Architectural portfolio

Anukruti N | Selected Works | 2019-23

About me

Hi, I am Anukruti. I am a student of Architecture, currently pursuing my degree as a Bachelor' of Architecture from School of Architecture, Sushant University. As an individual and an architect in the making, i find the the profession incredibly multidimensional and limitless in terms of possibilities that it promises and that aligns with my own value system and beliefs. I aspire for a career that offers lifelong learning and constanly makes me challenge, push and break my own conventions and boundaries and those of the ever-changing world around me.

LOCATION

gurugram, Haryana (IN)

LANGUAGES SPOKEN

Hindi
English

CONTACT INFORMATION

MOB. (+91))7049347267
7042096767

instagram- @anukrutiii_

EDUCATION

2019 - prsnt **School of Art and Architecture, Sushant University** | Gurugram
Bachelor of Architecture (B. Arch)

2014 - 2019 **Carmel Convent Senior Secondary School** | Bhopal
Classes IX - XII

2004 - 2014 **Apeejay School** | Faridabad
Class I - VIII

EXPERIENCE

2022 **Annual NASA (National Association of Students of Architecture) Convention** | Faridabad
Cultural Trophy team head | Fashion

2021 **FOAID (Festival of Architecture Interior Design)** | Delhi
Fashion Design | Participation (team)

2020 **MOOD Indigo** | IIT Bombay
Fashion Design Trophy | Participation (team)

2019 **Zonal NASA (National Association of Students of Architecture) Convention** | Jaipur
Winner - Cultural Trophies | Fashion Trophie - 1st Position (team)

WORKSHOPS AND COURSES

2022 **Revit + BIM full- length Certified Course** | LOMOS Archilabs

2021 **Rhino + Grasshopper Certfified Course** | LOMOS Archilabs

2021 **MVRDV Typological Reinvention in Architecture and Design** | Vastukul- School of Innovation

2021 **International Symposium on Mobility and City** | Vastukul School of Innovation

2021 **Structural Systems in Architecture - Virtual lecture** | Kaarwan

WORKSHOPS AND COURSES

2023 **Data Landscape - Remote Data Centre Design Competition** | YACademy Bologna
Participation

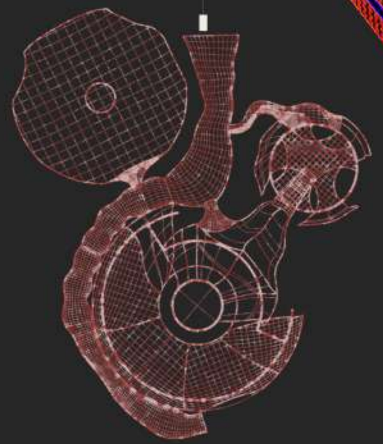
2022 **Private Island Bahamas Resort Design Competition** | RIBA
Participation

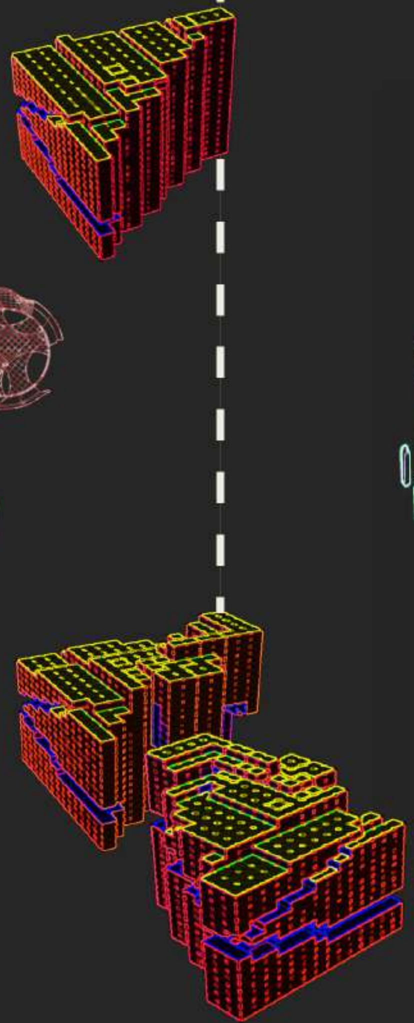
2022 **Extreme Habitat Architecture Design Competition** | Volume Zero Competitions
Participation

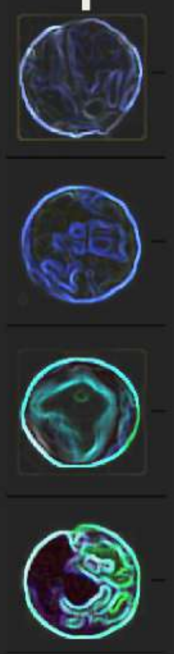
SKILLS

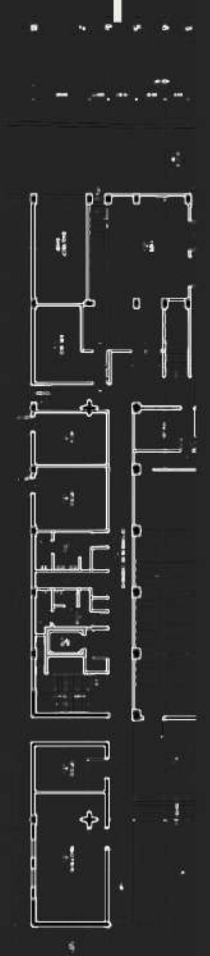
2D Drawing	**AutoCAD**	●●●●○
Design \ Modelling	**Rhino**	●●●●○
	Sketchup	●●●●○
	Revit	●●●○○
	Autodesk MAYA	●●●○○
Visualization	**Lumion**	●●●●○
Graphics\ Illustrations	**Adobe Illustrator**	●●●●●
	Adobe Photoshop	●●●●○
	Adobe Indesign	●●●●○

Contents







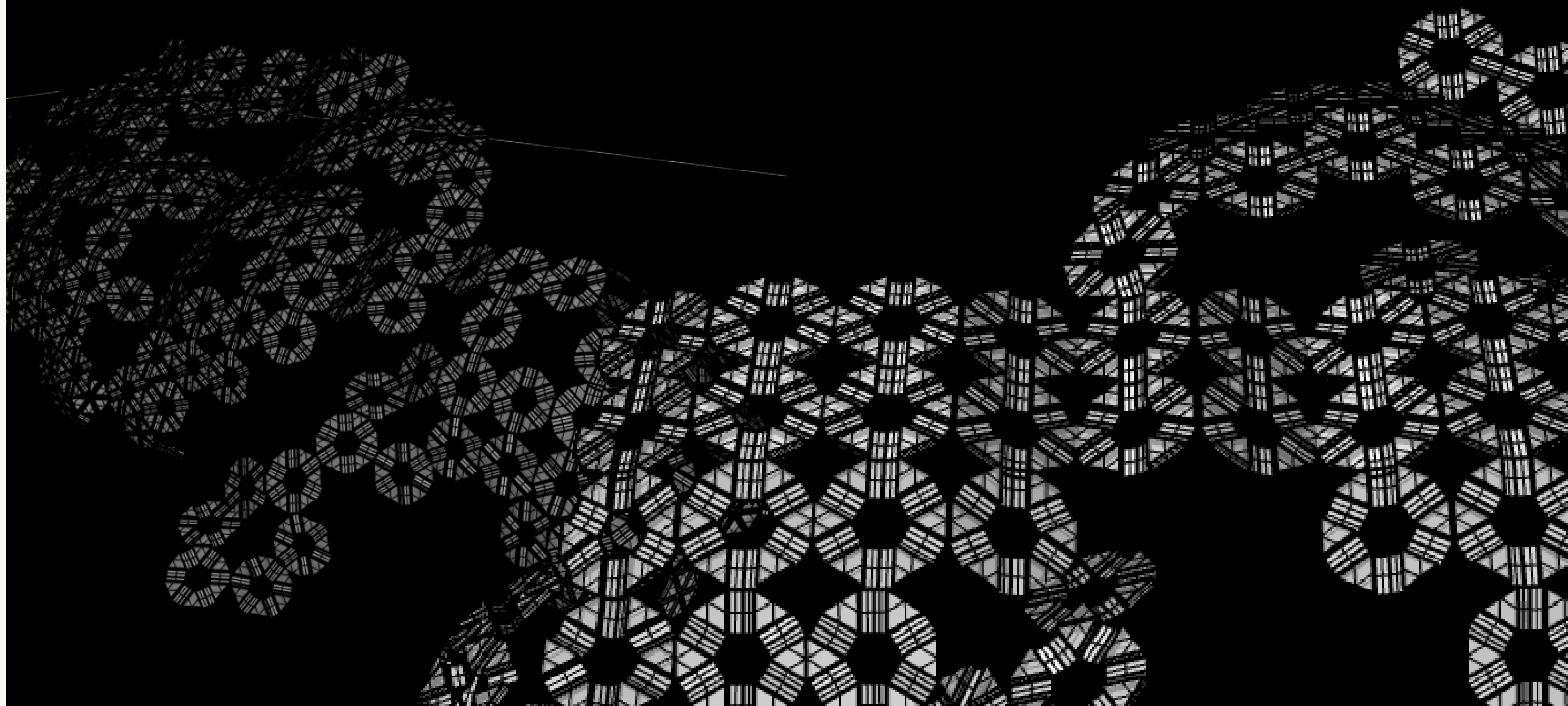


theGAUGE

YEAR	2021
THEME(s)	MATERIAL-DRIVEN DESIGN RESPONSIVE ECOLOGY
STATUS	COMPLETED
GROUP MEMBERS	ANUKRUTI NIGAM KSHEETIJA DAS

A THERMOELECTRIC GENERATOR, A METEOROGICAL INSTRUMENT.

Our machinic pavilion works as a meteorological device working primarily on the principles of a pyranometer- the built envelop system responds to the surrounding heat which in turn is used as a source to generate thermo-electric power within the constituent prototypical unit.

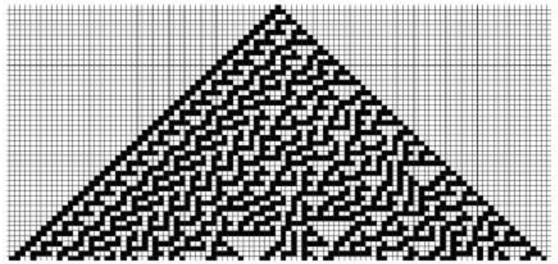


PROTOTYPICAL DEVELOPMENT

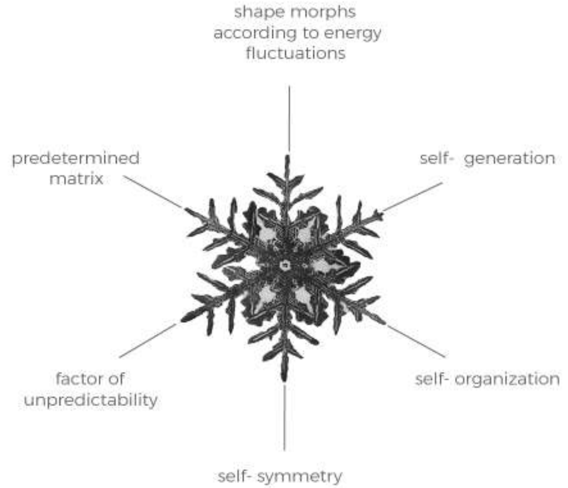
EMERGENT MORPHOLOGIES

Emergence occurs when an entity is observed to have properties its parts do not have on their own, properties or behaviours which emerge only when the parts interact in a wider whole.

It is produced by multiple causes, but which cannot be said to be the sum of their individual effects.



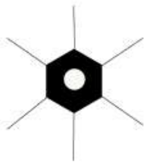
Natural system under the microscope -
SNOWFLAKES



FORMATION OF A SNOWFLAKE

The process begins with a microscopic dust particle.

Water moluecules condense on the particlesand form hexagonal lattices given their molecular strcuture.



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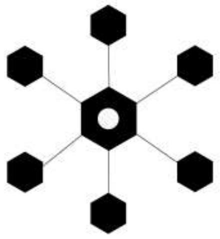
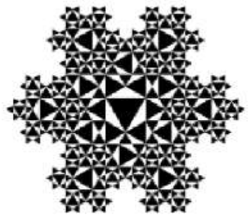


The structure takes in energy and changes its form accordingly. By the logic of fractals, it starts from a singular elementary unit , and it keeps Iterating onto itself.

Fractals, chaos theory

Creating order out of chaos.



A dynamic between uniformity and chaotic nature is created.

INITIAL INVESTIGATION

Physical Demonstration

MOST MOBILTY

UNIT1

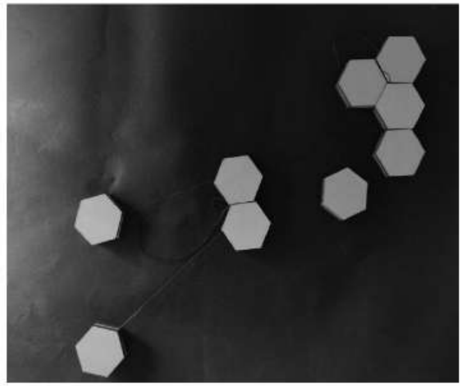
MODERATE MOBILTY

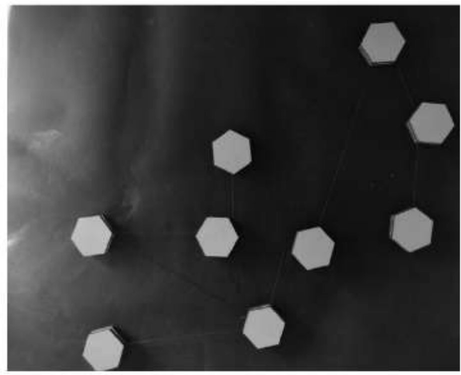
UNIT2

LEAST MOBILTY

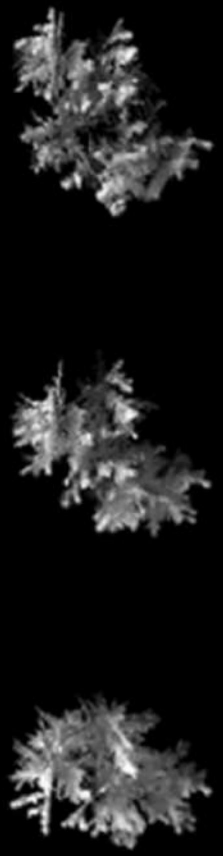
BALL/BEAD + STRING ROLLING MECHANISM

[CLOSED]





PROTOTYPE 1.0



EMERGENT PATTERN OBSERVED:

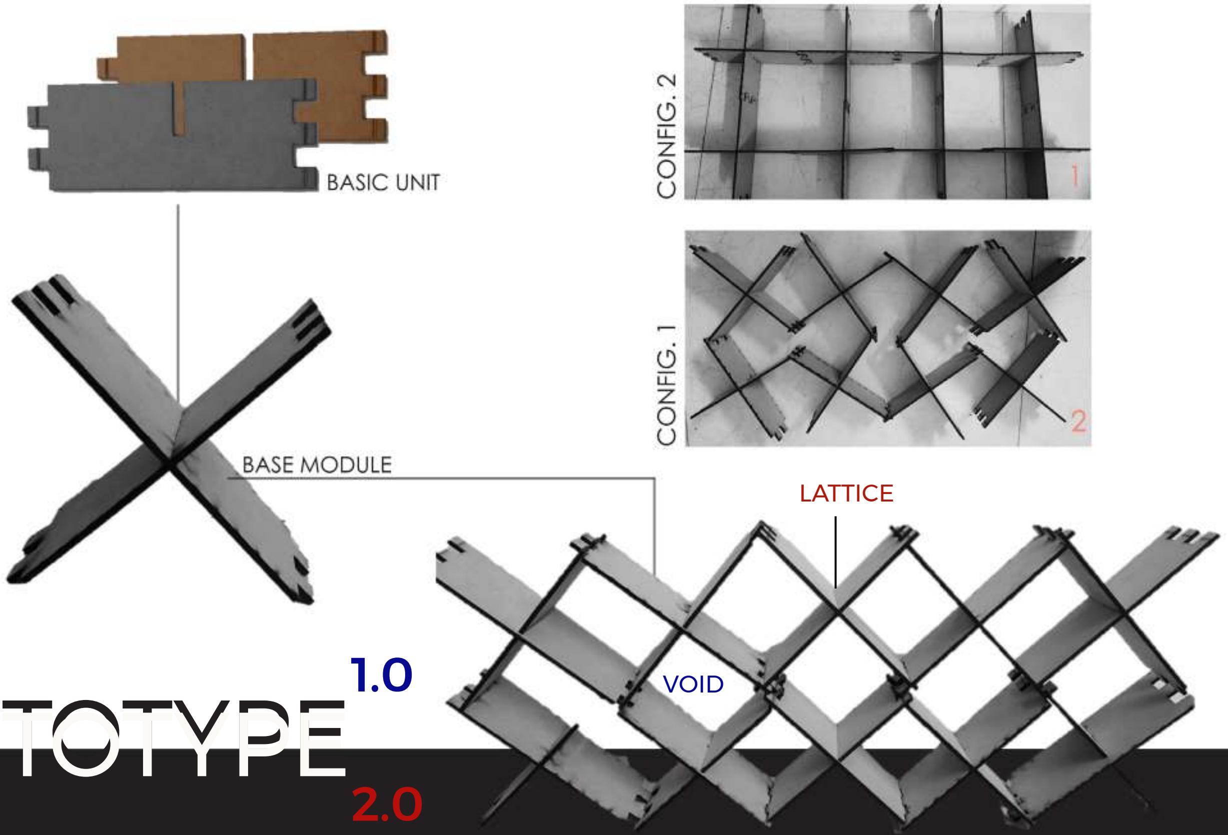
SELF-ORGANIZATION

from the formation of the nucleus to the minute the snowflake reaches the ground, its shape keeps changing, growing according to the change in conditions.

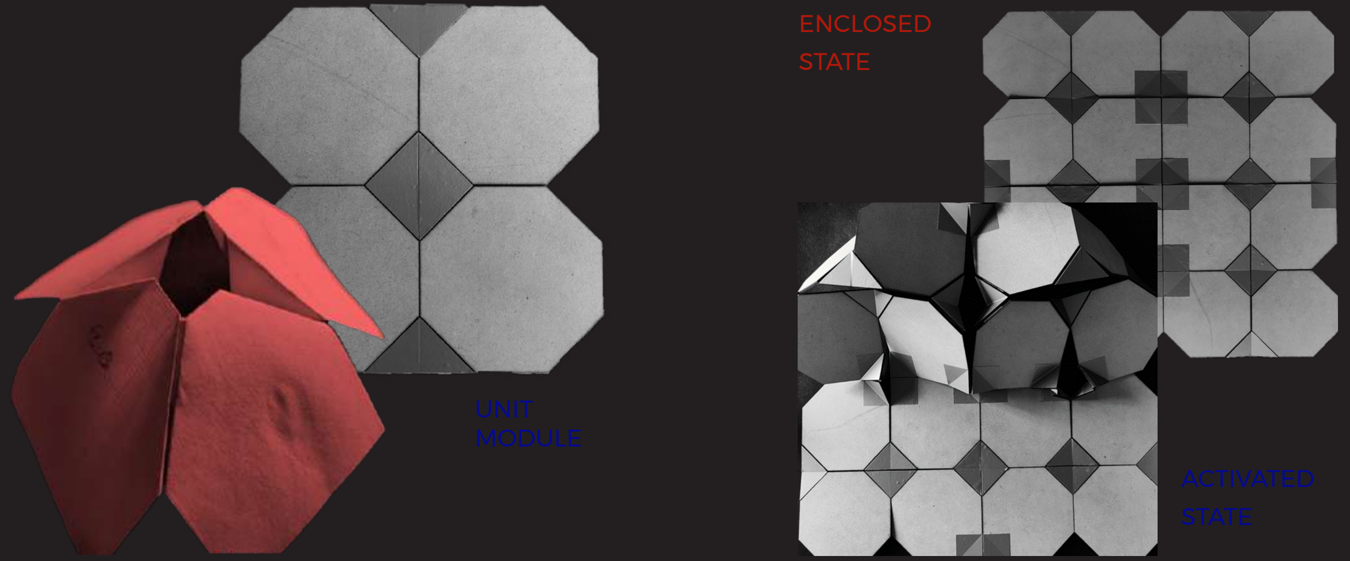
it keeps organizing itself, in the most efficient manner possible, as it falls.

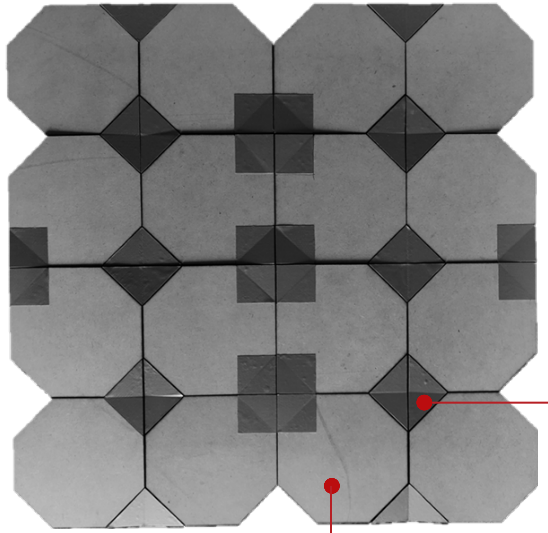
Self-organization refers to the emergence of an overall order in time and space of a given system that results from the collective interactions of its individual components.

