

Conservation of Row Houses in Old Commercial District, *Mekong Riverside, Nakhon Phanom Province, Thailand*

Pakorn Pattananurot⁺ & Suthon Khongsaktrakun⁺⁺ (Thailand)

Abstract

The objectives of this research paper are; 1) to study the development of towns & commercial districts, 2) to study the architectural characteristics of the row houses and 3) to propose guidelines for their preservation by studying related theories & research, conducting field surveys & interviewing the owners or tenants. This study found that a group of Chinese immigrant merchants formed a commercial district and built row houses to trade, store and live by the Mekong Riverside & Sunthon Wichit Road. Traditional row houses can be divided into 3 types; 1) Mixed Chinese influenced style of a single storey 2) French-influenced style and 3) a modern-style. Conservation methods were used to preserve their original identity. Also, stabilization & consolidation were chosen to strengthen restoration efforts.. During rehabilitation modern materials were used to mimic the originals while improving structure's usability. Today, this old commercial district has been renovated and developed to promote tourism according to Nakhon Phanom Province's policies. As a result, the old way of life of a trading community has changed to one of tourism. Many of the original row houses were renovated to meet this new business model as being tourist attractions.

Keywords: Row Houses, Old Commercial District, Nakhon Phanom, Architectural Characteristics, Conservation

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Introduction

The old commercial district is a traditional form of community settlement; it used to be a commercial and economic hub. The old commercial district is rich in resources; somewhere distinctive or ethnically divided. For example, the Chinese Sampeng commercial district, the Westerners' Phraeng Nara and Phraeng Phu Thon commercial district, and so on. Evidence of wooden and concrete structures was discovered during an investigation of buildings in the old commercial district along the Mekong River in Chiang Khan, Loei province, Meechai Road in Nong Khai province, Sunthon Wichit Road in Nakhon Phanom province and Khemmarat, Ubon Ratchathani province. As the city grew, new economic sources emerged. As a result, the old commercial district's role and importance have been diminished. Commercial buildings in the district had been abandoned or were being used inappropriately. Many agencies, organizations, and academics are looking for a solution in various fields. The most common process is the modification of new usage in order to keep original form and use consistent (Chanjianasthiti, 2009).

The old commercial district of Nakhon Phanom province is located on Sunthon Wichit Road in Wat Okad community which is a historical commercial district located in the heart of the city (The Fine Arts Department, 1990) with a rich cultural resource consisting of tangible things such as single and two-storey townhouses that retain their original appearance and have been influenced by the architectural styles of Thailand, Laos, China, Vietnam, and France. In 1960, the Vietnamese built the clock tower as a memorial to their return to the country. It was a gesture of appreciation for Thailand. Later, it became a community landmark. Additionally, the district has intangible cultural heritage, including traditions associated with Chinese, Vietnamese, and Isan and distinctive regional traditions, such as the Christmas Star Parade, flowing fireboats are a long-standing tradition, long boat races on the Mekong River, for example. A group of Chinese merchants founded this commercial district. They bought local products, shipped them to Bangkok for sale and resold consumer goods to locals. The building was constructed as the business grew on both sides of Sunthon Wichit Road with mixed-use function (Pimolsathein, 2012) Most of the commercial buildings in this area are rectangular in shape and have the same exterior. For protection from sun and rain, there is a long corridor in front (arcade) the same, as row houses in southern China are known for making it easy for consumers to acquire things (Shan 2004). As a result, this area has become the economic hub of Nakhon Phanom and Khammouane province in Lao People's Democratic Republic. Thus, Nakhon Phanom's old commercial district is like a cross-border kitchen; that's been serving both sides of the Mekong River for years. While urban development policies want to demolish old row houses to expand roads, caused people in some areas to oppose and support its preservation as a historical district. Until the Nakhon Phanom municipality office, built a new fresh market in the middle of the city. A group of Chinese merchants relocated to a new business district. Consequently, some row houses were sold or abandoned in this commercial district.

Nakhon Phanom has had a policy of promoting cultural tourism for the last five years and has been responsible for the development of the Mekong River area and the row houses in this historic commercial district, including; 1) Adjusting the district's landscape by burying electric cables and installing light poles. 2)

Establishing bicycle lane and pedestrian walkways alongside the Mekong river 3) Restoring the physicality of the row houses along the Mekong River, and 4) Organizing a walking street activity resulting in the revitalization of this economic hub. Such changes can have a positive or negative effect on the community's historical value. The objectives of this research paper were to 1) Examine the evolution of cities and districts 2) Assess the architectural significance of row houses, and 3) Propose guidelines for row houses preservation.

Research Methodology

This research divides the study process into 4 parts. 1) studying data from related documents and research on the historical and architectural value of the area, to indicate the source of the influence that affects the style and development of the row houses. 2) Field surveys by taking pictures, recording important details of the row houses such as the form, structure, material, space usage in current conditions, and decoration by surveying and collecting data of 30 valuable row houses to identify their architectural characteristics. 3) Case studies were selected applying a specific method, considering the criteria, values and importance, history, age, value in terms of form and condition as a city element value and a way of life value, and conserving cultural originalities and 4) interviews with landlords or tenants to notice the history and changes of the row houses.

Literature Review

In this research paper, the study of commercial buildings in the old commercial riverside area consisted of 1) Physical, the location was a commercial center, with various important places. There is a transport route from the port connecting to the main road within the district. Resulting in the unique characteristics of the row houses that are placed parallel to the river. 2) Most of them are flexible in trading activities, services, accommodation, and storing goods and 3) Meanings, the commercial area has a social and cultural value that has been passed on from generation to generation through trading activities, and there are beliefs involved. For example, a shrine is built near the market and the pier (Ngawtrakun, 2008). The study of the concept of city elements is to understand the social and economic roles that influence the physical of the city. Showing the shape, positioning, and density of buildings, open spaces, traffic networks, and usage of buildings and land (Conzen 1981). It also indicates the building construction wisdom of people in each era (Rossi, 1999). Knowing the physical changes of the community's uniqueness must not destroy valuable elements. It should take an integrated approach between building the new with the old physique of the community (Worskett, 1969). Moreover, the study of the theory of perception and recognition of the city (image of the city) comprises Path, Edge, Districts, Node, and Landmark, is to analyze the characteristics of the city which resulted in an impression of the beauty of the city (Lynch 1960). Also, the study of the value and importance of the row houses; 1) Historic value, the wisdom of the builders in the past, 2) Architecture value that is outstanding in construction and materials 3) Aesthetic value, the beauty of the decoration of the row houses, and 4) Age value, the criterion for assessing the age of the row houses which older than 50 years old, to analyze the architectural characteristics of the row houses (ICOMOS, 1987). Besides, the concept

