SPACE IN TRANSITION: A DESIGN EXPLORATION OF A TRANSITION SPACE IN BAN PLAINERN

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เต็งโจว เฟง : พื้นที่แห่งการเปลี่ยนแปลง การออกแบบพื้นที่แห่งการเปลี่ยนแปลง ณบ้านปลายเนิน. (SPACE IN TRANSITION: A DESIGN EXPLORATION OF A TRANSITION SPACE IN BAN PLAINERN) อ.ที่ปรึกษาหลัก : จิตตวดี จิตรพงศ์

วิทยานิพนธ์นี้คือการศึกษาวิธีคิดในกระบวนการออกแบบ พื้นที่เชื่อมต่อระหว่างภายนอกและภายใน ของบ้านไทยเดิม ผู้เขียนตั้งคำถามถึงวิธีการสืบทอดและพัฒนา สถาปัตยกรรมจากอดีต สำหรับคนในรุ่นต่อไป พื้นที่เชื่อมต่อระหว่างภายนอกและภายใน ของบ้านไทยเดิม เป็นพื้นที่ที่เลือกขึ้นมาเพื่อศึกษาเรื่อง วัสดุ สัดส่วน การจัดองค์ประกอบพื้นที่ว่าง แสง ความสลัว และเงา อันส่งผลต่อสถาปัตยกรรม

การทบทวนวรรณกรรม เป็นการหาวิธีต่อยอด กระบวนการวิเคราะห์พื้นที่และรูปทรงของสถาปัตยกรรมของ โคลิน โรว์ ปีเตอร์ ไอเซนมาน และ เลอกอร์บูซิเย หลังจากนั้น กระบวนการวิเคราะห์ถูกประยุกต์ใช้เพื่อวิเคราะห์สองกรณีศึกษาของบ้านเรือนไทย ได้แก่ เรือนไทยจุฬา และตำหนักไทยของสมเด็จเจ้าฟ้ากรมพระยานริศรานุวัดติวงศ์ ในกรุงเทพมหานคร กรณีศึกษาทั้งสามบ้านเหล่านี้รวบรวมความทรงจำในอดีต และในเวลาเดียวกัน ก็กระตุ้นให้เกิดแนวคิดของแบบดั้งเดิมและแบบประยุกต์ ภาพวาดทางสถาปัตยกรรมในวิทยานิพนธ์เล่มนี้ ถูกวัด วาด และวาดใหม่อีกครั้งโดยผู้เขียน จากพิมพ์เขียวที่ถูกอนุรักษ์โดยมหาวิทยาลัยจุฬาลงกรณ์ และจากสำรวจจำนวนหลายครั้ง รูปภาพ สำคัญสำหรับวิทยานิพนต์นี้ การมองเป็นสิ่งที่มีประสิทธิภาพมากที่สุดที่จะอ่านพื้นที่ ภาพจำนวนหลายชุดบันทึกความเปลี่ยนแปลงของวัสดุ แสง รูปร่าง และเงา ในพื้นที่เชื่อต่อระหว่างภายนอกและภายในของบ้านเรือนไทยหลายหลัง เกี่ยวกับเวลา และพวกรูปภาพยังบันทึกสัดส่วนและการจัดองค์ประกอบเชิงพื้นที่อีกด้วย

สถานที่สำหรับเสนอการออกแบบคือพื้นที่ดินส่วนหนึ่งของบ้านปลายเนิน ที่สามารถเป็นพื้นที่เชื่อมระหว่างภายนอกและภายในได้ด้วยตัวเอง มี 3 ตึกเดิมที่อยู่ในพื้นที่ และต้องการการปรับปรุงใหม่อยู่ บ้านเขียว เคยเป็นโรงเรียนรำไทยเดิมมาก่อน บ้านสีแดง ที่เก็บของ และโครงสร้างสีเขียว เป็นพื้นที่กึ่งเปิดของโรงเรียนรำไทยเดิม การปรับปรุงใหม่เคารพแหล่งมรดกโดยใช้สัดส่วนองค์ประกอบของพื้นที่ และวัสดุที่พบภายในสถานที่ ความเห็นของเจ้าของบ้านปลายเนินต่อแบบมีความสำคัญต่อการวิเคราะห์ผลของการเรียนรู้นี้

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Tengzhou Feng : SPACE IN TRANSITION: A DESIGN EXPLORATION OF A TRANSITION SPACE IN BAN PLAINERN. Advisor: Assoc. Prof. CHITTAWADI CHITRABONGS, Ph.D.

This thesis concerns a methodology to study transition spaces in traditional Thai houses. The author questions how to inherit and develop traditional architecture for the future generations. Transition spaces of Thai houses are chosen as the places to observe how materials, proportions, spatial compositions, light, shade and shadow affect architecture itself. They represent a relationship between man-made and nature with respect to environment, culture and time.

Literature reviews are a supplement to the analytical methods to study architectural spaces and forms of Colin Rowe, Peter Eisenman, Le Corbusier and Juhani Pallasmaa. Then, the methodology is applied to analyse two case studies of Thai houses, namely CU Thai House of Chulalongkorn University and H.R.H. Prince Narisaranuvattiwongse's private residence in Bangkok.

The site to propose the design is a piece of land in Ban Plainern, which can also be regarded as a transition space in itself. The renovation design respects to the heritage site by utilizing proportions, space compositions and materials found within the site itself. The responses from the owners were shown in this research as the most important reference to evaluate the design.

Field of Study:	Architectural Design	Student's Signature .....
Academic Year:	2020	Advisor's Signature .....

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Preface

After my BArch graduation, I kept the knowledge gained from my university and went to work in an architectural office. I gradually lost my patience to think and to review architecture. My daily work mainly focused on concrete structures. Design, for me, was then like working in a factory, joining the line of production and standardization. I therefore quit my job and chose to continue studying what I am interested in. I like wood as an architectural material. I would like to see traditional buildings appear in our everyday life. I decided to come to Thailand in order to study wood structures and to understand traditional buildings. Architecture is to be studied by the actual experiences, with the acts of seeing, measuring, reading and above all drawing.

Writing has become a tool to construct the topic of interests since my arrival to Thailand. During a field trip with i+mARCH students at Phu Phra Bat Historical Park, I took a photograph and paired it with the image of Barcelona Pavilion (figure 1). This was how my writing began. Light, shade, shadow, materials and viewpoints are what I want to explore at the beginning. As the research progresses, the vague and unclear feelings about architecture gradually become clearer in front of my eyes through the touch my hands. Measuring the selected buildings, writing and drawing architecture are the tactile experiences that enable me to understand architecture itself. I am surprised when I review the whole process of my study, during the time of writing down this preface, that I have created something out of nothing. Detail drawings of materials and construction can make the design alive. My i+mARCH years at Chulalongkorn University are like a journey. In the end of this journey, I gain not only a thesis but also a passion in architecture.

When I was a year-three student in BArch Program. In a course entitled Bionic Design, students were required to select a plant, then according to a study of the plant, to design an architecture. The course was designed to help students to find more possibilities in architectural designs. A mushroom that glowed at night was my selection and I was going to design a beacon. My teacher, however, denied my idea because in her view a beacon was not "architecture". To her, nobody would really use it, a beacon is

like a streetlamp. There was no interior space. It can only be regarded as a "structure" at most. I did not agree with my teacher. A beacon, in my view, is architecture. When one gets there, to a beacon, one can feel the space. It meets the requirement of uses, even if there is no indoor space as such. This story reminds me that people perceive the world differently. The perspective of individual is affected by one's context, which related to the memories about the past, the emotion about the current and the imagination about the future. Viewpoints need to be explained. The way how to feel the intangible in architecture, how to connect one's inner world is the key to open the door of architectural world.

Figure 1 The left photograph shown a space in Phu Phra Bat Historical Park, Thailand; The right one shown a space in Barcelona Pavilion, Spain.

Chapter 1 Introduction

SPACE IN TRANSITION is personal and social. SPACE IN TRANSITION, at a personal level, is meant a gap of the author's knowledge concerning architecture between BArch graduation and working experience at an architectural office. It also means the possibilities that the knowledge can be improved. SPACE IN TRANSITION is therefore a state of learning. The necessity is to constantly search and gain nutritive information from the outside world in order to begin to understand a perspective towards architecture and architectural discourse. SPACE IN TRANSITION is a formation of the author's thoughts in architecture.

At a social level, SPACE IN TRANSITION is meant a process of renovating a heritage site in Bangkok, named Ban Plainern, for the future purposes. Ban Plainern is a private residence in transition. That is to store the memories and the experiences of those who live within this site, to share its stories to the public and to preserve Thai cultures. SPACE IN TRANSITION is therefore a process of inheritance. It inherits memories of the pasts for the future generations.

Transition space in Ban Plainern is a space in between that connects the outside and the inside, the man-made and the nature, the grass and the pavement, the trees and the columns. Transition space in Ban Plainern is the main circulation that links the Thai traditional house to the Thai classical dance school that will be opened in the future.

The research outcome in this thesis is a design for the transition space in Ban Plainern. The design is to explore the tangible, such as, forms, materials, constructions how to connect the context of Ban Plainern. Further, to discover the how the intangible things that behind the tangible to touch individuals' inner world, such as memories, experiences, and feelings. Because intangible things are closely related to personal experiences, for people who do not know the situation and stories about Ban Plainern are hardly perceive the intangible connections. Therefore, the responses from Chitrabongs Family, the owners of Ban Plainern about the design are very important

references in this research.

1.1 Research Background and Significance

This research is an exploration about the tangible and the intangible in architecture. The tangible has two aspects: presentative and diagrammatic. Presentative level incorporates things that can be perceived by vision directly, for examples, materials, colours, lights, shades and shadows. These things presented by specific substances are to be watched at the beginning when people look at architectural spaces. Diagrammatic level indicates orders, proportions and spatial compositions in architectural spaces. Symmetry and delight, for instance, are the successful results. Normally, these qualities cannot be observed directly by the eyes. They must be presented by accurate architectural drawings. There is a natural shortcoming of observing things by the eyes, that is, vision is a deceptive sense. Looking is a subjective behavior. It is often self-centered to gain contact with the exterior world. Therefore, the hands (tactile) are the organs to understand orders, proportions and spatial compositions in architecture. The hands can intactly draw the tangible architectural elements including the structural frameworks that governed the aesthetics, such as the columns, the walls, the regulating lines, the axes and the coding system.[1]

The intangible in architecture is a kind of energy. This energy utters the connection between the individual senses and the world. This connection can be conveyed to one's mind in different times and spaces, as Juhani Pallasmaa points out in ***The Eyes of the Skin: Architecture and the Senses*** to the significance of human's body in the architecture. Vision makes the world appear in front of the eyes; the sense of touch confirms the reality of existence. The sense of smell awakens the memories stored in a space that is forgotten by the eyes. The sense of hearing makes the space appears in one's mind. Like the act of reading, one can imagine the space through the texts. In "The Taste of Stone", Pallasmaa discusses the realms of tactile and oral sensation through the Veronese marble. He cites Adrain Stokes' quote of John Ruskin's letter: "I

[1] Eisenman, P. (2008). ***Ten Canonical Buildings: 1950-2000.*** New York: Rizzoli.

should like to eat up this Verona touch by touch."[2] The sense of taste is activated by certain colours and delicate details of the buildings. Feel the real world. The real architectural spaces cannot be handled with a single sense organ, the process of digesting architecture requires the human body to participate in real spaces. Architecture expresses not only its functionality and the aesthetics that follow, but also the connection between individual and the world. This indicates the subjective observations in architectural world is not one-sided (look, use, design, analyse, etc). These subjective observations are the way in which one establishes the connection with the world, behind such connection is one's memories, experiences and emotions gained by different senses with time. The significance of exploring the intangible in architecture is to build a place not only for accommodating one's body, but also for replenishing one's inner world.

The intangible is conveyed by the tangible as the language. Refined architecture is like a poetry, behind the concise construction is a deep emotional sustenance or a lesson from life. Architecture may function like Shakespeare's ***A Midsummer Night's Dream,*** which makes the readers gasp in admiration of the imagination. There are many words that can be extracted from the tangible in architecture: materials, patterns, lights, shades, shadows, orders and proportions. The same is true with the intangible in architectures, the words can be memories, experiences and feelings. There is another word that has a special place in this thesis. It represents the individual memories, experiences and closeness with time. Simultaneously, it also represents the tangible in architecture. The word is TRADITION. If history is like a vast night sky, then tradition is the star twinkling in the night sky. It is not forgotten by time, when people look up at the vast night sky, they can still find their home. A Professor Emeritus in Sociocultural Anthropology at University of California, Berkeley named Nelson Graburn wrote about the tradition in his article entitled "**What Is Tradition?**" He said: "a consciousness of tradition arose primarily only in those historical

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[2] Pallasmaa, J. (1996). ***The Eyes of the Skin: Architecture and the Senses***. New Jersey: John Wiley & Sons. Page 63.

situations where people were aware of change. Tradition was the name given to those cultural features which, in situations of change, were to be continued to be handed on, thought about, preserved and not lost".[3] Tradition, in his view, is the memories of the pasts, being aware of during the time of change. When the term 'tradition' is added in architectural space, it means the space can activate memories which may be different for each individual. In different cultures and at different times, tradition may be perceived differently.

In order to explore the relationship between tangible and intangible in architecture, to understand the relationship between built environments and everyday life, transition space in Thai houses is selected as the research topic. Transition space is not only composed by the tangible man-made elements, such as forms, proportions, materials, but also the tangible natural elements, like light, shadows, shades. Thai houses imply a kind of tradition, one's memories and emotions related to this tradition is the intangible in architecture. Ban Plainern, a private residence of H.R.H. Prince Narisaranuvatiiwongse (1863-1947), is the specific design site in this research.

This research is an attempt to establish a personal design method to convey the intangible in architecture by the tangible. The process reveals how to use our bodies to read and touch architecture, and to a certain extent, this process is perhaps more meaningful than the final result. It is hoped that when the process is read, throughs that follow will stimulate its potential to continuously improve the design method. In a deeper sense, this research wants to tell a fact that architecture is far more than just what the eyes can see.

1.2 Scopes of Research

In this thesis, "tradition" signifies the micro-culture that is formed within the site itself. For an example, the tradition in Ban Plainern is represented by a composition of

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[3] Graburn. H. H. N. **"What is Tradition?".** (2008, May). Museum Anthropology, 24(2-3):6 – 11, retrieve from: https://www.researchgate.net/publication/230505685_What_is_Tradition

wooden walls, paths of steppingstones, colours painted on the buildings and the garden. These elements have a common feature. That is what they are all things that have been preserved during the time of urban development and change. This tradition is not restricted by the external context. It is internal to the site and the families who live in Ban Plainern and continue to tell the stories of its pasts to the future generations.

The focus in this research is the transition spaces of traditional Thai houses. All selected case studies are in Bangkok. They can be visited, measured, observed from dawn to dusk as often as necessary. Transition spaces are chosen as the places to observe materials, their colours and qualities, techniques of construction, proportions, spatial compositions, the movements of light, shade and shadow.

1.3 Purpose of Research

This research aims to learn the knowledge about analyzing architectural language achieved by preceding scholars and architects, then apply those knowledges to a design project. Through the display of the learning process and the review of the design outcome, to get feedback from different perspectives. It is hope that this research can provide assistance to the research that related to this topic.

1.4 Research Methodology

The research methodology is composed by literature reviews, case studies, site analysis, program analysis, user analysis and design part. Literature reviews focus on the methods of architectural analysis, which achieved by Colin Rowe, Peter Eisenman and Le Corbusier. Juhani Pallasmaa is the key author who contributes the phenomenological aspect of architecture to this thesis. While learning from their approaches, this thesis also attempts to develop a personal method that is based on their knowledge.

Case studies are to apply the methods of analysis gain from literature reviews to analyze the following Thai houses: CU Thai House of Chulalongkorn University and

H.R.H. Prince Narisaranuvattiwongse's private residence in Bangkok.[4] Photography is the important tool to collect basic analysis data in the beginning of case studies. Besides, as Le Corbusier said, when people are doing the measurement, they are also establishing an order. All the architectural drawings achieved in this thesis start with measurements and surveys.

Design proposal is divided into two parts, the design exploration and the review of the selected design. Design outcomes are built upon the knowledge gained from literature reviews and case studies, particularly the architectural languages existed in Ban Plainern.

1.5 Benefits of Research

Bangkok is facing the problems of globalization, there are more and more high-rise buildings in the city center, yet Ban Plainern remains to be a low-rise residential area and its greenery seems like a jungle. The uniqueness of its character is not only its local materials but also the spatial organizations. It has a historical value for the city of Bangkok as well. Ban Plainern is a former residence of H.R.H Prince Narisaranuvattiwongse (from now on, abbreviated as Prince Naris) in Bangkok, due to the change in the surrounding physical space and the elapse of time, it has become a vehicle of history and a carrier of tradition. However, nowadays, Ban Plainern is threatened by high-rise buildings.

The plan to revive the activities in this space is still relevant to people's everyday life. To improve the transition space in Ban Plainern is not only good for the historic site itself, but also convey the significance of Thai houses to people as Ban Plainern becomes more open to public in the future.

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[4] Initially, the author planned to use M.R.Kukrit Pramoj's heritage home as a case study. M.R.Kukrit Pramoj's heritage home is a private residence. Visitors are allowed to visit during the opening time: 10.00 am to 16.00 pm. The author has already measured the plan of this house, but the document is not completed because of the pandemic Covid-19. M.R.Kukrit Pramoj's heritage home was temporary closed. Unfortunately, this case study cannot be presented in this thesis.

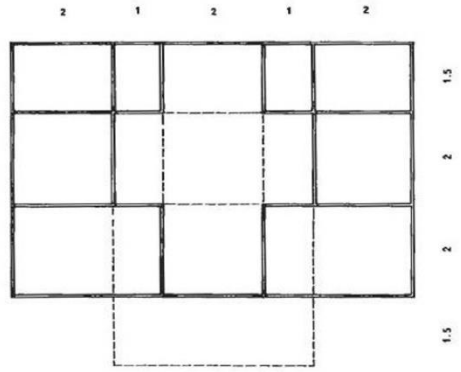
Chapter 2 Literature Reviews

2.1 Colin Rowe's *The Mathematics of the Ideal Villa and Other Essays*

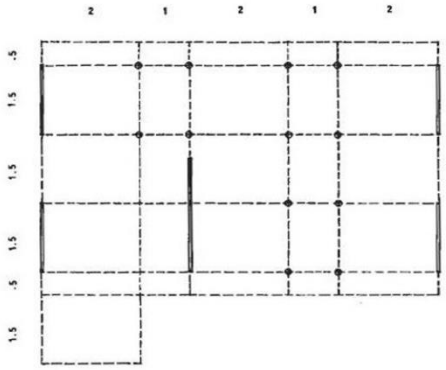
Looking back in history, architecture in any periods does not appear suddenly, it has a development process. In this process, there are similarities between the old and the new, lesson learnt from the past and the proposal for the future. This similarity also implies that what architecture represents is worthy of being continued. In other words, this similarity represents an architectural tradition. How to find similarities and connections in new buildings and old buildings? Scholars have different explanations. Colin Rowe, Peter Eisenman's teacher, gave his analysis on such relation in a book named ***The Mathematics of the Ideal Villa and Other Essays***. In the first chapter to this book, Rowe used two buildings as the bases for comparative studies. One is Villa Foscari in Maleontenta (built at 1560), designed by Andrea Palladio. Another one is House of Mr. and Mrs. Michael Stein (built at 1928), designed by Le Corbusier. He used mathematical methods to analyze the proportions through the elevations and the structural frameworks of these two buildings. Their frameworks of these two buildings, built at different time, are similar and the result of the comparison is convincing (figure 2).

The total length of the two plans in the horizontal direction is 8 units, from left to right, the two buildings show the intersection alternative rhythm as 2, 1, 2, 1, 2. The length in the vertical direction is 7 units, the difference is that Le Corbusier divided his plan in the vertical direction more refined. He made the two rows of pillars above and below indented 0.5 units inward, thus forming a transitional space. The overall layout of the two buildings has great similarities. If only look at the relationship between these two plans, it can indeed be seen that House of Mr. and Mrs. Michael Stein is the inheritance and development of Villa Foscari in Maleontenta. This is an analysis on paper by a scholar, not an architect. Although Rowe also tried to explain the relationship between the two buildings on the façade, obviously, the correlation is hard to be detected. The mathematics is intangible. In contrast to the similarities reflected in mathematics, the difference between the two buildings through material and construction can be

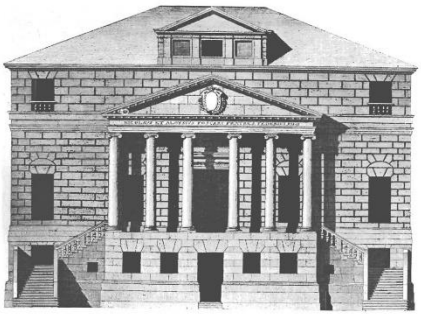
perceived. They are tangible. Rowe did not explain these issues in this chapter.



Plan of Villa Foscari in Maleontenta



Plan of House of Mr. and Mrs. Michael Stein



Elevation of Villa Foscari in Maleontenta

Elevation of House of Mr. and Mrs. Michael Stein

Figure 2 The plans and elevations of Villa Foscari and House of Mr. and Mrs. Michael Stein. Retrieve from ***The Mathematics of the Ideal Villa and Other Essays****, page 5, page 20 and page 23.*

2.2 Peter Eisenman's *Ten Canonical Buildings*

As Rowe's student, an architect Peter Eisenman's analysis is even more radical. In his book ***Ten Canonical Buildings,*** He used Altes Museum (built at 1830) and Peter B. Lewis Building (built at 2002) as the objects of comparison. In Eisenman's comparison, he gave the analysis of mathematical models on proportion in coding system (ABCBA, see figure x) and used purer analysis of form (figure 3). Eisenman explained that the two plans use the same form ABCBA to divide the overall plan. If read it only in terms of form, this explanation is feasible. Further, Peter Eisenman indicated that, looking at the two

buildings from the corner, they also have similarities in form. For Altes Museum, the comparative relationship between the side elevation and the front elevation at the corner strengthens the theme of the corner as the main part. For Peter B. Lewis Building, the different arrangements of windows on both sides of the corner are also the embodiment of the corner as an important part. This explanation is abstract. As a kind of analytical study for architectural design, this relationship itself is hard to detect.

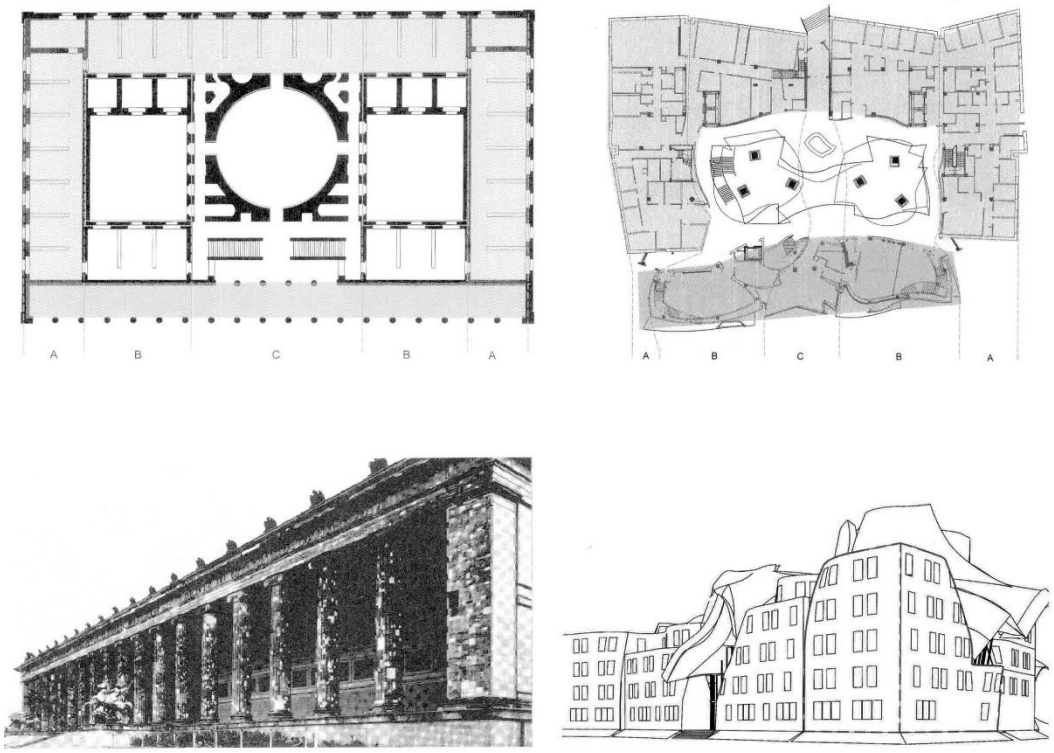


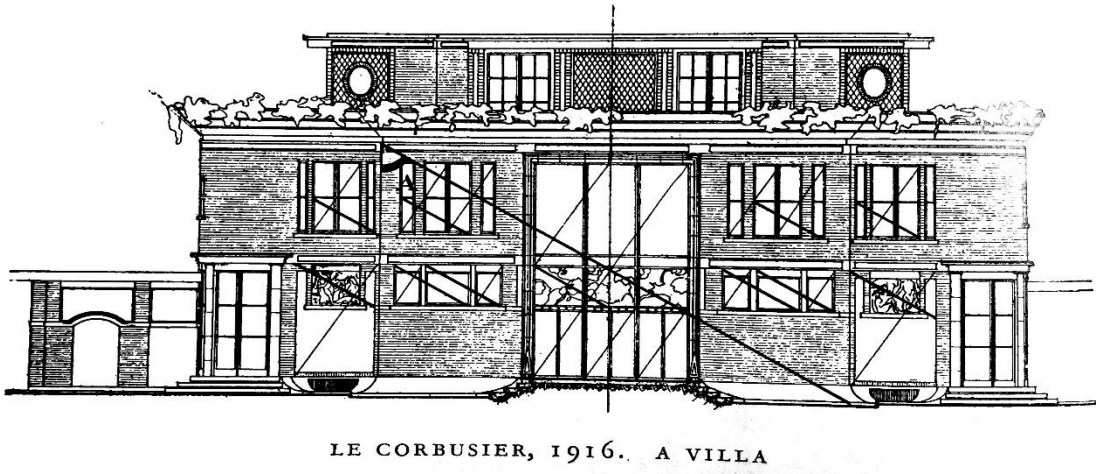
Figure 3 The plans and elevations of Altes Museum and Peter B. Lewis Building. Retrieve from ***Ten Canonical Buildings****, page 254, page 259.*

In analyzing the relationship between precedent buildings and modern buildings, Rowe and Eisenman focused on the analysis of form. Eisenman called it “the mind sees”. Their analytical method of architectural form is impressive, it reveals the connections between the new buildings and the old buildings that are not easily

detectable by the eyes but have real existence. However, this analysis method only emphasizes the form of the building itself. The relationship between architecture and environment, the relationship between architecture each other in the environment has not been studied.

2.3 Le Corbusier's *Towards A New Architecture*

In ***Towards A New Architecture***, Le Corbusier wrote that human eyes are always moving in the process of investigation, observing everything they are interested in, turning right and left, up and down. He gave an example, if a building cube by 100,000 cubic yards, but what around it is millions of cubic yards. Then the sensation of density will come out: a tree, and a hill, their proportion is less powerful than the geometrical disposition of forms in terms of density. It is impossible to draw such a conclusion without putting the building in the environment to observe. Compared with Colin Rowe used the mathematical model in analyzing the elevations, Corbusier used regulating lines to analyze the elevations (figure 4). Le Corbusier praised architectural plan is the source of great creation. Seeing from the result of using regulating lines to analyze the elevations, elevations also show the power of orders. The aspect that Colin Rowe and Peter Eisenman did not show in their research: the relationship of space. Le Corbusier pointed out the importance of grading of axes in spatial relationships.



LE CORBUSIER, 1916. A VILLA

Figure 4 This graphic shows how Le Corbusier use regulating lines to analyze architectural elevation. Retrieve from **Towards A New Architecture,** *page 80.*

To Le Corbusier, the grading of axes is to classify the aims and the intentions, therefore, architect gives destinations to axes. These targets of axes are the wall, or light and space. Le Corbusier, however, did not give the clear and powerful illustrations to help readers to understand what he talked about like Colin Rowe and Peter Eisenman. For example, the graphic below (figure 5) is used by Le Corbusier to explain the spatial relationship between architecture and environment, and also the spatial orders in the Acropolis. In this graphic, except for a central axis, readers cannot see the grading of axes that assigned by architect. Even if read Le Corbusier's explanatory words and watch this graphic at the same time, readers cannot understand how these axes work in the space. it is difficult to understand the spatial relationship in this case. This makes readers wonder whether, as Le Corbusier said, grading of axes plays a significant role in the spatial relationship of architecture. On the other hand, this also aroused the desire to prove it.

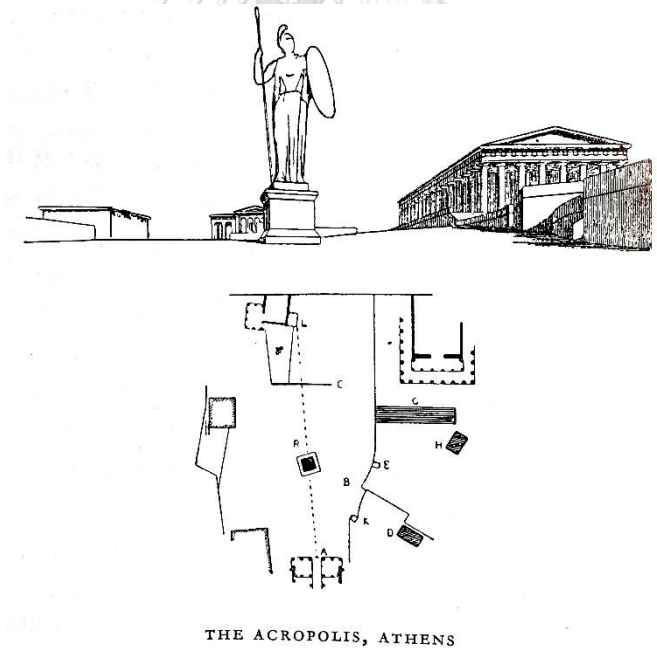


Figure 5 Le Corbusier used this graphic to explain how axis work in space. Retrieve from ***Towards A New Architecture,*** *page 188.*

The research methods shown by Colin Rowe, Peter Eisenman and Le Corbusier in their books are obviously complementary. ***The Mathematics of the Ideal Villa and Other Essays*** and ***Ten Canonical Buildings*** focus on the form analysis of

individual building. ***Towards A New Architecture*** not only provides another method to analyze the building elevations, but also puts forward analyzing the spatial correlation with the axis. Combining these two methods for study will make the research methods more inclined to analyze architecture by an intact methodology.

Therefore, as an exploration, the method of analysis in this research combined the way from Colin Rowe, Peter Eisenman and Le Corbusier. At the same time, try to explore a clearer graphical representation, and verify whether like Le Corbusier said, "The axis here is not an arid thing of theory; it links together the main volumes which are clearly stated and differentiated one from another."[5]

2.4 Juhani Pallasmaa's *The Eyes of the Skin: Architecture and the Senses*

A poetic viewpoint towards architectural space that is important for this thesis is Juhani Pallasmaa's ***The Eyes of the skin: Architecture and the Senses.*** Pallasmaa advocates that architectural experience has the body at the center. Vision is the basis for all other senses. The position of human body is central to how one experiences architecture then the essential significance of architecture will be presented in front of one's eyes. This view is unmentioned by Colin Rowe, Peter Eisenman and Le Corbusier. It is true to say that the invisible order in architecture can be represented in architectural drawings. It is also true to say that the experience to Juhani Pallasmaa is formless but exists. Pallasmaa wrote "All experience implies the acts of recollecting, remembering and comparing … In memorable experiences of architecture, space, matter and time fuse into one singular dimension, into the basic substance of being, … these dimensions become ingredients of our very existence."[6]

Pallasmaa criticised that vision has dominated our senses for a long time (figure 6). Adding to vision, taste, touch, hearing and smell are the tools for us to experience the real world. Visual observation is confirmed by touch (figure 7). With the assistance of the development of science and technology, images can be spread

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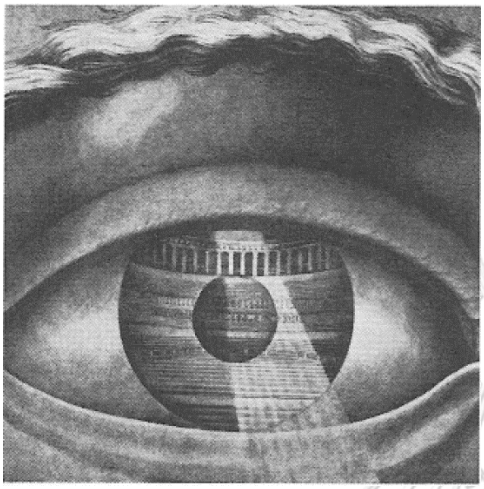
[5] Retrieve from ***Towards A New Architecture,*** by Le Corbusier. Page 162.

[6] Retrieve from ***The Eyes of the Skin: Architecture and the Senses,*** by Juhani Pallasmaa. Page 72.

rapidly in all corners of the earth through publications. The photograph enables one to see, even though the body is not there. Photograph however cannot be a substitute for a real encounter of architectural spaces.



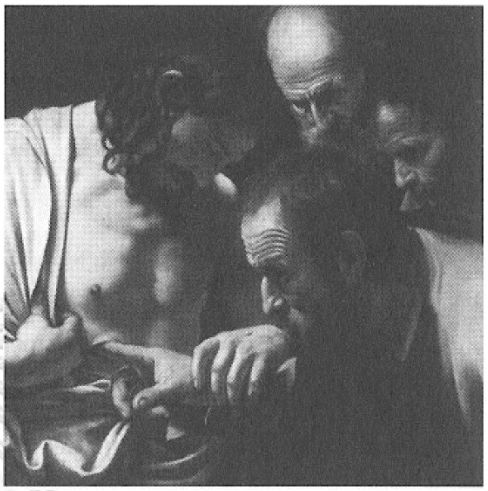


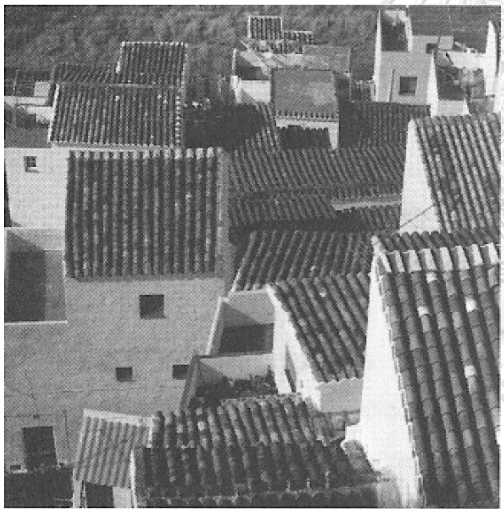
Figure 6 (left) Architecture has been regarded as an art form of the eye. Retrieve from ***The Eyes of the Skin: Architecture and the Senses,*** *Page 18.*

Figure 7 (right) Regardless of our prioritization of the eye, visual observation is often confirmed by our touch. Retrieve from ***The Eyes of the Skin: Architecture and the Senses,*** *Page 23.*

Pallasmaa thinks that traditional culture and vernacular architecture can be experienced through the tactile sense, rather than the visual sense (figure 8, figure 9). The process is like birds determine the form of the nest through physical activities. To explain "the body as the center", Pallasmaa quotes the philosophical view from Mealeau-Ponty: "Our own body is in the world as the heart is in the organism: it keeps the visible spectacle constantly alive, it breathes life into it and sustains it inwardly, and with it forms a system."[7] Using all the senses of one's body to establish a connection with the world, and to experience the world. Pallasmaa regards vision as the basis of other senses. To him, gaze implies the unconscious touch, bodily mimesis and identification. In contrast, we can think of the sense of touch as the unconscious vision. The unconscious sense of touch determines the pleasure or unpleasantness of the

[7] Retrieve from ***Phenomenology qf Percejltion,*** by Maurice Merleau-Ponty. Page 203.

experience. For example, a student is talking with a teacher in a classroom. They are looking at each other and discussing topics of their interest. The student concentrates in the talking, the vision consciously focus on the teacher's eyes. The tables, chairs are still in the vision of the student, but they exist in the unconscious way. When the student touches the table, if the table is made of smooth iron surface, the student may feel uncomfortable, cold. If the table is made of wood with rough texture, the student may feel normal, natural. No matter which result, the touch is the unconscious vision of this student. In terms of architecture, Pallasmaa says that the delight in architecture can be unconsciously touched by the eyes through the shapes and the surfaces. As Le Corbusier mentioned, "Contour and profile are the touchstone of the architect." The unconscious touch makes architecture regain its plasticity.