TECTONIC SYSTEM	MORPHOLOGICAL ASSEMBLY
ENVELOPE SYSTEM	LATTICES



PROTOTYPE 1.0 / 2.0





SHAPE MEMORY POLYMERS/ ALLOYS

Morphs according to changes in temperature but return to their originally programmed shape and size through a series of few intermediate stages.

lightweight

shape recovery can be triggered through multiple stimuli - **light, heat UV**

THE STRUCTURE

Deployable structure

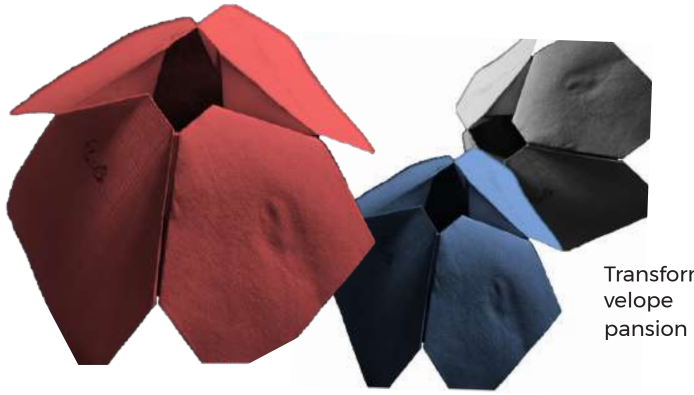
Adjusts to the space provided

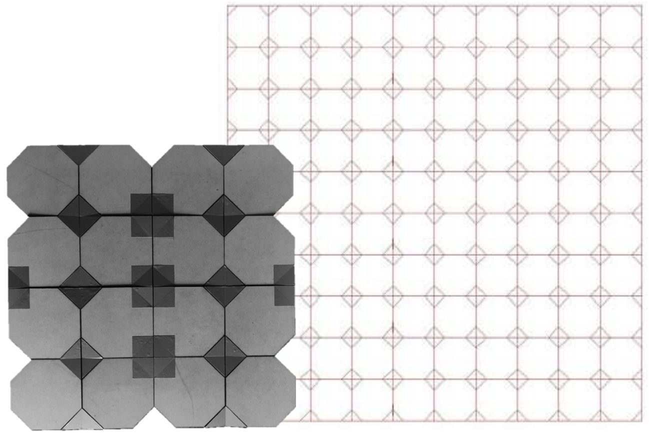
Morphs according to the user movement

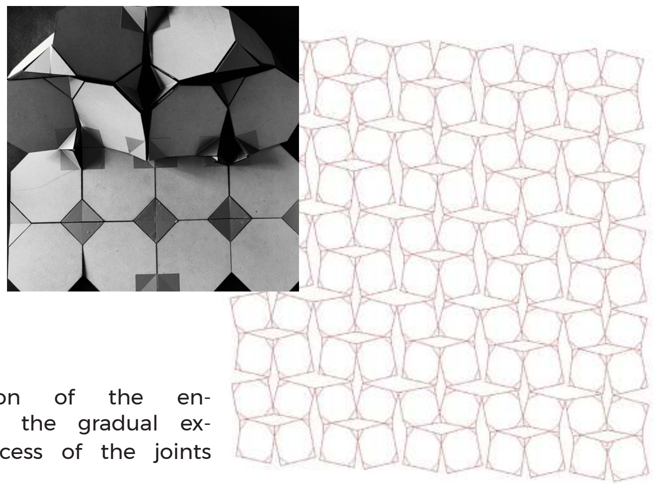
Shape memory

Can resist impact

Unfolded state/ deployed state (the joints undergo expansion with heat gain and create apertures between the connecting units in the base module







Transformation of the envelope with the gradual expansion process of the joints

WORKING MECHAMISM

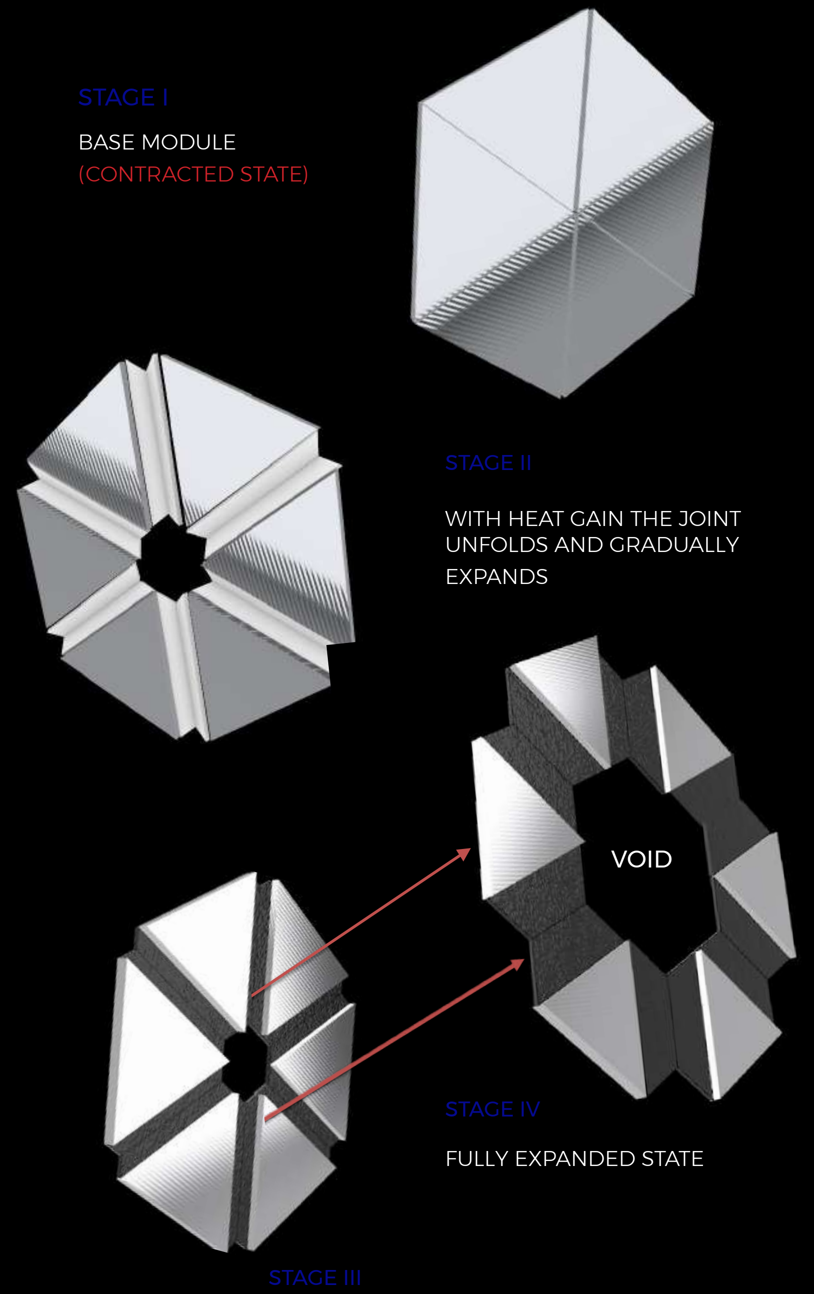
Each prototypical panel consists of six tri angular metal units joined together with expandable shape memory polymer joint works as a micro thermo electric generator working on the principle of Seebeck Effect.

As the panel accumulates heat, the, the metallic units convert it into electricity and the consequent rise in temperature cause the polymer joint to expand and create apertures in the built envelope.

MATERIALITY

FOR TRIANGULAR THERMOELCTRIC UNITS – **ALUMINUM**

FOR JOINTS - **SHAPE MEMORY POLYMER**



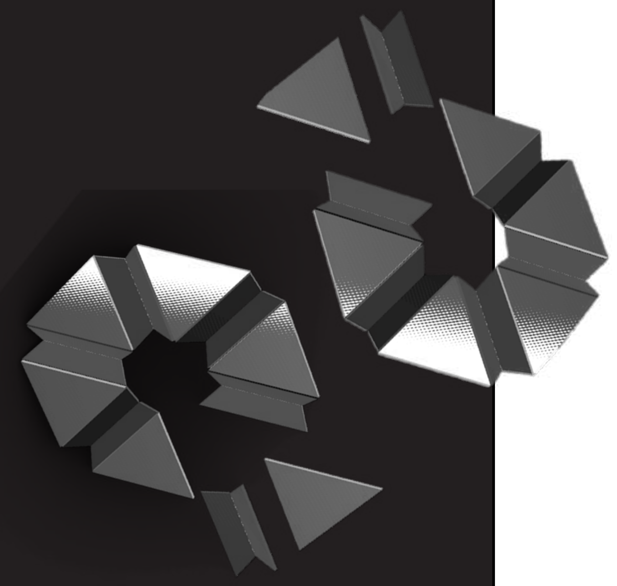
PROTOTYPE 3.0

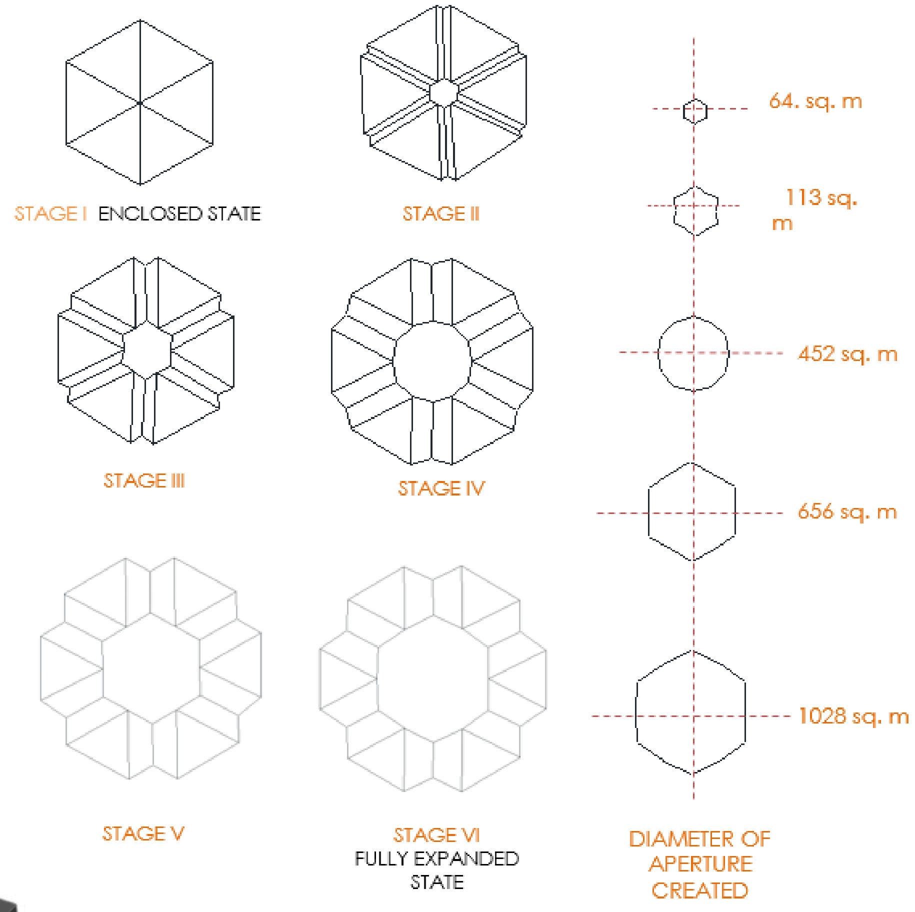
ALGORITHM /LOGIC

RULE 1. The prototypical unit is an equilateral triangle (each side 200 mm respectively) which forms a hexagonal pyramid when connected to adjacent triangles through shape memory polymer joints.

RULE 2. The polymer joints undergo expansion/contraction depending of the heat accumulation of the thermoelectric panels in a ratio of w/l

RULE 3. The expansion of the joints in a particular hexagon creates apertures at the center of the hexagonal unit which in turn expand along the diameter





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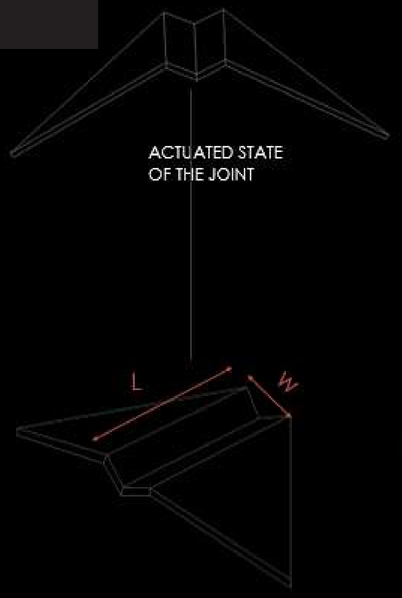
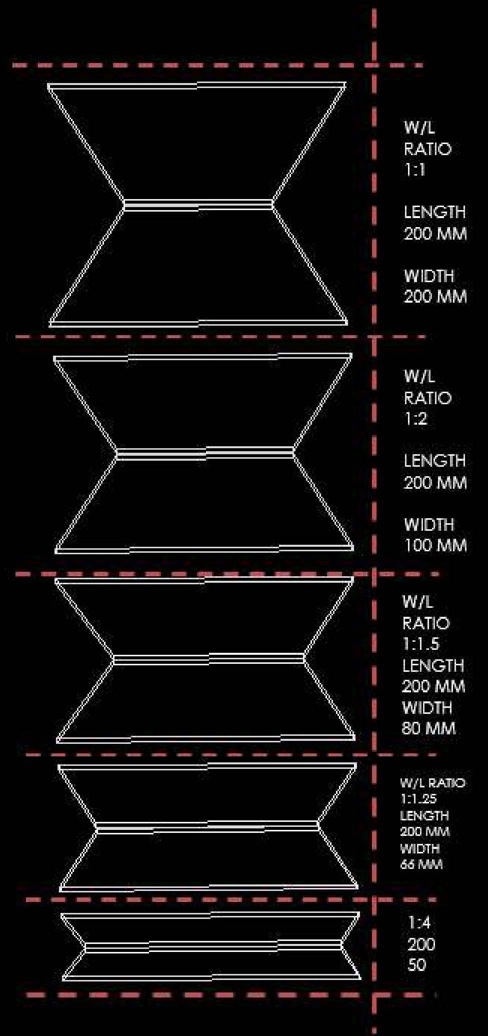
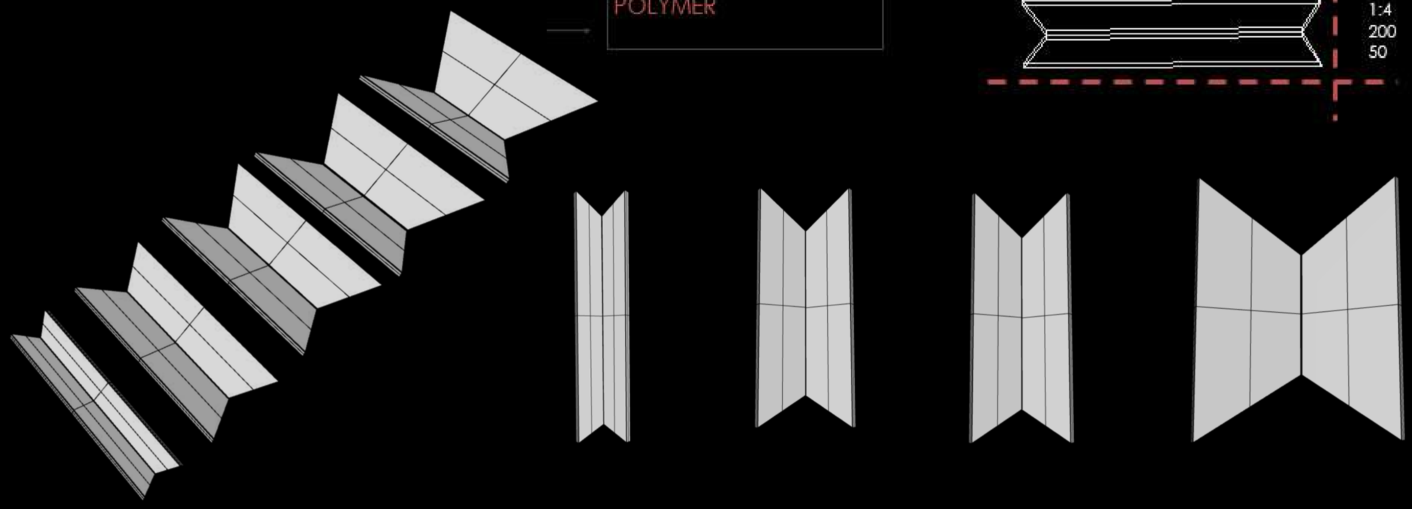
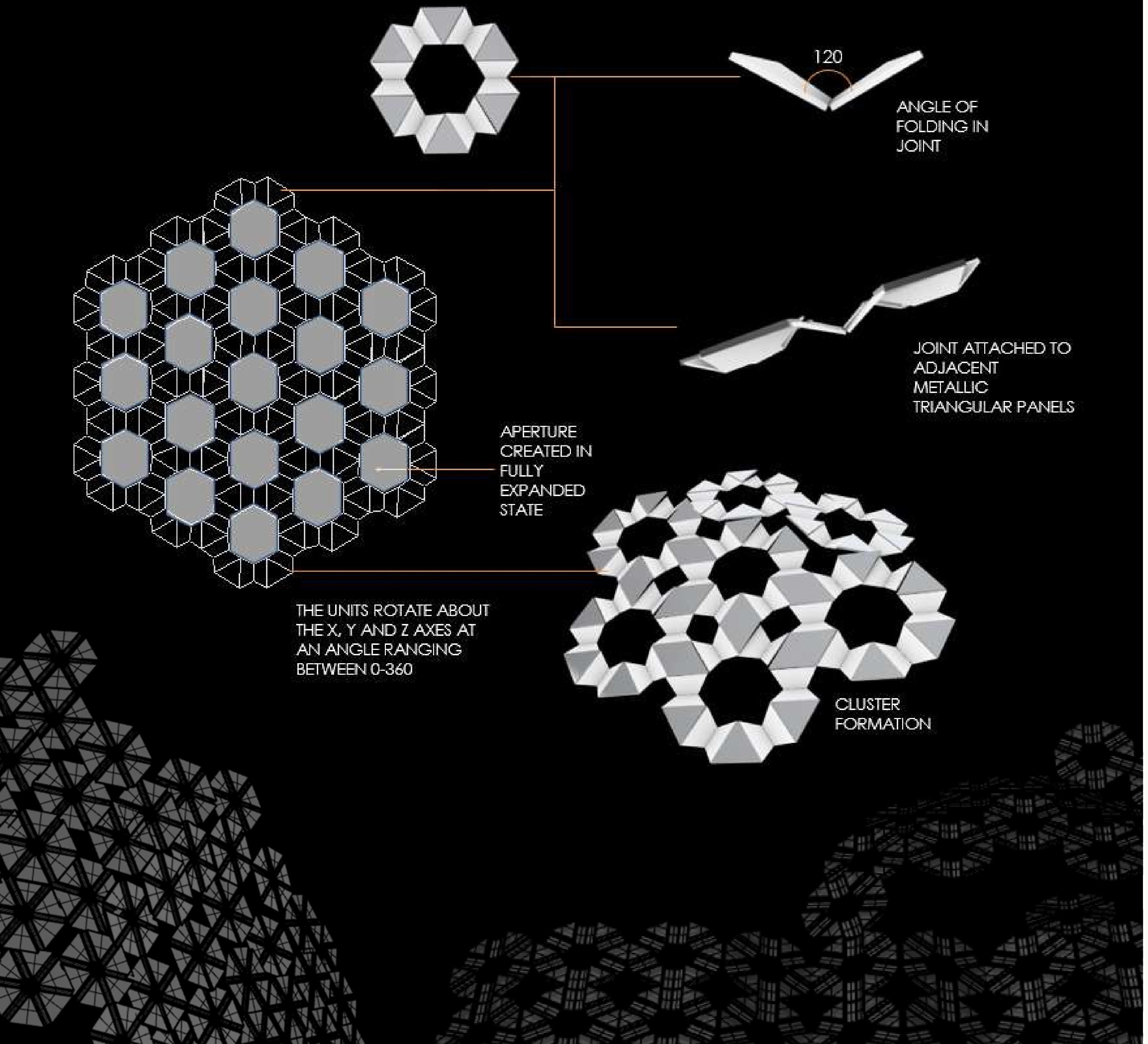




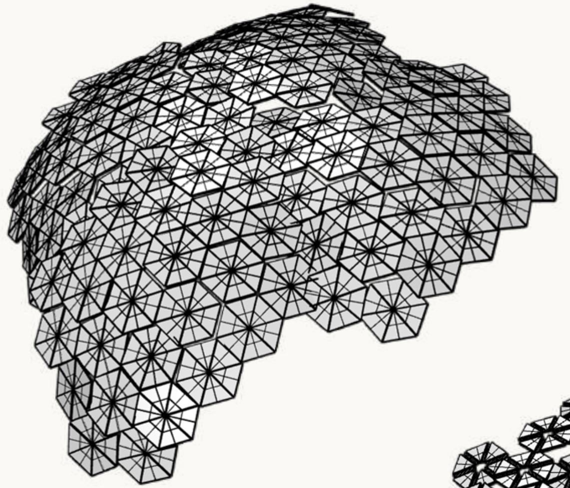
MATERIAL OF THE JOINT
:
SHAPE MEMORY SMART POLYMER





FUNCTIONING OF THE PAVILION

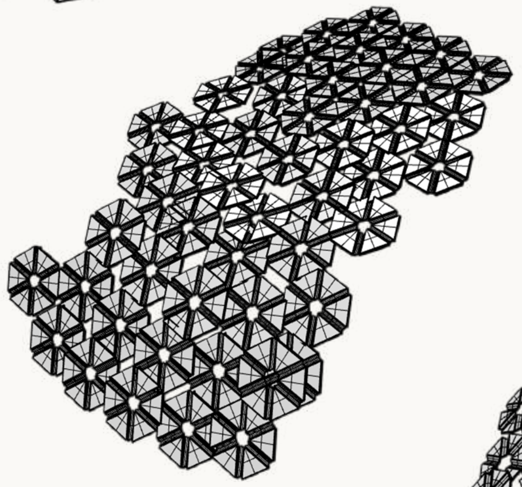
AS A METEOROLOGICAL DEVICE

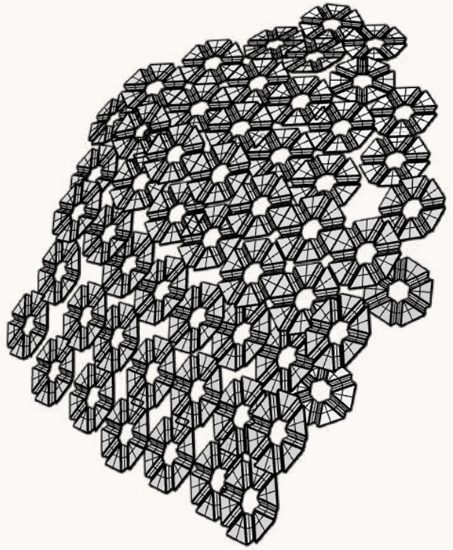


PRINCIPLES OF EXPANSION

The main sources of heat being: Solar radiation(function of a pyranometer) b. The heat accumulated by the AI-systems that controls the functioning of the entire built c. Heat dissipated by the movement of people within the cluster/envelope

AS THE HEAT ACCUMULATED FROM THE SURROUNDING REDUCES, THE JOINTS CONTRACT BACK TO THERE ORIGINAL STATE AND ENCLOSE THE CLUSTER.





The expansion of the prototypical unit depends on the total heat gain in a particular instance.

The apertures or void spaces so created in the built envelope function as meteorological tool where users are visually guided about the change in ambient temperature by the overall change in the built skin - openings created which in turn alter the spatial qualities of the space as a whole

ARCHITECTURAL PROGRAM

The Age of AI and Climate

Our world exists in a very delicate fragile time, and the balance could be tipped any minute. And the cause for this is us, with our greed, with our un- harnessed science and technology that have kept razing the planet. But at the end of the day, these are mere tools.

Artificial Intelligence is a new, fresh tool, brimming with potential. We believe, it's one of the best tools we have, in our fight against climate change.

AI-driven solutions, for climate change.

AI in our program

Interactive VR/MR/ER-facilitated studios

Simulation rooms for a more interactive/deeper learning/research (Tides, Weather etc. - demonstration of natural phenomena)

AI systems analyze weather conditions, and forecast real-time humidity levels, radiation etc.

[SPACES]

Facilitation of interaction/collaboration/rapid exchange of information between researchers from different disciplines/fields.

Transformative spaces

Multifunctional spaces

Spaces that facilitate thought, contemplation.
Human spaces:
- Thought
- Healthy Spaces
- Inclusive Spaces

Less rigid spaces, more connections:
- Visual
- Physical
- Mental(?)

[sustainibility]

Minimization of waste+energy consumption

Could the waste generated be recycled/reused?

