



ARCHITECTURAL PORTFOLIO  
*DIA VOHRA*



Architecture is really about well-being I think that people want to feel good in a space.. On the one hand it's about shelter, but its also about pleasure  
-Zaha Hadid



## DIA VOHRA

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@\_.mindcandy  
Bangalore, India

## About Me

A 5th Year student pursuing her Bachelors in architecture at RV college of architecture. This course has always inspired me to do better, be innovative, observe, learn, and pay attention to the details. Sustainable Architecture and new concepts in architecture fascinate me and push me to explore, adapt, and do better. I am a hardworking student that will give my best in everything I do.

English .....  
Hindi .....  
Kannada .....

## Education

Bachlores In Architecture  
RV College Of Architecture 2018-2023

PUC Board  
Christ Junior College - 2016-2018

IGCSE Board  
Primus Public School 2007-2016

## Professional Skills



O AUTO CAD	
O RHINO	
O REVIT	
O PHOTOSHOP	
O ILLUSTRATOR	
O INDESIGN	
O SKETCHUP	
O LUMION	
O TWIN MOTION	
O MICROSOFT EXCEL POWER POINT	

## Extra Curricular

### WORKSHOPS :

- Bamboo Construction and design
- Hafele design and detail

### LEADERSHIP :

- Class Representative 2018-2023
- School Sports vice Captain 2016

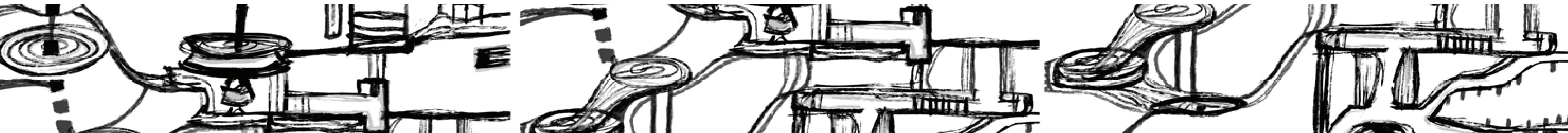
### COMPETITIONS :

- First Runners Up all India Solar Decathlon Net Zero Building
- Lancify x Puma Shoe design
- Selected for Incubation period for climate launch pad world competitions

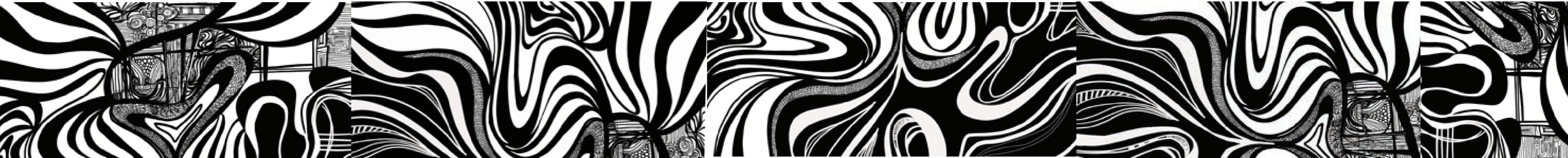
### FREELANCE/WORK :

- Architecture Paradigm Professional training internship
- Design and Content creator student ambassador For Lancify. (1 year)
- Interior Design Freelance
- Graphic Design Freelance

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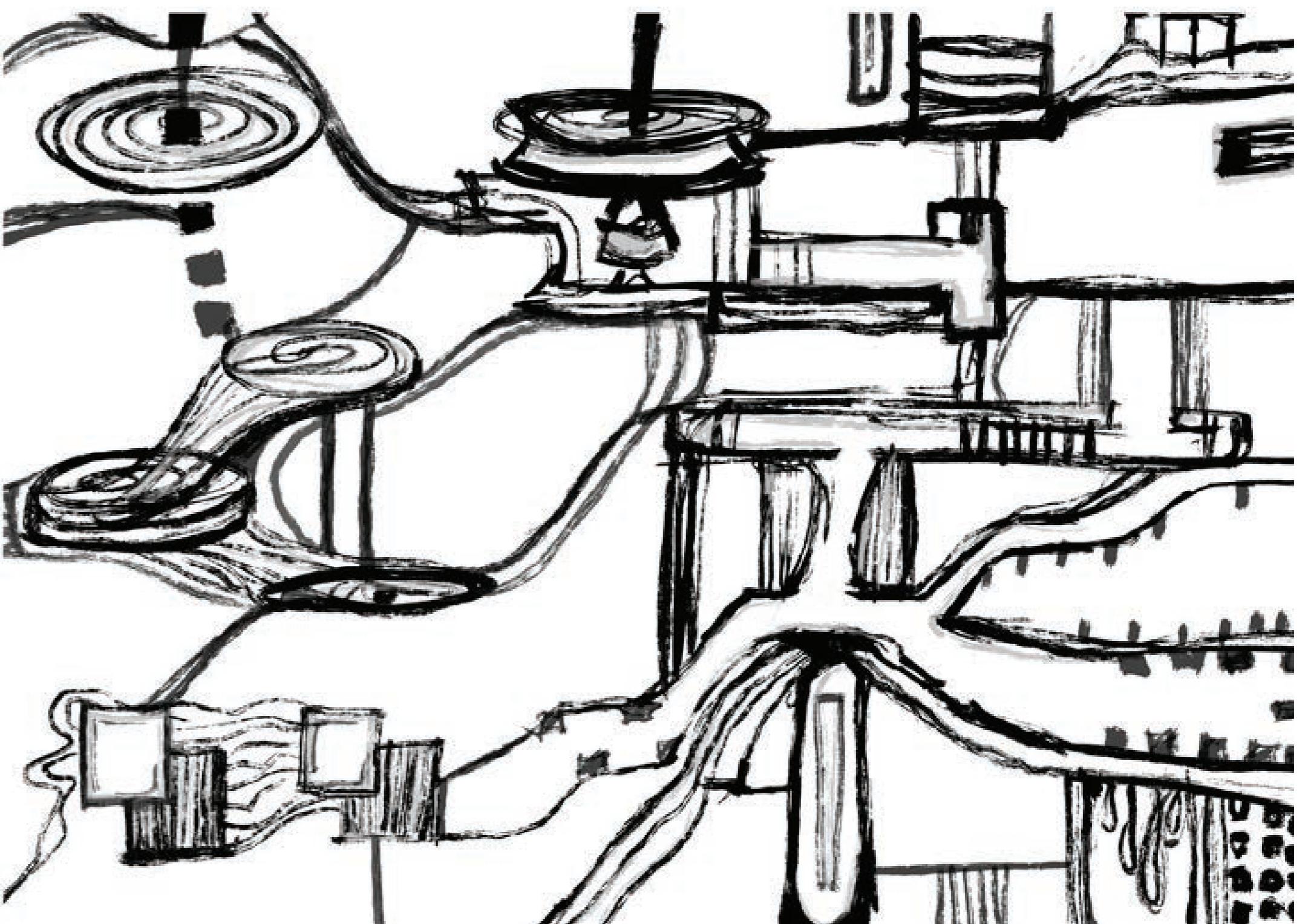
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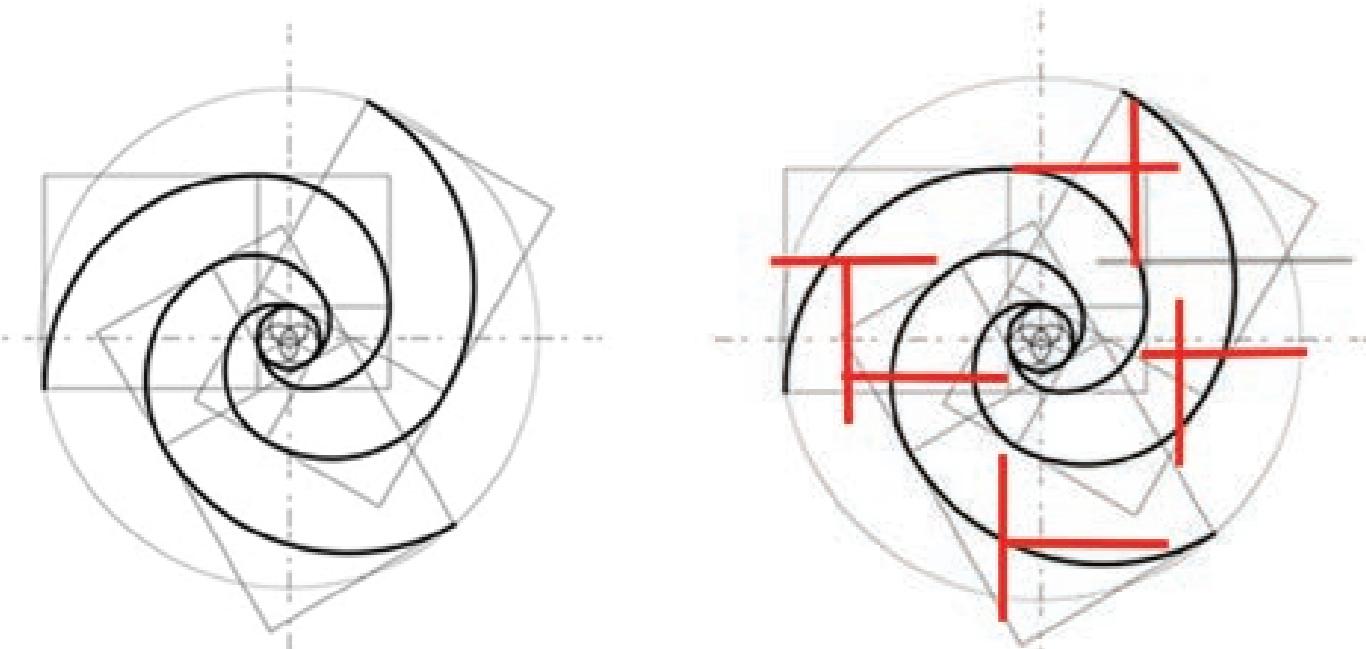
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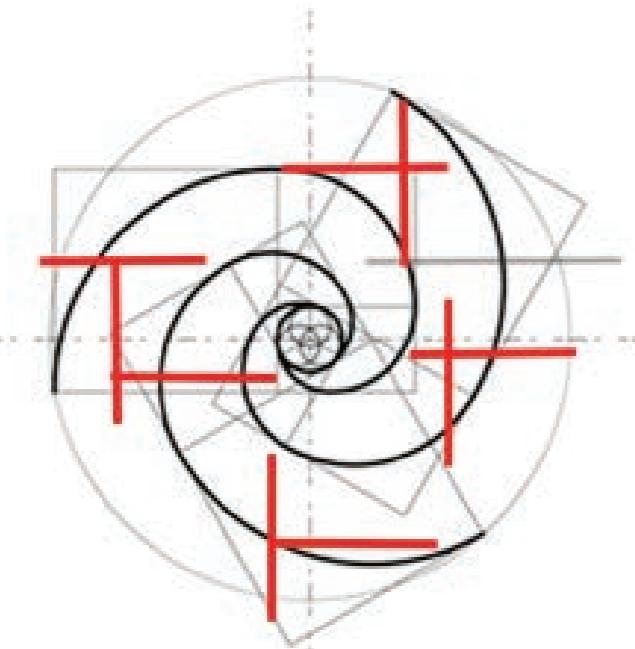
PUBLIC LIBRARY  
Unwrapping of chapters



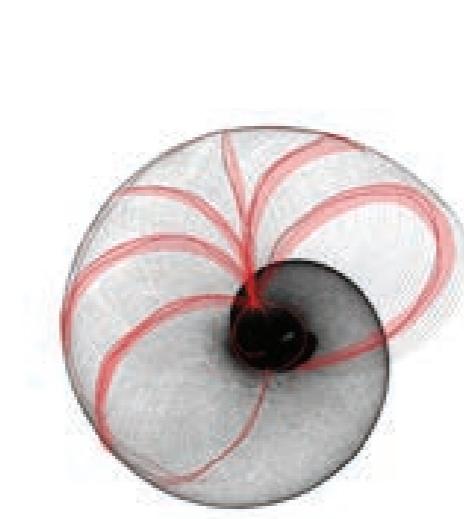
Bringing together the new way of which an **experience** can take place, the stumbling upon the discovering the exploration. The **pealing of each layer** understanding the depth of what it is the experience space through your senses and what is chosen to **focus and blur out**. The street culture and the sense of chaos in such a context bring out the discovery of calm spaces that help grow your knowledge **build communities** and understand the importance of **public scape**. Each space in the building has a sense of a chapter that reveals parts of the story while the space is explored.



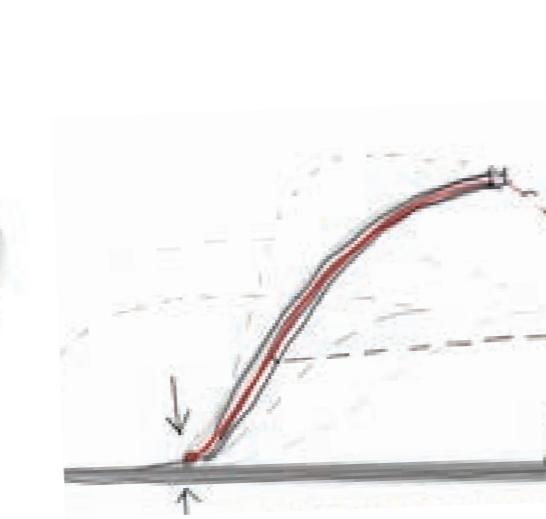
Inspiration taken from a 3 dimensional golden ratio, increasing Visibility, Interaction, ability to stumble upon a space



Layer 1- Layer one is the circuity  
Layer 2 - Layer two represents the planes that interact the layer one



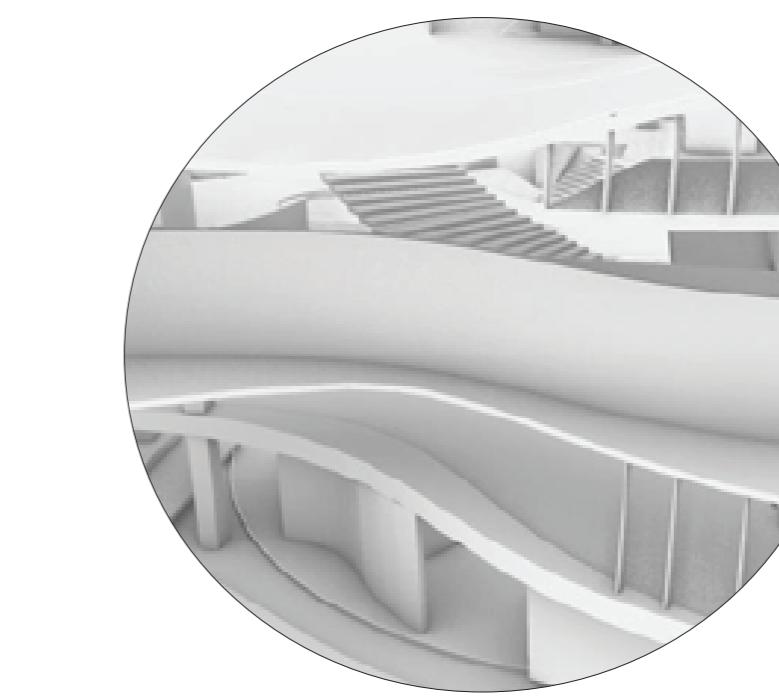
Spaces carved out of the shell, to understand the complexity of the curved spaces



Spaces Manifest from the main focal point marking the library as the main public space for interaction and knowledge.



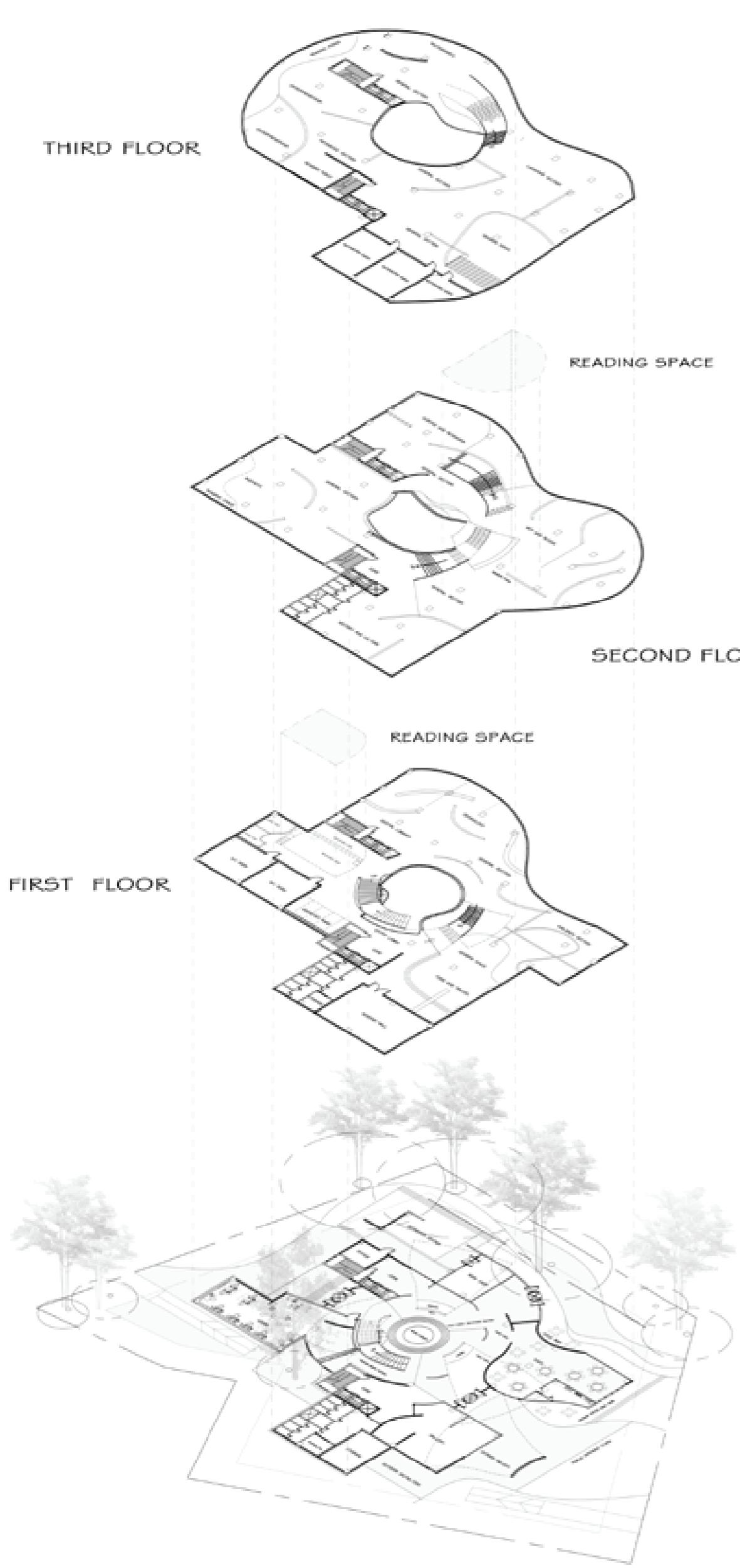
Central Staircase always has visibility to each Level



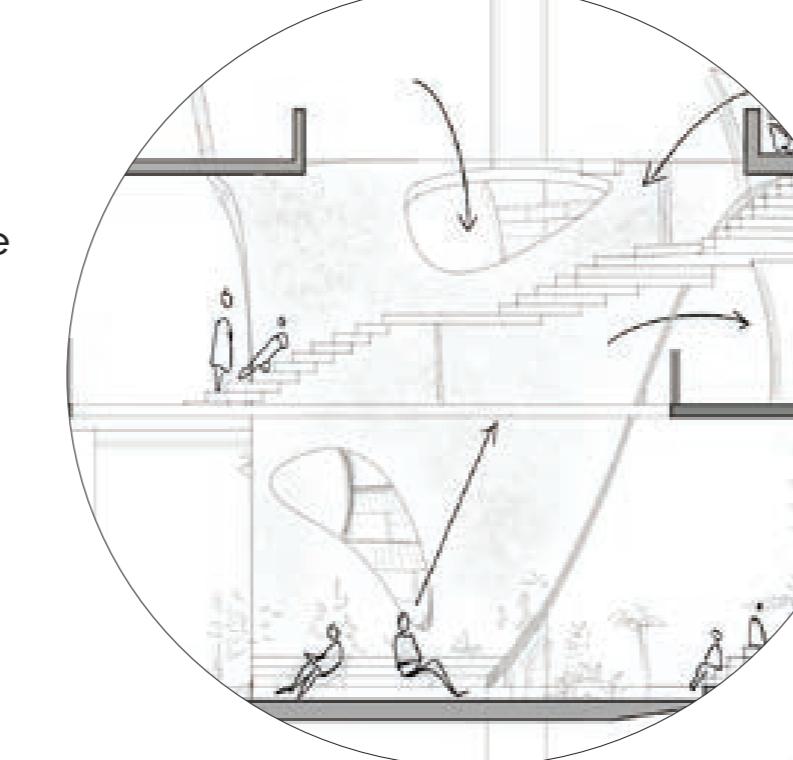
Public edge responds to the busy street and presence of trees



Spaces carved out of the structural elements



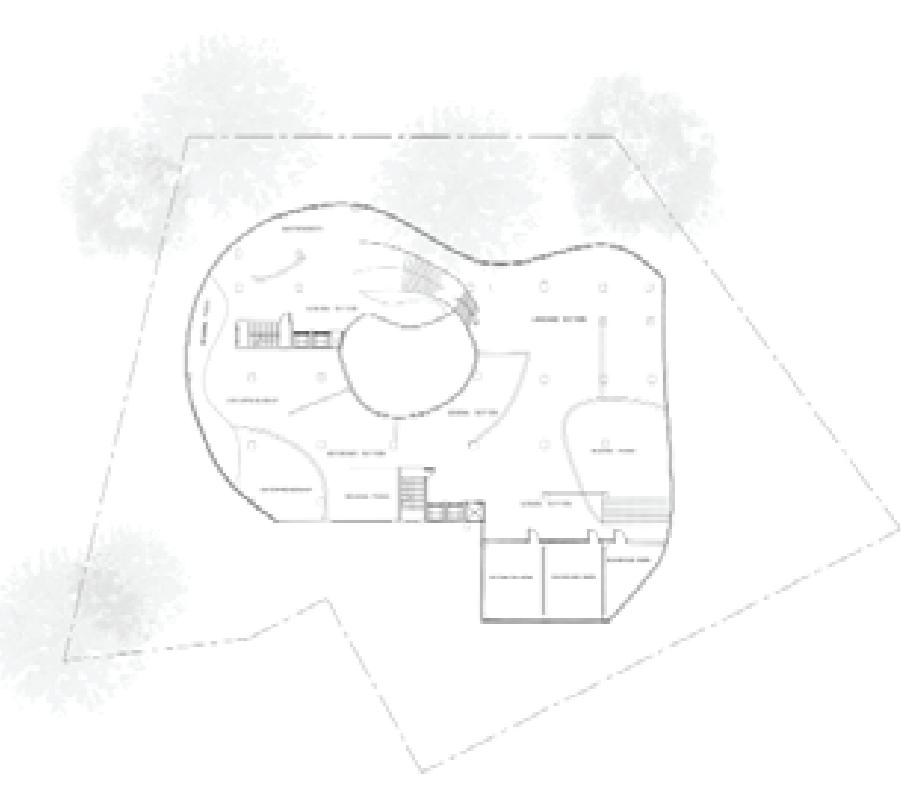
- Visibility of spaces, while walking through the helical Staircase the view of the reading pockets and large book shelves are seen.
- Staircase is celebrated as a spaces to explore vertical and horizontal vision and increases Interaction.
- The Public edge catering to the all age crowd that is a passing audience to the highly dense sight edge



