

# **TEN X**



From Concept to Construction  
Architecture, Nirma University  
ADS V-VI (2018-19)

House Of Sports  
By. Saumil Upadhyay

**PROJECT BRIEF**

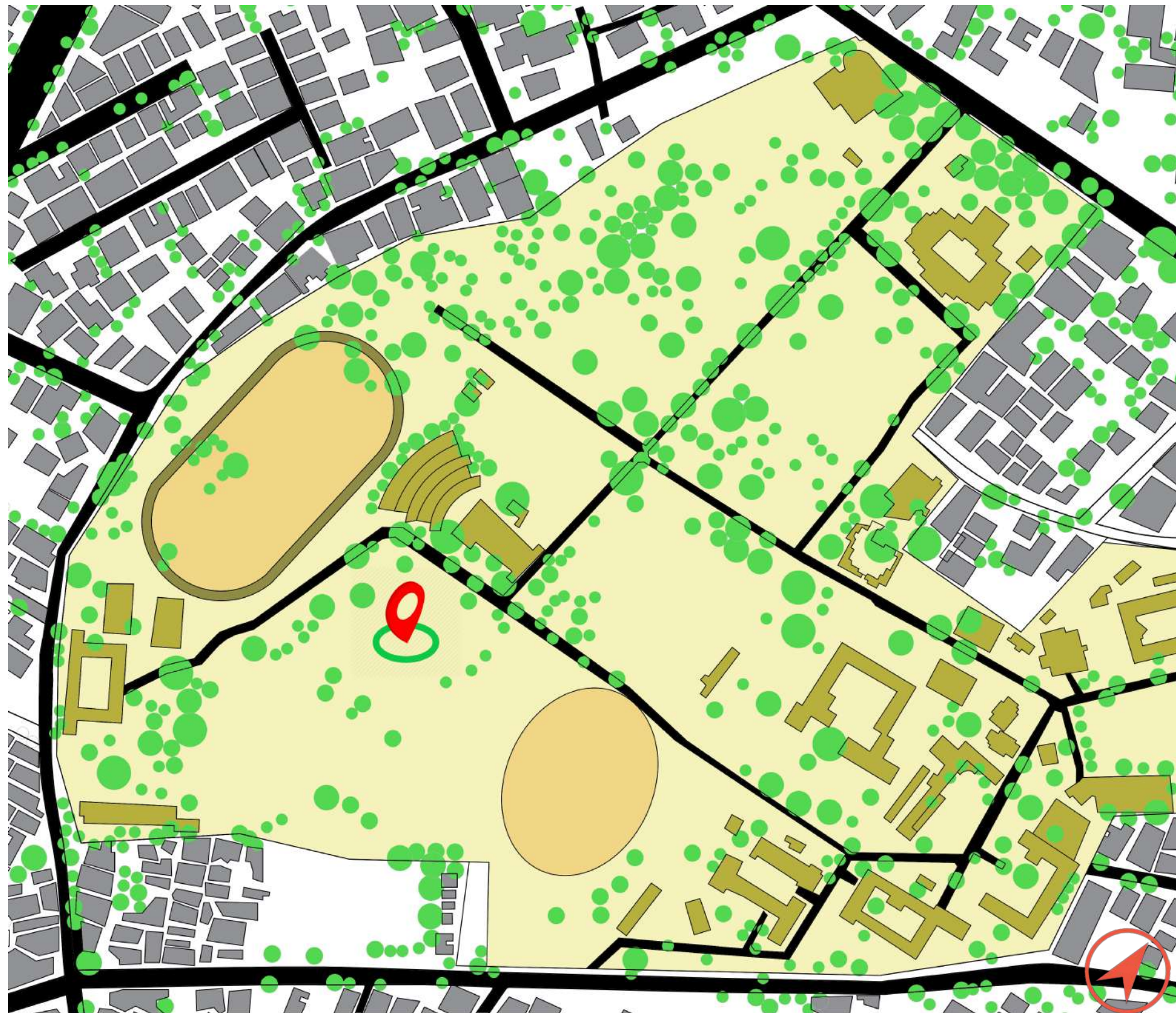
**Institute of Architecture and Planning, Nirma University.**  
**2AR552 ADS-V (Institution) 2018**  
**Bhooshan S Deval G**  
**Sanal T Jitesh M**  
**House of Sports**

A centre which promotes physical and mental development including individual and group based community sports. To revive old sports and games indoor as well as outdoor and to introduce new versions of indoor and outdoor games national as well as international along with Hatha yoga and Pranayama as traditional forms of Exercise and Meditation with sports like kabaddi, kho-kho, guilli danda, marbles, chess, along with the newer versions of indoor and outdoor sports and computer simulated virtual reality based gaming, rappling, wall climbing, inline skating, etc.

**Requirements:**

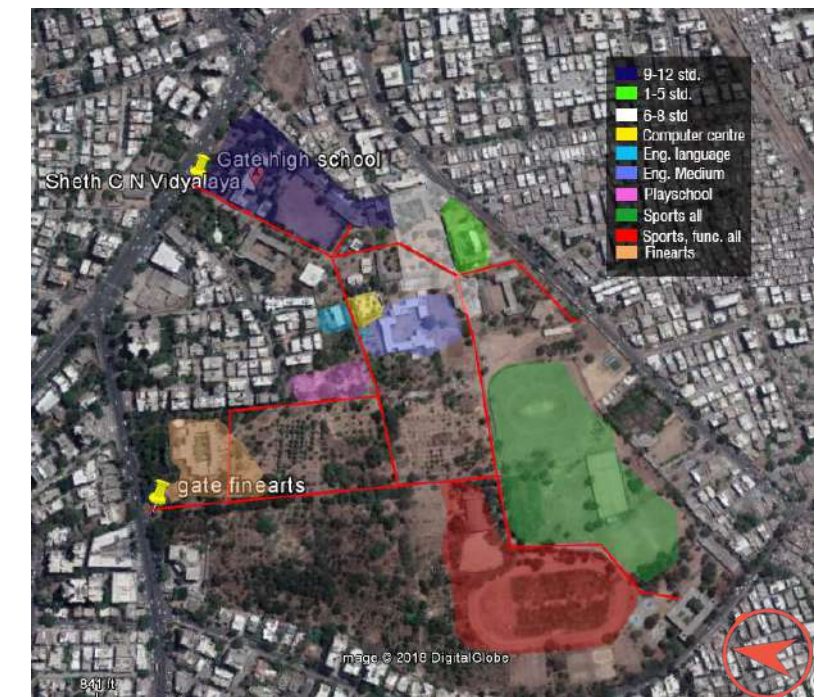
Sports Interactive/Simulation Gallery/Reception/Entrance	150-250 Sq M
Hall for Yoga/Pillate/Aerobics/strength training/Judo/Karate/Boxing/ etc with attached storage	50-100 Sq M x 5
Gymnasium	100-150 Sq M
Chess/Carron/Board games/robotics/etc	50-75 Sq M x 4
Service + Admin + Toilet + Pantry + Storage	100-200 Sq M
Cafeteria	50-100 Sq M
Table tennis (2), Snooker/Billiards (2)	300-350 Sq M
Badminton/Basketball/volleyball/Handball/Squash	300 sq M
Arena for competition	300-400 Sq M
Wall Climbing	
Circulation	20-30%
<b>Total</b>	<b>~2000-3000 Sq M</b>

This was approximate area distribution , which could be altered as per the convinience. There is an excel sheet under QR-code, scan it to see precise area distribution.



Location- Sheth C.N. Vidhyalaya , Ahmedabad , Gujarat - 380006

Site plan with proposed building demarcation.



Land-use plan of the site. It's a school with a huge 72 acres campus and different educational buildings. Scan QR-code to navigate to the Site.



Site Model - Scale 1:500

To get a wider view of the model, Scan this QR-code and get every detail of the model.



## Building is a product of process.

In the process of making the following building I went through several stages and exercises. There were 6 main exercises apart from site analysis as listed below.

The campus of C.N. is vast, so I was asked to choose a site anywhere in the campus and place the building there. After choosing a proper site I developed a concept with the help of context and ideologies of C.N. vidhyalaya. Following 6 stages support, represent and help bring the ideas onto the paper.

## How this portfolio work?

This portfolio explains an entire journey of a building from concept to construction. So there are basically 3 partitions or we can say 3 indexes- **One** is this page, which explains preliminary stage of any project, - **Second** is intermediate or conceptual design with basic structure and, - **Third** is construction drawings, details and finishes.

**Every page contains QR-codes for particular topics, scan them to know further about that topic. In addition to that there are some surprise QR-codes with no captions, scan them and they won't fail to surprise you.**



POSTER &  
COLLAGE

Pg. No. 6

CONCEPT &  
SKETCHES

Pg. No. 6-9

BUBBLE  
DIAGRAM

Pg. No. 10

BLOCK  
EXERCISE

Pg. No. 11

CASE  
STUDY

Pg. No. 12

NEWS PAPER  
EXERCISE

Pg. No. 13

## POSTER

In this exercise I was asked to represent a building of my choice or an experience that I had liked about any particular building in form of a poster.

I chose Atma house (Ahmedabad) by Ar. Le Corbusier and represented it with a few charcoal posters.

My intention is to show the floating effect he has created with the help of simple elements but exposed R.C.C. construction.



Scan this QR-code to see more posters, and pictures of Atma house



## SPATIAL EXPERIENCE

Choosing the spatial experience depends on 2 things, context and personal experience or choice. It is the **most crucial stage of designing** which will decide how your building will eventually look.

For me this was the most time consuming task. Here is a list of experiences that i prepared which one can incorporate in the design for this context.

-Excitement,Fear,Freedom,-  
Calm, Cozy,Strict,Confusing,Vast/Huge,  
Tiring ,Comfort,Lazy,Active,Absence of  
mind,Blank,Unbound,Happy,Satisfac-  
tion,Torture,Feeling low,Focus,Fight,Sur-  
prise,Love,Pressure,Thoughts,relief,Stuck,  
Force,Hiding,Lost,Hope,Struggle,Kind,Mer-  
cy,Competition,Introvert,Hate,Blame,Guilt,  
Depression,Board,Blank,Break,Boast.

## STYLE/TYPE OF ARCHITECTURE

C.N. is changing it's style of archi-  
tecture as new buildings are being con-  
structed in there. So i wanted to create a  
building with modern looks using modern  
materials and a **give an experience to the  
students that they have never got in C.N.  
earlier.**

According to me modern archi-  
tecture is , minimalistic and simple looking  
building with neat aesthetics and least  
decorations , but very comfortable, rich light  
quality and greatness of space from inside.  
I have attached some doodles on this page, which i made  
during semester.



## COLLAGE

Representing C.N. and it's motives, in a form of collage was a challenge here.

This exercise helped me to un-  
derstand C.N. better , so that I can design  
something taking C.N.'s motives in mind .

In first collage I have placed all the  
motives of C.N. with the help of similar  
looking posters , in a way indirect represen-  
tation. In the second collage , emphasis on  
mother tongue is evident.



Scan this QR-code to know about the motives of C.N. represented in these collages



## HOW TO BEGIN

**Step 1**-Think of a spatial experience

**Step 2**-Take that spatial experience as a base and keep on adding more ideas.

**Step 3**-Add structure , comfort and make workable/functional design.

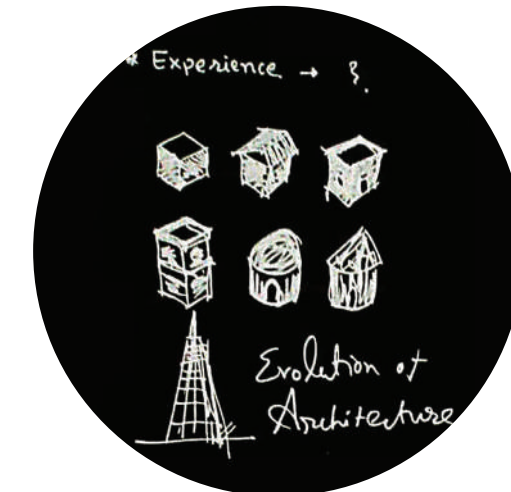
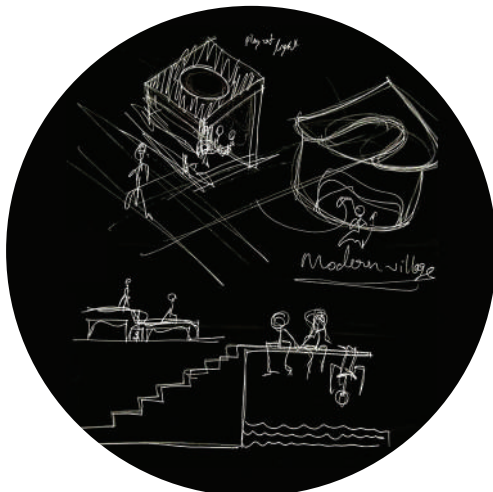
Sequence and points to take care-

**Concept-Functions-Aesthetics**

**Open-Built**

**Plinth-Walls-Levels-Roof**

**Earth-Water-Air-Light**

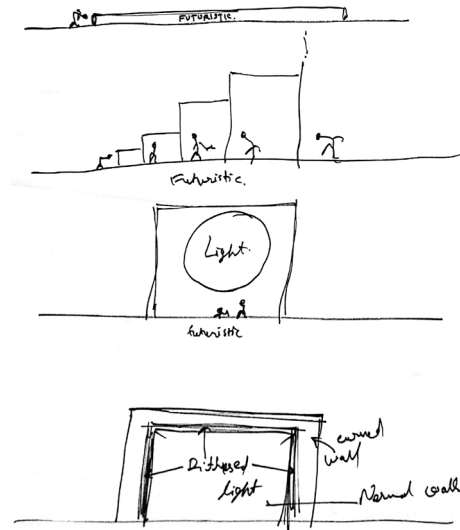


### Concept -Future

The basic idea was to give all kind of experiences to the students on C.N. , also I wanted to create modern architecture, but these ideas were not enough for creating a building or design, as they did not provide me any base , so I came to a word that can accomodate all the words & it was 'Future' .

