

# Recalibrating the New Thai Vernacular Architecture

## การปรับเปลี่ยนความเข้าใจในสถาปัตยกรรมพื้นถิ่นใหม่

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### Abstract

The emergence of the new types of vernacular houses shows the evidence of change leaping from the popular image of the traditional Thai houses. The change is impacted from many factors including contemporary cultural needs. New vernaculars, which are found in the central Thailand, are the transforming Thai houses and the reproduction Thai houses. These two occurrences began since the 1960s (for the first type) and the 1990s (for the second type). The vernacular houses were surveyed in Pak Kran village and Bang Pahun area in Phra Nakhon Si Ayutthaya province during the 2000s. These new vernacular houses have developed from the traditional Thai house among other modern housing developments. However, there is lacking of awareness and understanding of the change. Most of the policies from Thai government, study courses and research topics have focused only on the image in the past. Accordingly, contemporary vernaculars tend to be disregarded. For recalibrating the new vernaculars in this paper, there are three main subjects: 1. the viewpoints on vernacular architectures both from local and international scholars; 2. the definitions and previous studies relating to vernaculars; and 3. the establishment of the new vernacular architectures, which closely relate to the traditional Thai house. This paper involves developing an understanding of vernaculars as well as providing ways to expand the scope of vernacular studies.

### บทคัดย่อ

การเกิดขึ้นของสถาปัตยกรรมพื้นถิ่นไทยในรูปแบบใหม่เป็นหลักฐานสำคัญของการเปลี่ยนแปลงแบบก้าวกระโดดจากรูปแบบที่ชินตาและถูกยึดติดของบ้านพื้นถิ่นที่ถูกเรียกว่า “เรือนไทยเดิม” การเปลี่ยนแปลงนี้ได้รับผลกระทบจากหลายปัจจัยรวมถึงความต้องการทางวัฒนธรรมร่วมสมัย สถาปัตยกรรมพื้นถิ่นใหม่ที่ถูกสำรวจศึกษาในบทความนี้อยู่ในพื้นที่ภาคกลางของประเทศไทยโดยเป็นอาคารประเภทบ้านพักอาศัย แบ่งเป็น 2 รูปแบบ คือ เรือนไทยเดิมเก่าแก่ที่กำลังเปลี่ยนรูปทรง และเรือนไทยรูปแบบใหม่ที่ถูกสร้างใหม่ รูปแบบแรกเริ่มเกิดขึ้นตั้งแต่ช่วงปี ค.ศ. 1960 และรูปแบบที่สองเริ่มตั้งแต่ช่วงปี ค.ศ. 1990 พื้นที่สำรวจของรูปแบบแรกอยู่ในหมู่บ้านปากกราน และรูปแบบที่สองอยู่ในพื้นที่ริมถนนหลวงใกล้หมู่บ้านบางปะหัน ทั้งสองพื้นที่อยู่ในจังหวัดพระนครศรีอยุธยา ในช่วงตั้งแต่ต้นศตวรรษที่ 21 บ้านพื้นถิ่นรูปแบบใหม่นี้ได้ถูกพัฒนาขึ้นอย่างชัดเจนเคียงคู่กับการพัฒนาสู่ความทันสมัยในด้านอื่น ๆ อย่างไรก็ตาม การตื่นตัวและความเข้าใจในความสำคัญของการเปลี่ยนแปลงและเกิดขึ้นของปรากฏการณ์นี้ยังอยู่ในระดับต่ำจากทางรัฐบาลไทยและนักวิชาการ โดยประเมินจากนโยบายงบประมาณหลักสูตรการศึกษาและหัวข้อวิจัยยังมุ่งเน้นไปที่รูปแบบสถาปัตยกรรมที่มีความโดดเด่น

ในช่วงเวลาหนึ่งในอดีต เช่น เรือนไทยหรือวัดวาอาราม คุณค่าของความเป็นพื้นถิ่นร่วมสมัยถูกละเลย ซึ่งเป็นลักษณะที่เกิดขึ้นในหลายประเทศ อันก่อให้เกิดการปิดกั้นทางความคิดต่อสถาปัตยกรรมพื้นถิ่น ดังนั้น การปรับเปลี่ยนความเข้าใจเกี่ยวกับสถาปัตยกรรมพื้นถิ่นใหม่เป็นสิ่งจำเป็น โดยมีประเด็นที่ถูกนำเสนอ คือ 1. มุมมองสู่สถาปัตยกรรมพื้นถิ่นจากนักวิชาการทั้งระดับท้องถิ่นและสากล 2. คำจำกัดความและการศึกษาที่เกี่ยวข้อง และ 3. การเกิดขึ้นของสถาปัตยกรรมพื้นถิ่นใหม่ที่มีความเชื่อมต่อกับเรือนไทยเดิม ซึ่งเป็นหนึ่งในตัวแทนที่สำคัญของสถาปัตยกรรมไทย บทความนี้จึงมีความเกี่ยวข้องกับการพัฒนาความเข้าใจในความเป็นพื้นถิ่น ซึ่งมีลักษณะร่วมสมัย รวมถึงการขยายขอบเขตการศึกษาอย่างเหมาะสมกับศักยภาพของสถาปัตยกรรมพื้นถิ่นใหม่

## Keywords

Vernacular (พื้นถิ่น)

Tradition (ประเพณีพื้นบ้าน)

Traditional Thai House (เรือนไทยเดิม)

Transforming (การปรับเปลี่ยนรูปแบบ)

Reproduction (การผลิตใหม่)

## 1. Introduction: Viewpoints on vernacular architectures

Vernacular architectures have been a subject of academic interest since the nineteenth-century (AlSayyad 2006; Oliver 1997). Official interest in vernacular buildings developed through the building conservation movement (Brunskill 2000). The increase of courses and research programs in the last two decades reveal its significance. Academic and professional interest has been concentrated in documentation, studying and preserving historical and traditional buildings before their loss or irreversible alteration. Recently, the vulnerability of vernacular traditions under the threat of modern developments is the issue most commonly addressed, used as object of research and applied to policy.