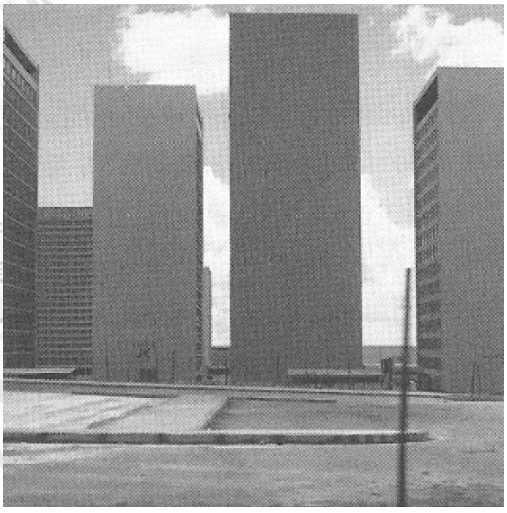


Figure 8 (left) The haptic city is the city of interiority and nearness. Retrieve from ***The Eyes of the Skin: Architecture and the Senses,*** *Page 33.*

Figure 9 (right) The modern city of sensory deprivation. Retrieve from ***The Eyes of the Skin: Architecture and the Senses,*** *Page 43.*

Architecture is an extension of nature, that is the relationship between built form and the fantasy of natural environment. Shadows give shape and life to objects under the sun. Time stop in front of great buildings. The cycle of time, the passage of time and movement of the sun is reflected by architecture. It is touching and convincing that

Pallasmaa summarizes the task of architecture design in his mind, “Architecture elaborates and communicates thoughts of man’s incarnate confrontation with the world through ‘plastic emotions’.”[8]

2.5 Jorit Graham’s poetry: “All”

The interior world is filled with individual’s memories, experiences and emotions. Poetry is the refined words to speak out one’s subtle feelings by appealing to the collective minds. Juhani Pallasmaa also admits himself to the power of poetry in architecture. He says, the “re-oralised words” of poetry brings people to the center of one’s interior world.[9]

The poetry “**All**”, wrote by Jorit Graham, describes how the minute things, such as the weight of water droplets on leaves, flower stretched shape, connect with the public emotions. Existence has meaning because it is seen, is it true? With or without attention, “nothing” is important. The existence is not defined by being seen, the meaning of existence is defined by being recognized. The existence of nothing is there. It is ready for those who wish to be touched by it and still can be touched by it. The same is true with architecture. One can be touched by architecture in both aspects of the tangible and the intangible.

All :

“After the rain stops you can hear the rained-on.
You hear oscillation, outflowing, slips.
The tipping-down of the branches, the down, the
exact weight of those drops that fell

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[8] Retrieve from ***The Eyes of the Skin: Architecture and the Senses,*** by Juhani Pallasmaa. Page 46.

[9] Retrieve from ***The Eyes of the Skin: Architecture and the Senses,*** by Juhani Pallasmaa. Page 25.

over the days and nights, their strength, accumulation,
shafting down through the resistant skins,
nothing perfect but then also the exact remain
of sun, the sum

of the last not-yet-absorbed, not-yet-evaporated
days. After the rain stops you hear the
washed world, the as-if inquisitive garden, the as-if-perfect beginning again
of the buds forced open, forced open – you

cannot not unfurl
endlessly, entirely, till it is the yes of blossom, that end
not end – what does that sound sound like
deep in its own time where it roots us out

completed, till it is done. But it is not done.
Here is still strengthening. Even if only where light
shifts to accord the strange complexity which is beauty.
Each tip in the light end-outreaching as if anxious

but not. The rain stopped. The perfect is not beauty.
Is not a finished thing. Is a making
of itself into more of itself, oozing and pressed
full force out of the not-having-been

into this momentary being – cold, more
sharp, till the beam passes as the rain passed,
tipping into the sound of ending which does not end,
and giving us that sound. We hear it.

We hear it, hands
useless, eyes heavy with knowing we do not
understand it, we hear it, deep in its own
consuming, compelling, a dry delight, a just-going-on sound not

desire, neither lifeless nor deathless, the elixir of
change, without form, we hear you in our world, you not of
our world, though we can peer at (though not into)
flies, gnats, robin, twitter of what dark consolation –

though it could be light, this insistence this morning
unmonitored by praise, amazement, nothing to touch
where the blinding white thins as the flash moves off
what had been just the wide-flung yellow poppy,

the fine day-opened eye of hair at its core,
complex, wrinkling and just, as then the blazing ends, sloughed off as if a
god-garment the head and body
of the ancient flower had put on for a while –

we have to consider the while it seems
to say or I seem to say or
something else seems to we are not
nothing."[10]

[10] Retrieve from "All", by Jorit Graham. ***London Review of Booooks.*** Vol. 40, No. 16, 30 August 2018.

Chapter 3 Case Studies

3.1 Selected Cases

Compare with a relatively independent rural environment, a complex urban environment is more conducive to observing the role played by the Thai houses. Two Thai houses, CU Thai House of Chulalongkorn University (CU Thai House), and H.R.H. Prince Narisaranuvattiwongse's house (Prince Naris' Thai House) are selected as the case studies this research. The two houses represent a type of typical tropical architecture, and they are conventionally traditional Thai house, since their strong Thai-styled forms. In fact, these three houses are not real traditional Thai house.

In terms of materials, these two Thai houses have used concrete column on the ground floor to support the first floor, besides, tiles have used as the finish on the terrace. Concrete and tile are not the traditional materials applied in traditional Thai houses in the past. In terms of form, the plan of Prince Naris' Thai House is linear, the floor plan unfolds around a straight internal circulation. The layout is not a traditional idea. The plan of CU Thai house is also not a traditional plan of Thai house. Toilet was installed on the corner of northwest, as the result, the extra room was squeezed out of the terrace, so that the extra room got the independent entry and terrace.

However, even though these two Thai houses are not the unadulterated traditional Thai house, they all expressed an image of traditional Thai house to public. These two Thai houses embodied a transformation that shows traditional forms to contemporary, also evoked memories about past. Therefore, rather than choosing unadulterated traditional houses as research cases, choose the Thai-styled houses like the three houses can be more valuable.

Since Prince Naris' Thai house is one of the most important building in Ban Plainern, the case study about Prince Naris house is combined into the design part (chapter 4). So that the value of case study in this design can be easily seen.

3.2 A Case Study: CU Thai House of Chulalongkorn University

CU Thai House located in campus of Chulalongkorn University, designed by Associate Professor Pinyo Suvannakhiri, PhD, a National Artist in Thai Architecture (figure 10). It is designed for creating a traditional Thai atmosphere on the University campus as well as building a permanent structure to commemorate some important occasions.

This case study composed by three steps, the first step of this case study is to choose a spot and set up camera to record the changes that in front of lens (figure 11 and figure 12); The second step is to disassemble the scene that recorded by camera; The third step is to measure and redraw the plan and section for further analysis. In addition, to study how perspective affects people's perception about order in space.

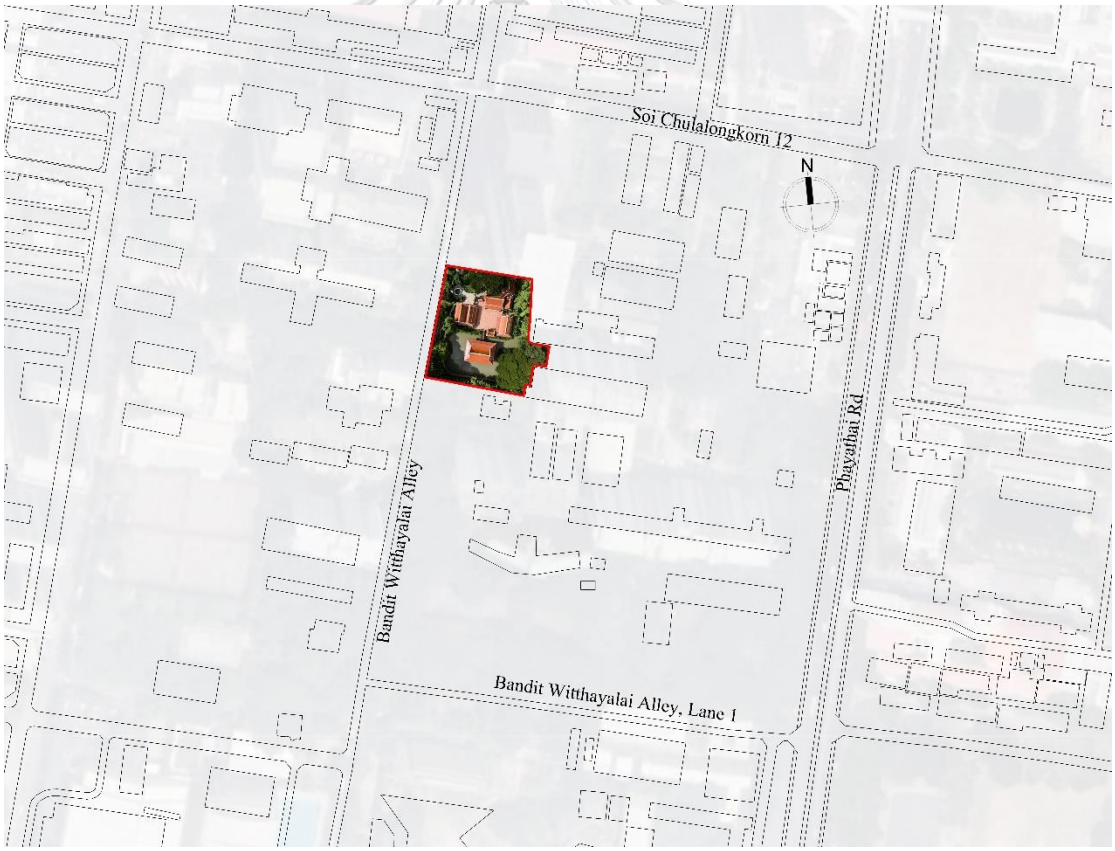


Figure 10 The location of CU Thai house.

Step one: select a spot.

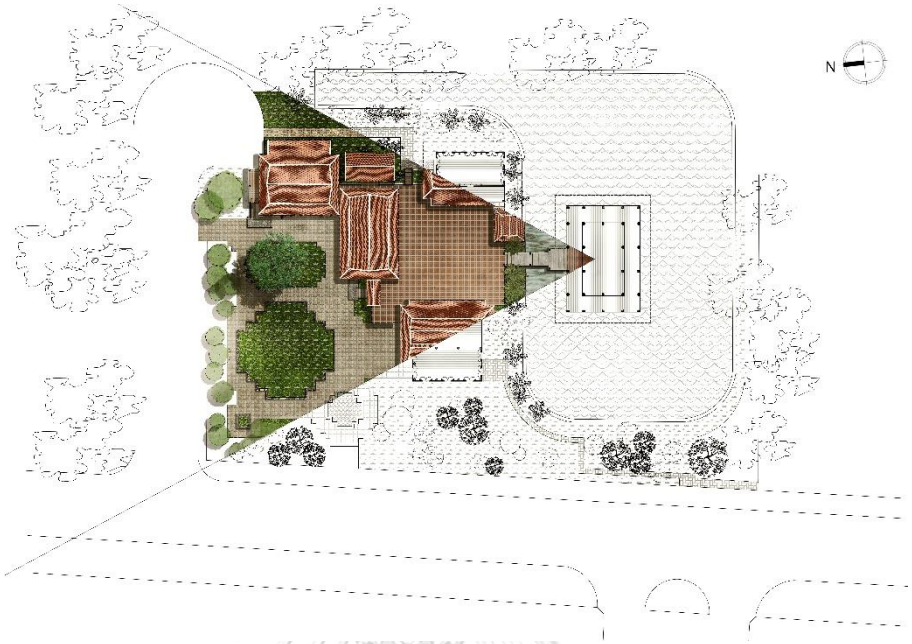


Figure 11 Master plan covers first floor plan, which shows the spot in front of camera. (redrawn by author, which bases on blueprint that achieved by associate professor Pinyo Suvannakhiri, PhD.)

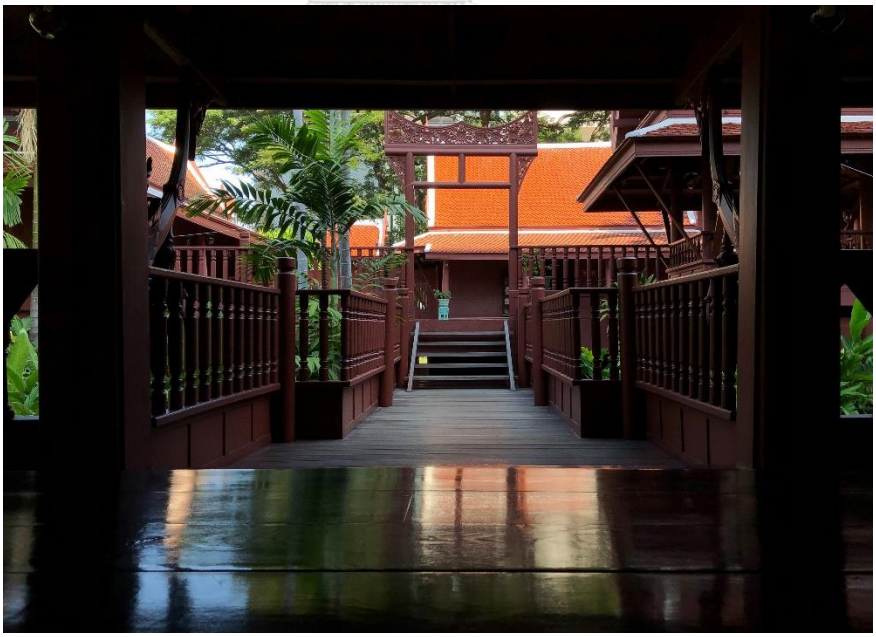


Figure 12 The perspective shows the scene in front of this spot.

Step two: disassemble the scene by different elements (start from next page).

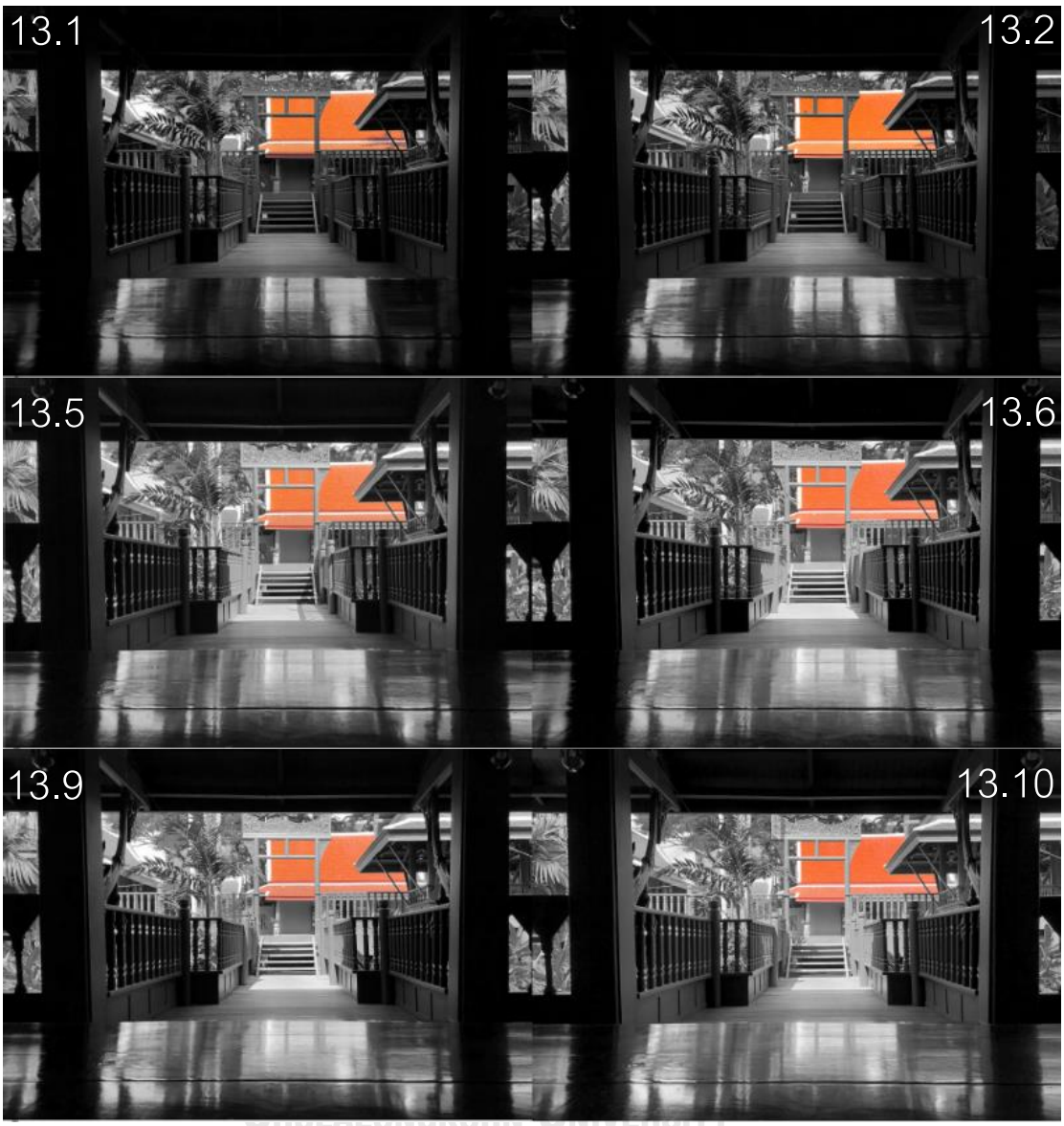
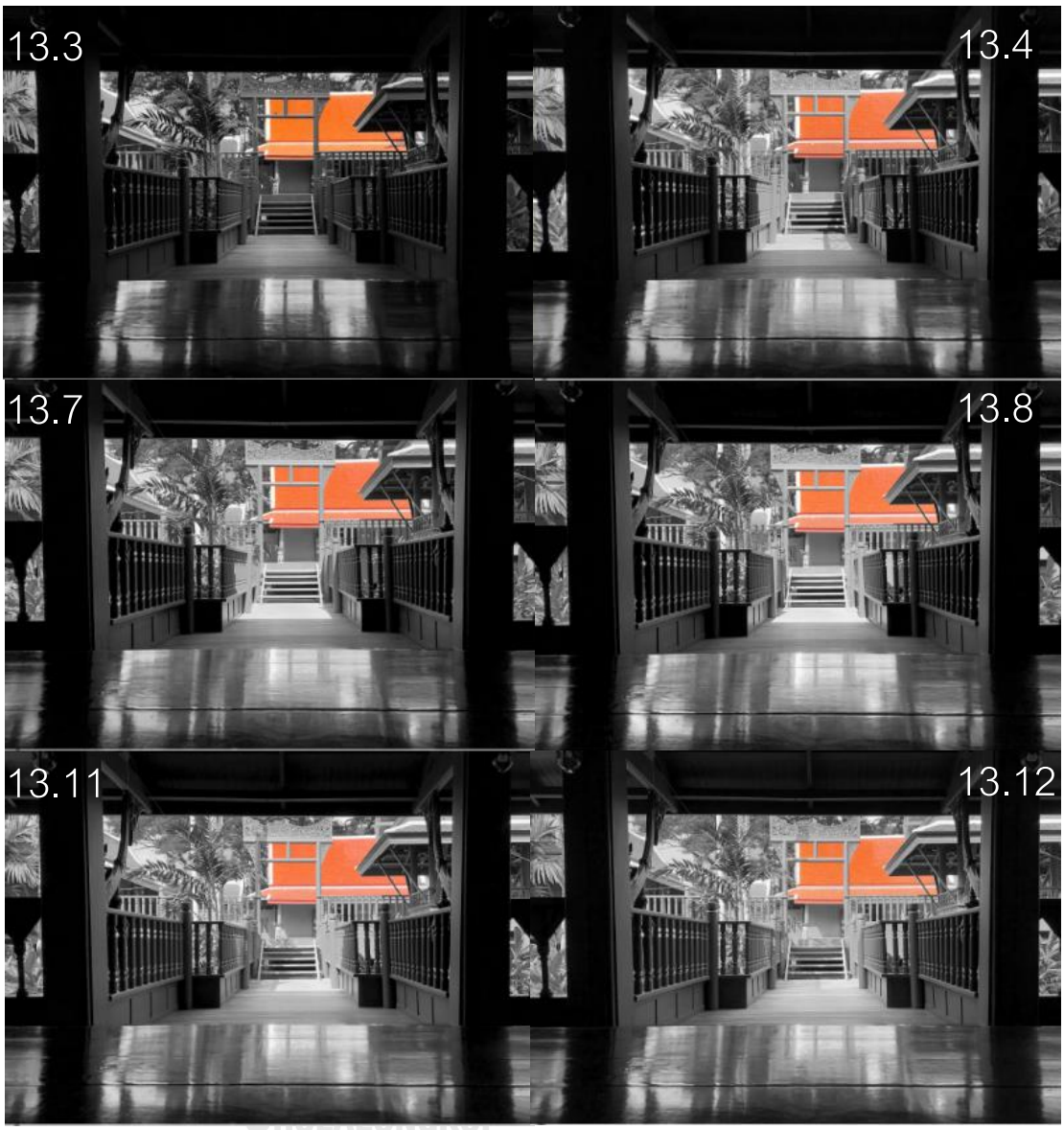


Figure 13 (including the photographs on next page): This series photography shows the changes of roof's color by different time. The observation time is 9 a.m. to 2.30 p.m. on December 3, 2019. Choose this period as the observation time is because the intensity and angle of sunlight will change significantly during this time, another reason is to respect the regulation about visiting CU Thai house.

Roof--the change of color

The roof always exposed under the sunlight, which means it is under the influence of sunlight all the time. From figure 13.1 to figure 13.4, according to the timeline, from 9 a.m. to 11 a.m. the color of the roof becomes more and more red. Basing on the result of observation, light changes architectural façade every moment in terms of colour.



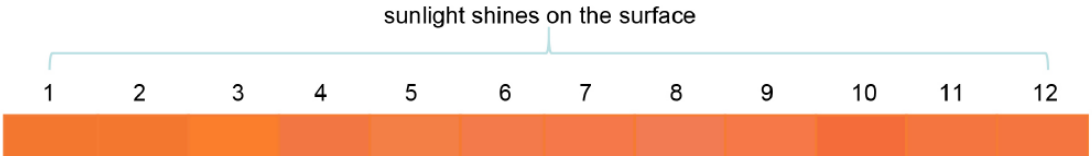
Material Property

original Color: #e09878

Raw Material: clay

Timeline: December 3, 2019.

Figure 13.1	9:00	Figure 13.7	12:00
Figure 13.2	9:30	Figure 13.8	12:30
Figure 13.3	10:00	Figure 13.9	13:00
Figure 13.4	10.30	Figure 13.10	13:30
Figure 13.5	11.00	Figure 13.11	14:00
Figure 13.6	11.30	Figure 13.12	14:30



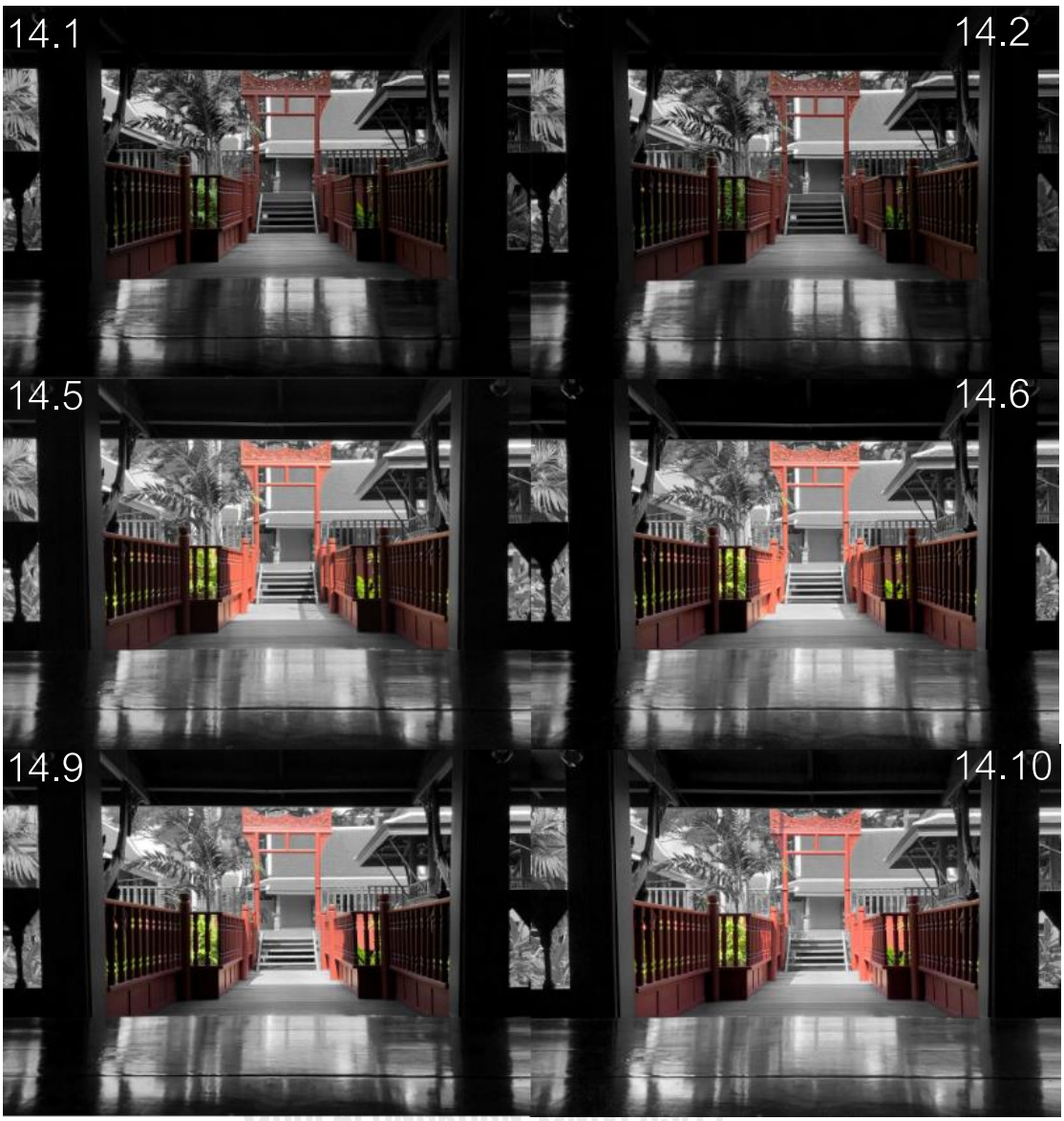
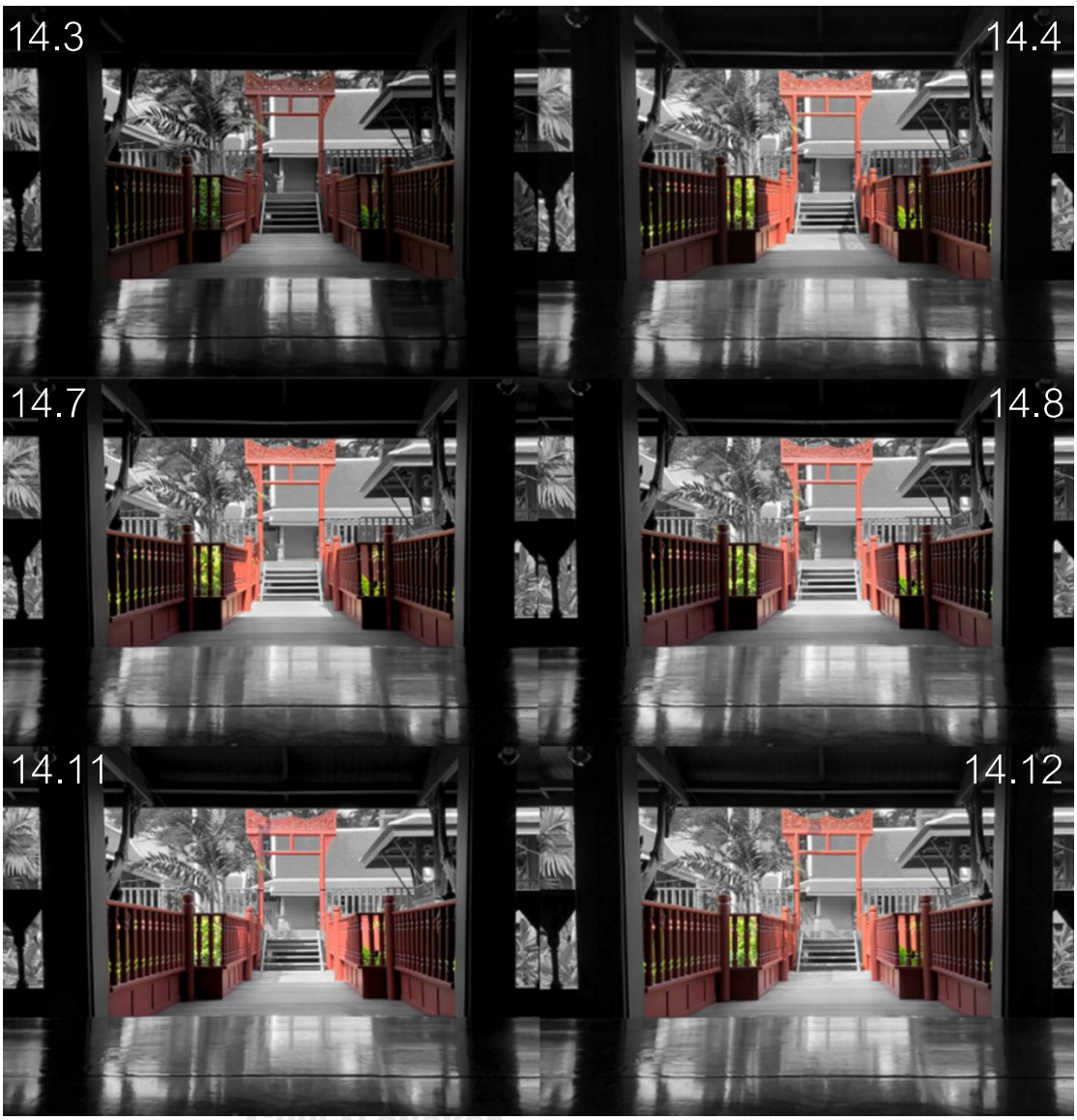


Figure 14 (including the photographs on next page): This series photography shows the changes of rail's color by different time.

Rail--the change of color (with and without affecting of light)

From figure 14.1 to figure 14.3, light does not shine on the rail, the color is gloomy. Since figure 14.4, the change of color is obvious. When the sunlight shines on the rail, the color to be warm and bright immediately. This more powerfully proves the conclusion summarized from the series of figure 13.



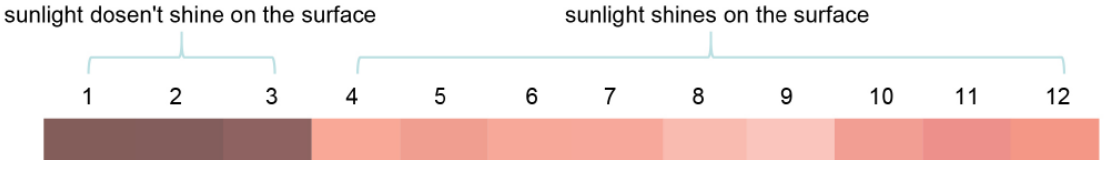
Material Property

Original Color: 7e4943

Raw Material: wood

Timeline: December 3, 2019.

