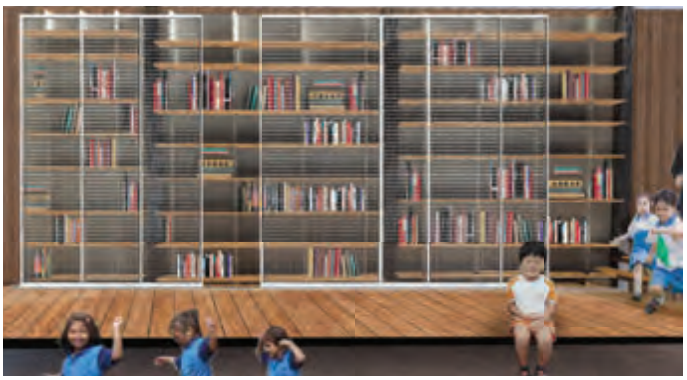
2016 - 2019

PORTFOLIO

SAPANYA PATRATHIRANOND

CONTENT

ARCHITECTURAL PROJECT



BAAN HIN WUA SCHOOL PAVILION

LIBRARY PAVILION

KRA BURI, RANONG, THAILAND
2018

The library is a community design and build project for Ban Hin Was School in Ranong, Thailand. Under the concept of 'it's floating', the design incorperates the idea of learning and playing, and is intended to served both school and community usage.

DESIGN CONSTRUCTION FOR COMMUNITY

This project offers an architectural construction for community, particularly, a library for Baan Hin Wua School which is situated in Ranong, Thailand.
The concept of the library is not only for childern but the community, providing benefitial uses for everyone. The books that are stored here are focuses on the local knowledge. To nurture both students and people within the community about the importance of the local knowledge regarding to agriculture and fishing industry to develop their own profession in a substantial way.

CREW

INSTRUCTORS
Will Hulbert
Wisarut Wattanachote

DESIGN TEAM
Luxsamon Niramitsrichai
Pattarawan Rungrattawatchai
Saruta Yupuang
Sapanya Patrathiranond

DRAWING TEAM
Chansokhan Nuon
Kongphob Amornpatarasin
Tanaboon Kittisrikangwan
Vedant Urumkar

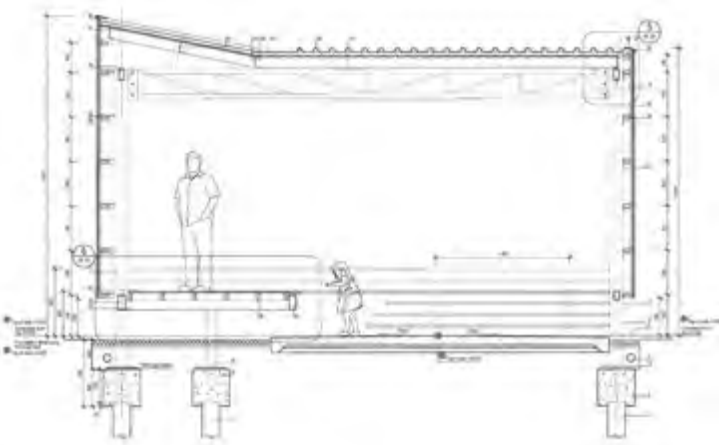
PR TEAM
Achiraya Sangpaiboon
Chanya Sukhumcharoenchit
Isaya Kitcharoen

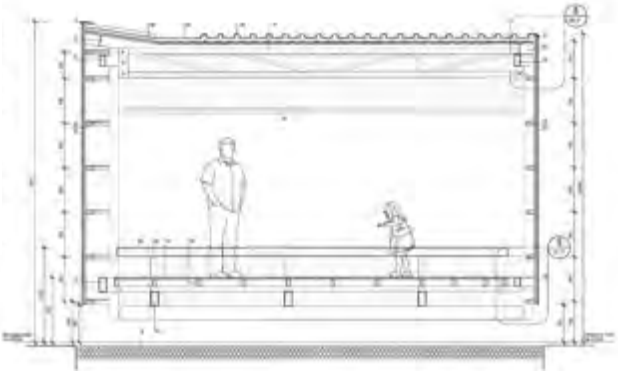
RENDER TEAM
Chit Su Yi Win
Hathairat Kangval

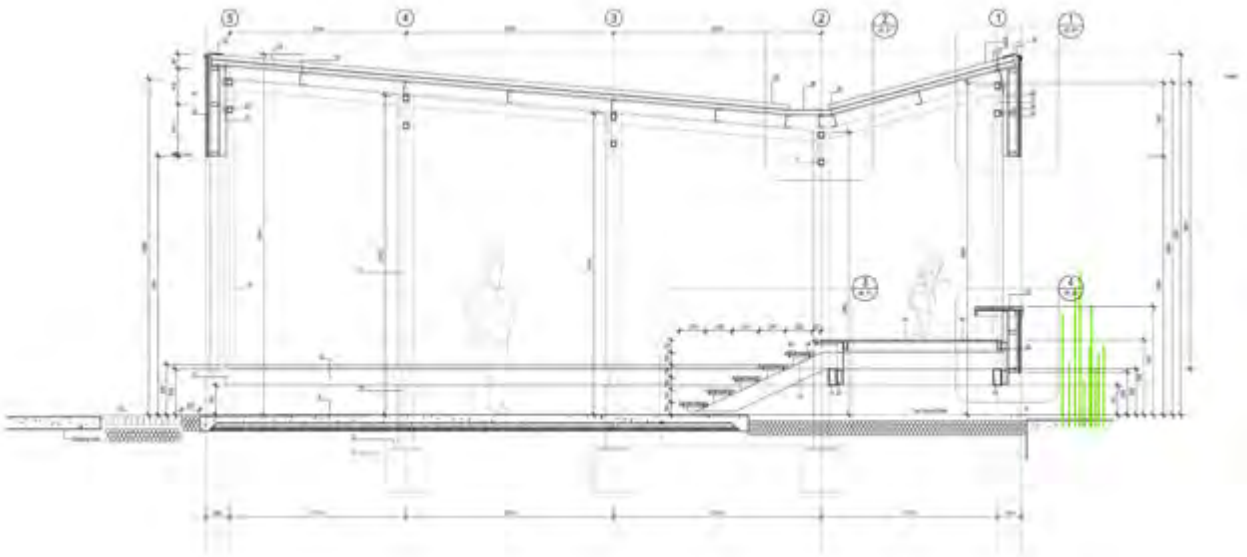
MATERIAL TEAM
Bunyanut Kemmonta
Kunpriya Khamkhane
Nunthikorn Satirachat
Puntawan suppakornwiwat
Rasita Choonhaprasert
Shompoonuth Kumpakdee
Supichaya Kosalanantakul

DESIGN CONCEPT : IT'S FLOATING

The design is intended to be light and seems to be floating, using the visual seperation effects which the facade is lifted up from the ground, sitting on thins columns.
The design embrance, not only the library, but other program as well. It is open for study areas and multi purpose space. Additionally, the architecture is not a mere container for those program, rather, it creates an interation itself by allowing plays to happen. In order to seperate programs under the limited area available, the idea of split levels is used. The different levels of platforms define the limit between programs by ifself without further cost spend on creating walls and partitions. Thus people can interact with these split layering in multiple way: kids can use them a playing platform - jumping up and down, the architecture can become a furniture itself - with people be able to sit on the platforms and stairs. The material choices here is derives, not only from the aesthetics, but the availability of them as well. Since the school has spare wooden planks we ,then ,decided to work with them to save some cost and resources, however, is able to last long with the right maintainance.
The openings one the facade are designed regarding the oreintation, function, and the placement of the surrounding programs. One opens to the east where the school play ground is, another opens to the palm trees forest on the west. Likewise, allowing natural air to breeze through the space. Additional skylights are adding in order to allow light to get into the inner part of the space during sometime of the day.
The form of the building, specifically diagonal lines, is influented by form and placement of the surroundings.







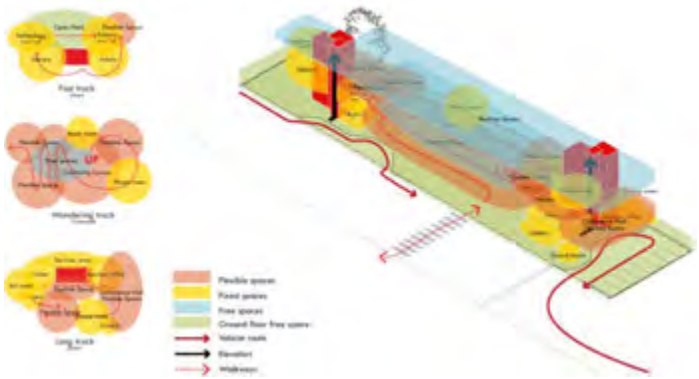

FOREST
BOOKSHELF
PLAYGROUND
PLAN

THE LIMINAL SPACE

SECONDARY SCHOOL QUARTER FOR WARRAPHAT SCHOOL

HATYAI, THAILAND
2019

The proposal is a middle school quarter for Warraphat School, in which, the architectural, programmatical and school cirriculum design are derived by the idea he idea of effective learning through liminality.
By embedding the quality of liminality, it opens up for more opportunity where ones can come and appropriate the space responding to their own learning manners.



SITE and REQUIREMENT :

Width and Lenght: 20.7m. x 94.85m.
Total Area: 1,963 Sq.m. (1.2 Rai)

- Private School
- Secondary School (Grade 7- 12)
- 12 classes (2 classes per grade)
- 25-30 students per class (300- 360 students)
- 15 - 25 Teachers and Staff (1: 20)

DESIGN CONCEPT

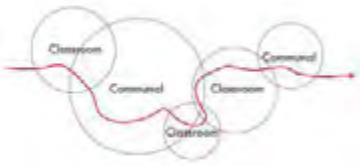
The idea is to create a school which embraces a quality of being a liminal space, and to look at it as a piece of community rather than a stand alone subject both in term of curriculum and architecture.

The major part of the users are adolescent, the age of finding one selves. They tends to pay more attention and willing to take more risk towards peers learning. For this age group the moment where attention comes together with an act of inquiry and investigation, that is the moment of learning.

However, conventional school doesn't allow for that moment to happen much inside the classroom. Instead, the moment where people start talking and discussing is when they are in a corridor, an in-between space because the doesn't feel forced to perform a particular task in the space. This leading to a productive learning process where the learners want to learn more. This space I define it as a liminal space.

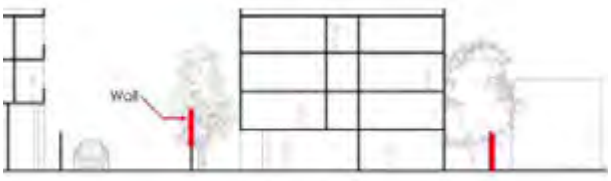
Liminal space is a blurry zone between two distinguish space, the space where limits become connections and open up the realm of pure possibility of how one can appropriated their own space.

Conventional Organisation

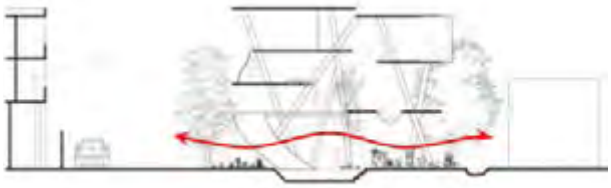


Design Intentions: Shifting Space Ratio

By shifting the space ratio, favouring communal space and liminal space, it starts to open up the possibilities where one can compose their own space responding to their needs. Spaces can even become a circulation itself, allowing the flow of people and knowledge to flow through space. The moment of freedom gives a sense of liberty.
And since the users are a part of a larger community, the quality of being liminality should not stop at school wall, the boundary between school and community then should become liminal.
The network of school and community can be enhanced by the curriculum and the architecture aspects.

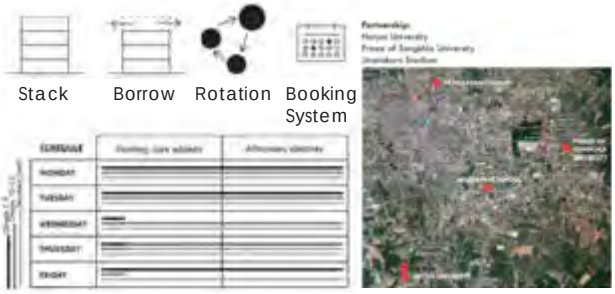


Conventional Organisation

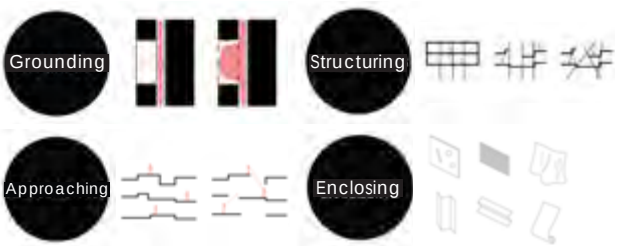

Shifting Space Ratio

DESIGN APPROACHES

In term of curriculum, since the site is very narrow, the school is purposed to create a partnership with other facilities and institute in town and doing the borrowing space. A time schedule is purposed for a temporary relocation population of users in school in relation to their electives courses, by doing this the users themselves has the opportunity to experience activities and learning beyond school. Where the space inside school are operating by rotation and booking system, which would develop autonomy of conscious social responsibility.

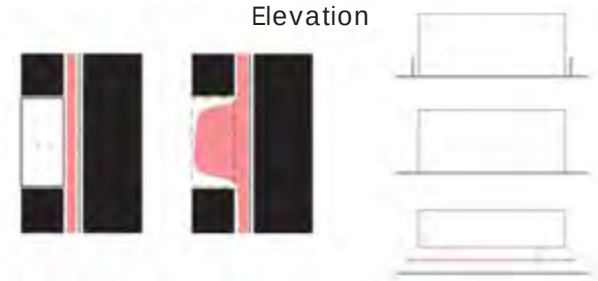


In term of architecture, starting from looking how the idea of community occurs: in the low-rise neighbourhood the street is used as a living room, and that the scale of architectural barrier can completely changes the scale of the street, or so say, of community.
There is exploration on 4 architectural aspects in this project: grounding, approaching, structuring and enclosure; to enhance the quality of being liminality.



Grounding:

How a school can be grounded to the context



Concept:

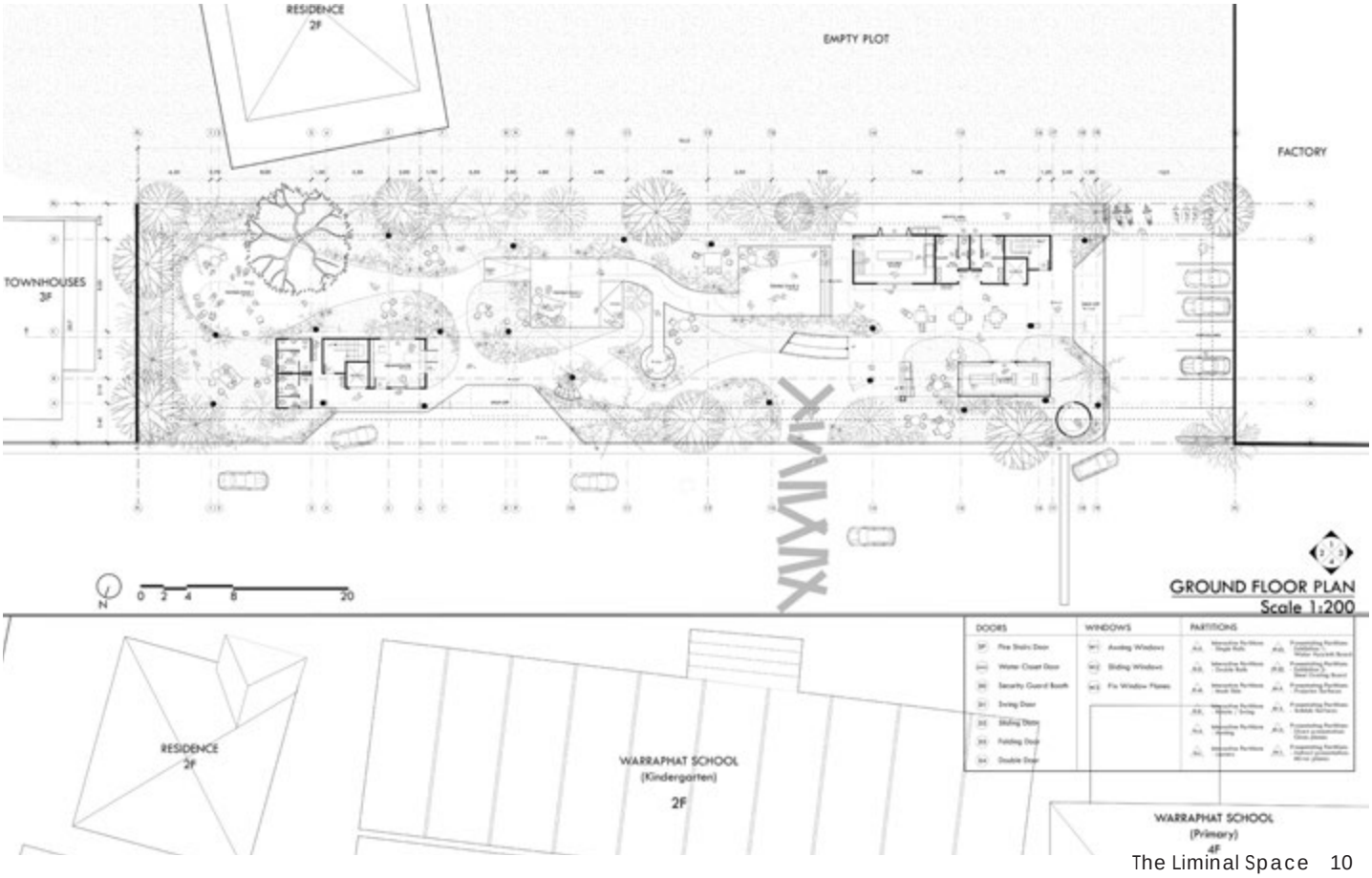
To change the perception of community by both physical flows and visual flows, the scale of fences act as a protagonist, it can completely change the scale of community.

Considering the borders of the school as a connection to the community, these borders should invites people in and at the same time present ourselves to them as well.

Approaches:

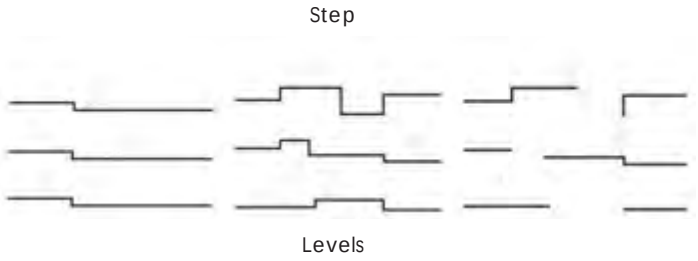
The design approach here is to open up ground floor, degraded the idea of solid fences and using the greenery and green space as filter and a transition from the street. The ground floor will act as a sharing platform where the community can use and the school event can take place, for example, the school market where students run the business or exhibit their works. Considering the safety and security of the users, on a regular school schedule, during daytime the space is for school user: leisure and learning, while after school a community usage is allowed. On school break, the space is free for community uses during daytime.

The pacing of approaching community suggests 3 circulation cores: the fast track, the long track and the wandering track. While the former twos are a direct core, the latter one is a meandering route. The programs are organised around these cores, in relation to their usage requirements and spatial conditions requirements.



Approaching:

How users approach an architecture



Concept:

Exploring the idea of liminal space by challenging how people use their senses to define space. 3 scales: macro, meso and micro.

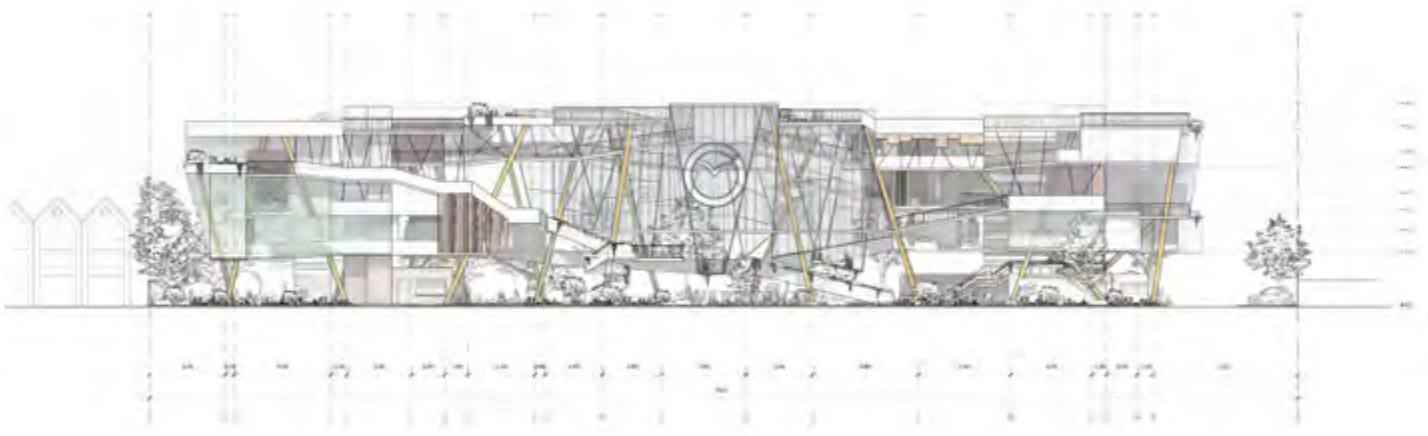
First, we see things from afar then as we move towards it we start to notice the change in smell and sound, the last thing we notice is the change in touch: texture, for instance, and how the space embraces us differently.

Instead of a solid wall, what would happen if we use touch as a dominant sense to separate space, starting to change the way people distinguish and define space.

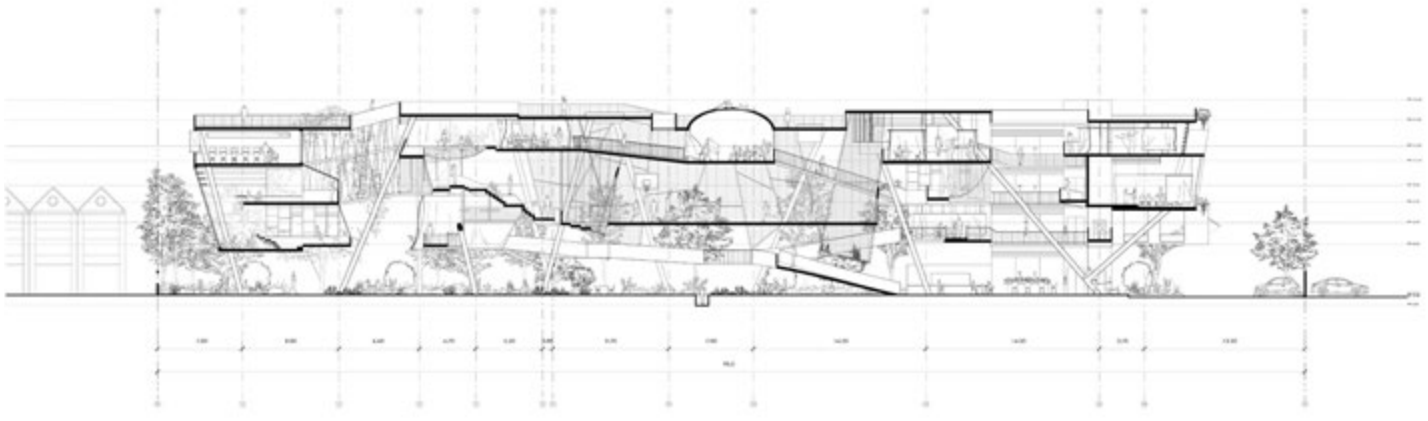
Approach:

Using the concept of one big room where different spaces can be defined by topographical level changes. A floor plan is consisted of many floor plates, in which, these floor plates are positioned in different heights, forming various steps. The floor plates allow various programs to take place, while the steps can be used as a multi-purpose furniture that the function depends on the user at different floor plates to employ. Likewise, the steps suggest stops as well as continuity. This way the users are able to see different spaces ahead, however, they won't feel that they move from one classroom to another but rather from spaces to spaces.

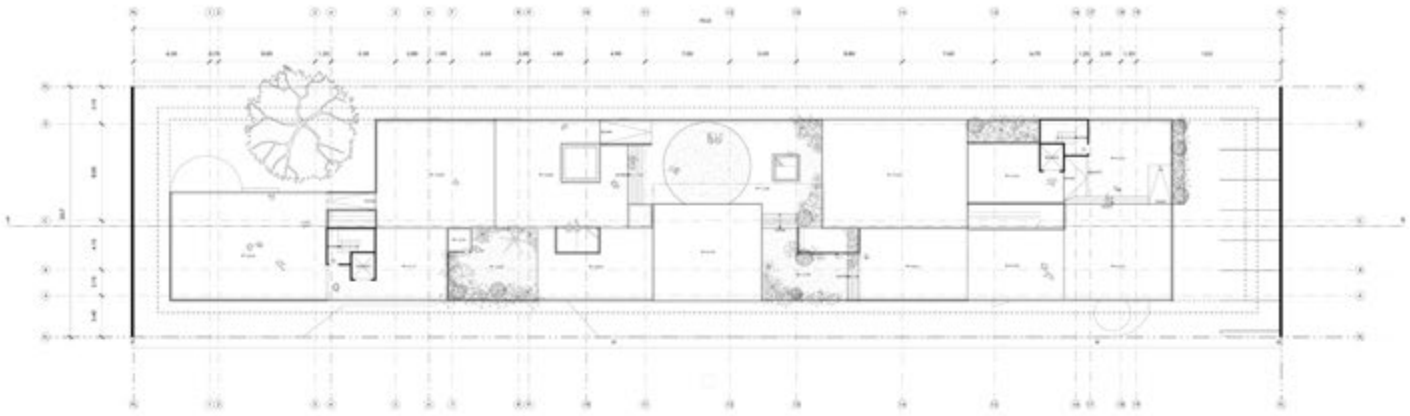
However, there are ramps and slopes located on the floor as well, they form a stepless continuous route from an elevator to other spaces throughout the floor to provide access for wheelchair users, people with disability and trolley.