First Floor



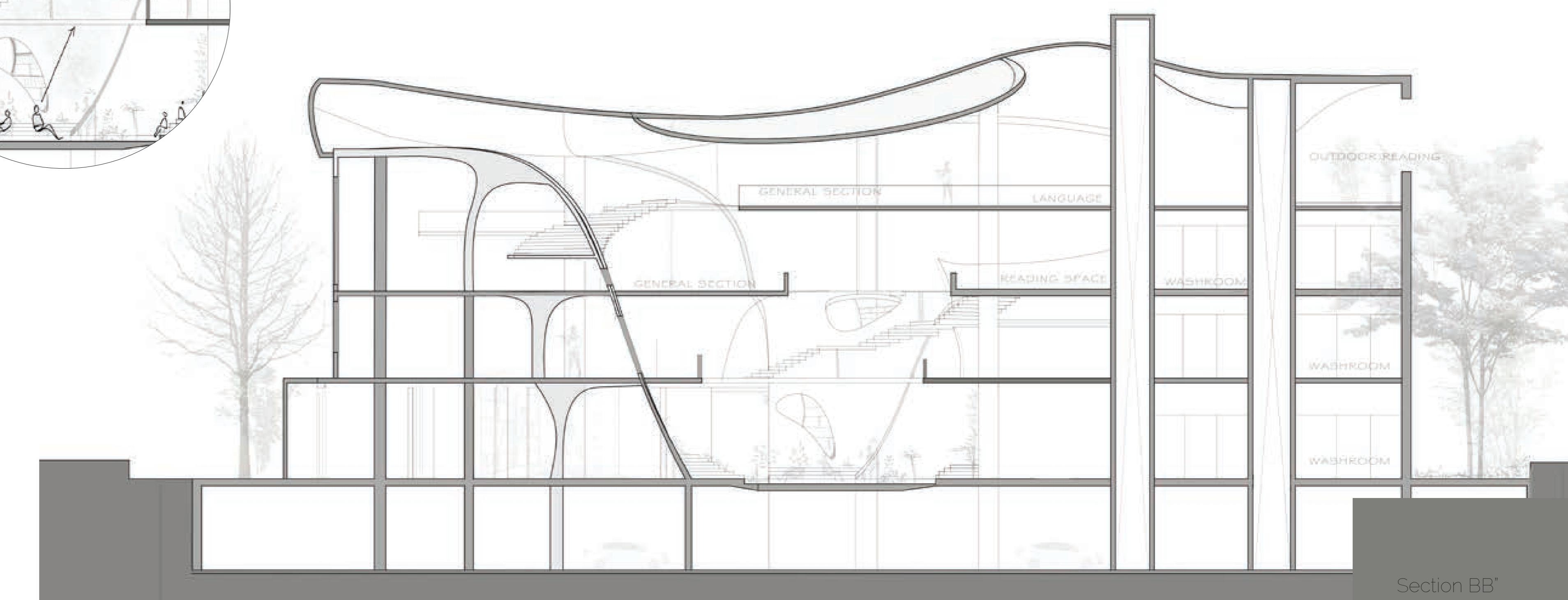
Second Floor



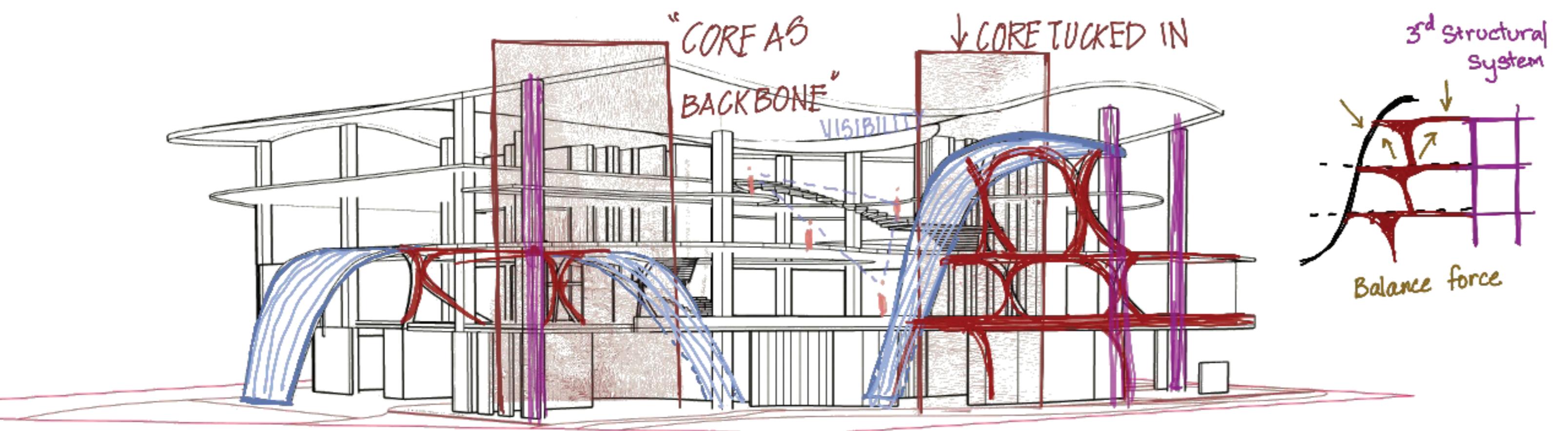
Third Floor



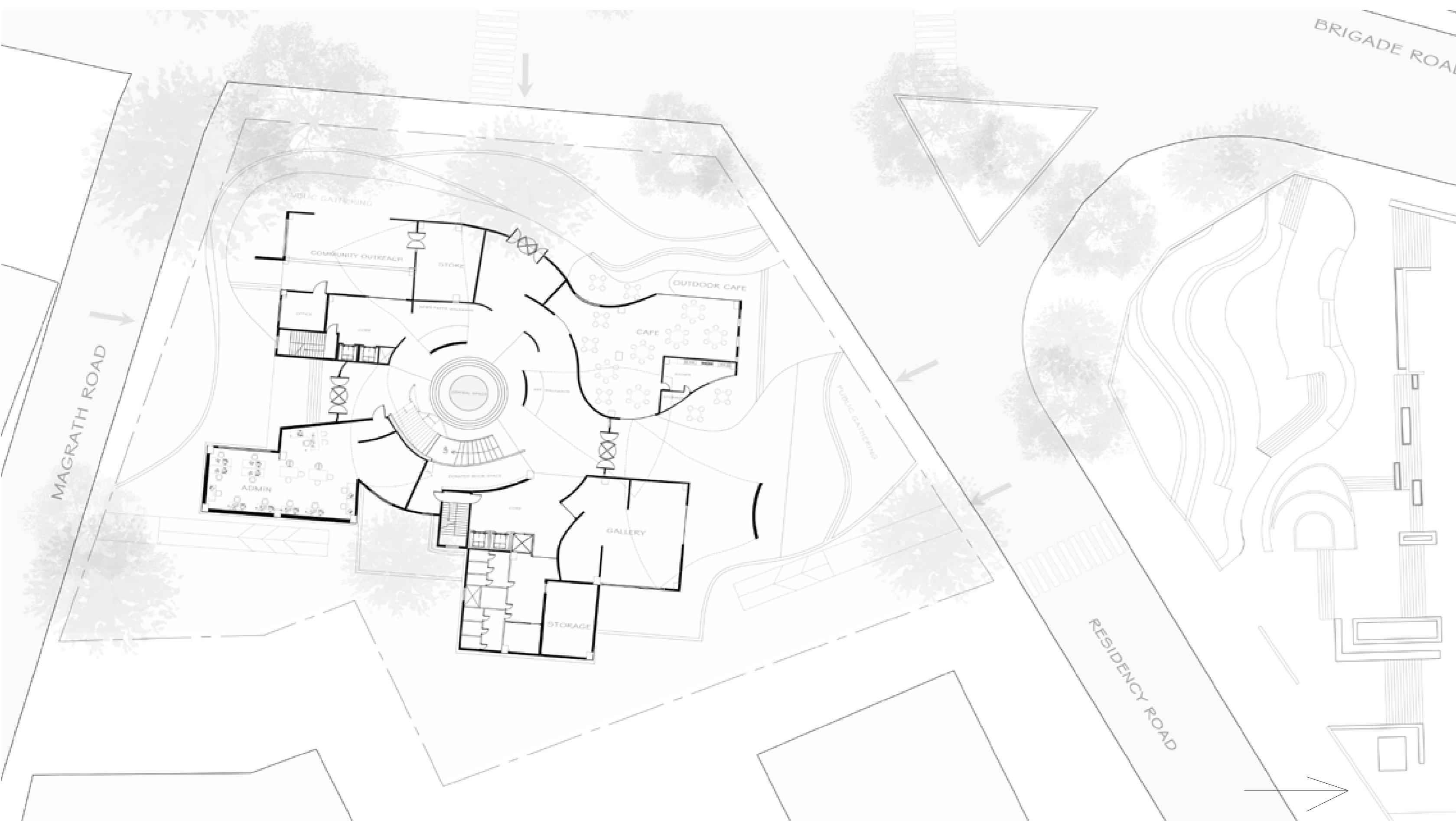
Explore, unwrapping of spaces and visibility of spaces.



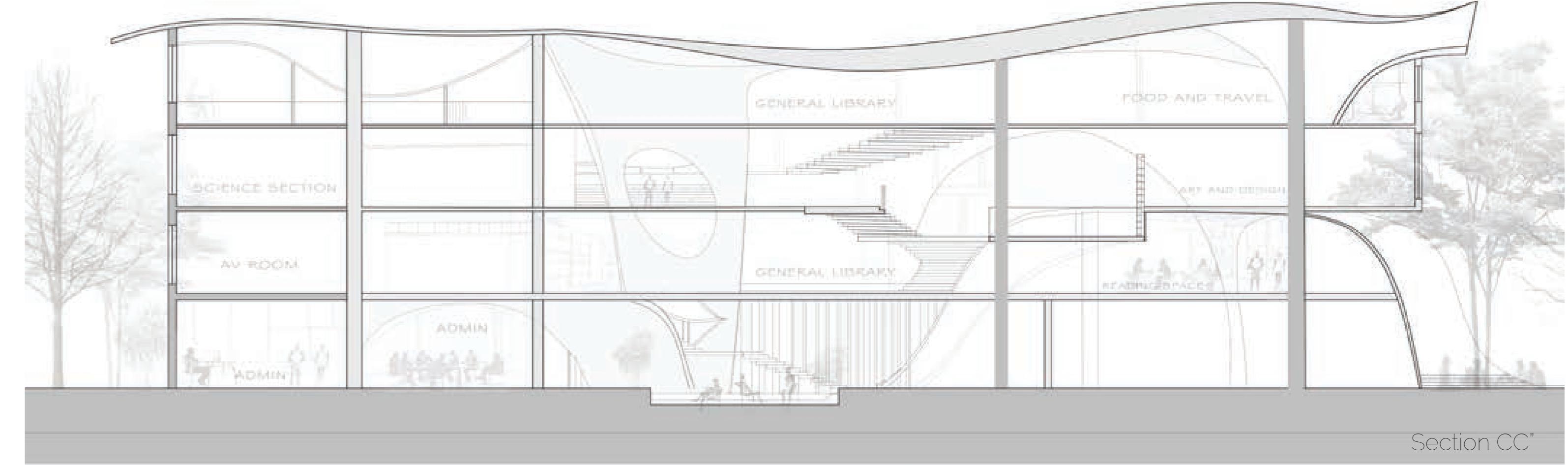
Section BB\*



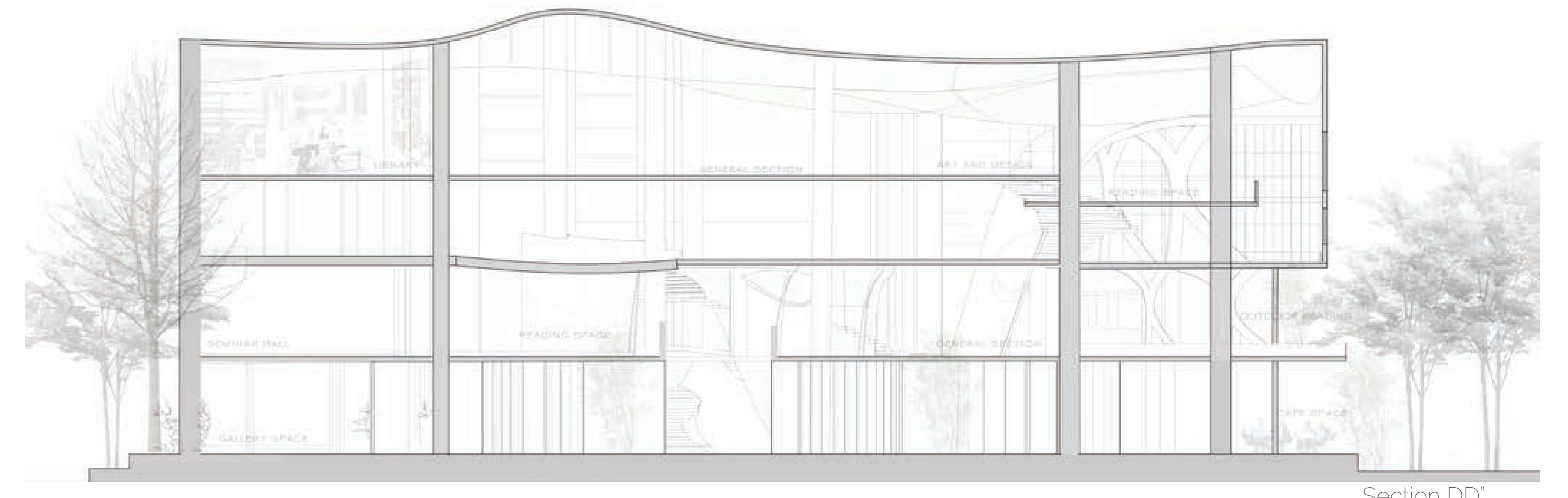
Service core acts as the **backbone** of the structure that's tucked into the building  
the main focal point is the skylight with a semi permissible membrane that allows the light to fall into the central circle gathering.  
The spaces spiral out of the **node** and creating the shift in the two layers manifesting reading spaces,



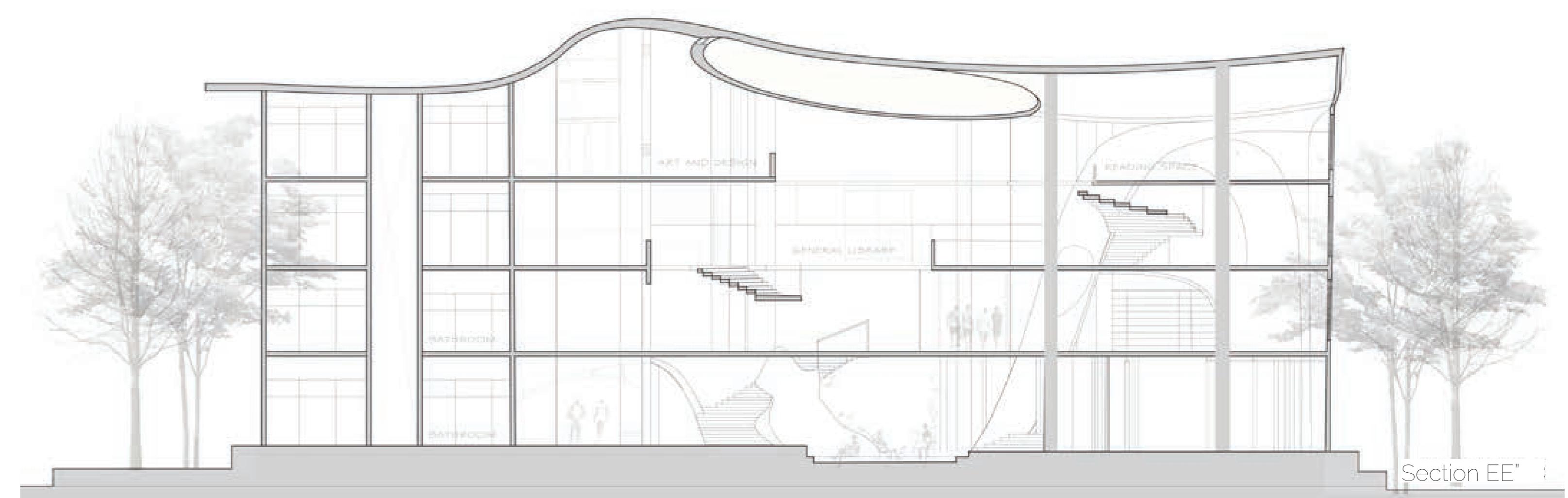
Open spaces, ground floor remains **public**, allowing the views from all sides of the road.  
follows the **similar language** from the Samsung opera house next to the our site.  
Allows entrances from each main road and takes them into the **central core** that allows **visibility** from all levels.



Section showing the **large sheer walls** that spiral into ceiling spaces creating arch like structure in the interiors  
Public Edge allowing the entry of people and the center acting as pause points.



Mezzanine spaces created for smaller pocket spaces, **general section** of the library **holds the other sections** together  
The central core increases **Visibility** on all levels with the staircase being on different areas so it adds to the experience.



CAMPUS  
Around the rain tree



Campus being a very important space to learn through **pears** which is what this design talks about how to have interactions from people in other departments have more open spaces for interactions department places places around it for more teacher and student communication and a mix of 3 spaces, **individual pods, group zones and flexible spaces.**

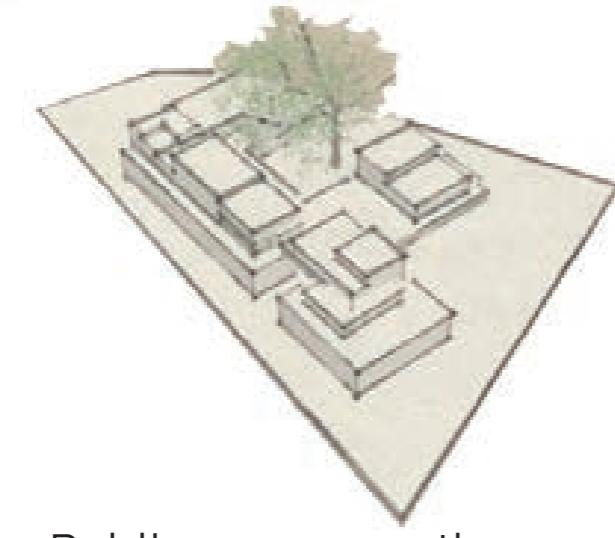


## Site conditions

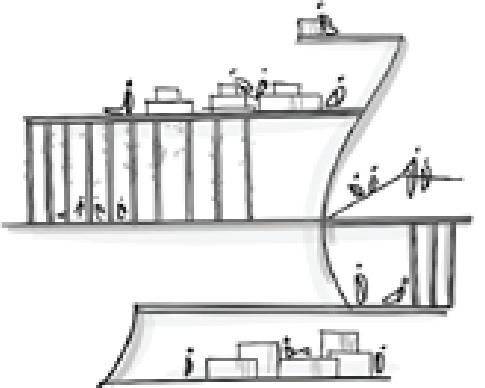
- Main roads present on all sides
- Rain Tree Present in the middle of site
- Army green land Present on the back of the site



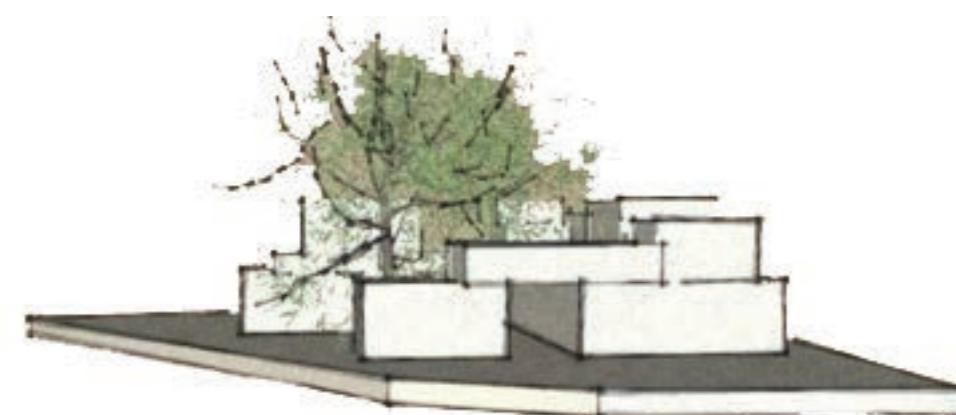
Individual Zones



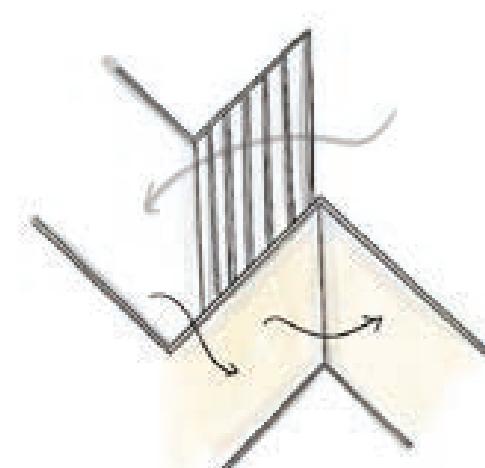
Public spaces on the ground



Group Zones



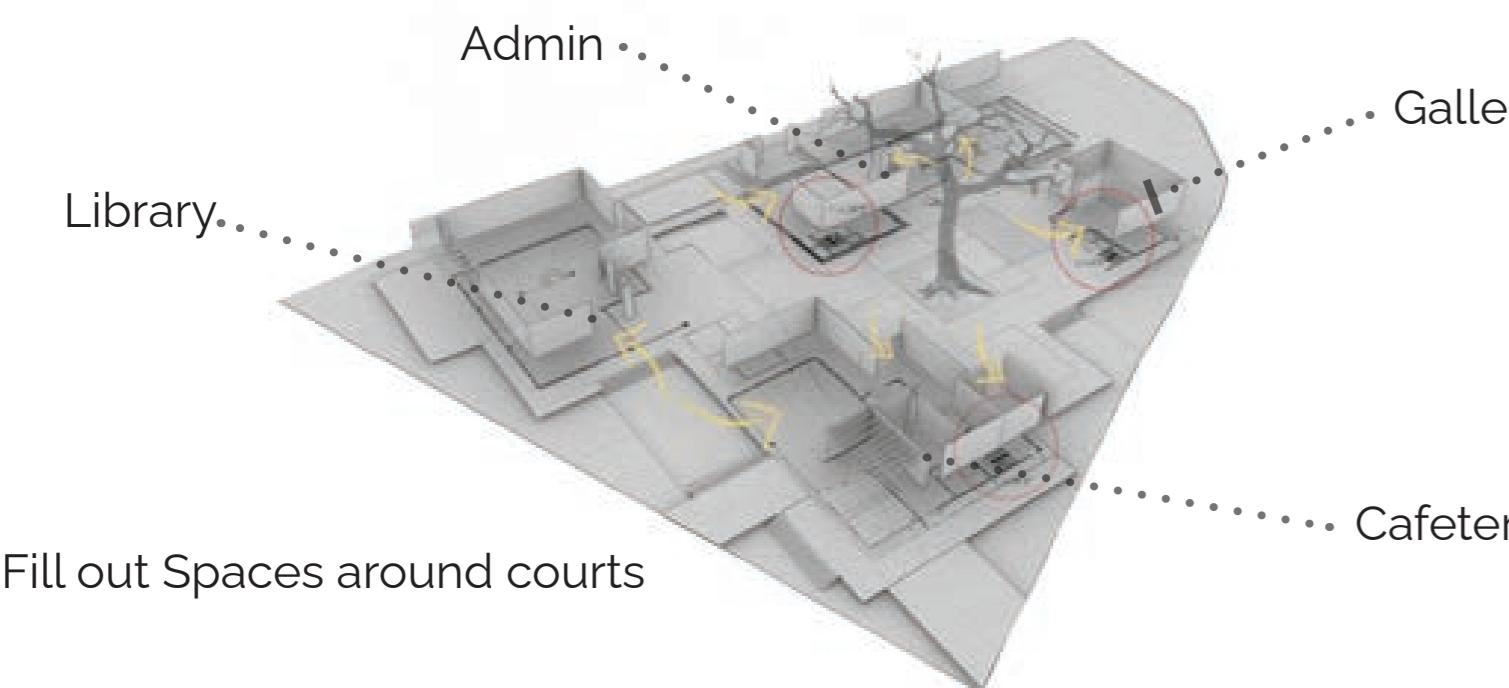
Interlocking of spaces



Flexible Spaces



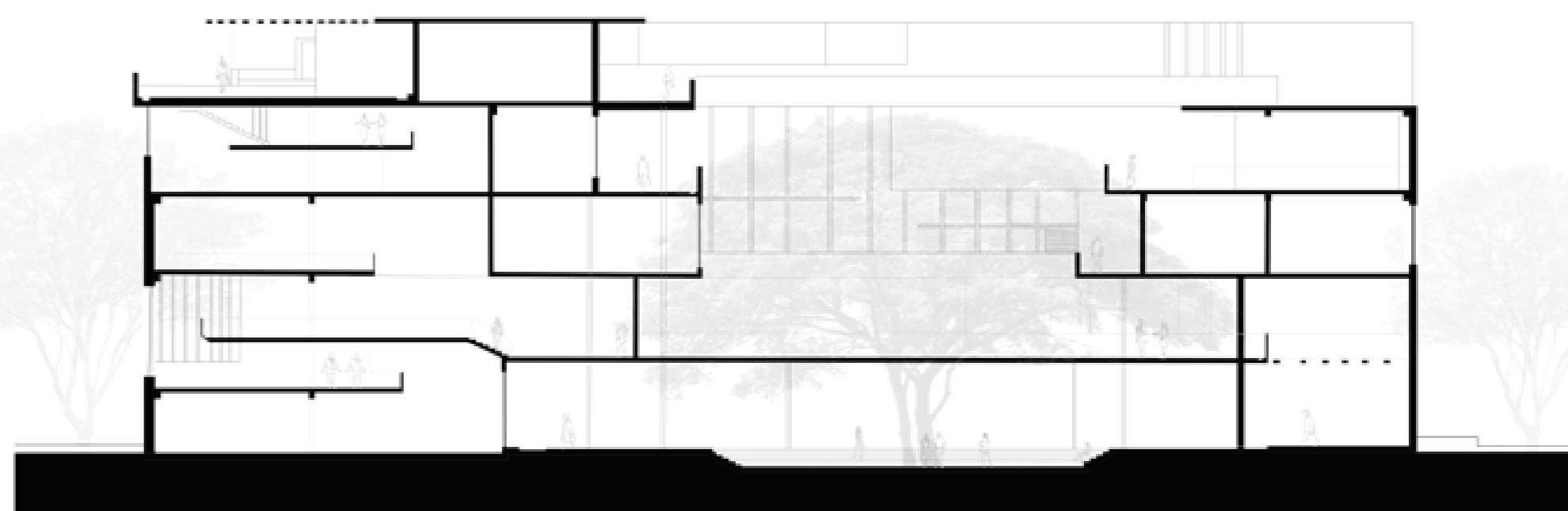
Solid and Void



- Interlocking spaces with cantilever shaded space
- Library **open reading spaces** shared with cafe shape
- Spaces unwrapping around the **rain tree**
- Core placed on 3 entries
- **Quite Spaces** towards the back of the site (open area)