In his book, "Architecture without Architect", Rudofsky (1964) called this type of architecture: vernacular, anonymous, spontaneous, indigenous and rural. Correa (1998) defined vernacular architecture as an organic process. He described the use of the vernacular as not the product of any individual architect, but that of an entire community, working through its history. Lim and Beng (1998) claimed that the term "vernacular architecture" is one of the most commonly used but least understood terms in the field. They also argued that the term "traditional" and "vernacular" have been used interchangeably.

Rudofsky (1964) stated that the traditional architecture does not go through fashion cycles but is clearly immutable or unchangeable. The origin of its building forms and construction methods is lost in the distant past. Upton (1993) commented about this viewpoint that the study of the field of vernacular architecture has been held back by the limitations of its own assumption and definitions. To understand and sustain the vernacular in the twenty-first century, Vellinga (2006) suggested focusing on new and emerging vernacular traditions

as well as on enduring ones and on the ways in which they interact and relate to one another. He noted that vernacular traditions have not all vanished, but merged with modern ones to create new manifestations of traditions or localized hybrid forms that better suit current circumstances and requirements.

Rapoport (1969) stated that the chief characteristic of vernacular is its additive quality, unspecialized and open-ended nature. These qualities enable its architecture to accept changes and additions which would visually and conceptually be opposite to the scholastic or academic architecture.

However, only few researchers have attempted to study the changes and relate to the adaptations of vernacular buildings. AlSayyad (2006) encouraged scholars of the vernacular to face the world of global communication and supported Oliver's advice about the change in an era of technological advancement and increased communication. Therefore, the study of the vernacular in the twenty first century involves developing an understanding of the changes and ensuring that the changes are sensible, appropriate and sustainable.

According to Vellinga (2006), studies that pay attention to recent and modern vernacular buildings are relative rare. Despite these new vernacular buildings, which are not always as exotic or distinctive as the traditional buildings, are the majority of buildings in the concern of society, they have still not received the academic and professional attention. Vellinga also noticed that all buildings, whether traditional, modern or modernized hybrid, should be regarded as vernacular because of distinctive cultural expressions. Merging of old and new buildings still needs further more studies.

Pinijvarasin (2004) stated that there has been insufficient consideration of changes to Thai vernacular houses to respond to changing socio-cultural conditions resulting from modern development. Because her research was in a single locality, she suggested a cross-cultural, comparative study.

This type of study will highlight similarities and differences among various cultures, regions and societies. Two interrelated topics for further study were raised: 1. Study of local significance that has to be re-invented; 2. Study of applications of cultural and global knowledge.

Similar to the suggestions from Pinijvarasin, a comparative study was advised as the potential area of future research by Thongsakul (2001). The other potential topics were environmental behavior, meaning and value, and change of materials and construction technologies.

Horayangkura et al. (2001) stated that there are three approaches of the studies on Thai vernacular houses: contextual; interpretation; and evolution. There have been many fields of research in contextual group but mostly concentrated in physical characteristics, and relationship between the houses and the people activities and beliefs. In this group, there have been increasing numbers of fields of research on climatic responsive design. Critically, the fields of research about technological, material and structural factors have been limited by few scholars such as Wiwat Temiyabandha (1995; 1994).

The interpretation group has been increasingly conducted and has provided a better understanding of principles, descriptions and meaning of the houses. Significantly, the evolution group, began in the 1990s, has continued to the twenty-first century by a few scholars. Although there are courses of vernacular study in some Thai universities, this group still shows a lack of studying in international and inter-disciplinary level.

In conclusion, there have been a few scholars who focus on the contemporary vernacular houses. Importantly, the study about technological, material and structural factors has been rare on the traditional houses and has not been found on the contemporary vernacular house. A comparative study was suggested for better understanding of similarities and differences among various locations.

## **2. Vernacular Architectures in Thailand**

In Thailand, vernacular buildings normally have the meaning of dwellings in rural areas. For example, the vernacular buildings described by Roonrakwit (1997) are huts, feudal houses, the Siamese house and the Chinese shophouses. To gain a broader idea of vernacular building, more types of building which may be defined to be vernacular building are included in this paper. In this respect, it should be considered that some of the formal architectural styles, associated to monumental buildings, can be categorized as vernacular architecture in the present context.

Paribatra (2002) stated that one of the celebrated vernacular Thai buildings, the traditional Thai house, is a representative of “Thai style”. He described its evolution, from its 13th century heritage, through centuries of development and adaptation, to the present day. From the Sukhothai, Ayutthaya, Lanna and today’s Rattanakosin era, he explained the influence from Thai’s surrounding neighbors. Built entirely from wood, the houses have the capability of being dismantled, moved to a new site and reassembled or rebuilt with adaptation for modern-day use.