But converting this cool looking word into design was a task.

Here are some efforts I made to draw future on the paper.



### -How to convert future into architecture?

-Long & narrow ways gives a feeling of infinity , & future is infinite.

-Curves & rounds that are new to people , or weired shapes interest people, as they have never seen it before.

-Light plays major role, quality and intensity of light, sharp rays or defused lights give experience of future.

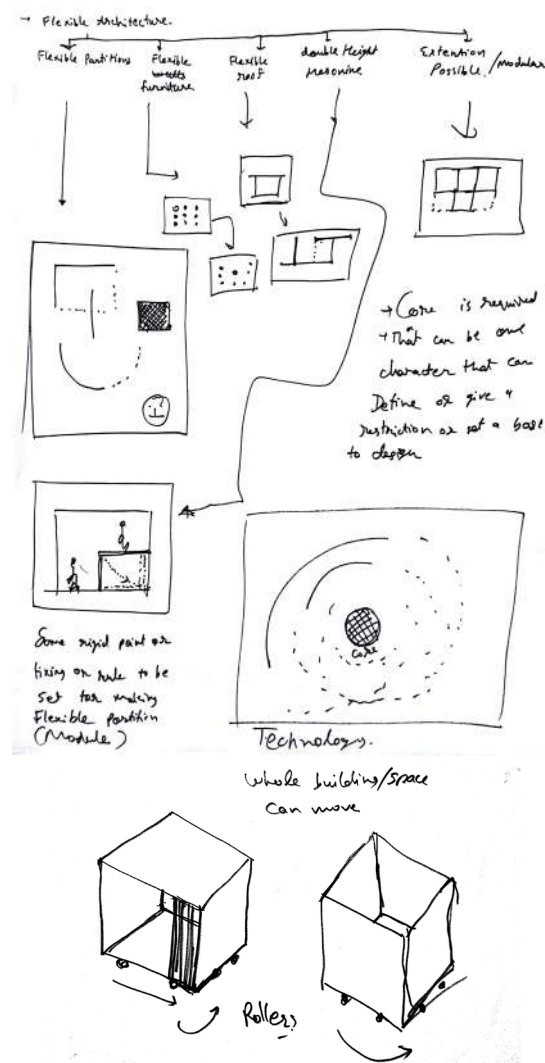
-Huge volume or comparitively huge volume , grandness and and playing with volumes give experience of future.

### Core Idea - Flexible Architecture

Now it's weird that from no where flexible architecture came, but actually it's very logical.

**Modern Architecture is future, Future is unknown , So it requires flexibility. So flexible architecture is future.**

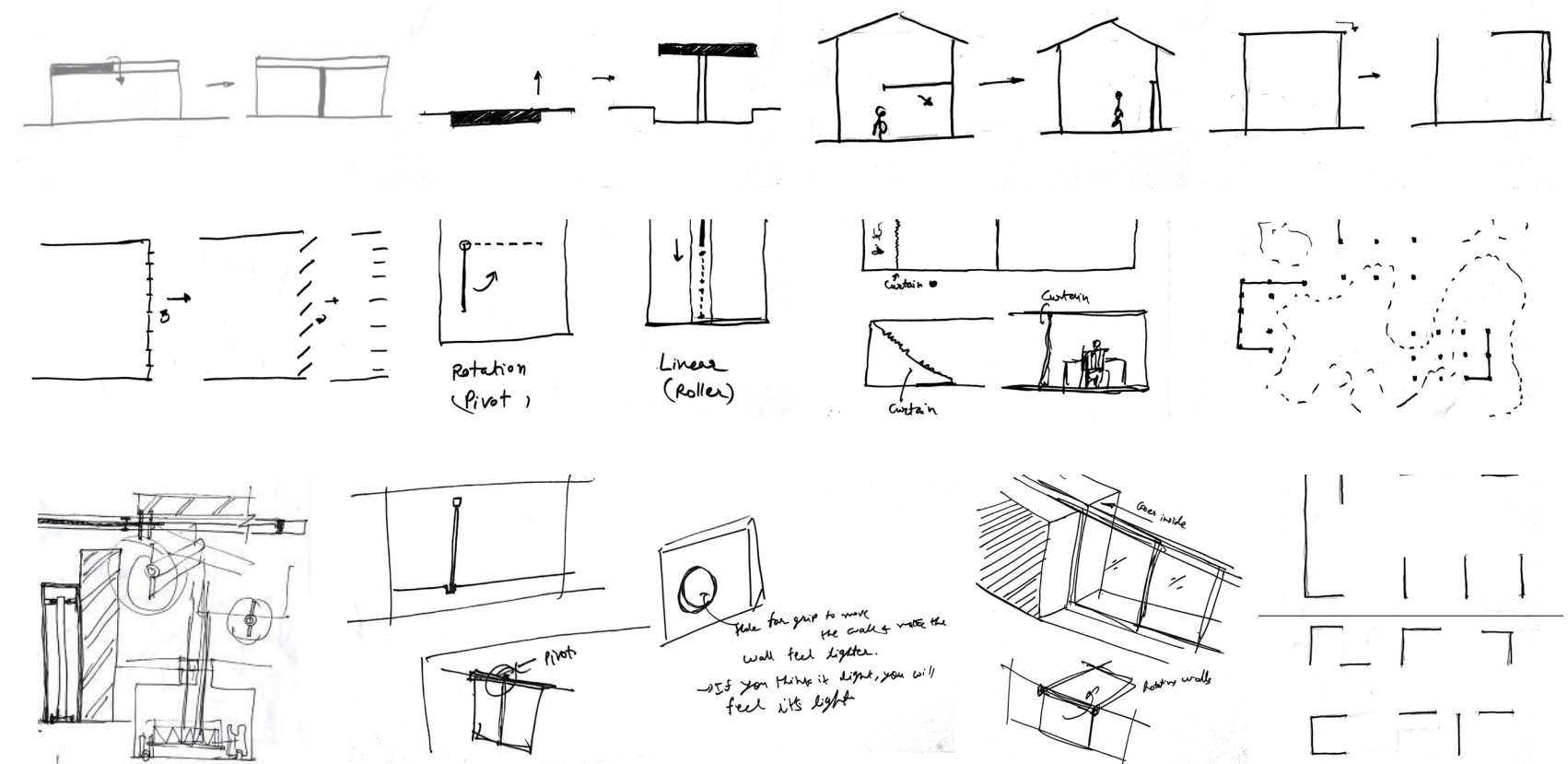
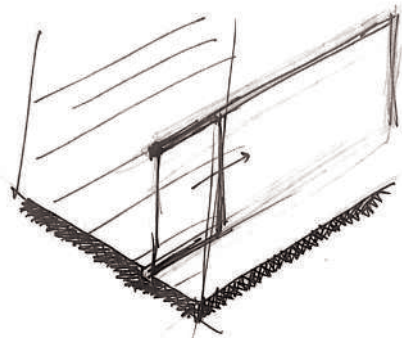
**Architecture that can take/adept to any changes is flexible architecture.**



If we assume material can last forever then flexible architecture is infinite, so as the future.

Because it's the architecture that can change it's shape according to function. Architecture that can shrink and expand at the same time.

This type of architecture should have flexibility in smallest detail like chair.

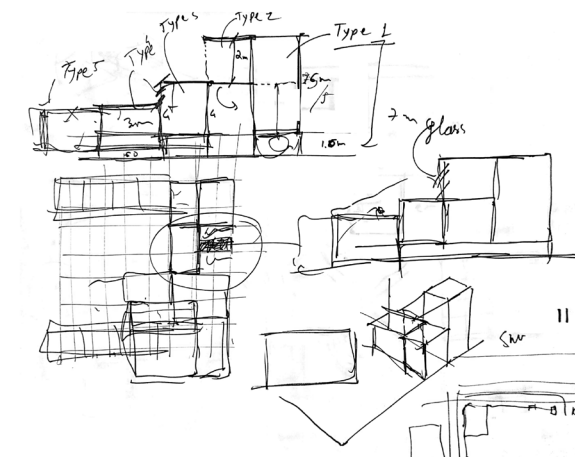
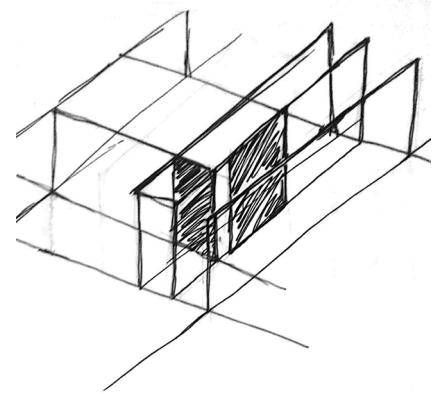


The diagrams above are attempts to achieve flexibility with different elements sizing from small to big. Details play as important part as a building layout in terms of achieving flexibility. Some sketches show details of element and its functioning.

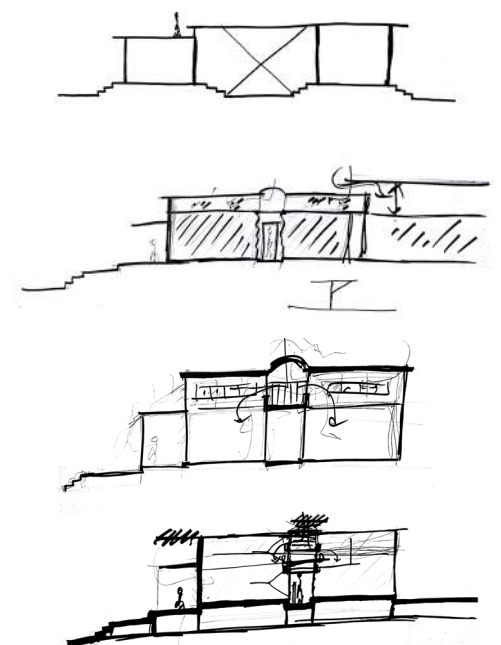
This is a stage where one has to go back and forth to achieve what one wants.

### DIAGRAMS

These few diagrams shows number of ways to achieve flexibility in every tiny details.



Left diagram is distribution of functions and a checklist according to its requirements to see what uncommon all functions have. Other diagrams are overall building ideas.

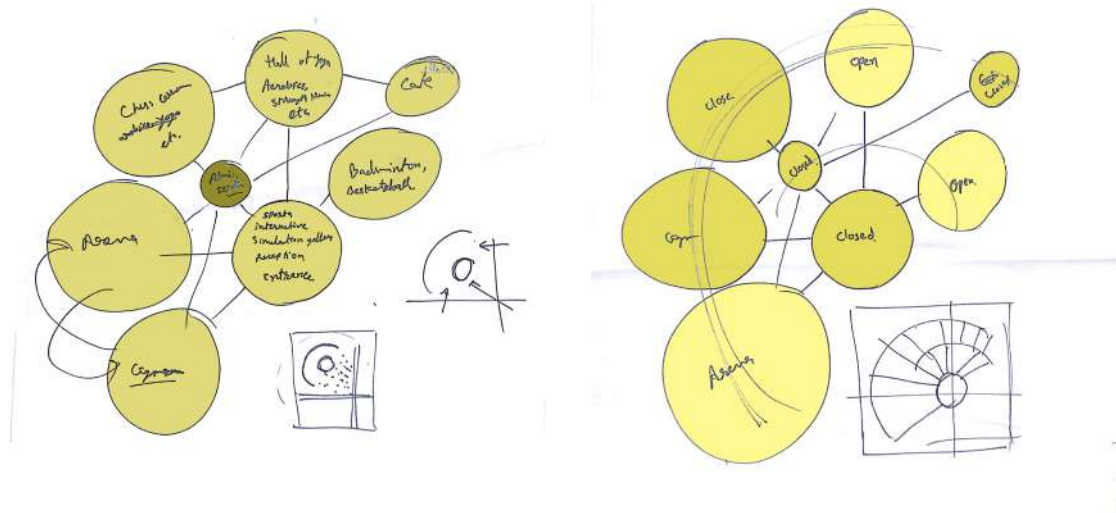


## BUBBLE DIAGRAM

It's a tool that helps in making important decisions about placement of spaces according to inter-relationship and function, it helps in taking the design a step forward.

