



DESIGN + ARCHITECTURE



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Aden Foong Design + Architecture

Graduation Portfolio

Author : Foong Zhi Min

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**TAYLOR'S
UNIVERSITY**

Wisdom • Integrity • Excellence

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"I doubt, that's why I think. I think, that's why I am."

- René Descartes

FOONG ZHI MIN
TULC, Malaysia



AWARD

2nd Runner Up

Industrialised Building System Challenge 17'

Merit Award

BCI Award - Futurarc [Biophilic Design] 17'

PARTICIPATIONS

[味!马来SEE亚 2.0] Illustration Competition 19'

(Workshop) WCSC Masterclass 19'

11th WCSC International Conference 19'

(Workshop) Young People's Lab 19'

(Workshop)MY100 Year City by Urbanism Malaysia 18'

(Workshop)The City @ Eye Level by STIPo 18'

Tugu Negara Gazebo Competition 17'

PAM Adaptive Reuse Competition 16'

Architecture is an abstract thinking & the construction of '**idea**' that we build in our human mind consciously. Each of us may argue the representation or narration of social ideas differently based on own interpretation of social, scientific and semantic realities. However, see this as an advantage of big sharing pools of ideas where an 'identity' is strengthen by the discourse. These 'ideas' carried by buildings however are things that make human experiences or building more than repeated tradition. These buildings will form discipline of Architecture, which I believe can be discussed, taught and widely experimented with artistically, scientifically, and ideologically.

As much as the ideas play the major role behind the construction field, a **systematic research process** is equally important for architects in trying new methods for creating architecture using buildings. In formalising the 'ideas', I believe the 'idea' of future should not be the literal visual of future social and environment, but the constant conversations & exposure that sparks possibility in different development opportunities. In that sense, evolution of architecture is not defined by buildings, but the 'ideas' that count. Architecture cannot evolve as architectural change is always the result of deliberate actions of architects.

I am passionate to discuss about **the future of social & architecture relationship**, and I'm widely open to various approach to experimental process which toughens up the thoughts of my 'ideas'. Experiment may cause a risk, but that's what it takes to break the norm.

A positive, determined and explorative individual with curiosity.

SYNERGY VIC

VISITOR INTERPRETIVE CENTER @ BATU CAVE

SEMESTER 3

"The concept of 'Architecture' is to capture the rich content and energy synthesised from the activities of Batu Cave, translating dynamic movements to a journey of cave-like-exploration wrapped by different architecture elements with different intensity of light and shadow. These moods of 'Architecture' will allow the visitors to explore different ambience within a visitor interpretative center.

The design process focuses on studying contextual responses, such as axis alignment of circulations and views. By overlapping axis from horizontal planar, each experiences and mood are joined into a series of journey that guide one's vision and senses through a cave-like-interpretive journey."

Aden Foong

SYNERGY VIC

MOTION TO EMOTION

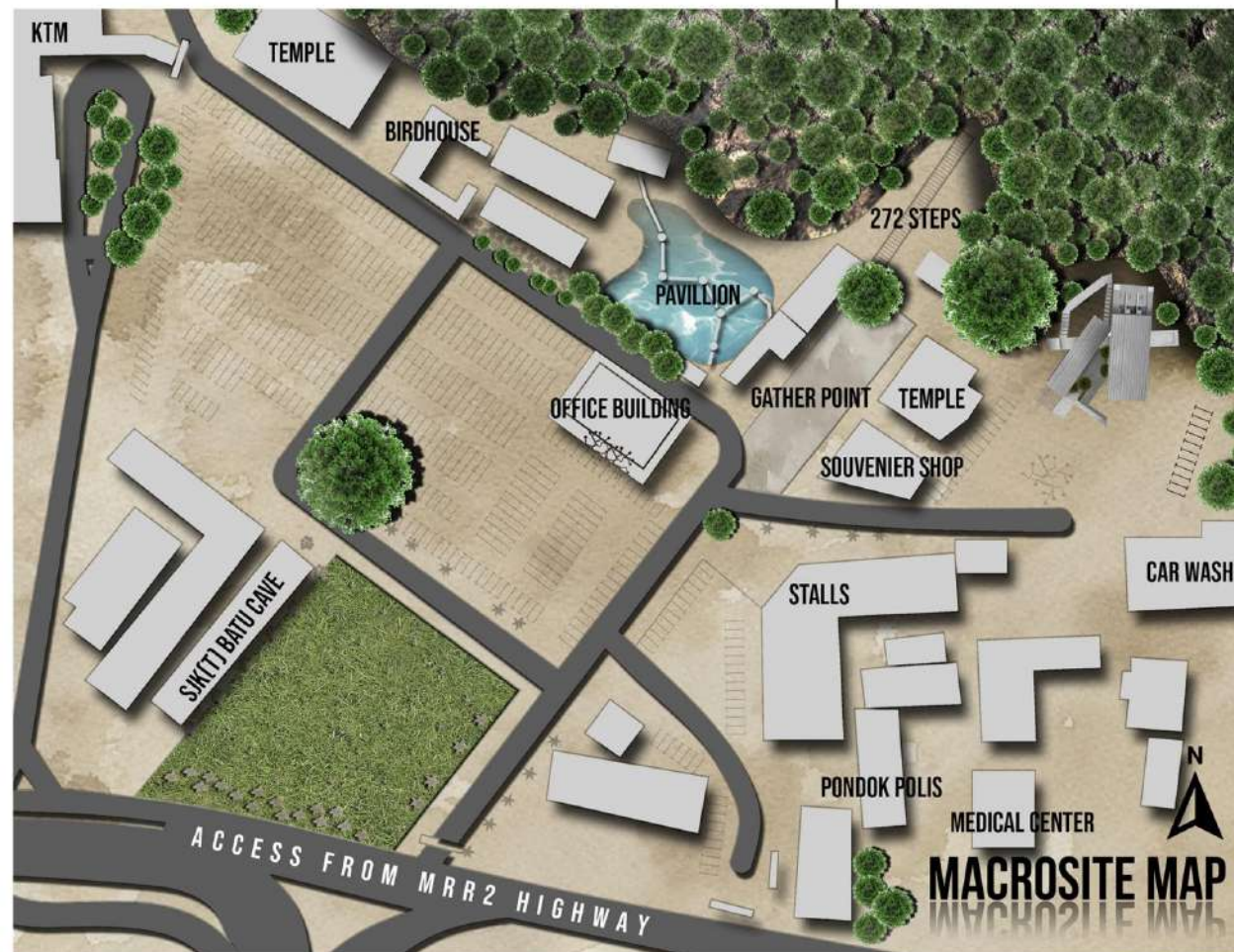
Synergy VIC is a platform to invite different communities to understand and experience the interpretive essence of Batu Cave through their emotions along their journey, capturing different viewpoints from different altitude and also opportunities to interact to interact with the context.

This VIC serves as a bridge to bring human closer to nature and admire their beauty through different architecture expressions. During festive seasons, this VIC is able to hold on to events and celebrations that bridges humanity together with nature as a majestic backdrop for events.



FOONG ZHI MIN 0328020





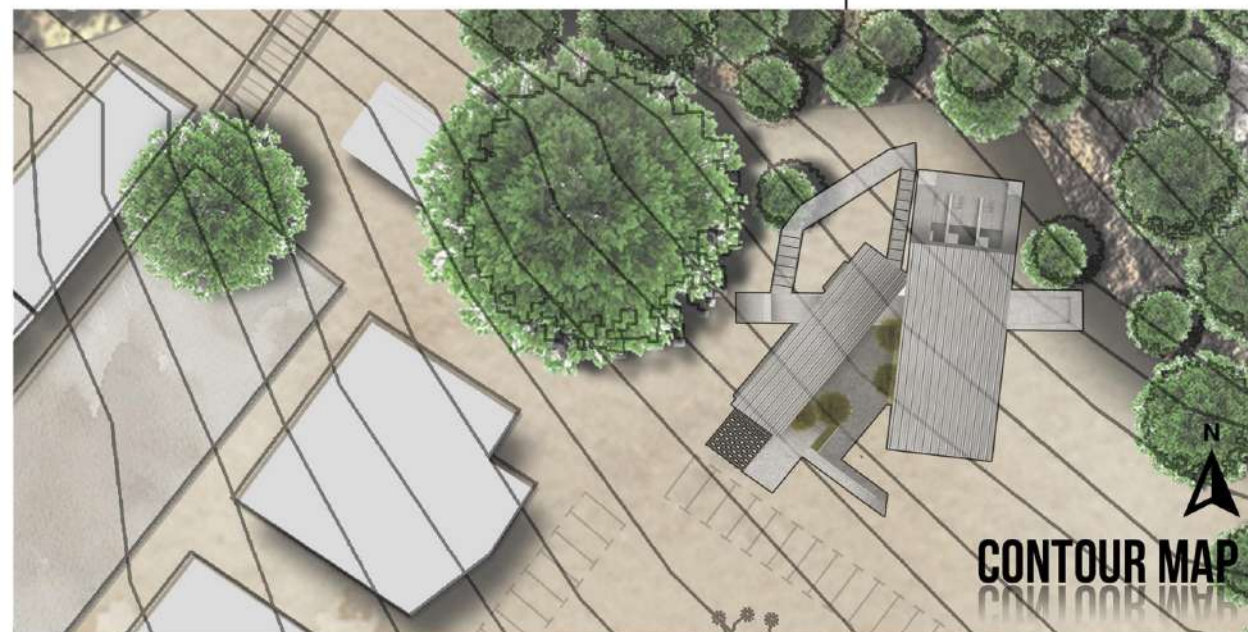
TIMELINE

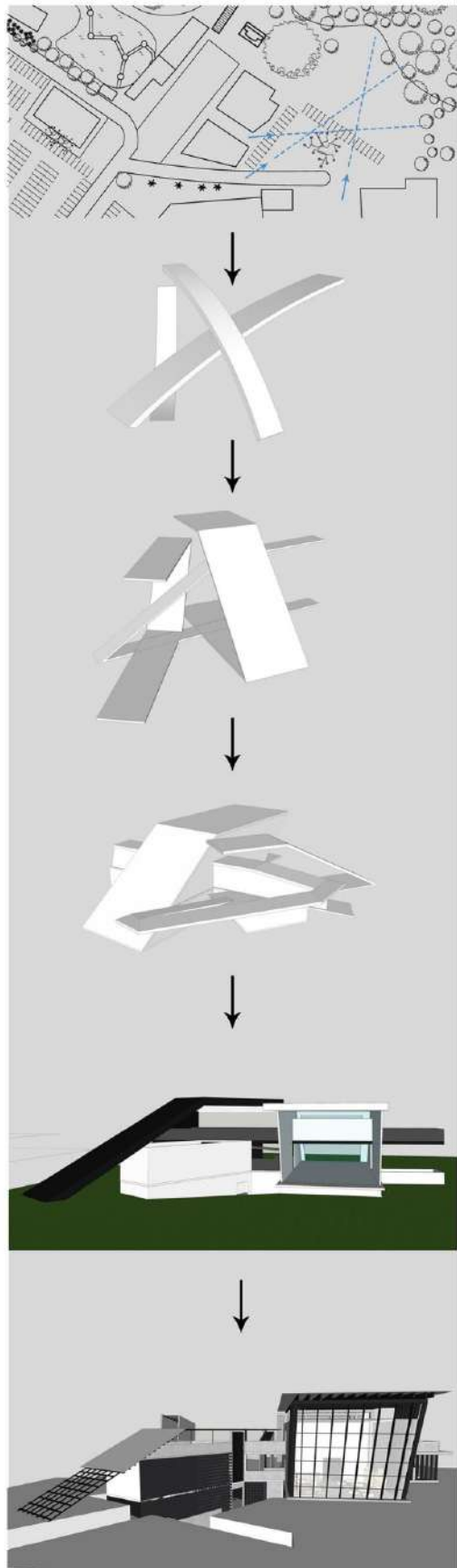
Used as shelters by the indigenous temuan people
(A tribe of orang asli)

Chinese settlers began excavating guano for fertilising their
vegetable patches.

K. Thamboosamy Pillai, an indian trader, was inspired by the
vel-shaped entrance of the main cave and was inspired to dedicate
a temple to Lord Murugan within the caves.

Wooden steps were replaced by 272 concrete steps.





DESIGN PROCESS

Identify movement pattern

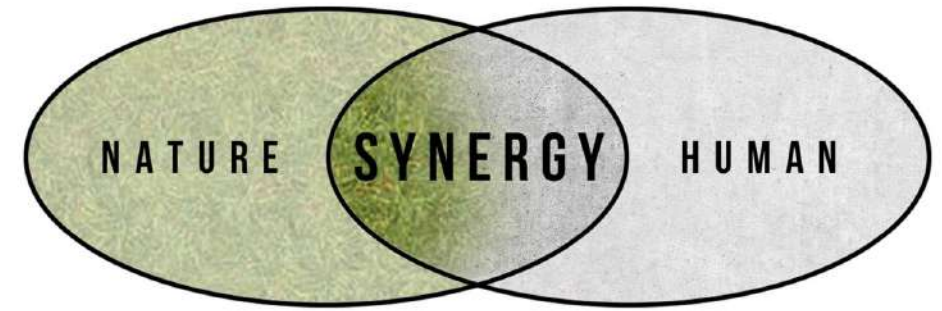
Translate to inclined planes

Folded to altitudes and spatial accommodation

Views & circulation captured

Spatial refinement based on programs

Structural constructability



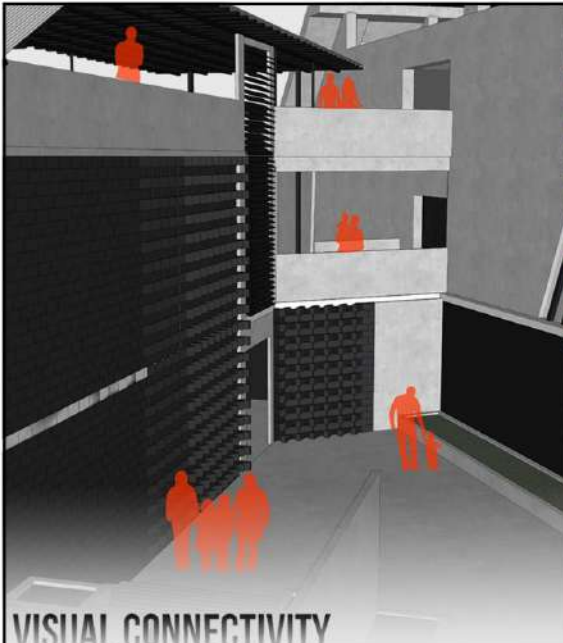
CONCEPT

Following through the timeline, Batu Caves serves many purposes as human first conquered the cave for different needs. Until today, Batu Cave is well known as a tourist attraction for the interaction with monkeys and also for the views. It is also a spiritual gathering point for Hinduism. Not only that, they do provide activities such as rock climbing too. During festive seasons, this place converts into a celebration node with interesting performances and cultural event, which is very happening within the urban context itself. Such a cave is able to accommodate various atmosphere and forms a new relationship with different community for different purposes.

The essence of the cave that is extracted to apply as the VIC concept is the synergy between nature & humanity.

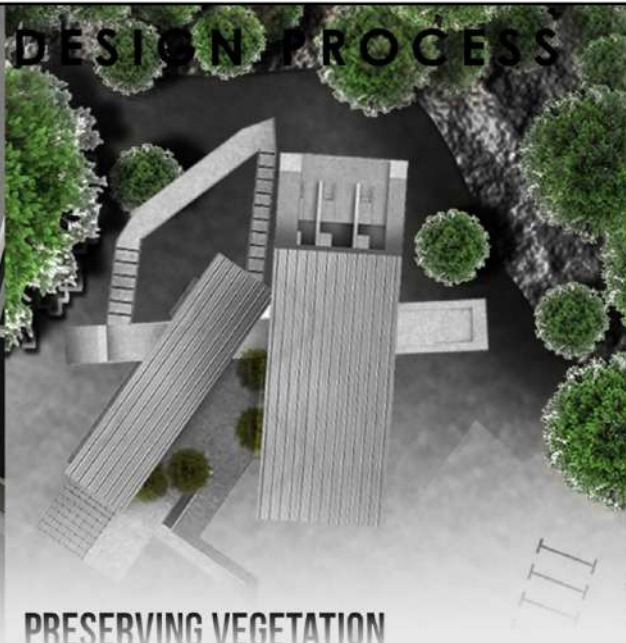
To give the visitors a sense of Synergy, the circulation of the VIC will translate different emotions along the visitors' journey, similar to exploring the cave with different surroundings through different places & time.

DESIGN PROCESS



VISUAL CONNECTIVITY

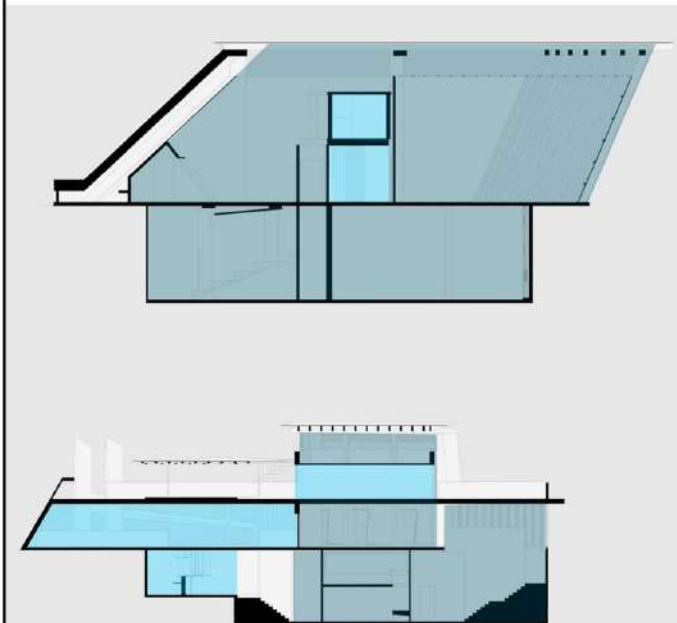
The courtyard acts as an atrium where visitors get to view the happening events going on at the courtyard. Visitors get a glimpse of each of the floor as long as they are close to the courtyard. This encourages more interaction between communities and enhancing a friendlier atmosphere.



PRESERVING VEGETATION

Existing vegetations are preserved as the beauty & essence of the context, making a majestic backdrop for the spaces such as the gallery & viewing decks.

Additional vegetations are planted along the courtyard as a payback respect to the nature, & to enhance the ambiance of the gathering space.



Double volume creates the tectonic expression within the cave, comparing the scale & proportion of human to the context.

A play of volume spreads around the circulation gives visitor a sense of crawling through the cave of different height & different light intensity.

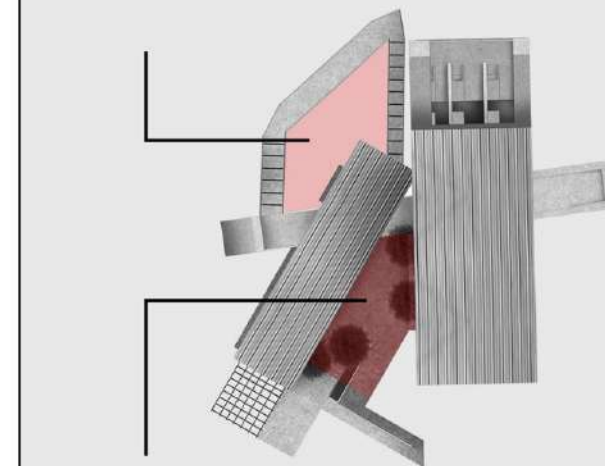
LEGENDS

- SINGLE STOREY HEIGHT
- DOUBLE VOLUME HEIGHT

VOLUMETRIC LAYOUT



SITE ENGAGEMENT ACTIVITIES



POSITIVE AND NEGATIVE SPACES

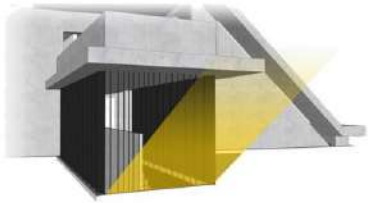
Negative spaces are utilised as courtyard/ foyer to gather the community for different functions especially during the festive seasons.

Courtyards are formed in the wrap of ramps & blocks of concrete walls.

EXPOSURE CONTROL



Frosted glass to allow entry while covering the unpleasant traffic scene.

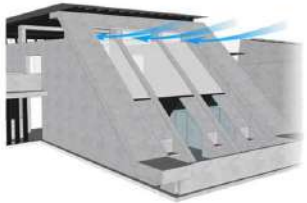


Morning light penetration from East.



Capturing view while allowing sunlight entry.

VENTILATION CONTROL : Stack Ventilation & Cross Ventilation



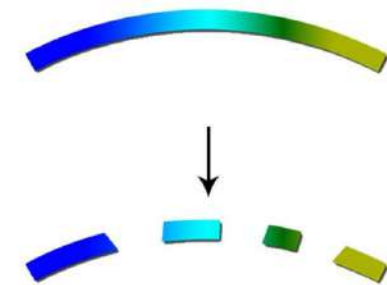
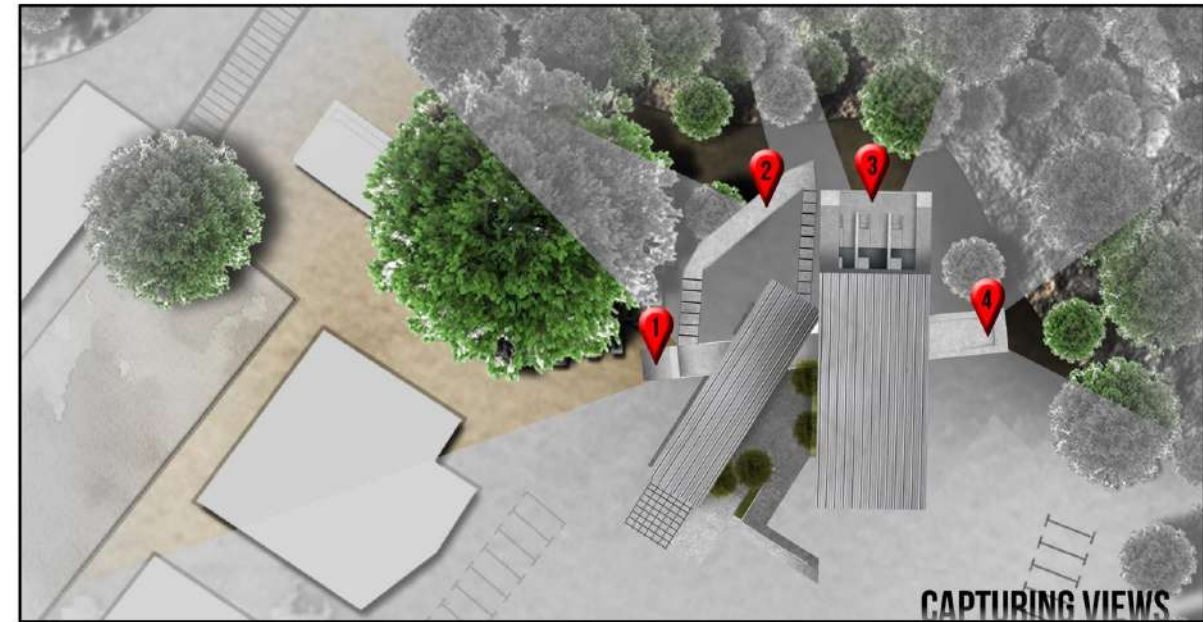
Entry of cool wind.



Stacking effect of heat taken by incoming cool wind.

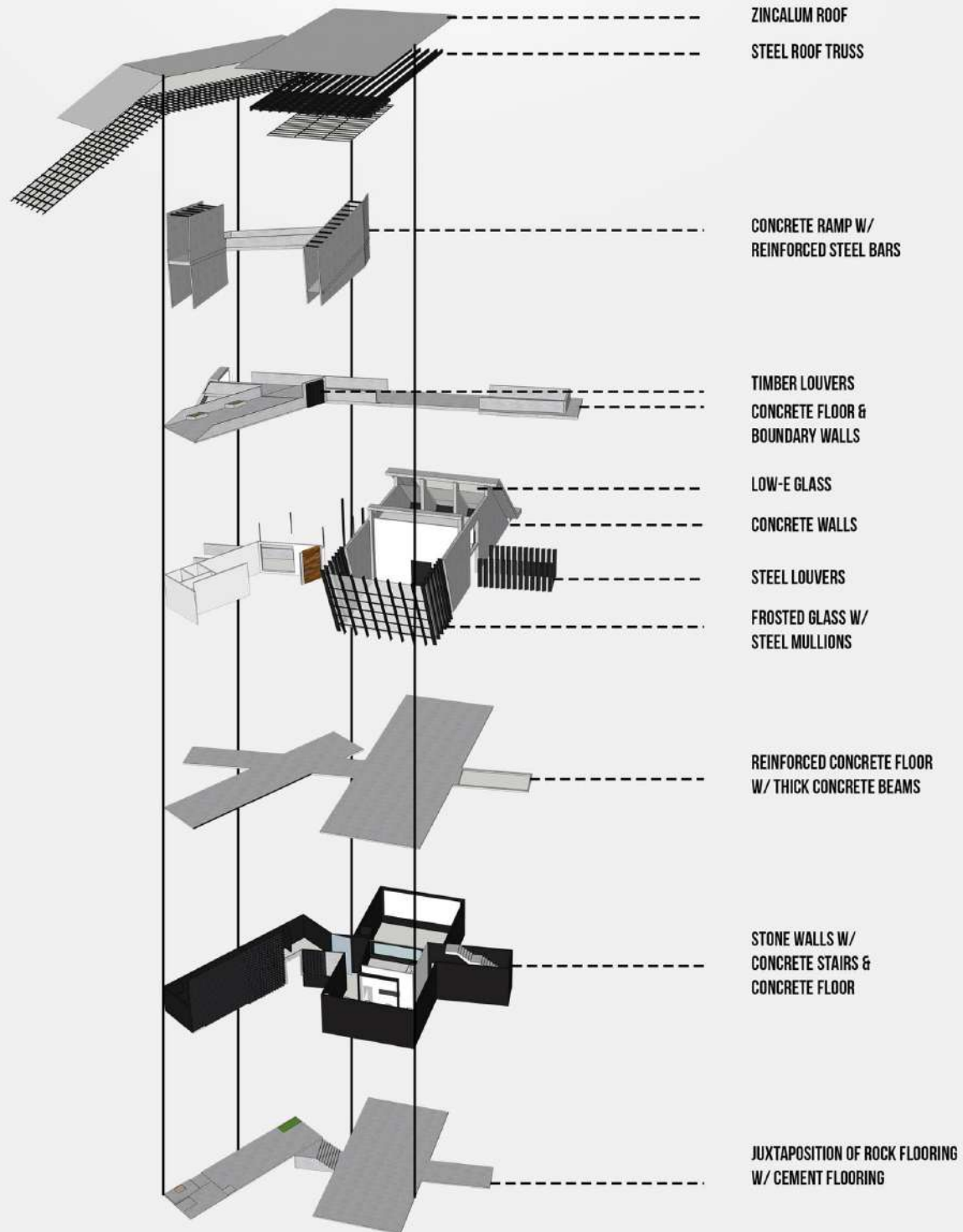


Heat is eliminated from building along with the wind.



Views are framed from the majestic panorama view of the cliff. Instead of having a wide view (strip) of the cliff, the strategy used is to break down the views to different spaces, framing at different altitudes and angles. Thus, each view framed are captured and highlighted as a focal point.

MATERIALITY

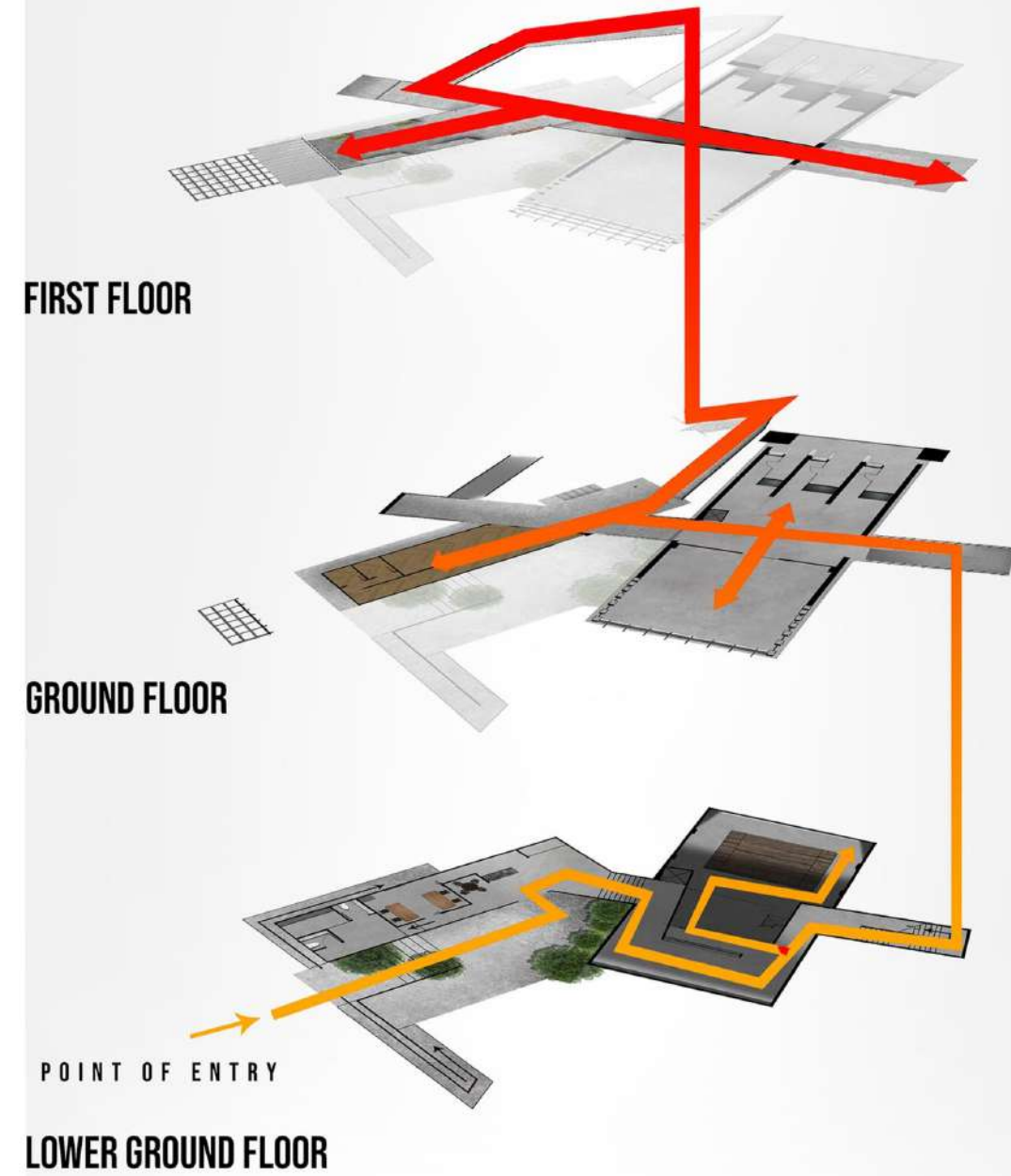


MATERIALITY

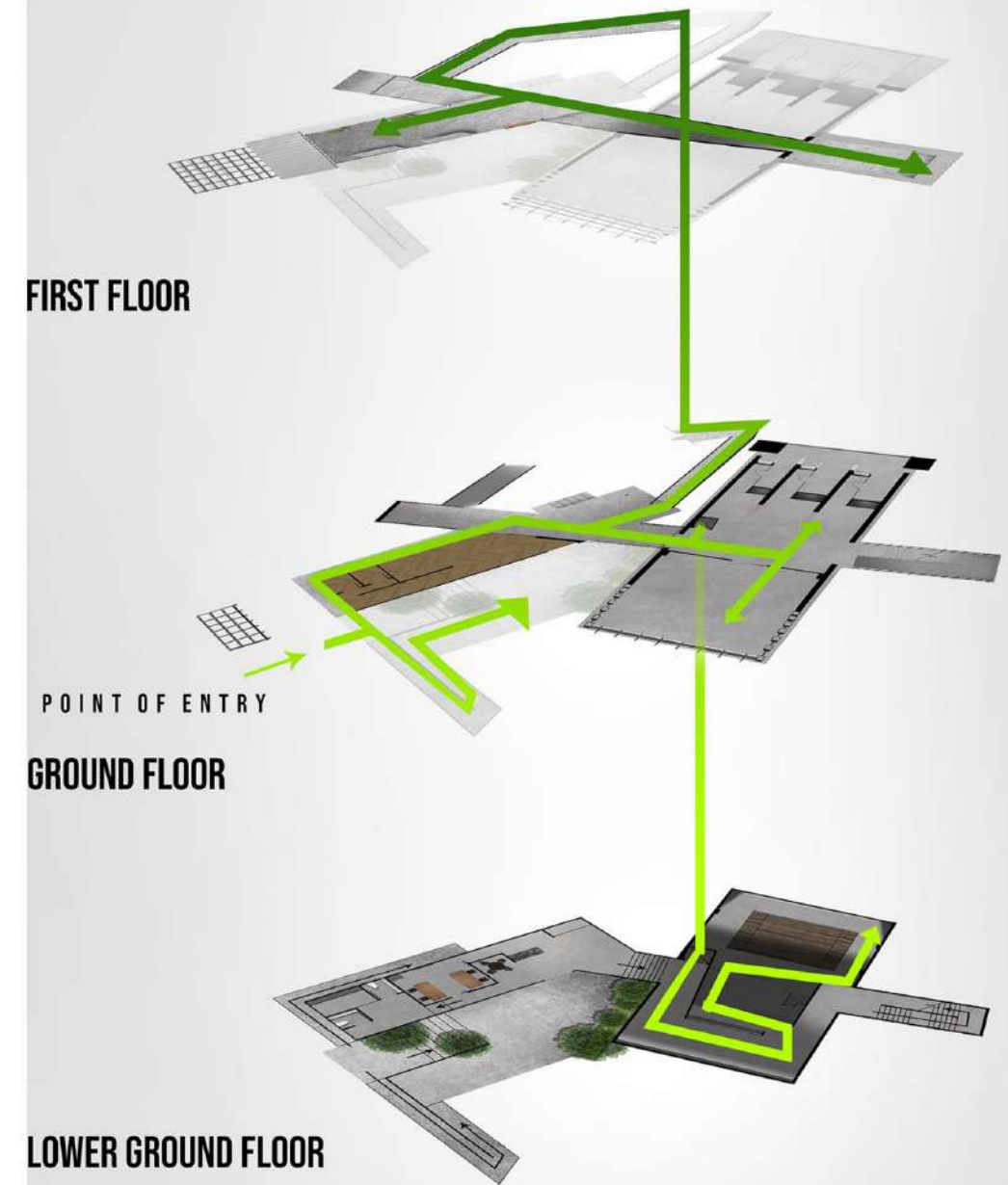
Material selections are chosen with the similar language to the site context. Raw materials are used to immitate the expression of caves & manipulated in a way to enhance the techtonic expression of a cave exploration.