### **2.1 Vernacular Thai Houses**

Before the 13th century, the form of the vernacular houses in Thailand cannot be determined exactly (Roonrakwit, 1997). Horayangkura (2001) stated that there were humble traditional structures consisting of ordinary residences. In the central region, the houses of a water-based culture were built either as floating houses along the rivers and canals, or as houses on stilts on the banks of the water ways.

Denpaiboon (2001) divided the typology of houses in central Thailand into two types: the structural floating houses on the water and; houses on stilts situated along the riverbank or on land. Houses on stilts are also categorized into two types:

the temporary types or semi permanent types that were made of bamboo and; the permanent types that were made of wood. The house type concentrated in this research is the latter.

During the 19th century, a new vernacular type, called shophouse, was built by Chinese immigrants in urban context. Thongsakul (2001) explained that shophouses serve the dual functions of business and family living. A typical shophouse setting forms a row of uniform dwellings located along a commercial road. The ground floor is used for commercial purpose while the upper floor is residential and sometimes used as a warehouse.

## **2.2 Previous Studies on Thai Vernacular Architectures**

Studies on Thai vernacular architectures have begun since the 1950s but a number of studies are found after the 1990s. Horayangkura et al. (2001) compiled a list of academic studies on Thai architecture and categorized into three main types: studies of regional houses; studies of temporary houses; and studies of the house of specific ethnic groups.

The study by Horayangkura et al. revealed that most of the studies focus only on the traditional houses and do not relate to the contemporary vernacular houses. Only some studies concerned about new or emerging vernacular houses, which have been transformed in the recent period. Therefore, the previous studies on Thai vernacular houses are divided into two groups: traditional house and contemporary vernacular house.

### **2.2.1 Studies on the Traditional Buildings**

This group mostly focused on the traditional houses in four main regions of Thailand: central region; northern region; north-eastern region; and southern region. Little has been written on the temporary houses and the houses of specific ethnic group. Interestingly, the traditional houses which have been studied are usually the models typically

appeared during the 18th century to the 19th century.

Horayangkura et al. (2001) stated that only the studies of the traditional Thai house in central region show the measured works and some systematic analyses of the physical appearance of the houses. Most of the studies in the other regions were conducted by unsystematic analyses and lacked architectural details.

These studies provide a valuable understanding of the traditional house in static period. However, studies in this group are limited by their own assumptions and definitions. The proper vernacular houses, considered to be the 'Thai authentic' traditional building and deserved to be studied, are only the houses in pre-modern times. The scholars in the other regions tend to work with similar focuses and results.

### **2.2.2 Studies on the Contemporary Vernacular Buildings**

Before the twenty-first century, there were only a few studies concerned about the contemporary vernacular houses. In the 1990s, only the studies by Temiyabandha (1995) reported about the changes of the traditional houses, Kalae house, in northern region. He stated that in the contemporary Kalae house, the building enclosures have usually changed with the use of new materials and technique of construction while retaining the characteristics of the floor plan. However, his studies were described without systematic analysis.

There have been increasing numbers of studies on the contemporary vernacular houses after the twenty-first century. Two researches for the degree of Doctor of Philosophy began the new approaches of the study on Thai vernacular houses. These researches accepted the contemporary vernacular house, which were changed over time.

First, Pinijvarasin (2004) studied about the well-being in Thai vernacular house in central region. The study confirmed that vernacular houses have

progressively changed in accordance with the change of the villagers' experience of well-being. Second, Thongsakul (2001) studied about the vernacular living space in the north-eastern region. The study indicated a continuous transition of space-use pattern in accordance with the change of lifestyle.

Additionally, few studies were conducted for the master degree in Thai universities. Pengchad (2002) studied the settlement of hill tribe in northern region and concluded that the style of dwelling has altered according to social and economic changes. Wongkham (2001) explored the development of the vernacular house in north-eastern region and concluded that the house style has changed while the pattern of plan and space has remained unchanged.

These researches began the new direction of the study on Thai vernacular buildings. The expanded scope raises awareness and understanding of the contemporary vernacular building. It coordinates to the movements of the practice of vernacular study in the twenty-first century (Vellinga, 2006). However, there are still many unexplored fields of research at an international and interdisciplinary level.

### **2.3 Dynamic of the Vernacular Architectures**

Lim and Beng (1998) stated that contemporary vernaculars can be a dynamic development of architectural direction to meet the challenges of rapid urbanization and development. In sight of the trends and changes, Oliver (1997) pointed to the evolving neo-vernacular buildings. He referred to the "Fourth World" people and the indigenous cultures that survive within the industrialized society. The used, recycled and manufactured materials are adopted in former traditional contexts. The descriptions of this process are various such as unauthorized, illegal and spontaneous.