Here are some bubble diagrams and related diagrams.

Here I have majorely arranged the spaces according to its functions and open semi-open areas.



## BLOCK EXERCISE

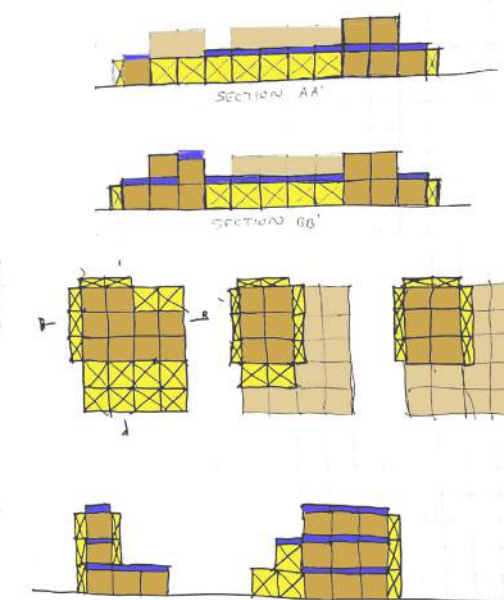
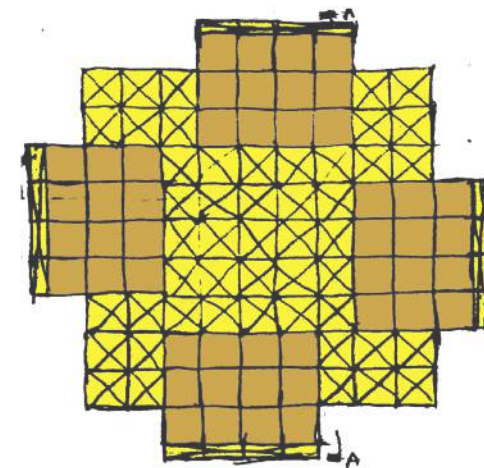
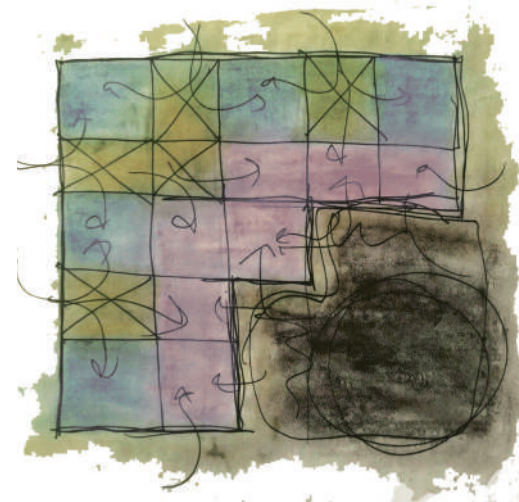
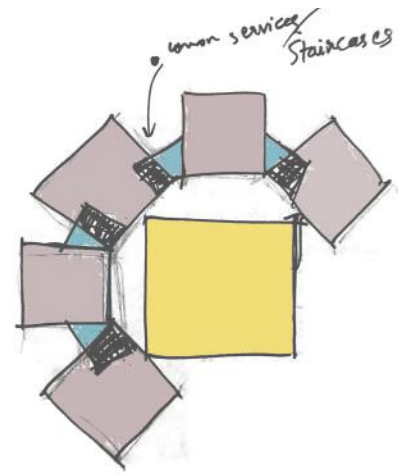
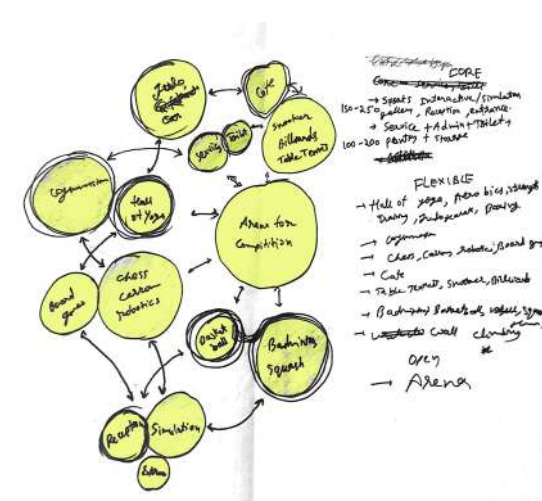
This exercise is important for massing, with a particular size of blocks that represent their characteristics by their color, one can make options based on bubble diagram, concept, light and ventilation.

- Block sizes - 25x25x25 mm
- 25x50x10 mm
- 25x25x10 mm

Block characteristics based on color  
Yellow-Light block (All six sides invites light, Open to Sky)

Brown-Core or dark block (A block with all 6 sides covered, basically a room)

Blue-A slab or a roof (for floors above floors it acts as a slab otherwise roof)

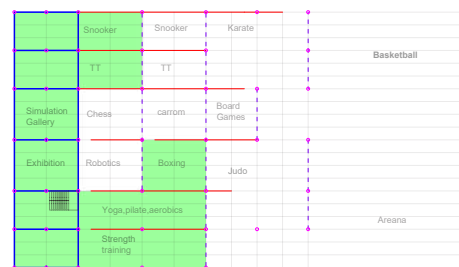


The sizes of blocks are to be seen as 1:100 scale. Thus 2.5 meters height of the block is taken with consideration of a human scale.

Placing a yellow block next to a brown block means creating a window on one side of the room from where light can enter. At the same time putting a yellow block inbetween brown blocks creates a courtyard inbetween. And placing a blue block on the top of yellow block means pavillion.

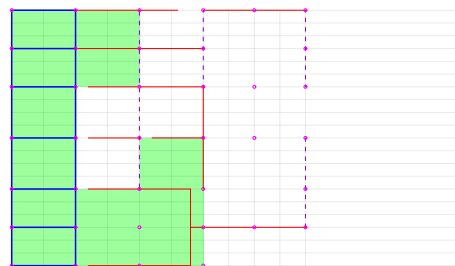
### Variation 1

This concept diagram is the product of bubble diagrams.



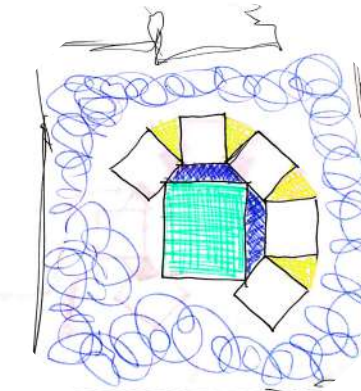
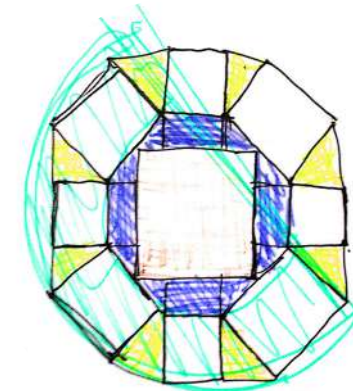
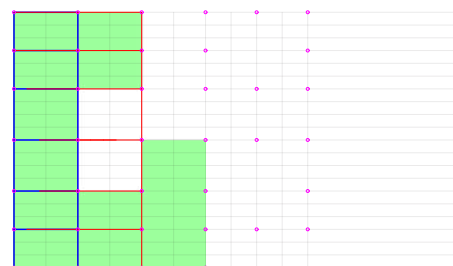
### Variation 2

These flexible walls can move and rotate to change the user experience and function.



### Variation 3

In this layout, we are getting maximum open space and minimum core or rigid space.



As you can see on the left side, it is the product of the block exercise.

This module is basically a polygon with 16 sides and each negative or triangular space works as a light unit, and rectangles are functional units.

**CASE-STUDY**

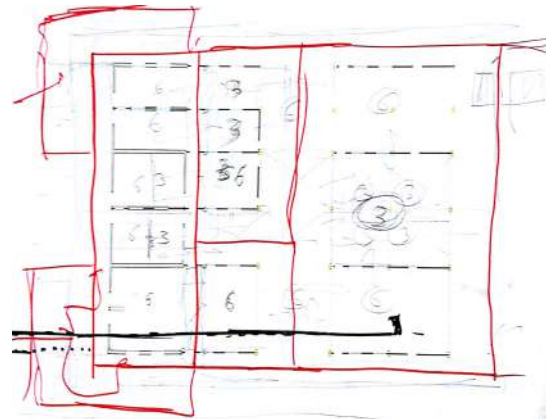
Case study was done at a very later stage intentionally, & it benefitted me to take certain decisions and take my design further.

My case-study was Pompidou Centre by Ar. Renzo Piano.

My concept is to create flexible open spaces, Pompidou Centre has long span spaces with no hinderance inbetween,.

Additionally it has circulation issue solved by taking it on the edges of the building. A few decisions like these helped me to move ahead with the design.

Here is a diagram inspired by Pompidou Centre.

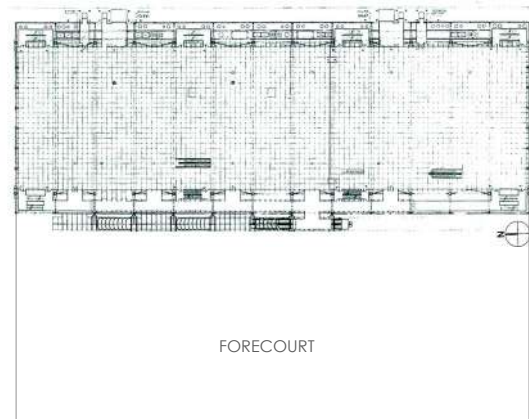


As shown in the diagrams on the right side, Pompidou Centre has resolved structure, services, ventilation and circulation in a unique and exposed way.

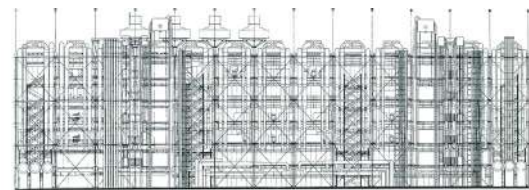
Scan this QR-code to know more about Pompidou Centre.



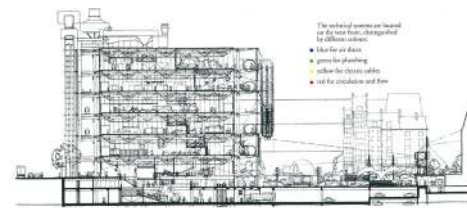
**CENTRE GEORGE POMPIDOU**



PLAN-1:500

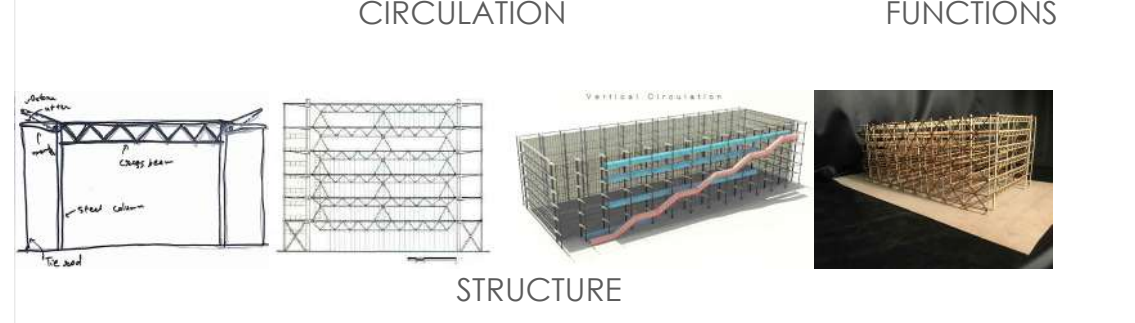
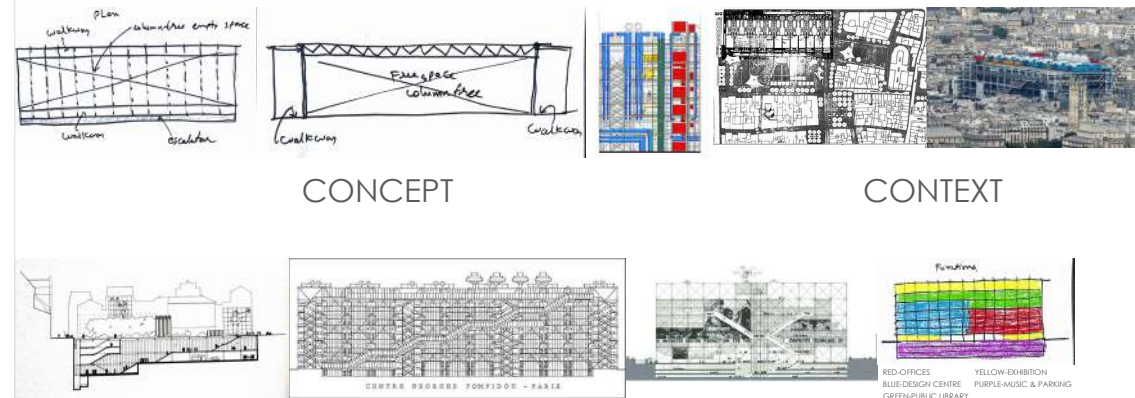


FRONT ELEVATION



SIDE SECTION

Centre Georges Pompidou - Paris (France) - 1977  
 Site Area - 2 ha, Area Of Each Floor - 166 x 45 m, Height-45.5  
 Architects-Renzo Piano, Richard Rogers, Engineer-Peter Rice  
 Materials - 1 Basement Concrete, 7 Floors Steel and Glass  
 Functions - Exhibition, Library, Offices, Music, Design Centre



**Chimanlal no Ariso**

**Environmentalist VS Architects**

6 architects hired for a new project in C.N.