Entrance from the north - giving a grand entrance



Large Lung spaces for open studio spaces and semi open studio



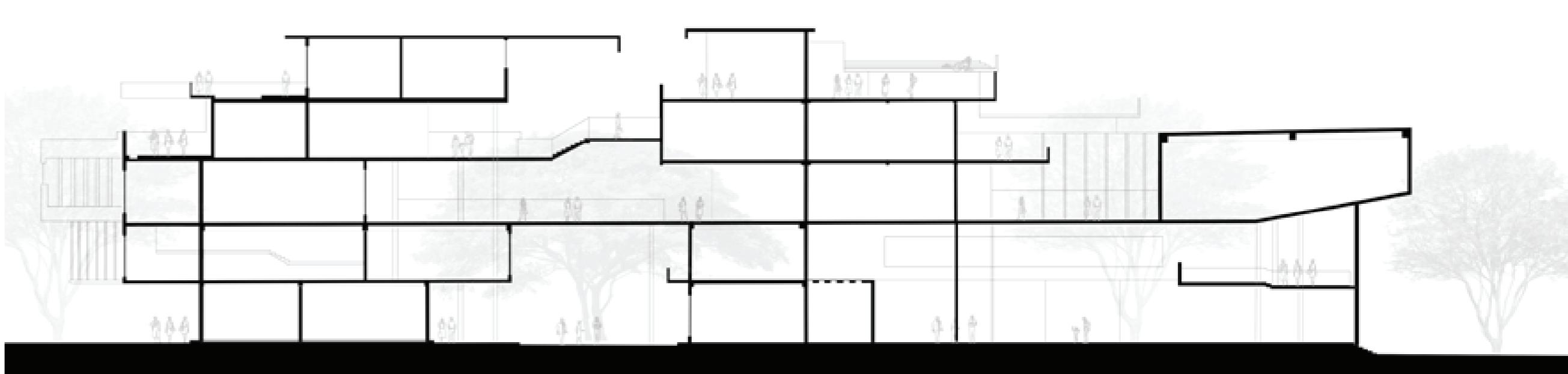
Work around the canopy

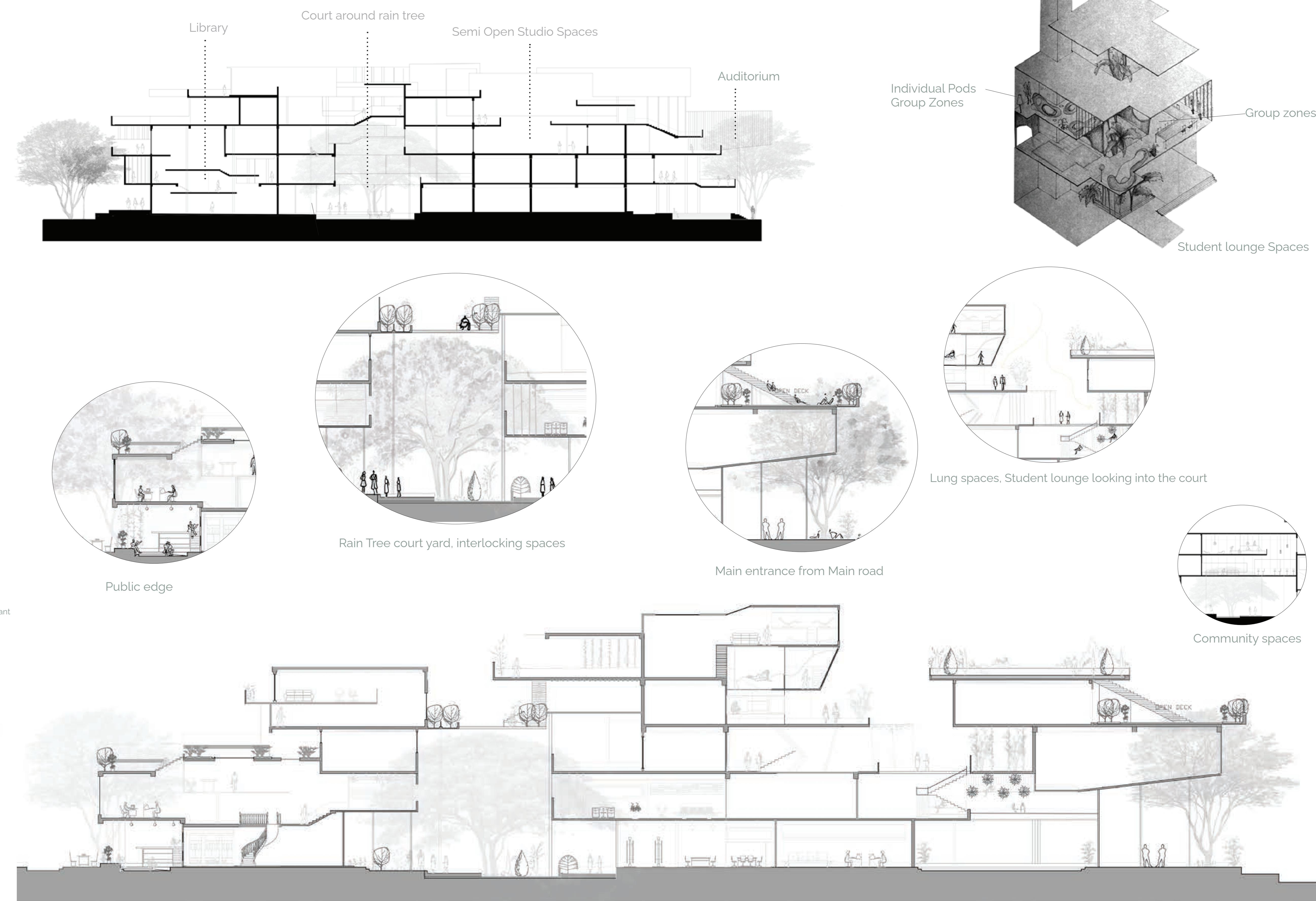
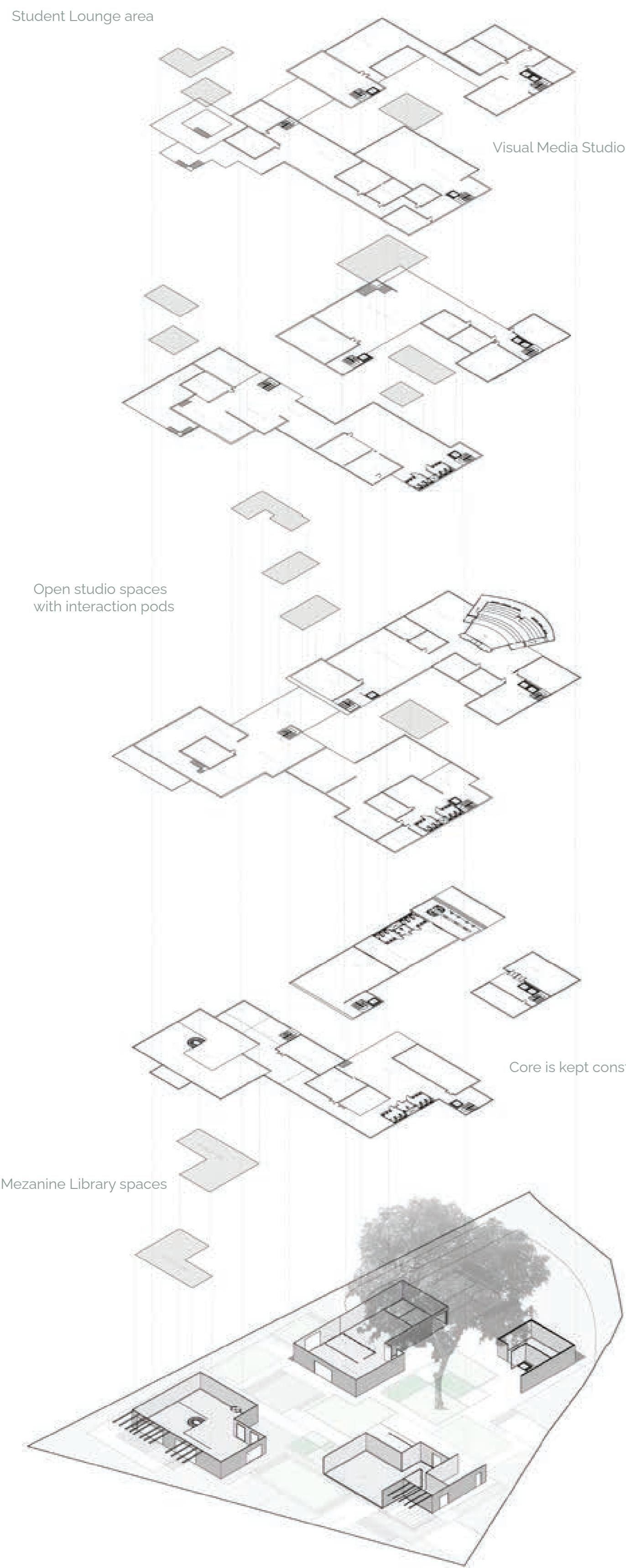


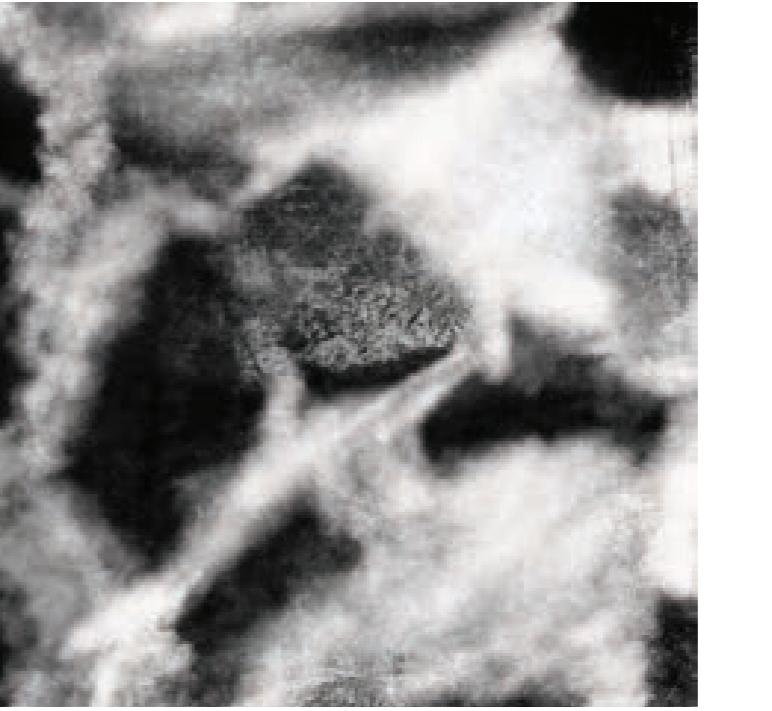
Central Court with interlocking spaces



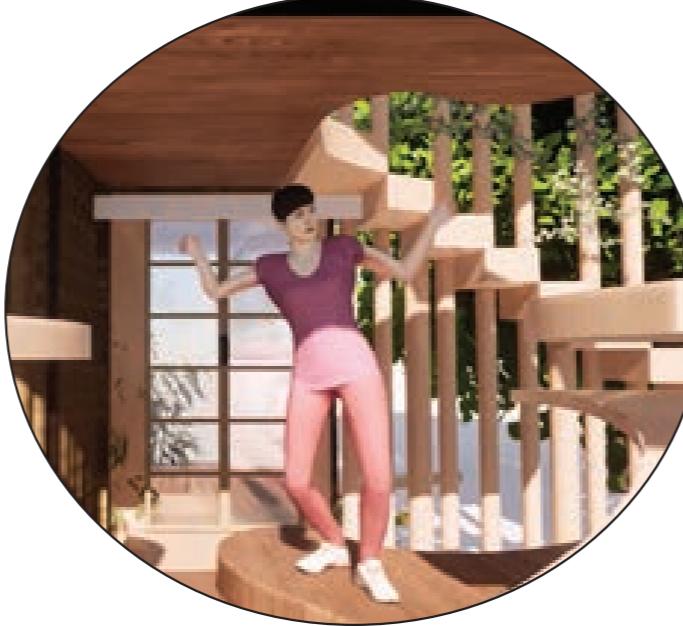
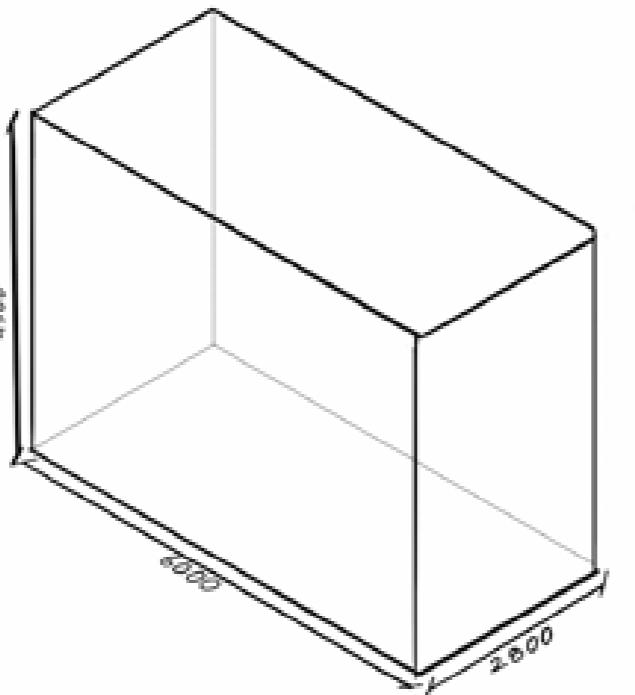
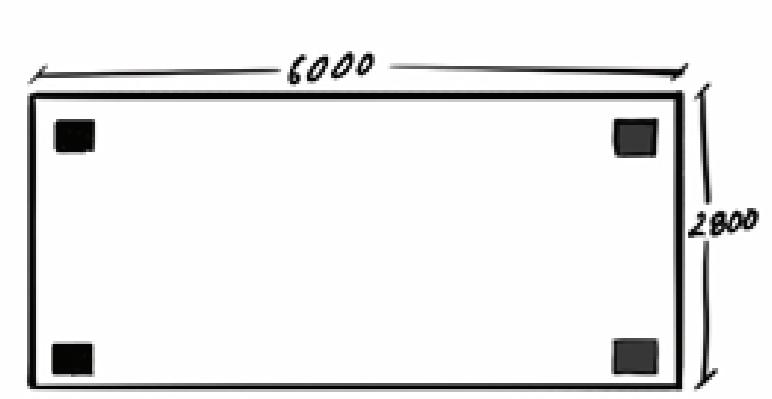
Solid and Voids



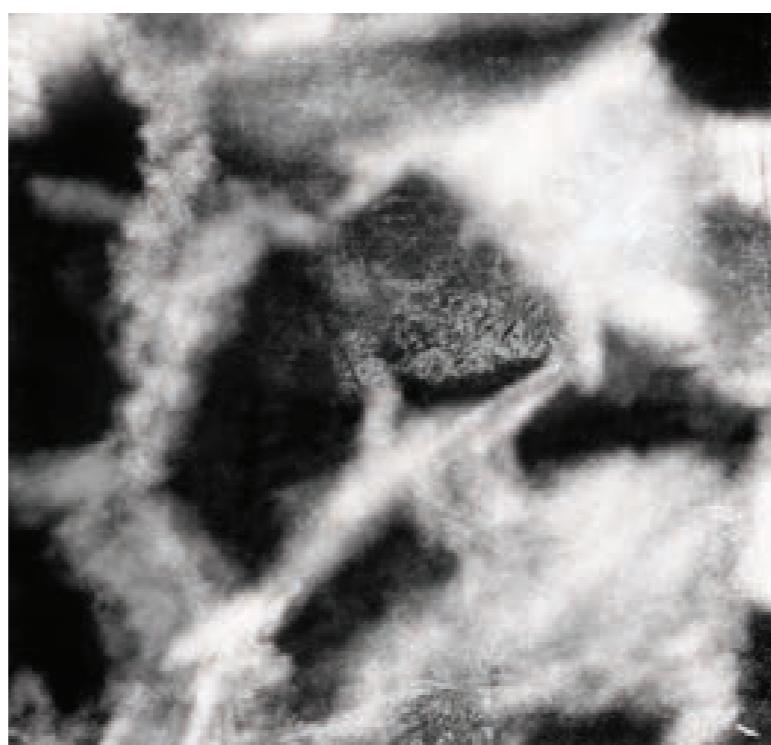




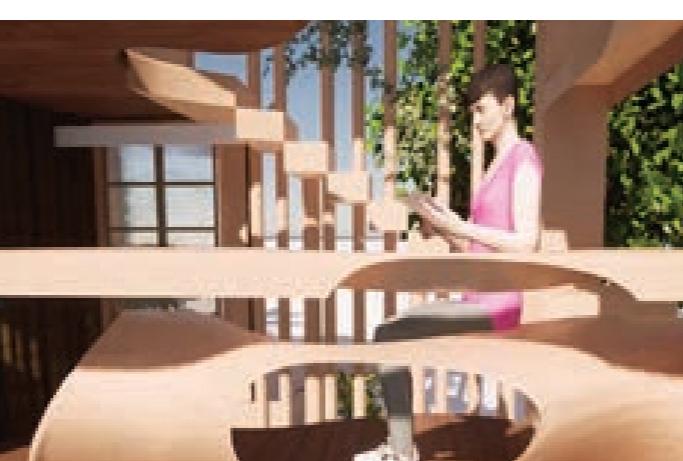
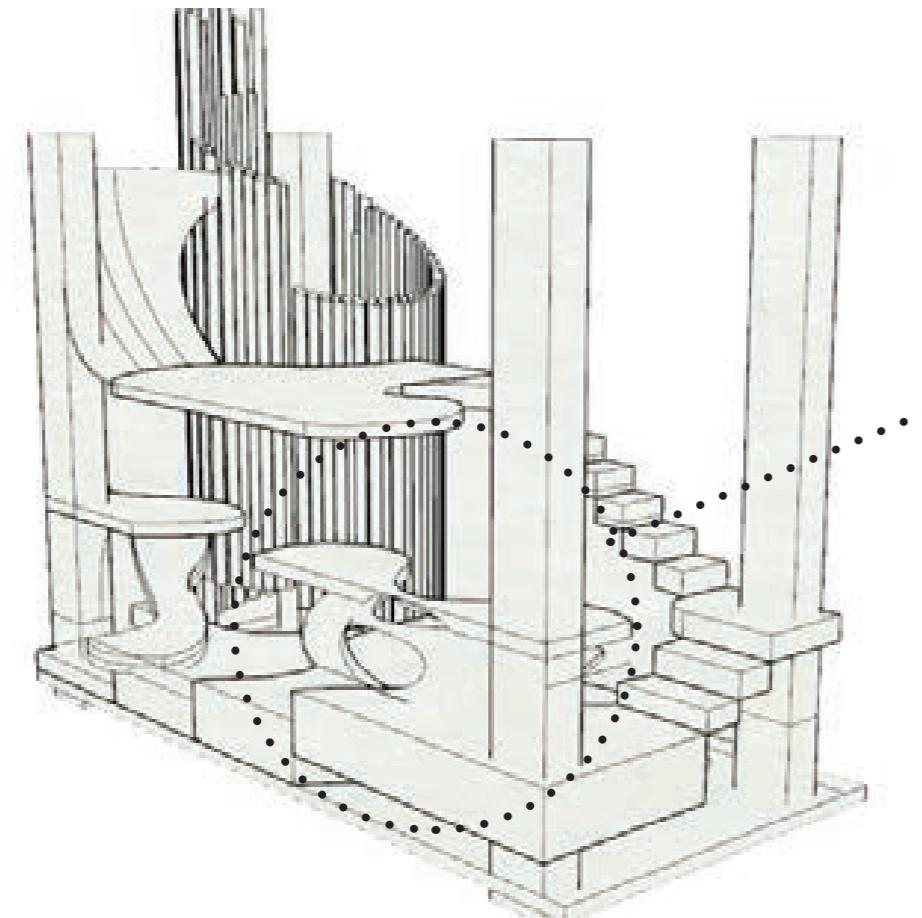
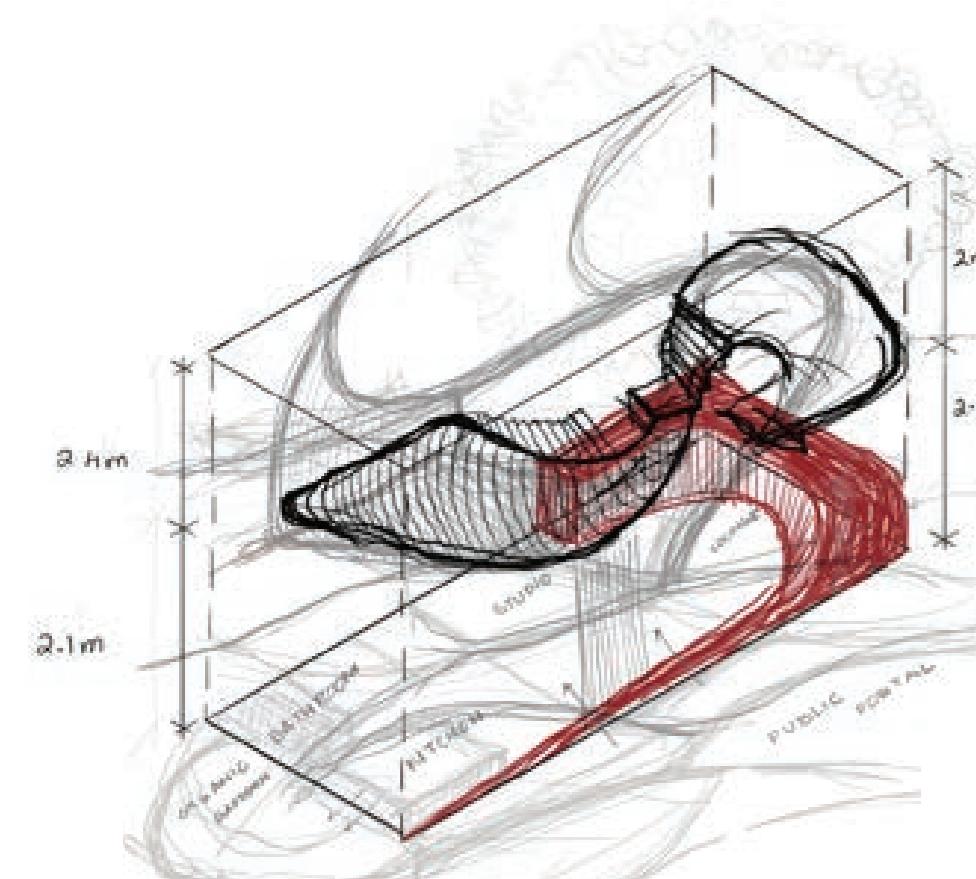
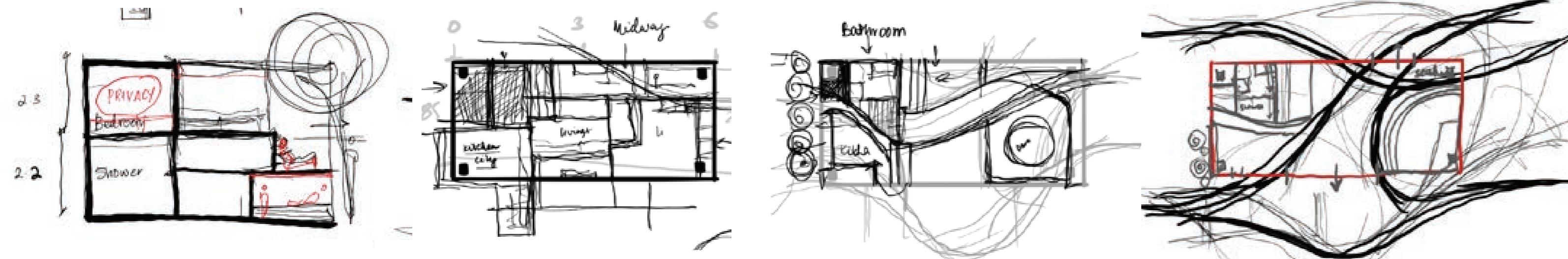
HOUSE FOR ONE  
**Plinths of Intuition**



PROJECT BRIEF : 6000 X 2800 X 4500 SPACE BUILD AN ARCHITECTURAL INTERIOR PROJECT THAT FITS INTO A CONTEXT. CHARACTER STUDY (CAS HOLMAN) THE PLAY OF SPACES, PLAY OF THE PLINTH



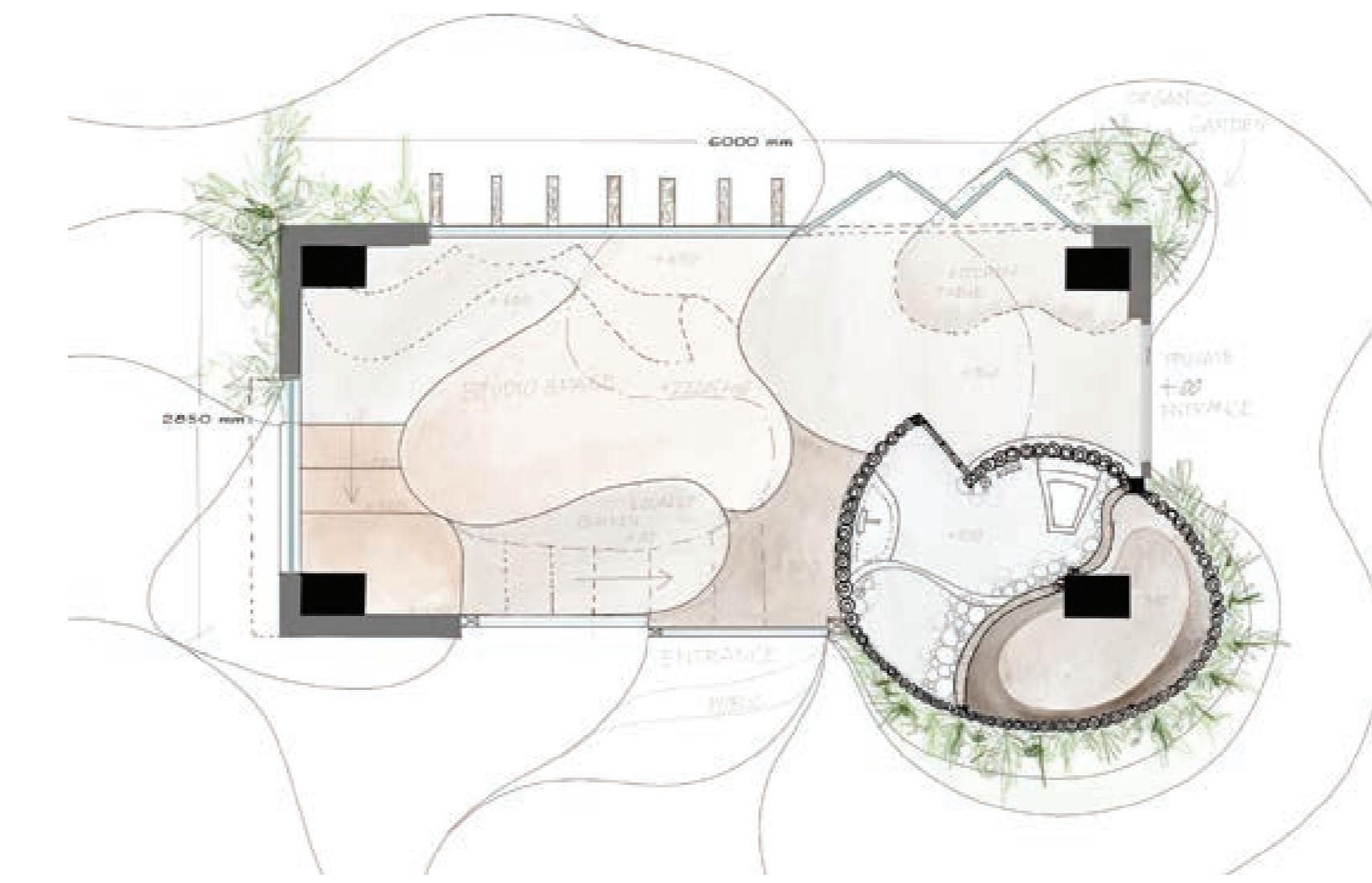
Emotional mapping of the space, art created by mapping of the intuition of spaces through art, the patterns of nature and the way of play of plinths in space, how the building and the furniture become one with the play of plinths



The four existing columns on the rectangular block for one person house is adapting the interior functions to be fixed into the columns optimizing space to increases workable and moveable spaces in the house



