



TEMPORAL ARCHITECTURE
MINDFULNESS MEDITATION CENTER

Darasawin Chumee

A Thesis Submitted in Partial
Fulfillment of the Requirements
for the Degree of

Bachelor of Architecture

Department of Architecture School of Architecture and Design
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The attempt of this thesis is to study and be able to understand the sequence of space and perception of human that change over time.

This project is located in very special location which standing in flooding area. The site surrounding keeps changing over time. So, it effects on the old existing temple turn to be unusable ruin. In order to bring back the important of this Buddhist temple, temporal space and structure would be experiment and turn to be mindfulness meditation center. To help people reaching the state of contemplation, an architectural space, structure, lightness and darkness will help in human's psychology about how those factors will navigate people from unconsciousness state to the atmosphere that people can find their own space of contemplation.

Therefore, this thesis would study the way to create the temporal spaces and structures that can change to suit with the environment that change over time.

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The success and final outcome of this thesis required a lot of guidance and assistance from many people. I am extremely fortunate to have got this all along the completion of my project. Whatever I have done is only due to such guidance and assistance and I would not forget to thank them.

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Darasawin Chumee

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Chapter 1: Thesis Introduction

1.1 Background of Interest

As of 2010, more than half of the people living in the world reside in urban areas, compared to only 13 percent in 1900 (United Nations 2005; World Health Organization 2012). And while there are many benefits that accompany an urban lifestyle (more sustainable, higher densities, easier access to cultural activities etc.), it also often results in a separation of people from the natural environment. Urban dwellers are at risk of losing a connection with nature that is not only beneficial but essential to their existence as human beings.

Since Richard Louv's book came out in 2005, examining how disconnected children are from nature, both children and adults have only gotten more hooked on digital gadgets and technologies. The problem is that as people spend more time in the electronic world, they are spending less in the nature and experience less of the outdoor space. So, they lose their connections with nature and also lose their senses of time.

On average, a person in a contemporary society lives over 99.9% of his or her life devoid of conscious sensory contact with attractions in nature. We spend over 95% of our time indoors. We think, write and build relationships while closeted from nature. This disconnected state deludes us to believe that our extreme separation from nature does not influence our intelligence, sanity or ability to relate responsibility. The state of the world says otherwise¹.

¹Michael J. Cohen, "Nature Connected Psychology, Creating Moments That Let Earth Teach," Seeking Ecopsychology, accessed October 14, 2016, <http://www.ecopsychology.org/journal/gatherings3/cohen.html>

1.2 Issues of Interest

"The state of mind of the observer plays a crucial role in the perception of time"

Albert Einstein

We have learnt that the nature never stays still. Time passing also has an effect on changing in nature... In architectural term, human's perception changes according to the different kind of spaces. So, how can they get different experiences according to the change of **time** within the architectural space? How time affects the human perception? And, what kind of perception can inspire concentration and self-awareness for human?

Is it possible for architecture to help reconnecting people with the natural world, the very thing that it was conceived to protect against? How can the built environment act as a mediator between humans and nature? How can designs amplify/distill/isolate all of those elements that exist in nature?

1.3 Objectives of Proposal

To study the changing of human's perception according to time by using light, water, and material as elements.

To further understand how **changing of Time** provide the different experiences to people.

To study and identify the site context where is suitable to experiment with time and nature in order to create natural consciousness to occupants.

To explore the structure that provides different human's experiences according to the changing of the environment.

1.4 Hypothesis of Proposal

The architecture is simulated by time that narrates the notion of “Temporal Experience”. Temporal space can raise human's awareness and lead people to the contemplation stage.

1.5 Definition of Terms

Temporal - relating to the temples or relating to time

Temporal Experience of time - fundamental aspects of our experience of time

Time - Thing that changes over and affects environment, space and human perceptions

1.6 Thesis Statement

To provide the architectural sequences and spaces according to the changing of time which gradually navigate people to raise up their true natural and self-awareness.



Chapter 2 : Literature Review

2.1 Temporal Experience of Time

"FUNDAMENTAL ASPECTS OF OUR EXPERIENCE OF TIME" Ernst Pöppel (1978)

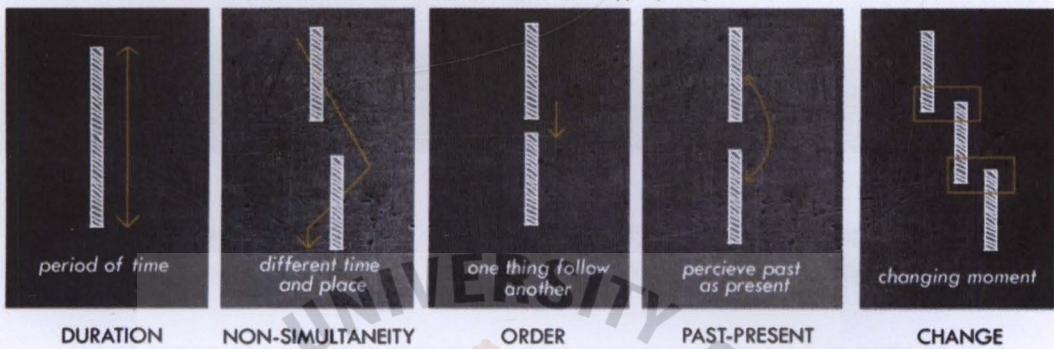


Figure 2.1 fundamental aspect of our experience of time

There is a number of what Ernst Pöppel (1978) calls 'elementary time experiences', or fundamental aspects of our experience of time. Among these we may list the experience of (i) duration; (ii) non-simultaneity; (iii) order; (iv) past and present; (v) change, including the passage of time.² It might be thought that experience of non-simultaneity is the same as experience of time order, but it appears that, when two events occur very close together in time, we can be aware that they occur at different times without being able to say which one came first (Hirsh and Sherrick 1961).

2.2 The Perception of Time

The very expression 'the perception of time' invites objection. Insofar as time is something different from events, we do not perceive *time* as such, but changes or events in time. But, arguably, we do not perceive events only, but also their temporal relations. So, just as it is natural to say that we perceive spatial distances and other relations between objects (Fig.2.2: the dragonfly as hovering above the surface of the

²L.A. Paul, "Temporal Experience," *Journal of Philosophy* 107, no.2 (2010): 333–59.

water), it seems natural to talk about perceiving one event following another (Fig.2.3: the thunderclap as following the flash of lightning), though even there is a difficulty.

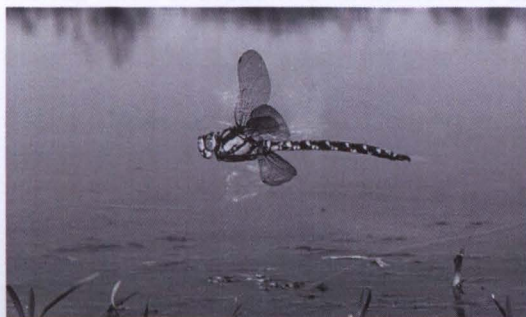


Figure 2.2 dragonfly as hovering
above the surface of the water



Fig.2.3 the thunderclap as
following the flash of lightning

What sense or senses that human used to perceive time? It is certainly not associated with one particular sense. In fact, it seems odd to say that we see, hear or touch time passing. And indeed, even if all our senses were prevented from functioning for a while, we could still notice the passing of time through the changing pattern of our thought. We have a special faculty, distinct from the five senses, for detecting time.

2.3 The Space of Time

We do not live in an objective material world. We live in mental worlds in which the experienced, remembered and dreamed, as well as the present, past and future, constantly fuse into one another. We transform time and space through imagination and dreaming, into the specific human mode of existence-the world of possibilities. The self and the world mutually define one another in a perpetually intertwining process.

Contemporary architectural settings are usually experienced as having their origin in singular moments of time. They evoke an experience of flattened or rejected temporality. Yet, the existential task of architecture is to relate us to time as much as to space. "Architecture is not only about domesticating space," writes Karsten Harries, "it is also a deep defense against the terror of time. The language of beauty is essentially the

language of timeless reality."³ 1 We are equally frightened of being left outside the progression of time as being lost in the anonymity and meaninglessness of space. The mental roles of these two fundamentals existent in all dimensions are curiously reversed. In terms of space, we yearn for specificity, whereas in our temporal experience we desire a sense of continuity. Consequently, architecture has to create a specificity of space and place, and at the same time, evoke the experience of a temporal continuum.



Figure 2.4 Space and Time : Distantly biomorphic imagery of the roof trusses of the Council Chamber

Time is the dimension of experience

that is most frightening to us in its seemingly absolute power over us. We feel helpless in relation to time, and we find ourselves at its mercy. As human's understanding of time lost its primordial cyclical nature, time became linear with an irrevocable beginning and end. We can shape matter and order space, but we cannot throw time off its predestined course. Human's greatest desire, therefore, is to halt, suspend and reverse the flow of time.

Architecture's fundamental task, to provide us with our domicile in space, is recognized by most architects. However, the second task of architecture, to mediate human's relation with the fleeting element of time, is usually disregarded.

³Juhani Pallasmaa, *The Space of Time: Architectural Essays*, (Helsinki: Rakennustieto, 1998), 54.

2.4 Time and Architectural Elements

Time perceiving through 3 architectural elements: light, water and material



Fig.2.5Architectural elements: light, water and material

2.4.1 Time and Materiality

All matter exists in continuum of time; the patina of wear adds the enriching experience of time to the materials of construction. Materials and surfaces have a richly complex language of their own that evolves and changes over time.⁴

2.4.2 Time and Light

Light is a necessity for the functionality of architecture. Its consideration for sensory reverence is critical in preliminary design. How light conveys the essence of a space and depth is a valued determinant of the philosophy of phenomenology.

The perception of space is directly connected to the way light integrates with it. What we see, what we experience and how we interpret the elements is affected by how light interacts with us and with the environment. Regarding architecture, in whatever dimension it can be analyzed, either as space, as material or as color, it is essentially dependent on the lighting situation that involves both the object and the observer.

2.4.3 Time and Water

Joseph Brodsky gives a surprising meaning to time: "I always adhered to the idea that God is time, or at least that his spirit is"⁵He makes other intriguing associations: "I simply think that water is the image of time"⁶, and: "Water equals time and provides beauty with its double."⁷In the poet's imagination, God, time, water and beauty are connected to create a mysterious cycle. These associations are not, however, Brodsky's alone; Gaston Bachelard, and Adrian Stokes, for instance, make similar suggestions.

⁴ Juhani Pallasmaa, *Hapticity and Time: Architectural Essays*, ed. Peter Mac Keith (Helsinki: Rakennustieto, 2005), 52.

⁵ Brodsky, *Watermark*, op. cit., 42

⁶ *Ibid.*, 43

⁷ *Ibid.*, 134.

Water is also a frequent image in various art forms. Think of the fusion images of water and the extraordinary sense of time, the architecture of water by Sigurd Lewerentz, Carlo Scarpa and Luis Barragan. Water dripping from a giant seashell into the dark wound in the brick floor at the Klippan Church of Lewerentz, the underwater architecture of the Brion-Vega Chapel of Scarpa, and the reflecting veils of water, as well as the images of rushing water in Luis Barragans buildings, all evoke a heightened and sensitized experience of duration. The reflective surface of water hides its depth, as the present conceals the past and future. The life-supporting image of water also contains the mortal images of deluge and draught. We are suspended between the opposites of birth and death, utopia and oblivion.

Images of water turn into instruments of concretizing the passing and persistence of time. The dialogue of architecture and water is truly erotic. There is a special fascination in all towns that are in dialogue with water. As Stokes remarks: "The hesitancy of water reveals almost like a textile of visual and audible ingredients architectural immobility."⁸ The sound of the waterfall at Frank Lloyd Wright's Falling water House creates a dense sensuous weave with architecture and the enveloping forest, almost like a textile of visual and audible ingredients; one dwells comfortably in a natural duration next to the beating heart of reality itself.

2.5 Theory of Phenomenology

Question of Perception by Seven Holl, Juhani Pallasmaa and Alberto Perez-Gomez

The five sensory in experiencing the space. Our skin is the middleman to touch the world. Architecture are considered to be the world for the living. Living in the world fills with senses and feelings. To design or create a good architecture is to make the architecture which would be that the people feels the architecture itself.

⁸Adrian Stokes, "Prologue: at Venice", *The Critical Writings of Adrian Stokes*, vol II (Plymouth: Thames and Hudson, 1978), 88.

Human experience in space with five senses;

Eyes: Perceive, the beauty of space: Light and Shadow are the main element that integrate directly to the eyes.

Ears: Hearing the space through the sound of wind, water and nature. Some buildings need peace, silence and respect. Material would be selected carefully. The auditory senses create an Omni-directional experience for the user. A space can be understood by the amount of background noise which is directly influenced by the amount of acoustical treatment used. The omni-directional portion of the auditory senses allows for noises to be picked up from any direction.⁹ Peter MacKeith expresses that, "we are not normally aware of the significance of hearing in spatial experience, although sound often provides the temporal continuum in which visual impressions are embedded". Buildings create sounds and reflect sound that bounce off the building back to the ear. These sounds work with the other senses which become associated with past experiences to determine the feeling within a space is to silence all external noise, allowing the users to focus their attentions on what is occurring around them. "The most essential auditory experience created by architecture is the art of petrified silence"¹⁰. The sense of sound creates intimacy, invitation, rejection or hospitality depending on the size of space and the materials that the space is made of.

Nose: Smell reminds the thoughts. Thoughts of what has passed before. The smell of wood, seeps through the panel wall along the church. The sense of smell is also greatly defined by the size of the space and materials used to create it. The most persistent memory of any space is often produced by its smell. Human beings can detect over 10,000 different odors and scents which make the sense of smell so prominent. "A particular smell makes us knowingly re-enter a space completely forgotten by the retinal memory; the nostrils awaken a forgotten image, and we are enticed to enter a vivid

⁹Juhani Pallasmaa, *Encounters: Architectural Essays*, ed. Peter MacKeith (Helsinki: Rakennustieto, 2005), 40

¹⁰*ibid*, pp. 51.

daydream”¹¹. The sense of smell is unique because it is very hard to describe to someone else what something smells like. Within a space of architecture there will be a unique smell which will triggers an instant feeling and perception of the space.

Mouth: Taste of the space, the satisfaction of experiencing the sense of taste is one of the most intimate sense that the body can experience. “There is a hunger of the eyes, and doubtless there has been some permeation of the visual sense, as of touch, by the once all-embracing oral impulse”¹². Taste can be recognized from all the other senses, but is most Highly associated with the sense of smell. He explains, “Our sensory experience of the world originates in the interior sensation of the mouth, and the most archaic origin of architectural space is in the cavity of the mouth”. Experiencing architecture can bring the world into intimate contact with the body.

Skin: Touch the detail of space, material and texture are considered, especially textures that imitate nature. The tactile sense of touch is important in a full experience of a space. Most often we experience touch through the bottom of our foot by sensing the different density and textures of the ground below us as we walk. Touch does not always have to be by the sense of temperature interacting with our skin. “Skin reads the texture, weight, density and temperature of matter”¹³. Every surface we come into contact with we connect to the space and interact with it by creating associations just like every other sensory receptor.¹⁴ Juhani Pallasmaa stated, “Good architecture offers shapes and surfaces molded for pleasurable touch of the eye. ‘Contour and profile are the touchstone of the architect,’ as Le Corbusier put it, revealing a tactile ingredient in his otherwise ocular understanding of architecture”

¹¹Juhani Pallasmaa, *Encounters: Architectural Essays*, ed. Peter MacKeith (Helsinki: Rakennustieto, 2005), 52.

¹²*ibid.*, pp, 59.

¹³*ibid.*, pp, 56.

¹⁴*ibid.*, pp, 59.

2.6 Case study

These case studies show the idea of how to use three architectural elements that was mentioned to provide perception of time.

The Langen Foundation

The Langen Foundation is located at the Raketenstation Hombroich, a former NATO base, in the midst of the idyllic landscape of the Hombroich cultural environment. This museum is intended to house and exhibit a collection of Eastern and contemporary art built up by Mrs. Langen and her husband. In response to the program, Ando designed two different spaces: a still space filled with soft light for Eastern art and a dynamic space for contemporary art.

The using of shallow water as a floor gives many benefits such as the sense of calmness to the space.



Figure 2.6 The Langen Foundation : water as a calmness surface

The Naoshima Contemporary Art Museum

Naoshima Contemporary Art Museum was designed by the architecture Tadao Ando, the museum stands on a promontory on a small island floating in the Inland Sea. The building is relaxed and at rest-stretched out as if to enjoy the view of the sea. The spacious site creates an impression of brightness, lightness and outward orientation; curved lines seem to dance joyously. The inward-oriented seriousness of Tadao Ando's works in cities is absent; instead, there is a sense of release about this building. The

eluding geometry design of an inhibiting, prescriptive character, the building has seemingly fled to nature in search of freedom and release. We sense a at work. Walls constructed through natural stone, terraces, and centrifugal force plazas are arranged throughout the site. Here, nature and architecture disport themselves; climate and geometry melt into one another.

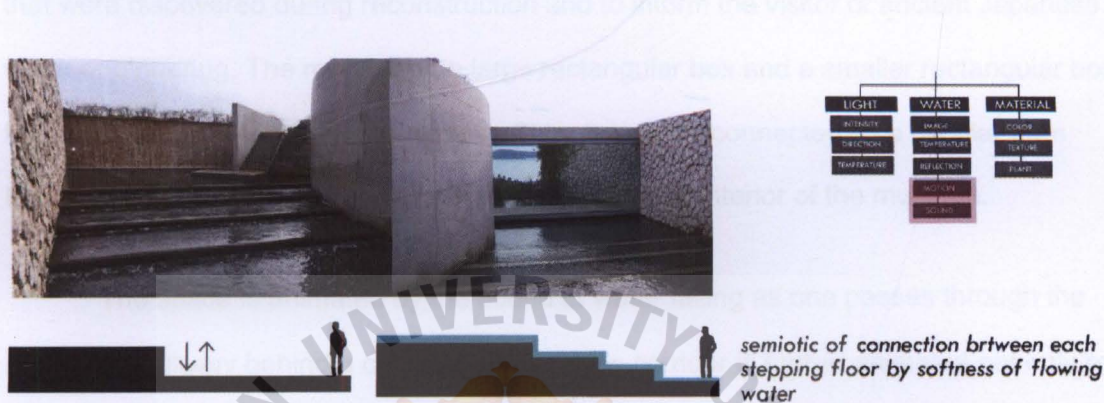


Figure 2.7 The Naoshima Contemporary Art Museum : movement surface

The cylinder, on the other hand, is a node integrating vertical lines of circulation. However, because of the sloping topography, we are underground in one room but find ourselves above ground in the next. As we move, the landscape blends into the geometry; nature and geometry are at play. The landscape breaks through the perimeter of the building and invades the interior; the rooms are filled, each with a different landscape.

