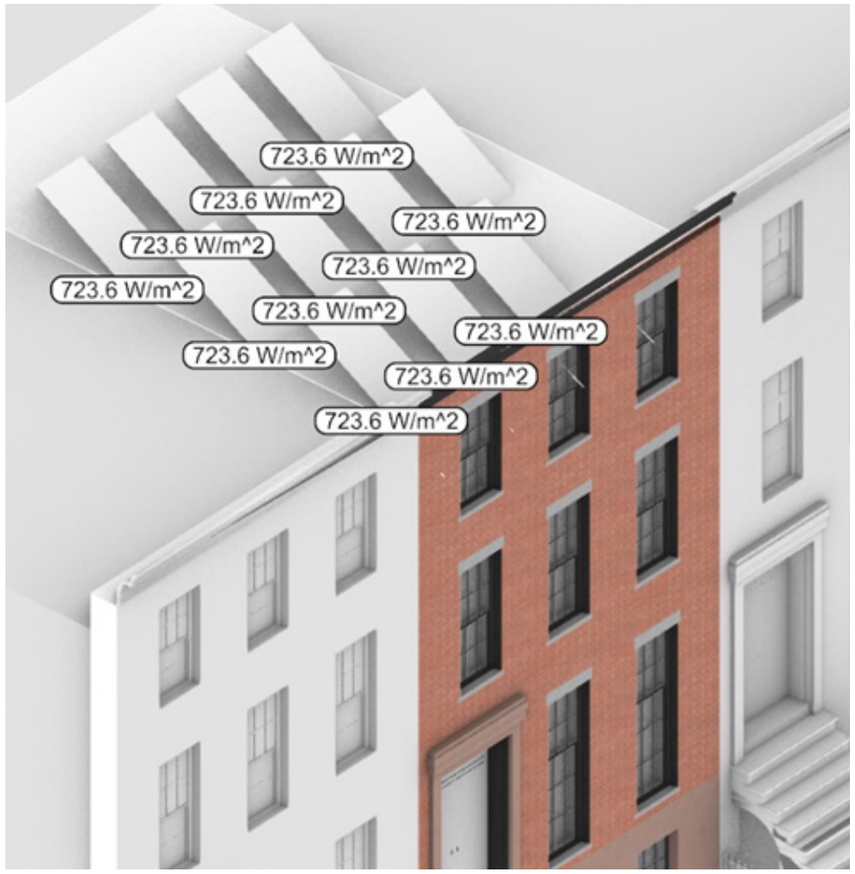


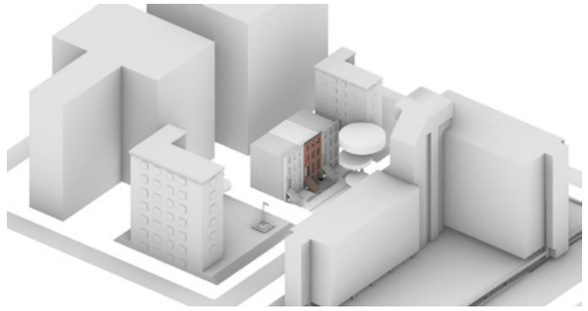
05 ITERATIVE SOLAR PANEL DESIGN

Intergration of python with Grasshopper and Rhino









This project develops a simple system for optimizing rooftop solar panel placements in Rhino.