Vellinga (2006) explained about the two contemporary themes dealt within the vernacular

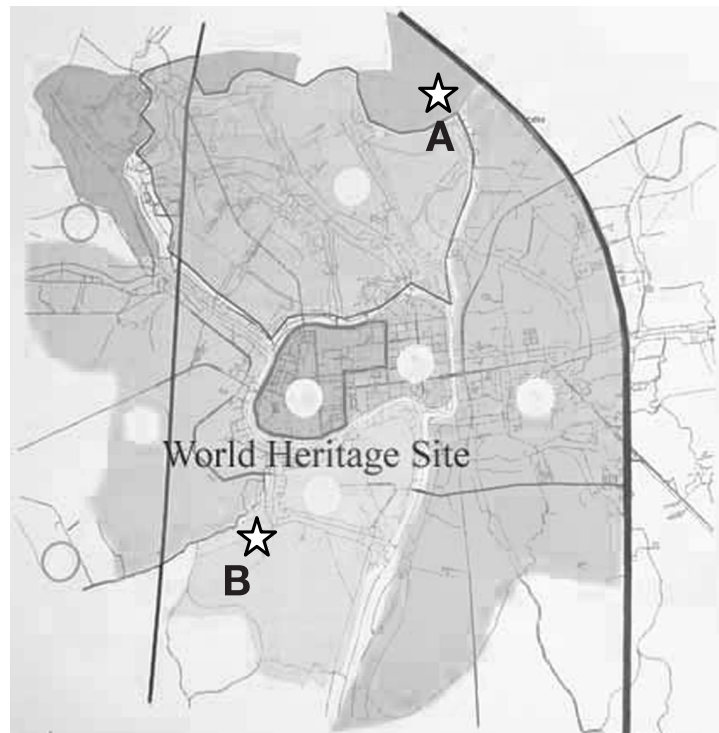
houses in Minangkabau village, Indonesia. The first theme was defined as a "decline" of old vernacular houses. The second theme was described in term of a "revival" of new vernacular houses built in the traditional style, but with modern requirements, materials and techniques.

Some of the contemporary vernacular in the northeastern of Thailand was explained by Thongsakul (2001) and based on the previous research conducted by Hengrasamee, Phalawattana and Sutthitham (1992). He stated that the contemporary style in the study area tends to imitate the style created by land and property development companies. This contemporary style could be found everywhere in suburban housing projects. The house has a single story or two stories. Its structure, enclosed by concrete blocks or masonry walls, is built by reinforced concrete. Roofs are built in hip or gable shape covered with concrete tiles or corrugated asbestos cement sheets.

### **3. Emerging of the New Vernaculars**

Recent development of the traditional Thai houses in the surveyed locations in Phra Nakorn Si Ayutthaya province can be defined as two main paths: transforming of the traditional Thai house and emerging of a new house type, which aim to look similar to the traditional Thai house (see Figure 1). In Pak Kran village, many traditional Thai houses have been in continuous use since the late 19th century, adapting to changes in use and demands of modern and contemporary living, by integrating with modern forms and technologies of construction. Extensions, built in a bungalow style, were one of the early construction changes applied to the traditional house. Traditional houses that have undergone such change are defined as the transforming Thai house.

While the bungalow style has been continuously used in many vernacular houses, the more recently built vernacular typology, the reproduc-



Source: Silpakorn University, 1999

**Figure 1.** The locations of Bang Pahun (A) and Pak Kran (B).

tion Thai house, has emerged in the zone along motorways in Bang Pahun area. The new vernaculars are not only built for reproducing the popular image of the traditional Thai houses but also are redesigned to merge with the contemporary constructions, which are found in the typical urban housing development in Thailand. As a result, these houses conform to modern demands, using a variety of materials and techniques.

The emerging of two types of the new vernacular house, the transforming Thai house and the reproduction Thai house, evidently shows strong evolution of the traditional Thai houses and revival of the traditional “Thai style” in newly constructed houses. This establishment has occurred rapidly in the last few decades. As a result, ‘the new Thai vernaculars’ are separated to evolution and revival groups. The evolution group relates to conservation and sustainable topics. The revival group relates to the adaptation of tradition and new technologies.

Accordingly, vernacular houses in the discussion are categorized into three types: the traditional Thai house; the transforming Thai house; and

the reproduction Thai house. The traditional Thai house is assumed as an archetype with respect to the changes. Both the transforming Thai house and the reproduction Thai house are derived from the traditional Thai house but are developed from a different basis. The reproduction Thai house is a new development and is studied to know the trend of the vernacular houses while the old house found in the transforming Thai house is categorized as one of the Thai heritages. Therefore, two new vernacular houses provide important resources of development and sustainability of the traditional houses in Thailand.

### **3.1 The Archetype of the Thai Vernacular House: the Traditional Thai House**

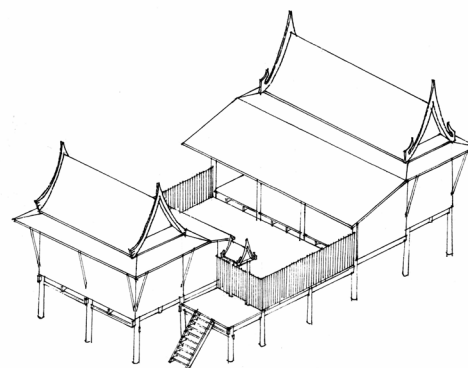
Pavlidis (1997) explained about an archetype of the vernacular that it is constructed through rigorous categorization of a few aspect of a building, such as the diagram of the plan, and the most common features of the elevation, decorative details or shape of openings. These can define the typical house in the specific area.