PLAY OF PLINTHS, EACH ENTRY TELLS A STORY AND THE PLINTHS OF SPACES CHANGE ACCORDING TO FUNCTION



SECTION SHOWING BED SITTING UNDER THE CANOPY

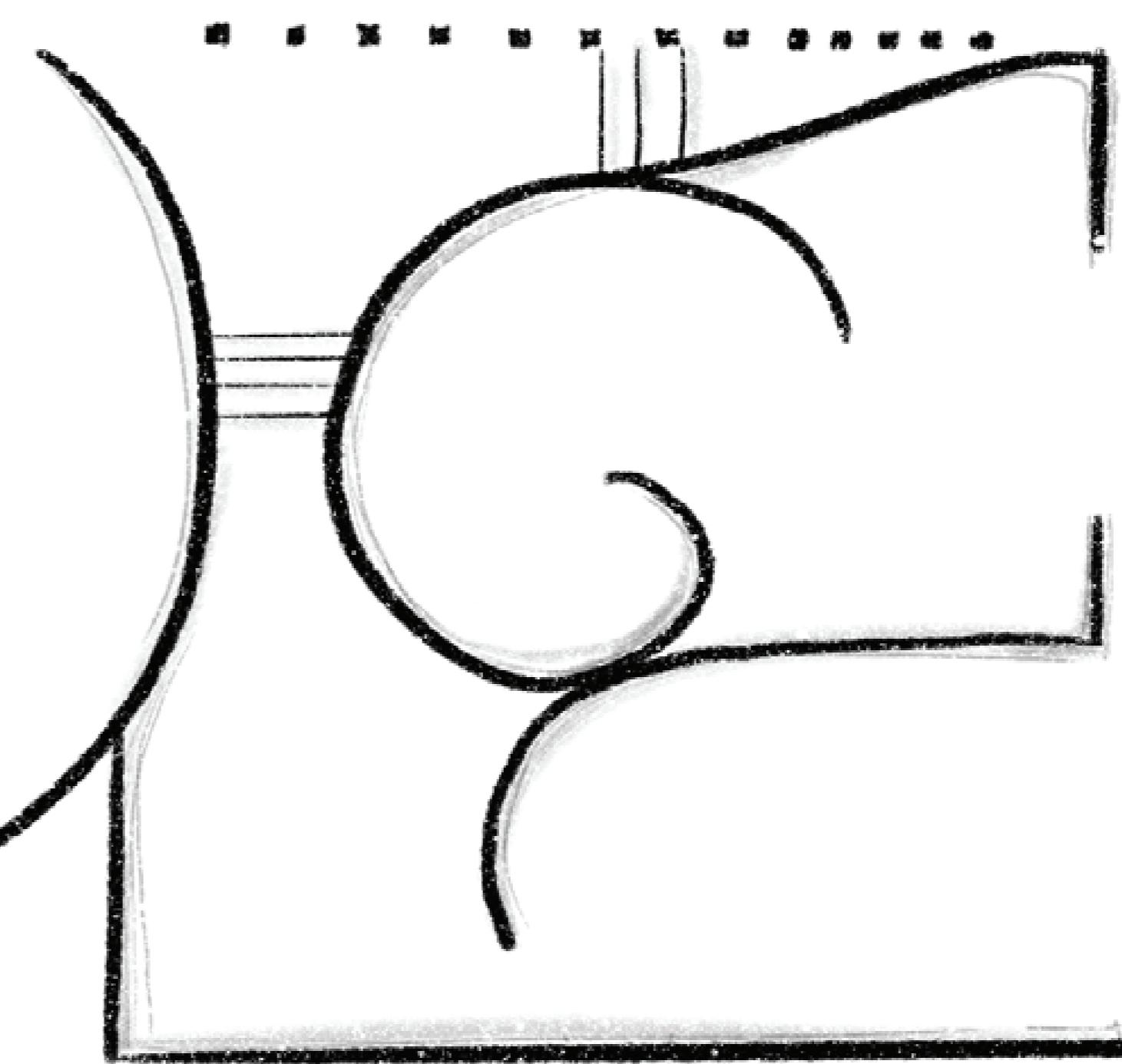


PLAY OF PLINTHS



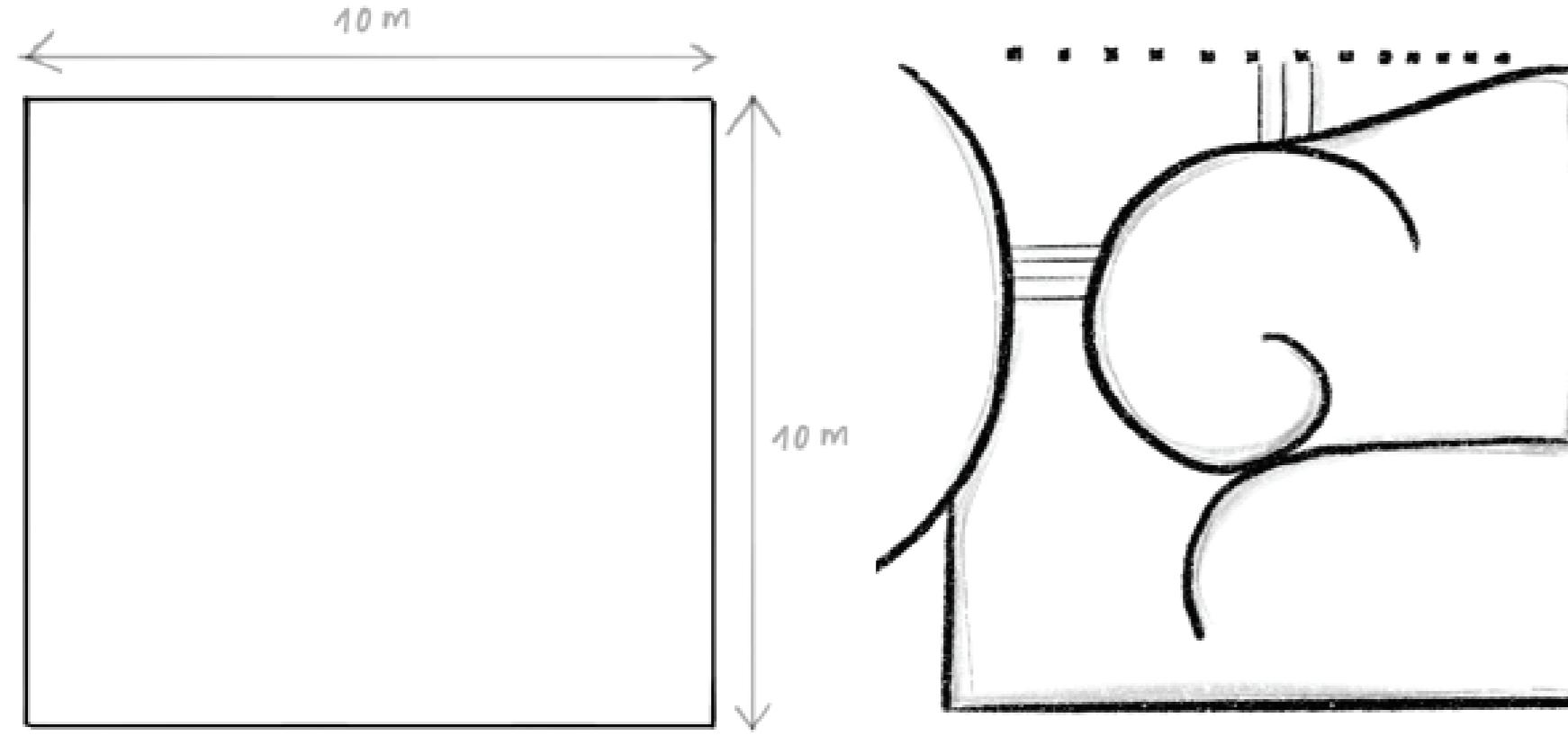
BLEND OF SPACE

10 BY 10 READING SPACE  
Explore through a childs mind

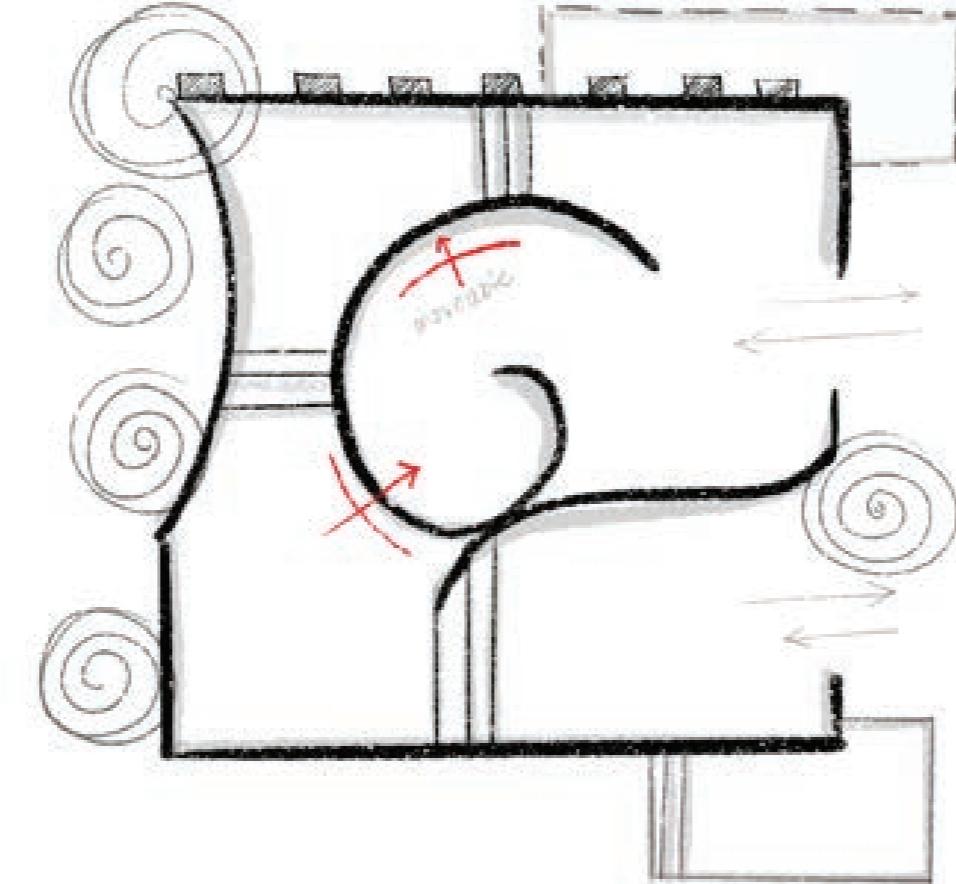


**04 STUDIO-VII**  
**10 X 10 READING SPACE ( CHOSEN FOR A CHILD)**

ARCHITECTURAL DESIGN STUDIO - 5 HOURS TIME PROBLEM

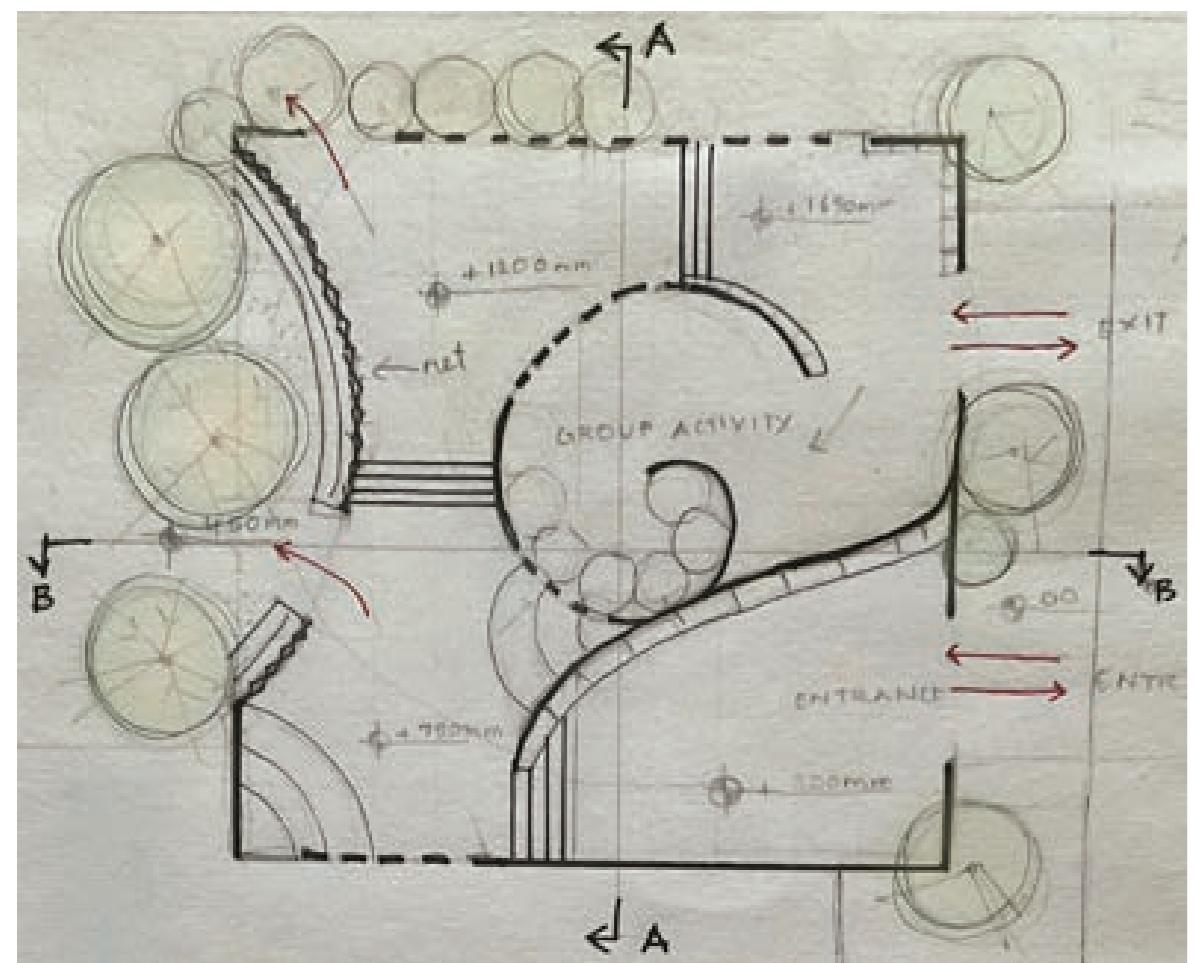


- 10 meter by 10 meter space given

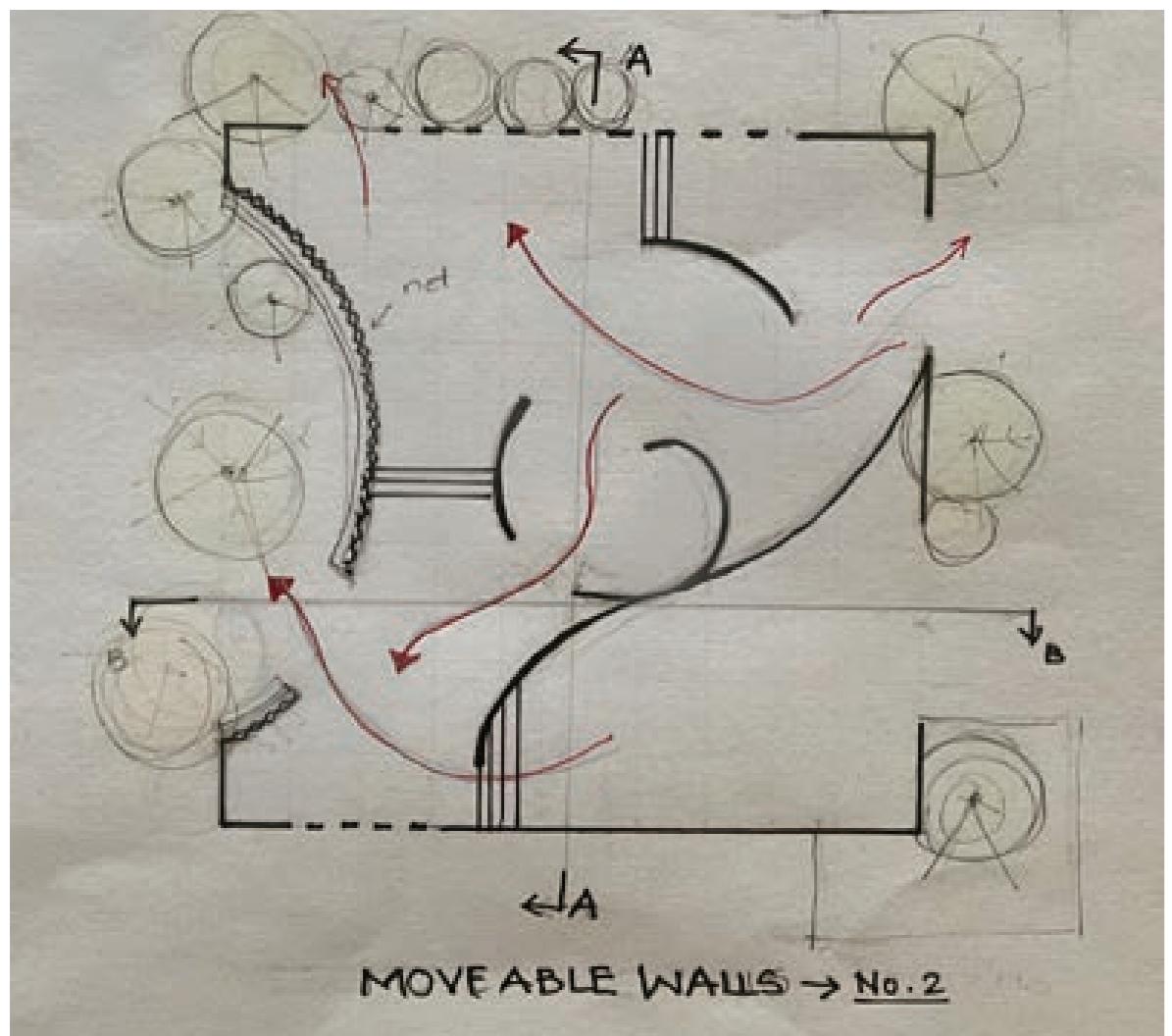
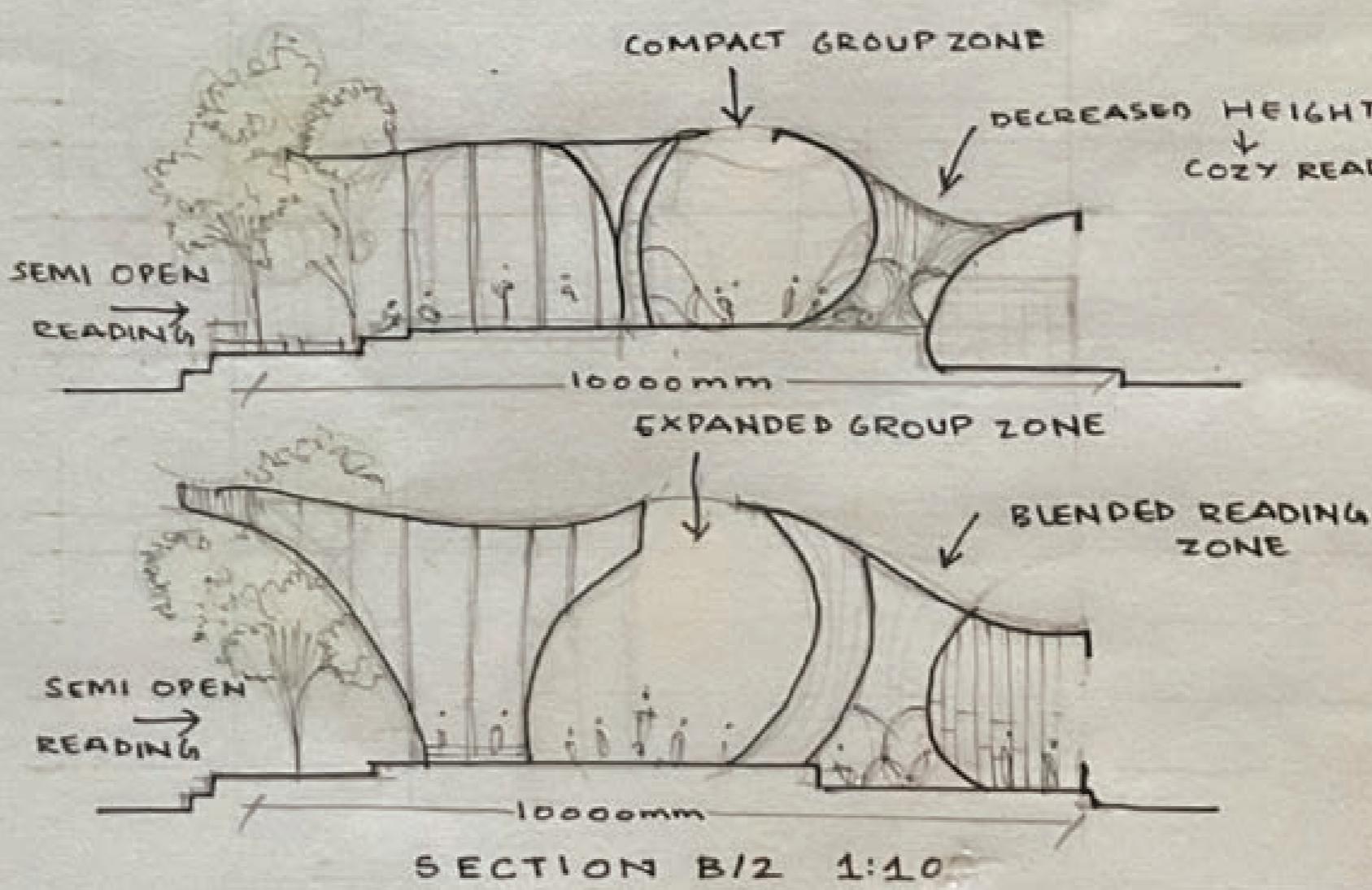
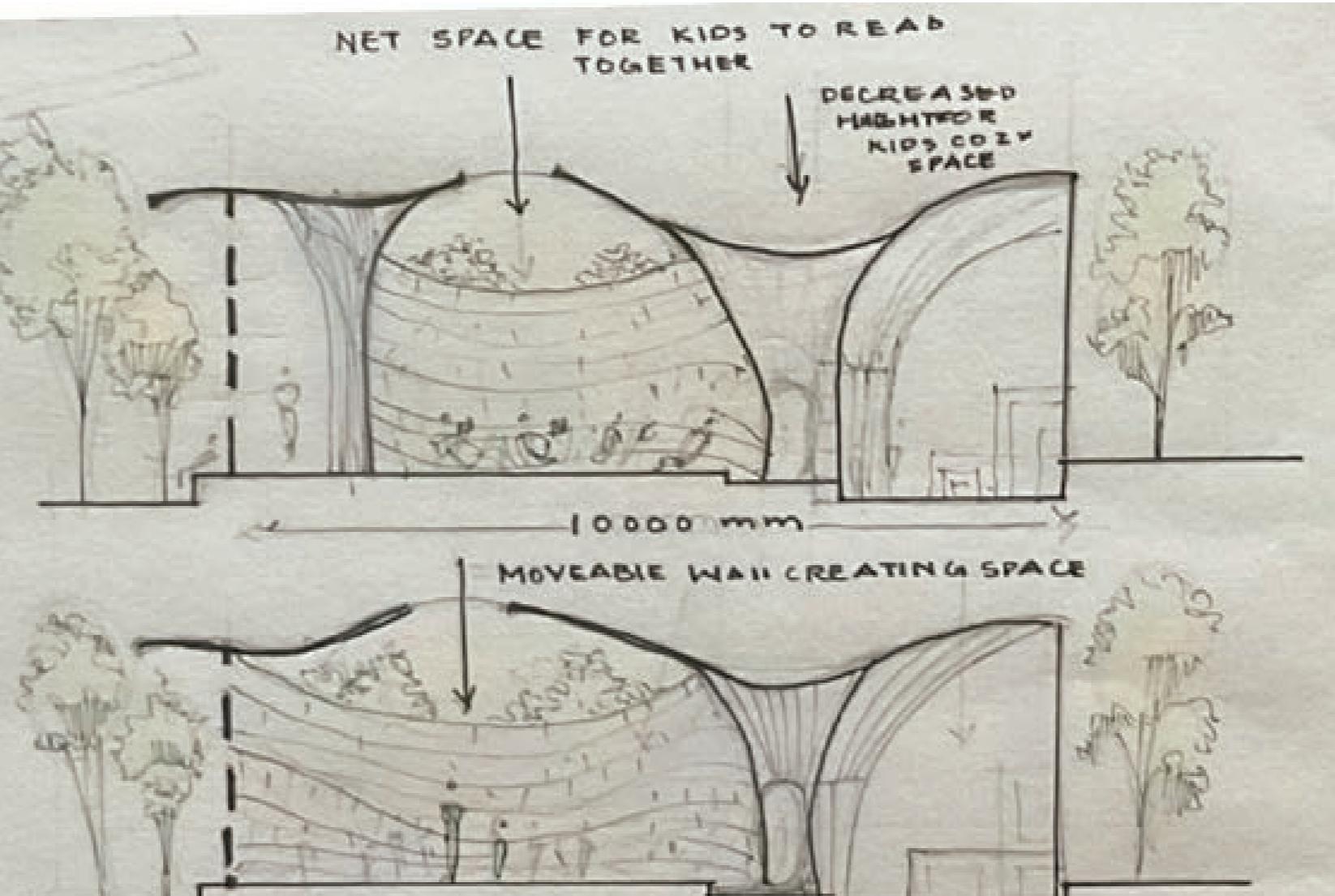


- Increase the exploration of a child
- Block vision and guided vision increasing sensitivity

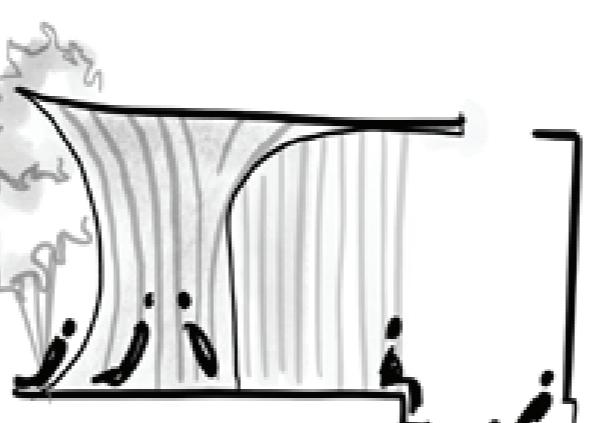
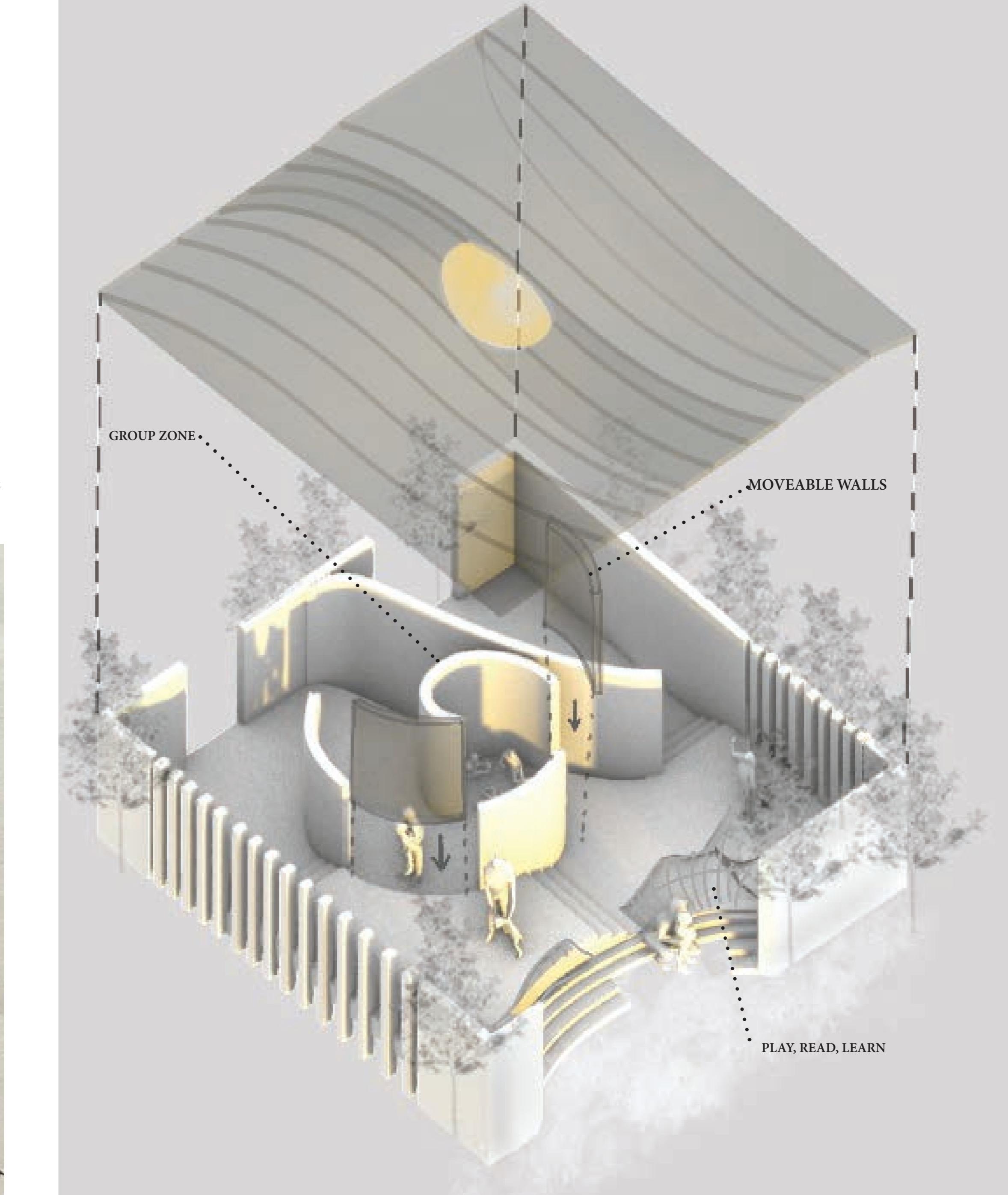
- Moveable walls help in bringing increases movement
- Increases view of group zone from all sides for group activities



Plan without the removable walls.