of adaptive reuse is modifying old buildings to meet new economic and functional values that can create attraction to activities in the district by maintaining the value of elements that represent the place or identity of that building (Ngawtrakun, 2008). In addition, studying the preservation of row houses, this article consists of 1) conservation as a way of preserving the condition and identity of the original building (Feilden, 2003), 2) stabilization and consolidation to reinforce old structures (The Fine Arts Department, 1990), 3) restoration to restore buildings to their original appearance, and 4) rehabilitation is a method of improving, repairing, adding to the current usability for economic benefit (Sutthitham, 2011).

Area of the study is traditional row houses with load-bearing wall structure, mixed wood, masonry, and plaster in the old commercial district that represents the past and present of architecture in Mueang district, Nakhon Phanom province, along the Mekong River parallel to Sunthon Wichit road, from the Vietnamese memorial clock tower to the 260 meter, Luk Suea road intersection. (Figure 1)



Figure 1. Area study the old commercial district Nakhon Phanom (Source: Edit from <https://traffic.longdo.com/> and <https://earth.google.com>, 2021).

Results

Settlement development of Nakhon Phanom City

Nakhon Phanom is a border province in Thailand's northeast, located on the right bank of the Mekong River, opposite Thakhek, Khammouane Province, Lao PDR, with a longitudinal settlement (river linear settlement). Many ethnic groups migrated to Nakhon Phanom in large numbers, divided into three groups: 1) Thai-Laos in Wat Pho Si, Wat Klang, Wat Klang Mak, Wat Mahathat and Wat Phra In Plaeng community who were forced to cross the Mekong River to establish a community, occupied agriculture and fishing. In the first phase, all houses were built of wood on stilts; and was aligned along the Mekong River's north-south axis, according to their ethnic beliefs; and the building faces the street (Suwanasaksri, 1987) 2) Groups of Vietnamese immigrants affected by the Indochina War

and WWII from Nam dinh, Ning binh, and Son tay in central Vietnam. They came to establish a community at Ban Nong Saeng, working as a trader, a builder, and a furniture maker and 3) a group of Chinese merchants who came to Ban Nong Saeng to set up a community. They came from Kwangtung province in southern China to establish a trading community around Wat O kad on Wichit Sunthon selling agricultural products, food, and service business. (Figure 2)



Figure 2. Settlement along the Mekong River of Nakhon Phanom.

- a. Vietnamese Community, Christian, Nong Saeng.
Source: https://www.youtube.com/watch?v=yC_gmhWShrs
- b. Chinese Community, Wat O Kat, Sunthon Wichit Road.
Source: <https://www.facebook.com/richardbarrowthailand/>
- c. Thai-Lao Community of Wat Pho Si, Wat Klang, Wat Mahathat and Wat Phra In Plaeng.
Source: <https://www.facebook.com/Nakhonphanom02/>

Architectural Value of Nakhon Phanom City

For Nakhon Phanom's Mekong River community, in addition to being a historically significant settlement, the area has valuable architecture worth preserving. Most of the buildings were built by Vietnamese immigrants who settled in Nakhon Phanom; they were craftsmen with a background in colonial building construction during French colonial ruled in Vietnamese (Atipattayakul, 2019). Architectural survey and evaluation categorize the building according to usage to three types; (Figure 3).

1. Religious and beliefs building, due to the fact that the city is a Christian settlement from the reign of King Rama V to the present; the following buildings exhibit the characteristics of brick and mortar construction: 1) St. Anna's church, which is influenced by Gothic architecture 2) Temple foundation building, which is influ-

enced by French architecture (Chiranthanut, Thungsakul 2015) and 3) Modern architecture is inextricably linked to religious belief. Moreover, Phraya Sisattanakarat is the common faith of the people living along the Mekong River. It serves as a new landscape symbol and promotes tourism in Nakhon Phanom province.

2. Public and government buildings, Nakhon Phanom province was an important outpost for Thailand and the Lao People's Democratic Republic during the separatist war of 1893, as a result, the Thai government placed a high premium on this area. Also as, central Thai government administration and significant buildings are centralized showing as bricks and mortar structure characteristics (Atipattayakul 2019). The notable buildings are the following: 1) Commemoration library Nakhon Phanom 2) The provincial museum in Nakhon Phanom 3) The old provincial court in Nakhon Phanom and 4) The Sunthon Wijit school building.

3. Row houses and local houses, this is the time period during which Chinese and Vietnamese immigrants arrived in Nakhon Phanom to trade. On both sides of Sunthon Wichit Road, they had constructed commercial and residential buildings with mixture of brick and wood, ranging in height from one to two storey. According to surveys, many row houses are between 80-100 years old and have retained their original appearance. Residential is defined by wooden and brick structures, influenced by indigenous Thai-Laotian and French colonial populations spread throughout various community.



Figure 3. Architectural value of Nakhon Phanom city. **Top, left to right:** Saint Anna Nongsaeng Church, Eduard Nam Lap Building & Phaya Sri Satta Nagaraj (new landmark). **Middle:** Commemoration Library Nakhon Phanom, Former Governor's Residence Museum & Nakhon Phanom Provincial Court **Bottom:** Row houses of Commercial District, Local Thai house - French Influences & Goo Ba house - French influences.

