REDEFINE THAI HOUSE[1]

Sarawuth Pintong Ph.D.Candidate[2]

ABSTRACT

When most Thais think of "Thai house" or *BanThai*, the image of Thai traditional houses in the Central plain that is acclaimed as "national symbol" immediately occurs to their imagination. This is something like a stereotype because they "receive" one-sided of distorted information, which only focused on the physical appearance of Thai houses.

Due to the incomprehension of the real meaning of Thai house, Thais have seen *Ban Thai* as an "old aesthetic" that caused limitation and misleading to the development of Thai houses which can only be done by "adapting" some modern materials and construction technology into the Thai traditional form of architecture. Then adopted "alien architecture" (unconformity architectural form: Sarawuth Pintong) as "new aesthetic", which is incompatible with Thailand's environment, and as a consequence, it has impacted us in the various forms of unavoidable natural disasters.

The forgotten of "Thai architectural wisdom" which is the core ideology of Thai house that has been improved through time until it becomes the "architecture for living", conforming to a place and time among the diversity of Thai cultural landscape. Even though, Thai architectural wisdom is a timeless dynamic equilibrium that composed out of nature, human, and architecture, it needs to be up dated.

In order to "Redefine Thai house", the research methodology was framed in accordance with Phenomenology theory in order to investigate throughout the research objectives, which are Thai traditional house and also Thai vernacular house empirically. The research methods were chronologically divided in 3 phases which commenced with collecting datas and site visiting, collected datas analysis and formed up conceptual design frame work, and then design experiments and implementation.

In conclusion, the researcher founds that the essences of Thai house can be found, not in the tangible superficial decorative elements such as "Ngao" (hornlike finial) or "Pan-lom" (windbreak on the gable as shown in figure 4), or streamline gable roof, but rather in the profound intangible element which is the sense of living equilibrium in between the

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interrelationship of nature human and architecture such as the ability of sufficiency and sustainability of architecture for living among the diversity and change of both natural and man-made environment in the country of Thailand.

KEYWORDS: Thai House; Thai architectural wisdom; Redefine; Interrelationships; Equilibrium

INTRODUCTION

The definition of the word- "Thai house" (*Ban Thai* or *Ruean Thai*) from the past to present has inherited some deviation and distortion. Generally, an image of a clustered wooden house raised on stilts with steam-lined curves of a gable roof and a large terrace has immediately occurred to the Thais's perception when they thought of Thai house. Such image represents architectural form of Thai houses in the Central plain of Thailand which acclaimed as the "national symbol". Indeed, that thought is not easy to be remodel and it has been influenced, dominated, and tied the development of Thai house to the aforementioned Thai physical appearance over the time.

As a result, the status of *Ban Thai* or *Ruean Thai* in present day has become a museum for preserving the Thai Architectural form, so that future generations can study the patterns of the residence where Thai people lived in the past. Although the *Ruean Thai* can still be found as a living place for people, but most of them are old and dilapidated and will deteriorate within times.

At present, the architectural form of Thais' residence has received the influences from the international style which has no connection with a social context and the principles of the original Thai architecture. An effect is that it creates changes in all dimensions of the design concept of architecture in Thailand especially in terms of ventilation, maintenance, drainage, and air- conditioned, that is not suitable for Thailand's natural environment, because of that; it has caused some environmental problems in the present circumstances such as floods, landslides which are parts of worldwide global warming situation.

RESEARCH OBJECTIVES

This research aims at examining the informations covering the word *"Ban Thai"* or "*Ruean Thai*" (in English –Thai houses) in both Thai traditional house and Thai vernacular house, without taking Thai form or physical appearance into consideration, but rather focused on similarities of one another, in order to investigate through core knowledge of Thai architectural wisdom that reflect on the architectural formats even though they are found in a very different cultural landscape. All collected data will be synthesized in order to set up a design framework for the design experiment process. The conceptual design outcome could

be one of the alternative ways to preserve the precious Thai architectural knowledge through the new Thai architectural prototype, and this may be a significant implication that this Thai forgotten heritage is coming back for a revival.

RESEARCH METHODS

The research methodology of "Redefine Thai house" was framed in accordance with phenomenology theory in order to investigate throughout all of the research objectives which are Thai traditional house and also Thai vernacular house empirically. The research methods was divided in 3 phases which commenced chronologically as follow;

Firstly, collecting data which was the process of reviewing literatures (architecture only) that related to the research objective in parallel with the field trip for site visiting in several places around countrywide, in order to experiencing difference forms of Thai architecture in the present context.

Secondly, collected datas were analysed and composed as a set of knowledge that found from the research. Then some missing informations were filled in by reviewing further literatures in the deeper areas of things that surrounded the research objective such as sociology, economy, and political issues, and all collected datas were once again combined into the research finding knowledge which transform into the conceptual design for the new Thai house that suitable for today lifestyle.

Thirdly, design experiments process were taken place and being developed through time, in order to prove the finding knowledge and design outcomes through professionals point of views. To do so, the research finding outcome had been integrated to, various architectural design competition programmes hosted by country well known organizations, and some current projects of researcher that actually constructed.

Finally, all occurrence issues during each stage of both, design experiment sketches and real construction projects had been recorded, analysed, adjusted, and concluded. The research objective had reflected the final outcome in to a form of ideology and conceptual design that can be implemented to all architectural design form in order to reflect the essences of Thai house that actually not in the tangible quality but rather intangible quality.

SCOPE OF RESEARCH AND LIMITATIONS

The scope of this research is aimed to study through the definition, meaning, and theories that related to Thai house and living space in the Kingdom of Thailand which clarified as follow;

1. The Definition of Thai house in this research mean the house that located in Thailand and house of Thai people.

2. The limitation of this research objective is only aimed to identify the similarity of Thai houses that found in the Kingdom of Thailand without taking Thai form (architectural forms, elements, and ornaments of Thai traditional house or vernacular house such as Ngao, Pan-lom, or Ka-lae: Sarawuth Pintong) and the variety or the differences of races or beliefs into consideration.

3. The outcome of this research will be presented as "conceptual design" of the new Thai house that derives from the research finding knowledge. Please noted that the design from of architecture that appeared in this article were examples of the finding concept implementation only.

RESULTS OF THE RESEARCH

CLASSIFICATION OF THAI HOUSE

The architecture for living in Thailand can be classified into two categories which are Thai Traditional House and Thai Vernacular House. Firstly, Thai traditional house, house that represent "High Culture" and has been symbolized by Thai conventional state and acclaimed as the national architecture which mainly expresses Thai form, architectural elements, proportion, and construction process in concerned with Buddhism influenced *"three main identical characteristics that reflected in Thai Architecture form are Still/ Lightness / floating, which are Buddhism ideology to enlighten*[3]. The mentioned quote is a discourse that created norm which have been used to describe Reun Kahabodi (House of wealthy family)as a design philosophy of Thai house (in central plain of Thailand) and becomes fundamental of design development for Thai house until now (2014).