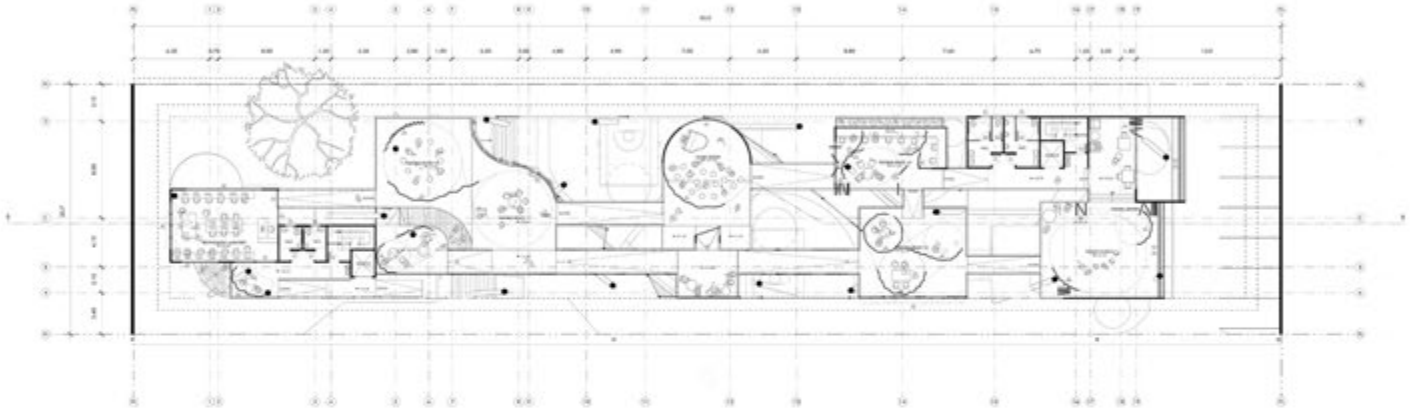
ELEVATION



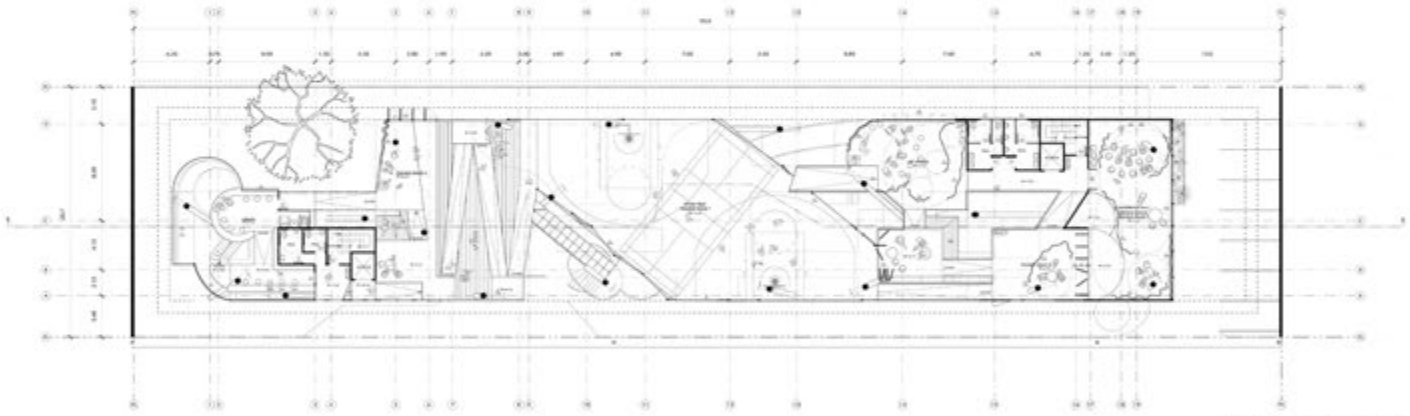
SECTION A-A



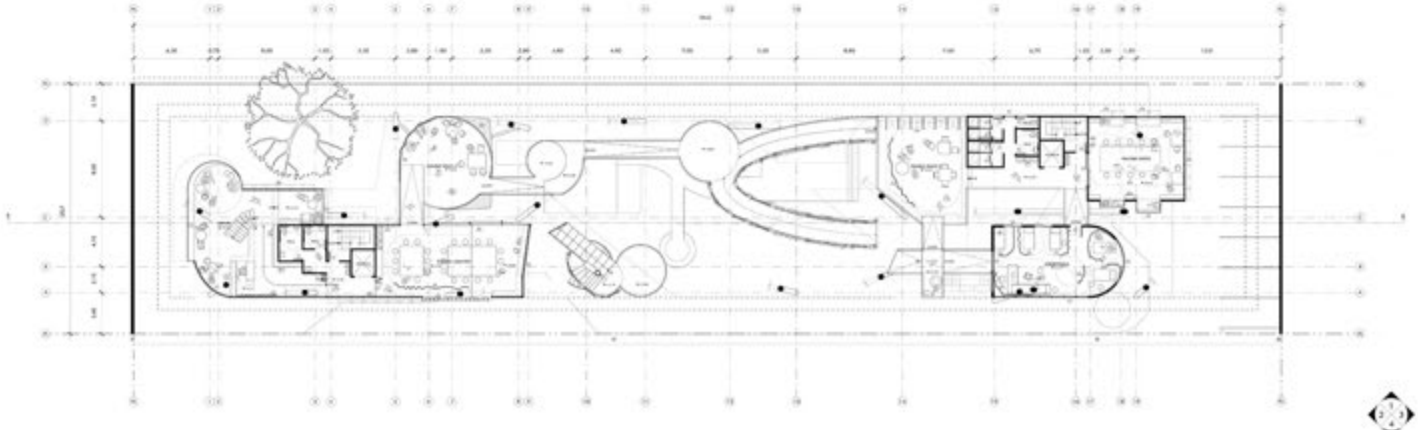
ROOFTOP FLOOR PLAN



THIRD FLOOR PLAN



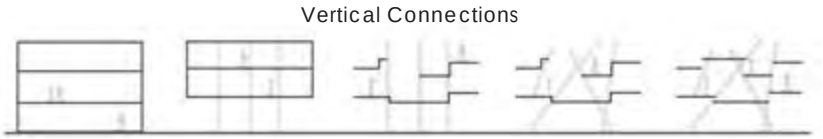
SECOND FLOOR PLAN



FIRST FLOOR PLAN

Structuring:

How users approach an architecture



Approach: Instead of standing straight, the columns are inclined and tilted to multipulate the sense of space. They are also rotated 3dimensionally, leading perception of people to the connected spaces in an informal manner.

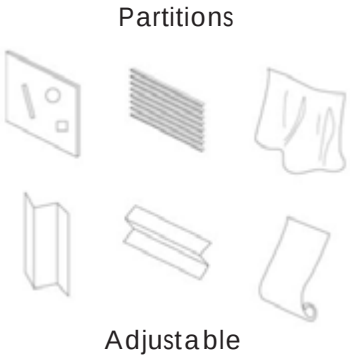
Steps say one thing column leads to another. Lessen the concrete idea of conventional classroom.

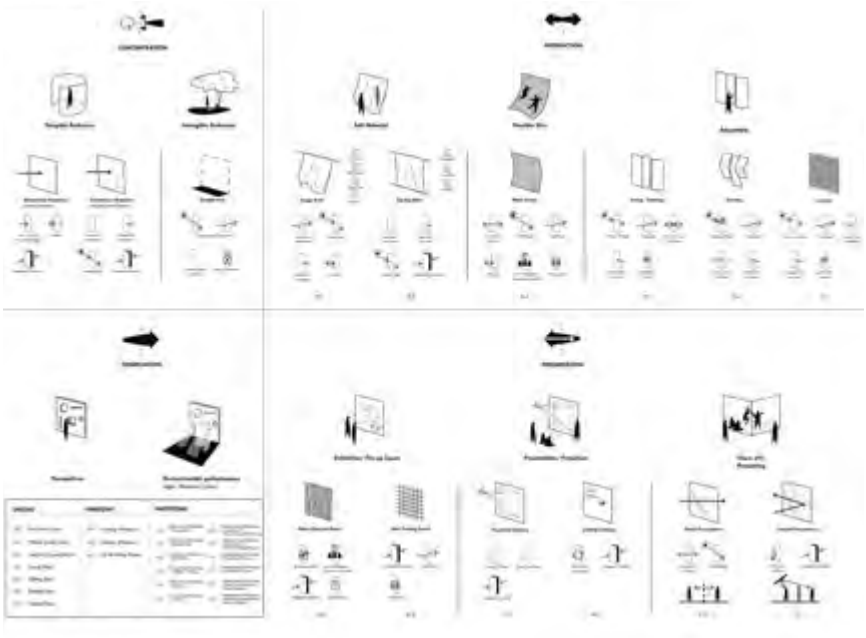
The columns are there for more than construction purposes, they can act as a furniture in some places, for example, the columns that crossed each other form a space for bookshelves or even seating space for the users. These aspects allow more possibilities for the users to appropriate space to suit their own use.

The placement of structural columns also influences the space of the platforms for the program inside. For example the sports field, the angle of inclination and position challenges the standard shape of a sports field. Considering 'play' in informal manners opens up possibilities of what a sports field can be.

Enclosing:

How spaces can be enclosed





Concept:

In order to provide more possibilities that the users are appropriated a space to suit their own use, the enclosure of space are categorised into 4 categories according to the learning environments they could create: Concentration, Interaction, Observation and Presentation.

The different categories provide distinguish learning environments for the users: self-study, individual learning, group learning, learning by looking and observing, for instance.

However, all the 4 categories enclosure are able to be integrated with each other, widening the range of program usages they can serve.

The materials are dedicated to the use of local materials that are easily accessed and considering environmental concerns, using community intelligence to add value to them.

Approaches:

Concentration:

The idea of enclosure for concentration is to generate a least exchange between the two sides. Creating a sense of 'embracing' which influences the concentrated moment.

Type 1 - Tangible Embracement: Distractions Retections

The main idea of this type of partition is to reduce distraction both visual and sound, creating a diffuse ambience

C1.1 Solid Partitions

C1.2 Double Rails Fabric curtains

Type 2- Intangible Embracement:

C2. 1 Shaded Area

Using the shaded area of trees to form an organic embracing space.

Observation:

The enclosures under this category are encouraging the moment of learning through observation, the outside is visible to the inside. It involves aspects of perspective distortion and environmental performances.

Type 1 - Perspectives:

The main idea of this partition type is to create perspective manipulation that evoking curiosity and sense of investigation.

Type 2 - Environmental performances

Learning through an observation of environment: Light, Shadow, Colour, Natural Colour Blending

Interaction:

Focuses on generating the exchange between the two sides, the ideas of 'interaction', 'visibility' and 'reversible. The types of enclosure under this category revolve around the use of an interactive of a flexible-skin that is adjustable manually and environmentally.

Type 1 - Soft Materials:

I1. 1 Fabric screen.

The fabric screens are soft screen that is sensitive to environmental effects therefore they enable visibility exchange. Likewise, they are adjustable and reversible upon the needs of the users.

The screens are provided in various types of material properties: Translucent ,Opaque, Half length, Full length. Particularly they are installed in both single rail and double rails.

One example of the screen materials is Songkhla Local weaving.

Type 2 - Flexible Skin:

I2. 1 Mesh screen

It is an Interactive with skin where the users can approaches them on all sides, meaning that it creates an exchange to the space above, under, and besides.

The production of this mesh screen is cooperates with a local weaving technique, in which, it can take place as an educational activity between students and the community.

Type 3 - Adjustable:

I3.1 Louver - Folding / Awning - Swing / Rotate

Presentation:

The partition where the inside is visible to the outside. This refers to partitions as a presentation platform such as exhibition panels, pin-up spaces, projector screen as well as the 'show off' space.

Type 1 - Exhibition: Pin-up Space/Notice board (Occasional events)

This type of partitions is looking for the quality of being reversible and reusable.

P1.1 Water Hyacinth Board

The partition panels are made out of water hyacinth, which is kind of weed that rapidly grow and is overpopulated, using local weaving technique to added value to the material. The process of making the panels can be an educational activities between the students and the community. The pinning tools for the types of panels is wooden pins.

P1.2 Steel Grating Board

The material is easily accessed from the material store nearby. This can also comes construction leftover material, that is formed into a particular shape. The pinning materials are wooden clips.

Type 2 - Presentation: Media wall

P2.1 Projection Surfaces:

This refers to an existing static surfaces that allow for the formal presentation to occur via using a projector as a projection media, as well as other existing surfaces that can be used for a special events and usages.

P2.2 Scribbles Surfaces:

A writable or drawable surfaces, using markers or other removable writing tools as a projection media.

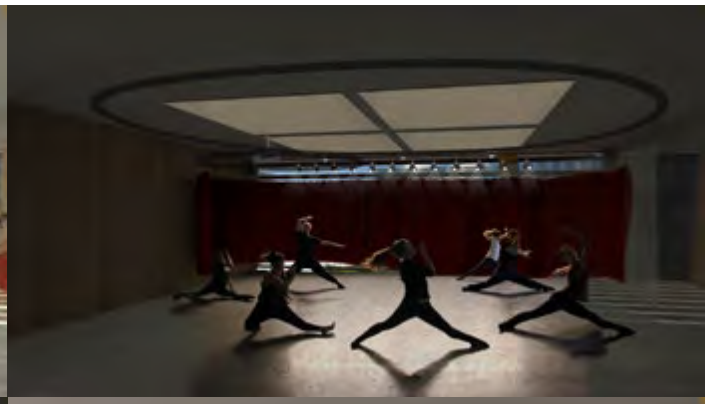
Type 3 - Show off: Presenting

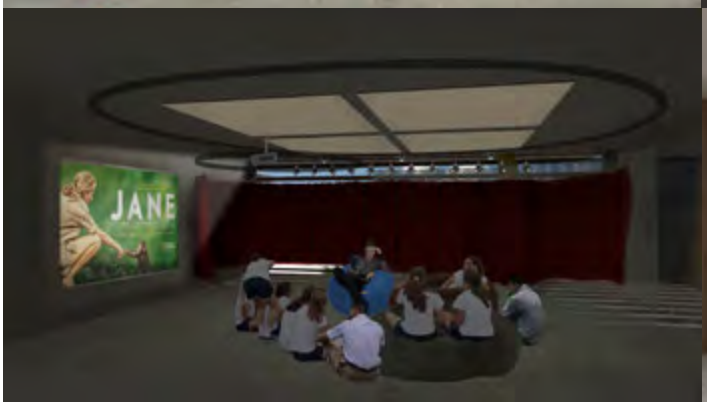
P3. 1Direct

This refers to a transparent partition surface, in which the activities inside and outside are visible to each other, to create a direct presenting method.

P3.2 Indirect:

Using a reflective surface to create an indirect presenting method. The activity in front of the surface will reflect on the plane back to the presenter, but at the same time, the reflection allowing the activities to be visible to the audience from afar.





Please refer to a presentation slide for further information of this project via:
https://drive.google.com/open?id=1lLQdM9M02f2Nej21WSKGYEJSTjy5GlAh8htVPO-ivnE

THE ENWOVEN

STRATEGIC PLAN FOR BAANKRUA COMMUNITY

BAAN KRUA, BANGKOK, THAILAND
2018

The proposal is a strategic plan to reawaken the community through the mutation of different scale of elements in the community: spaces, objects and routines. The modification of spaces are proposing as a guide and generators that introduces new materials to the community, in which, they are not only concerning about a physical living condition but extends to other fields.

DESIGN CONCEPT

The main concept of the proposal is to reawaken the community, through the mutation of different scale of elements in the community: from the scale of spaces(non-activated space), objects(locally found in the community), and programs or routines (the injection of new programs), the proposal is seen in a form of a strategy in which modified spaces are supposed to be generators for a regeneration of other elements or spaces in the community that may follow.

LOCATION

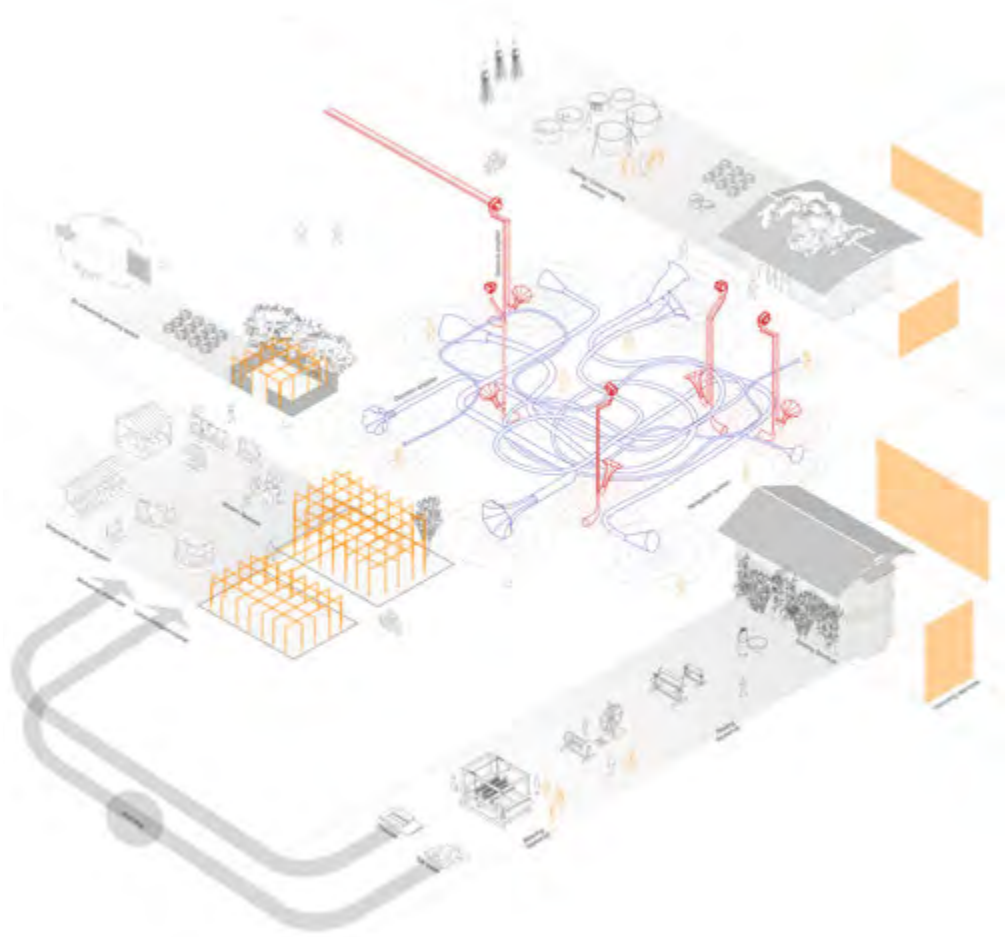
-CURRENT CONDITIONS-

The project localtion is based on the condition of 'BAAN KRUA' community in Bangkok, Thailand. It is an urban village that contains a very dense population of houses and compacted pathway which surrounded by high rises building. This contrast between these two typologies of architecture, the low rise houses and the high rise building, is resulting from the pattern of land ownership, which is one of the factors that prevent the village from being destroyed. Since the situation of land ownership is similar to a chessboard where the land is chopped and own by government section and a private section, therefore, it becomes hard for the government to expropriate the area.
The effect of time on the space is a broad scope which has been looking at in this case since it has caused many changes in what the village is known for and what it is in the current stage. To begin with, the village is known for a silk weaving village since in the old day many families in the community were doing weaving, however, now a day there are only two houses who still carry on the occupation. While the current occupations of the people are opening grocery stores, vending washing machine, and due to the change in the population where some locals move out and people from countryside move in, a lot of places are turned into rental place. And through time, the self-organisation of housing typologies can be seen and approximate the expansion of the village, since the older typologies such as wooden houses are located closer to the shoreline where the ones the made out of concrete occupied the space more towards the opposite side.

-SITE ANALYSIS-

The specific agendas that have been looking at in this area are *adaptation* and *mutation*.
Begining with *'Adaptation',* the first interesting aspects of this area is the 'signage', the indication of house numbers which have been written on walls, fences, mailboxes or even downpipes. there are the handwritten house numbers that appear on walls, fences, downpipes and post boxes throughout the place which seems to be done, mostly, by the same person, supposedly a postman.
Furthermore, the adaptation condition is also applied to the local hangering techniques. There are a lot of use of plastic bottles to substitute a missing element of some system or infrastructure, for example, adopting a plastic bottle in the system of gutters and downpipe, using a cut plastic bottle as a lamp covering and mailbox , sometimes use them to help in a process of growing of a tree.

The next agenda is *'Mutation'*, in this case, the mutating quality appears in the area as an effect of time which can be categorised into 3 categories which resulting from 3 different causes: mutation as a result of material lifespan(age of decaying), mutation as a result of human activity on construction or maintenance and mutation as a result of the flourishing quality of other element such as plantation.
Lastly, the mutation has also occurred on the change in DNA of people who are living and owning the space, meaning that people who used to own a space has moved out or people who are not originally from this neighbourhood is owning a space either from buying it or renting it, eventually this quality of mutation blurs the definition of 'Local' and 'Outsider' of the space.

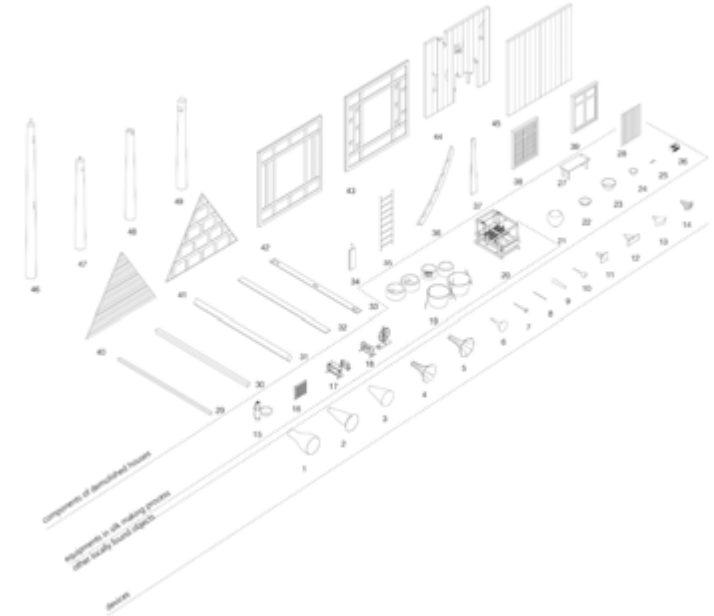


DESIGN APPROACHES

Since the community is losing its identity, considering the fact that it is known as a silk weaving community but right now there is barely silk related activities appear on the site. The idea is to bring back the identity of the community by injecting a new program in, that is not only concern about silk weaving but rather the whole process of silk making, since the growing of silkworms and so on. However, with the different type of silk, Eri silk, the non-violence silk, meaning that it is the silk that contains no animal killing during the process of making it. Furthermore, this injection may introduce new elements to the community that relate to an economical field and else.
The next step of the strategy is to find non-activated spaces or structures and make a use of them to create a new community space. Without the action of demolishing but rather rethinking, repurposing and refurbishing the components of those spaces, to mutate its original aesthetic and function. By the adaptation, modification and combination of locally found object and the spaces components, the aesthetic of the proposal will represent the DIY community vibe which represents the local intelligent action of the community, object mutation that spreads in the site.
The aim of the device is, originally, to enhance the relationship between visitors and locals, likewise, the device is used as a wayfinding, a tool that acts as a signage, leading people throughout compact and cramped alley of Baan krua community to the modified spaces and others.

This map shows the location of the non-activate spaces in the community(dark orange colour), however, these sites contains different specifications that affect the process of modification. To begin with, ownership of the lands, there are both private owning lands and the ones that own by the government. The ideas is that for the lands that create the least changes on the components of spaces that are owned by the government in term of their footage, meaning, the increasing and decreasing of area them so that it creates less problem on construction permission asking. Likewise, intended for a light structure that can be easily demolished one the contact of land renting is over. On the other hand, private spaces are more flexible in term of construction requirement.

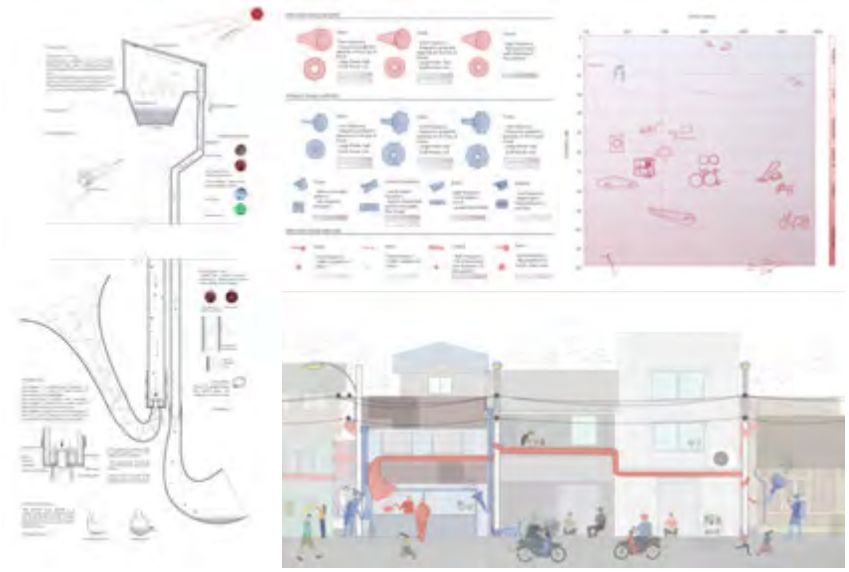
The modifications of non-activated spaces are created as a guide, an examples approach. These spaces are seen as generators and are introducing new materials to the community that is not only concerning only a physical living condition but extended to other fields. Since It is easy to be hacked by the locals, therefore, the usage of the strategy is expected to be spread through the community through time.



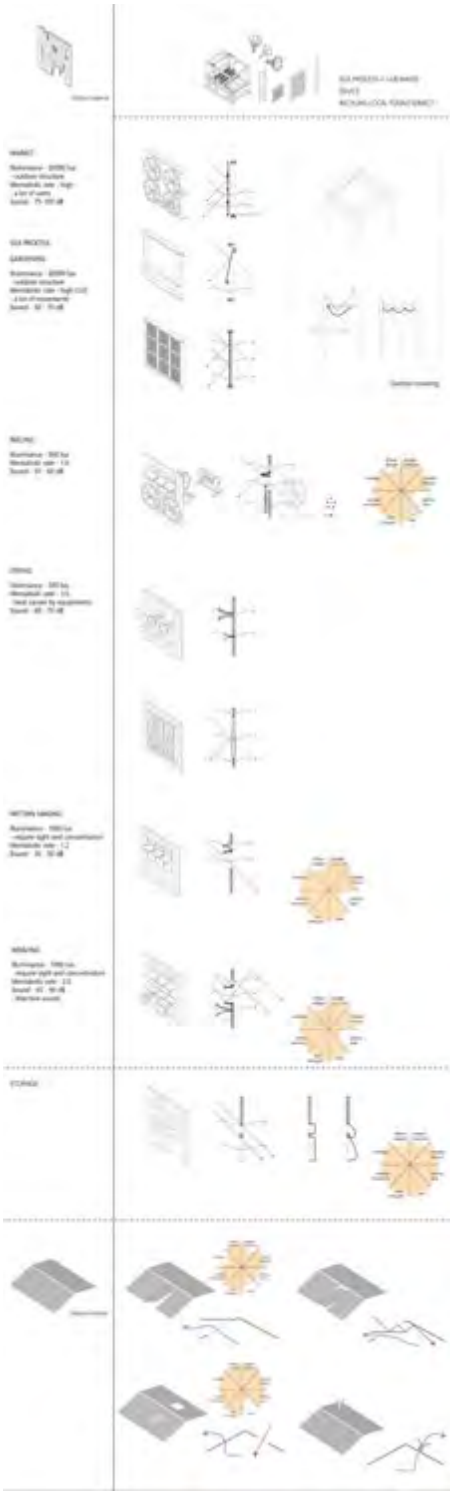
The board of elements contains the objects that are available for use in this strategy which can be found on site. They may be categories into 3 groups: the component of demolishes houses, the equipment of silk process and other locally found objects relating to ritual and routines, and lastly the components of the devices.

The first stage of the modification is to explore the ideas and alternatives of mutation, stared by the study on routine or activity requirement of light(illuminance), ventilation(metabolic rate), and the sound that the activities will produce (decibel). Then comes the exploration of structural parts and objects, the matrix shows examples of the combination and the environmental performance that they may generate. The next step is to apply these action of mutation on the different spaces in relation to their contained programs, positions and orientations of them.