Colour scheme of the VIC is kept in cool raw colours to not outstand the attention of the cliff.

CIRCULATION



OKU CIRCULATION

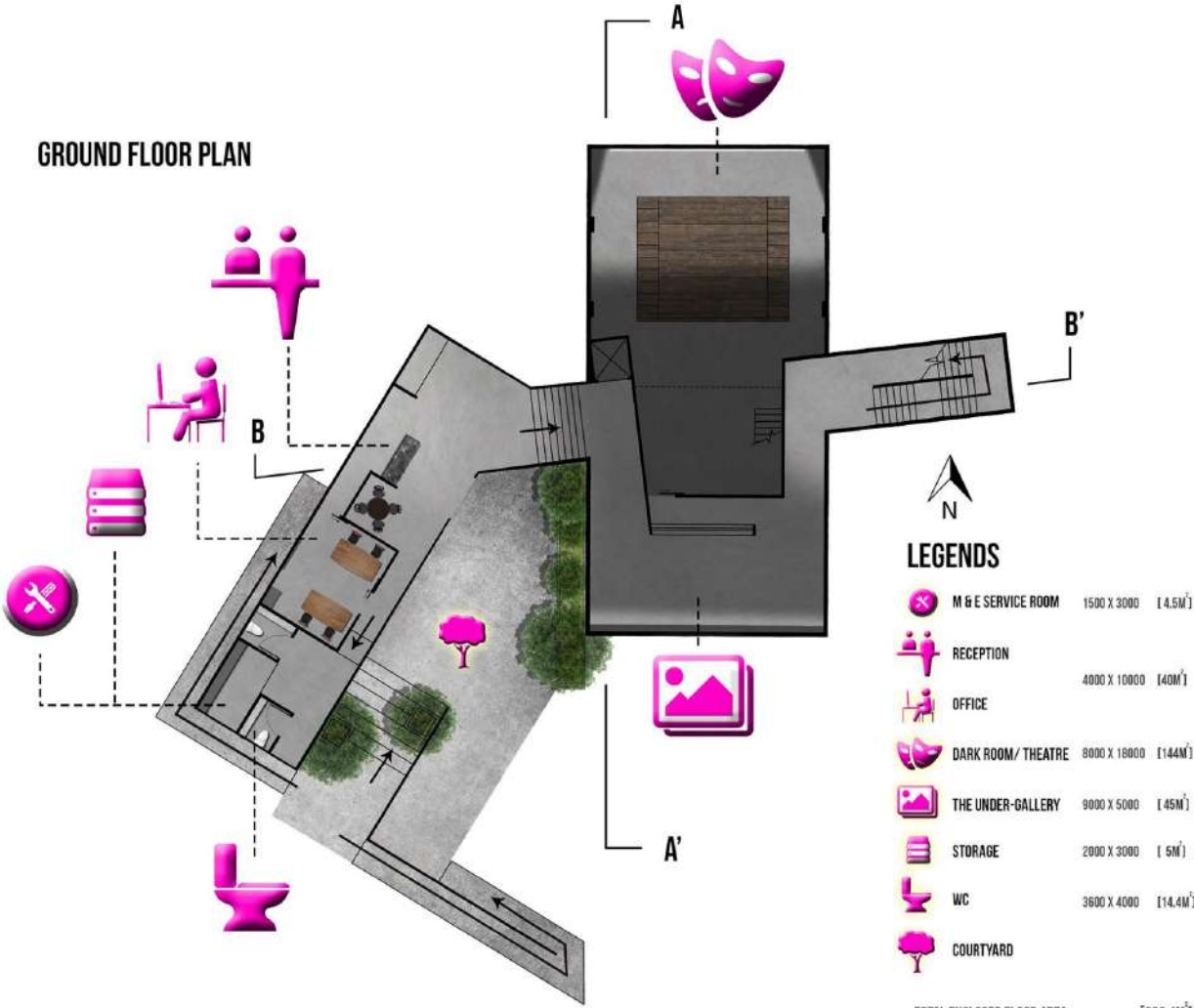


SYNERGY VIC EXPLORATION JOURNEY

A PLATFORM TO ENGAGE AND ENHANCE RELATIONSHIPS BETWEEN HUMANITY AND NATURE.

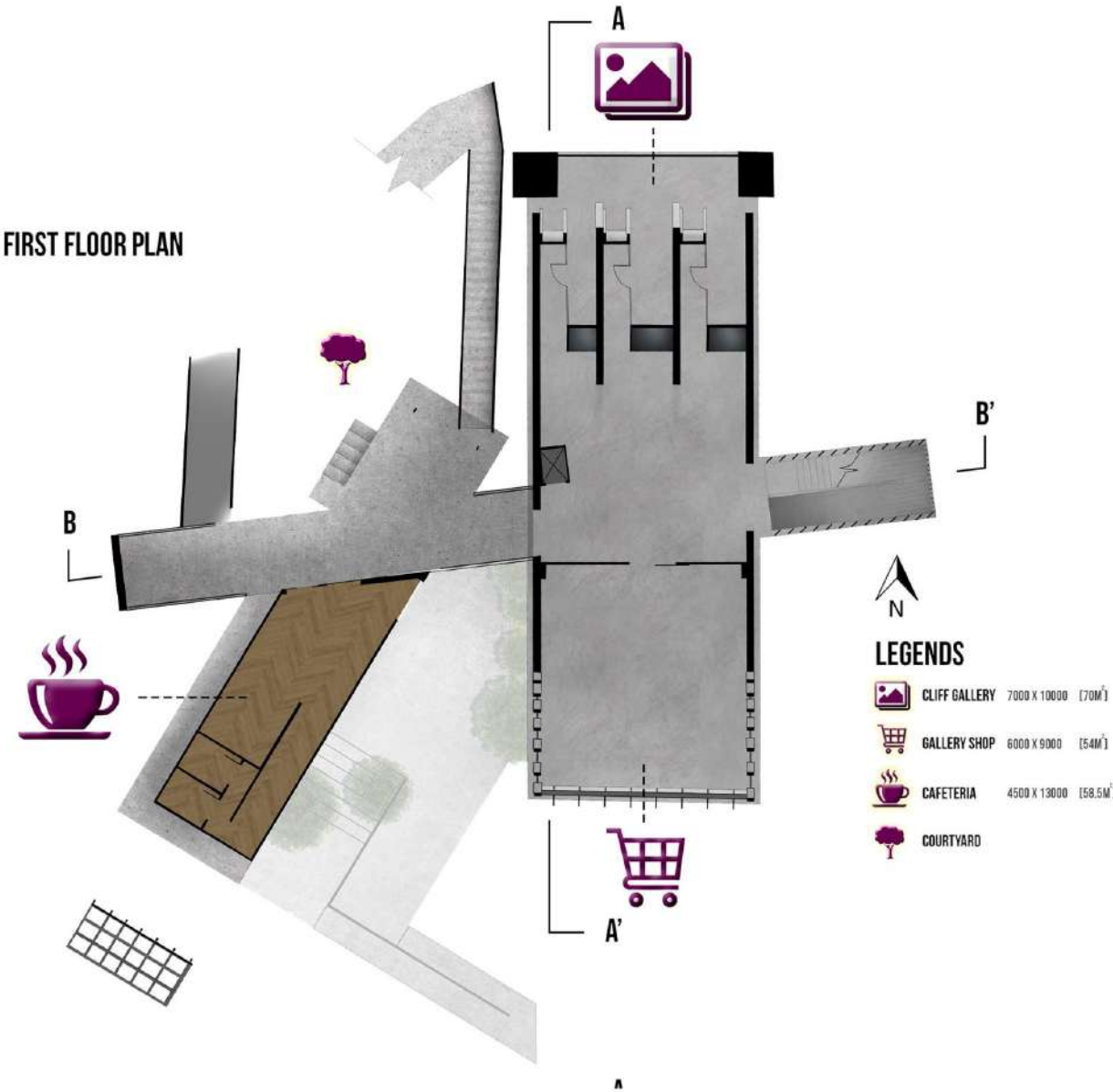


GROUND FLOOR PLAN



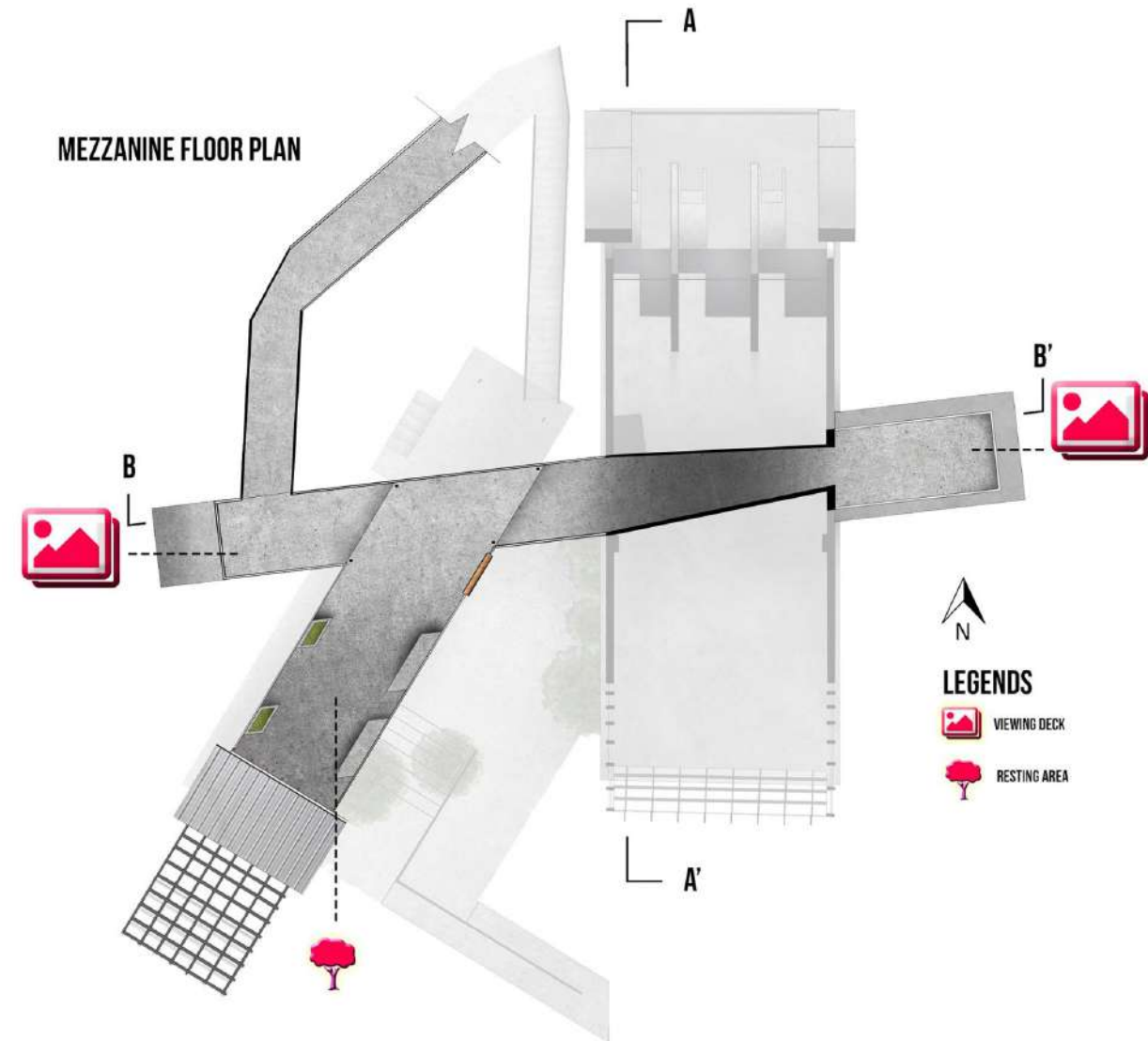


FIRST FLOOR PLAN





MEZZANINE FLOOR PLAN



THE NARRATIVE GARDEN

CULTIVATING IMAGINATIVE DIVERSITY IN A SPACE-MATRIX MAZE

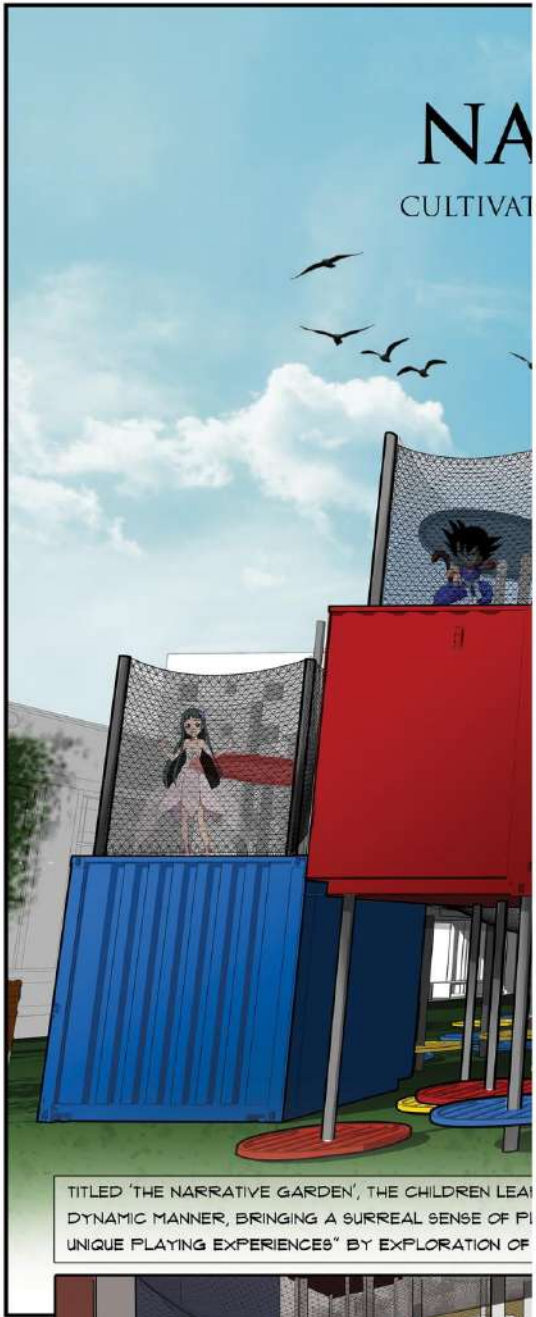
SEMESTER 4

"Children play shall not be explored from a third's person view as different stage of growth defines play differently. We interviewed a few kids and concluded that children like variety and diversity. An environment that is too controlled will flip the situation upside down. Given the modular of containers to design a playscape, it is challenging to repurpose this matured looking modular into an environment that kids will define as 'playful'. Instead of stacking all up, we cut it and toss around so that things can be more freely visible and interesting in methods of playing. It helps in ticking off a topic between children too rather than the same activity and method that is the same all year long.

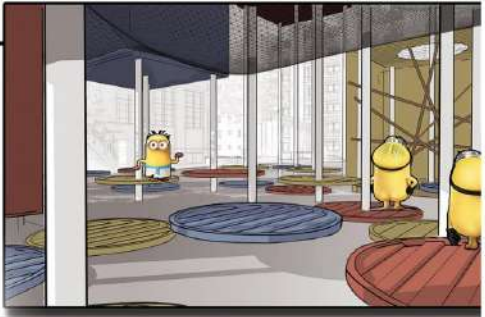
The best way to cultivate creativity paradoxically is no definite way."

Aden Foong

Explorations of Modules in Design



TITLED 'THE NARRATIVE GARDEN', THE CHILDREN LEARN TO PLAY IN A DYNAMIC MANNER, BRINGING A SURREAL SENSE OF PLACE TO THE URBAN RESIDENTS. CHILDREN ARE INVITED TO 'CREATE THEIR OWN SPACES THROUGH 'DRAMATIC PLAY'.



ROTATING PLATES

VERTICAL COLUMNS AND ROTATING BASE PLATES CONVERTS THE GROUND FLOOR INTO A PLAYFUL 'CHASE-TAGGING' SPACE.



CHILDREN ARE BORN WITH THE ABILITY TO ALTER REALITY INTO IMAGINATION. THEY TEND TO SEE CERTAIN FEELINGS OR RELATIONSHIP IN RANDOMNESS, IN WHICH THEY ARE ABLE TO COME OUT WITH A SERIES OF CREATIVE STORIES OR ACT BASED ON THE HAPPENING SITUATION.

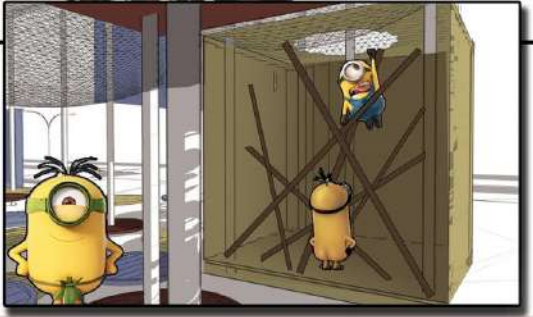
THIS ABILITY IS ONE OF THE GEM STONE TO PUSH GENERATIONS TO BECOME A VISIONARY, AS IT PRACTICES EXPLORATION IN IDEAS AND THE ATTITUDE OF CHALLENGING THE IMPOSSIBLE.

THE PLAYING CAPSULE FEATURES A 3X3 GRID OF DISSECTED CONTAINERS PLANNED IN A WAY TO THE URBAN RESIDENTS. CHILDREN ARE INVITED TO 'CREATE THEIR OWN SPACES THROUGH 'DRAMATIC PLAY'.



'NET'WORK SPACE

'FLOATING CUBES' INTERCONNECTED FORMING A SELF-DISCOVERY SPACE TO BE EXPLORED.



'NET'WORK SPACE

ENTANGLED ROPES CHALLENGES AGILITY AND COGNITIVE SKILLS IN ORDER TO MAKE USE OF THE ROPES TO TRAVEL TO ANOTHER LEVEL.

THE NARRATIVE GARDEN SERVES AS A PUBLIC STAGE WITHIN THE URBAN RESIDENTIAL AREA WHERE CHILDREN GATHER & EXPLORE DIFFERENT NARRATIVES AND DRAMA WITH DIFFERENT CHARACTERS DAILY.

THE LIVELY URBAN SQUARE IS A MODEL OF SUSTAINABILITY BY USING RECYCLED MATERIAL TO DISCOVER ANOTHER IDENTITY FOR THE

PEDESTRIAN BRIDGE LINKS ACCESS FROM THE SURROUNDING RESIDENTIAL.

PUBLIC PLACE-MAKING TO GATHER COMMUNITY.

CONTAINER CHILDREN LEARNING CAPSULE

SECTIONAL PERSPECTIVE
(NTS)

TAKE A GOOD ROLE BY USING RECYCLED MATERIAL TO DISCOVER ANOTHER IDENTITY FOR THE

CONTAINER BUS STOP

CHILDREN LEARNING CAPSULE

THE NARRATIVE GARDEN

ZONING

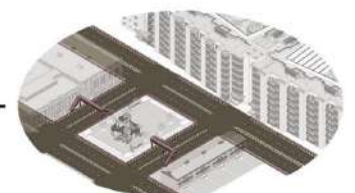
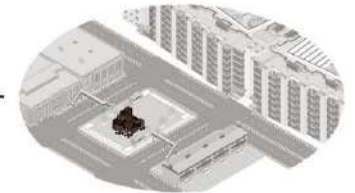
RESIDENTIAL
URBAN SQUARE

LANDSCAPE

LANDSCAPE

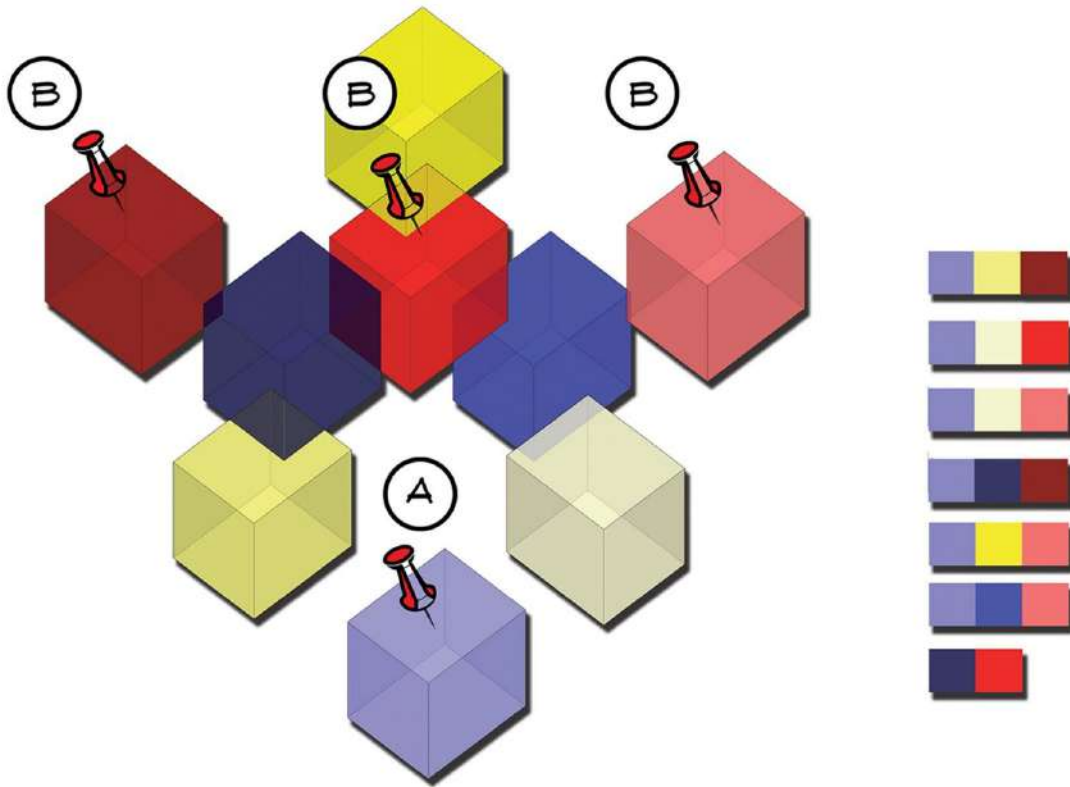
CIRCULATION

PEDESTRIAN ROUTE
VEHICLE ROUTE



DIVERSE EXPLORATION EXPERIENCE

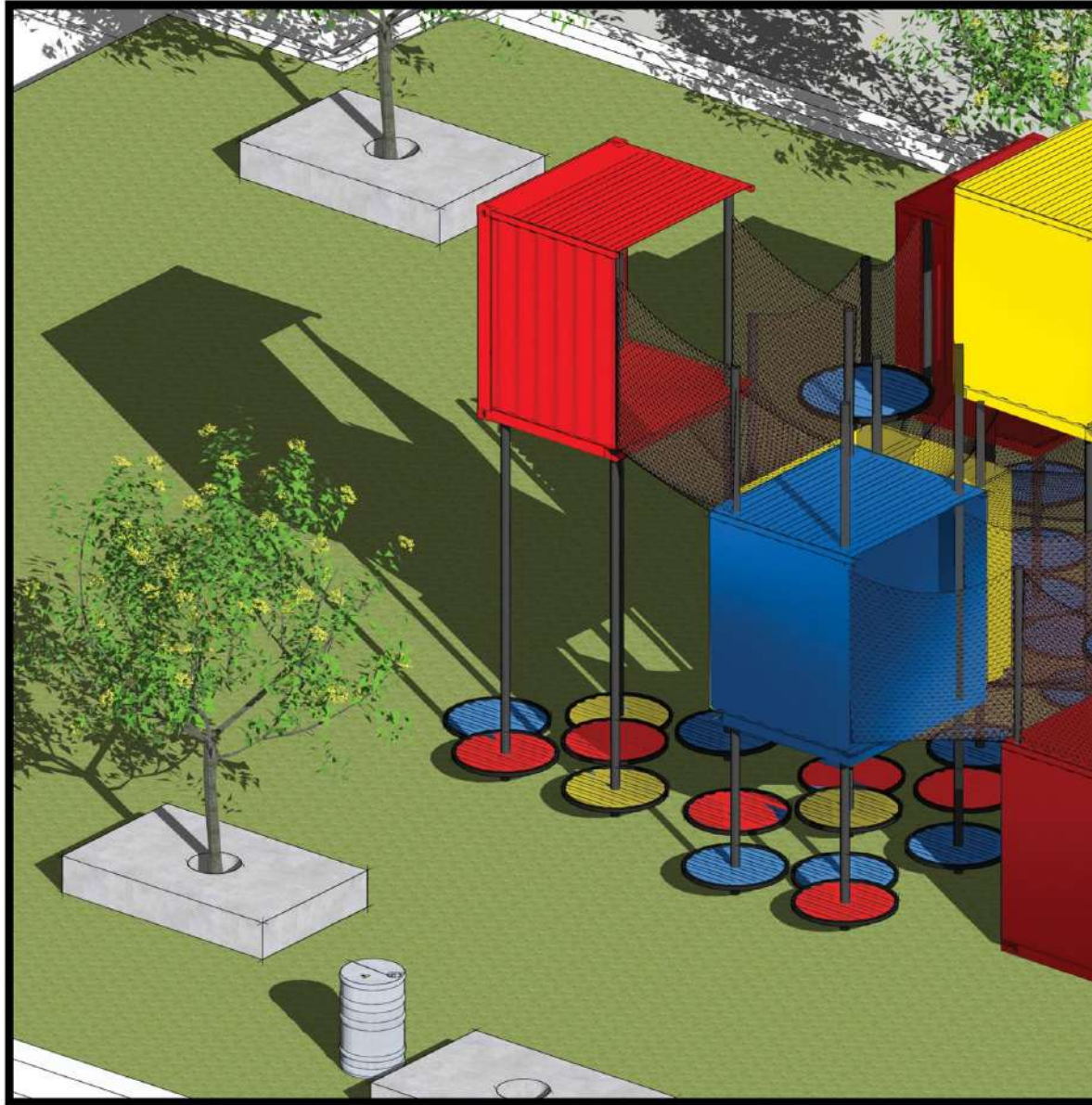
MORE THAN ONE UNIQUE ROUTES TO TRAVEL FROM POINT A TO POINT B IN A 3X3 GRID, EACH DEFINED BY EXPLORER.



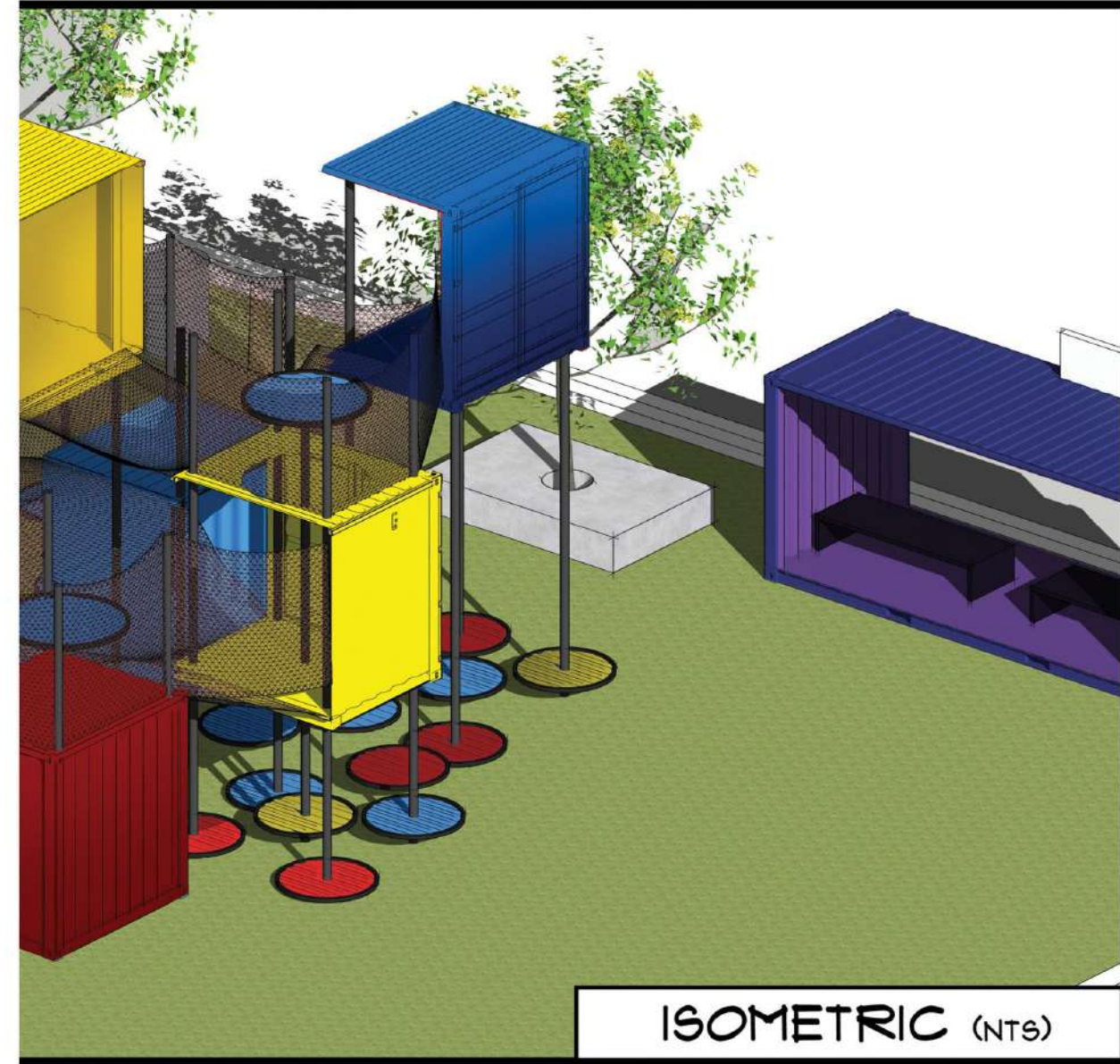
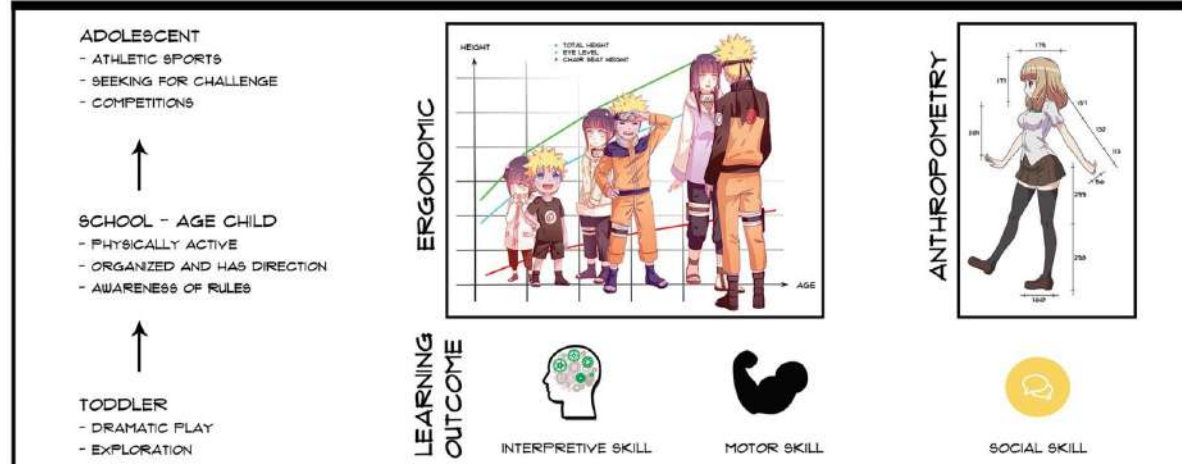
STRATEGY

Our vision of diverse exploration is a mixture of order & chaos. Our strategy is to dissociate the programs that are introduced in each container, and leave room for unexpected events to occur. We believe that it is in this ambiguity that provides fertile ground for creativity & diversity.