[3] Choti Kalyanamitra, สถาปัตยกรรมแบบไทยเดิม, Bangkok: The Association of Siamese Architects under the Royal Patronage of His Majesty the King, 1996.



(Northern - Central plain - North Eastern -Southern)

Figure 1 Thai Traditional House: High Culture

Secondly, Thai Vernacular house, house which is part of the "Folk culture"[4] created by the ordinary people, expresses the meaning of life, beliefs, hopes, family and the understanding of diversity of cultural landscape of Thailand. Moreover, Thai vernacular house has simply shown its attitude based on Thai architectural wisdom which reflected to "form" of architecture, not only through the sense of place, time, and seasons, but also individually identical group of ethnic.

[4] Srisakra Vallibhotama, เรือนไทย บ้านไทย. Bangkok: Muang BoranPublishing, 2009.



(Paka kayaw - Tai song dam - Raft house - Karen - Morgan)

Figure 2 Thai Vernacular House: Folk Culture

Actually, this type of living architecture was created and continuity develop before the evolution of Thai traditional architecture. Although both types have been adapted and changed parallel through the course of time and developed all the way together, the latter architecture is regarded as useless; therefore, "*it was ignored to be recorded as a part of the heritage of the national architecture*[5]". However, Thai vernacular house is an usefulness Thai heritage that definitely worthy to study not only for the preservation aspects but also in the areas of living respectively among its surrounding.

[5]Veera Inphantung, ปลูกเรือนคล้อยตามผืนดิน ปักถิ่นคล้อยตามสายน้ำ: รวมบทความทางวิชาการว่าด้วยสถาปัตยกรรมและภูมิปัญญาชาวบ้าน. Bangkok: Faculty of Architecture, Silpakorn University, 2007.