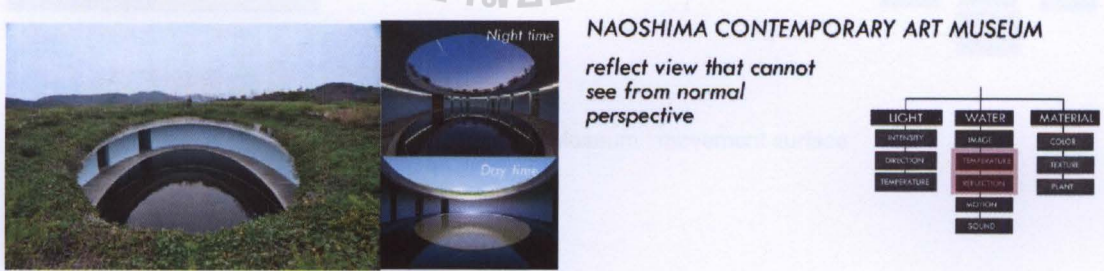


Figure 2.8 The Naoshima Contemporary Art Museum: reflection of nature

The Sayamaike Museum

The Sayamaike Historical Museum is located on the edge of Sayamaike Pond, a reservoir in Osakasayama, Japan, dating back to the seventh century which was converted into a flood control dam. The museum was built to house the relics of the site that were discovered during reconstruction and to inform the visitor of ancient Japanese water engineering. The museum is a large rectangular box and a smaller rectangular box flanked by a water plaza. The two rectangular forms are connected by a circular form that serves as part of the rich spatial sequence into the interior of the museum.

The space is animated by the sound of water falling as one passes through the recessed walkway behind a curtain of water. This corridor is further animated not only by the sound of water but by light as it hits the water.

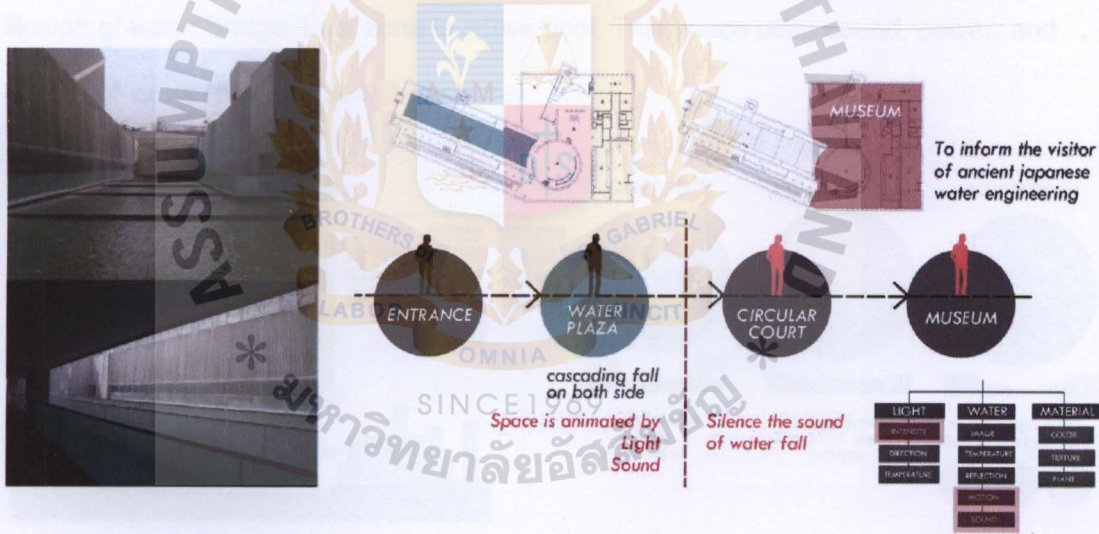


Figure 2.9 The Sayamaike Museum : movement surface

Forth Worth Water Garden

This park was designed by Phillip Johnson from New York. It was constructed by Thos. S. Byrne General Contractors in Fort Worth. The water park is an oasis in the concrete jungle in the center of the town. The park features three pools of water: the aerating pool, the quiet pool, and the active pool with water tumbling down a series of terraces down to a small pit. Recently, the gardens have been modified to allow direct access from the Convention Center expansion. This includes a new north entrance to the park and restoration of the multiple sprays in the aerating pool.

There are 3 zones which are quiet zone, aeration pool, and active pool. Each zone has its own function and identity. The Quiet zone is used for meditation so the space is private and provides calmness to users. The Aeration pool, there is mist create illusion of water bridge. Last zone is active pool. This space uses sound, power, and motion of water to create sense of space.



Figure 2.10 Forth Worth Water Garden

Water Temple

Water Temple is one of those sensorial experiences that changed the face of age-old tradition of Japanese temple architecture. The Temple rises in **Hompukuji**, a small town in the northern part of Awajishima Island, in a hilly landscape.



Figure 2.11 Water Temple : calmness surface

Church on the Water

"You cannot simply put something new into a place. You have to absorb what you see around you, what exists on the land, and then use that knowledge along with contemporary thinking to interpret what you see."¹⁵ This philosophy of Tadao Ando is ever apparent in his design, as he is celebrated for the attention he pays to nature and the relationship between interior and exterior spaces of his buildings. Tadao understands the changing of time that effect to the perspective from the architecture. So, he uses the architecture as a frame to present outside view.



Figure 2.12 Church on the Water : reflection of nature

¹⁵"AD Classics: Church on the Water," Archdaily, last modified December 20, 2010 accessed October 3, 2016, <http://www.archdaily.com/97455/ad-classics-church-on-the-water-tadao-ando>

Work Modern Art Museum of Forth Worth



Figure 2.13 Work Modern Art Museum of Forth Worth

Azuma House

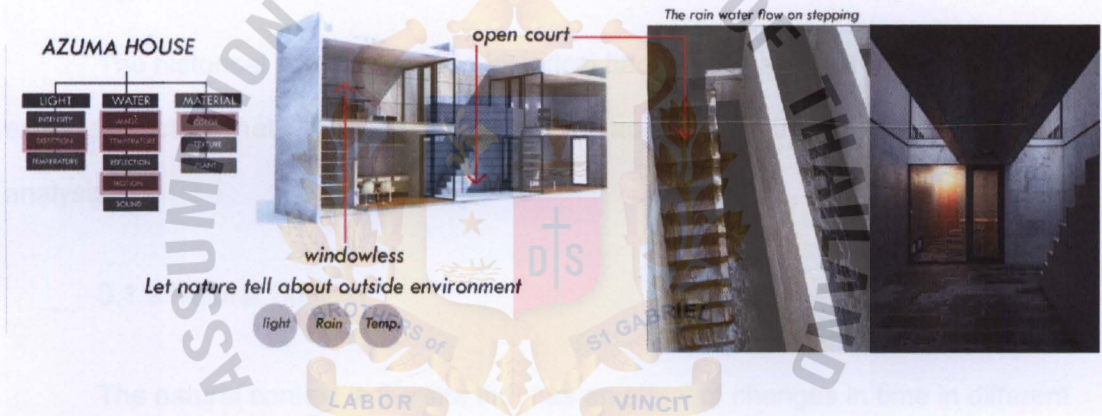


Figure 2.14 Azuma House : natural representation

The first impression of Tadao's architecture is its materiality. His large and powerful walls set a limit. Second impression of his work is the tactility. His hard walls seem soft to touch, admit light, wind and stillness. Third impression is the emptiness, because only light space surrounds the visitor in his building. He has three characteristics in his design concept, which are: use of almost perfect geometric shapes, the blending of nature and architecture, and his endless studies of glass and concrete.

Chapter 3: Contextual Position

3.1 District Selection

Concepts in district selection start from the location where the timing issue and other criteria are expected to occur which may have an impact on the site. In addition, the site district selection must have the potential in terms of both historical and natural context.

3.1.1 Historical Context

The historical context includes historical background and historical buildings or existing structure that will be kept for renovation according to the new programming analysis.

3.1.2 Natural Context

The natural context is the site that has an effect of changes in time in different ways. For example, changes of water level according to the season variation.

According to the project that aims to raise human awareness of nature through architectural space by using space and time as a theory, the criteria of district and site selection are as followings.

- Site need to be nearby natural water resource.
- Site need to relate to nature, water, and time.
- Site should be in a historical area or near historical place.
- Site should have an old existing construction.

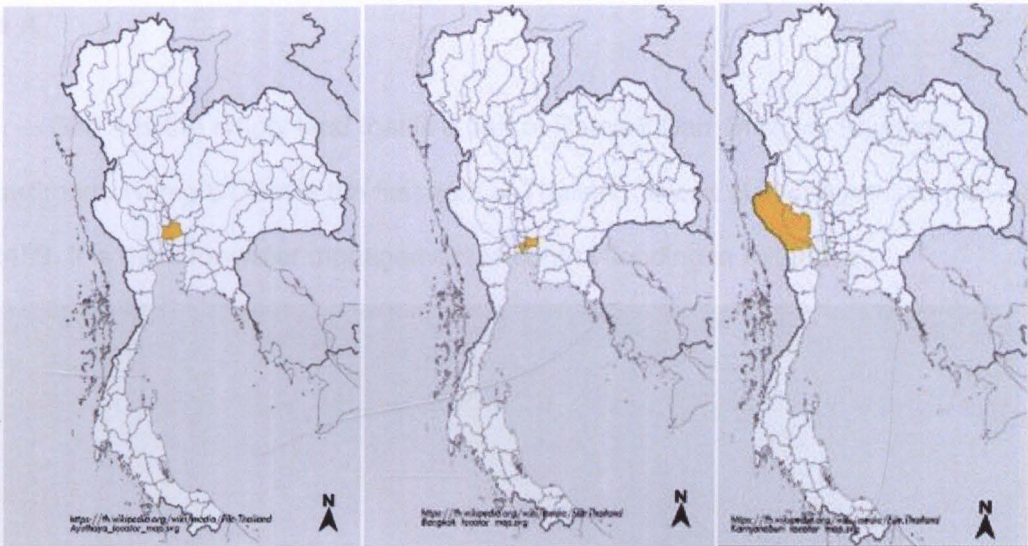


Figure 3.1Map: AyutthayaFigure 3.2Map: Bangkok Figure 3.3 Map: Kamchanaburi

Sense of place is related with the fascinated existences of the selected site such as an old structure, special natural context and others.

3.2 Site Selection and Site Analysis

3.2.1 Site Selection

In order to select the most appropriate site, the issue of time and water that relates with the site is the main factor that would be focused. Then these issues would be considered as a secondary factor.

- Transportation
- Identity of Culture
- Density of Community

Site A

Site A is the empty land that is a part of Rama 6 Dam in Royal Irrigation Department. Rama 6 Dam is the first dam of Thailand. It was built in Ayuthaya province in 2459. It is used for water management to control flooding in Ayuthaya.

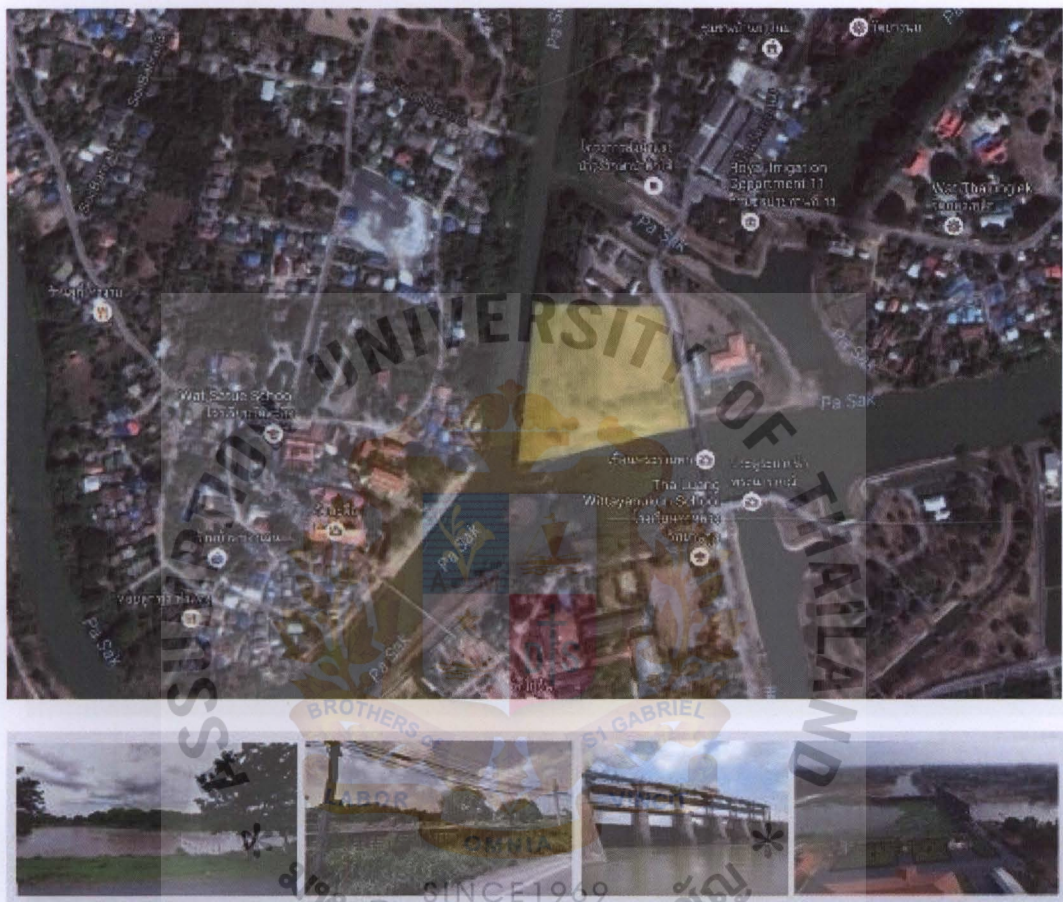
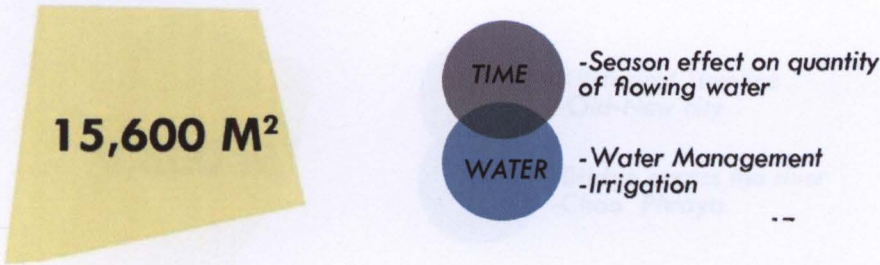
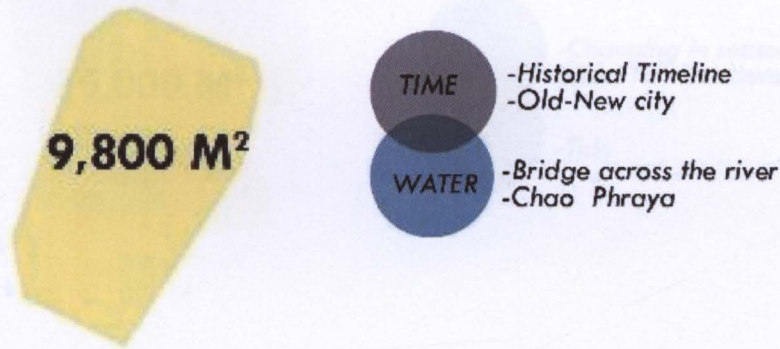
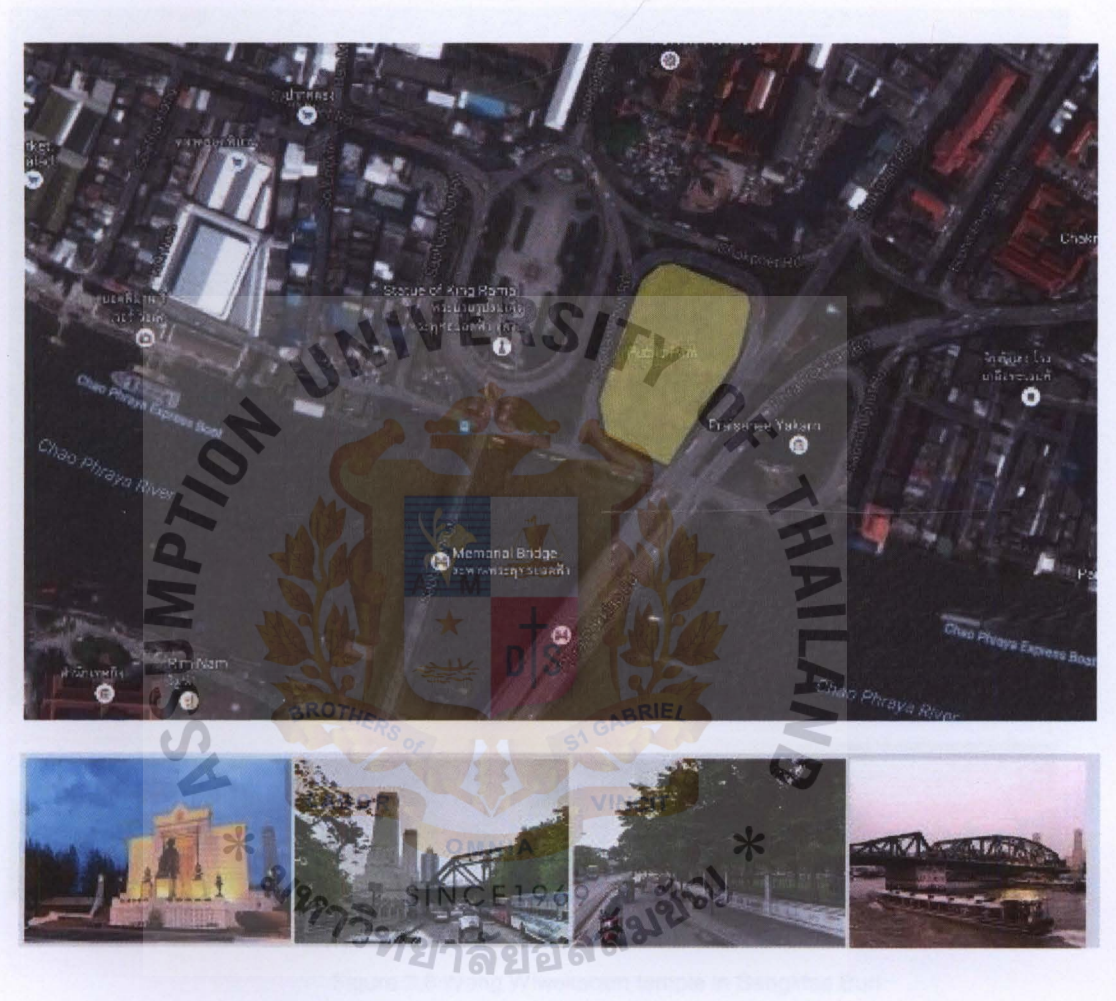


Figure 3.4 Rama 6 dam in Ayuthaya



Site B

Site B is a park close to the Memorial Bridge. This site is located on Chao Phraya River bank. The importance of the Memorial Bridge is that it connects between old and new city of Thailand which are Krung Thonburi and Phra Nakhon.