Figure 14.1	9:00	Figure 14.7	12:00
Figure 14.2	9:30	Figure 14.8	12:30
Figure 14.3	10:00	Figure 14.9	13:00
Figure 14.4	10.30	Figure 14.10	13:30
Figure 14.5	11.00	Figure 14.11	14:00
Figure 14.6	11.30	Figure 14.12	14:30



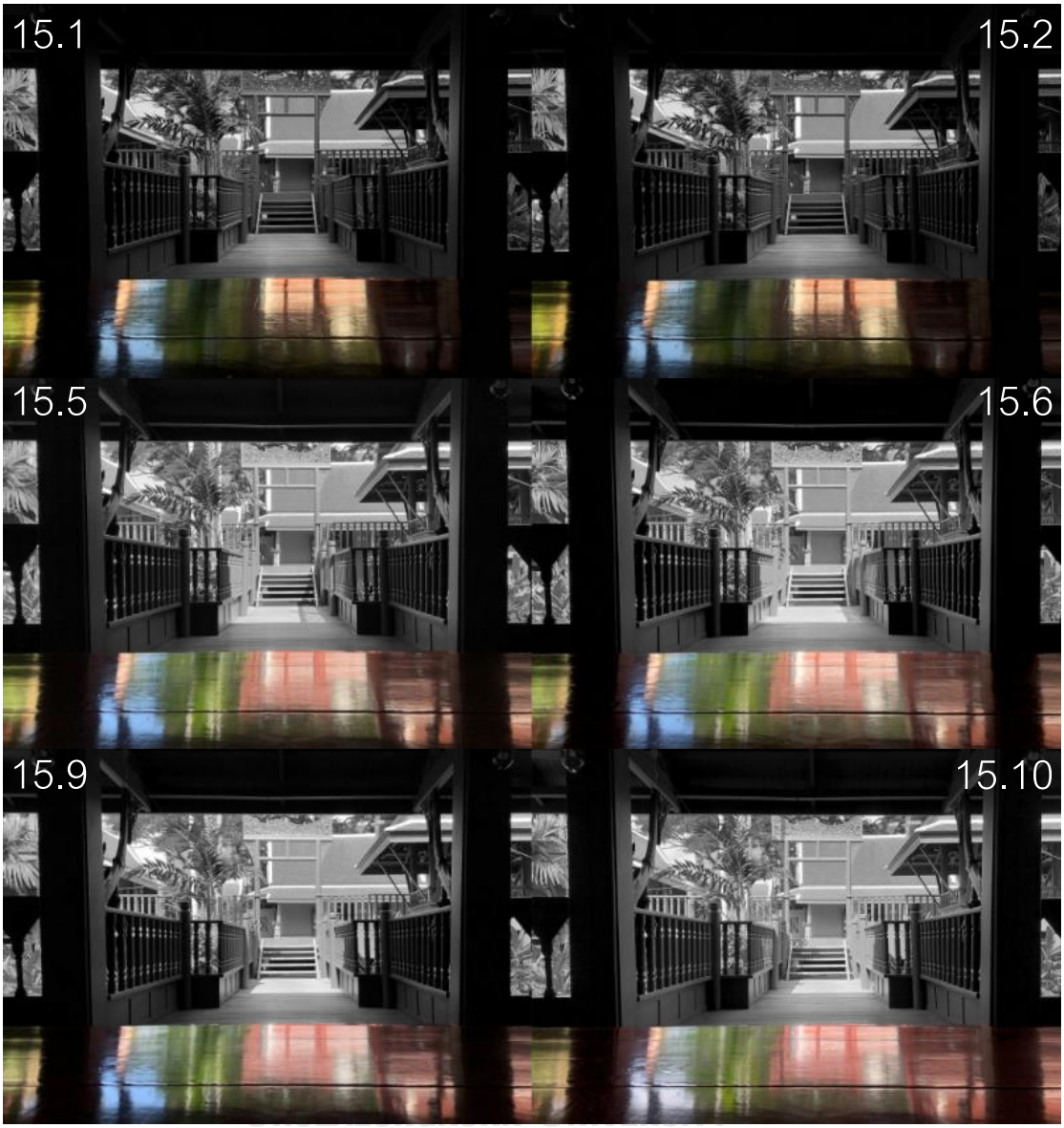
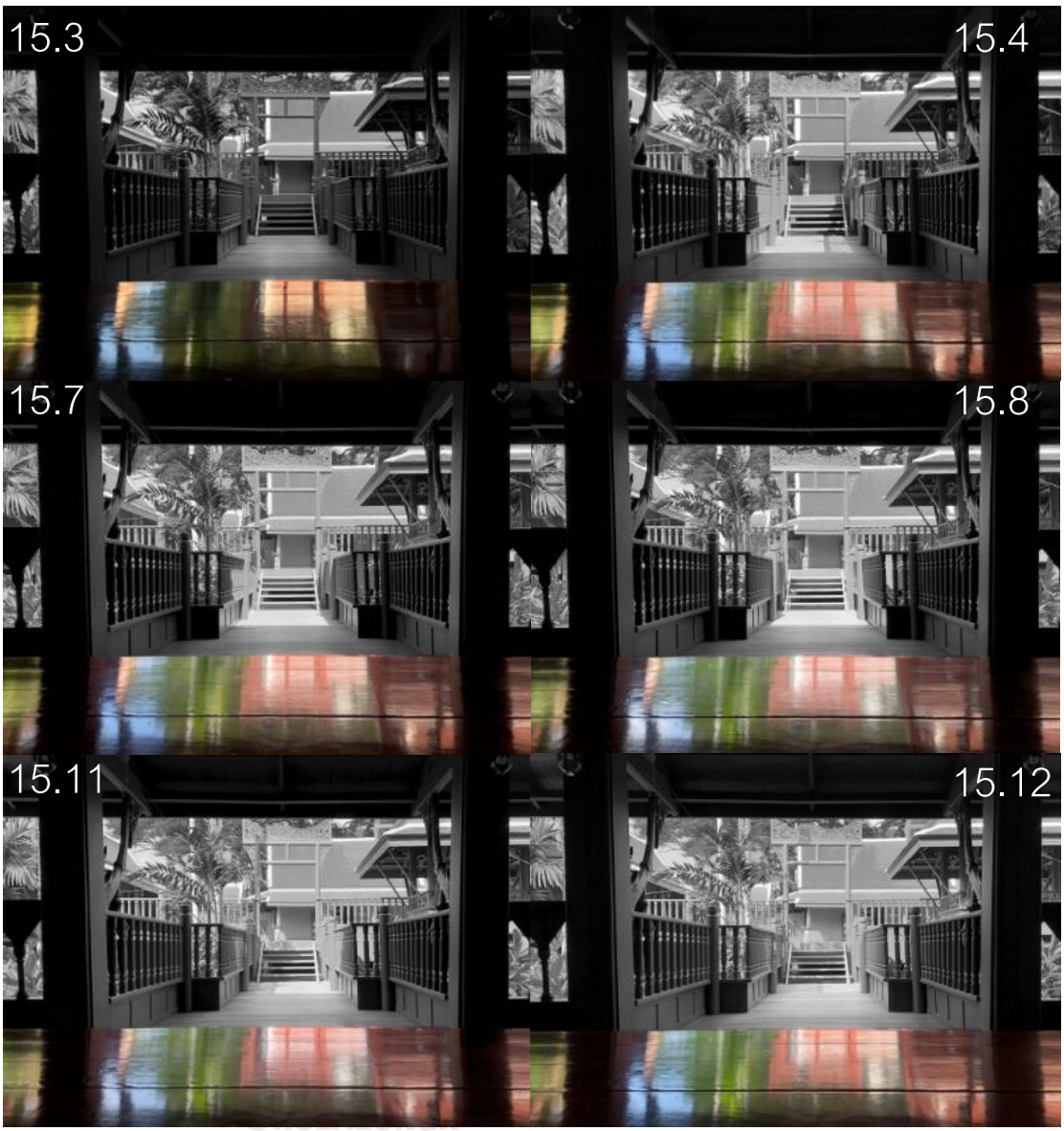


Figure 15 (including the photographs on next page): This series photography shows the changes of floor's reflection by different time.

Floor--the change of reflection

Light makes refection on the floor. The reflection on figure 15.1, 15.2 and 15.3 are blurry, even these colors trend to mix with each other. Since figure 15.4, the colors of the reflection are easily to be recognized. The stronger the light, the more obvious the reflection on the floor. And the color of reflection is closer to the real situation.



Material Property

Original Color: 814334

Raw Material: wood

Timeline: December 3, 2019.

Figure 15.1 9:00
Figure 15.2 9:30
Figure 15.3 10:00
Figure 15.4 10.30
Figure 15.5 11.00
Figure 15.6 11.30
Figure 15.7 12:00
Figure 15.8 12:30
Figure 15.9 13:00
Figure 15.10 13:30
Figure 15.11 14:00
Figure 15.12 14:30

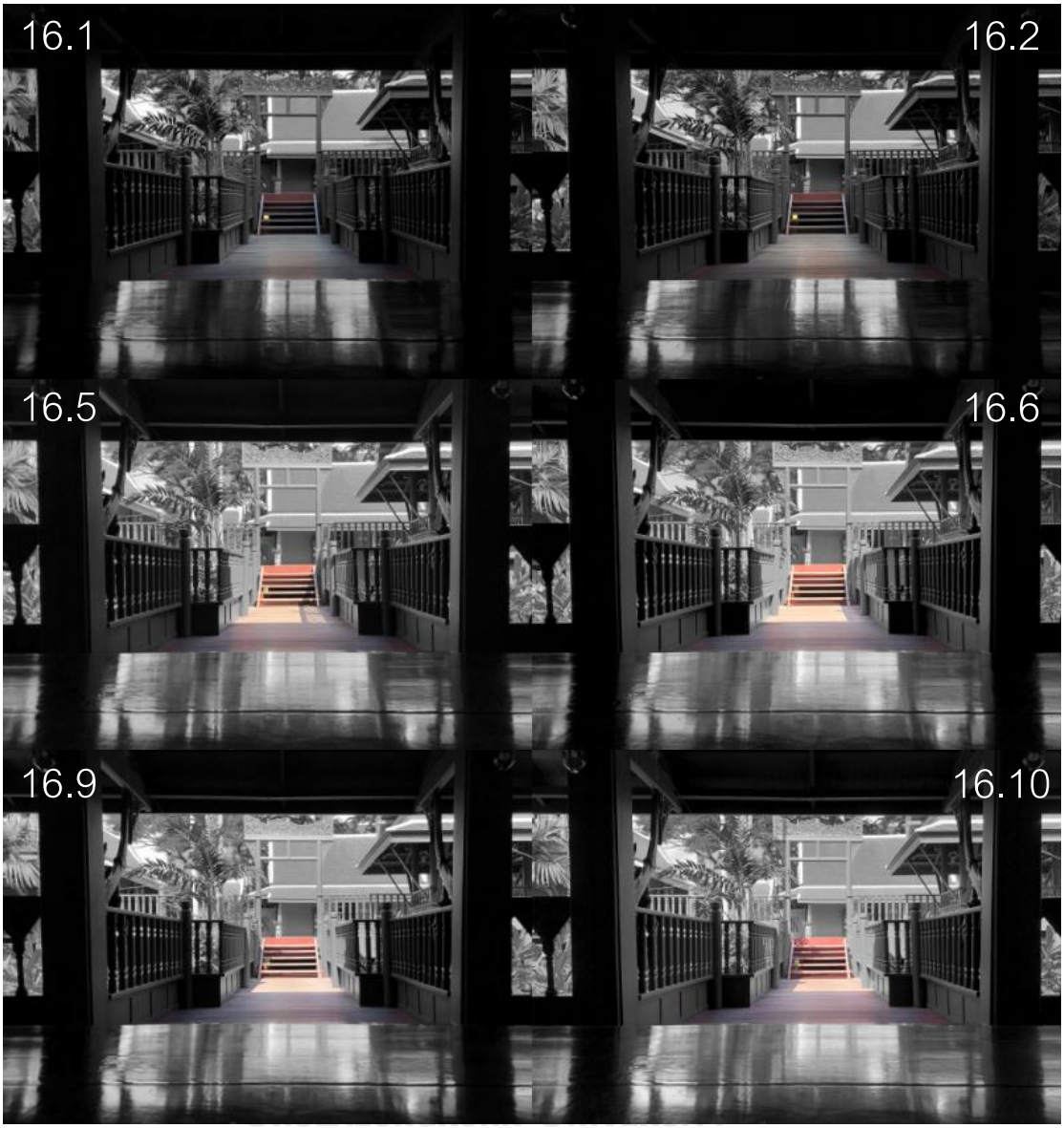
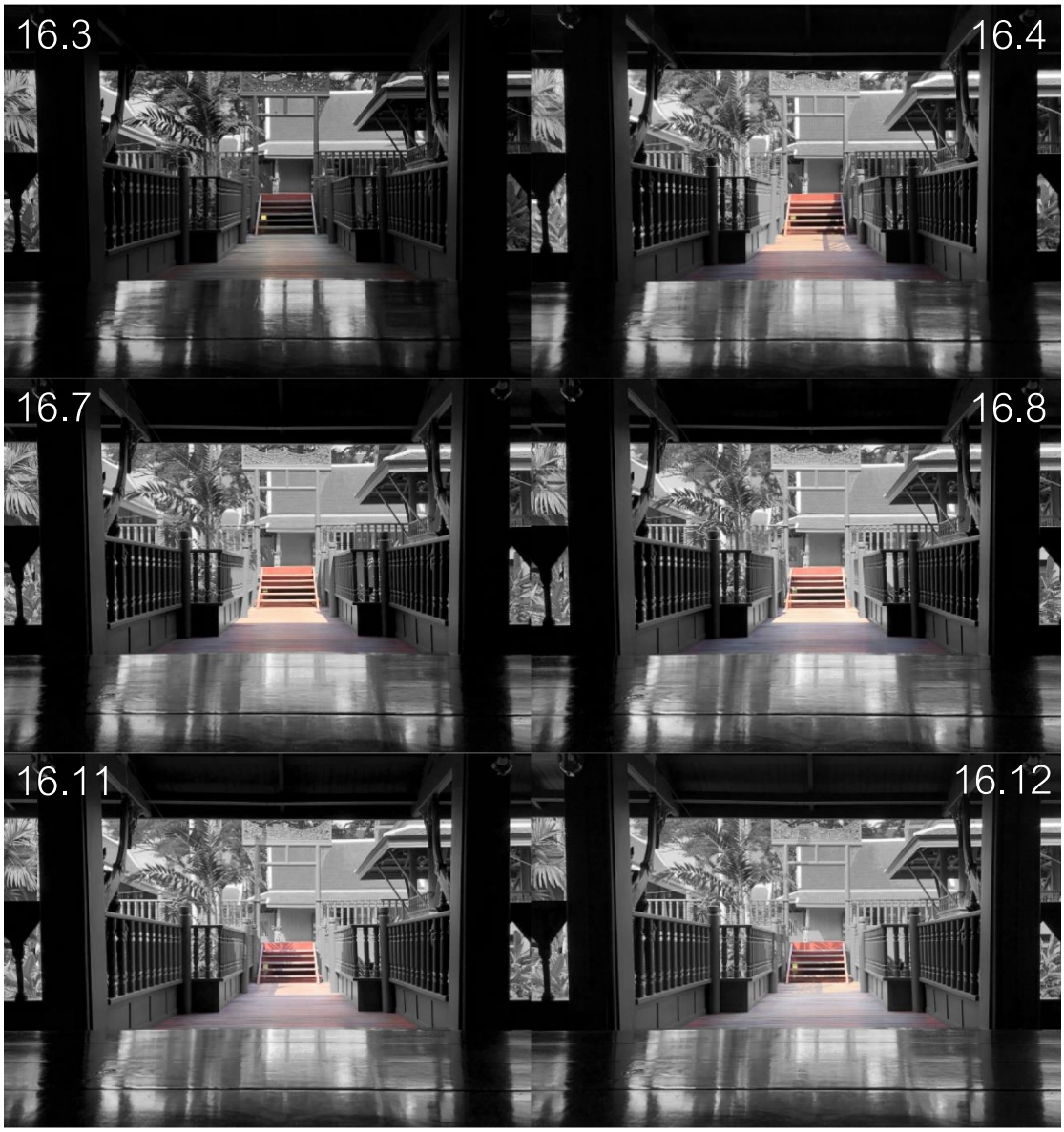


Figure 16 (including the photographs on next page): This series photography shows the changes of shadow on stair by different time.

Stair--the change of shadow

Before sunlight shine in this space, the stair demonstrated its important status by acting as a passage connecting the upper and lower spaces. After sunlight shine in this space, through shade, the primary and secondary relationship of space can be distinguished at a glance.



Material Property

Original Color: b7b7b9

Raw Material: wood

Timeline: December 3, 2019.

Figure 16.1 9:00
Figure 16.2 9:30
Figure 16.3 10:00
Figure 16.4 10.30
Figure 16.5 11.00
Figure 16.6 11.30
Figure 16.7 12:00
Figure 16.8 12:30
Figure 16.9 13:00
Figure 16.10 13:30
Figure 16.11 14:00
Figure 16.12 14:30

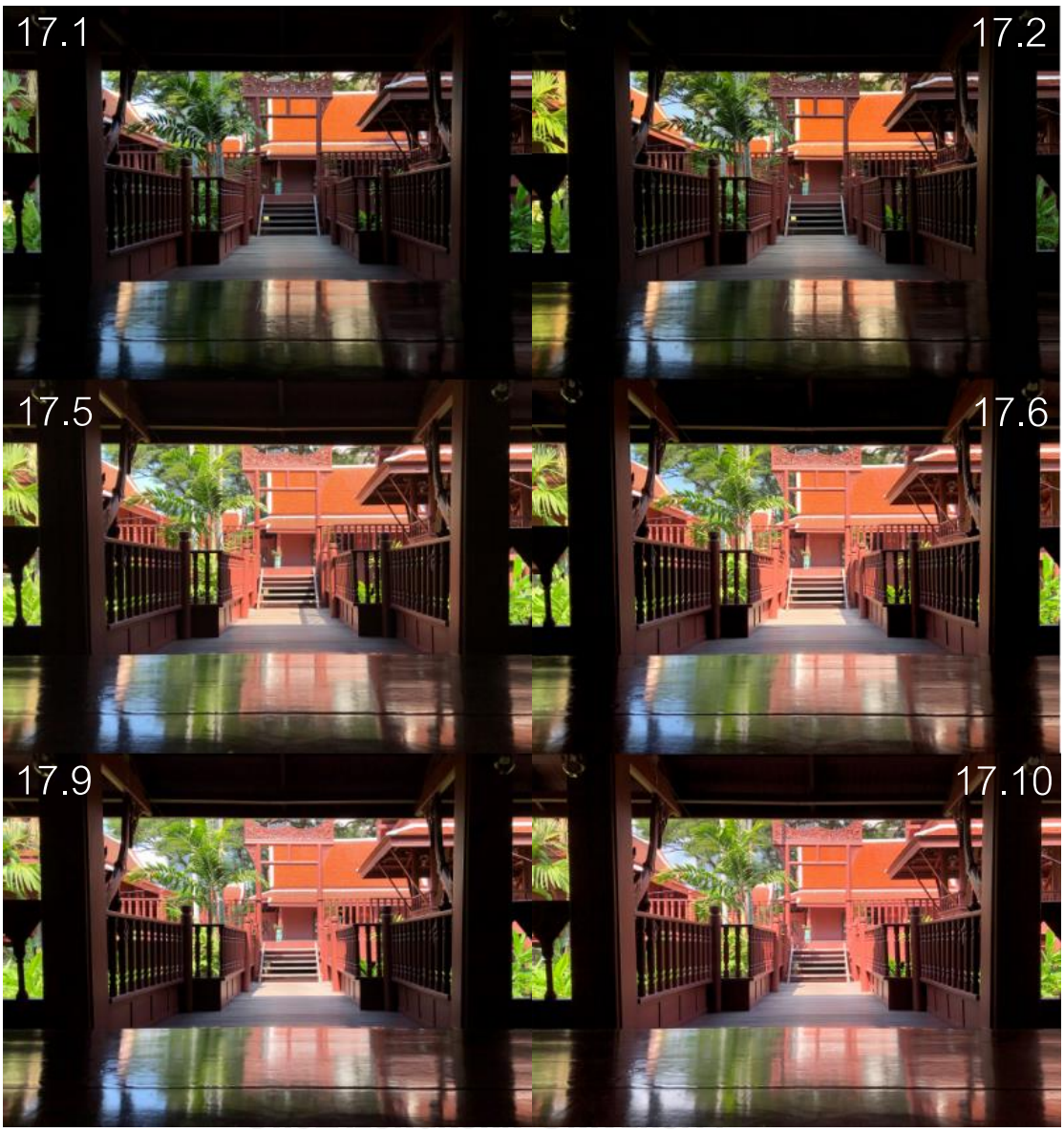


Figure 17 (including the photographs on next page): This series photography shows the changes of the whole space by different timing.

A perspective--the change of space

Light can strongly change the colour of materials, shade and shadow can reflect the primary and secondary relations in space. These changes proved that materials, light, shade and shadow are unavoidable factors in architectural analysis and design.

In terms of light, it could be regarded as one of the orders in architecture. From figure 17.1 to figure 17.3, the space looks like consecutive. But after figure 17.3, the space is cut by light, the shadow clearly divides the boundaries between indoor and outdoor. As time goes, the space becomes more hierarchical.

Timeline: December 3, 2019.

Figure 17.1 9:00
Figure 17.2 9:30
Figure 17.3 10:00
Figure 17.4 10.30
Figure 17.5 11.00
Figure 17.6 11.30
Figure 17.7 12:00
Figure 17.8 12:30
Figure 17.9 13:00
Figure 17.10 13:30
Figure 17.11 14:00
Figure 17.12 14:30

Step 3: analysis via diagram

Analyzing the building's plan is the first thing that if people would like to study the building. If the analysis completely relied on the architectural drawings without surveying on the site, it may cause the analysis results to be inconsistent with reality in some cases. The graphic below shows that the hierarchies of space are divided by different height. The order is clear.

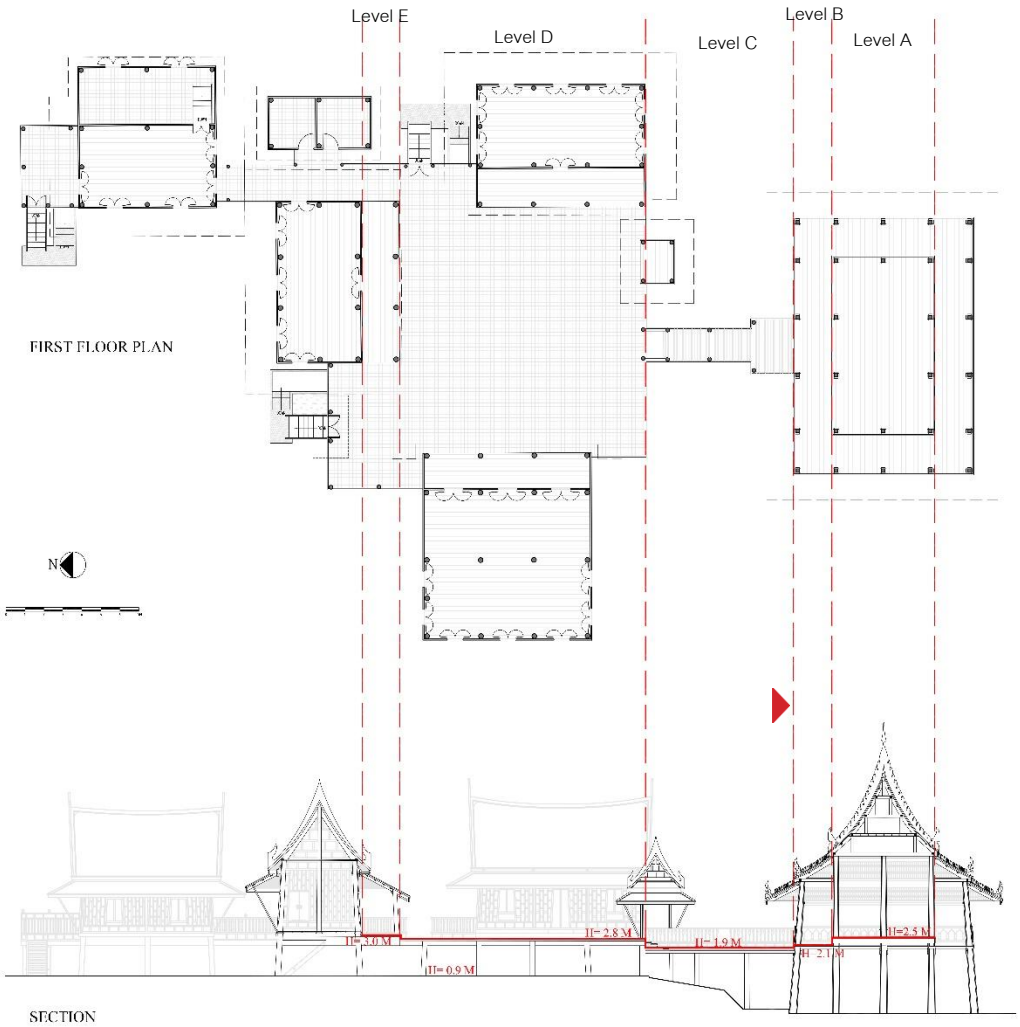


Figure 18 This diagram combined the first floor plan and a section to show the hierarchy of space in literal perspective. (First floor plan and section redrawn by author, which bases on blueprint that achieved by Associate Professor Pinyo Suvannakhiri, PhD. Details shown Details shown on appendix.)

In the reality situation, if look at the space from the spot, Level B is disappeared in front of eyes. In this spot, only the space between stair and the reflective floor are seen. To be more precise, Level B was blocked by Level A.

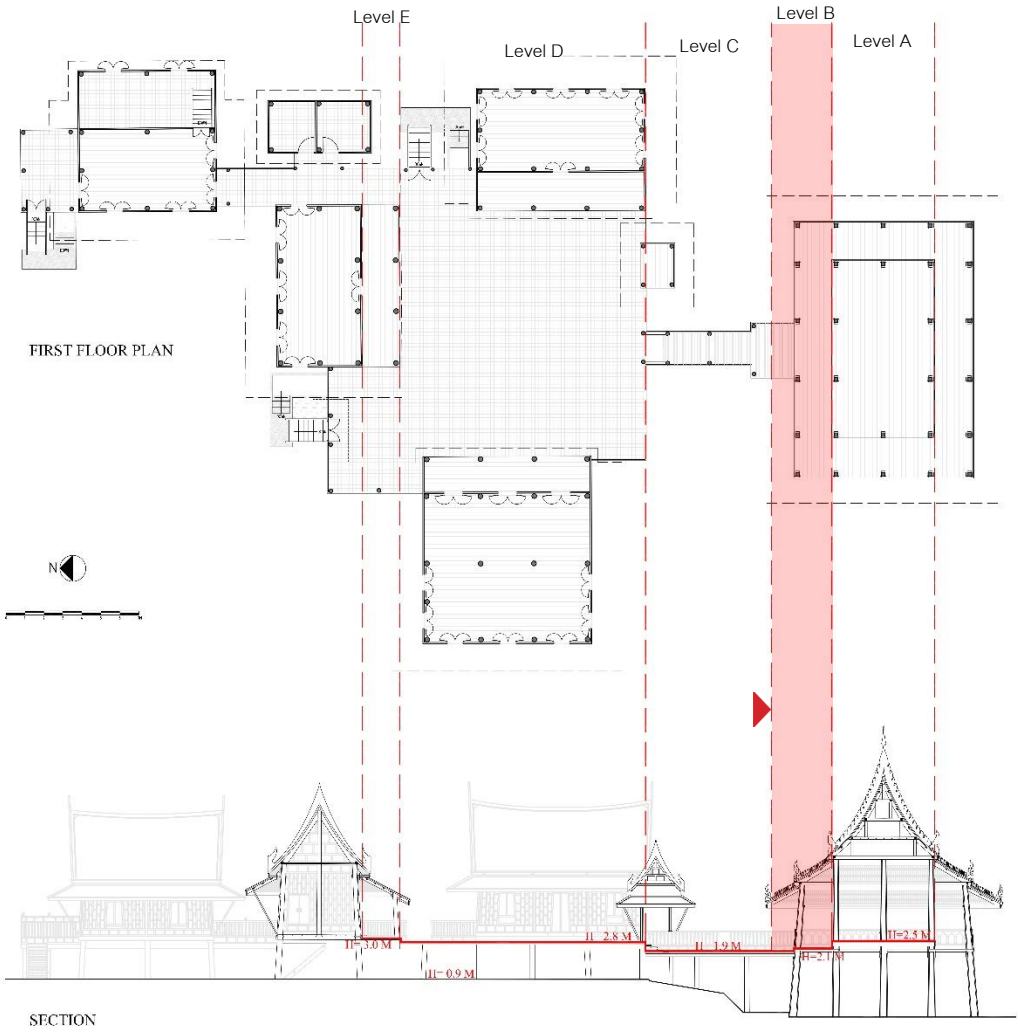


Figure 19 This diagram combined first floor plan and a section to show the hierarchy of space in a reality perspective. (First floor plan and section redrawn by author, which bases on blueprint that achieved by Associate Professor Pinyo Suvannakhiri, PhD. Details shown on appendix.)

In conclusion, people see different orders in the same space. Perspective is another variable element in architectural space. For example, in the same spot, people also see different scenes by standing and sitting. What people can see in front of eyes in architectural space, is decided by mathematics as well. When people talk about mathematics in traditional architecture, modulus is always be mentioned. Following

traditional modulus is a way to construct traditional architecture. Modulus for architectures is the reliable experience for constructing, and also embody a kind of aesthetics. How to find those modules? Decide the proportion by doing survey in site, rely on context to figure out the data, which is the way point out by Le Corbusier.

For CU Thai house, drawing a triangle to connect point A, B and C, the point D represent the position of the gate that connected with the rail. If the proportion of the gate is 1 in this triangle, it will be harmonious in the framework (figure 20). If the proportion over 1, what will happen is like the reality situation: the door cannot be seen by intact (figure 21).

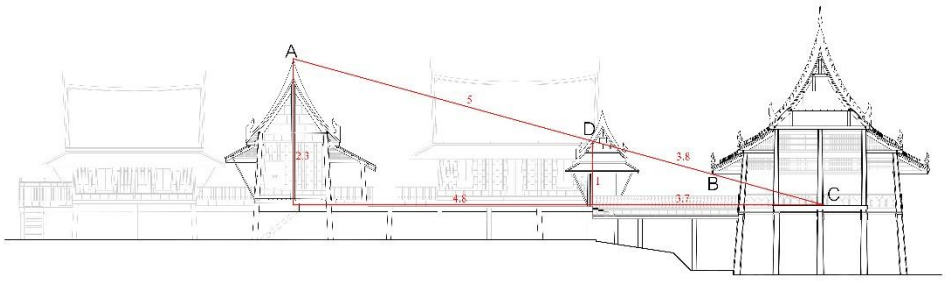


Figure 20 This diagram shows that the appropriate proportion for the gate is 1 in the space. (Section redrawn by author, which bases on blueprint that achieved by Associate Professor Pinyo Suvannakhiri, PhD. Details shown in appendix.)

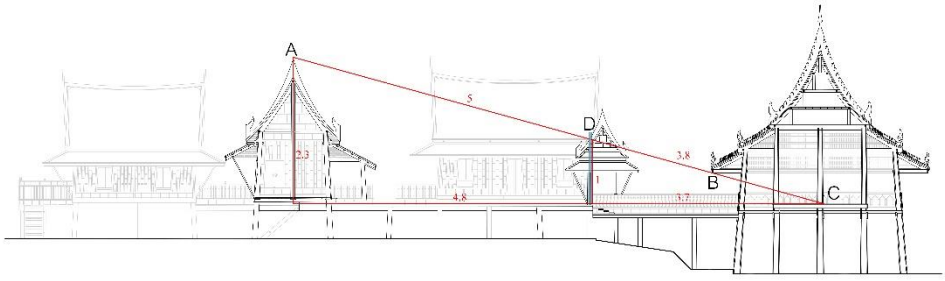


Figure 21 This diagram shows the proportion of gate is over 1 in fact, so people cannot see it completely when they sit at point A. (Section redrawn by author, which bases on blueprint that achieved by Associate Professor Pinyo Suvannakhiri, PhD. Details shown in appendix.)

The order arranged by human in space exists objectively and is fixed. But if the observer's perspective is different, the order of seeing in the same space will be different. Therefore, it is difficult to explain spatial composition when only relying on what eyes see. Use regulating lines to find the connections of spaces, use proportions

(numbers) to define their relationship, which is a way how to combine the methods from Colin Rowe and Le Corbusier

3.3 Conclusion

Materials, light, shade and shadows, are unavoidable factors in architectural analysis and design, they can make obvious effect to architectural spaces. Objective analysis based on accurate architectural drawings, which helps to discover orders, proportions and spatial relationship in architectures. From this case study, we can see that the eye sees is designed by the mind sees. People's eyes only perceive the tangible and objective existence, what people's mind can see is complex than the eyes. When we read traditional Thai houses or any traditional architectures, we better not underestimate what in front of our eyes. Because behind the scenes, is the wisdom and memories passed down for hundreds or thousands of years. How to read the process that from eye to mind in observation, and how to reinterpret the process that from mind to eye in architectural design, are the guidelines in the next design part.

Chapter 4 Design

Design chapter composed by two parts. The first part introduces Ban Plainern, the selected site, the second part focuses on the analysis of design process and the presentation of design result. In the introduction part, the location of the site, the existing circulations, conditions of buildings, some impressive existing design details are presented. The analysis part describes how the design result formed one step by step.

The whole design part is also a case study about Prince Naris' Thai house and Ban Plainern. This process illustrates how to apply the knowledge achieved from the literature review and the CU Thai house case study in analysis and design.

4.1 Introduction of Design Site

Like other modern metropolis, the identity of traditional culture in architecture is fading away from development of Bangkok. Many buildings and sites that has its identity to relate to the culture are struggling in the city. Ban Plainern is one of them.

Ban Plainern is a former residence of Prince Naris, located in Khlong Toei District, Bangkok (figure 18). When Prince Naris built Ban Plainern, Klong Toey district was desolate in those days. Prince Naris refused to use fence to defense outsiders who wanted to intrude his place. Instead, the prince maintained a good relationship with his neighbors, and said that, the fence of kindness was good enough. However, it is regrettable that the neighbors of Ban Plainern are not so kind nowadays. This historic site today is threatened by dangerous situation. On the west of Ban Plainern, a 36-storey condominium under construction. This project is considered as a miniature to expose that, while respecting their own culture, Thais are more enthusiastic about pursuing the development of commercial urban. Concernedly, since the 36-storey project is badly close to Ban Plainern, buildings in Ban Plainern are likely to be damaged during the construction of the project. On the east of Ban Plainern, a 25-storey metropolitan electricity authority head office is located there. Stand in such a

surrounding, the memory of history and culture carried by Ban Plainern can only be enclosed within itself.

Prince Naris's Thai house is located in this Ban Plainern (figure 19). This house is made up of traditional Thai houses, but Prince Naris changed the plan as linear, which make the plan has organic property. Since Ban Plainern is rich in plants, the owners of Ban Plainern called it as "Jungle". The name "Ban Plainern" means end of the slope, it gave a direction to people who were not familiar with the location of this palace in the past. Today, it to be an example to direct people who have enthusiasm to develop traditional culture.

Figure 22 The location of Ban Plainern in Bangkok.

Figure 23 The Thai house of Prince Naris (photograph by M.L.Trichak Chitrabongs.)

4.1.1 Current Condition of Design Site

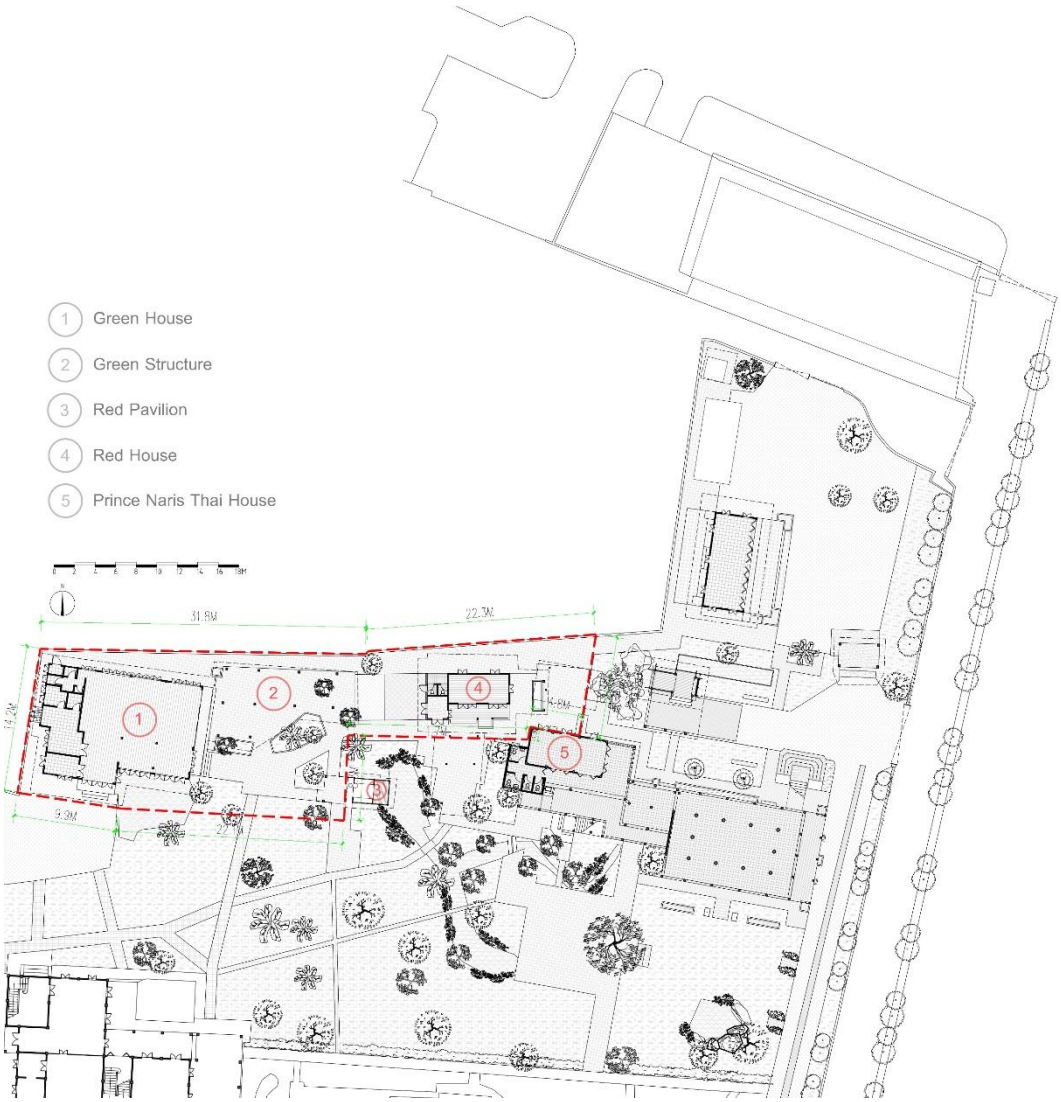


Figure 24 This master plan shows the boundary of the selected land in Ban Plainern (the master is measured and drawn by author).