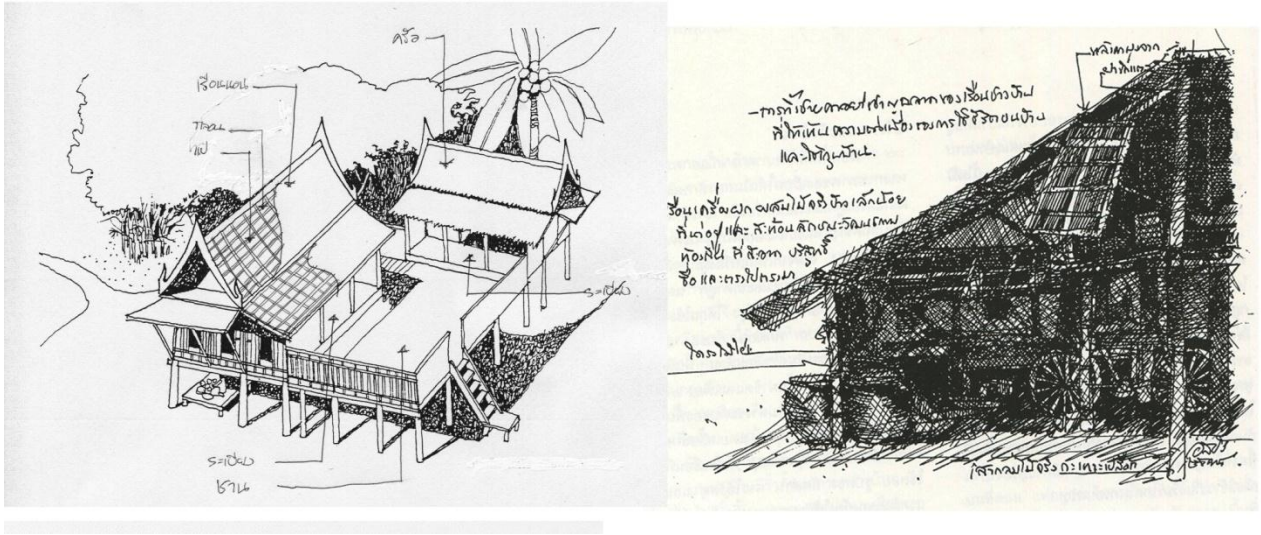


Figure 3 Section of Traditional House and Thai Vernacular House

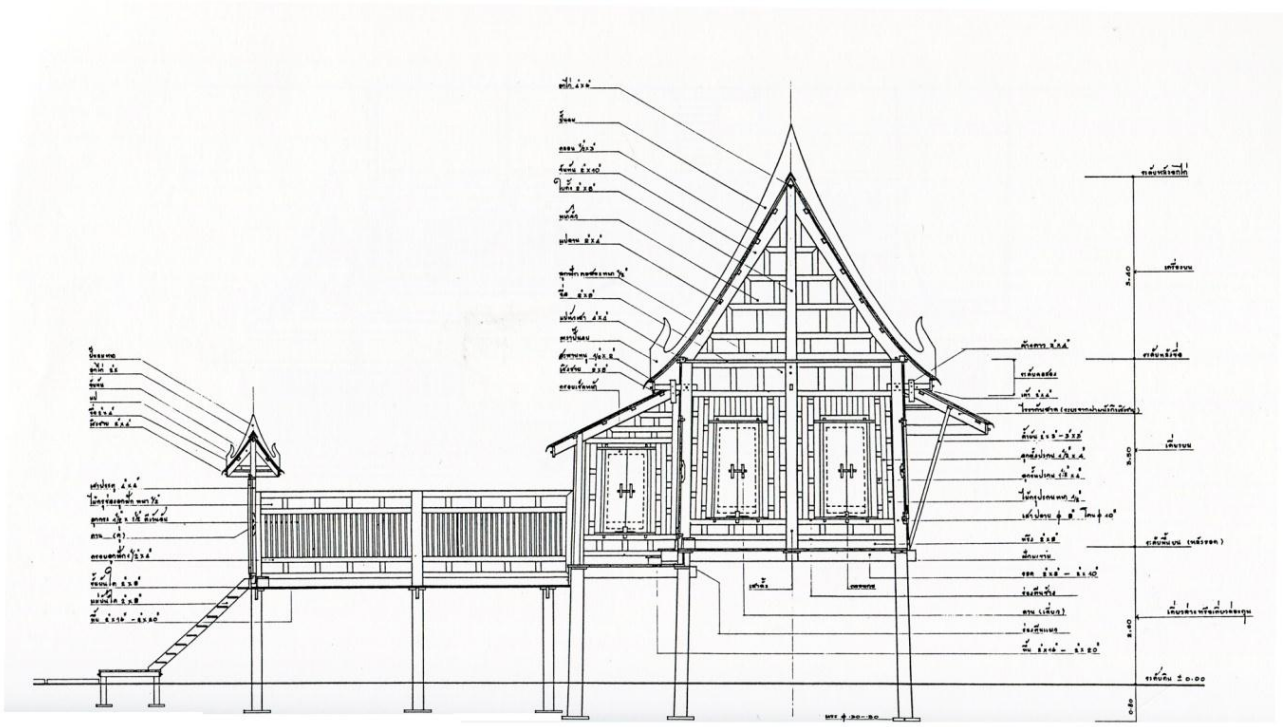


Figure 4 Architectural ornaments of Thai Traditional House

DEVELOPMENT OF THAI HOUSE

The Development of house that found in the Kingdom of Thailand has been continually developed for more than thousand years as we can see from the following reference. *"There are some mural paintings showing houses that found in Thailand have always be wooden house raised on stilts covered with high gable thatch roof for more than thousand years".* [6] The mentioned quote is a very strong evidence which in consistent to the form of Thai house that still can be founded generally in present day. This is to verify that in between diversity of globalization, the knowledge of Thai architectural wisdom still subsisted. As house is part of culture which always changing, thus when culture changes, the way of life will also change, and definitely architecture must be changed. But in case of Thai house, the house form is just slightly changed depending on some circumstances but not for the core idea. For instance, the house form of late Ayutthaya, Thonburi, and early Rattanakosin were identical.



Figure 5 Mural painting shown the physical appearance of Thai hous

[6] Nor na. Paknum (Prayoon Auruchata) แบบแผนบ้านเรือนในสยาม (5th ed.). Bangkok: Muang Boran Publishing, 2005. (in Thai).

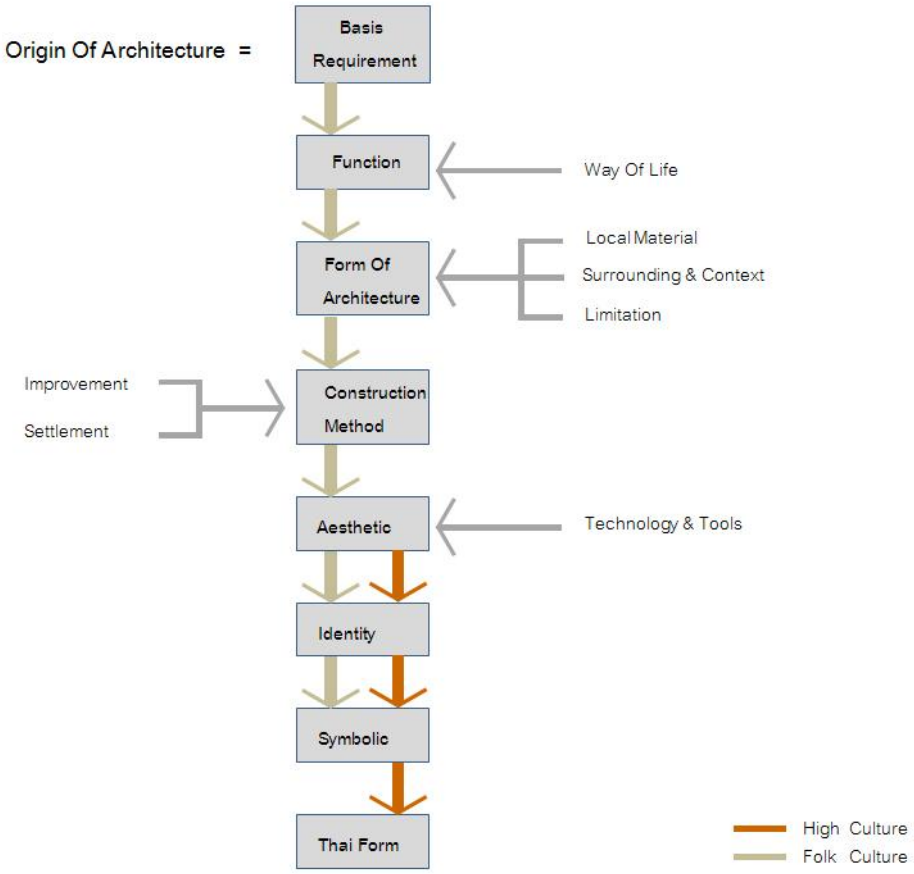


Figure 6 The related factors that influenced form of Thai architecture for living

The alteration to both kinds of Thai house (traditional and vernacular) had firstly begun when the shifted of paradigm from Tri-bhumi to be Scientific in during King Rama 4 - 5[7]. Since then, the development of Thai house has been gradually deserted from the very top downward. Moreover, in 1939 (after Siam renamed to Thailand), the development of Thai house has faced the major turning point once again, when country's administrative government (by then) trying to adopt "modernism" they also launched the Nationalism policy in order to create the national identity, in consistent with architectural academic information in the pioneering era, when Thai traditional house (Reun Kahabodi) is discoursed as a national symbol. Then all attentions was being paid to the study of Thai traditional house, especially in the areas of the details in architectural planning, elements, patterns, and craftsmanship which mainly based on the Buddhism influenced while Thai vernacular house has no place to stand. That was the beginning of the distortion of the Thai house definition, which led to the

[7] Chatri Prakitnondakarn, การเมืองและสังคมในศิลปสถาปัตยกรรม สยามสมัย ไทยประยุกต์ ชาตินิยม (2nd ed.). Bangkok: Matichon Publishing House, 2007. (in Thai).

misconception to the development of Thai house to be adhered to the physical appearance.

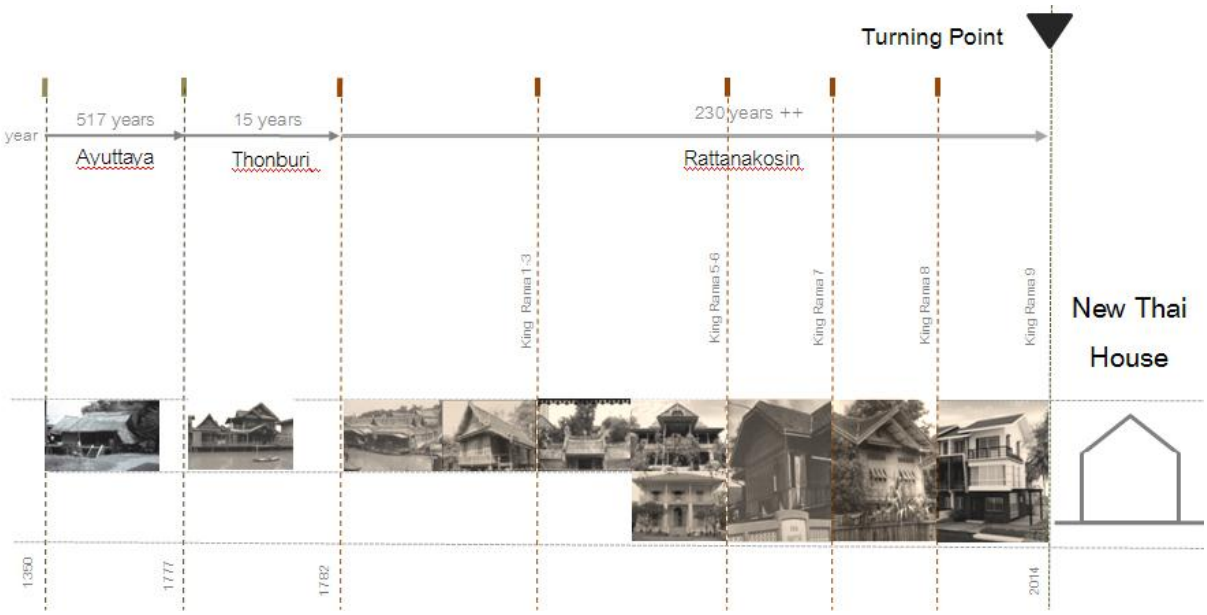


Figure 7 The chronological of Thai house (from Siam to Present)