Development of Commercial District

Nakhon Phanom's historic commercial district is located on Sunthon Wichit Road which is widely regarded as the focal point of border trade for people living on both sides of the Mekong river. The Thai-Lao community, in particular, benefits from a fresh market, trading and exchanging agricultural products such as household goods, vegetables, forest products, and fisheries. Vietnamese people gradually migrated into the area later, during the French occupation of Vietnam in 1893. Later that year, between 1917 and 1927, a group of Chinese merchants moved from Kwangtung to Bangkok. Then they spread to various provinces of Thailand, where Chinese groups discovered the Mekong River's border trade channel. After that they were inviting one another to settle down and permanently commerce in Nakhon Phanom. To facilitate the trading of agricultural products, food, and services, a group of Chinese merchants began constructing row houses for trading and living. The majority of row houses were located along the Mekong River. Row houses were built in brick masonry style, combined with single-layer wood, facing Sunthon Wichit Road (the district's major road), with a platform extending down to the Mekong river at the back. They were constructed by Vietnamese craftsmen and workers skilled in wood and masonry construction and following World War II, a large number of Vietnamese immigrated to this area between 1946 and 1947. Later on, as the Vietnamese became more prosperous, they purchased land and constructed row houses.

Since Chinese and Vietnamese merchants had entered the trade, along with enlivening the commercial district, it helped establish Thailand, Laos, China, and Vietnam's cultural traditions. Until the 1960s, a small number of Vietnamese returned to their homeland. Additionally, a memorial Vietnam clock tower was constructed to express gratitude to Thailand and the people of Nakhon Phanom for their hospitality. When completed, this clock tower became a district landmark. (Figure 4)

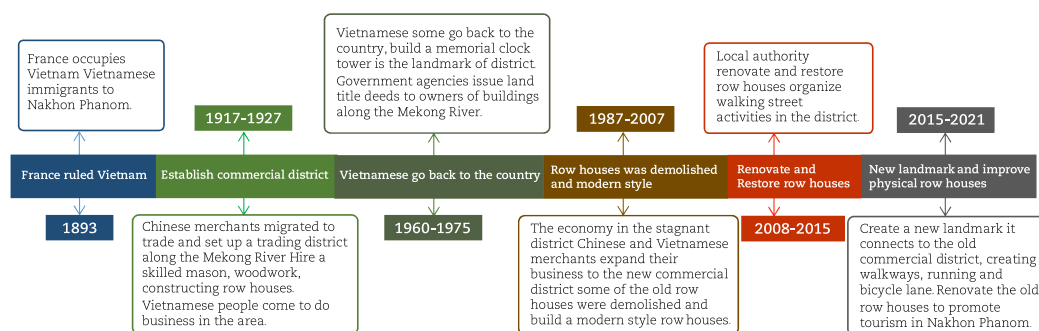


Figure 4. Settlement development of commercial district in Nakhon Phanom.

This commercial district had been in continuous operation for over a century. Until the end of the Indochina War in 1975, the Thai government designated Nakhon Phanom as the site of the US military base and airfield. With over 8,000 soldiers stationed in the commercial district, the economy has grown rapidly. Numerous hotels, pubs, and bars catered to the American troops and distributed to various communities, resulting in the presence of foreign merchants, both Thai and foreign, (Figure 5) in this area until 1974. When the US military withdrew, the commercial district's economy slowed as a result and several row houses deteriorated. Additionally, the row house's footprint cannot be increased, combined with

the gradual erosion of land along the Mekong River caused by the current erosion during the flood season, some Chinese groups sold commercial buildings to Vietnamese and then relocated to conduct business in the area of Aphiban Bancha Road, resulting in a row houses of commercial buildings. Until the establishment of a new commercial district in Nakhon Phanom between 1997 and 2007, the municipality of Nakhon Phanom wished to improve the landscape along the Mekong River. Thus, they expropriated and demolished row houses along the Mekong River, provoking opposition from conservationists and local residents. As a result, a conservation policy was established for communities along the Mekong River. And from 2015 to the present, the utility of the row houses has changed. It functions as a restaurant, clothing boutique, and coffee shops, but retains the row house aesthetic as a selling point. Also enhances the exterior in order to attract tourists. (Figure 6)



Figure 5. The past commercial district in Nakhon Phanom. Top row, commercial district during the American era to set up an army base at Nakhon Phanom. Source: <https://www.facebook.com/SvenH.Lundquist>. Bottom, The condition of the back of the row houses in the past. Source: <http://www.nkp2day.com/>.



Figure 6. The current condition in commercial district of Nakhon Phanom. Top row, front view of row houses in commercial district of Sunthon Wichit Road. Bottom, back (river side view) of row houses in commercial district by Mekong River. Source: <https://www.post today.com/social/local/594743>.

The Image of Nakhon Phanom Commercial District

The imaginary element of this old commercial district (Figure 7) is classified according to the theory of five forms as follows: 1) Path, with waterways, specifically the Mekong River, a vital thoroughfare for Thais and Laotians and overland route, Sunthon Wichit Road, which runs parallel to the Mekong River north and south, also connects the roads to form a grid, allowing for quick and convenient access to the area. Along the banks of the Mekong River, there is a path that connects the old commercial district with new tourist attractions. 2) Nodes, Lan Tawan Boek Fa is for traditional events and Lan Chan Song La is an area for exercise. In terms of the neighborhood, the vacant space between row houses are used as cultural courtyards. 3) District is comprised of a pedestrian street and an old trading area where local products and food are sold. The Indochina market sells goods and processed foods. 4) The edge is a bicycle path along the Mekong River and 5) The landmark serves as a landmark for residents and visitors alike, consisting of the followings: (1) Vietnam Memorial clock tower (2) A cluster of traditional row houses on both sides of Sunthon Wichit Road (3) The entrance to Wat Okad and (4) The pier building and the Nakhon Phanom immigration checkpoint.

