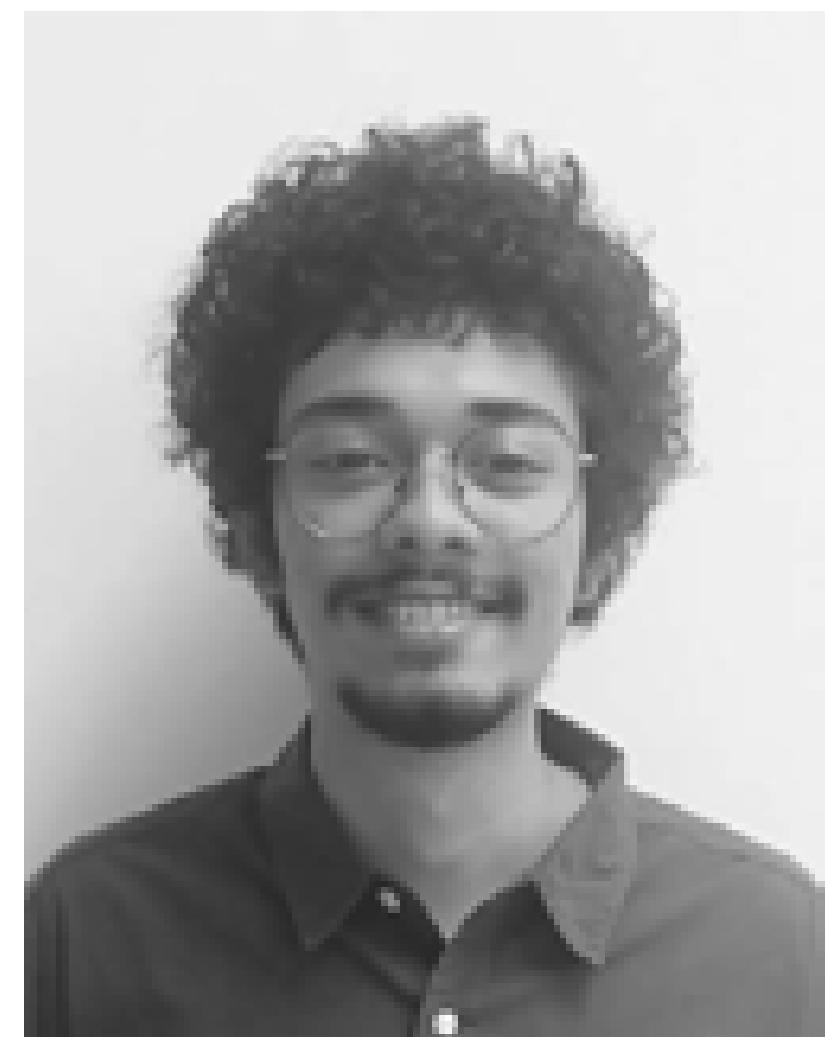


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Hello there! I am Varun SA, a 22-year-old architecture student currently studying at the School of Planning and Architecture, Bhopal. I am in my fourth year of pursuing a Bachelor's degree in Architecture.



I live in Bengaluru. Often referred to as the 'Garden City of India', I am surrounded by greenery that beautifully complements the architectural landscape, inspiring me to integrate nature-friendly elements into my designs.

Deconstructing things to their fundamental parts or first principles is a process that enhances my understanding and approach to architecture. Through my travels across India and countries abroad, I have been fortunate to experience a wide range of architectural typologies and styles, expanding my knowledge and inspiring my own design explorations.

Utilizing technology and software tools, I aspire to enhance architectural design and drive innovation.

I look forward to the opportunity to be a part of your team! Thank you for your consideration!

**Date of Birth:** 01 March 2001

**Nationality:** USA

**Skills:** Concept Development, Digital Sketching, Photo Editing, 3D Modelling, Parametric Modelling, Visualization, Working Drawing, Architectural Documentation, programming

**Interests:** Design, Technology, Artificial Intelligence, Sustainability, Art, Nature

**Hobbies:** Sketching, Table-Tennis, Chess, Trekking, Gym



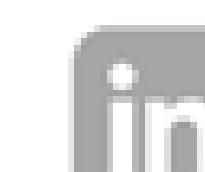
[valleyvarun@gmail.com](mailto:valleyvarun@gmail.com)



<https://issuu.com/varunsa>



<https://www.instagram.com/varun.>



<https://www.linkedin.com/in/varunsa-spab/>



<https://github.com/valleyvarun>

## EDUCATION

- + 2020 - Present **Bachelors in Architecture (B.arch)** | School of Planning and Architecture, Bhopal, India
- + 2017 - 2019 **Secondary Education** | Deeksha Centre for Learning IIT-JEE Coaching, Bengaluru, India
- + 2007 - 2017 **Primary Education** | The Valley School KFI, Bengaluru, India

## OTHER COURSEWORK

- + June, 2023 **Python Programming Course** | freecodecamp.org
- + May, 2016 **Diploma in Car Design** | Launchpad Academy, Bengaluru, India
- + 2015 - 2016 **Carpentry Studio** | The Valley School KFI, Bengaluru, India

## SOFTWARE PROFICIENCY



Photoshop



D5 Render



Autocad



Sketchup



Rhinoceros + Grasshopper



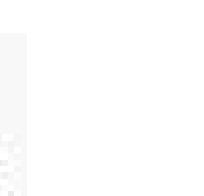
Revit



AI TOOLS USED:



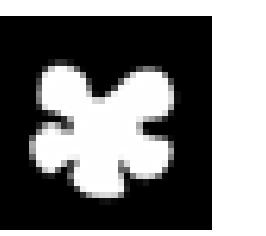
ChatGPT



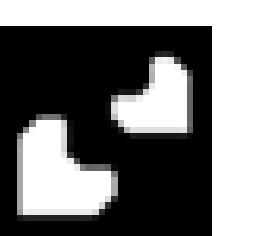
MidJourney

My architectural design philosophy aims to transcend the mere functionality of a building and create experiences that resonate with the complex nature of human beings. I believe that living spaces should serve as more than just utilitarian structures; they should actively contribute to our emotional well-being and elicit a range of feelings. To achieve this in my designs, I strive to incorporate the natural landscape into the building structures in such a way that it evokes a range of emotions in the users, such as feeling calm, secure, excited, and inspired.

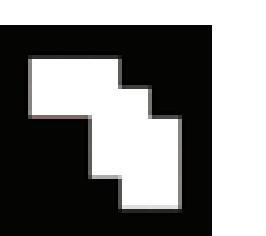
Here is a selection of my works that showcase my design philosophy.



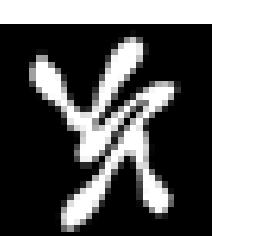
1. BHOPAL HABITAT CENTRE



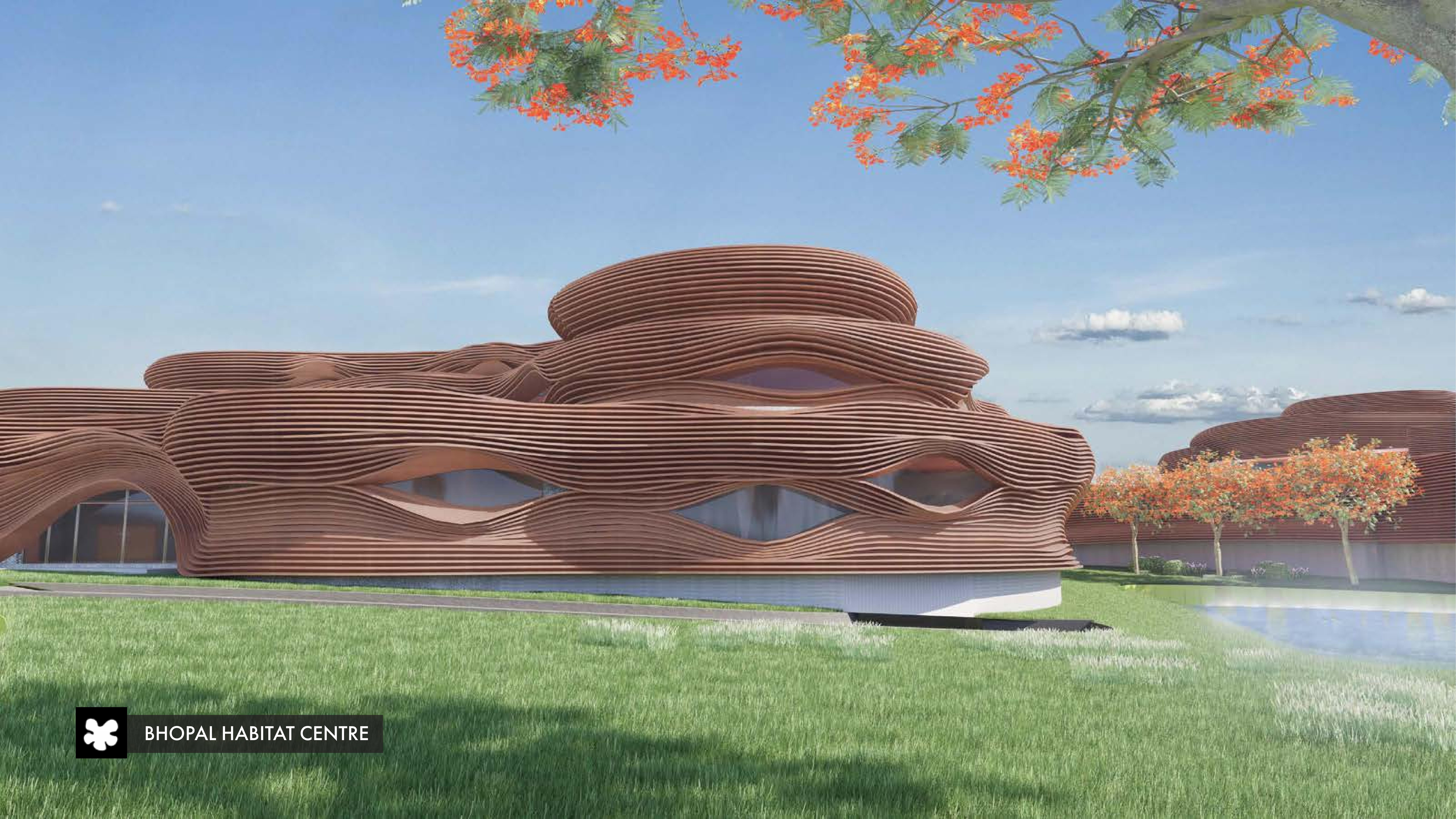
2. AUTISM MITRA RESIDENCE



3. MULTI-SPECIALITY HOSPITAL



4. MISCELLANEOUS



BHOPAL HABITAT CENTRE

## 01. What is a 'Habitat Center'?

The word 'habitat' is a term in ecology which refers to the natural environment which nurtures the organisms living in it. A 'habitat center' is a multi-purpose building or complex, designed to be a hub for social, cultural, and intellectual activities. It provides a physical environment that fosters a vibrant and holistic community. Hence the term "habitat" is used to signify that it is a place for various types of people and activities to thrive.

A habitat is characterized by a unique set of physical features that not only define it but also differentiate it from other habitats. These distinctive characteristics largely determine the types of organisms that can thrive within it, and they are often the result of the habitat's geographical location, climatic conditions, and underlying geology. Like natural habitats, a habitat center is characterized by unique and prominent physical features that may distinguish it from the rest of the urban landscape. These features can include the architectural style, layout, the mix of amenities and facilities, and even the cultural and social activities it hosts.

The Bhopal Habitat Centre's design takes inspiration from Terrace-farming and the Amoeba. Green roofs have been provided on every floor so that the users of the building are always immersed in the habitat, while also combating the intense heat of the region. The amoeba-shaped terracotta facade mimics the terraced soil of a mountain, protecting the exterior walls from heat gain and creating a striking organic aesthetic.



### SITE INFORMATION:

SITE COORDINATES:  
23°13'44.63"N, 77°23'53.95"E

ALTITUDE:  
around 540 meters ( 1772 feet ) above sea level

ADDRESS:  
TT NAGAR, BHOPAL, MADHYA PRADESH, INDIA  
- 462003

SITE AREA:  
54,748 sq.m ( 589302 sq.ft )

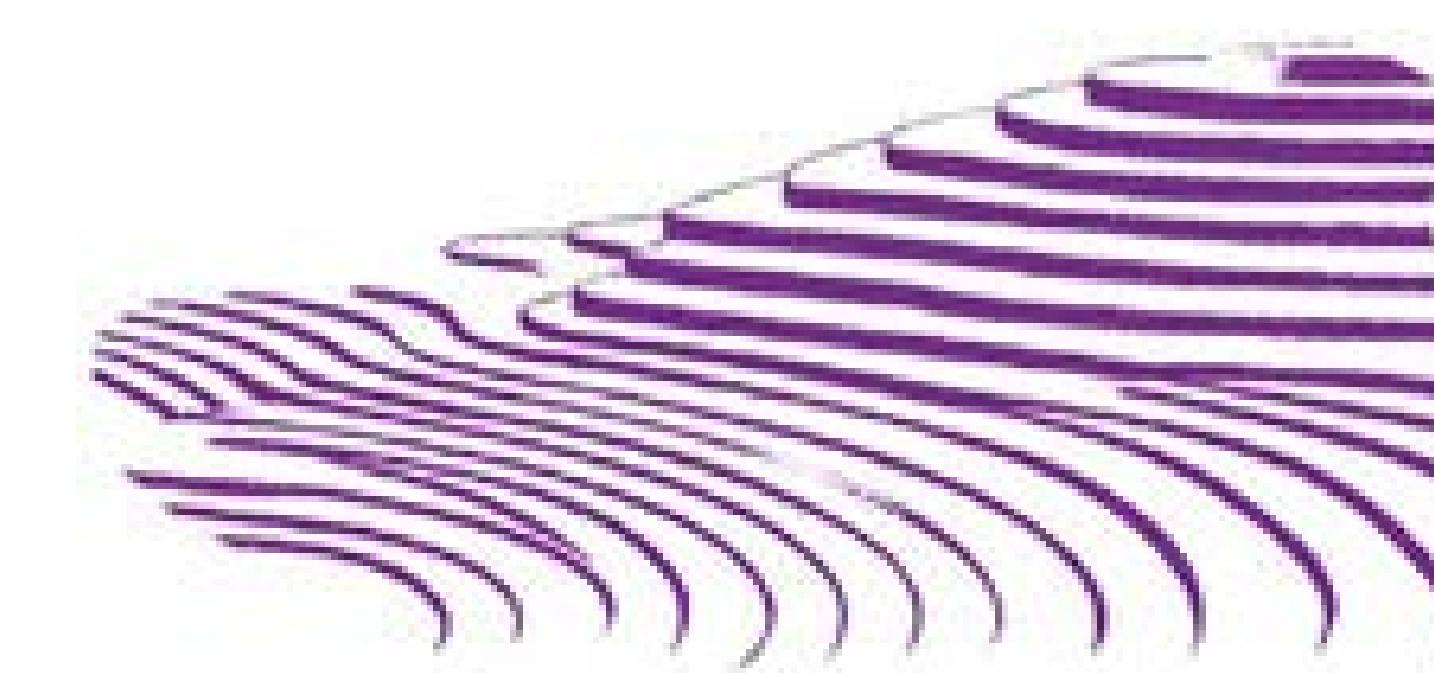
GROUND COVERAGE:  
14520 sq.m ( 156292 sq.ft ) = 25% approx.