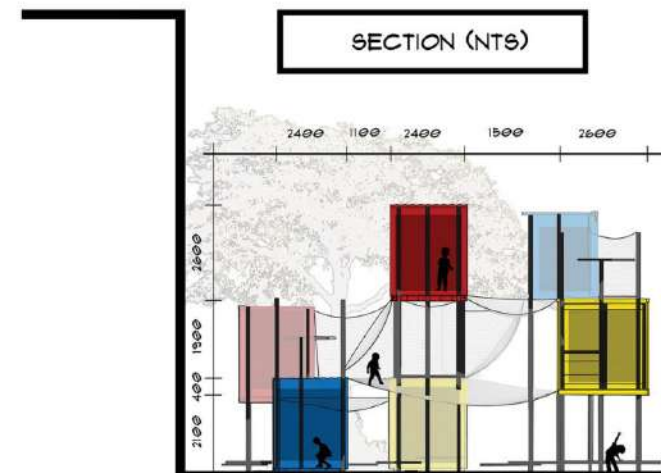
Thus children come and free to decide their own journey while exploring possibilities to get each of their own desired destination.

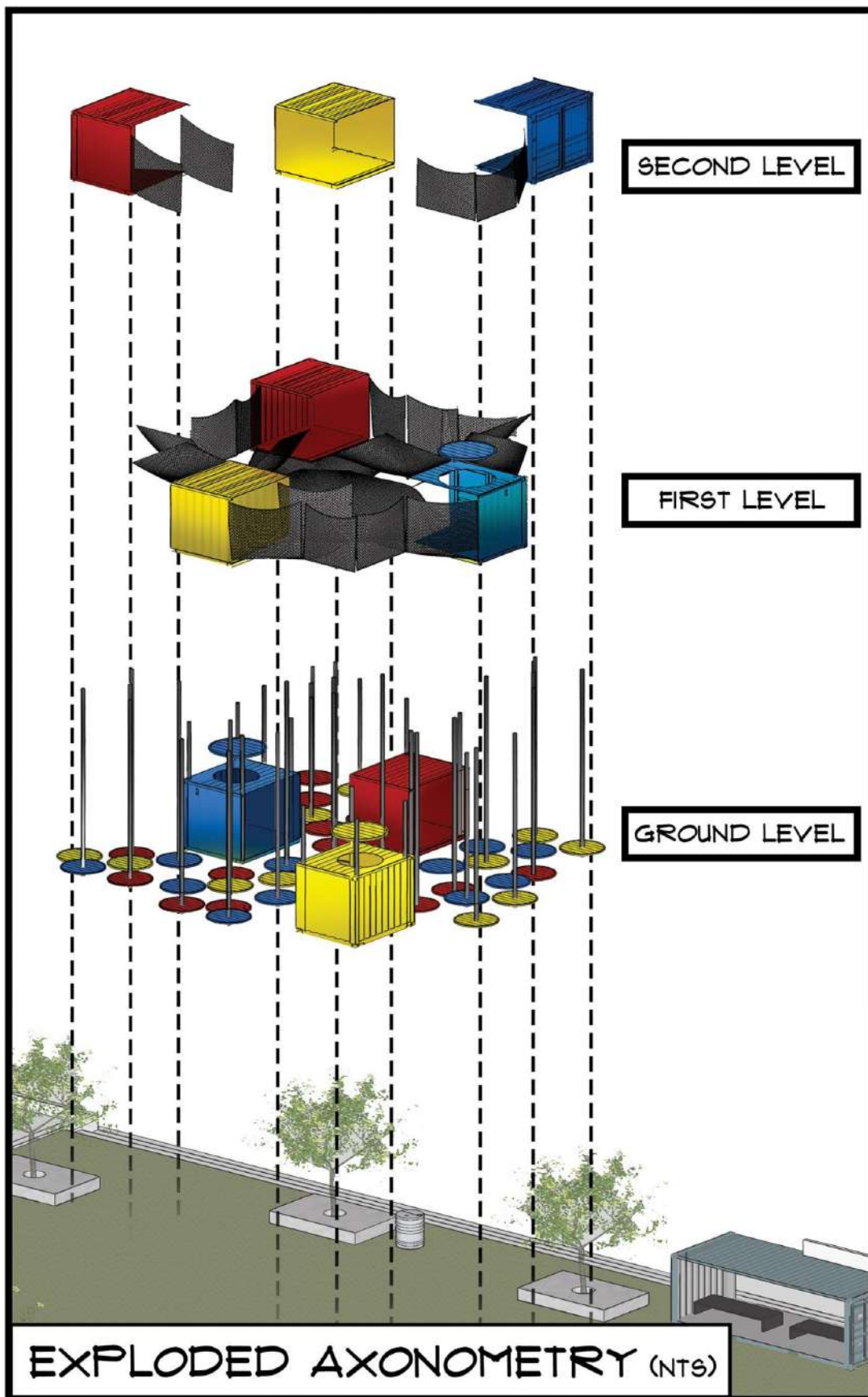


UNDERSTANDING USER



ISOMETRIC (NTS)

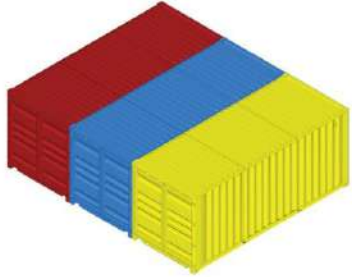




WHAT ARE THE ROLES OF ADULTS IN THIS NARRATIVE GARDEN?

Parents & teachers are able to demonstrate variety of correct methods to challenge boundaries...
As experiences shapes attitude.

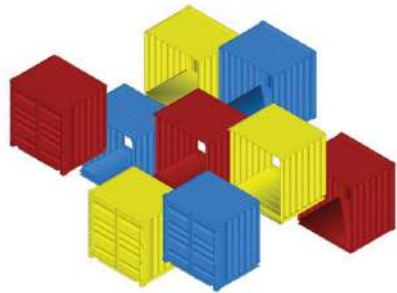
DESIGN PROCESS



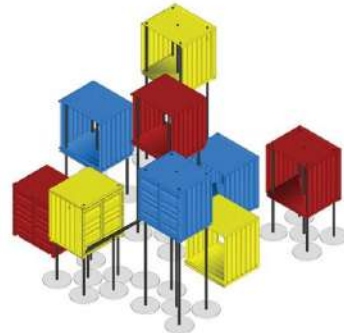
1. INTRODUCTION OF UNIQUE
PROGRAMME IN EACH CONTAINER



2. DISSOCIATE AND REARRANGE
PROGRAMME



3. DISTRIBUTION OF PROGRAMME
INTO EACH LEVEL



4. INTEGRATION OF STRUCTURAL
ELEMENT WITH 'PLAY'



5. LINKING THE DISINTEGRATED MODULAR FOR
CIRCULATION AND SAFETY

DESIGN PROCESS

The initial idea that sparks the design process is to assign colors to modules based on types of activities. These programs are later 'disected' and distributed evenly to different altitude with a system. Lastly is to intergrate structural components and constructability that never neglects the initial briefto incorporate 'play' to each components.

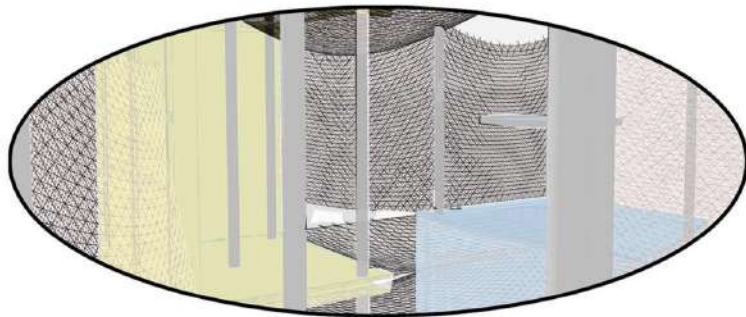
ROLE OF MATERIALS



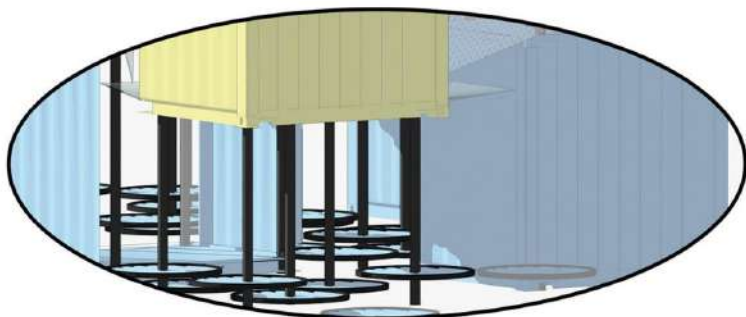
Used as stations within the maze.
Creating & balance between void & solid
within the exploration of spaces.



Spinning discs.
Reusing the containers' cut-off-faces to rebuild
another activity.



Main circulation device.
Provides flexibility in route of connectivity.
Encourage various mode of travelling such as
climbing/ crawling.



Main structural support.
Durable to weathering.
Integration of structural components with 'play'
activities.
Create voids below raised containers for
activity to occur within & outside the container
simultaneously.

SYNERGY SPLINE

FABRIC DANCE CENTER @ KAJANG

SEMESTER 5

"Constraints from previous site analysis are rather worked as parameters in this scheme as for architecture to be more explorative, but at the same time speaking the language of the context. The overall scheme is more of showcasing the interesting process of challenging spaces through the concept of fabric, and at the same time deriving floor plans and programs from Jan Gehl's urban theories.

But sadly, computing skills are the constrain to design explorations, whereas time is the constrain to complexity. Though the process is fun and explorative, if time is given more, I believe this scheme can potentially be more interesting in terms of facade treatment, roof design, form, architecture elements such as walls, etc."

Aden Foong



SYNERGY SPLINE

TRANSFORMATION OF COMMUNAL RELATIONSHIP

ECONOMIC GROWTH IN THE WAKE OF MODERNISM TRANSFORMED KAJANG FROM A TRADING VILLAGE TO A DEVELOPED TRADING TOWN. THROUGHOUT THE 30 YEARS OF DEVELOPMENT, MANY MIGRANTS HAVE MOVED IN KAJANG FOR JOBS DUE TO THE ECONOMICAL DEMAND. WHILE MOST OF THE LOCALS SHIFTED TO CITIES FOR A GREATER LIVING, MINORITY OF THE LOCALS THAT STAYED FOR GENERATIONS HAVE WITNESSED THE DRASTIC CHANGES OF COMMUNAL RELATIONSHIP OVER THE DECADES. FESTIVALS WEREN'T CELEBRATED AS HOW THEY USED TO MAKE 'KUEKAPEK' ON THE SFT WALKWAY, GREETINGS NEVER HAPPENED ACROSS THE WALKWAY AND THE SHOPHOUSES ANYMORE, CONGESTED TRAFFIC FLOW HAS TAKEN THE MAIN PLAY OF THE STREETS WHERE THEY SEE MORE CARS THAN HUMAN FLOW.

SYNERGY SPLINE AS A CATALYST

THE SYNERGY SPLINE IS A UNIQUE ART CENTRE THAT TRANSLATES THE ESSENCE OF LOCAL'S FABRIC DANCECELEBRATING THE OLDEN HARMONIOUS ATMOSPHERE INTO THE HISTORICAL SITE AS A CATALYST TO THE SOCIAL ISSUES. THIS PLATFORM INVITES SOCIAL INTERACTIONS THROUGH THE INTERGRATION OF THE STRATEGIES OF 'NECESSARY, OPTIONAL & SOCIAL SPACES' BY JAN GEHL'S 'CITY FOR PEOPLE'.

LANGAT RI

CENDOL STALL & RESTAURANT

MAYBANK

RESTAURANT

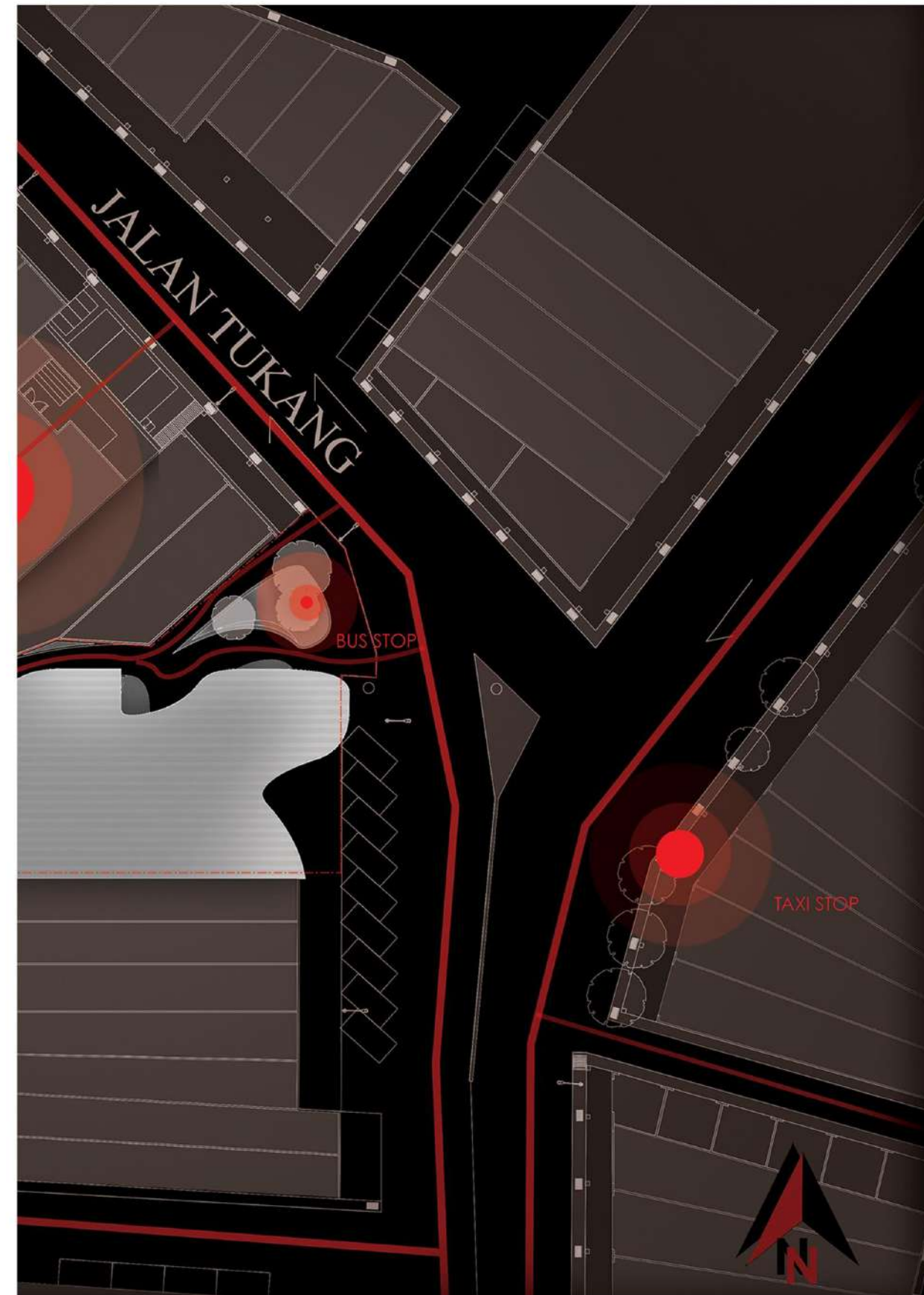
PUBLIC
TOILET

SITE MAP

SCALE 1 : 500

CONTACT POINTS ARE VERIFIED TO STUDY ON THE PEDESTRIAN & VEHICULAR MOVEMENT PATTERN AND SOCIAL BEHAVIOURS.

AS A RESULT, NOT ONLY THE EXISTING CIRCULATIONS (SIDE ALLEY) AND CONTACT POINTS (BUS STOP) ARE RETAINED, BUT MULTIPLE ROUTES AND OPTIONAL ACTIVITIES ARE INTRODUCED TO KEEP THE PUBLIC REALM ACTIVE.





LOCALS



"Unfamiliar faces everywhere, not the friendly community I was once closed to..."

"Nowdays you see much traffic congestion more than human interaction. Back then different households used to come together and make kuekapet during festive seasons. Good times..."

IMPRESSION



"We're born here and still living here. Life has changed a lot, you see more migrants more than the locals. If we're searching for family or leisure activities, definately gonna go somewhere else because Kajang don't have much of interesting bonding places."

"Lot of culture in Kajang not celebrated in a trendy manner. Thus slowly fading away as time past..."

KAJANG : "NOT THE ONE WE USED TO LIVE IN..."

The collage photo is inspired by the local's impression of the current Kajang as compared to the Kajang they used to live in. During pre modernism, community of Kajang was like a big family to one another, whereby the streets became the interaction platform for each households. Thos pedestrian friendly streets has now evolved to traffic congestions as modernism pushes demand of economy and living, causing many locals to move out of the city for better income and job opportunities. What is left is no longer the Kajang they used to be familiar anymore; What is left is not the community and relationships they once have.

STRATEGY

Design strategies are derived based on Jan Gehl's theory of '**Necessary, Optional & Social spaces**'. The study starts with observing the local's behaviour in the **5 dominant activities** within the microsite, which is categorised as **transactions, F&B, retail, performances, and learning**.

Jan Gehl
Cities for People

"While **necessary activities** take place regardless of the quality of the physical environment, **optional activities** depend to a significant degree on what the place has to offer and how it makes people behave and feel about it. The better a place, the more optional activity occurs and the longer necessary activity lasts. **Social activity** is the fruit of the quality and length of the other types of activities, because it occurs spontaneously when people meet in a particular place."

- Jan Gehl

	Good	
Necessary activities	●	●
Optional activities	•	●
Social activities	•	●

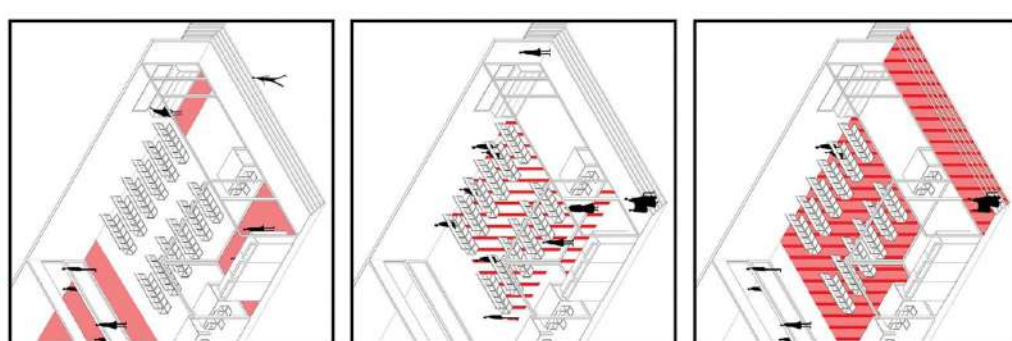
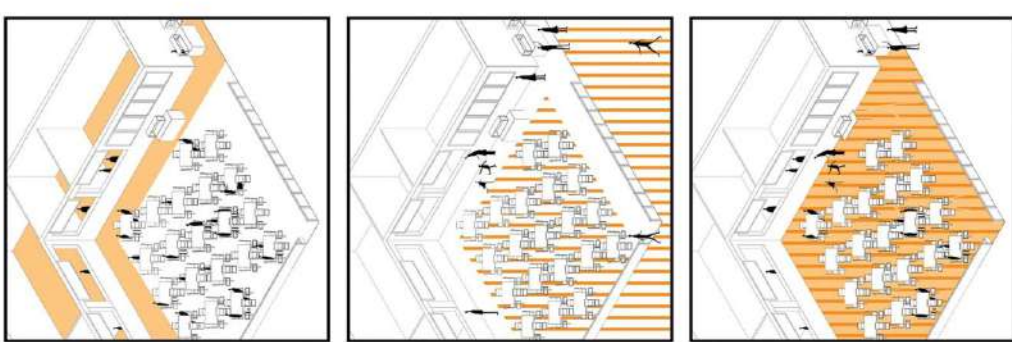
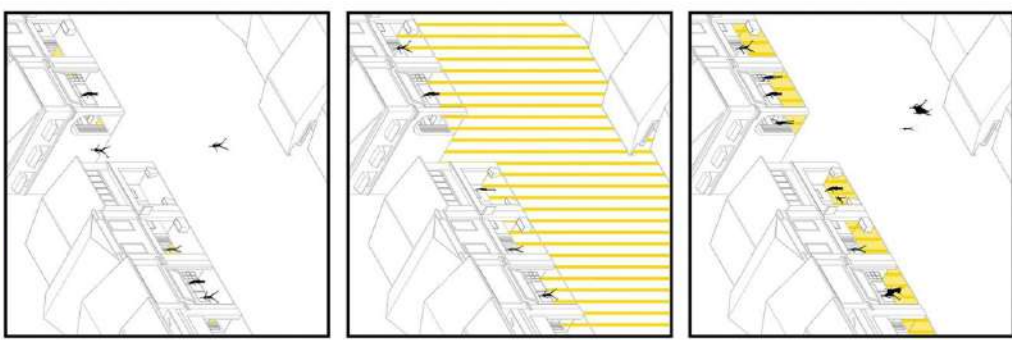
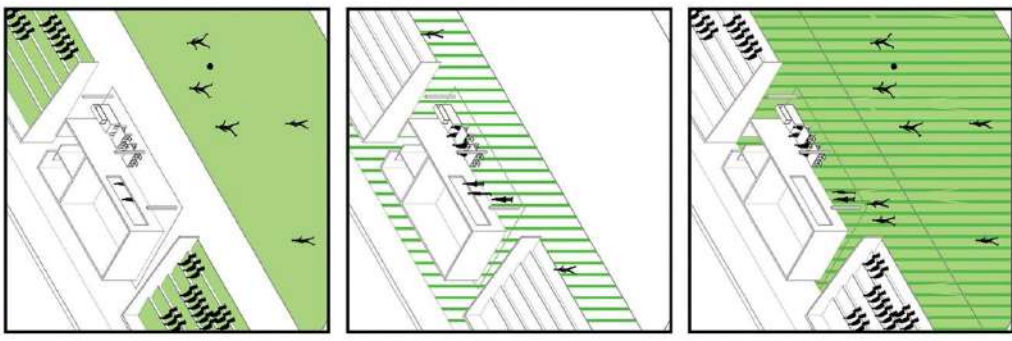
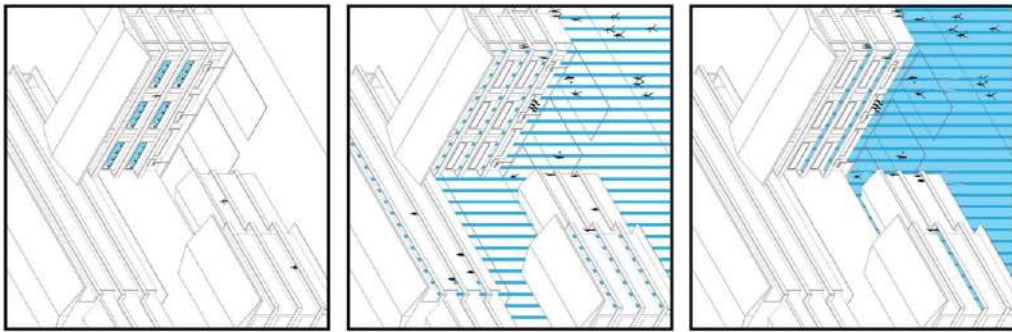
LEARNING

PERFORMANCE

RETAIL

F&B

TRANSACTION



NECESSARY

OPTIONAL

SOCIAL

5 DOMINANT ACTIVITIES IN KAJANG

Apart from the impression of the locals, we still do see human flow in Kajang. This raises a curiosity to investigate;

Why do people still come to Kajang?
What do they come here for?

The 5 dominant activities are what observed happening in Kajang, and the activities & social behaviour are recorded in diagrams for easy comparisons. These social behaviour are recorded into 3 different study category : **Necessary, Optional, Social.**

From the table of diagrams made, it is observed that social spaces are the overlapping of necessary and optional spaces. However, the rate of interaction in social spaces are not always successful, depending on the outcome activity.

Since optional activities doesn't necessarily have to be related to the necessary activity, **what if**, there is a chance of marrying different necessary activities that one compliments the other/ both compliments each other as optional activities? Thus the overlapping spaces are constantly used by different users of different intentions. Social spaces will have more conversations instead of one type of user.

EXPERIMENT : COMBINATION OF NECESSARY & OPTIONAL DOMINANT ACTIVITIES

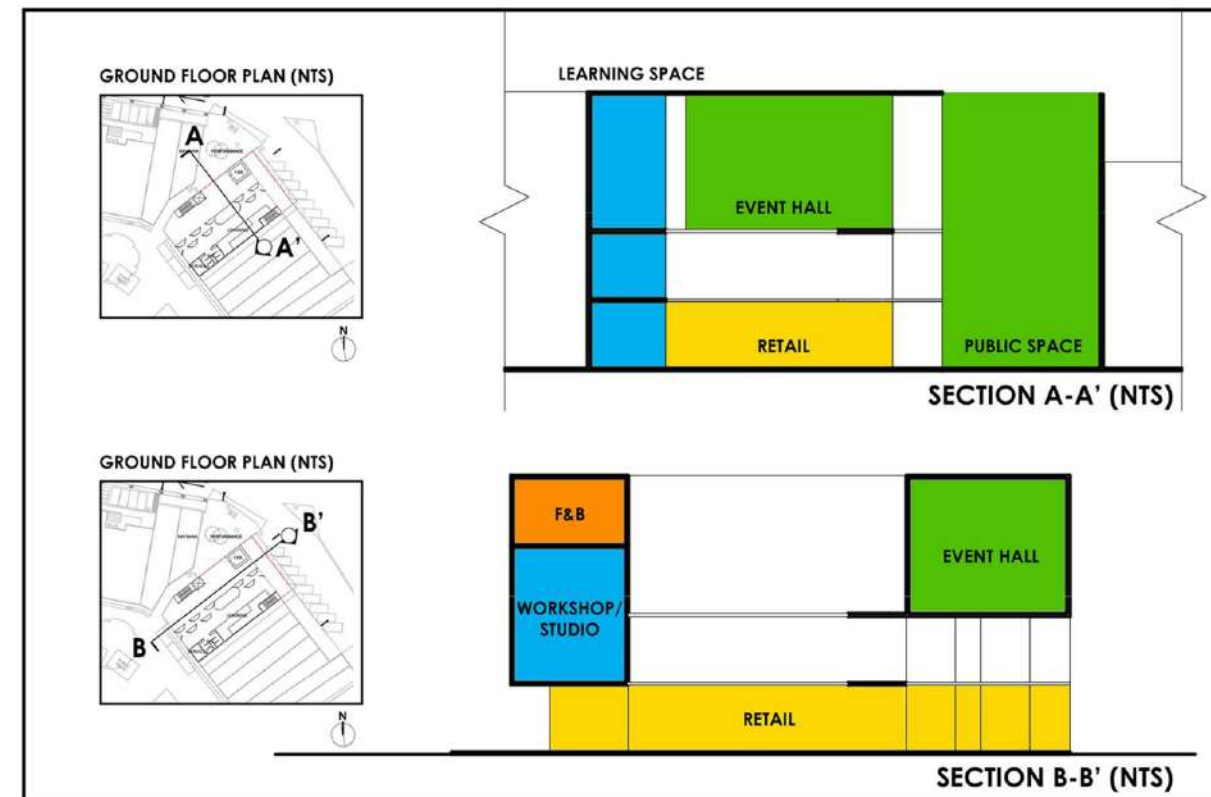


SPATIAL EXPERIMENT

The question of **WHAT IF** further leads to a series of experiments to overlap spaces from different programs, such as :

(Nec) Transaction OVERLAP (Opt) F&B
(Nec) Learning OVERLAP (OPT) Retail
Etc....