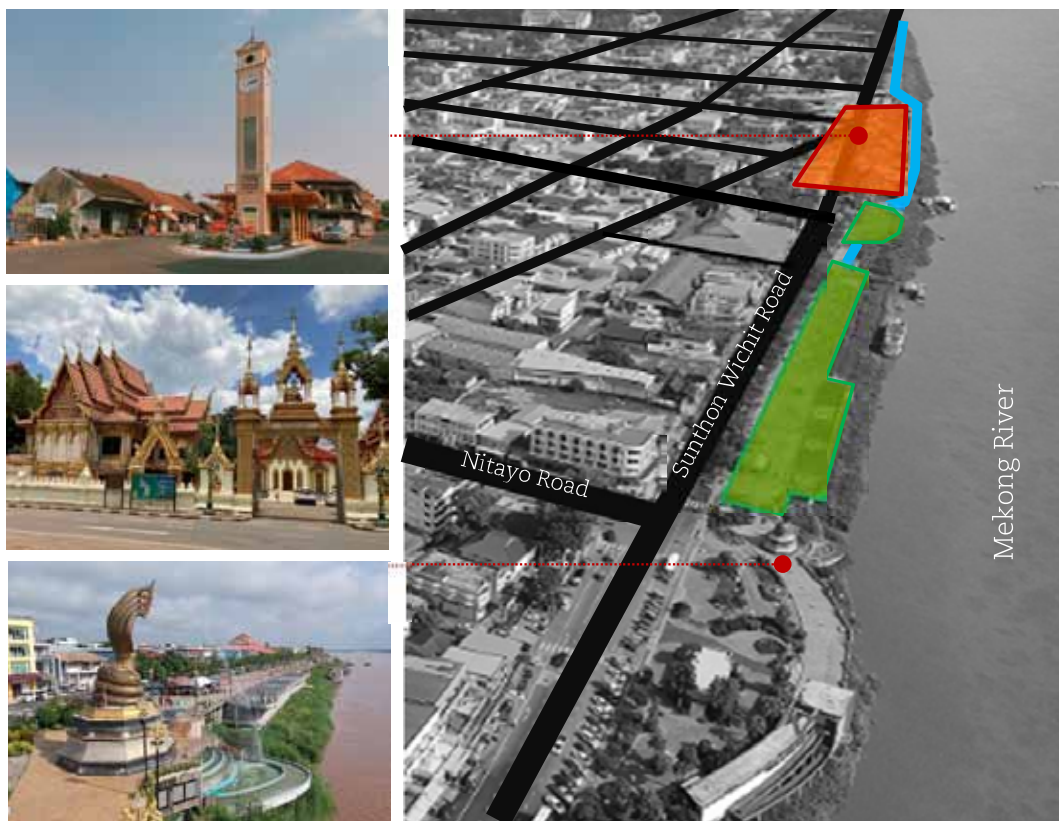


Figure 7. Images of the commercial district of Nakhon Phanom. Landmarks: L1 = Vietnam Memorial clock Tower, L2 = Wat O Kat and bottom the new landmark, Phaya Sri Satta Nakharat.



Figure 7 Continued. **Path:** P1 Sunthon Wichit Road, P2 Mekong bicycle lane (Blue) and P3 Ferry across the Mekong River. **Node:** N1 Lan Tawan Boek Fa N2 Area space between the buildings and N3 Lan Chan Song La. **District:** D1 Old commercial district & D2 Indochina market. **Edge:** E1 Mekong bicycle lane.

Architectural Development of Row Houses in the Old Commercial District of Nakhon Phanom Province

The development of historic commercial row house style have occurred in 3 phases; Phase I: vernacular Chinese styles during 1917-1927 (Srikeaw 2015); it was a time when transportation and commerce were largely reliant on waterways. They were originated from a group of Chinese traders who settled along the Mekong River, hired Vietnamese builders to construct retail and residential buildings parallel to the road. The arrangement of enclosed living spaces are open to internal interaction through the use of an open courtyard, at the same time, they must adapt to local conditions. It is a load-bearing wall, primary materials are clay, brick, and wood. This style also found in southern China (Qingzhou, 1997) that combines elements of the traditional Isan style. The layout is classified into two types; 1) A

collection of single-storey row houses planned according to the Mekong River's physical layout. The front is narrow, but deepens towards the back. The trading section is located in the flat area to the front. The living area is located behind the raised basement, which has an increased floor count by lowering the ground level in accordance with the slope of the bank. The front of the row house appears to be one floor high from the road, but when viewed from the Mekong River side, the back of the building is two to three floors high. 2) A line of single-storey row houses plans along the road; the width of the front is greater than the depth. The buildings are all on the same level, occupying space for commerce and storage in the back. Phase II, French style during 1940-1957; it was during the Indochina War and the propagation of French culture in the region. Two-storey weight-bearing wall with brick and mortar structure characteristics, constructed by Vietnamese craftsmen who previously constructed a Christian church in the French architectural style and government buildings which inspired Vietnamese craftsmen to learn construction techniques and influence the construction of row houses. The front ground floor is serving as a trading area, the kitchen is located behind the house, while the bedroom is located upstairs. And phase III, modern style, which lasted from 1957-1975, was when Nakhon Phanom shifted its emphasis from rail to road transportation. Along the road, the city expended. And with additions of prefabricated component and building materials such as concrete, steel, steel doors, glass, and zinc had been available. Row houses in this era typically have 2-3 storey, reinforced concrete structures, and masonry walls, and are loosely decorated, constructed by contractors and local technicians. And it was also during this time period that municipal building control laws became effective.

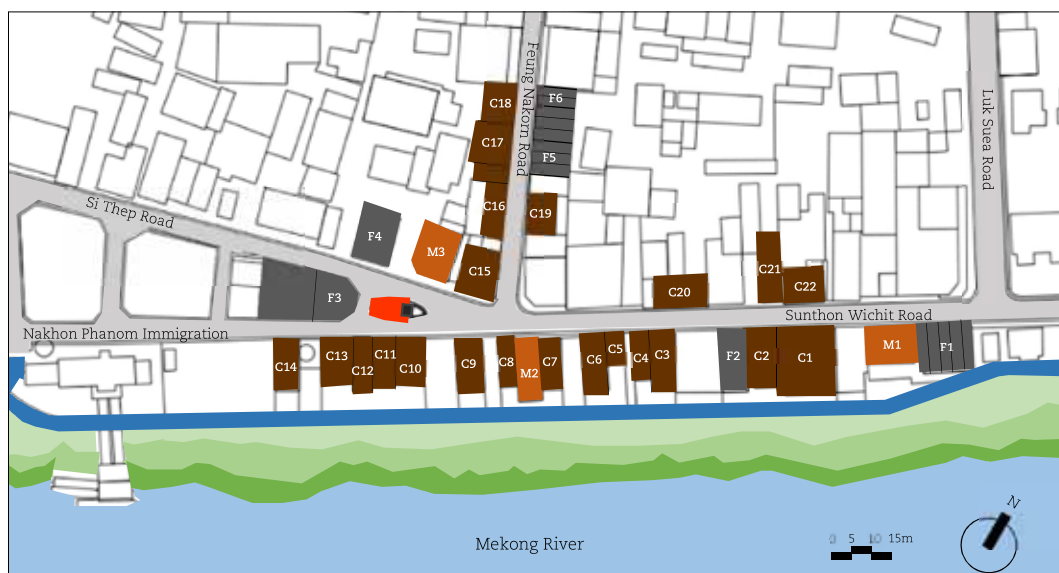


Figure 8. Locations of commercial row houses in the old Nakhon Phanom. Brown (C1-22) Traditional one-storey row houses. Grey (F1-6) Traditional two-storey row houses. Orange (M1-3) Modern style.