Ventilation

Openness

Economical

Multifunctionality of spaces

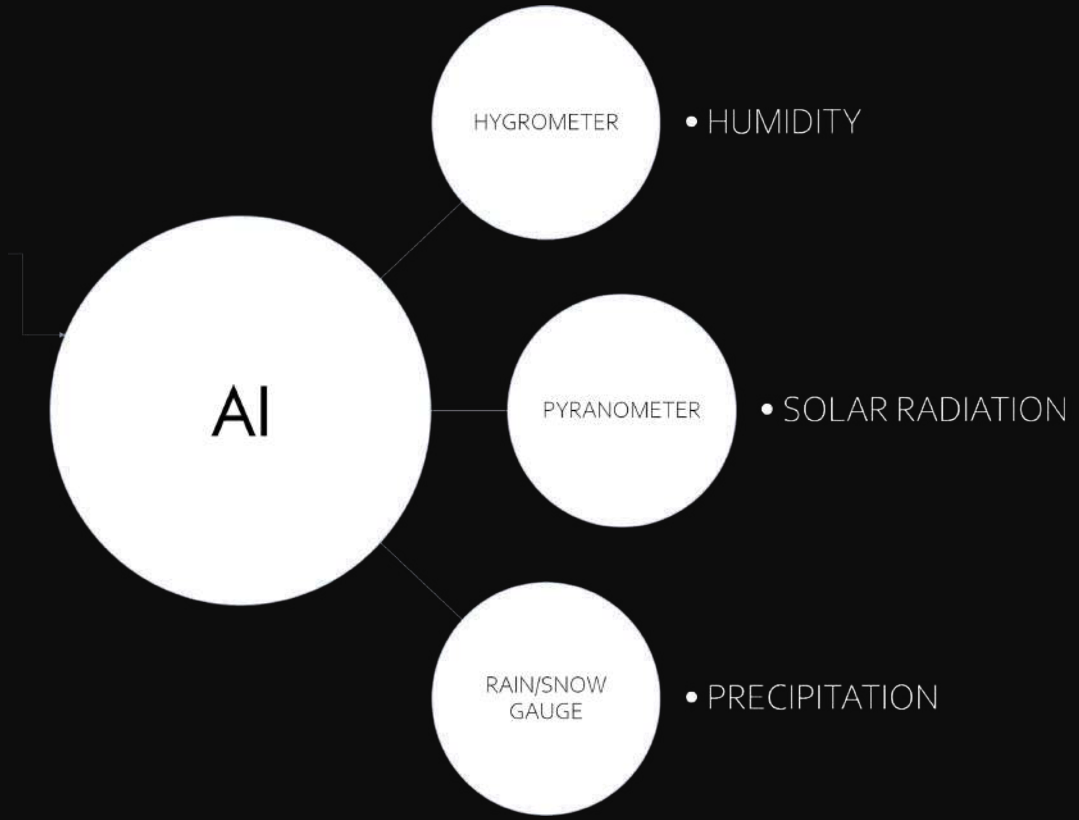
Efficient energy consumption

FLEXIBLE WORKSPACES/LABS

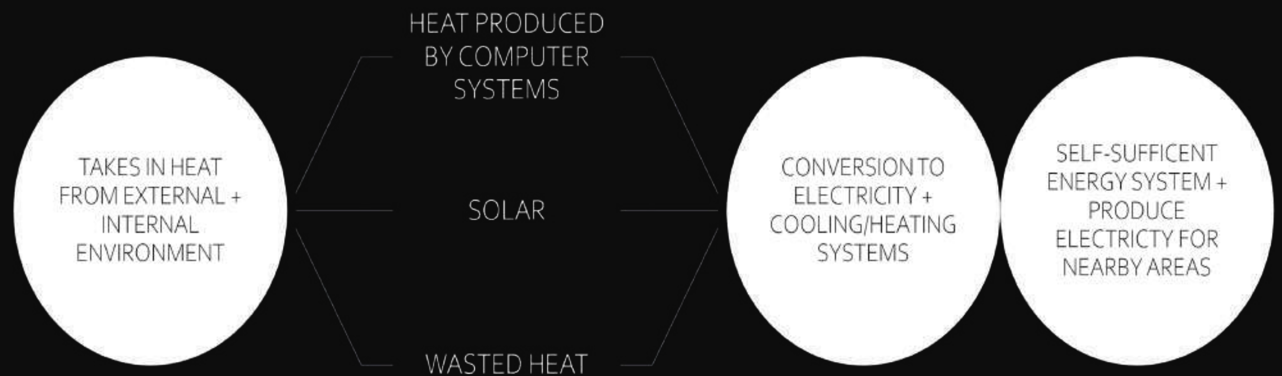
Fixed workstations/offices limit interaction+learning, and eventually, innovation and (fast) growth.

Flexible interiors, as well as structure(?)

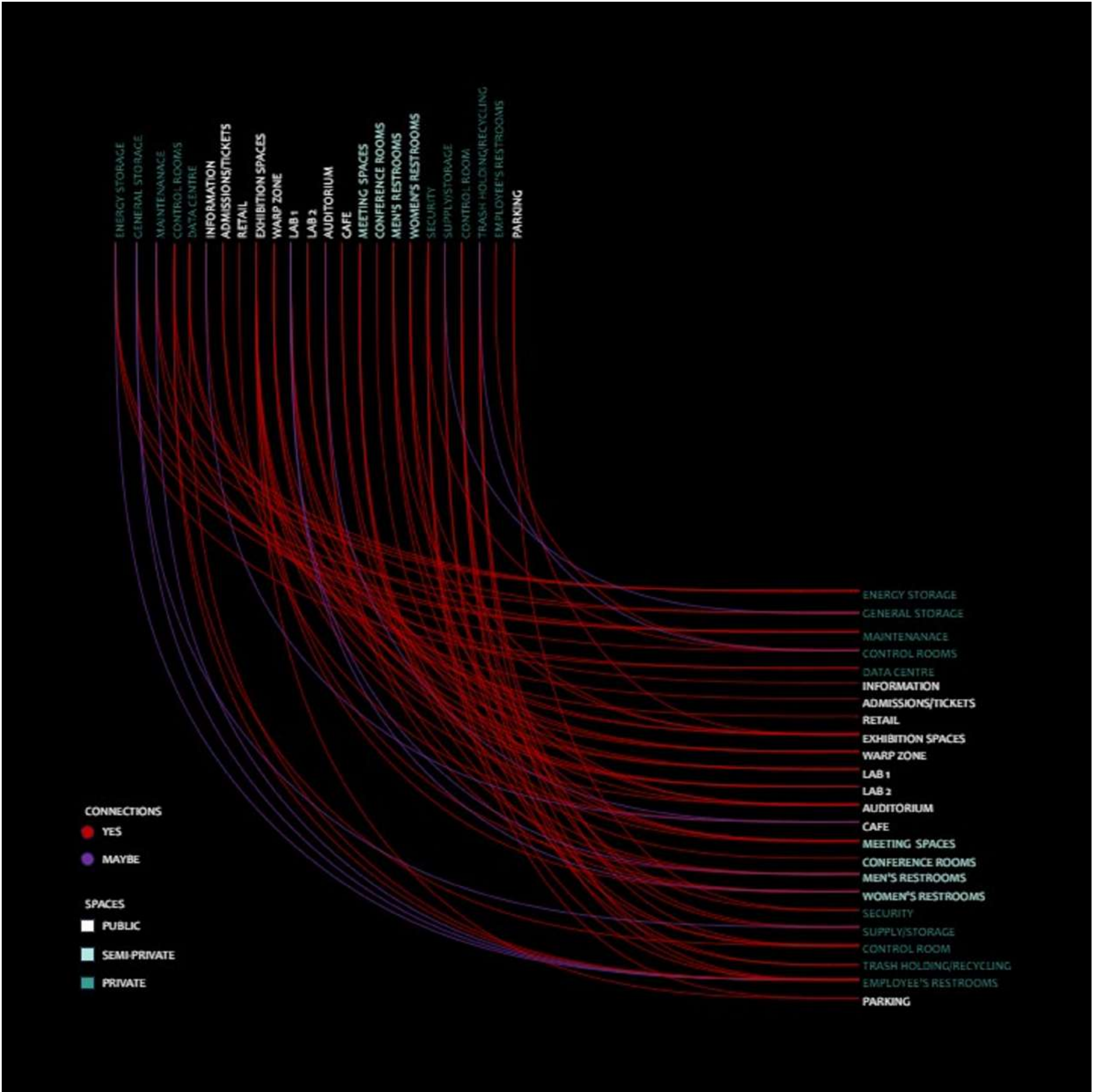
Designed in such a way that they allow for self focused/individual work as well as collaborative.



	SPACES	OCCUPANTS	NO. OF PEOPLE	QUANTITY	SIZE (sqm)	TOTAL SIZE	% OF BUILDING	SPACE TYPE (P/S/T)
	MACHINE							
1	ENERGY STORAGE TANKS	PERSONNEL	5	2	80	160	3.2	
2	SUPPLY+GENERAL STORAGE	PERSONNEL	5	1	60	60	1.2	
3	MAINTENANCE	PERSONNEL	5	1	45	45	0.9	
4	CONTROL ROOMS	PERSONNEL	10	1	50	50	1	
5	DATA CENTRE	PERSONNEL	5	1	25	25	0.5	
	SUB-TOTAL NET ASSIGNABLE				260	340	6.8	
	ENTRY, LOBBY, ADMISSIONS, STORE							
1	INFORMATION	MIX	3	1	4	4	0.08	
2	ADMISSIONS/TICKETS	MIX	3	1	5	5	0.1	
3	RETAIL	MIX	10	1	150	150	3	
	SUB-TOTAL NET ASSIGNABLE				159	159	3.18	
	ACTIVITY/PROGRAM AREAS							
1	EXHIBITION SPACES	VISITORS	80	1	1500	1500	30	
2	WARP ZONE	VISITORS	40	1	150	150	3	
3	LAB 1	VISITORS	30	1	150	150	3	
4	LAB 2	VISITORS	30	1	150	150	3	
5	AUDITORIUM	VISITORS	80	1	1000	1000	20	
7	CAFE	VISITORS	20	1	250	250	5	
8	MEETING SPACES	VISITORS	30	4	30	120	2.4	
9	CONFERENCE ROOMS	VISITORS	40	2	50	100	2	
10	MEN'S RESTROOMS	VISITORS	5	1	15	15	0.3	
11	WOMEN'S RESTROOMS	VISITORS	5	1	15	15	0.3	
	SUB-TOTAL NET ASSIGNABLE				3310	3450	69	
	ADMINISTRATION+SERVICES							
1	INFORMATION	MIX	3	1	4	4	0.08	
2	SECURITY	PERSONNEL	3	1	15	15	0.3	
3	SUPPLY+GENERAL STORAGE	PERSONNEL	5	1	40	40	0.8	
4	CONTROL ROOM	PERSONNEL	5	1	30	30	0.6	
5	TRASH HOLDING+RECYCLE AREA	PERSONNEL	5	1	100	100	2	
6	EMPLOYEE'S RESTROOMS	PERSONNEL	10	1	20	20	0.4	
7	PARKING	MIX	60	1	900	900	18	
	SUB-TOTAL NET ASSIGNABLE				1109	1109	22.18	



PROGRAM


ENERGY STORAGE
GENERAL STORAGE
MAINTENANACE
CONTROL ROOMS
DATA CENTRE
INFORMATION
ADMISSIONS/TICKETS
RETAIL
EXHIBITION SPACES
WARP ZONE
LAB 1
LAB 2
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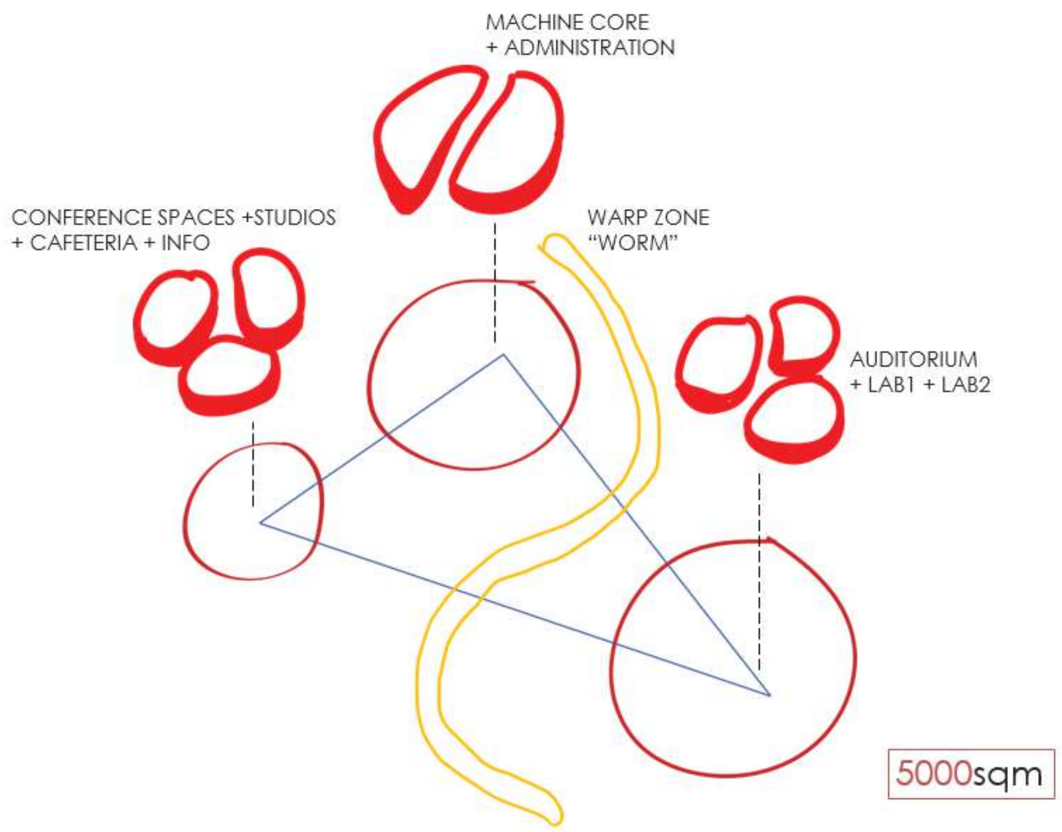
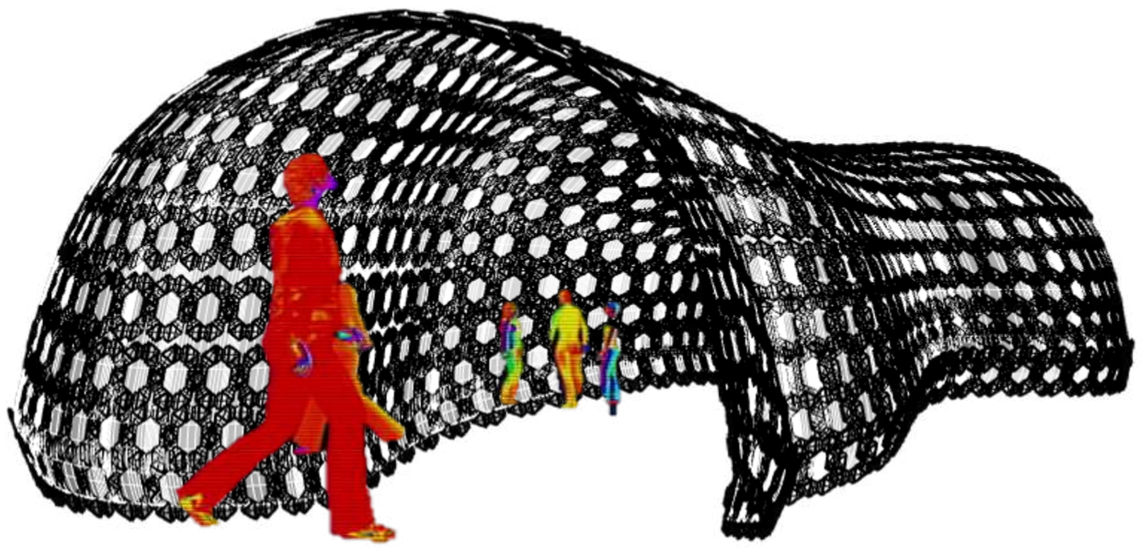
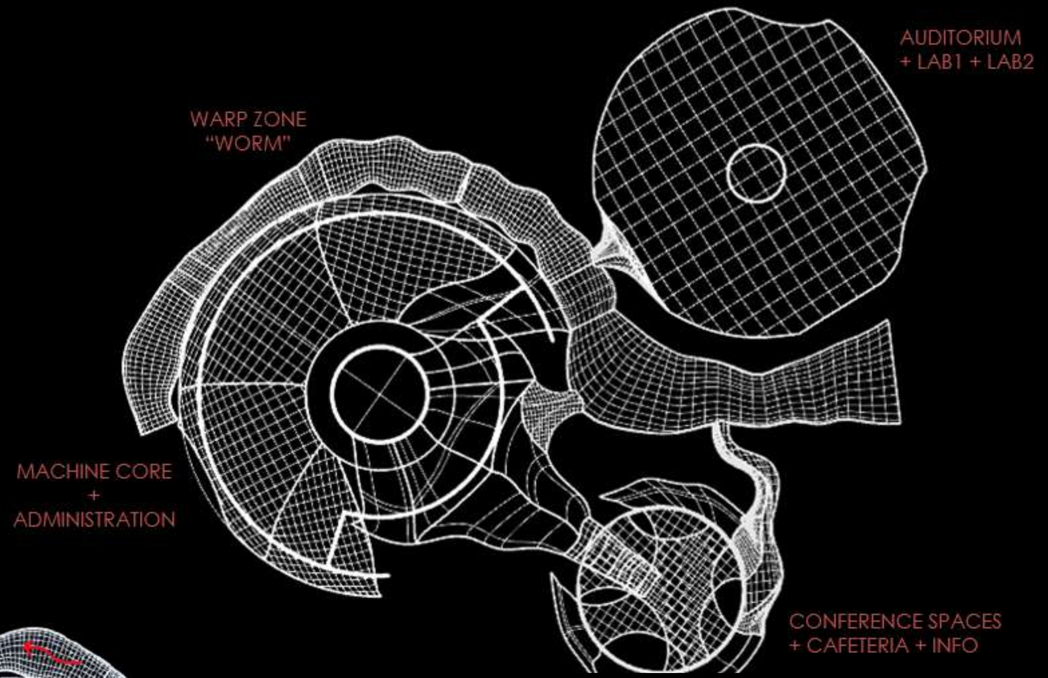
CONTROL ROOM
TRASH HOLDING/RECYCLING
EMPLOYEE'S RESTROOMS
PARKING
CONNECTIONS
YES
MAYBE
SPACES
PUBLIC
SEMI-PRIVATE
PRIVATE


MACHINE CORE
+ ADMINISTRATION
CONFERENCE SPACES +STUDIOS
+ CAFETERIA + INFO
WARP ZONE
"WORM"
AUDITORIUM
+ LAB1 + LAB2
5000sqm