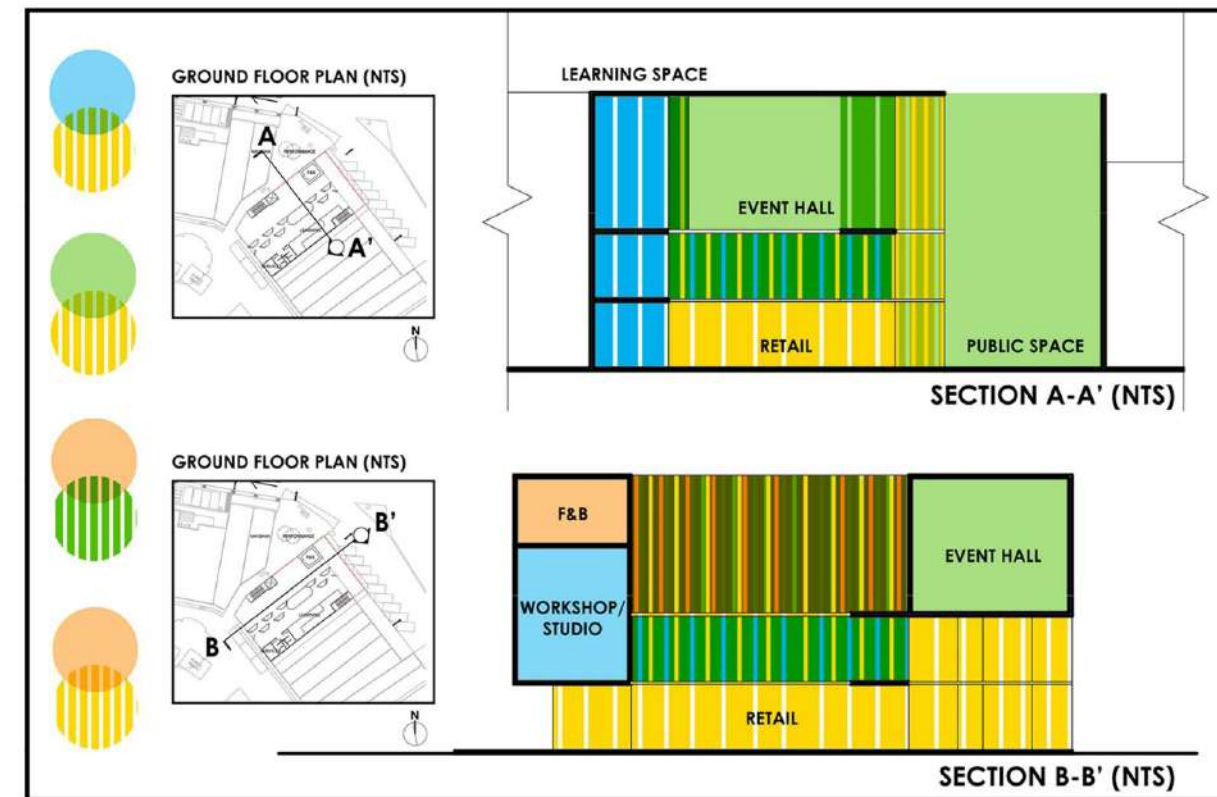
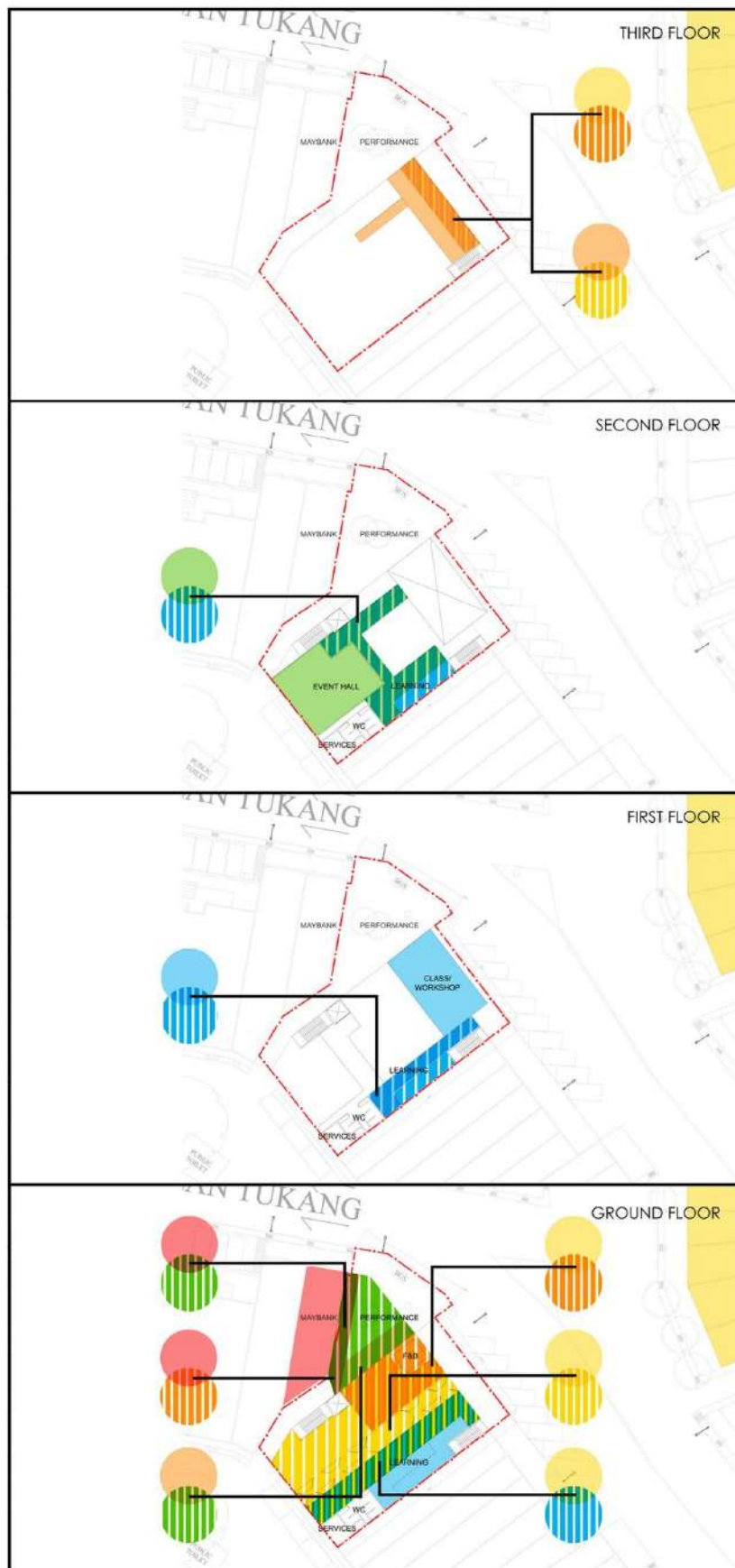
These experiments forces the thinking of social behaviour under different overlapping of spaces, while the diagram sets a database of reference to aid the design process later on. Color coding are used to differentiate different programs, while the hatching styles represents the type of spaces (Nec, Opt, Social).



STEP 1

CREATING NEC. & OPT. SPACES BASED ON EXISTING CIRCULATIONS

Maybank is the first necessary activity located within microscale of radius from site, stating that it is under the category of transaction activities. This program further chains up to the need off various optional activities and brought up vertically through floors. Certain programs such as studios at first floor are introduced to respond to opposite junction as an informal theatre, whereby the performers are the dance students, while the audiences are the pedestrians.



STEP 2

CREATING RELATIONSHIP BETWEEN NEC. & OPT. SPACES

Colour codes representing different spatial programs are overlapped horizontally & vertically to create opportunities of social spaces. These overlapped color codes are then referred to the previous *Spatial Experiment Table of Diagrams* to study what are the needs for each social activities occurred.

STUDY OF FABRIC DANCE



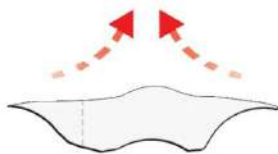
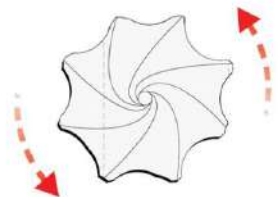
THE MOST PROMINENT MOVEMENT OF FABRIC DANCE IS THE SPINNING OF CLOTH THAT FLOWS HARMONIOUSLY WITH BODY MOVEMENT, COMPLEMENTING AS A WHOLE OF LIGHTNESS.

THE CHARACTERISTICS OF THE CLOTH IN MOTIONS ARE STUDIED. THESE CHARACTERISTICS WILL THEN BE TRANSLATED INTO ARCHITECTURAL SPACES, RESEMBLING SPACES FORMED BY FABRIC.

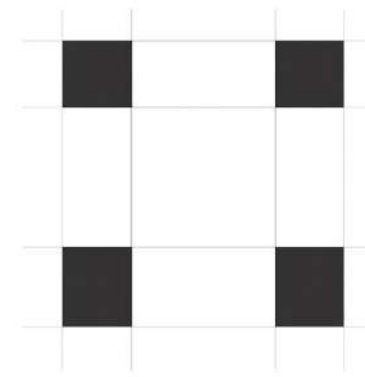


VISIBLE FROM PLAN VIEW, THE SPINNING CLOTH FORMS CURVE AXIS THAT FLOWS FROM THE EDGE OF THE CLOTH TO THE CENTER FOCAL POINT. THESE AXIS ARE CONTROLLED BY MOVEMENT AND SPEED OF THE CLOTH.

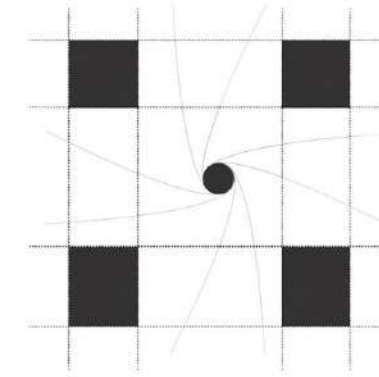
WHEREAS FROM ELEVATION VIEW, WE CAN SEE THAT THE FOCAL POINT OF FABRIC RISES TO DIFFERENT LEVELS AS IT SPINS OR REST. IN HERE WE CAN SEE MORE OF A FLEXIBLE MORPHOLOGY OF THE FABRIC UPON THE MOVEMENT OR OBJECT LYING UNDERNEATH.



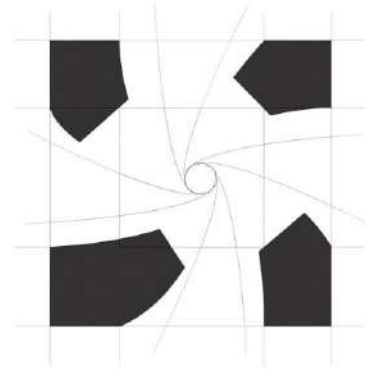
HOW DO WE TRANSLATE THESE CHARACTERISTICS INTO ARCHITECTURE?



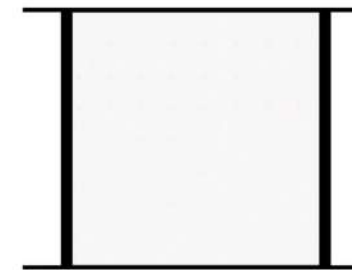
TYPICAL GRID & SPACTIAL SHAPES



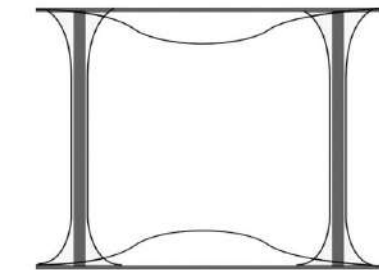
CREATE FOCAL POINT & CURVE AXIS



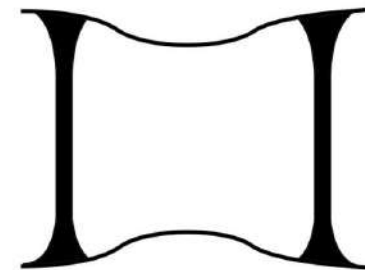
DISTORT SPACES ALONG THE CURVED AXIS



TYPICAL CLOUMN & SLAB



CURVY PLANES



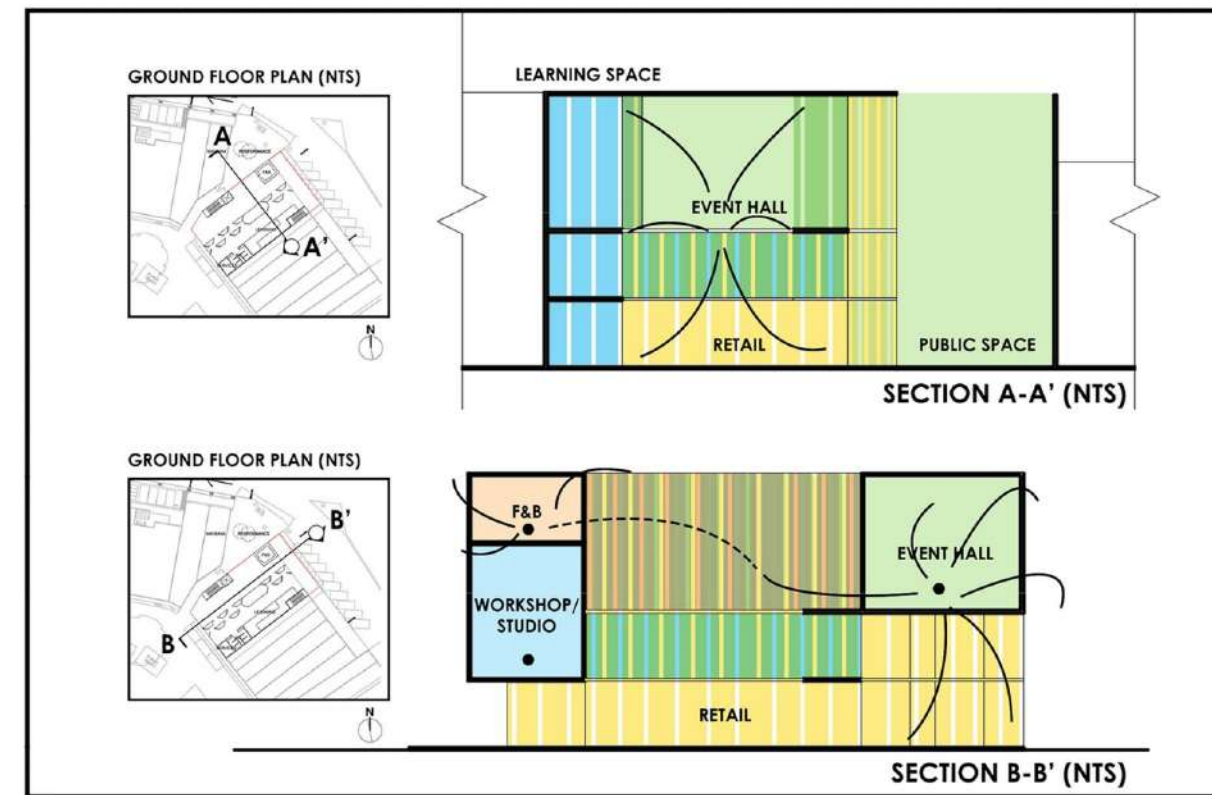
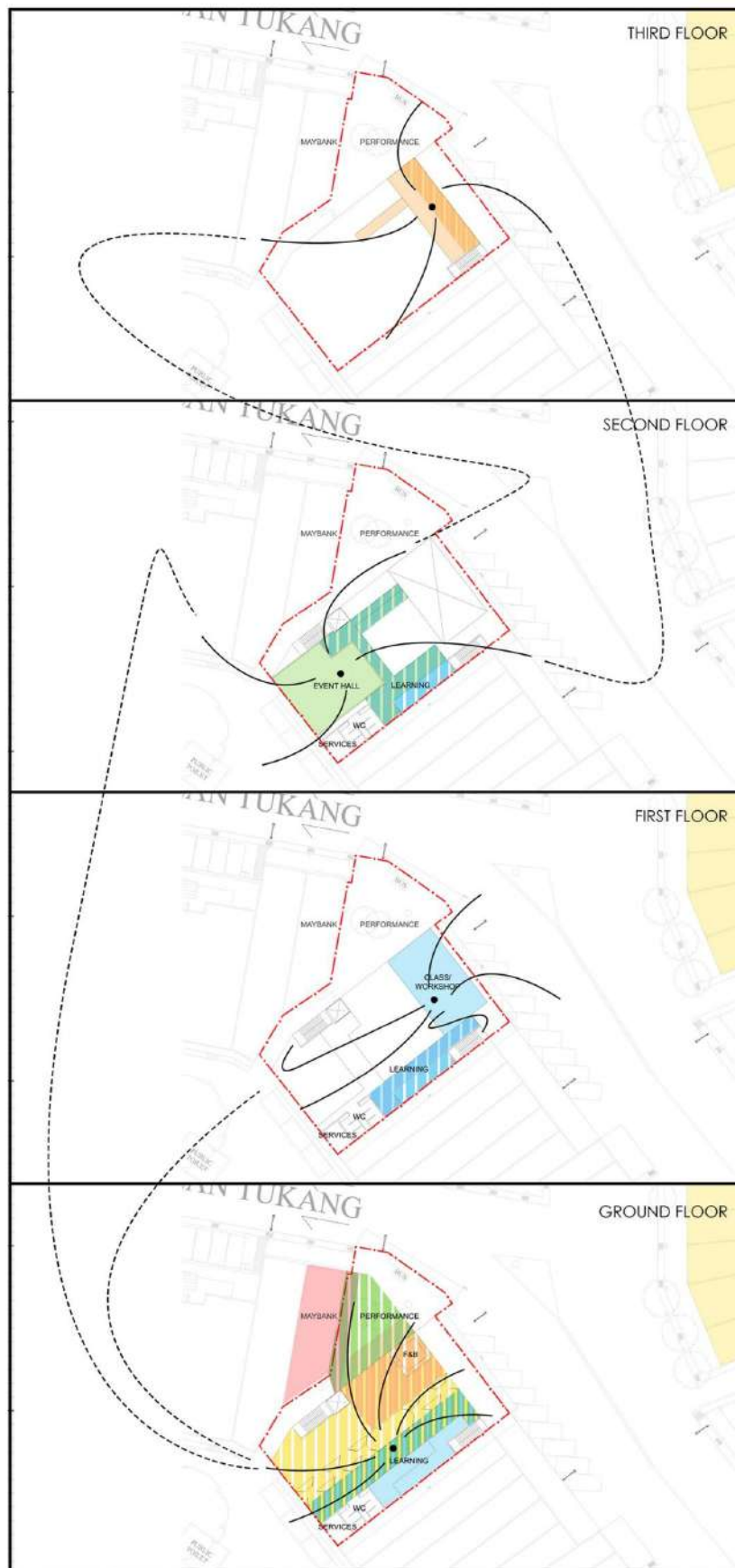
CURVED SLAB & COLUMN

STEP 3

STUDY OF THE CHARACTERISTICS OF FABRIC IN FABRIC DANCE

The method of manipulation is derived by the study of fabric dances. These studies are translated into architecture techniques to challenge the possibilities of design to be more prominent to the identity of a fabric dance centre.

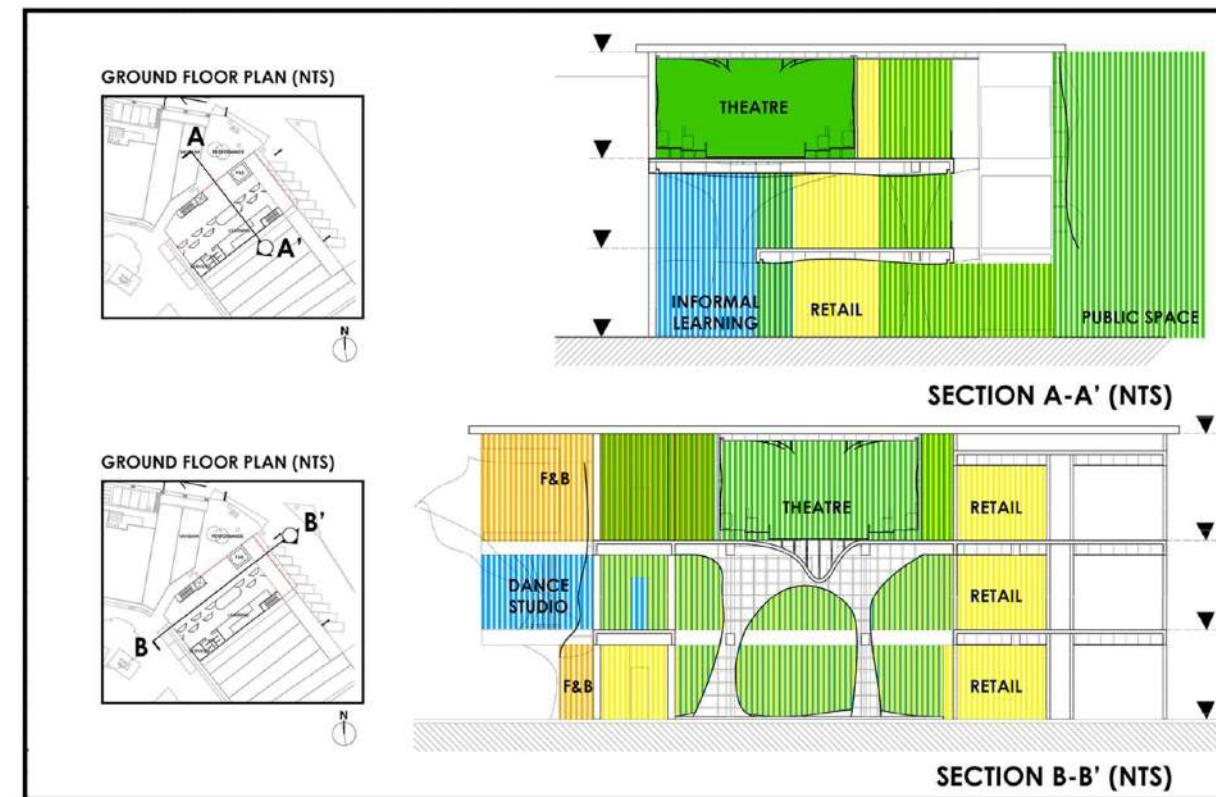
These ideas are first translated into a conceptual diagram to see how can spaces morph through these process/ actions. Rotation of the fabric around a focal point is translated into spatial planning through floor plans, whereas the altitude of peaks affected by motion speed is translated to sections of buildings to challenge spatial experiences. nstead of having vertical components and horizontal components seperated to 2, what if everything blends into one piece of fabric without a right angle turning?



STEP 4

INTERGRATING STEP 3 INTO SPATIAL PLANNING

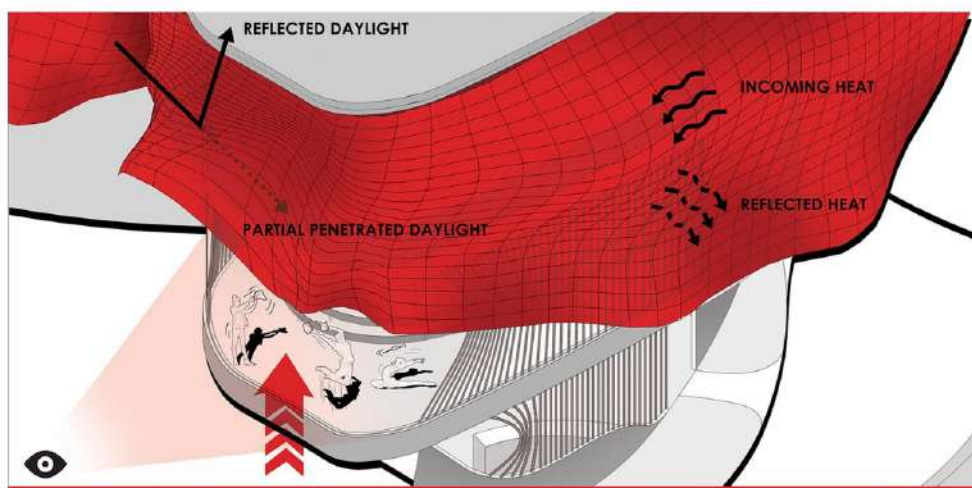
Focal points are pinned on floor plans & sections to create focal view & interaction opportunities between programs, between floors.



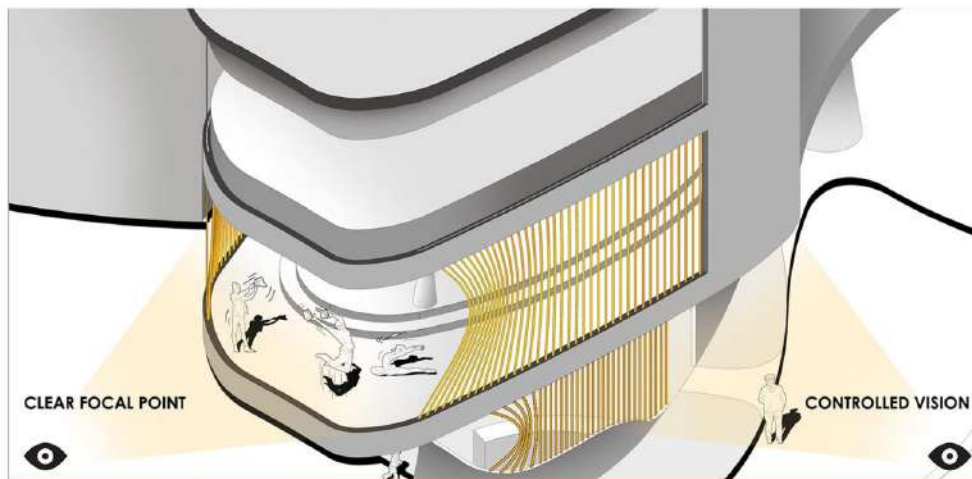
STEP 5

REFINE FLOOR PLANS BASED ON ANTHROPOMETRY, STRUCTURAL SYSTEM & UBBL

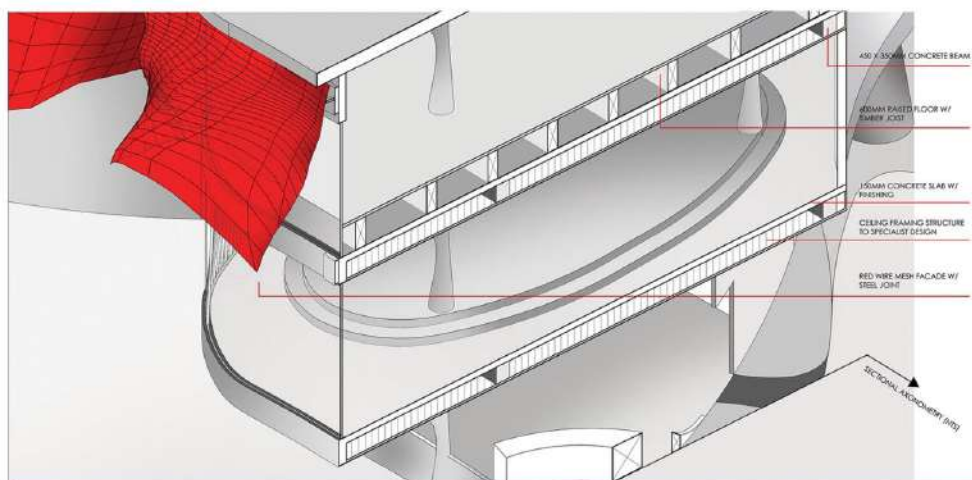
Final step transforms conceptual floor plans into practical floor plans by planting in walls, floors and other structural components. These transformation are based on reference of UBBL, anthropometry studies, and construction details references.



FACADE FABRIC RESPONDING TO CLIMATE AND SURROUNDING ACTIVITIES.



VISUAL CONTROL TOWARDS ACTIVITIES INSIDE BUILDING.



COMBINATION OF POST & BEAM STRUCTURAL SYSTEM & STEEL STRUCTURES.

FACADE FORMATION

Facade being the in-between component between the internal spaces and the external environment plays an important role as a bridge of communication. Thus, two major questions are reflected in the process of forming the facade system :

- How does the facade reflects the identity of the building as a *Fabric Dance Center* by first glance from pedestrians?
- How does the reaction of facade (climate & contextual responses) imitate the characteristics of *fabric dance*?

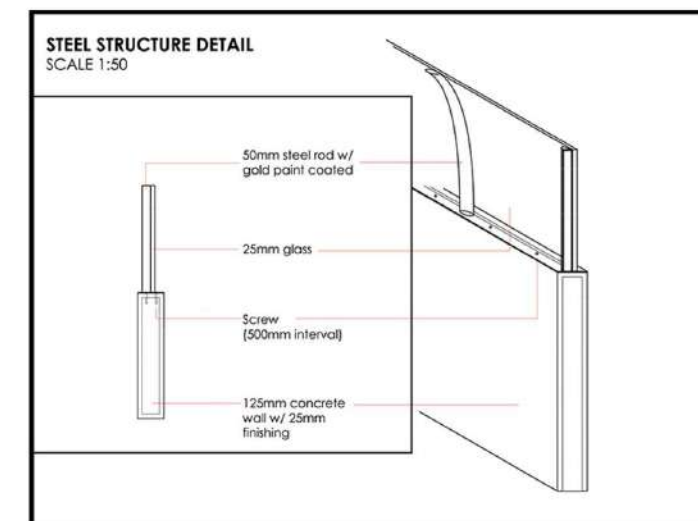
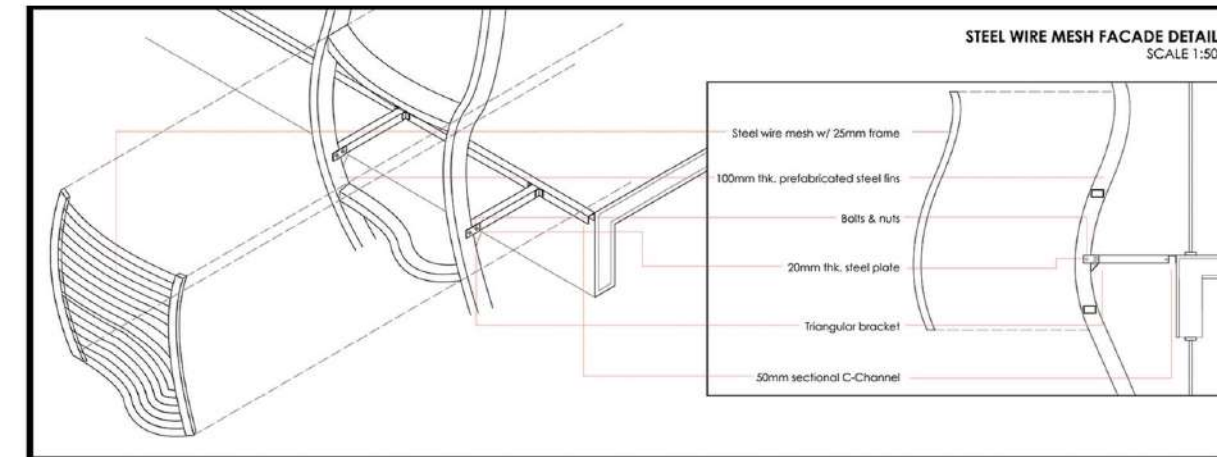
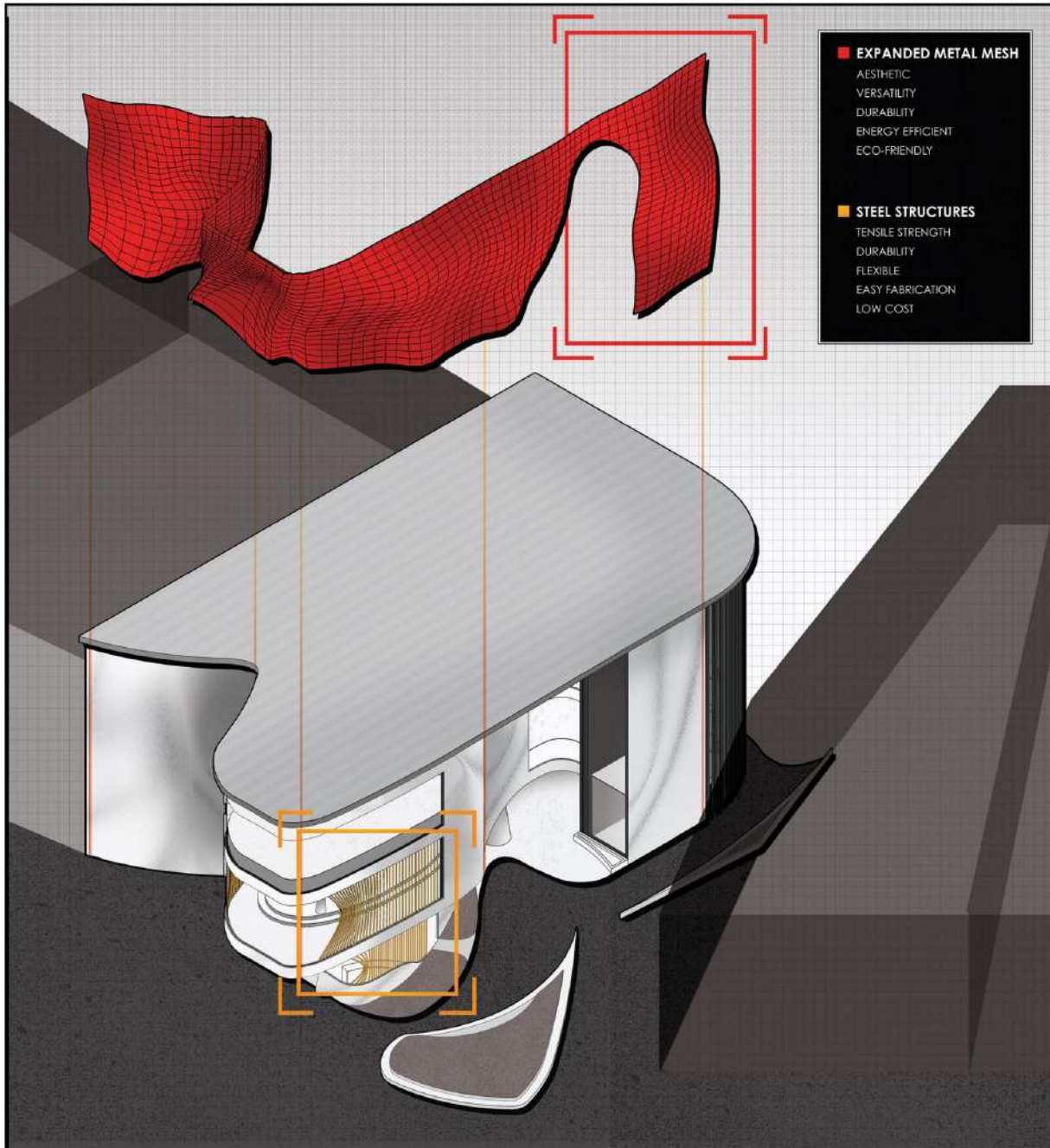
The idea revolves around the concept of '*fabric*'. By studying the properties of a moving fabric as reacting to speed and motion, these characteristics are translated into the facade system.