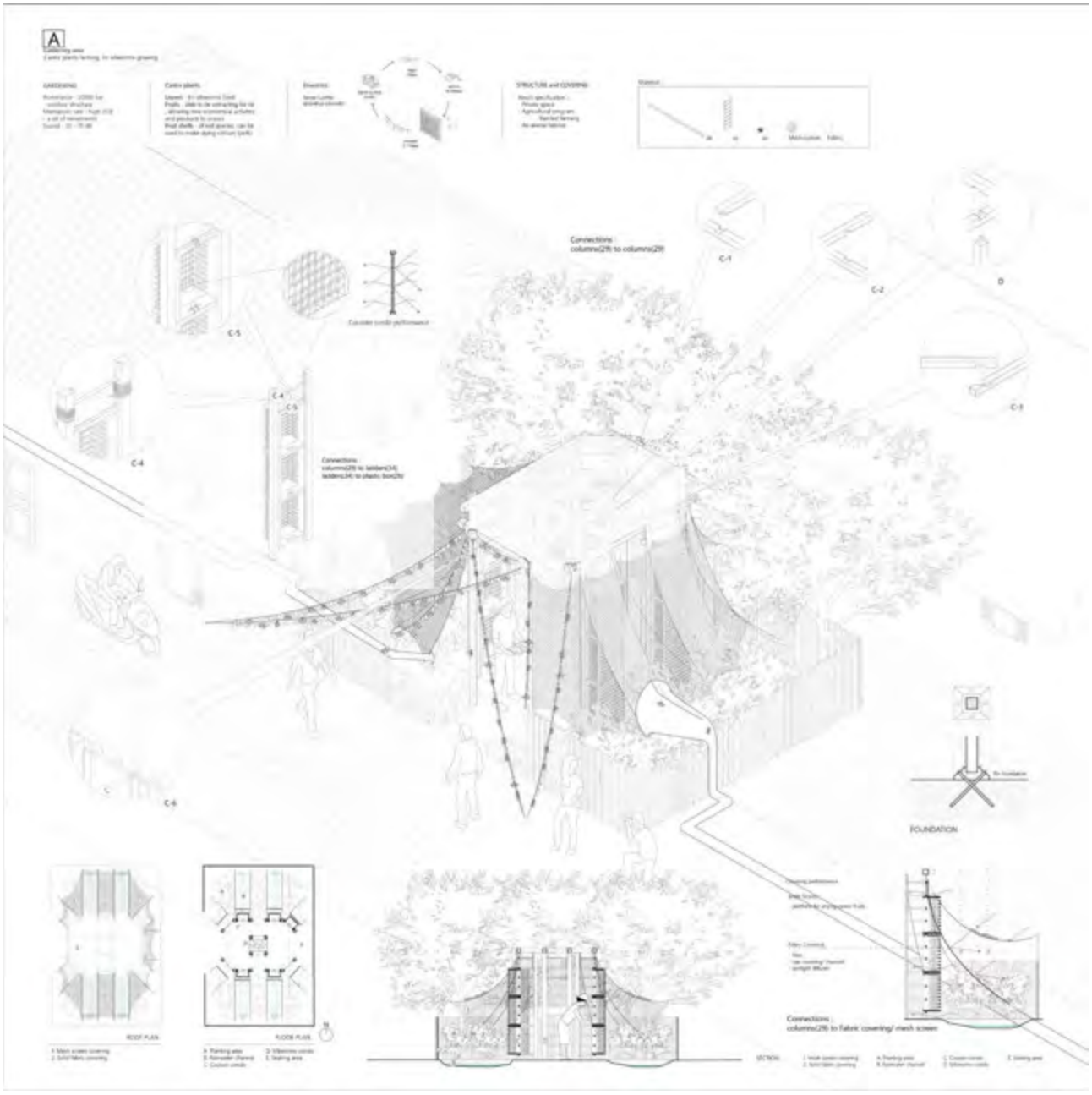
The new nevigation system is added in by using the device that cooperates the used of two senses : seeing and hearing, in order to awake the new sense of orientation and experience.
Additionally, double the use of human senses makes ones remember better. The device is not aimed to direct with the most precise way, instead, trying to make people use their senses and observing skill so that they will enhance the context better. Resulting in the two system of the devices that navigate through sound and appearance: direction amplifier and distance amplifier.



Example model of a combined elements

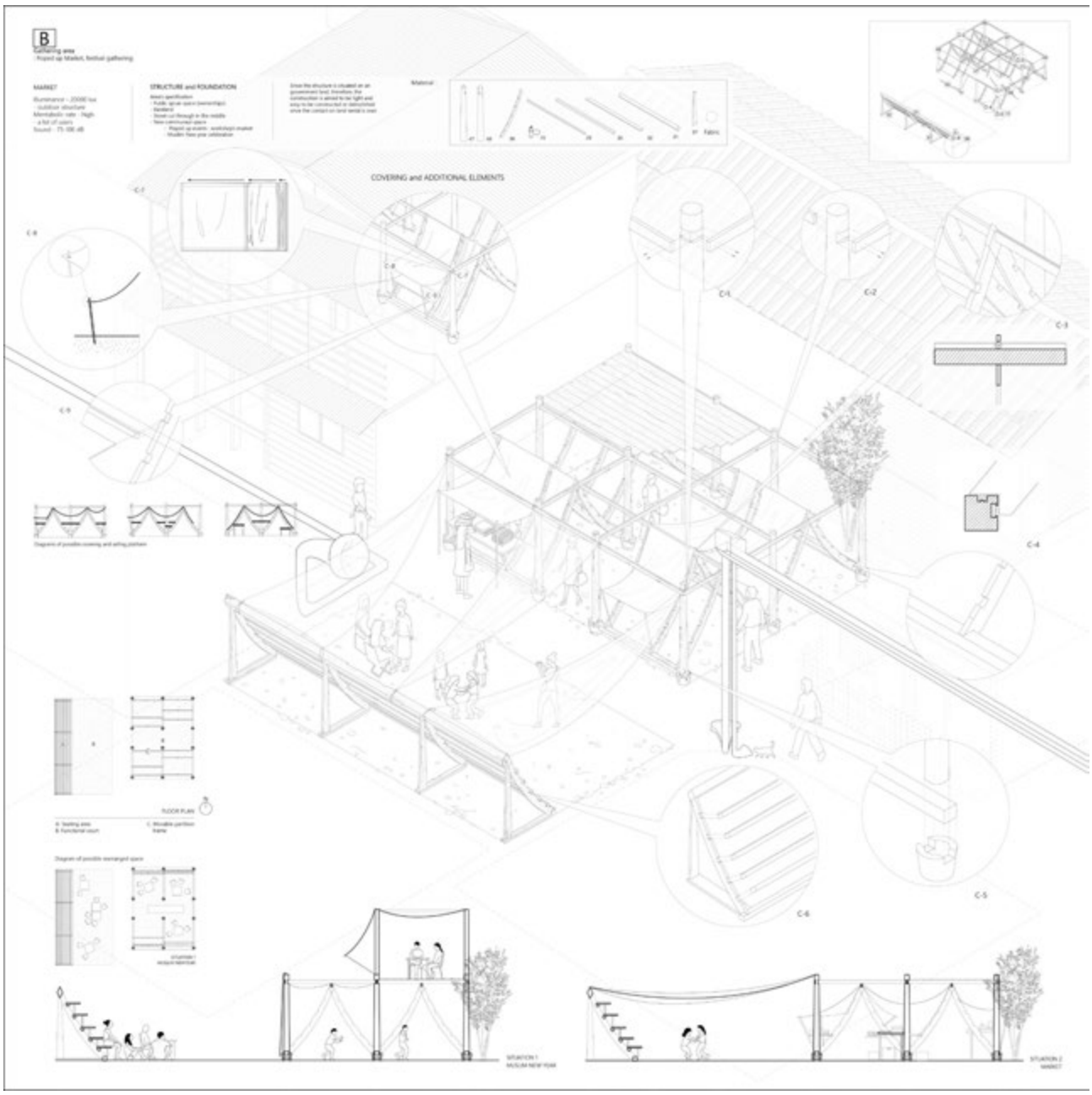


Catalogues of combined elements in relation to their functions and environmental performances



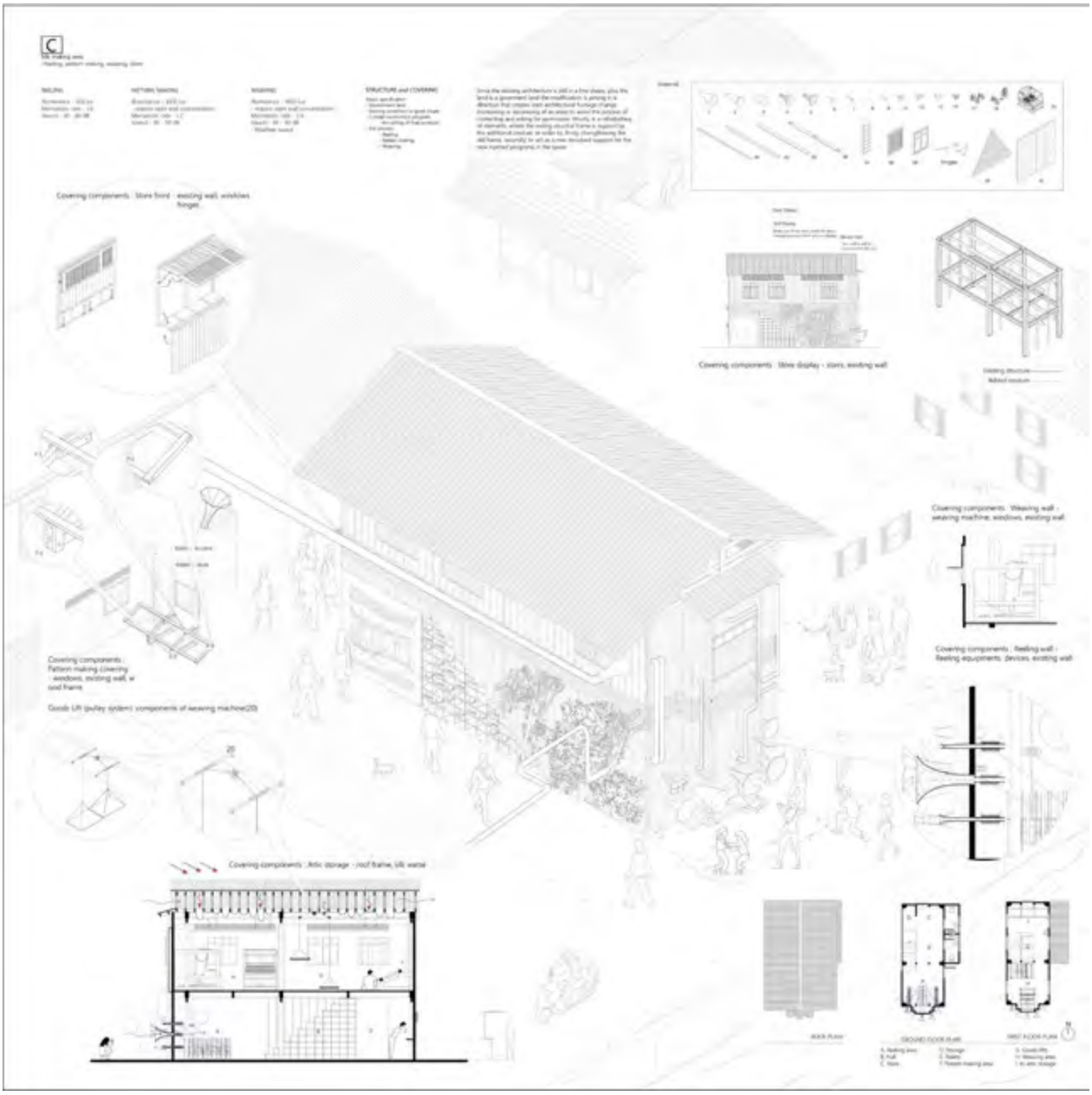
Space A is containing a small agricultural land: a garden of castor plants and an Eri silkworms farming. The gazebo is made out of components of demolished houses (29,35), using interlocking system together with pegs and pins techniques. where the plastic basket(26), a locally found objects, is attached to the structure, functioning as a cocoons condos. The double layers covering is used: mesh screen and solid cover. The mesh screen is the first layer, acting as a platform for drying castor fruits which is a new material that is introducing as its leaves is a food for silkworm. These fruits can be extracted to creates castor oil(new material) and various parts of the plants are able to be extracted colour of dyeing process(natural colour process).

MODIFIED SPACES *as Examples and Generators for The Regeneration*



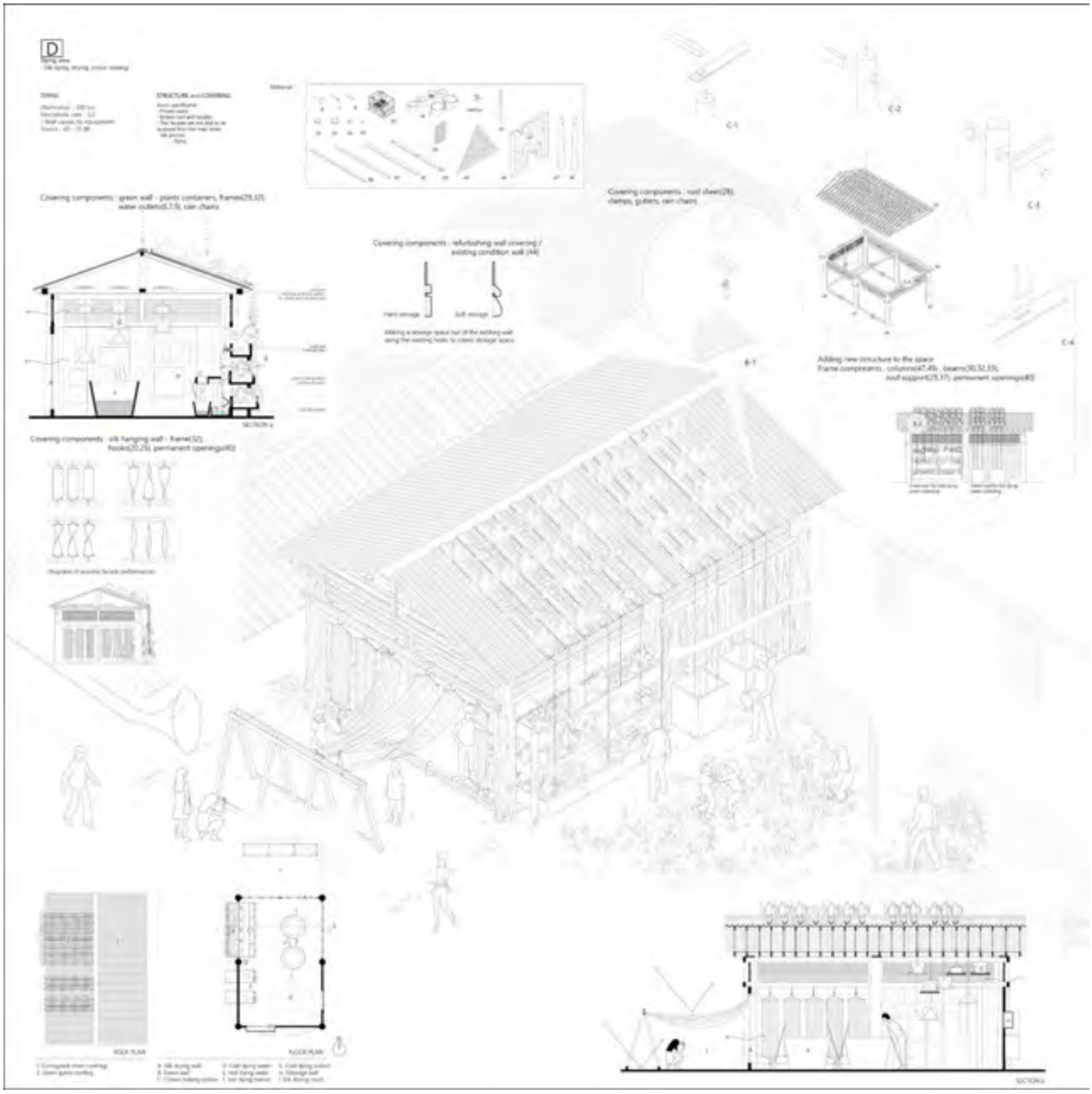
Space B is intended to be a new gathering space for the community, yet its structure allows various pop-up events to happen, for example, space for Muslim new year celebration and a marketplace to sell locals intelligence objects and silk products from the new injecting programs.
Since this space is situated on a land owned by the government, the structure is aimed for a light construction, likewise, dry joints and on ground foundation, therefore, the structure is easy to be constructed and demolished when the contract with the government is over or else concerns, meaning a reversible structure. The structure also allows for a vertical expansion to happen, a second level or so. Using both locally found objects and the demolished parts of houses to create the structure (19,25,30,31,32,36,37,47,49) and the soft covering is used in which it is done by fabric.

MODIFIED SPACES *as Examples and Generators for The Regeneration*



Space C is another example of an invention on government property, the idea is to create least changes on the footage of the components area, meaning the increasing and decreasing of the area, in order to avoid the process of asking for permission or so. The modification is ended up to be a refurbishing, recomposing or repurposing the components rather than creating a new one.
By modifying the components in relation to the programs it contains: reeling, pattern making, weaving and a storefront, this way the space will be more suitable to the programs both in terms of functions and performances. Since this particular space contains many programs, it is as well made of many materials: the use of devices(1-9,11-14) and the reeling equipment for reeling area(17,18), the use of devices(1-9,11-14) and the weaving equipment for weaving area(20), demolished houses component as a platform for pattern making(29,30,32) and the refurbishing of window as a storefront(38,39 and hinges), moreover, there is alsouses of other materials to compliment that space, for example, circulation parts, goods lift, facade, storage, attic storage and else(20,33,35,40,45)
This space is also a workshop space for the silk-making process as listed above, thus the products that are produced here will be sold both permanently at this space and temporarily at the pop-upmarket.

MODIFIED SPACES *as Examples and Generators for The Regeneration*



Space D is situated on a private land and is not in a good shape to use, therefore, the modification included some of a heavy structure(28,29,30,32,33,37,40,47,49) in order to restrengthen it and since it is a private property, it is freer in terms of construction methods.
This space contains a program of silk dyeing both hot(19) and cold(22,23,24) dyeing techniques and a colour making platform. There are to storage: one is a refurbishing of a wall(44) where another is a pulley system plates for keeping cold dyeing process(20,22,23,24). The green roof and green wall are created as a way to collect water for these dyeing process. The green roof tiles are made out of gutters and clamps, a platform for planting, the rain that falls on the roof will run down the rain chains and to the containers for hot dyeing process water collecting whereas some of them will run down the rain chains to the green wall and get purify a little bit then out the outlets(6,7,9) and is collected for cold dyeing process. The drying of silk is done on the facades of the space, using the combination of the modified facade(20,32,47or49) and hangers(25), likewise, this allows many drying actions to happen since it is flexible the silk can be extended to another reversible self-standing structure in order to receive full sun for drying, furthermore it can be twisted in a various forms.

RHYTHMOS REMEDY

HERBAL RETREAT FOR INSOMNIACS

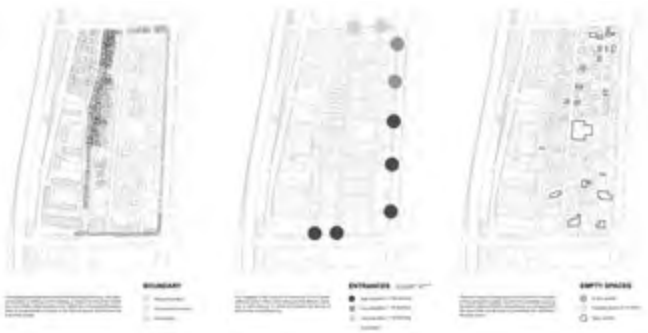
CHEONGYANGNI MARKET, SEOUL, SOUTH KOREA
2018

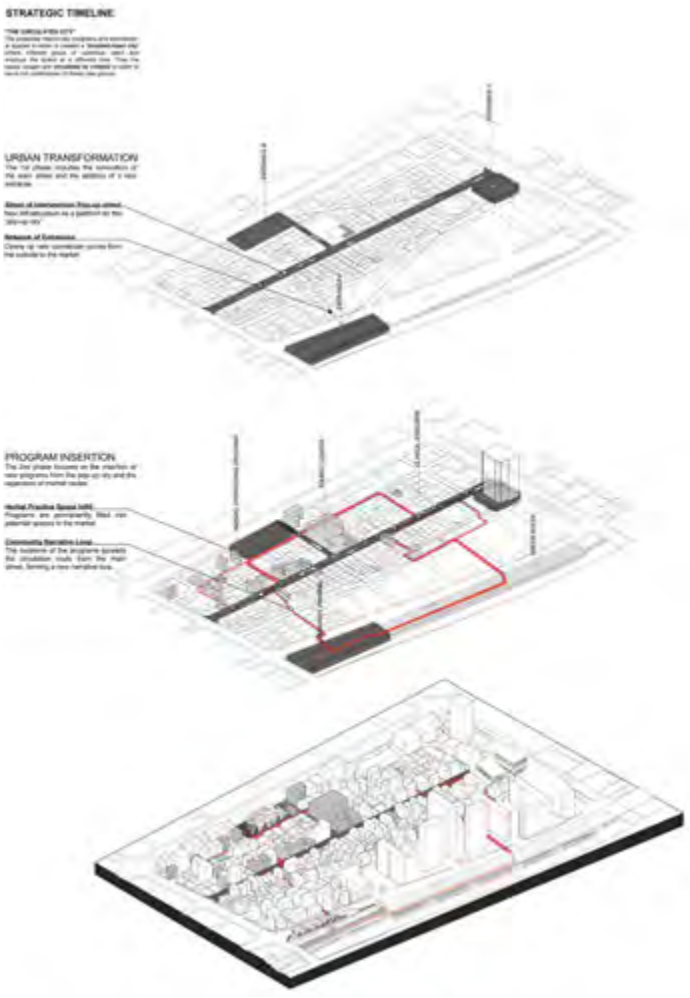
The first part of the proposal is an urban regeneration project for the cheongyangni market, in which, it specifically focuses on the traditional herbal medicine market area. Where, the later part of the proposal is a hybrid building project, a sleeping retreats for insomnias, that is design to compliment the operation of the urban regeration plans.

URBAN REGENERATION

The intension of the strategic plan is to drill through the original boundaries of the area, suggesting more programatical dynamics which may introduce a flow of a wider range of customers to the area.

The proporsal injects new programs and architectural spaces in order to creates a **'doubled-layer city'** where different group of collective users can employs the same space at a different time. Thus the space usages are circulated or rotated in order to serve the preferences of those user groups, likewise, to keepp the space activated.





The study of boundaries suggests that the site has been blocked by: the physical boundaries such as the high-rise buildings, and the non-physical boundaries created by programmatic change and the flow of people on the pathwalk of the main street.

Therefore the proposal purposes 2 Sets of interventions: Physical Transformation and Programmatic Strategy, in order to relocate and reactivate the market space.

Phase 1 : Urban Transformation

Street of Intervention : The Pop-Up Street (Contemporary Programs)

New Infrastructures are added along the main street of the market, which continues all the way through the longitudinal side of the market, as a platform of various contemporary programs or events to be held. Furthermore, the infrastructures also produce leisure platform and new communal spaces.

The program such as clearance sale, herbal food and goods festival, and a start-up business related to health business model, will rotationally pop-up on this street as suggested on the strategic schedule. The pop-up street is a means to attract a wider range of customers from the regular shoppers, the passer-by to become locally known and reaching out to the foreign visitors.

Network of Entrances : New Entrances

The 3 new entrances are added in at a specific location in order to open up the new connection points from the outside to the market. A specific programs are added to a particular entry sites in relation to certain groups of customers.

Phase 2 : Program Insertion

Herbal Practice Space Infillation (Temporary Programs)

Programs that are related to herbal practices will be permanently added. These herbal experiences programs will appear at the popped-up street as a workshop to be used as an introduction or advertisement first,then they will be filled into potential spaces in the market in relation to the new zoning.

The programs are: operational performances, medical making process, agricultural open house.

Community Narrative Loop : Circulation Routes

As the programs are infilled according to the new zoning, the locations of the programs will spread the circulation route from the main street, forming a new narrative loop. In which the particular loop performs a complete communal medical practice. The route can be used as the narrative loop for the community open house.

DESIGN CONCEPT

The project is a hybrid building of a sleeping retreats for insomniacs and a community garden. It is one of the new entrances, sitting on an entrance site near the riverside.

The 2 main ideas of the proposal are, first, is to function as a "*GATEWAY*", second, is to perform as a "*LIVING MEDICINE*".

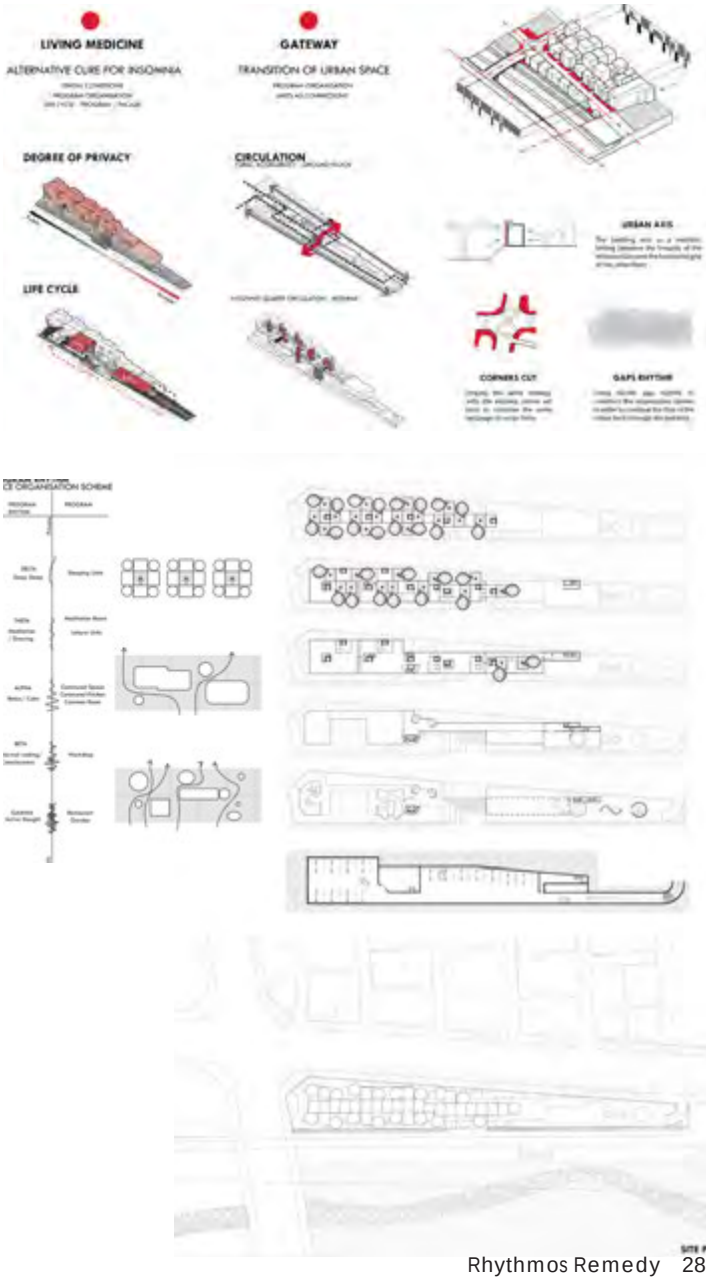
The concept of a gateway is to create the transition of the urban space, in which, the program organisation and the architectural aspects turn limits into connections. The main *'communal' programs* of the space are dedicated to herbal medicine practice spaces and a community garden, using the nearby river as a main source for agricultural performances. Since the new zoning suggest this area to be the agricultural lands, the proposal uses the advantage of the green programs to maximise the ability to create a specific conditions for an *'individual' program*. The aspects of the architecture such as the spatial conditions and program organisations are designed to compile an environment that compliments a treatment procedure, in which the architectural environment itself naturally performs as an alternative cure for insomnia. The design will be based around the user group requirements, senses and the nature of brain actions.

Gerneral ideas of urban forms that will be employed:

Urban Axis: The building acts as a medium, linking between the linearity of the infrastructure and the horizontal grid of the urban form.

Corners Cut : Employ the same strategy with the existing corner set back to continue the same language of urban form.

Gap Rhythms : Using facade gap rhythm to construct the organisation system in order to continue the flow of the urban form through the building.