Site C

Site C is the existing Wang Wiwekaram Temple with fascinating existing buildings. This temple is called “Under water Temple” because it is flooded in every rainy season and gets drowned under the water.



Figure 3.6 Wang Wiwekaram temple in Sangkhla Buri

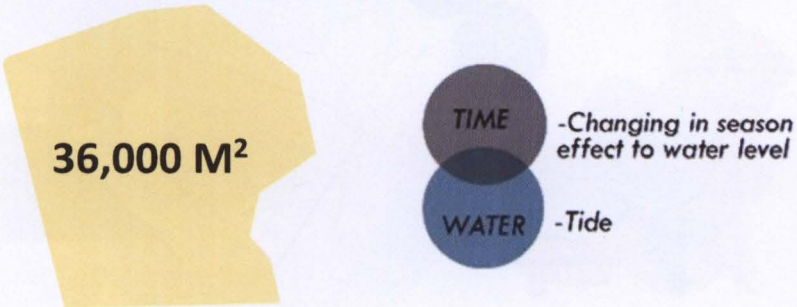
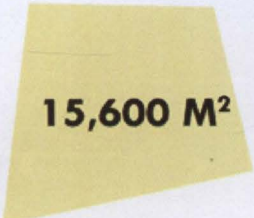




Figure 3.7 Sangkhla Sub Map to Mahon road

The site comparison

Table 3.1 Site comparison

Site A	Site B	Site C
 15,600 M²	 9,800 M²	 36,000 M²
<div>16</div> <div><div><div><div></div><div></div></div><div>Near natural water resource</div></div><div><div><div></div><div></div></div><div>Near community area</div></div><div><div><div></div><div></div></div><div>Strong cultural area</div></div><div><div><div></div><div></div></div><div>Historical area or near historical places</div></div><div><div><div></div><div></div></div><div>Relating with nature, water, and time</div></div><div><div><div></div><div></div></div><div>Old existing construction</div></div><div><div><div></div><div></div></div><div>Have transportation to the site</div></div></div> <div><div>2</div><div>3</div><div>3</div><div>2</div><div>2</div><div>1</div><div>3</div></div>	<div>16</div> <div><div><div><div></div><div></div></div><div>Near natural water resource</div></div><div><div><div></div><div></div></div><div>Near community area</div></div><div><div><div></div><div></div></div><div>Strong cultural area</div></div><div><div><div></div><div></div></div><div>Historical area or near historical places</div></div><div><div><div></div><div></div></div><div>Relating with nature, water, and time</div></div><div><div><div></div><div></div></div><div>Old existing construction</div></div><div><div><div></div><div></div></div><div>Have transportation to the site</div></div></div> <div><div>2</div><div>3</div><div>3</div><div>2</div><div>2</div><div>1</div><div>3</div></div>	<div>18</div> <div><div><div><div></div><div></div></div><div>Near natural water resource</div></div><div><div><div></div><div></div></div><div>Near community area</div></div><div><div><div></div><div></div></div><div>Strong cultural area</div></div><div><div><div></div><div></div></div><div>Historical area or near historical places</div></div><div><div><div></div><div></div></div><div>Relating with nature, water, and time</div></div><div><div><div></div><div></div></div><div>Old existing construction</div></div><div><div><div></div><div></div></div><div>Have transportation to the site</div></div></div> <div><div>3</div><div>2</div><div>3</div><div>3</div><div>3</div><div>3</div><div>2</div></div>

The site C at Karnchamaburi is the most suitable according to the criteria of both general and timing issues.

3.2.1 Site Analysis

The site is located in Sangkhlaburi district, Karnchanaburi, Thailand

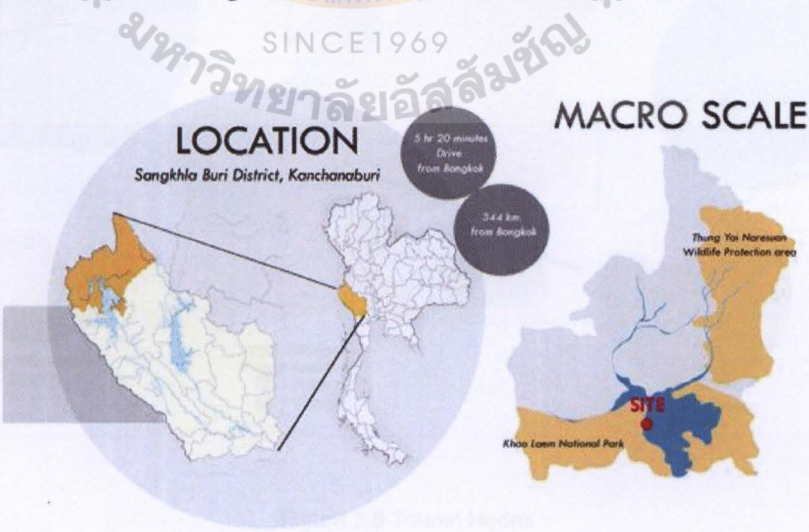


Figure 3.7 Sangkhla Buri Map in Macro scale

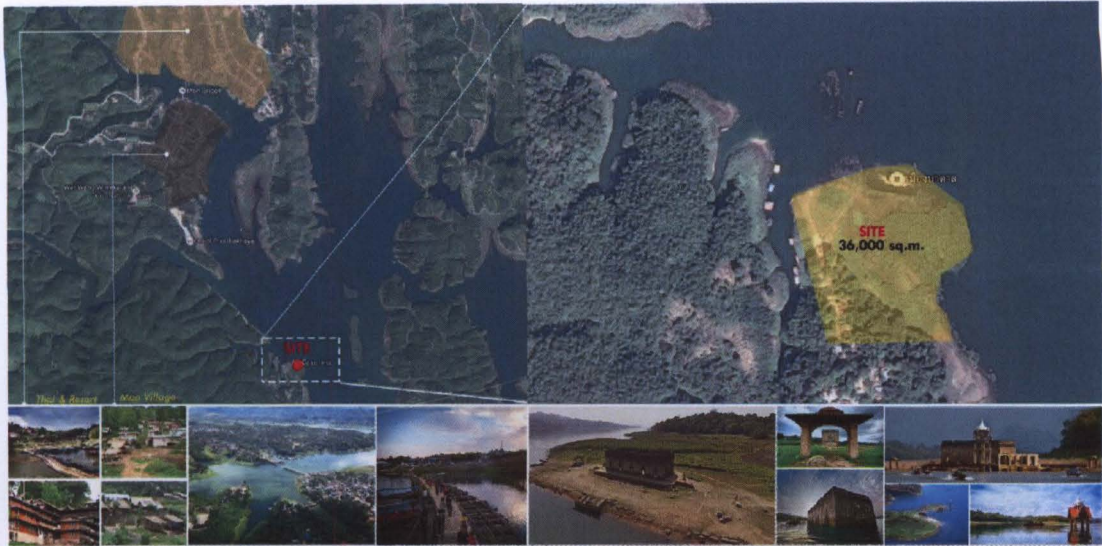


Figure 3.8 Sangkhla Buri in Micro scale and view

There are lots of tourist attractions. Most of them are religious and natural sites such as Temple, National Park, and Pagoda.



Figure 3.9 Tourist Nodes

Physical Condition

The site is located among the natural environment. So, the natural conditions will be considered as a main factor such as greenery area, water level, sun direction, etc.



Figure 3.10 Green area

Figure 3.11 wet and dry area



Figure 3.12 Sun direction: Light & Shadow

Figure 3.13 Water Level diagram

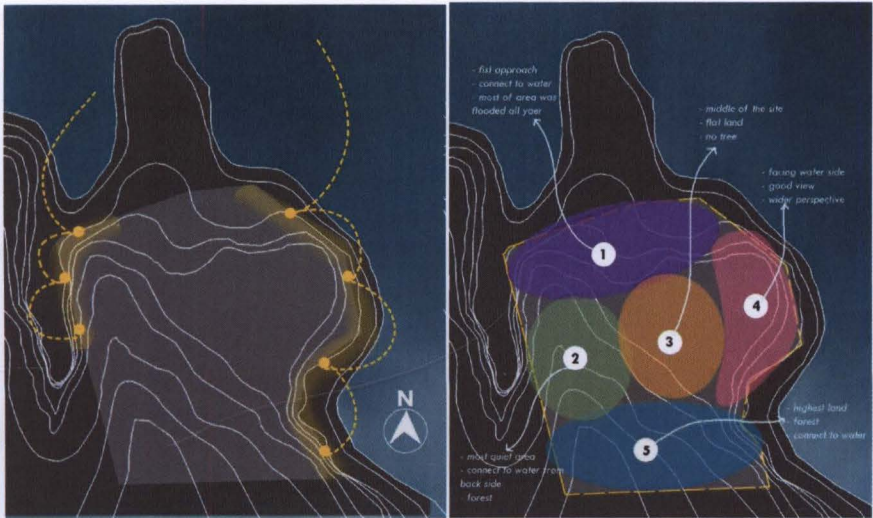


Figure 3.13 Approach

Figure 3.14 Zoning analysis

Water level - Seasoning

Water level changes in every season so understanding of the height of the water level in each season is important to design process.



Figure 3.15 Water Level diagram

Background of the site

This site is the existing Wang Wiwekaram Temple with fascinating existing buildings. This temple is called “Under water Temple” because of it is flooded in every rainy season and get drowned under the water.



Figure 3.16 Background of the site diagram

User and Tourist

Sangkhla Buri became famous and popular among Thai and foreigner since the Mon village was promoted. Tourist came to this place not only for relaxation but also for its cultural identity. The most popular season is summer, there are lots of festival and activities in this season.

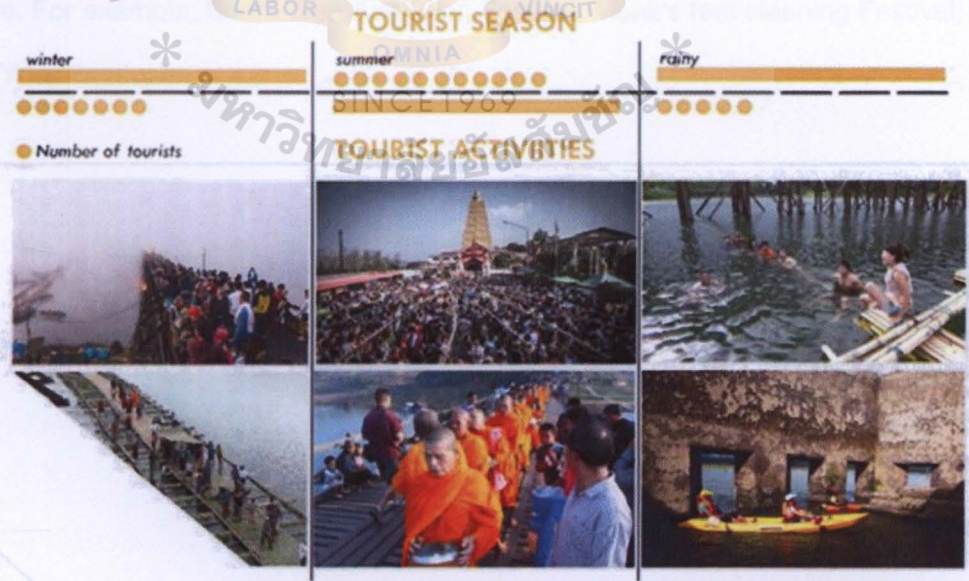


Figure 3.17 Tourist season diagram

Social and Population

There are 3 groups of people living in this area: Thai, Mon, Karen. So, this area is a mix cultural area and has its own identity.



Figure 3.18 Social and Population diagram

Cultural condition

Mon and Thai people in this area have strong relationship with Buddhism. In their routine always relate with religion from day until night.

In Sangkhla Buri, there are lots of uncommon festivals that we might never know before. For example, Bodhi Tree Adoration Festival, Monk's feet cleaning Festival, and New Year Festival.

SINCE 1969

Figure 3.20 Monakh festival



Figure 3.19 Culture and Festival

Manmade Feature

Most of architectures and buildings in this area used natural materials especially bamboo and wood. Because of Mon culture so the structure and pattern of architectures are very unique in style. The material that they use for wall and fence is bamboo by making a weaving pattern out of it.

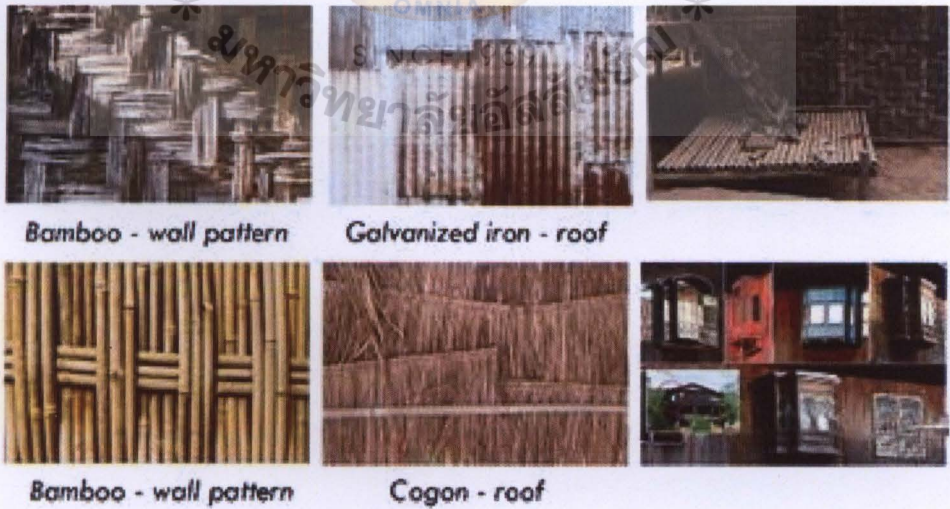


Figure 3.20 Manmade feature

There are two types of house: permanent and temporary architecture. Permanent houses are built in 1-2 stories. In some house, the basement is lifted up to allow ventilation and provides activity area under the house. Temporary houses are floating houses that the structure can be moved to other locations according to the water. This type of houses is located along the waterfront. So, the structure can float up and down according to the water level.



Figure 3.21 Local house

Fascinated building in the site

There are 3 fascinating buildings which used to be part of the temple before: Bot, Kuti (monk resident) and bell tower. These fascinating buildings will be kept for renovation according to new programming analysis.