“ Thai house in a present day is nothing but the repetition, the house that we found today can hardly find one that suitable and conform to Thai context, and please do not understand that the aforementioned Thai house means the house with gable roof, Ngao and Pan-lom only”.[8]



Figure 8 The Adaptation Thai house and The dilapidated Thai vernacular house

[8] Santi Chantavilasvongse, บรรยายในหัวข้อ “เสพซับกับบ้านสวย” จัดโดย การเคหะแห่งประเทศไทย

As one can see from the development of Thai house nowadays that has frequently applied the new kind of materials and construction methods but maintain the skin (appearance) of the original Thai form of architecture at most, which is a result of the "secularization"[9] (top-down development based only on the physical without any spiritual dimensions.)Such development, has not related to the process of understanding through time because it ignores the true definition, and values of the house that lies underneath the wisdom and reactions to live with nature in harmony.

However, from the last 10 years, the study of Thai vernacular house has revealed the new perspective of an integration across the line through the study of "Cultural Landscape" which directly related to the fact that the architectural form was created in order to serve human activities according to limitations such as topography, climate, natural resources, materials availability, and etc. Thus, Thai vernacular house not only reflect identities of individually group of ethnics or way of life but also reflect the knowledge and wisdom that react to each surrounding architecturally.

THAI ARCHITECTURAL WISDOM

The characteristic of Thai architectural wisdom is a timeless dynamic equilibrium that composed out of nature, human, and architecture. This is because architecture for living is originally created in order to protect human from the crucial mother nature and provide some space to serve human activities. Thus, the evolution of architecture through time not only reflects the method of thinking against the various form of limitations but also show some improvement of architectural form that conform to its surrounding and human's way of life respectively as one said *"Architectural wisdom expresses an understanding of how to live in this world."*[10]

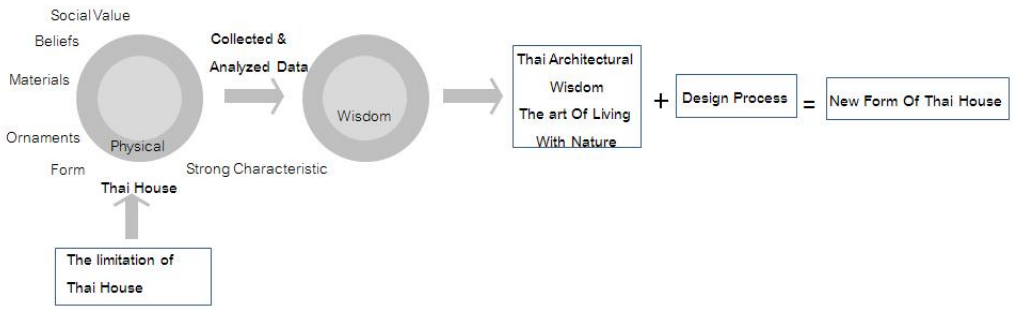


Figure 9 The limitation of Thai house and the new approach of Thai house

[9] Srisakra Vallibhotama, เรือนไทย บ้านไทย. Bangkok: Muang BoranPublishing, 2009.

[10] Arwut Ankawut, Architectural Wisdom series 2. Bangkok: Arsom Silp Institute of Arts, 2010.

As a result of intuition, Thai architectural wisdom can be considered as arts of living sustainably with nature. That is to say that Thai house is a functionality form of knowledge which practical and simply reflected the reaction in response to locality limitations in concerned with the matter of place and time. As one can see from some of the physical abilities of Thai house that can be expandable and re-locatable according to the interdependent causation, which is a very good example to show how Thai architectural wisdom simply translate the intangible factors into the form of architecture.

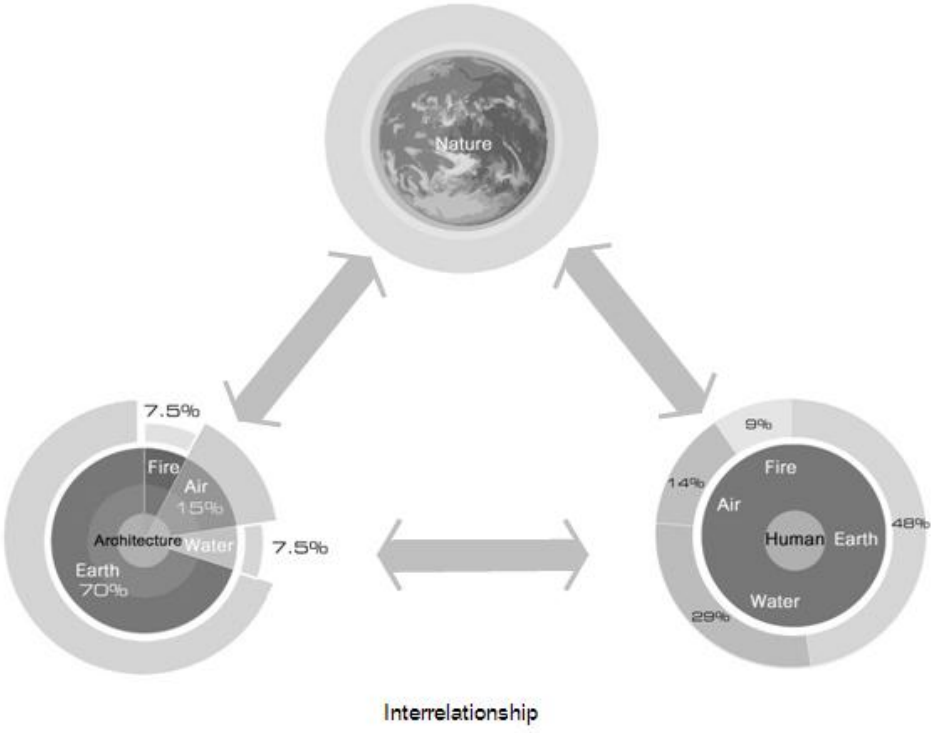


Figure 10 The interrelationship of 3 factors earth, human, and architecture

However, to modernized the Thai architectural wisdom, the interrelationship between 3 main factors (nature, human, and architecture) need to be taken into consideration through the new perspective in order to decoding and transform the core ideology of Thai architectural wisdom into the conceptual design in order to preserve the valuable national heritage.