SITE PERIMETER:  
996 meters ( 3268 feet )

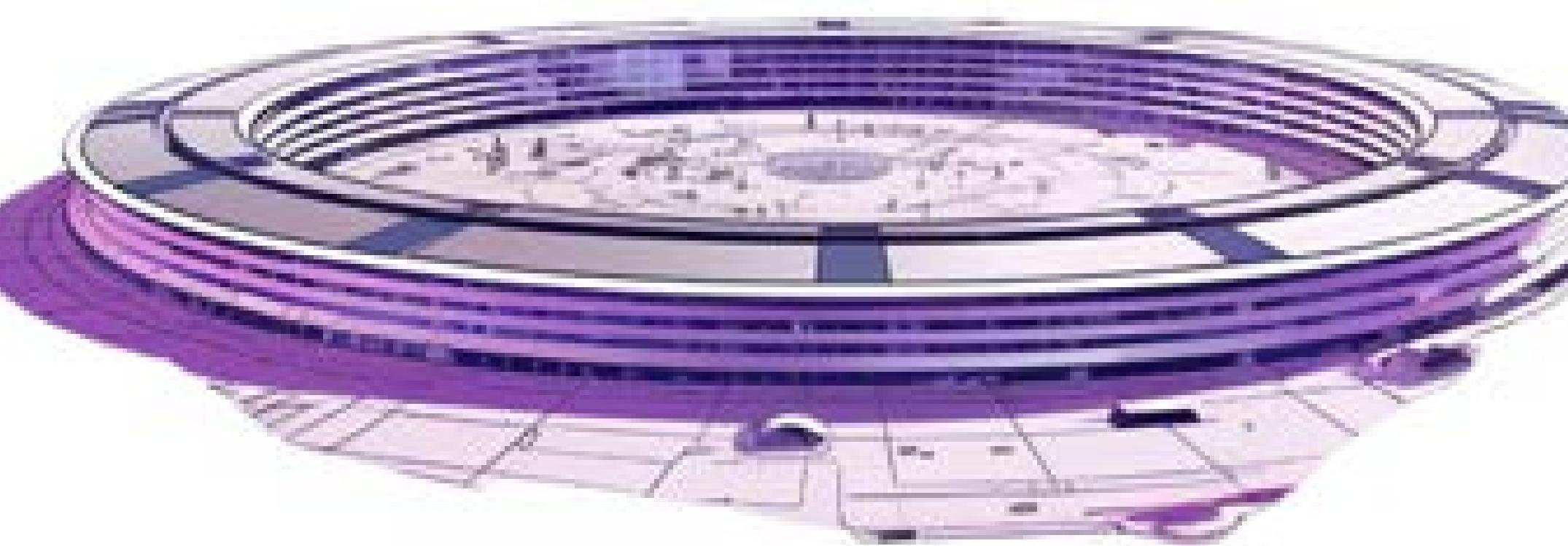
### CONCEPT & IDEATION:



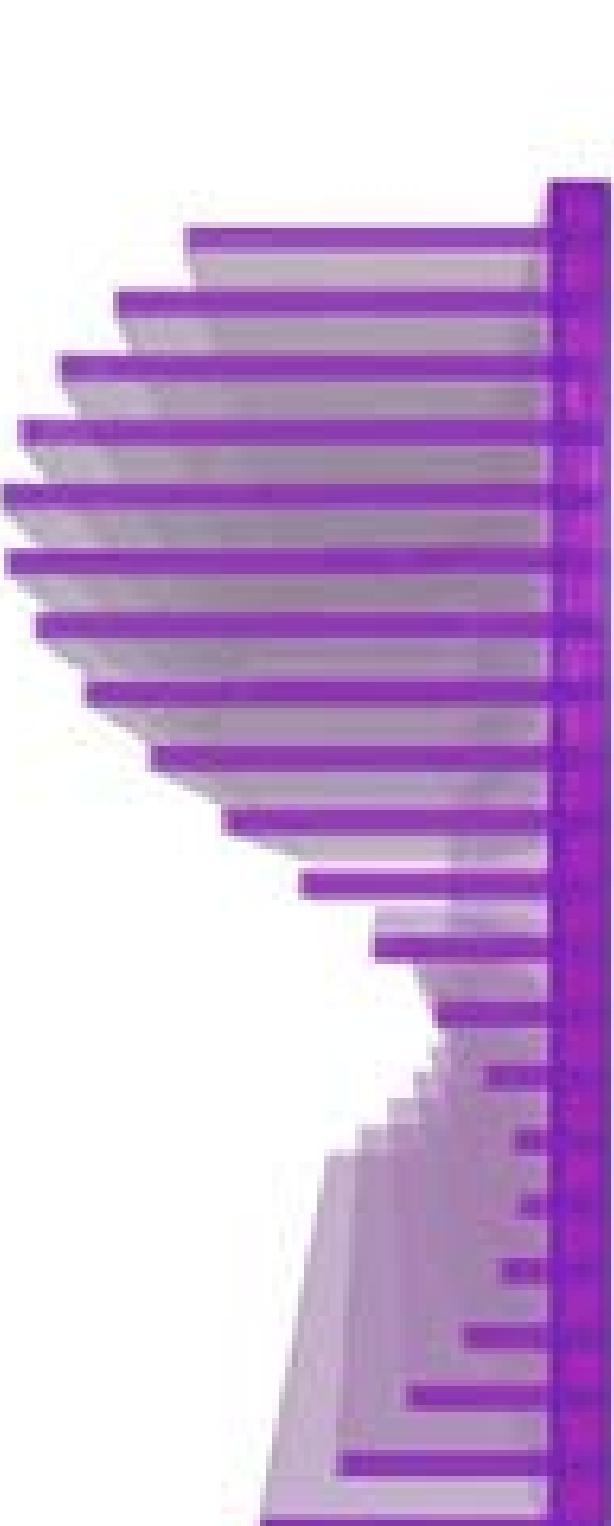
Amoeba shaped buildings



Floors stacked one above the other like a terraced hill



Central green space like in Apple Park by Norman Foster



Terracotta slabs protruding to form a vertical sine curve shape



Eye shaped glass windows



Entrance doors like the opening of a cave

Images made on MidJourney:



'Beehive shaped stone walls'



'Curving corridor surrounding a green landscape'



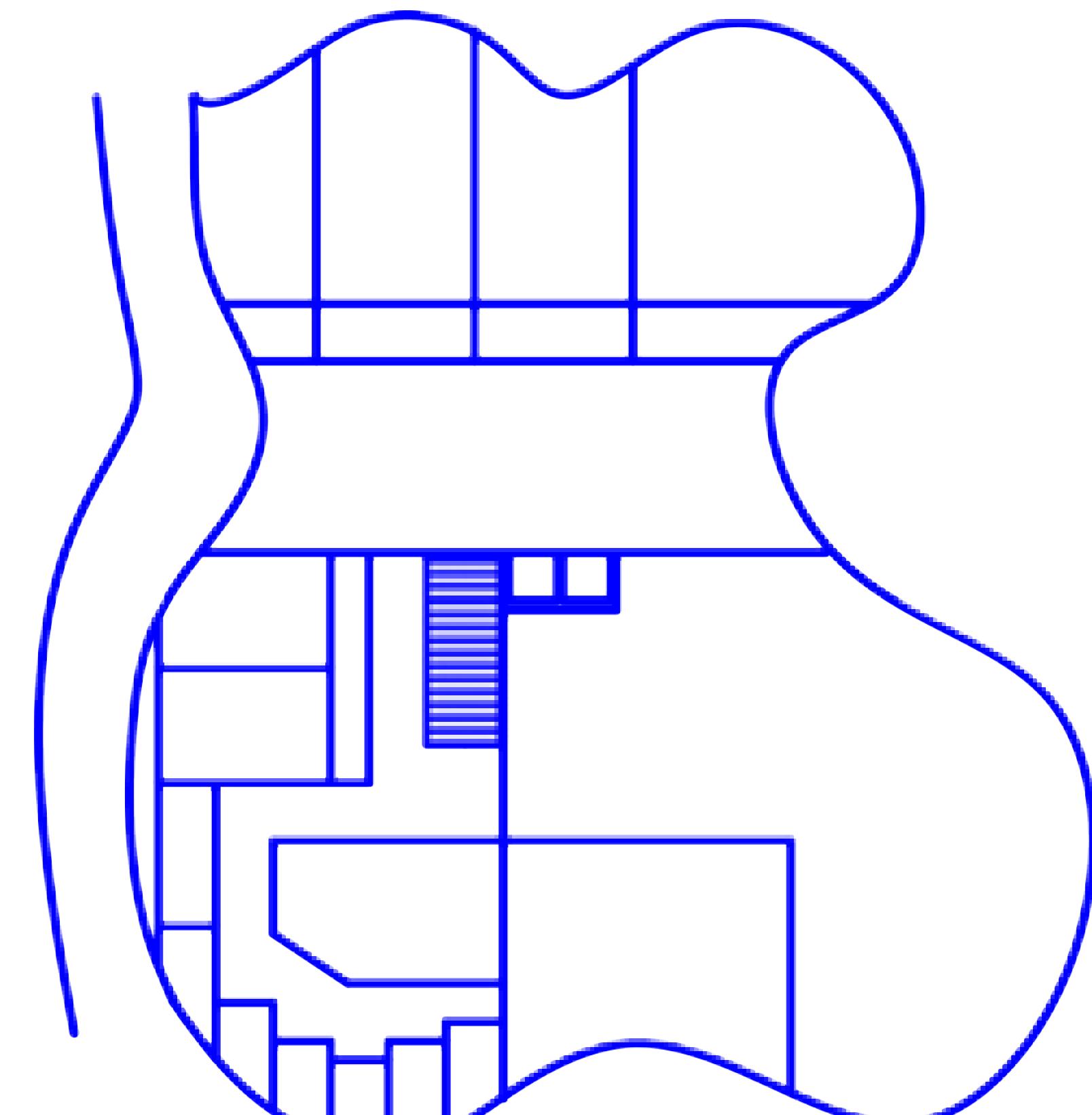
'Village style layout with central open space'

## OFFICE BUILDING - GROUND FLOOR PLAN

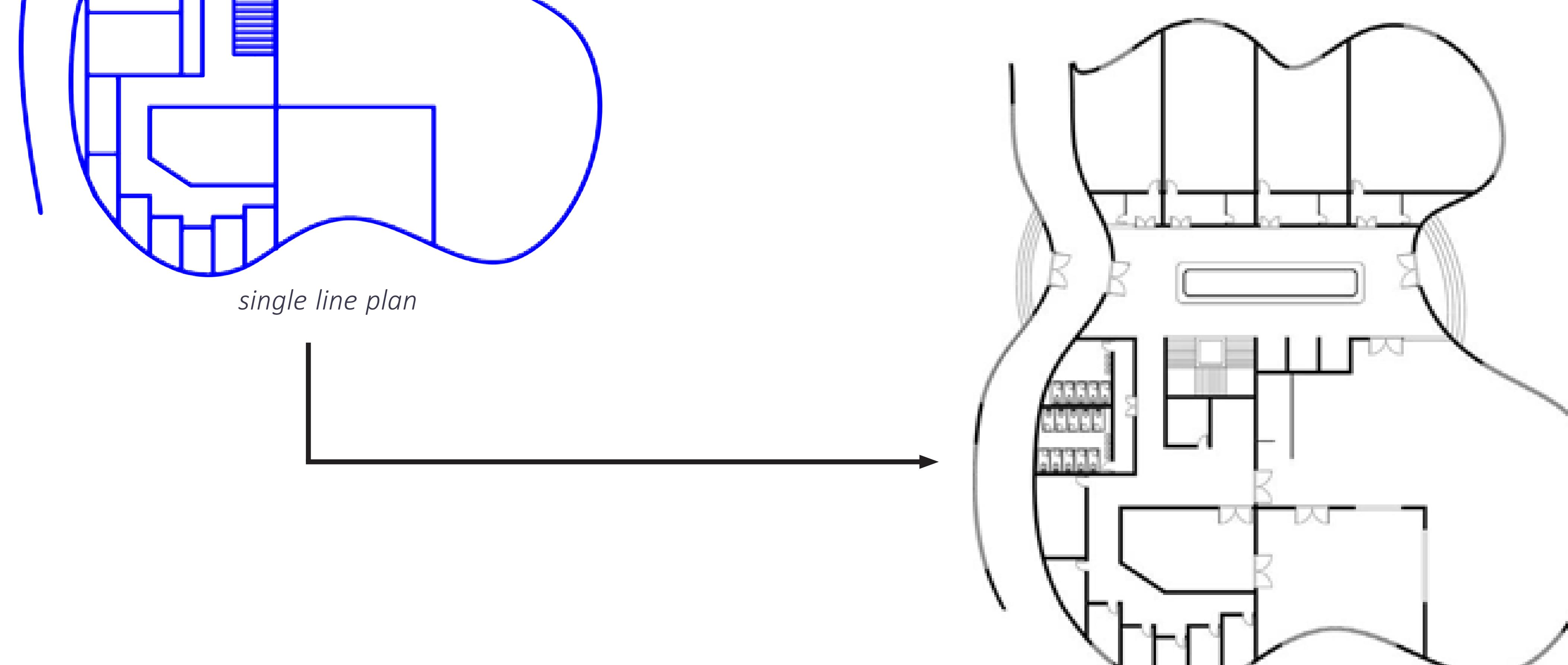
### FLOOR PLAN DEVELOPMENT:

Name	Number	Area (sq.m)	Total Area (sq.m)
Meeting Hall	4	100	400
Cafeteria	1	500	500
Kitchen	1	170	170
Storage Room	1	80	80
Main corridor & sitting area	1	250	250
Public Elevators	3	4	12
Basement to Storage Elevator	1	6	6
Men's restroom	1	30	30
Women's restroom	1	30	30
Resting rooms	5	10	50
AHU Room	1	25	25
Utilities Room	1	25	25
Electricity Control Room	1	25	25