From the area survey, row houses can be classified into three types based on the influencing factors during each period (Figures 8-11): 1) Single-storey row houses with a mix of Chinese styles 2) Two-storey row houses with French influences and 3) Modern row houses. The analysis classify their architectural characteristics into four categories; 1) Layout in accordance with the physical of the area 2) Internal space utilization 3) Aesthetics and 4) Structure and materials. See table in fig. 12.



Figure 9a. **1917 – 1927, Chinese and Vernacular styles** of single-storey row houses in the style of mixed Chinese influences. These row houses are 80-110 years old, located parallel to the Mekong River facing Sunthon Wichit Road, locations C1-C14.



Figure 9b. **1917 – 1927, Chinese and Vernacular styles** of single-storey row houses in the style of mixed Chinese influences located in the flat area facing Sunthon Wichit Road and Feung Nakorn Roads, locations C15-C22.



Figure 10. **1940 – 1957, French influenced style** of two-storey row houses. Facades of 65-80 year old two-storey row houses located along the Mekong River, Sunthon Wichit Road and Feung Nakorn Road, locations F1-F6.



Figure 11. **1957 - 2005, Modern style** of various forms of reinforced concrete & glass row houses. Facades are 2-3 stories, 45-46 years old, located along Sunthon Wichit Road. The front ground level area hosts trading activities and behind are the kitchen, dining, restrooms. The 2nd and 3rd floors are residential areas. Located at M1-M3.

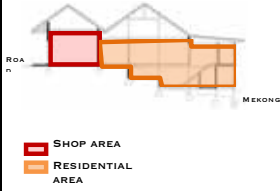
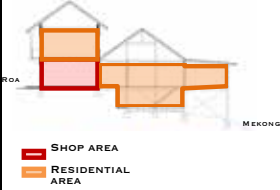
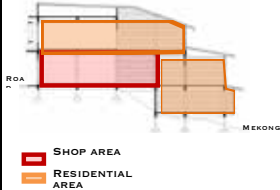
ROW HOUSES STYLE	ARCHITECTURAL CHARACTERISTICS OF ROW HOUSES			
	LAYOUT	USE OF SPACE	STYLE	CONSTRUCTION AND MATERIAL
1. VERNACULAR CHINESE INFLUENCED STYLES OF ONE-STOREY 	THE LAYOUT CAN BE CLASSIFIED INTO TWO TYPES: 1) ALONG RIVER LINE LAYOUT; THE FRONT IS LAID OUT PARALLEL TO THE ROAD, RECTANGULAR PLAN, DEEP IN THE BACK, DIVIDED INTO 3-5 COLUMN SPANS AND 2) ALONG ROAD LINE LAYOUT; THE FRONT IS LAID OUT PARALLEL TO THE ROAD, RECTANGULAR PLAN DIVIDED INTO 3-5 COLUMN SPANS.	USAGE IS SEPARATED INTO TWO SECTIONS: 1) MEKONG RIVER ROW HOUSES; THE TRADE SECTION IS LOCATED AT THE FRONT. IN THE REAR, THERE IS A RESIDENTIAL AREA AND EXPANSION USED AS A BEDROOM STORAGE AND BALCONY AND 2) ROADSIDE ROW HOUSES; THE TRADE SECTION IS LOCATED AT THE FRONT. THE RESIDENCE IS CONSTRUCTED INDEPENDENTLY OF THE ROW HOUSES.	ROOF STYLES CAN BE CLASSIFIED INTO TWO CATEGORIES: 1) MEKONG RIVER ROW HOUSES; TWO GABLE ROOFS COLLIDE AND 2) ROADSIDE ROW HOUSES; SINGLE GABLE ROOF, THE GABLE SIDE PERPENDICULAR TO THE ROAD. THE FRONT DOOR WAS ORIGINALLY A WOODEN FOLDING DOOR.	TWO TYPES BOTH EXIST: THE FRONT STRUCTURE IS MADE OF LOAD-BEARING BRICK WALLS, WHILE THE REAR STRUCTURE COLUMNS, BEAMS, AND ROOF ARE MADE OF HARD WOOD. FLOOR FINISHING IS CLAY TILES. THE FRONT WALL IS CONSTRUCTED OF BRICK MASONRY, WHILE THE BACK WALL IS CONSTRUCTED OF HORIZONTAL WOOD. ORIGINALLY, THE ROOF WAS TILED WITH CLAY TILES, ZINC ROOFS WERE LATER MIXED.
2. FRENCH INFLUENCED STYLE OF TWO-STOREY 	THE RECTANGULAR LAYOUT IS CLASSIFIED INTO THREE TYPES: 1) PLAN ALONG MEKONG RIVER 2) PARALLEL TO THE ROAD LINE AND 3) PARALLEL TO THE ROAD ON BOTH SIDES. COLUMN SPANS ARE DIVIDED BY TWO TO FIVE.	USAGE IS SEPARATED INTO TWO SECTIONS: 1) THE GROUND FLOOR ADJACENT TO THE ENTRANCE IS FOR TRADING. THE KITCHEN AND BATHROOM ARE AT THE BACK AND 2) THE RESIDENTIAL AREA IS ON THE UPPER FLOOR.	MEKONG RIVER ROW HOUSE CONSIST OF TWO GABLE ROOFS COLLIDE. WHILE ALONG ROAD ROW HOUSES CONSISTS OF GABLE ROOF WITH THE GABLE SIDE PERPENDICULAR TO THE ROAD. A WOODEN BALCONY EXTENDS 1.00 METERS IN FRONT. THE FRONT DOOR IS BOTH WOODEN OR STEEL FOLDING DOOR.	TWO-STOREY STRUCTURE, THE GROUND STRUCTURE IS CONCRETE COLUMNS AND BEAMS, THE UPPER AND ROOF STRUCTURE IS MADE OF HARD WOOD. THE GROUND WALL IS BRICK MASONRY, WHILE THE UPPER WALL IS CONSTRUCTED MASONRY OR HORIZONTAL WOOD. ORIGINALLY, THE ROOF WAS TILED WITH CLAY TILES, ZINC ROOFS WERE LATER REPLACED.
3. MODERN STYLE 	TWO AND THREE-STOREY HIGH ARE COMMON WITH TWO DISTINCT LAYOUTS: 1) ALONG RIVER LINE LAYOUT; THE FRONT IS LAID PARALLEL TO THE ROAD AND 2) ALONG ROAD LINE LAYOUT; PLAN DIVIDED INTO 2-5 COLUMN SPANS.	TRADING AREAS IS THE MOST EMPHATIC. USAGE CAN BE DIVIDED INTO TWO SECTIONS: THE GROUND FLOOR AND THE TRADING AREA. THE KITCHEN AND BATHROOM ARE LOCATED BEHIND. AND THE UPPER FLOOR IS RESIDENTIAL.	ROOF IS MADE OF CONCRETE. ONLY AFTER THE ROOF WAS CONSTRUCTED TO PROTECT AGAINST THE RAIN. STEEL DOORS AND SHUTTERS WERE STRETCHED. THE EXTERIOR IS CLAD IN CONCRETE PANELS AS WELL AS STEEL BATTENS.	COLUMNS, BEAMS, AND FLOORS ARE ALL REINFORCED CONCRETE. ALL WALL MATERIALS ARE MADE OF MASONRY AND FINISHED WITH SMOOTH PLASTER. FLOOR FINISHES WITH CERAMIC TILES. WINDOWS MADE OF WOODEN FRAME AND GLASS. THE REAR EXTENSION IS STEEL-FRAMED MIXED WITH SYNTHETIC WOOD.