AUDITORIUM
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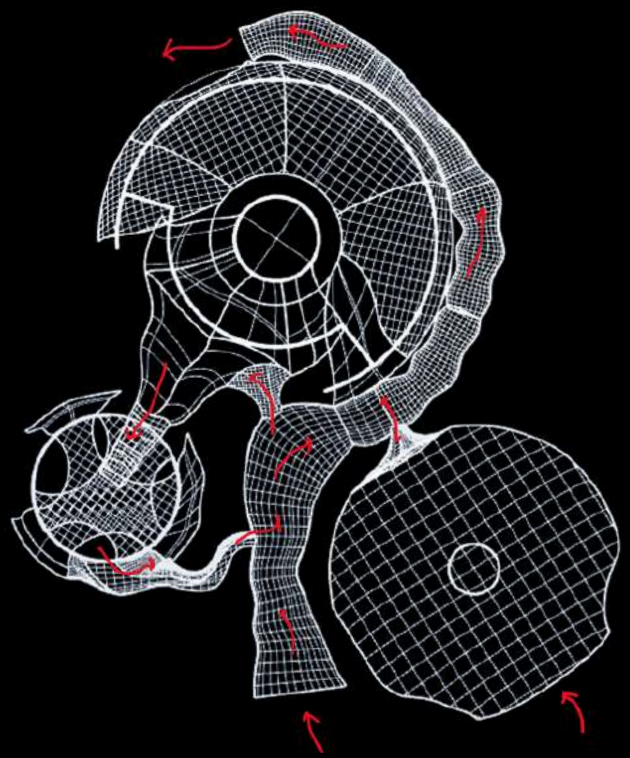
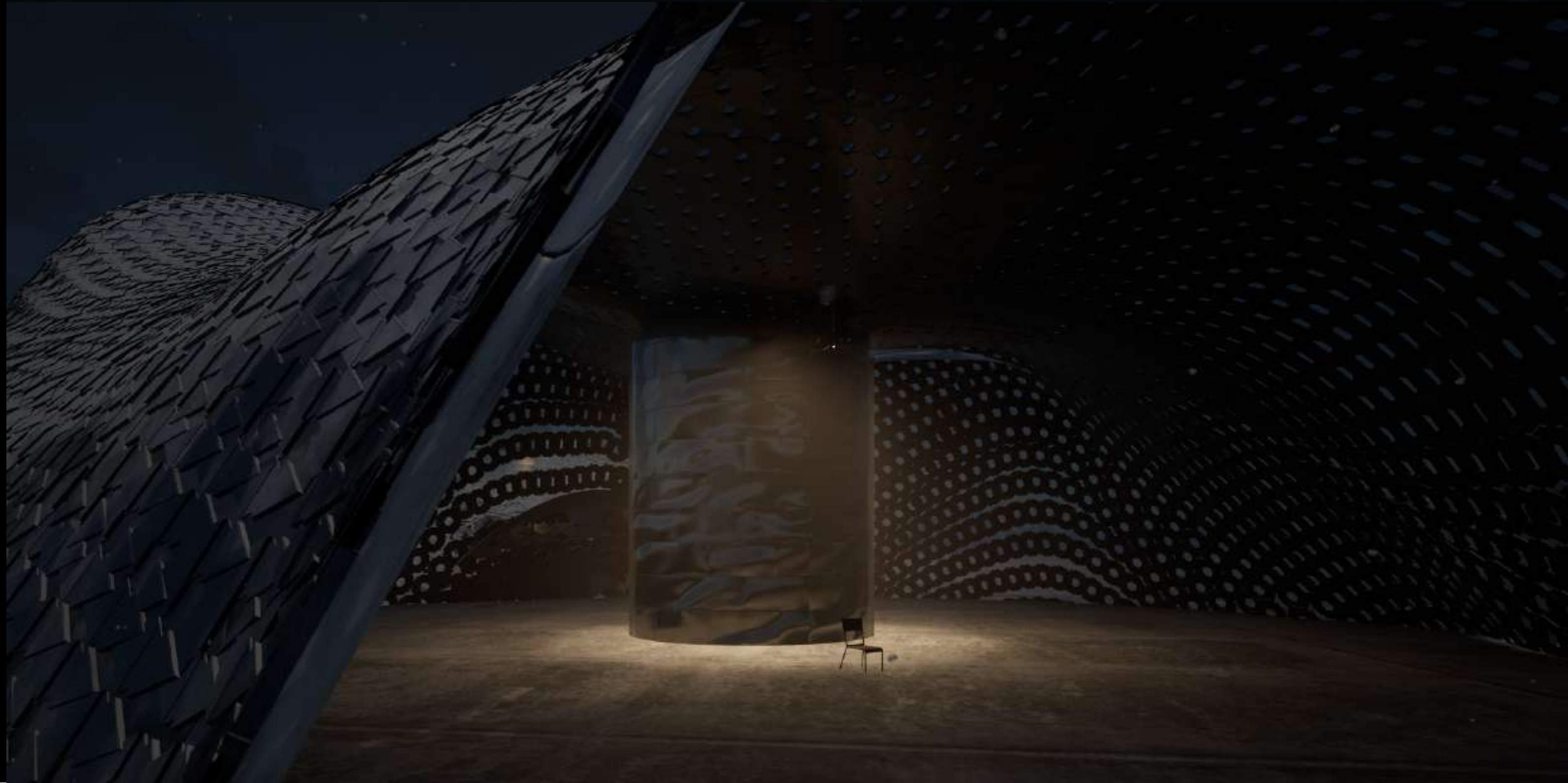
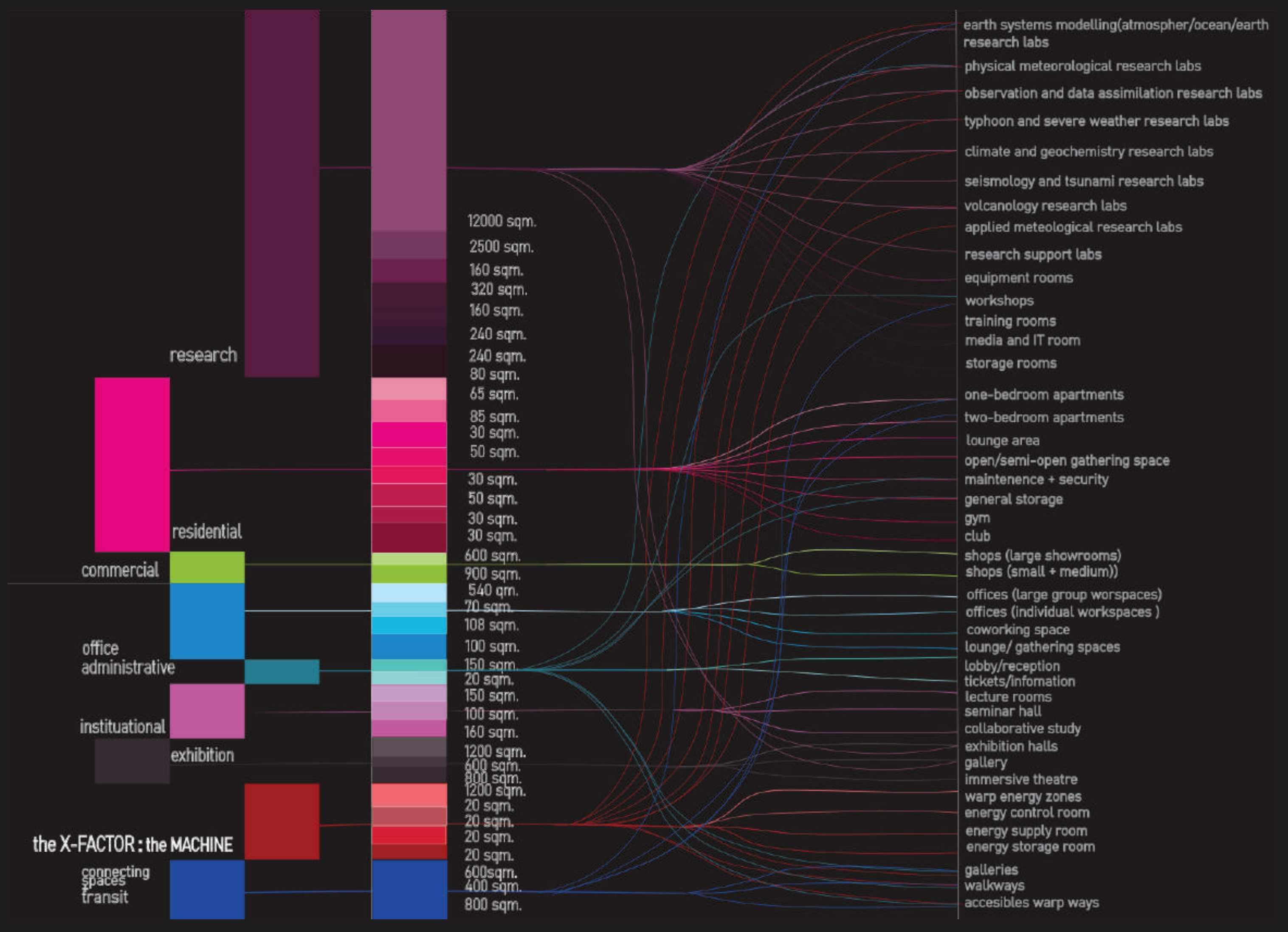




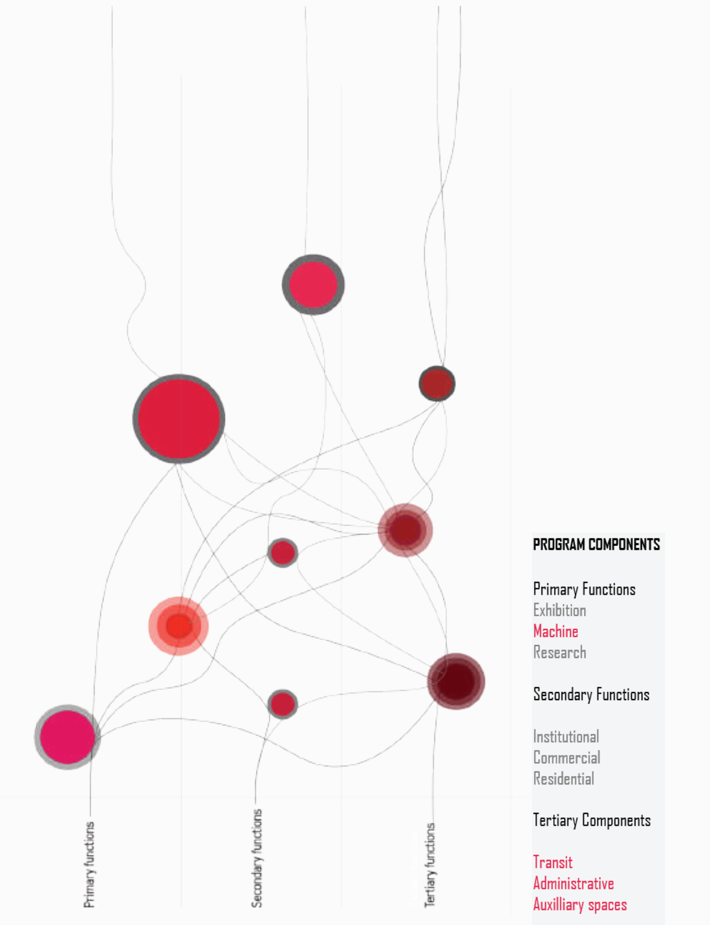
theMETAPERSEDIAL

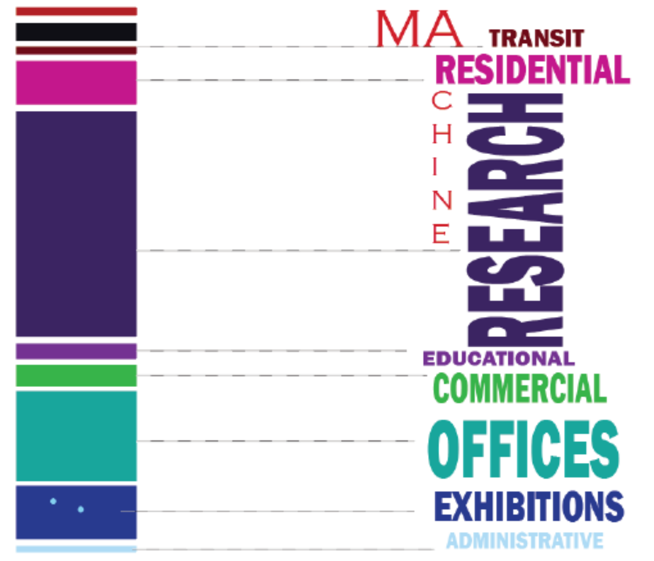
YEAR	2022
THEME(s)	MATERIAL-DRIVEN DESIGN RESPONSIVE ECOLOGY
STATUS	COMPLETED
GROUP MEMBERS	ANUKRUTI NIGAM SIMRANJEET SINGH

THE AGE OF AI



ADJACENCY DIAGRAM





SOLAR RADIATION ANALYSIS

ALGORITHMIC PROCESS :

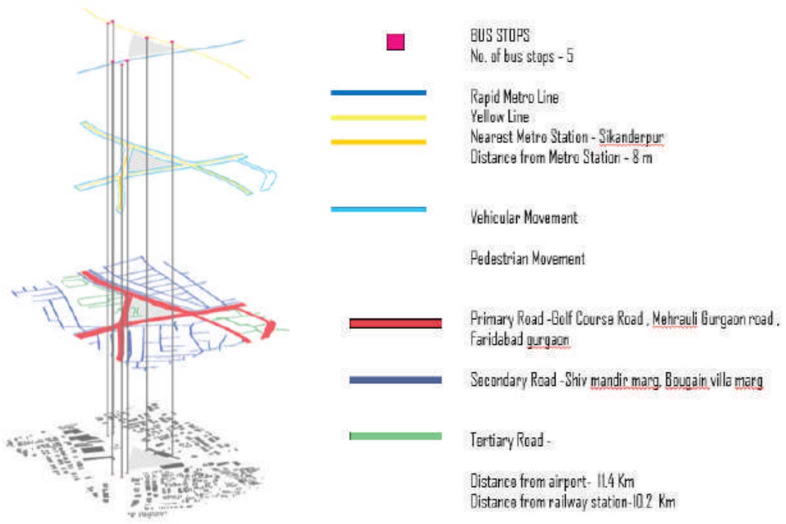
The aim of the process was to analyse the effect of solar radiation in the direct sun hours and find the most suitable orientation (i.e. maximized heat gain on the periphery of the built mass for the placement of the prototypical unit.

The hypothetical placed voxel mass is hence rotated across a series of angles: 0 to 60 degrees respectively to find the best suited orientation of the builform with maximized solar gain.

USER GROUP ANALYSIS

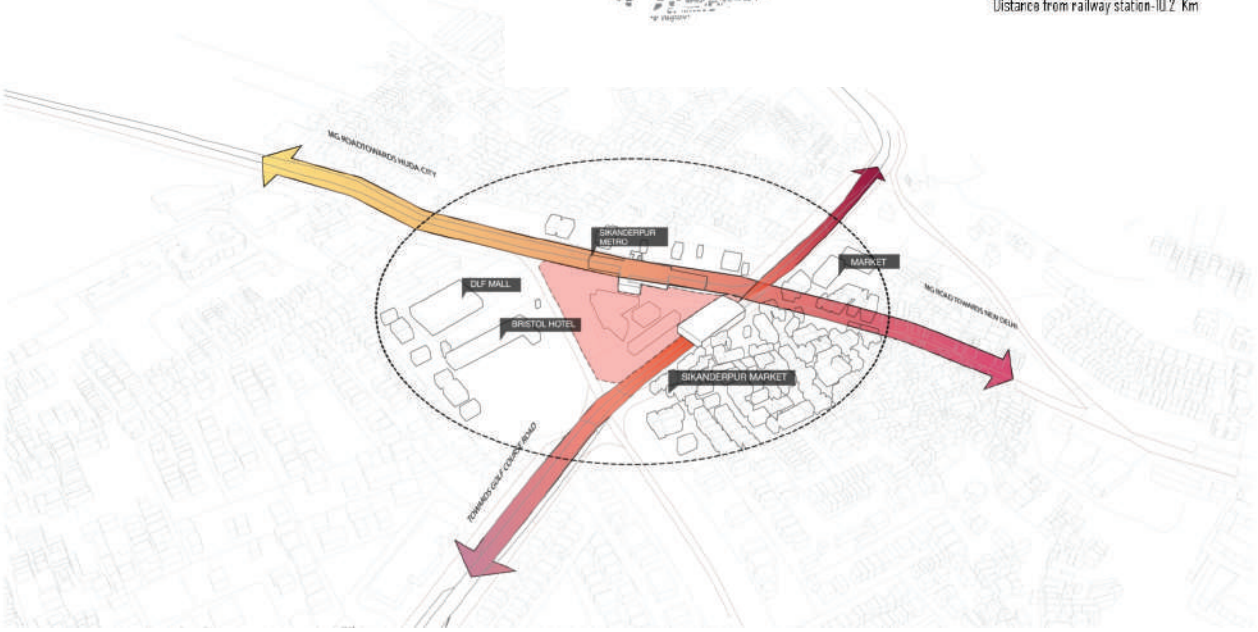
ALGORITHMIC PROCESS :

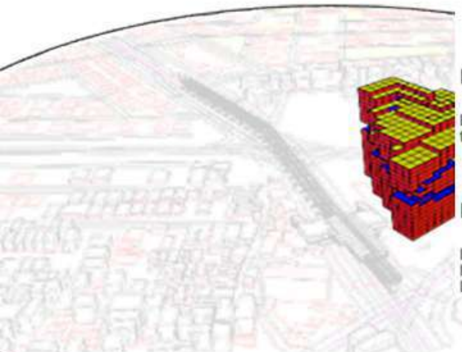
The main user groups occupying the site are – regular commuters, visitors, students, staff and residents respectively. The site has been analysed for eight time slots throughout the day in order to understand the clustering pattern of occupants for various activites.



ACCESSIBILITY

Site - Sikanderpur





SIKANDERPUR - METRO STATION

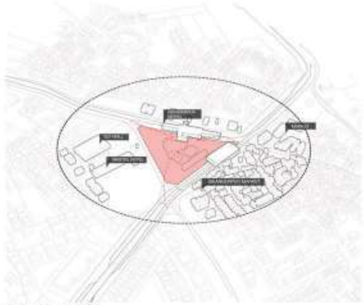
Sikanderpur is a popular locality situated in Gurgaon and the pin code of this locality is 122004.

POPULATION

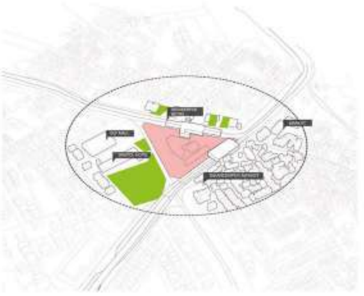
Existing - 15.5 Lakhs and is estimated to rise to 42 Lakhs by the end of this decade.

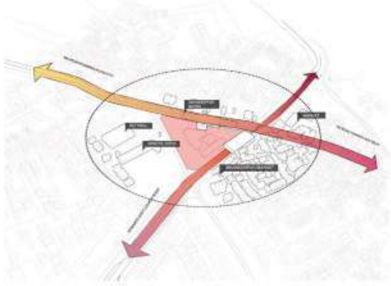
LOCATION & ORIENTATION

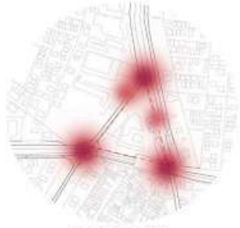
Located adjacent to South-Delhi falling in NCR Delhi.
Latitude - 28d,27m,55s
Longitude - 77d,01m,00s

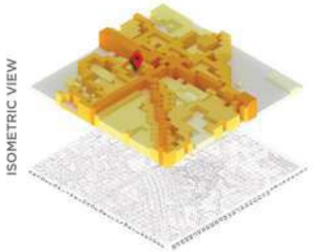

VISUAL ACCESS


PEDESTRIAN ACCESS


VEGETATION

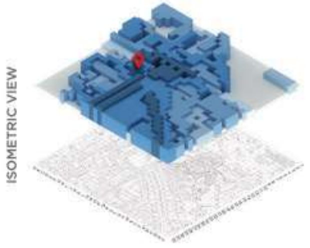

ROAD ACCESS

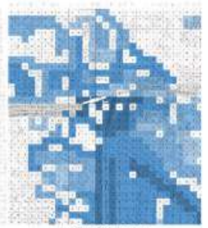

BUSIEST AREA




VEHICULAR MOVEMENT

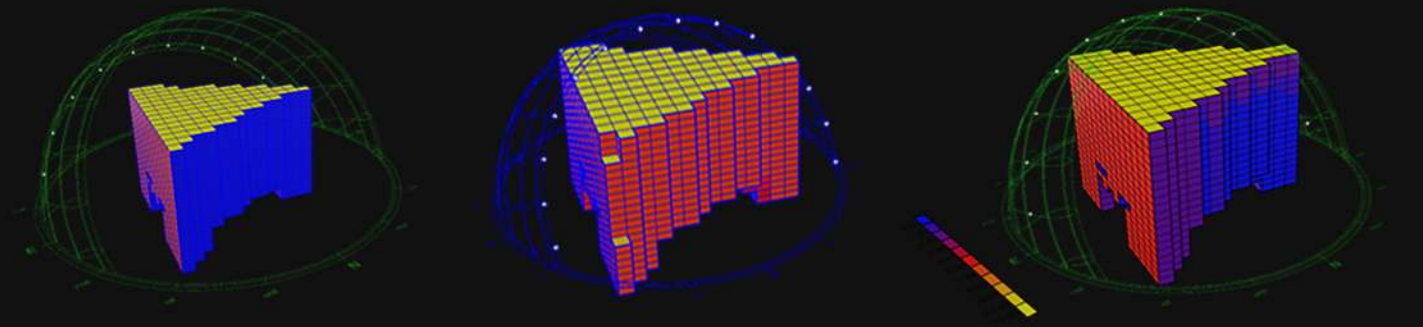

NOLLI'S PLAN




PEDESTRIAN


ORGANISED AND UNORGANISED


VEGETATION



MONTH : JANUARY (PEAK WINTER)
ORIENTATION OF BLOCK : NORTH
ANGLE OF ORIENTATION : 0

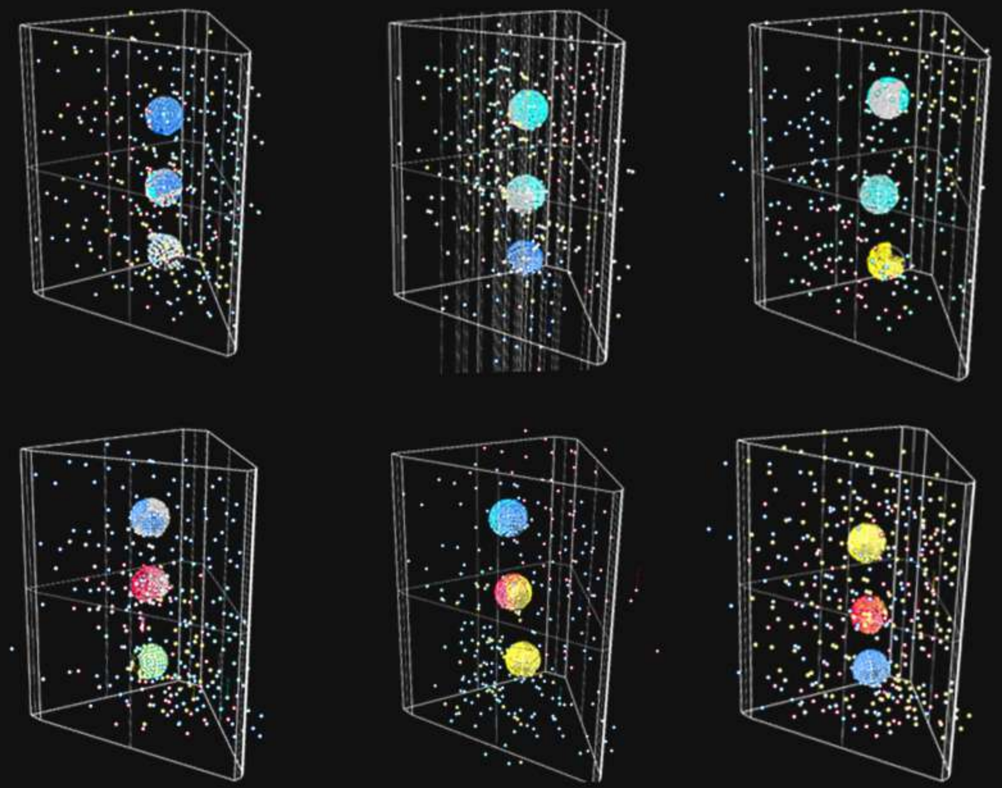
MONTH : JANUARY (PEAK WINTER)
DIRECTION OF ORIENTATION OF THE BLOCK : NORTH-EAST
ANGLE OF ORIENTATION OF THE BLOCK : 15

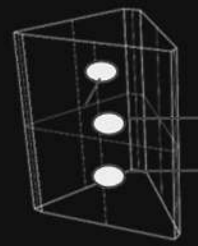
MONTH : JANUARY (PEAK WINTER)
ORIENTATION OF BLOCK : NORTH-EAST
ANGLE OF ORIENTATION : 30

USER GROUP ANALYSIS

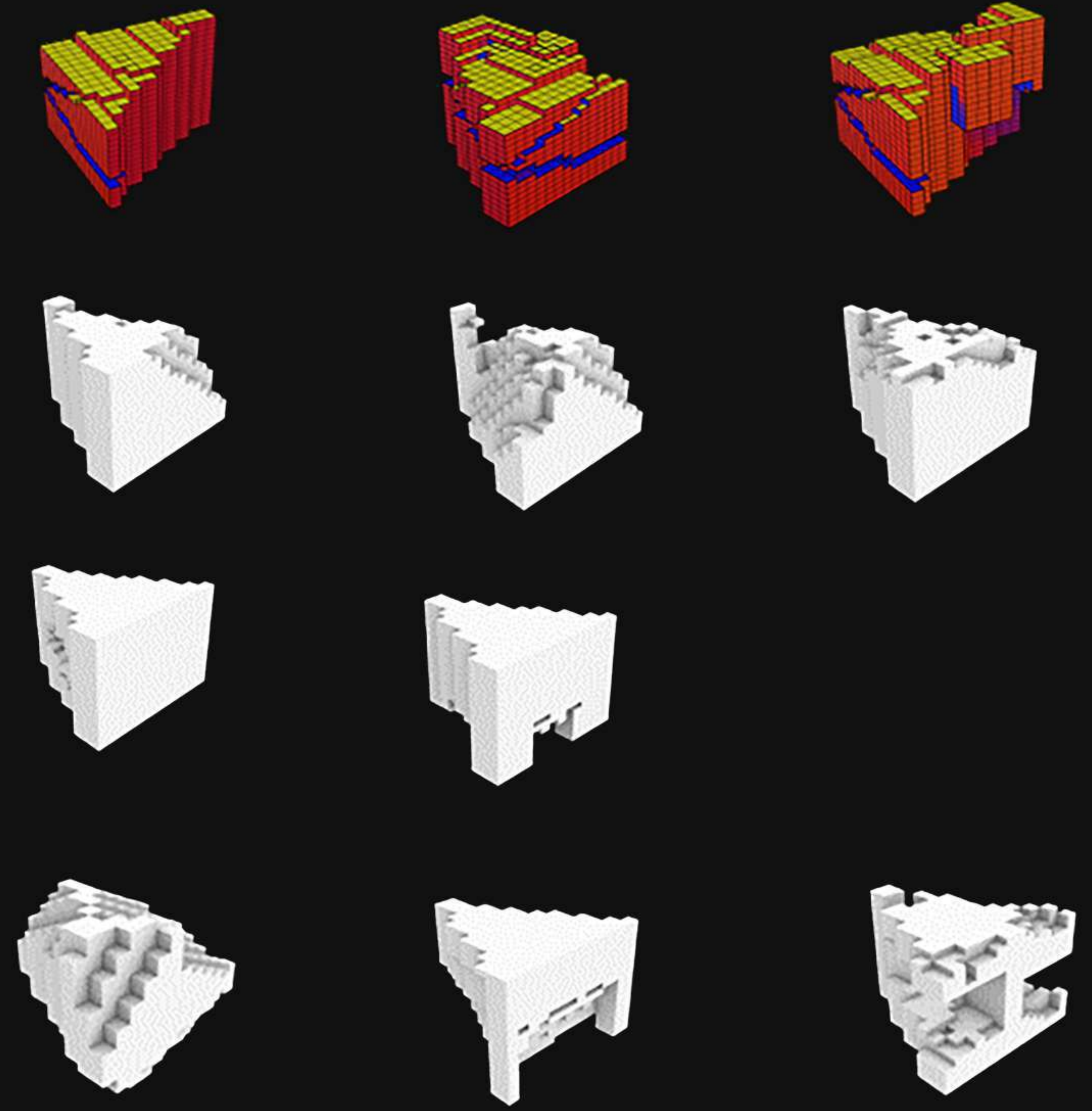
User groups :