DESIGN APPROACHES

RHYTHM OF ORGANISATION

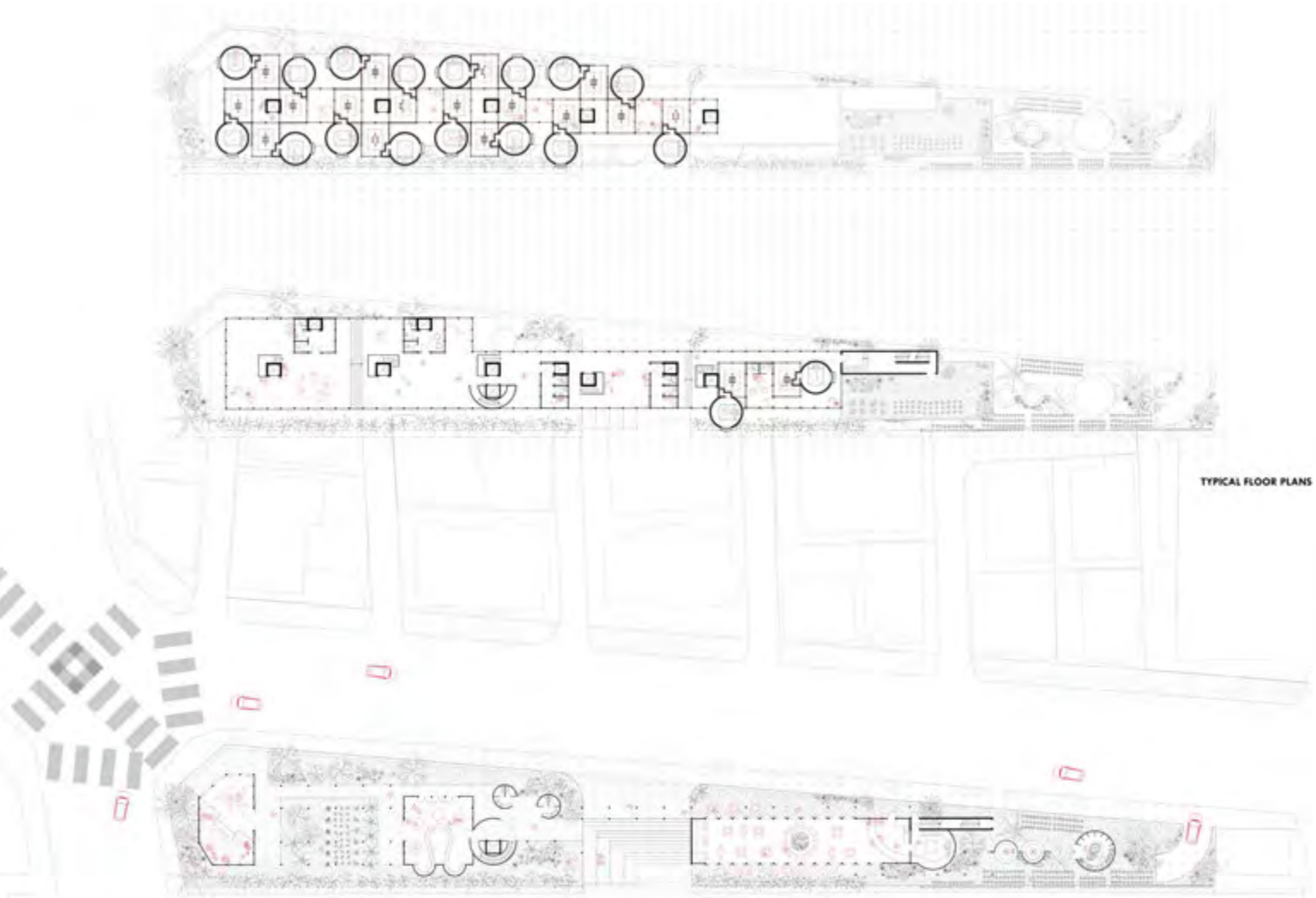
The design based around the user group requirements. The programs are categories in relation to their performance rhythms(movements and noises), in which, the rhythms refers to the effects on human brain waves. The programs will be matched with the stages of brain waves rhythms: *GAMMA, BETA, ALPHA, THETA and DELTA*, in order to define the scale of theirs "*Publicness*" and "*Privateness*". These programmatic scheme will later on define the organisation of the spaces.

DEGREE OF PRIVACY

The degree of privacy is vertically changes from most public program on the ground floor to the most private program on the top floor. The RHYTHMIC JUXTAPOSITION of spaces is also change accordingly, from the scattered placement and flowy movements on the ground floor, to gradually be more composed and fixed movements on the middle floors, then is limits and fixed to become a mind filtering on the upper floors.
The ground floor holds the community garden, a functional hall and a restaurant that using the herbal and crops from the garden, producing the food in relation to the insomnia treatments. These spaces are the platforms for the pop-up event of urban proposal as well. While the second is an exchange between the practice spaces and communal spaces for the residents, the third floor is the leisure hall that holds the entrances to the residence area on the upper levels.

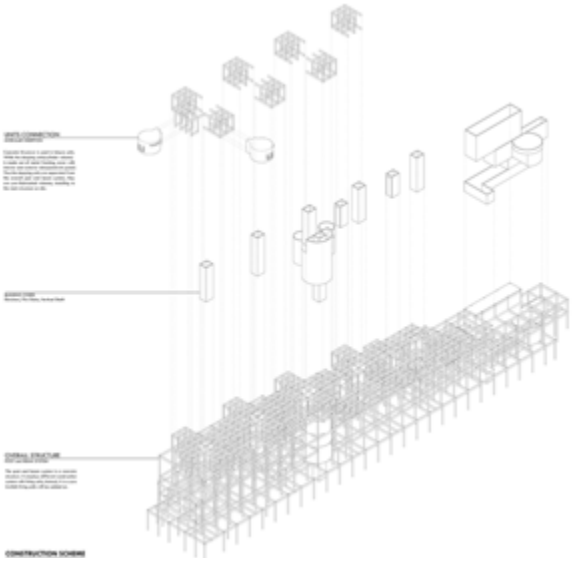
CIRCULATION

The circulation flow is laid out in manners that is related to the hierarchical privacy. While the public access on the lower floor tends to be more open, favouring horizontal movement to allow people from the outside to meander through the space to the market, the circulation to the resident area favouring vertical movements.



TYPICAL FLOOR PLANS

There are main public elevators and stairs to direct people from the ground floor to the second and third floor. However, from the leisure space of the third floor, people are required to take a particular elevators and stairs to access a specific aggregation of sleeping units on the upper floor, this is a means to filtering the rhythms before entering the private units which required a calming environment in order to benefit the treatments.



CONSTRUCTION SCHEME

The construction scheme are differed in relation to the hierarchy of program as well.

OVERALL STRUCTURE: Post and Beam System

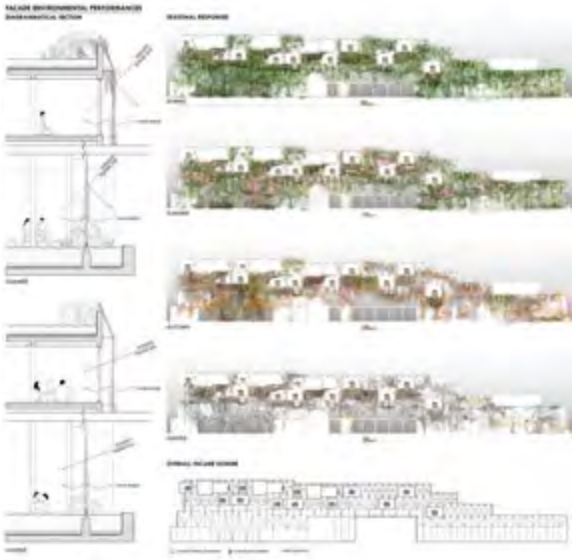
The post and beam system is a concrete structure. It employs different construction system with living units, instead, it is a core in which living units will be added on.

BUILDING CORES: Elevators, Fire Stairs, Vertical Shaft

Acts as a horizontal stabilizer - Shear cores

UNITS CONNECTION: Modular Insertion

Concrete Structure is used in leisure units. While the sleeping units(cylinder volume) is made out of metal framing, cover with interior and exterior skins(sandwich panel). Thu the sleeping units are separated from the overall post and beam system, they are prefabricated volumes, installing to the main structure on site.

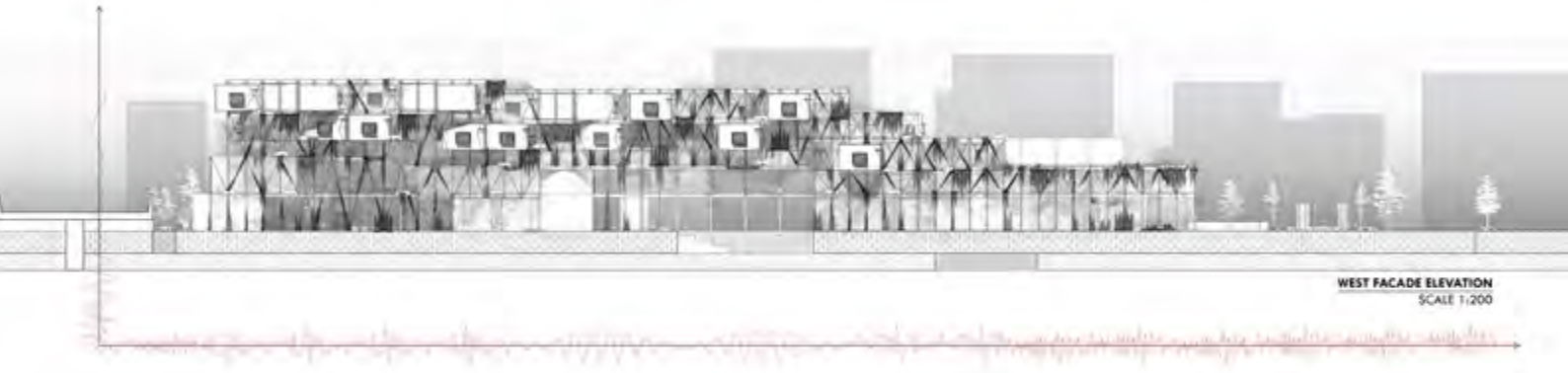


LIFE CYCLE

The design also embedded the aspects of natural 'LIVE CYCLE' of the herbs. It contains the full programs of herbal life cycle, Stating from: *GROWING, HARVESTING, STORING, COOKING and COMPOSTING,* then the compost circles back to growing process again.

THE LIVING FACADE applies the property of living cycles. The green facade is used as a filtering screen for natural light and air breeze. Likewise, it filtering the sight and generating aromatic scent. The greenery will rotationally bloom a particular herbs and florals according to the season, generating different atmosphere to stimulate the senses.

SECTION C-C
SPACE TRANSITION

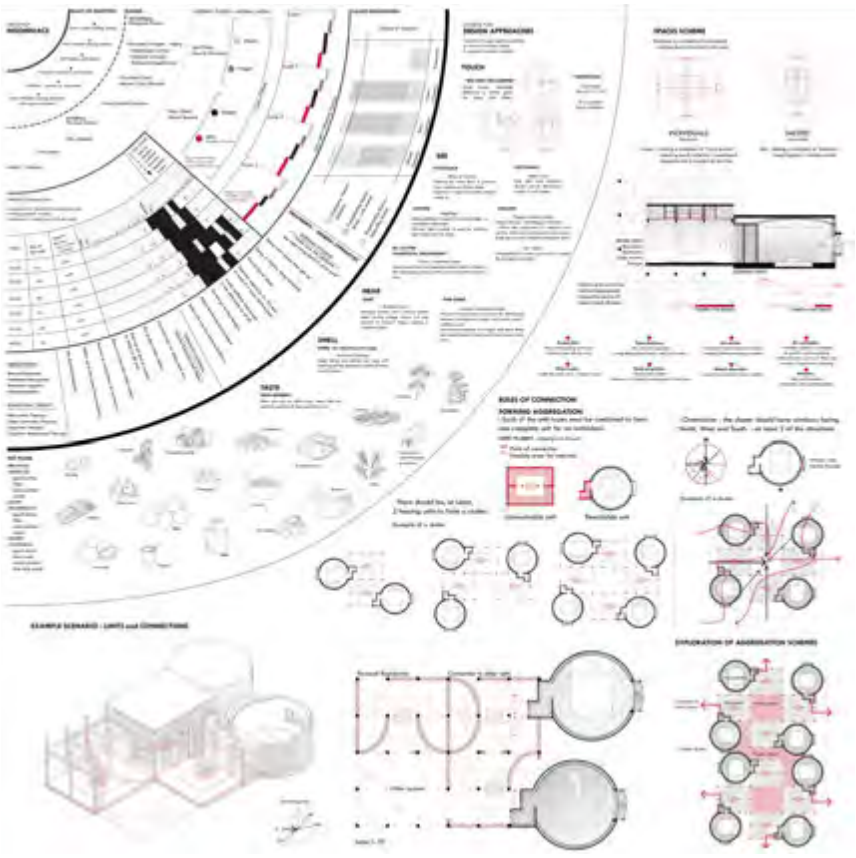


WEST FACADE ELEVATION
SCALE 1:200

PRIVACY

LIFE CYCLE

CIRCULATION DIAGRAM



AGGREGATION and UNITS

A complete retreats unit for an individual is composed of 2 subunits: the *"SCARED - Unreachable Space"* and the *"INDIVIDUALS - Reachable Space"*.

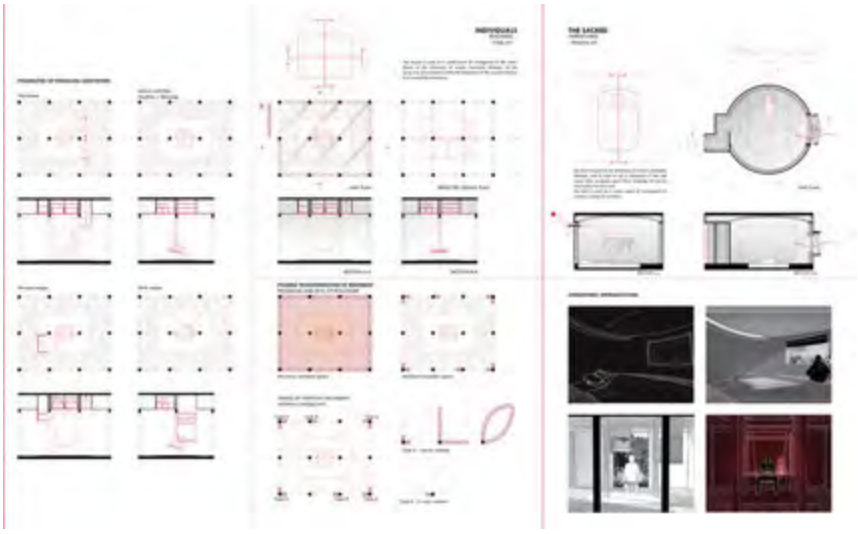
UNITS TO UNITS: Both of the subunits can be connected together by aligning their point of connections and the possible area for insertion.

UNITS TO AGGREGATION: To form an aggregation, there should be, at Least, 2 housing units. The orientation of the aggregation should have windows facing at least 2 of the directions : North, West or South. The negative spaces from the connection will become the shared spaces between the units, such as a living room or a bathroom.

UNITS DETAILS

The units are designed to spatial conditions in relation to human senses and the method of insomnia treatments: "Sleeping Hygiene" and "Stimulus Control"; an the ideas of an absolute bedroom.

Emphasis on symmetrical arrangement, declustering to create least distraction.



INDIVIDUALS

Reachable Space

The carpet is seen as a center point of arrangement of the room, all the programs are contained within the boundary of the carpet and are in a reachable distances.

COLUMN GRID: comes from the overlapping and intersection points of human reach distance.

CARPET: reducing sound reflection / soundwave vibration this is created on the floor.

LEISURE UNIT: Relaxation, Meditation, Daily activity, Storage. All stored in the ceiling stored to decluster the room.

SACRED

Unreachable Space

The bed is used to set a statement of the unit where other programs will not be reachable from the bed. Bedroom is only for sleeping. The design aspects consider all the basic human senses, to get the best brainwave reaction for the treatments.

SUNKEN BED:
- Set as a center point of arrangement to creates a sense of symmetry.
- Sleep hygiene / stimulus control
- Keep the sleeping area cool
- Cool air sink, Hot air rises : Best at 15 - 19ºC for sleep.

NOISE BLOCKING:
- Soft wall and insulation
- Using background noise : pink/white noise

SUN ALARM:
- Horizontal chanel and curve ceiling bringing diffuse morning sun inside.

THICK CURTAIN:
- Make the room dark / reduce noise

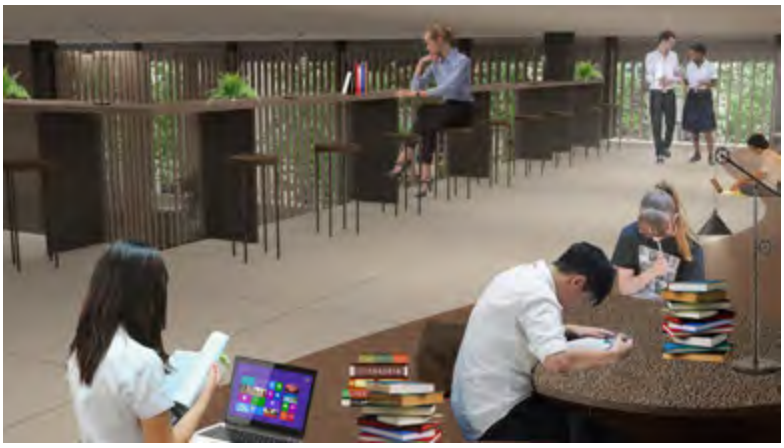
ROOM PROPORTION:
- Based on the dimension of multiple wavelength of the sound frequency.
- Best sound created.
- Round shape to reduce the distraction that is created by the shadow of wall corners.

NATURAL DECORATION:
- Natural material and colour scheme.

AIR VENTILATION:
- Still keep window to ventilate air and for passive cooling.
- Herbs Garden as an air filter and aromatic fragrance for sleeping.

GREENERY:
- Help with sleeping physically and psychologically.

DETAIL SECTION
SCALE 1 : 30



CU PHYSICS LIBRARY

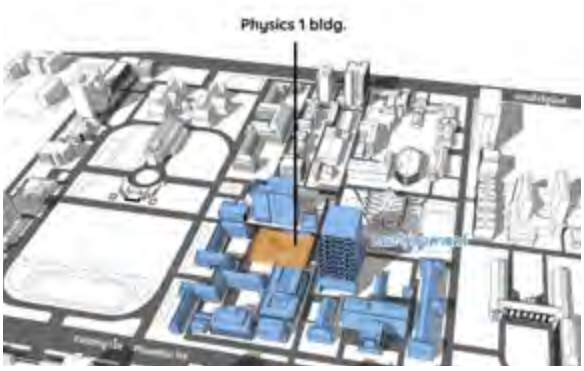
RENOVATION PROJECT

LIBRARY OF PHYSICS DEPARTMENT,
CHULALONGKORN UNIVERSITY,
BANGKOK, THAILAND
2019

The proposal is a renovation of a library of Physics department, aiming for an enhancement of an enthusiastic and proactive environment, while providing effective co-working and co-learning spaces for the members of the department, the people of Chulalongkorn University and visitors.

TEAM MEMBERS

Nuttcha Paopahon
Thenatcha Pojthaveekiat
Palakorn Guagulpipat
Pattarawan Rungrattawatchai
Sapanya Patrathiranond



LOCATION:

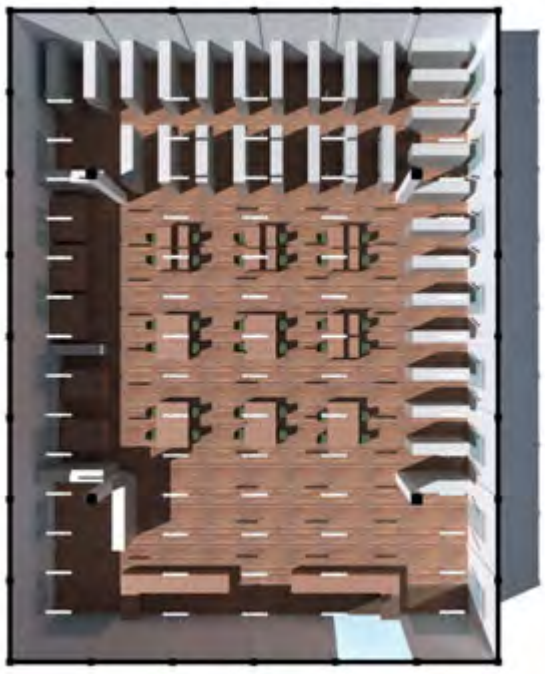
The Library of the Department of Physics,
Groung floor of Physics 1 Building,
Faculty of Science,
Chulalongkorn University,
Bangkok, Thailand

EXISTING CONDITIONS

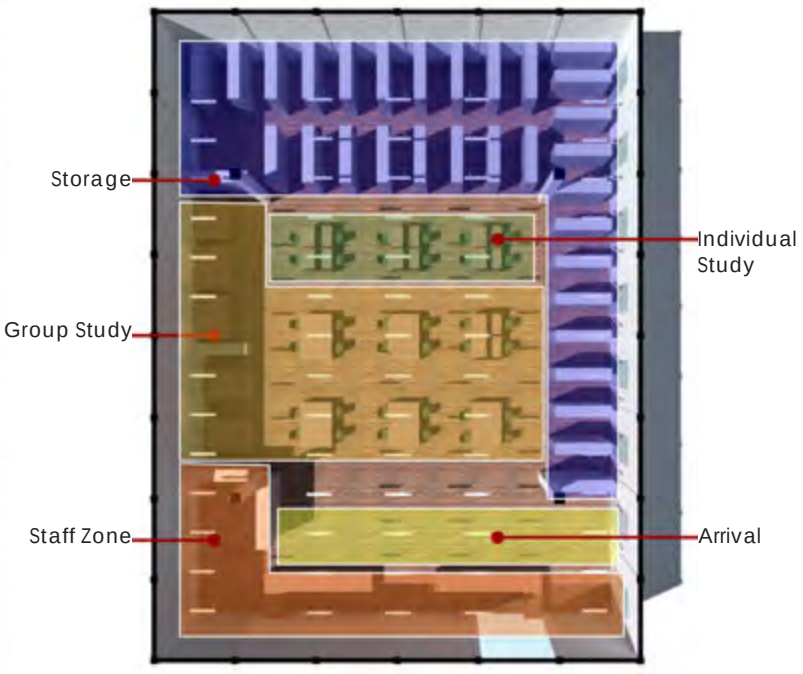
The overall environment of the architectural space is finished in a utilitarian way. The walls and columns are coloured in white with no decoration. The floor is made out of red wood panels. The layout of the space is quite conventional.
The study tables carry the similar wooden aesthetic with the floor. They are grouped in the middle of the room, surrounded by the metal bookshelves.
The light source is solely coming from the artificial lighting. Additionally, the lighting only focuses on the middle part of the room where the study area is, neglecting the storage area.

CONS
- The environment is quite dark
- The storage space is left unorganised
- There are piles of books that being stored on the tables, takes up space of the study area.
- Seating Spacing is cramped

PROS
- High Ceiling gives a potential of adding more space



Existing Floor Plan



Zoning Diagram

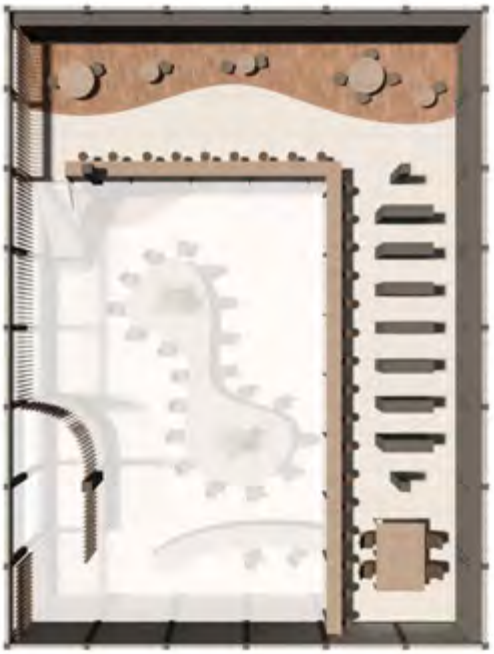
DESIGN APPROACHES

The renovation is scoped by using the existing structure of the old library for less effect on the other parts of the building. The whole interior space is redesigned in order to create a more welcoming environment.

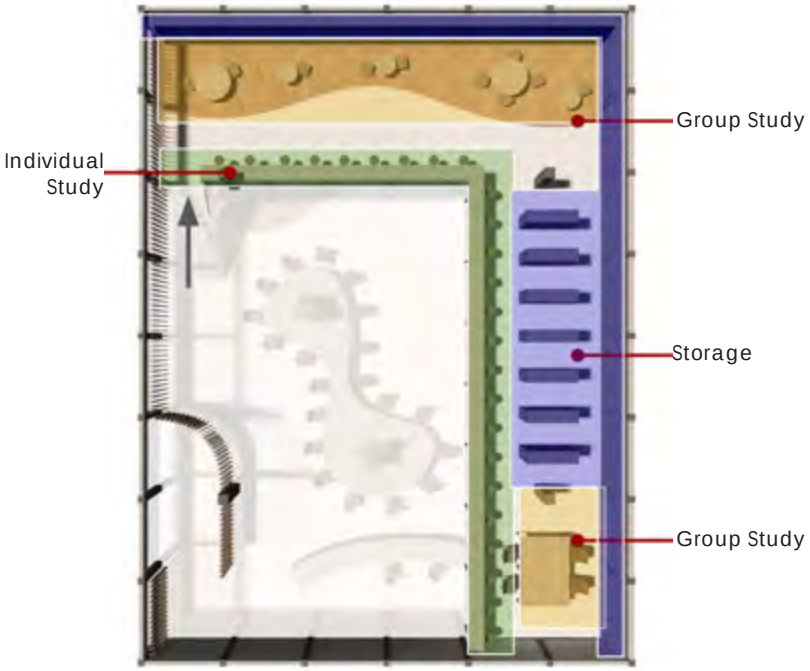
By giving efficient natural lighting and zoning rearrangement, the library will offer an effective environment for learning. The design opens up one side of the library that looking out to the garden to bring in more natural light, while the light will be diffuse by trees and additional cladding. Using natural light as a main light source can decrease the cost of electrical expense. The greenery is integrated inside to create a connection from the outdoor garden to the inside.

The proposal offers variety of seating area such as group table, individual working space and other casual seating on the floor. Likewise, taking the advantage of the 5 meters high ceiling, a mezzanine level is added to provide extra spaces.

Different flooring material is used to indicate a soft transition of the zoning inside. Two side of the walls are dedicated for bookshelves and storage.