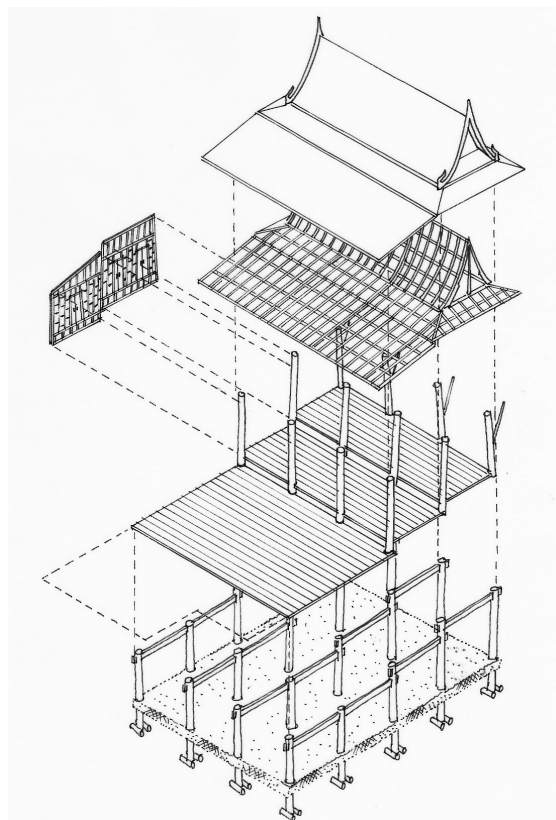
Vernacular houses are different in each region of Thailand, but the style considered to be the most classic is that of the central plains (Jotisalikorn, 2002). This house is called traditional Thai house built around the region where Thailand's kingdoms of Sukhothai, Ayutthaya and Bangkok are located and where the Thai reached the peak of their culture.

This house is exclusively called "Reun Thai" (the traditional Thai house) in Thai language. In fact, it can be considered as a further development of the Lanna Thai house, found in the northern region before the 13th century (Horayangkura, 2001). The traditional Thai house had widely built due to its aesthetics and practicality in the central region. Like many Thai vernacular houses in other regions, its construction elements were made from wood, principally teak. The timber floor of the houses was raised above accessible height for avoiding seasonal floods. The residents used a ground level area for multipurpose usage such as open living space in the daytime, sheltering animals at night and mooring a boat during times of flooding (see Figure 2 to 4).

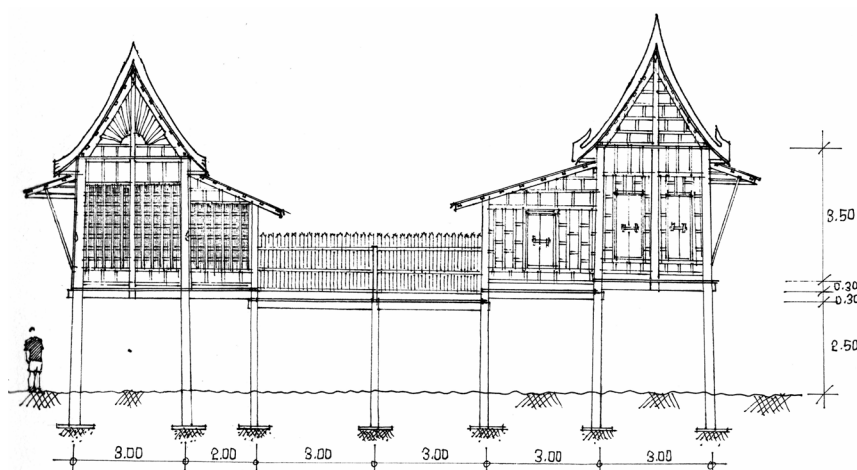
Recently, the traditional Thai houses have been considered to have heritage value and to be a symbol of Thai architectural identity. Jotisalikorn (2002) gave an opinion that the traditional Thai house is one of the most enduring icons of Thai



**Figure 2.** Isometric of an example of a traditional Thai house.



**Figure 3.** Construction elements of an example of a traditional Thai house.



**Figure 4.** Section of an example of a traditional Thai house.



style and design. Many textbooks explaining about Thai architectures generally illustrate the traditional Thai houses along with the other importance formal architectures.

The traditional Thai house was described by Horayangkura (2001) as having unique features: a steep roof, a raised-up floor on pillars, a semi-enclosed central terrace and a covered veranda, an inward sloping wall, a tapered window, an outdoor staircase, a prefabricated wooden structure and enclosing elements. To enlarge the traditional Thai house, additional structural units are attached to the terrace instead of increasing size of each unit.

Jotisalikhorn (2002) identified five basic elements: a stilt, an inward sloping wall, a high gable sloping downward into a long projecting eave, a large raised veranda connecting a separate room, and an extendable room. The element that differs from the first description is the extendable room. The size of a house varies from a single-family house to a cluster house. The smaller house is composed only of a bedroom and kitchen, while the cluster house has possibly up to five or six bedroom units. Every bedroom unit is arranged around the terrace or veranda. From the extended family system in Thai culture, additional bedrooms were added as the family size increased.

As previously discussed about the vernacular building in Thailand, there are many variations of the house style, ranging in size from a single-family to an extended family house. The smaller house consists only of a bedroom, a kitchen and a narrow terrace, while the cluster house may have up to five or six bedrooms and a wide central terrace. The extended family system enlarges the housing compound by increasing the amount of new buildings. One unit of the building is composed of a bedroom, a verandah and a part of terrace which is attached to the central terrace. In some occasions, if family members want to start their own household or need to relocate, these additional buildings could

also be moved away to form a new house. Because they were built mostly of prefabricated components, the traditional Thai houses are easily dismantled and transportable.