**ARCHITECT EATS UP TRUSTEE'S LAND**  
REF. PG 2

**CLASH OF CONCEPTS**

-Introducing a new chapter in C.N. life!  
**House of Knowledge & House of Sports.**  
 A brand new library, workshop, cafe & exhibition space to be built in the heart of Ahmedabad.  
 -Along with this a sports centre is being built with supporting functions like yoga hall, gymnasium, sports arena.



**Zumkhawala architects**  
Admin pleased, students frozen

Report by - Yatri Dangl  
yatrindang@gmail.com

As a new proposal of making a new house of knowledge in the campus of old C.N. VIDYALAYA, trustee of the school mr. XYZ conducted the first meeting with Ar. anushree zumkhawal and the team. In the meeting, architect took stand of designing a new building, surving as a temple of knowledge in the green campus of C.N. with taking care of all the values and principles of the institute.

The knowledge centre is located in front of fine arts college, and also centre is also serving the outside people of ahmedabd. But when the admin of school thinks with his point of view a very large library of this centre which is very far from their school, why they go to this new building?? they can propose a library in their old building alos.

Another concern the design took is, it was quite systematic and well arranged so trustee and other administrative members were pleased with the architect. But the design is suchthat it restrict childrand to have their fun. So, there is knowledge, but not fun with learn.

ARCHITECT:  
ANUSHREE ZUMKHAHALA  
anushree.zum@gmail.com

**Land modulation, worth it?**

Report by - Jinal Mehta  
jinalmehta@gmail.com

An attempt by Ar. Vishrut Shah made everyone think wether it is worth modulating the plane for the purpose to b solved. He proposed keeping the computer centre underground to avoid direct light at eye level.

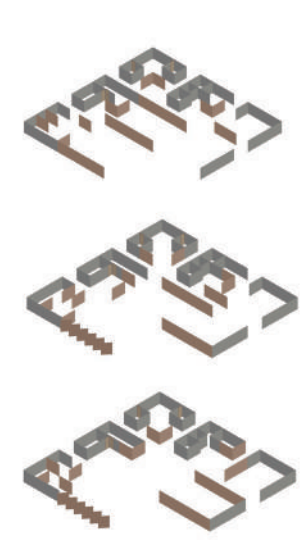
A bridge dividing as well as joining the spaces seemed to be an interesting attempt. Opens and visibility made children little sad. No chance of running or hiding!

Taking a look on its positive approach, the design is handicap friendly even with modulation of land. All the core activities are accessible from the ground. Smart move by Architect as excavated land is used for modulating the plinth.

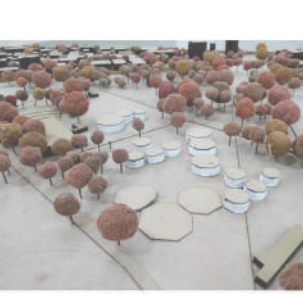
**HEATED UP DISCUSSION**  
Modulating land made response towards trees questionable.

ARCHITECT:  
VISHRUT SHAH  
vishrutshah@gmail.com

**Renders by Ar. Saumil**



**Why Octa?**



**NEWS-PAPER EXERCISE**

It was the most interesting exercise, where six of us sat together and did a role play of different authorities like, admin, head, architect, etc. and one has to propose his/her design on which everyone would give suggestions or critics. It was like a real life experience of how to present design to client and we learnt a lot from each other. At the end we wrote conclusions of everyone's design and printed in a news-paper format as if it was a headline or a breaking news. We wrote it in a very typical and attractive language as you can see in the above 2 pages. Overall experience of this exercise was really amazing and fun.

We learnt a lot from each-other through this exercise and also realised some big mistakes which were never noticed by oneself. As this exercise was divided among 40 students and in a group of four, there are other interesting news-papers too by other groups, you just need to scan this QR-code and you get access to all of them.



Sectional Perspective - Revit Model (BIM)



Space Renders - Revit Model (BIM)



Detail Models - Hand Made





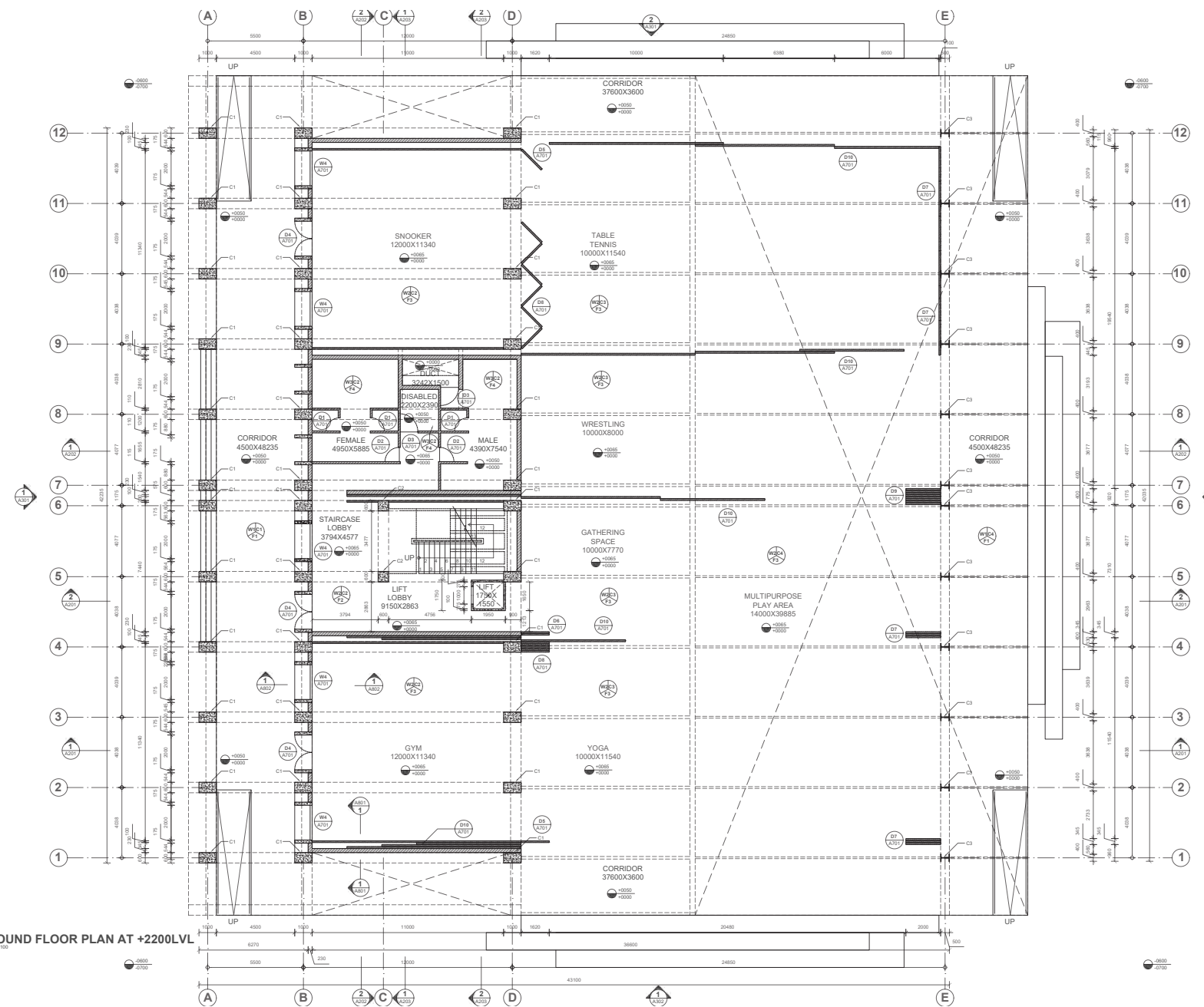
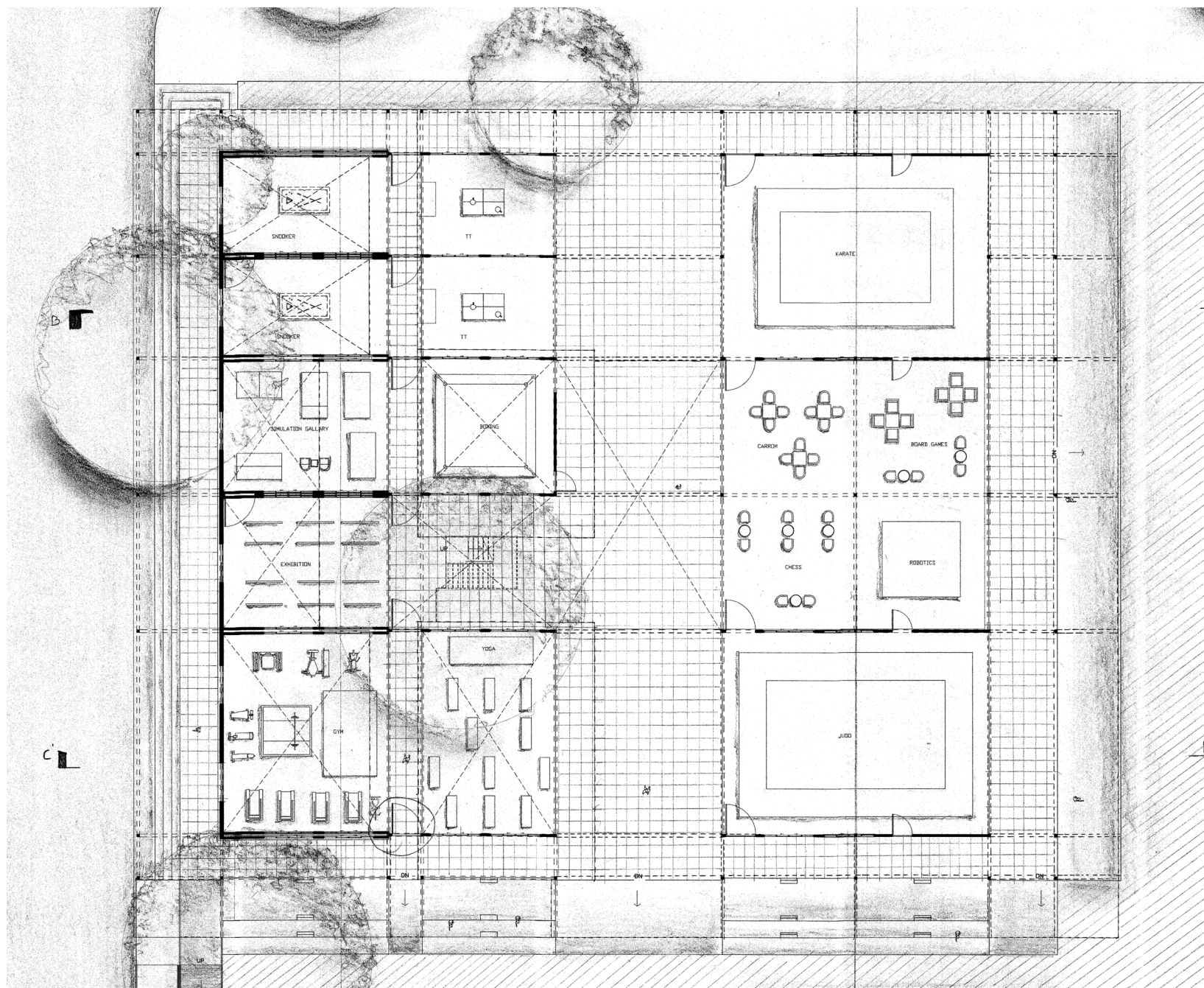
CONCEPT

T O

CONSTRUCTION

Concept plan

Construction Plan



Scan code for Concept Drawings Set  
This is the concept drawing which was purely made based on idea , experience and concepts. But when converting it into working drawing, taking other aspects in consideration , it changes alot and you can see the comparison.