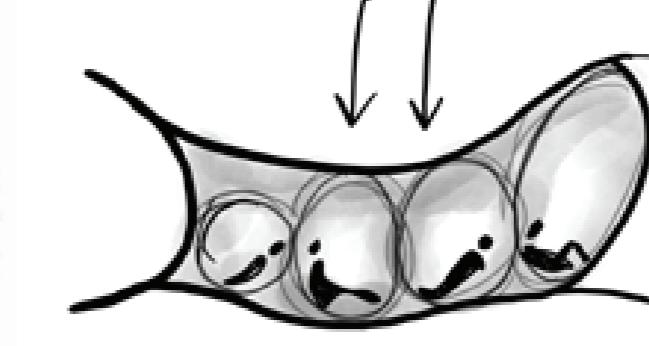
After the walls are removed for circulation



Different levels



Nets allowing them to float  
Play and read!

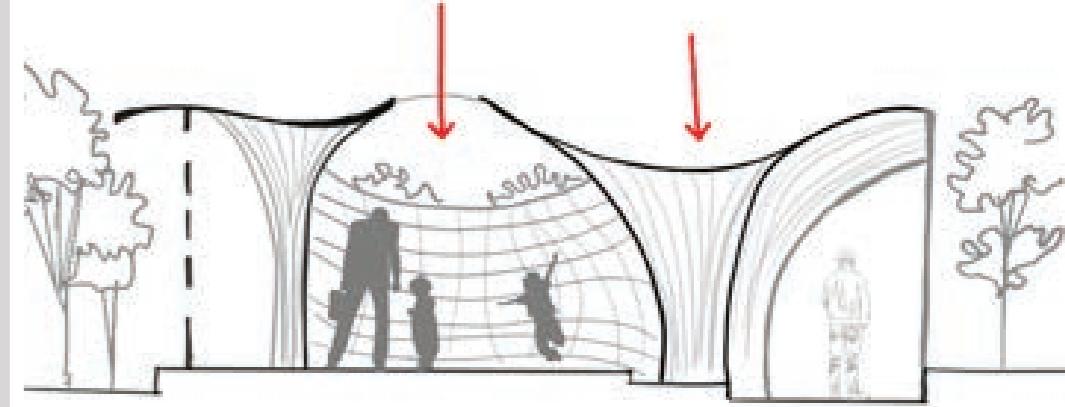


Small niche for private intimate spaces

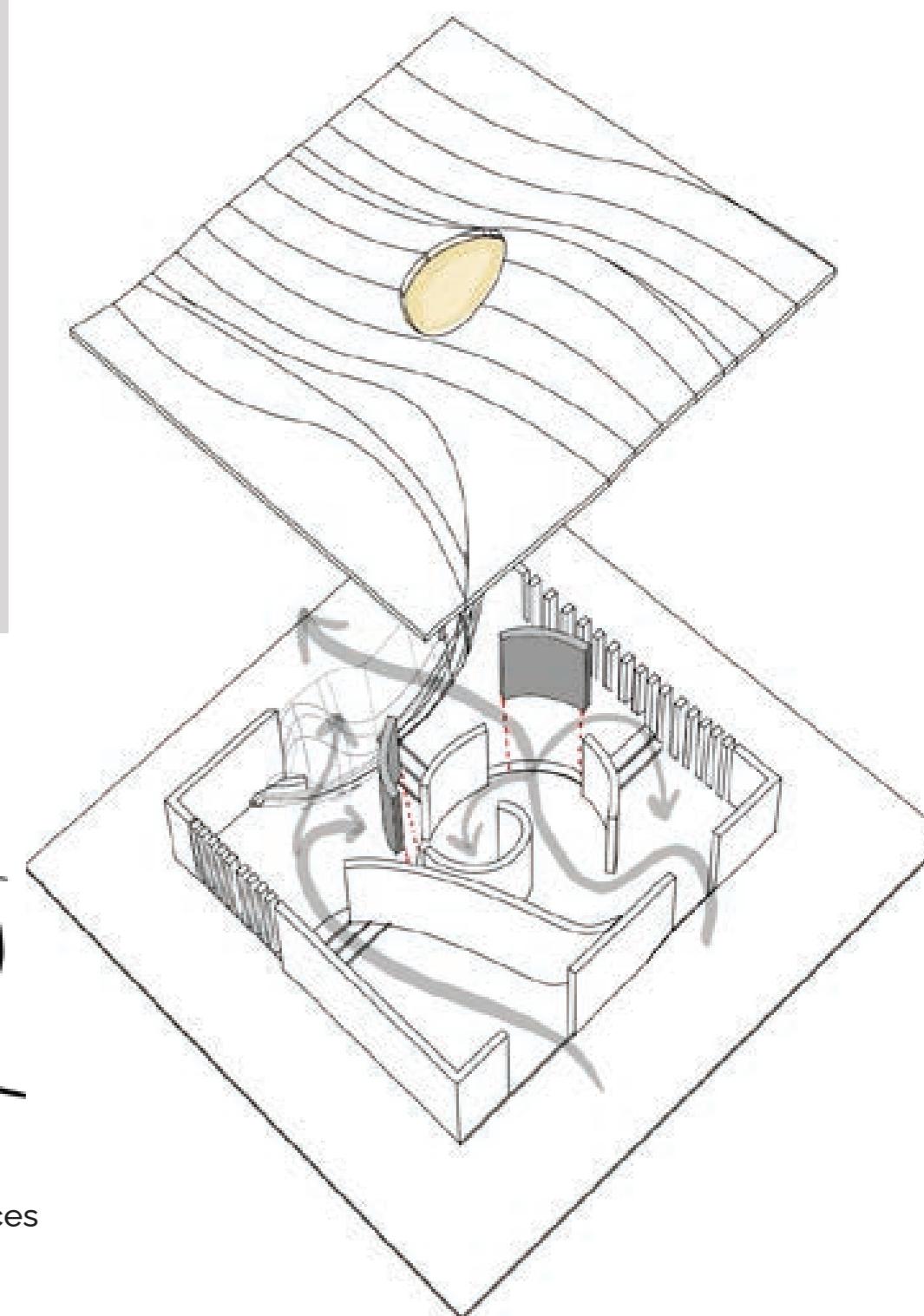
Learn through a child's mind

Adapting to the mind of someone who entered the space as a child, the scale of the child is kept in mind. The spaces are created to build curiosity and explore the space to its full capacity and have it transformed into a new fluid space with just the change of two moveable ways. Clearing spiral walls and some narrow hallways lead to light channels that turn into larger reading spaces that process into smaller niches space for a child that makes them feel like they are floating and lightness to the space with low walls and ceilings creating intimate spaces and a variety of space for a child.

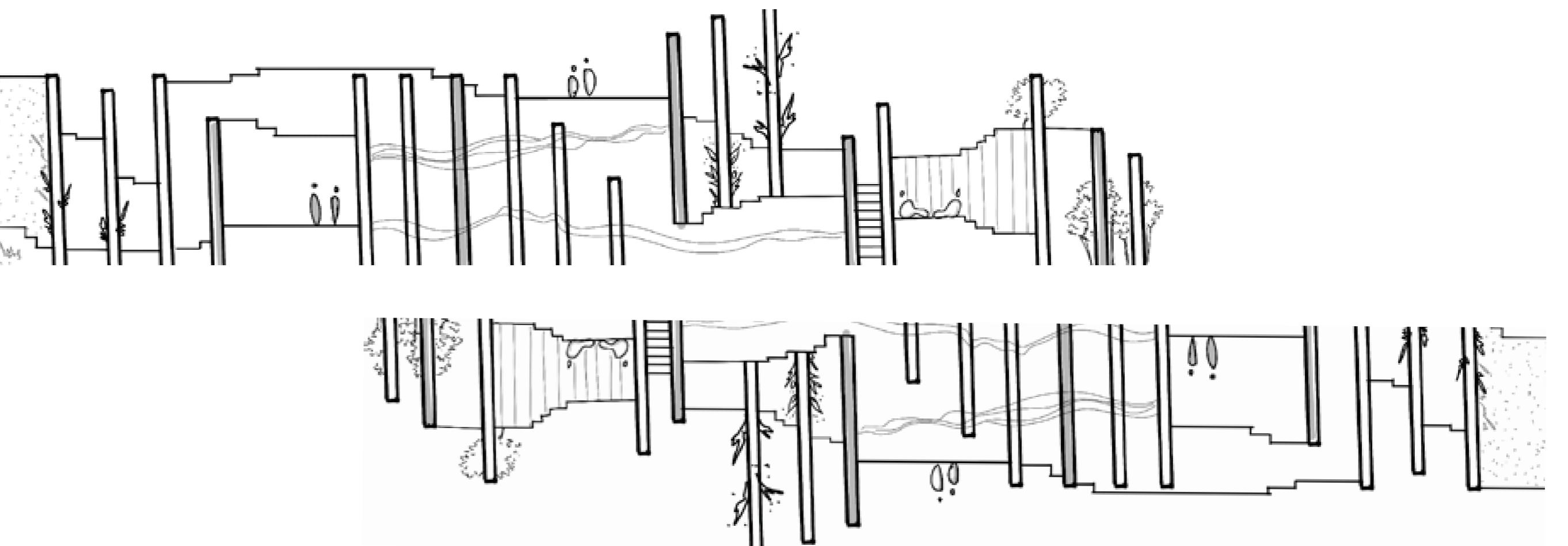
Heights of the ceiling reduce to create intimate spaces  
Or increase for the group and shared space.



Movement after the walls are pushed behind the other walls, circulation allowed to be fluidic

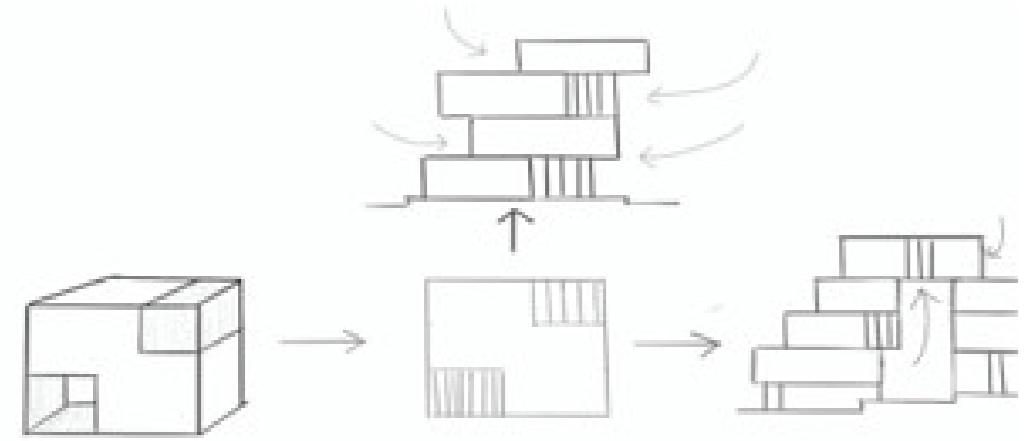


MIXED USE BUILDING  
**Vīrya** (Sanskrit; Pāli: viriya)

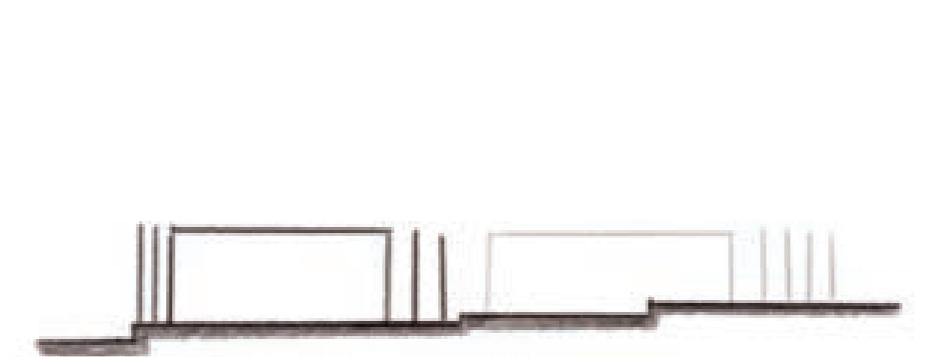


Vīrya (Sanskrit; Pāli: viriya) is a Buddhist term commonly translated as "energy", "diligence", "enthusiasm", or SS "effort". It can be defined as an attitude of gladly engaging in wholesome activities, and it functions to cause one to accomplish wholesome or virtuous actions.

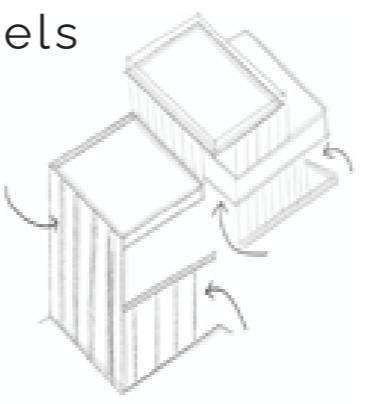
- Mixed Use building that has co working offices on the top floors for privacy
  - Ground level for public use with cafe and art walkways
- Building categories from public, semi public to private spaces with levels



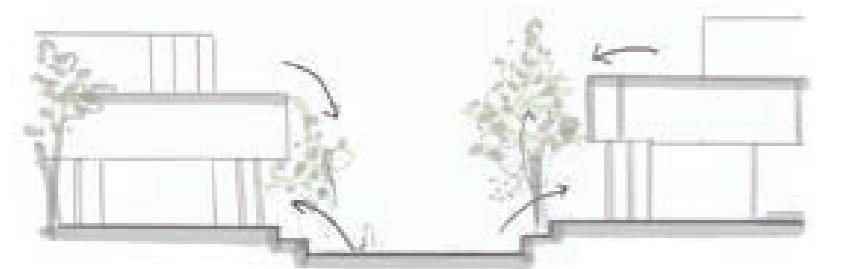
Interaction between the floors



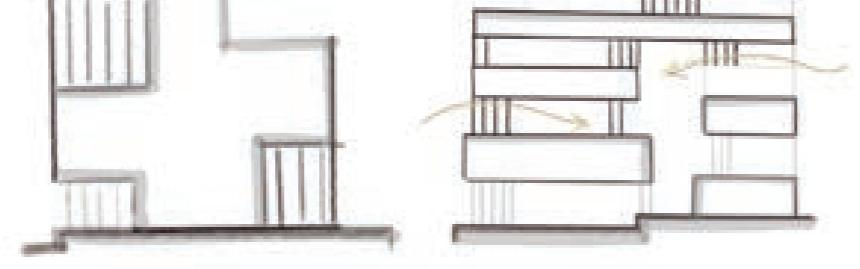
Series of open gap with public and private and language of memorial



Spaces In Between and exterior view interior or



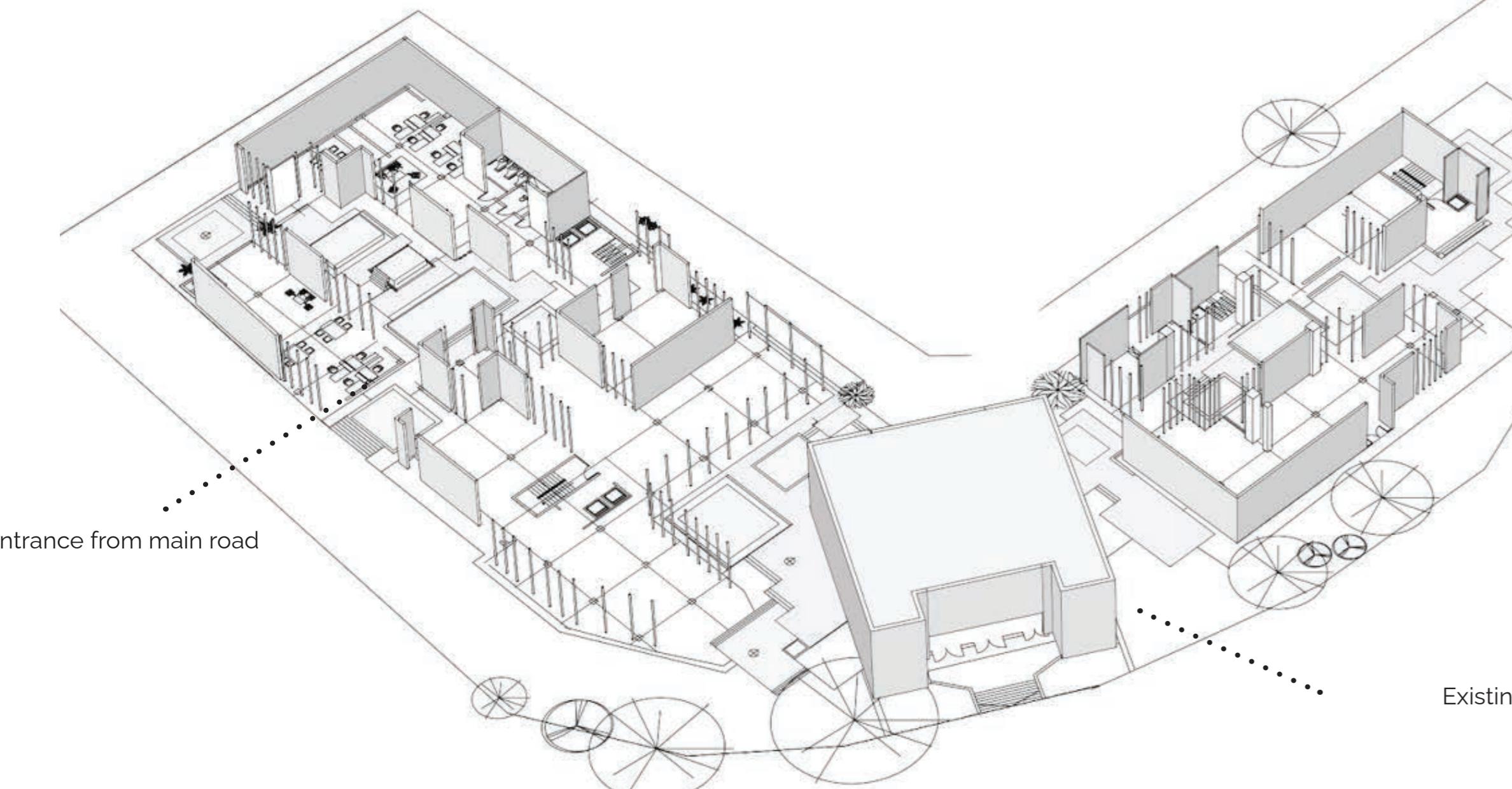
Interaction between the floors



Void for light Light and ventilation

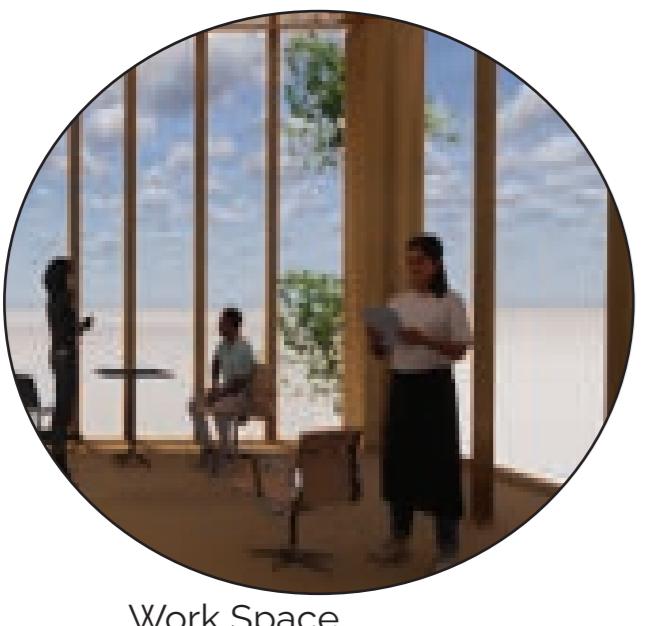


Closed semi open spaces



Entrance from main road

Existing Memorial



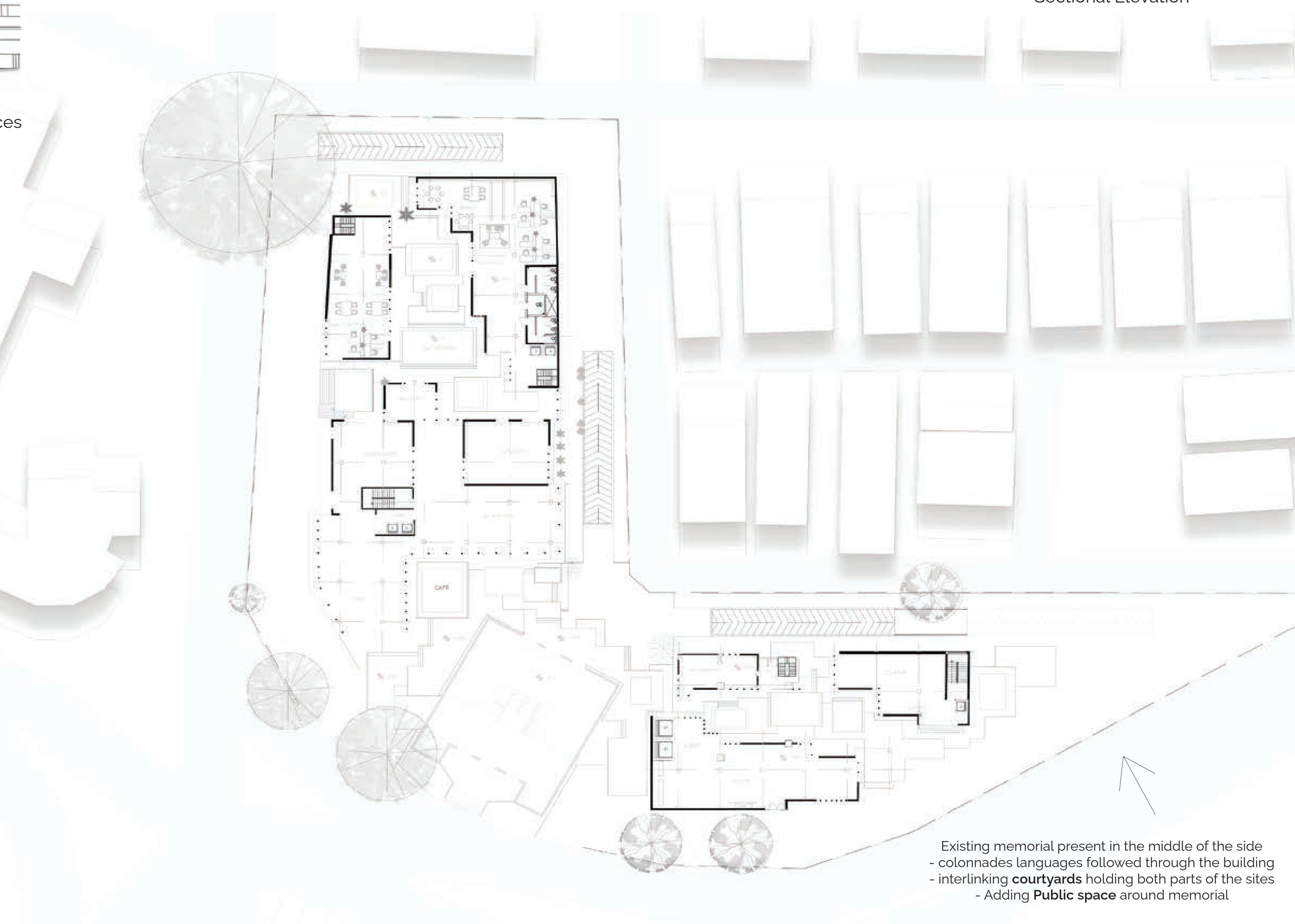
Work Space



Outside view of green facade



Solid and voids



Existing memorial present in the middle of the side  
- colonnades languages followed through the building  
- interlinking courtyards holding both parts of the sites  
- Adding Public space around memorial

**Solar Decathlon - NET ZERO BUILDING  
ROPANA**

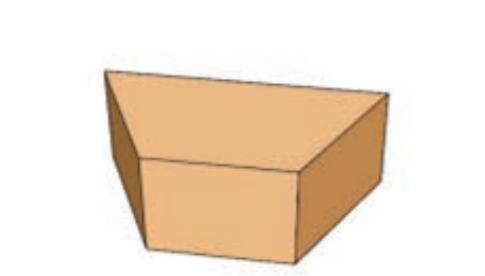
First runners up all India - single family housing  
Top 10 Chosen for climate launch pad incubation



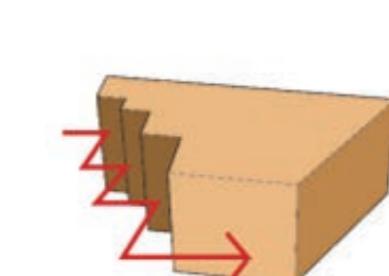
# 06 SOLAR DECATHLON NET ZERO SINGLE FAMILY HOUSING

ALL INDIA NET ZERO COMPETITION - FIRST RUNNERS UP

## ARCHITECTURAL DESIGN - Passive design strategies given after site study



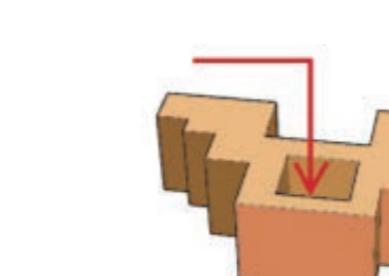
General massing



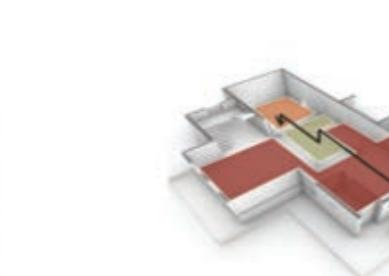
Stagger needed for west facade



Stagger needed for west facade



Floor plates thinner and more compact



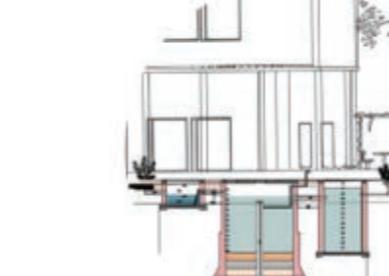
Plinth level differences



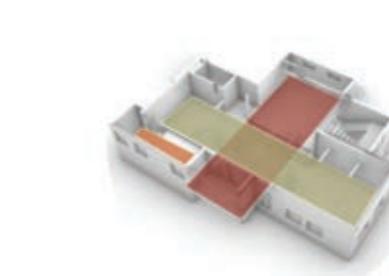
Staggering the walls along NW



Functional space for wellness



Ground Water Recharge System



Thin floor plates for shading

The seismic zone of the site is zone II, thus being the least prone to earthquakes.