### **3.2 Transformation of the Traditional Thai House**

The transformed houses, which are modified from the traditional Thai houses, were obtained from two bases: first, the houses were moved from other places; and second the houses were modified on their original location. These houses were modified and new parts were added. Houses built in the first manner represent the distinctiveness, transportability, of the traditional Thai house. The house can be quickly dismantled, assembled or moved from site to site. Even the later houses always are shifted, rotated and adjusted on the original site when needs for change arises (see Figure 5 and 6).



**Figure 5.** A transforming Thai house on river bank, which some of them were move up on land.



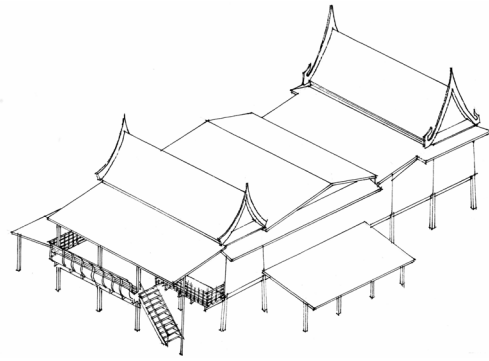
**Figure 6.** A transforming Thai house on their original location.

Six major transformations are found:

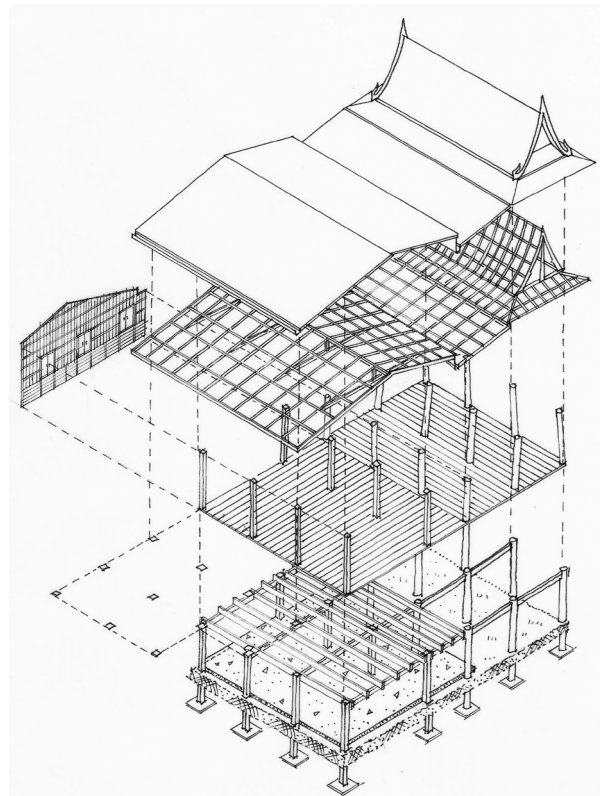
1. Central terrace to hall; 2. Multi-level to flat floor;
3. Changes of an area under a raised dwelling;
4. Disappearance of a verandah and erection of a porch at front;
5. A bathroom at upper level; and 6. A kitchen unit to cooking space (see Figure 7 to 9).

In the traditional extended family system in Thailand, additional bedroom units were added when the family size increased. The central terrace platform is extendable while living units were added on. Traditionally, the son left his family home to join the wife's family. He would remove his bedroom unit from his parents' house and attached to his wife's home or extend this unit with a new terrace and a kitchen unit.

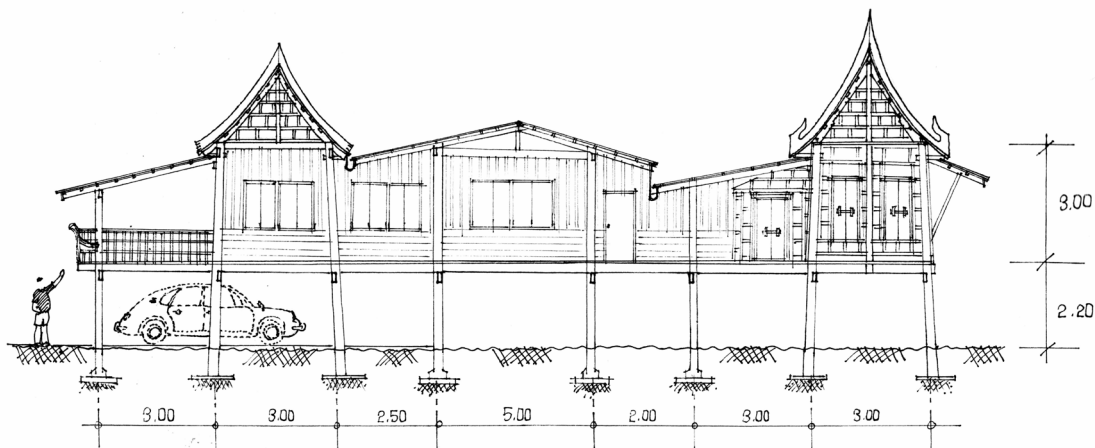
The size of the enclosed space of the original Thai house is rather small compared to the contemporary house. For single family, the area of the enclosed space of the contemporary house is 170-200 square meters (Puwanan, 2004) and of the traditional Thai house is 40-50 square meters (Jaijongrak, 2002). Additionally, Jaijongrak stated that the area of the terrace normally is 40 percent of the total floor area and increases to 60 percent if the verandah is included. One of the reasons is that the Thai house traditionally contained almost no furniture. Instead, the residents used several reed mats on the floor for sleeping or sitting. Most of the activities are outside the building. As a result, the compact buildings are