REDEFINE THAI HOUSE

"To pose a question regarding to Thai house, it does not a matter what is the new Thai house going to looks like, as long as it is situated in a state of balance with its cultural ecology."[11]

To redefine Thai house is to disclose the core ideal which is a foundation of the knowledge that influence on the concept that creates mutual characteristics of the architecture for living in Thailand. Thus, it is an interrelationship between the three elements that become essential: nature, human, and architecture which needed to be revealed. This is because, humans cannot live in the nature without architecture, at the same time, the architecture itself has to conform differently with the nature's reactions in the various landscapes where architecture situated. In the mean time, architecture must be in harmony with the locality way of life and culture of persons who live in, in the other word, architecture play it roles as a medium in between others.

Supposedly, we take the three elements to analyze; we will find that in the nature, in the human, and in the architecture, all are composed of the four elements: earth, water, air, and fire. There are many literatures that referred to the existence of these classical elements such as in Buddhism, the Mahabhuta (great elements) explain the basis of life and forms (tangible/intangible) in this universe are the composition of those four elements."*Even though, in Buddhism, the objective of life is to releasing off all forms, but in architecture is to create form."*[12] However they both share the core ideal of living that is to be the same oneness with nature.

[11] Ornsiri Panin, หมู่บ้านและเรือนพื้นถิ่น. Bangkok: The Association of Siamese Architects under the Royal Patronage of His Majesty the King, 1996.

[12] Tipsuda Patumanan, ภูมิ+สถาปัตยกรรม. Bangkok: Chulalongkorn University Printing House, 2003.

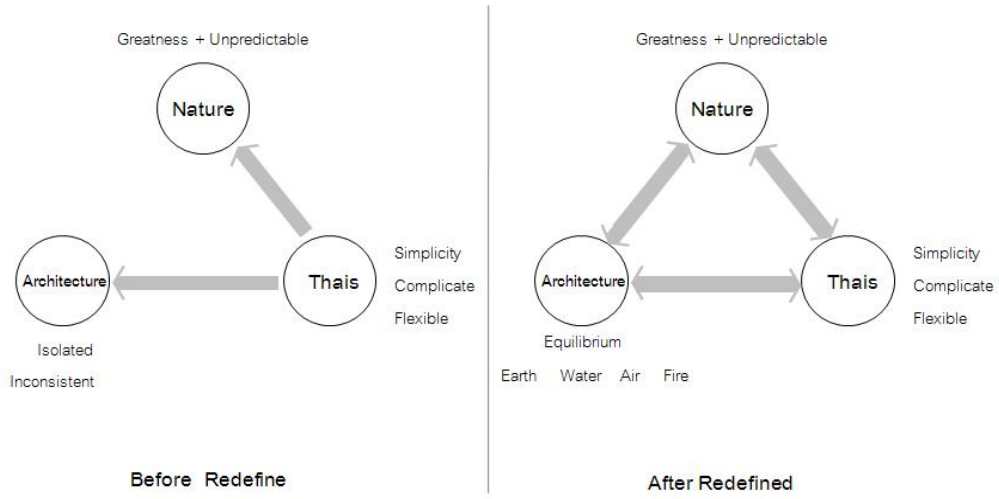


Figure 11 The comparison of interrelationship between each factor

In conclusion, to redefine Thai house is to acknowledged the essence of the long-term development of Thai architectural wisdom that lies in the creation of the equilibrium of the four elements under the conditions and limitations of place, time, and space. Then create the architectural design concept that to be settled in the state of Equilibrium, where the interrelation between nature, humans, and architecture are in harmony and sustainability, in order to refine the new meaning of Thai house that conform to the present situation.

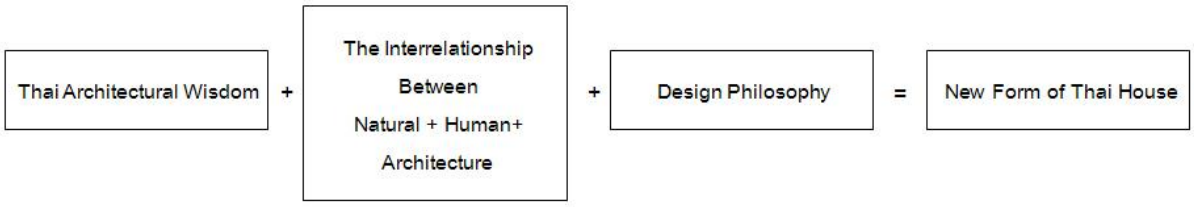


Figure 12 The direction to redefine Thai house

TOWARD THE NEW MEANING OF THAI HOUSE / DESIGN EXPERIMENT

According to the disclosure of the core ideal of Thai house, which discover the essence of Thai house that is in fact not in Thai form (tangible) but rather in the Thai architectural wisdom (intangible) which reflects the understanding of the interrelationship between nature and human into forms of living architecture. Then, in order to express the ideal of redefining Thai house, the concept of generating the equilibrium condition (intangible)

which mainly concerned with the four elements: earth, water, air, and fire within Thai architecture has to be converted into the new form of architecture for today's living in Thailand (tangible).

Chronologically, researcher conducting the series of experimental design process during the stage of literatures review which was design sketch 01- 02. The experimental designs took place in several areas but mainly were in the design studio in Bangkok and a selected piece of land located in Cha am, Petchaburi Province. However, after discovering the core ideal of Thai house and the conceptual design was settled, it was the experimental design sketch 03 which researcher decided to participated in the "Low Carbon House Design Competition" hosted by Thailand Greenhouse Gas Management Organization (TGO) in 2011, which programme and requirements are indicated below;

Table 1 The Competition programme and requirements

Scope and Conditions	Criteria
1. Single house	1. The adaptation of technology and materials in used to reduce the carbon footprint.
2. Located in 100 sq.w. piece of land	2. The adaptation ability against climate changes i.e. flood, heat wave, heat island, and heat transfer.
3. For living purpose only	3. Use of eco friendly materials and modularity such as local materials, water and electrical saving, LEEDS certified materials.
4. Four users living together as single family	4. Sense of aesthetic, comfort, and architectural creativity.
5. Three bedrooms	5. Construction cost issue.
6. Follow to the law and regulations	

There are some aspects of participating this design competition which firstly, to apply the finding knowledge through the competition programme in order to find out the design direction that could transform the intangible essences of Thai wisdom into the new form of Thai architecture for living and secondly, to verify the potentials of the research finding by framing the design concept in the limitation of the contest programme which was being created by others. And finally, the design outcome will be judged by the competition

committees which had been invited from many professional fields who could give a very strong comment on the proposed design, The design concept of sketch 03 mentioned to the disequilibrium of the natural elements that contribute the global warming which considering architectures as part of the problem. Then to solve this internationally problem, researcher proposed consciousness small architecture called “Ban Ban” which was named after the Thai idiom means simplicity that can return a peacefulness equilibrium condition to the mother nature by integrating ideas of utilizing four elements into architectural form.