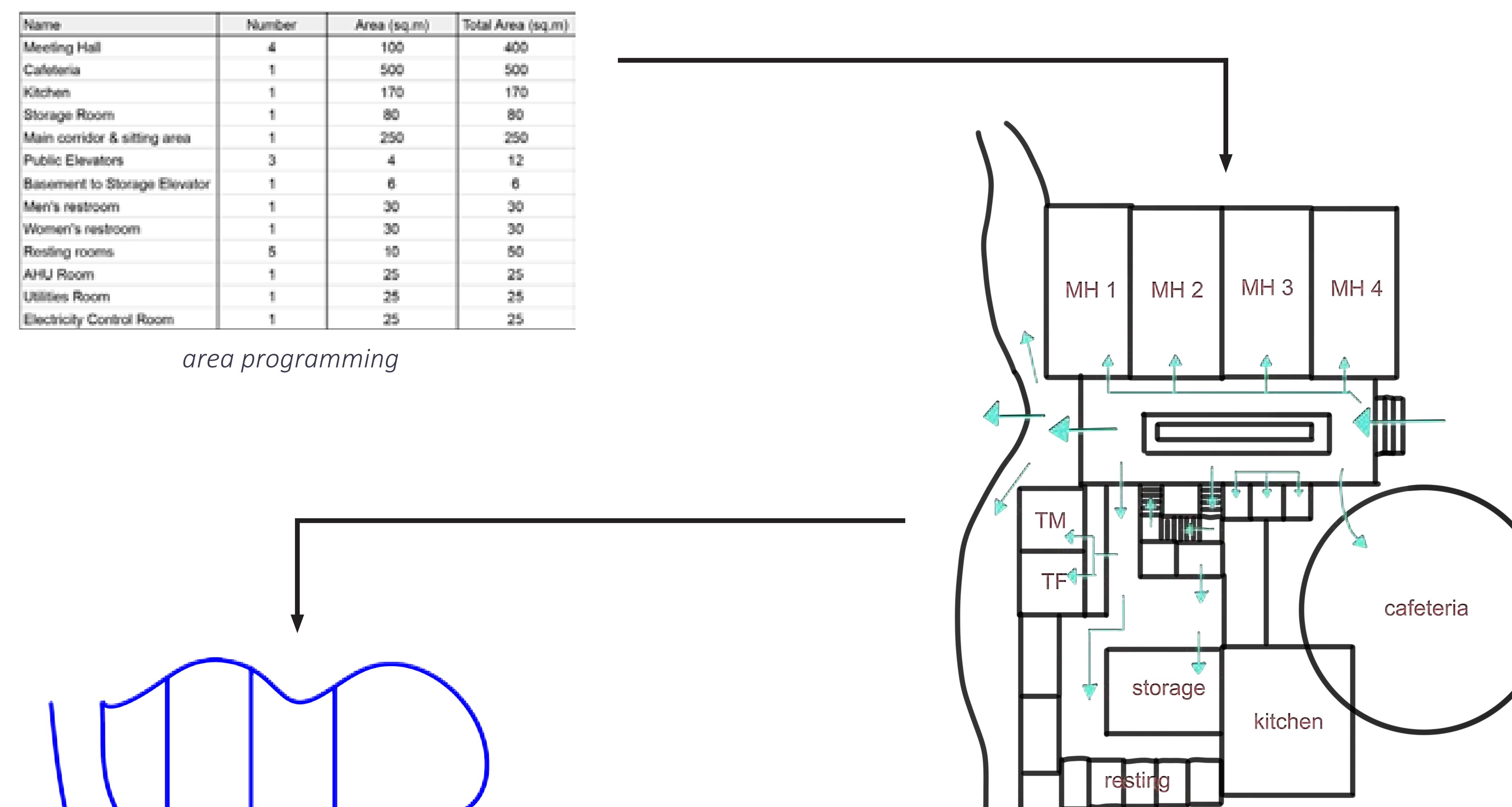
area programming



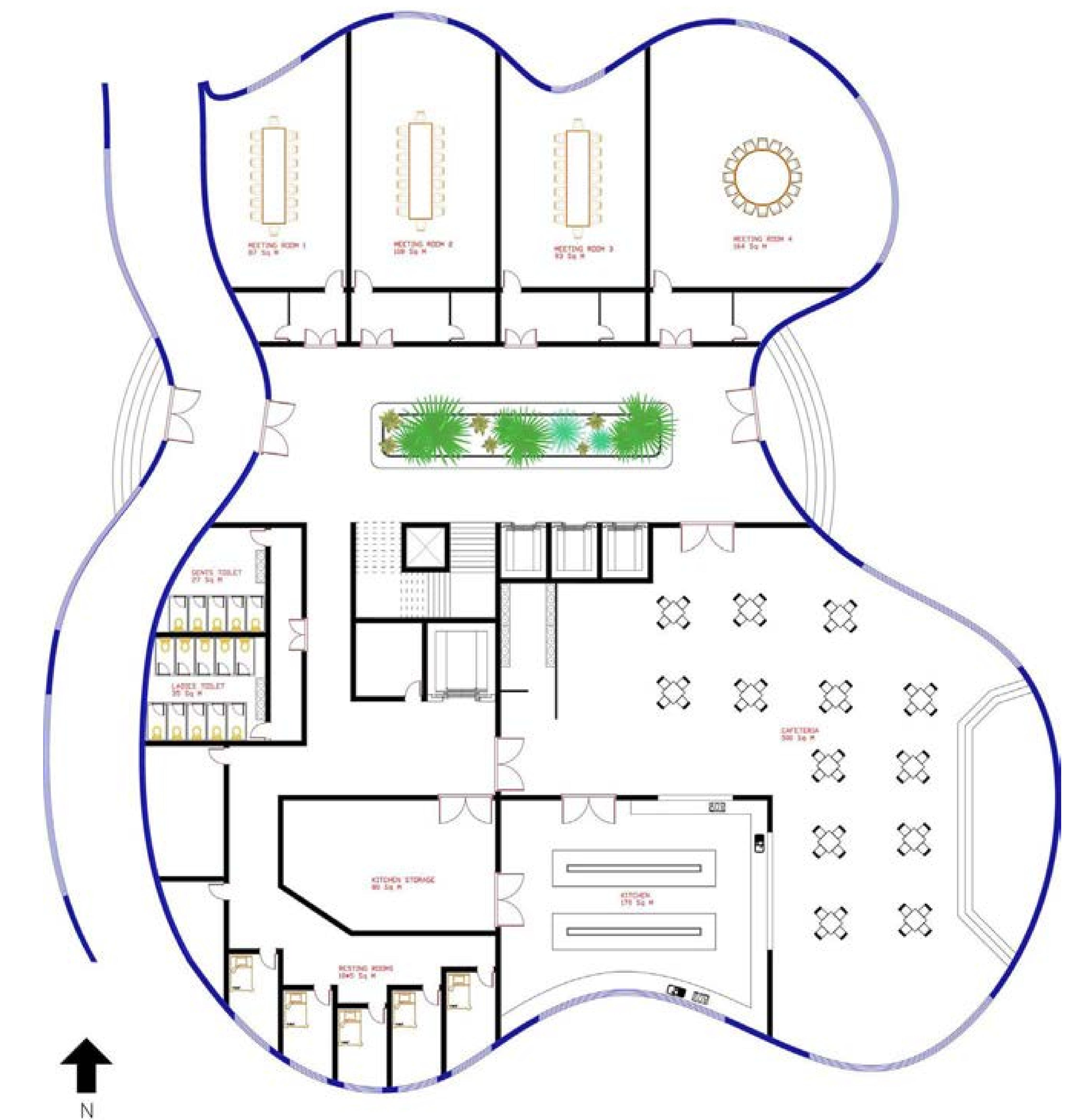
single line plan




detailed floor plan

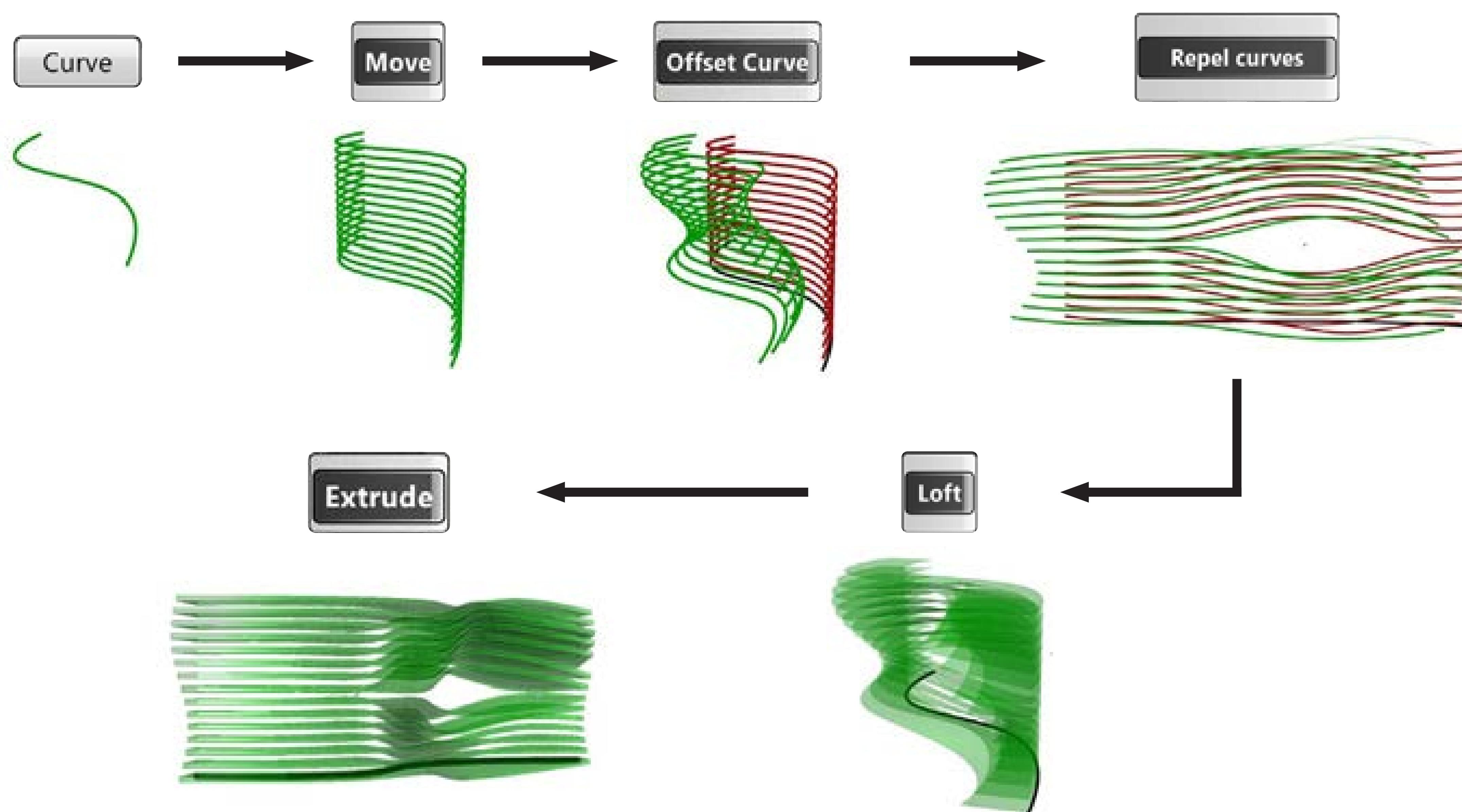
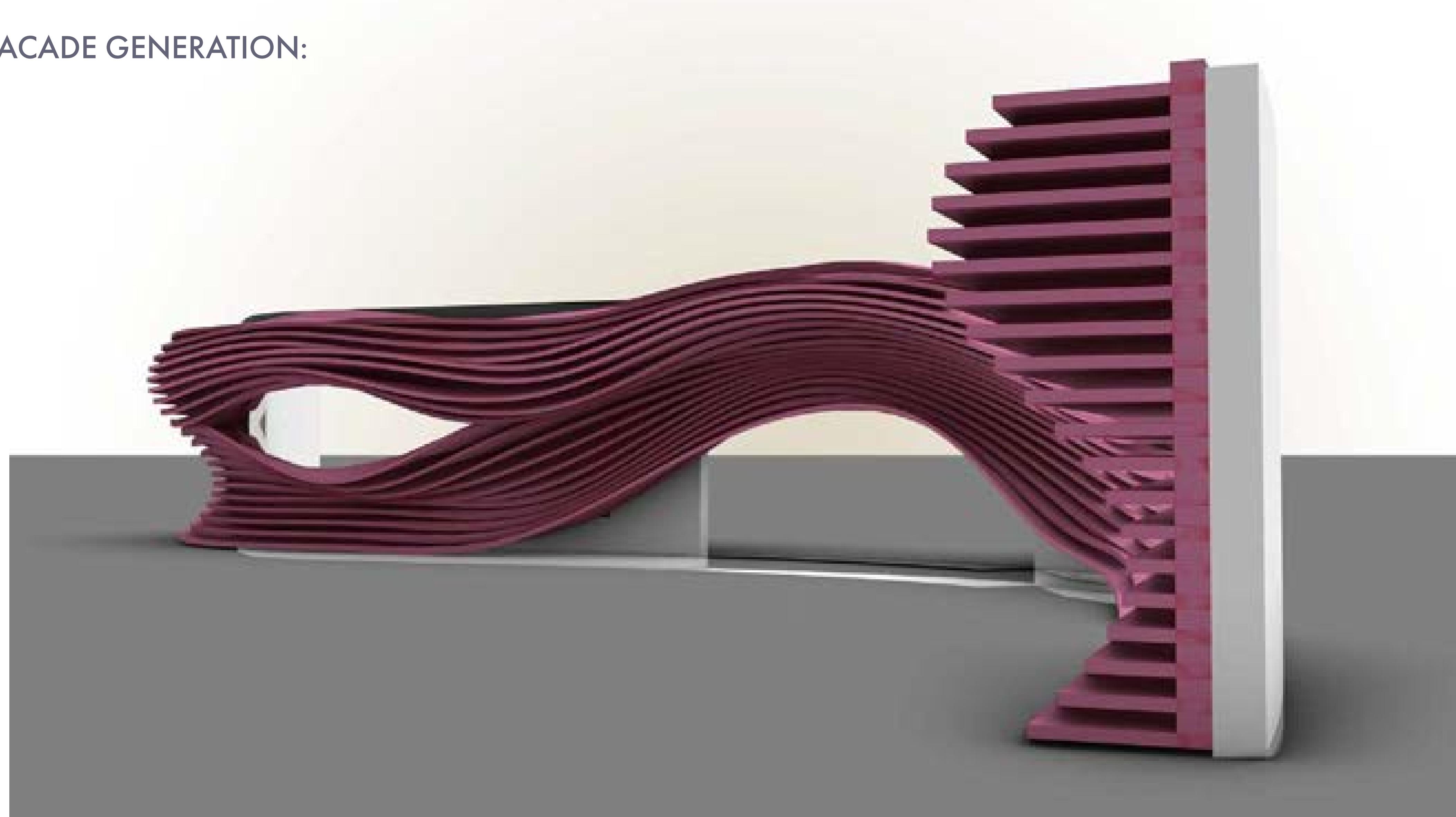


shapes representing the required spaces to scale

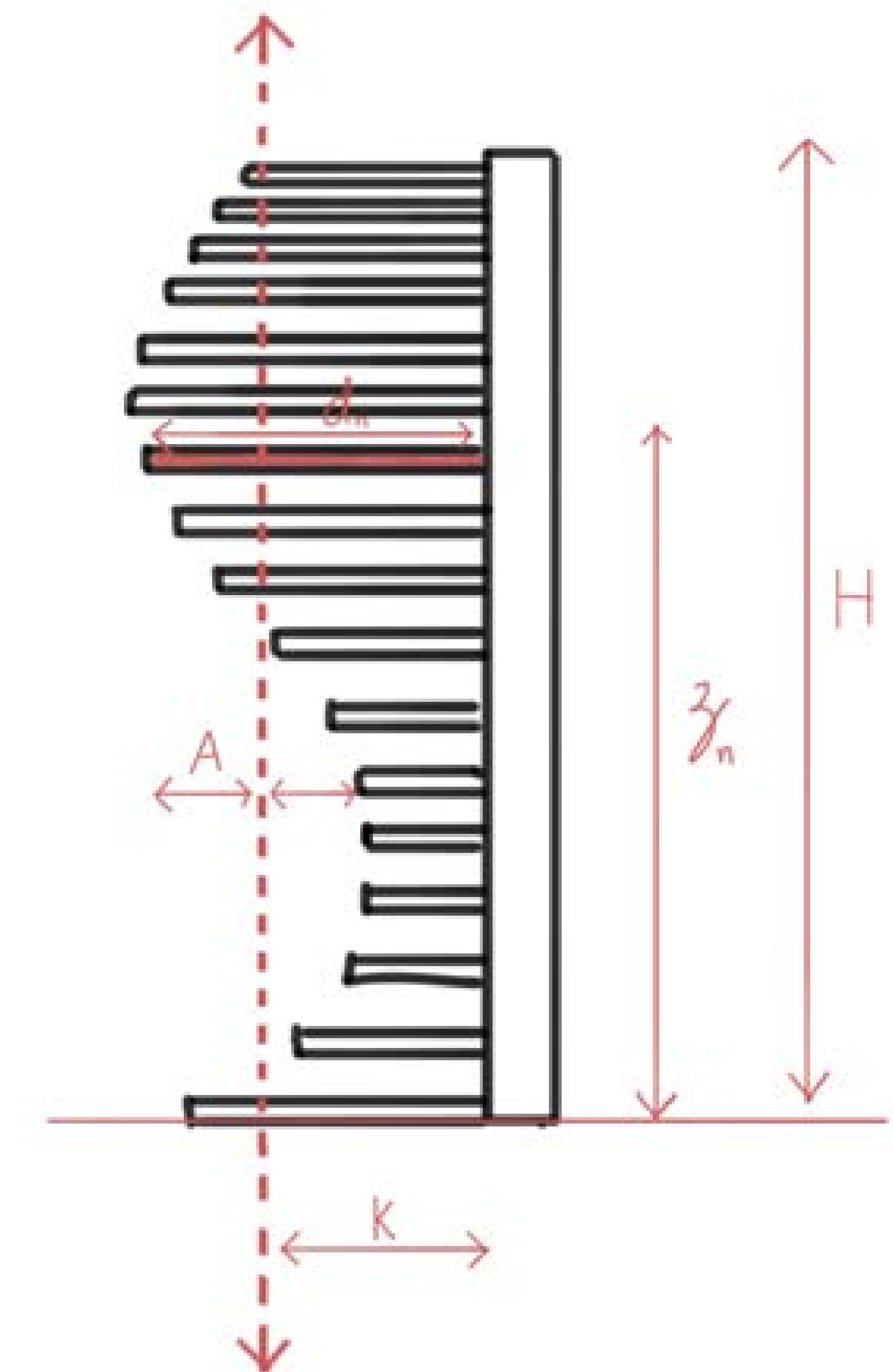




## FACADE GENERATION:



LINK TO GRASSHOPPER CODE: [https://github.com/valleyvarun/habitat\\_centre\\_project](https://github.com/valleyvarun/habitat_centre_project)



$$d_n = K - A \cdot \sin((2\pi/H) \cdot z_n + t)$$

The curves are offset by a distance 'd'.