PROJECT DATE
December 2024

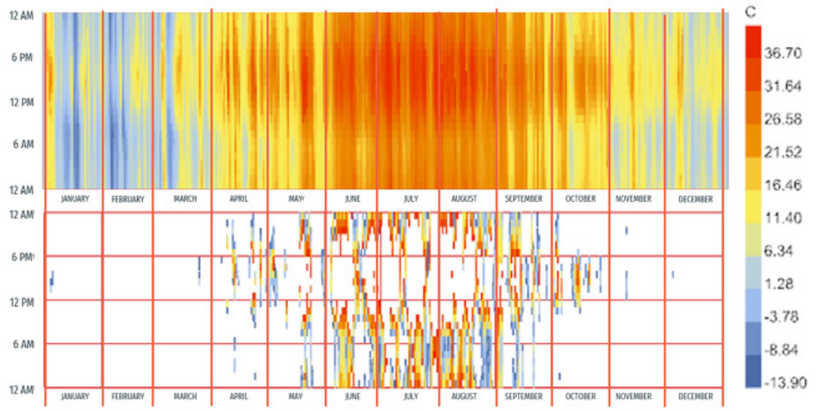
The script automates rooftop solar panel placement by generating a grid based on roof area, panel size, tilt, and azimuth. Solar exposure is calculated using Ladybug's beam, diffuse, and reflected radiation data, while ray tracing identifies and removes shaded panels. Users can dynamically adjust parameters such as panel size, tilt, spacing, and location, guided by Ladybug inputs like radiation and sun vectors.

Key Functions:

Solar Exposure Calculation: Combines beam, diffuse, and reflected radiation.
Shading Check: Uses ray tracing to detect and exclude obstructed panels.
Panel Creation: Dynamically places and tilts panels at grid points.
The Conduit Plugin enables an interactive UI for parameter adjustments and result visualization in Rhino. While Grasshopper's UI supported real-time customization, Rhino scripting proved more accurate for panel placement due to its direct geometry handling capabilities. This highlighted the limitations of Grasshopper's visual scripting for complex shading and exposure calculations.

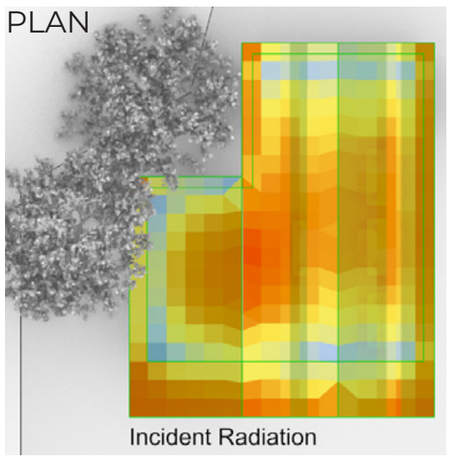
This was a two-person project: I developed the model and code, while my teammate handled the UI and presentation.

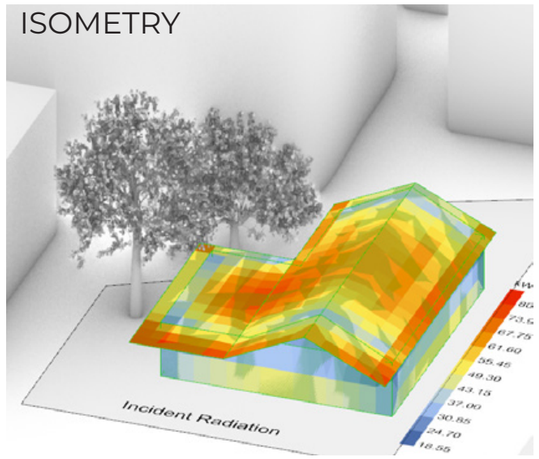
06 ENVIRONMENTAL PERFORMANCE
Design of an Office Building with Climate Studio and Ladybug

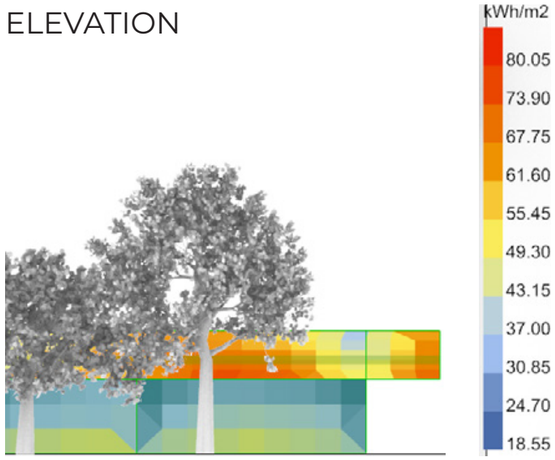


Implications of 2D Dry Bulb Temperature with Comfort Comparitive:
According to this data, From June to August, he data shows a clear rise in dry bulb temperatures, peaking in the afternoon (12 PM to 6 PM).
Since the temperatures in May still drop significantly at night, the cooler nighttime winds can be used to flush warm air out of the building.