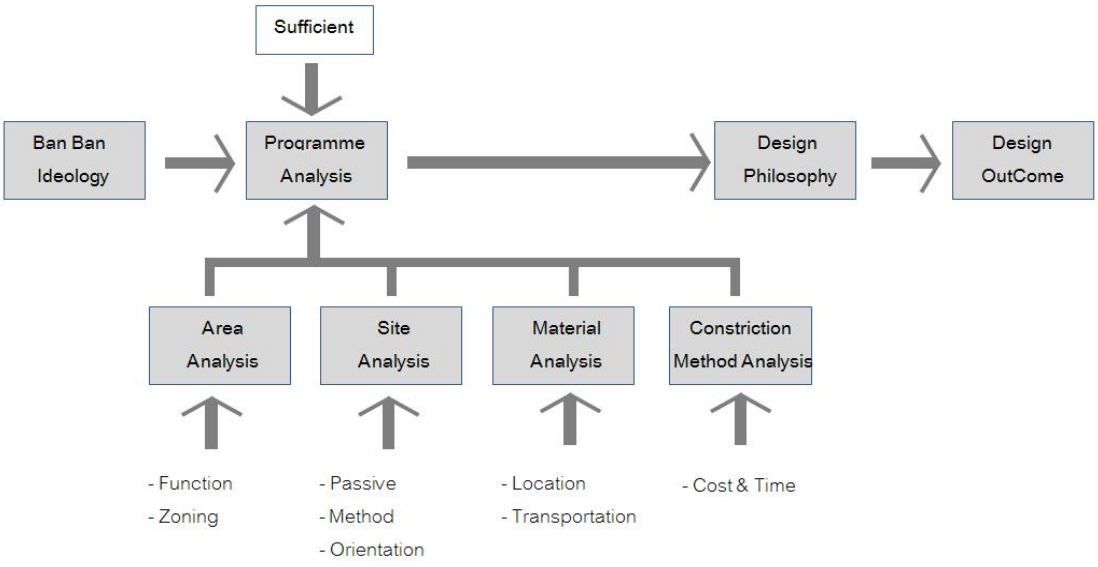


Figure 13 Ban Ban ideology implementation in the design process

CONCEPTUAL DESIGN

The design concept for this project show interrelationship between three main factors that composed with earth, water, air, and fire and how to integrate those elements into architecture as follow;

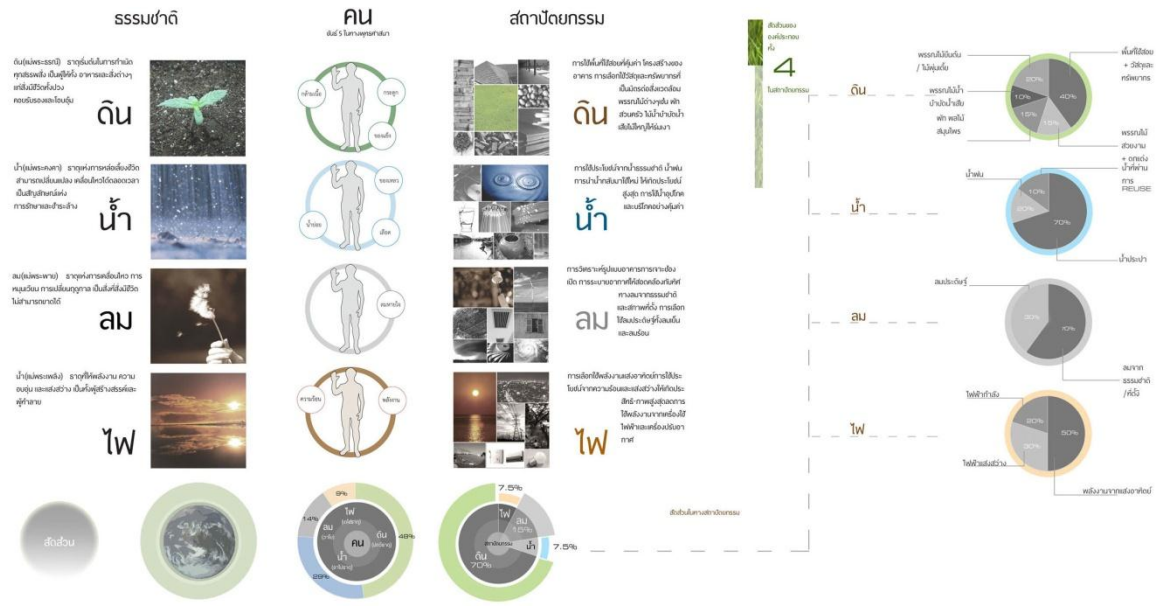


Figure 14 Conceptual design show how to equilibrium the interrelationship between Nature - Human - Architecture

Earth, metaphorically as a design site which divided into 4 different aspects; 40% out of design site will be provided the living space for all family members while the rest will be use as a green area. The green area was also divided into 4 different zone which was 15% for recreation proposed, 15% for eatable green and herbs, 10% for toxin absorbing and rehabilitated plantation, and the last 20% for locality useable plantation.

Water, there were 2 type of water coming in to the house which was water that supply from the waterworks authority and water that was being collected from nature (rain water). These two types of water will be complied to Ban Ban systematic 3R method (reduce, reuse, and recycle) which mean that all used water in this house will be sort collected and treated before proper reused circulatedly.

Air, will be mainly used to create the comfort zone to the house and circulate in the new air. The house orientation was carefully designed with the new technology called Eco Tech programme in parallel with the old technic such as sun-path diagram in order to create shade and also ventilate the heat out of the designed area, the house was also elevated in order to allow natural wind to buffer the heat and cool down the temperature.

Fire, metaphorically as an building energy. The natural light was used during the day time in order to save energy, while the roof slope was prepared for the solar panel in the future when the cost of system is more affordable.