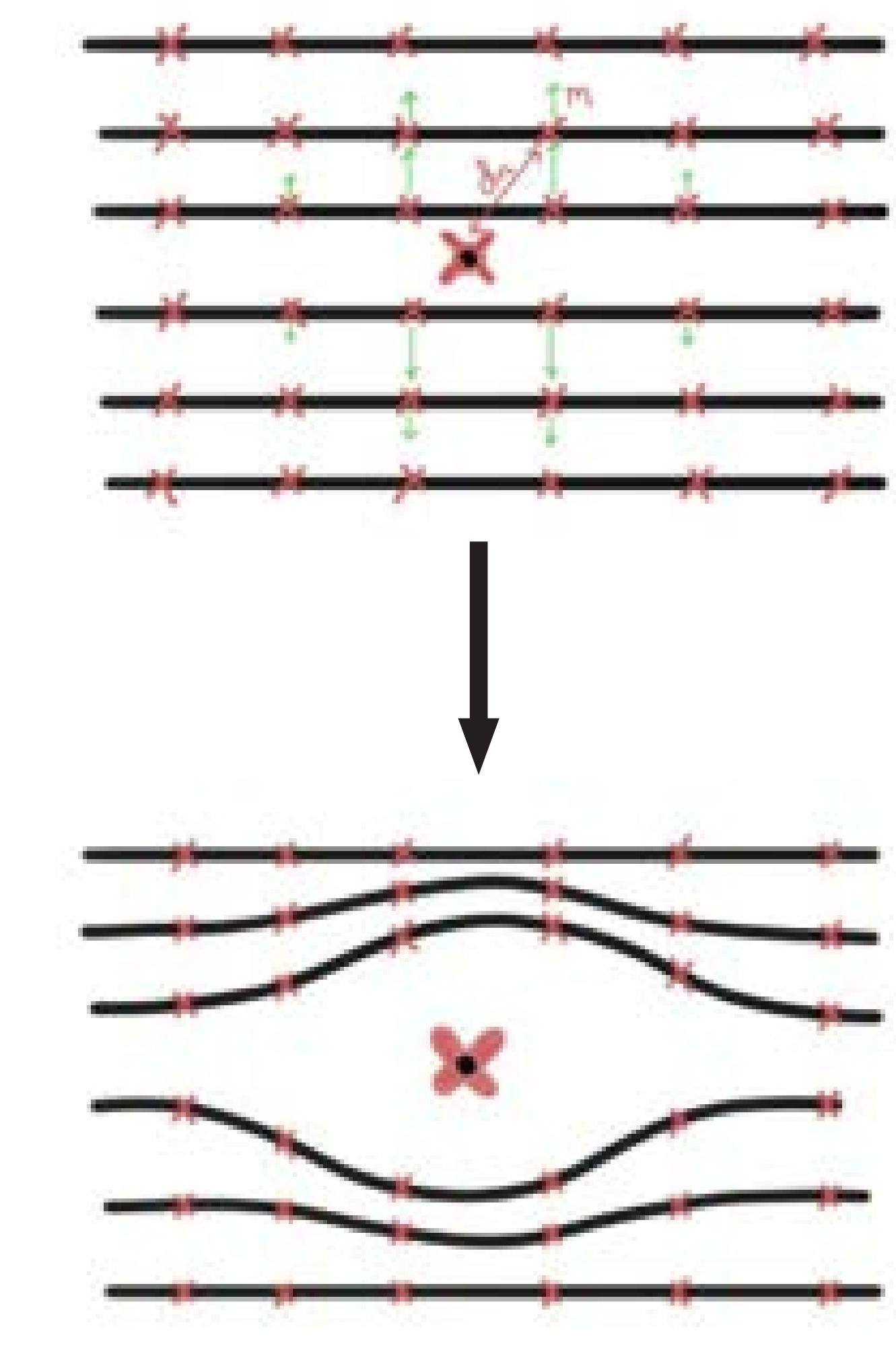
$A$  = amplitude of the sine curve

$H$  = height of the wall

$K$  = distance of the sine axis from the wall

$z$  = height at which the panel is from the base level

$t$  = constant that changes the phase of the sine curve



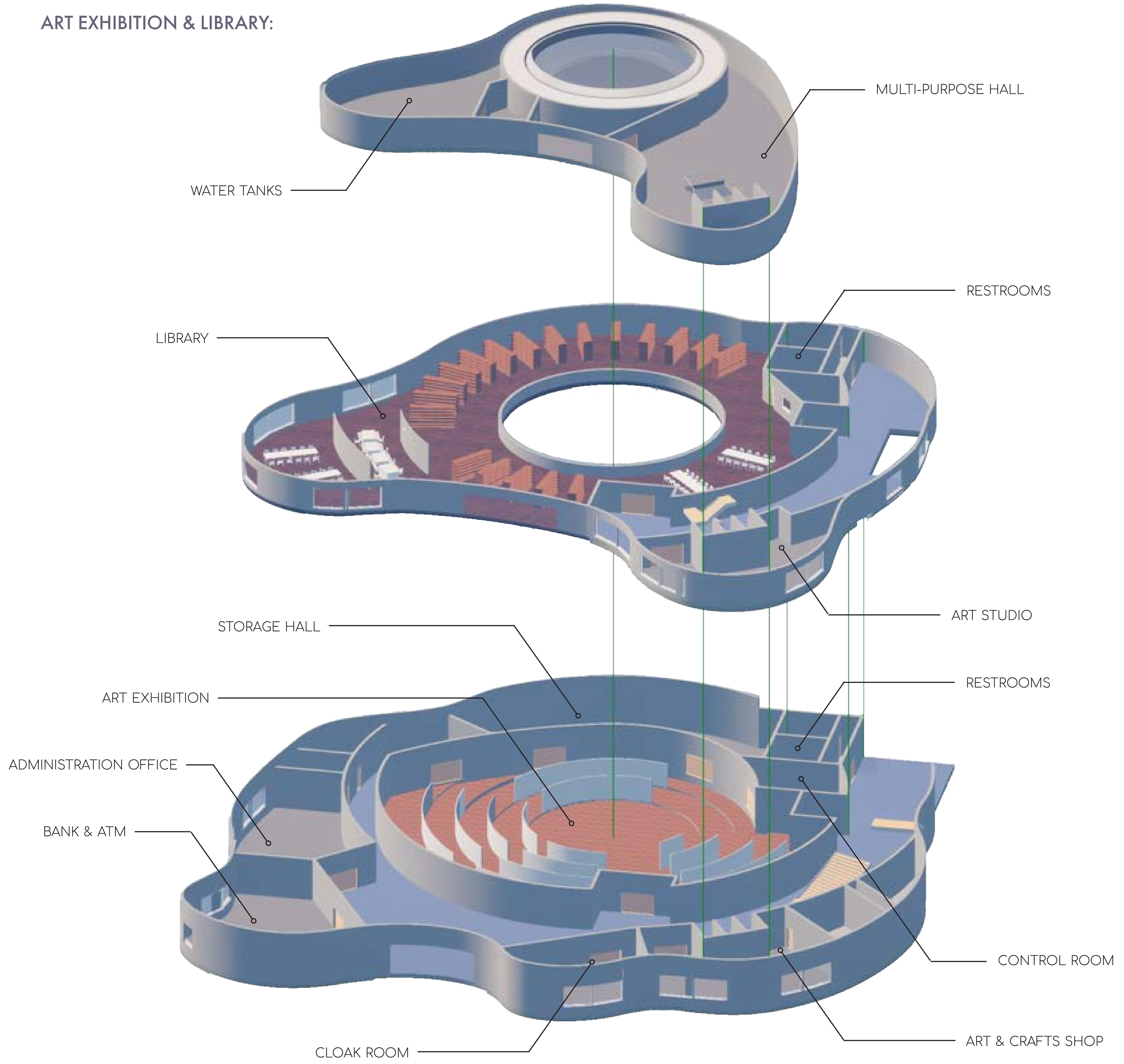
$$m_n = K/(d_n^2)$$

Points on the curves are moved on the z-axis by a distance 'm'.

$d$  = distance between a point on a curve and the 'Repel Point'



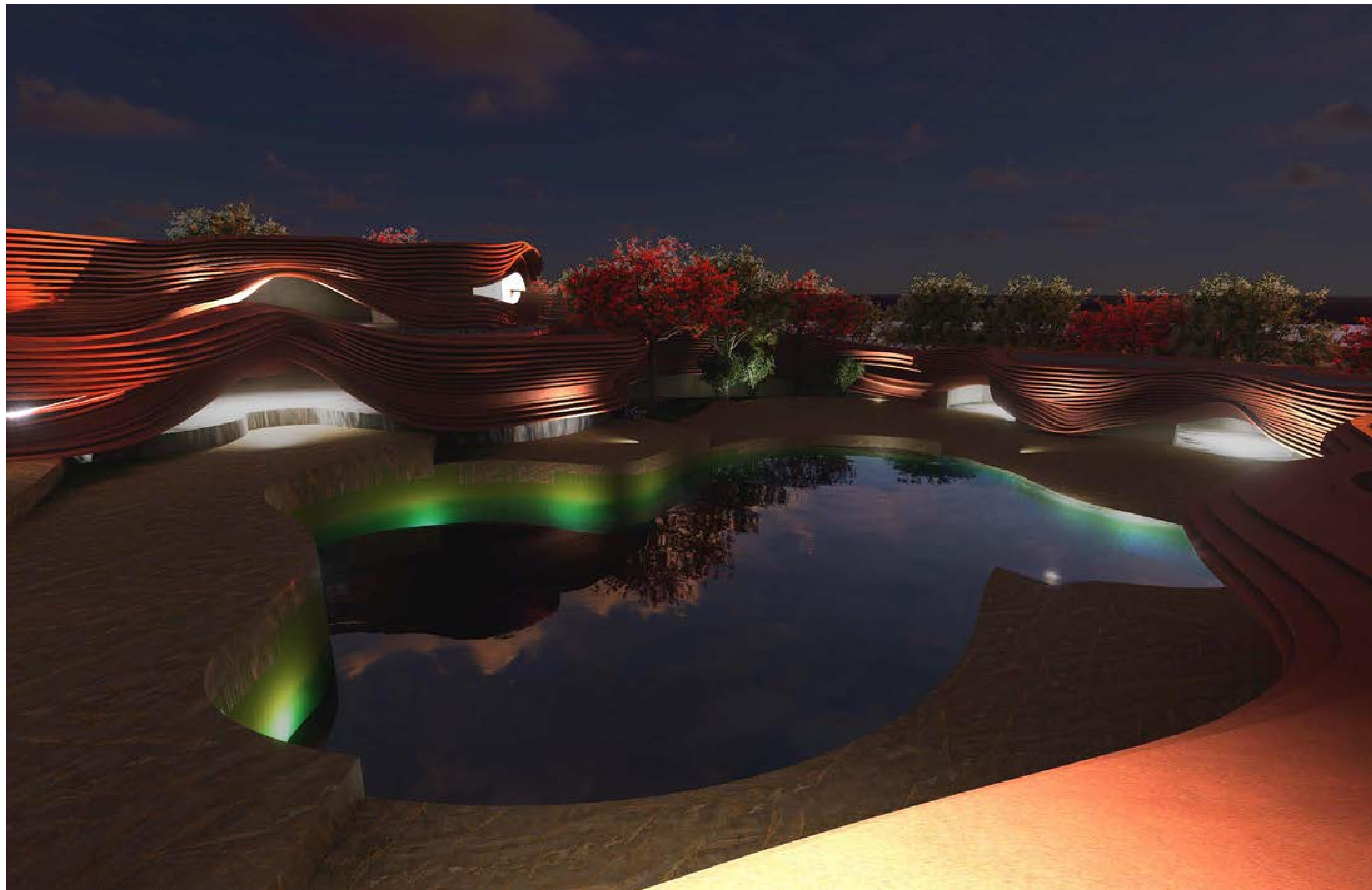
### ART EXHIBITION & LIBRARY:



Aerial view of Art Exhibition & Library building



Visualization of the Art Exhibition made on MidJourney



#### TOOLS & SOFTWARE USED:

**Site analysis:** Google Earth, Qgis

**Concept & Ideation:** sketching, Sketchbook Pro, MidJourney, ChatGPT, Sketchup

**Floor plan development:** Sketchbook Pro, Autocad, Revit

**3D modelling:** Rhinoceros 7 + Grasshopper, Revit

**Rendering visualization:** D5 Render, TwinMotion, Photoshop

**Explanatory diagrams:** Sketchbook Pro, Photoshop, Indesign

**Portfolio compilation:** Indesign

#### PROJECT DETAILS:

**Type:** Academic project

**Task:** Design a multi-use 'Habitat Centre'

**Start date:** January 2023

**Semester & Year:** 6th semester, 3rd year

**Course:** Architectural Design-VI (BARC06001)

**Site location:** TT nagar, Bhopal, M.P, India



AUTISM MITRA RESIDENCE

## Architecture for Adults with Autism

Designing spaces for individuals with autism requires a nuanced understanding of their unique preferences and sensory needs. Drawing from my personal experience at ALFAA (Assisted Living For Autistic Adults, Bengaluru), where I spent seven days alongside residents with autism, I gained valuable insights into the architectural considerations that enhance their comfort and well-being.

One key observation is the preference for closed, smaller spaces, which instill a sense of security among individuals with autism. These spaces provide a controlled environment that minimizes external stimuli and fosters a feeling of safety. Contrary to conventional design principles, excessive decorations and visual stimuli can be overwhelming for them. Instead, architects should focus on creating environments with carefully curated stimuli that guide individuals through the building without causing distraction or anxiety.

Sensory considerations extend beyond the visual realm to encompass the texture of materials used in construction. The tactile experience plays a crucial role in navigation and comfort, emphasizing the need for thoughtful material choices throughout the architectural design.

The floor plan itself should prioritize simplicity and clarity. A one-way flow minimizes confusion, allowing for easier navigation without unnecessary branching or complex intersections. This streamlined layout helps individuals with autism confidently move through the space, promoting a sense of independence.