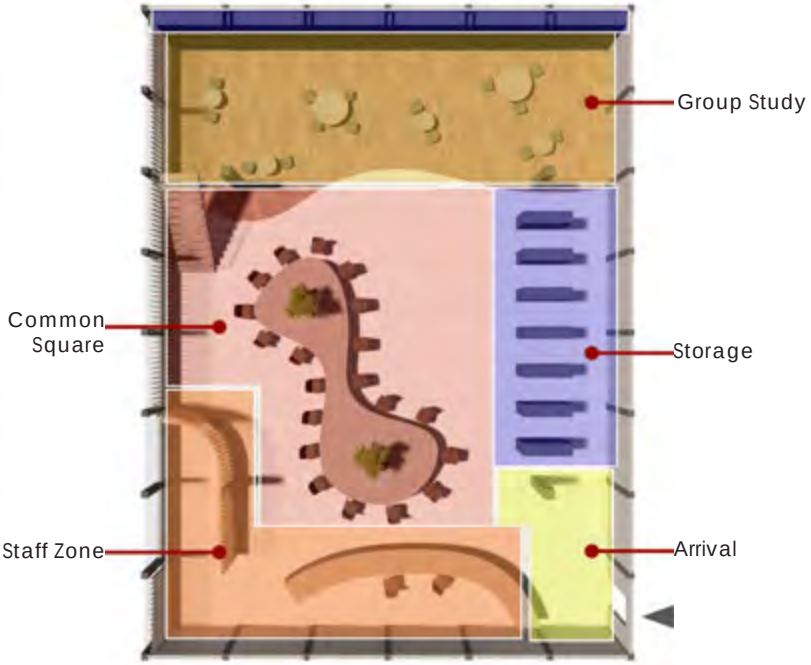


Mezzanine Floor Plan



Zoning Diagram

Ground Floor Plan



Zoning Diagram

PROJECT TIMELINE

Date: April - Octobet
Expected Duration: 24 weeks

Stage 1
April - June

WEEK 1 : Site Inspection
WEEK 2 - 3 : Schematic design
WEEK 4 - 5 : Design Consultation 1
WEEK 6 - 7: Design Consultation 2
WEEK 8 - 9: Design Consultation 3
WEEK 9: Design Finalize
WEEK 10 - 12 :Construction Drawing

Stage 2
July - August

WEEK 13 : Demolition/Wall Work
WEEK 14 - 15 : Mezzanine Structure
WEEK 16 : Curtain Wall Structure
WEEK 17 : Glass Work

Stage 3
August

WEEK 18 : Wall Finishing
WEEK 19 : Ceiling Finishing
WEEK 20 : Install Handicap Stair Lift

Stage 4
September

WEEK 17 - 21 : Prefabricate Customise Furnitures
WEEK 21 : Lighting & Fixing
WEEK 22 : Install Customise Furnitures
WEEK 23 : Furniture Finishing

Stage 5
October

WEEK 24 : Delivery of Loose Furnitures

FINANCIAL PLANNING

STAGE 1	Site inspection				
	Schematic design				
	Design development consultations				
	Design development drawing				
	Total of Design Fee	5%	฿8,526,796.00		**฿426,339.80**
STAGE 2	Demolish wall	฿100.00	127	sqm	฿12,700.00
	Floor finishing removal	฿60.00	470	sqm	฿28,200.00
	brick + plaster for wall	฿4,000.00	6	door	฿24,000.00
	Mezzanine structure	฿5,000.00	฿270.00	sqm	฿1,350,000.00
	Curtain wall	฿12,000.00	127	sqm	฿1,524,000.00
	Labour	20%	฿2,898,000.00		฿579,600.00
			Total of Stage 2		**฿3,518,500.00**
STAGE 3	Floor finishing white tile	฿149.00	310	sqm	฿46,190.00
	Floor finishing laminate	฿500.00	159	sqm	฿79,500.00
STAGE 4	Table (customise)	฿15,000.00	70	sqm	฿1,050,000.00
	Front desk (customise)	฿20,000.00	12	sqm	฿240,000.00
	Book shelf (customise)	฿19,000.00	54	sqm	฿1,026,000.00
	Lighting & Fixing	฿6,300.00	30	spot	฿189,000.00
	Labour	20%	฿2,505,000.00		฿501,000.00
			Total of Stage 4		**฿3,006,000.00**
STAGE 5	Circular coffee table	฿7,000.00	4	table	฿28,000.00
	Circular coffee table (small)	฿6,000.00	7	table	฿42,000.00
	Table	฿12,000.00	2	table	฿24,000.00
	Chair	฿4,000.00	30	chair	฿120,000.00
	Bar stool	฿3,500.00	25	chair	฿87,500.00
	Bean bag	฿2,400.00	30	chair	฿72,000.00
	Book shelf	฿12,000.00	15	shelf	฿180,000.00
			Total of Stage 5		**฿553,500.00**
			TOTAL COST		**฿8,953,135.80**
			LABOUR COST		฿1,362,966.00
			DESIGN COST		฿426,339.80
			MATERIAL COST		฿7,163,830.00

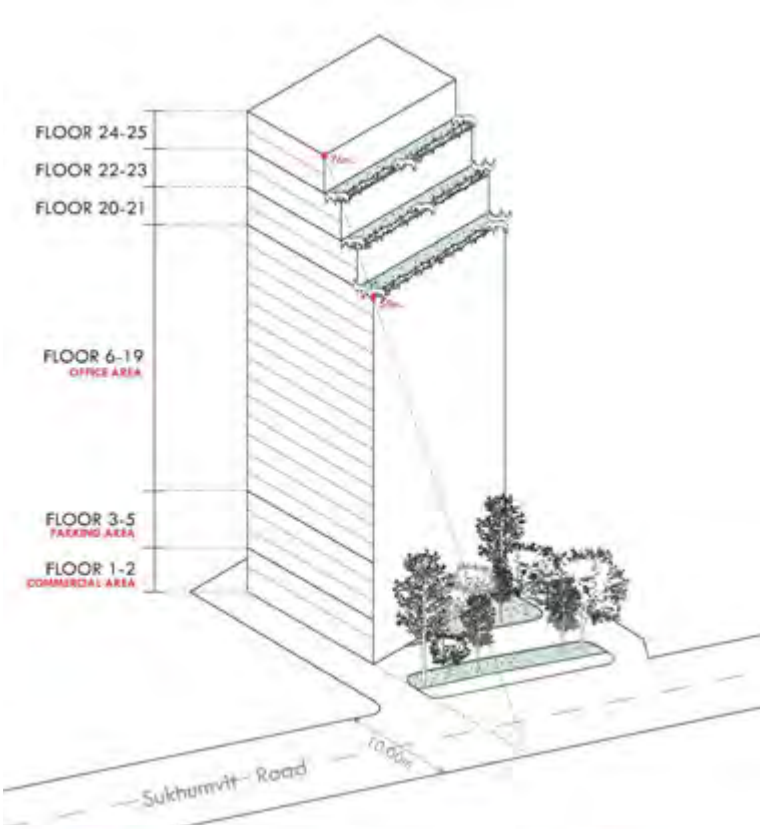
THE OASIS

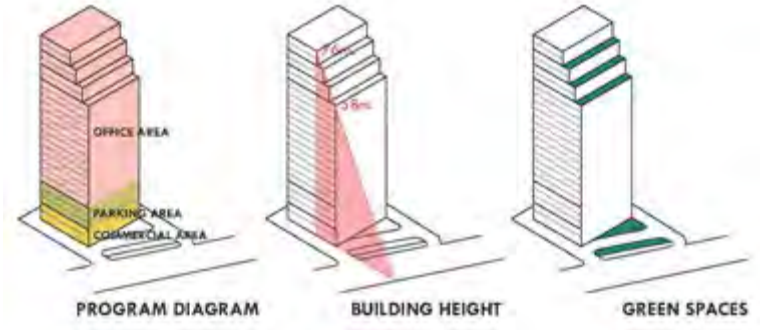
OFFICE BUILDING DEVELOPMENT

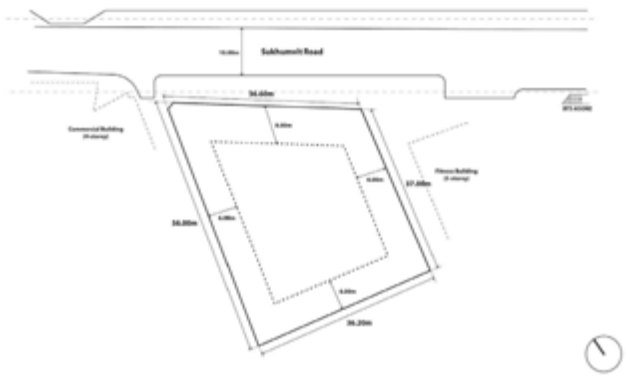
ASOKE, BANGKOK, THAILAND
2019

TEAM MEMBERS

Akarpint Chomphooteep
Pattarawan Rungrattawatchai
Sapanya Patrathiranond







SITE

Location:	1 Sukhumvit Rd, Khwaeng Khlong Toei, Khet Khlong Toei, Bangkok 10110
Suburb:	Khlong Toei
Road :	Sukhumvit Road (width: 21m)
Zone :	RED ZONE - Commercial Zone (พ.5)
Total PLot Area :	Approx.1650 sq.m.
FAR :	10:1
Max. Total Floor Area:	16500 sq.m.
OSR :	3
Min. Open Space:	552 sq.m.
Setback:	6m Width on all sides

PROPOSAL

Building Details

Building Types : Office building with retail on the 1st - 2nd floor
Floor Area : 13107 sq.m.
Open Space Area: 1098 sq.m. (8.377%)
Height : 76m

Floor Details

1st - 21st Floor
Floor Area : 552 sq.m.
Service Core : 111 sq.m.
22nd - 25th Floor
Floor Area : 480 sq.m.
Service Core : 81.6 sq.m.

The Oasis is an office building in Asoke area, which offers more with green spaces to this building forest place, giving back green spaces to the area.
With the consideration of office workers' wellness in mind, the green spaces provide relaxing spaces for the users. The pockets of green spaces run along the stepping slope of the building, becoming a green escapes for the users, while generating a vertical green space to the urban area as well.

Around Asoke area is a commercial area in which office spaces still in demand. Since it is one of the huge transportation interchanges: BTS, MRT, airport link; the area is easily accessible. The transportation system provides the possibilities for more customers flow for retail area without extra parking requirement.
By doing this it can add value to the building, apart from the building itself is easily access, it provides access to food such as restaurants and cafes.

Rental Price nearby:

The Trendy Office Building
650 Baht - 750 Baht/sq.m.
Interchange 21
1200 Baht - 2500 Baht/sq.m.
Exchange Tower
1300 Baht - 2500 Baht/sq.m.
Jasmine City Building
750 Baht - 850 Baht/sq.m.
10th Asoke Montri Road
700 Baht - 850 Baht/sq.m.

FLOOR DETAILS

Floor Level	Office Space (sq.m.)	Retail Space (sq.m.)	Service Core (sq.m.)	Green Space(sq.m.)	Parking Area(sq.m.)	Total floor area per floor (sq.m.)	Total floor area (sq.m.)
1st Floor	99	222	111		120	552	552
2nd Floor		321	111		120	552	552
3rd - 5th Floor			111		441	552	1656
6th - 19th	441		111			552	7728
20th	369		111	72		552	552
21th	369		111			480	480
22th	326.4		81.6	72		480	480
23th	326.4		81.6			408	408
24th	254.4		81.6	72		408	408
25th	254.4		81.6			336	336
Total area	2439.6	543	992.4	216	681	4872	**13152**

DEVELOPMENT COST

Sections		area (sqm)	development cost / sqm (thb)	selected dev costs (thb)	total cost (thb)
Land Price		1,650	325,000	325,000	536,250,000
Construction Cost					
	Office + commercial	11,643	27500 - 35000	27,500	320,182,500
	Parking	1,563	6000 - 9600	6,000	9,378,000
	Mechanical services	2,657	4400 - 4800	4,400	11,692,560
	Electrical services	13,107	3400 - 3600	3,400	44,563,800
	Hydraulic servies	2,657	790 - 910	790	2,099,346
	Life servies	1,427	1050 - 1180	1,050	1,498,088
	Fire services	13,107	750 - 850	750	9,830,250
	Fit-out costs	13,107	20000 - 25000	20,000	262,140,000
	Material	13,107	120	120	1,572,840
					1,199,207,384
Development Expenses (other fees)					41972258.42
Total Development Expenses					**1,241,179,642**

ASSUMPTION

Sections	Total Payment (thb)
Cash (30% of total development expenses)	372,353,892.60
Borrow (70% of total development expenses)	868,825,749.40
Annual Interest (MLR at rate 6.25%)	
Annual Rate	6.25%
Number of Payments	10
Loan amount	868,825,749.40
Annual Payment	**119,447,714.89**

INCOMES

Year 1-3

Building Parts	Area (sqm)	Estimated Occupied Space (%)	Estimated Occupied Space (sqm)	Price per sqm (thb)	Total per month (thb)	Total per year (thb)
Office	8,172.60	85.00	6,946.70	1,800.00	12,504,060.00	150,048,720.00
Commercial	543.00	80.00	434.40	800.00	347,520.00	4,170,240.00
Annual Tax and Insurance			7,381.10	825.00	1,686,447.50	19,277,370.00
Parking	525.00	80.00	420.00		50,400.00	604,800.00
Total Income per year (thb)						174,101,130.00
Total Income year 1-3 (thb)						**522,303,390.00**

Year 4-6

Building Parts	Area (sqm)	Estimated Occupied Space (%)	Estimated Occupied Space (sqm)	Price per sqm (thb)	Total per month (thb)	Total per year (thb)
Office	8,172.60	90.00	7,355.34	2,000.00	14,710,680.00	176,528,160.00
Commercial	543.00	85.00	461.55	850.00	392,317.50	4,707,810.00
Annual Tax and Insurance			7,816.89	356.25	1,887,874.69	22,654,496.25
Parking	525.00	85.00	446.25		53,550.00	642,600.00
Total Income per year (thb)						204,533,066.25
Total Income year 4-6 (thb)						**613,599,198.75**

Year 7-10

Building Parts	Area (sqm)	Estimated Occupied Space (%)	Estimated Occupied Space (sqm)	Price per sqm (thb)	Total per month (thb)	Total per year (thb)
Office	8,172.60	95.00	7,763.97	2,500.00	19,409,925.00	232,919,100.00
Commercial	543.00	90.00	488.70	950.00	464,265.00	5,571,180.00
Annual Tax and Insurance			8,252.67	431.25	2,484,278.75	29,811,285.00
Parking	525.00	90	472.50		56,700.00	680,400.00
Total Income per year (thb)						268,981,965.00
Total Income year 7-10 (thb)						**1,075,927,860.00**
Total Income 10 year (thb)						**2,211,830,449**

EXPENSES

Year 1-3

Sections	Total cost per year (thb)
Property taxes (1.2% of the property values)	14,894,155.70
Administrative and Contact Services	500,000.00
Utilities (Electric = 219 kWh/m2/year) (Water (	12,790,476.00
Insurance (Rate from Tip Insure)	162,873.26
Maintainance and Repairs (5% of total income)	8705056.5
Annual Loan Interest	119,447,714.89
Total Expenses per year	**156,500,276.35**
Total Expenses year 1 - 3	**469,500,829.05**

Year 4-6

Sections	Total cost per year (thb)
Property taxes (1.2% of the property values)	14,894,155.70
Administrative and Contact Services	500,000.00
Utilities (Electric = 219 kWh/m2/year) (Water (	20,453,306.63
Insurance (Rate from Tip Insure)	162,873.26
Maintainance and Repairs (5% of total income)	10,726,653.31
Annual Loan Interest	119,447,714.89
Total Expenses per year	**165,684,703.79**
Total Expenses year 4 - 6	**497,054,111.37**

Year 7-10

Sections	Total cost per year (thb)
Property taxes (1.2% of the property values)	14,894,155.70
Administrative and Contact Services	500,000.00
Utilities (Electric = 219 kWh/m2/year) (Water (	26,898,196.50
Insurance (Rate from Tip Insure)	162,873.26
Maintainance and Repairs (5% of total income)	13,449,098.25
Annual Loan Interest	119,447,714.89
Total Expenses per year	**175,352,038.60**
Total Expenses year 7 - 10	**701,408,154.40**

Year 11 - onwards

Sections	Total cost per year (thb)
Property taxes (1.2% of the property values)	14,894,155.70
Administrative and Contact Services	500,000.00
Utilities (Electric = 219 kWh/m2/year) (Water (	26,898,196.50
Insurance (Rate from Tip Insure)	162,873.26
Maintainance and Repairs (5% of total income)	13,449,098.25
Total Expenses per year	**55,904,323.71**

25th FLOOR PLAN

20th FLOOR PLAN

3rd - 5th FLOOR PLAN

24th FLOOR PLAN

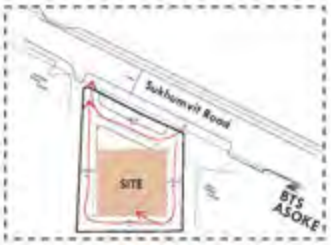
16th - 19th FLOOR PLAN

2rd FLOOR PLAN

23rd FLOOR PLAN

22nd FLOOR PLAN

21st FLOOR PLAN



GROUND FLOOR PLAN

THE LIVING BRIDGE

COLLECTIVE DORMITORY

PUNAKHA, BHUTAN
2017

A collective dormitory in which the design based on an interpretation and a translation of the concept of Bhutanese traditional architecture, culture and ritual.

Under the concept of a collective building, the proposal is aimed to create the link between the ‘old’ and the ‘new’, the older generation and the younger one. Starting off with the current content of Bhutan, as an effect of globalisation, youths started to be drawn away from traditional activities, specifically agriculture, favouring education. Instead of trying to bring people back to the farmland in order to preserve the tradition, the proposal suggests a way where the young ones can live harmoniously with agricultural tradition. Since many students are studied away from home, nearer to the city, in order to extend their time with practical farming activities, the project proposed dormitory as an approach.

Using the concept of a ‘bridge’, the one that can link human to land, places to activities, the proposal become a conjunction where the ‘old’ and the ‘new’ meet and live together.It is both conceptual and physically a bridge, firstly.the proposal is situated between the University of natural resources and traditional agriculture land, thus it provides a continuous path from up the hill to down.

ANALYSIS OF TRADITIONAL BHUTANESE ARCHITECTURE

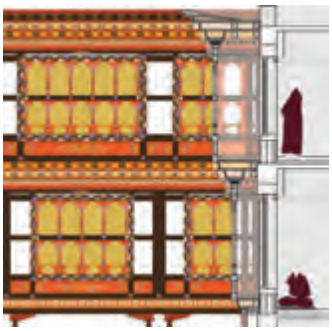
The project is dedicated to the study of Bhutanese traditional architecture, specifically houses and dzongs.

2	RM	3
5	4	6

- Overall Panels -
The plates are based on the composition and logic of Bhutanese painting. Each of the plates contains its own story, however, they can be read in a certain way in order to be understood as a whole.





- RM (Relational Map) -
the map suggests how religion is a concept of living for Bhutanese people(Buddha figure at the center of the page), particularly, how religion and the surrounding(Outer circle) affect their daily routines.

- 3 (House unit) -
the construction use two main material: earth(rammed earth) and wood(Pinewood). The roof has stones on top of it so that it won't be blown off by the wind.
The traditional houses usually consist of 2-3 storey.

Ground Floor: Cattle(livestock) - Apart than being a live space for the animals, the heat them will radiate up to warm the upper floor which is their traditional way to cope with climate.

First Floor: Living space for the family. Traditional the kitchen is the biggest room in the house since it is where people use the most. However, the best location in the house dedicated to the prayer room, moreover, we can see how the room is heavily decorated where other living spaces are simple, this suggests how significant religion is to people.

Attic: Storage, Drying grain/crops

- 2 (Compound) -
There 3 main types of architecture in Bhutan: Dzong(a combination of secular building and religious space), Religion structure and Houses. A compound usually consists a cluster of 2-15 houses that are arranged in a way that each of them is a protection from strong wind from each other. Dzongs are included in a larger scale compound such as city state, additional they are located in a strategic space, sometimes isolated, depending on the function they favour.

- 4 Dzong Unit -
Function inside is divided by courtyard. The interior space is heavily decorated compared to houses.

- 5 (Detail - Study of material and Structure.) -
The drawing illustrates how the idea of persevering nature is portrayed in the architecture. From the study, "only earth touches earth", meaning that the only material that touches the ground is the rammed earth(the heavy Mansory at the bottom) where wooden part(more the delicate element) sit at the top and the structure seem to grow towards to top like a plant.

- 6 (Detail - Rabsel Section) -

DESIGN APPROACHES

- FORM -

The major concept is being the growing architecture where the building starts to grow towards the top, but in this case, it didn't grow with a rigid form as it usually is.

The design is trying to challenge the 'rigid' and 'solid' qualities of the traditional ones. Based on traditional properties of the folk design, the lowest level is the area where is less manipulated, due to the use of the material, construction or even form, therefore, all the wall is pushed away living the column to grow from the ground. To clarify this, in order to introduce 'lighter' quality to the building, it is lifted up from the ground, lessening the area where it touches the earth, together with the composition of fragmented rooms, it allows more flow to go through the place, including the flow of nature: wind breeze, sunray; the flow of the living: human, animals and greenery.

- MATERIALS AND CRAFTS -

Traditionally, an architecture is built by rammed earth, masonry and wood. In order to adapt itself to contemporary context and to the strength that the construction required, the use of concrete and steel structure is applied. While the use of wood still remains as a decorative part such as cladding and flooring radiating the sense of folk that still surrounded the place, a connection to the traditional identity.

The decoration on colouring and crafting is lessened, instead, the design introduces the rich in decoration through soft material like fabric.

THE CORE

The proposal emphasise the idea of one large community where private quarters, public living spaces and green space are all connected together by a core that is situated the center of the building, connects all the way from the ground up to the top most level both physically, by the main staircase, and visually through the big void space that allow people to see all the way up to the top or down to the lowest level, this may make ones feel as if there is one big room where the ground plane is the agricultural field and a roof is a sky plane.

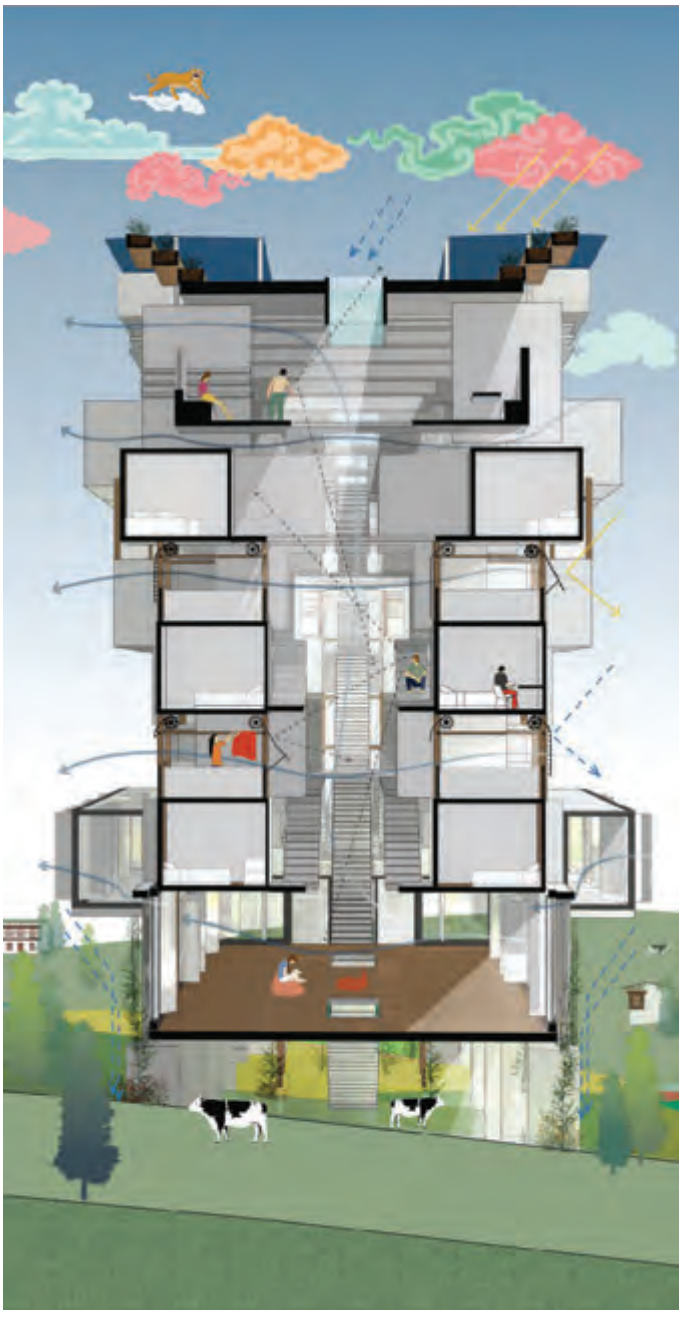
ORGANISATION

While the rooftop and the ground levels are green spaces, the programs inside are arranged according to the level of the hierarchy of the current context.
The topmost level is dedicated to studying area, a library which to serve the needs for education that is significant. However, the floor level also contains prayer room which has been the core of the society since forever. The decoration inside the prayer room is neglected, due to the fact that the building would contain people of various religions since the university is opened to foreign students. In this case, the effect of light is used as a substitution of the divine image so that the room is more universal and is for all.

The lots of levels below are privates quarters, levels of fragments bedrooms and privates spaces, offering 2 layers of privacy to the clients. The first layer is a bedroom, which contains the access to the second layer: a bathroom and a private balcony. The second layer is not physically connected to any corridor, however, it visually connects to both inside and outside of the building through the opening of the balcony, additionally, the fabric blind and wooden blind are provided for the clients to customize their prefered level of privacy further. Likewise, the blind also set the sense of folk live or qualities to the interior experiences.

The public living spaces such as living area, dining area and kitchen are on the lowest level, however, there are also the small corners of these around the place to provide more convenience to the inhabitant. These spaces are the place where the community inside can be connected. Where the inside and outside are linked through the green space.
Green spaces are provided on both the roof plane and the ground plane, by wrapping the around living spaces, it drew people closer to nature as if they are entering the spaces of one another. Additionally, it is the space where students can get their hands on the real things. The roof garden offers the space for organic farming practice that generates food supply for the community as well as a space for a workshop which the institute offered. It also offers the idea of self-sufficient community in which rainwater can be collected in the artificial canal to be used in the agricultural practice and solar energy is collected through the solar panels that are integrated with soft material like fabric. The green space on the ground level allows the dynamics of living organisms such as agricultural crops and cattle to flow through space. Here the students can experience and engage in the actual activities.

Due to the fact that it is a temporary stay where various people come and go, it covers a wide range of people plus, with the living experience and the integration of daily routines and organic farming that it offers, the proposal should, more or less, able to keep the traditional heritage knowledge running in the communities as intended.

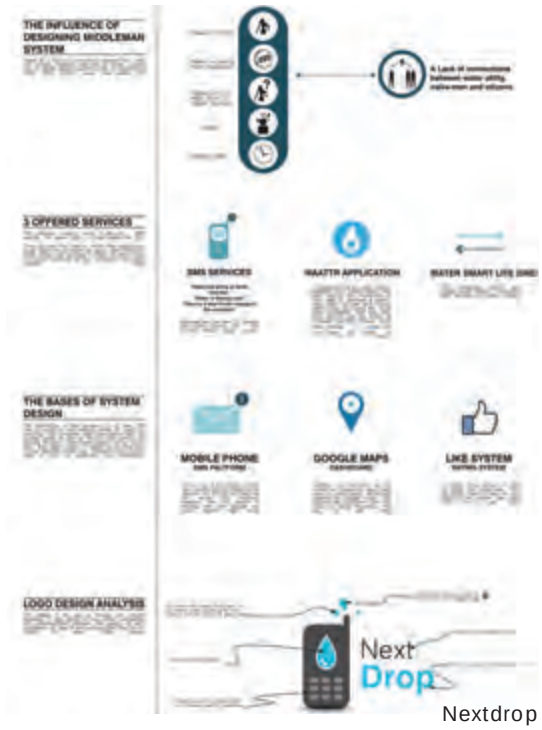


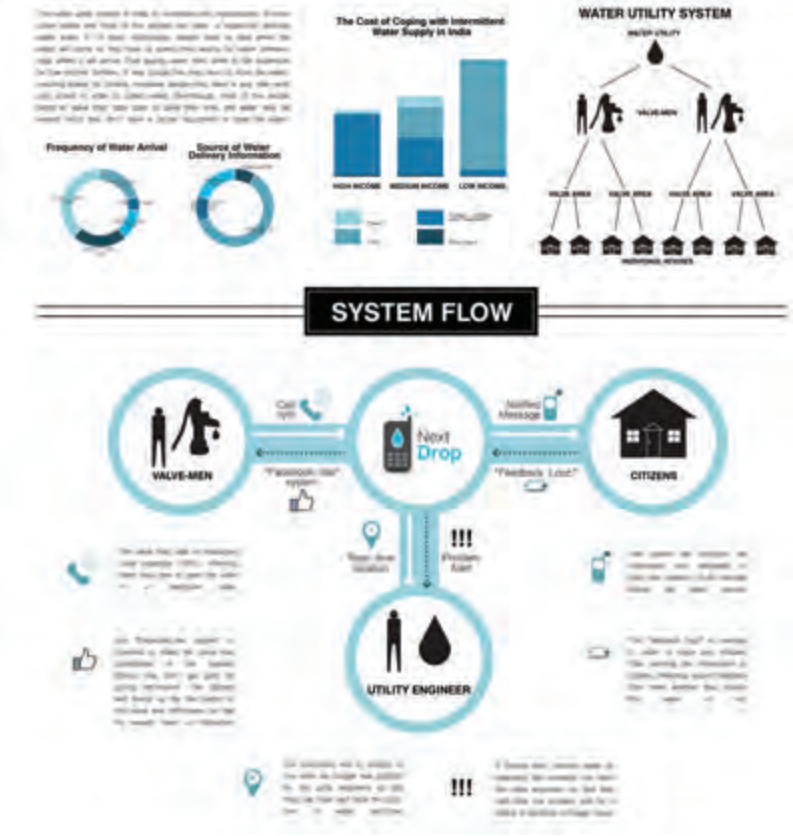
Nextdrop

FLAGSHIP LANDSCAPES

AWRA AMBS, ETHIOPIA ;
BERKELEY, USA
2017

The project is the interpretation of working strategies of 'Nextdrop' company through an architectural representation. The proposal suggests two flagship landscapes that occurs at the same time on a different place. One is a permanent architecture that intended to give people more accessibility to water in a physical way. Another houses an exhibition concerning the topic of water crisis, hoping to shape the way people use water.