Figure 3.22 Fascinated building in the site

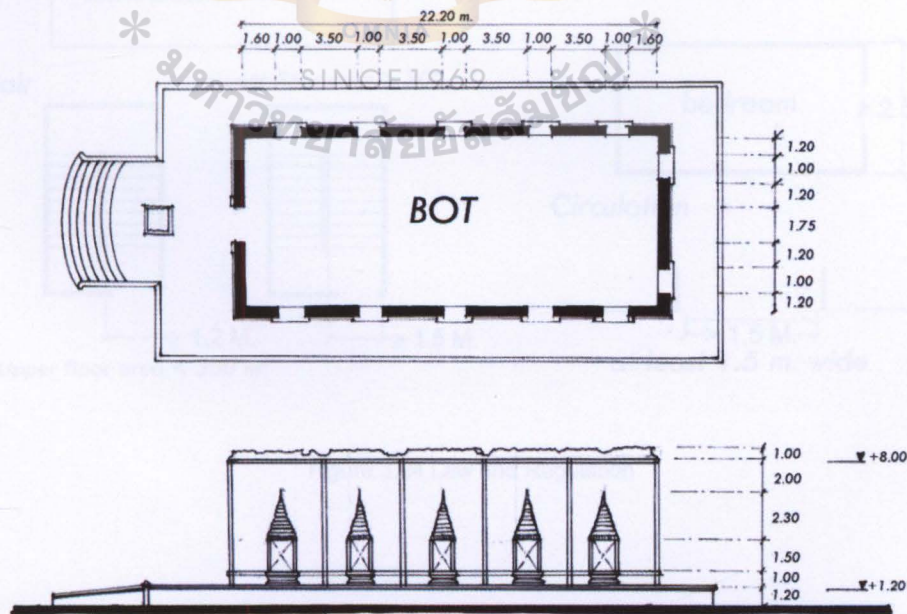


Figure 3.23 Fascinated building dimension

3.3 Law and Regulation

Setback from the water front

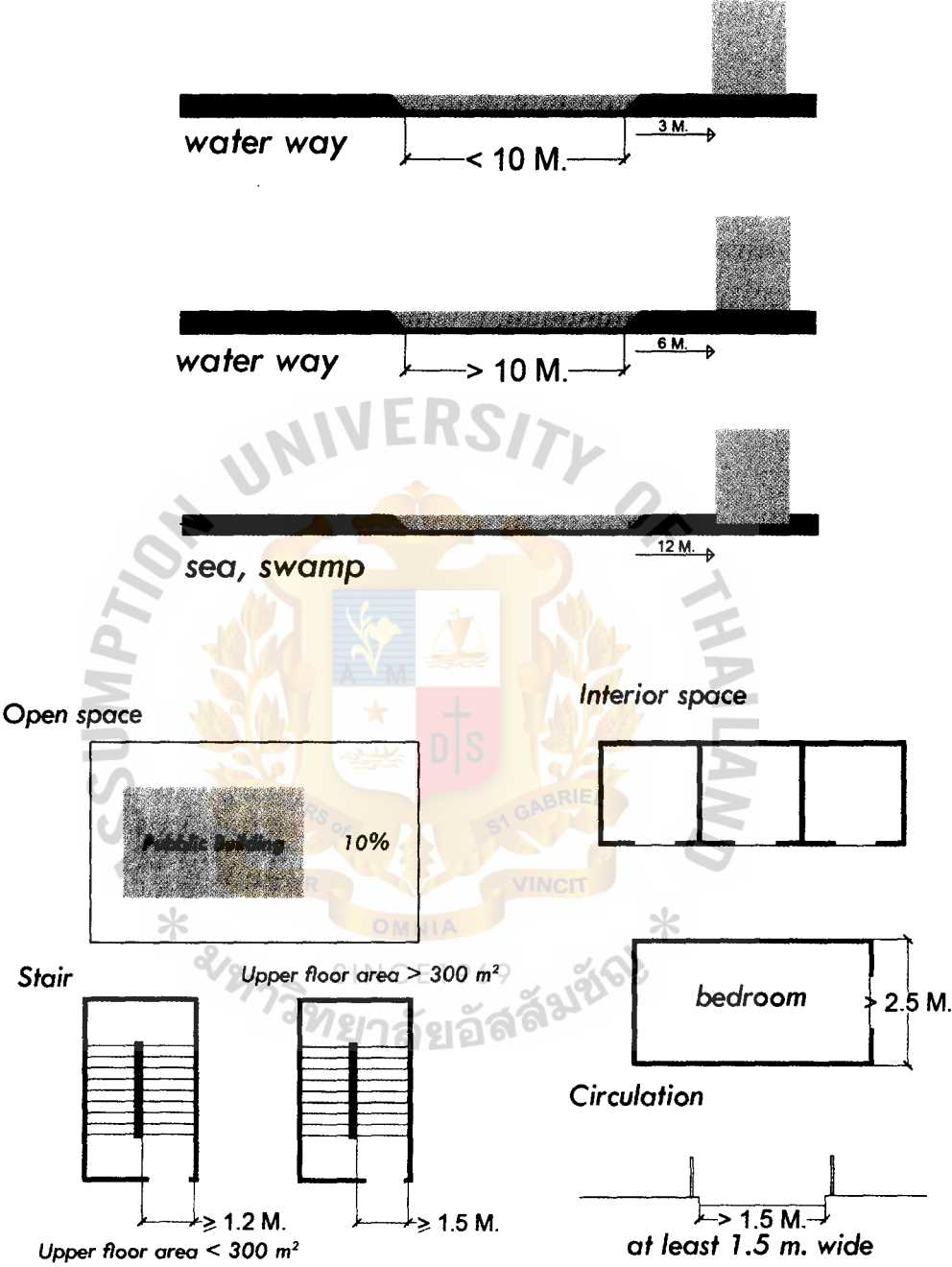


Figure 3.24 Law and Regulation

Chapter 4: Potential Design Response

4.1 Design Scope

According to the site analysis, the very outstanding aspect of the community around the site is their culture and belief. People in this area have strong relationship with Buddhism for a long time. So, the program that would be provided is focusing on the Temporal Architecture that provides Buddhist meditation and natural learning space.

Using the theory about time and space to navigate people from being unconsciousness to the atmosphere where people can visualize nature.

4.2 Programming Analysis

4.2.1 Program

Main program of the project is meditation. According to Buddhist meditation, there are 2 main types of meditation. First is Samata which is the first step by using only 1 sense to practice. Second is Vipassana which is deep meditation that can use every type of body sensations to practice.

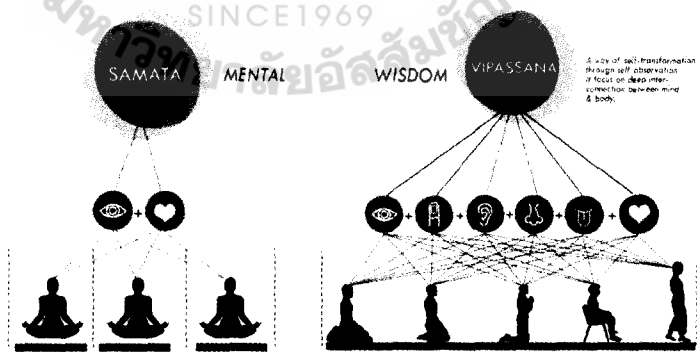


Figure 4.1 Types of Meditation: Samata and Vipassana

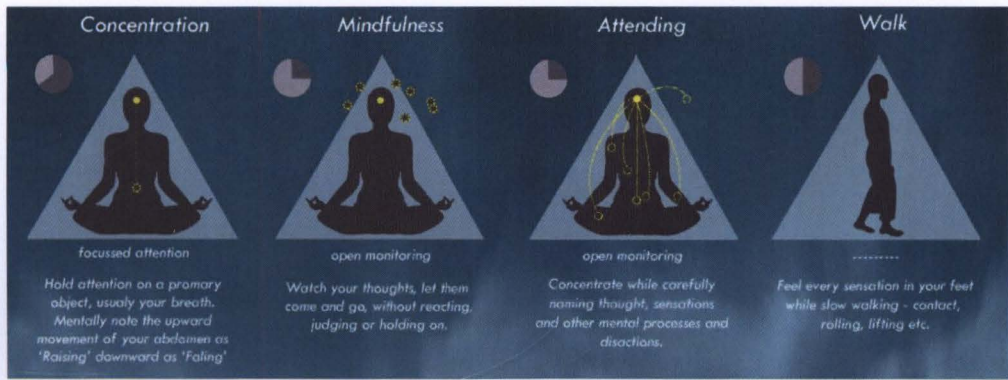


Figure 4.2 Types of Vipassana meditation

Programs in the meditation center are divided into 4 parts which are administrative area, meditation area, accommodation area, and support area.

Administrative area

- Lobby
- Reception
- Office
- Meeting room
- Health care room

Meditation area

- Worship hall
- Meditation hall
- Walk meditation area
- Multipurpose room
- Individual meditation cell

Accommodation area

- Group room for male and female
- Bath house
- Toilet

- Gathering space
- Single room for male and female
- Cafeteria
 - Dining area
 - Kitchen area
 - Washing area
 - Preparing area
 - Storage
 - Toilet

Support area

- Furniture and Storage
- Workshop
- Services area
 - Kitchen and support factors
 - Worker resting area
 - Laundry area
 - Mechanical room
 - Storage
 - Garbage room

4.2.2 User and Program Analysis

Users are divided into 3 groups according to the program analysis. First is the users who take 1 day course for meditation. This group of users use only administration program and meditation program. But the second and third groups that take 3 and 7 days course use every program including accommodation area.

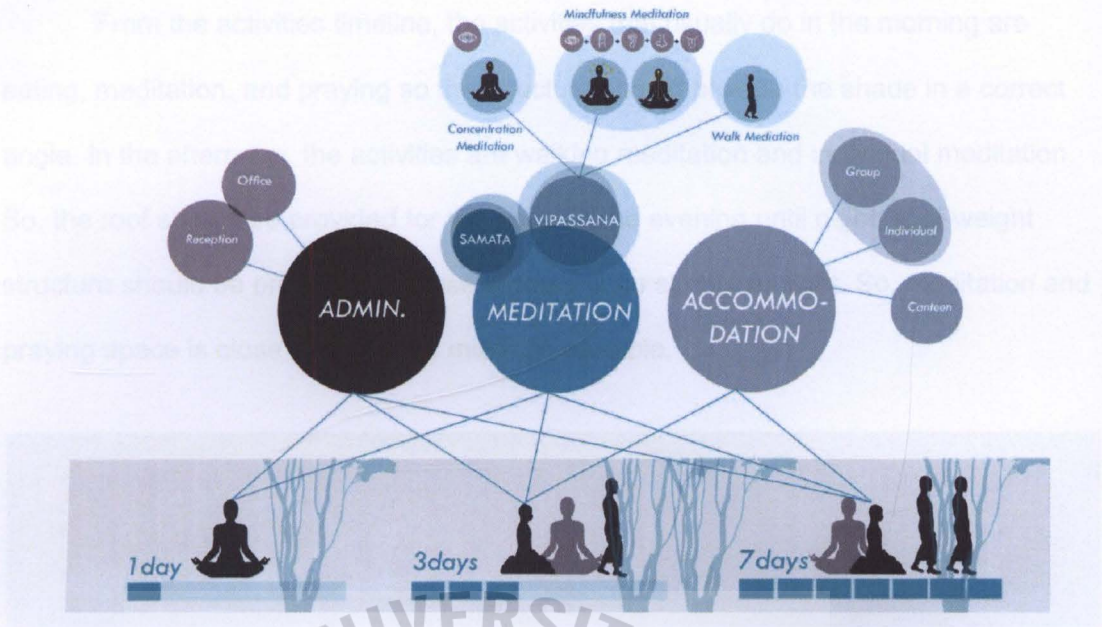


Figure 4.3 User and Program Diagram

4.2.3 User and Activities timeline

Activities that are provided in Meditation center according to the case studies are meditation, walk meditation, and pray. The following activities timeline is a relationship of activities and space between monks and meditators.

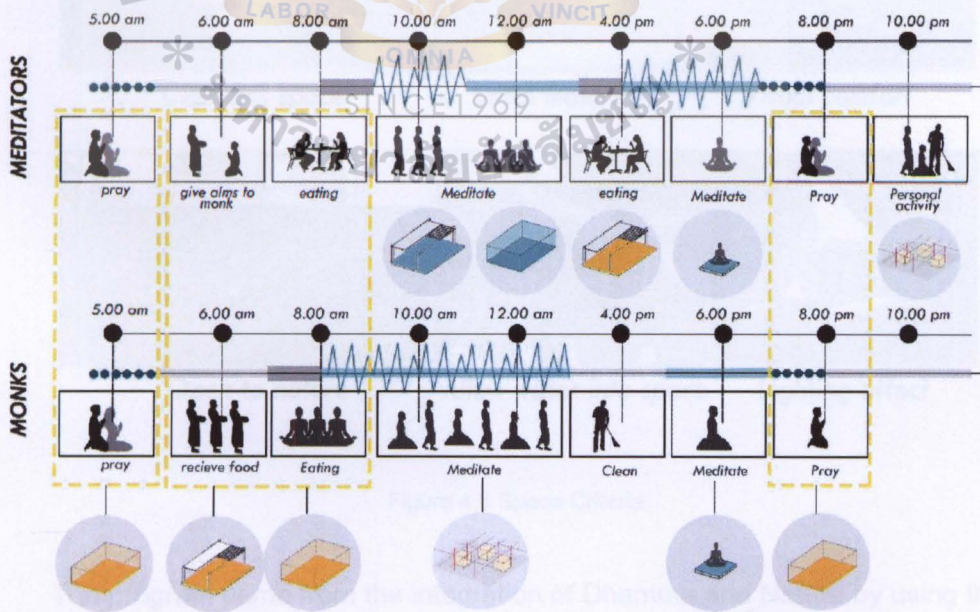


Figure 4.4 User and Activities Timeline Diagram

From the activities timeline, the activities that usually do in the morning are eating, meditation, and praying so the structure should provide the shade in a correct angle. In the afternoon, the activities are walking meditation and individual meditation. So, the roof should be provided for this area. In the evening until night, light weight structure should be provided because of there is no strong sunlight. So, meditation and praying space is close to nature as much as possible.



Figure 4.5 Space and Activities Diagram

To succeed in the program of meditation, sense of space need to be considered as a primary issue, these kinds of space would be applied to the program.



Figure 4.6 Space Criteria

The program came from the integration of Dhamma and Nature by using the old construction of the temple and attach with the nature meditation program.

4.3 Organization Structure

Cooperation between government and private organization which is Wat Wang Wiwekaram Temple is the part that take care about the meditation activities. But government takes care of management part.

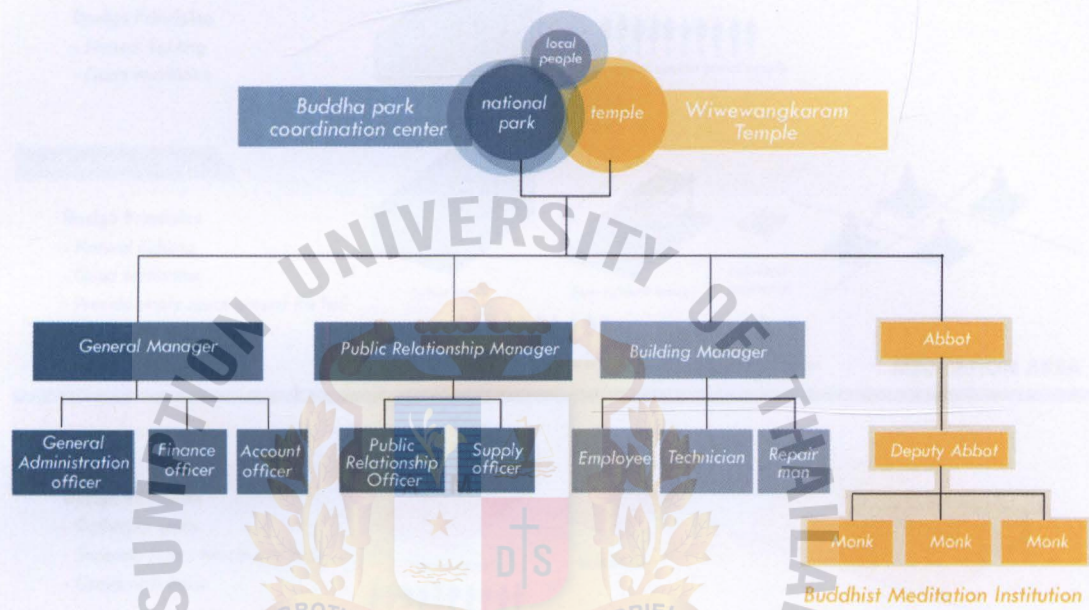


Figure 4.7 Organization Diagram

4.4 Activities / Space

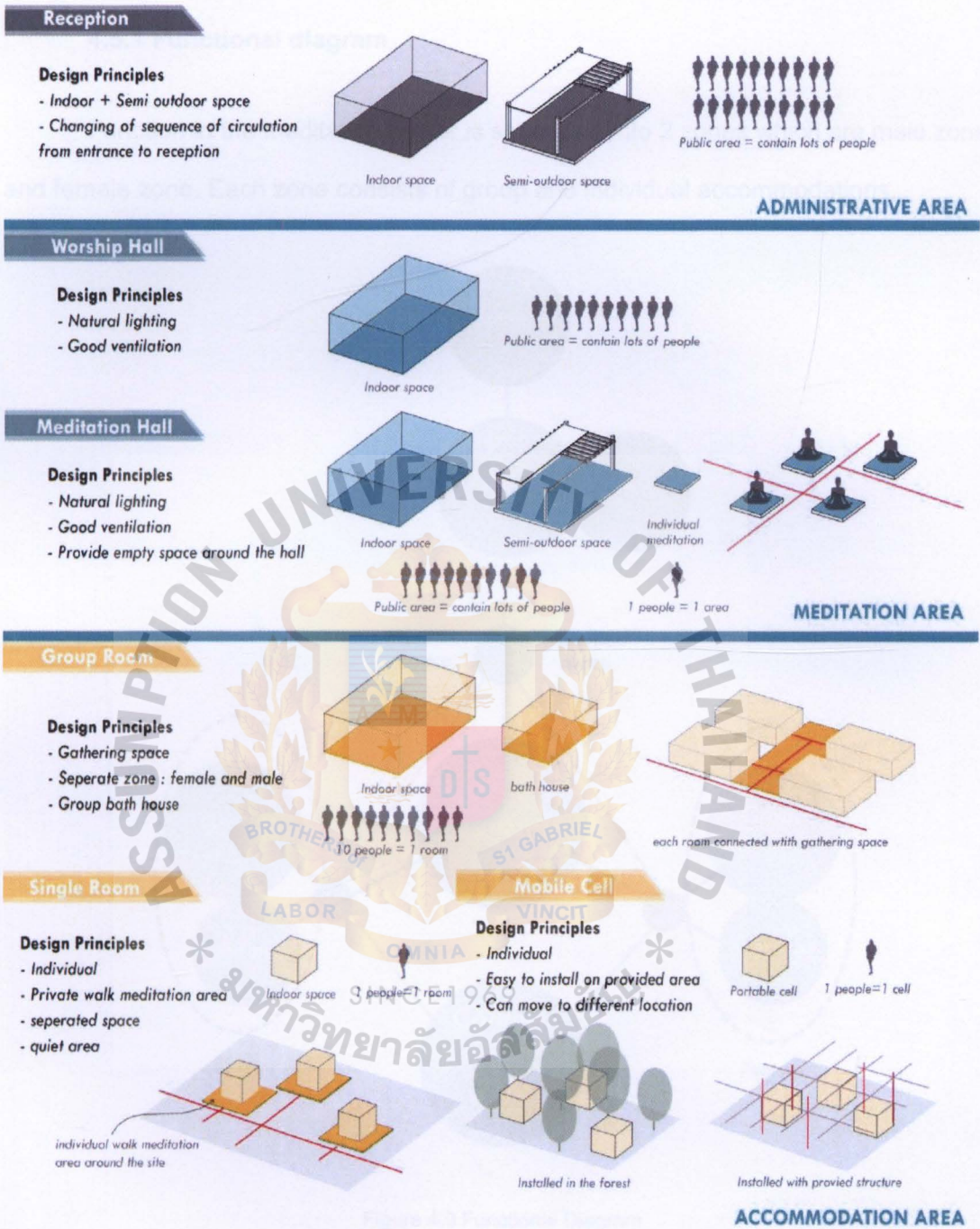


Figure 4.8 Activities and Space diagram

4.5 Space Summary

4.5.1 Functional diagram

Function in the meditation center is separated into 2 zones which are male zone and female zone. Each zone consists of group and individual accommodations.