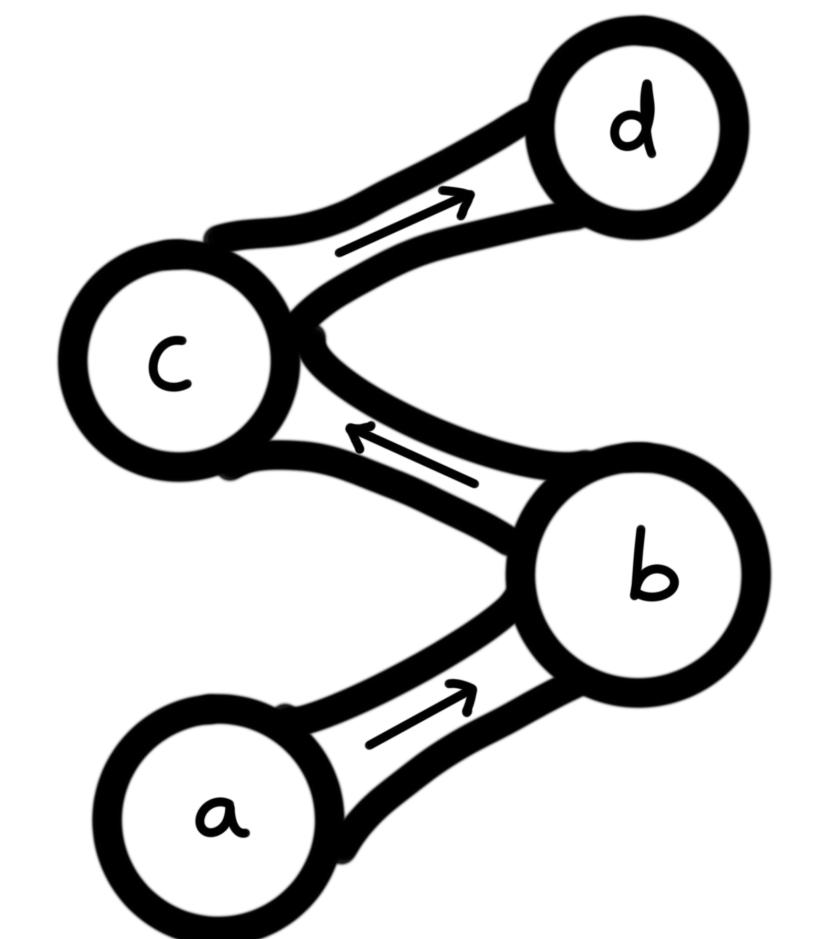
Incorporating common areas for socializing and daily activities is pivotal in these architectural designs. Spaces like dining and living rooms serve as central hubs for learning essential life skills, fostering social interaction. These communal areas should be carefully designed to balance sensory considerations, providing a comfortable space for residents to engage with one another and learn valuable daily life skills.

In essence, architecture for autism demands a departure from conventional design norms. It requires a keen understanding of sensory needs, a focus on simplicity and clarity in layout, and the creation of secure, controlled spaces that empower individuals with autism to navigate their surroundings with confidence and ease.

LINK TO ALFAA CASE STUDY: [https://issuu.com/varunsa/docs/alfa\\_a\\_case\\_study](https://issuu.com/varunsa/docs/alfa_a_case_study)

## CONCEPT & IDEATION:

**One Way Flow** - A one-way flow in architecture for autism prioritizes simplicity, minimizing branches for easy navigation through spaces arranged in the sequential order of residents' daily activities, helping them maintain a strict routine more easily.



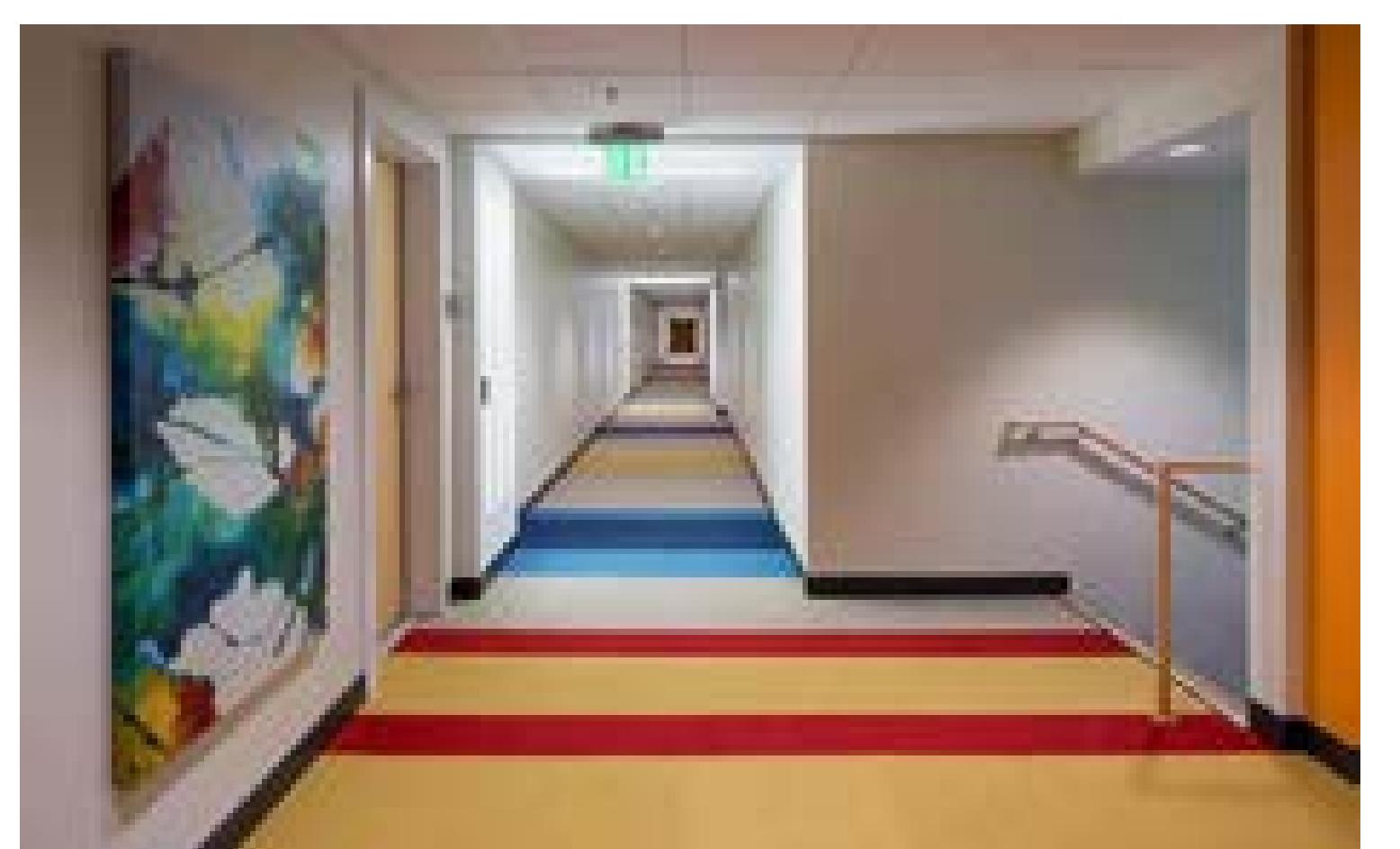
**Escape Spaces** - Placed strategically around corridors and communal areas such as living rooms and dining spaces, these sanctuaries offer a quick refuge for individuals experiencing sensory overload or seeking respite from social interactions.



'Super Active Sensory Room'  
Source: autism-products.com

**Sensory Rooms** - Sensory rooms provide controlled environments with beneficial stimuli, offering individuals with autism a pleasant experience and opportunities for skill development. These spaces can also serve as rewards and contribute to building positive relationships between caretakers and residents.

**Caretaker Rooms** - are placed adjacent to residents' rooms. Caregivers manage and support individuals with autism, assisting with daily tasks such as brushing and bathing. Therefore, ensuring continuous care and accessibility is essential.




A corridor in the Faison Residence, Richmond, Virginia, USA

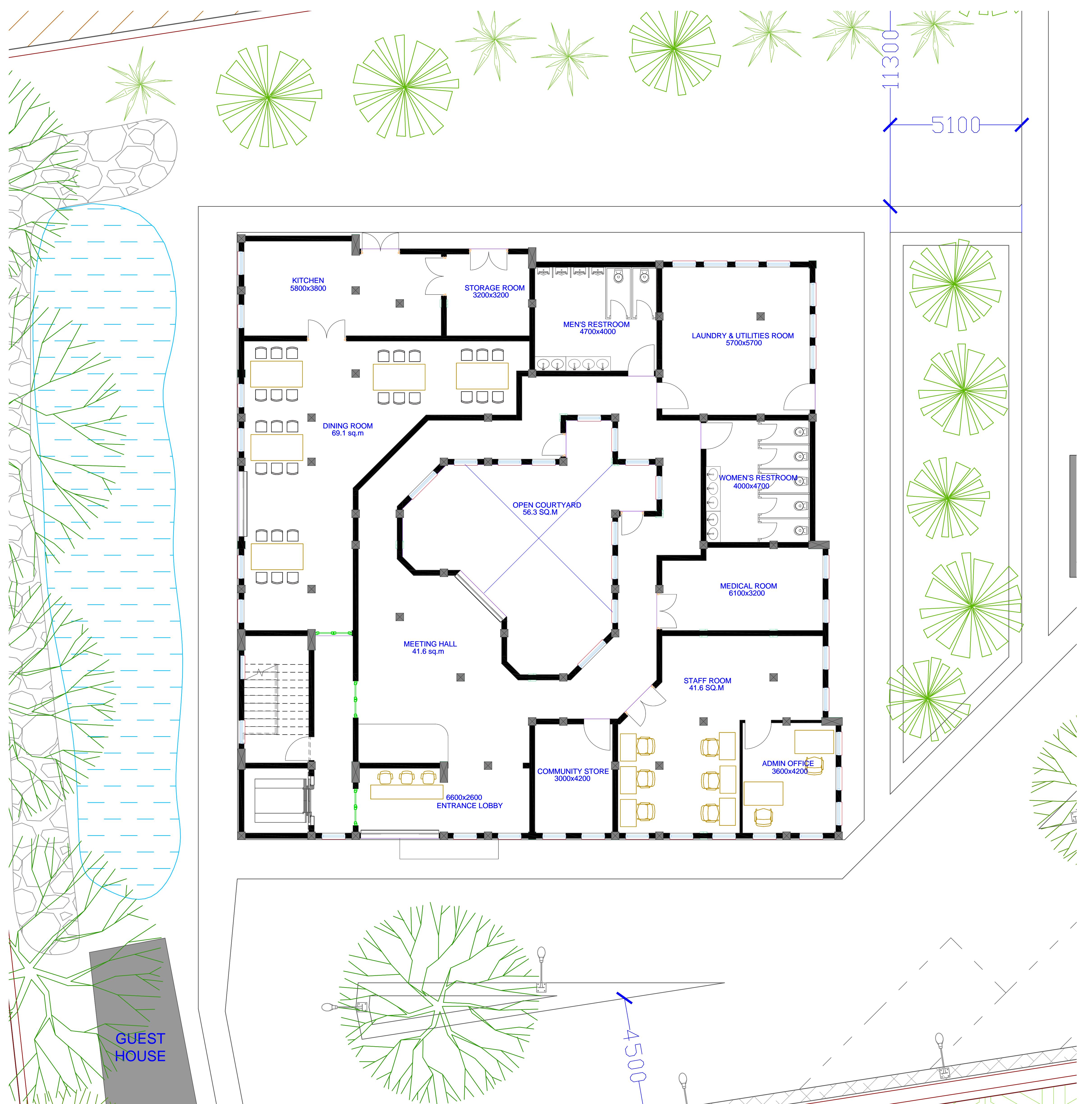
**Color & Texture Coding** - provides sensory cues for navigation and understanding of location. This can help the residents with Autism identify their bedrooms more easily.

**Noise Dampening** - Cork flooring, rubber runners, and sound dampener boards all reduce the amount of noise in the rooms and prevent echoing. Cork flooring has the added benefit of remaining at a comfortable warm temperature. Rubber runners on staircases provide extra grip and hence reduces the likelihood of slipping.

SITE PLAN:



GROUND FLOOR PLAN:



Ground Floor Dining Hall



Central Courtyard



*Living floors, designed for individuals with autism, incorporate supportive railings, colored and textured footsteps for orientation, and escape spaces. Utilizing natural materials like cork flooring and pine wood inner walls, the environment is both sensory-friendly and calming.*

SECOND FLOOR PLAN:





**TOOLS & SOFTWARE USED:**

**Site analysis:** Google Earth

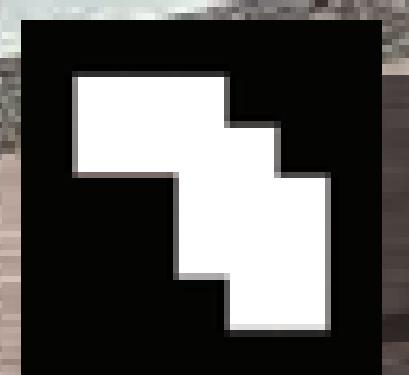
**Concept & Ideation:** sketching,  
Sketchbook Pro, Sketchup

**Floor plan development:**  
Sketchbook Pro, Autocad, Revit

**3D modelling:** Revit, Rhino.inside  
Revit, Rhinoceros 7 + Grasshopper

**Rendering visualization:** D5  
Render, Photoshop

**Portfolio compilation:** Indesign



MULTI-SPECIALITY HOSPITAL

## SITE MASTER PLAN:



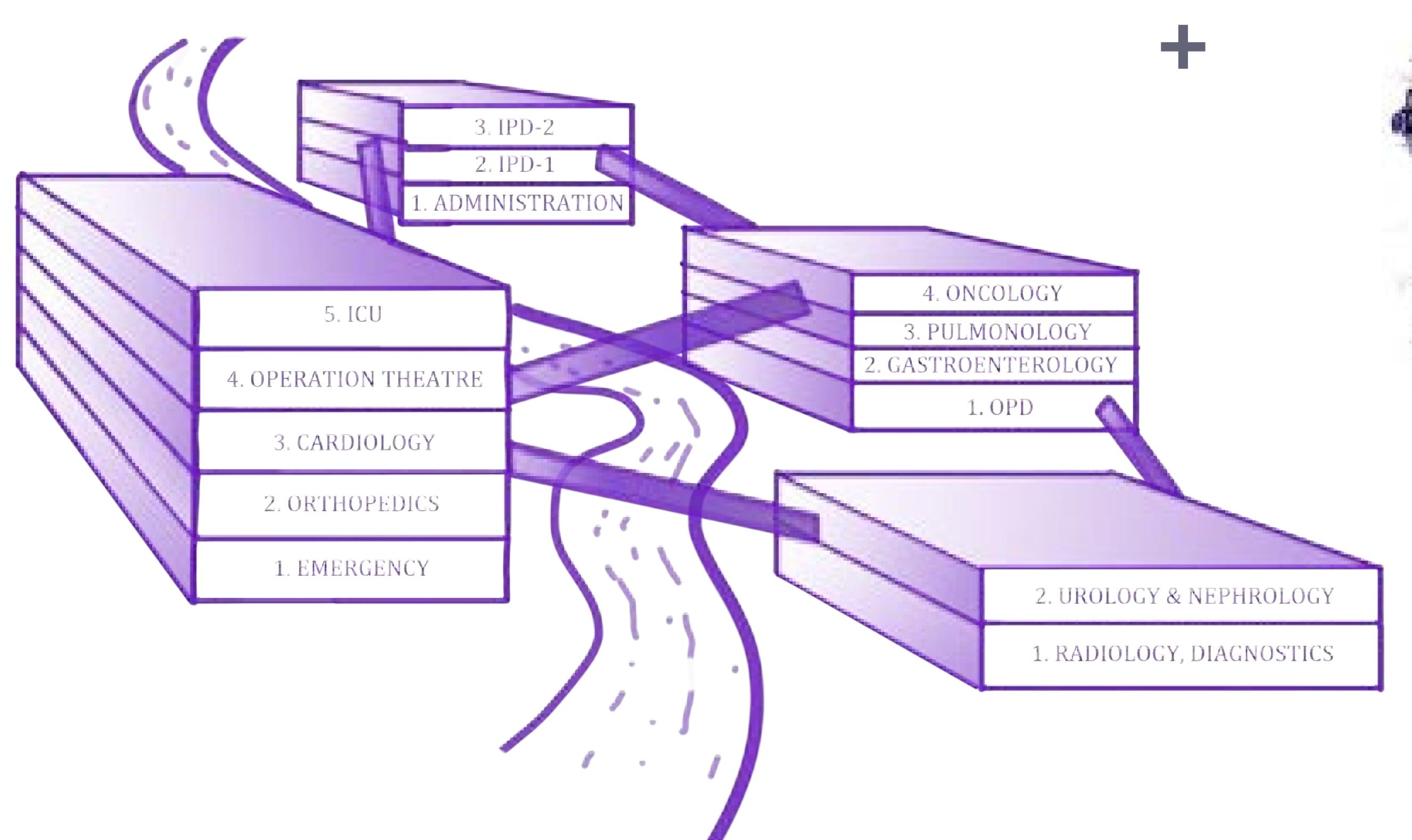
## 03. Hospital is a Place of Healing

Nestled strategically between an old age home and renowned educational institutions like MANIT and IIIT, our multispecialty hospital is thoughtfully designed to meet critical healthcare needs. It houses specialized departments such as Emergency, OPD, Orthopedics, Urology & Nephrology, Gastroenterology, Cardiology, Pulmonology, Oncology, and a fully equipped operational theatre, catering to a wide range of medical requirements.