Scan this QR-code for walk-through simulation



Scan code for sliding mechanism animation  
This is the construction drawing or working drawing , which is redesigning of concept drawing with taking structure , materials , details and bylaws in consideration. Sometimes one has to make majore changes due to some bylaws and structural requirements.



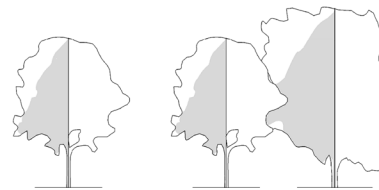
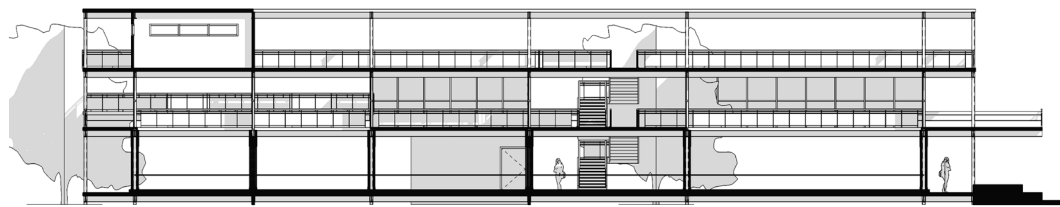
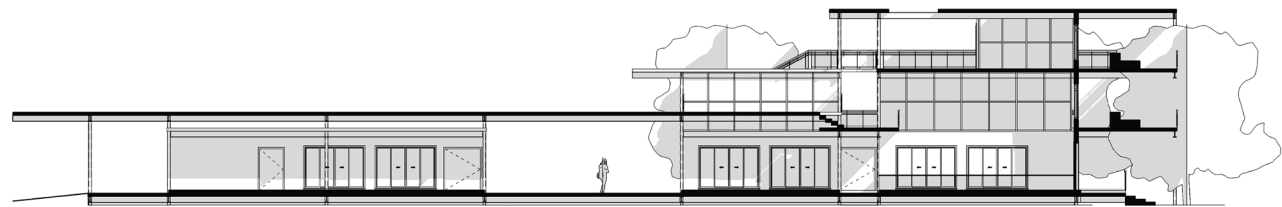
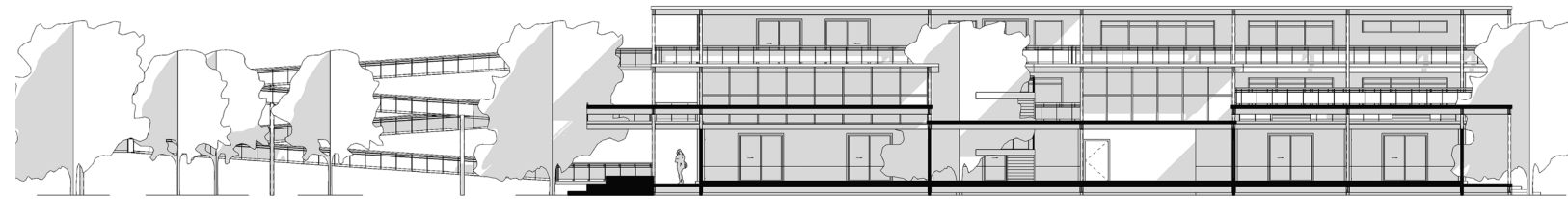
Scan code for Construction Drawings Set

CONCEPT

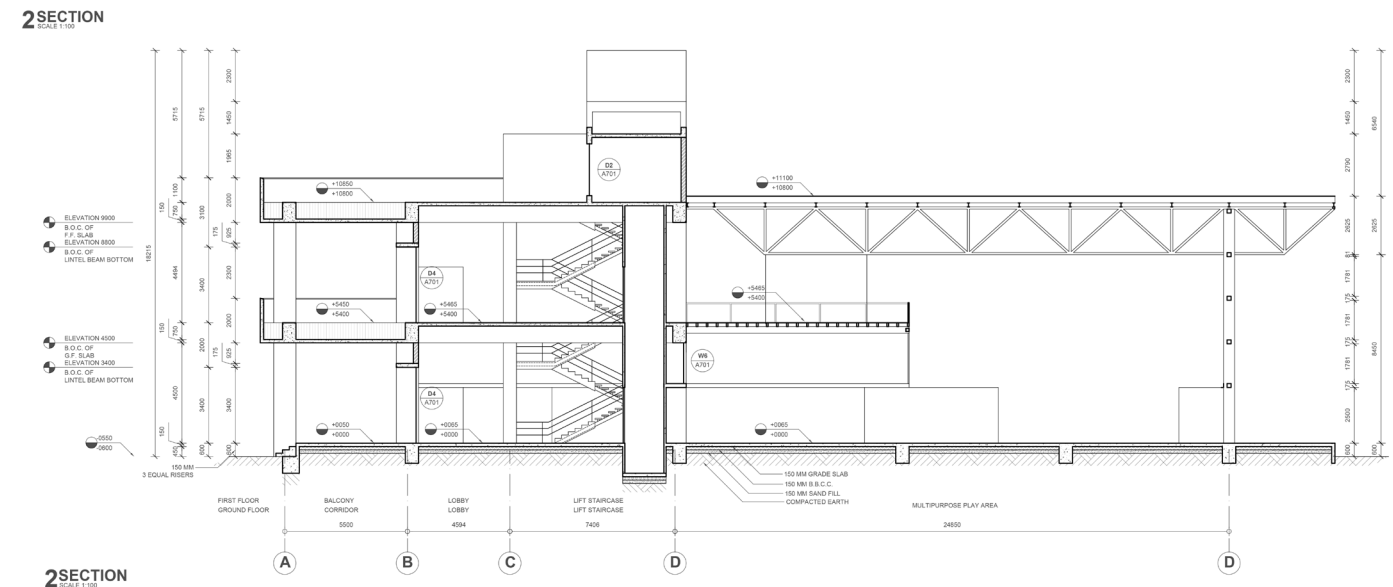
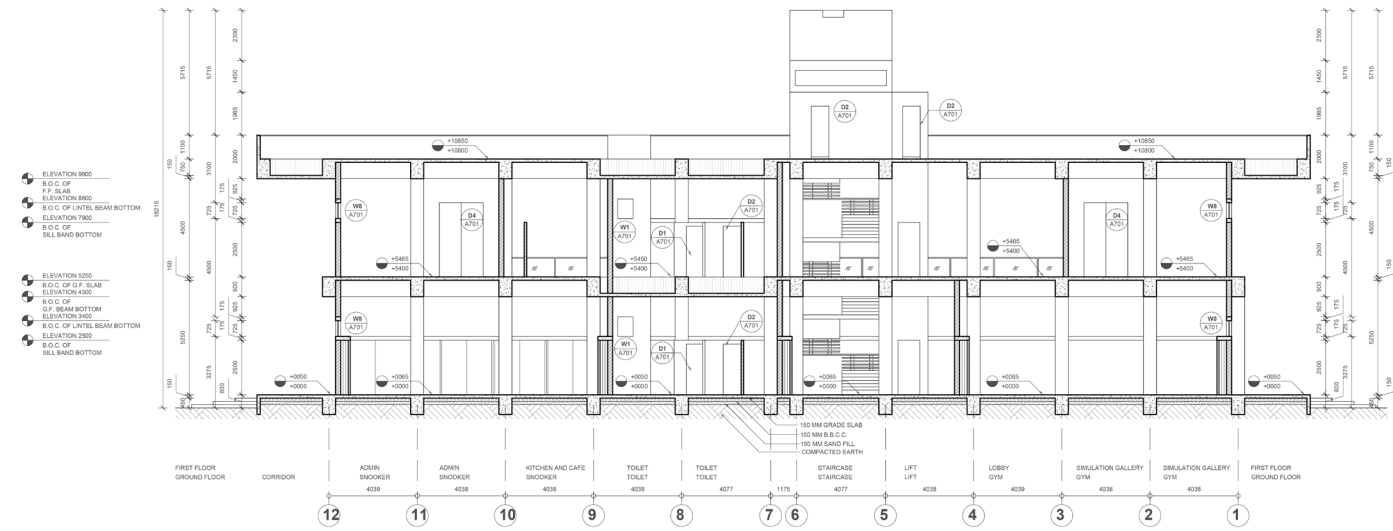
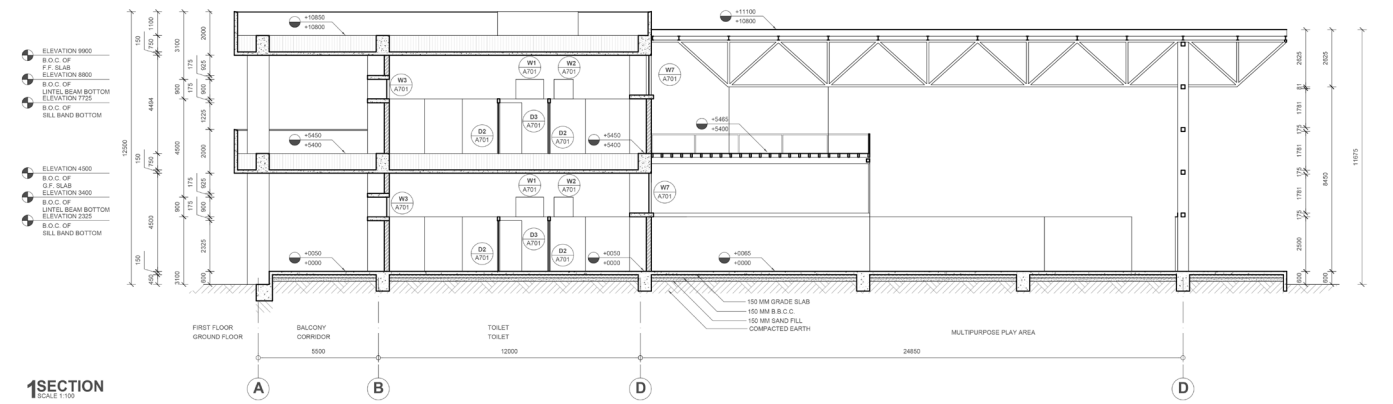
T O