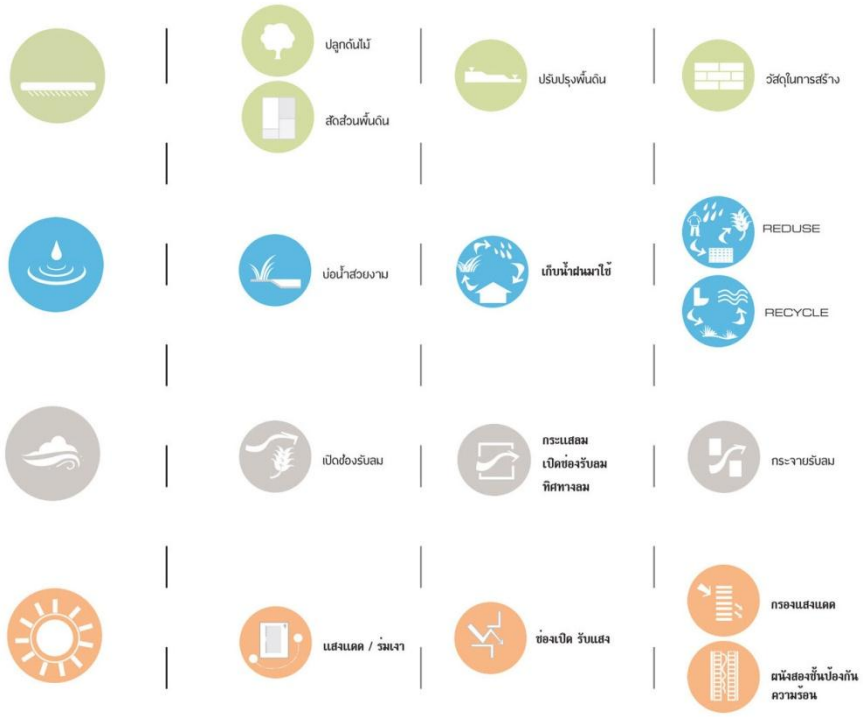


Figure 15 The application of “Ban Ban” ideology

DESIGN OUTCOME

After developed through the process of trial and error until researcher decided to proposed the single storey steel structure house that composed all required functions to the application of “Ban Ban” ideology (as shown in the figure 12;). And for the main reason why steel structure, it is not only because of the manufacturing process of steel caused less carbon in comparison with concrete but also the reusable, and recyclable abilities as well.



Figure 16 The 1st round presentation plate that reflected “Ban Ban” ideology

The final design outcome was an elevated single storey steel structure house with a lean to metal sheet roof, the house was oriented on 100 sq.wa oriented from North to South. There was total 180 sq.m composed with 3 bed rooms 3 bathrooms 1 living room 1 kitchen 2 storage rooms and 2 parking. All functions were contacted with the terrace (Charn in Thai). The main idea of this lay out plan was in concerned with the present day of Thais way of life that most of the family members spend time outside their place, which was not necessarily for them to occupied such a big space. Moreover, the floor planning was created in order to convince all family members to spend time together in plenty of provided space that can be adjustable according to different circumstances. Not only tie them together or bring them closer to the nature around their place but also safe them a big number of the annual expenses.

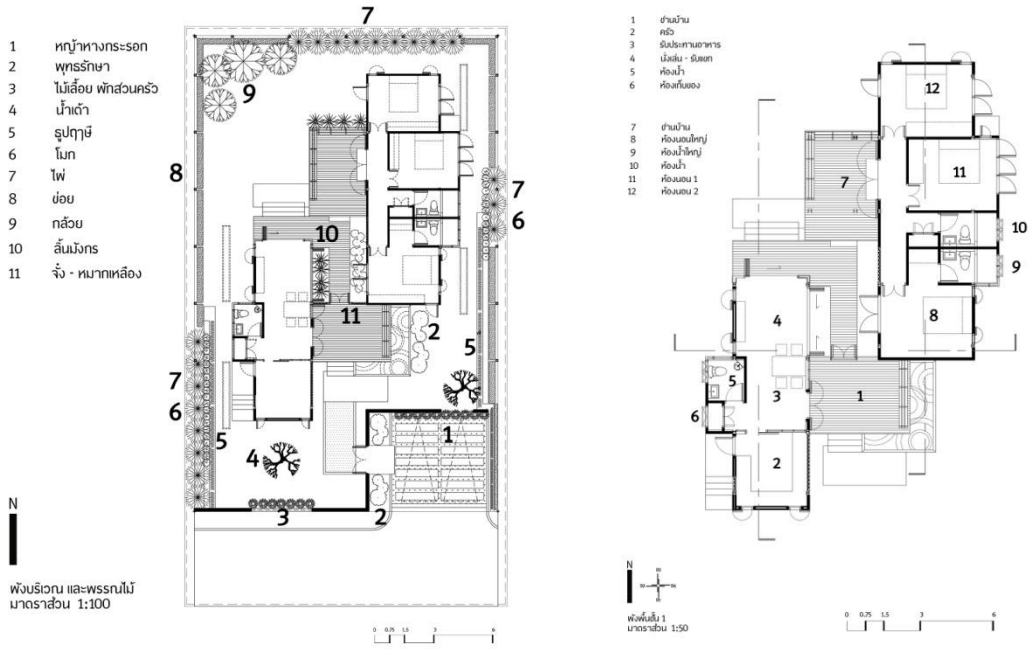


Figure 17 Lay out / Plan



Figure 18 The elevations and sections indicated ideals of integration of earth, water, air, fire

Due to the design of architectural form, it was obviously be influenced by some ornaments and technic of both type of Thai architecture for living (Traditional and Vernacular Thai house), such as the breathable walls and openings that had been transformed from “fa samruad” and “fa lai” (Thai wisdom breathable panels as shown in figure 18) are being use in the kitchen area for ventilation, double roof was applied from the ancient technic of Thai not only for shading the house from a very strong sun but also create an air gap under the roof in order to prevent internal space from the heat transfer. Moreover, the rain water were collected at the far end of the roof where the gutter was installed. Double brick wall were in used to the panel that against the heat, all system and necessary equipment were located under the terrace.



Figure 19 Fa samruad and Fa lai: Thai wisdom breathable panel

Moreover, according to the figure 14, the cross sections shown the true identity of Thai house is that actually based upon the ideal of living among nature understandably. The living architecture is adapted in order to conform to its context by integrating the simplicity form of architecture and the basic household technology in order to create the state of equilibrium. This is to prove that the essence of Thai house is in the profound intangible quality which converted to tangible quality reasonably.