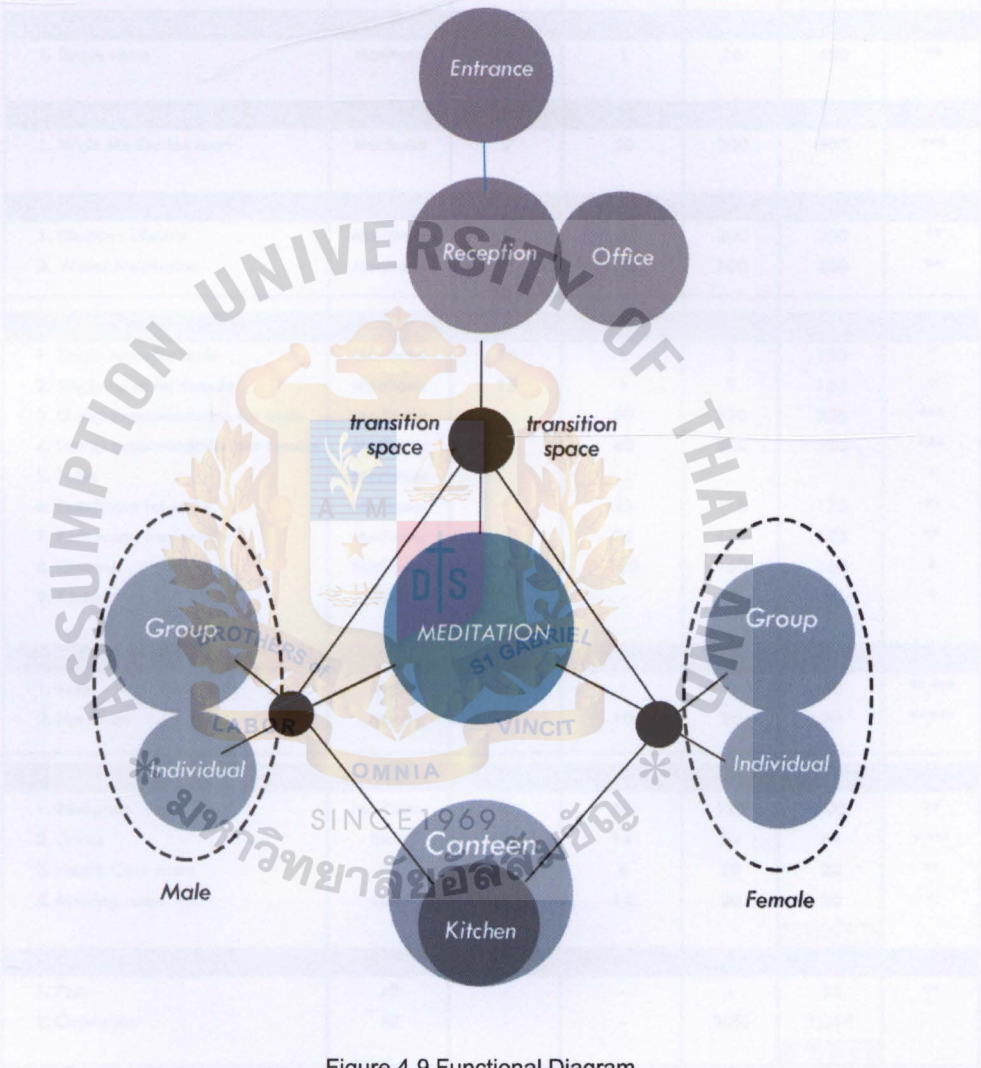


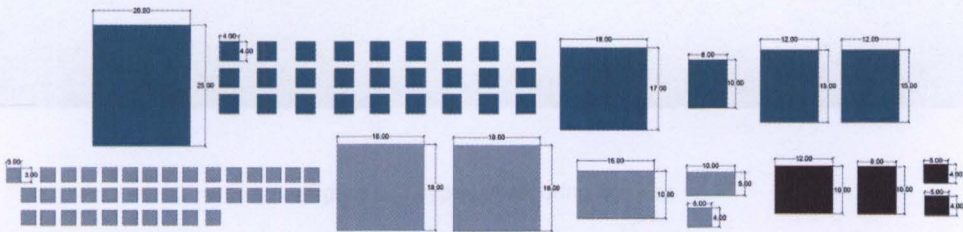
Figure 4.9 Functional Diagram

4.5.2 Area Summary

Table 4.1 Area Tabulation

	User	No. of room	Total Capacity	Area	Total Area	Reference
Mindfulness Meditation						
1. Meditation Hall	Meditator	1	200	500	500	**
2. Worship Hall	Meditator	1	50	80	80	**
3. Multipurpose room	Meditator	2	50	180	360	***
4. Sound Meditation room	Meditator	1	50	130	130	***
Concentrative Meditation						
1. Single room	Meditator	30	1	16	480	**
Walk Meditation						
1. Walk Meditation court	Meditator	2	50	300	300	***
Propose						
1. Dhamma Library	Meditator	1	50	300	300	**
2. Water Meditation	Meditator	2	20	100	200	**
Accommodation						
1. Single room for male	Meditator	15	1	9	135	*
2. Single room for female	Meditator	15	1	9	135	*
3. Group accommodation for male	Meditator	1	80	320	320	***
4. Group accommodation for female	Meditator	1	80	320	320	***
5. Toilet	Meditator					*
6. Bath house for male	Meditator	1	25	175	175	**
7. Bath house for female	Meditator	1	25	175	175	**
8. Canteen	Meditator	1	100	160	160	*
9. Kitchen	Staff	1	-	50	50	*
Monk area						
1. Kutti	Monk	10	1	8	80	***, ****
2. Hor Chan	Monk	1	10	20	20	***, ****
Administrative area						
1. Reception	Meditator	1	50	120	120	**
2. Office	Staff	1	14	84	84	*, ****
3. Health Care room	All	1	4	20	20	**
4. Meeting room	Staff	1	14	20	20	*
					4,664	
Other						
1. Port	All	-	-	-	50	**
2. Circulation	All	-	-	30%	1,399	
					6,133	

* Architectural Data
** Comparison with case studies
*** Analysis



Chapter 5: Building Technology

5.1 Building Structure

5.1.1 Materials

In this project, local materials which are brick and bamboo will be used in order to maintain the sense of place as much as possible. Some materials will be integrated to make the structure stronger such as concrete.



Figure 5.1 Materials list

5.1.2 Floating Structure

According to the site analysis, some part of the land will be flooded. So, floating structure will be a part of the project.

There are many types of floating structure. The following diagram are types of mooring system that can be applied in this project.

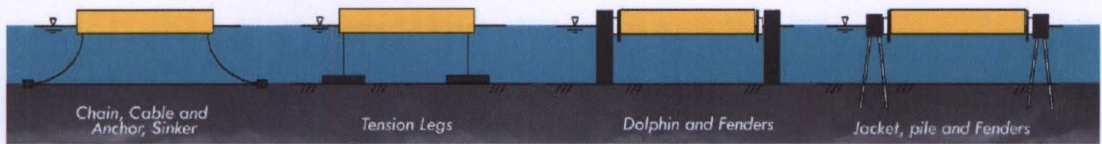


Figure 5.2 Types of Mooring System

5.2 Building System

The possible building systems which is proper with the building scale and structures are the water supply system, air conditioning system, transporting system and the fire protection system.

The water supply system, the building scale will be lower than 2 stories so that the possible water supply system will be up feed system.

The air conditioning system, according to the site location and the function of the project which is meditation center within the nature. So, the passive design will be considered as a main system. There are possibilities that the air conditioning system might not be used.

The main vertical transportation system is the stair because of the building scale will be lower than 2 stories. Ramp will be provided for disable users in necessary area.



Chapter 6: Design Schematics

6.1 Concept Development

6.1.1 Design Concept

The idea of "Temporal Architecture" provides the architectural sequences according to changing of time which gradually navigates people to raise natural inner-self and self-awareness. The Temporal Architectural idea changes according to 3 factors which are human's density, water level, and sunlight. These factors provide 3 different articulation design concepts which are "Temporal circulation", "Temporal space", and "Temporal structure".

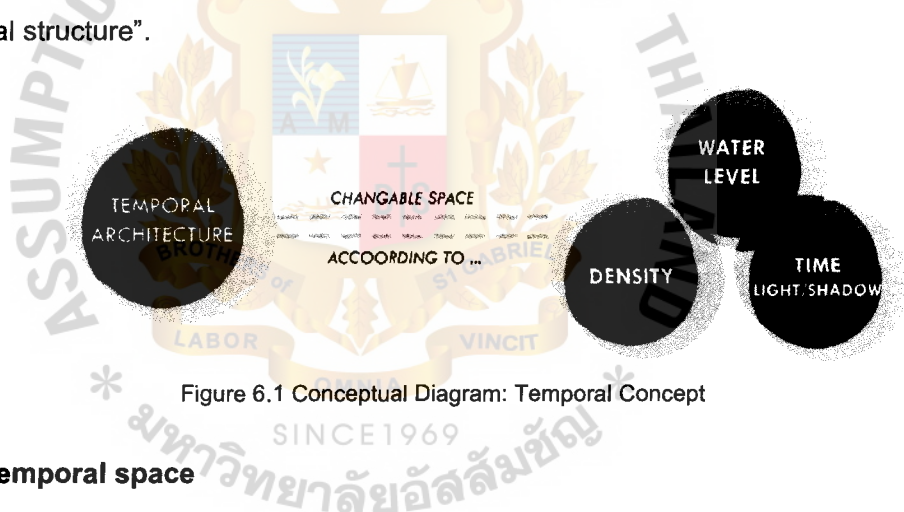


Figure 6.1 Conceptual Diagram: Temporal Concept

Temporal space

The same space provides different experiences to the user in the different times according to lighting and shading that gradually changed in a day.

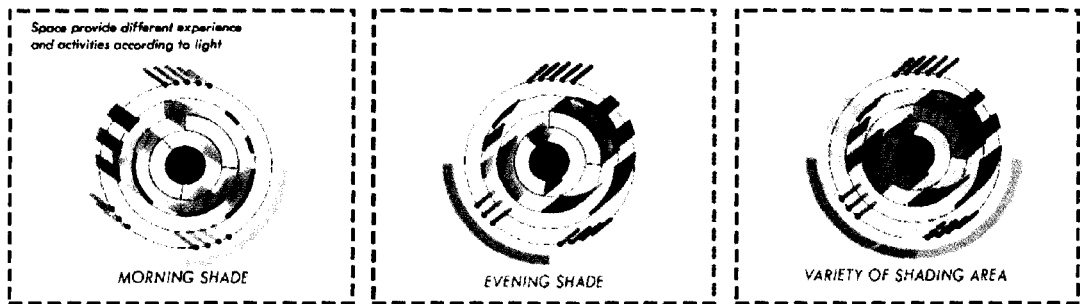


Figure 6.2 Conceptual Diagram: Temporal Space

Temporal Circulation

Space and circulation provided different experiences to the user according to the time. In dry seasons, the platform act as a roof. During rainy seasons, platform will act as a floor which floats up and down according to water level. The perception and visualization will change along the changing height of the platform.

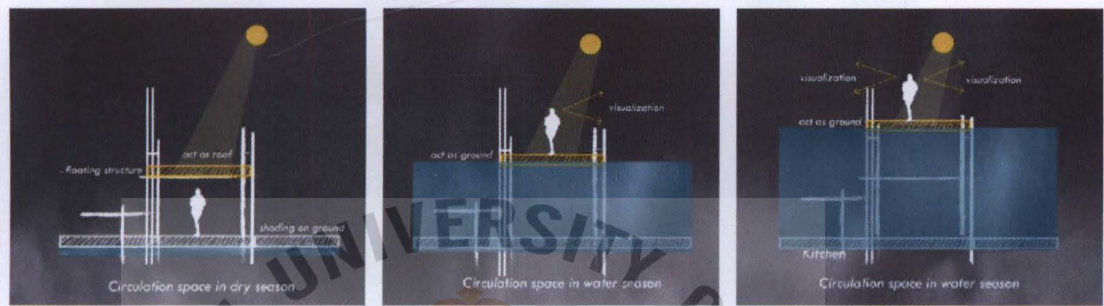


Figure 6.3 Conceptual Diagram: Temporal Circulation

Temporal Structure

The structure can be moved, extended, and changed according to the density of the user. The flexible structure can support the increasing number of users for some parts of the project.



Figure 6.4 Conceptual Diagram: Temporal Structure

6.1.2 Design Strategy

To design the suitable meditation space and environment, these 3 elements would be applied and concerned as a main issue.

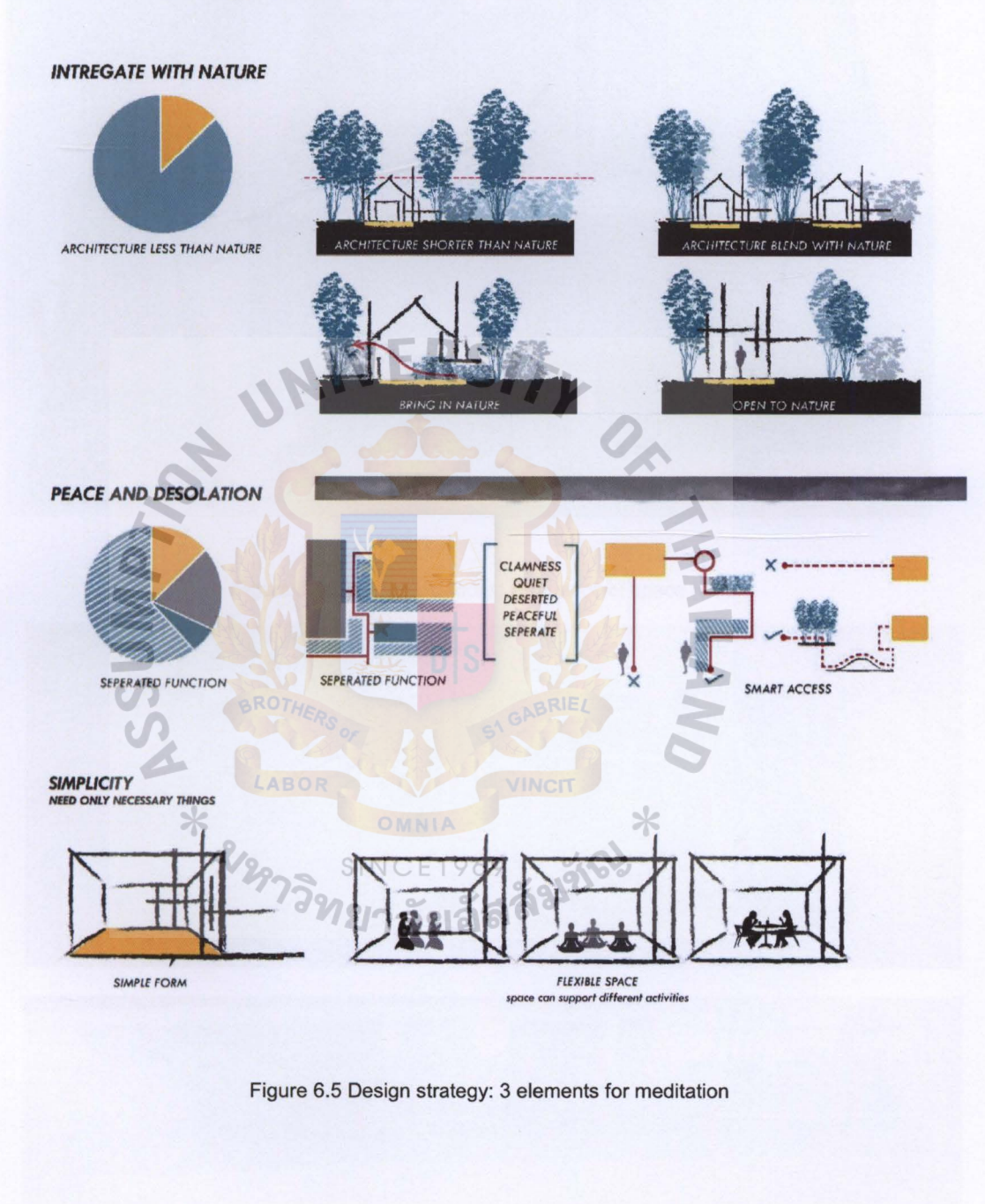


Figure 6.5 Design strategy: 3 elements for meditation

6.1.3 Conceptual Model



Figure 6.6 Conceptual Model : Sequence of space (water)



Figure 6.7 Conceptual Model: Sequence of space (Lighting)