During the months of June-October the site is prone to flooding due to the increased rainfall.



Due to the presence of a high number of mosquitoes, the users may be prone to dengue.

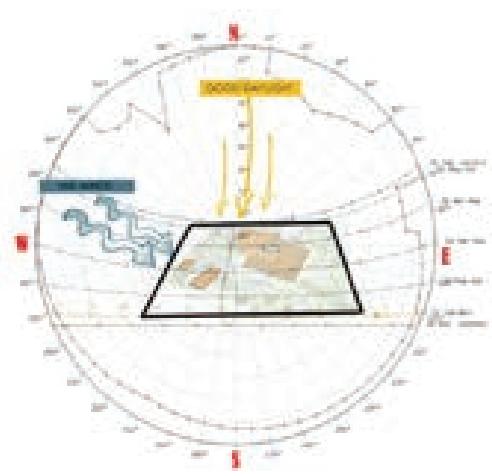
- Water may enter into living spaces through open spaces like courtyards.
- Municipal connection for energy supply is available.
- There is availability of everyday essential items as well as food demand due to the close vicinity of the site to the market.

## RESILIENCE

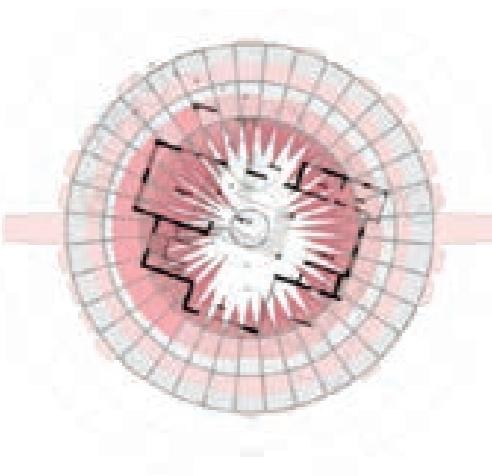
Due to the secluded location of the site, users may also experience loneliness.



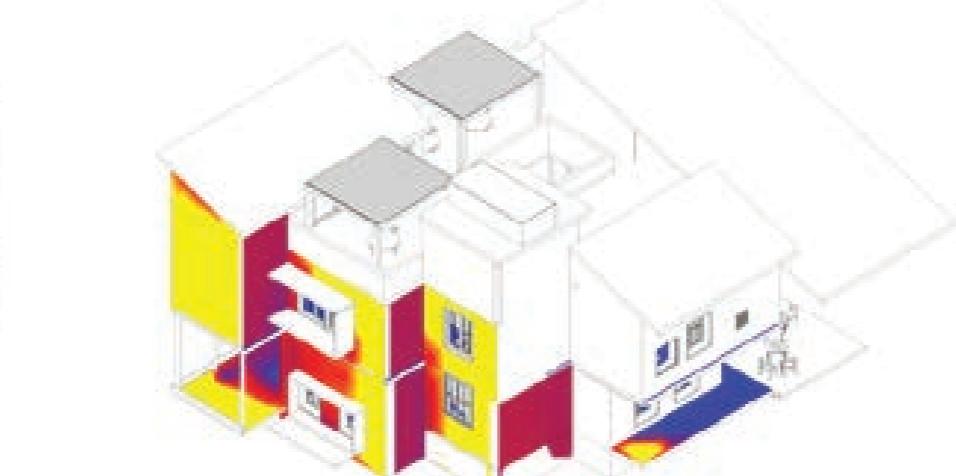
## ENERGY PERFORMANCE



Site Climate and income lighting



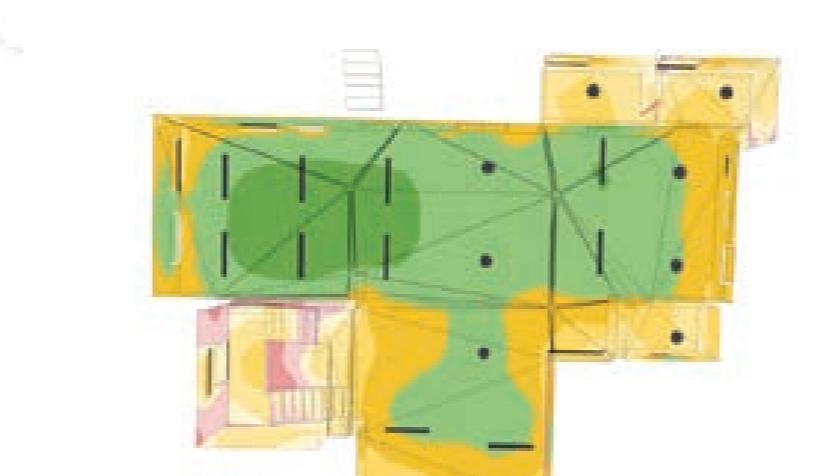
Wind Rose Diagram



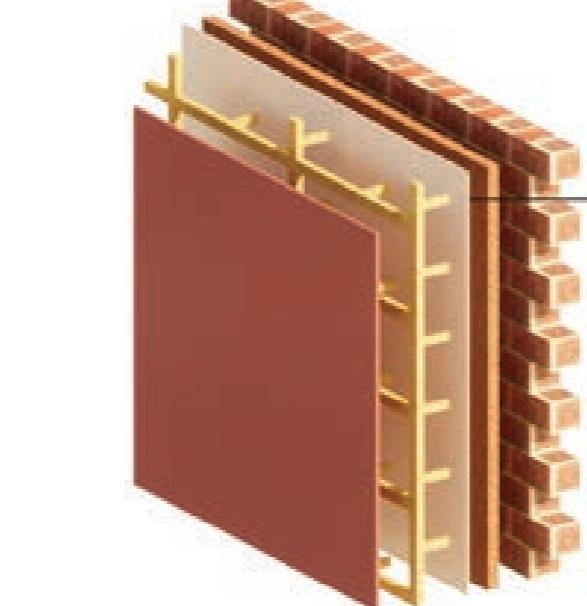
Effect of solar radiation on self-shaded building form in the proposed design scenario.



Shoebox analysis



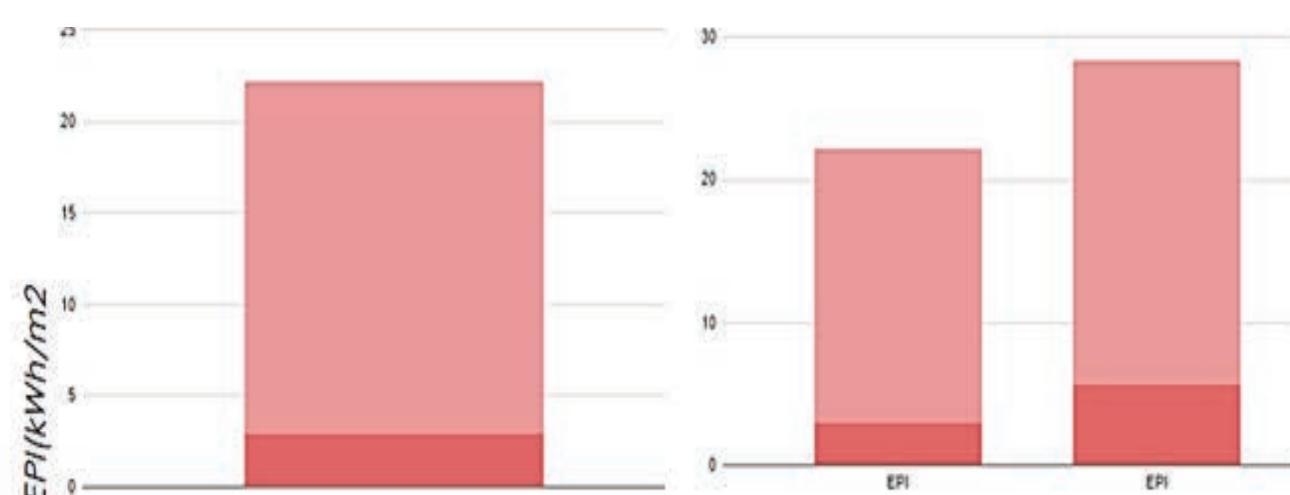
Spatial artificial light autonomy for ground floor plan



Coconut coir panel inserted in the envelope

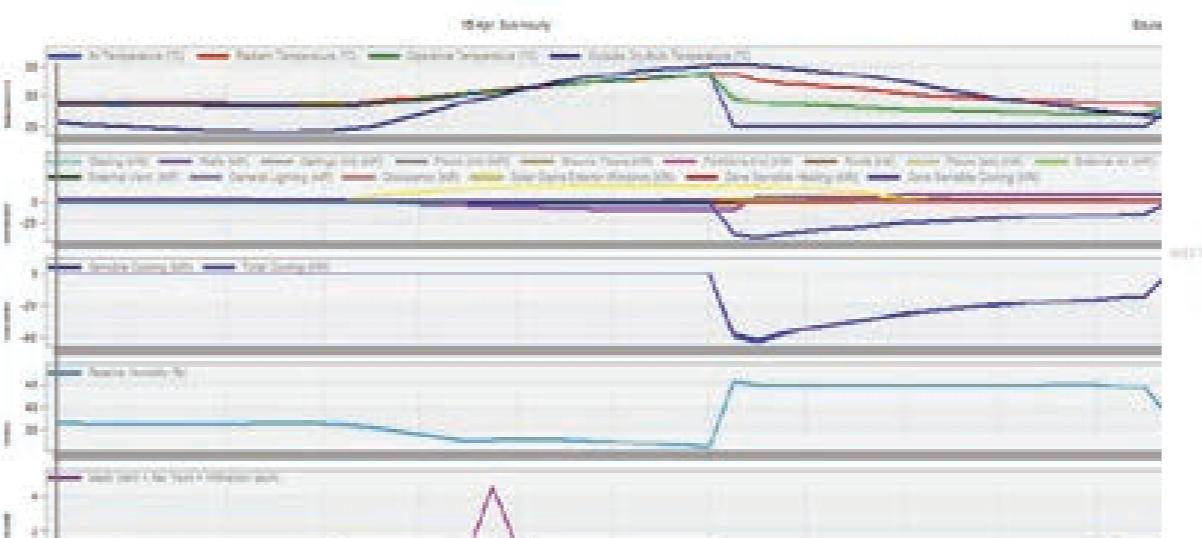


## INNOVATION AND MATERIAL

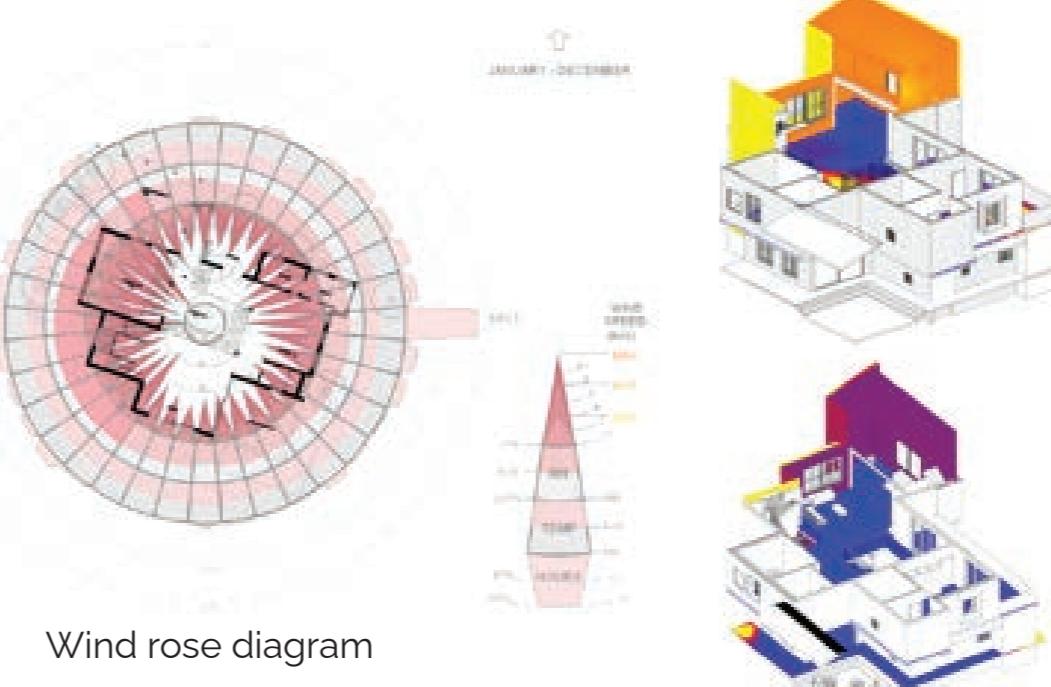


The usage of energy efficient appliances brings down the total energy consumption by 12.47%  
The base case scenario being NBC values

Total Energy Consumed in a year	6679.5 kWh
Total Energy Generated in a year	9260 kWh
Degradation of generation per year	1%
Total energy generation considering degradation	9167.4 kWh
Excess energy that can be fed into the grid	2487.9 kWh
Cost of energy	7.5 INR/kWh
Cost saving per year	18659.25 INR



Design builder output for a summer day



Wind rose diagram

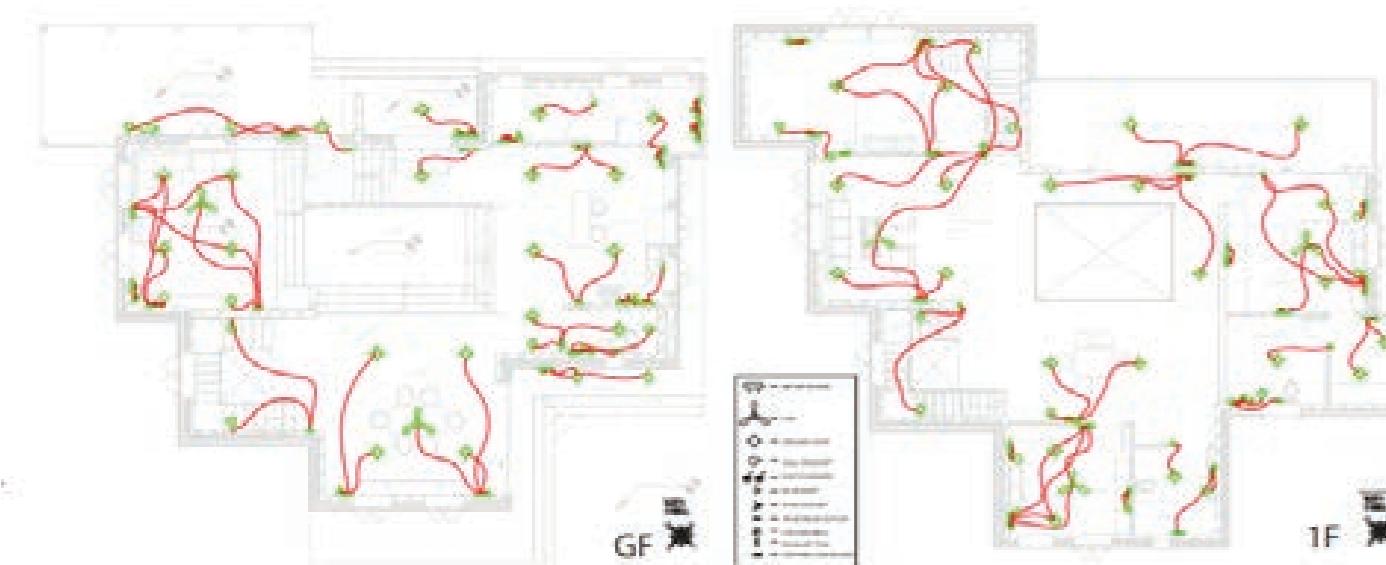
The coconut coir has a K-Value of 0.084 which when used along with porotherm bricks and terra-cotta panels, help achieve a total U-Value of 0.5 for the structure.

One bag of coconut husk fibre costs about 175 rupees which can easily be transported and soaked in water on-site through which fibres can be recovered and dried on the site itself.

Comparative analysis between base line scenario and suggested envelope sections

Windspeed derived : 0.12-0.17m/s  
Windspeed as per NBC: 0.2m/s  
Operative temperature coupled with ventilation: 18 deg.- 19 deg

## SERVICES

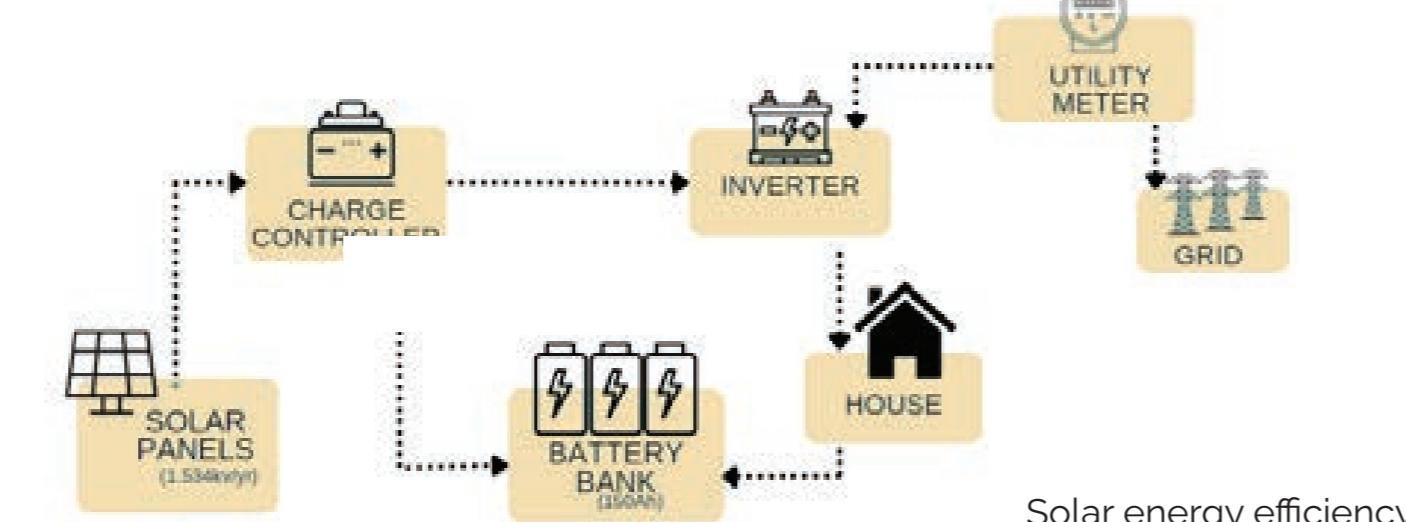


Electrical Plumbing

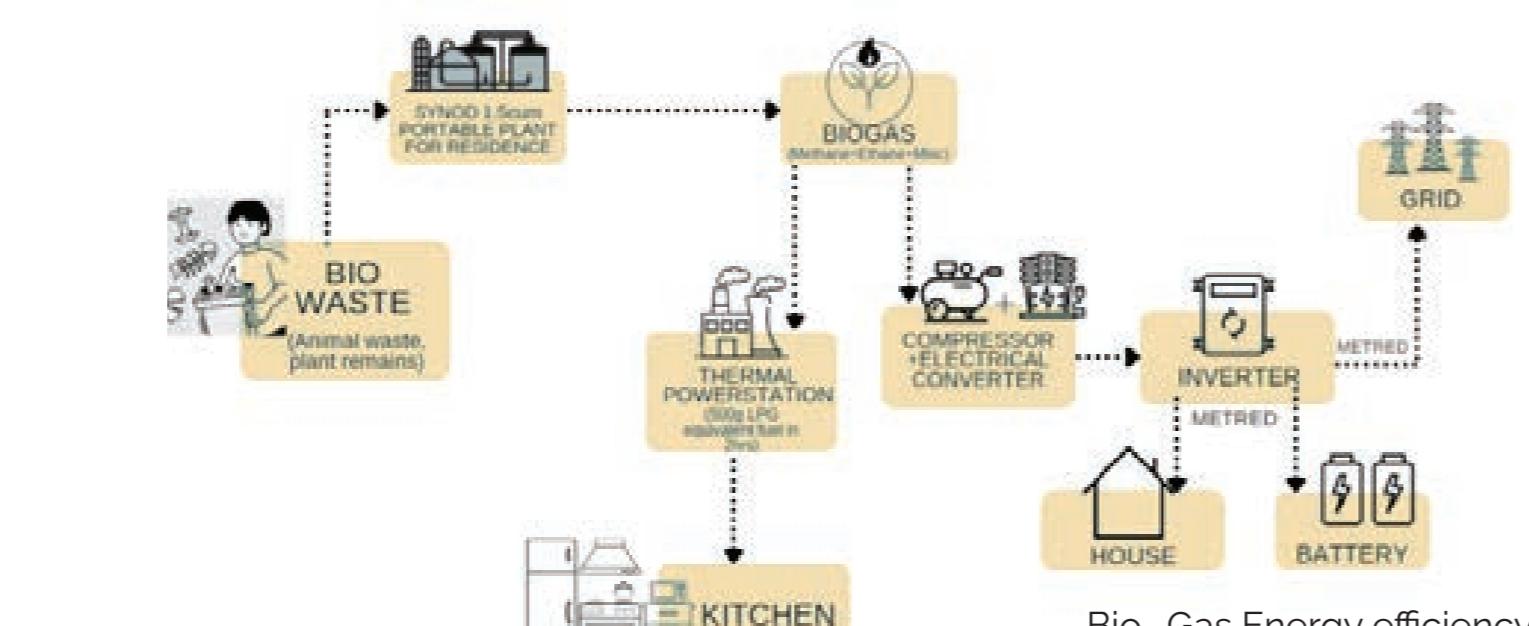


Plumbing Layout

## ENERGY FLOW CHARTS

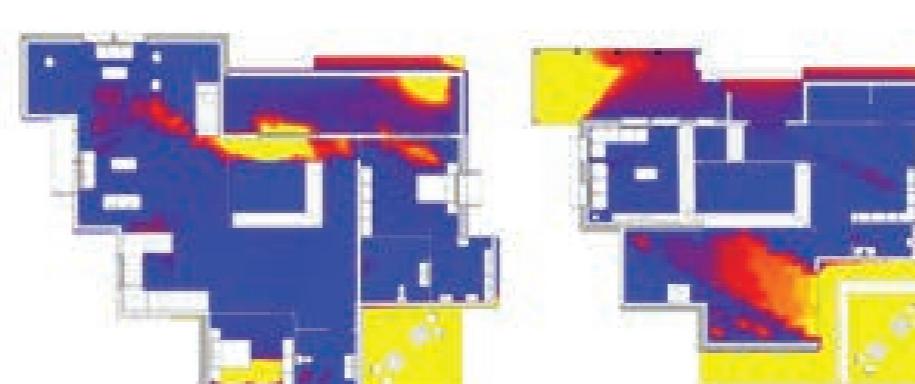


Solar energy efficiency

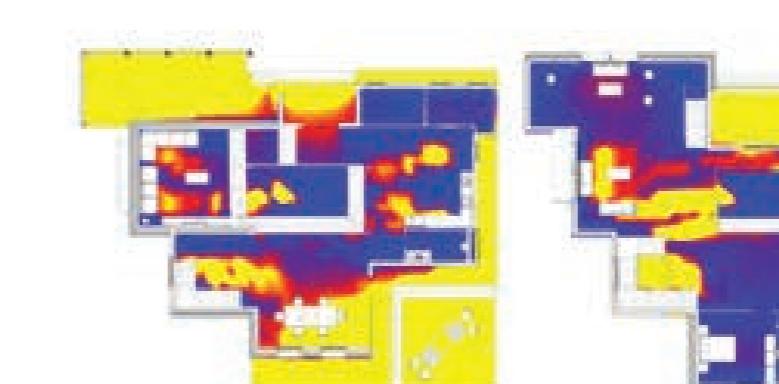


Bio-Gas Energy efficiency

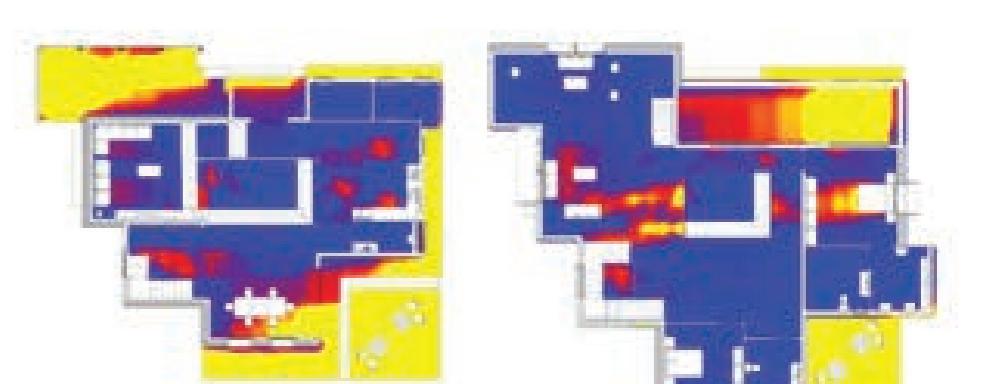
## HEALTH AND WELL BEING



Simulation of a typical winter

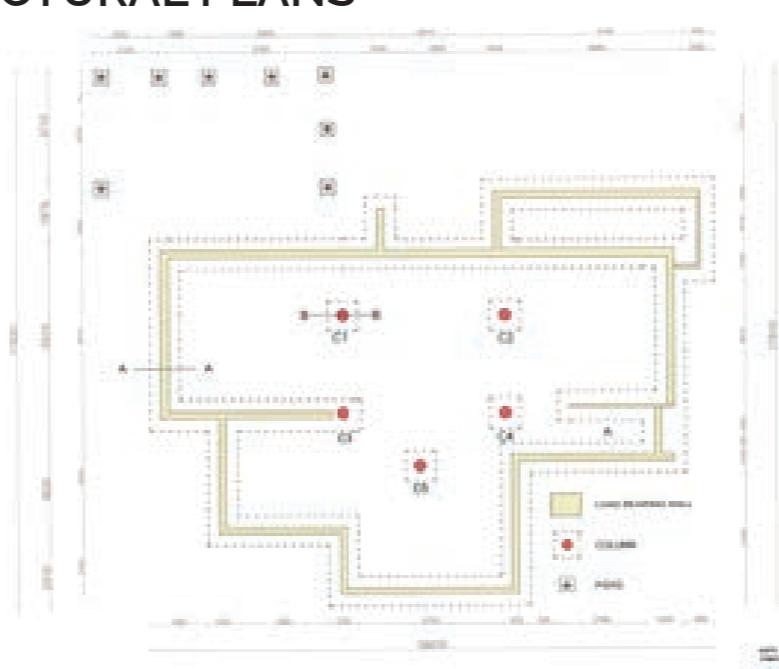


Simulation of a typical summer week (Apr-May)