**Figure 7.** Isometric of an example of a transforming Thai house.



**Figure 8.** Construction elements of an example of a transforming Thai house.



**Figure 9.** Section of an example of a transforming Thai house.

only composed of a bedroom unit and a kitchen unit. In the transforming Thai house, enclosing of the central terrace to be a hall provides an extra space for accommodation. In addition, the verandah is modified to be part of the hall. The multi-level floor is also adjusted to become one continuous level.

Consequently, the most obvious change of the physical feature is at the central terrace which was enclosed by new roof and walls. Two main parts which are combined together to be the transforming Thai house are: 1. Original part and 2. Modified or extension parts.

The original part still uses wooden post extending from ground to the roof. In some houses, the wooden pillars underneath the houses have been replaced by concrete columns. There are new types of gable which differ by the shape and angle of the roofs. The first type with medium angle (around 45 degrees) is assumed to be developed from the original shape. The second type with low angle (10-20 degrees) is an adaptation of the bungalow roof. Both shapes cover wider room and reduce the height of the ridge. The first type may be considered as a traditional roof if the materials and the structure are the same as the roof of the archetype. Roofing materials have changed from grass to cement tiles, corrugated metal sheets or corrugated cement tiles. Some of the wall panels remain the same as the original but some have been changed to a corrugated metal sheet or a cement board. A cement board is a combination of cement and fibers. It is normally used without plaster in the surveyed sites. A cement board with asbestos fiber has been gradually replaced by a non-asbestos cement board.

### **3.3 Reproductions of the Traditional Thai Houses**

Reproduction Thai houses which have been sited along the highway (Phaholyothin Road in Bang Pahun areas) have developed since the 1970s

(Sub-district office 2008). These houses appear as a single house instead of a compound house of the traditional Thai house. Although these houses are similar to the transforming Thai house, there are many different factors between them:

1. It has not developed from the old traditional Thai house but built with the purpose of having some appearances of the traditional house;
2. The entire building was newly constructed both the modern style and traditional style parts;
3. Most of the modern appearances are limited at the ground level; and
4. The materials and technologies used in these houses are as updated as the contemporary house in modern housing projects.

These houses could be ordered to build at any sites from the high income customers who may not be a local villager (see Figure 10 and 11).



**Figure 10.** A reproduction Thai house for a local villager.



**Figure 11.** A reproduction Thai house for a high-income household.

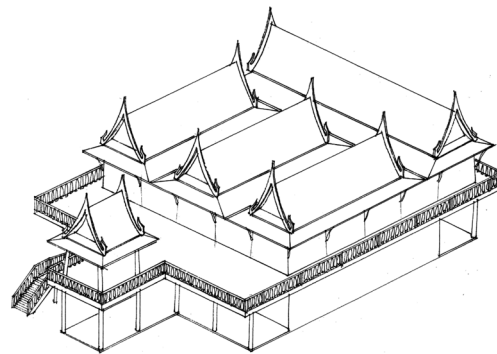


The information was obtained from eight houses in Bang Pahun area in 2009. These individual houses are constructed by the local builders who have an experience in building the original traditional Thai house. Most of the houses belong to the builders and located near the builder's work shop. Some of the houses could be shown to customers as an example of the production.

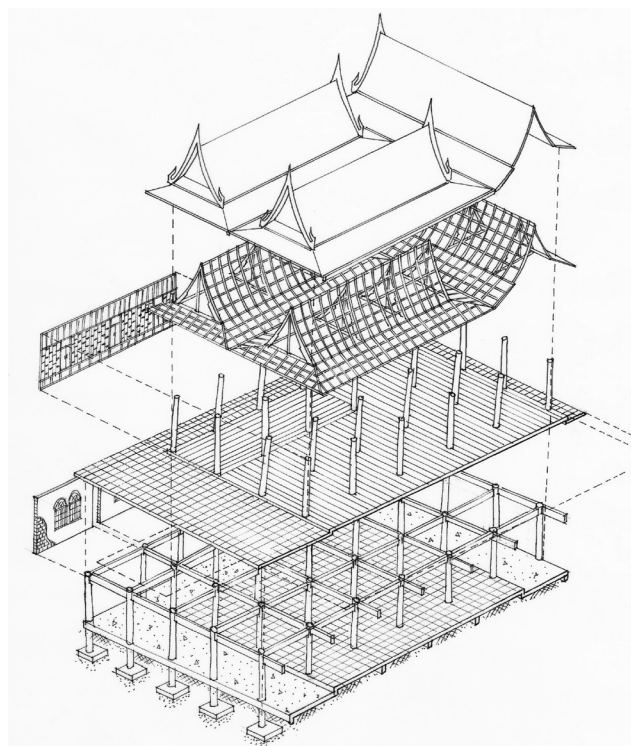
The reproduction Thai houses are built from the fundamental of traditional house and contemporary house but developed for modern life (see Figure 12 to 14). The groups of builders are divided into traditional carpenters and modern builders. Since the forest protection laws, the traditional materials were not obtained from Thai forest but other sources such as imported timber from neighboring countries.