- Regular commuters (Ur)
- Visitors (Uv)
- Students(Us)
- Staff(Use)
- Residents (Ure)

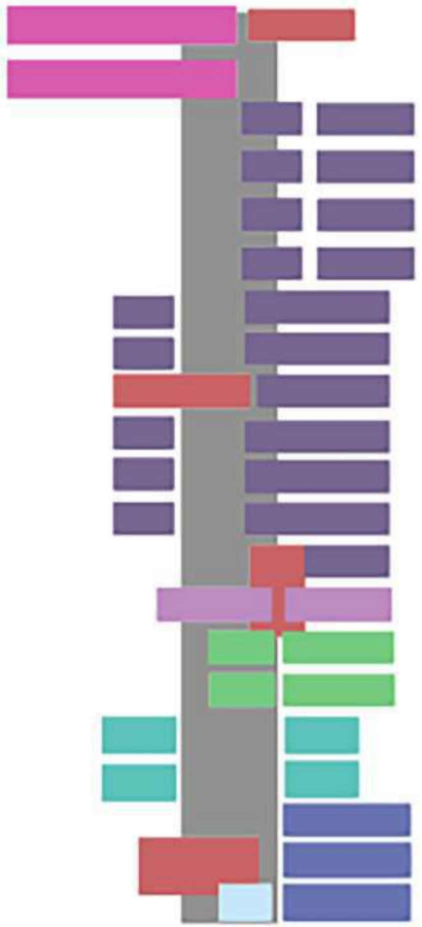


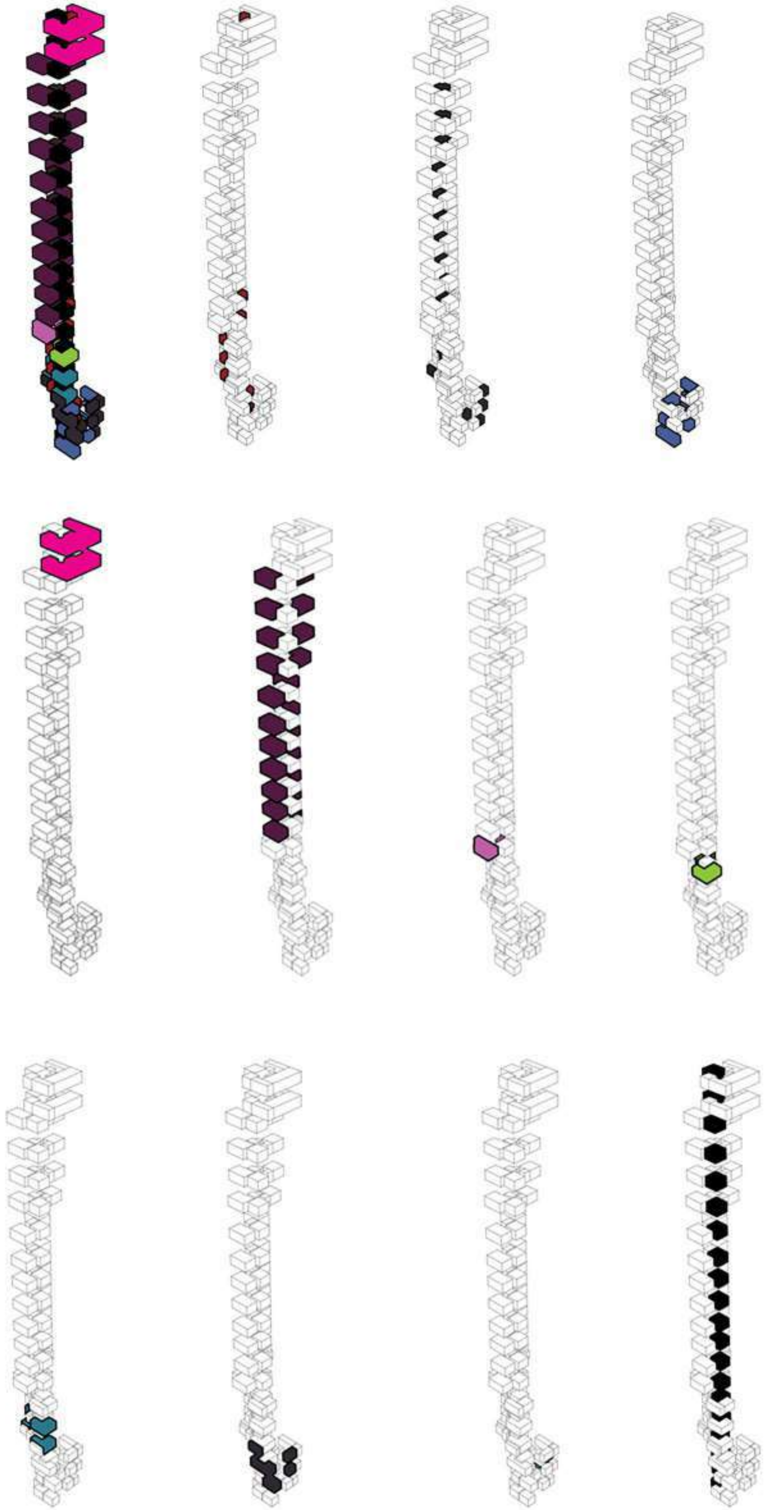


MASSING ITERATIONS

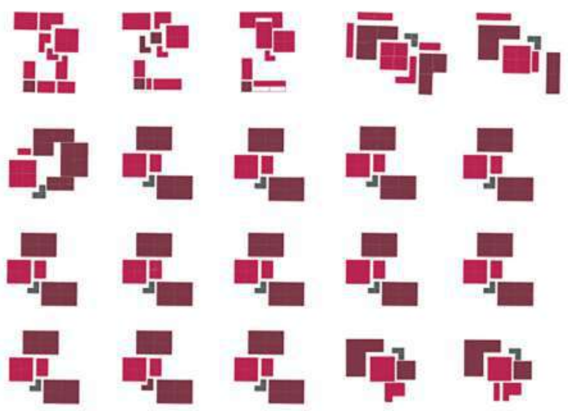


FINAL FORM DERIVATION





Linking to program and massing form derivatives

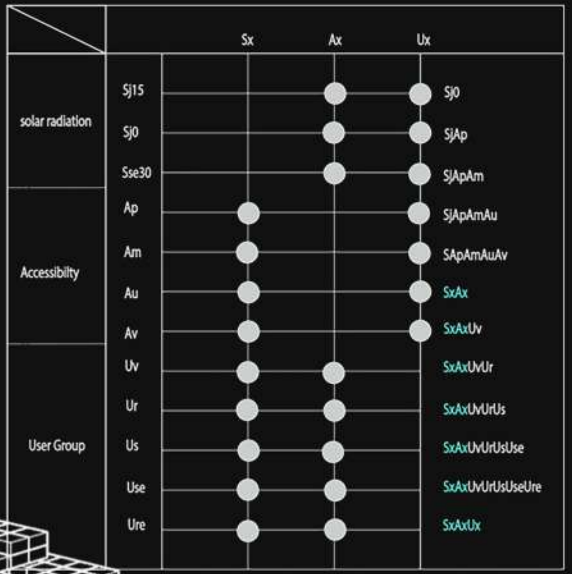


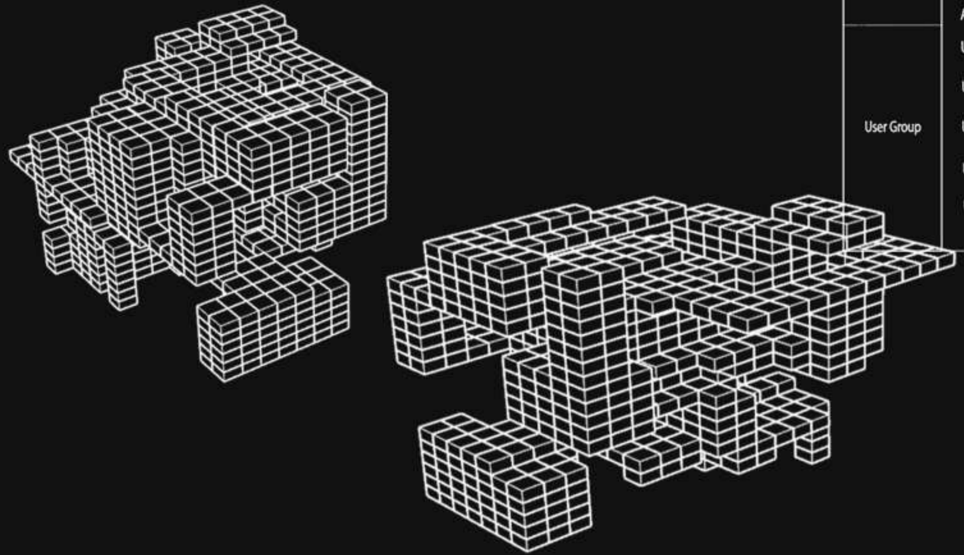
FINAL FORM DERIVATION

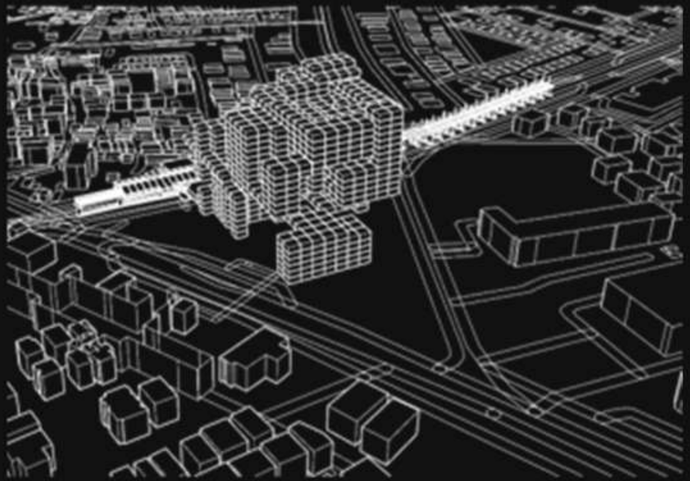
PRIMARY PARAMETER - SOLAR RADIATION

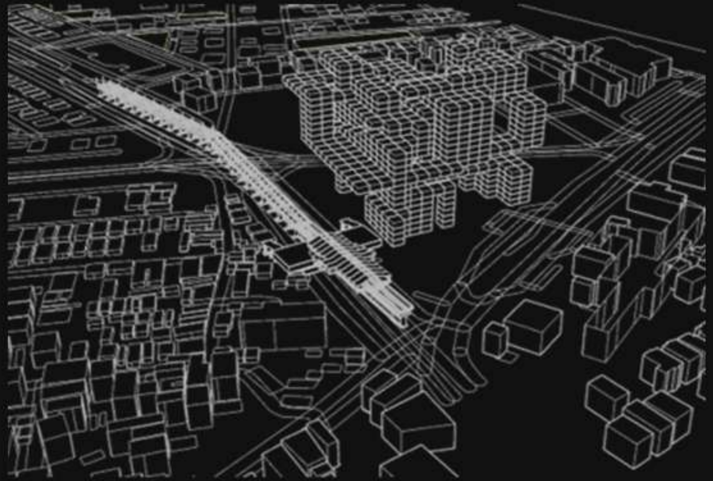
SECODARY PARAMETER -
ACCESSIBILITY

TERTIARY PARAMETER -
USER GROUP







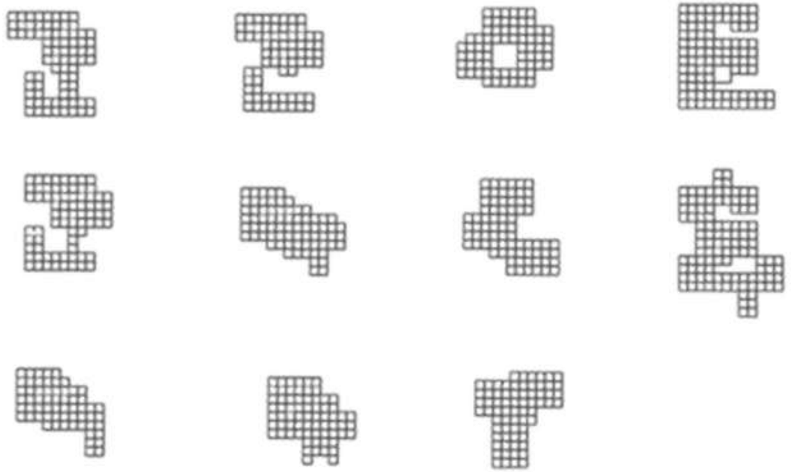


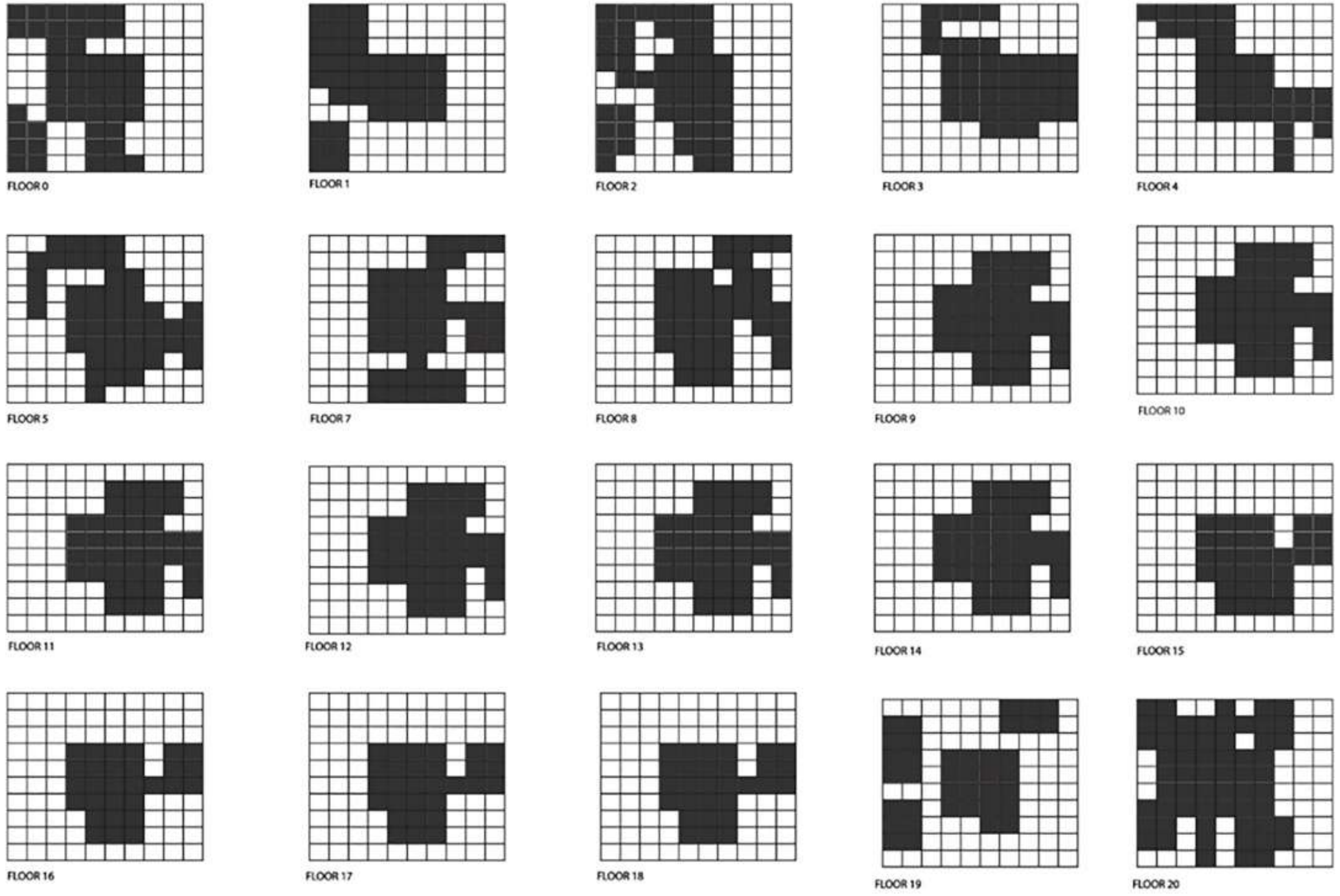
FLOOR WISE SPATIAL LAYOUTS

The floor wise arrangements demonstrate the spaces with maximum user density at any given point in time and the white spaces show the possible placement of voids.