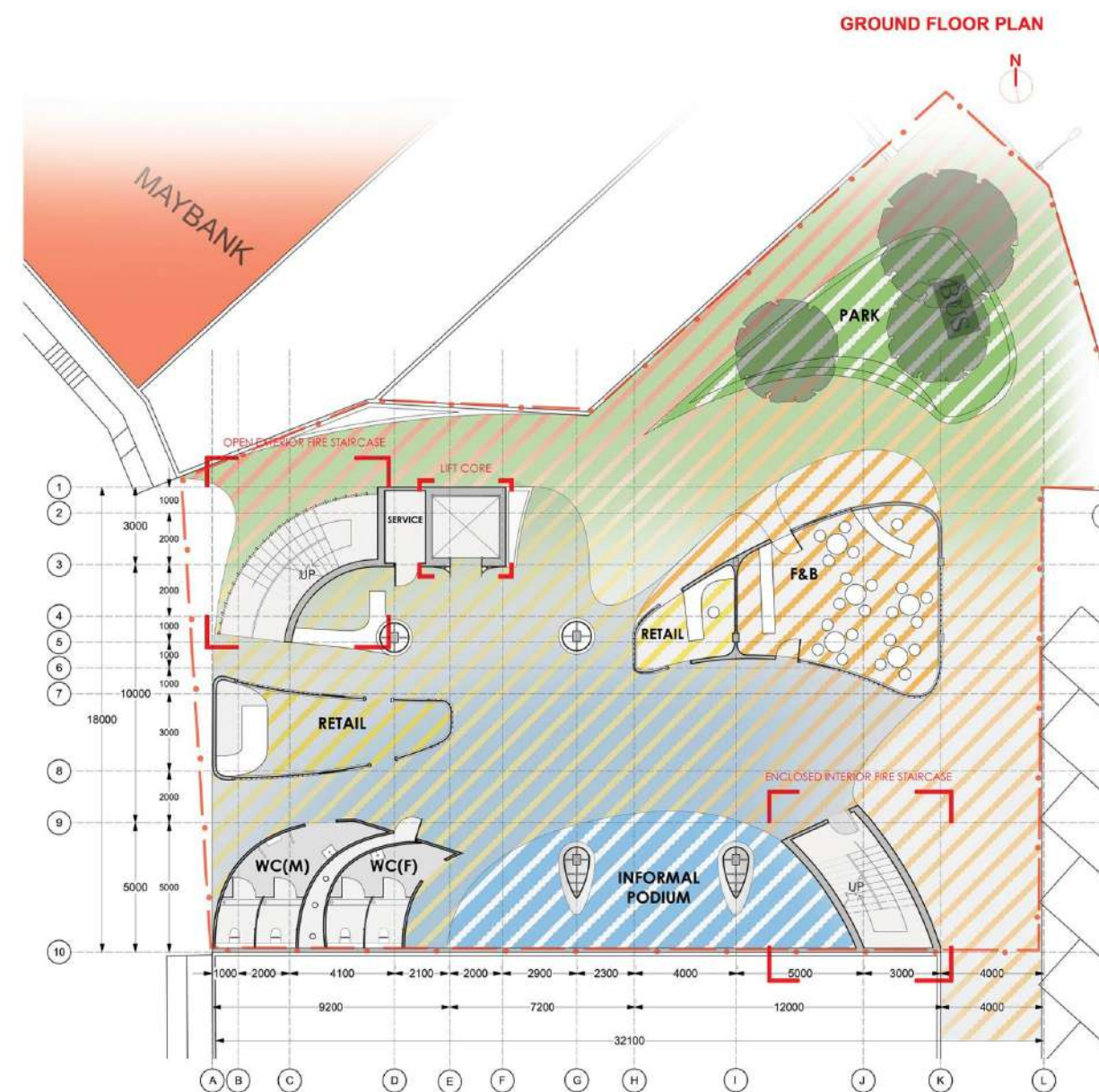
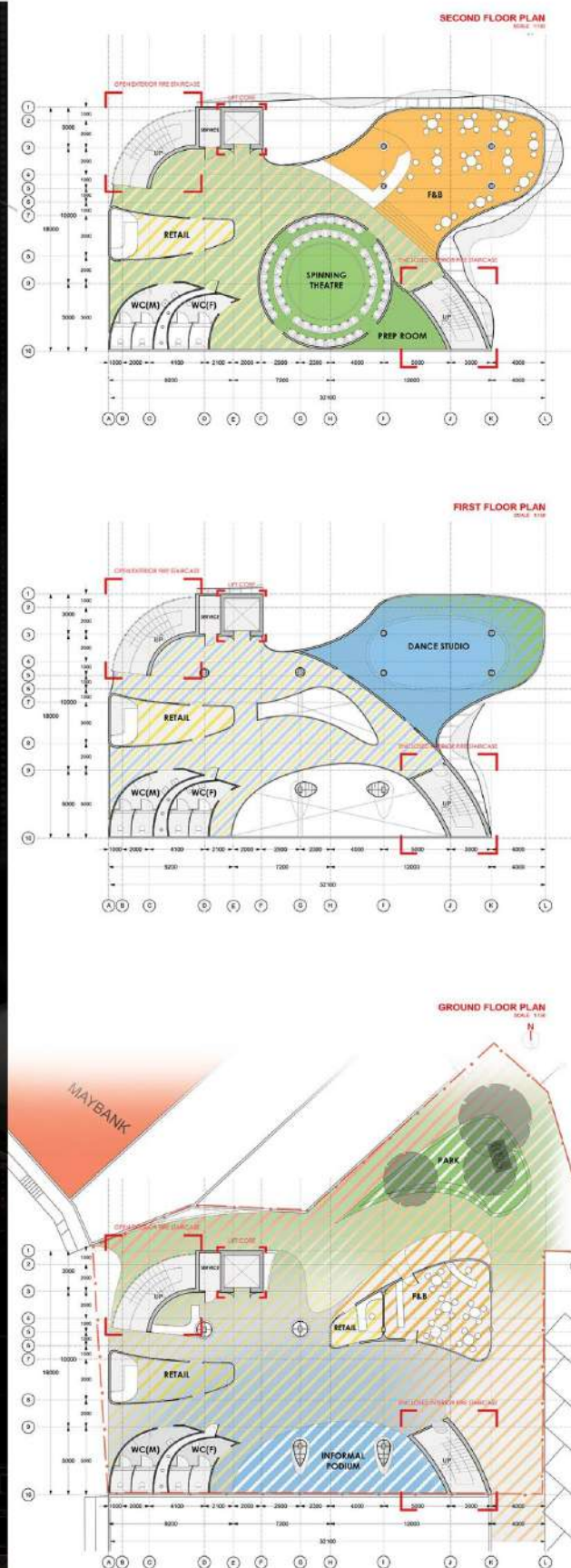
As a response to the sunlight and glares, a double skin facade is introduced. This layer of skin lifts and pulled to allow permeable visual of the dance studio from street level, and also as a means to shade the exposed space from excessive heat and direct glare.

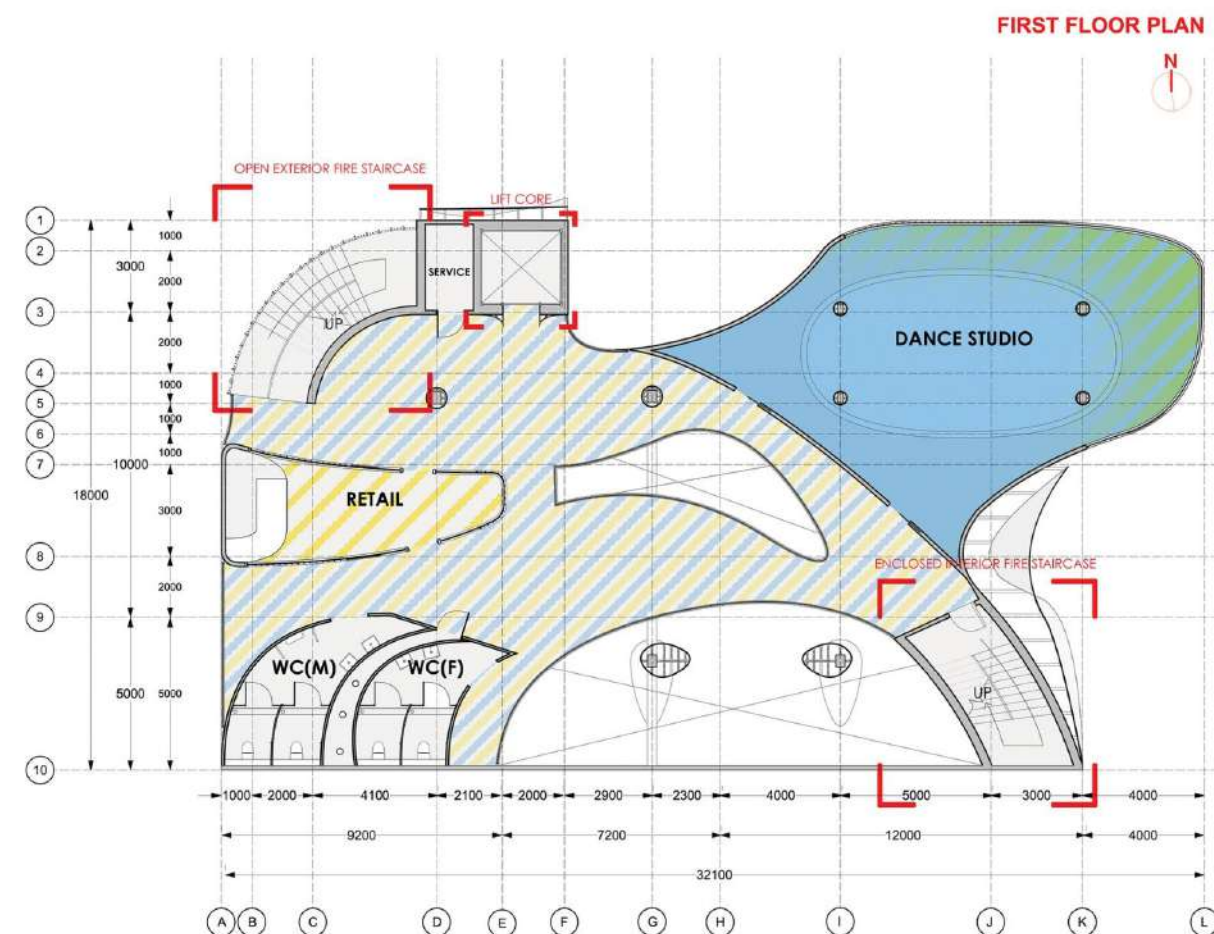
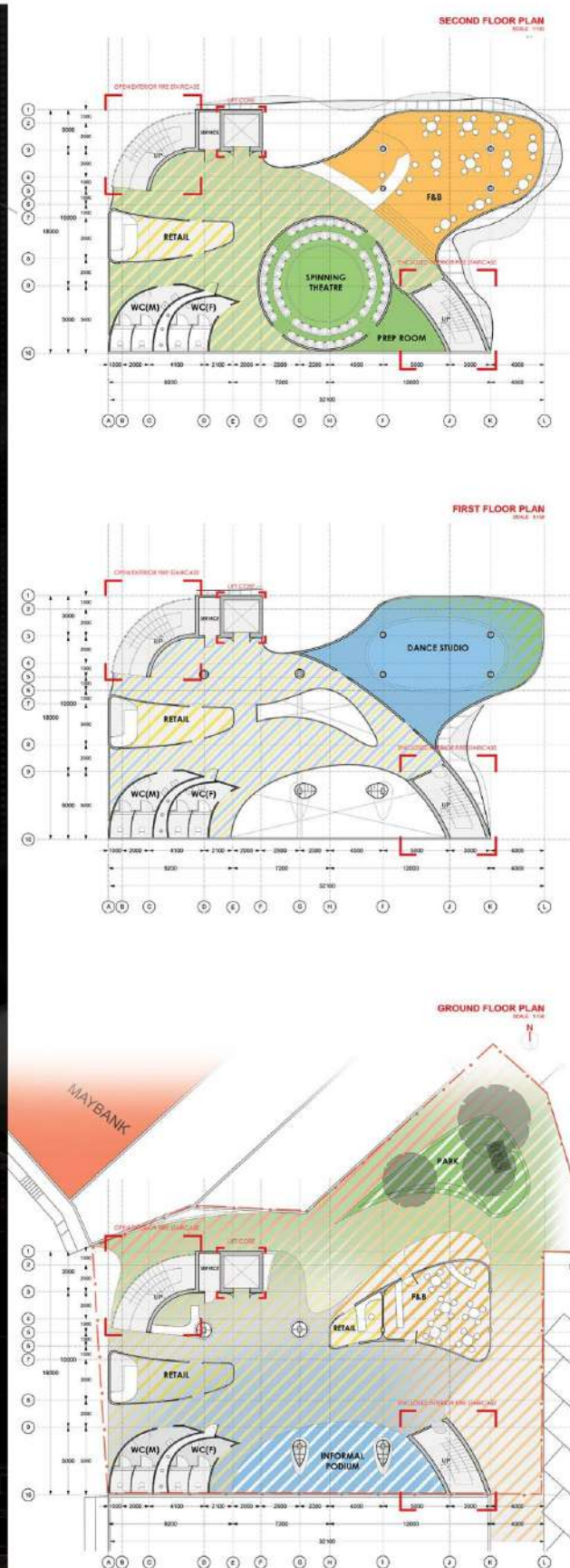
The mullion of the openings are vertical bars, pulled from the center like a curtain to create focal point to the front facade, and also to control visuals from the side.

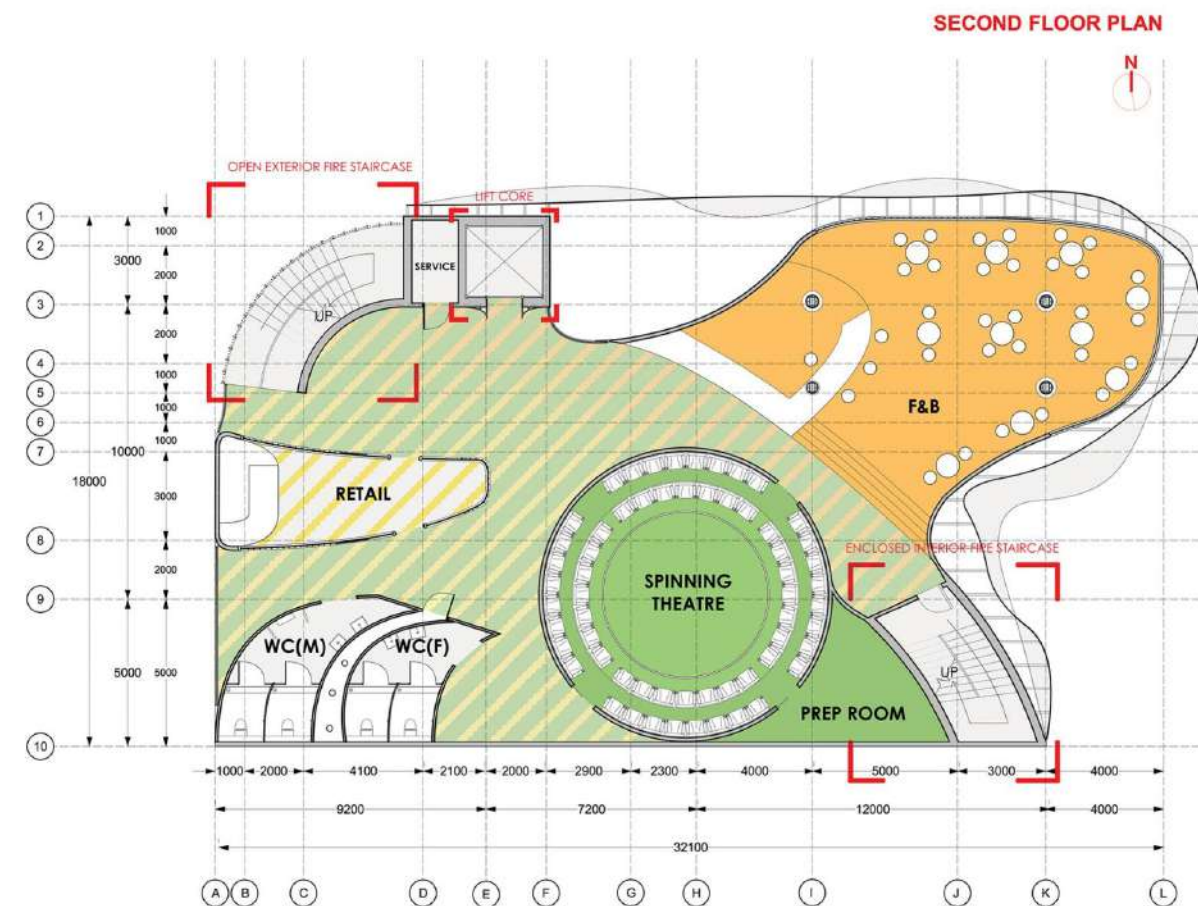
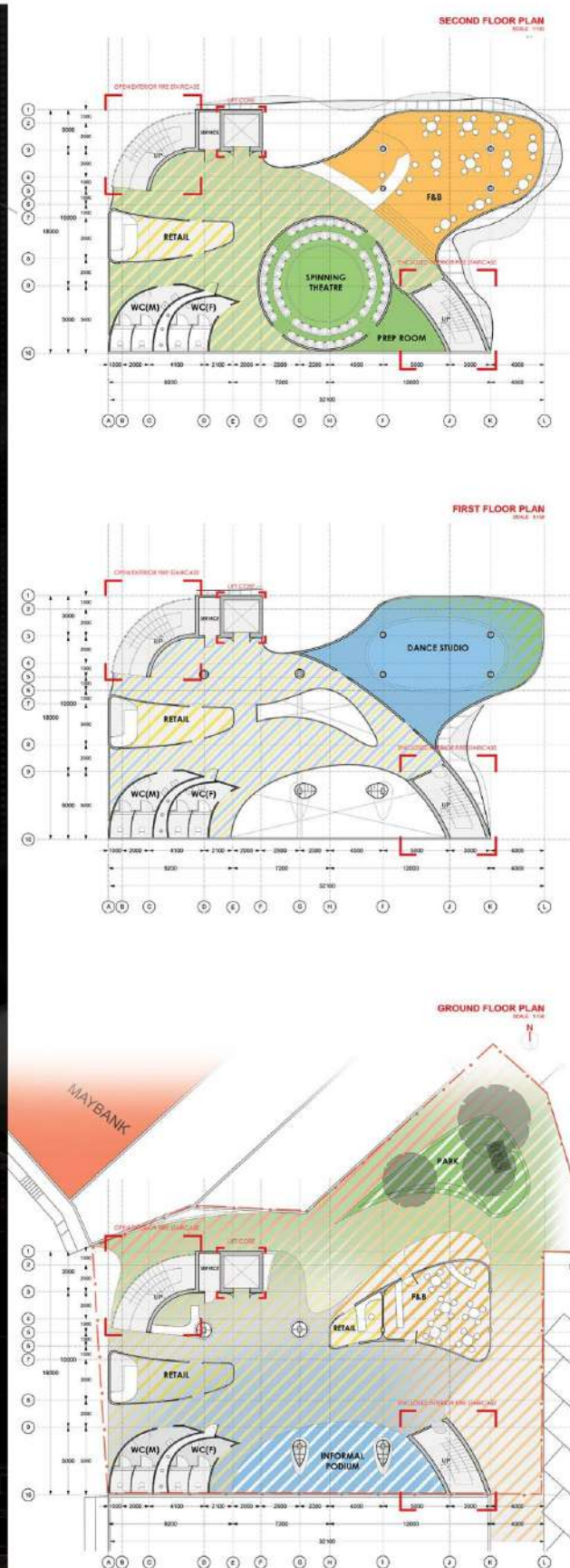
FACADE CONSTRUCTION

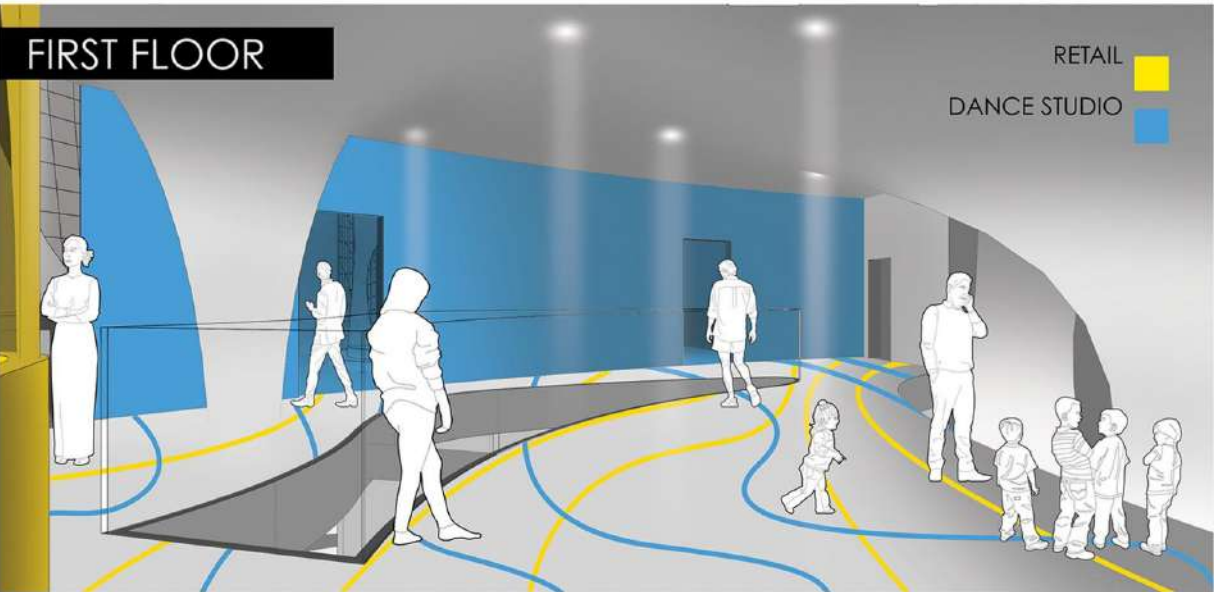
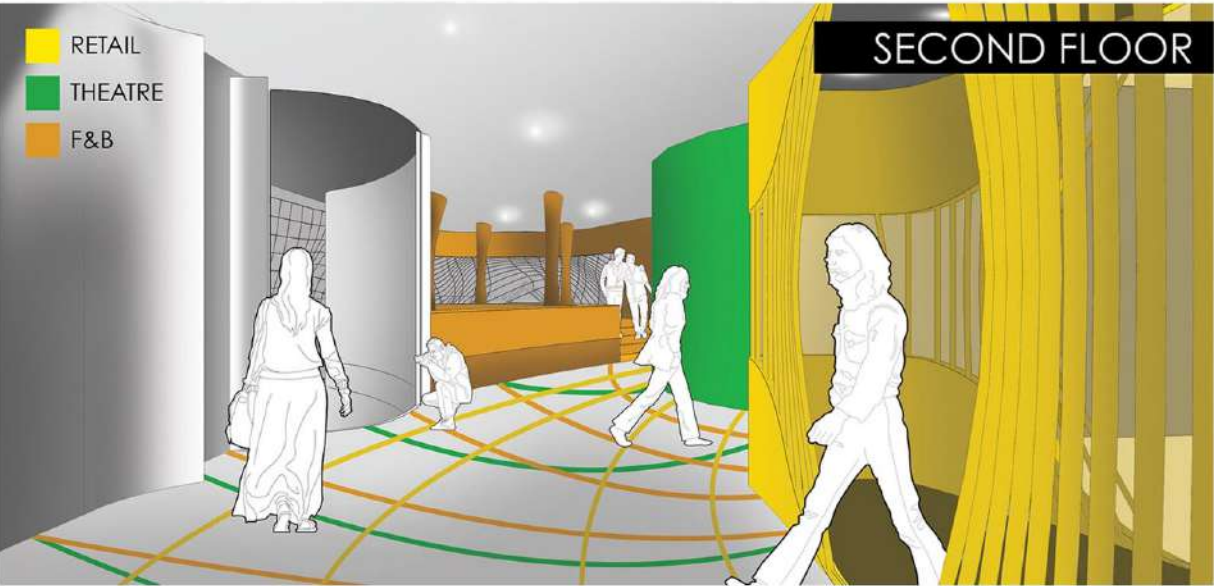
Expanded metal mesh is used as the skin of the building & **steel structures** for the openings mullions due to it's properties that aids the need of requirement for facade.











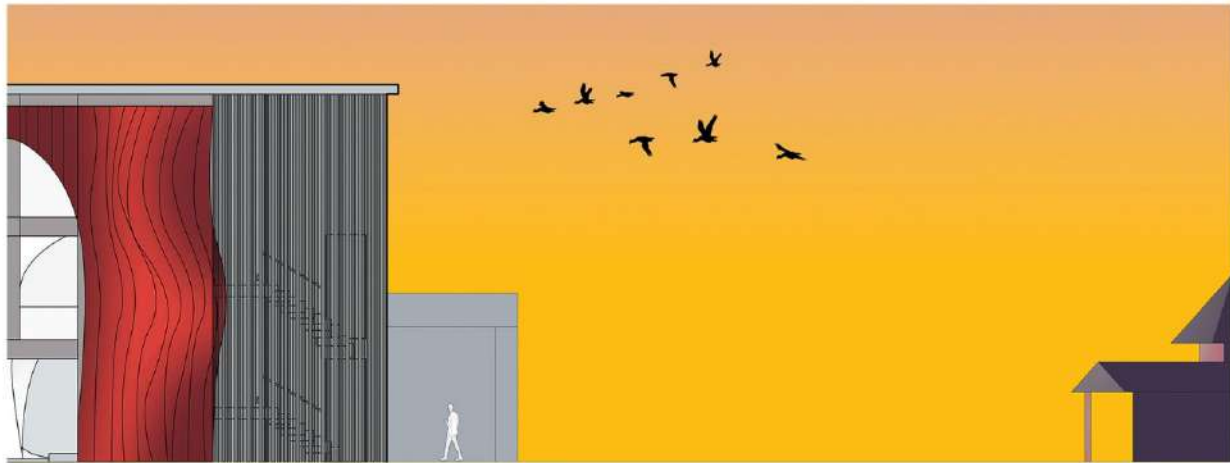
FRONT ELEVATION

HOW DOES SYNERGY SPLINE RESPOND TO THE URBAN INTERVENTION?

THE FABRIC FACADE GENTLY FLOATS UPON THE ALGORITHMS SET BY THE STRATEGY OF 'NECESSARY, OPTIONAL, & SOCIAL ACTIVITIES' BY JAN GEHL.

AS FURTHER DISTANCES ARE ABLE TO VIEW HIGHER ALTITUDES, THE FRONT FACADE SOFTLY LIFTED TO EXPOSE THE DANCING STUDIO TO THE MAIN JUNCTION OF JALAN TUKANG, JALAN SULAIMAN, AND JALAN BESAR. THE STUDIO NOT ONLY SERVES AS A SPACE FOR THE NECESSITY OF DANCE PRACTICE, BUT AT THE SAME TIME TRANSLATING THE ACTIVITY THEATRICALY INTO A PERFORMANCE OF MOVING SILHOUETTES, WHERE THE AUDIENCES ARE THE PEDESTRIANS.

THE CIRCULATION THROUGH THE SITE IS RETAINED AND SHIFTED WITHIN THE BUILDING. THIS SHORTCUT ENCOURAGES PEDESTRIANS TO MOVE THROUGH THE ART CENTER, CREATING MORE OPPORTUNITIES FOR NECESSARY ACTIVITIES AND OPTIONAL ACTIVITIES TO OVERLAP FOR A SERIES OF EXPERIENTIAL JOURNEY.



RIGHT ELEVATION

THE KINETIC EDIFICE

CULTIVATING POSITIVE INDIVIDUAL TRAITS TO FOSTER POSITIVE
TEMPORAL PROFILE IN THE DOMAIN OF EXTREME SPORTS

SEMESTER 6 (FINAL ADP)

"The Time Perspective Theory by Zimbardo & Boyd (2000, 2008) has been used in various psychological experiments as a tool to study and observe individual cognitive thinking & physical behaviours. Seeing the opportunity to use the Time Perspective Theory as a tool to enhance athlete's sports performances & interpersonal skill as the local demands (Parkour & Rock Climbing), the scheme seeks to evaluate positive spatial quality based on the 5 main criteria (**Curiosity, Stimulation, Social, Habitual Tendency, Competence**) to cultivate individual & community positive traits, which in time aids in fostering positive temporal profile.

As the saying goes *nature is always the best architect*, atomic bonds are used as a precedent to study relationship between spaces, while the fish gills are observed to reinvent similar filtering/ extraction system that maintains the optimum level of oxygen content as one of the major component under *Stimulation*. As result, spaces were segregated & pushed to boundary with a central core compacting the services, while circulations allow access between different spaces. The facade is made of Glassfibre Reinforced Plastic (GFRP), attempting to innovate a flexible system by combining both the efforts & technology from EcoLogical Studio (Algae Facade) & SOMA Architect (Thematic Pavilion). Thus the facade activates to supply sufficient oxygen to the interior spaces, while producing biomass as an alternative energy source for the building. As for the ground floor (plinth), outdoor activities (especially parkour) are fully exposed, catalysing both the main streets at different altitudes (Jln. Wong Ah Fook & Jln Trus) while blending the landscape to the public realm as a recreation park.

The Kinetic Edifice; the "**Third Place**" in Johor Bahru which provides common ground to both the extreme sports community (Parkour & Rock Climbing) & the public; breaking the norm of a typical sports spatial design using psychological strategies & nature as a design guide."

Aden Foong
[Ar. Edward Chew's unit]

THE KINETIC EDIFICE

CULTIVATING POSITIVE INDIVIDUAL TRAITS TO FOSTER POSITIVE TEMPORAL PROFILE IN THE DOMAIN OF EXTREME SPORTS

In conjunction with **Zimbardo & Boyd, (2000, 2008)**'s theory of the **'Time Perspective Theory (TPT)'**;

Exploring the potentials of TPT in the domain of Extreme Sports from the **'Conceptual Analysis Article'** by Faculty of Psychology, University of Warsaw, Poland;

Using **Bio-mimicry** (fish gill's counter-current oxygen exchange phenomena) & **Chem-mimicry** (translating chemical bonds to spatial guidelines) as a strategy in studying spatial quality & relationships;

Merging the effort of **Algae-Canopy by Ecological Studio** w/ the innovated kinetic lamaella facade by **SOMA's Thematic Pavillion**;

Using **'Place-Making'** as a tool to fully expose the ground level and morphing design to the urban interventions to blend both the main streets (frontage) at different altitudes;

Stolarski, Maciej, Wojciech, & Dominika. (2018, December 24). Introducing Temporal Theory to the Field of Sport Psychology: Toward a Conceptual Model of Time Perspectives in Athletes' Functioning. Retrieved from <https://www.frontiersin.org/articles/10.3389/fpsyg.2018.02772/full>.