With ICU facilities and IPD wards, the hospital places healing at the heart of its design. Inspired by the serene Banaras ghats of the Ganga, the layout embraces the natural beauty of a stream flowing through the site. Steps along the stream offer a tranquil setting, while green spaces connected to every ward create a seamless blend of nature and healthcare within the architectural concept.



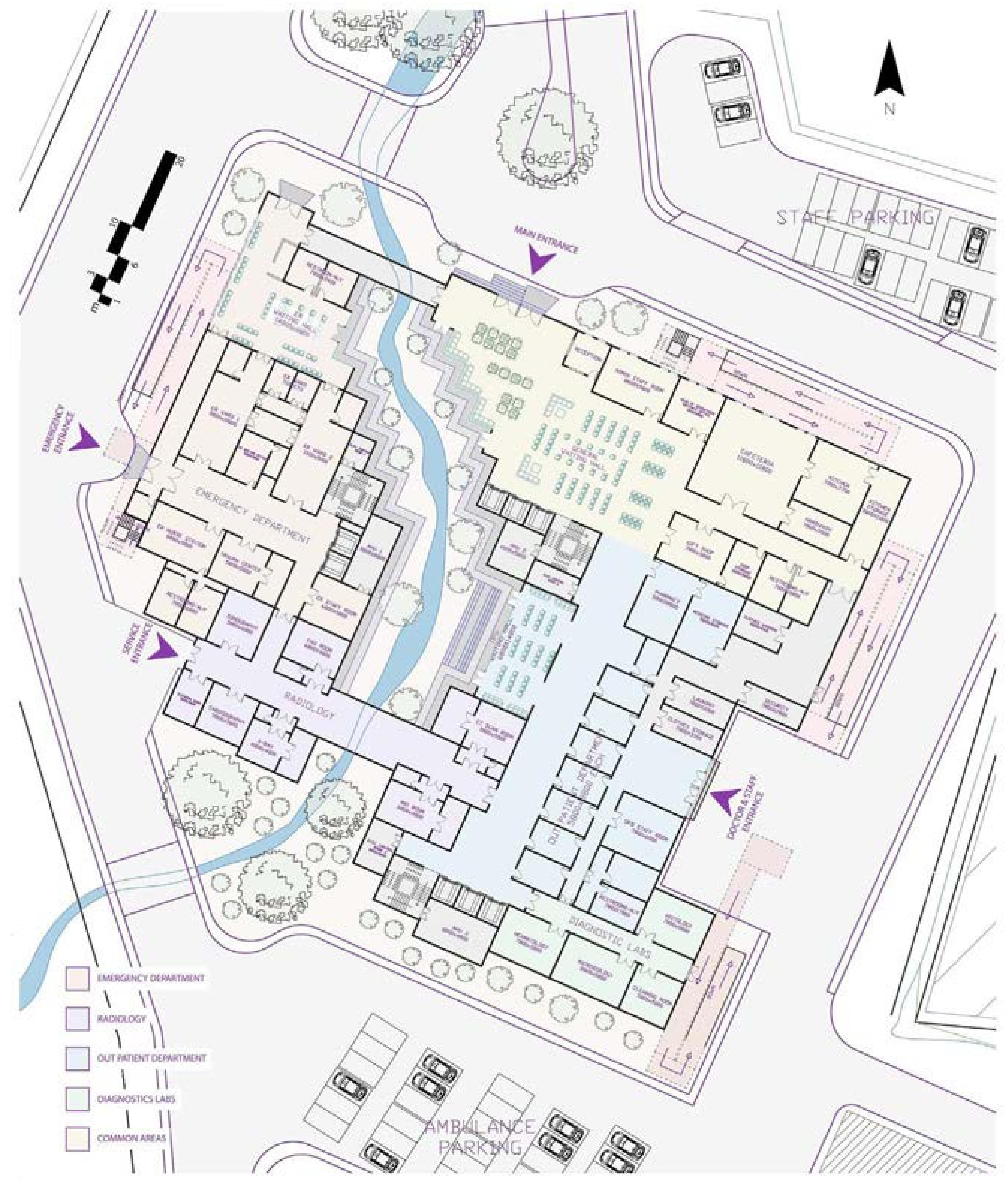
A river flowing through a canyon



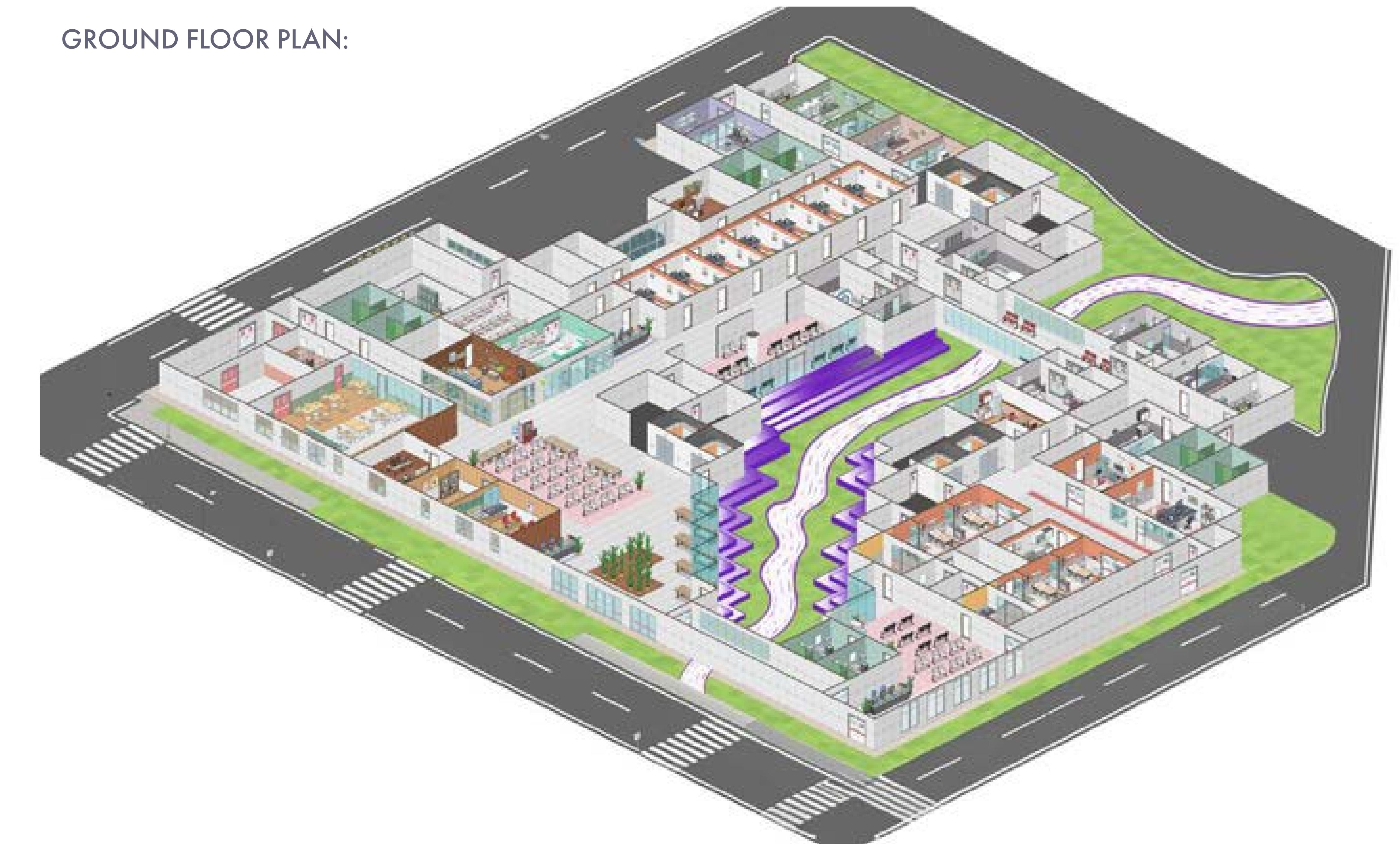
Zoning of hospital departments



Ghats of Varanasi on the Ganga River

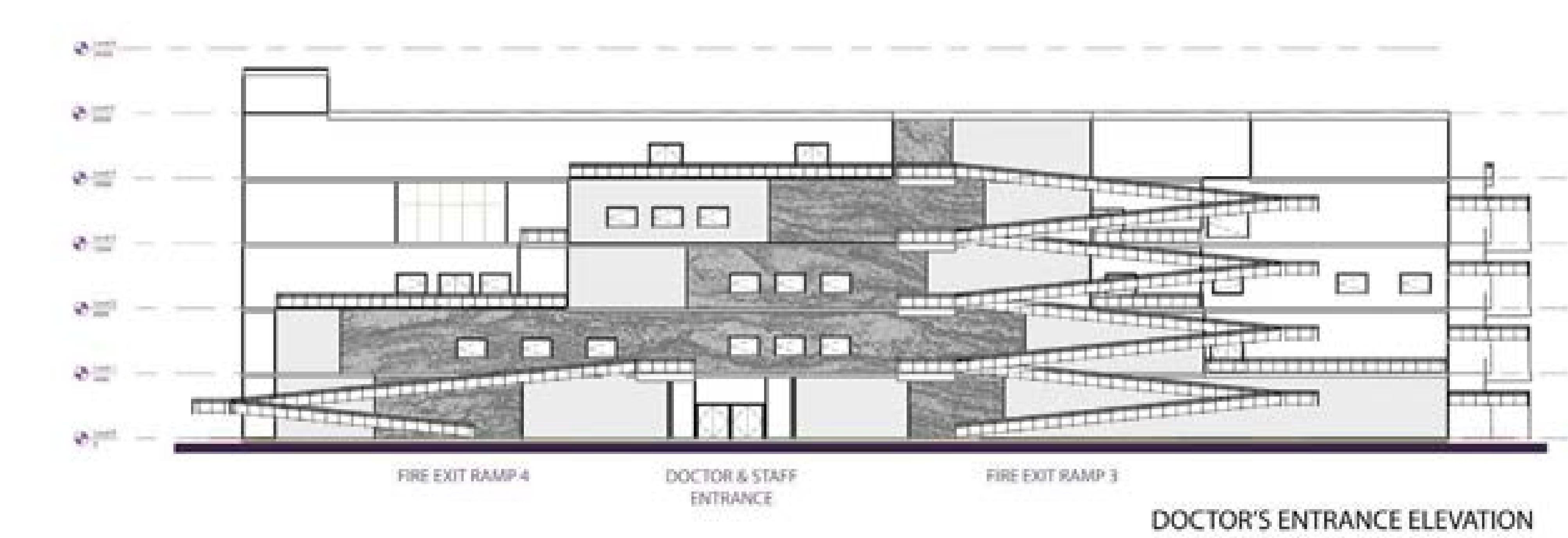
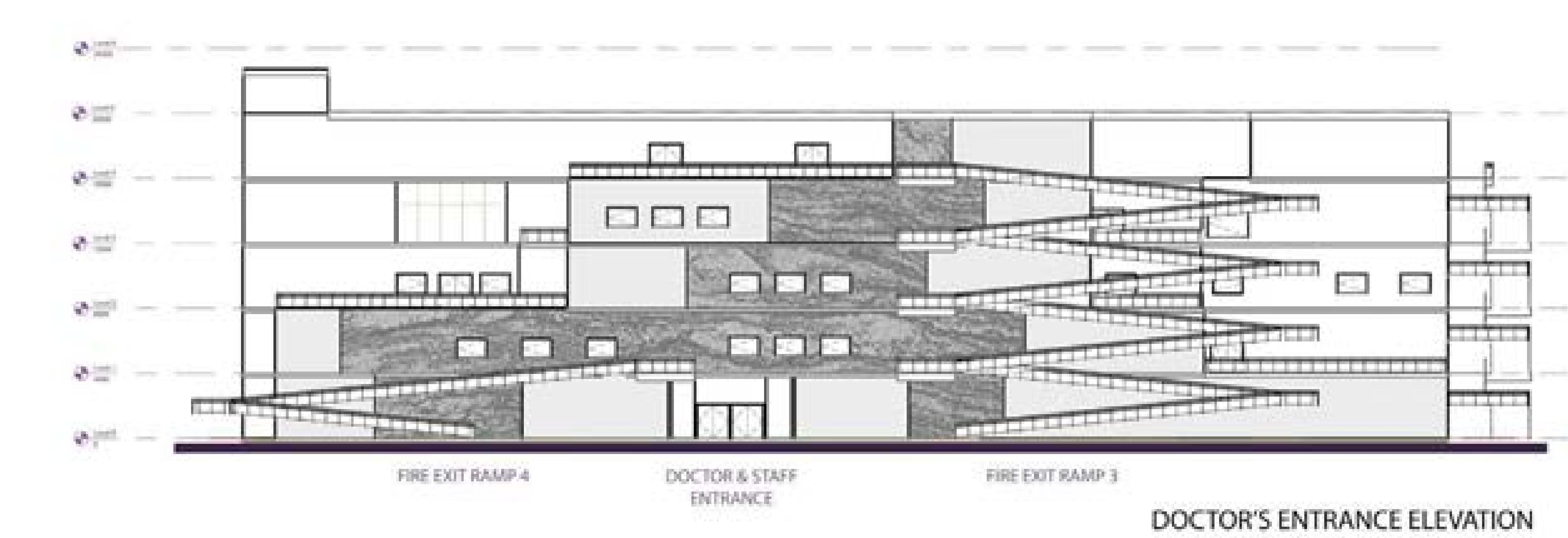
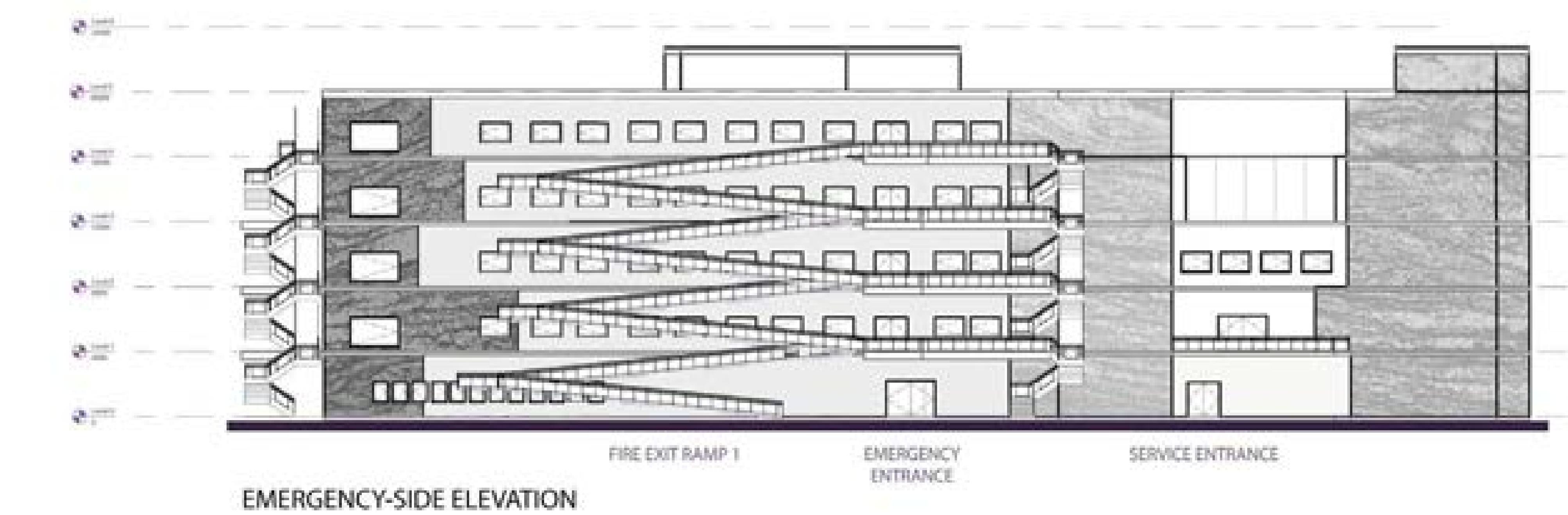
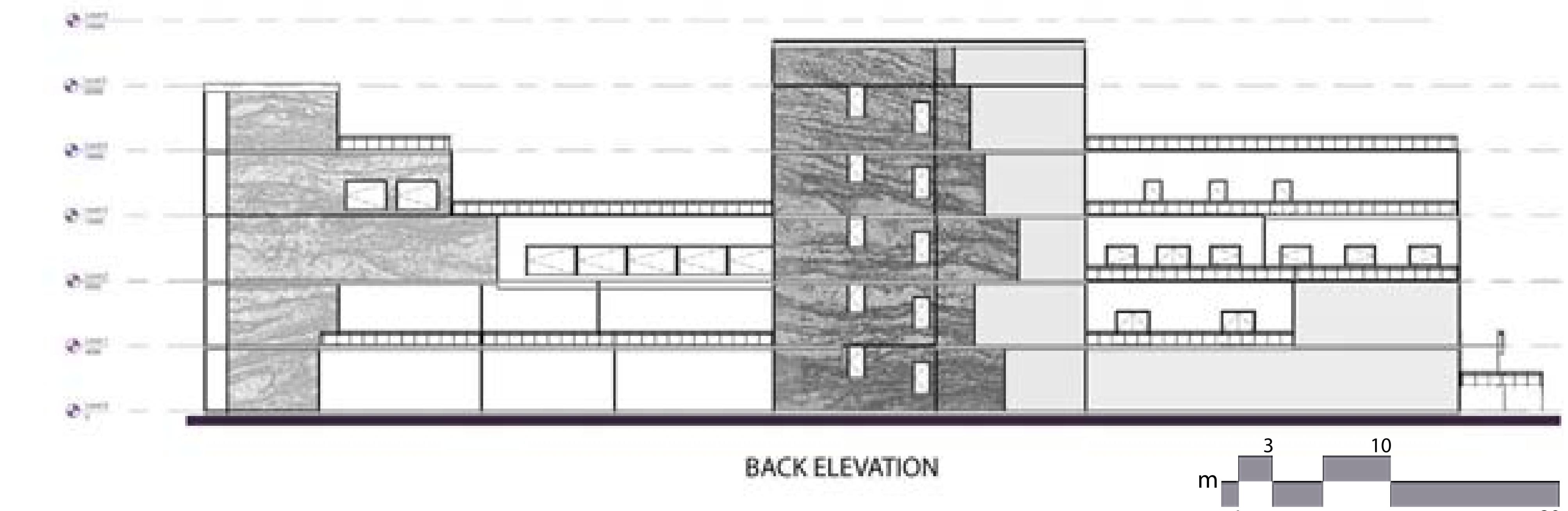