These houses were influenced by the western style house and break many sets of traditional rules. For instance, they are not grouped in the traditional way but are attached to form a large living space. Most of them do not have a main terrace but narrow-shape terraces around the group of buildings. The obvious features are the traditional roofs at upper level and the contemporary building at ground level.

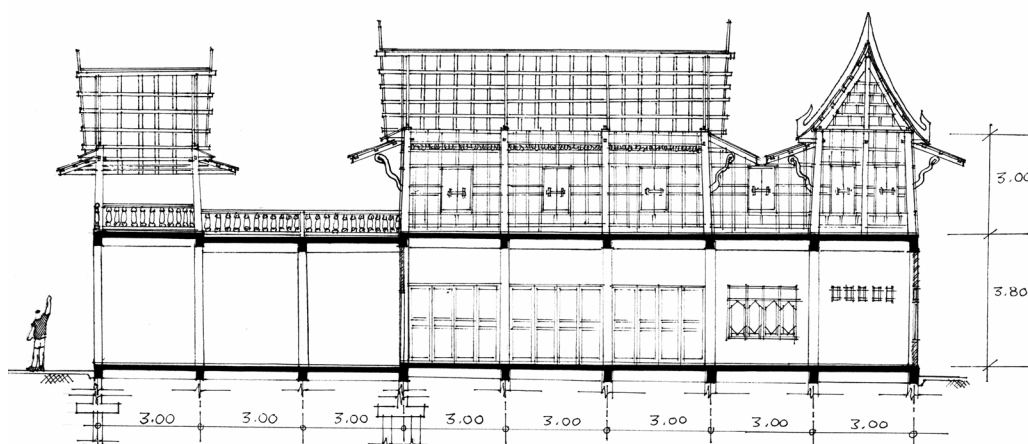
The whole upper part still uses timber with various methods. Some traditional methods



**Figure 12.** Isometric of an example of a reproduction Thai house.



**Figure 13.** Construction elements of an example of a reproduction Thai house.



**Figure 14.** Section of an example of a reproduction Thai house.

are the same as original. Some are adapted for modern-day tools or for integrating with concrete structure at lower part. The wall panels are the same as the original but there are no ventilated panels for using of an air conditioner. This upper part can be accessed by both from the stairs inside and outside the house. The plan is entirely different from the traditional style. The living room at this level functions as the central terrace of the traditional Thai house.

The ground level part is similar to the contemporary houses built by housing estate developers. Materials are mainly concrete and cement brick. This part is enclosed for the main living area, toilet and kitchen. Main entrance leads to the main living room for receiving guests and family living. There are the extensive uses of air conditioner at both levels.

#### **4. Discussions and Conclusions**

In an era of technological advancement and increasing communication, vernacular Thai builders transmit building tradition in various paths. From the new types of vernacular houses in this paper, scholars should no longer assume that vernacular builders are unskilled, technological ignorant or isolated from global communication. The vernacular builders continue to use or reproduce the popular image of the traditional Thai house. However, they rationally select the image and merge the traditional knowledge with modern technologies, lifestyle and demands. They leave many traditional principles which had been united and protected by their instructors. The emerging of these new vernaculars definitely confirms the growing of local knowledge.

The study of the transforming Thai houses shows that more research needs to be continued in the field of low-cost housing, particularly with respect to solving the problems of urban slums or even middle-income housing. The connection

between the vernaculars and squatters is not yet well established. New grassroots traditions are set up and may represent the future of the vernacular in urbanized societies. The forms of squatting as a new vernacular can be guided by the knowledge of the transformation and appropriate technologies.

The information in this paper suggests that some vernacular forms of the reproduction Thai houses are unaffordable. From the view point of low income villagers, the cost of the authentic traditional material (timber) and the labor cost of professional vernacular carpenters are very expensive. Further study should be done on practical use of local knowledge for ordinary people.

The issue of housing, that vernacular architecture can contribute, is a good example of forward-looking and positive approaches and should not be disregarded by the academic. Many attentions about housing are paid to environmental issues but little though is given to matters of culture and transmitted tradition. In this century, housing of the local community should be in culturally and environmentally sustainable ways. In order to meet the demand for low-cost houses, it is essential that vernacular building traditions are supported in matters of benefitting from knowledge that emerges in many areas. Local builders should be assisted to learn both traditional skills and new techniques. Vernacular households also need to be guided about these ecological, cultural and technological changes.

As the information in this paper demonstrates, some attitude towards vernacular architectures is obsolete. There are few academic courses or educational resources that offer the new point of view to students. The dynamic and changing of vernacular building traditions is significantly addressed in this discussion because of some backward conceptions. Vernacular building traditions have been often viewed with ideas of romantic

past, poverty and underdevelopment, vernacular traditions. In contrast to the stereotypes of backward or old fashioned past, vernacular buildings have well responded and reacted to technological and cultural changes. The vernacular traditions allow for creativity, innovation and

change. The adaptability of them has also created appropriate ecological solutions. There are a lot of ideas that can be learned from vernacular builders. The study that stresses the dynamic nature of vernacular traditions is needed to make active implementations.

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