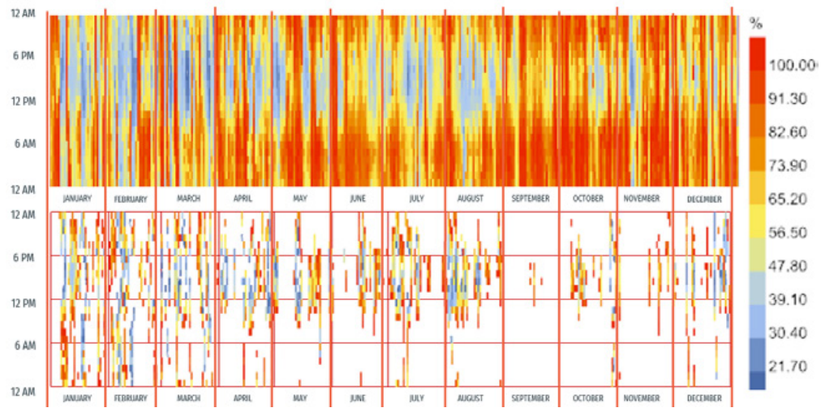
This project focuses on the evolution of environmental performance simulation of a small office building, designed to accommodate approximately 15-20 people. The office consists of three primary sub-zones:
An open work area,
A small lounge space, and
A small conference room.
Each of these spaces is carefully designed to meet the needs of the occupants while optimizing energy performance through thermal comfort, daylighting, and solar radiation analysis.