The design site is a piece of land located at the northeast corner of Ban Plainern, there are three buildings inside. From west to east: a green house, a green structure and a red house. A red pavilion and Prince Naris' Thai house are near the selected land, they played important roles in the design, since all of them composed Ban Plainern.

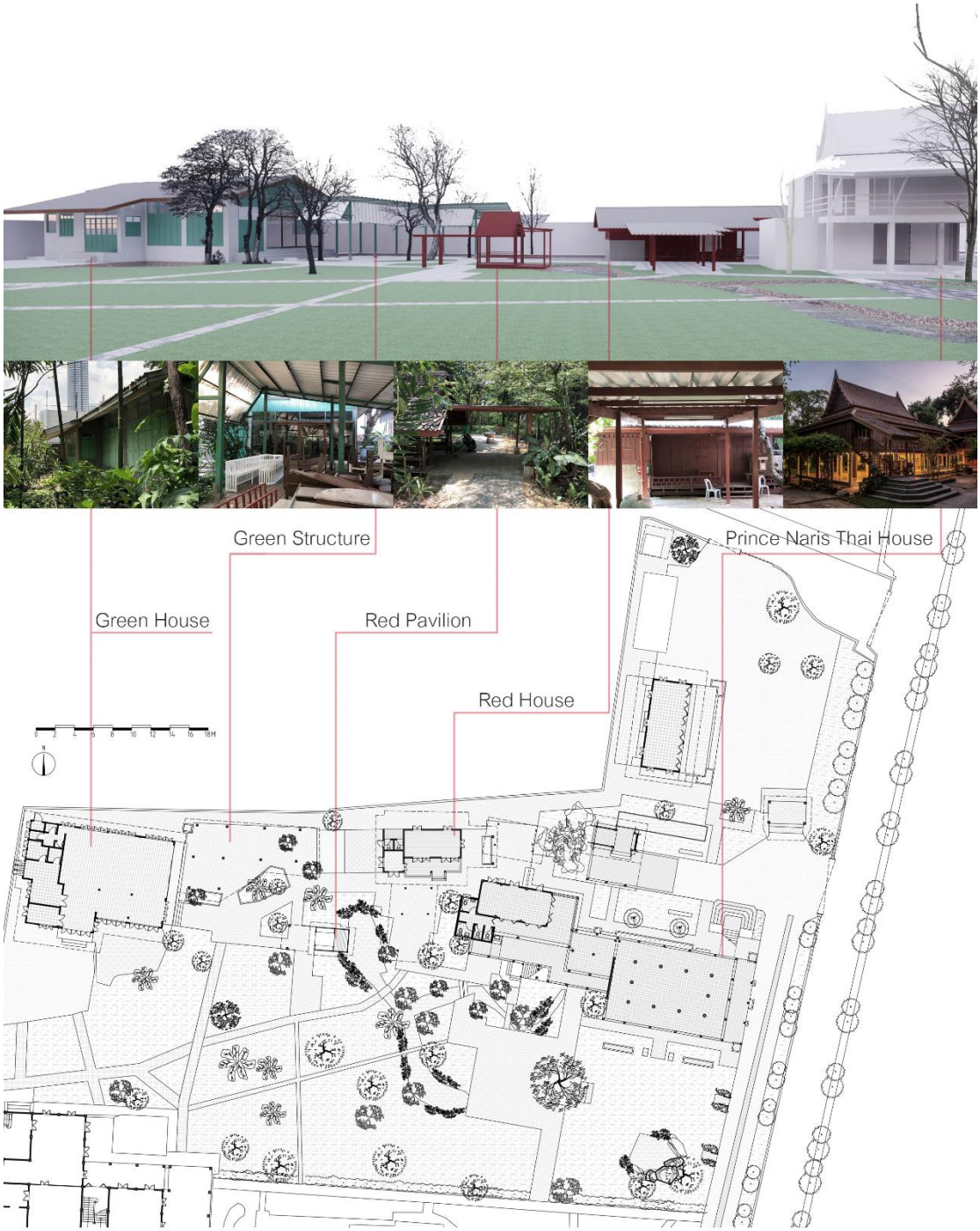


Figure 25 This diagram shows the location of existing buildings in the selected land. (The 3D model is made by author).

Green house located at west of the selected land, while it is the end of this transition space. Green house was made up by concrete foundation and brick walls, wooden doors and windows, timber roof covered by tiles (figure 26). Due to long-term exposure to sunlight and rain erosion, the eaves were badly damaged. All the wooden doors and windows are coated with matt green paint, they are still firm. Green coat makes it look harmonious in such a green jungle.

Green house will open as the classical Thai dance school again in the future, to reactivate the vitality of the green house is necessary. In order to inherit and improve the green house, to extract idiosyncrasy architectural languages in green house is obligatory.

Rough cement wall, matt green wooden doors and windows, a specific approach to joint two timbers, are the man-made architectural languages in green house (figure 27). Change the color of surface at different time, make shadow moving on the façade with time, are natural architectural languages present in green house.

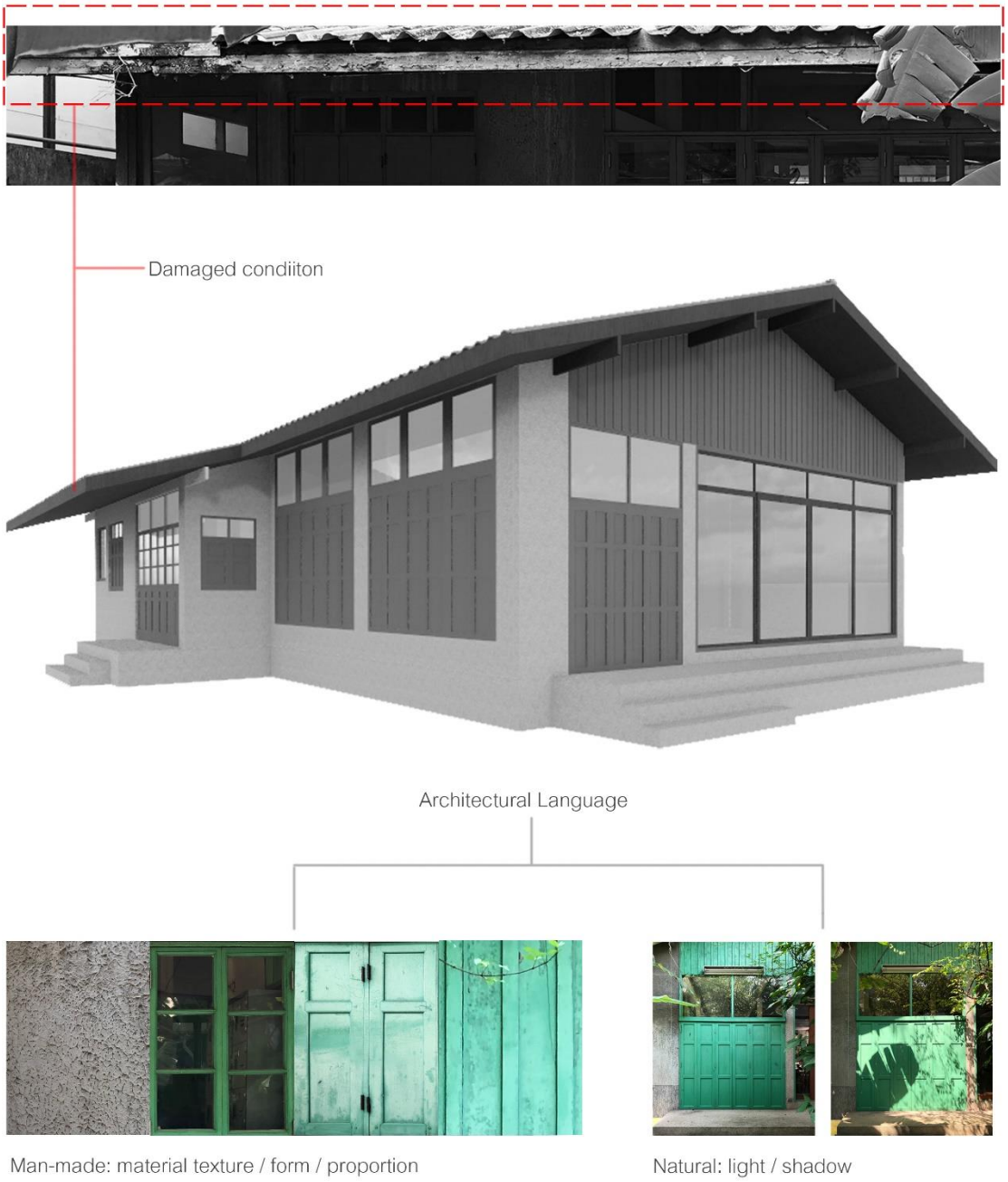


Figure 26 Introduction of green house.

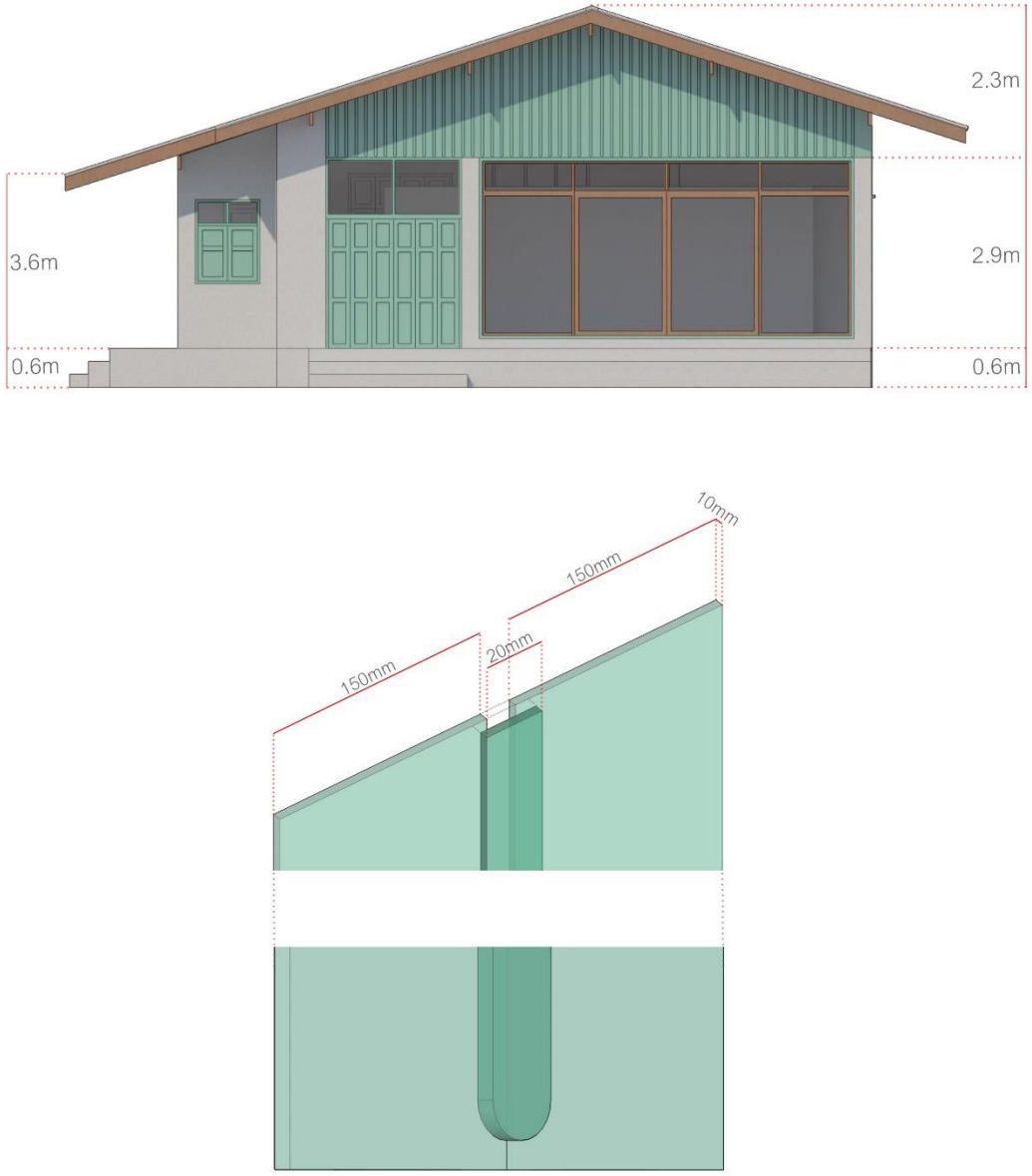


Figure 27 A special design in green house.

Use a 20 mm wide board to connect two 150 mm wide boards, which not only improves the stability of the entire structure, but also covers the gap between the two boards. This detail makes this façade looks like an elaborate designed craft.

Green structure is actual as a roof, it provides a shade space and closely links with the green house. Therefore, green structure can be regarded as a semi-outdoor Thai classical dance area. It composed by concrete foundations, wooden columns and steel beams. Besides, in order to block the sunlight from the south, three large transparent plastic panels are installed on an attached structure (figure 28).

The unique form design for plinth is the man-made architectural language in green structure. Rough concrete plinth supports green wooden column, which clearly indicates the connection between the green structure and the green house. Green house is the end of this transition space. However, light makes green structure reflect on the glass door of green house, which makes the space look like it has been extended. This space becomes a space with no end.

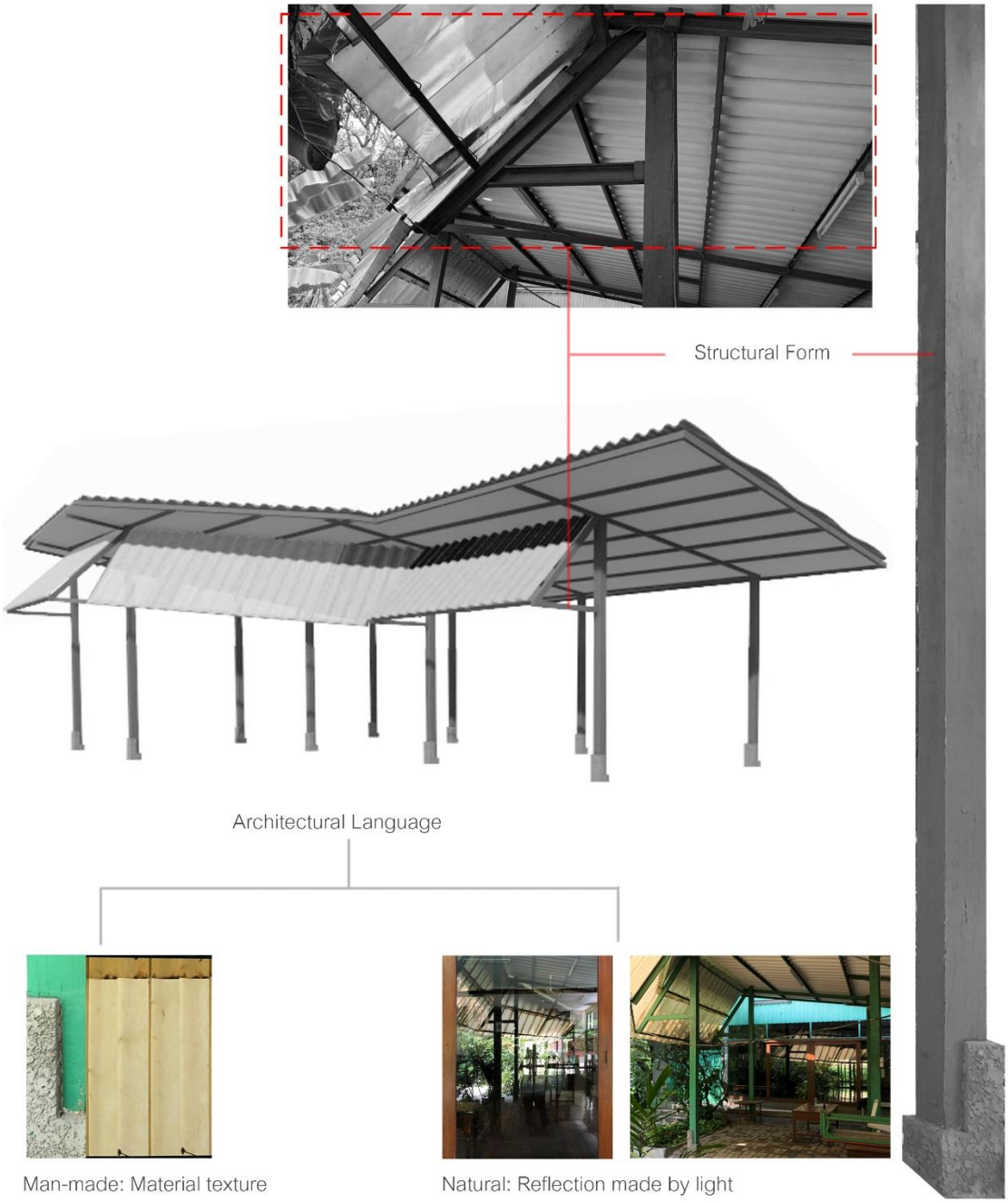


Figure 28 Introduction of green structure.

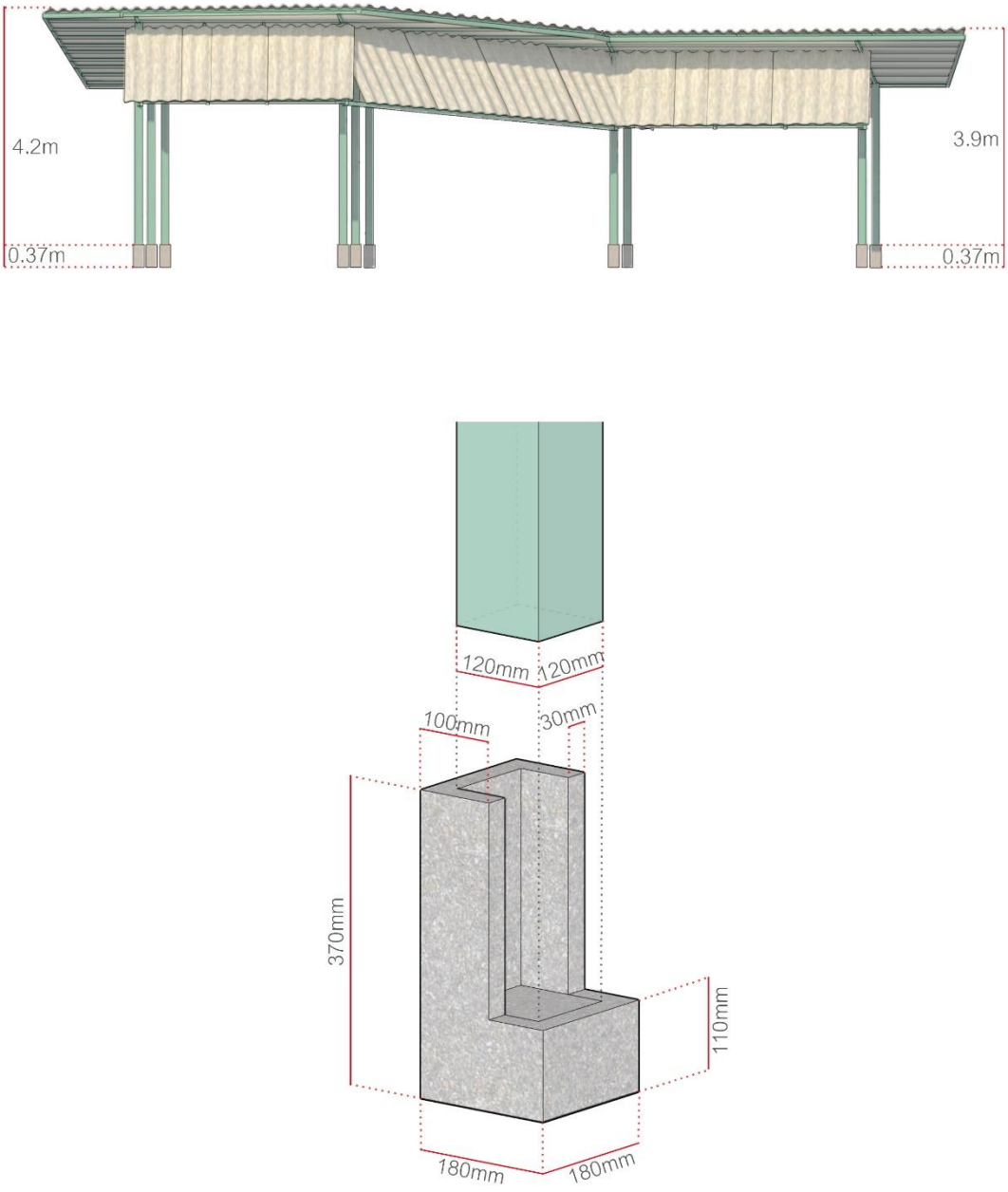


Figure 29 The special design for plinth.

Red house used to be tableware storage, it is a part of kitchen in the past. Since a restroom installed in the north corner, so foundation made up by two part, a concrete foundation and a wooden foundation. The wooden foundation designed by a good proportion. Doors and windows in red house are made by wooden as well, they have a beautiful color combination. Matt red paint covered the exterior face, and white paint coated the interior face. Red color shows that it wants to follow the tradition, while white color makes it looks like modern building (figure 30). The wooden wall composed by a wonderful form too (figure 31). The design makes the fresh air and light can get into the room even if door and window are closed.

However, the current condition of this house is not good. The roof and wall need to be renovated. The red house will be a café. Add more space appropriately for red house is necessary.

There have a lot of beautiful and practical man-made architectural language in red house. The two most prominent features are the composition of the wooden wall and the color combination of doors and windows. In terms of natural architectural language, it is wonderful and easily perceivable. When sunlight does not use roof to create shadows on the ground, this path in the space have obvious directivity, people's line of sight will be quickly directed to the front with the path. When sunlight uses the roof to create almost symmetrical shadows on the ground, the order in this space has changed. The line of sight is no longer guided by the path, but directly locked in the center of the space. For this specific space, in other words, without the shadow made by light, people more like a participant in the space. If with the shadow made by light, people more like an audience in this scene. This is the fourth dimension in architecture-time, this is how time works in architecture.

Figure 30 Introduction of red house.

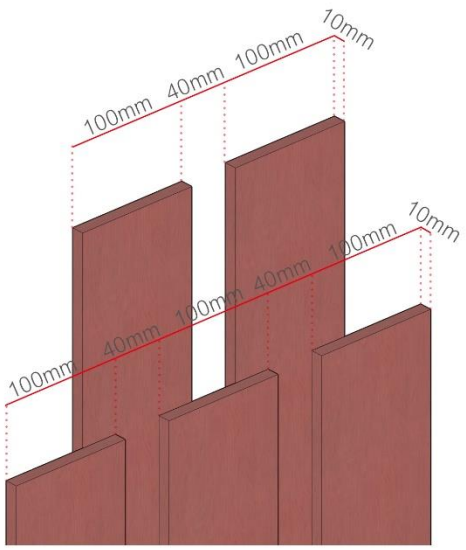


Figure 31 The composition of wooden wall in red house.

Thailand is tropic country, compared with heat insulation, ventilation and heat dissipation should be considered in most cases. This way of interlacing can not only save timbers, but the gap formed at the top is conducive to natural ventilation and lighting. In addition, compared to a flat wall, this form shows that it is a smart work.

4.1.2 Circulations

Figure 32 Existing circulations in Ban Plainern.

Since Ban Plainern was under renovating and some materials stack on the empty land, therefore some activities and circulations were obstructed. Such as the dance school and service circulation. Form the existing circulation (figure 32), people's activities happen around Prince Naris' Thai House. The basement of this Thai house is the main event venue.

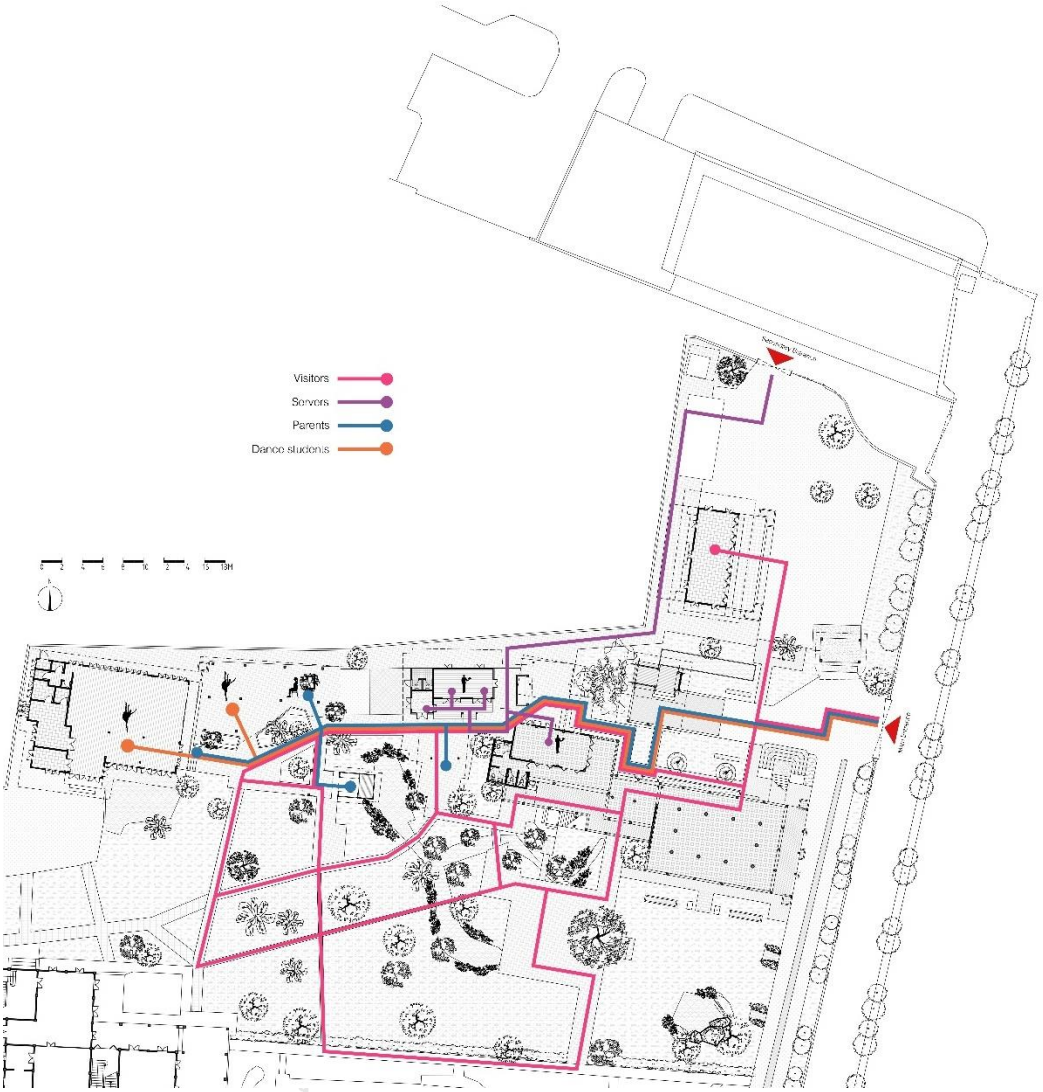


Figure 33 Suggested circulations in the coming future.

In the future, the dance school will restart, Ban Plainern will open for public. The secondary entrance will be main entrance for service circulation. From the future circulation diagram (figure 33), the land that been selected plays an important role in Ban Plainern, it is a transition space connects Prince Naris' Thai house, red house and green house.

Figure 34 Combined circulations in Ban Plainern.

In conclusion, when Bna Plainern completed the renovation, people's activities not only happen around Prince Naris' Thai house, but every corner. The selected piece of land is an important transition space between various buildings that provides many possibilities in terms of function. Art gallery, cafe, flower make, outdoor practice space for dance students, rest space for parents and visitors, activities space for Buddhist monks, food catering, storage, etc. These functions can be integrated into the transition space.

4.1.3 Site Survey: read Ban Plainern

Ban Plainern is the place where carries memories about history and culture, it has its own unique expression to tell the stories of history. In terms of materials, wood, brick, concrete, stone and tile, they are the vehicles that drive the site walks forward in the historical process. The changes of materials during renovation of Ban Plainern shows that Ban Plainern is not out of touch with the times but exists in a self-improving way (figure 35).

In terms of spatial composition, Ban Pliarnern maintained its original layout, and did not add houses due to changes in usage requirements. The maintenance of plants without spare effort has continued to the present, which gives great presentation for the relationship between nature and architecture in the transition space of Thai house (figure 36).

As far as light and shadow are concerned, Prince Naris' Thai house in Ban Plainern could be regarded as a classical case to show how light and shadows affect transition space in Thai house (figure 37, figure 38).

Figure 35 The master plan shows different materials applied in Ban Plannern (measured and drawn by author).

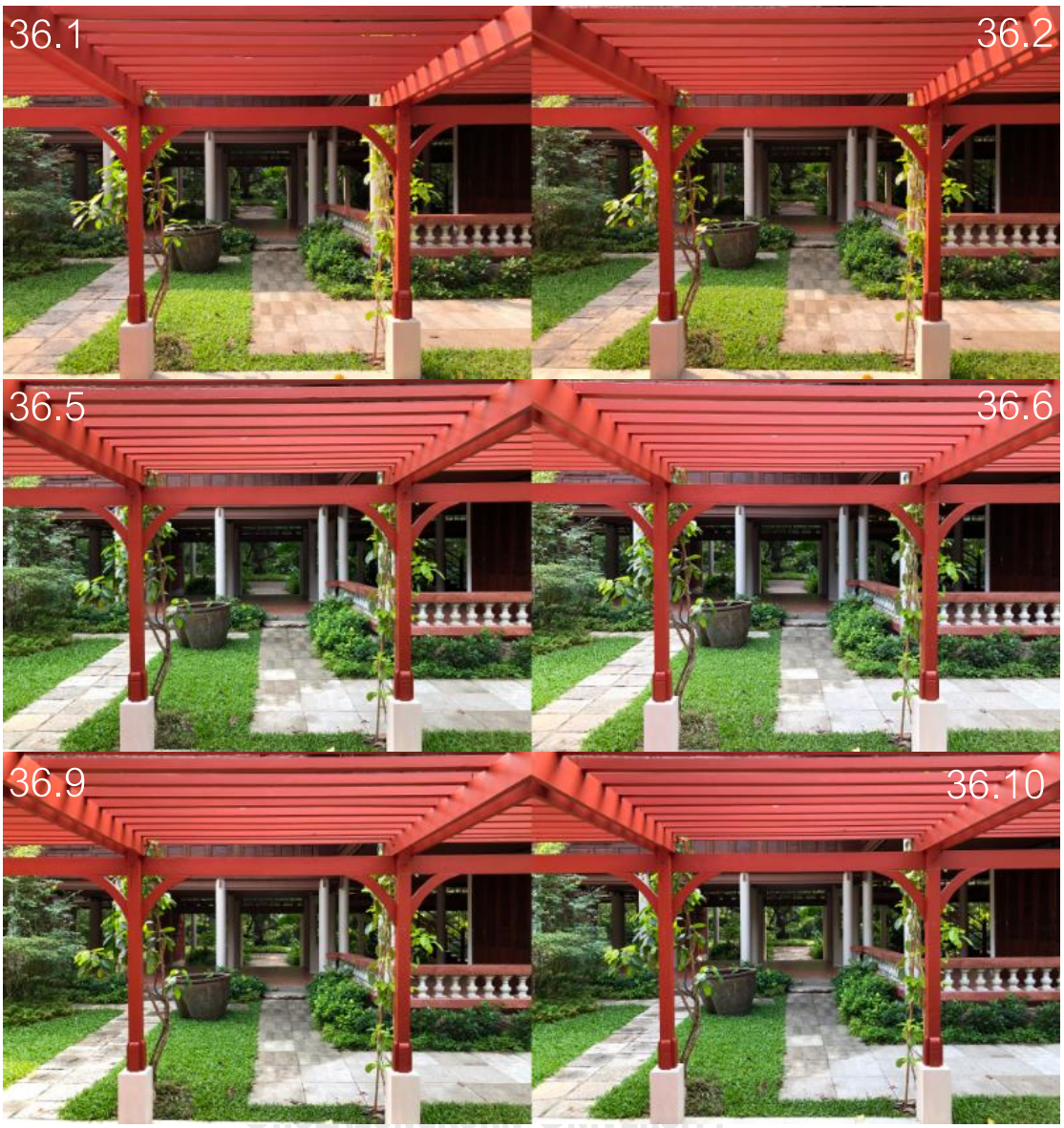
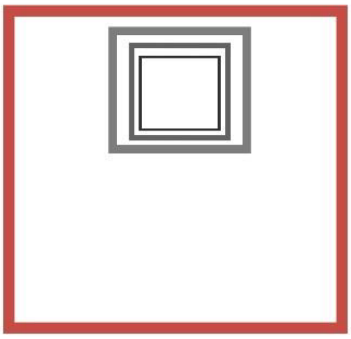
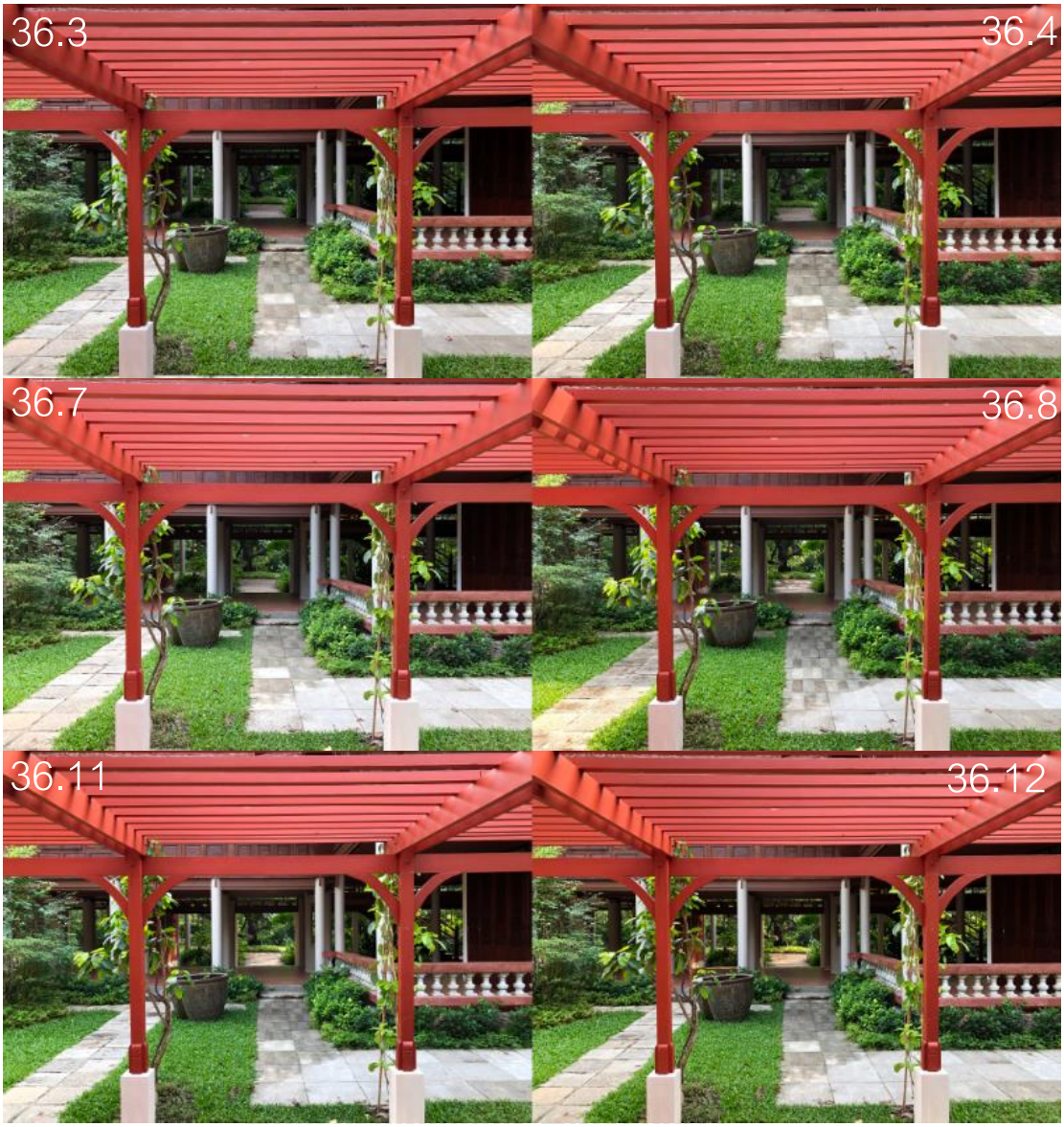


Figure 36 (including the photographs on next page): This series photography shows the changes of a space in Ban Plainern by different timing.