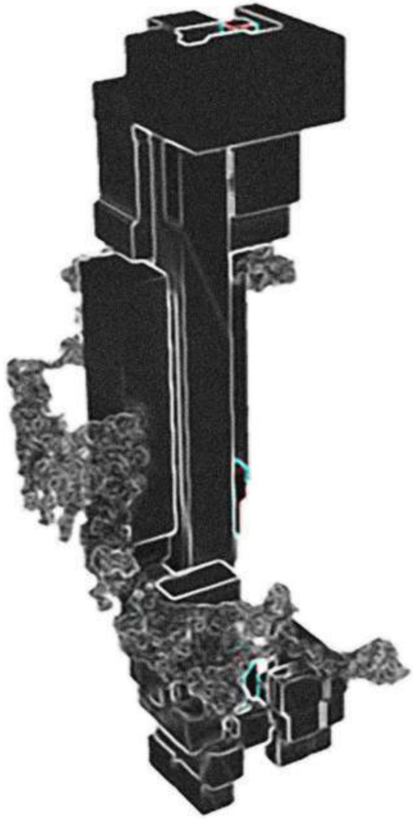
■ Occupied spaces

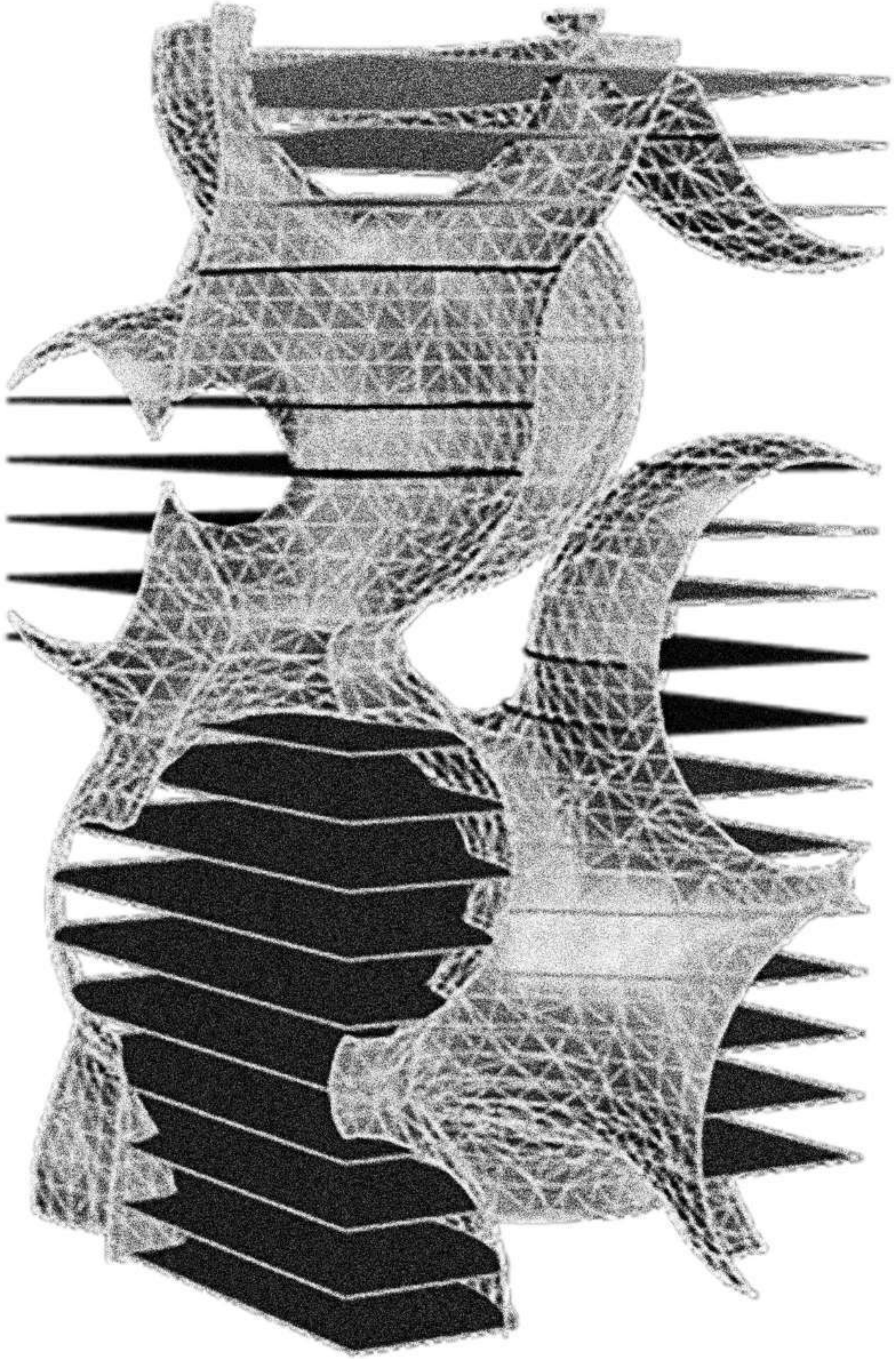
□ Un-occupied spaces

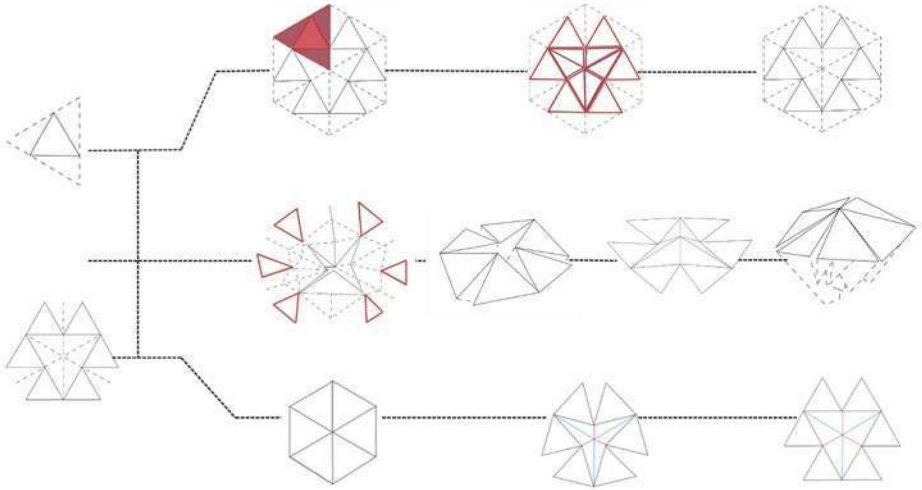




PROTOTYPICAL INTEGRATION



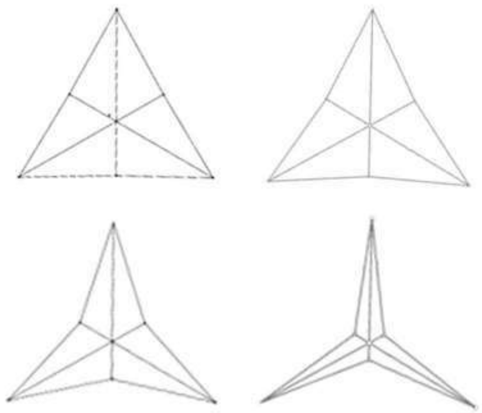


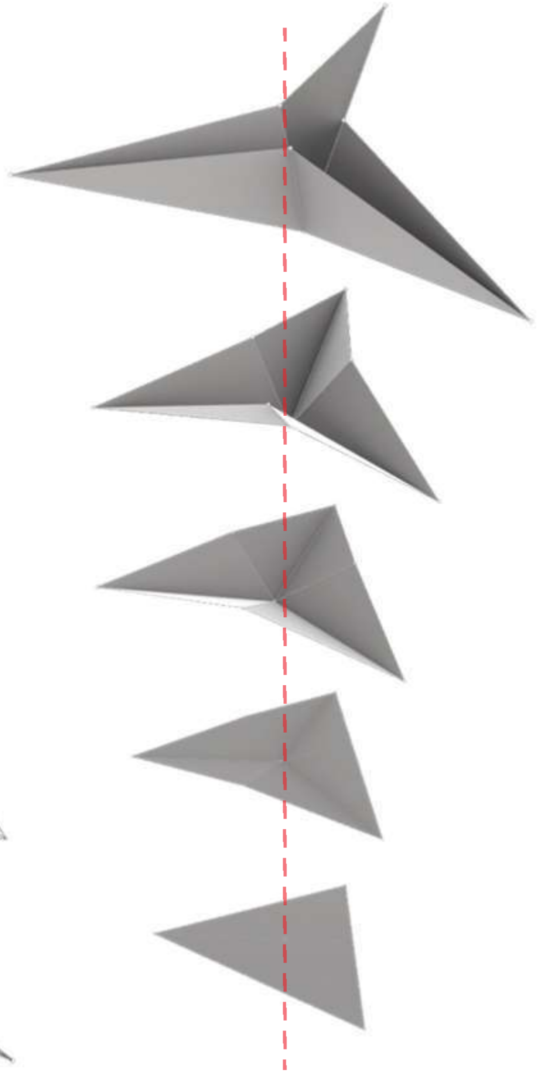


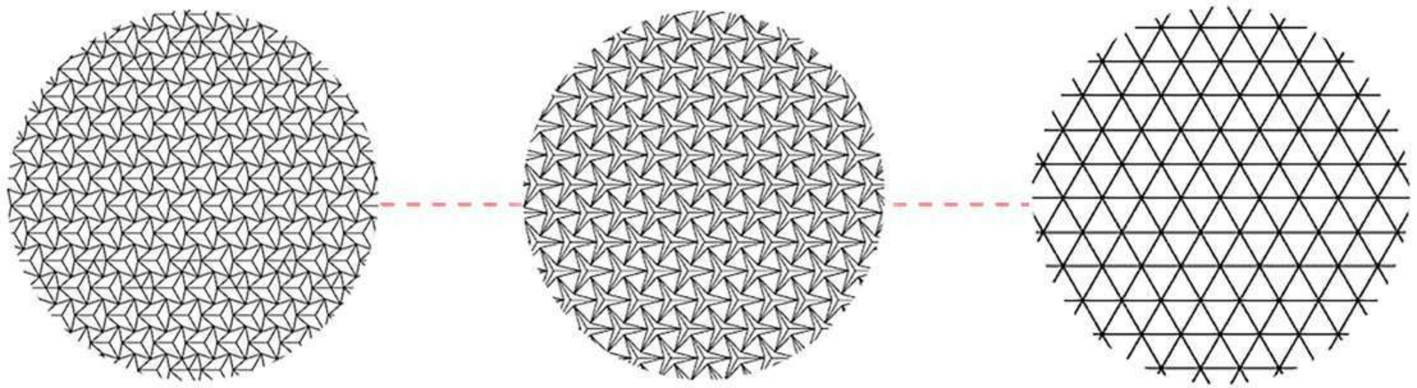
PROCESS OF EXPANSION OF THE PROTOTYPICAL UNITS

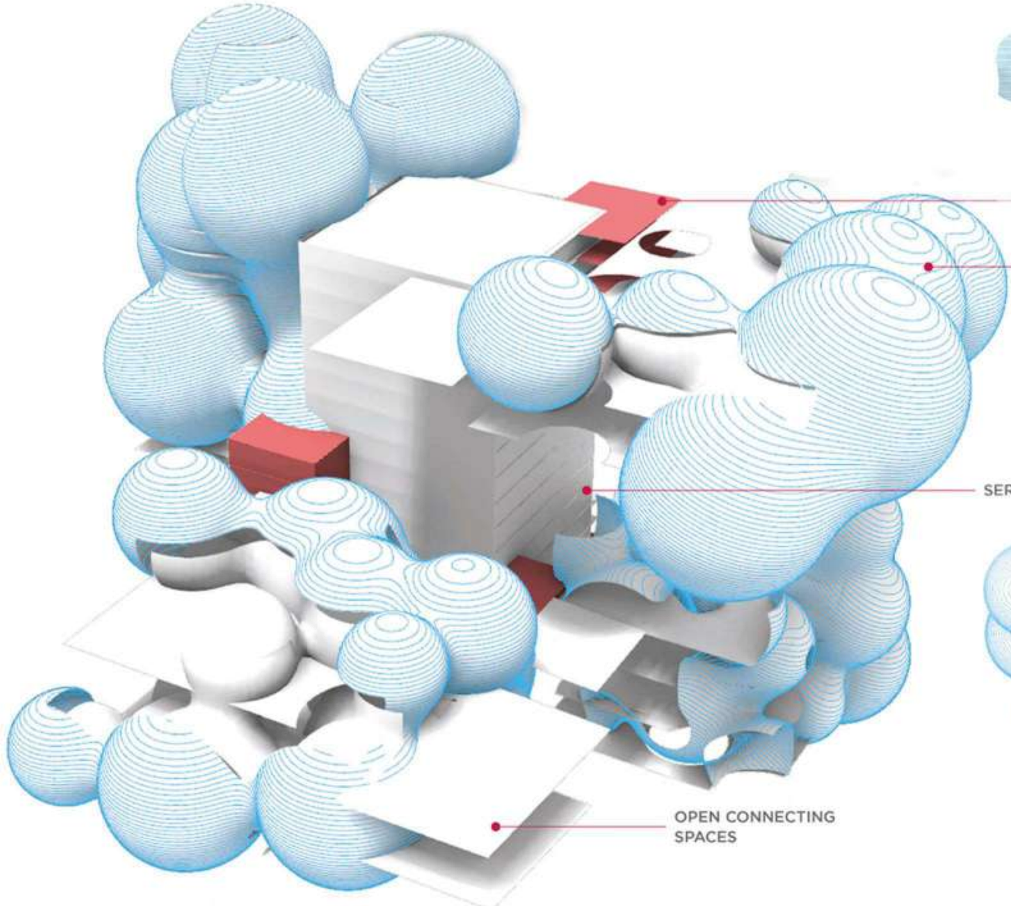
RULE 1.0 : The prototypical unit is a trianle joined to adjacent triangles in a group of six each, of dimesion 200 mm.

Each of the triangular thermoelectric unit is joined to eachother using the shape memory polymer joint.

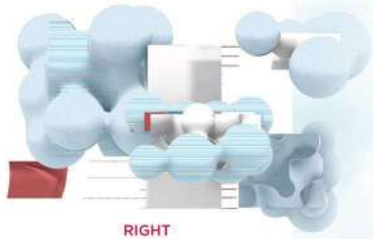


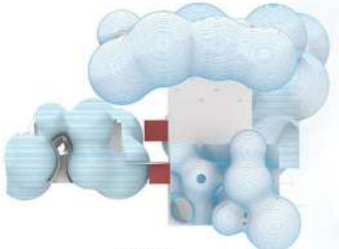


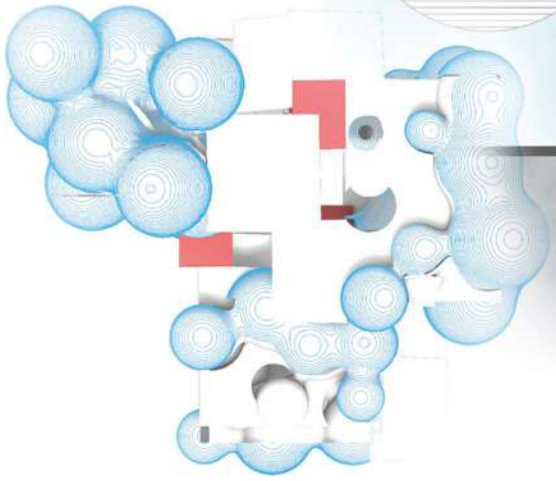


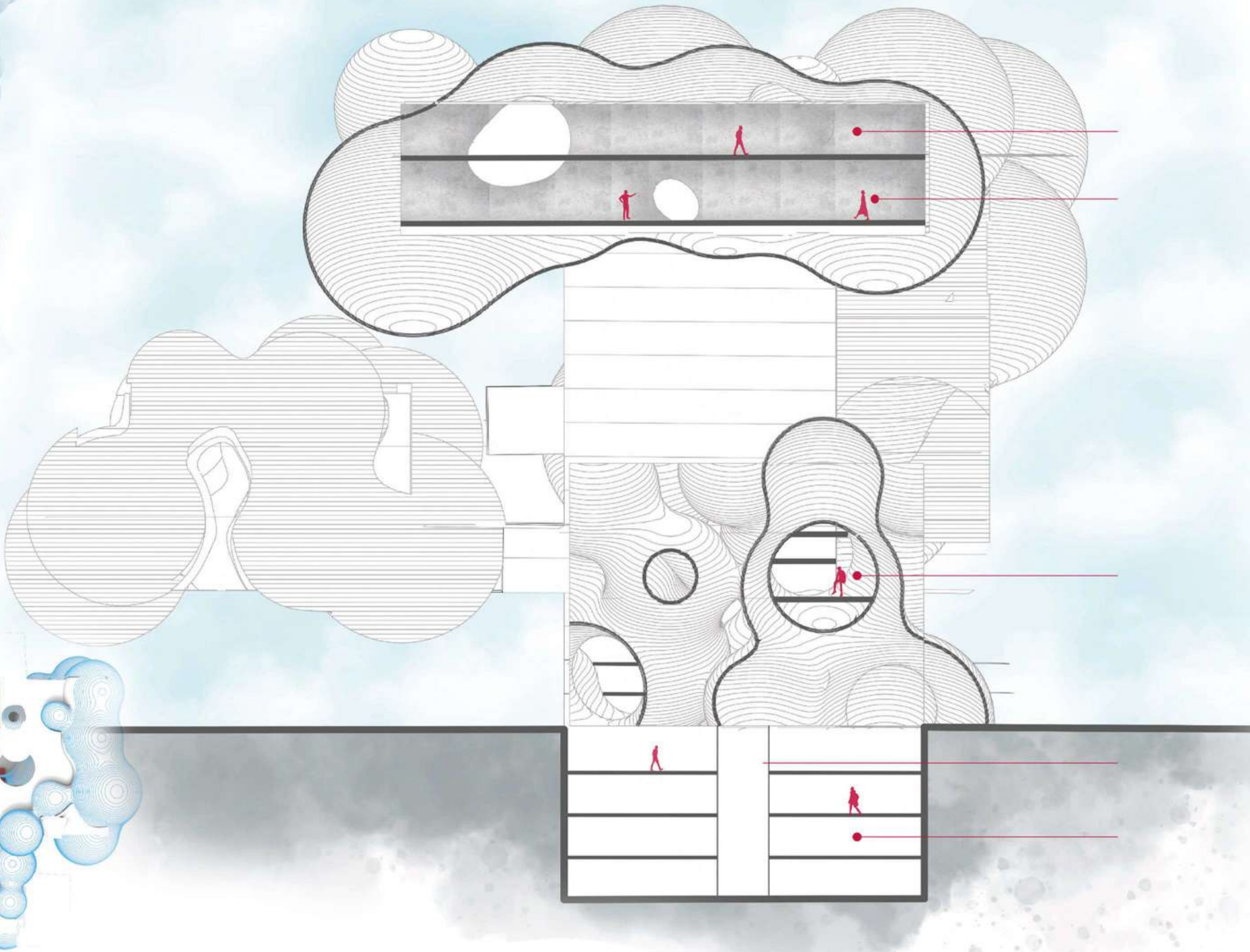


PERSPECTIVE VIEW


RIGHT


FRONT


TOP


SECTION

project RUDOLPH

YEAR

2022- PRESENT
(ONGOING)

THEME

METAVERSE IN ARCHITECTURE

GUIDE

AR. HIMANSHU SANGHANI

GROUP MEMBERS

ANUKRUTI NIGAM
ABHINAV RAJ
PRIYAL CHANNA
SHARIKA SHAMEEM
TANISHQ ROY

New York is the largest and most influential American metropolis, encompassing Manhattan and Staten islands, the western sections of Long Island, and a small portion of the New York state mainland to the north of Manhattan.

New York City is in reality a collection of many neighbourhoods scattered among the city’s five boroughs—Manhattan, Brooklyn, the Bronx, Queens, and Staten Island—each exhibiting its own lifestyle. Moving from one city neighbourhood to the next may be like passing from one country to another.

CITY CHARACTER

New York is the most ethnically diverse, religiously varied, commercially driven, famously congested, and, in the eyes of many, the most attractive urban centre in the country.
Wall Street means finance, Broadway is synonymous with theatre, Fifth Avenue is automatically paired with shopping, Madison Avenue means the advertising industry, Greenwich Village connotes bohemian lifestyles, Seventh Avenue signifies fashion, Tammany Hall defines machine politics, and Harlem evokes images of the Jazz Age, African American aspirations, and slums.

Image source : internet

CITY LAYOUT

The high-rise elegance of Park Avenue and the Upper East Side rapidly gives way to the teeming streets of Harlem to the north and to the crowded bohemian existence of the Lower East Side and Greenwich Village to the south.

The jumble of pre-Revolutionary streets continues up to Houston Street, where the grid pattern becomes dominant and continues up the island. Soho (short for “south of Houston”) covers much of the old immigrant East Side and now has been matched by a Noho neighbourhood. To the west is Henry James’s Washington Square and beyond that Greenwich Village, formerly a haven for artists

“The grid has shaped this vibrant city, imposing an order and controlling its chaos."

DEMOGRAPHY

New York has more Jews than Tel Aviv, more Irish than Dublin, more Italians than Naples, and more Puerto Ricans than San Juan. Its symbol is the Statue of Liberty, but the metropolis is itself an icon, the arena in which Emma Lazarus’s “tempest-tost” people of every nation are transformed into Americans—and if they remain in the city, they become New Yorkers.

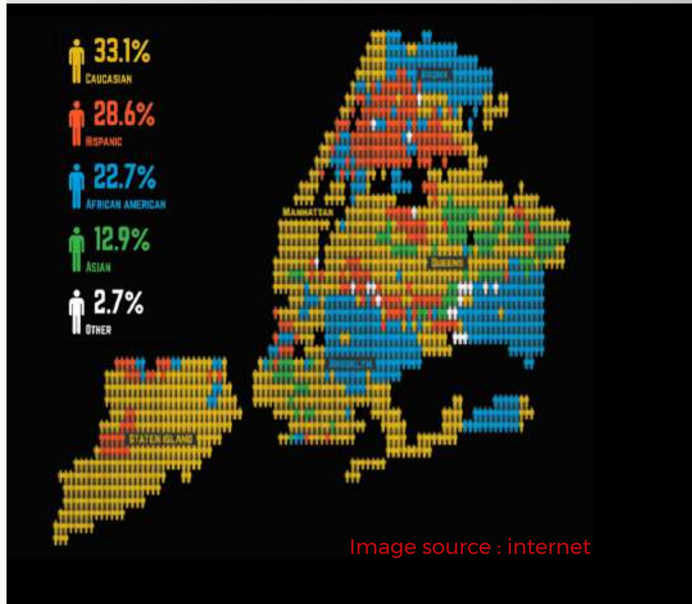


Image source : internet

CONCEPT

Shifting and transforming land parcels according to-
Footfall
Time of the day
Different physical features - open/green spaces
Road networks
Transportation lines
Public spaces/landmarks
Residential area

-Art Street

(Every street/avenue has created a image of itself)

Taking the same thing forward to give identity to the avenues, we created the art street.

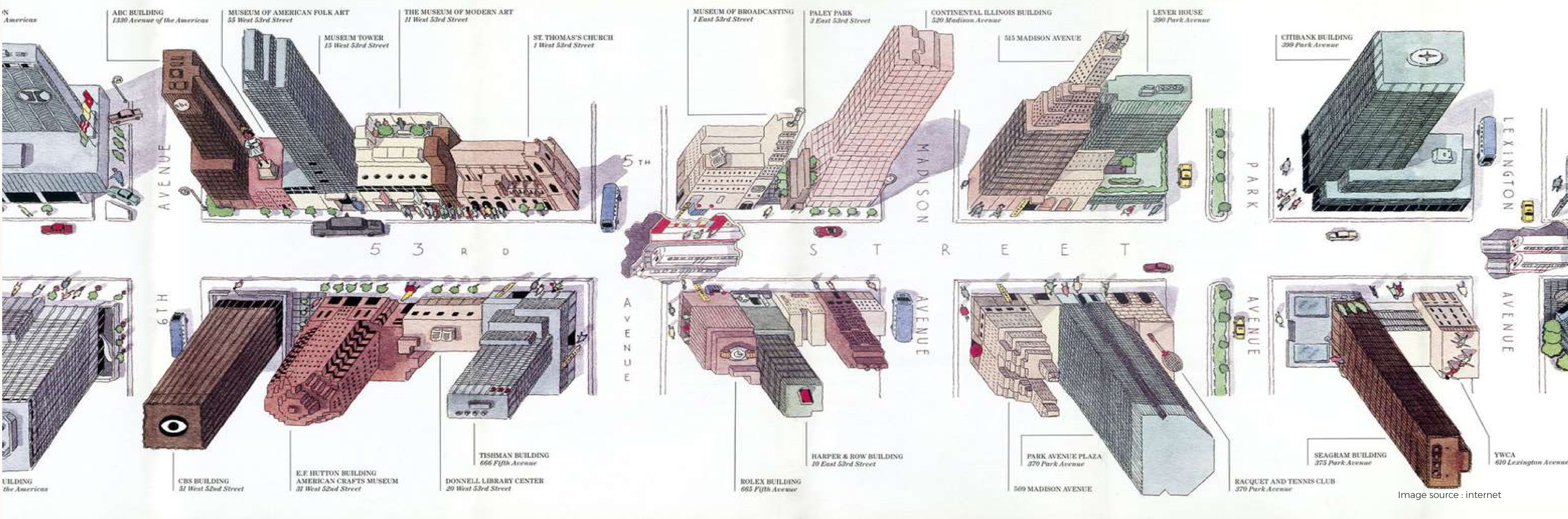


Image source : internet

Premium users

(Users who pay extra will get the privelage to stay connected to chosen node)

People can buy or sell their art in any form.

We can find them floating in the sky or on the facade of build ing or at billboards etc and buy them while walking or tran siting to other place.

ALGORITHM

STAGE I

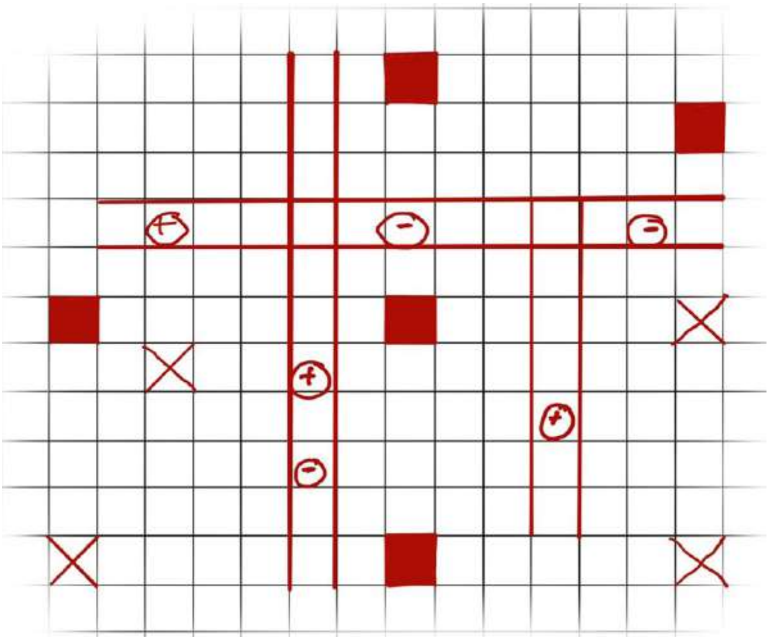
Decoding the grid system

There are many aspects that govern these systems. For this prototype, a list of guidelines was taken:

The Dynamic Nodes only move on certain alleys and major road/connectivity networks.

The Land Parcels may move with the dynamic nodes or remain stationary.

There will be land parcels occupied by public and semi-public space which will move with the nodes and govern the virtual economy.