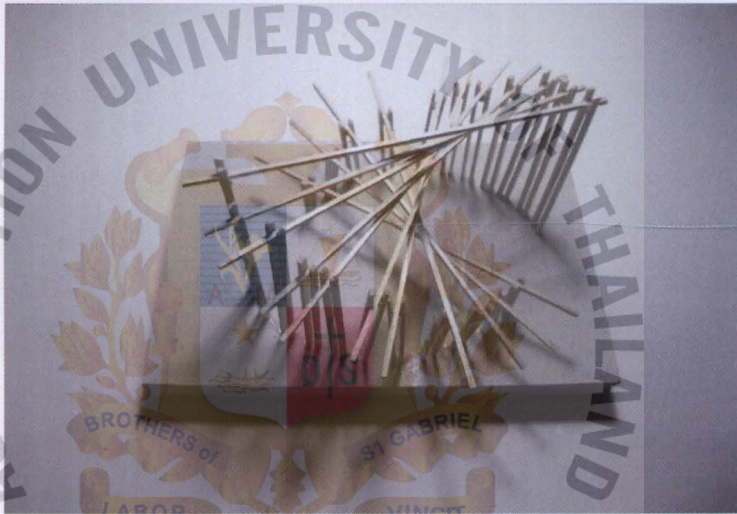
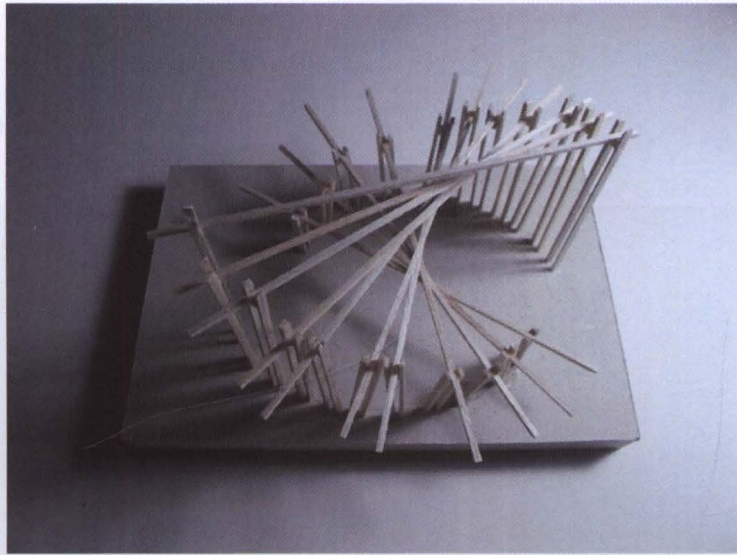


Figure 6.8 Conceptual Model : Sequence of space2 (Lighting)

6.2 Design Development



Figure 6.9 Zoning diagram

Figure 6.10 Zoning and Function diagram

Table 6.1 Zoning Score

zone	accessibility	privavy	view	static land
1	●	●	●	○
2	●	●	●	●
3	●	●	●	○
4	●	○	●	○
5	○	●	●	●

Table 6.2 Function Score

Function	accessibility	privavy	view	static land	
1 Reception	●	○	○	○	1 2 4
2 Office	●	○	○	●	2 5
3 Worship hall	○	●	○	○	2 5
4 Meditation zone	●	●	●	○	1 3 4 5
5 Acommodation	○	●	●	○	2 3 4
6 Library	●	●	○	●	2 5
7 Mank zone	○	●	○	●	2 5
8 Canteen	●	●	○	○	1 2 3 5
9 Back of house	○	○	○	●	2 5

6.2.1 First Schematic Zoning

First schematic zoning uses the straight line for circulation. Every of transition spaces are courts that spread user to other functions. Main axis is meditation area with a balance planning.

Strength: Each function and circulation are clear and simple

Weakness: The important of existing is looked-over. And straight circulation is hard to capture the perception that changed over time

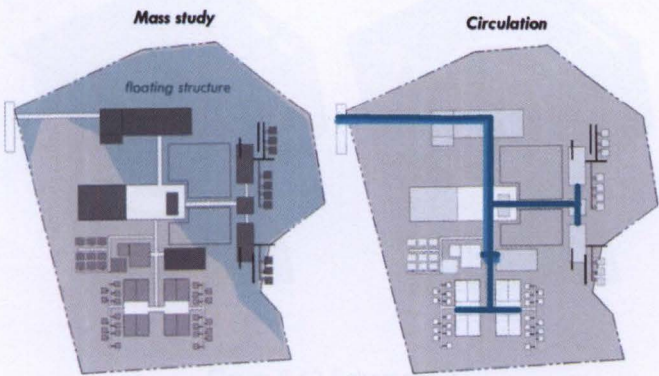
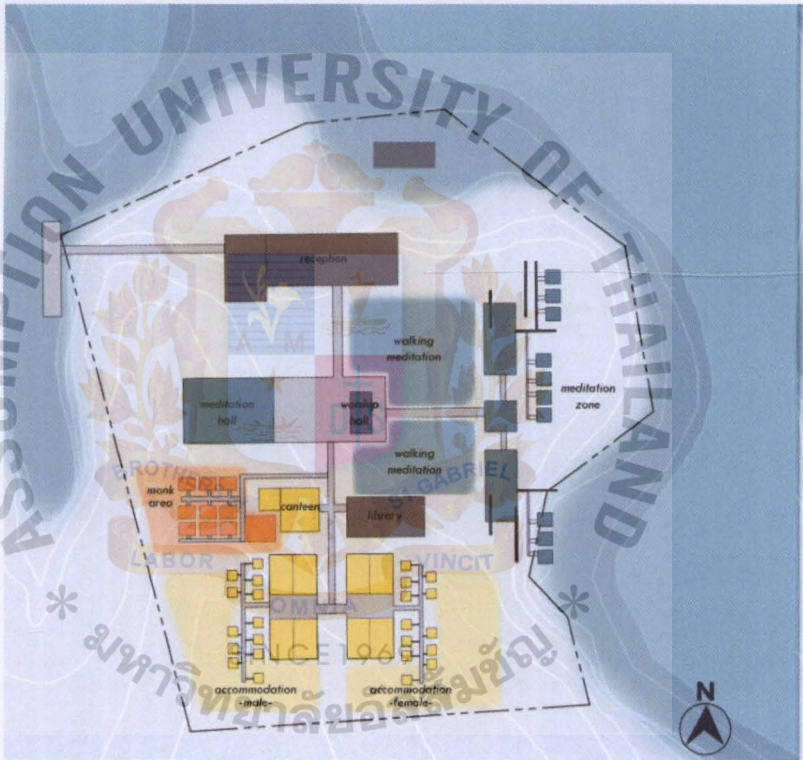


Figure 6.11 Schematic 1

6.2.2 Second Schematic Zoning

Second schematic has the same functional zoning as first schematic. The curved lines are used for the circulation to make it more continuous. Every of transition spaces are connected by circled circulation. Main axis is meditation area with balance planning.

- Strength:** space and circulation play along with light and view according to circle planning
- Weakness:** The important of existing is looked-over.

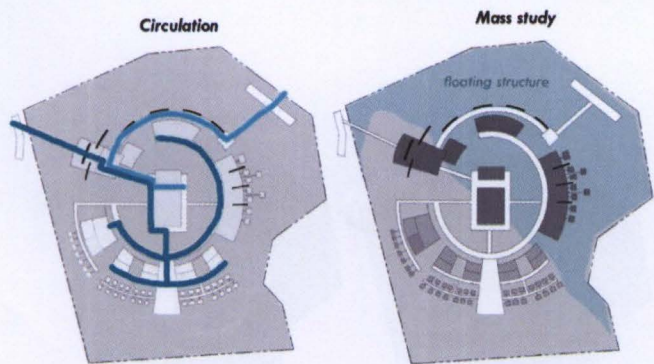
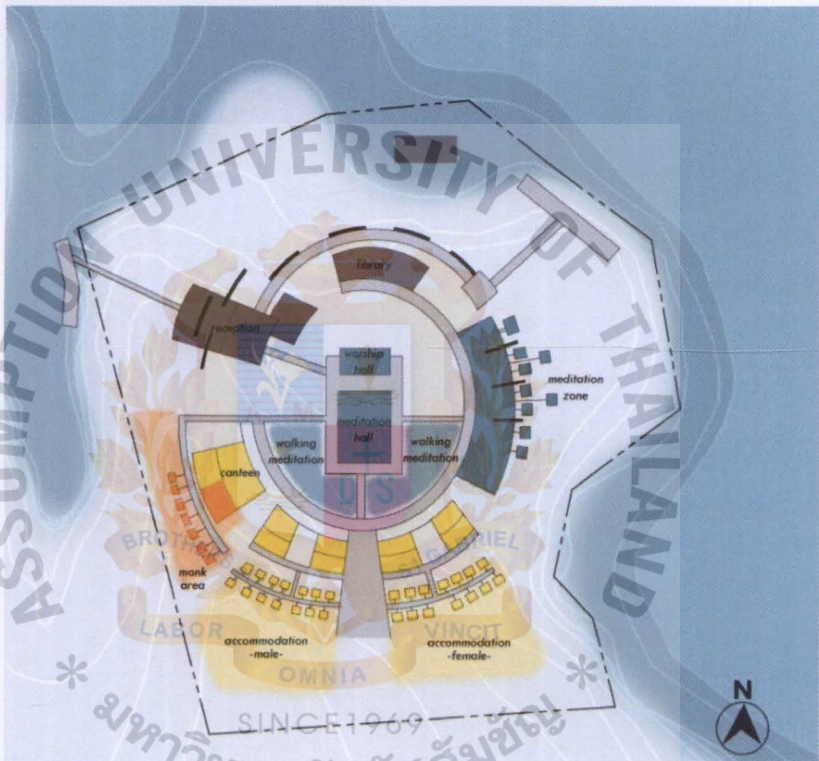


Figure 6.12 Schematic 2

6.2.3 Third Schematic Zoning

This schematic mostly is similar to the Second Schematic zoning. Using the curve line for circulation to make it more continuous but using the oval shape. Main axis is meditation area that will be the main part to spread users to other functions.

- Strength:**
- space and circulation play along with light and view according to oval planning
- Weakness:**
- The important of existing is looked-over.

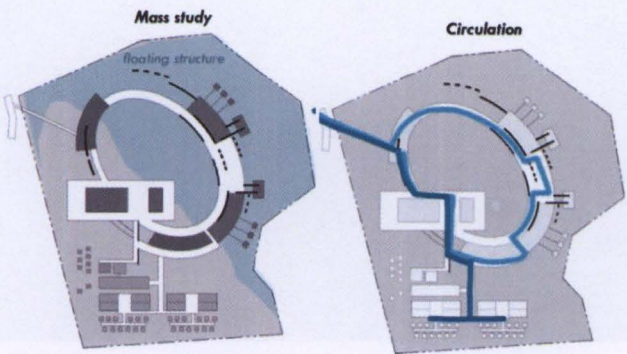
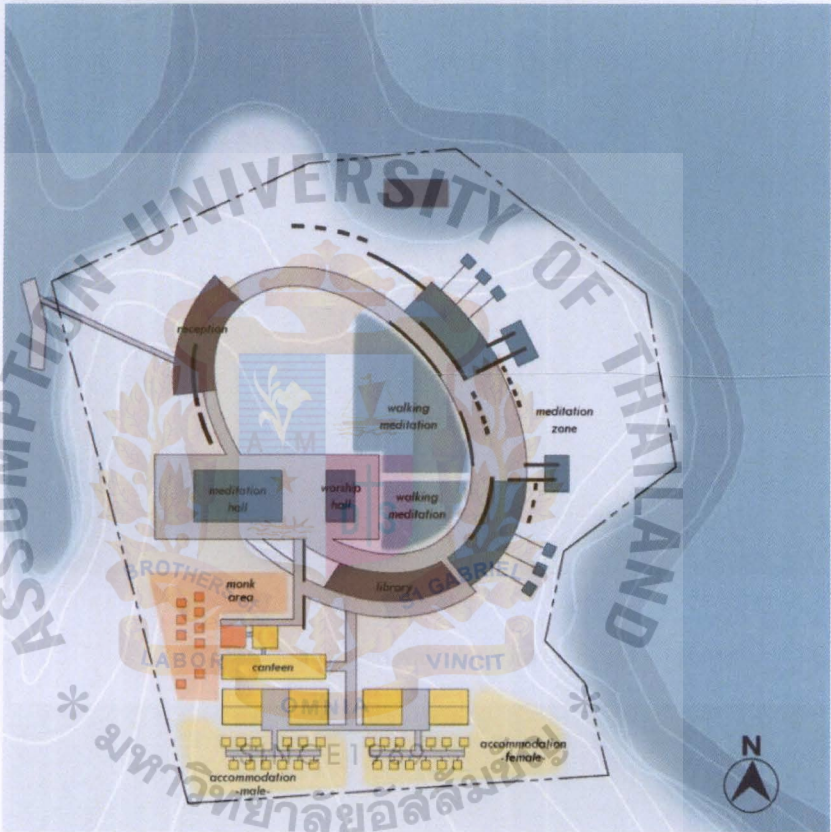


Figure 6.13 Schematic 3

Chapter 7: Design Summary

7.1 Study Models



Figure 7.1 Mediation Hall Structure (back side)



Figure 7.2 Mediation Hall Structure (front side)