CONSTRUCTION

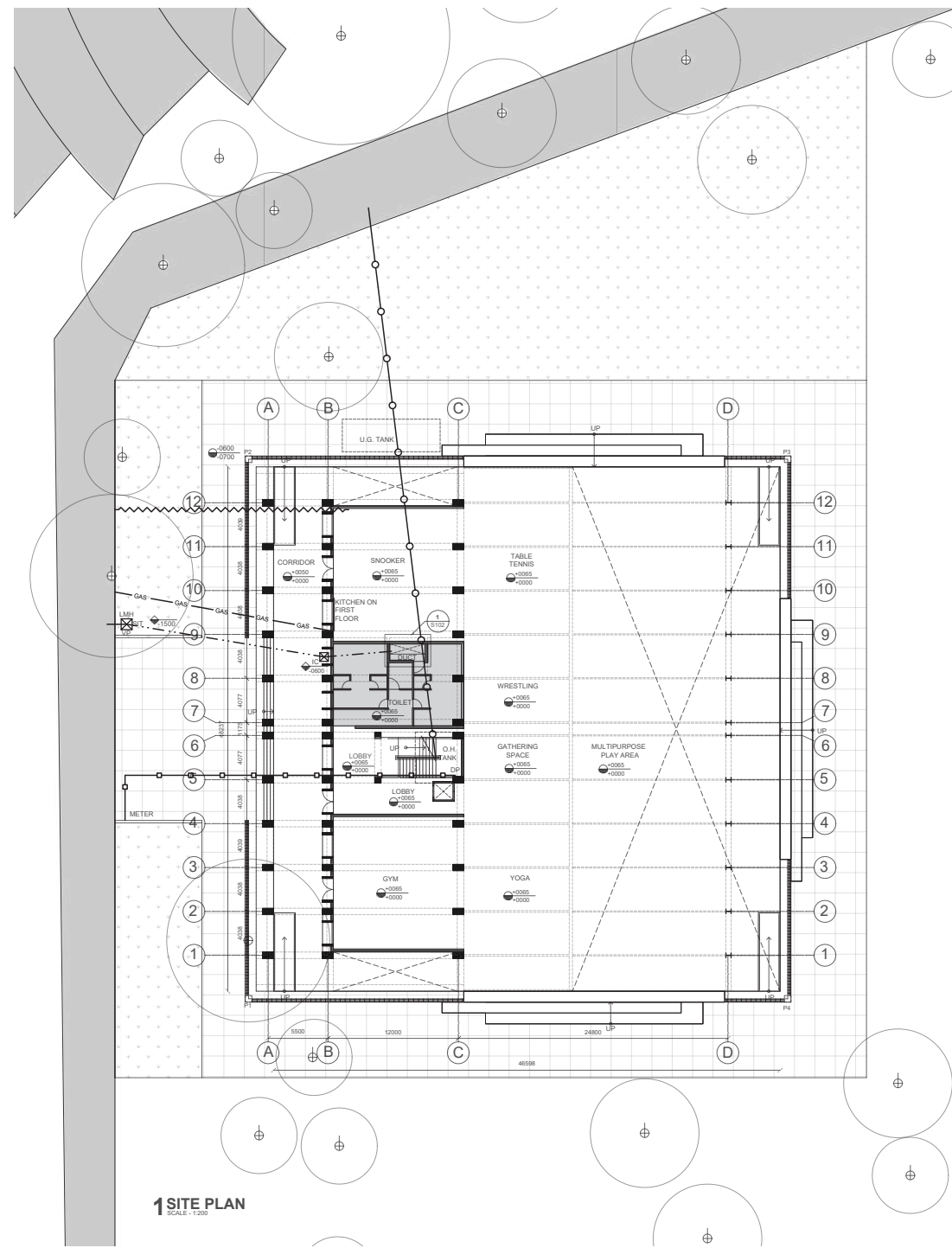
Concept Sections



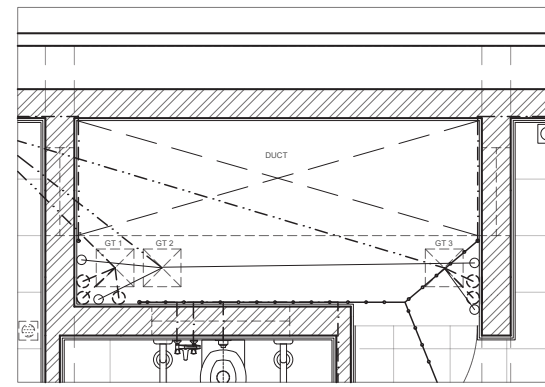
Construction Sections



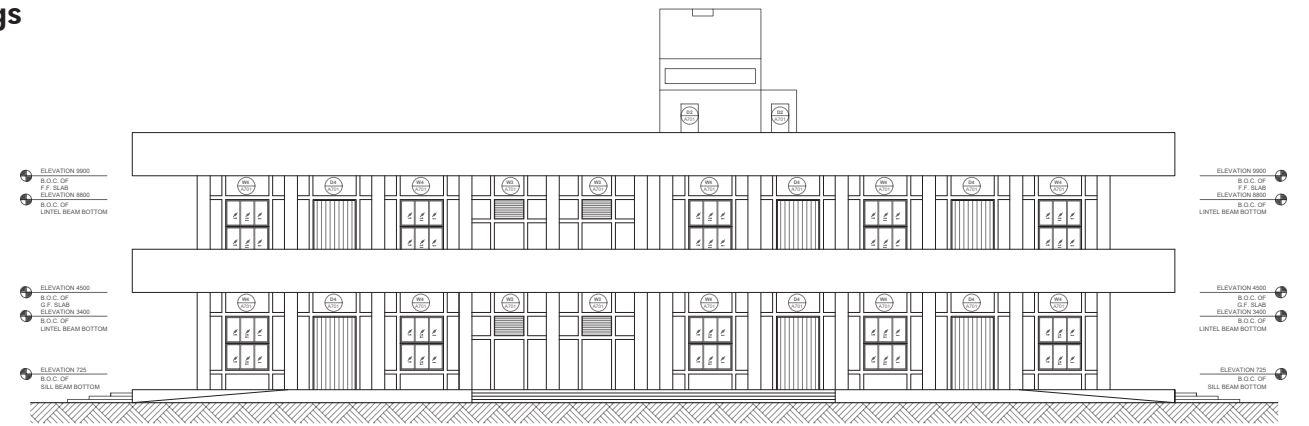
Site-Plan



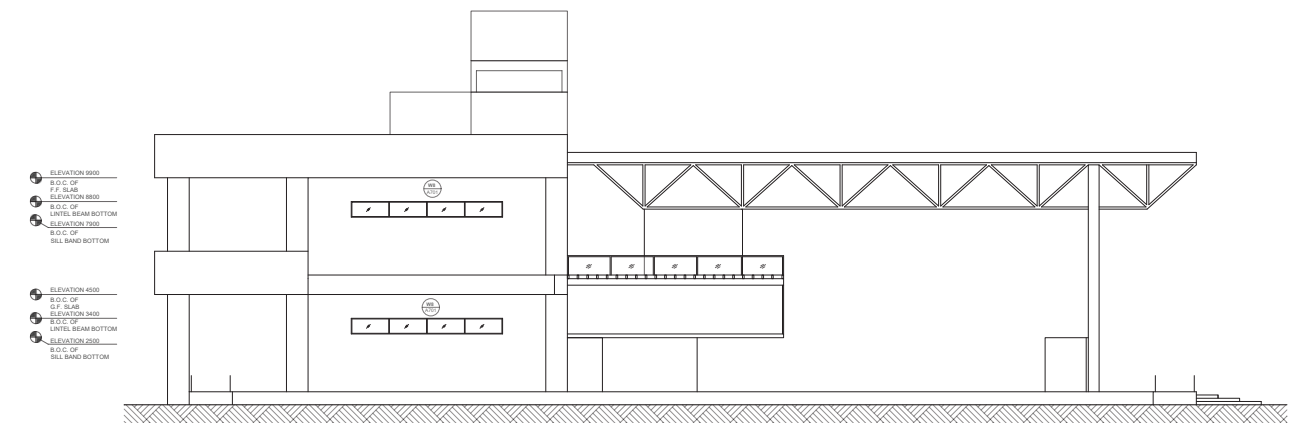
Working Drawings



Drawings



1 ELEVATION



2 ELEVATION



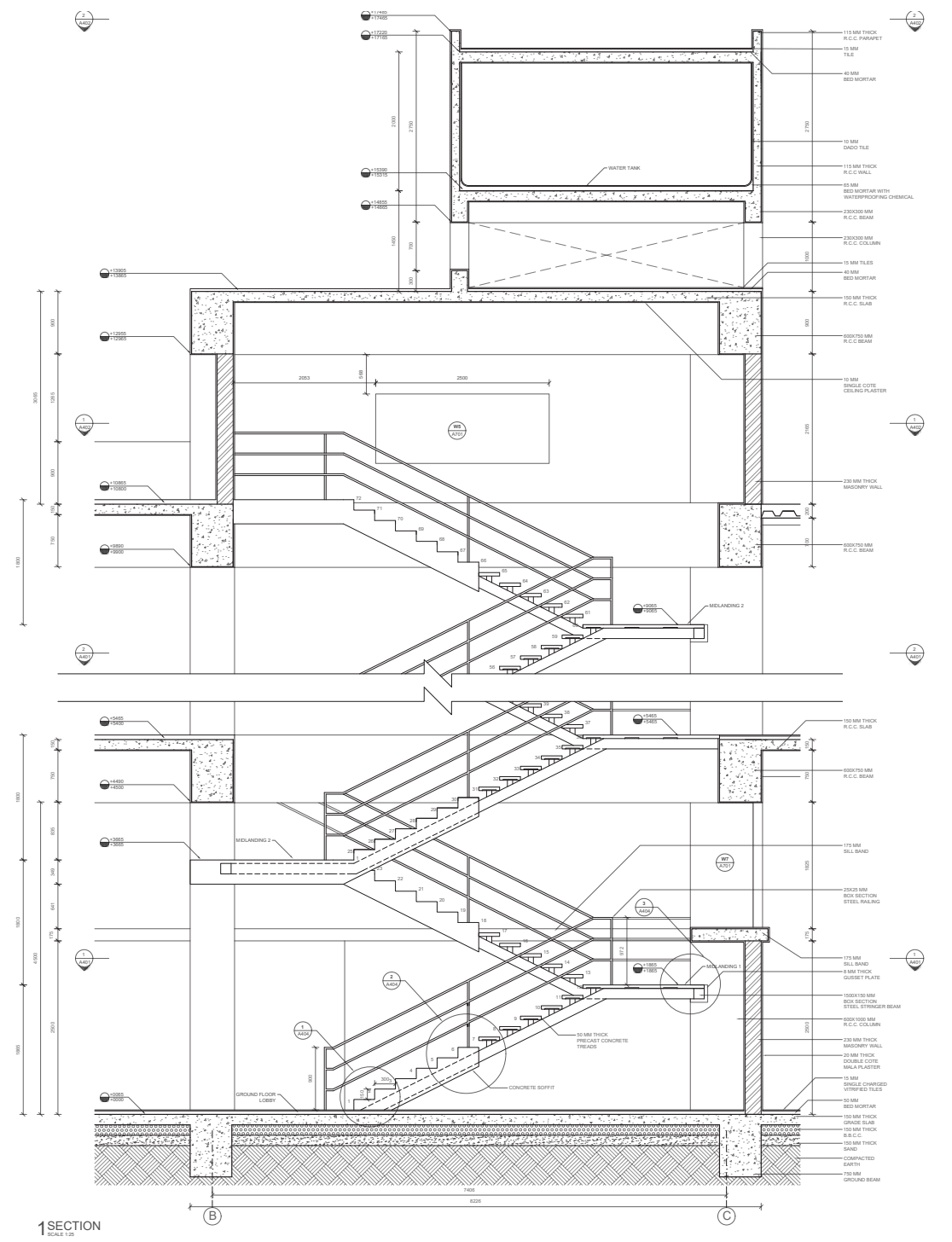
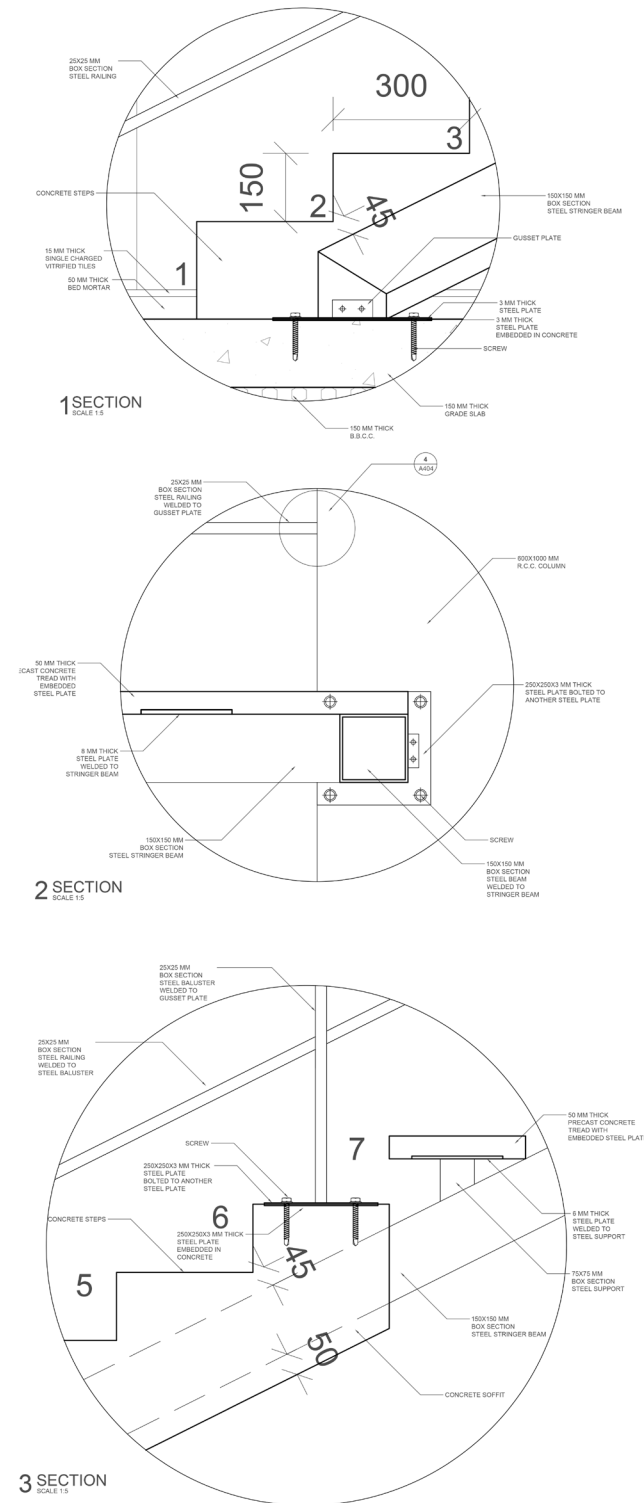
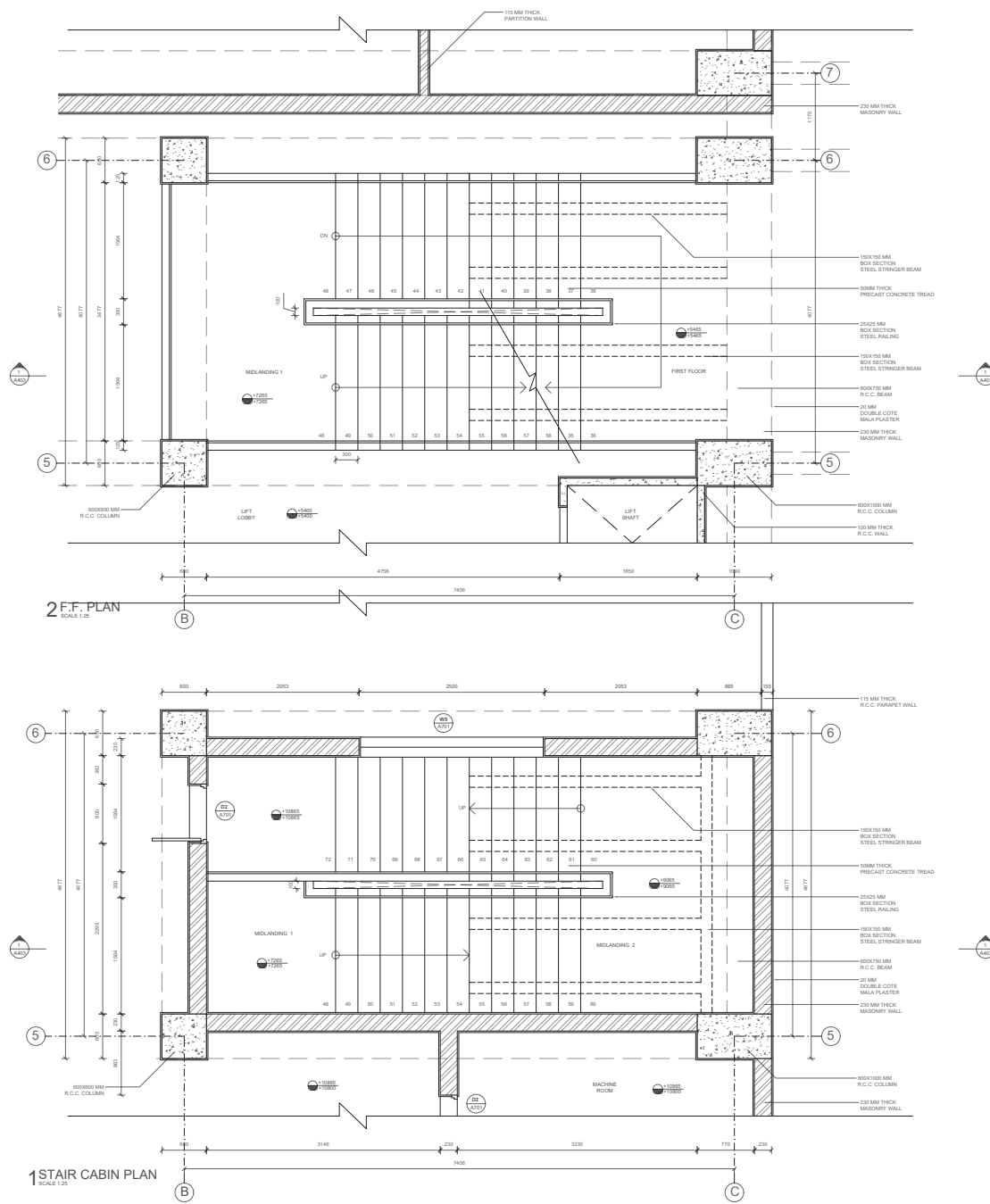
2 ELEVATION