This project is dedictaed to a critical study of a company. Through the analysis and obeservation of a company: structure, strategies, tactics and operation methods; the investigation is implicated into a statement about future operations of company bussiness which, at the end, suggest in an architectural form - a flagship landscape.

The chosen company of this project is called ***'NEXTDROP'***, the company who offers a notification system, concerning the schedule of tap water arrival in India.
In India, the tap water is not available all the time, rather, the water utility is unpredictable and unreliable. In most of urban areas, a household recieves water once every 2-10 days. With unreliable infomation sources, people spend time all day or days waiting for water unknowing when it will arrives. There is where the company comes in to offer helps to the citizens.
Nextdrop operates through SMS platform and cooperates with the government utility to notify aheads, the arriving time of water. Their system flow is in a 'feedback loop', starting from the valve-men call, to a real-time tracking, notified message and then back in a form of rating system as an aspirational reward for participants.

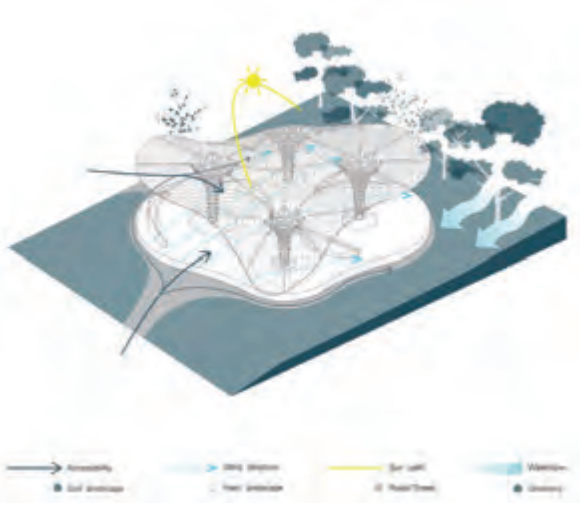
ARCHITECTURAL DESIGN APPROACH

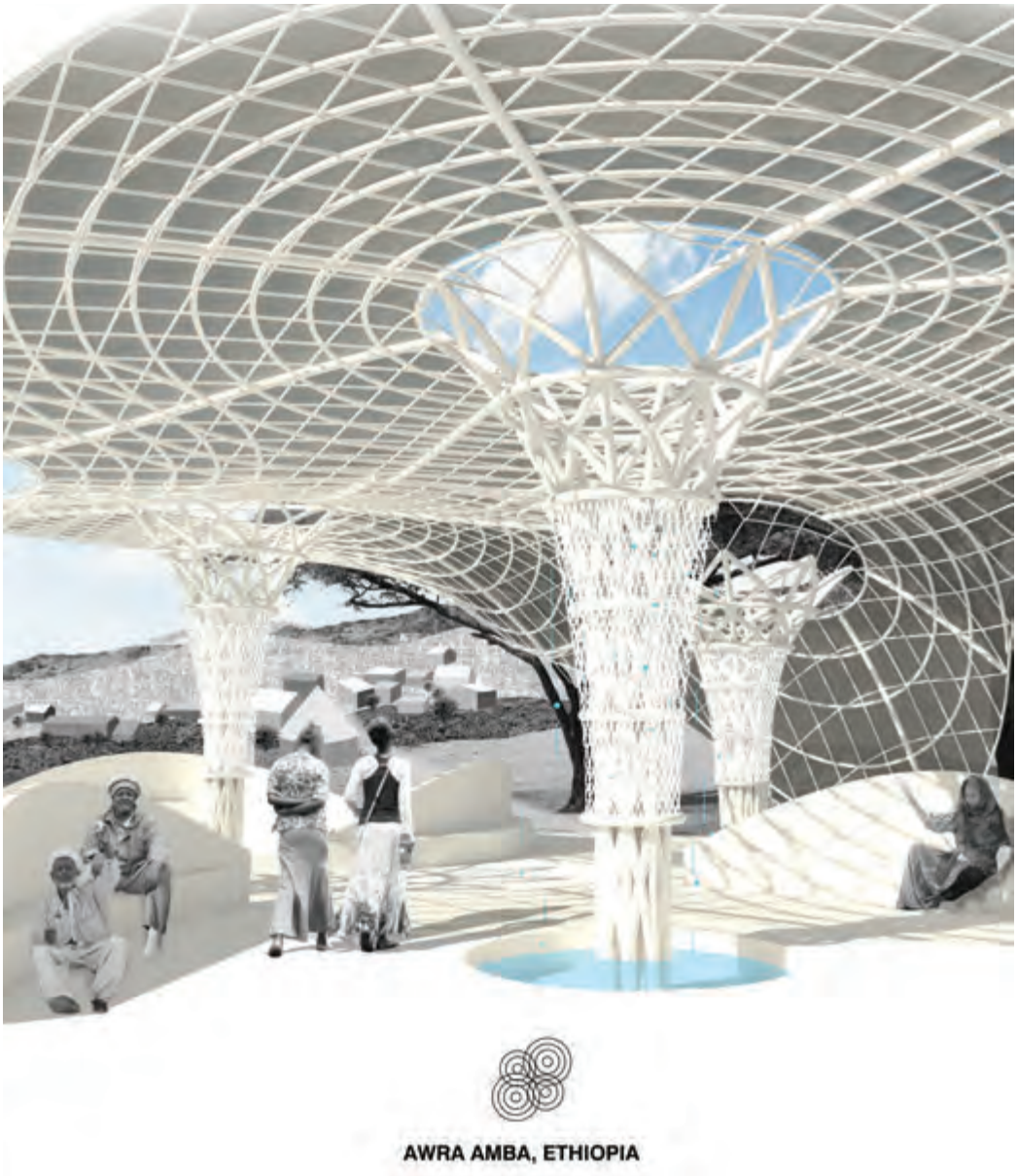
The company next move may concern, not only water accessibility on digital platform, but the physical one. The future expansion of the company may turning towards providing access to both physical water and knowlegde about them.
The design results into 2 different flagship landscapes, in which, one situates permanently in the 1st set of locations where another sits temporarily in the 2nd set of locations. Both of the exhibitions will be held at the same time, using the same material and architectural language with the different programs to express messages for different context.
The 1st set of locations are in the less develop countries which are already facing water shortage problems. The architectural flagship offers a permanent water collecting tower to a community, together with a comtemporary workshop on water mesh screen construction, in order to introduce more possibilities to acces save water.
The 2nd set of locations are in the more develop countries which are in a risk of facing water shortage in the future. The company will held a water exhibition, aimming to rise the awareness about water, thus exhibits the company current operation and plans for the future moves and expansion.

6.1 TEMPORARY WORKSHOP and PERMANENT COMMUNUAL PLACE
1st SET OF LOCATIONS

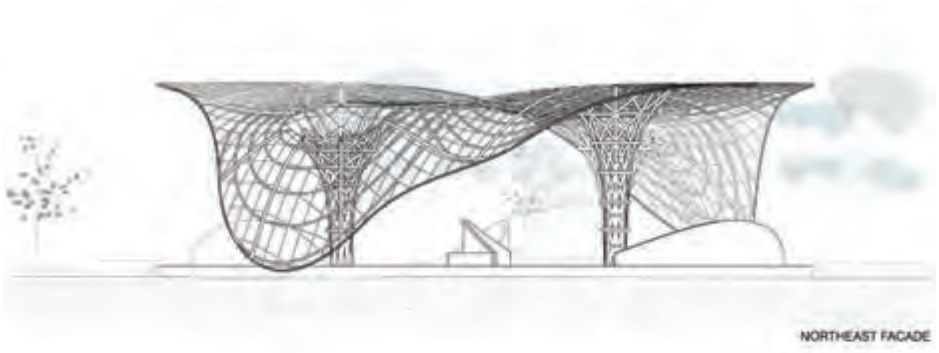
The first location for the flagship space to be construct is in AWRA AMBA, s. GONDER, ETHIOPIA. After that will follow by Agona, Ghana then Gopalganj, Bangaldesh. Therefore, the design of this flagship will not be the form that apply in the following two countries since it is design relating to the site and condition of Awra amba, Ethiopia.

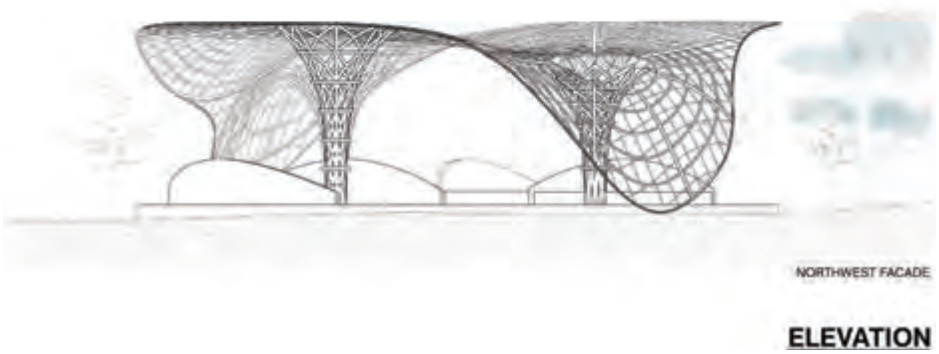
Awra amba is a village in Ethiopia where the community promotes gender equality, they believe in hard working and being good to others. People do weaving as their main occupations. They are hoping to earn money so that they can build portable water, sewage system, pave the road and create an education fund for childern. The current situation of the community may allow the company to step in for a little help. With people being able to produce more water from natural air, together with the handcraft skill they already have, the project has a great opportunity to develop and expand by the local, and with hope that it may lead the villagers to their goals.





AWRA AMBA, ETHIOPIA





AWRA AMBA, ETHIOPIA

DESIGN APPROACH

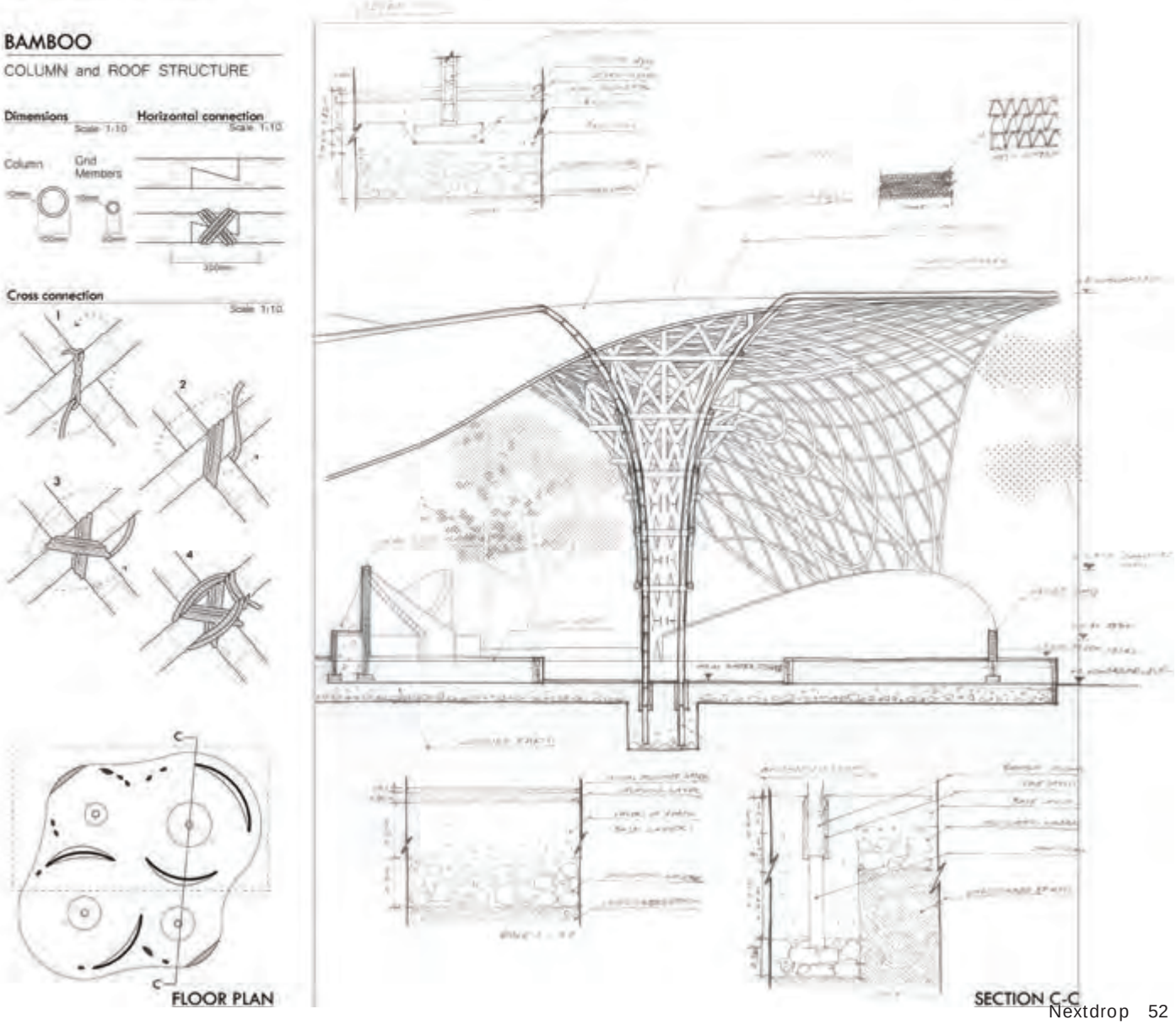
Since the intension of the project is to introduce people to a more sustainable life, the design is aiming towards local material and local intelligent teniques so that once the workshop is done, the villagers are able to continue making the water tower and mesh screening by their own. Therefore, the design used local material such as bamboo and natural fiber rope for the roofing structure and local construction tecniques such as rammed-earth and sun-dried clay brick for partitions and flooring . Likewise, these materials leave minimal footprints on the environment and is easy for the maintainance by the locals.

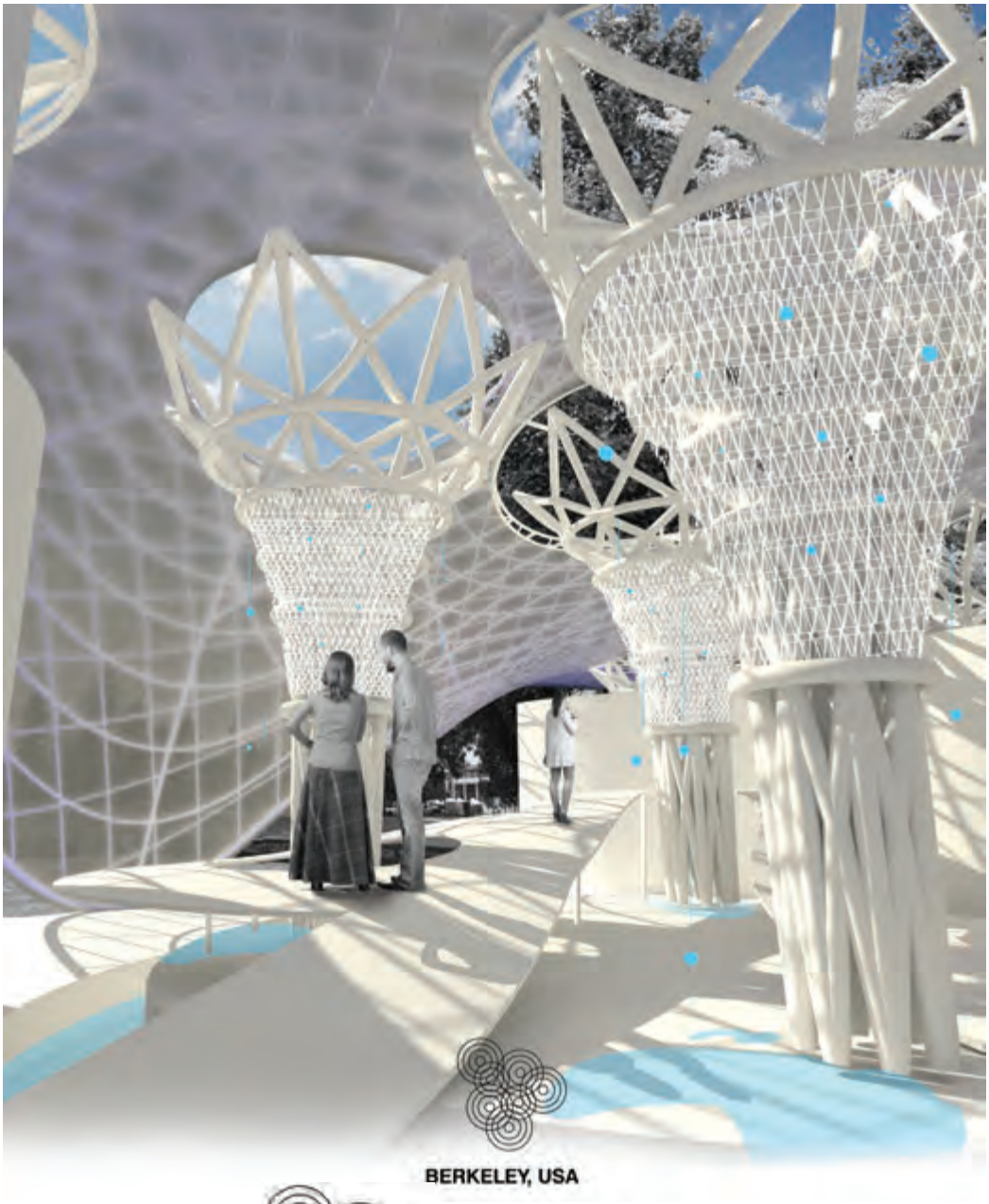
The floor is made out of rammed earth as well as the benches inside the pavilion where the mid-level partition wall is created using adobe tecniques.

The mesh screen is a cell-like structure that will capture moisture in the air and through the process of condensation it will transform, then drops down as water. Meaning that the placement of the tower is also important, to put the structure near greenery will benefit the production process.

Bamboo sticks are assembled into continuous columns and roof structure, in which the different height and shape are done responding to the environment and the surroundings, at some points the roof undulated down to the floor , becoming the furniture itself. There are also some hanging chairs, that is made out of weaved fiber, attached to the structure. The height of the columns also refer to the program they hold under: higher and larger for workshop, smaller for seating area. Likewise, the sizes of ponds below the columns are resulted from its height since the columns are where the mesh screen is attached - where the water is produces , therefore, the bigger the surface area the more water in can produce and the bigger the water container should be.

Model of material and construction study





BERKELEY, USA

WORLD CONFERENCE CENTER,
BONN, GERMANY

ROYAL EXHIBITION BUILDING,
MELBOURNE, AUSTRALIA

6.2 TEMPORARY EXHIBITION and FLAGSHIP STORE

2nd SET OF LOCATIONS

SITE PLAN

These second set is aim for a more develop country which are in a risk to face water crisis in 2025 due to the footprint on water usage. Starting in MARTIN LUTHER KING JR PARK, BERKELEY, USA. While the next stops are Royal Exhibition building in Melbourne Australia and then Thw World Conference center in Bonn, Germany. These exhibition period will happen and end as the same time it does in the other set of locations

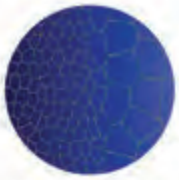
DESIGN APPROCH

For this set of country, the program is intended to be an educational exhibition which communicates about water crisis and how it will effect us, in order to rise an awareness on our footprint on the resources. The primary exhibition is done by temporarily shutdown and pulling all the water out from a water feature that is only used as a decoration. Putting the design structure on top it to generates a confusion and draw attention towards the exhibition. Through time the 'water tower', which is also used in Ethiopia, will visualised how much time it takes for one drop of water to be produced and how long untill those water drops can fill the water feature.

The whole structure is situated on a risen platform, using modular stage system and paved with 'individual foam blocking flooring'. This material also act as an installation: in a long term, people actions will form a permanent damage on the floor, the foam will lose its propertise of bouncing back in shape therefore a topography is formed, this refers to how people actions can cause a permanent lose of natural resource without an awareness. This whole pavilion is an interactive installtion by itself. The use of the secondary exhibited objects are used to give a more literal infomation - meaing it contains a more straight forward implication. The secondary exhibitions happen inside the semi-enclosed architectural form of the main exhibition.

The exhibition space can be devided into 5 spaces, in which they performs different story about water: reception, introduction, dark room, installtion(the primary structure performance) and the donation point.

MATERIAL



MODIFIED METAL

Modified metal is a material that is investigating in North carolina state university. By modifying the internal structure its emulate bamboo gives the material strength yet flexibility. The material is chosen to use in a more developed countries to strengthen the idea of the co-existing parallel exhibition. Instead of local material as the 3rd world countries, the more developed countries apply high-tech material.

OPEN CELL FOAM

The term "interact" was interpet through a properties of the material. The open cell foam is a material that will generate the idea of interaction and the "reflective" system of nextdrop by its property of reverting the initial form. After being press the open cell foam will immidiately bounce back to its initial stage.

CLOSE CELL FOAM

The term "interact" was interpet through a properties of the material. The open cell foam is a material that will generate the idea of interaction and the "reflective" system of nextdrop by its property of reverting the initial form. Unlike the open cell foam, the close cell foam will slowly reverting to inital stage. Additionally, leaving more footprint.

MODULAR SYSTEM

INDIVIDUAL FOAM BLOCK FLOORING

The component is designed to function as a relational art, resulting by the interpretation of nextdrop's "business model".

To begin with, the component that people must or mostly interact with when they are in a space is the floor. Additionally in order to represent the "massive" or "crowded" information and population in this water utility network, the individual foam blocks are put together.

Arrow represent feedback loop

Giving information

Receiving information

MODULAR STAGE SYSTEM

Since the exhibition is temporary, the construction system should be something that is might and flexible to be put together or taken apart. Moreover, the module stage system is tried to create a smooth, and stable platform above the existing fountain. Particularly, modular system represent the massive population of participants of Nextdrop network.

The reactive flooring will be added on the modular stage system used in the exhibition.

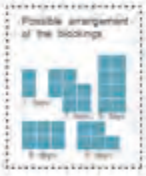
Sample of possible arrangement of the components

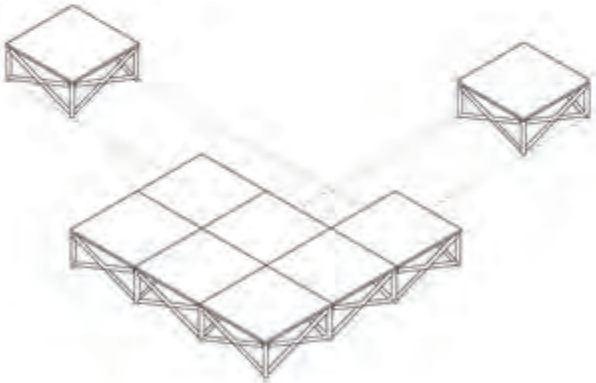
CLOSE CELL FOAM

OPEN CELL FOAM

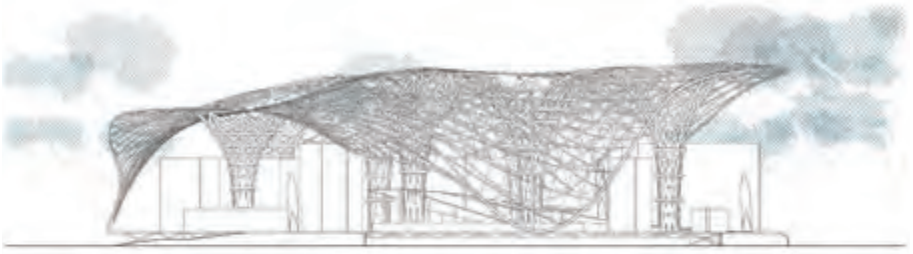
The used of different types of foam(material) would create the sense of visual and physical sensing. People will acknowledge the differences of types and properties by colour before they do the physical interact with both of the foam types. Referring to the notifying system of Nextdrop.

The proportions of these unit are based on the statistic of the 3rys water arrival.

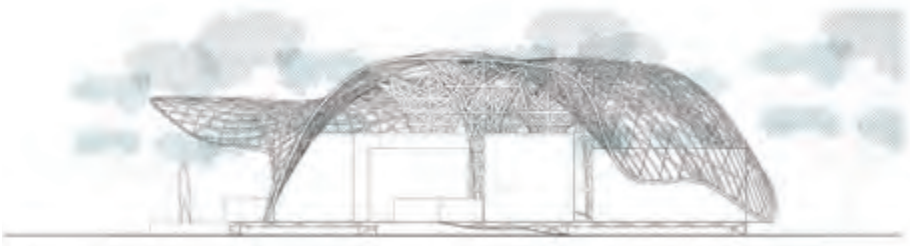




FLOOR PLAN

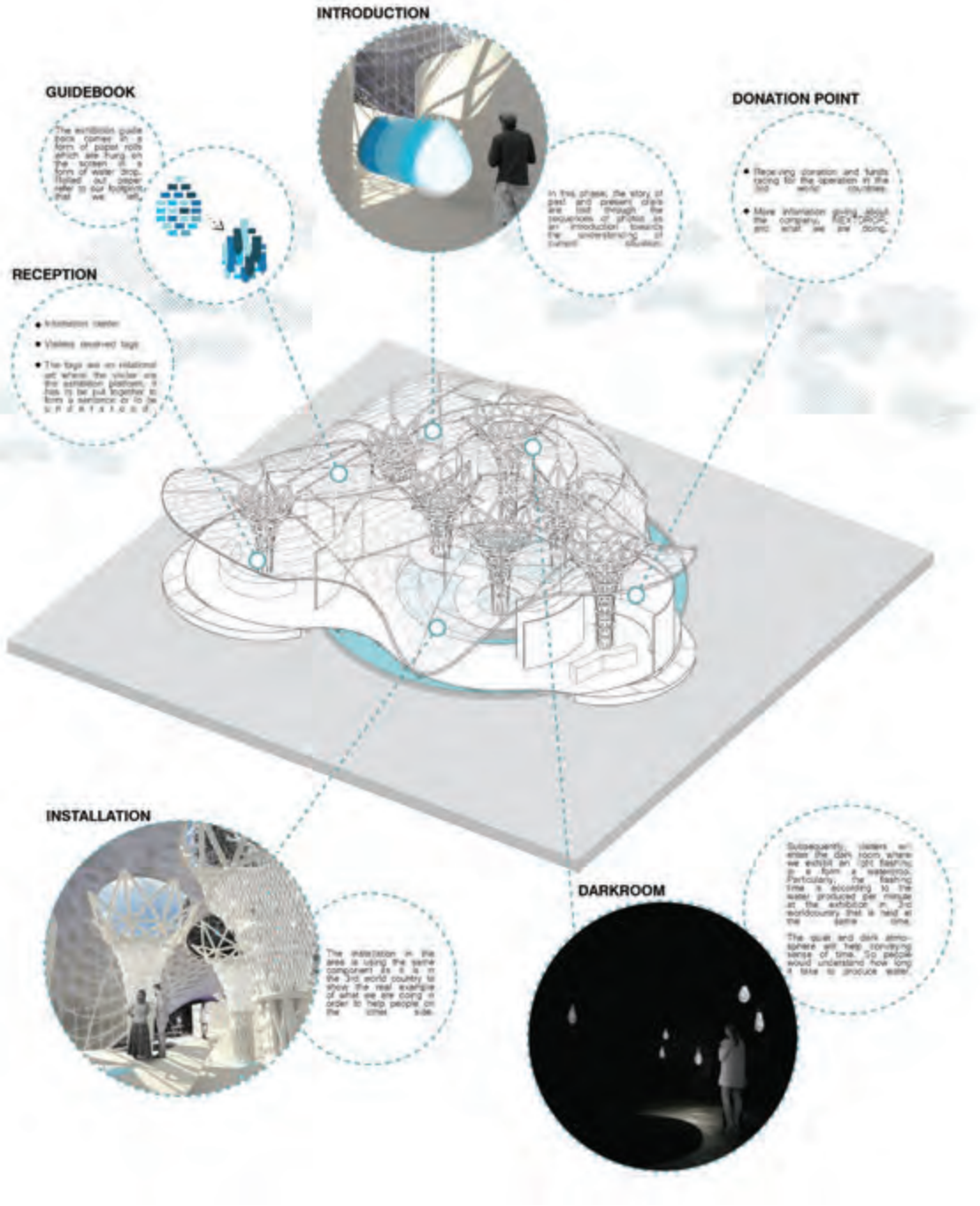


WEST FACADE



SOUTH FACADE

ELEVATION



- Reception -

Information center and guide book give away spot, The guide book comes in a form of paper rolls which are hung on the screen in a form of water drop. Rolled out paper refer to our footprint that we left.