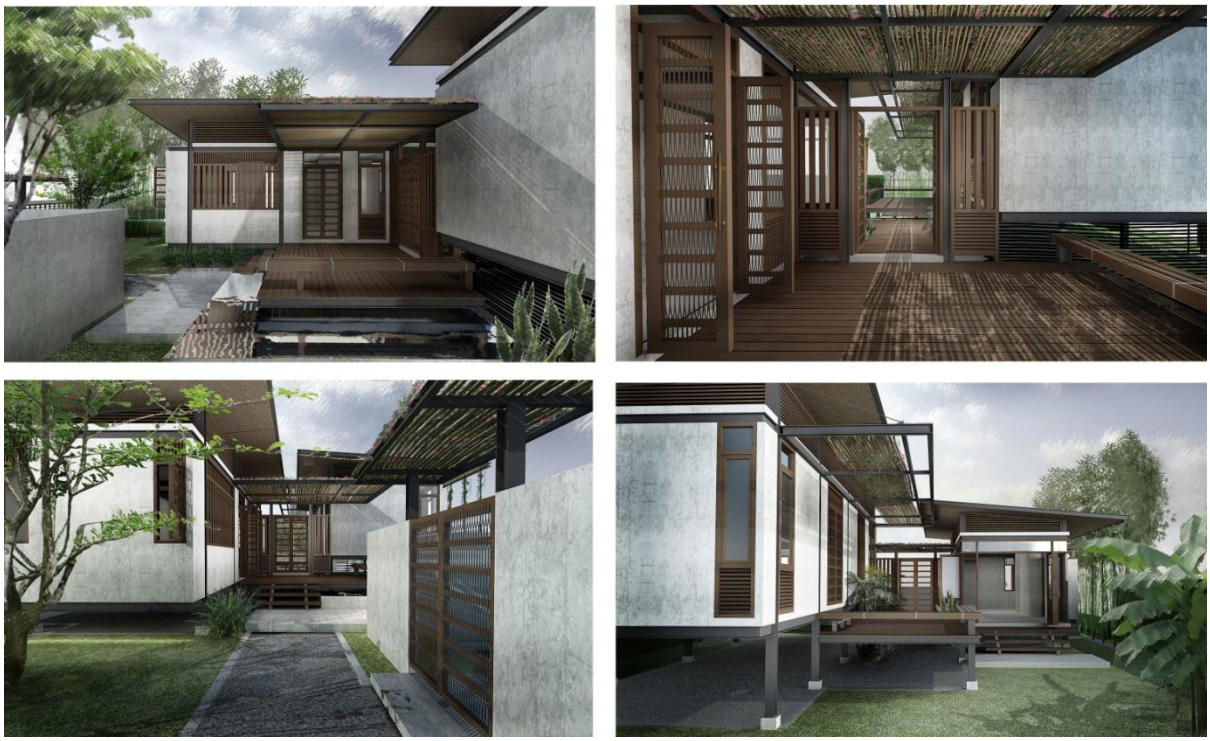


Figure 20 Perspective of the design sketch 03 reflected the “Sense of Thai” in the present day

In summary, the ideology of “Ban Ban” and the final architectural form was not only won the competition as a design principle of “low carbon house” which reflected the sense of Thai architectural wisdom that conform to the present day of Thai’s way of life, but the designed was also being developed by the Faculty of Architecture Chulalongkorn University in order to profitless publicized via TGOs website to those who is interested.




องค์การบริหารจัดการก๊าซเรือนกระจก (องค์การมหาชน)
กระทรวงทรัพยากรธรรมชาติและสิ่งแวดล้อม
ขอมอบเกียรติบัตรฉบับนี้ไว้เพื่อแสดงว่า
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ได้รับรางวัล ชนะเลิศ
ประเภท บ้านเดี่ยว ระดับ บุคคลทั่วไป
โครงการประกวดแนวความคิดออกแบบบ้านและอาคารตึกแถวคาร์บอนต่ำ
มอบไว้ ณ วันที่ ๒๘ เดือน ตุลาคม พ.ศ. ๒๕๕๖

Figure 21 Researcher during presentation in the final round

Figure 22 The award winner certificate

CONCLUSION

This research had been investigated through the development of Thai house from past to present and found out that actually, the differences of architectural appearance reflect the diversity of each identity of ethnic groups who reside in the boundary of Thailand are not only physical matter. Beyond those differences form, there was a similarity that is "Thai architectural wisdom and knowledge" which wisely reflect into the simplicity form of architecture, depending on limitation of each cultural landscapes.

Apparently, the study of Thai architecture had approached the classification of Thai house and put lots of effort on the study of Thai tradition house especially those houses of the central plain which has been centralized, synthesized and valued as a "national symbol".

As a result, the definition of the word-Thai house (*Ban Thai* or *Ruean Thai*) has inherited some deviation and distortion and consequences are the development of Thai house has been freeze and abandon because of the lack of understanding. However, the researcher has found some trace that could generate the core ideal of Thai architectural wisdom back to revival, because of this knowledge is a timeless truth that still up to date but definitely need to be modified in order to fit in today's Thais way of life. To modernize this ideal, researcher mainly focused on the tangible and intangible values of the interrelationship between three main factors, (nature, human, and architecture). Then, analyzed and decoded them in depth, and the outcome of this research is the "conceptual design ideology" that integrate all related architectural design factors in order to create the state of "equilibrium" into the new form of Thai architecture for living practically.

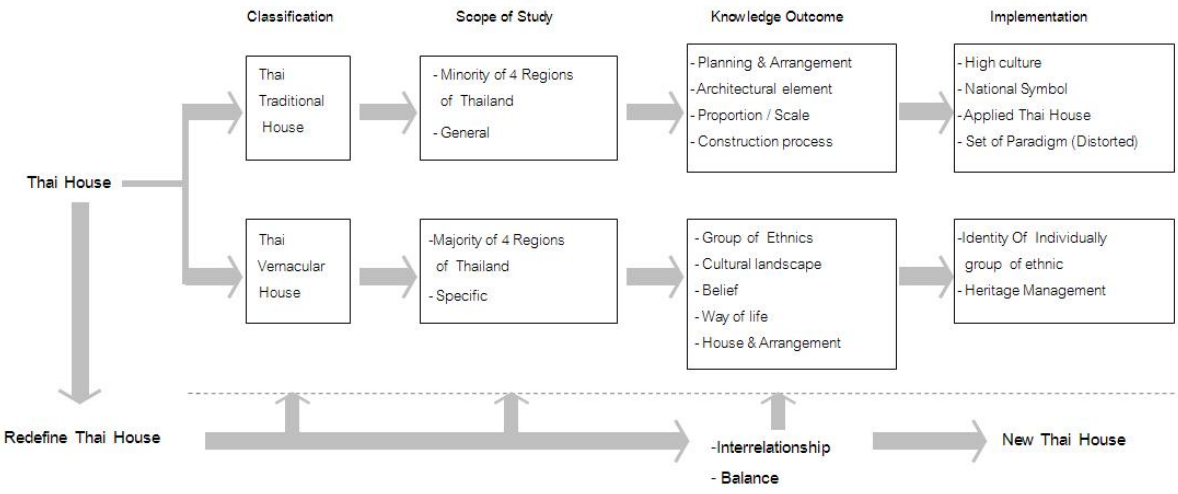


Figure 23 The process of the Redefine Thai house

In conclusion, the ideology of this research outcome has been continually reflected it potentials through not only on the professional current projects but also numbers of design competition for the last two years. Even though, researcher did not win all of titles, but all of them were finalists which was a sign that indicate some concernedness from many professionals and none-professionals in Thai architecture fields.

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