STAGE II

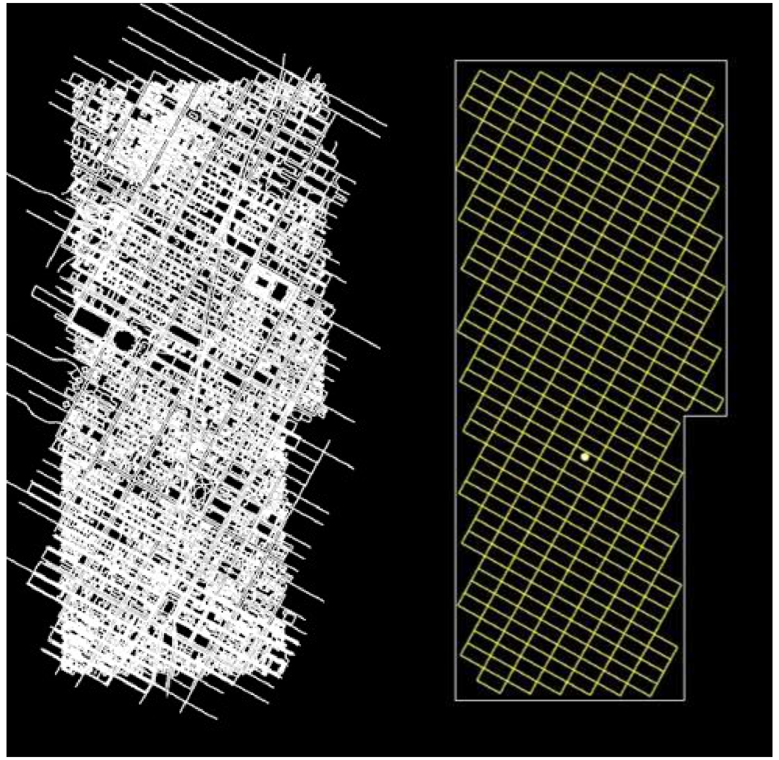
Addition and Subdivision of Land Parcels

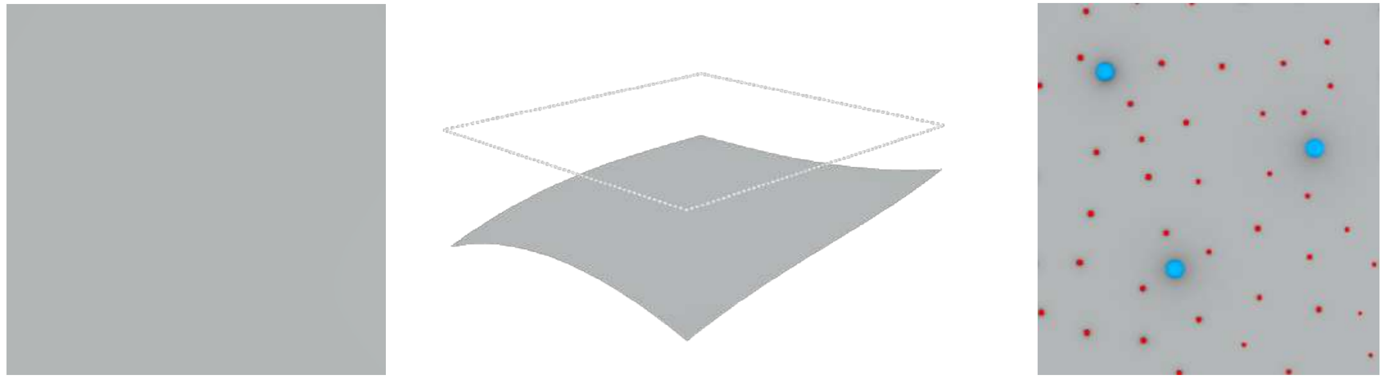
In this analysis, an area is divided into a grid-like pattern.

This grid further adds up or subdivides according to the shifting nodes, denoted by circles/spheres.

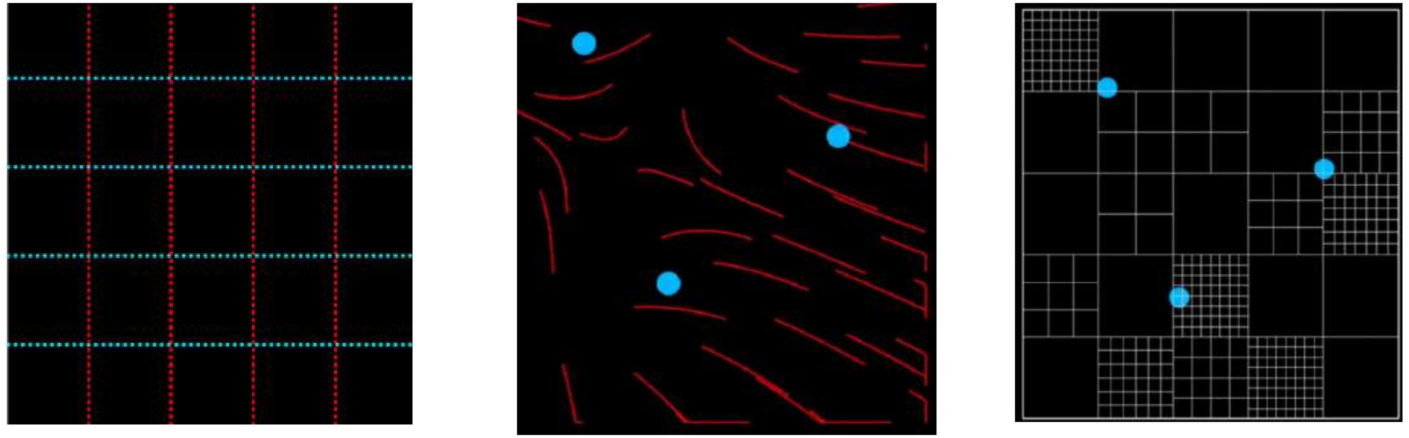
The addition or subdivision of the land parcel also affect the parcel in z direction, i.e., this gives then a particular height or depth.

The movement of people is also governed by the movi ng nodes and is analysed with the help of swarm ten- dency.

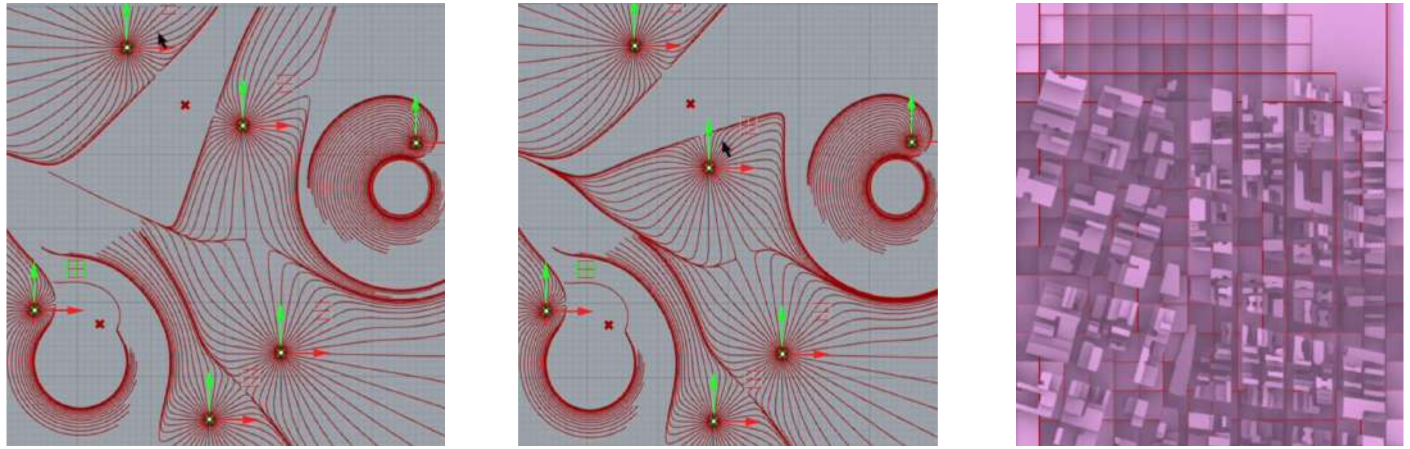




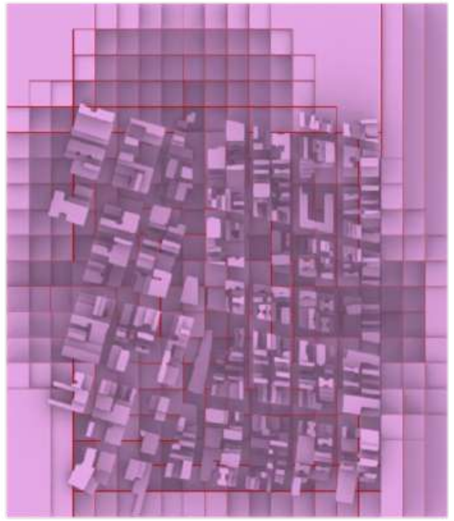
Identifying nodes



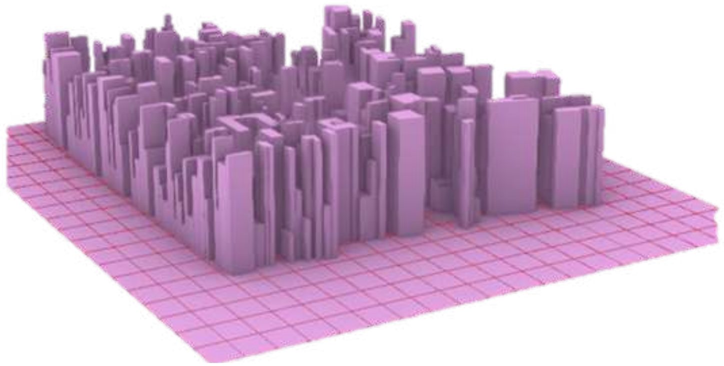
Identifying Shortest Way

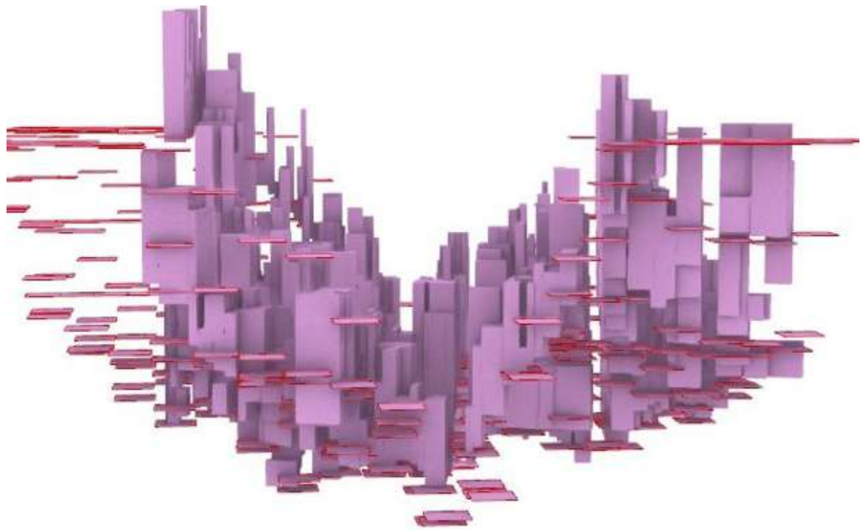


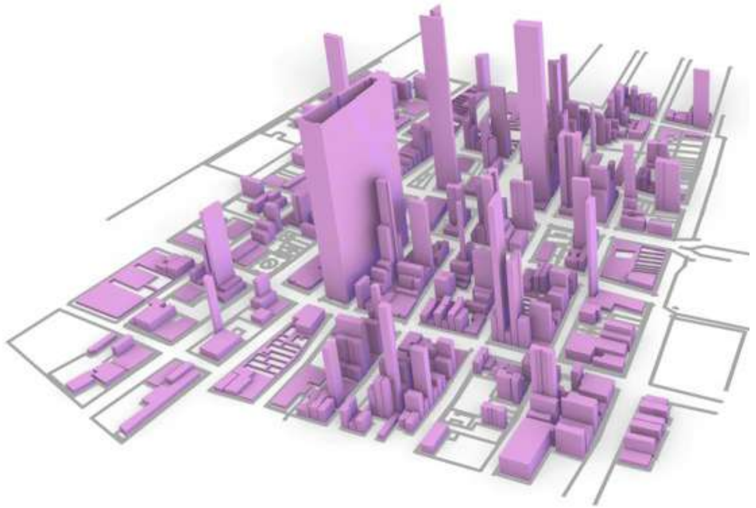
Final Prototype



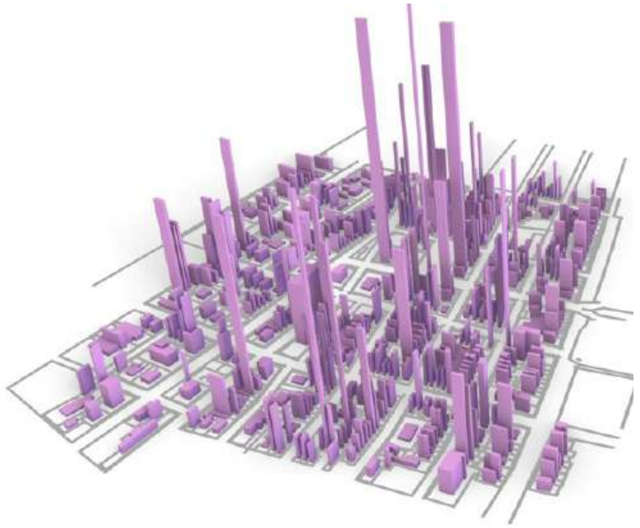
Once the grid is figured out and the dynamic nodes start moving, it is necessary for the nodes to connect with other parcels. This simulation was tested in order to find the shortest path between a major dynamic node and particular land parcels. This function provides user the ability to connect with their preferred dynamic node. By doing this people are more connected to their interests in metaverse.







The final prototype made using the previous learnings and outcomes combines most of the attributes of workability. It stitches both systems with the simulation and the environment. Even though the prototype is made for a small patch of land, due to technological problems, it works using all the previous scripts and provides a functioning metaverse platform.



3D VISUALIZATION

DISSERTATION

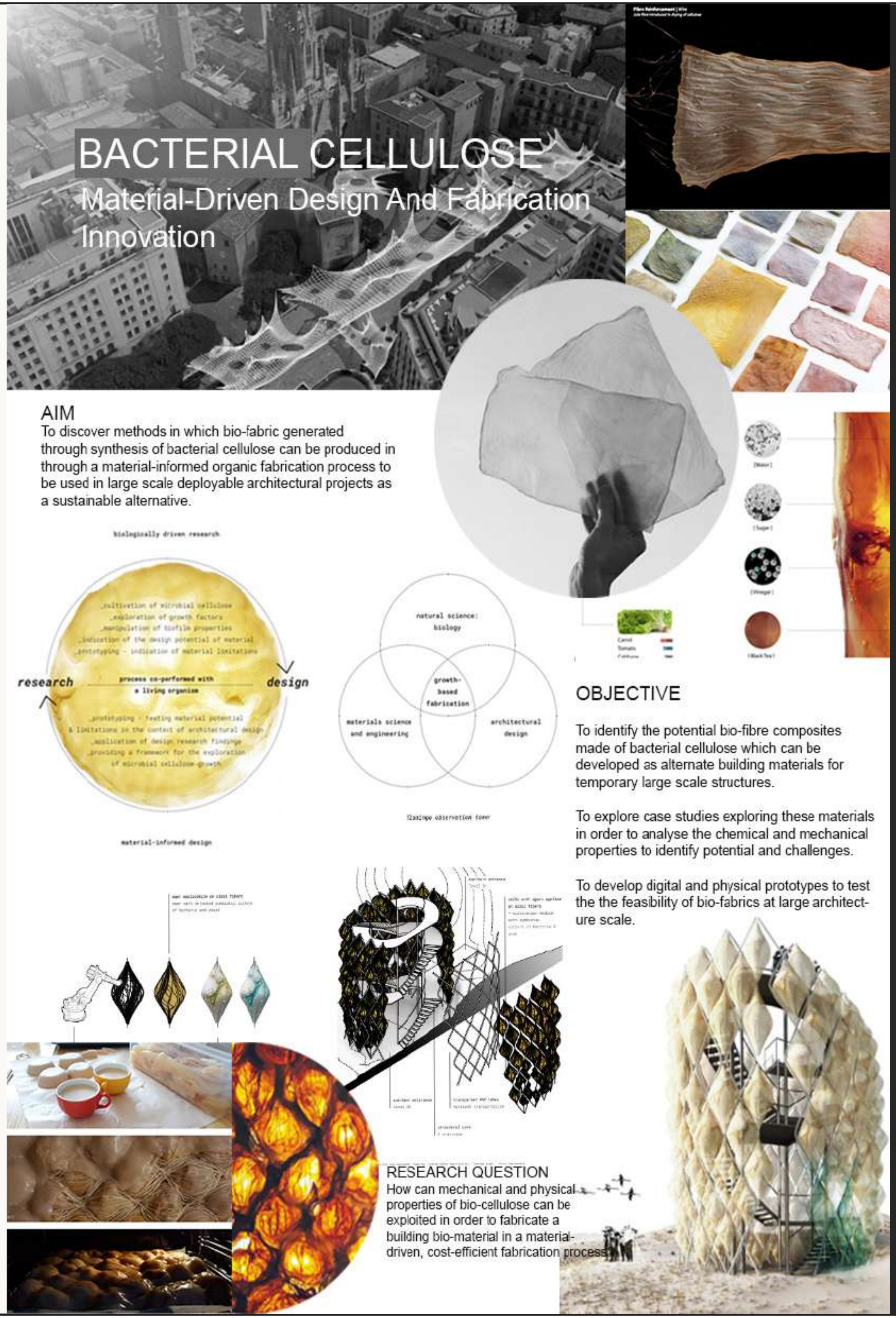
YEAR 2022

THEME BACTERIAL CELLULOSE : MATERIAL SCIENCE DRIVEN ARCHITECTURAL INNOVATION

GUIDE AR. AVITESH VAISHNAVI NAYAK

DR. PURVA MUJUMDAR (mentor)

STATUS COMPLETED



RESEARCH QUESTION

How can mechanical and physical properties of bio-cellulose can be exploited in order to fabricate a building bio-material in a material-driven, cost-efficient fabrication process?

AIM

To discover methods in which bio-fabric generated through synthesis of bacterial cellulose can be produced in through a material-informed organic fabrication process to be used in large scale deployable architectural projects as a sustainable alternative.

OBJECTIVES

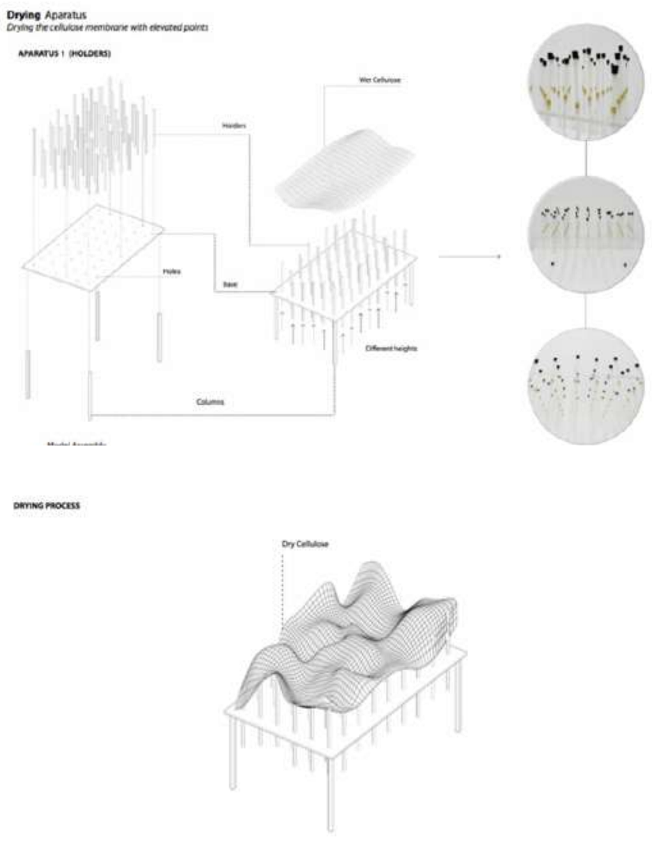
1. To identify potential the potential bio-fibre composites made of bacterial cellulose which can be developed as alternate building materials for various architectural applications.

2. To analyse the physical and chemical properties of these bacterial cellulose based composites and understand the processes involved in their production at various stage to be used as a major architectural material.

3. To identify the potential applications of the bio-materials to be used a sustainable alternative to traditional building materials used at a large scale.

SCOPE

Particular emphasis is placed on the exploration of bio-composites of microbial cellulose and other natural fibers and implementation in architectural context, creating an environmentally responsive architecture with a high level of integration between structure, shape, and material across scales - micro, meso and macro. Bio-Inspired Fabrication Methodologies and Virtual and Physical Prototyping -Because of these unique properties, it is an attractive candidate for a wide range of applications, including within architecture and engineering (i.e.: water retaining structures, architectural components, etc.), but due to the lack of suitable fabrication methods and digital design tools, cellulose is still disregarded as a building material.

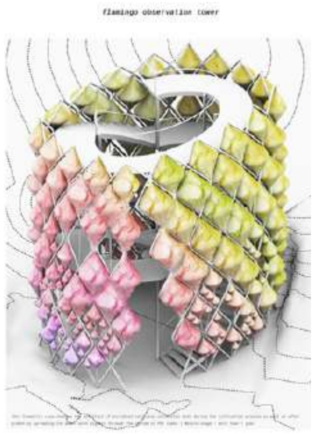


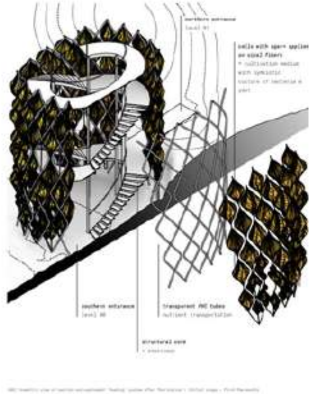
The shape of the cellulose depends on the different heights of the holders.

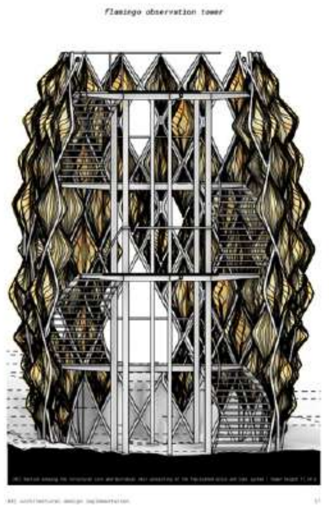
ABSTRACT

"In her (nature's) inventions nothing is lacking, and nothing is superfluous."
— Leonardo da Vinci

Geometric-driven form generation was the product of the institutionalised division between form, structure, and material that was firmly ingrained in modernist design theory and paralleled by a systematic segmentation between modelling, analysis, and manufacture. This preference for form above substance was included into the creation and design logic of CAD.
As a result of current pressures and an increasing understanding of the shortcomings and environmental risks of this strategy, modern design culture is transitioning to a more material-aware mindset.
Inspired by natural processes, where form development is dependent on local variations in the material properties to maximise performance while using the fewest resources possible. This approach assumes that material comes first and that shape results from the organisation of material qualities in relation to structural and environmental performance. Products that are not based on fuel have outstanding mechanical and biodegradability properties, particularly bio-polymers. Bacterial cellulose has proven to be an extraordinarily versatile bio-polymer, drawing interest in a wide range of practical scientific applications including electronics, biomedical devices, and tissue-engineering. Development of bio-fabrication methods connected to material-informed computational modelling and material science is required by the introduction of bacterial cellulose as a building material. The paper reviews, suggests and demonstrates approaches for a material-based strategy in exploiting the enormous potential of Bacterial Celulose-based bio-materials and their potential to have a profound impact on the ideas of architectural innovation and sustainability for a better future.