- Introduction -

In this phase, the story of past and present crisis are told through the sequences of photos as an introduction towards the understanding of current situation.

- Dark room -

An exhibition of flashing waterdrop-form lights. The flashing time is according to the water produced per minute at the exhibition in 3rd world country that is held at the same time.The quiet and dark atmosphere will help conveying sense of time. So people would understand how long it take to produce water.

- Installation -

The water tower exhibits what the company propose, plus, supports the dark room by showing the rate of water production visually.

- Donation point -

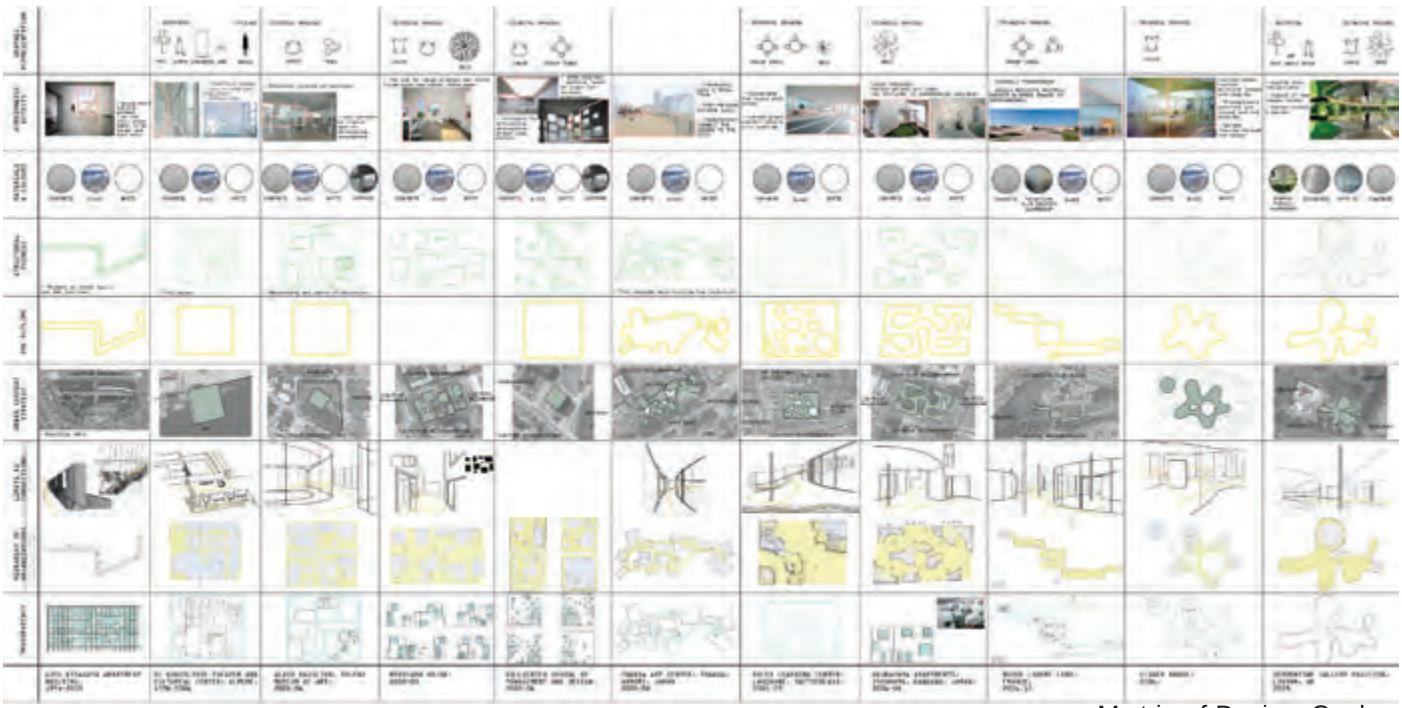
Receiving donation and funds racing for the operation in the 3rd world countries. A space for company infomation give away.

THE IMPOSTER

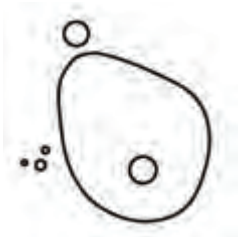
DECODING ARCHITECTS' DNA

IBARAKI; KANAGAWA*, JAPAN*
2016

The project derives from the study of the design codes of SANAA. The purpose of this project is aimed to be the study of architectural body of work and the understanding of methods, priorities and principles behind the choices and decisions of a professional architect, through analysis, researches, observations and interpretations. Resulting, 2 different forms of architectural design as creative responses to the objectives.



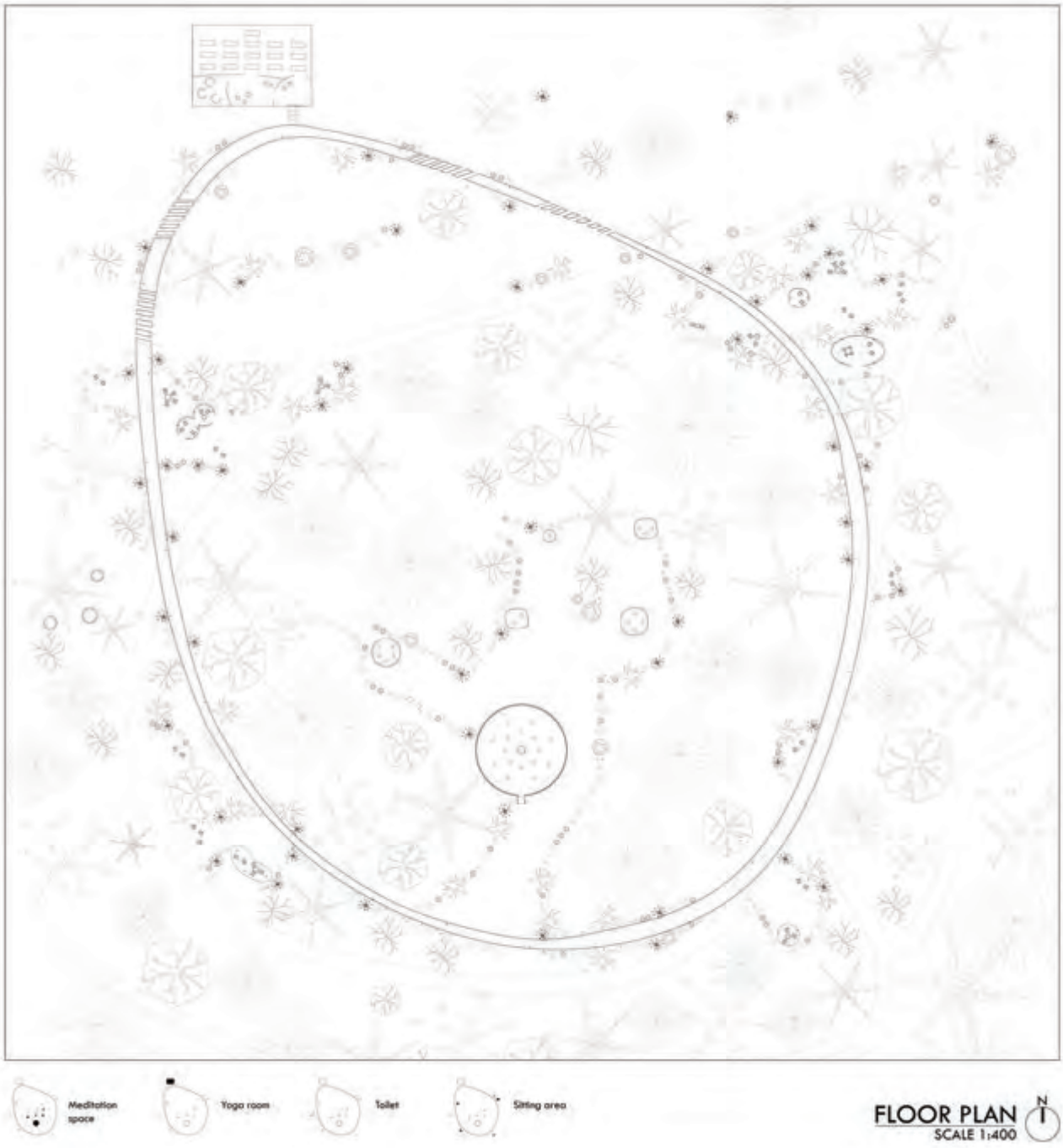
Matrix of Design Codes



THE QUIET INTERFERENCE
IBARAKI, JAPAN

Near the peacful scenary and the calming lake sight of Ibaraki, the design holds a meditation center along with a relaxation landscape as its programs. Using the advantage of the city, together with the critically use of SANAA codes, the design generates a perfect quiet architectural landscape.
The form of the design is resulted from the existing pathway on the site, however, fliped. The round-ish shape of the pavilion, quietly, causes interferences with the existing pathway. The design is intended for a light weight looking and feeling, therefore, the use of a very thin and light skeleton structure occurs.

According to SANAA's manisfesto - where architecture is the environment itself, the design is open up to the surroundings, using a blurred seperation in order to seperate spaces and programs - using limit as a connection. In order to archieve that, the use of materials, landscaping and a seperating rooms organistion are employed.
The meditating volumnes are spreaded through out the site for privacy purposes, plus, using the placement of trees and bushes to create more privacy as well as creating a natural seperation - a blurred limit. Likewise, the use of different materials is employed. Transparent glass creates a limitation between the inside and outside, yet it allows those spaces to be conneted. Translucent glass allows the connection throught the presence of natural light and conditions. Layering glasses create an atmospheric effects by the undulated reflections. Where the use of anodized aluminium reflects the surroundings image, creating a specific atmosphere and lighten the building mass blending with the enviroment. An undulated roof forms also conveys special effects, a specific level of openess.


Meditation space
Yoga room
Toilet
Sitting area
FLOOR PLAN
SCALE 1:400
N

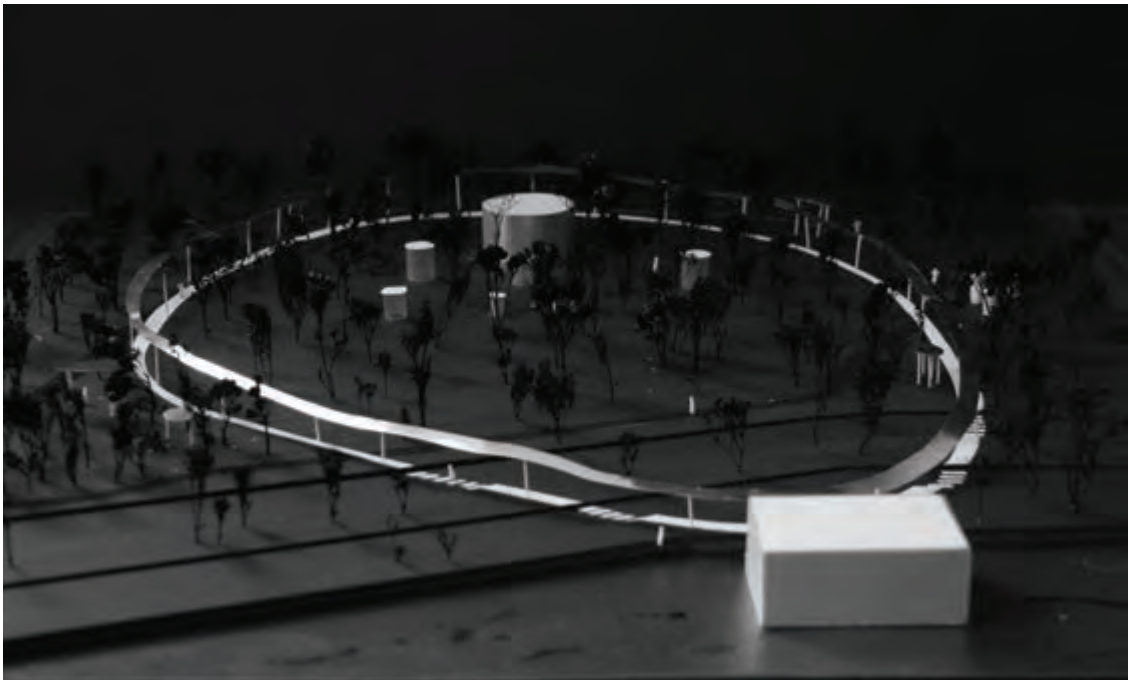
FRONT

RIGHT

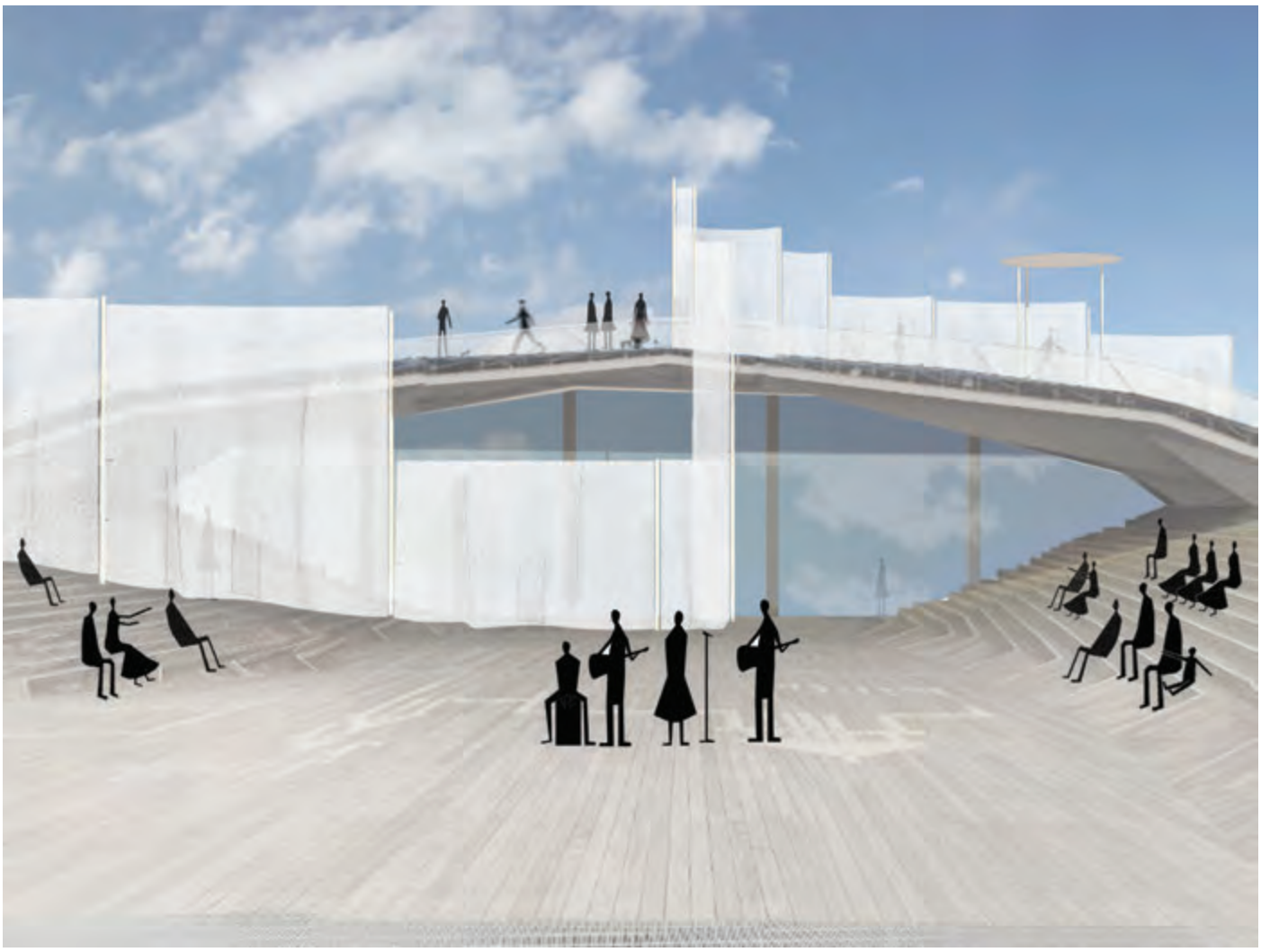
ELEVATIONS
SCALE 1:400

SECTION
SCALE 1:400

PAVILION B

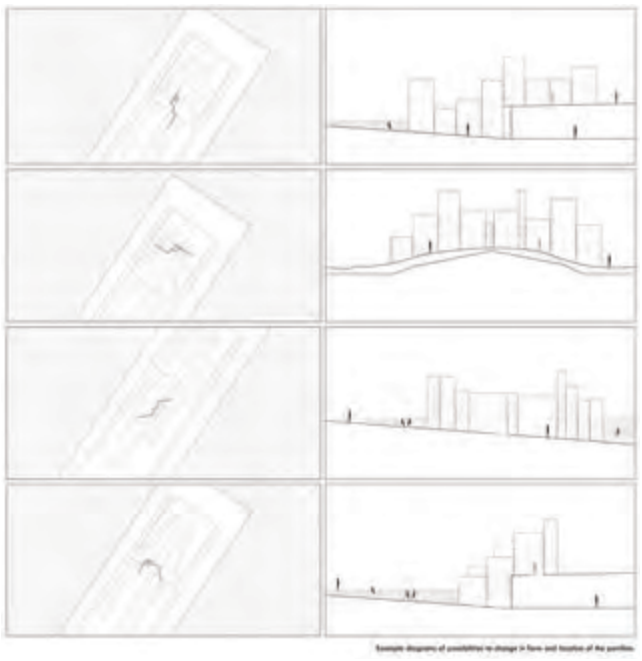


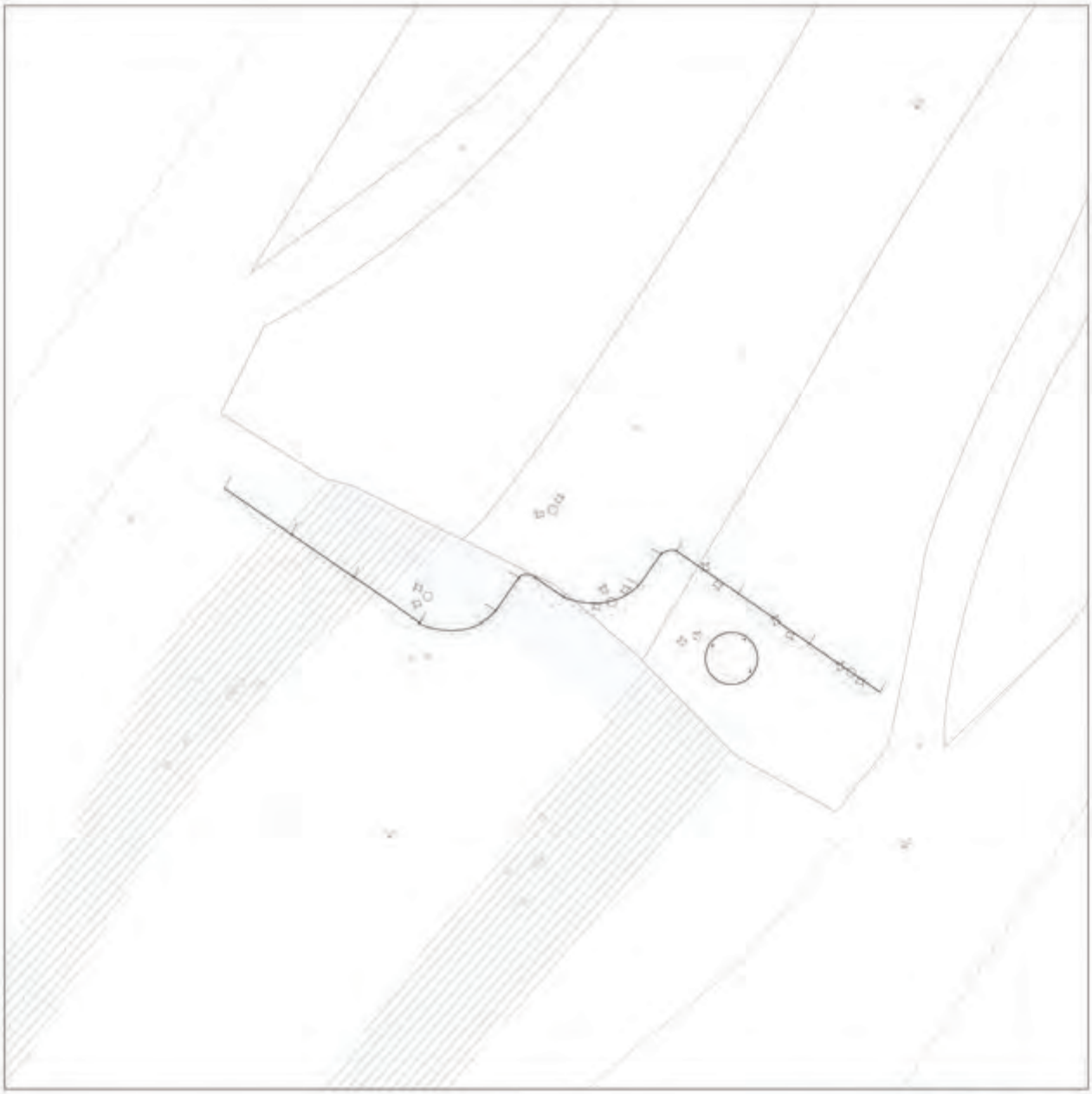
THE DANCING THEATRE
KANAGAWA, JAPAN



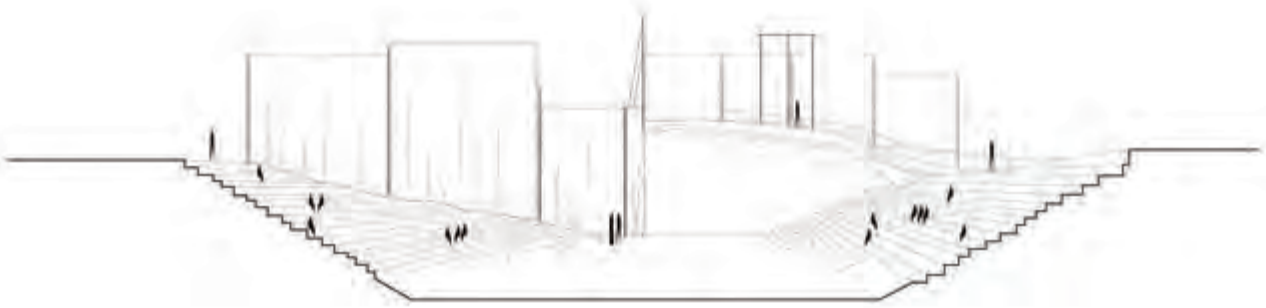
A small temporary pavilion is dancing on the pier of Kanagawa. The form is always in movements - it is an ever- changing architectural piece. The pavilion suggest the meeting point between artificial and nature. The use of soft materials as a seperation allows the connection between both sides of the patition to happen, a blurred limit is created by the properties of the blinds, in which the translucent fabric sheet allows people the feel and see an unclear presence of things on the other side, likewise, allowing people to see the form of 'nature'.

The usable space is created by the wind, meaning that the form of it will change according to wind direction, speed,as well as season and time. The wind blows on the surface of the soft partition generating a usable footage on the floor for small activities purposes. This way the architecture become a part of the environment, in which, nature itself defines an architectural form.
The pavilion is composed out of various components, therefore, its height, shape and form are flexible.



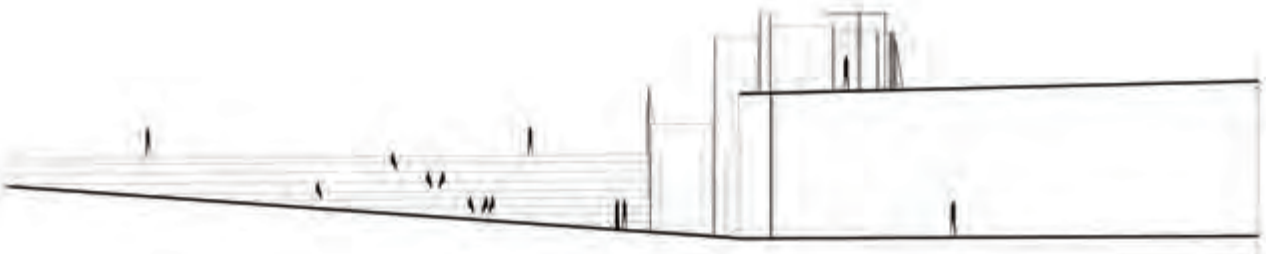


FLOOR PLAN
SCALE 1:200



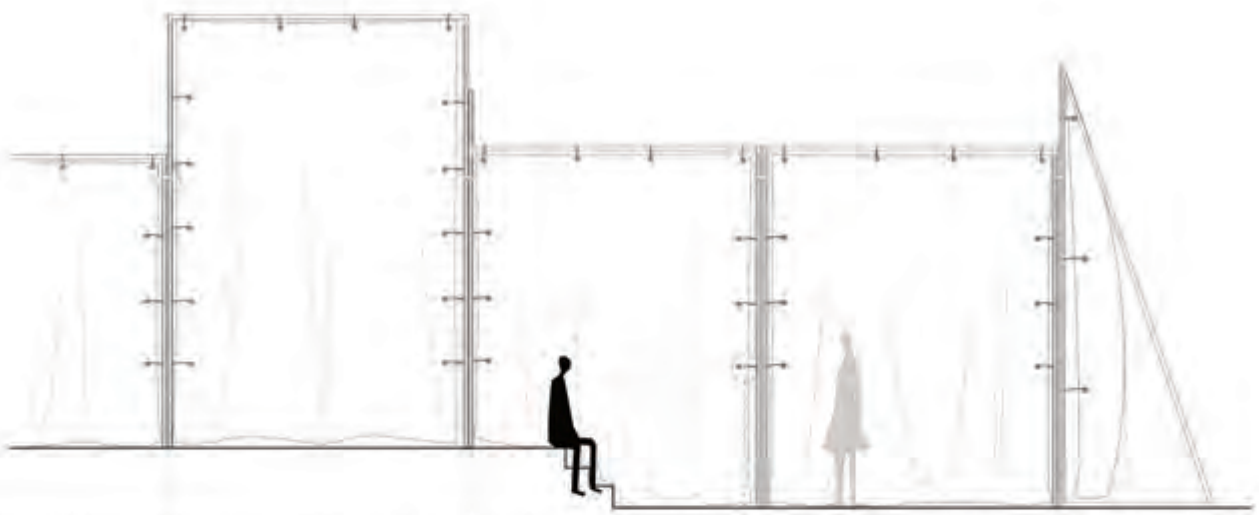
ELEVATION : SOUTH FACADE

SCALE 1: 200



ELEVATION : EAST FACADE

SCALE 1: 200



CONNECTION & BAR

Blinds, cable and columns are connected together using the method of how curtain connects to a rail : loops and strings. The string is a little bit loose in order to give more flexibility and possibility to transform.

Bar types

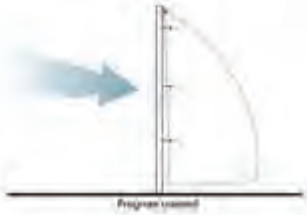
JOINTS

BLINDS

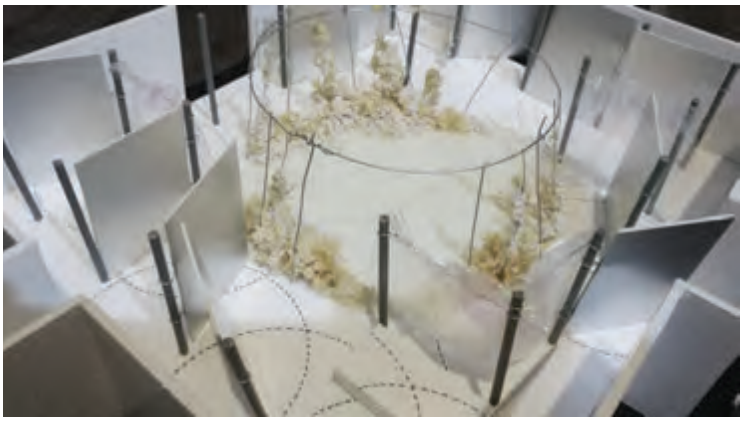
The blinds is used as a patition which defined volume of the program inside according to the seasonal wind strength and direction as well as its length and tension due to a certain location on the pier.