GROUND FLOOR PLAN:



view of north-west corner of the hospital

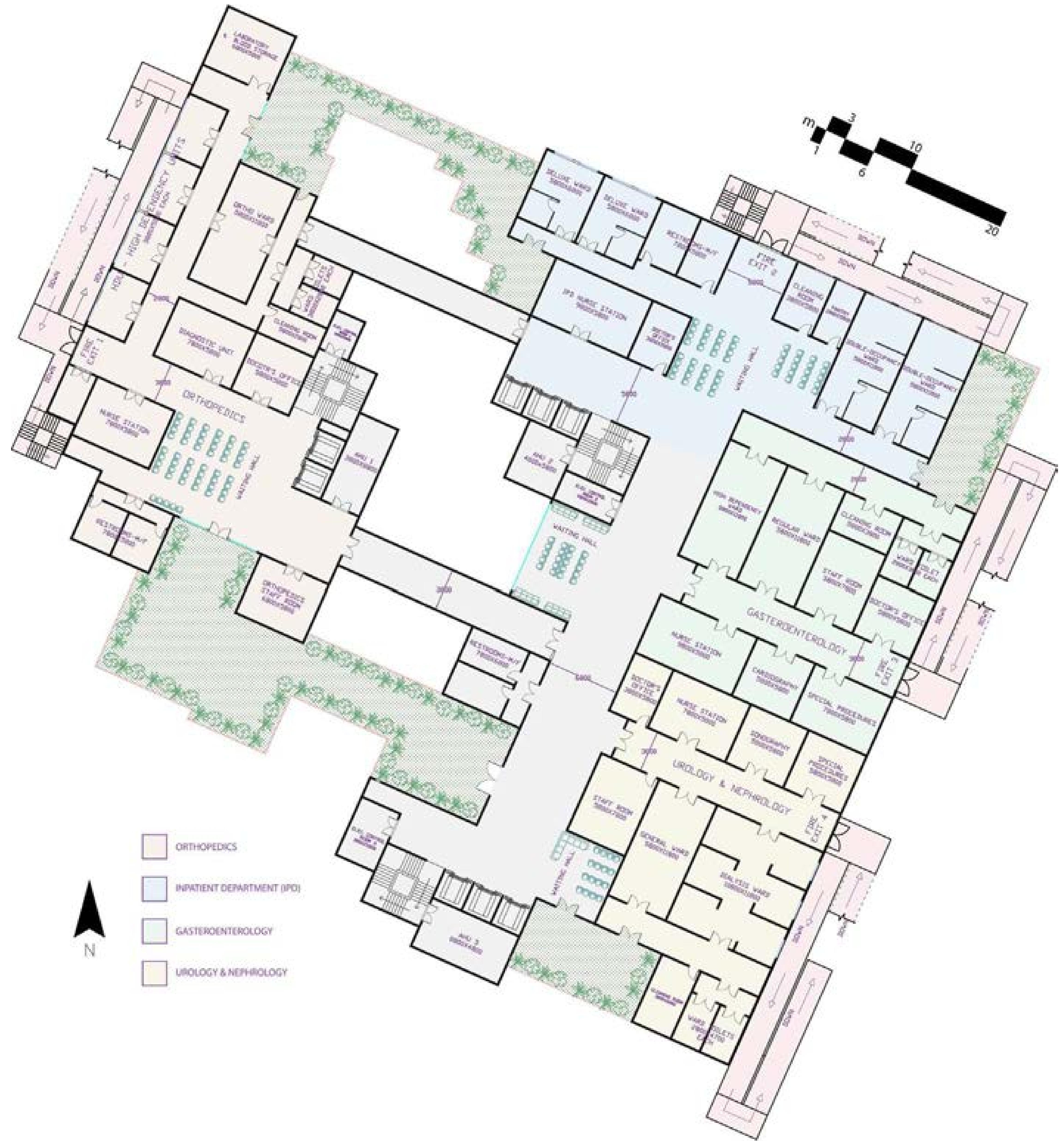
VIEWS & ELEVATIONS:



# FIRST FLOOR PLAN:



*view of south-west corner of the hospital*



SECOND, THIRD & FOURTH FLOOR PLANS:



THIRD FLOOR PLAN



FOURTH FLOOR PLAN





#### TOOLS & SOFTWARE USED:

**Concept development:** ChatGPT - Dalle

**Floor plan development:** Sketchbook Pro, Autocad, Revit, Project Hospital (video game)

**3D modelling:** Revit, SketchUp

**Rendering visualization:** D5 Render, Photoshop

#### PROJECT DETAILS:

**Type:** Academic project

**Task:** Design a 'multi-speciality' hospital

**Start date:** June 2023

**Semester & Year:** 7th semester, 4th year

**Course:** Architectural Design-VII (BARC07001)

**Site location:** next to National Health Mission NHM campus & MANIT, Bhopal, M.P, India



Carpentry Studio- 2016

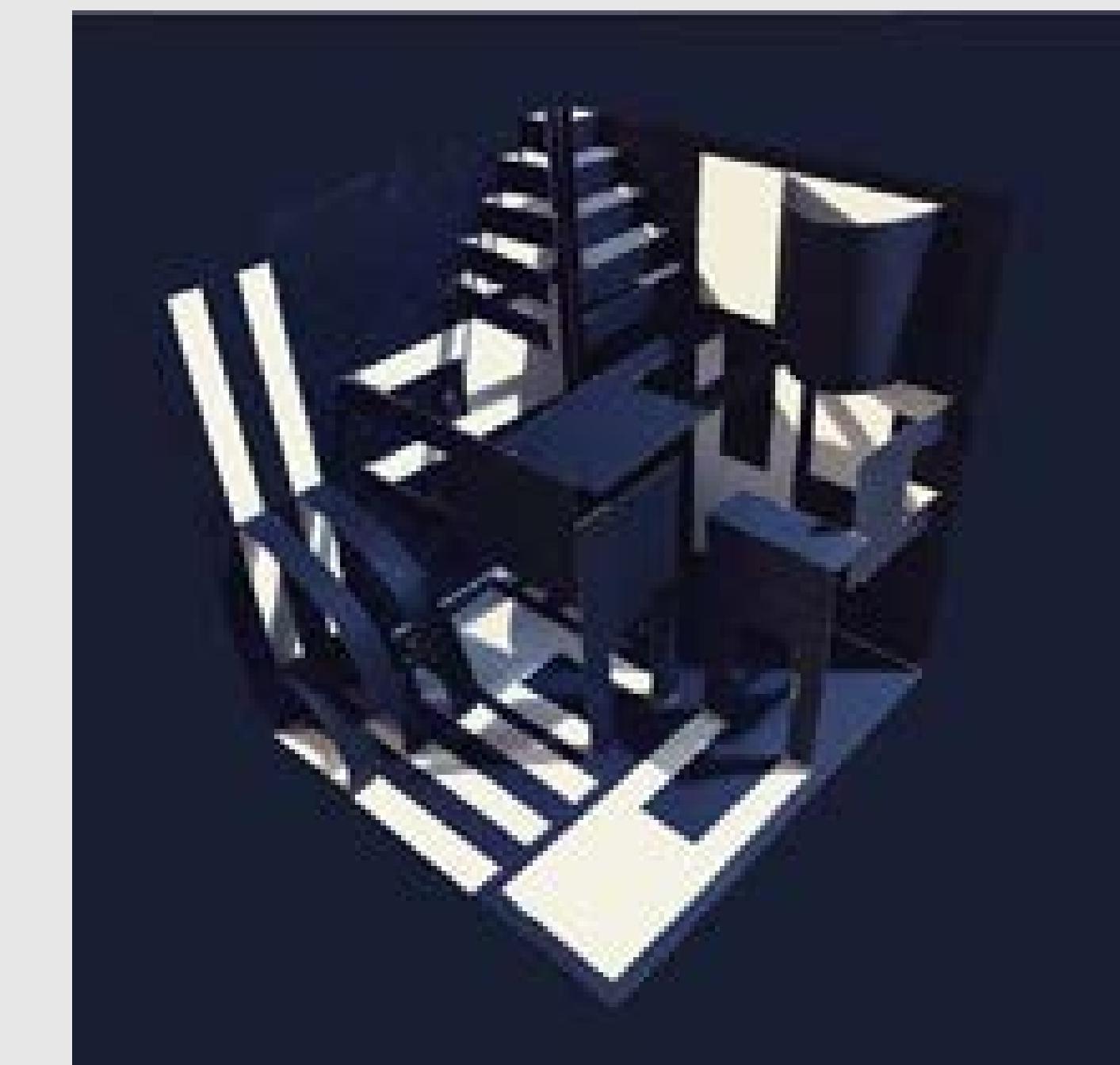


Colonizing Mars- 2020

Johnson Tiles Competition- 2023



2021



Twig Stool- 2012



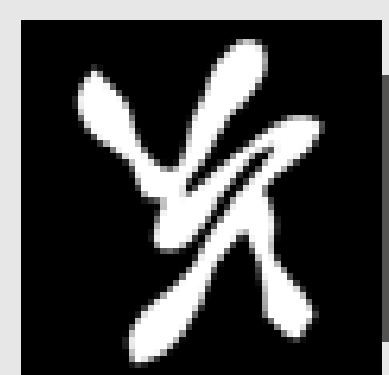
WALL E Boots- 2015



2019



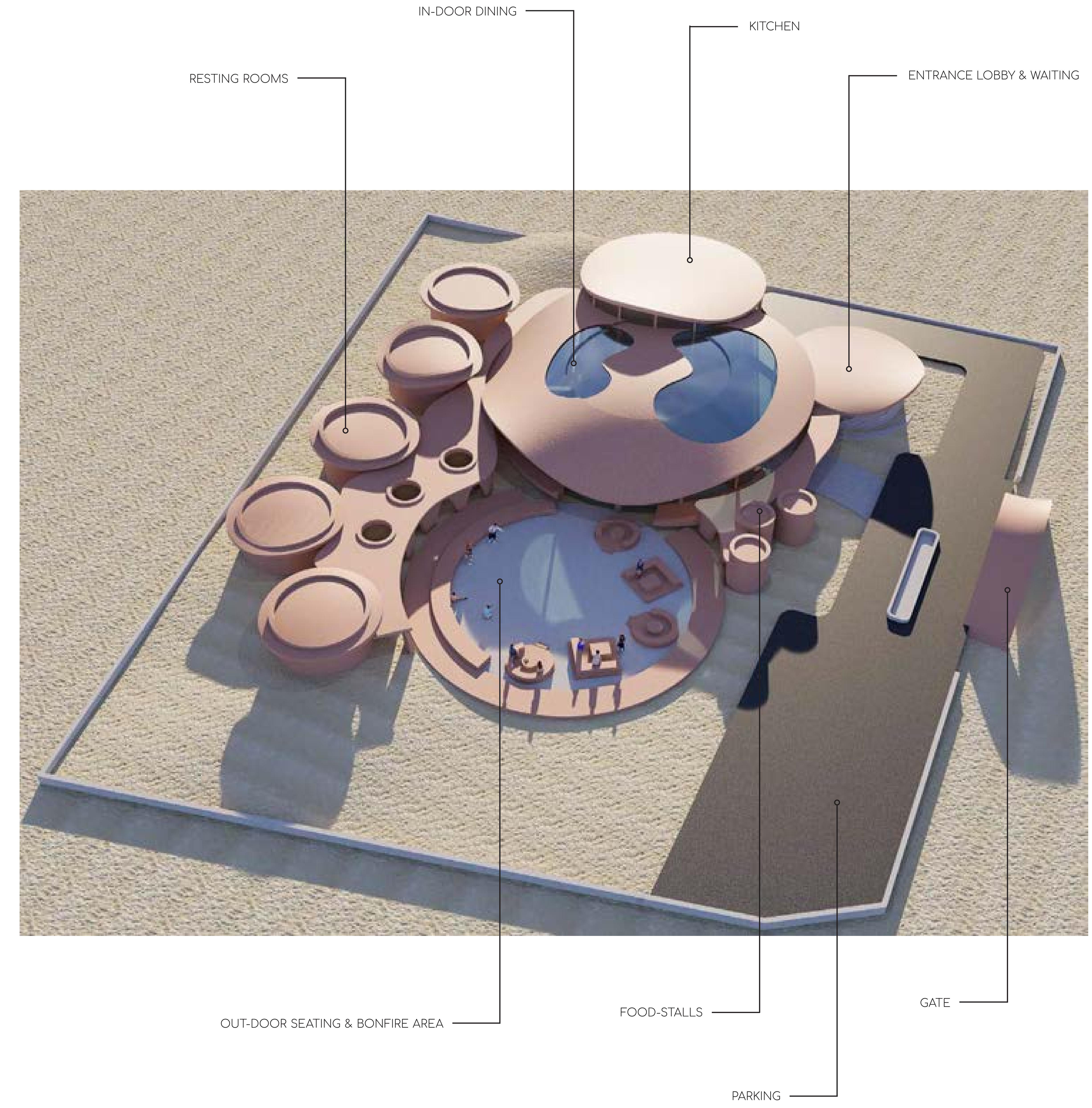
Launchpad Academy- Car Design Course- 2016

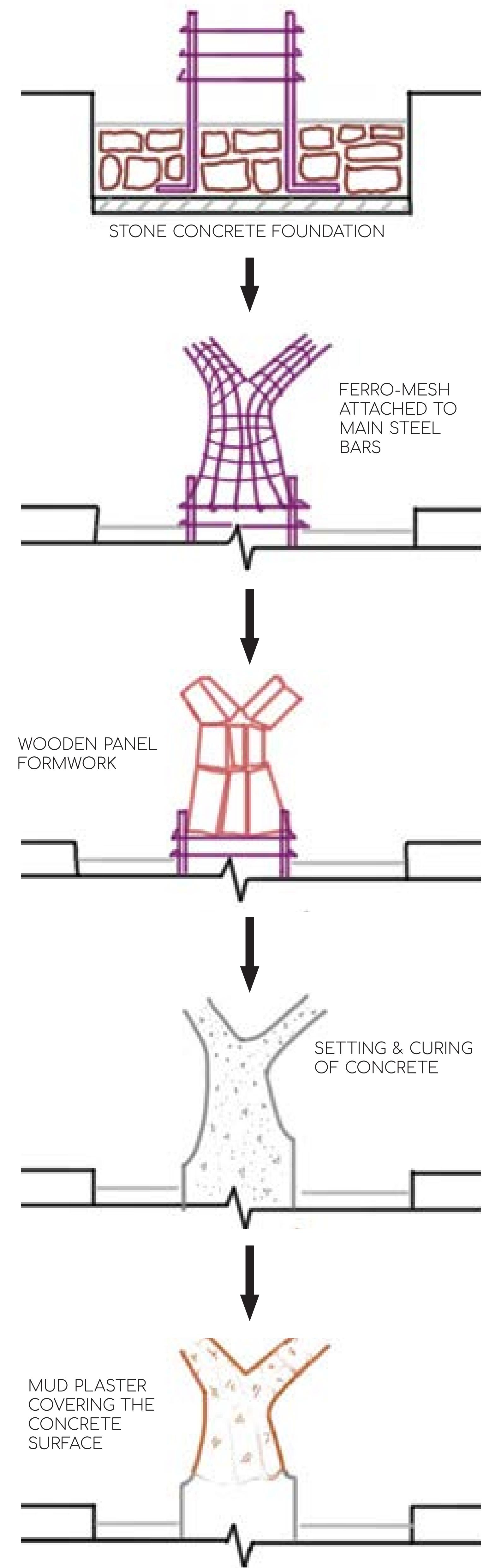


## MISCELLANEOUS WORKS

## 1 | Chokhi Dhani Restaurant

Nestled in the heart of the Thar Desert, our Jaisalmer restaurant is an architectural marvel, blending modern design with traditional elements. Built using innovative ferroconcrete mesh and mud plaster, the structure mimics the desert's natural dunes, offering stunning panoramic views. Our restaurant has both out-door and in-door seating, additional food-stalls, and even resting rooms. Imagine dining under a canopy of stars, surrounded by the mesmerizing emptiness of the desert, enjoying a bonfire's warmth and a delectable culinary journey - that's the magic we offer at our desert oasis.





*visualization of restaurant interior made on MidJourney*



TOOLS & SOFTWARE USED:

3D modelling: Rhinoceros 7

Rendering visualization: D5 Render, Photoshop, MidJourney

Portfolio compilation: Indesign

PROJECT DETAILS:

Type: Academic project

Task: Design a restaurant that is constructed using a mixture of traditional and modern 'non-conventional' materials and techniques.

Start date: June 2023

Semester & Year: 7th semester, 4th year

Course: Non-conventional Materials & Techniques (BARC07003)

Site location: Jaisalmer, Rajasthan, India

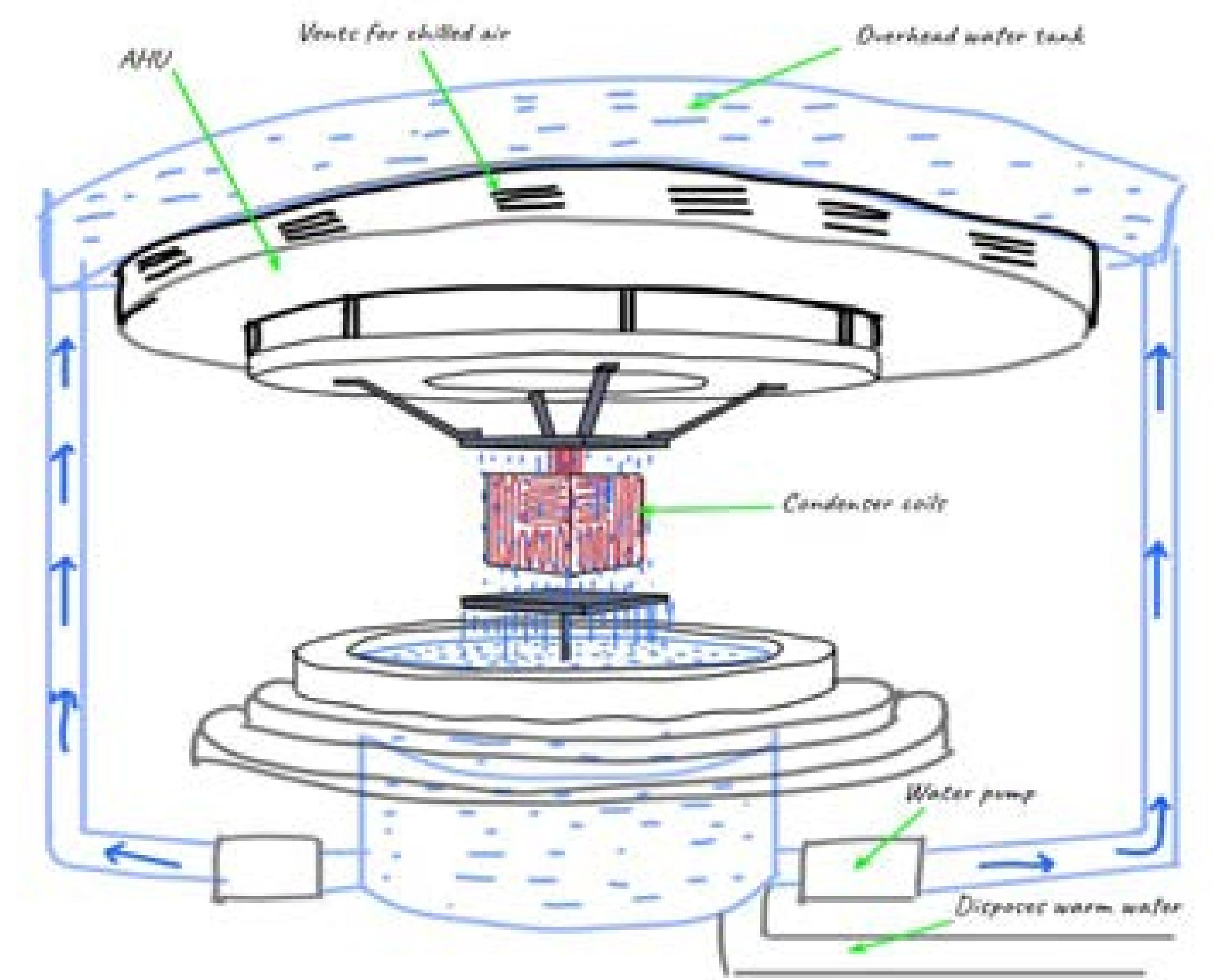


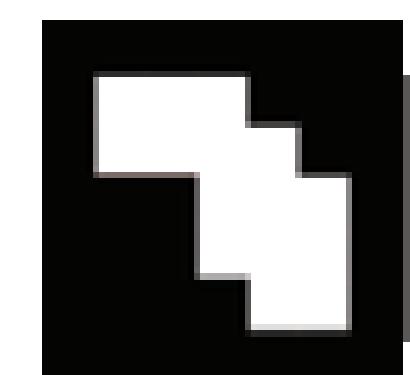
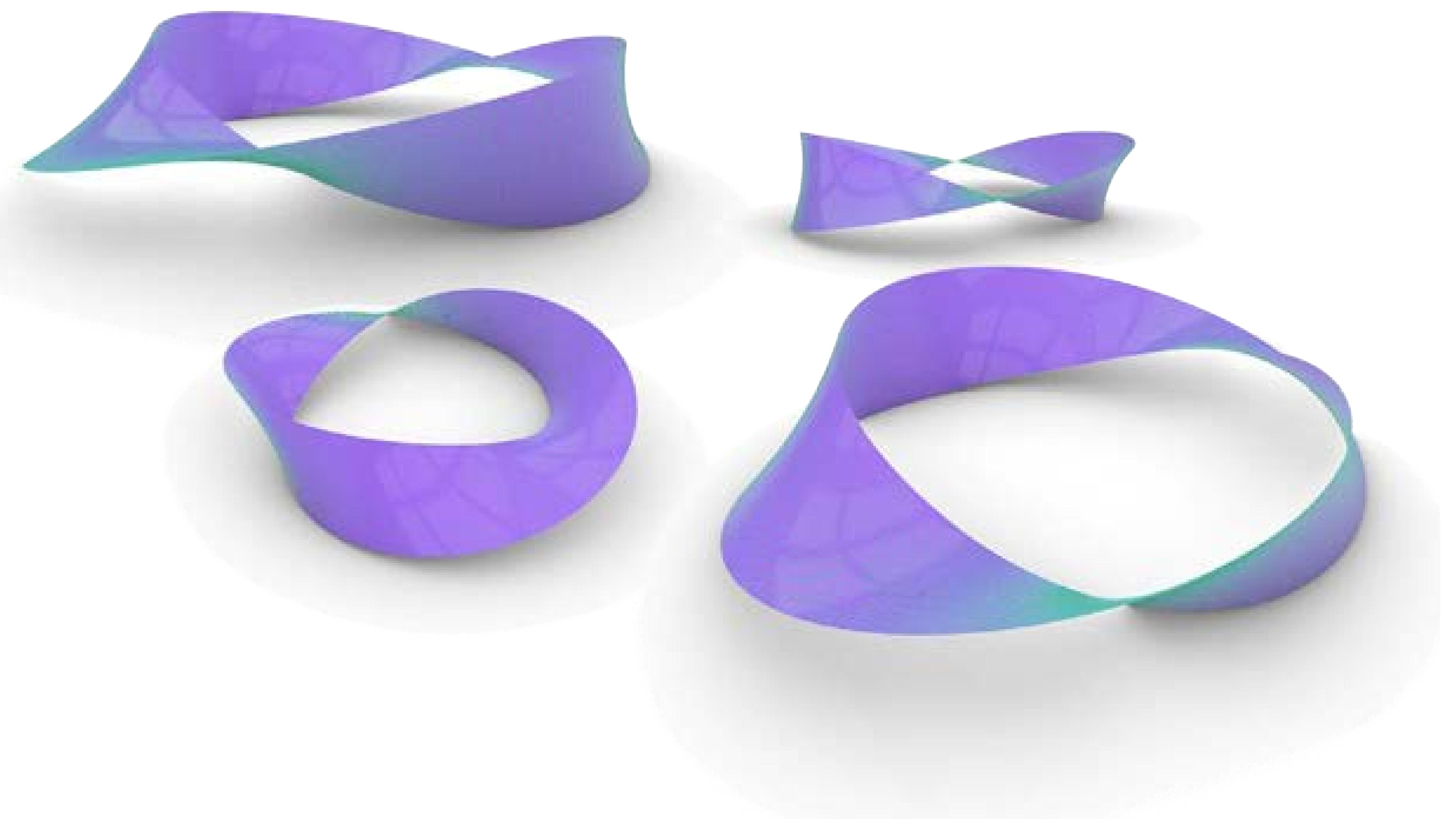
**Software used:** Rhinoceros 7 + Grasshopper, D5 Render, Photoshop, Sketchbook Pro

In the city near the river, within the futuristic setting of a nuclear fusion reactor building, lies a captivating space designed to enhance thermal comfort and engage the senses.

This unique environment revolves around a central air conditioning system that is also an art piece. An awe-inspiring cube matrix constructed from copper condenser tubes emerges from the air conditioning system. Levitating in appearance, the copper tubes form four separate loops, intricately woven together. These tubes are cooled by cascading water from an elevated granite stone, which gracefully falls and envelops them. The cooled water collects in a sump below, and when its temperature surpasses a predefined threshold, it is flushed out. On the roof above, there are four AHU units as well as a water tank.

Amidst the year 2030, this extraordinary sanctuary allows scientists and operators to retreat from their demanding tasks, immersing themselves in a serene ambiance filled with refreshing breezes, soothing rainfall, and the beauty of art fused with science.

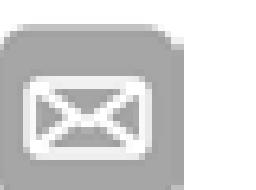




DESIGN COMPUTATION



CONTACT ME:

 [valleyvarun@gmail.com](mailto:valleyvarun@gmail.com)

 [issuu.com/varunsa](http://issuu.com/varunsa) <--- SEE MORE OF MY WORK

 [instagram.com/varun.sa\\_/](http://instagram.com/varun.sa_/) <--- I TRAVEL AND DO ART

 [linkedin.com/in/varunsa-spab/](http://linkedin.com/in/varunsa-spab/)

 [github.com/valleyvarun](http://github.com/valleyvarun)