Figure 12. Architectural characteristics of row houses in Nakhon Phanom's historic commercial district.

The analysis of the architectural characteristics of row houses in Nakhon Phanom's old commercial area along the Mekong River revealed that the row houses in this area follow the Mekong River area's physical layout and planning in accordance with Sunthon Wichit Road's physical layout. The first phase involves the construction of a single-storey row houses in the vernacular Chinese styles which divided into 3-5 column spans. A plaster load-bearing wall structure supports the front trading area enclosing by sliding doors. The rear portion is a residential area with hardwood structures. Two gable roof styles collide, resulting in a single gable and parallel the gable's side to the road. Roof material originally made of clay tiles, then was later replaced with zinc. The front walkway is enclosed by pillars. For the French-influenced style of two-storey, consists of 2-5 column spans. The trading section is structured with load-bearing wall, located on the ground floor in front. And a residential area on the upper floor with a hardwood structure and brick and plaster walls. Roof structure is constructed entirely of wood. Initially, thatched with clay tiles, and zinc roof is mixed as a contemporary style. Modern style row houses with two and three storey, divided into two - five column spans. It is a row house with a strong emphasis on the use of space for wholesaling activities. The trading section is located on the ground floor and the upper floor is devoted to residential purposes. The foundation is made of reinforced concrete and all wall materials are made of masonry and finished with a smooth plaster. Floor paved with ceramic tiles.

The Results of Architectural Characteristics of Row Houses

This research examined and selected traditional single-storey row houses with a mixture of vernacular Chinese influences that have remained in use from the past to the present. The architectural style is also diverse and well worth studying. As well as it is a type of tenement building that still exists in significant numbers throughout the study area. So case studies will be used to develop conservation guidelines by applying the architectural conservation criteria's, in terms of valuation, anything that benefits, whether physical or social is considered valuable. And that illustrates the building's distinctive features and history in relation to life which can be classified into several categories. 1) Historical value 2) Age value 3) Form and condition value 4) Urban composition value and 5) Value of lifestyle and preserving ethnic culture. (Figure 13)

According to surveys of retail buildings, the key variable affecting the row houses' distinctive characteristics in both cases is the Mekong River's physical layout. Because of the waterfront, area is very steep; this enables it to be used by building a row house on a flat level and increasing the number of basements, or by lowering the level to match the slope of the riverbank. When viewed from Sunthon Wichit Road, the row house's front is a single-storey structure. However, when viewed from the Mekong River, the back of the row house is 2-3 storey high, with two gable roofs juxtaposed. Consequently, this style of row house is a unique architectural feature in this area. Besides row houses face Sunthon Wichit Road in both cases and parallel laying out to the physical of the road which is the district's main and traditional thoroughfare. This complex consists of a single-storey structure with additional living space beneath the roof for storage.

The analysis of the architectural characteristics of row houses in Nakhon Phanom's old commercial area along the Mekong River revealed that the row houses in this area follow the Mekong River area's physical layout and planning in accordance with Sunthon Wichit Road's physical layout. The first phase involves the construction of a single-storey row houses in the vernacular Chinese styles which divided into 3-5 column spans. A plaster load-bearing wall structure supports the front trading area enclosing by sliding doors. The rear portion is a residential area with hardwood structures. Two gable roof styles collide, resulting in a single gable and parallel the gable's side to the road. Roof material originally made of clay tiles, then was later replaced with zinc. The front walkway is enclosed by pillars. For the French-influenced style of two-storey, consists of 2-5 column spans. The trading section is structured with load-bearing wall, located on the ground floor in front. And a residential area on the upper floor with a hardwood structure and brick and plaster walls. Roof structure is constructed entirely of wood. Initially, thatched with clay tiles, and zinc roof is mixed as a contemporary style. Modern style row houses with two and three storey, divided into two - five column spans. It is a row house with a strong emphasis on the use of space for wholesaling activities. The trading section is located on the ground floor and the upper floor is devoted to residential purposes. The foundation is made of reinforced concrete and all wall materials are made of masonry and finished with a smooth plaster. Floor pave with ceramic tiles.