SCOPE FOR FUTURE

Therefore, it's crucial to create bio-fabrication approaches connected to computational modelling with a materially informed perspective in order to introduce cellulose as a building material.
The improvement of the polymer's mechanical properties, such as its strength and stiffness, is a crucial area for potential future growth.
a variety of structural BC bio-composites can be created by calcifying 3D membranes with hydroxyapatite, chitosan, or lining.
Engineering, building, and architecture have traditionally been research hotspots for lightweight structural materials with high mechanical performance. deployable lightweight structures

technical DRAWINGS

YEAR 2021

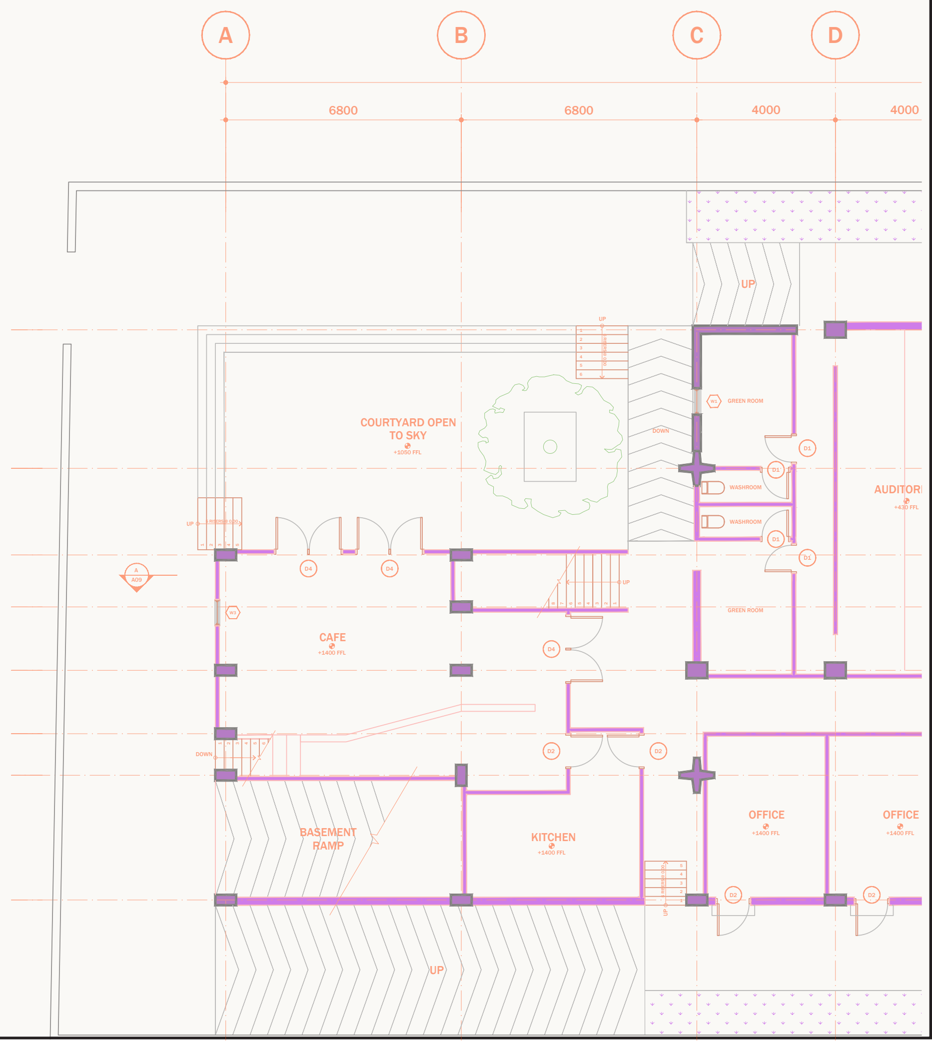
THEME CONSTRUCTION DOCUMENTATION :

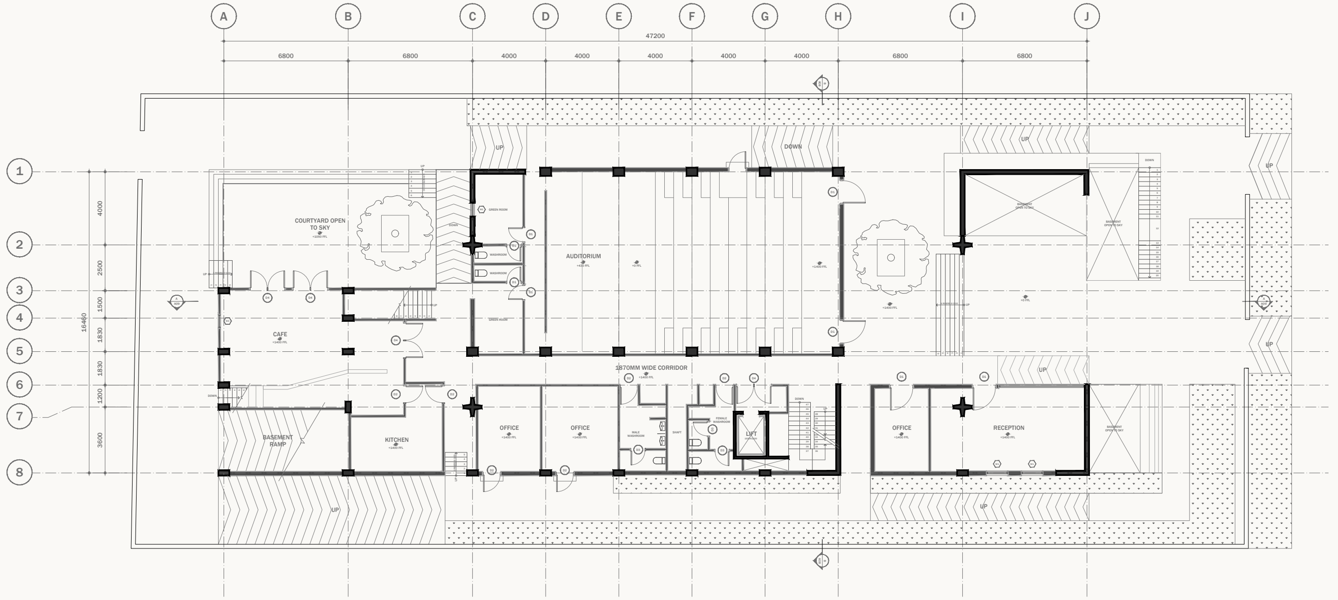
ALLIANCE FRANCAIS, NEW DELHI

STATUS COMPLETED

GROUP MEMBERS ANUKRUTI NIGAM

SIMRANJEET SINGH

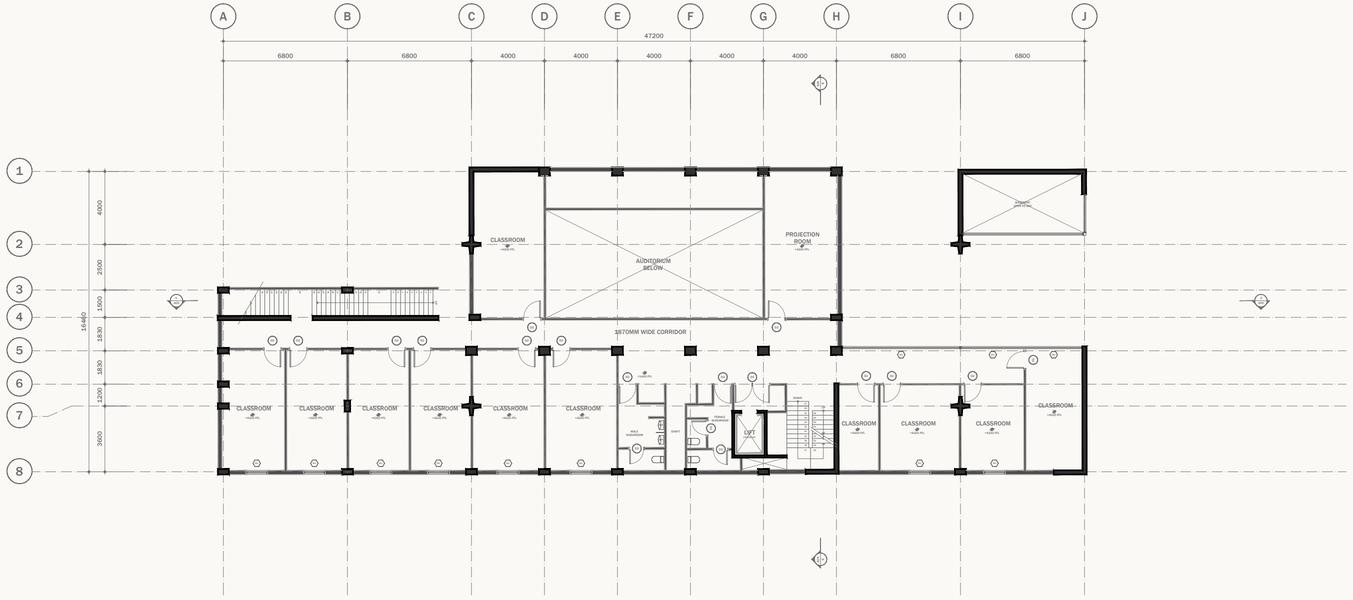




1 GROUND FLOOR PLAN

DOOR SCHEDULE		
TAG	WIDTH	LENGTH
D1	1200	2100
D2	900	2100
D3	750	2100
D4	2400	2100

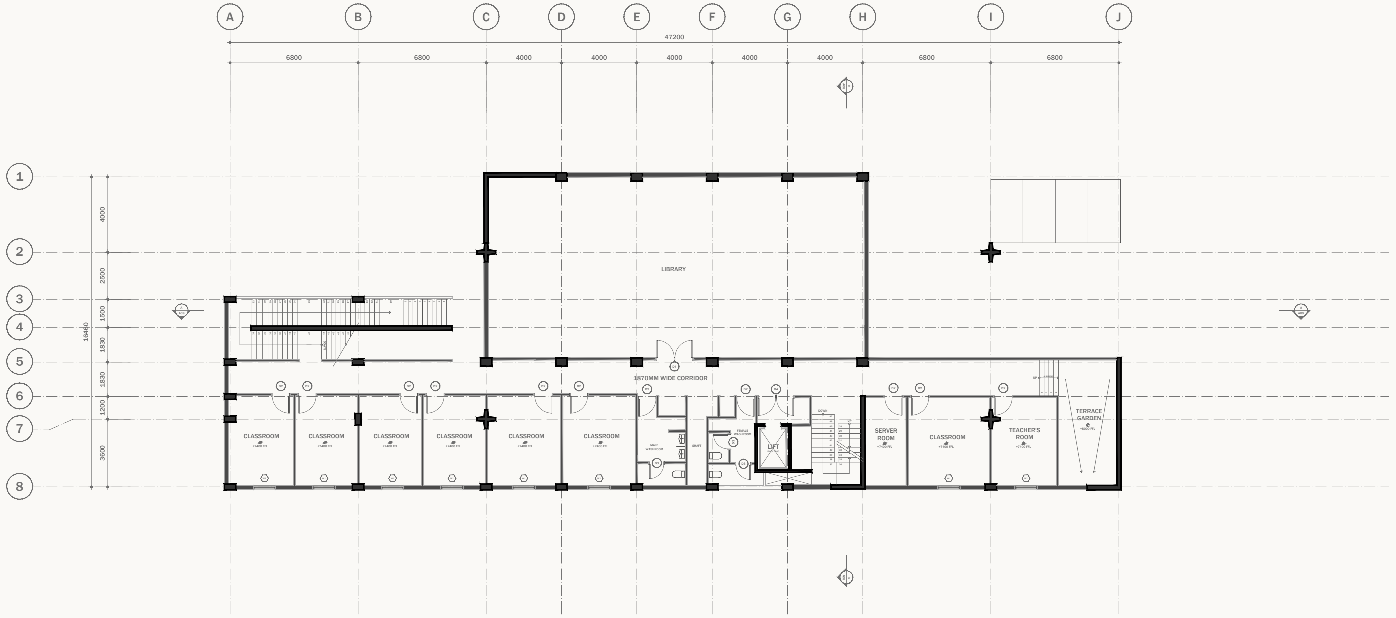
WINDOW SCHEDULE				
TAG	WIDTH	LENGTH	SILL	LINTEL
W1	1200	2100	1200	2100
W2	900	2100	1200	2100
W3	750	2100	1200	2100
W4	2400	2100	2400	2100



1 FIRST FLOOR PLAN

DOOR SCHEDULE		
TAG	WIDTH	LENGTH
D1	1200	2100
D2	900	2100
D3	750	2100
D4	2400	2100

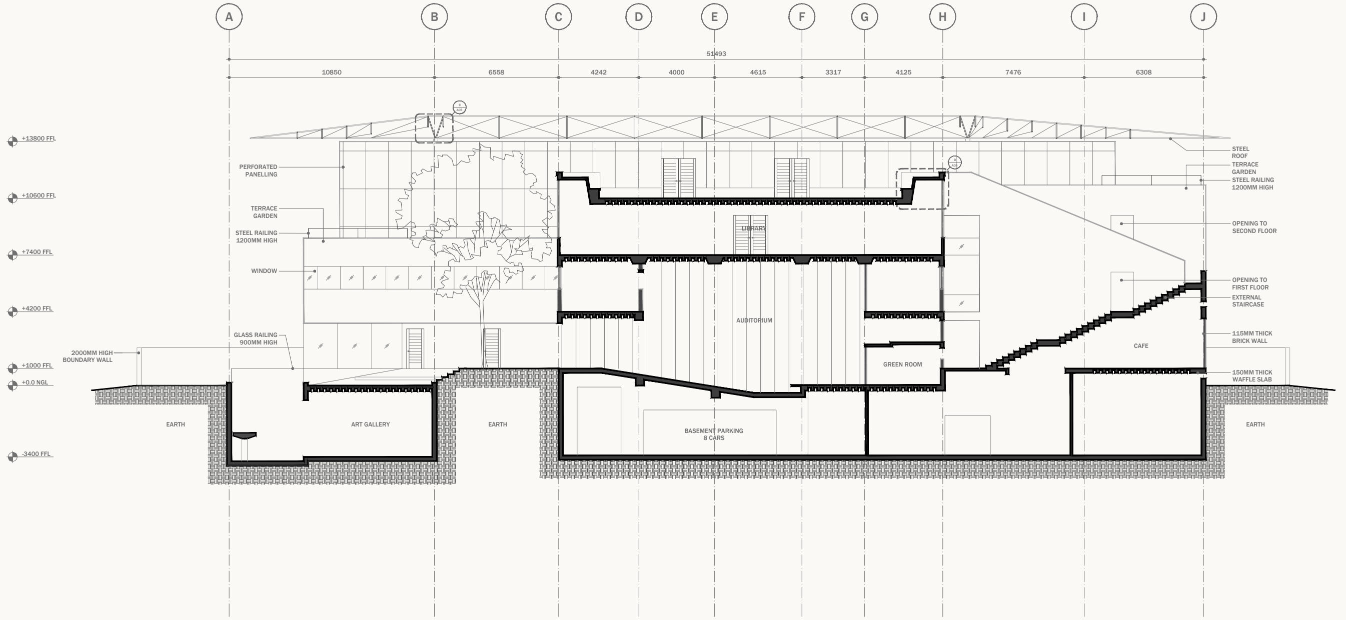
WINDOW SCHEDULE				
TAG	WIDTH	LENGTH	SILL	LINTEL
W1	1200	2100	1200	2100
W2	900	2100	1200	2100
W3	750	2100	1200	2100
W4	2400	2100	2400	2100



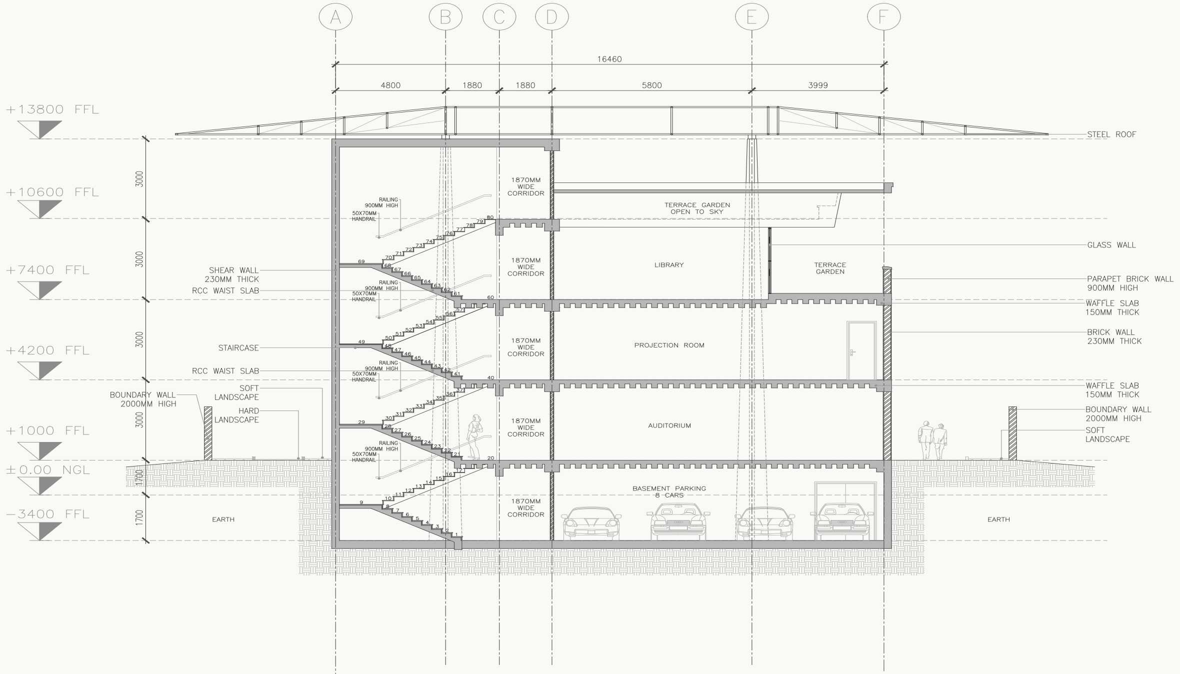
1 SECOND FLOOR PLAN

DOOR SCHEDULE		
TAG	WIDTH	LENGTH
D1	1200	2100
D2	900	2100
D3	750	2100
D4	2400	2100

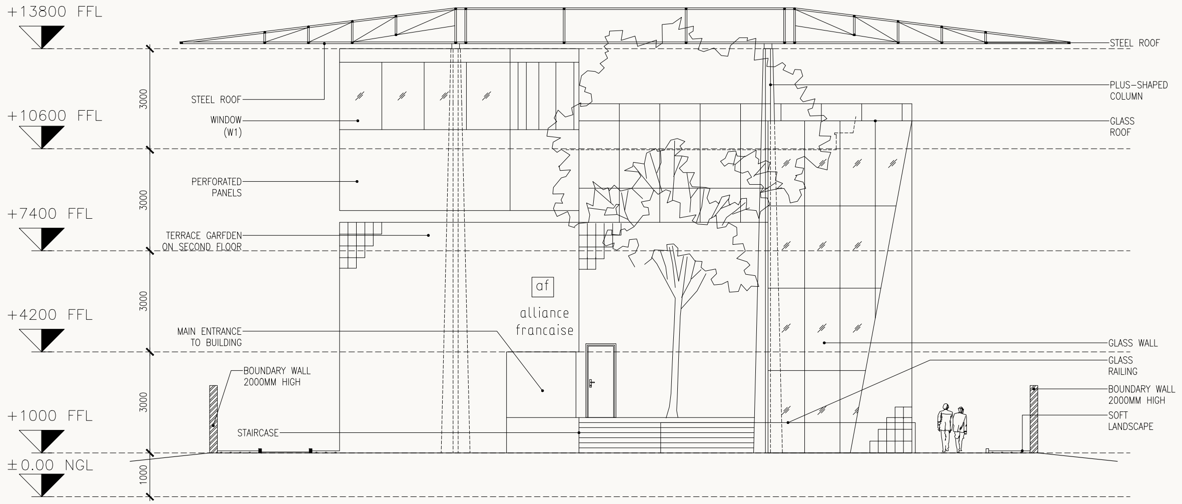
WINDOW SCHEDULE				
TAG	WIDTH	LENGTH	SILL	LINTEL
W1	1200	2100	1200	2100
W2	900	2100	1200	2100
W3	750	2100	1200	2100
W4	2400	2100	2400	2100

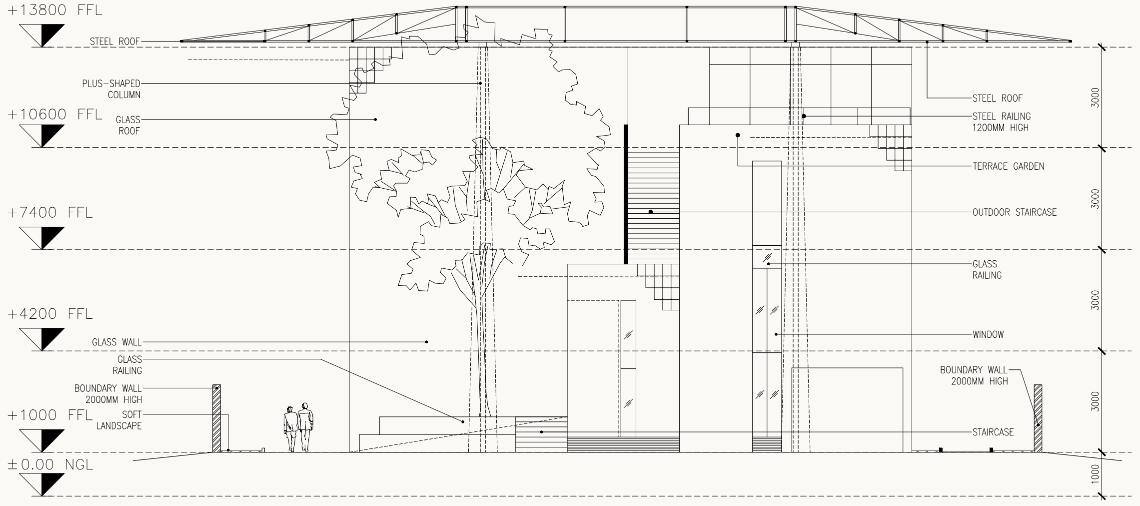


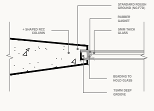
1 SECTION CC



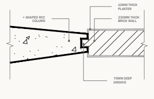
1 A010 SECTION BB 1:50



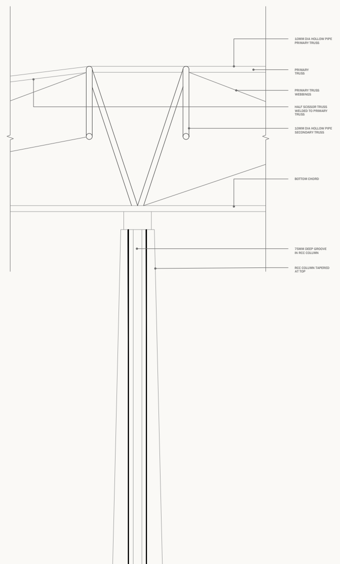




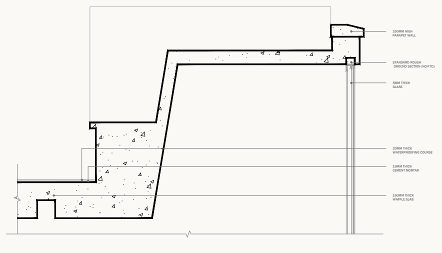
DETAIL - A



DETAIL - B



DETAIL - C



DETAIL - D