ALUMINIUM COLUMN

The reflectiveness of the surface helps to create a specific atmosphere or phenomenon for the space. Columns may have to be swicthed around in order to fit with topographical heights of some certain areas on the pier.



The program inside the pavilion will be set according to its location and the seasonal wind. Since the topography will defind the tension of the fabric as well as the available area that is left to be used.



SELF-PORTRAIT

OBSERVATORY

2018

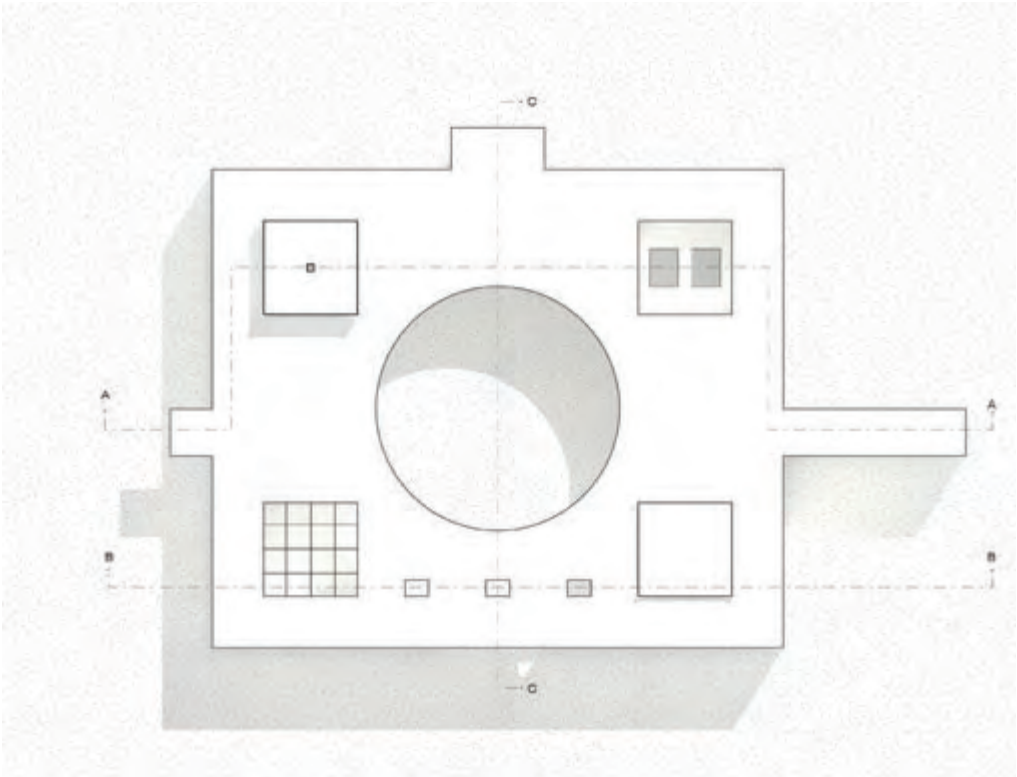
The project is a self portrait of an architect. A reflection of oneself through architectural aspects and components.
noun / self-portrait : a portrait of oneself done by oneself

Design Experimentation Workshop (DEX)
Instructor : Alexander Brodsky

The project is a reflection of a word 'self-portrait', suggesting an intepretation of oneself through architectural form and program.
Resulting, an observation landscape as a reponse, in which, the program derives from my hobbies, plus, an interest in analog photography. The intended program is a constallation observation and is situated at the center of the architecture. Where other surrounded architectural features are the interpreation of characteristics and personallities in which I hold, additionally, these features are used to create a better impact on a visiter's emotional reponse toward the observation point.
The architectural skin is devided into 3 layers, each containing different meaings, where the four entrances and roof features reflects and creates emotional reponses.

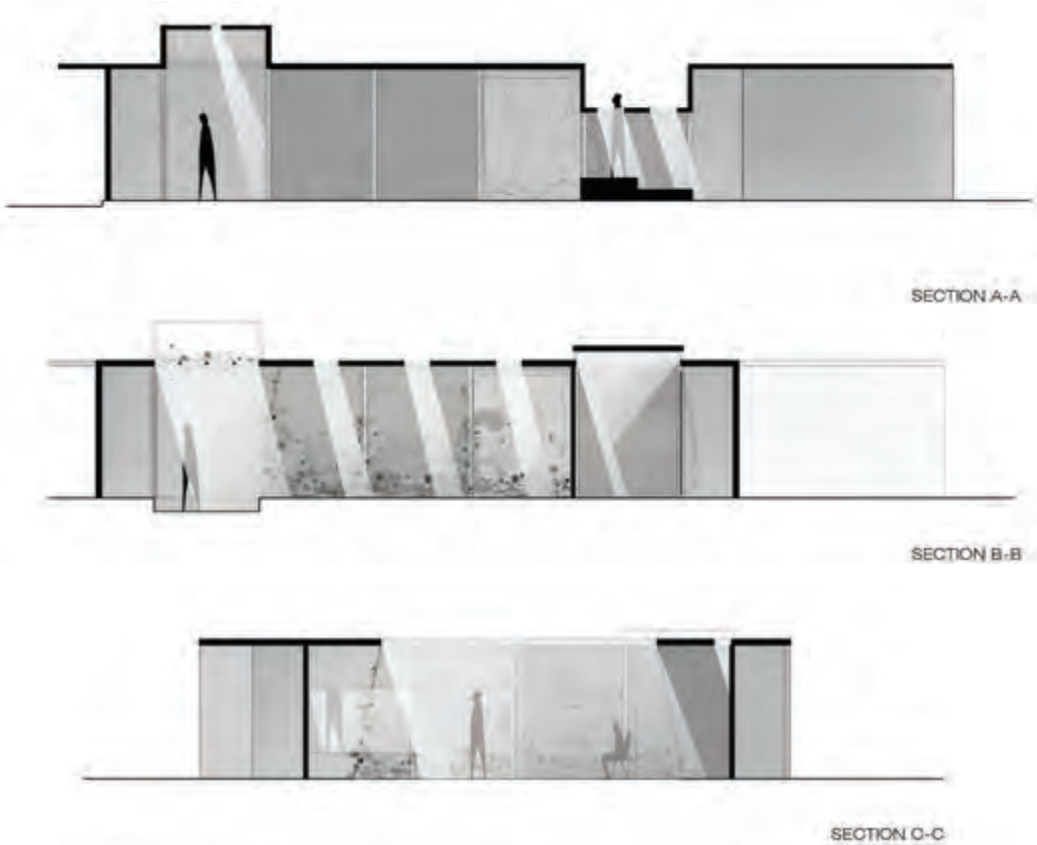
THE 3 LAYERS OF COVERINGS

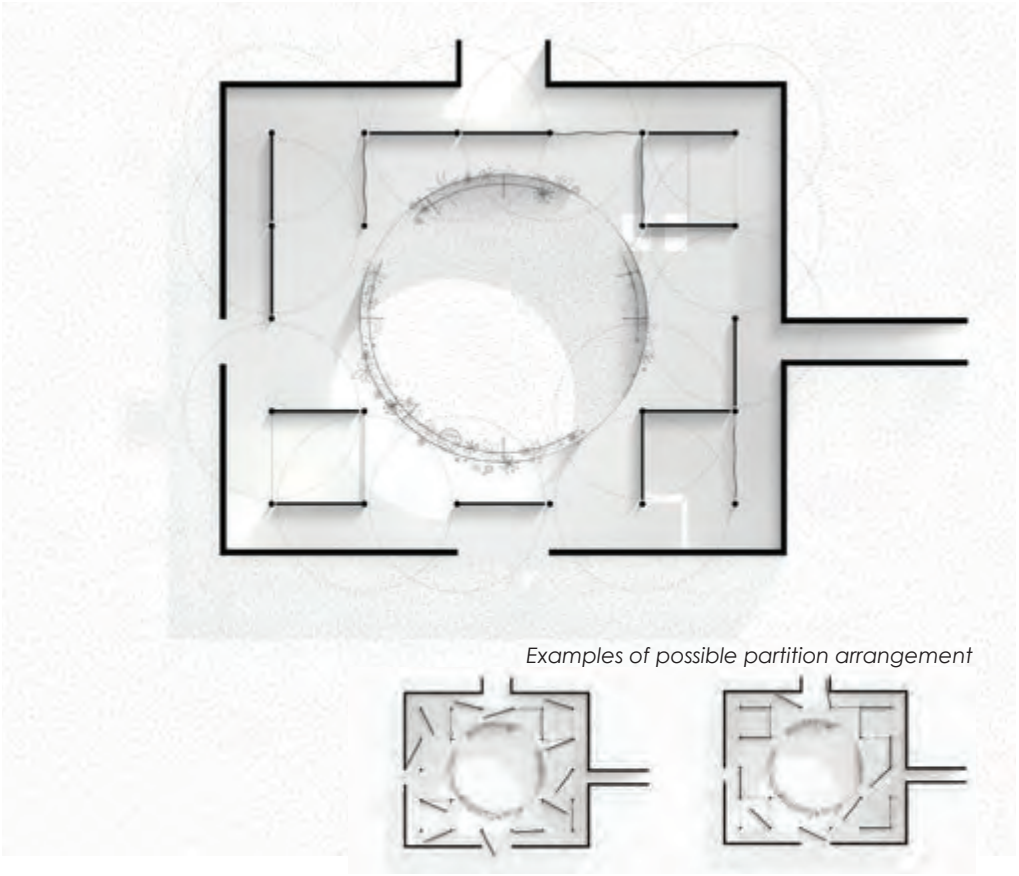
: OUTERSHELL(solid wall), INNERSHELL(field of flexible doorways) and CORE.



OUTERSHELL

The way I represent myself or the way I may appear to people.
The hard solid wall with fixed different entrances represent how I open up for things or for people, there is a certain way in and out, the product of anxiety allows people to get to know 'me' only from a certain way or actions.





Examples of possible partition arrangement

INNERSHELL

Field of flexible doors is make from both soft and hard material, representing the thought process system.

The hard panels act as a filter, creating a path way similar to the way of making a decision, picking what is going out as well as what is going into a mind. The position of the pivot points are based on grid system, showing how the thinking process is pattern and strict, yet the fact that the panels are rotatable suggest some flexiblities can happen.

While the soft panels are fixed panels, remining that even though one can pick what to let out and what to receive, there are still some place inside that they cannot should to not be affected by others, speaking in term of acrhitecture, the soft panels will be affected by weather or climate.

The four roof features and entrances are use to represent emotions and how thought system can leads to those feeling : happy, focus, stress or pressured

Space1 open up fully to the natural lighting, suggests the vibe of positivity one may get.

Space2 has a high ceiling with a tiny opening, allows light to come in concentratedly as one spot, referring to focus.

Space3 is compressed. With the lowering roof and rising floor, one may feels dense, uncomfortable and compressed like they are pressured. Together with a long passage way from the entrance, the darknest will risen the intensity of this effect. However, the holes at the lowering roof suggest the feeling of relieved after stress.

THE CORE

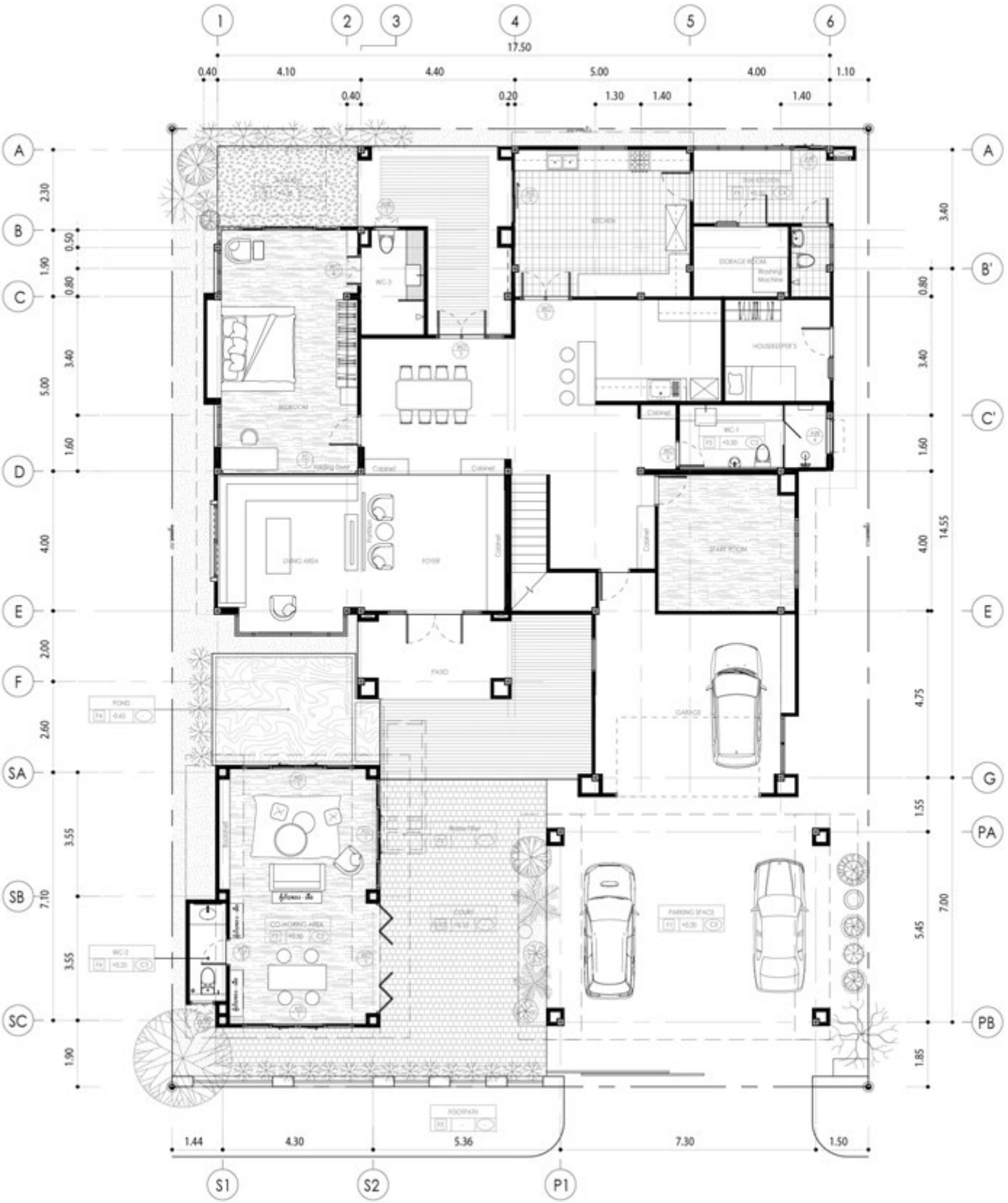
The most delicated place where nothing can be control, it is also refer to first impression or first effect that is created before all the thinking process happen. The wall here is made out of greenery. These plants have their own lives, they grow and react differently. The most inner part is the ever-changing wall.

RESIDENCE RENOVATION

HOUSE RENOVATION

BANGPHLI, SAMUTPRAKARN, THAILAND
2019 -

A renovation of a family home, focuses on the design of the ground floor plan and the landscape area.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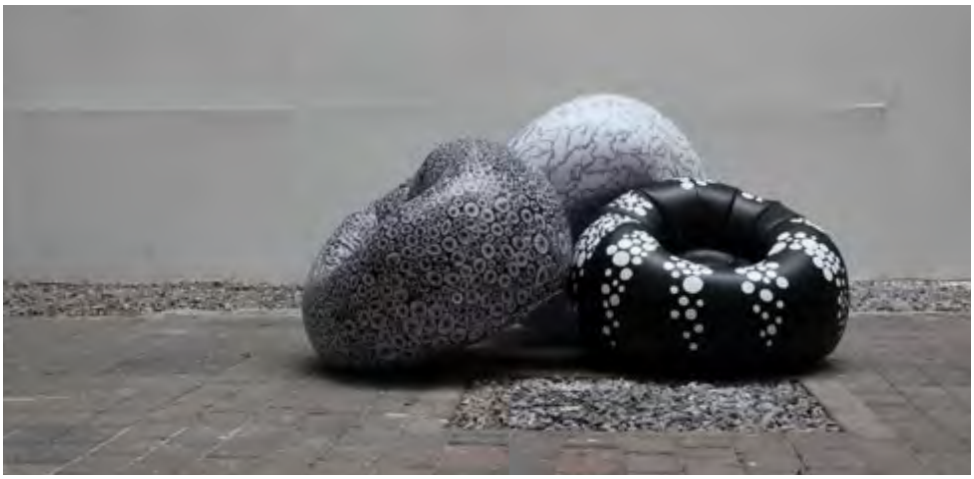
7.00
5.45
1.85
BEDROOM
WC-3
KITCHEN
STORAGE ROOM
Washing Machine
HOUSEKEEPER'S
Cabinet
WC-4
SPARE ROOM
LIVING AREA
FOYER
Cabinet
Cabinet
Cabinet
FOYER
GARAGE
POND
CO-WORKING AREA
WC-2
PARKING SPACE
FOOTPATH
1.44
4.30
5.36
7.30
1.50
S1
S2
P1

NON-ARCHITECTURAL PROJECT

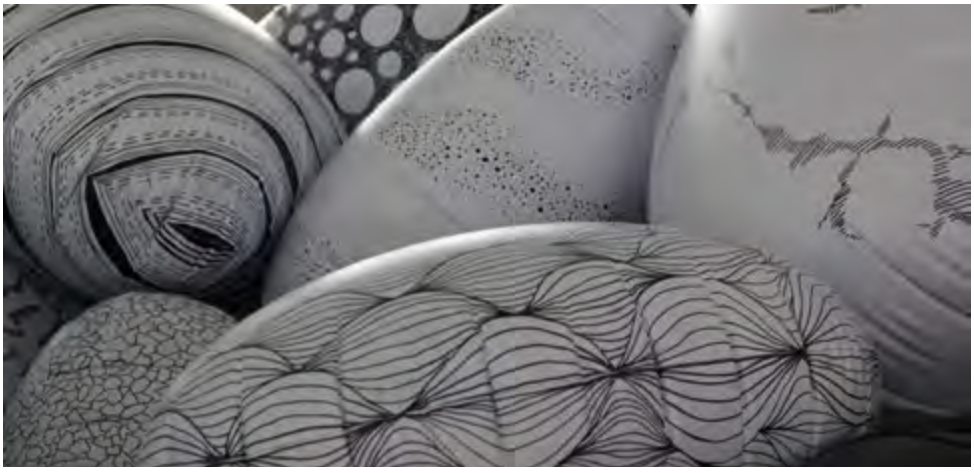


LOYY

Product and Branding Development

Inflactable Object
2017

Instragram: @loyy



INSTRUCTORS

Blanca Garcia Gardelegui
Carmen Torres

TEAMMATES

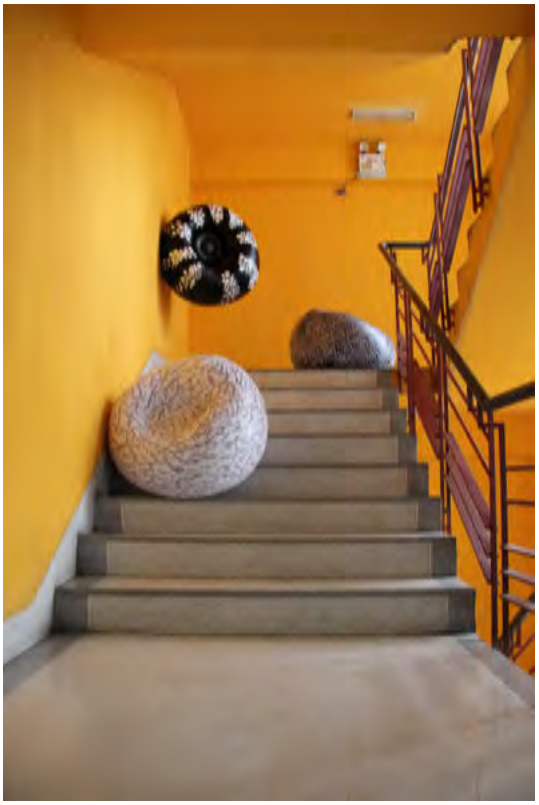
Auraya French
Chadaporn Sompolpong
Chanin Homdee
Chansokhan Nuon
Dhataroth Chaiwarasilpa
Lalita Phatthanachaisuksiri
Napassorn Charoentra
Nithit Chompatana
Nuttcha Paopahon
Palakorn Guagulpipat
Panyanus Jansomwong
Pattarawan Rungrattawatchai
Phannarath Siritantipat
Pornnapath Khampiranon
Ruchchapa Jaochakarasiri
Sakdipat Chitsawaengsrap
Sapanya Patrathiranond
Sisilpa Srisukson
Sita Hirunjit
Thanapon Harnpattanapanich

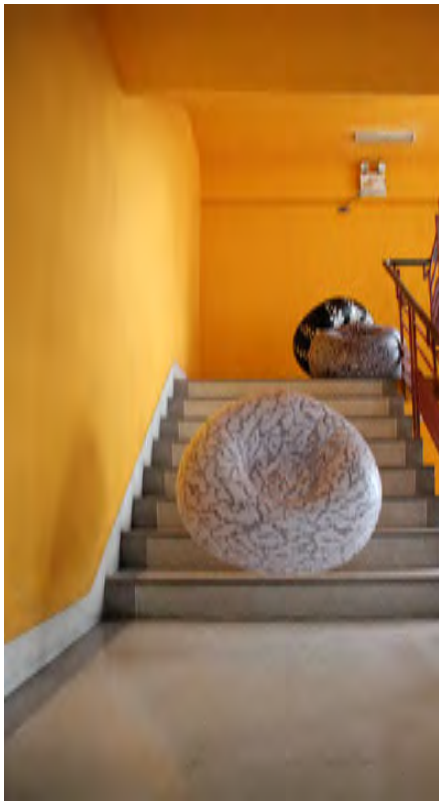
DESIGN CONCEPT

The design is based on a surreal concept, bringing together plastic, one of the lightest substances known to man, and rock, one of the heaviest substances known to man.
With an aim to challenge the perception of the natural rocks' properties ,in which the rocks are known to be hard and heavy, the design mimics the form and pattern of nature on to a light inflatable plastic.

DESIGN APPROACHES

The form of the design is inspired from the natural rock forms. The shapes are mimicked and redefined in a way that they would be able to be constructed as inflatables. The forms are designed to serve as a piece furniture rather than a mere inflatable piece.
A variety of patterns were designed as a reflection of the patterns found on rocks. The pattern designs interpret the 3 dimensional rock patterns, that are formed by positive and negative pigments or volumes, into the 2 dimentional patterns that are resulted form the combination of lines, pigments and empty spaces.
Each designs are specific to a particular rock types under the igneous, sedimentary and metamorphic rock families. As well as a series of designs that were inspired by the patterns found in coral.

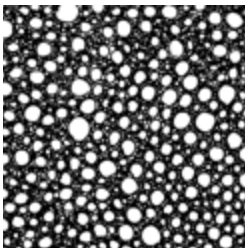




STORY OF ROCKS

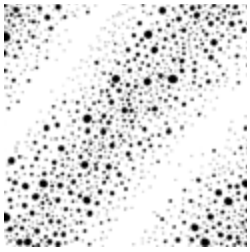
Àka-nee
COLLECTION I

Igneous : (of rock) having solidified from lava or magma.



Pumice : Carving Shelters
When the Earth first came into being, people the size of rice grains. In order to survive, they carved into the surrounding rocks to create shelter.

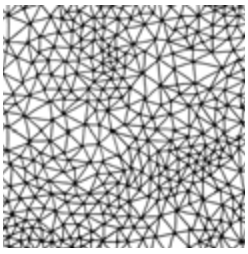
Diorite : Good and Evil
This stone was once the purest shade of white and it would reflect all the good in the world but as time progressed, more evil came into the world and so it became dull and developed black spots.



Granite : Stars in the sky
There was a giant that roamed the earth collecting stars from the beautiful night sky. As he placed the stars in his pocket, they began to merge together, forming a constellation of their own.

Ta-kon
COLLECTION II

Sedimentary : (of rock) that has formed from sediment deposited by water or air.



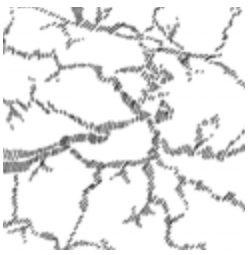
Dolomite : Water Crystals
There is a legend about a mystical cave deep within the desert. Inside the cave is a pool of glowing water, but the water within this pool is said to have the ability to turn anything that touches it to turn into crystal.

Sandstone : A world within
A world invisible to the human eye exists within the sandstone; the only way we know this world exists is from the specks of light that are visible on the surface.

Gypsum Rosette:Earth Flower
There existed a flower that reflected the Earth's well-being, the more the life on Earth flourished the more beautiful the flower became. As the Earth began to deteriorate, the flower slowly faded and its petals turned brittle.

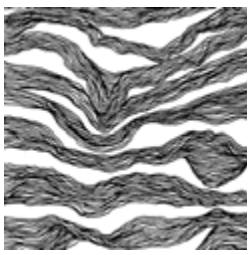
Praē
COLLECTION III

Metamorphic : denoting rock that has undergone transformation by heat, pressure, or other natural agencies



Marble : Dark sun
Our universe once had no Sun; the Sun's that did exist had shells of darkness surrounding them. One of the Sun's shells began to crumble from the heat within it, and through the cracks light began to seep through light and warmth was brought to our universe. to turn anything that touches it to turn into crystal.

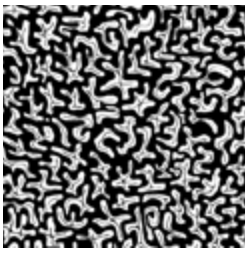
Soapstone : Mystical snail
In times past, mystical snails roamed the Earth bringing life to the land. The mucus that trailed the snails had the power to produce life but the snail's skin was poisonous and brought death to anything it touched.



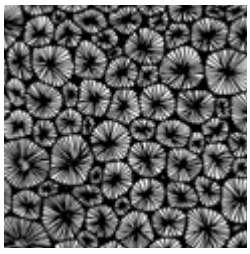
Gneiss : Frozen snakes
The only creatures that inhabited the world were snakes. The ground became cold and to survive the snakes would have to huddle together to keep warm. The snakes were defenseless against the bone-chilling weather and were frozen together, as a mound of snakes.the flower slowly faded and its petals turned brittle.

Pa-ka-rang
COLLECTION IV

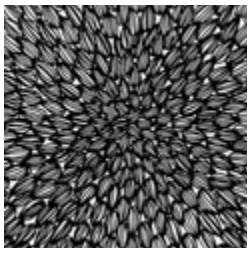
Coral : a hard stony substance secreted by certain marine coelenterates as an external skeleton, typically forming large reefs in warm seas.



Grooved Brain Coral : Maze of the city
There was an enchanted city, filled with creatures that had magical powers. Beings outside the city were jealous and planned an attack on the city. Using their powers the city was hidden inside a treacherous maze full of horrifying surprises, so that no harm could come to the city.cracks light began to seep through light and warmth was brought to our universe. to turn anything that touches it to turn into crystal.



Colonial Coral : Millipedes footsteps
There was a little millipede that wanted to explore the world but knew he was too small to ever see all of it. So he wished on a shooting star so that he could be big. Soon he was gigantic and began exploring, but soon realized that he had walked all around the world.death to anything it touched.



Acroporidae Coral : Seeds of our planet
Our planet was once just a sphere of water in the realm of giants. One day a young giant was running to his mother with a bag full of seeds and spilled them onto our planet, and from that point onwards our planet became more than just a sphere of water, in a world of giants.against the bone-chilling weather and were frozen together, as a mound of snakes.the flower slowly faded and its petals turned brittle.