The red structure is new addition in Ban Plainern, it follows the order existing in Prince Naris' Thai house.



Timeline: January 21, 2020.

Figure 36.1 10:30	Figure 36.7 13:30
Figure 36.2 11:00	Figure 36.8 14:00
Figure 36.3 11:30	Figure 36.9 14:30
Figure 36.4 12:00	Figure 36.10 15:00
Figure 36.5 12:30	Figure 36.11 15:30
Figure 36.6 13:00	Figure 36.12 16:00

Prince Naris' Thai house is a perfect place to demonstrate how light, shade and shadow affect transition space (figure 37). There are two transition spaces in his house that have the same architectural order, mainly the columns, but they catch the light differently. One space is facing the North and the main approach to the house, built in concrete floor. Another space is facing the South. It is right next to the garden, the grass and the trees. There are two spots to observe the transition spaces. Spot A focuses on the transition space composed by two rows of columns, which located on the south side of the Thai house (space A). Since the orientation of this transition space is south, and nothing blocks it. Light can shine into this space. Particularly, the end of space are plants. Spot B aims to the transition space located on the north site of the Thai house (space B). Space B is formed in the same way as Space A. The difference is that space B is longer, and the end of the space is not the plants but the entrance to the restroom. The restroom is a new addition in Prince Naris Thai house, it is prepared for the future opening of Ban Plainern to the public and large event, such as classical Thai dance performance. Since space B faces to north, sunlight cannot shine into this space.

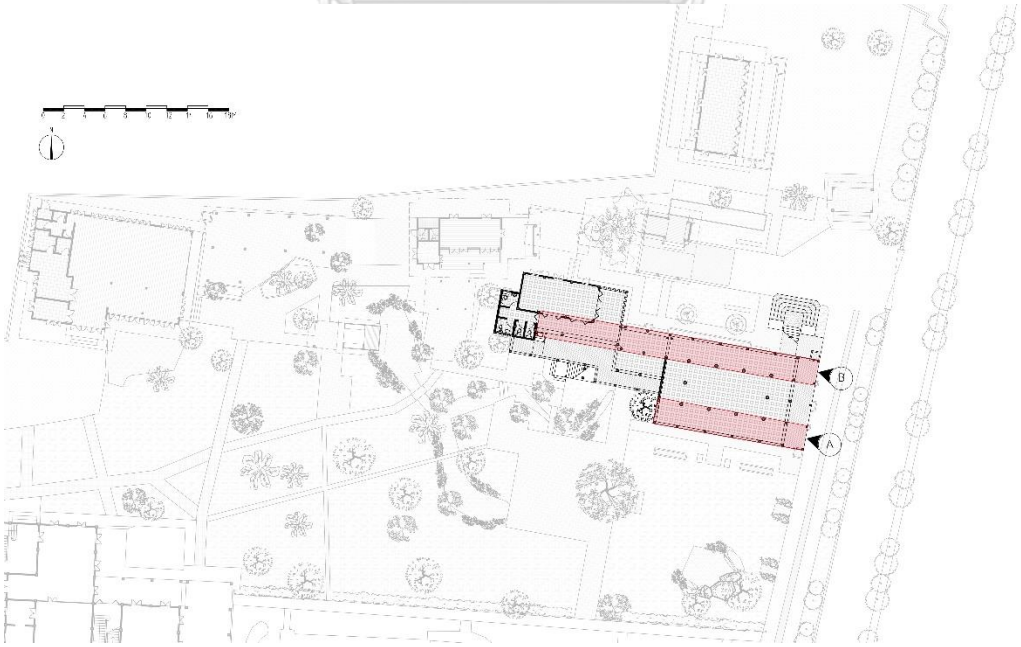


Figure 37 This diagram shows two spots (spot A and spot B) of observation for Prince Naris Thai house.

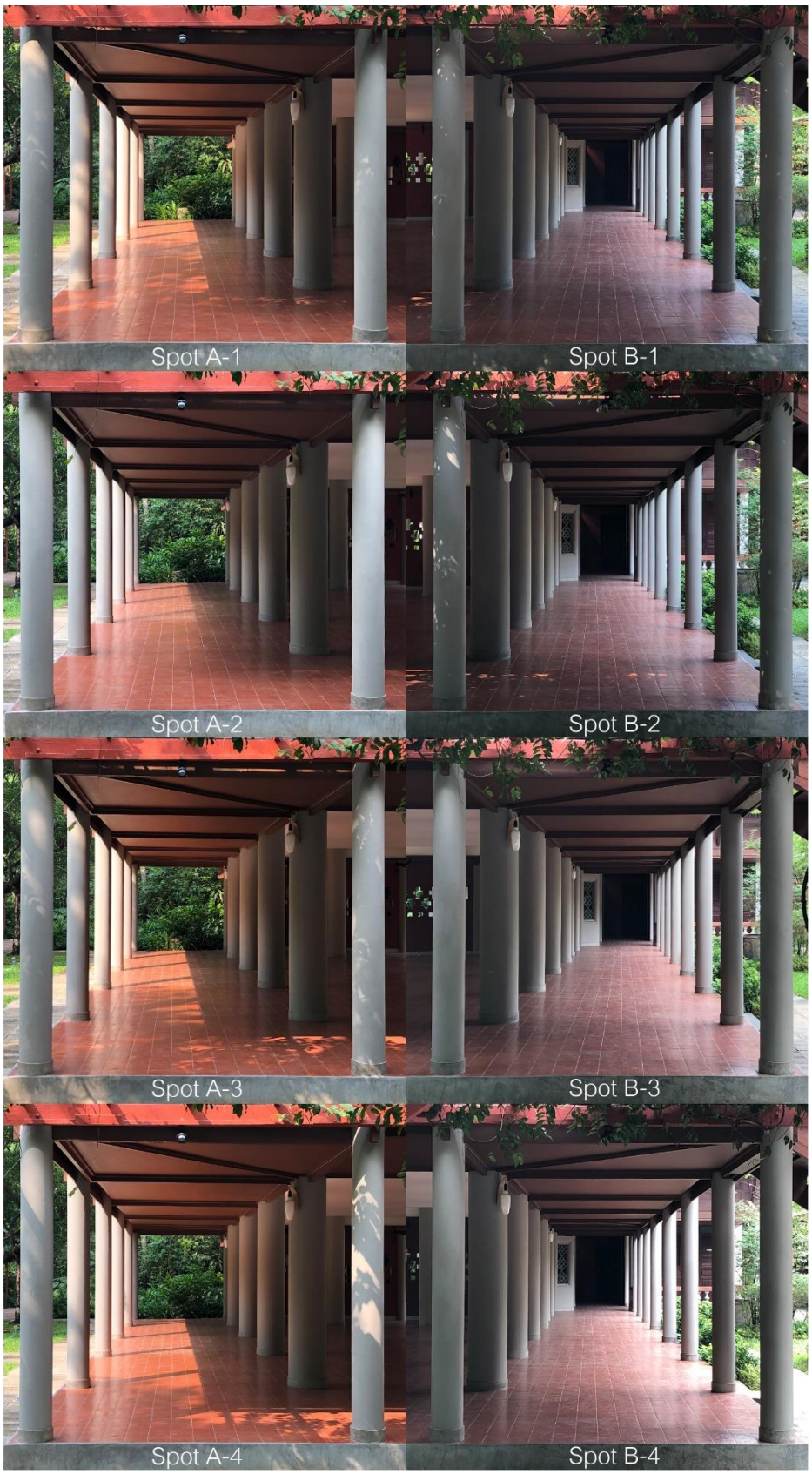
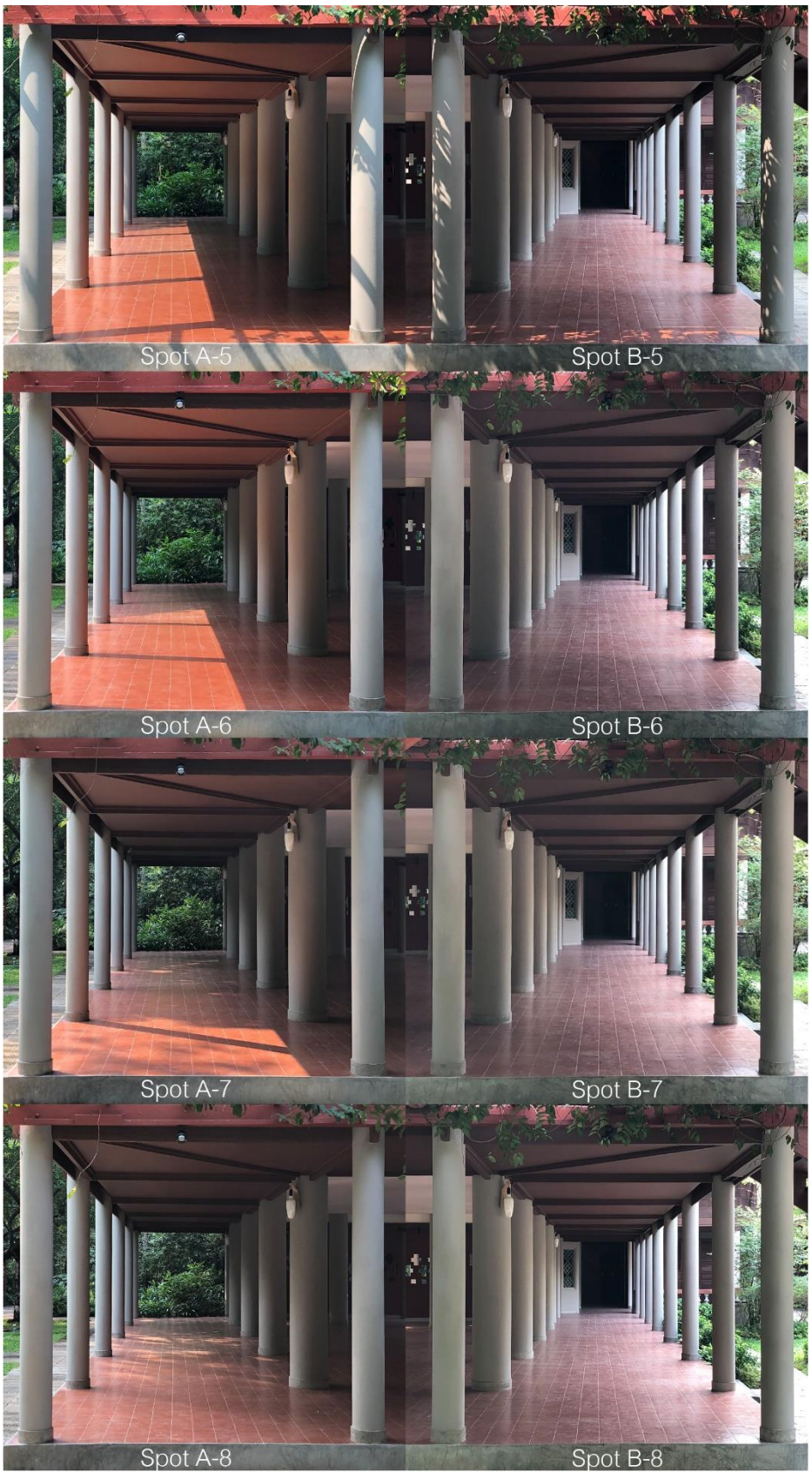


Figure 38 (include next page) Comparation of two transition spaces in Prince Naris Thai house.


Spot A-5
Spot B-5
Spot A-6
Spot B-6
Spot A-7
Spot B-7
Spot A-8
Spot B-8

Timeline of figure 38: January 21, 2020.

Spot A-1, B-1	10:00	Spot A-5, B-5	12:30
Spot A-2, B-2	10:30	Spot A-6, B-6	13:30
Spot A-3, B-3	11:00	Spot A-7, B-7	15:00
Spot A-4, B-4	12:00	Spot A-7, B-7	16:00

The comparability of the two transition spaces is very strong. Firstly, in terms of materials. The materials that make up these two spaces are exactly same, matt orange tiles as the finish of floor, white concrete columns support the celling that decorated by wooden batten. However, these same things show obvious differences in the two transition spaces. As the sunlight shines on the ground, the color of the tile in space A is brighter and more vivid. The sunlight on the floor is reflected on the ceiling, making the ceiling appear slightly orange. Shadow, the role of shadow is the participant in architectural spatial composition rather than passer-by. According to compare with figure spot A-5 and figure spot B-5, without shadow, the order in space B is clearer. In other words, it is easier for people to reach a consensus on the order of expression of space B: floor, celling and two raw of columns draws people's vision forward and concentrates to the center. Although the columns do not completely separate the space like walls, in terms of optic vision. The continuous column layout creates a strong sense of enclosure. Shadow participates in the spatial composition of space A. The shadows of the columns on the floor and the wooden batten on the ceiling look like trying to make the whole space more symmetrical. The shadow of the eaves on the floor seems to imply that there also existing the boundary of indoor and outdoor in this transitional space, places exposed to sunlight are outdoor area and places shaded by shadow are indoor area. Because of the participation of plants, light and shadow, transition space in Thai house appear full of vitality.

4.2 Analysis and Strategies of Design

This design wants to be humble, to respect the culture of Ban Plianern. The existing layout of the transition space is preserved. The locations of the green house, green structure and red house at the transition space do not changed. Especially, the columns of green structure are completely preserved. This design fucoses on renovate the main body of buildings, such as walls and roofs. The foundations are preserved to the greatest extent. The architectural design language comes from the interpretation of Ban Plainern.

There are three advantages to explain why keep the existing layout:

1. Would not destroy the original spatial composition, which has evolved from the first day of Ban Plainern's existence, then accumulated and formed by everyday life.
2. It can save construction costs.
3. Only by changing the three building's materials, proportions and light and shadow to change the spatial composition, will it have a positive impact on Ban Plainern? How to observe the impact? Do not move the locations of these three buildings as a prerequisite, which makes the answer of this explorational design become more valuable to do comparation.

Ban Plainern is place not only rich in plants, but also buildings. This wealth is not embodied in the number of buildings, but in the diversity of buildings. The construction time of each building is different, and the characteristics of the building are also different. Each building has its own characteristics, and this difference is mainly reflected in their own proportions and materials. This kind of special display makes Ban Plainern look special and makes people feel profound. But at the same time, this feature also makes some spaces lack a harmonious atmosphere. For example, the selected design site.

Therefore, the design strategy is divided into three parts:

1. Consensus of proportions.
2. The interconnectedness of spaces.
3. Extraction and application of design language.

These three steps will gradually build a model from overall to partial by different rules, and then change the elements in the model, such as materials, colors, construction forms, and so on. In the end, find the best design solution by comparison.

4.2.1 Consensus of Proportions

All buildings in the site have their proportion, the most obvious feature is the slope of their respective roofs. Some of these slopes are quite different, which makes these buildings lose contact with each other in proportion (figure 39). When people look at them from transition space, it is difficult to connect them in a coordinating spatial composition.

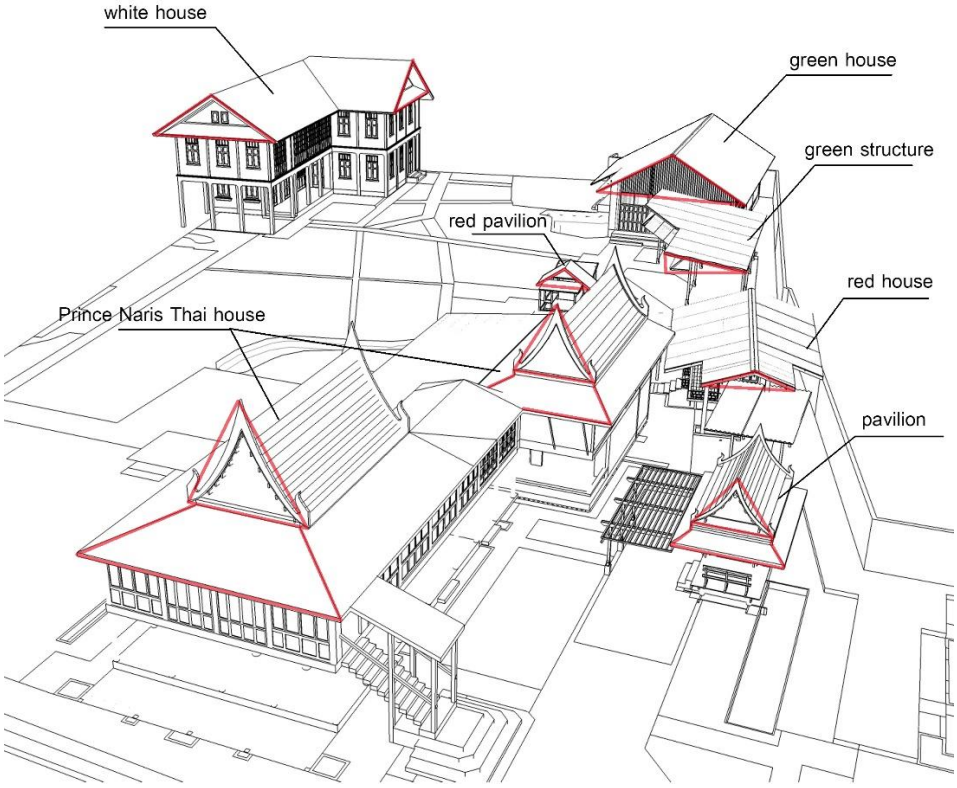


Figure 39 Different buildings with different slopes of roof.

Since the overall layout will be completely preserved, therefore, finding a suitable slope of roof became the first rule of this design. In order to figure out an appropriate slope of roof, the slope of all roofs have been calculated (figure 40). The slope can be roughly classified into three categories by comparing the data. The slopes of white house and red pavilion are 32 degrees and 35.6 degrees, they are the first category. The slope of green house and red house are 17.7 degrees and 19.9 degrees, they are the second category. The roof's form of Prince Naris Thai house is special in this group, it is the third category. From an aesthetic point of view, compared to the second category, the first category can better reflect the beauty of the triangle. From a realistic point of view, the second category will be renovated, while the first category will be remained. Therefore, in order to achieve harmony, the first category will be used as a reference. In the end, I chose 30 degrees as the roof's slope of all buildings (green house, green structure and red house) after renovation.

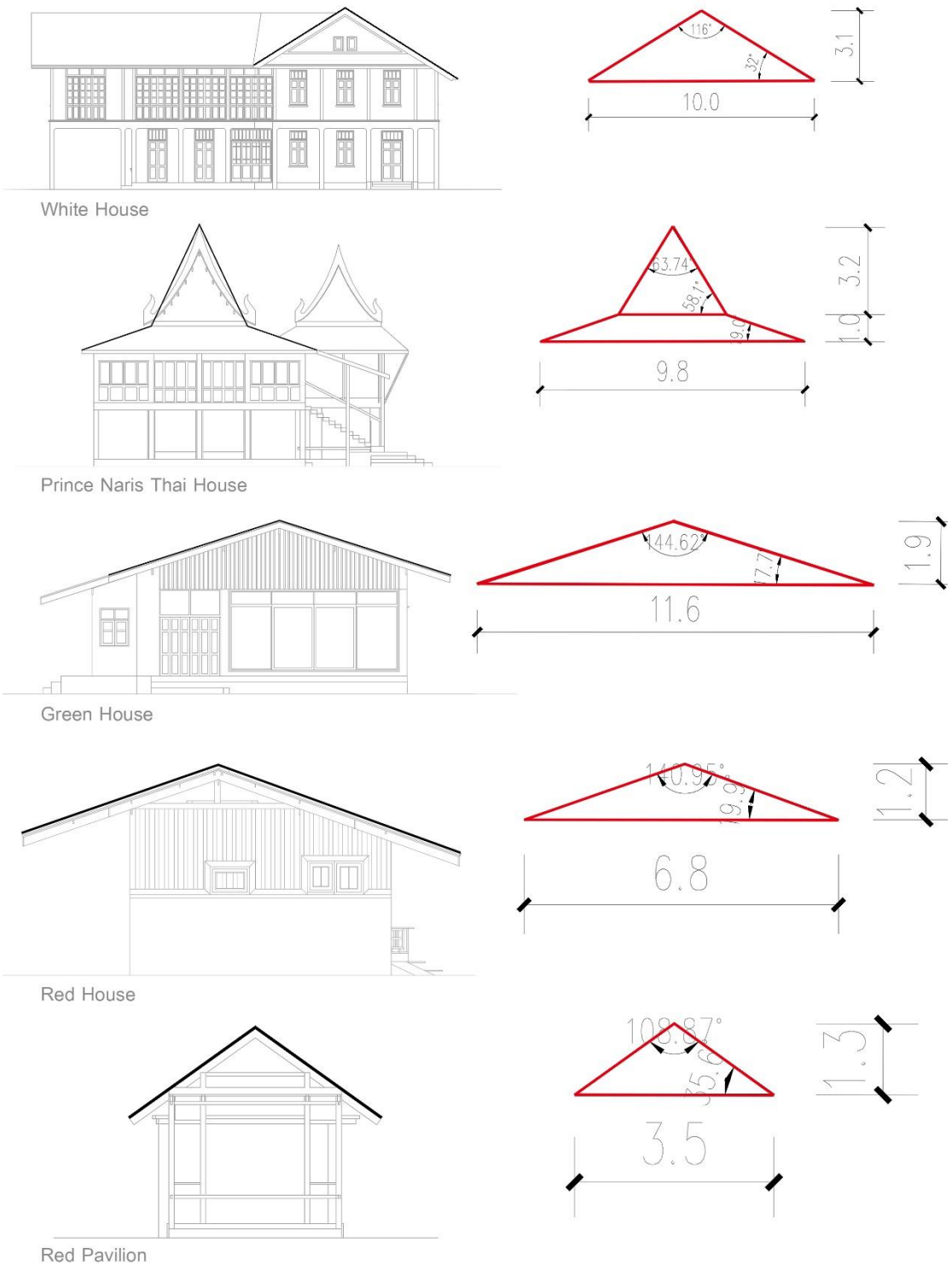


Figure 40 This diagram shows the slopes of roof in different buildings.

The height of these three buildings after renovation is another issue to consider. Prince Naris Thai house as the Prince Naris earliest residence in the Ban Plainern, Prince Naris spent a lot of time in his life here, many of the Prince Naris' design works were also completed in this Thai house. Besides, this Thai house itself also has high historical value. Prince Naris Thai house is of great significance to Ban Plainern. Red house is near Prince Naris Thai house, as a new renovation, the red house would be humble. Therefore, the height of Prince Naris This house is the reference of red house. The reference of green house and green structure is white house. The positional relationship between white house and green house in this place is almost parallel, when people are walking around Ban plainern, it is easy to connect the two of them in people's view. In addition, Prince Naris spent his old life in white house, the house is also meaningful to Ban Plainern.

Basically, the height of red house should beyond the Thai house. I hypothesized the height of red house equal to the second level of the Thai house's roof, and the height of green house equal to the eaves of white house (figure 41). The result is shown by analysis drawings. If the height of red house equal to the second level of the Thai house's roof, which is 5.8 meters, the slope of roof will be 40.66 degrees. This is 10 degrees away from 30 degrees. On the other hand, if the height of green house equal to the eaves of white house, the height is 7.4 meters, while the slope of roof is 30.11 degrees. Obviously only the green house meets rule 1 (slope of roof is 30 degrees) in this set of data, the result is that the relationship of the roofs is still chaotic. Therefore, I have used the first set of data as the basis to get the second set of data (figure 42). In this hypothesis, the height of red house equal to the first level of the Thai house's roof, which is 4.9 meters. Green house kept 30 degrees as the slope of roof, but the height dropped from 7.4 meters to 7 meters. The result of this set of data is satisfactory. The roof's slope of the red house and the green house are both 30 degrees, so the relationship between them will be parallel. When visually perceiving the space formed by them from a certain perspective, the space will be fluent. At the same time, the height of the red house can be related to the Thai house, the height of the green house will not

exceed the cornice of the white house, this keeps them humble at least in height. Logically, make the height of red house to be 4.9 meters, the height of green house to be 7 meters. That is the rule 2.

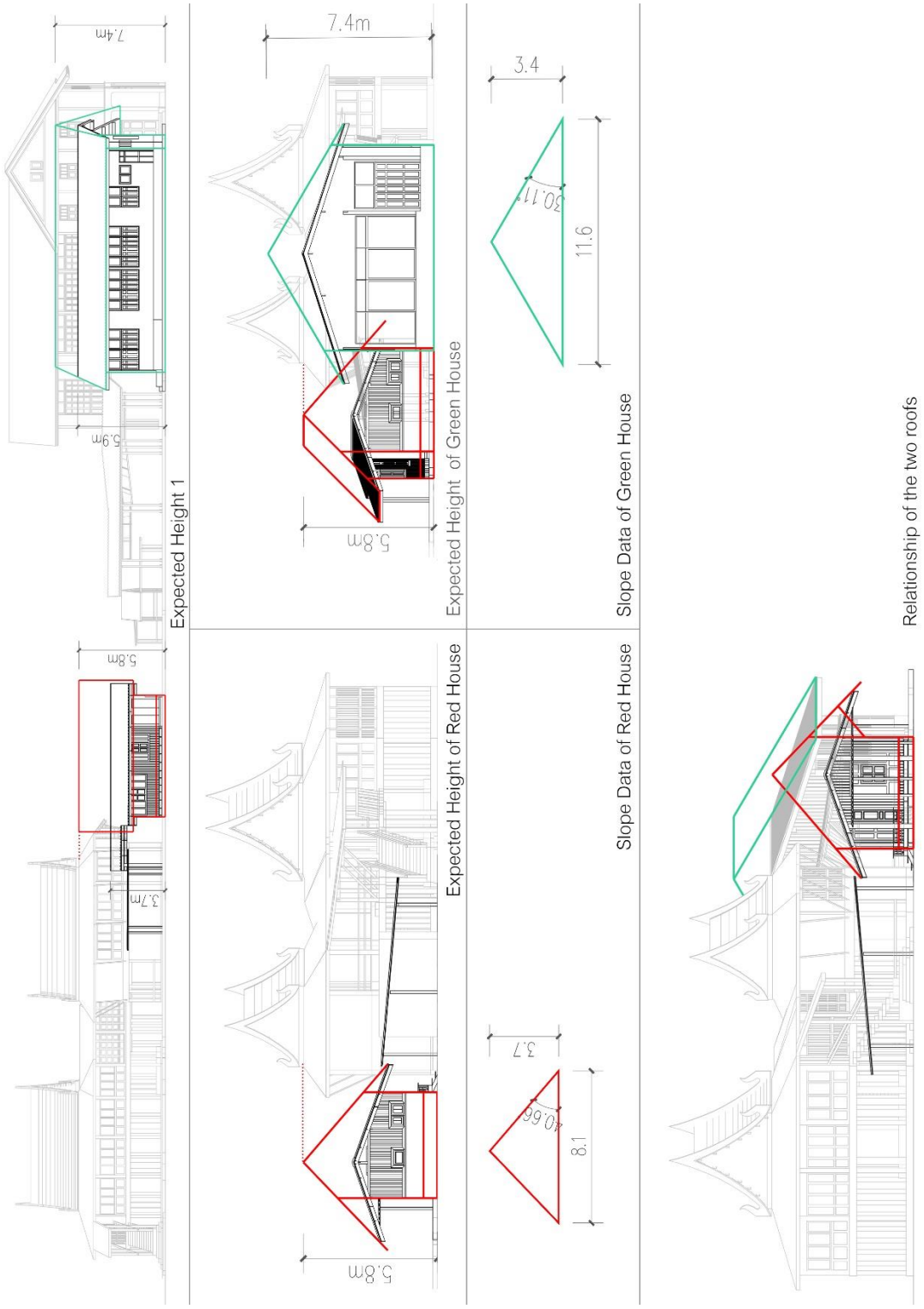


Figure 41 This diagram shows the first set of data about the height of green house and red house.

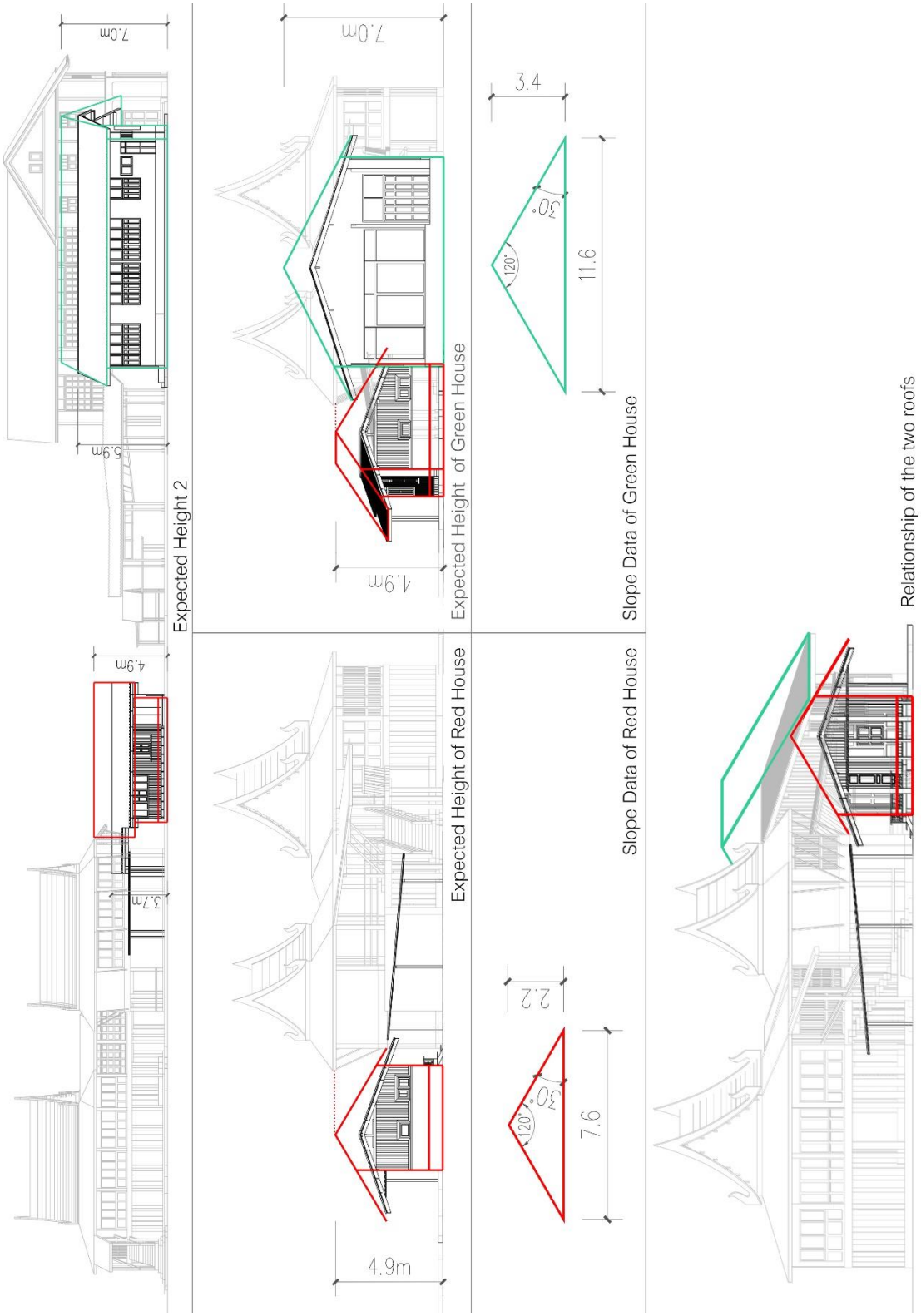


Figure 42 This diagram shows the second set of data about the height of green house and red house.

4.2.2 The Interconnectedness of Spaces

After figuring out the appropriate proportions by step 1, looking for the possibilities of interrelationships between spaces is in order to find some existing problems and solutions. For example, there is a space between green house and the fence need to be improved in this transition space (figure 43). This space is very narrow. Due to the obvious angle between the green house and the fence, the space becomes narrower and narrower from east to west. At the end of this small space is a toilet open to outside, which means people can use the toilet without entering the green house. Now this space is only used for stacking materials (figure 44), it is hard for anyone to notice that there is a toilet inside. This toilet can be reserved, it can be used as a toilet exclusively for internal staff. Or used in an emergency.

But the problem is that the space itself is very small, plus it is located in a blind corner of the site. People need some guidance to discover this space. How can this space be noticed by people through visual guidance and be connected with other spaces? In order to find the possibility of solving the problem, I used taxis to analysis the transition space.

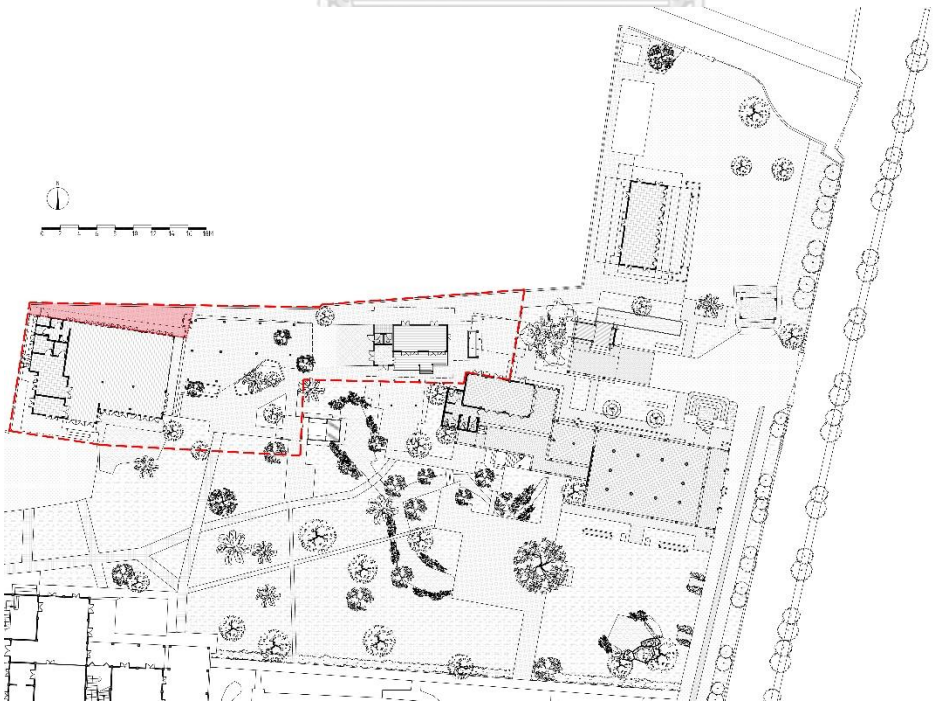


Figure 43 The position of the space need improved.

Figure 44 The small space between green house and fence.