Urban Algae Canopy, Milan 2015



ONE OCEAN
Thematic Pavilion Expo 2012, Korea

The Kinetic Edifice;

- The 'Third Place' apart from home & working -
- JB City Lobby as a transient between JB & Singapore-
- A Common Ground for the local urban realm -

THE KINETIC EDIFICE

Cultivating positive individual traits to foster positive temporal profile in the domain of extreme sports

The Time Perspective Theory by Zimbardo & Boyd (2000, 2008) has been used in various psychological experiments as a tool to study and observe individual cognitive thinking & physical behaviours. Seeing the opportunity to use the Time Perspective Theory as a tool to enhance athlete's sports performances & interpersonal skill as the local demands (Parkour & Rock Climbing), the scheme seeks to evaluate positive spatial quality base don the 5 main criteria (**Curiosity, Stimulation, Social, Habitual Tendency, Competence**) to cultivate individual & community positive traits, which in time aids in fostering positive temporal profile.


As the saying goes *nature is always the best architect*, atomic bonds are used as a precedent to study relationship between spaces, while the fish gills are observed to reinvent similar filtering/ extraction system that maintains the optimum level of oxygen content as one of the major component under *Stimulation*. As result, spaces were segregated & pushed to boundary with a central core compacting the services, while circulations allow access between different spaces. The facade is made of Glassfibre Reinforced Plastic (GFRP), attempting to innovate a flexible system by combining both the efforts & technology from EcoLogical Studio (Algae Facade) & SOMA Architect (Thematic Pavilion). Thus the facade activates to supply sufficient oxygen to the interior spaces, while producing biomass as an alternative energy source for the building. As for the ground floor (plinth), outdoor activities (especially parkour) are fully exposed, catalysing both the main streets at different altitudes (Jln. Wong Ah Fook & Jln Trus) while blending the landscape to the public realm as a recreation park.

The Kinetic Edifice; the **'Third Place'** in Johor Bahru which provides common ground to both the extreme sports community (Parkour & Rock Climbing) & the public; breaking the norm of a typical sports spatial design using psychological strategies & nature as a design guide.






QR Code SCAN!



THE MARSHMELLOW TEST

What is the main factor affecting *delayed gratification* or *deferred gratification*?



I'm hungry...

Looks so soft... hmmm

Should I just eat?

Just eat it!

Should I just eat?

But I'm getting two if I can just wait

What's the benefit and lost if I eat later?

I'll just wait for awhile more...

FUTURE

PRESENT

PAST

Human's perception towards "TIME"

Zimbardo & Boyd, (1999, 2008)

FUTURE

PRESENT

PAST

The Marshmallow Test

How does one act along their perspective towards 'TIME'?

The 'Marshmallow Test' is one of the famous psychological science experiment to study on one's behaviour and traits in leading to one's action. Individuals with broad temporal horizon tends to perceive time beyond 'Now & Then', allowing certain actions to be done by their cognitive processes.



Zimbardo's Time Perspective Inventory (ZTPI)

Zimbardo has later identified the temporal horizon of 'Past, Present, & Future' into 6 different time perspective profiles, which each results in different thinking, acts & behaviour. These profiles are often used to study in the field of financial behaviour, environmental attitudes, social relationships, & etc.

Zimbardo's Time Perspective Inventory (ZTPI)

According to Zimbardo, every individual inhibit 6 different time perspective profile within themselves, in which different individuals have different statistic of profile strength depending on various factors such as their growth environment, surrounding community, communication method, and etc. These 6 different profiles are as such;

Past Negative
Past Positive
Present Hedonistic
Present Fatalistic
Future Negative
Future Positive

These 6 profiles behaves differently when it comes to mental behaviour and cognitive decision makings.

Past Negative [Rewinds memories to the past that results in a negative thought]

"Oh gosh, the last time I did this it was a total embarrassment.
 I will never do it again."

Past Positive [Using the past as a motivation and lesson to do better in certain situation]

"Hmm, the last time I made a mistake is because of the strategy used.
 I'm going to change another approach to nail it this time."

Present Hedonistic [Believes that what you do currently is what you can get as result]

"There's no excuses. It's either I do it to get it, or I don't."

Present Fatalistic [Believes everything is controlled by a power beyond external locus of life]

"It is all destined. If it is mine, it will come eventually. Let's put everything back to fate."

Future Negative [Overthinkers who thinks negatively on what will happen in the future]

"What if I failed? What if they laugh at me? Never mind... this isn't a safe approach."

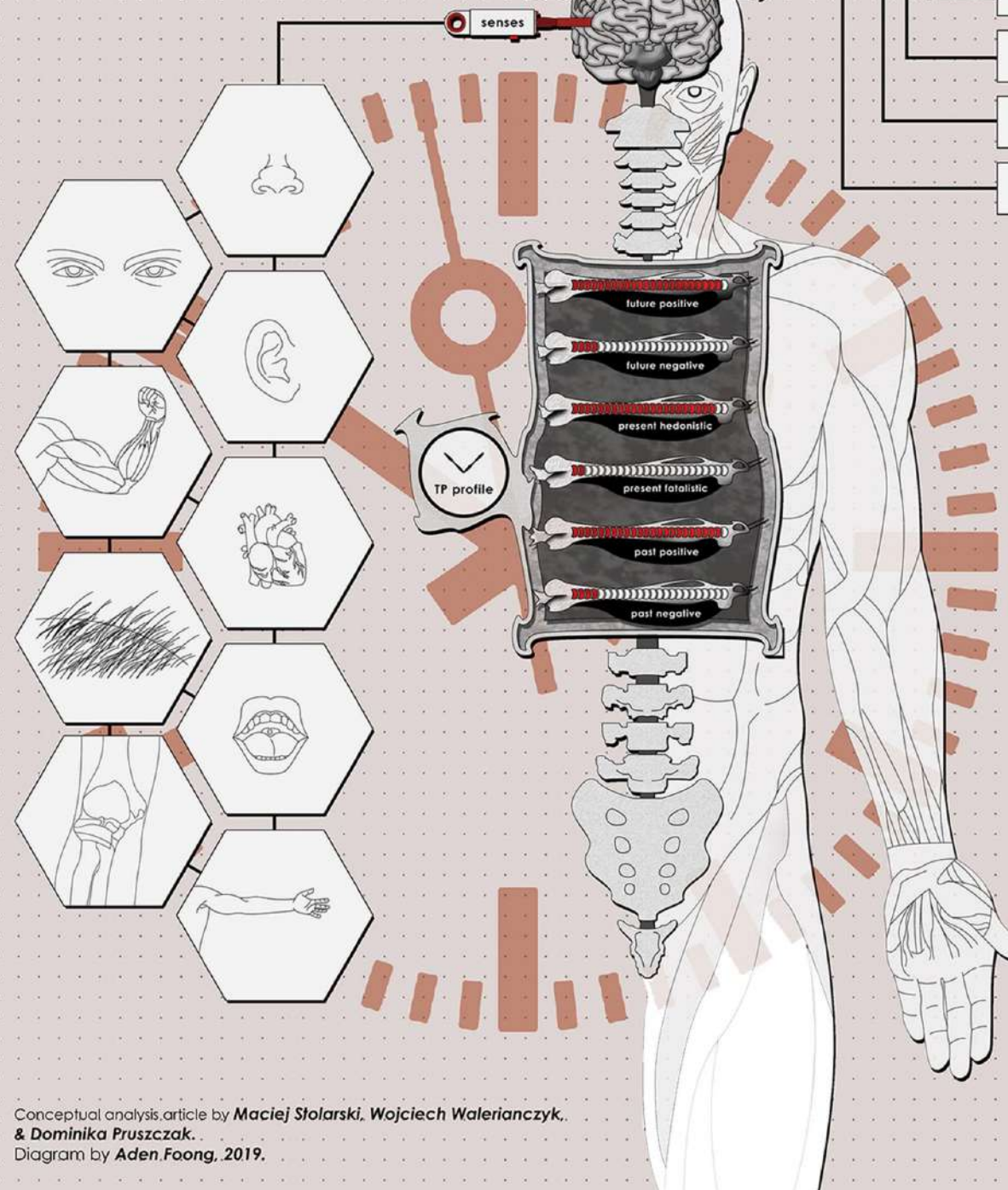
Future Positive [Setting a certain goal & visioning consequences as a motivation generator]

"I must get that title back! If I'm able to achieve it, everyone is going to look up to me.
 That is what I want; Gotta work for it!"

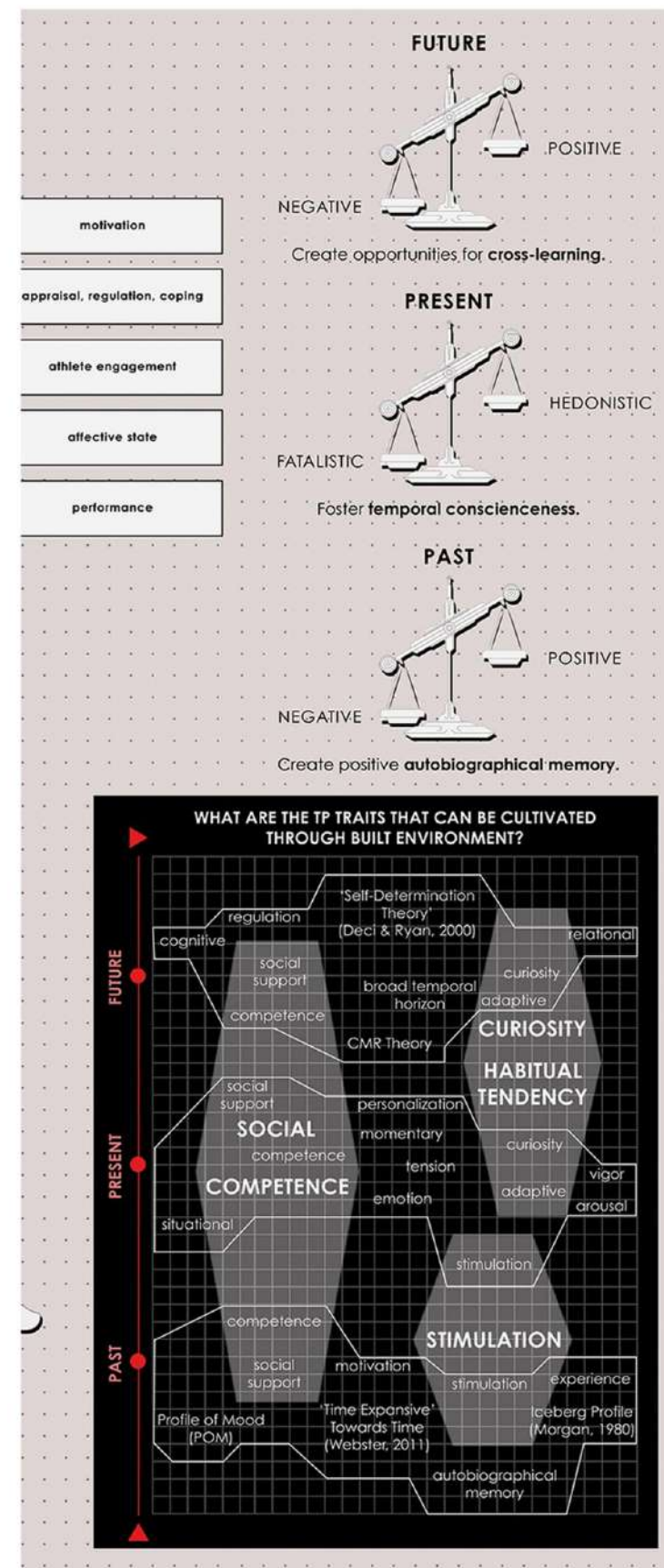
TIME PERSPECTIVE THEORY

IN THE DOMAIN OF SPORTS

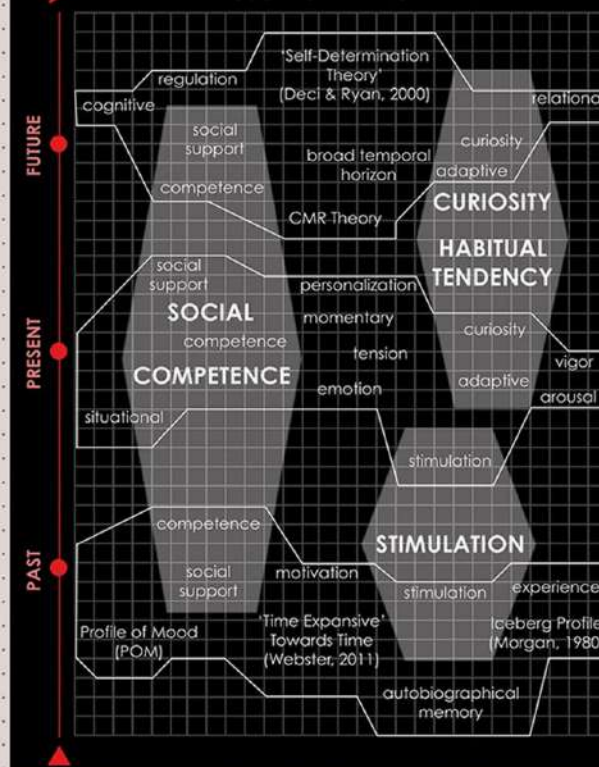
Faculty of Psychology, University of Warsaw, Warsaw, Poland.



Conceptual analysis, article by **Maciej Stolarski, Wojciech Walerianczyk, & Dominika Pruszcak**.
Diagram by **Aden Foong**, 2019.



WHAT ARE THE TP TRAITS THAT CAN BE CULTIVATED THROUGH BUILT ENVIRONMENT?



Architecture fosters positive temporal profile in the domain of SPORTS by cultivating 5 common traits through spatial planning & environmental atmosphere.

The concept of 'temporal perspectives' serves as a tool in sports psychology in studying athlete's motivation, appraisal & coping, athlete engagement, affective state, and performance. As the perspective of time affects an athlete's psychological play, the positive temporal profiles should be a focus & switch between time horizons according to the situational forces. Paradoxically, most people remain completely unaware of this influence. Thus, the method to cultivate positive temporal profile is through indirect affections, which is **social, spaces and activities**. Through the mindmap of researches, **5 key elements** can be used as the selected strategies to shape spaces and activities that indirectly fosters the 3 main positive temporal profile.

Since 'Time Perspective Theory' is used to study the relationship between **COGNITIVE THINKING & PHYSICAL ACTIONS**, how can this theory be explored in the domain of **SPORTS** to enhance athlete's performance?

How can **ENVIRONMENTAL QUALITY** (as one of the influential factor) contribute to the attempt of fostering a **POSITIVE TEMPORAL PROFILE** by cultivating certain characteristics?

Charles Lewis :
"School environment can affect behaviour."

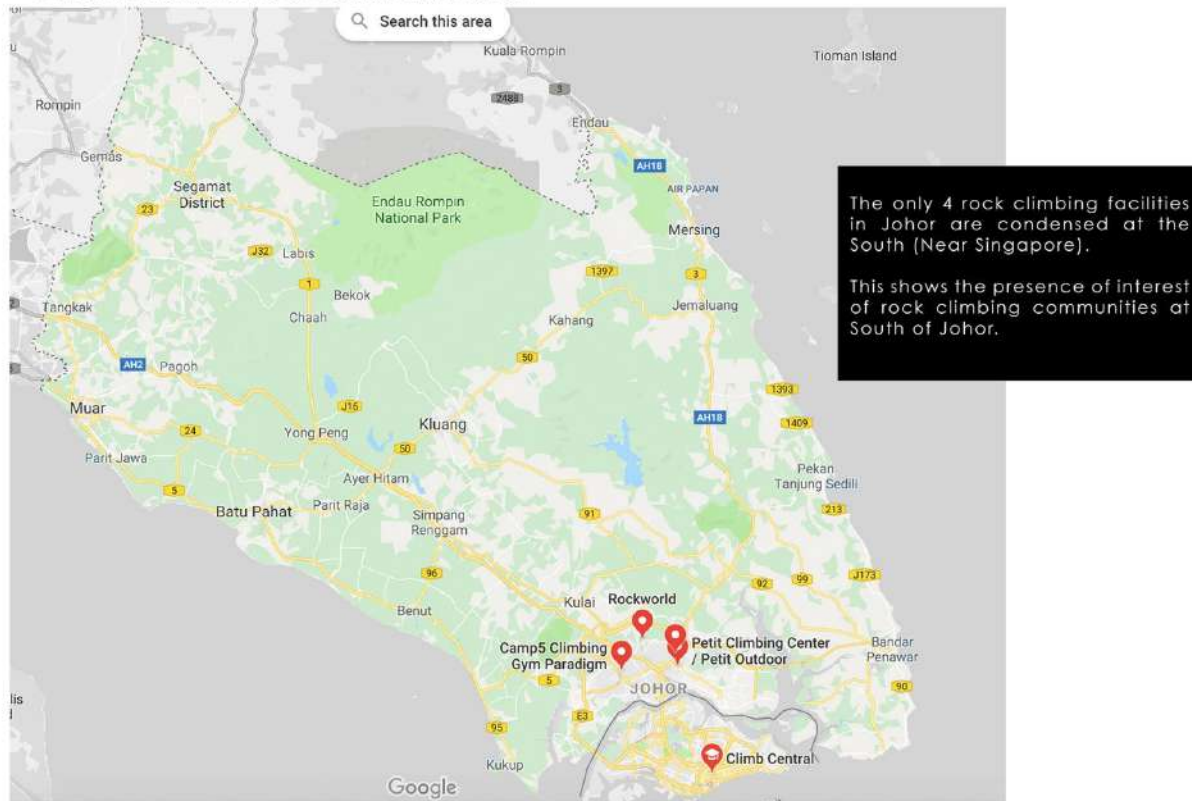


"Improved surroundings can enhance self-esteem and a positive impact on academic performance & students' attitude towards learning"

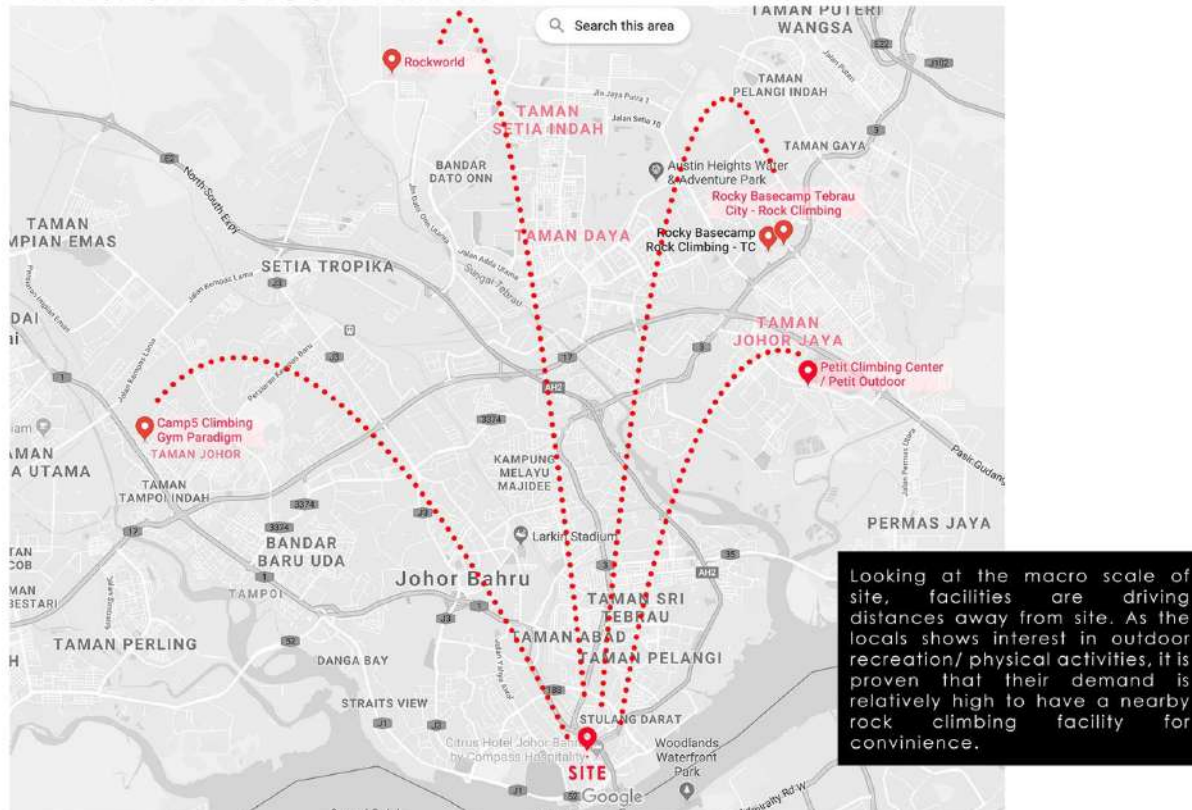
Such that we can observe from schools (especially Japanese schools), the learning environment is carefully studied and design as it may bring an impact to a kids' growth. It may be impossible to foster an independent kid just by environmental design, but the quality of surrounding allows kids to have the opportunity to have more explorations & conversations with one another, which in time shapes the attitude of being a positive well-being.

Thus schools focus on environmental designs to cultivate certain interpersonal skills, that in time shapes their attitude and behaviour as they grow.

UNDERSTANDING SOCIAL INTEREST



INVESTIGATING LOCAL DEMAND



Program Introduced

As studied from the local sports community 6 types of programs are designed into the building to cater their needs of a proper sheltered facility for their activities.

BOULDERING
TALL-ROPE CLIMBING
SLACK-LINING
ABSEILING
PARKOUR // FREE-RUN
CHASE-TAG

BOULDERING

Bouldering is a kind of rock climbing where the climber does not use ropes or harnesses. Common equipment associated with bouldering includes climbing shoes to help assure footing & chalk to improve grip. Unlike free climbing, however, bouldering is usually executed on paths that are less than 20ft high.

TALL-ROPE CLIMBING

Top rope climbing (or top roping) is a style in climbing in which the climber is securely attached to a rope which then passes up, through an anchor system at the top of the climb, and down to a belayer at the foot of the climb.

SLACK-LINING

Slacklining refers to the act of walking or balancing along a suspended length of flat webbing that is tensioned between two anchors. Slacklining is similar to slack rope walking and tightrope walking.

ABSEILING

Abseiling, also known as rappelling from French rappeler, 'to recall' or 'to pull through', is a controlled descent off a vertical drop, such as rock face, using a rope.

PARKOUR // FREE-RUN

BParkour is a training discipline using movement that developed from military obstacle course training. Practitioners aim to get from one point to another in a complex environment, without assistive equipment and in the fastest and most efficient way possible.

CHASE-TAG

Chase Tag is another of those childhood playground sports that has been professionalized and made into a competitive sport. It combines parkour, obstacles, and the childhood game of tag (also known as 'it'). A 'chaser' has 20 seconds to tag an 'evader' as they race round an obstacle course.

ROCK CLIMBING

BOULDERING



TALL-ROPE CLIMBING



SLACK-LINING



ABSEILING



PARKOUR

PARKOUR // FREE-RUN



CHASE-TAG





SITE FORCES

First step in taking data into design phase is the identification of site forces on site. These site forces help in the decision-making process, where design morphs for contextual responses.

1) Direct view from CIQ

Building orientation is orientated in 45 degree, exposing ground activities perpendicularly to the CIQ.

2) Double Frontages

North-West side of the site is JBCS Mall, while South-East side of the site is Persada Convention Centre (in construction). Thus the site has double frontages that allow formal access from both streets.

3) Cross Ventilation

Due to the close location towards the sea, land breeze & sea breeze occurs often due to the changes of temperature and air pressure. Thus the form is designed with a smooth surface, allowing the 'Push-Pull Wind Effect' to occur while ventilating the site.

4) 4.8m contour differences

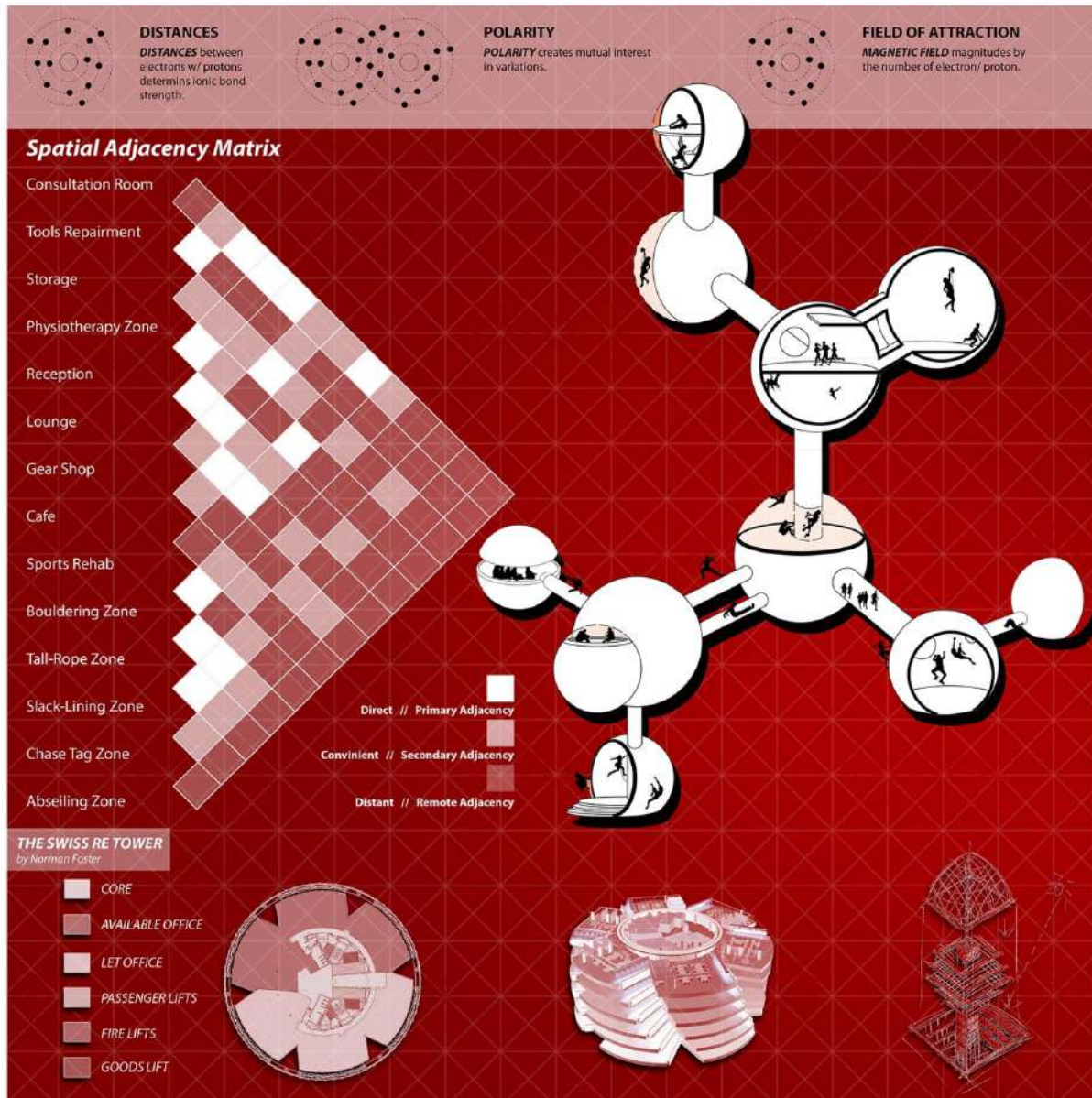
Connecting both the main street (Jln. Wong Ah Fook & Jln Trus) through ground floor landscape, allowing both way access that creates cross-circulation between the streets.

5) East-West daylight

Building orientation is orientated in 45 degree, which minimises solar exposure from the facade. In the mean time, the roof is pitched towards North-West to capture sunlight exposure for the solar panels (at rooftop).

Chemist-mimicry

Understanding the principles of 'bond' through studying the properties of atomic bond



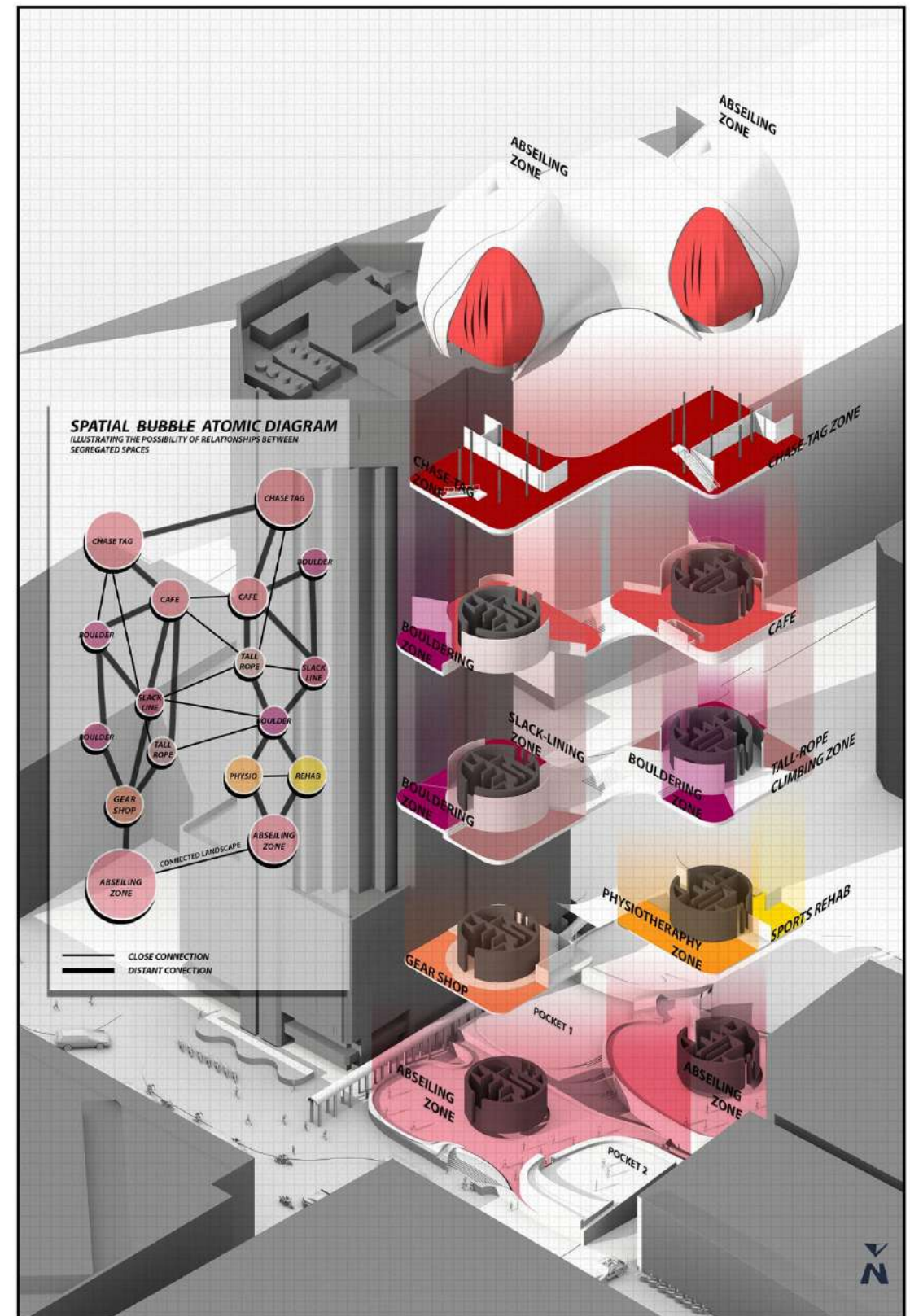
How are we able to translate the properties of a typical atomic bond into spatial strategy?

3 main factors determines the magnitude of bond strength : Distances, Polarity, Field of Attraction.

Using the same principle, we understand that the **distances** between spaces affect the rate of interactions (visually & physically), while **polarity** gives diversity of program within an area, and **field of attraction** is defined by the social opportunities that blends between boundary line of different zones.