Elevations

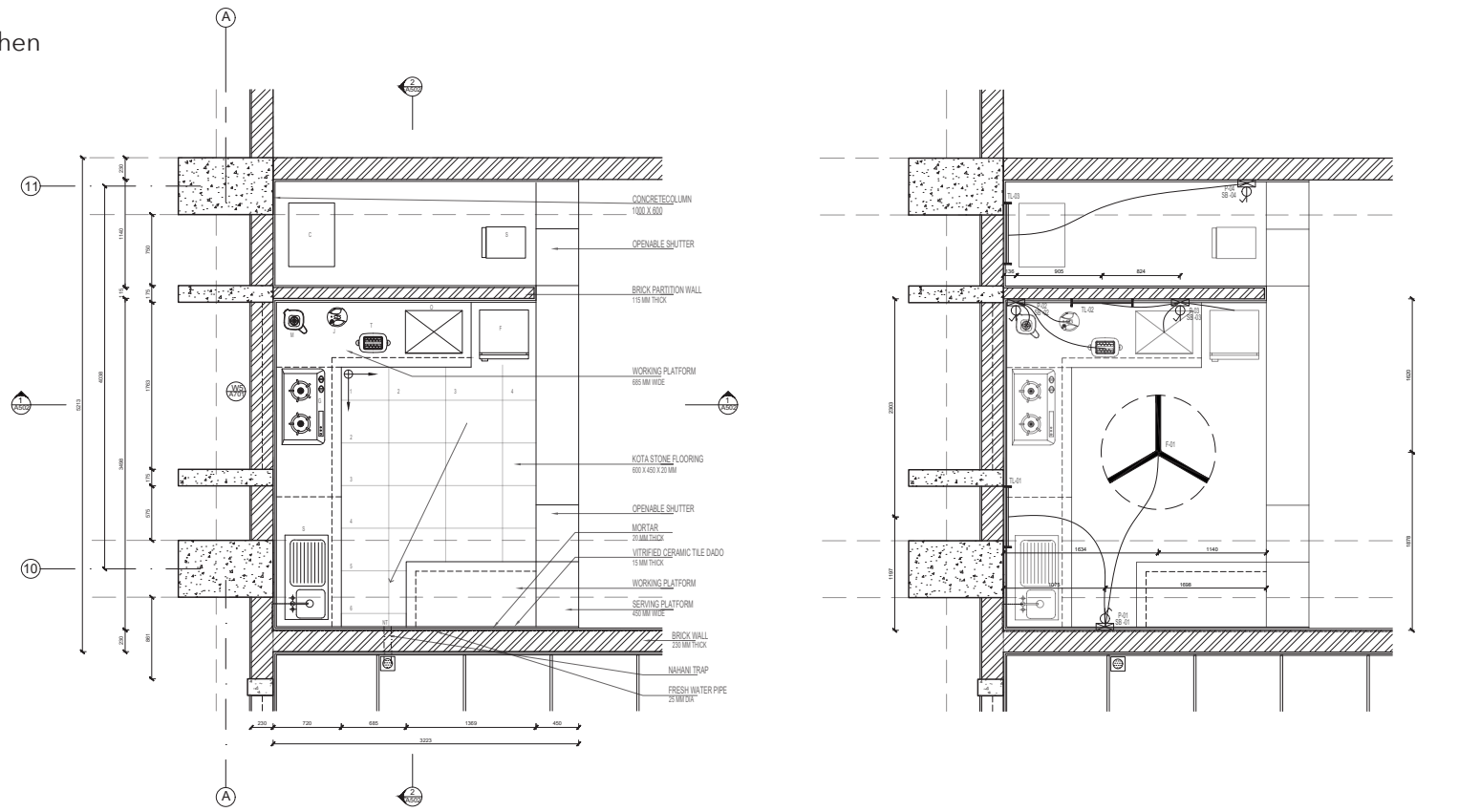
Staircase

Staircase

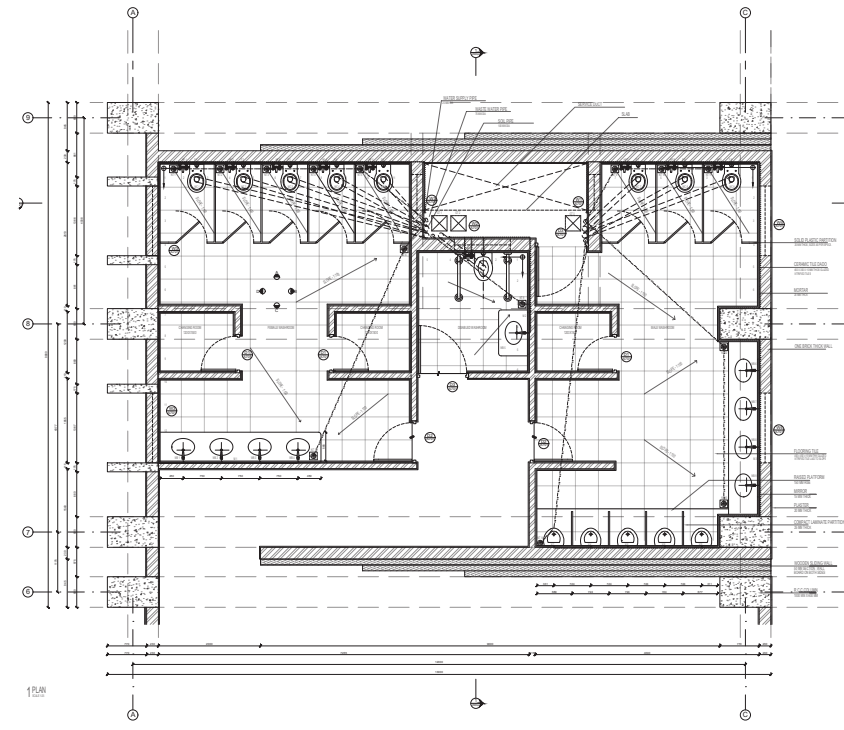
### Working Drawings



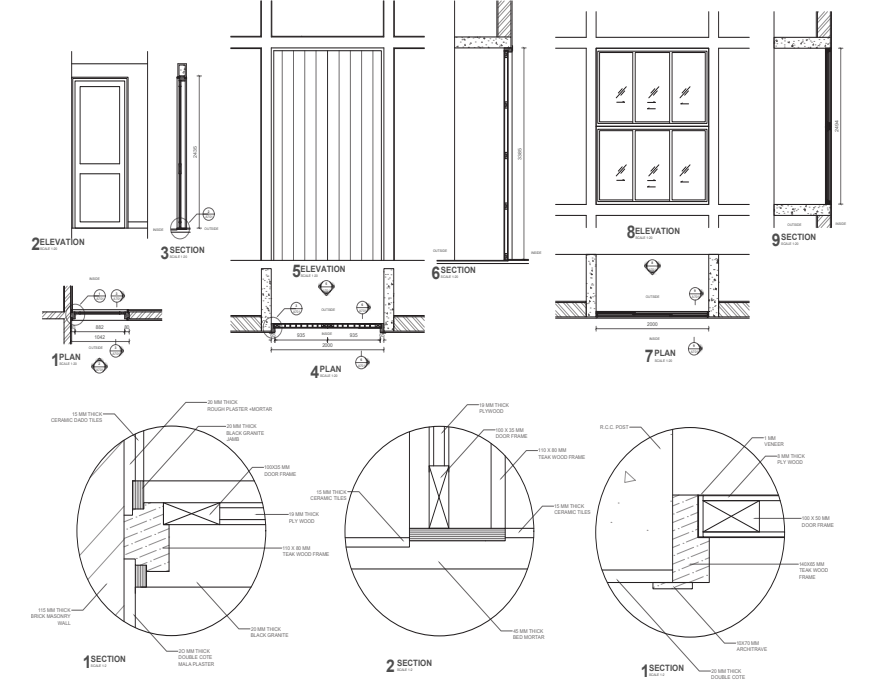
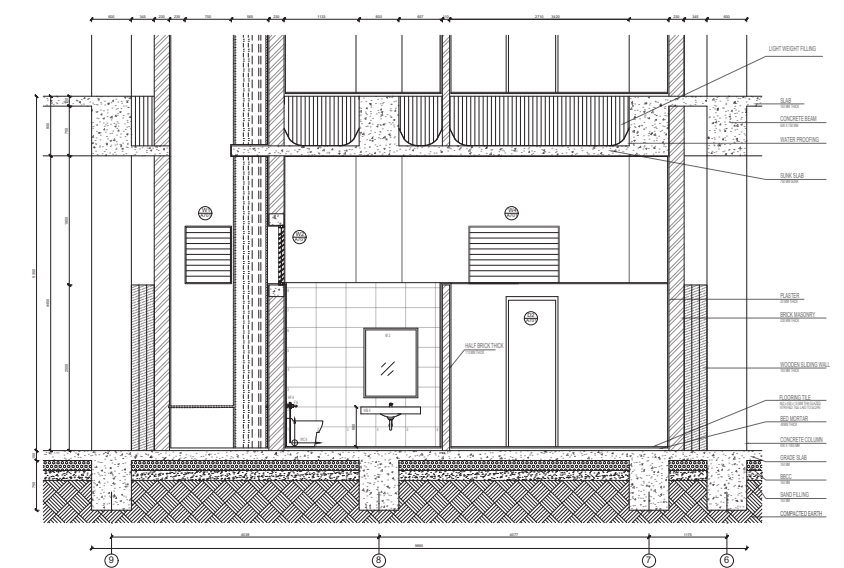