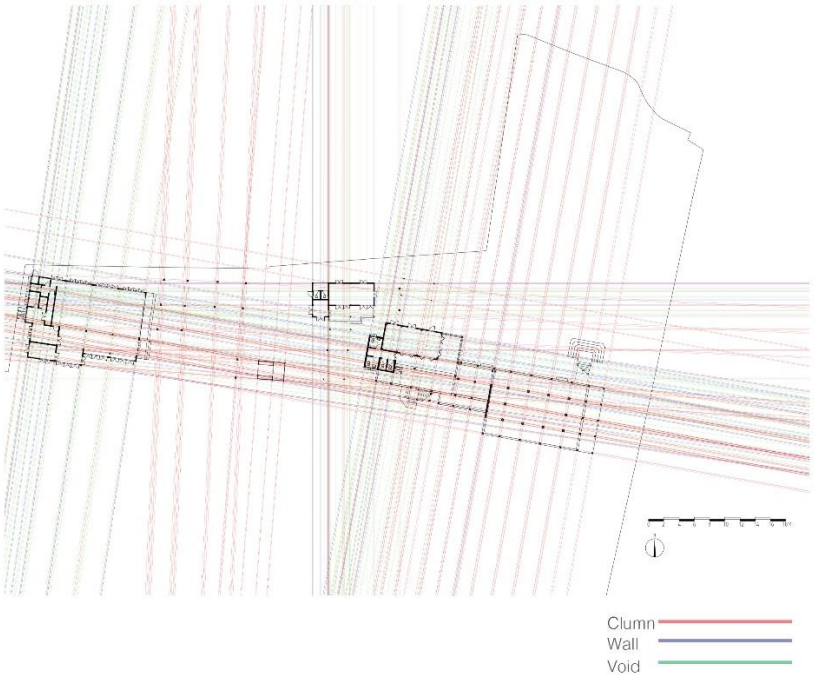


Figure 45 Taxis of green house, green structure, red house, red pavilion and Prince Naris Thai house.

Figure 46 The diagram shows an order between the Thai house and the new structure.

Taxis (figure 45) in this research is not used to analyze forms of architecture itself, I use it to study the spatial relationships that can be visually perceived when people stand in certain specific positions. Such as, standing in front of a window and looking out. Or standing at the position that can perceive a certain existing spatial order between spaces (figure 46).

The combined taxis are too complex, in order to help the analysis more effectively, the taxis disassembled as three parts (figure 47). The taxis of green house, the taxis of red house and the taxis of the Thai house. Then, with each of them as the center, look for the possibilities to relate to the external spaces and buildings.

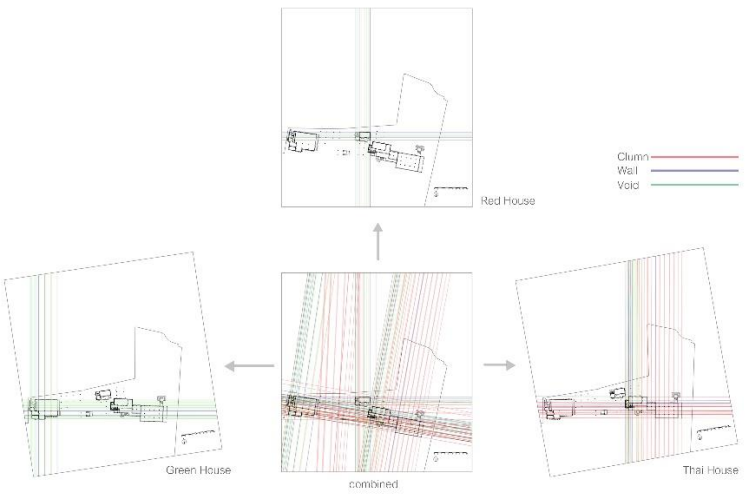


Figure 47 Disassembled taxis.

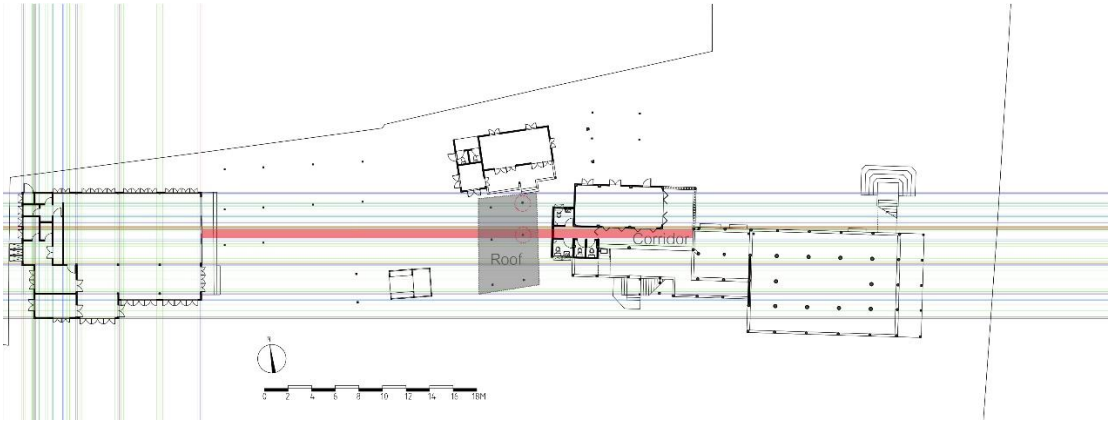


Figure 48 Analysis of the taxis of green house.

Figure 49 (left) Window in the corridor.

Figure 50 (right) Look the roof from the veranda.

According to the taxis (figure 48), green house and Thai house are directly related. There is a corridor running through the whole house in the Thai house, the toilet is connected to both sides at the end of the corridor. If the corridor is extended, it will connect to the center of the glass door of green house. Fortunately, a window appeared on the wall at the end of the corridor (figure 49). Although this corridor cannot really be extended, this window creates this possibility visually to set up this relationship. Even if tall trees hinder this connection, it can also precisely embody a garden design

technique. In traditional Chinese garden design, this technique is called “框景”. However, the appearance of a roof interrupted the fluent spatial relationship.

The piece of roof is an attachment of red house. Normally, people will make flower under the roof since it can provide a shaded space, sometimes people practice musical instruments here. Most of the time, the space exists as a path. Looking out from the window, the structure of the roof disrupted the scene. What should be seen through the square concrete frame are naturally curved gray tree trunks and green leaves, the window freeze-frames the scene on the wall like a painting. But a red straight pillar and a red inclined beam appeared in the picture, which makes the space lose the order. Besides, if stand on the balcony on the second floor of the Thai house and look at the scenery ahead (figure 50). The roof cover everything below itself, it even cut the connection between the crown and the trunk. Therefore, in the design, the piece of roof be removed.

Next, take the red house as the center to analyze the taxis (figure 51). Because the position relationship between the red house and the green house is not parallel, and the green structure is located in the middle. The red house is connected to the large space in front of the green house and the small space to the north of the green house. Therefore, it is necessary to find the primary and secondary relationship in the transition space enclosed by green house and red house.

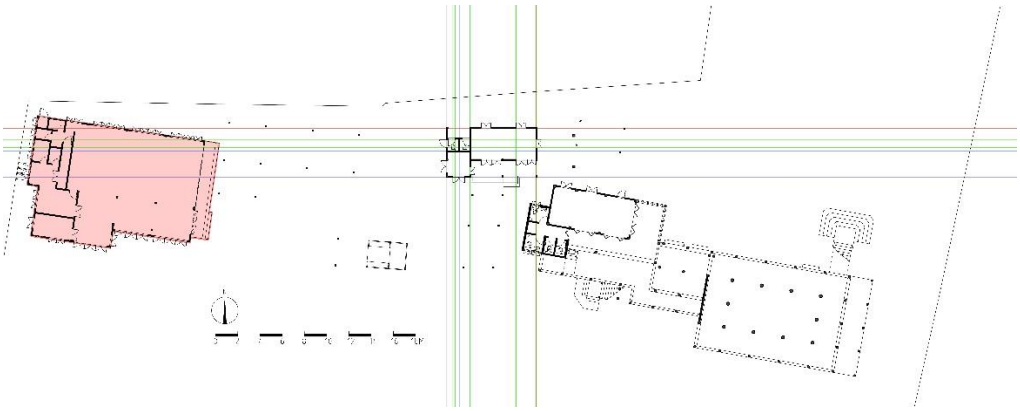


Figure 51 Analysis of the taxis of red house.

In order to clarify the primary and secondary relationship in this transition space, the taxis of green house, taxis of green structure and taxis of red house is combined (figure 52). First of all, green structure in this transitional space is subordinate anyway. If the green structure is to dominate the space, then this transitional space will become congested and pretentious.

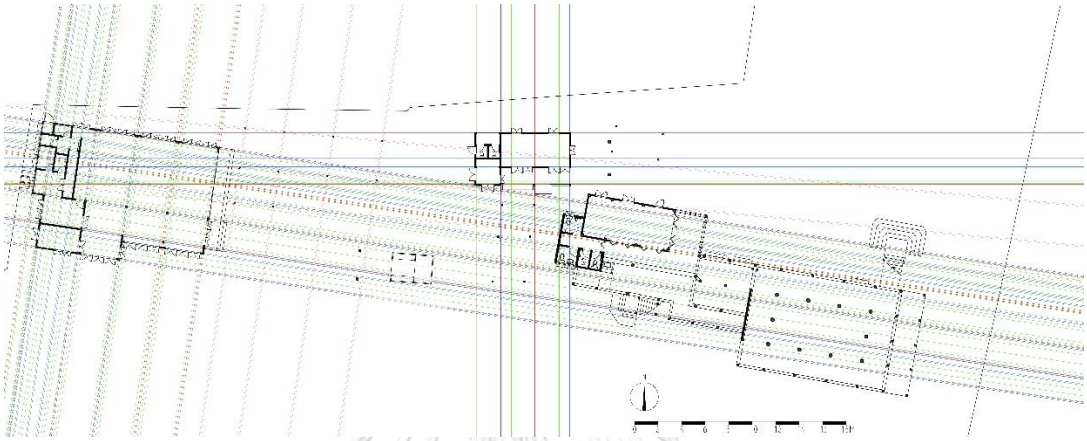


Figure 52 combined taxis with green house, green structure and red house.

Due to the north of the transition space is fence, and the south is open garden. Therefore, this space analysis focuses on analysis in the east-west direction. If use the green house and the red house as the starting point to divide the space directly related to them, there will be an overlapping space between them (figure 53). This means that this space is the most direct and effective space connecting the two houses.

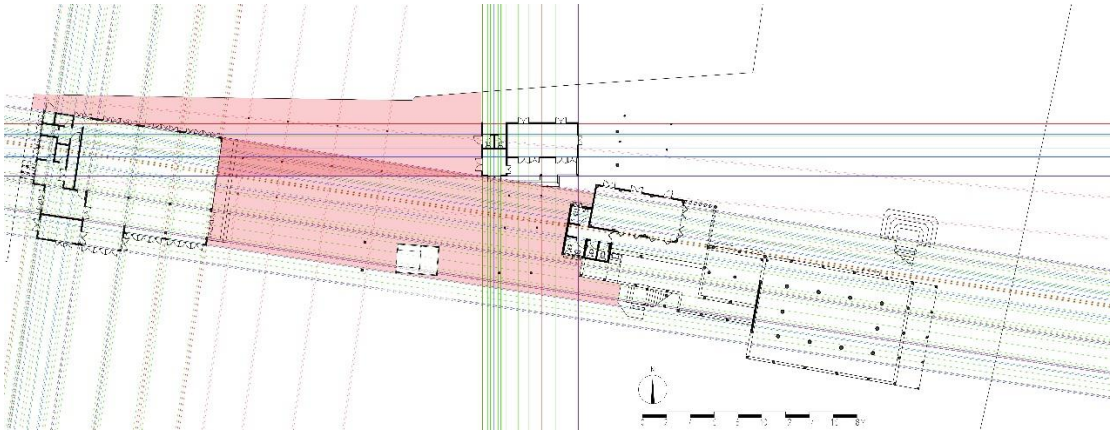


Figure 53 Overlapping space between green house and red house.

Green structure is between the houses, so add the space directly related to green structure into the graphic, the result shown on the graphic below (figure 54).

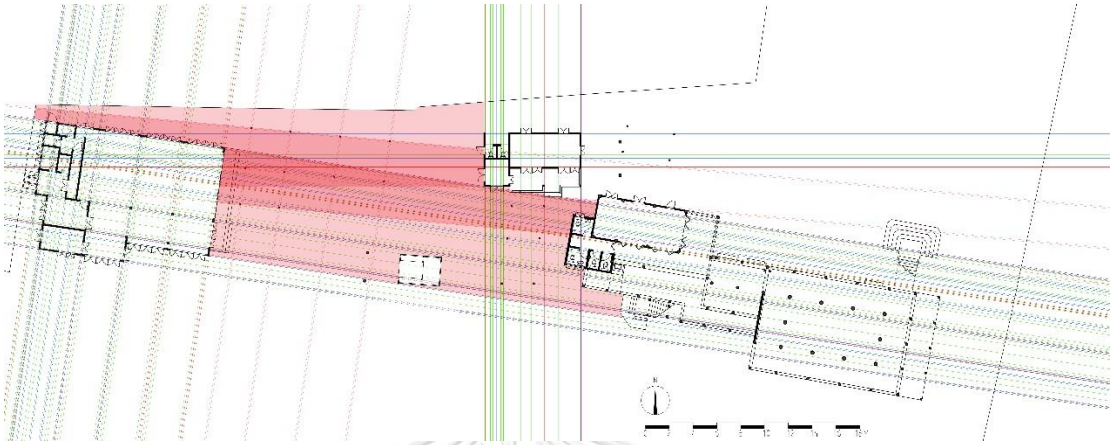


Figure 54 Overlapping space among green house, green structure and red house.

This is the existing main spatial relationship in the transition space. The three buildings have a certain relationship in space, due to green structure is parallel to green house, so their relationship is clear, the two rows of columns on the south side of the green structure can become a foyer of the green house. It seems that the red house through the green structure can have a certain connection with that small space. On the whole, the order of the entire transition space is not clear enough. But one thing is clear, the pillars will play an obvious role in dividing the space in this transitional space.

If connect the column at the northeast corner of the green house with a column hidden by the window of the red house, in other words, if there are pillars on this line, the spatial order will become different (figure 55, figure 56). This line divides the space enclosed by the green structure into two halves, which makes the connection between the red house and the small corner on the west more easily noticeable. In order to make the relationship clearer, I used the designed 3D model compare with the original 3D model (figure 57).

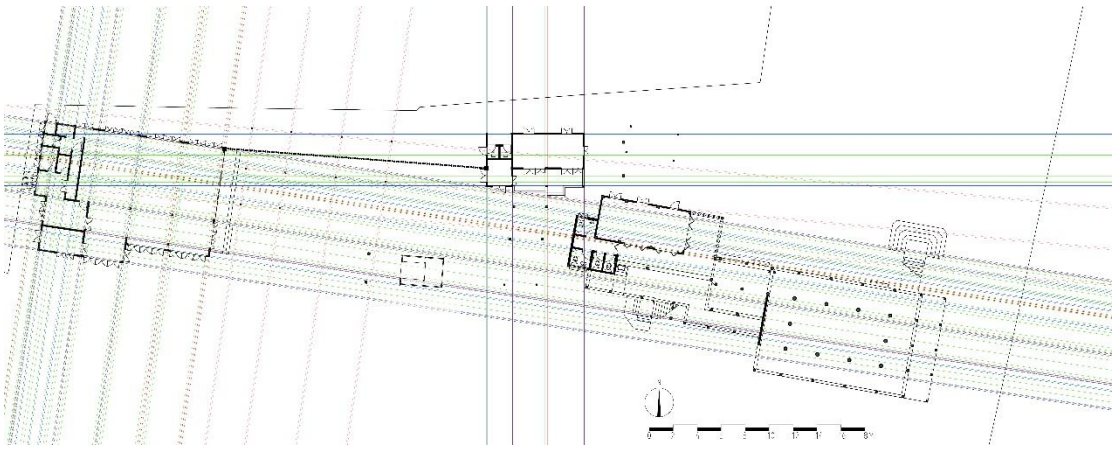


Figure 55 The black line shows the connection.

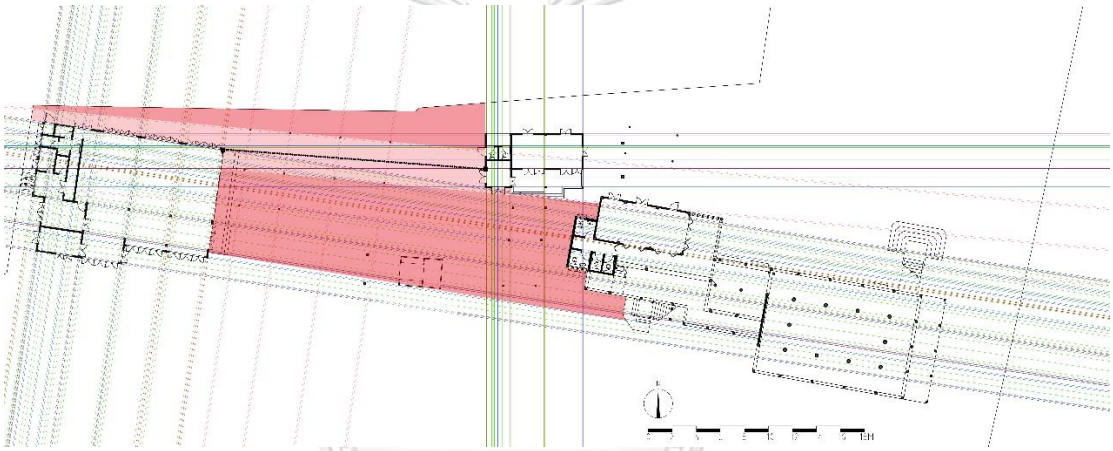


Figure 56 The graphic shows a new order in this space.

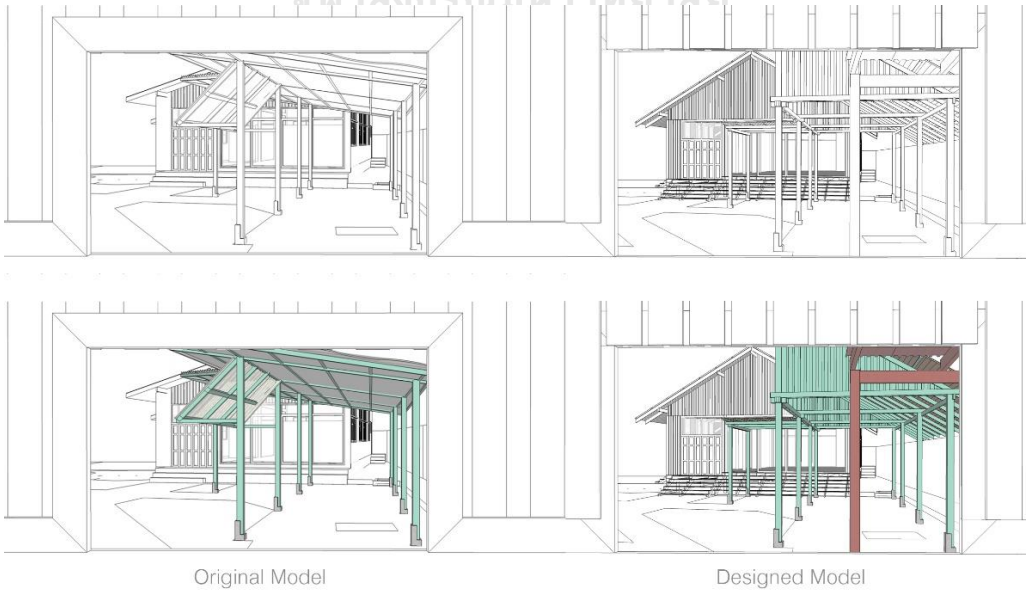


Figure 57 Spatial order comparation.

Through the exploration of spatial relations in this transition space, we can see that sometimes one pillar can destroy a space, but some time, one pillar can also mould a space. The key is how we observe it. My third rule also came out, that is to use column to reshape this transition space.

4.2.3 Extraction and Application of Design Languages

After analyzing the proportional relationship and spatial relationship, extracting and applying design language will be the next step. In this phase of research, because the specific conditions of these three buildings are different, so they need to be considered independently. The rules laid down in the first two steps of research can ensure that they will not lose their order with each other.

The first one to be discussed is green house, except for the dilapidated roof, the other structures are basically well preserved. After the first step of research, the height of green house will rise from 5.9 meters to 7 meters (figure 58). The entrance looks lower after the overall height is increased, then the roof creates a huge sense of pressure to the doors. To solve this problem, the height of the foundation is raised from 0.6 meters to 0.85 meters. Since all doors and windows are kept intact, they will all be kept without any changes. The walls are the structure that can try to apply new architectural language.

Figure 58 Comparation between two different height of green house.

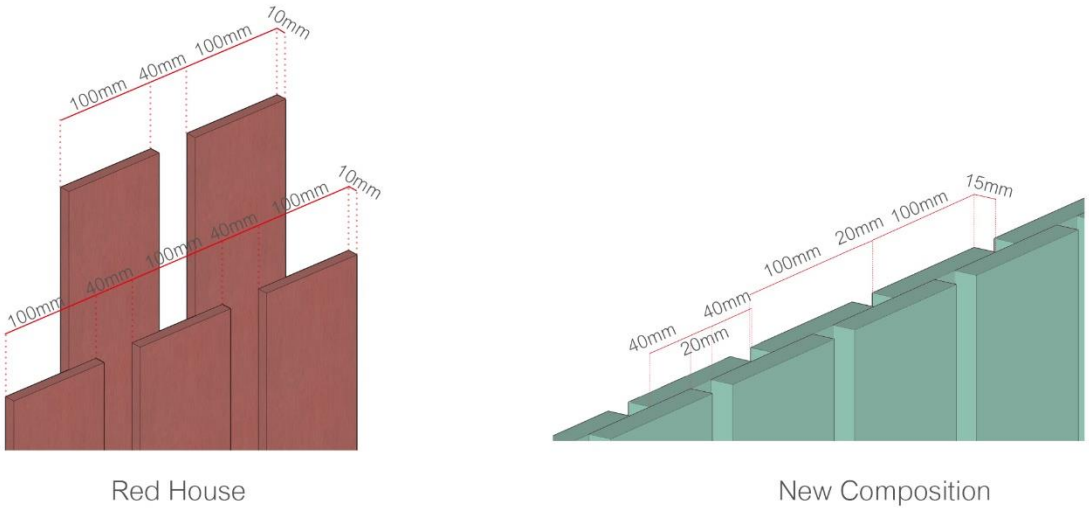


Figure 59 New composition from the existing form.

By using different moduli to imitate the combination of red house wooden walls to obtain new forms, which constructed the basic form for the new wall in green house (figure 59).

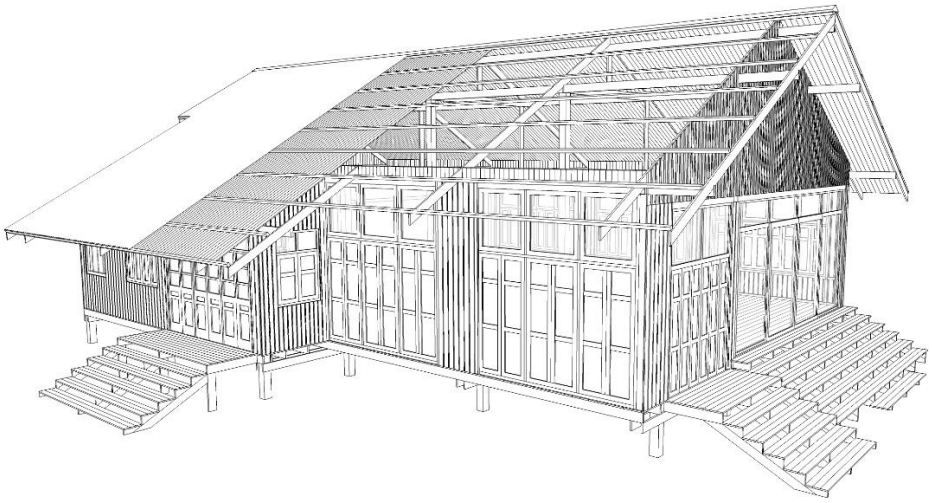


Figure 60 New model of green house, which made up by all required components.

Reconstruct the model to make it as a basic prototype (figure 60). By changing the properties of the material, different combinations can be derived.

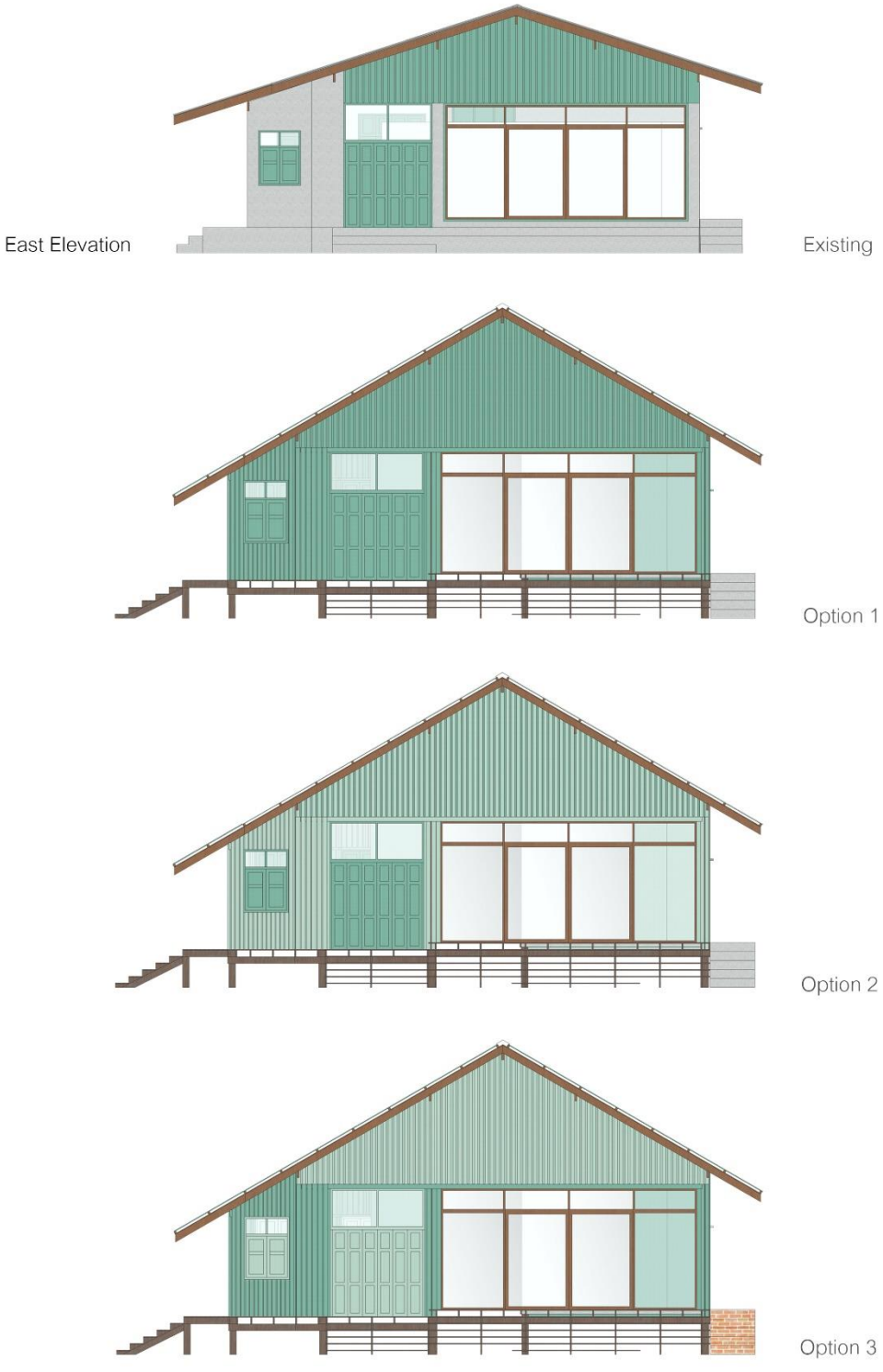


Figure 61 Different designs shown by east elevation.

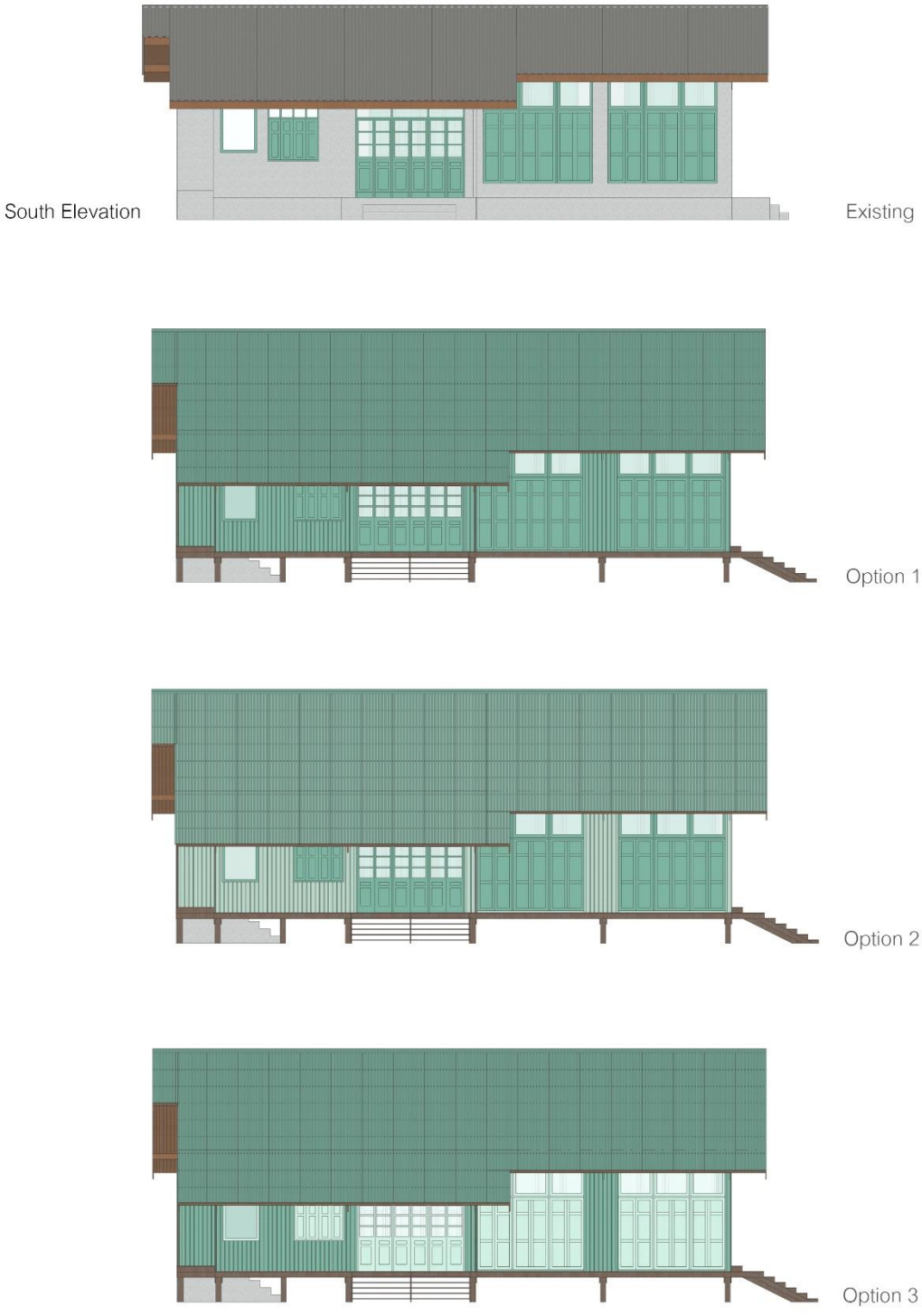


Figure 62 Different designs shown by south elevation.

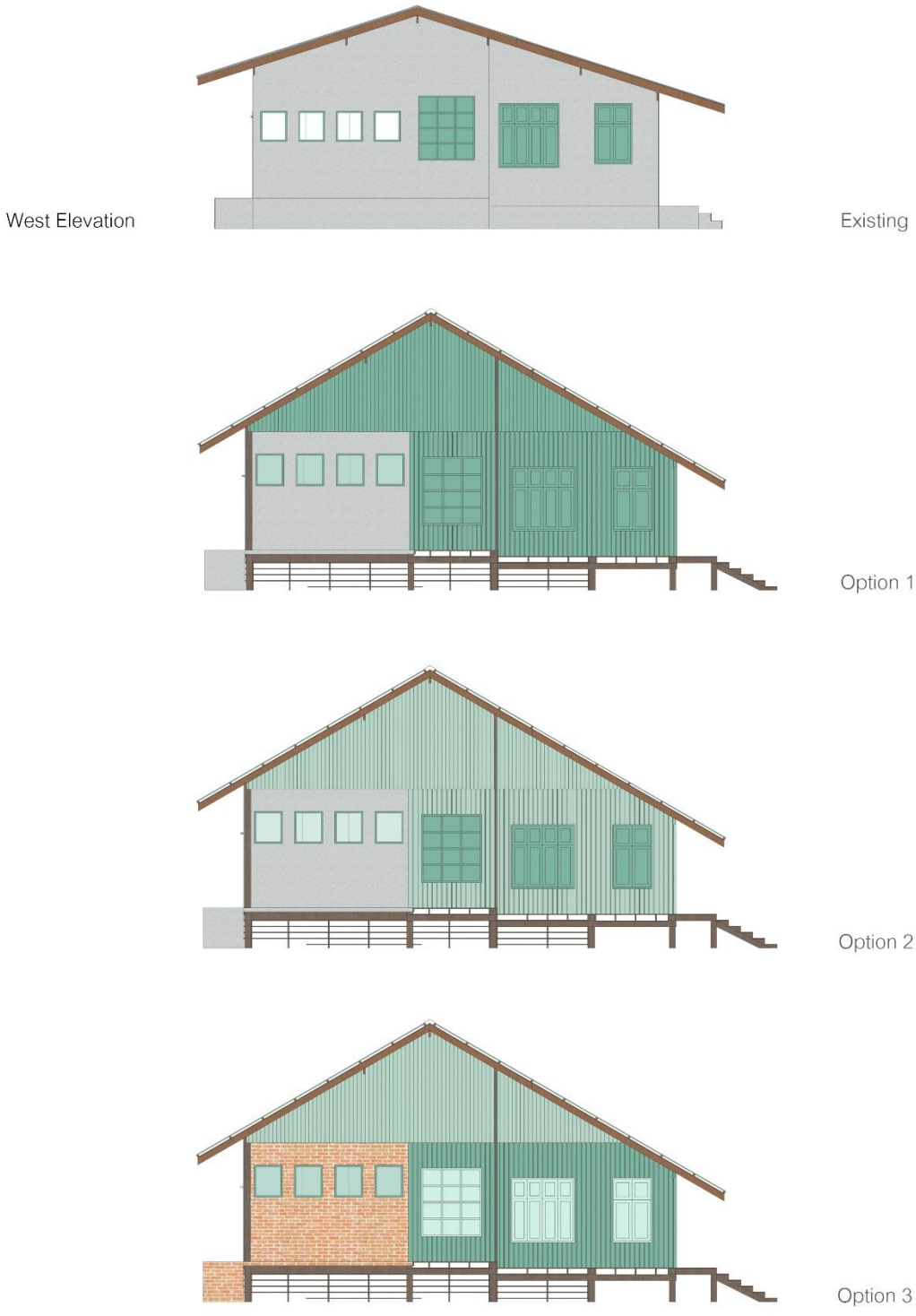


Figure 63 Different designs shown by west elevation.