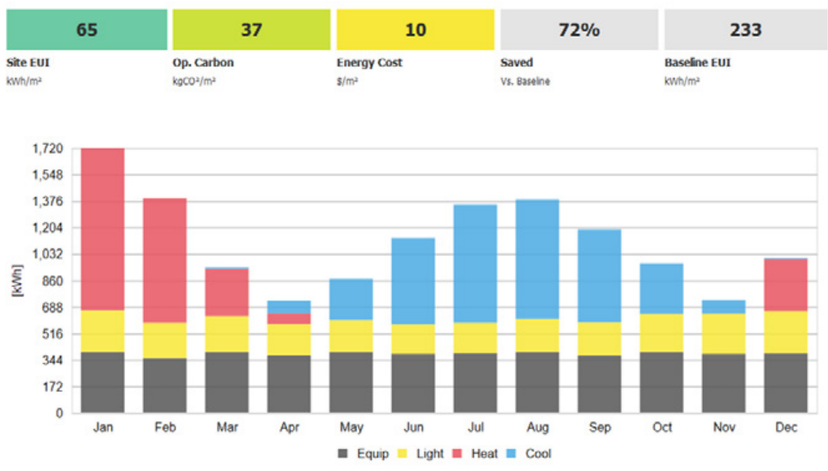


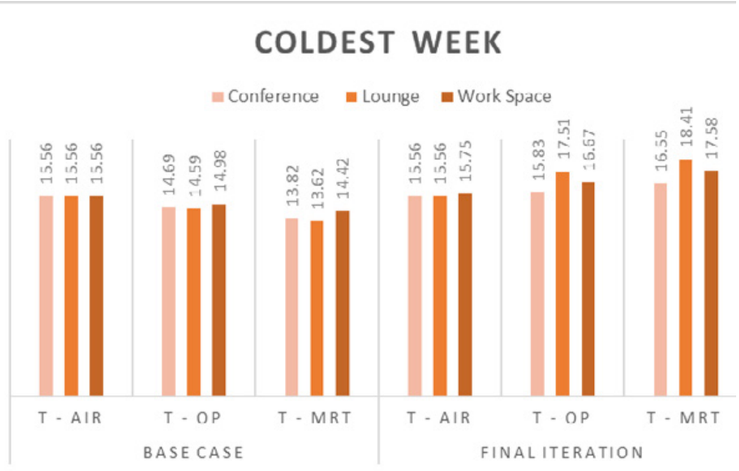


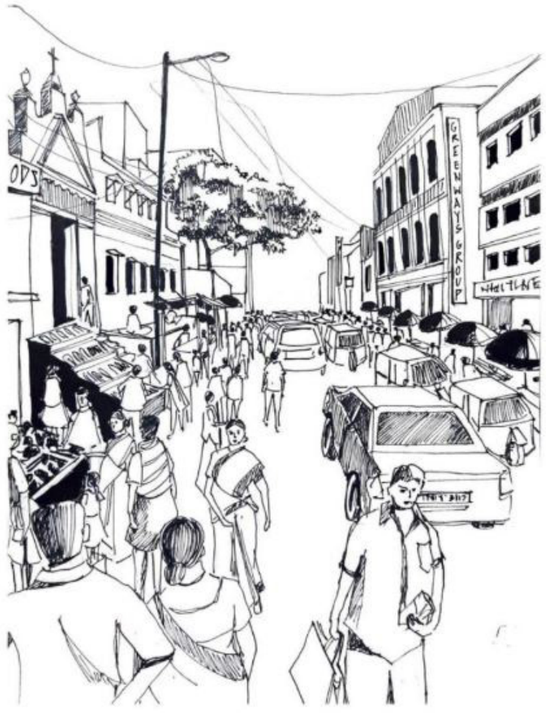
The plan highlights the distribution of incident radiation across the roof and surrounding areas. Radiation values range from 18.55 kWh/m² (low) to 80.05 kWh/m² (high), shown in a gradient color scale. Areas with higher radiation are concentrated on south-facing slopes and flat surfaces exposed to direct sunlight.North Surface and South Surface has Lower radiation levels dominate due to limited sunlight exposure.Western Facade has Moderate radiation levels with afternoon sun exposure.Eastern Elevation has Morning sun contributes to moderate radiation levels.

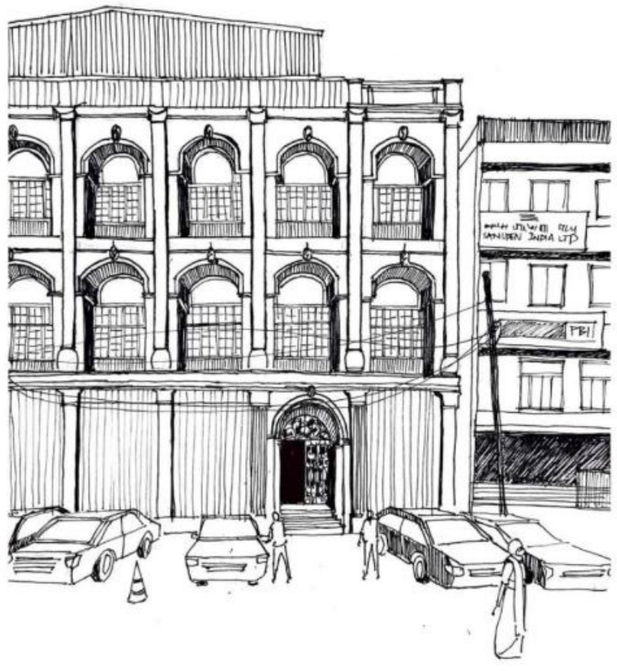


Implications of 2D RH
This Data represents the sparse spread of comfort of RH throughout the year This implies that we see high humidity throughout the entire year which justifies the Annual Average of 66.4%. Most of the design implications would be to shift this range more towards comfort.









ANISHA PANESAR