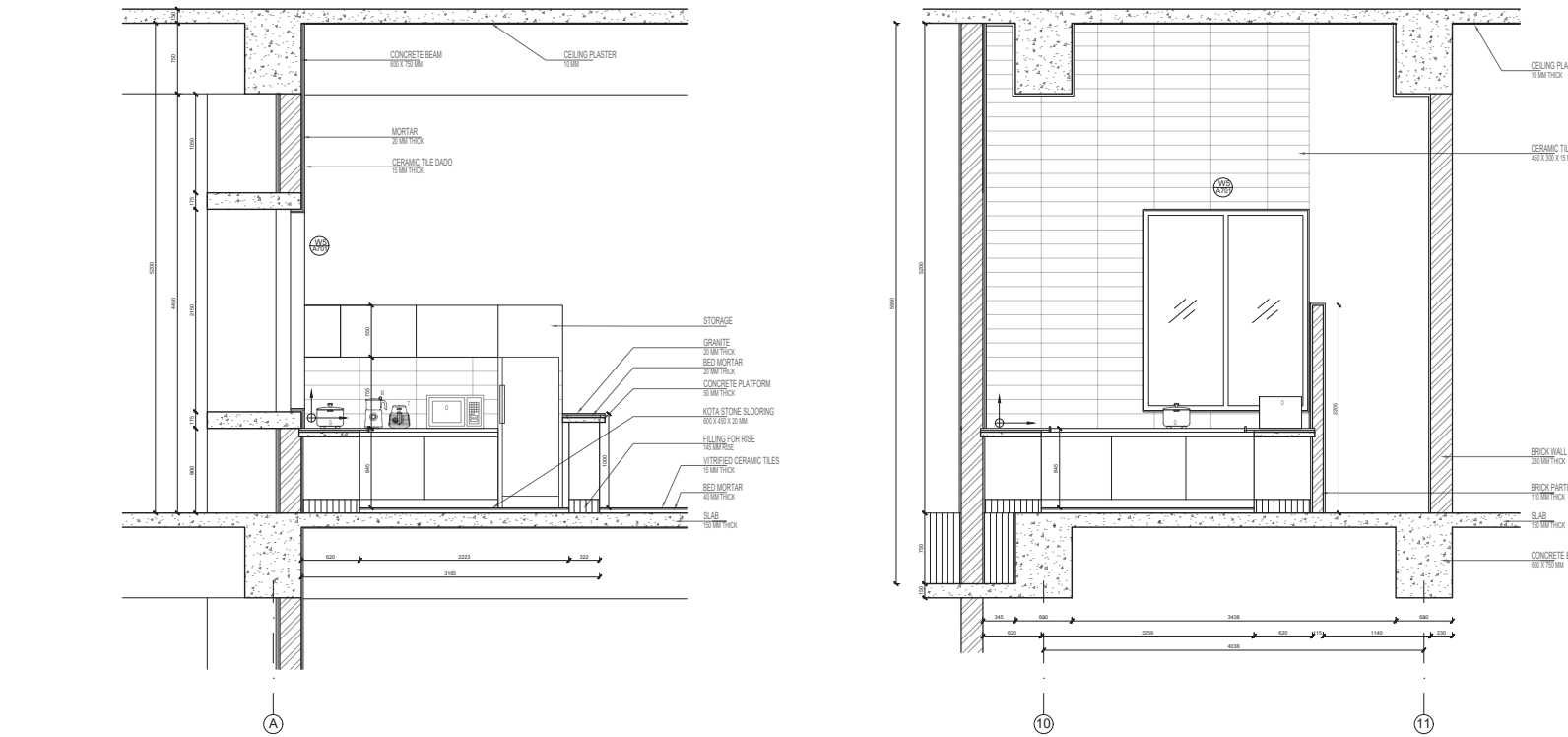
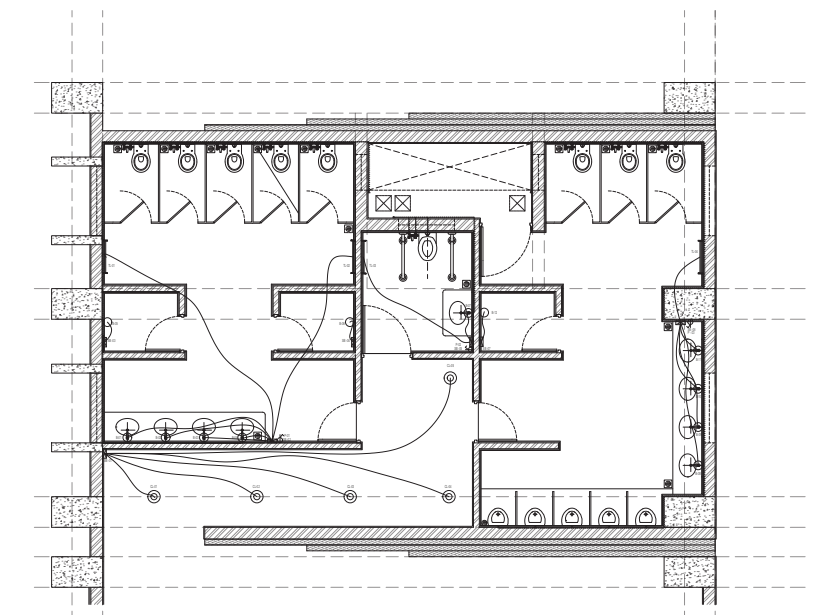
Kitchen



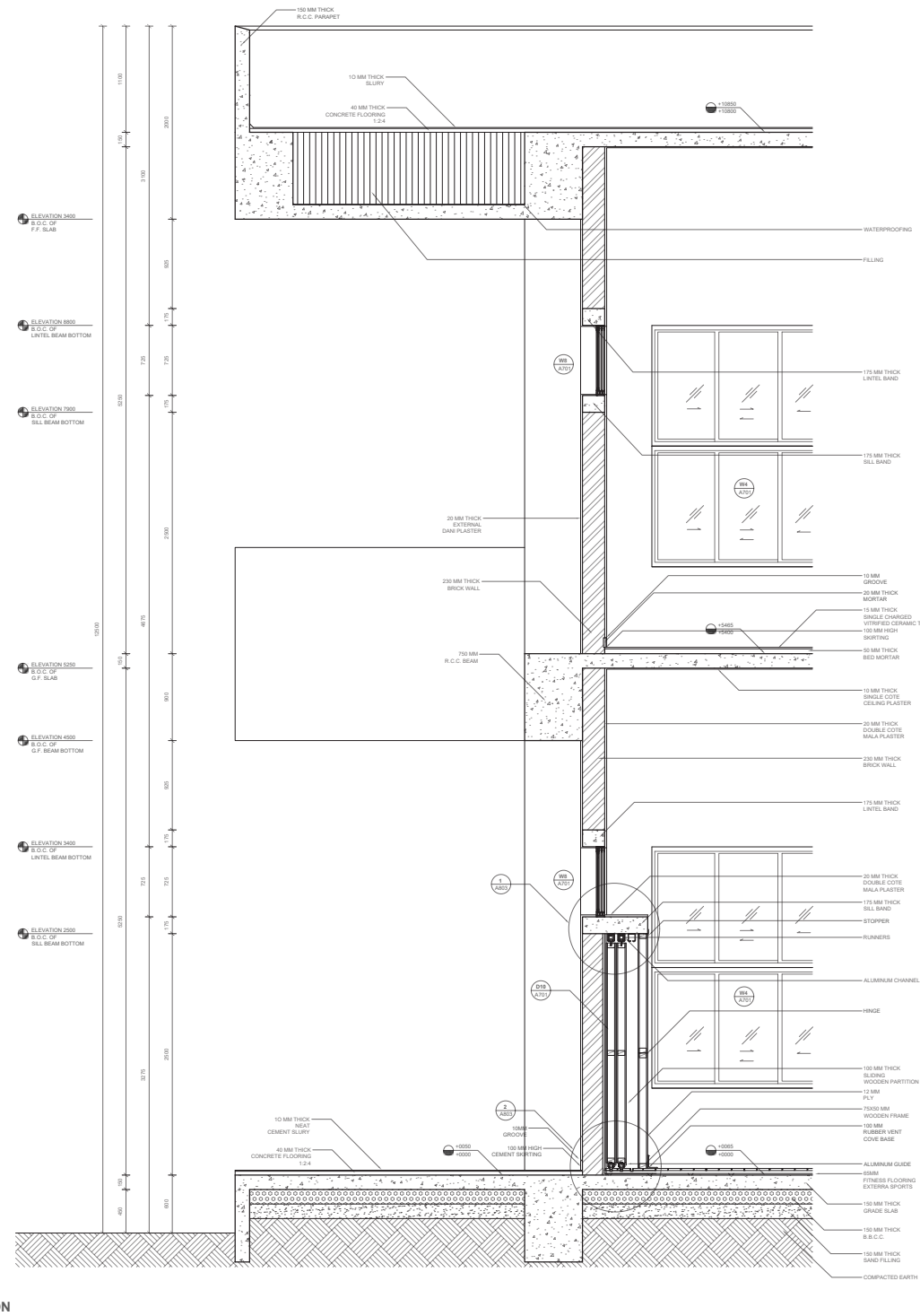
### Working Drawings



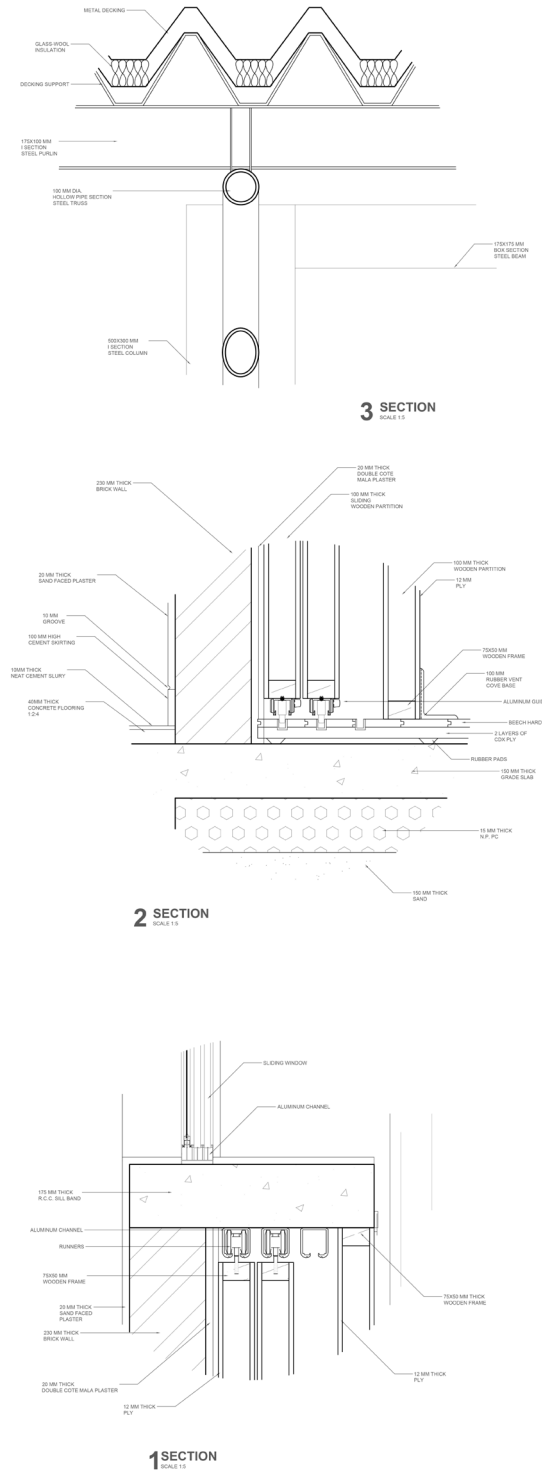
Washroom



Wall Section



Working Drawings



Wall Sections