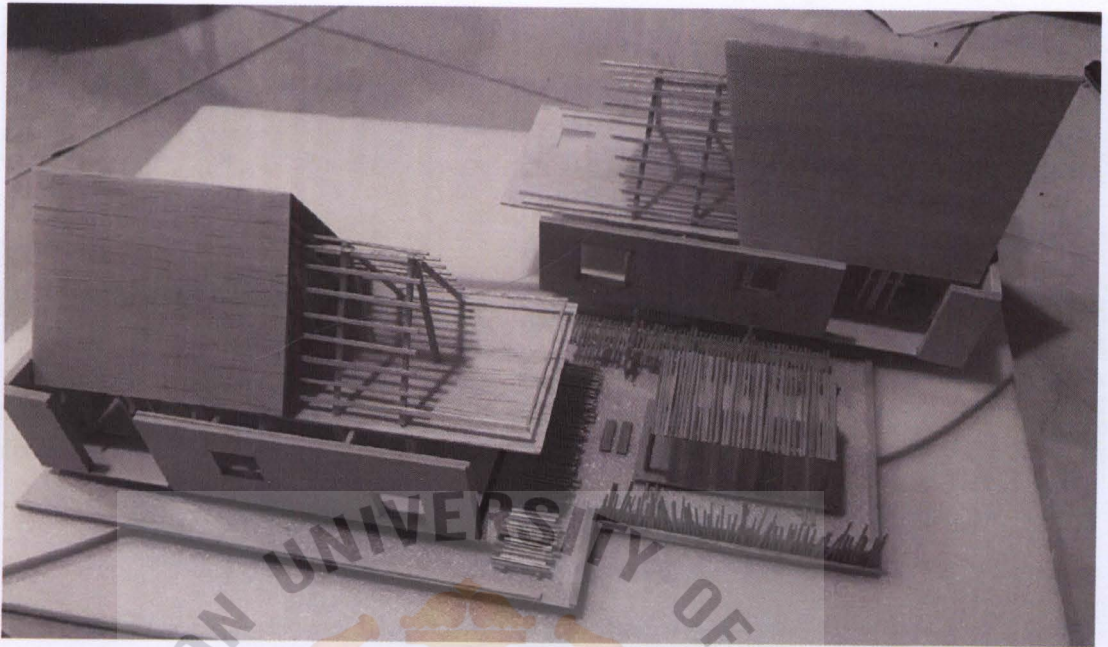


Figure 7.3 Group Accommodation



Figure 7.4 Private Pavilion for meditation

7.2 Final Production

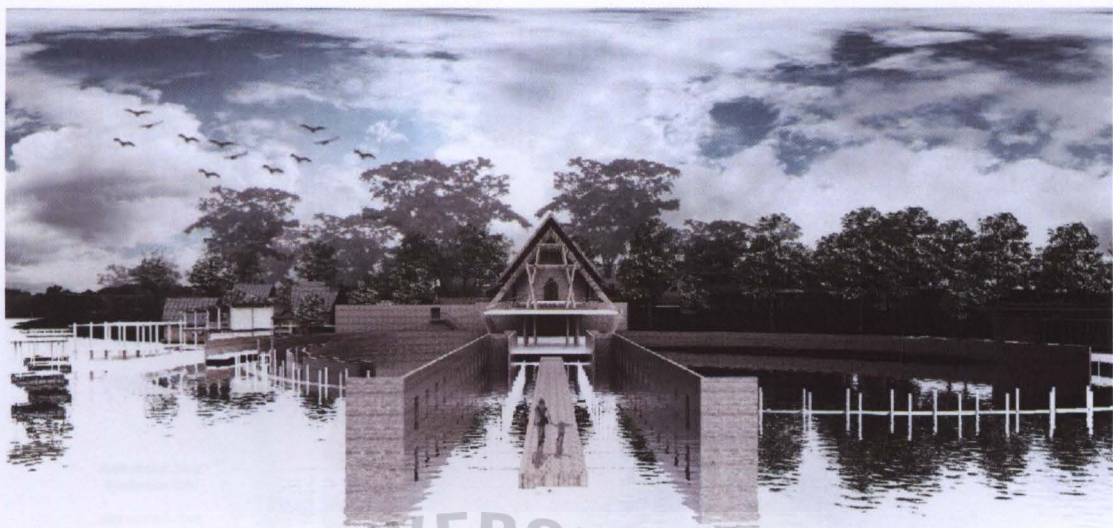


Figure 7.5 Mindfulness Meditation center perspective 1

7.2.1 Layout

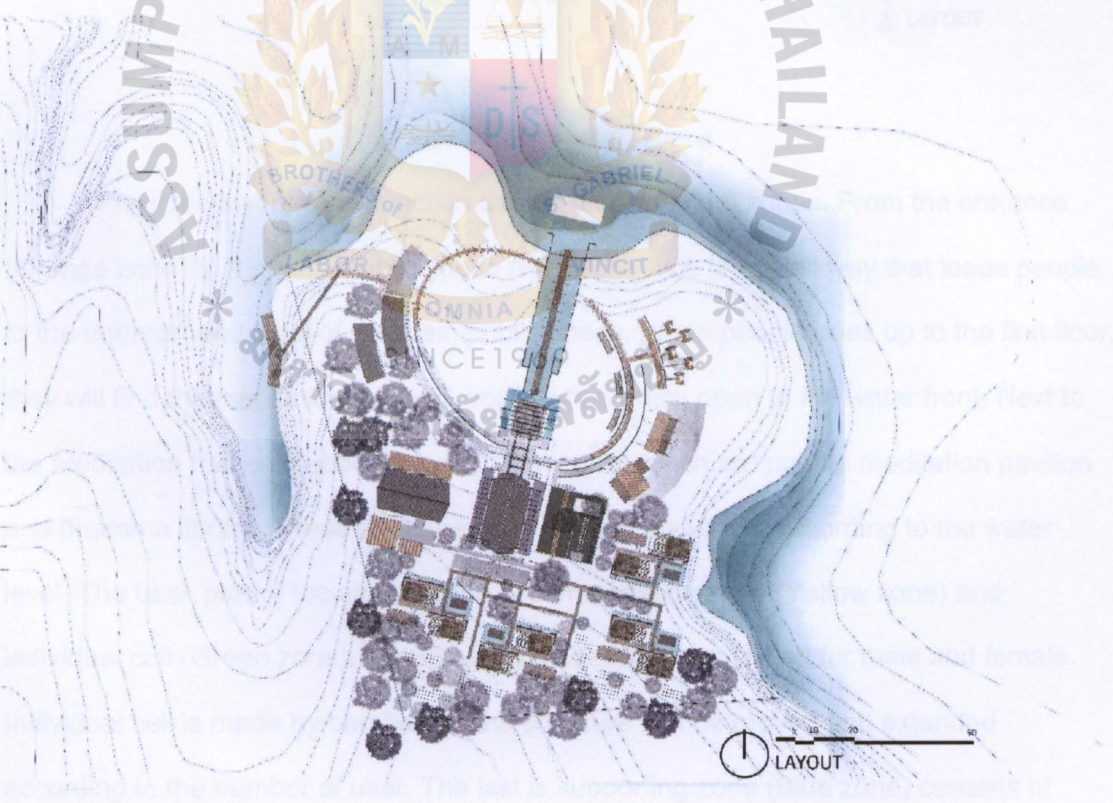


Figure 7.6 Layout

7.3.2 Layout and Zoning

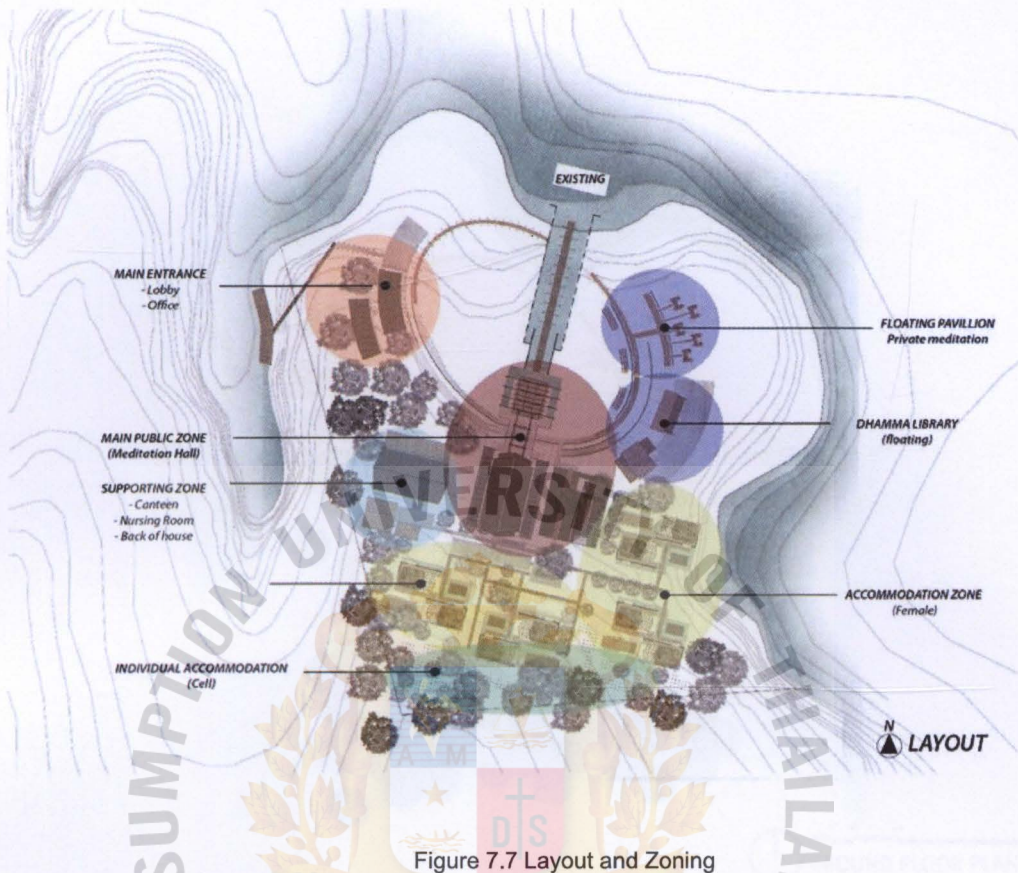


Figure 7.7 Layout and Zoning

From the layout plan, function can be divided into 6 zones. From the entrance (Orange zone) to the main public space (Red zone) is a long walkway that leads people to the underground level of the main public space. When people goes up to the first floor, they will find the meditation hall and worship hall which open to the water front. Next to the Meditation hall are public spaces (Violet zone) which are private meditation pavilion and dhamma library. These structures can float up and down according to the water level. The back part of the site is group accommodation zone (Yellow zone) and individual cell (Green zone). Group accommodation is separated for male and female. Individual cell is made by bamboo so the structure can be moved and extended according to the number of user. The last is supporting zone (Blue zone) consists of canteen, nursing room and back of house.

7.3.3 Plans



Figure 7.8 Ground floor plan



Figure 7.9 Site elevation

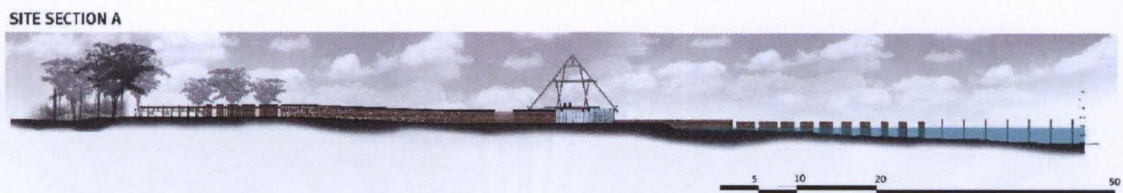


Figure 7.10 Site section A

This sequences section is cut along the circulation from the entrance to the end of the circulation. It shows the quality of space and light that gradually changed. From the entrance to the meditation hall, the wall pattern was designed to generate the light into the walkway space. The light will gradually change from bright to dark in order to rise up user's awareness and make them calm before get into meditation space.

From the meditation hall to the end of circle walkway, the concept of temporal circulation was applied according to the flooding issue. The walkway platform was designed to float up and down. The two sides wall will be the main floating structure and generate different perception and visualization to the user at a same time.



Figure 7.11 Site section B

This cross section showing the relationship between water, land, and architecture. The front part is temporal circulation that can be float up when the water level increses and float down when dry season comes. This ciculation leads people from meditation hall to the old existing building (Bot). People can walk under the walkway platform in dry seasons and walk on the platform during water seasons. So, they can have different perceptions and visulizations.