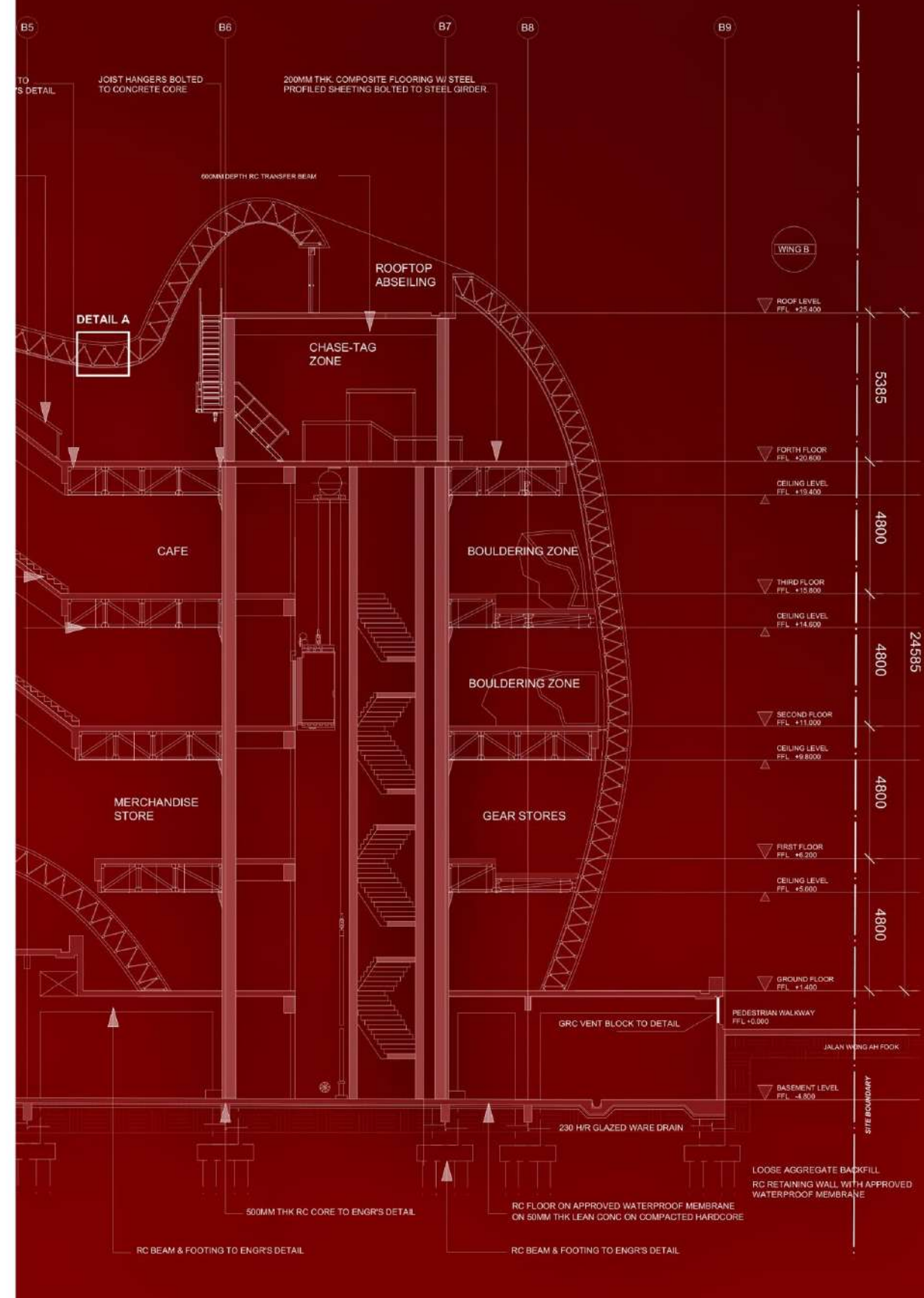
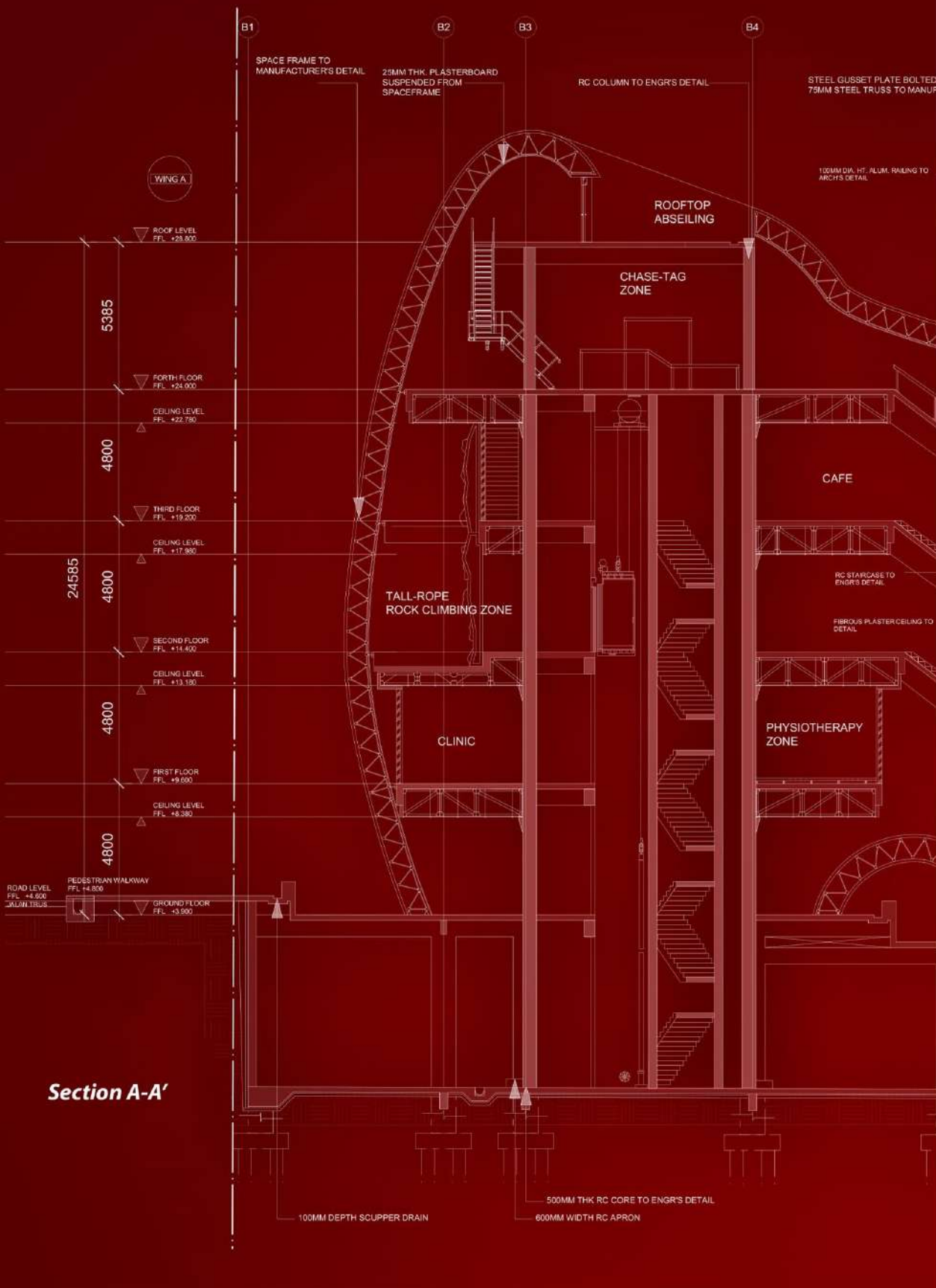
What kind of structures are we looking at?

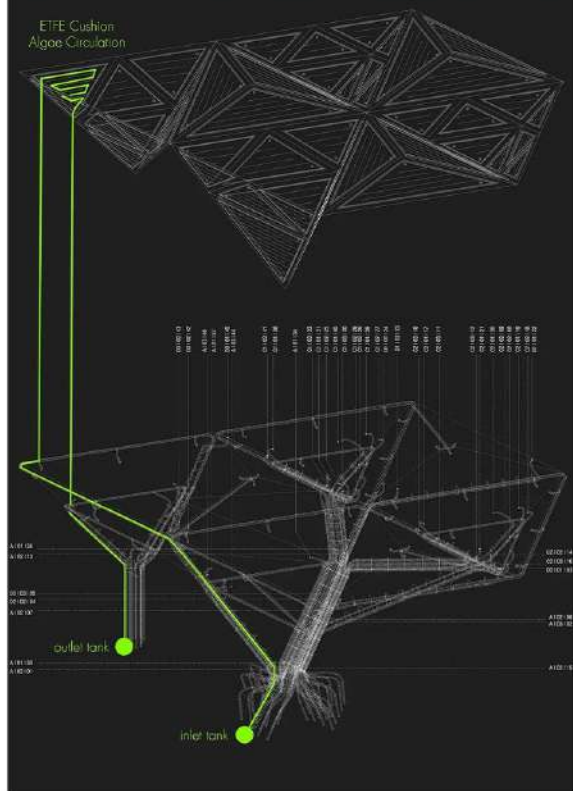
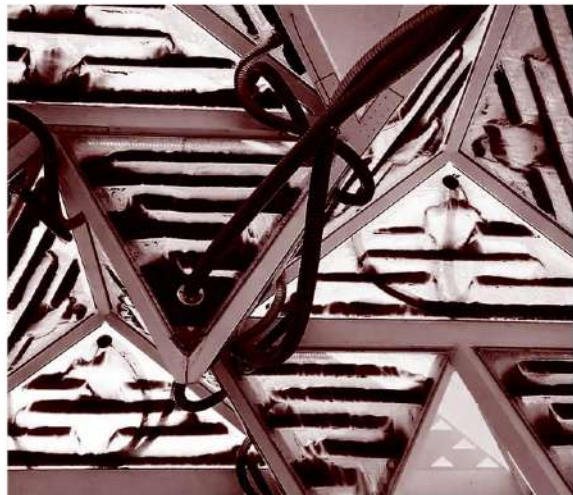
The Swiss Re Tower : Using a concentrated core as a main structural element & circulation across floors, while forming visual and access limitations between spaces by pushing them outwards .



Design Outcome

Using the Spatial Atomic Diagram, relationship of spaces are plotted as adjacent to the 'Spatial Adjacency Matrix' data, which gives an outcome as illustrated on the exploded axonometry above.





- ✓ Bring Photosynthesis to the built environment.
- ✓ Store solar energy ecologically.
- ✓ Decarbonize cities.
- ✓ Cultivate the public realm collectively.
- ✓ Retrofit buildings into bio-power stations.
- ✓ Turn pollution into raw material.
- ✓ Grow architecture beautifully.
- ✓ Enable eco-systemic urban growth.
- ✓ Design new technologies for bio-conscious cities.

Urban Algae Canopy
Milan, 2015

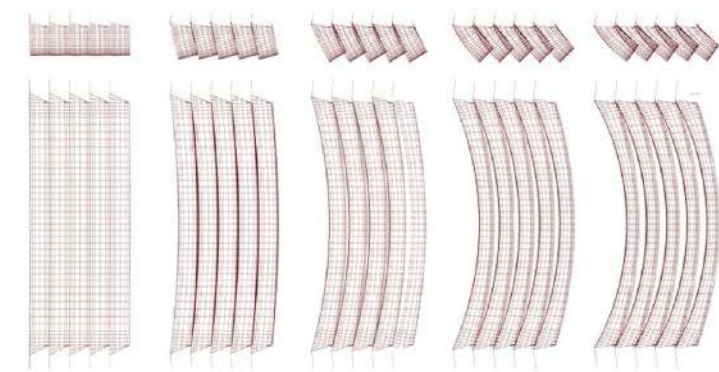
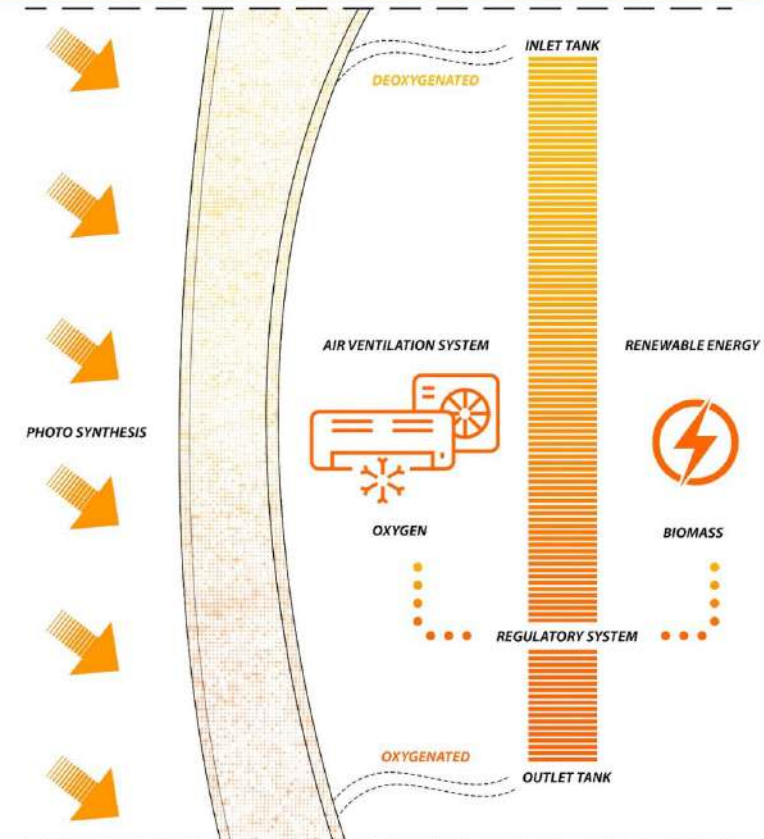
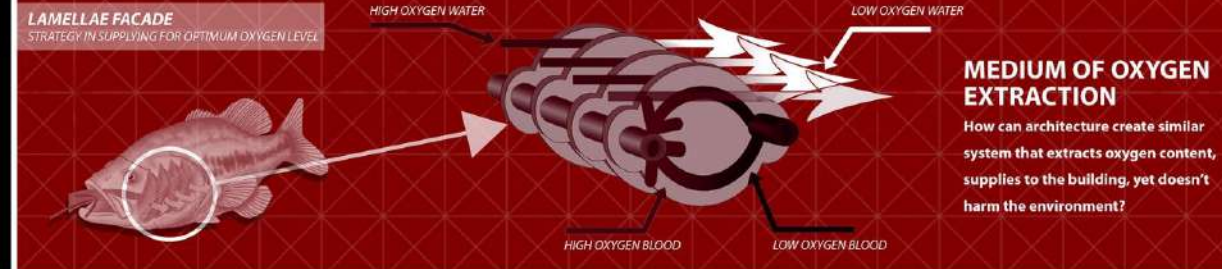


ONE OCEAN
Thematic Pavilion Expo 2012, Korea

As OXYGEN is one of the crucial stimulation that can't be replaced by any artificial stimulations, how do we create a flexible system that allows natural source to supply the need of the interior spaces?

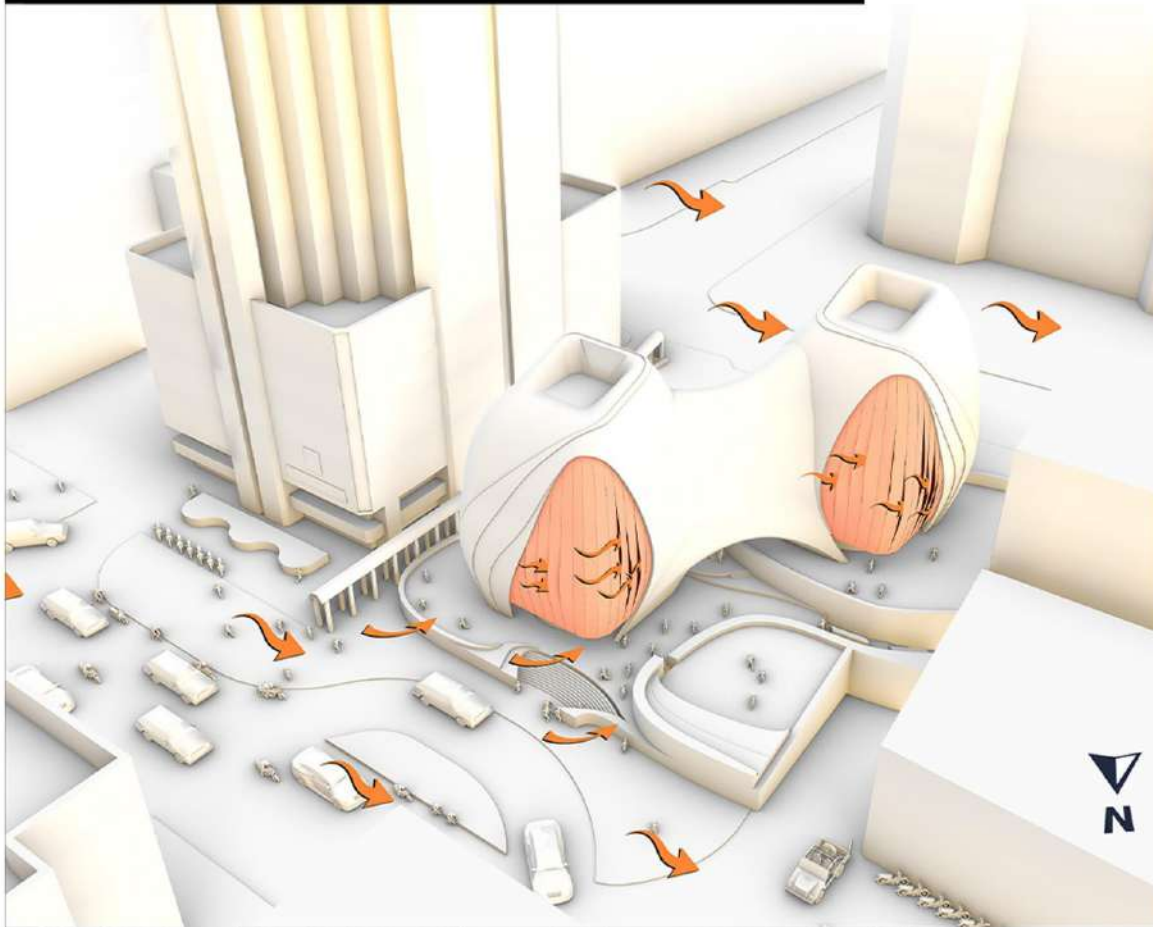
A decrease in atmospheric oxygen pressure produces hypobaric hypoxia that affects physiological stress & sports performances. In continuing the attempt of *photo.Synthetic* movement by *EcologicStudio* & merging the technological innovations of kinetic facade by SOMA Lima, the scheme proposes an active enclosed space which supplies the interior with sufficient oxygen level. At the same time, the algae kinetic facade contributes to urban carbon footprint.

CONCEPTUAL MODEL OF ALGAE-SYSTEM-MODIFIED FIBRE REINFORCED PLASTIC (GFRP) KINETIC FACADE



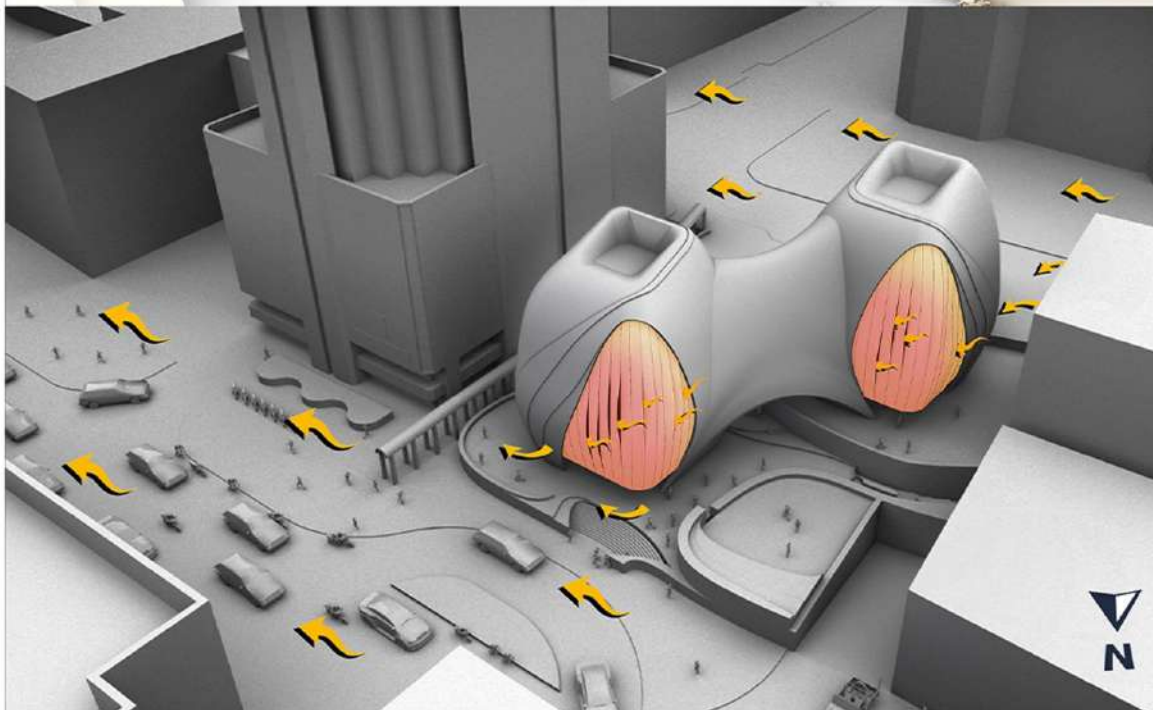
Kinetic Lamaella x Algae Facade

During the day, the algae gel is circulated in the Glass-Reinforced Plastic (GFRP) facade panel which generates oxygen & biomass when photosynthesis occurs. These are supplied to the building as natural source & renewable energy which supplies the need of the building. During the night, the facade opens & closes (controlled by wind simulation system) which directs natural breeze into the building through the gaps created.



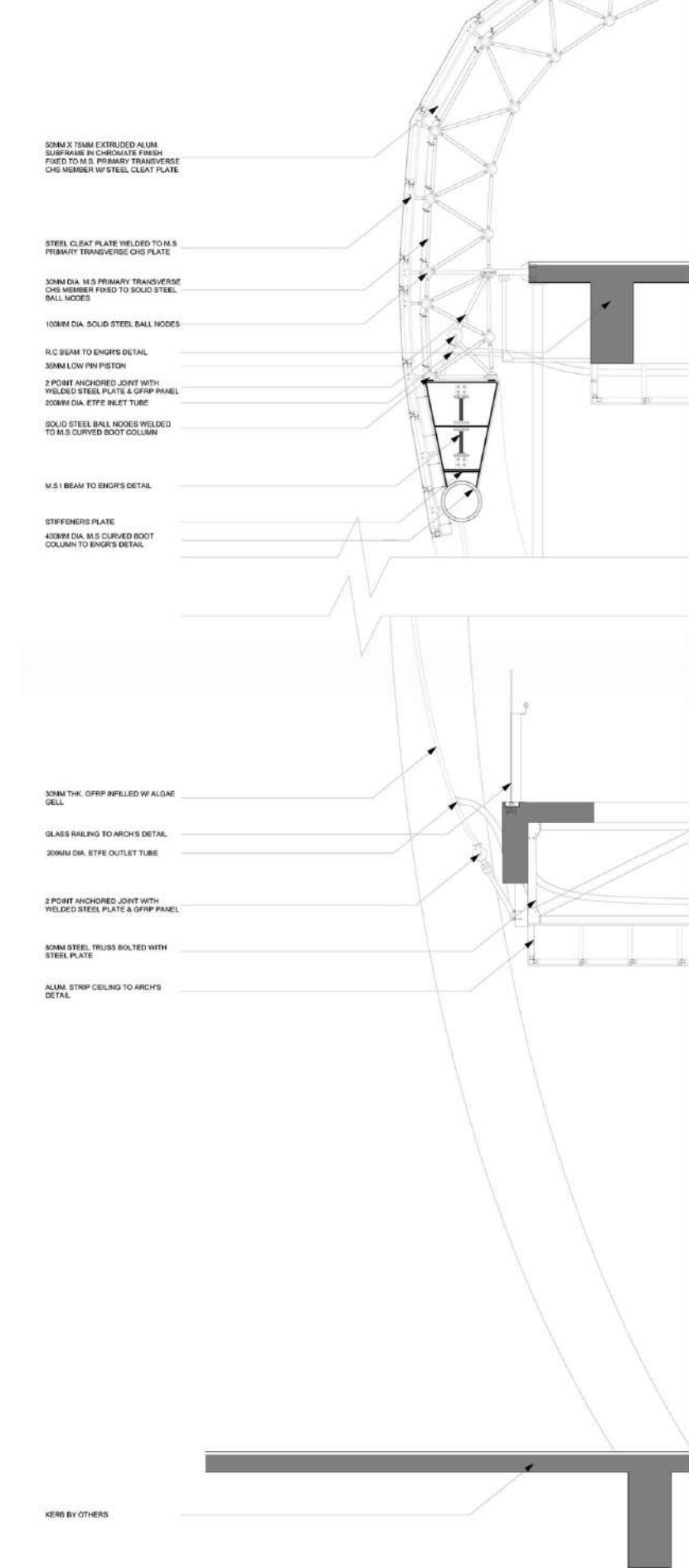
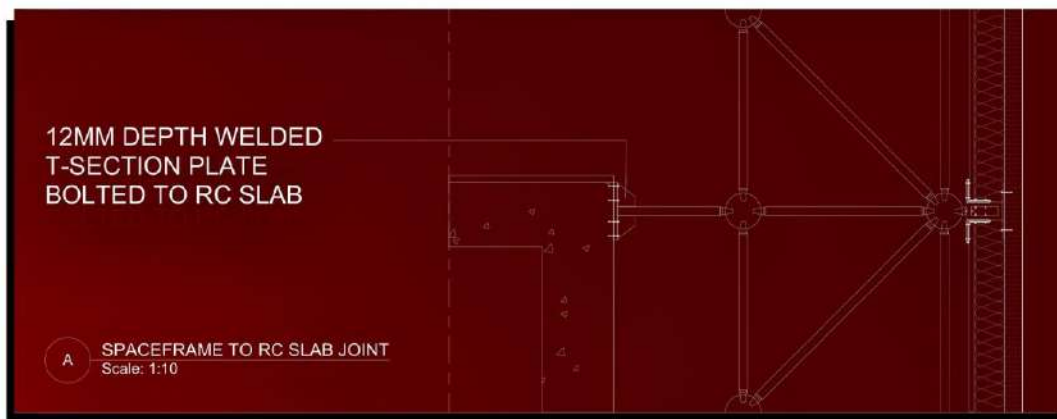
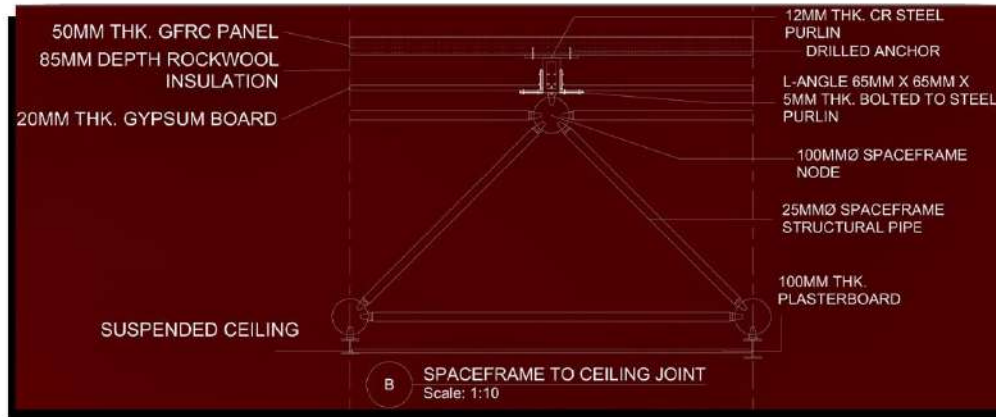
SEA BREEZE

- Wind that blows from a large body of water toward or onto a landmass; it develops due to differences in air pressure created by the differing heat capacities of water and dry land.

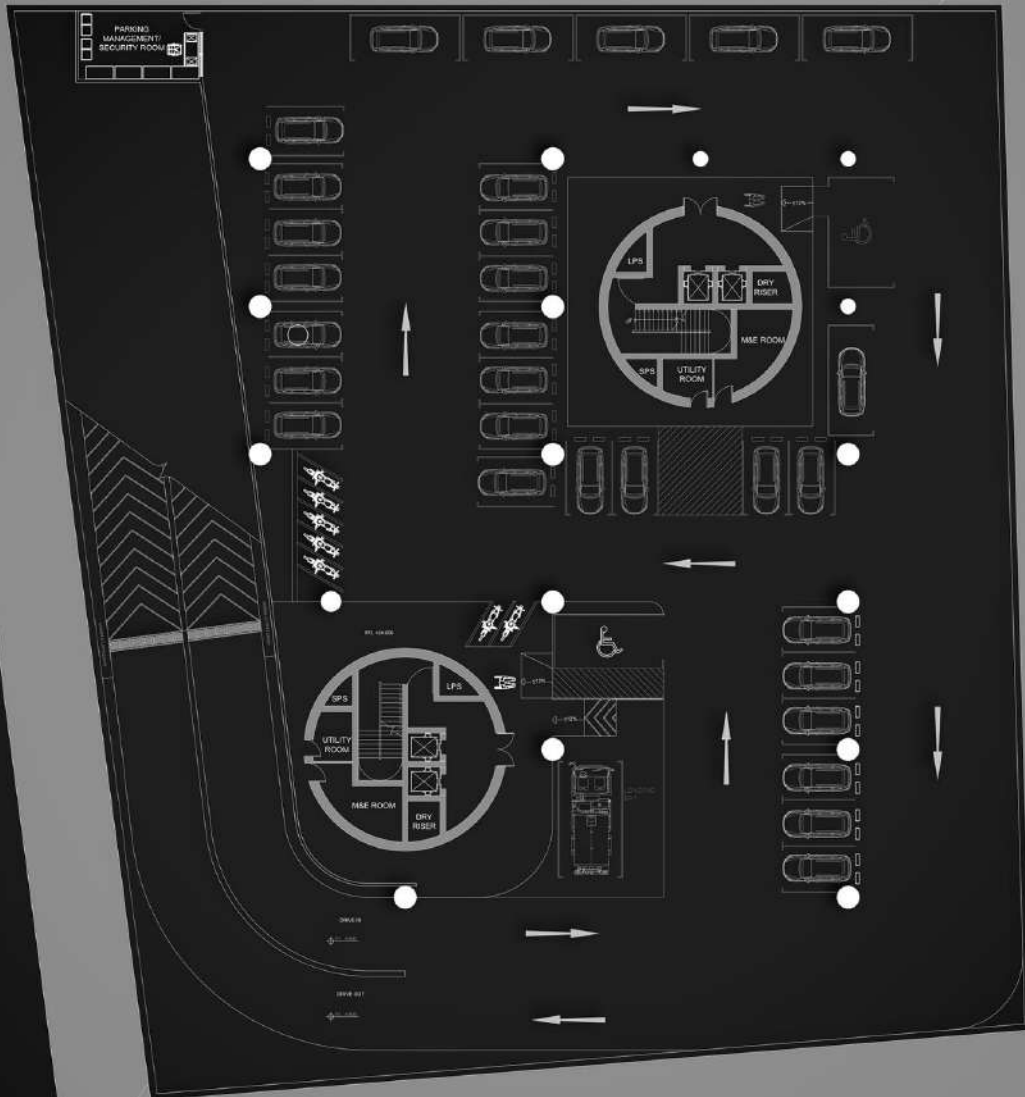


LAND-BREEZE

- A breeze blowing towards the sea from the land, especially at night, owing to the relative warmth of the sea.