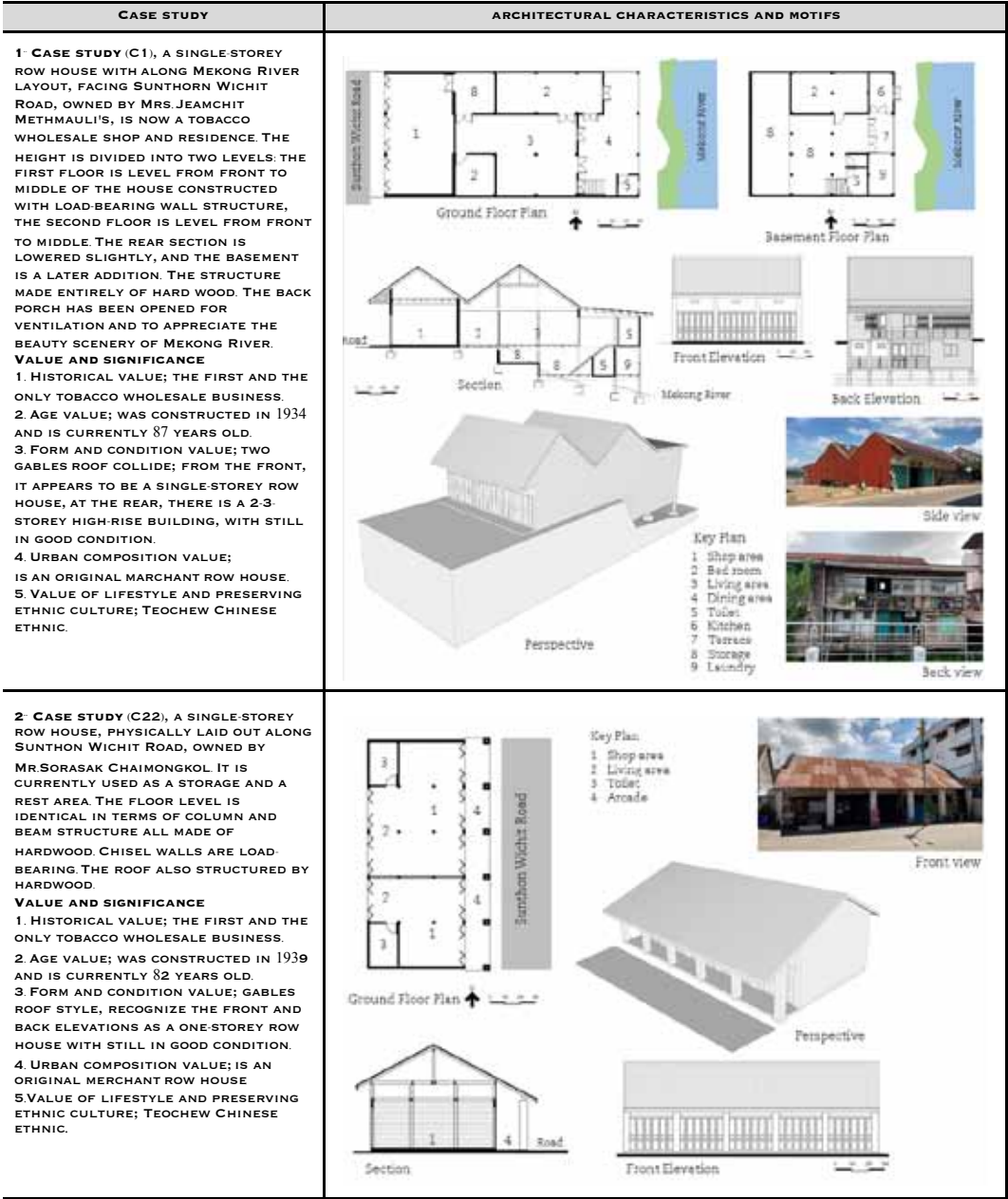


Figure 13. Evaluation of the values of a vernacular Chinese influenced single-storey row houses.

The Renovation to the Architectural Elements of Row Houses

On the Mekong River's old commercial district of Nakhon Phanom, the first tenement houses had a distinct character that reflected the local identity. The majority of activities were trading and residential (Figure 14), which has been blended with vernacular Chinese styles influenced by China, Vietnam, and France, giving each era's tenement houses a distinct characteristic. Nowadays, the way of life in this area changes in response to changing economic conditions. The same type of trade that our forefathers and mothers practiced in the past, such as food stores, agricultural product stores, and service shops are being shut down, due to a lack of successors. Certain properties have been sold, transferred, or leased, row houses have been converted into restaurants, beverages or coffee shops, pub and bars (Figure 15), by emphasizing the row house's traditional style as a selling point. As a result, a household trade community gave way to a tourism community. Six row

houses were discovered to be in a state of disrepair during the survey. Some of the row houses were abandoned (Figure 16), but ten row houses were renovated with two critical goals: 1) The tenant and owner proceeded to renovate the row houses, to redesign the interior space to accommodate the current business model, which includes restaurants, coffee shops, and clothing stores by removing the original wall and polished brickwork, replacing zinc roofs with steel roofs, replacing a glass door for the stretched steel door. The improvement has the advantage of attracting tourists, however, the disadvantage is that the motif value is diminished and 2) Nakhon Phanom Municipality renovated six houses into one-storey row houses with a mixture of Chinese style, five houses, and one modern style row house to promote tourism by modifying them with synthetic wood and were repainted, replacing wooden shutters with aluminum-framed glass shutters and zinc roofs with steel roofs. The renovation's positive outcome is that the row houses now have a distinctive appearance with vibrant colors that help attract tourists. The disadvantage is that it has historical significance and the motifs were diminished.



Figure 14. Six row houses were in either in disrepair or abandoned.



Figure 15. Renovation by tenants and owner.



Figure 16. Renovation by Nakhon Phanom Municipality Office.