7.3.3.1 Mediation Hall

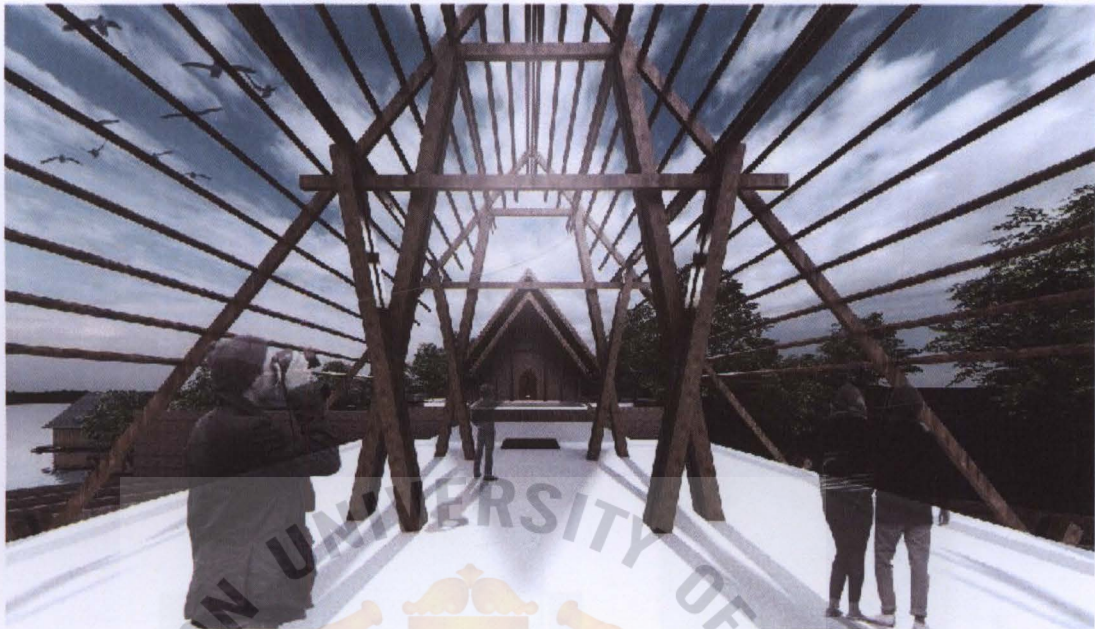


Figure 7.12 Exterior perspective: Meditation hall

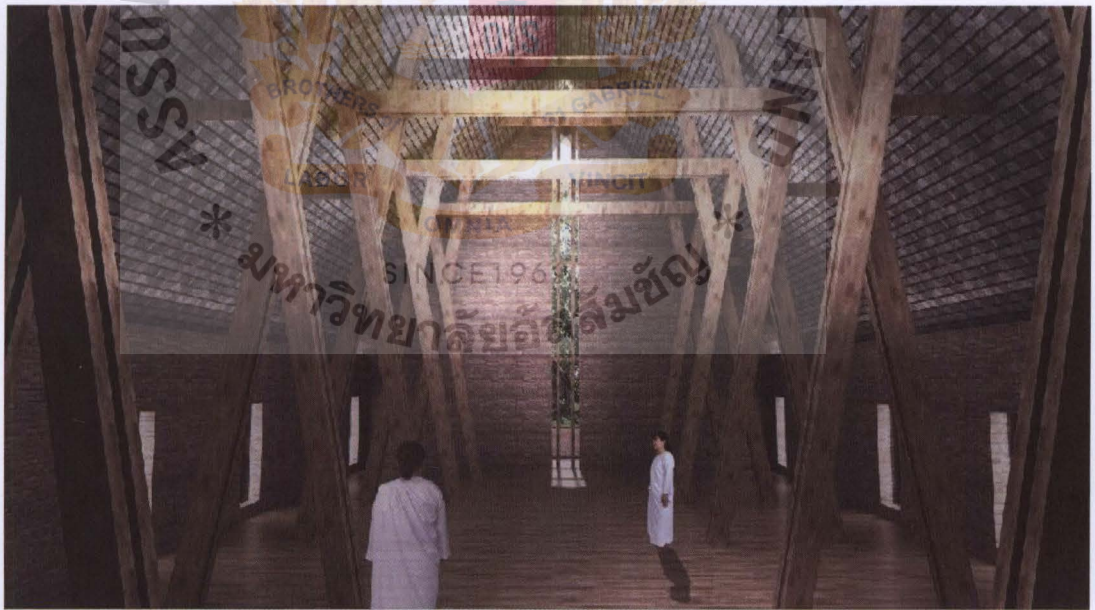


Figure 7.13 Interior perspective: Meditation hall

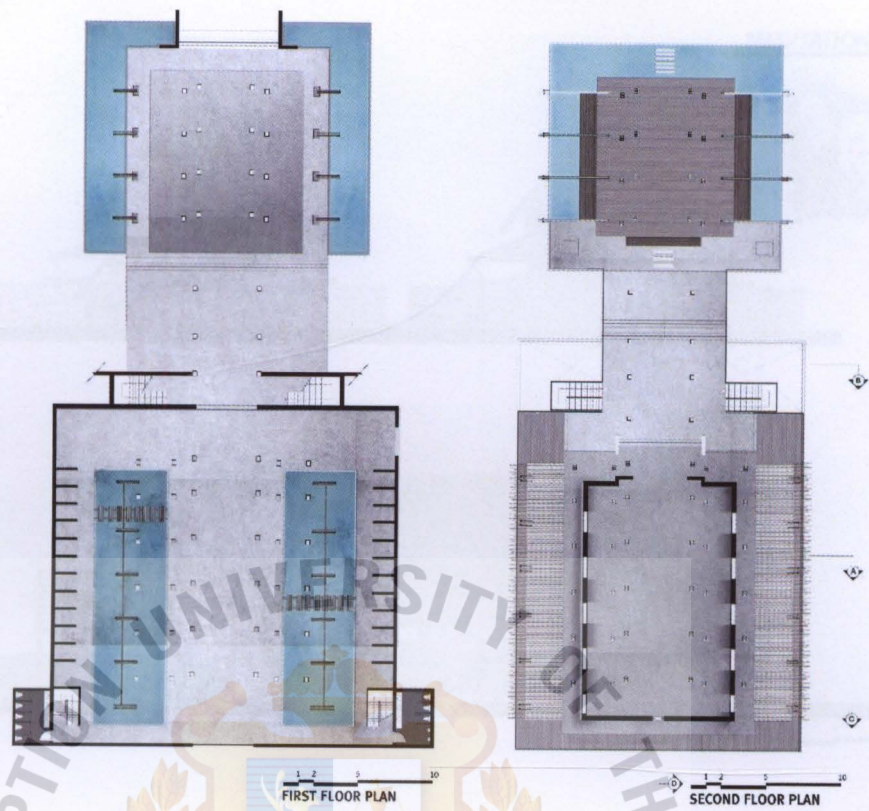


Figure 7.14 Meditation: First floor plan and Second floor plan

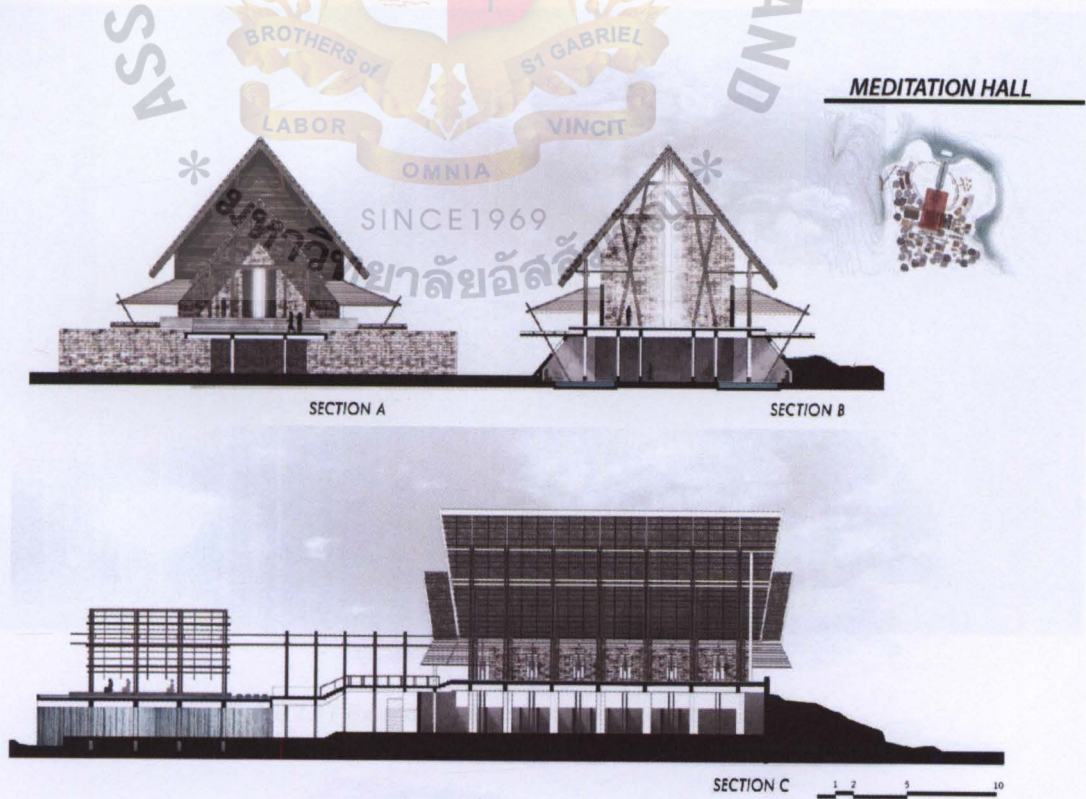


Figure 7.15 Meditation: Section A, Section B, Section C

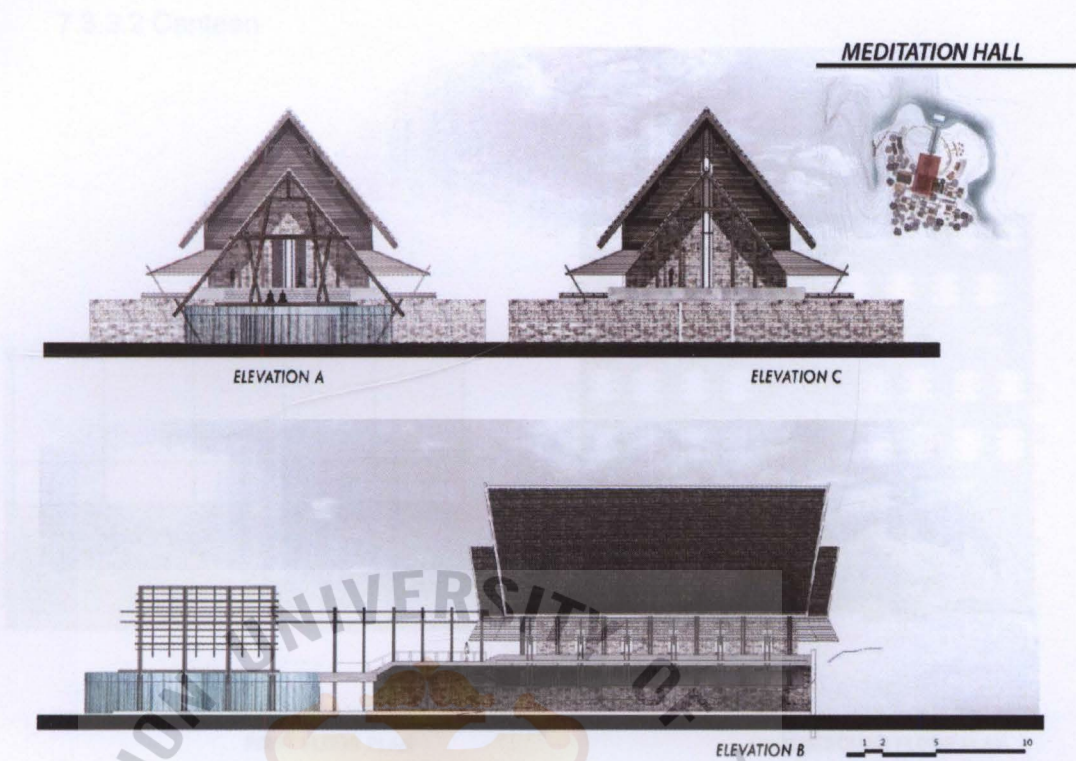


Figure 7.16 Meditation: Elevation A, Elevation B, Elevation C



Figure 7.17 Exterior Perspective: Meditation Hall front view

7.3.3.2 Canteen

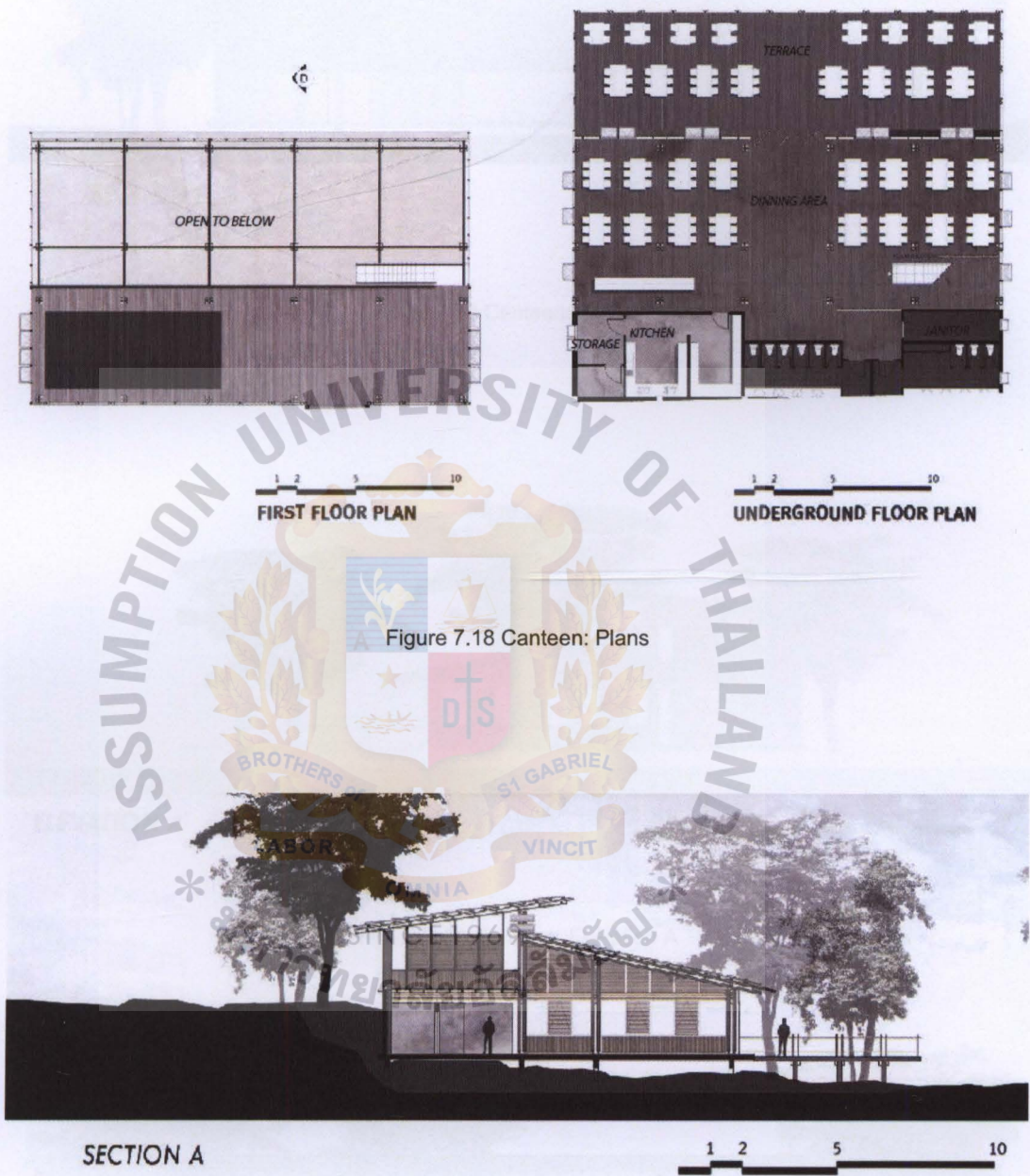


Figure 7.19 Canteen: Section A

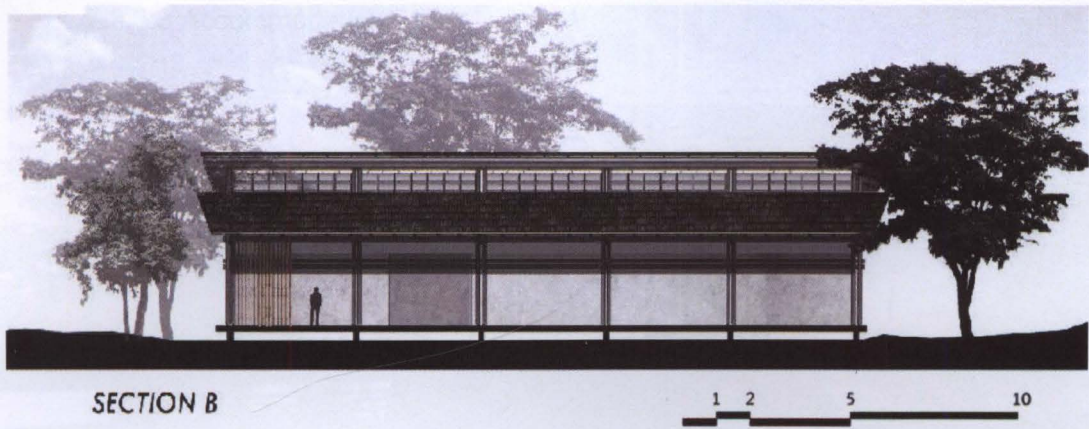


Figure 7.20 Canteen: Section B



Figure 7.21 Canteen: Elevation A

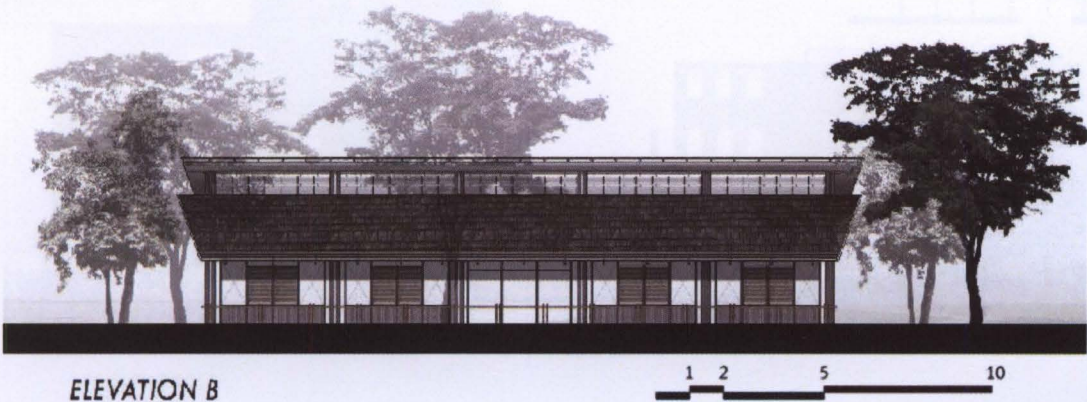


Figure 7.22 Canteen: Elevation B

7.3.3.3 Accommodation



Figure 7.23 Accommodation: Exterior perspective

Group accommodation included 2 storeys house, bath house, and meditation pavilion. Male and female accommodations are separated in two zones. The capacity of one house can maintain 14 people.

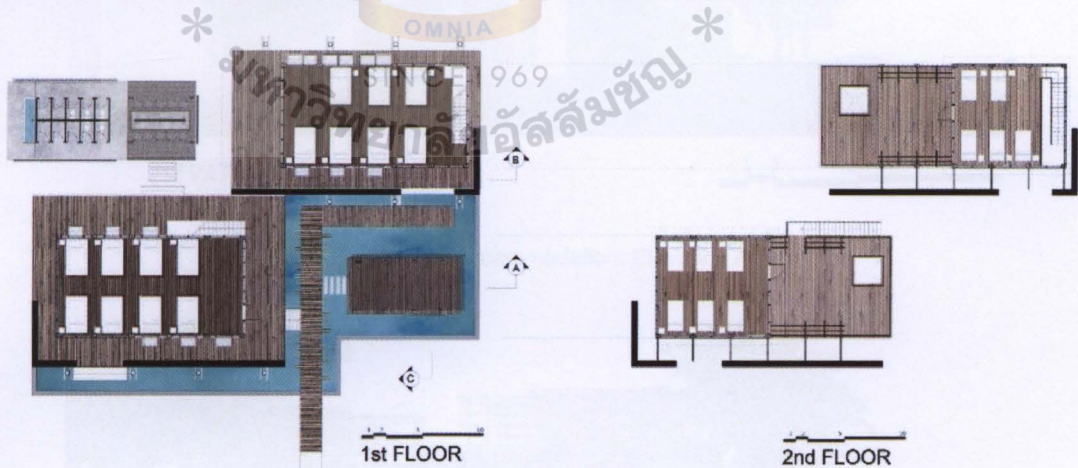


Figure 7.24 Accommodation: first floor plan and second floor plan

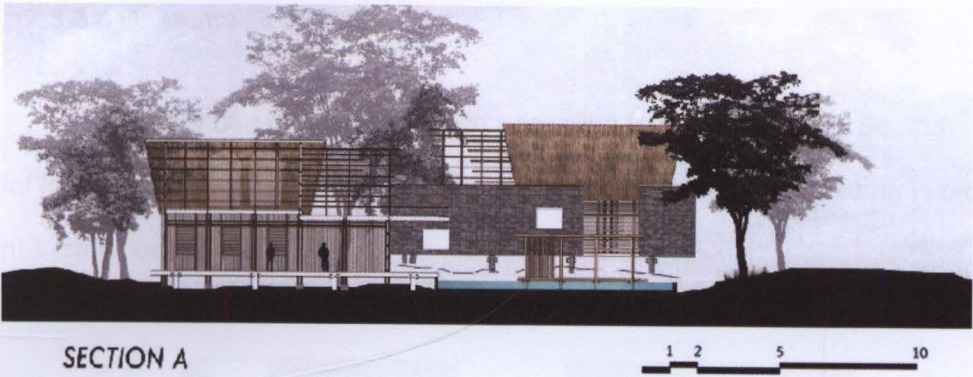


Figure 7.25 Accommodation: Section A

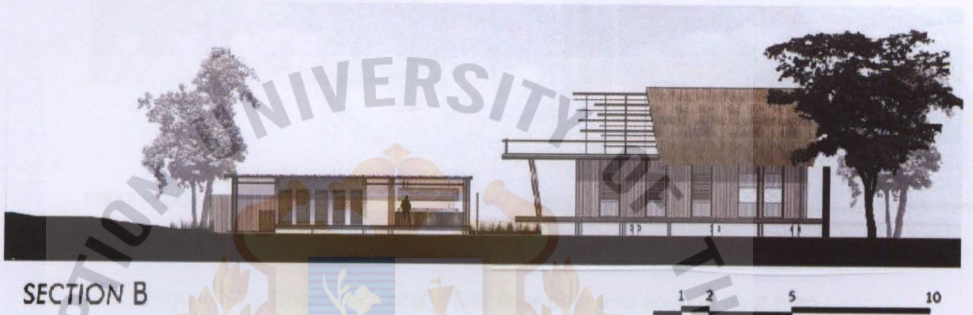


Figure 7.26 Accommodation: Section B



Figure 7.27 Accommodation: Elevation A



Figure 7.28 Accommodation: Elevation B

7.3.3.4 Dhamma Library

Library can float up and down according to the water level. So, the material for this structure is bamboo. Bamboo will joist to the concrete column in order to prevent it from floating away.

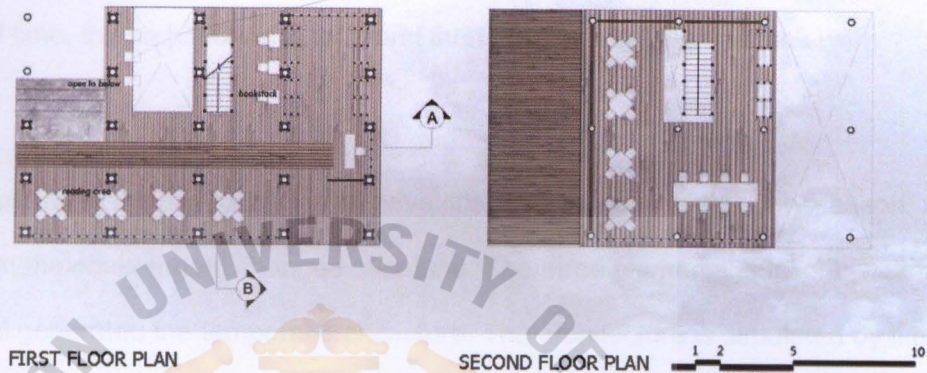


Figure 7.29 Dhamma Library: first floor plan and second floor plan

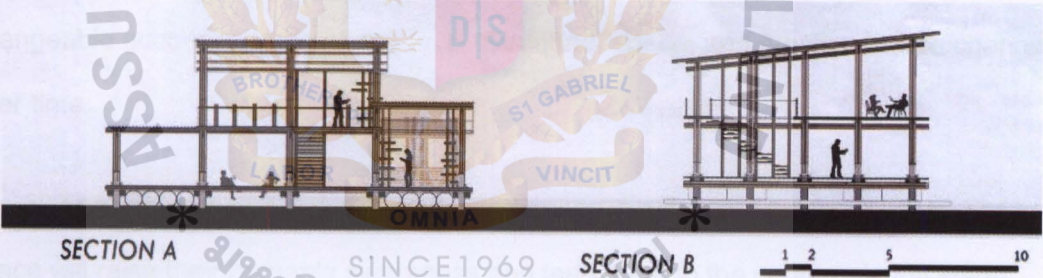


Figure 7.30 Dhamma Library: Section A (left), Section B (right)

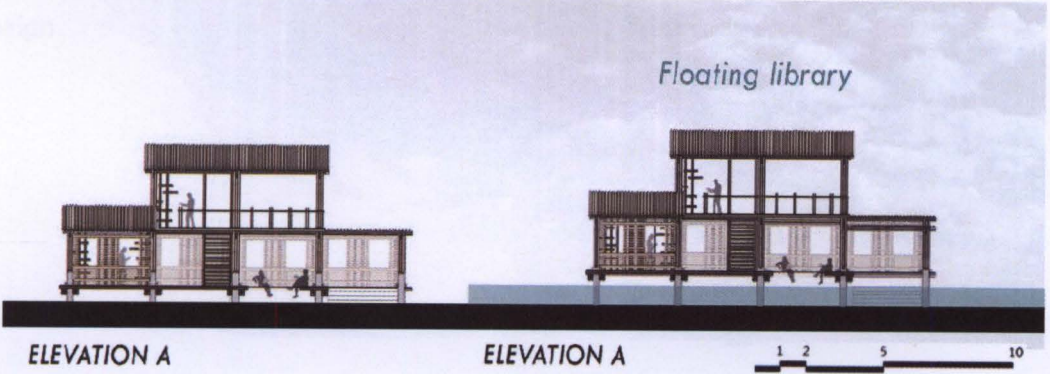


Figure 7.31 Dhamma Library: Elevation A with water up and down

Chapter 8: Thesis Conclusion

This thesis achieves the idea of combining the theory of time perception into human senses to encourage people to perceive what they see, touch, smell and hear. In changing of time, the architecture is temporal then the temporal experiences were created.

According to the site location that have changing in water level every season, as the time past the environment changed over time. The three elements: sunlight; water, and material generated the temporal architecture. The architecture is simulated by time that narrates the notion of "Temporal Experience". The layout of this architecture is placed by following the condition of the site which are water level, sun direction, visualization, and old existing building (Bot). Building becomes part of the existing and changeable according to the water level. Structure, space, and function will be changed over time.

The users can perceive the temporal space in different times and ways. The space will raise their human's awareness and lead them to the contemplation stage through the incident through five senses of human; Perception, Hearing, Touching, Smelling, and Taste of the space. The phenomenology is considered into the space design.

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