FULL WALL SECTION

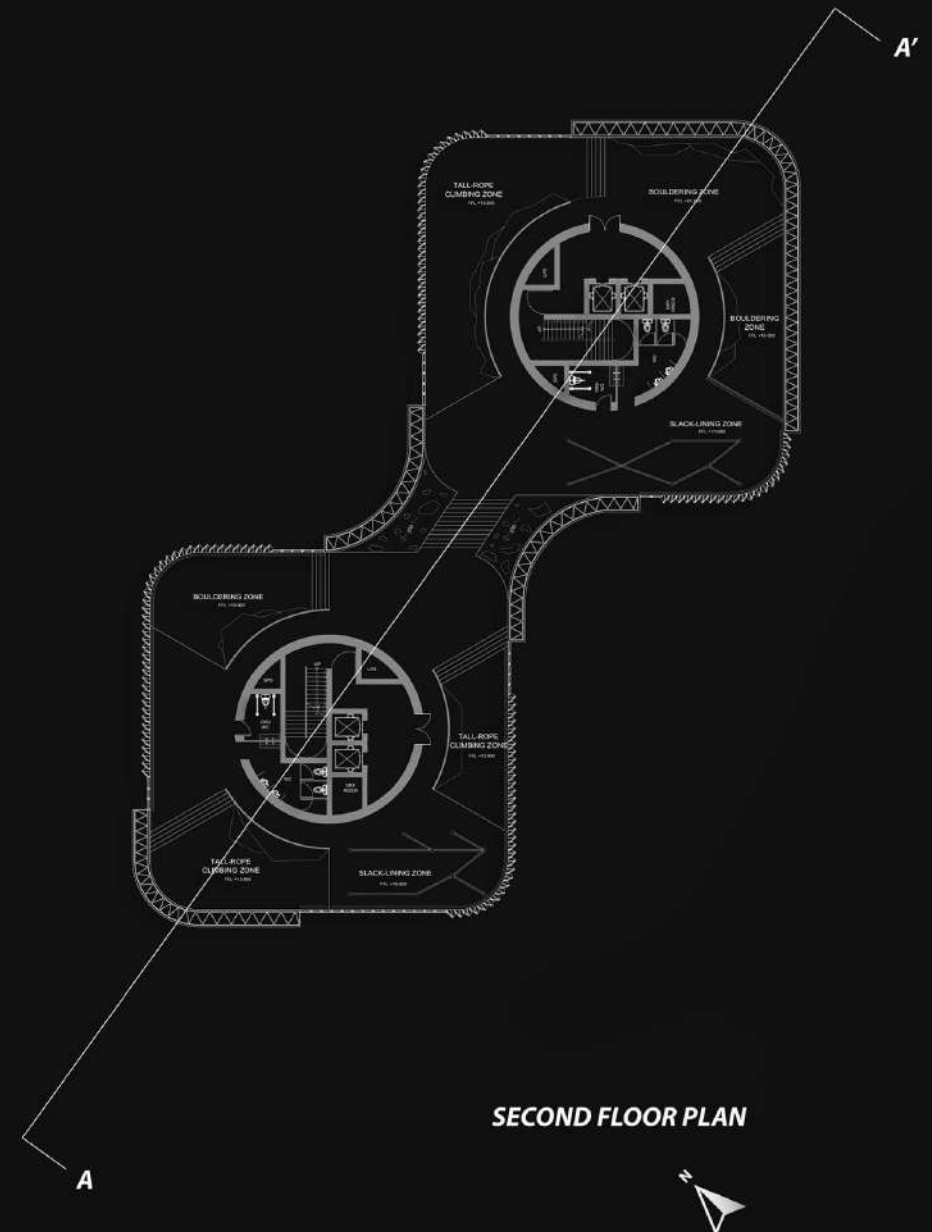
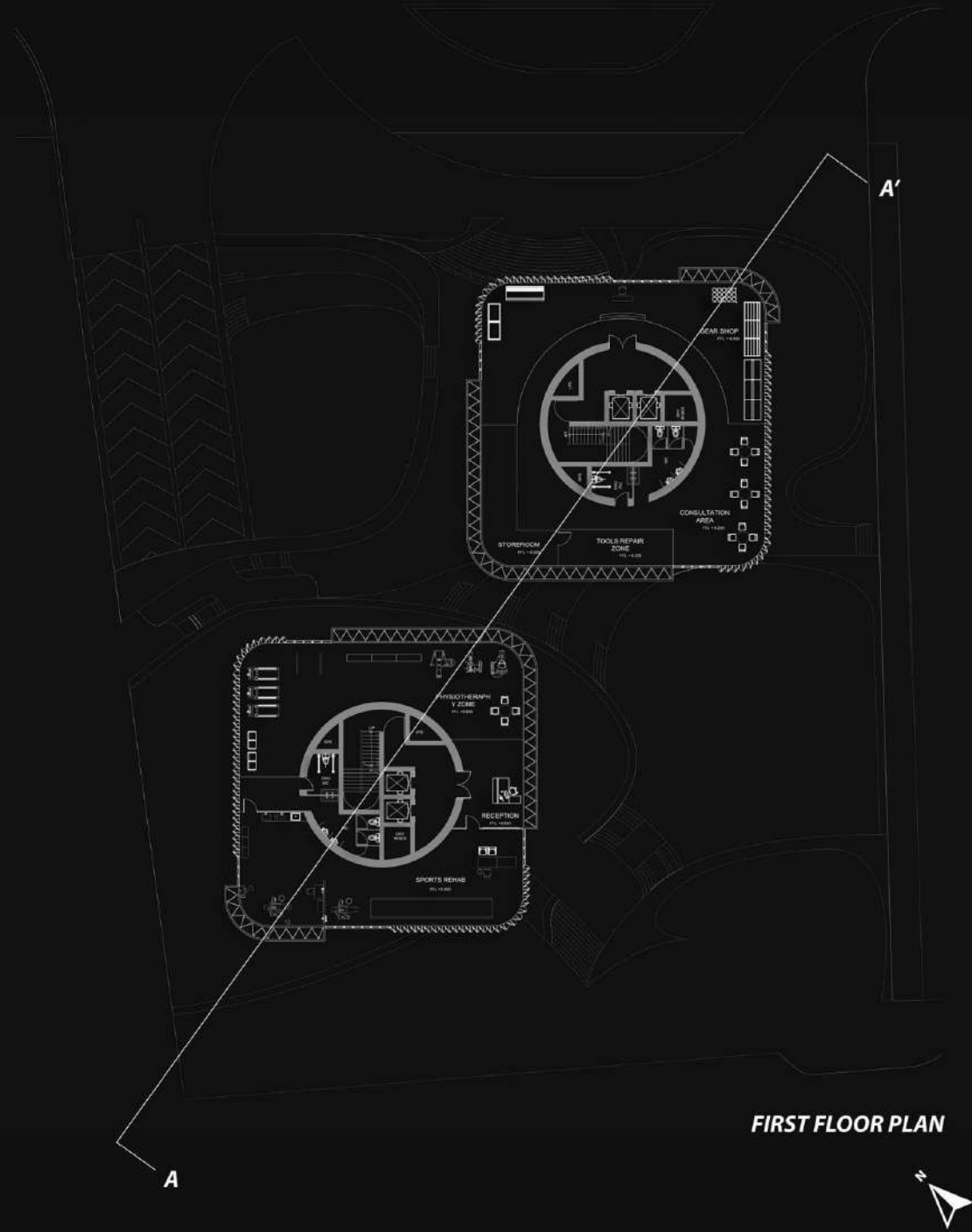


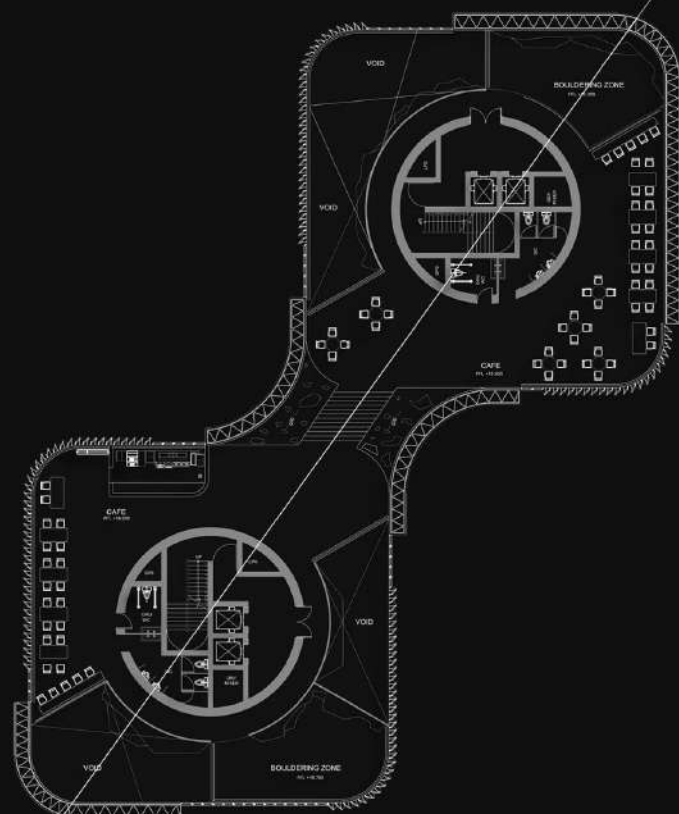
BASEMENT FLOOR PLAN



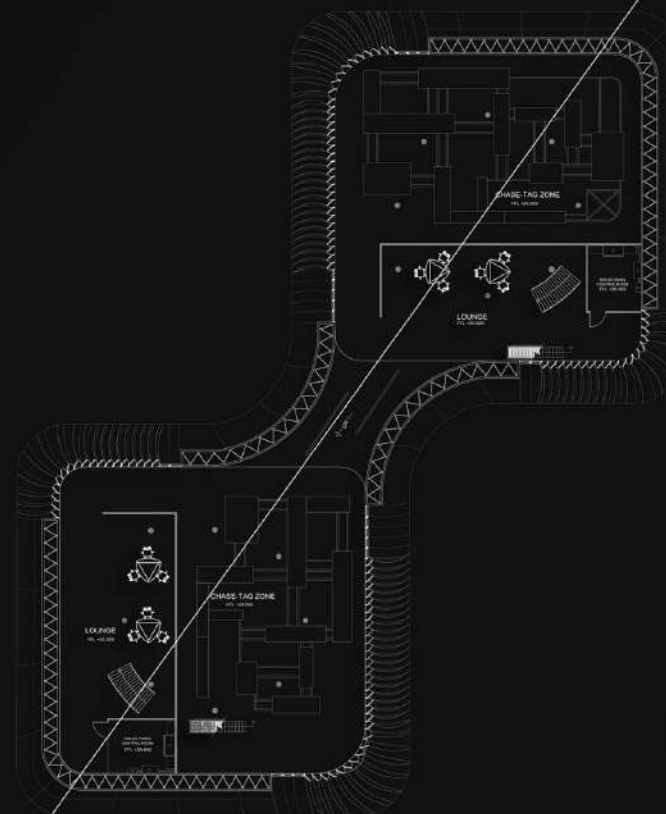
GROUND FLOOR PLAN



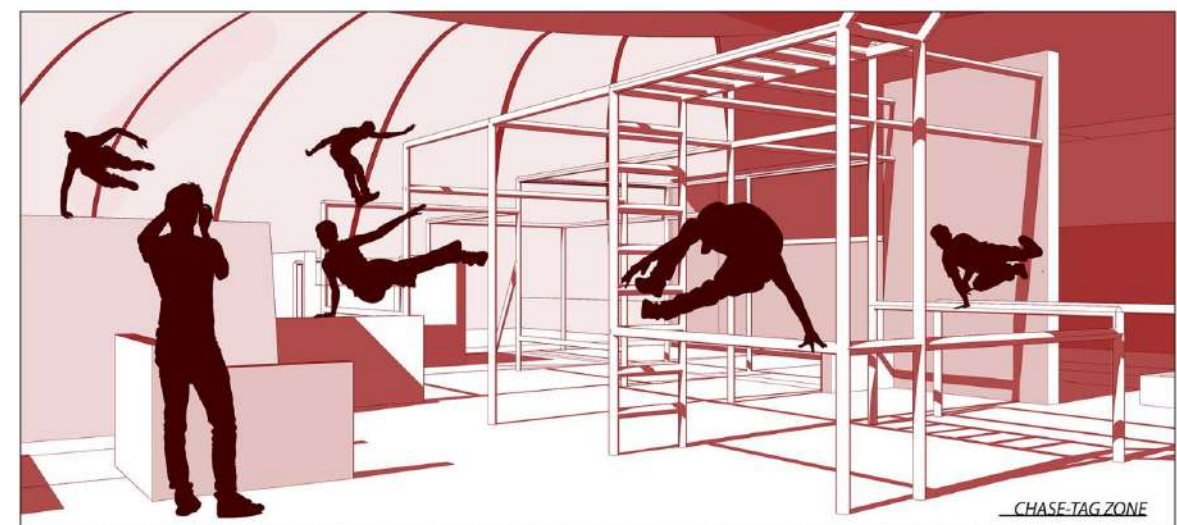
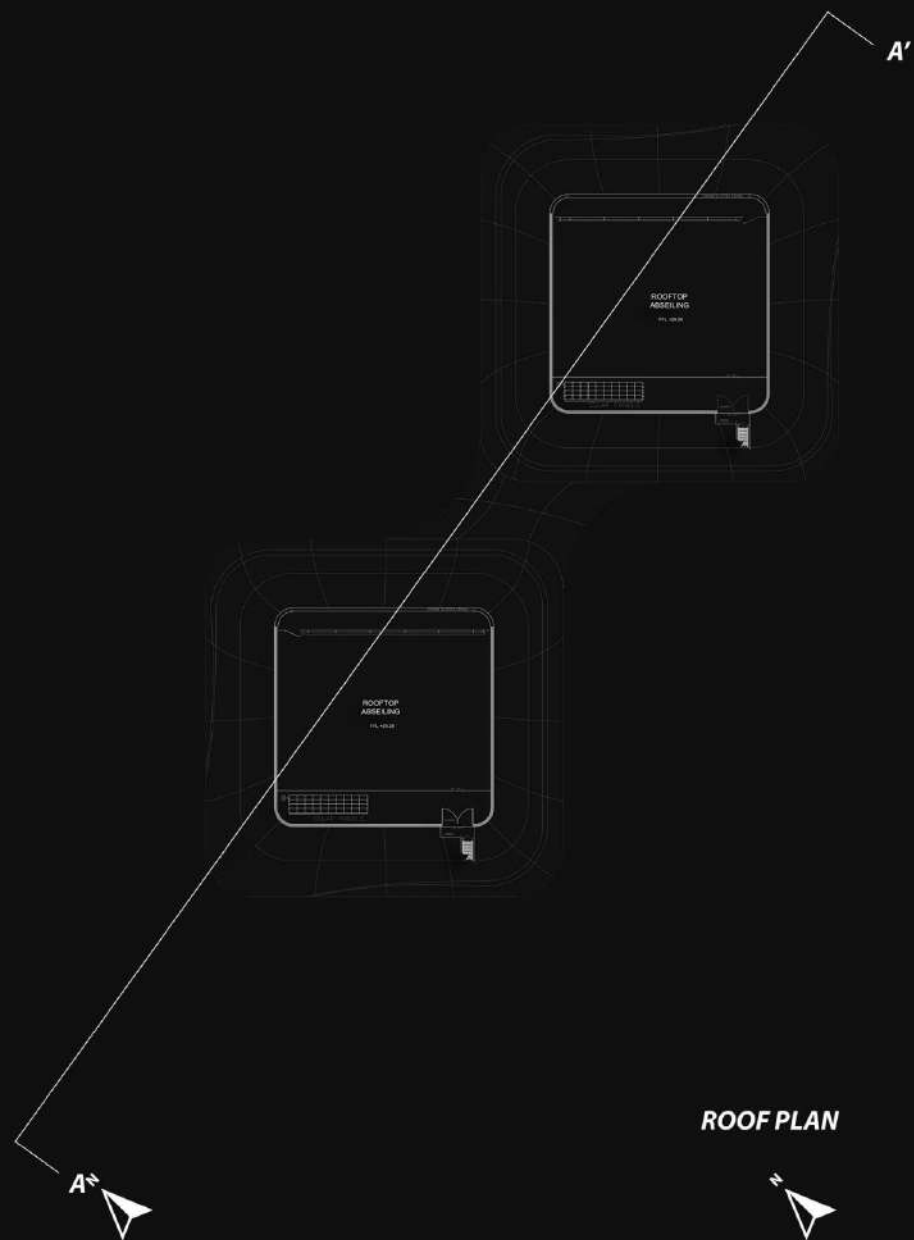




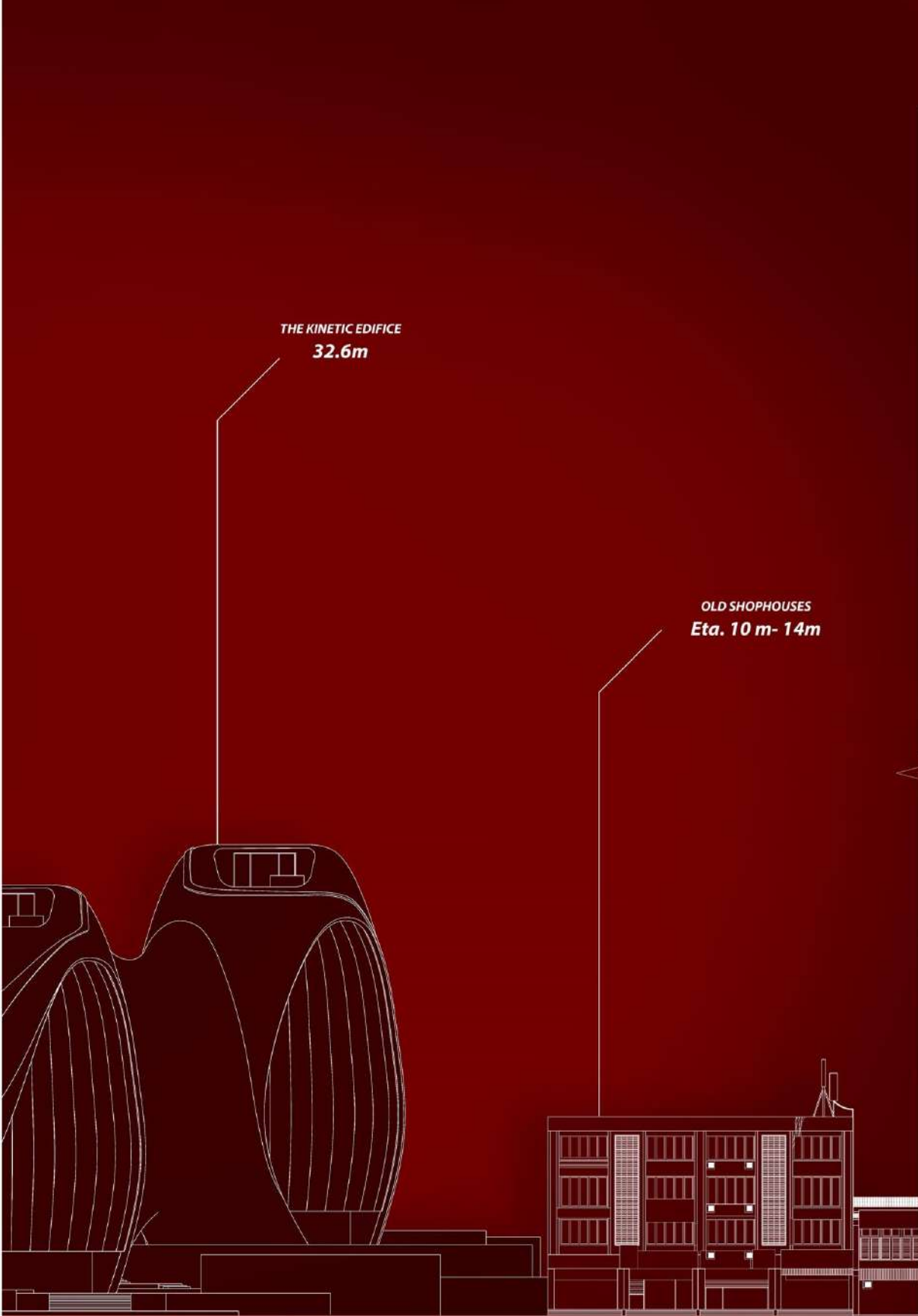
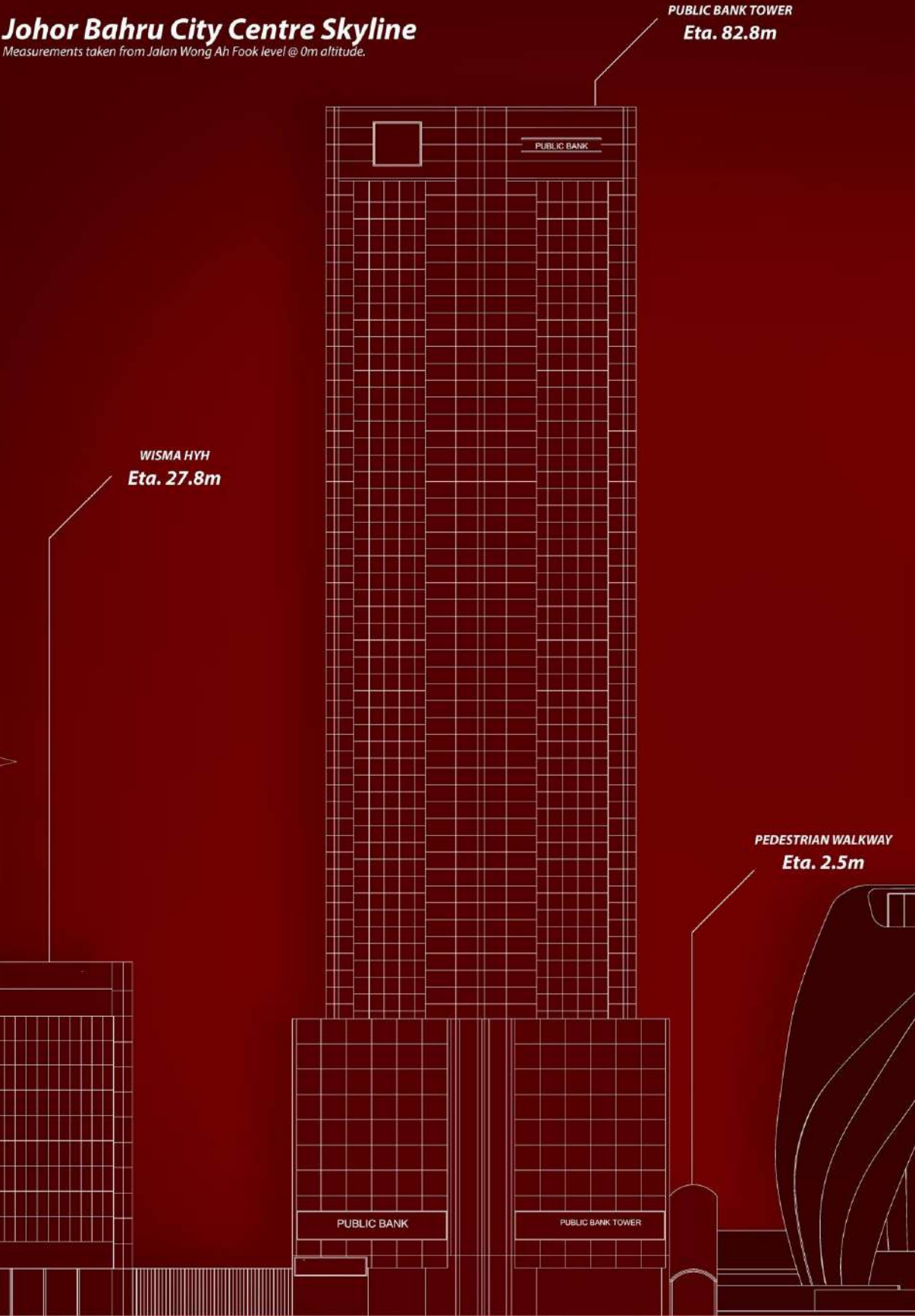
THIRD FLOOR PLAN



FORTH FLOOR PLAN

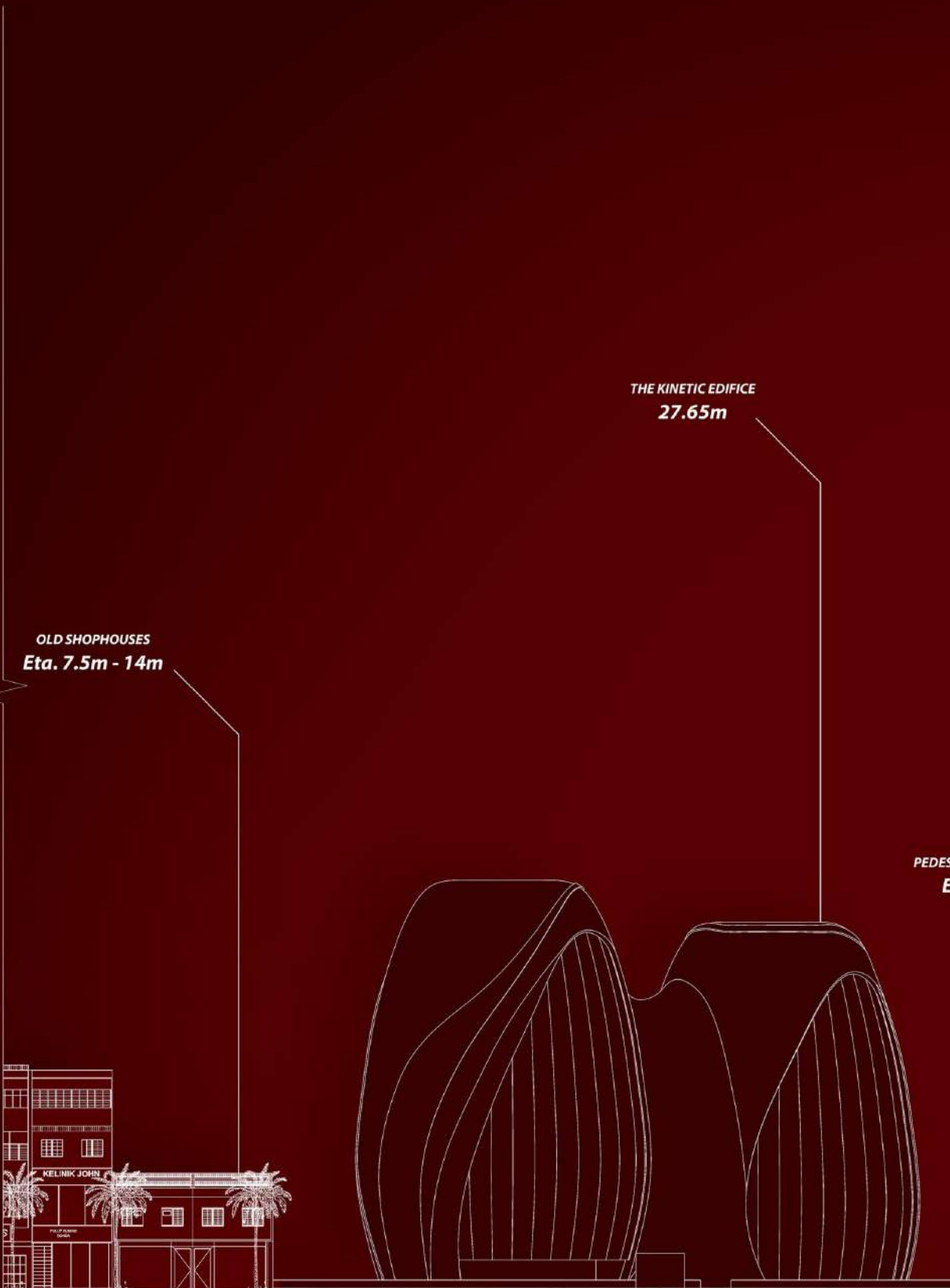


Johor Bahru City Centre Skyline
Measurements taken from Jalan Wong Ah Fook level @ 0m altitude.

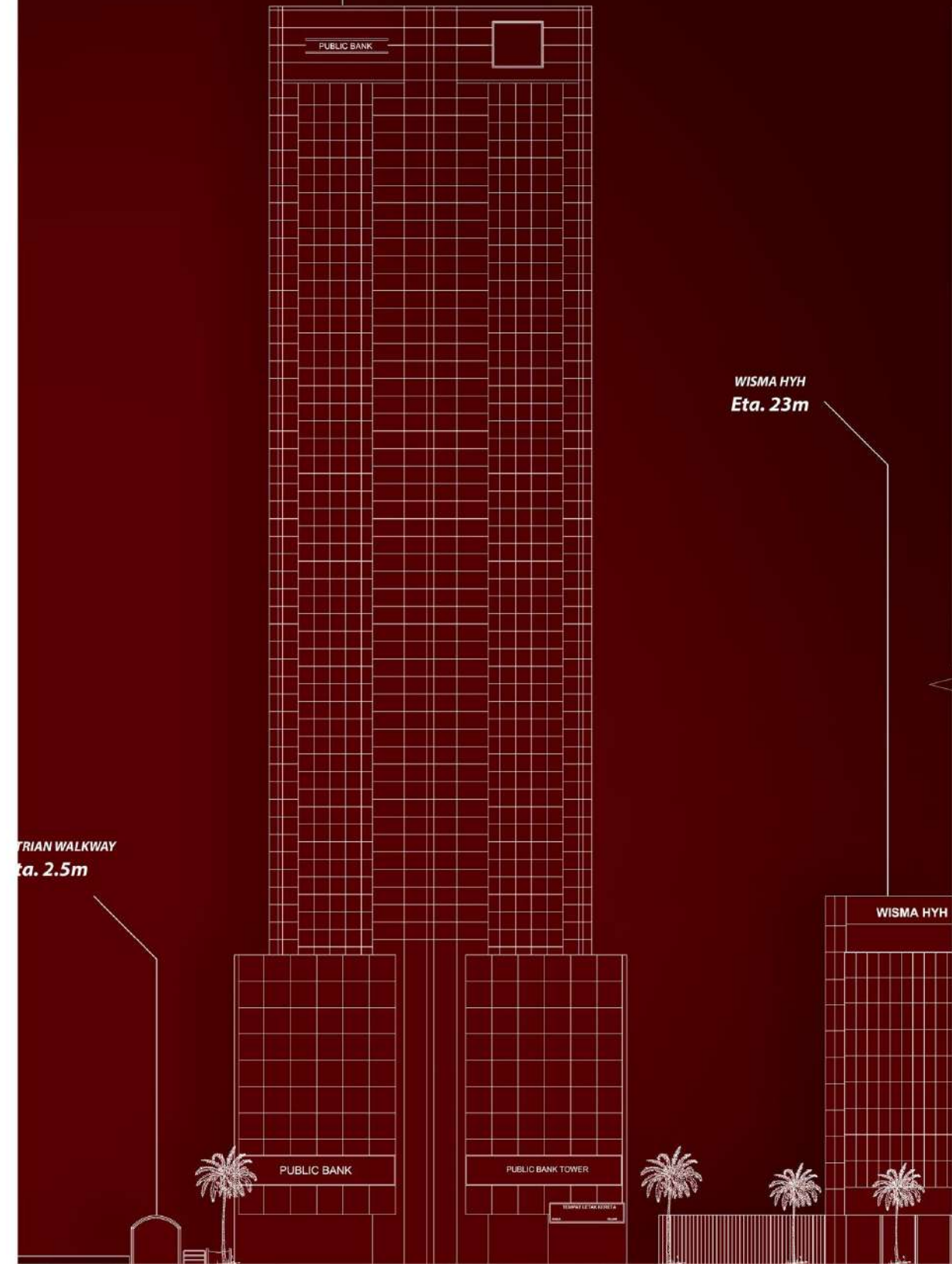


Johor Bahru City Centre Skyline

Measurements taken from Jalan Trus level @ 4.8m altitude.



PUBLIC BANK TOWER
Eta. 78m



Back Elevation





Ar. Edward Chew ADP Design Unit 2019

ADEN

Thankful to have him supporting by my side all the time. Literally, all the time.

"Aden... you can one la, I believe in you."

"Crazy ah you... but just go for it, I fully support."

"Just do it."

"René Descartes once said 'I doubt, that's why I think. I think, that's why I am.' Without doubts, you can't be who you are. Just go for it man."

"It's okay if others don't understand your thoughts, you can't blame them because they only spend 10mins to understand your lifelong study topic. Believe in it, and shoot for the stars."

EDWARD

Many thanks for a wonderful semester, Aden Foong. I will definitely miss you and the rest. As usual, here's my last but not least, a word of wisdom and food for thought for you:

*"Thirty spokes are assembled by one hub;
by their non-being a wheel is formed."
~ Tao Te Ching (Chapter 11)*

I wish you all the best in your future undertakings!



A blow-up physical model (w/out facade) to understand spatial relationships & circulations.



Complete physical model to show contextual relationships.

ADP FINAL PRESENTATION
"Ideas are what make human experiences more than repeated tradition"



Final models

Mock-up models



DESIGN + ARCHITECTURE