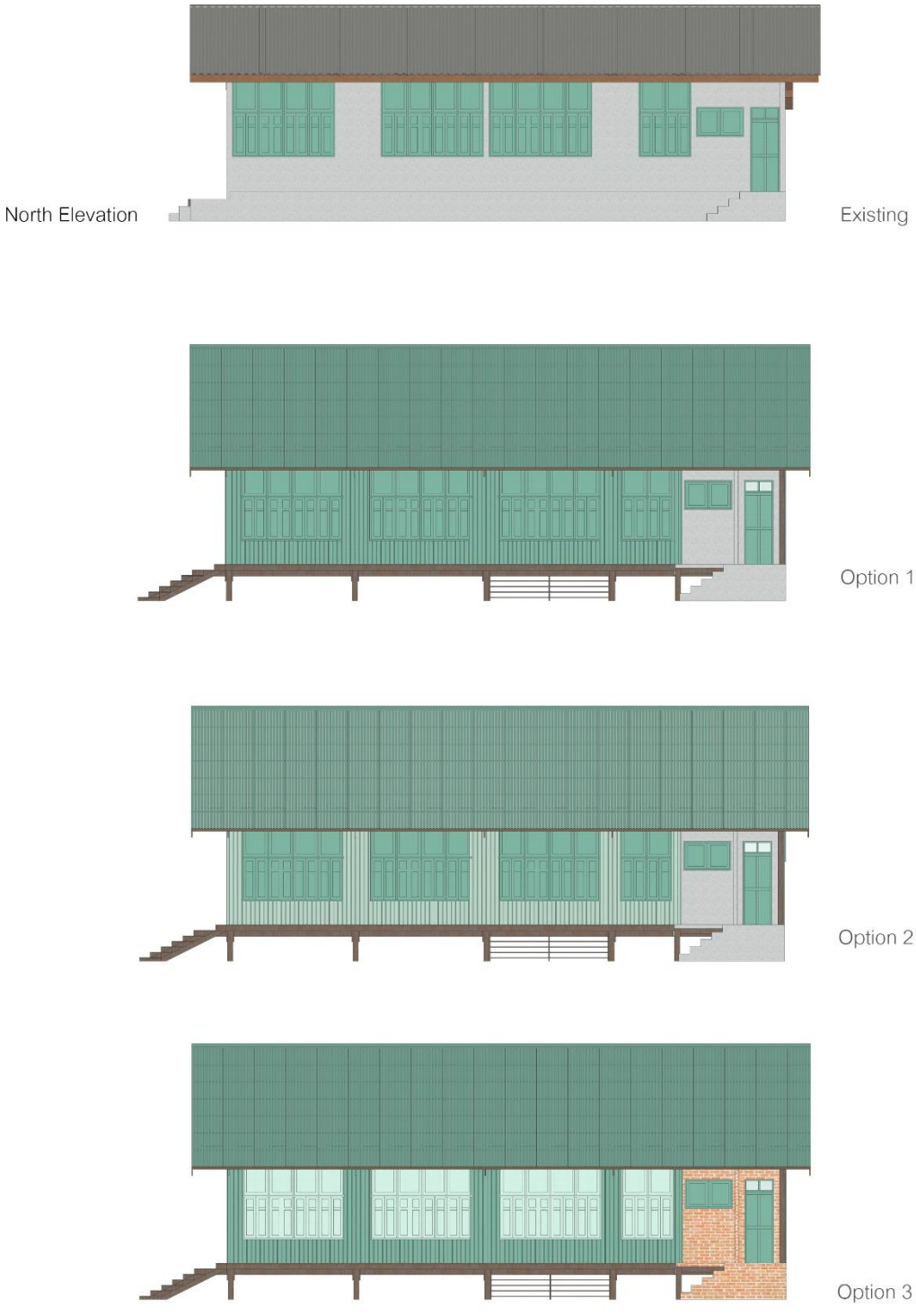
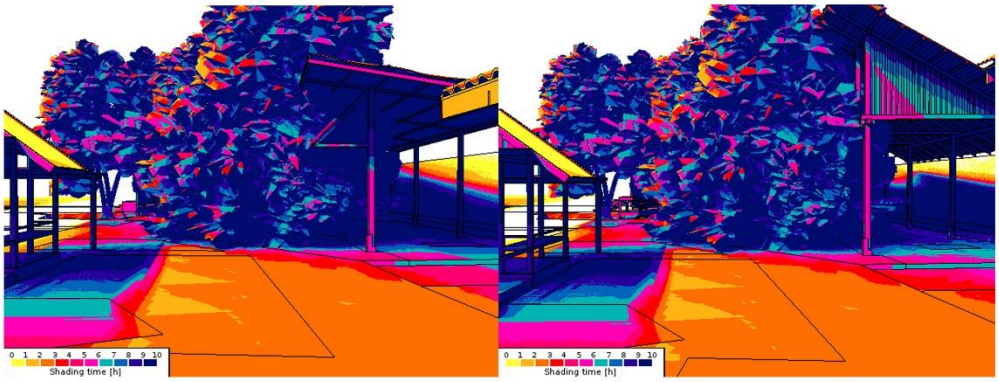


Figure 64 Different designs shown by north elevation.

Through the second step, the results obtained in the spatial analysis show that the columns in the middle of green structure plays an important role in guiding the vision in the entire transition space. Therefore, for the redesign of green structure, the emphasis is on extracting spatial language rather than material's language. Through learning the architectural language expression in terms of spatial in Ban Plainern, applying that language to redesign green structure. Trying to organically combine the green house and the green structure is the target of renovation of green structure (figure 66). The roof slope of the green structure designed to be 30 degrees and connected it to the roof of the green house in the same straight line and used the structural relationship between beams and columns to divide the entire roof structure into two parts. The first part is the triangle above, it visually forms a spatial continuity with the facade of the green house. The design language borrowed from the columns that arranged on the ground floor of Prince Naris Thai house. From the perspective, the empty space is blocked by pillars, thus forming a solid surface visually. The second part is the square below, it followed the proportion of the columns that presented on the ground floor of Prince Naris Thai house. But there is a concern, for this design, a lot of sunlight will directly get into the space under the structure. There are many tall trees on the south side of the green structure to block sunlight shine on the space under the roof. However, this subjective idea cannot be used as evidence to support the feasibility of this design. I used software to test the influence of sunlight on this space before and after the design (figure 65). The test time is September 1, 2020, 7 am to 7 pm. From the result, these tall trees can shade the space well in this design.

Real scene

Modeling scene for existing condition Modeling scene for new design



Shadow analysis about existing condition Shodow nanlysis about new design

Figure 65 This graphic shows the result of shadow analysis about the existing condition and designed condition. (Testing software: DeltaCodes)

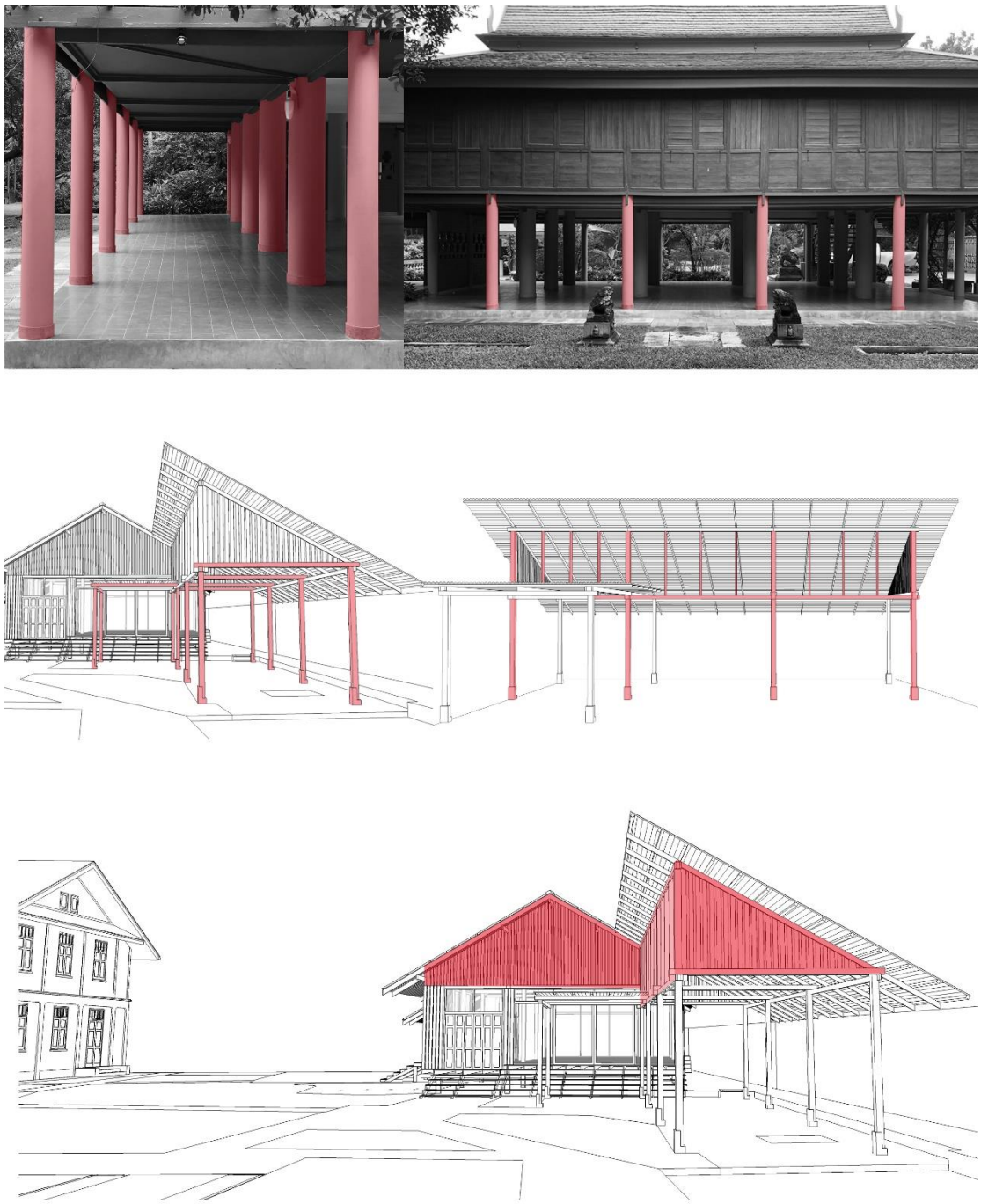


Figure 66 This graphic shows the spatial languages that exiting in Prince Naris Thai house and how to apply them.

Figure 67 The red house design (This model provided by the student team).

The design of red house has achieved by a student team that conducted by *Professor Chittawadi Chitrabongs Ph.D.* The beauty of this design lies in its façade, it applied a new architectural language to building the wall (figure 67).

But the designed height of red house is 6.6 meters, which is too height (figure 68). According to rule 2, it should not over 4.9 meters. Besides, after spatial analysis, the roof in front of red house is suggested remove. Therefore, I made some changes based on this design. First, I reduced the height of the design, and remove the roof in front of the entry (figure 69). Second, I redesigned the roof on the east side of the red house. By changing the form of the pillar foundations, allowing them to be associated with new additions, thereby enhancing the guidance of the space (figure 70).

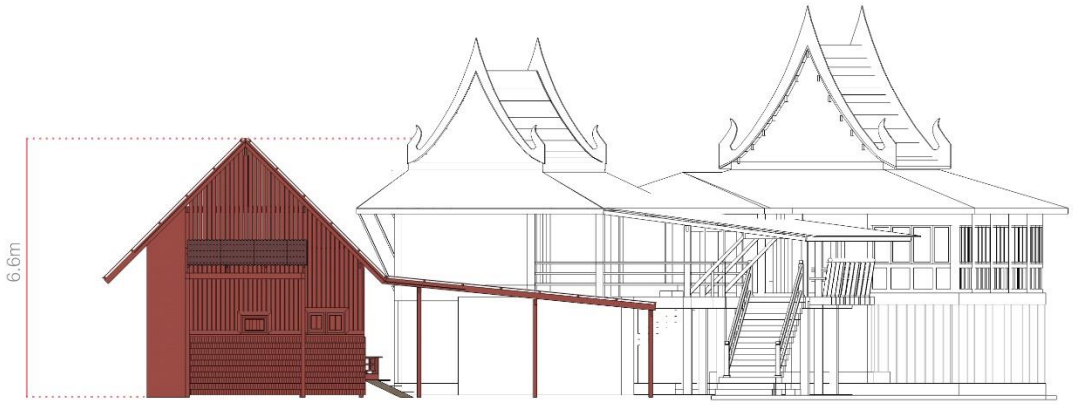


Figure 68 The height relationship between designed red house and the Thai house.

Figure 69 The height relationship between redesigned red house and the Thai house.

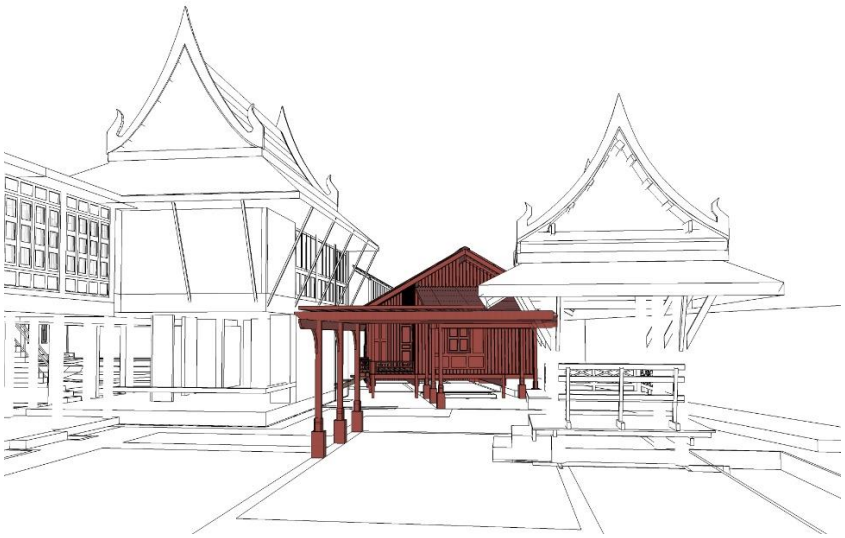


Figure 70 Relevance of column-oriented space.

4.3 Design Presentation

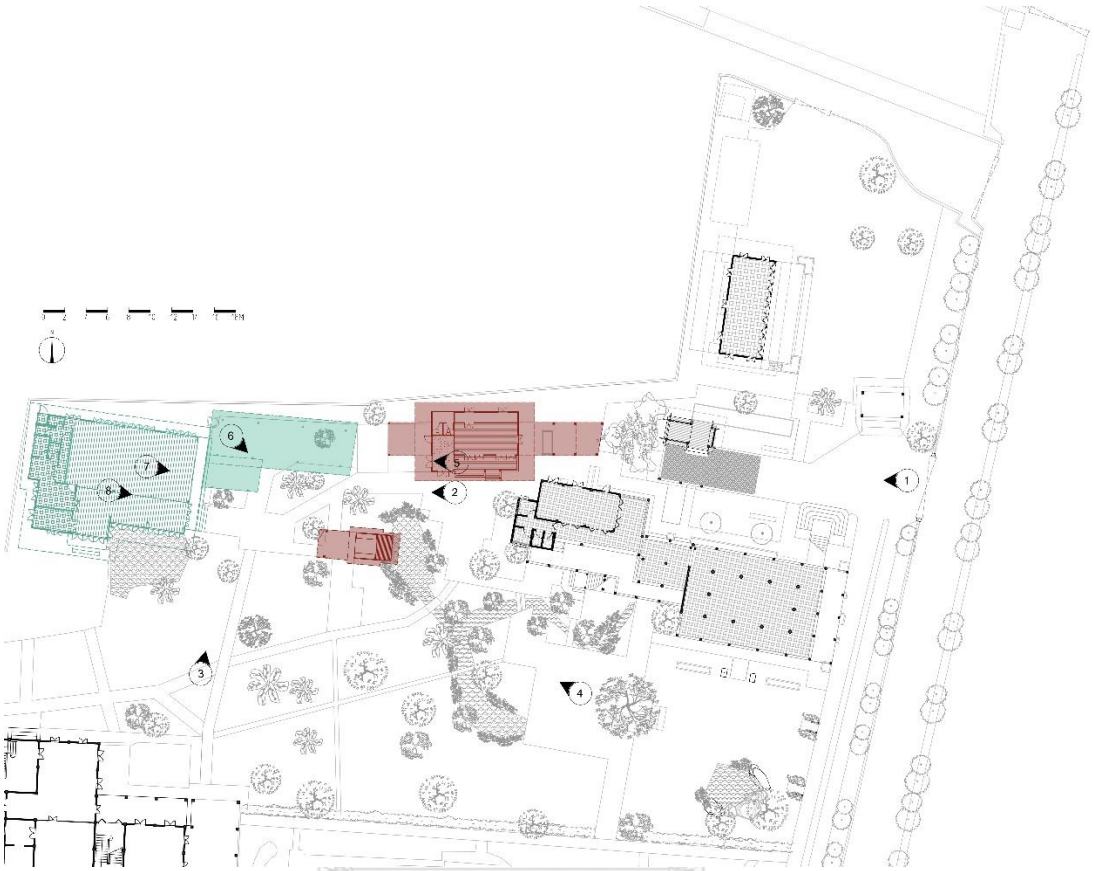


Figure 71 This diagram shows different view spots for observe final design.

Eight selected observation points show how the designed transition space changes itself and the spatial composition in Ban Plainern. Through a series of comparisons by 3D models between the designed and the existing, the differences will be visually manifested. The simulation times about the 3D model is random, there no specified time point. But in order to show as much as possible the state of the buildings under different time and sunlight conditions, the selected simulation times focus on afternoon at different month.

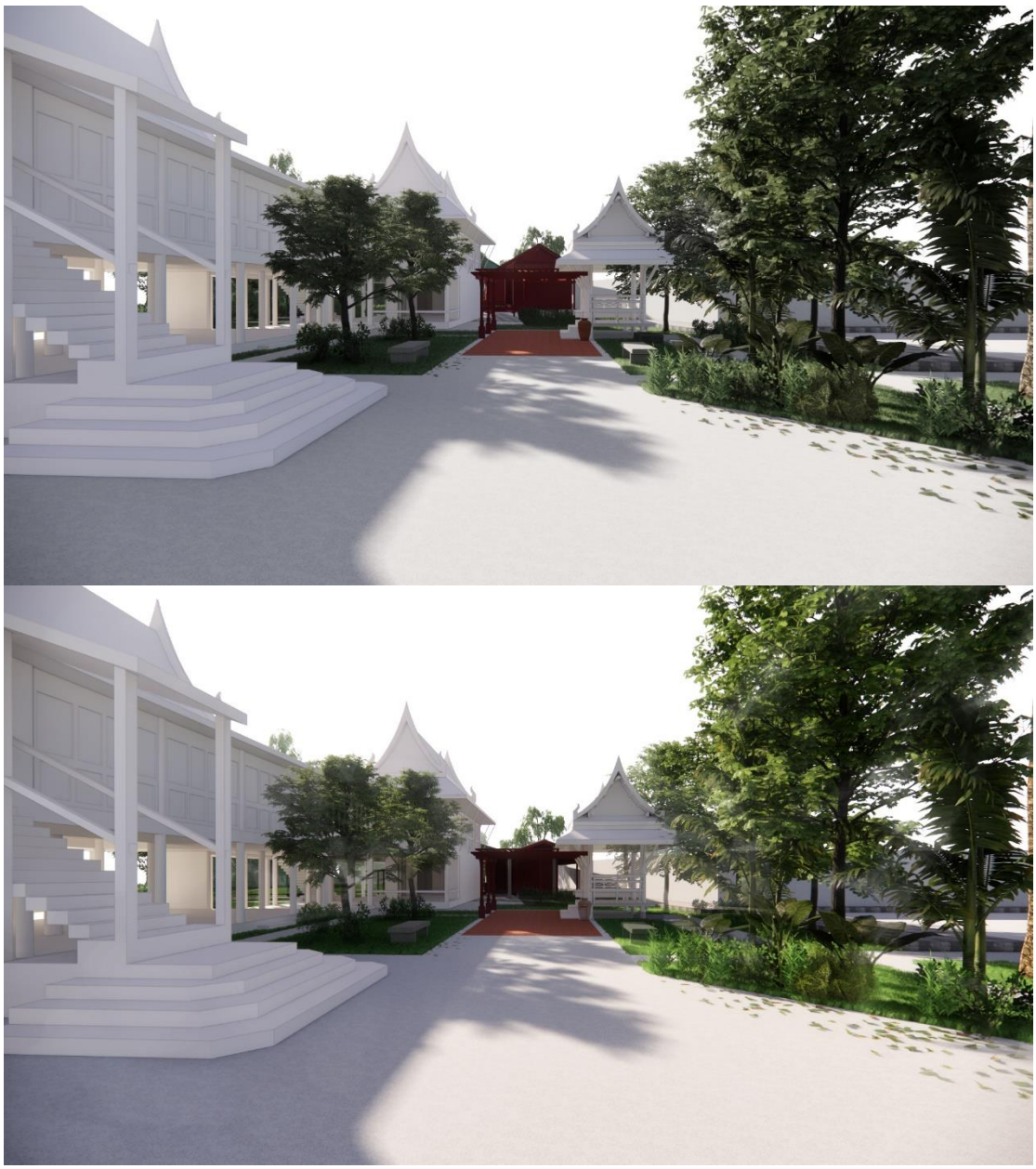
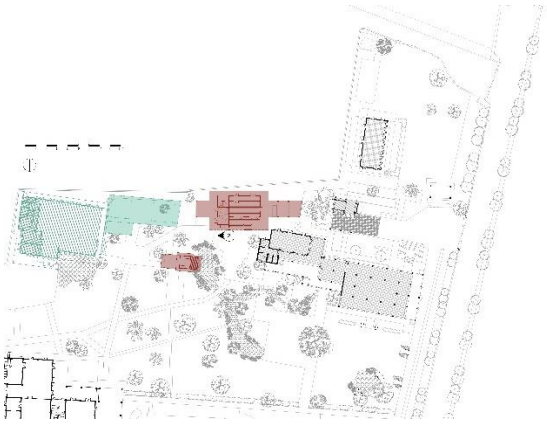


Figure 72 Viewpoint 1, new design (above), existing building (below), simulation time: 2:47 p.m. on March 12, 2020.

Figure 73 Viewpoint 2, new design (above), existing building (below), simulation time: 12:51 p.m. on November 1, 2020.



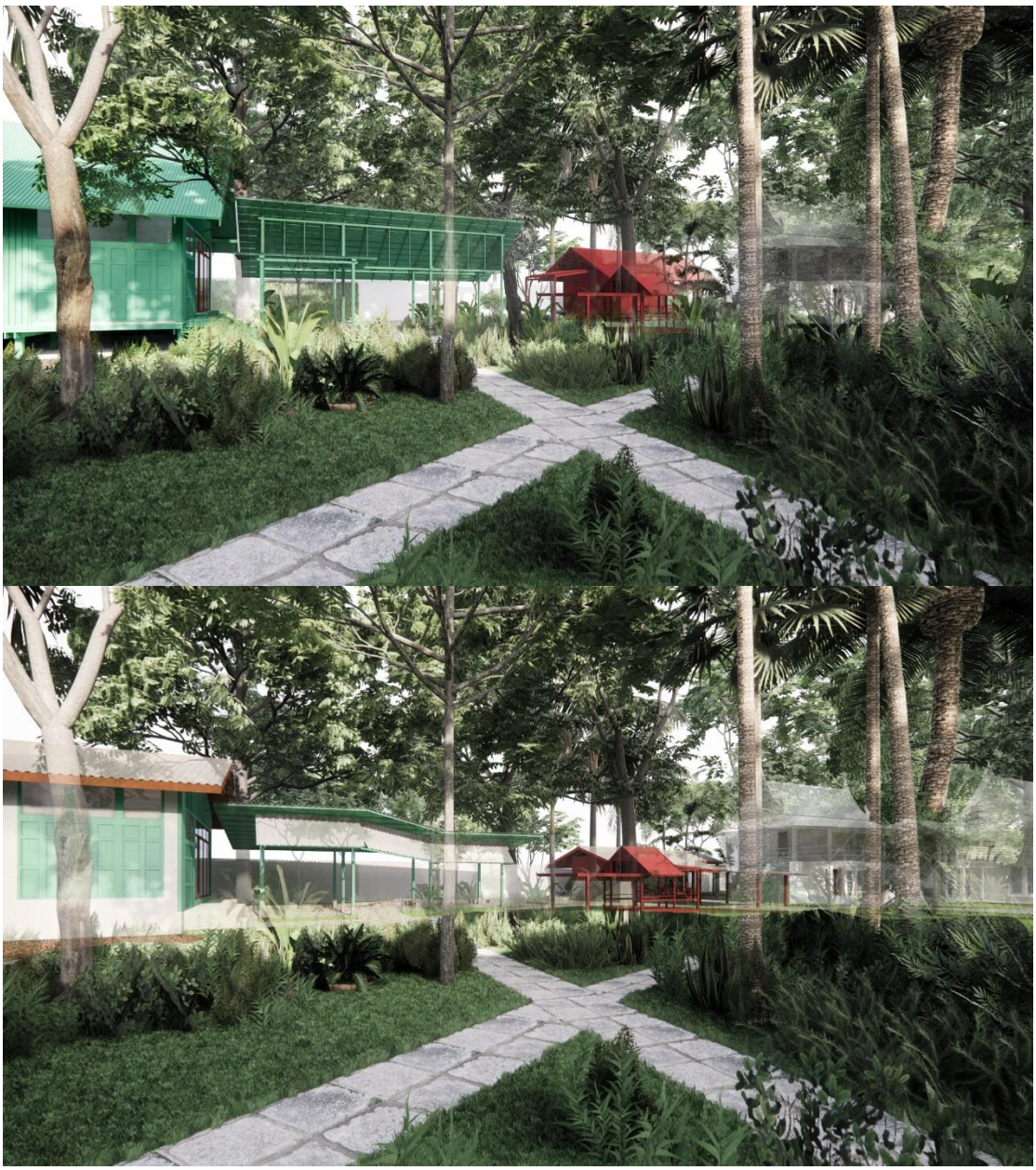


Figure 74 Viewpoint 3, new design (above), existing building (below), simulation time: 11 :37 a.m. on December 31, 2020.

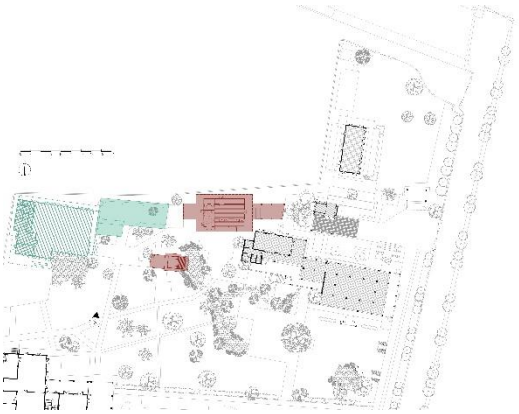


Figure 75 Viewpoint 4, new design (above), existing building (below), simulation time: 3:44 p.m. on March 12, 2020.

Figure 76 Viewpoint 5, new design (above), existing building (below), simulation time: 2:44 p.m. on July 2, 2020.

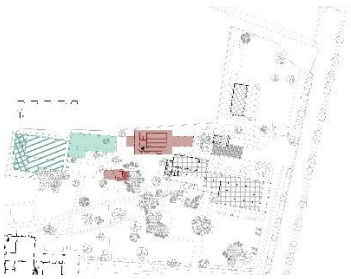


Figure 77 Viewpoint 6, new design (above), existing building (below), simulation time: 4:29 p.m. on February 7, 2020.

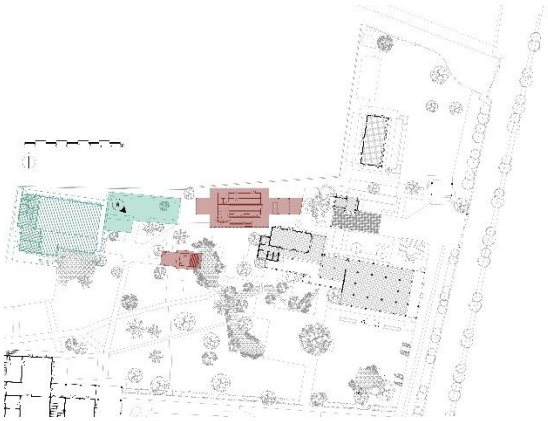


Figure 78 Viewpoint 7, new design (above), existing building (below), simulation time: 2:19 p.m. on May 13, 2020.

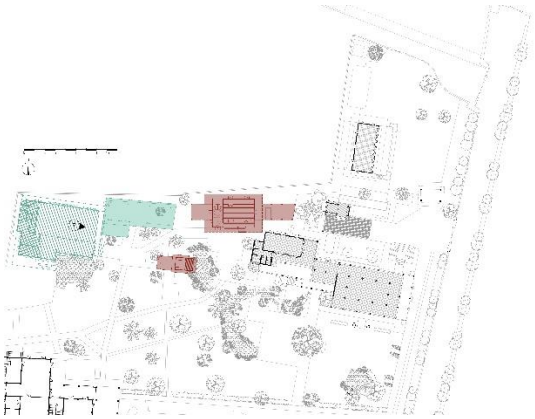


Figure 79 Viewpoint 8, new design (above), existing building (below), simulation time: 4:09 p.m. on March 6, 2020.

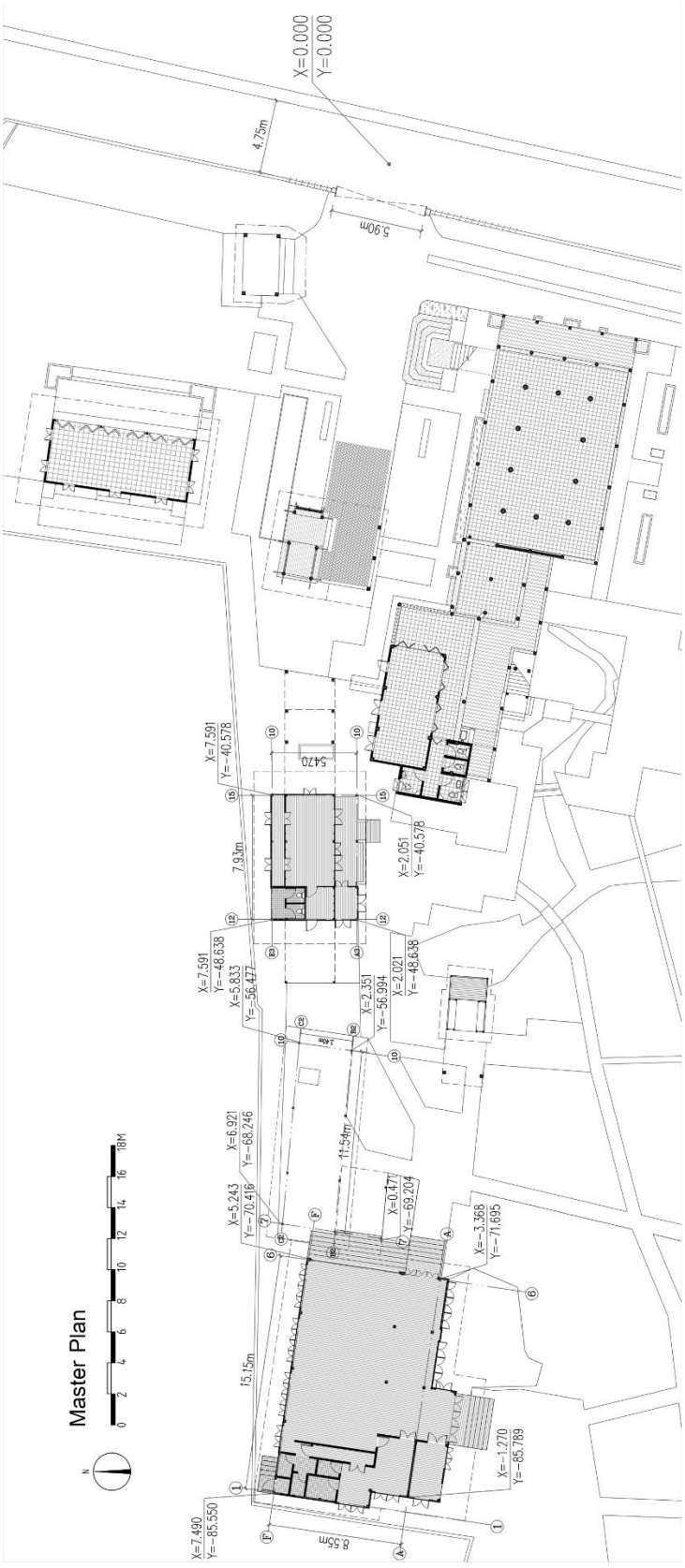


Figure 80 Master Plan.

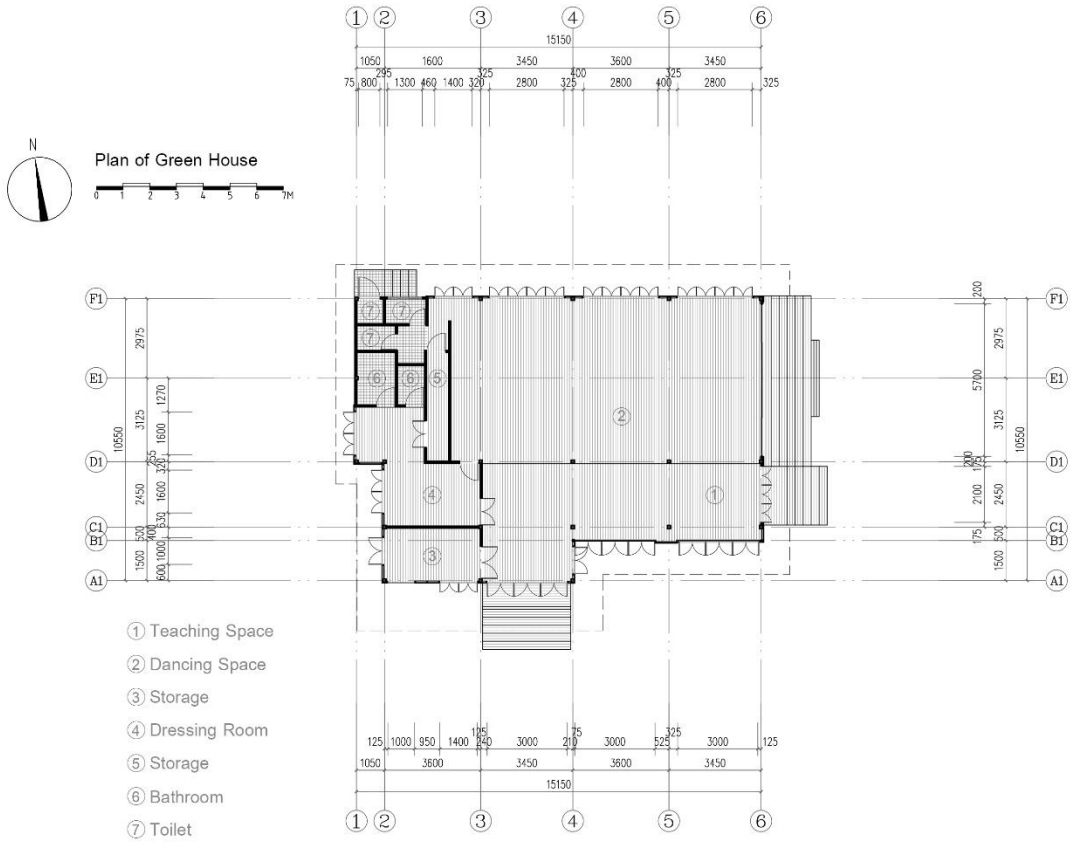
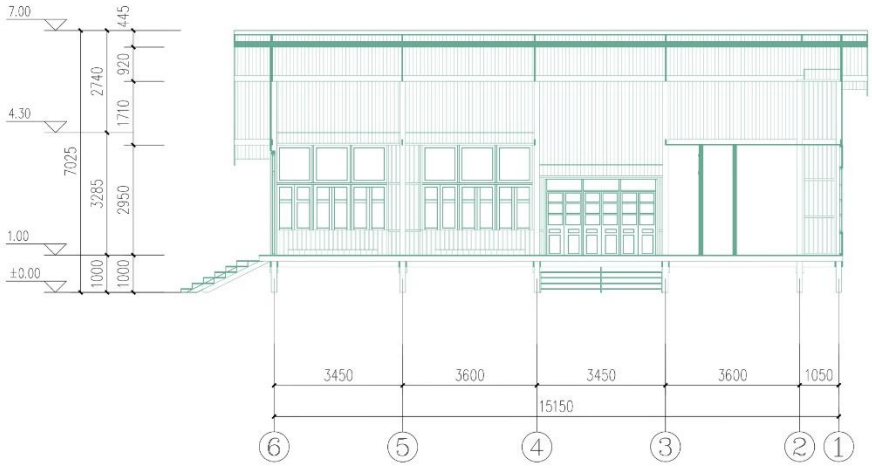


Figure 81 Plan of Green House.