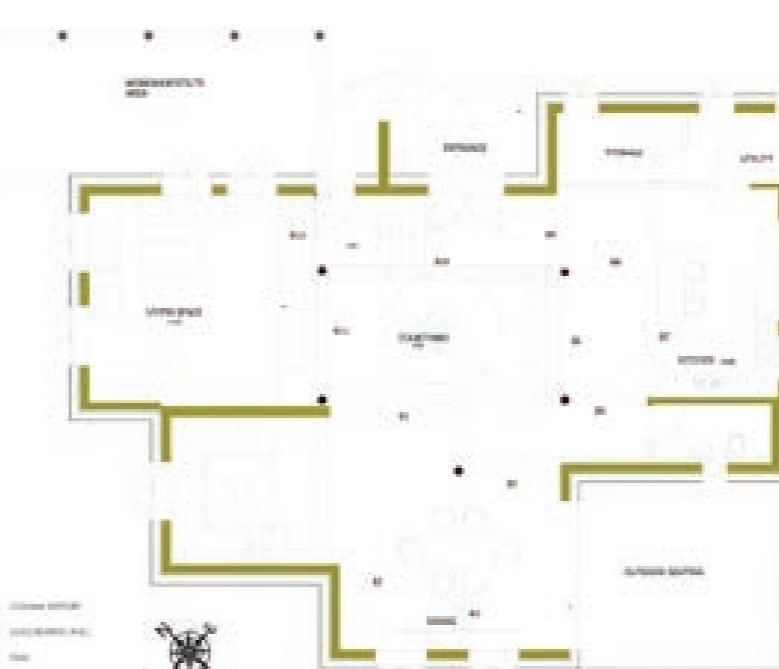


Simulation of a typical Monsoon week (Aug-Sept)

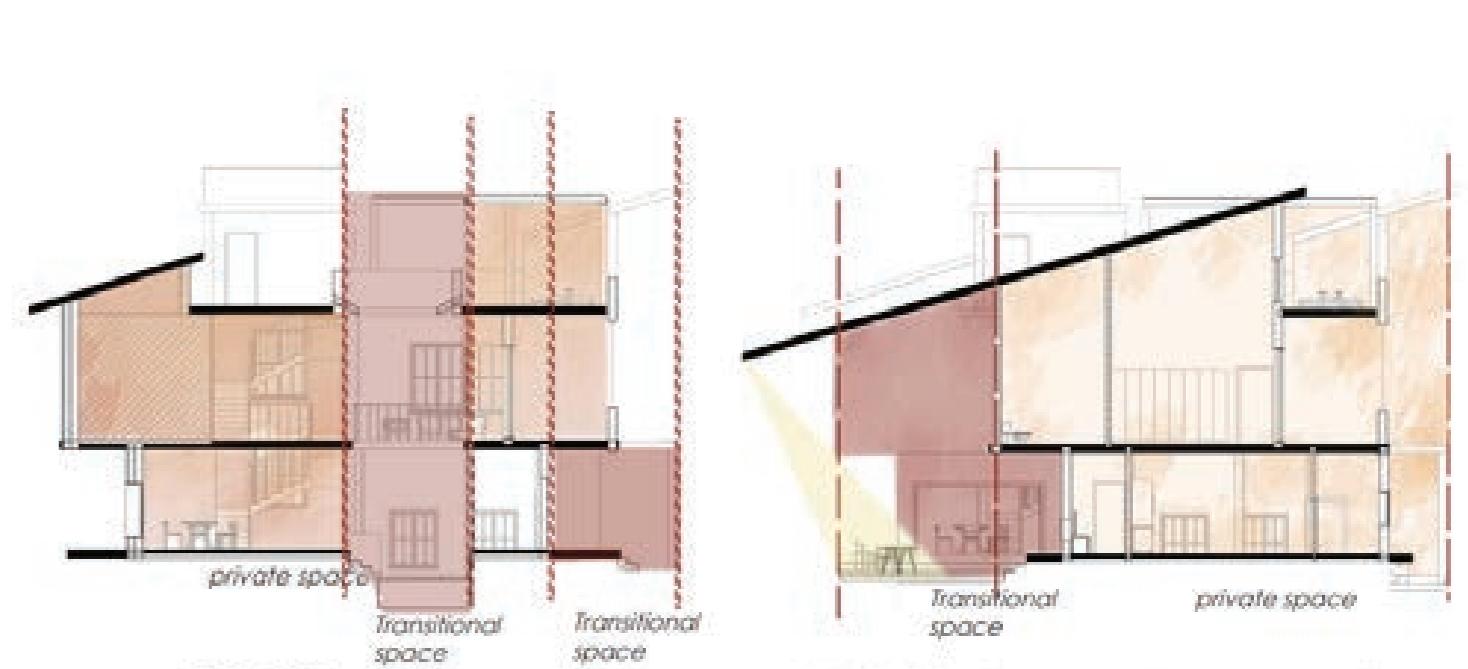
## STRUCTURAL PLANS



Excavation plan



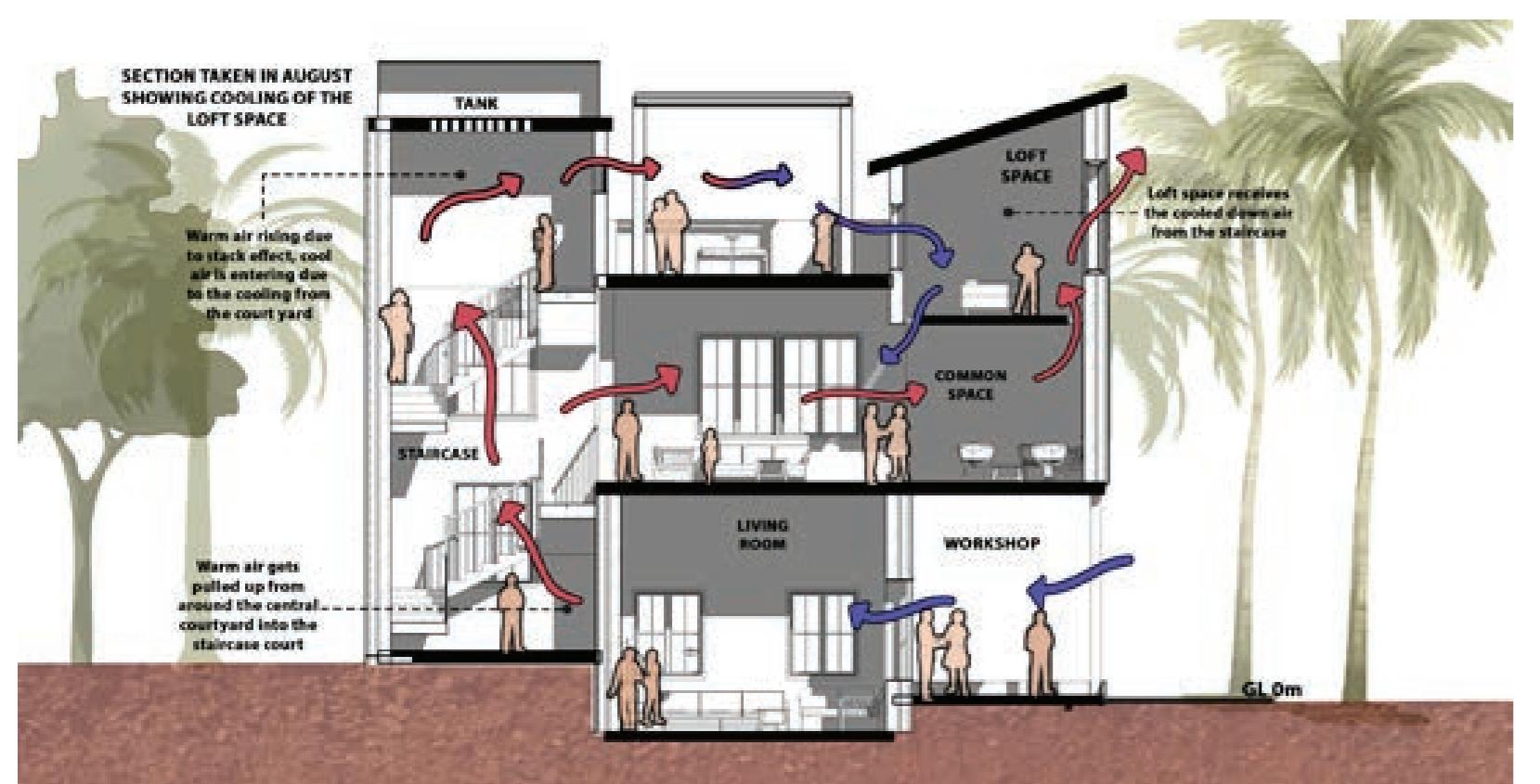
Framework plan



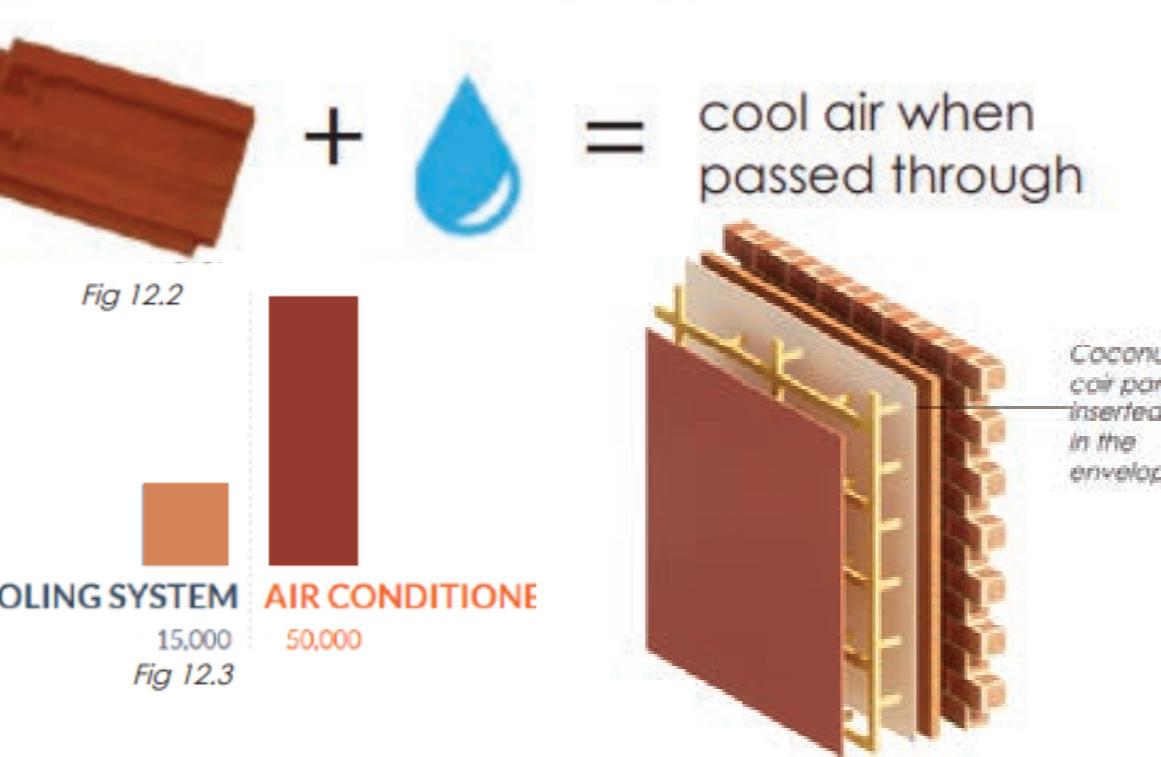
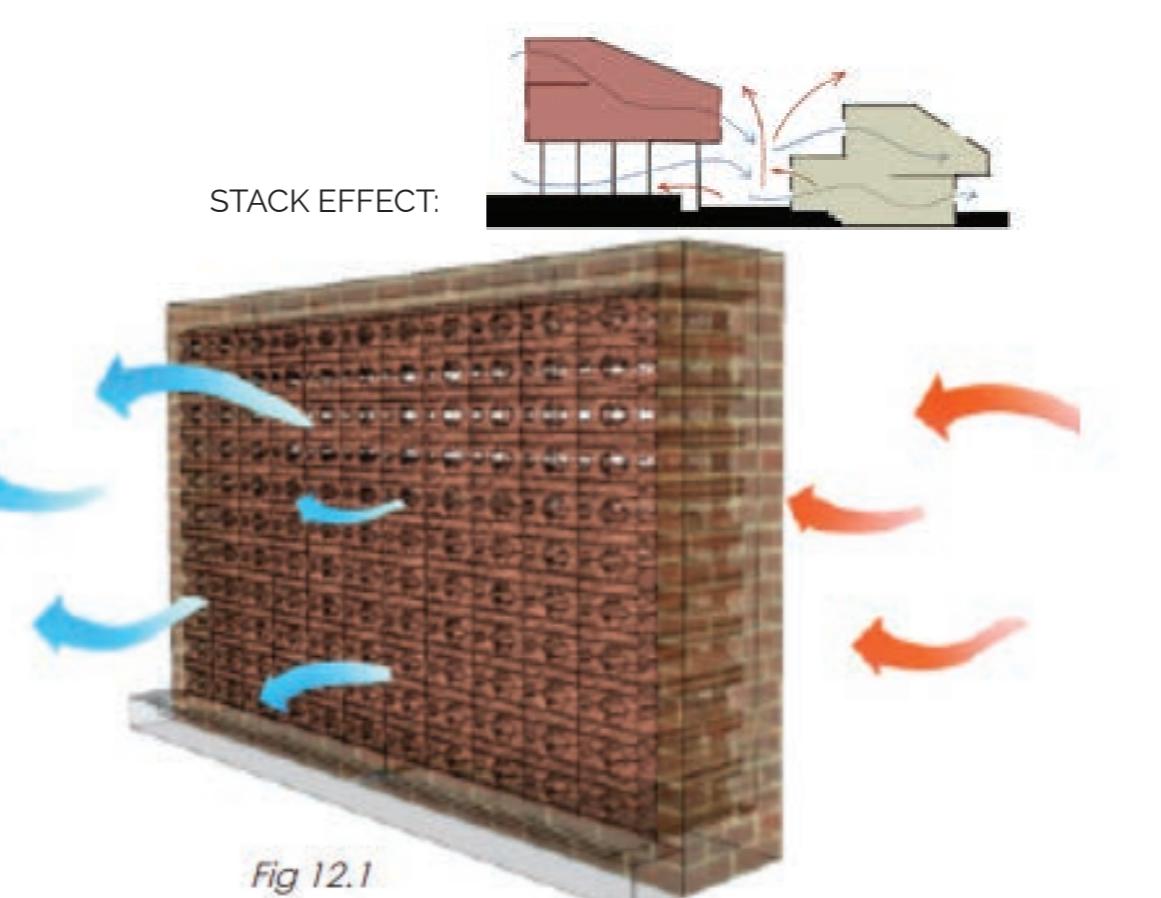
private space, Transitional space, private space

# 06 SOLAR DECATHLON NET ZERO SINGLE FAMILY HOUSING

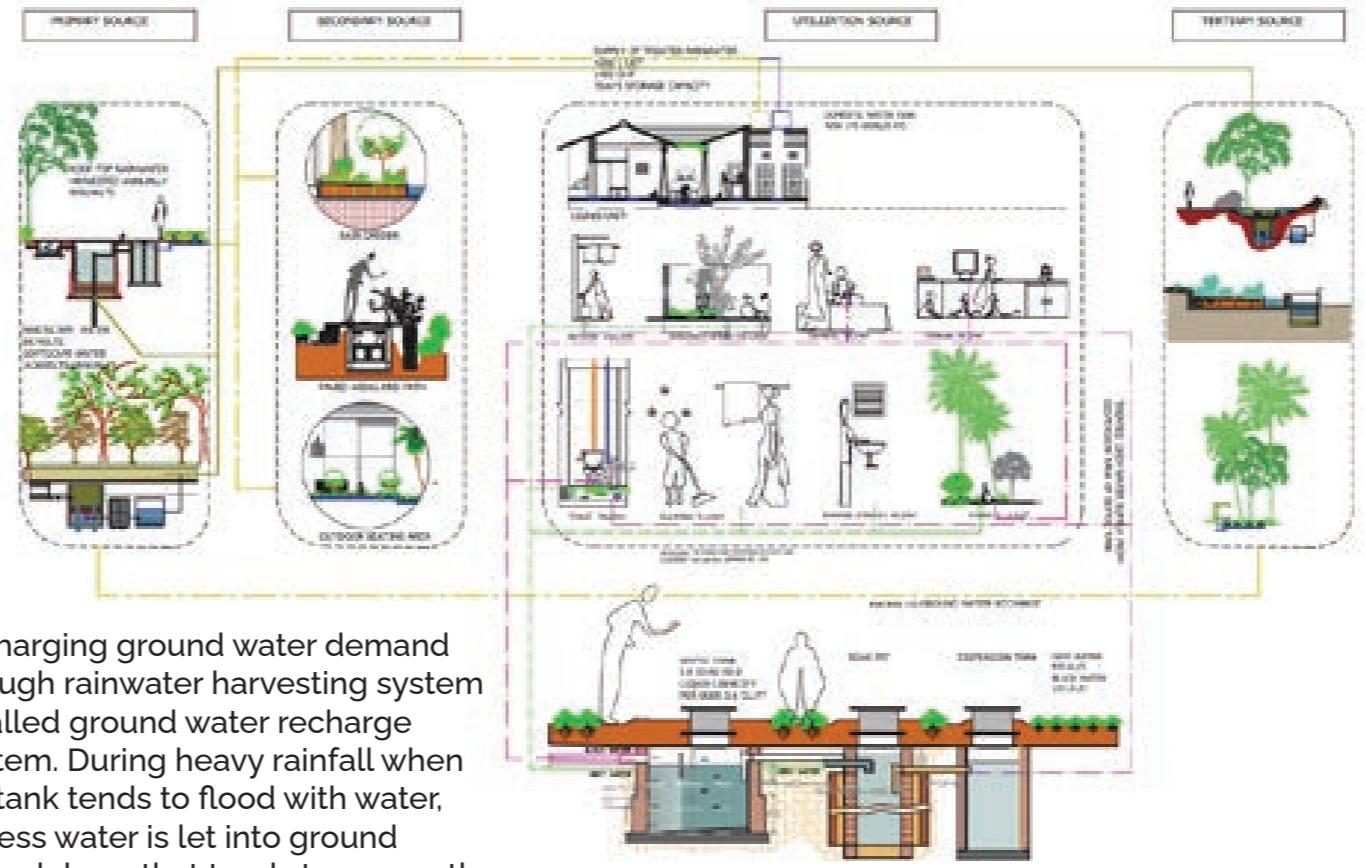
ALL INDIA NET ZERO COMPETITION - FIRST RUNNERS UP



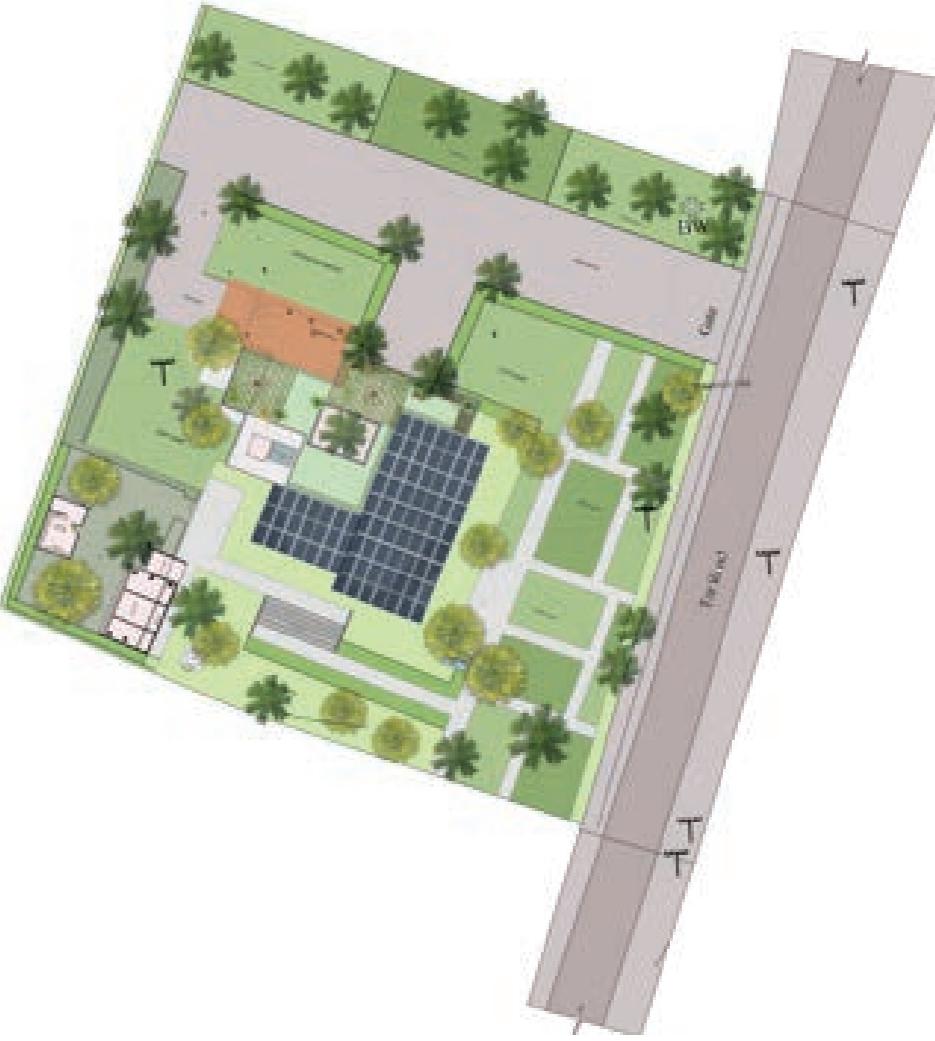
- The living room is sunken at a level of -1.12m to provide cooling of the space at all times.
- The courtyard in the middle acts as a ventilating shaft for the residence tapering upwards.
- Ground floor is mainly functional as a semi private space where guests can come and gather in the living or workshop with one washroom.
- First floor is strictly private with bedrooms and attached washrooms plus one common washroom.
- It also has multipurpose spaces which can be used as yoga decks, above which is a loft space used by the kids for sleeping.