Green House Section A-A



Green House Section B-B

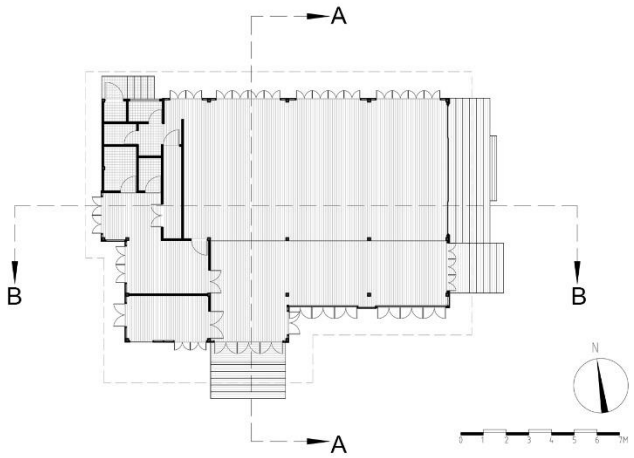


Figure 82 Sections of Green House.

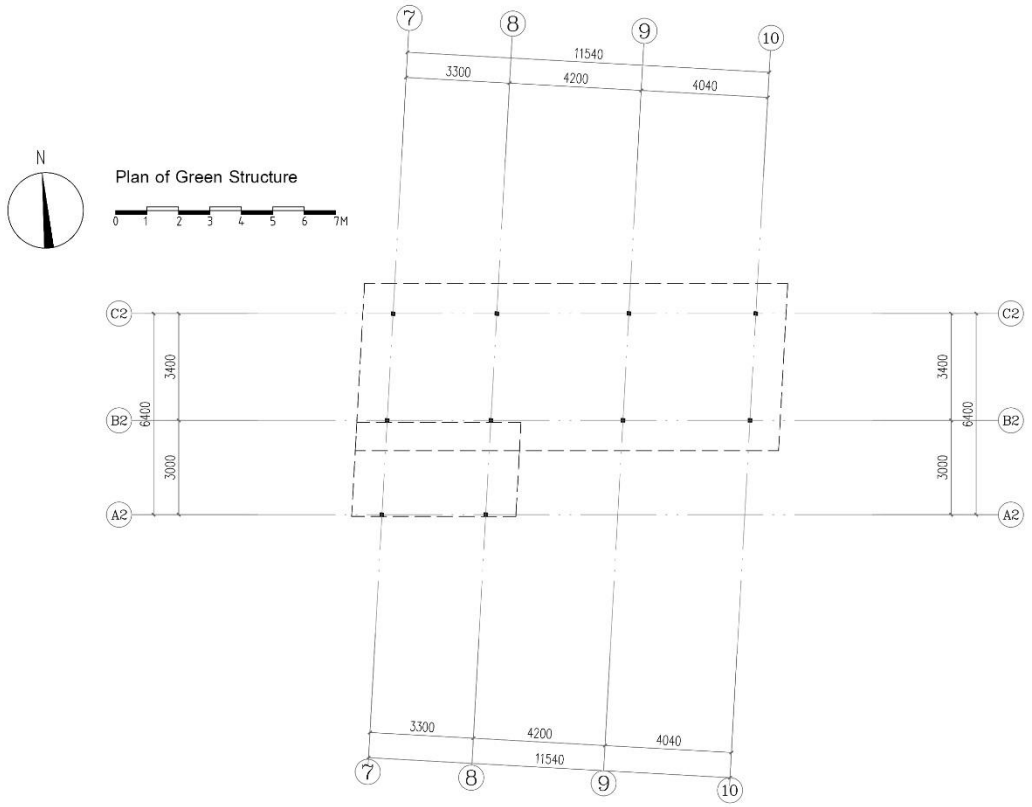
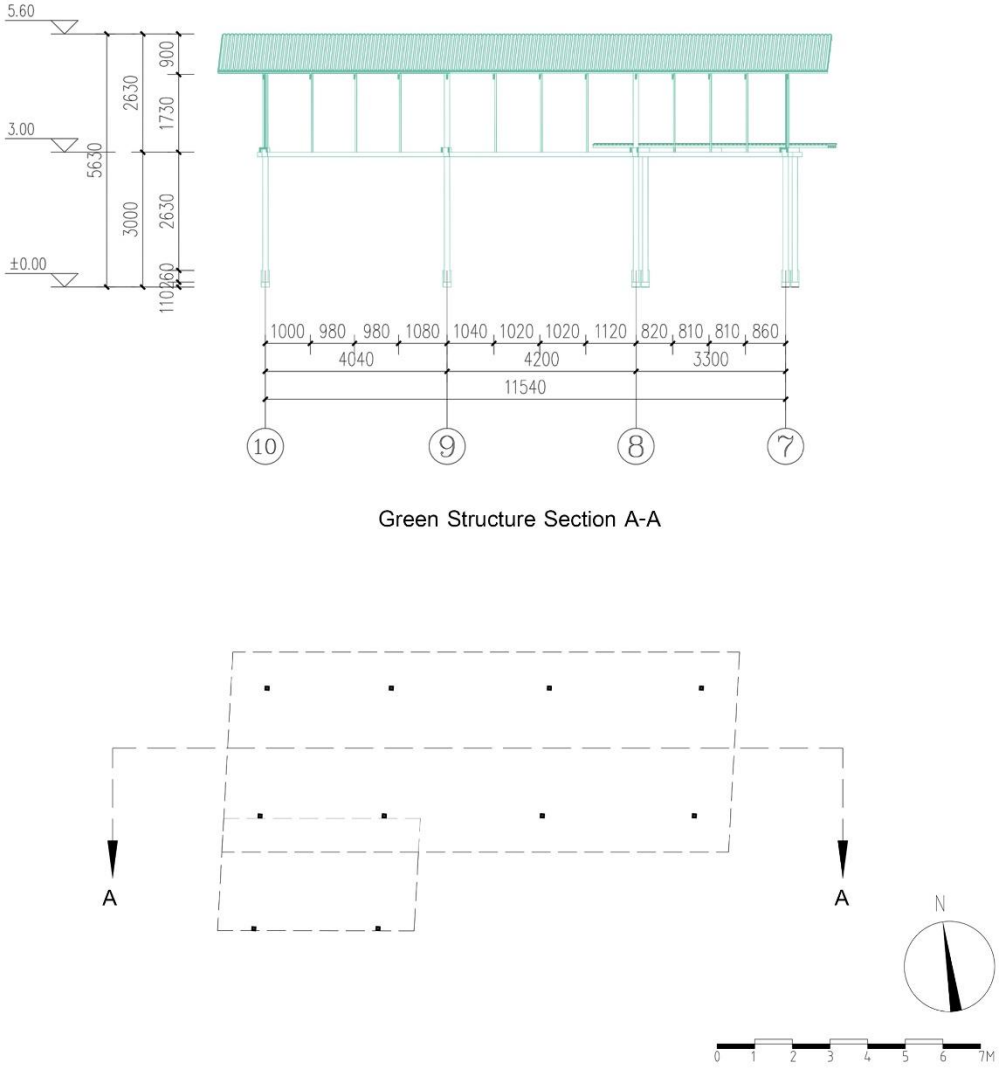


Figure 83 Plan of Green Structure.



Green Structure Section A-A

Figure 84 Section of Green Structure.

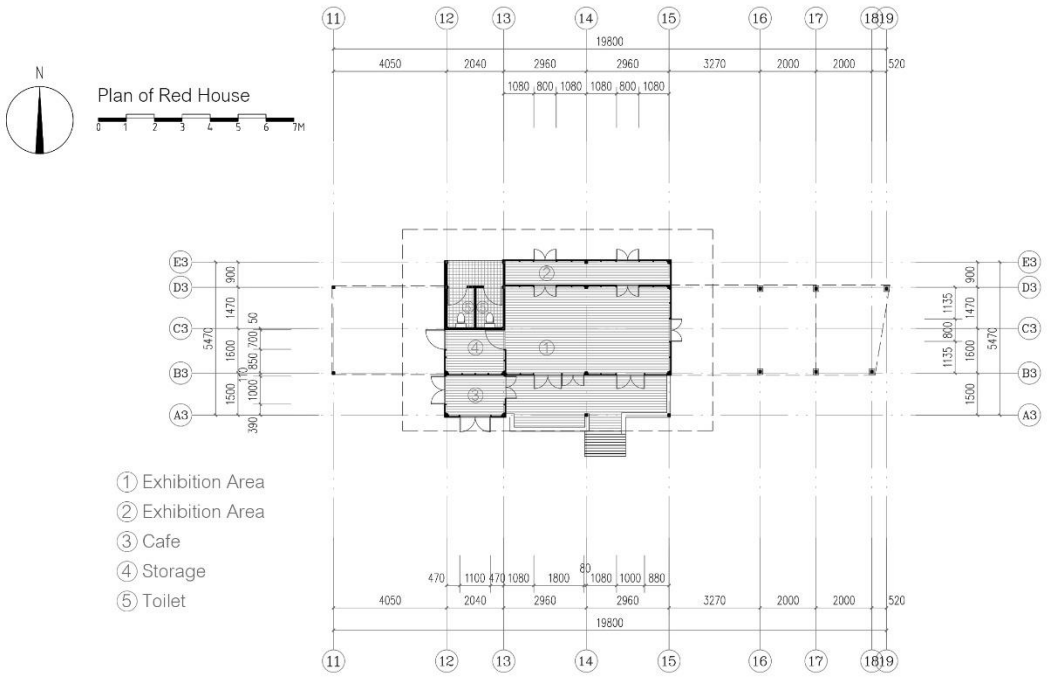


Figure 85 Plan of Red House.

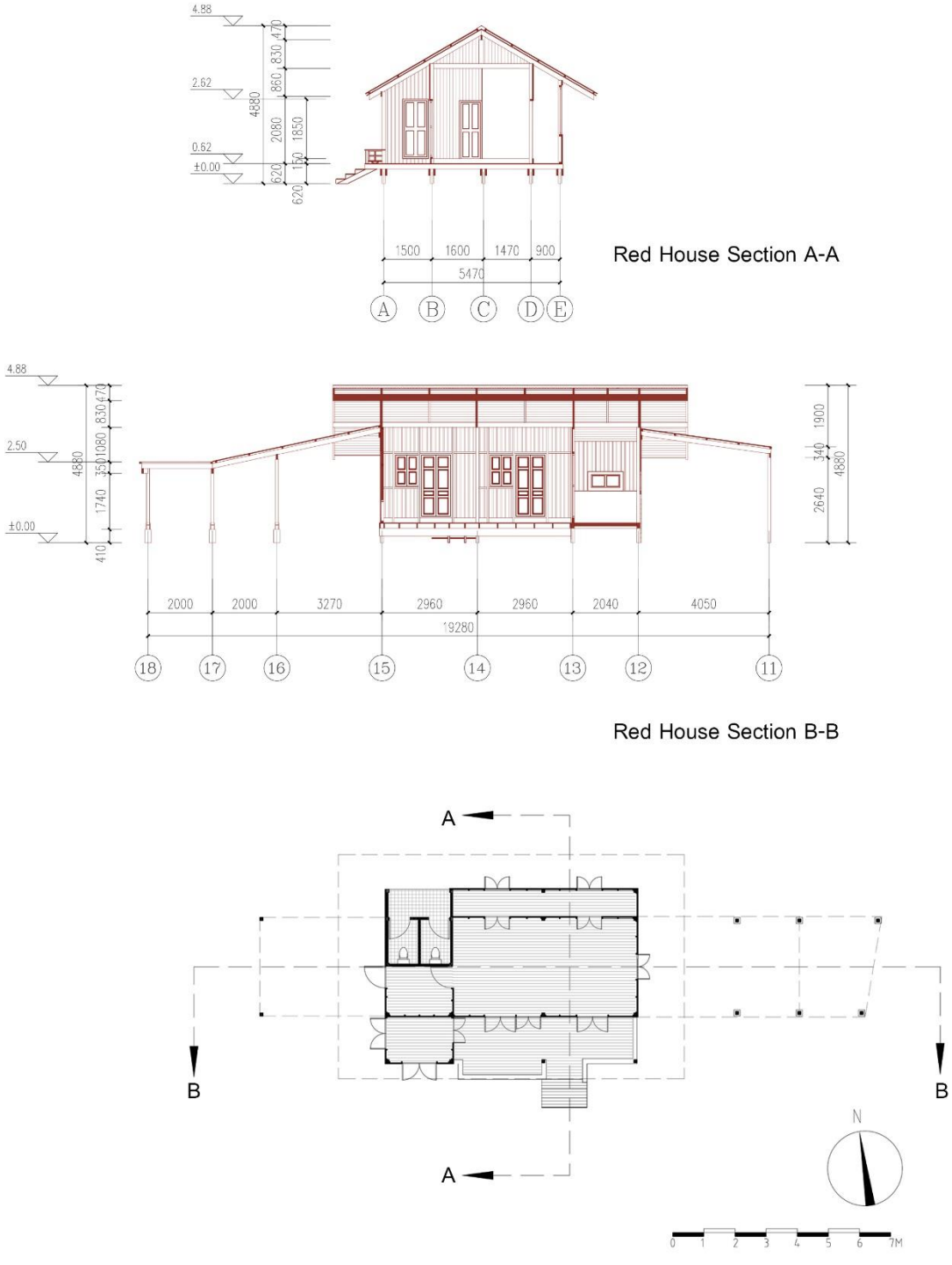


Figure 86 Sections of Red House.

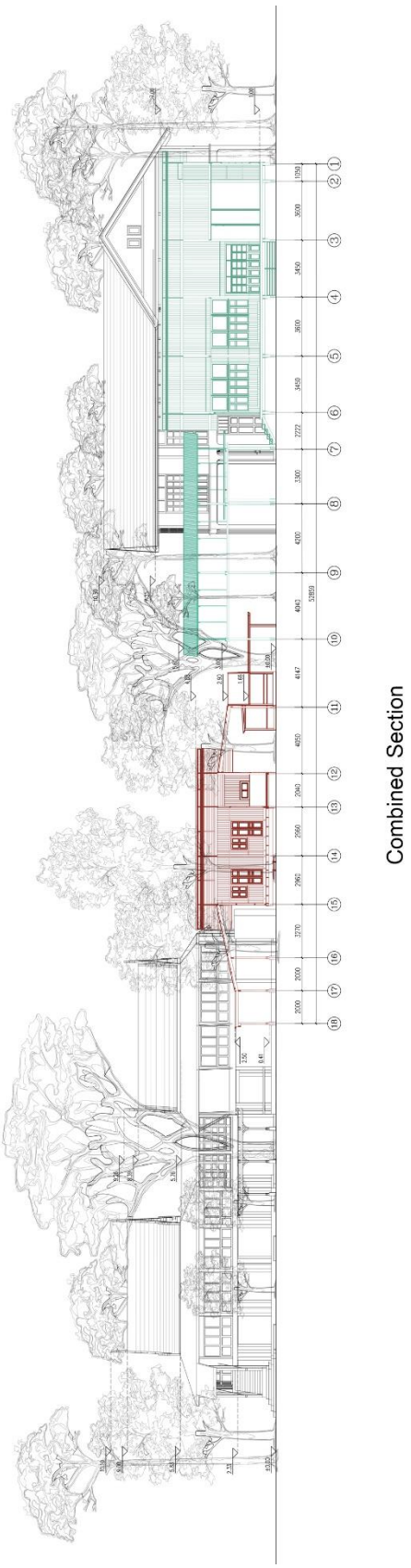


Figure 87 Section of Design Site.

4.4 Design Review

After integrated the analytical methods from literature reviews and case studies. This design process started with reading the site, Ban Plainern, a special place has its own history stories and design language. In order to discover and record its unique architectural language, photography was used as the main tool for collecting raw materials. The lens can not only record the details easy perceived by eyes, but also the spatial composition relationships, order and proportions. Photography provides possibilities for exploration. Further, the key to prove these possibilities and to understand architectures is to meticulously and realistically draw every line that composed them, then find the relationships by one's own eyes.

After collecting the necessary basic data, such as photos, measurement data, etc. The specific analysis steps are divided into three steps. First, find the consensus of proportions. Second, understand the interconnectedness of spaces. Third, extract and apply the architectural language to the new design. Build a model based on the rules found in first and second steps. Finally, test different possibilities on the model in terms of materials, structures, new composition of walls, roofs and as much as elements can be done.

The result of this model and design only represents a possibility, this design method can generate countless possibilities. Because as long as people look at the same world from different perspectives, they will look at different orders. There are a lot of things that can be explored in this design. Such as, test more different materials. Consider more design elements, such as wall design and ground design. The modulus relationship contained in these original elements will also affect the composition of space.

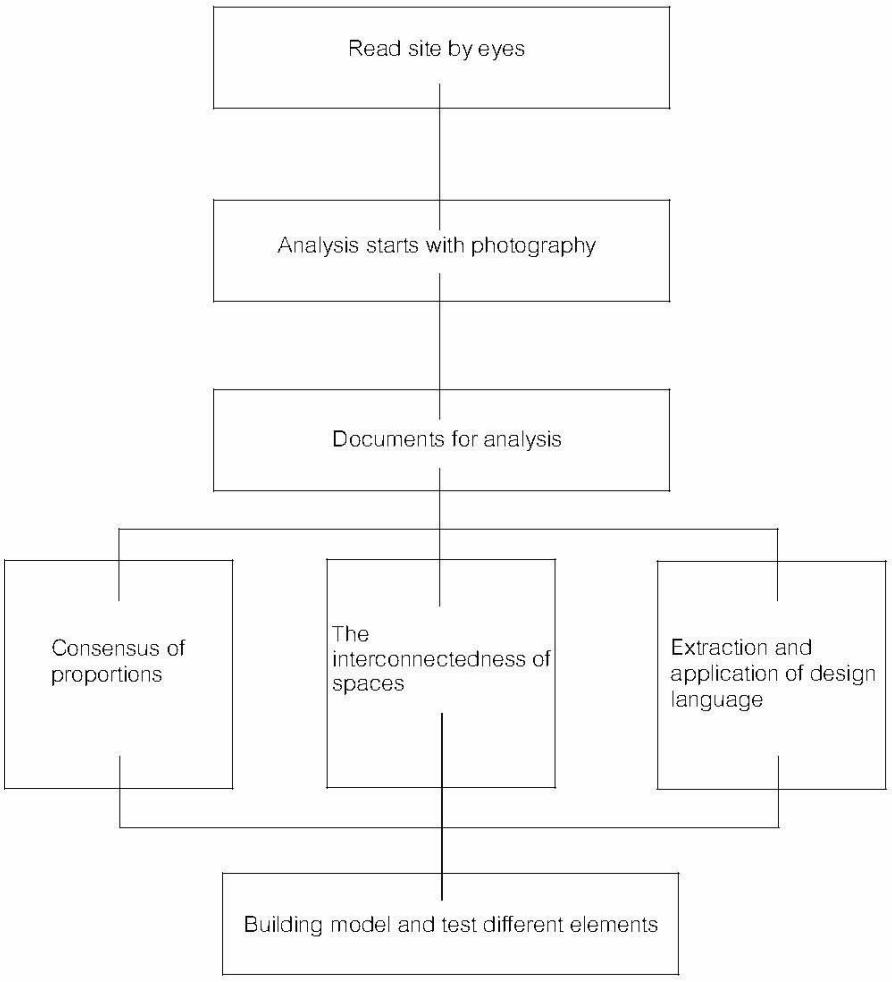


Figure 88 This diagram shown the process of design analysis.

Chapter 5 Conclusion

This thesis is an exploratory design method for transition spaces in Thai houses. It displays a methodology developed from the knowledge of Colin Rowe, Peter Eisenman, Le Corbusier, and Juhani Pallasmaa written in ***The Mathematics of the Ideal Villa and Other Essays, Ten Canonical Buildings***, ***Towards a New Architecture***, and ***The Eyes of the Skin: Architecture and the Senses,*** respectively. Although the focus of this research is limited to transition spaces in Thai houses, it is hoped that the method can be applied to all architecture as forms, proportions, materials are essential to the composition of architectural orders.

Architectural design is not only a scientific process of work, it is also appeal to human's experiences. Materials of construction enable architecture to be discussed. They are the physical matters that make the intangible frameworks visible. Colours can be perceived through cultural background. Red colour is on the columns of buildings in the forbidden city. It has a name, the "Chinese Red". Colour can be symbolic. Light and darkness enable architecture to be seen. Architecture is three dimensional. It catches light, shade and shadow. The movements of light also identify the scale of architectural elements, how high the column is, how wide the wall is. That is to say light, shade and shadow also have dimensions. In this thesis, photography is chosen to be a tool of documentation to document these factors. The factors mentioned above are on the surface of architecture, meaning that human can see them first, before reading the intangible frameworks as Rowe and Eisenman suggest. On the other hand, according to Pallasmaa, architecture is a sublimation of human's mind, it can be the key to open the door of one's inter world. This thesis works on the analysis of the tangible in combination with the intangible.

Epilogue

The Responses from the Owners of Ban Plainern

A most important references to evaluate the design is the feedbacks of Chitrabongs family. M.L.Suthanit Chitrabongs and M.L.Anuwat Jayanta used the word “Beautiful” to describe the design of this thesis, they especially appreciated the renovation of green house that was the classical Thai dance school. On the other hand, as the owners, they are also concerned about the renovation of the green structure on whether or not the green roof can protect the semi-outdoor dance area from the rain.

As the author and the designer, it is a pleasure to learn that the owners of Ban Plainern like my design. Beautiful is a broad adjective, it does not specifically emphasize a certain aspect, but it indicates the design in the owners’ eye is harmonious in Ban Plainern. The concerns about functionality are taken for granted, which can be regarded as a mistake of the designer. As the designer, although I provided an analysis of light and shades, I did not provide a proper analysis of rain in this research. This will remind me to consider and describe things as thoroughly as possible in future research.

Another feedback that made me feel something unexpected is said by M.L.Anuwat Jayanta. He wants the existing chairs for the dance tutors in green house back to the design. This requirement makes me feel to lose something in the design and also get something. I have tried to establish the connection between people’s memories about the past and people's imaginations about the future in architecture. The chair obviously is the thing I missed in this connection. No one will question the importance of furniture in architectural design, especially interior design, but how important they are?

While writing this paragraph, I remember one thing that happened a couple years ago. I was a student doing the internship at an architectural design company. One day, the design director asked all young architects, including all interns to do a house design. The sketch design review with a physical model will be organized in four days.

The design director is a famous architect, all of us felt very happy to be involved, especially for interns. Four days later, the design director gave a comment after all of us finished the presentation. He said, he found that the everyday life in our (all the people who participated the house design) minds is abstract, we cannot put the life into reality. The randomly placed furniture leaves the building without the appearance of real life. This is the only thing I can remember about that sketch design review. I do not know how to draw the real life by my design. I am still thinking about this question.

Perhaps, M.L.Anuwat Jayanta wants the chairs back, the reason is he cannot see the real life that happened in his everyday life in the new design. There is no doubt that these chairs do not only exist in the form of furniture, but they are also a token of a relationship with the past. But, as outsider, I do not perceive this connection of the chair even I am the designer. It is the same true with architectural form, pattern, materials.

This will be a lesson in my career, to remind me to discover the value of existence of every old stuff. This also makes me believe that architectural design not only caters to the development of the times, but also inherit the touch of individual's minds with the world.

Space in Transition

There are two worlds here,
One is the creator's NATURE; another is human's HOME.
Is there any relationship between them?
I might say, look at outside.
The fragrance of spring flowers floating from the window, make me smell the sweet.
The pleasure of summer wind blowing from the porch, make me touch the cool.
The melody of autumn bird's chirp calling from the eaves, make me

hear the happiness.
The lily of winter snow accumulating from the steps, make me
see the pure.
The flowing time seems to want that
the HOME can feel the happiness brought by NATURE.

There are two worlds here,
One is YESTERDAY; another is TOMORROW.
Is there any way to reach them?
I might say, think about today.
Children standing under the green roof practicing the dance moves
in the morning.
Musician walking between light and shades playing the musical instruments
in the afternoon.
Dancers moving on the grass performing the traditional dance
in the evening.
Buildings keeping quietly to prepare themselves for the next day
in the night.
The endeavor of today seems to want that
the beautiful memories of YESTERDAY can be reappeared in a moment of
TOMORROW.

There are two worlds here,
One is YOU, another is ME.
Where shall we talk?
I might say, walk into each other's inner world.
I saw a humble chair,
but I did not see it is the emotional sustenance YOU want to find in the new
world.

YOU saw I have only Nothing to Do[11],
but YOU did not see it is my serious thinking about lives.
I heard YOU complaining that I am not close enough,
but I did not hear it is the sound of YOUR fading footsteps.
The inner space between the two worlds seems to say that
YOU and ME can talk here.

[11] Nothing to Do is a poetry that the author wrote as the final presentation for i+March course called "Architectural Writing".

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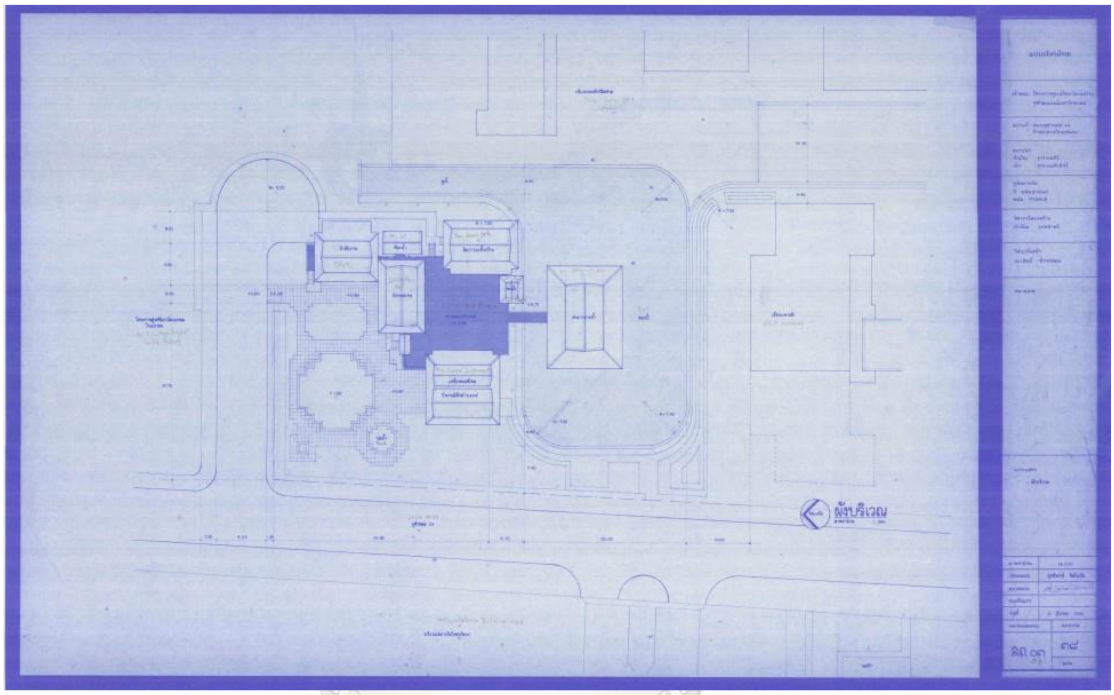
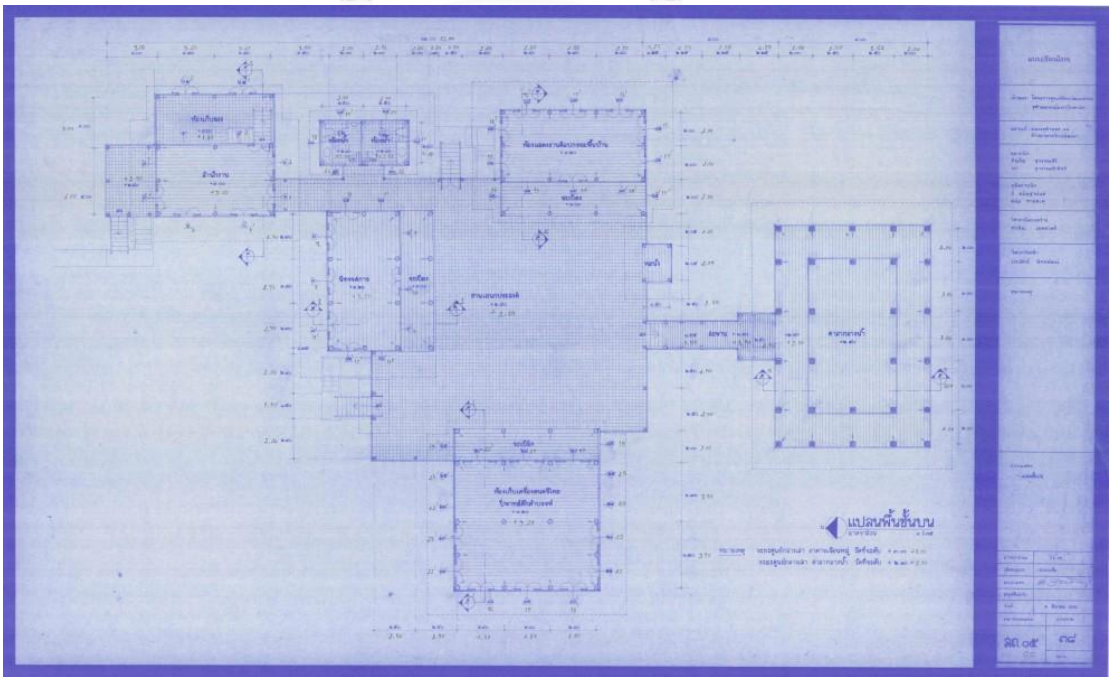
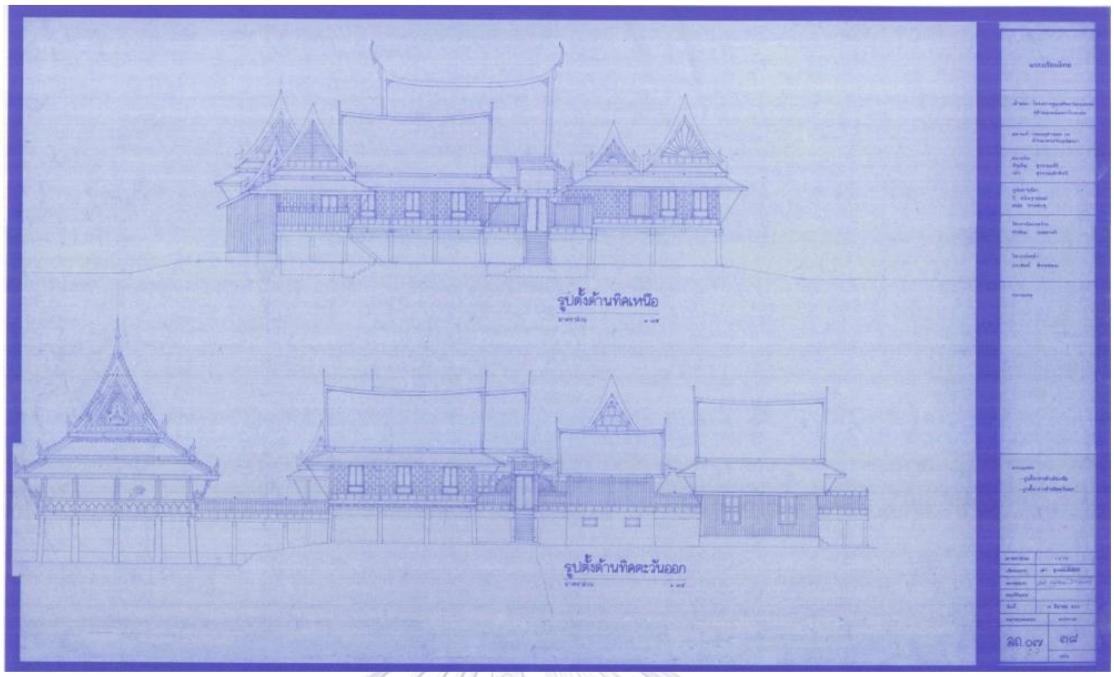
Appendix

The blueprints blow is the construction document of CU Thai House, the building is designed by associate professor Pinyo Suvannakhiri, PhD, a National Artist in Thai Architecture.



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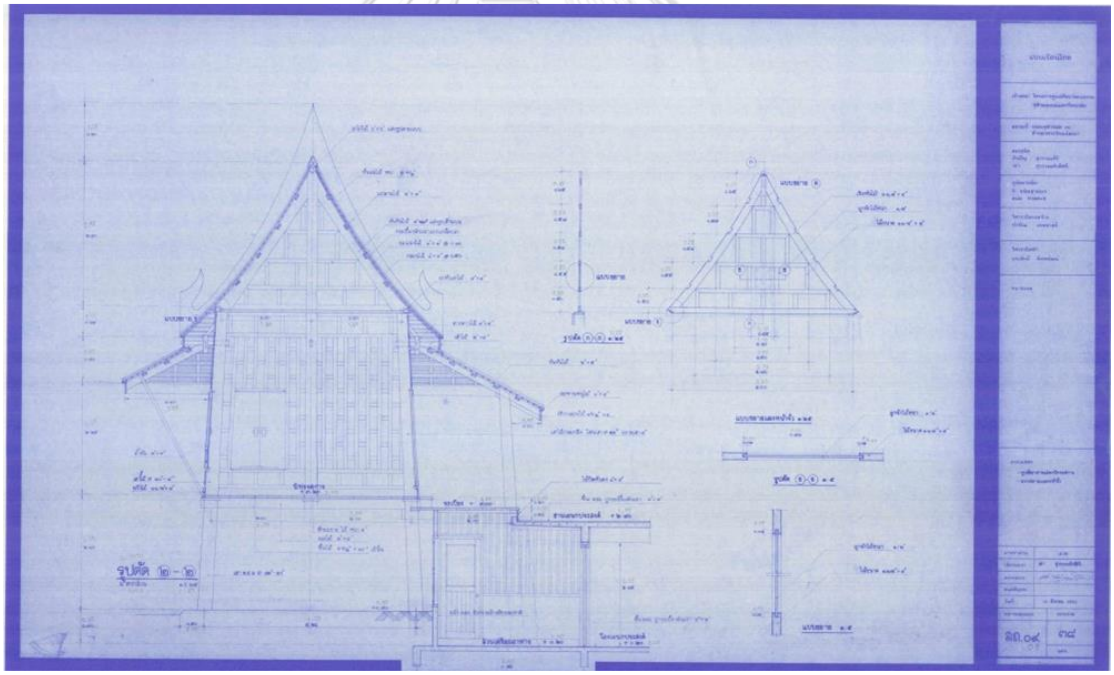
รูปตั้งด้านทิศตะวันออก



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