## WATER PERFORMANCE

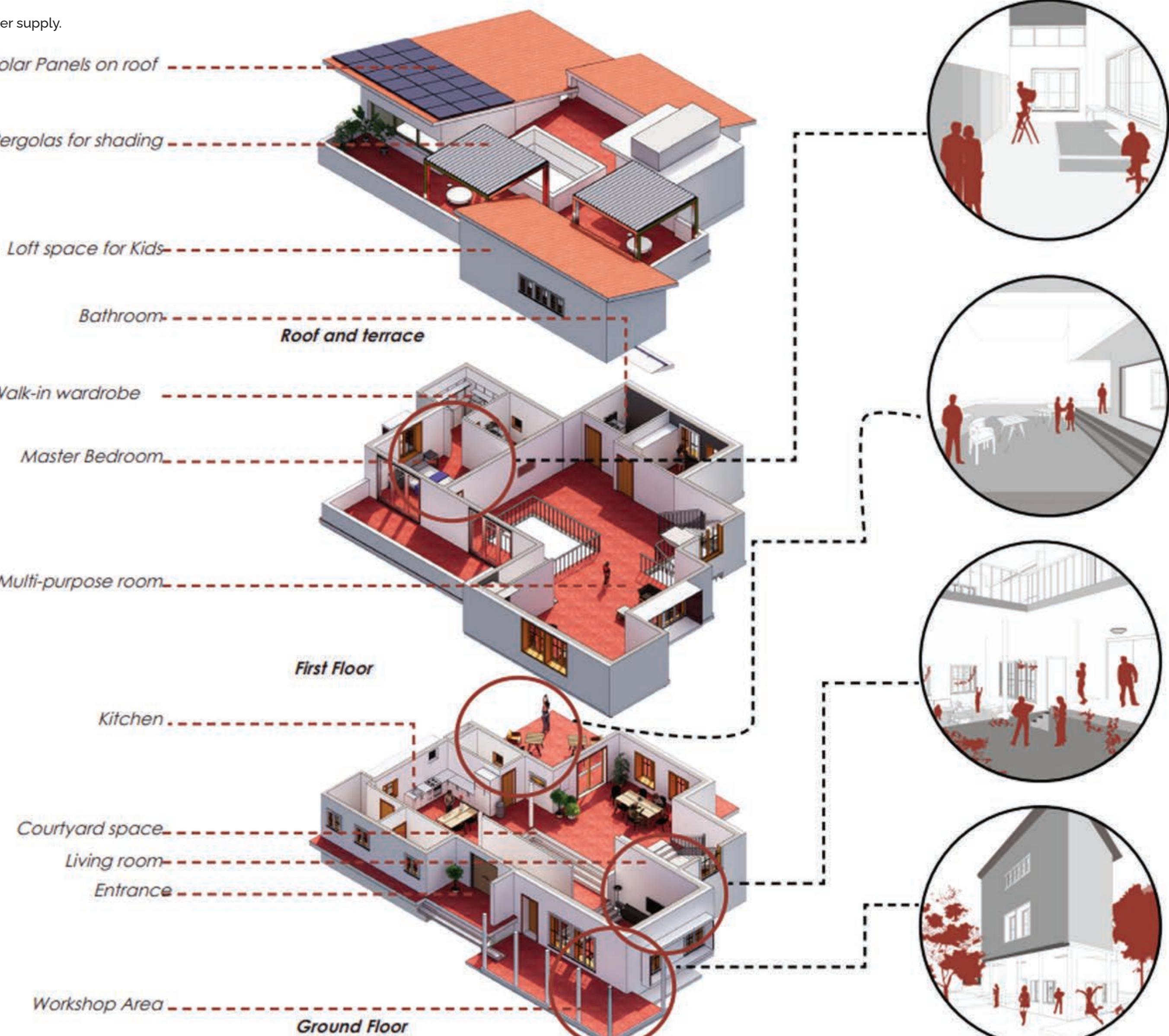


Recharging ground water demand through rainwater harvesting system is called ground water recharge system. During heavy rainfall when the tank tends to flood with water, excess water is let into ground through bore that tends to cease the water balance level of the site. Total annual rainfall collected is (490190L) and the tanks are designed to store water for 7days capacity as a result during dry months there is no need of dependence towards municipal water supply.

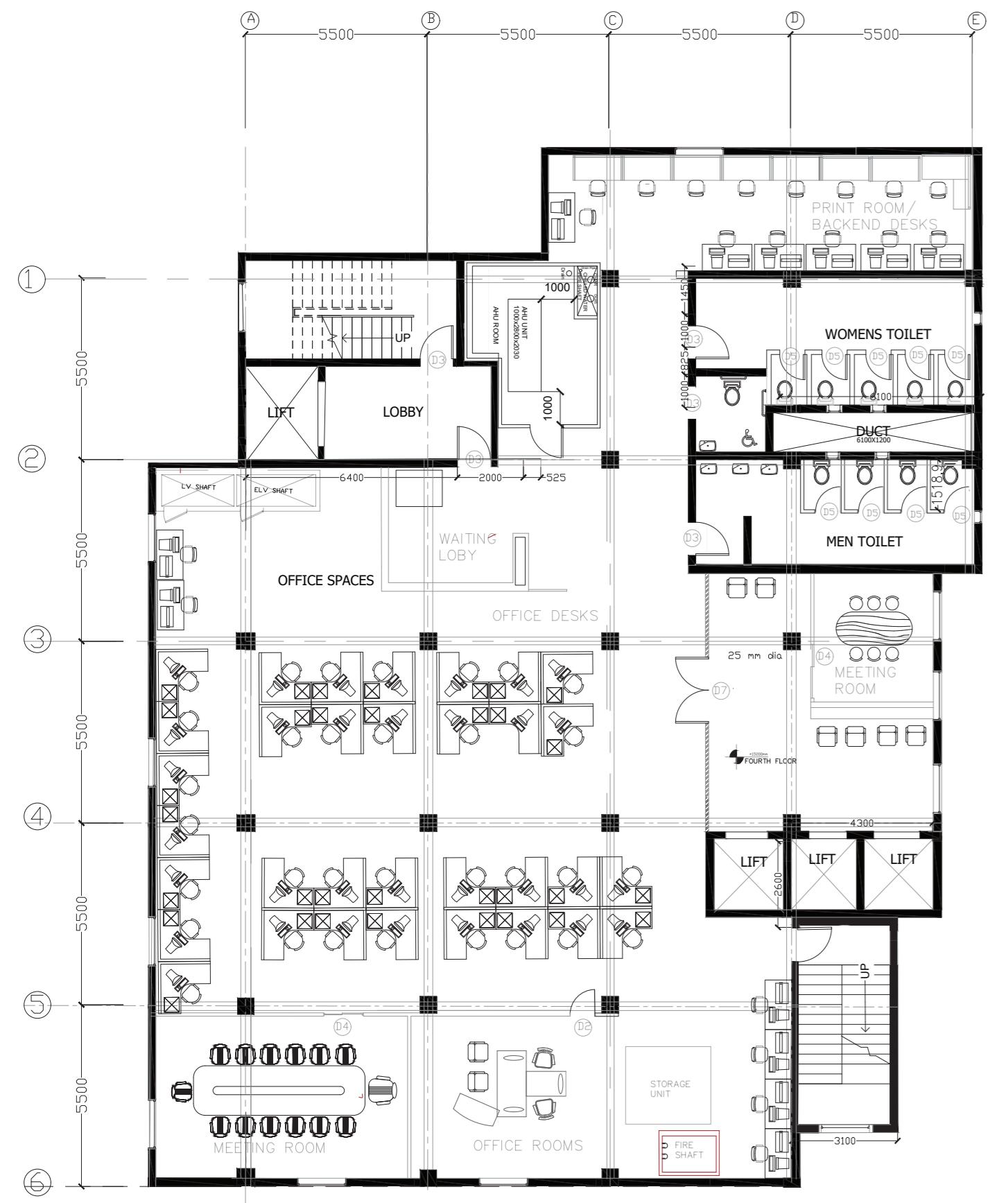


## LANDSCAPE

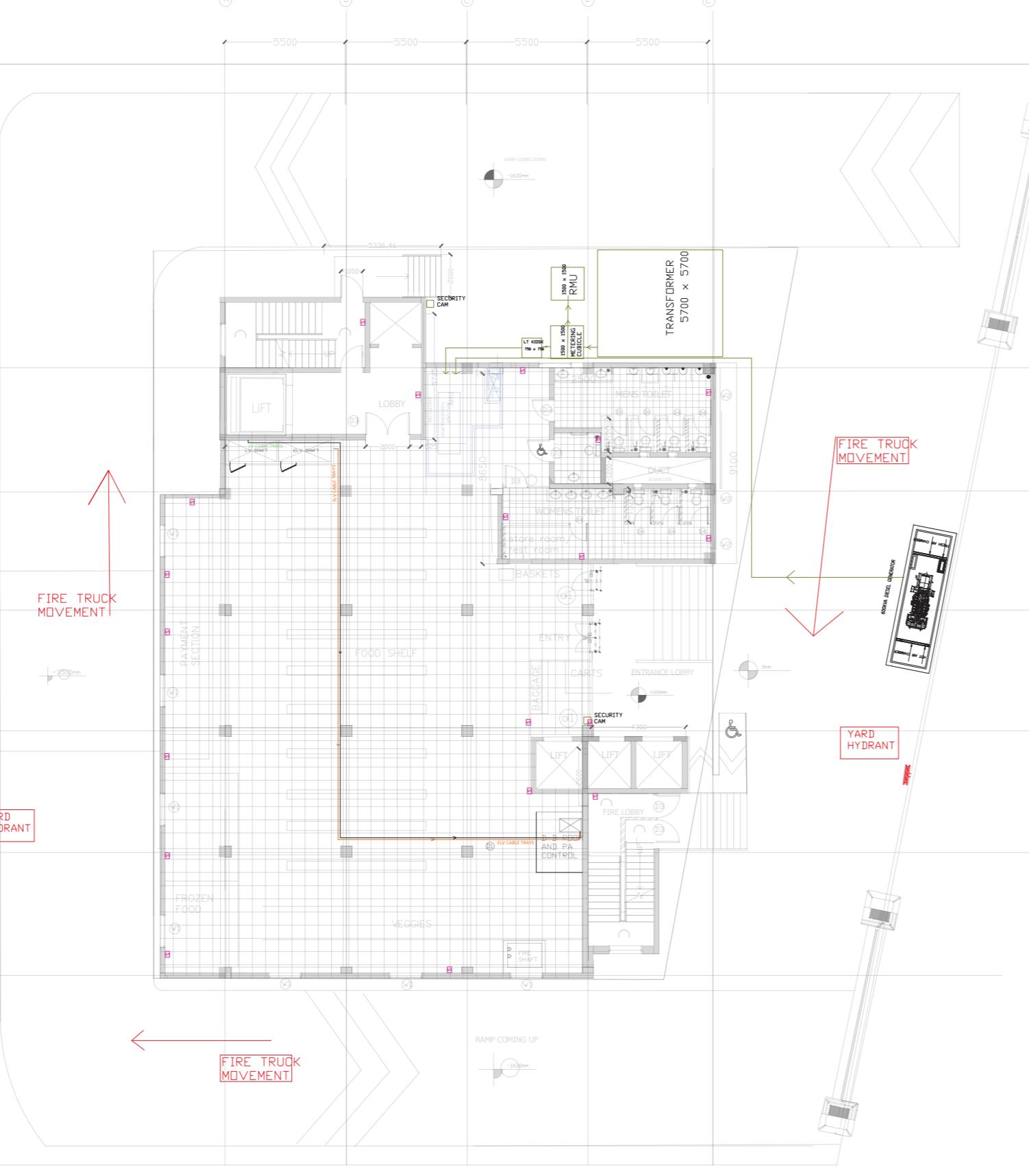
Plants are chosen to ensure indoor purification of air which are Spider and aloe vera. Fruits grown that are both suitable in site water conditions and climate are dragon fruit and pomegranate. Plants such Basil, mint and thyme act as insect repellants. Lavender is added to enhance the smell and is planted in the direction of prevailing winds.



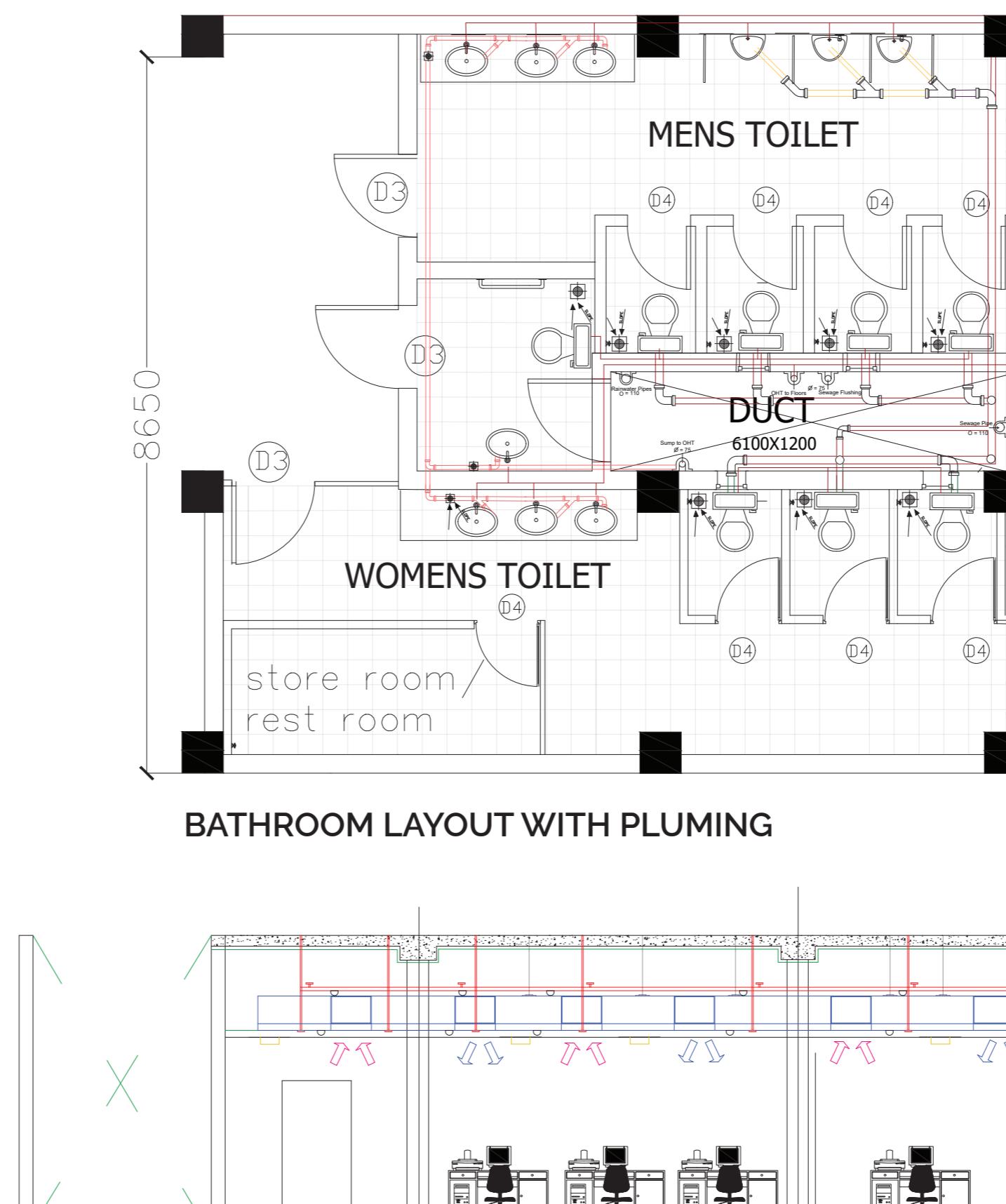
# WORKING DRAWINGS - OFFICE AND RETAIL



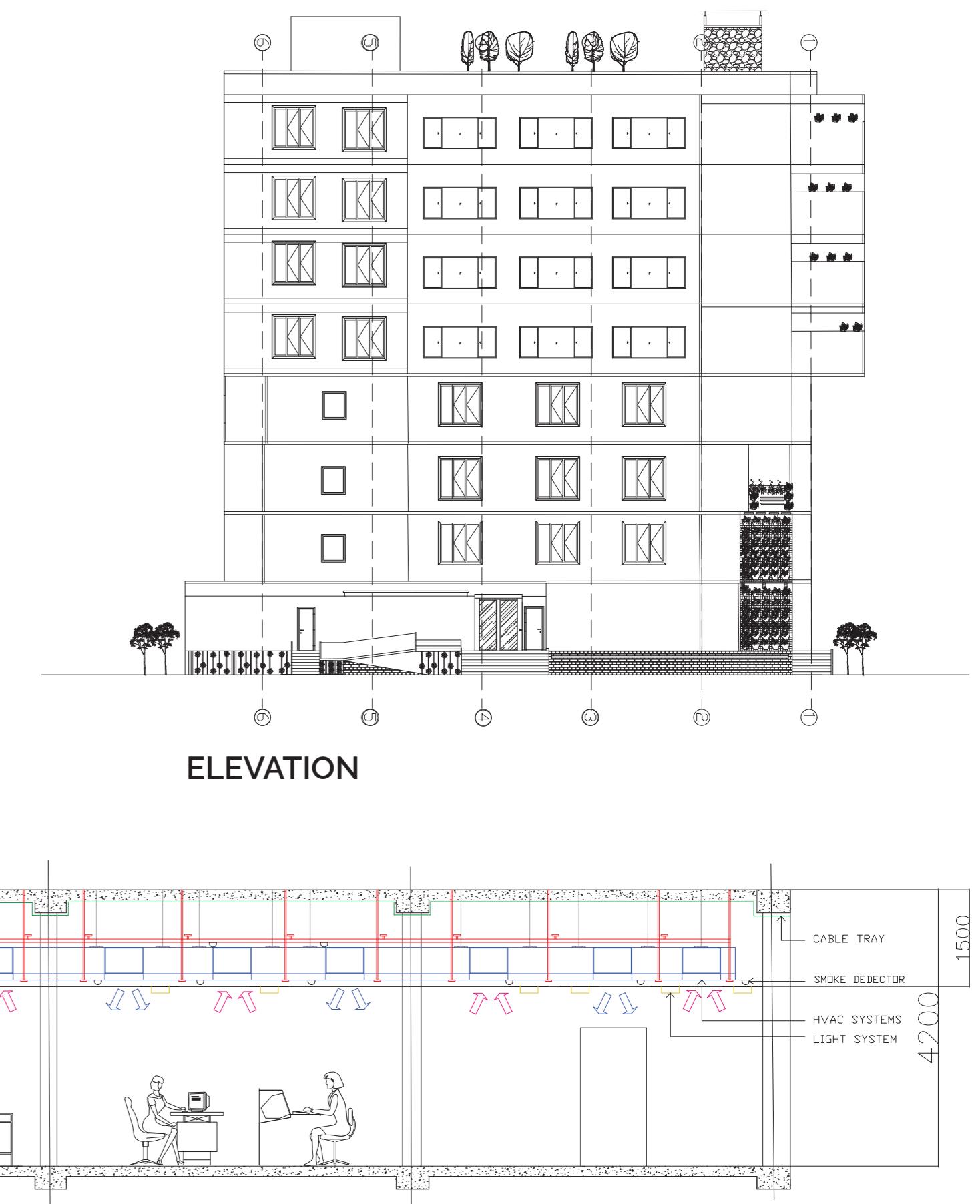
# OFFICE FLOOR PLAN



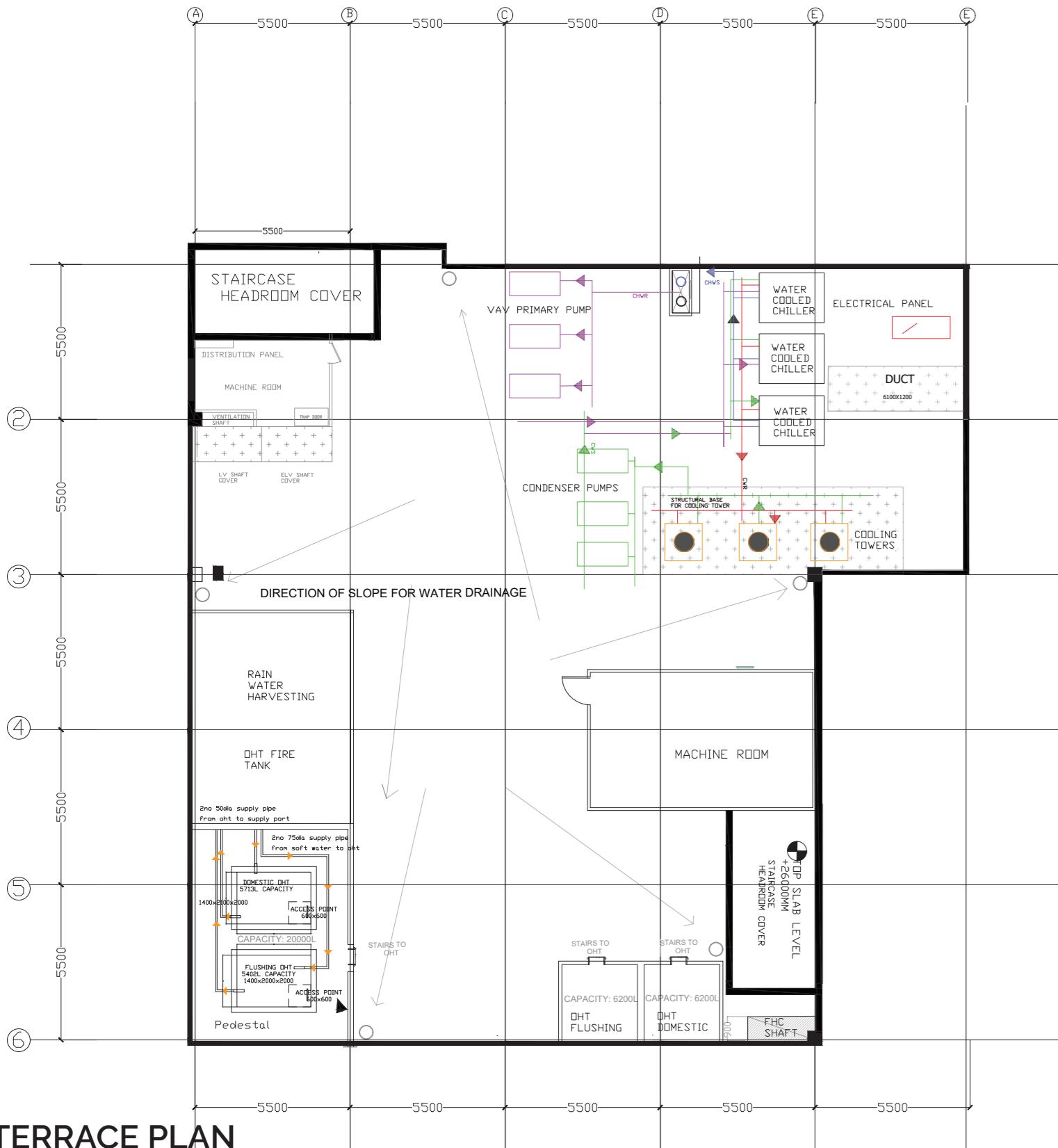
# FIRE MOVEMENT AND ELECTRICAL LAYOUT



# BATHROOM LAYOUT WITH PLUMBING



# DETAIL OF FALSE CEILING



# TERRACE PLAN



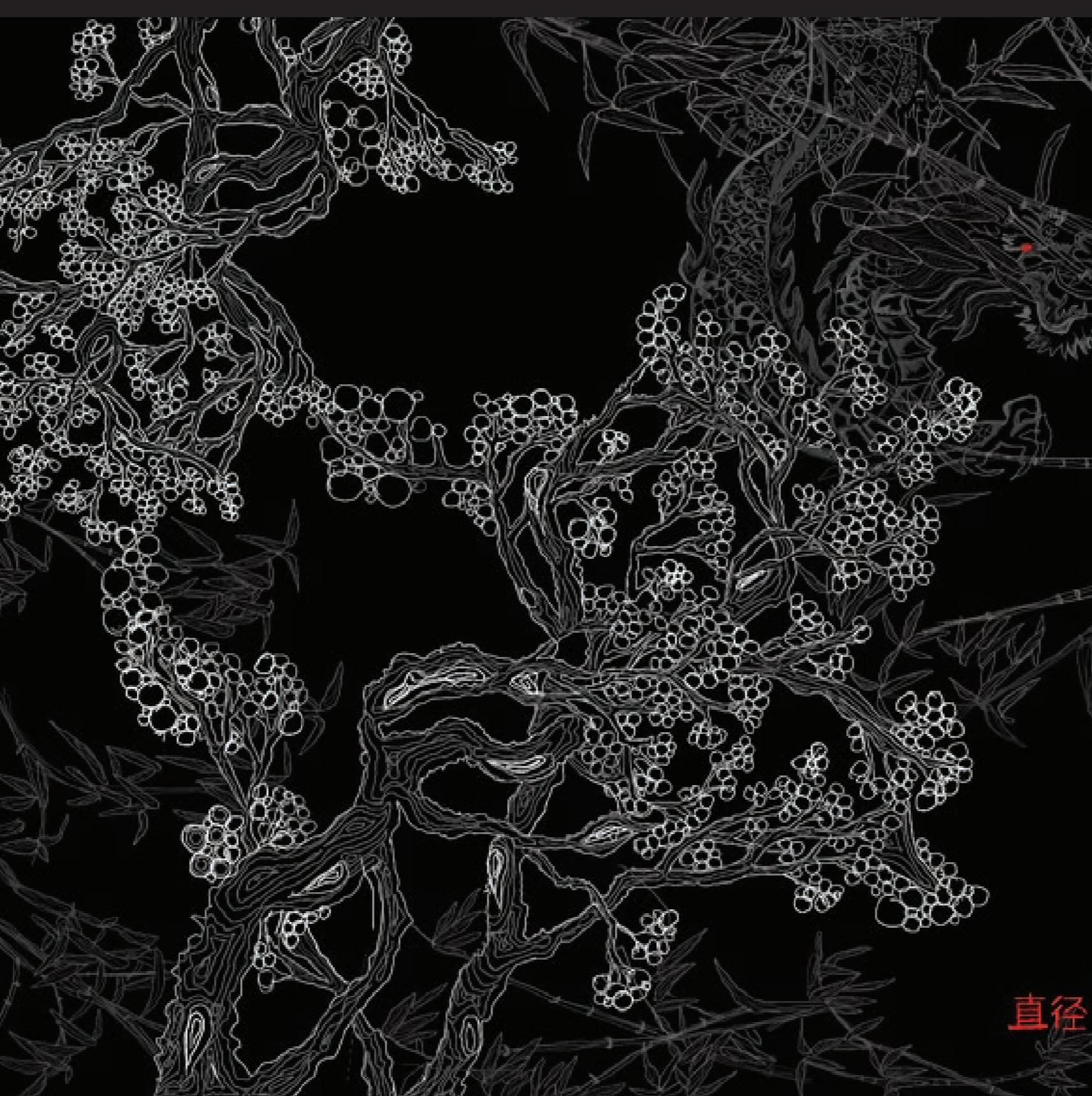
# HVAC, SPRINKLER AND LIGHTING PLAN



HVAC SYSTEMS SECTIONAL



LANCIEY X GOT X BRANDIE



@\_mindcandy  
Monochrome art, detailing through line work!

MISCELLANEOUS



Thank You!