Conservation of Row Houses in the Old Commercial District

From surveying and analyzing the architectural characteristics of the row houses in the old commercial area by adopting a conservation approach to modify the type of row house and according to the theory of building conservation, in order to develop recommendations to relevant agencies in the area in the future. (Fig 17)




TYPE OF ROW HOUSES	ARCHITECTURAL ELEMENTS	CONSERVATION METHOD
1. VERNACULAR CHINESE STYLES OF ONE-STOREY ROW HOUSES 	1. RATIO OF HEIGHTS	CONSERVATORY METHOD; MAINTAIN THE ORIGINAL PROPORTIONS.
	2. ROOF FORMS AND MATERIALS	REPLICATION METHOD; RETAIN ORIGINAL ROOF SHAPE AND STYLE, CHANGING THE ORIGINAL ZINC ROOFING TO STEEL ROOFING, BROWN OR CREAM TONES ARE RECOMMENDED.
	3. PRIMARY STRUCTURE	STABILIZATION AND CONSOLIDATION METHOD; TO ASCERTAIN THE STRUCTURE'S LOAD BEARING CAPACITY ACCORDING TO CURRENT APPLICATIONS.
	4. WALLS	REPLICATION METHOD; TO CONSERVE MASONRY WALLS, CRACKS SHOULD BE REPAIRED USING AUTHENTIC MATERIALS, DECAY OF AN ANTIQUE WOODEN REPLACED WITH SYNTHETIC WOOD AS SUBSTITUTE, BROWN TONES ARE RECOMMENDED
	5. DOOR AND WINDOW DESIGN	CONSERVATORY METHOD; CONSERVE THE FRONT AND BACK DOORS USING TO MAINTAIN THEIR ORIGINAL STYLE, REPLACE WITH ONE THAT IS MADE OF THE SAME MATERIAL AND HAS THE SAME BROWN HUES AS THE ORIGINAL.
	6. TERRACE AND BALCONY	REPLICATION METHOD; CONCEAL THE DECAYED WOODEN RAILING, OR USE STEEL RAILING WITH SHAPES AND SIZE ARE ACCURATE REPRODUCTIONS OF THE ORIGINALS.
	7. AWNINGS AND DECORATION MATERIALS	CONSERVATORY METHOD; EACH PIECE IS DESIGNED TO HAVE A DISTINCT STYLE AND ARE COMPARABLE IN SIZE, BRACES, PILLARS, AND EAVES ARE DECORATIVE MATERIALS THAT PRESERVE THE ORIGINAL STYLE.
2. FRENCH INFLUENCED STYLE OF TWO-STOREY ROW HOUSES 	1. RATIO OF HEIGHTS	CONSERVATORY METHOD; MAINTAIN THE ORIGINAL PROPORTIONS
	2. ROOF FORMS AND MATERIALS	REPLICATION METHOD; RETAIN ORIGINAL ROOF SHAPE AND STYLE, CHANGING THE ORIGINAL ZINC ROOFING TO STEEL ROOFING, BROWN OR CREAM TONES ARE RECOMMENDED.
	3. PRIMARY STRUCTURE	STABILIZATION AND CONSOLIDATION METHOD; TO ASCERTAIN THE STRUCTURE'S LOAD BEARING CAPACITY ACCORDING TO CURRENT APPLICATIONS.
	4. WALLS	REPLICATION METHOD; TO CONSERVE MASONRY WALLS, CRACKS SHOULD BE REPAIRED USING AUTHENTIC MATERIALS, DECAY OF AN ANTIQUE WOODEN REPLACED WITH SYNTHETIC WOOD AS SUBSTITUTE, BROWN WHITE AND CREAM TONES ARE RECOMMENDED.
	5. DOOR AND WINDOW DESIGN	CONSERVATORY METHOD; CONSERVE THE FRONT AND BACK DOORS, USING TO MAINTAIN THEIR ORIGINAL STYLE, REPLACE WITH ONE THAT IS MADE OF THE SAME MATERIAL AND HAS THE SAME BROWN HUES AS THE ORIGINAL.
	6. TERRACE AND BALCONY	REPLICATION METHOD; THE RAILING RETAINS ITS ORIGINAL FORM AND MATERIAL.
	7. AWNINGS AND DECORATION MATERIALS	CONSERVATORY METHOD; EACH PIECE IS DESIGNED TO HAVE A DISTINCT STYLE AND ARE COMPARABLE IN SIZE, BRACES, PILLARS, AND EAVES ARE DECORATIVE MATERIALS THAT PRESERVE THE ORIGINAL STYLE.
3. MODERN STYLE OF ROW HOUSES 	1. RATIO OF HEIGHTS	CONSERVATORY METHOD; MAINTAIN THE ORIGINAL PROPORTIONS.
	2. ROOF FORMS AND MATERIALS	CONSERVATORY METHOD.
	3. PRIMARY STRUCTURE	CONSERVATORY METHOD.
	4. WALLS	CONSERVATORY METHOD.
	5. DOOR AND WINDOW DESIGN	CONSERVATORY METHOD. FRONT DOOR AND REAR WINDOW RETAIN ITS ORIGINAL FORM.
	6. TERRACE AND BALCONY	CONSERVATORY METHOD.
	7. AWNINGS AND DECORATION MATERIALS	CONSERVATORY METHOD.

Figure 17. Recommendations for preserving row houses along the Mekong River in Nakhon Phanom Province.

From the survey, data analysis and community opinion, can be summarized to three types of row houses conservation through four conservation methods; 1) Conservation; to maintain the row houses original condition and identity specifically (1) the original height ratio (2) the shape of the gable roof (3) the style of the door and window and (4) supportive columns, eaves and decoration 2) Rehabilitation; to improve and repair for economic gain 3) Stabilization and consolidation for column, beam, floor, roof and 4) Replication; using synthetic cladding, metal sheet roofing and steel balconies by implementing brown, cream, and pale-yellow tones while considering partially renovated row houses.

Conclusion

Nakhon Phanom has a long history of settlement, with proper physicality, next to the Mekong River and was established as the first commercial district. People of various nationalities, including Thai, Laotian, Vietnamese and Chinese, have migrated to live in different communities in this area. The way of life of the people is related to the Mekong River, temples, and religious sites. The growth and physical transformation of this commercial district were formed by a group of merchants moving out to do business in a new commercial area around Aphiban Bancha Road and infrastructure was developed to promote tourism according to the policy of Nakhon Phanom Province. Such as improving the landscape, bringing electric cables underground and installing light poles, and constructing bicycle lanes and walkways along the Mekong River, which is consistent with concept of the composition of cities (Conzon, 1981). It discusses the role of society and the economy in the physical transformation of cities. The development that occurs in this area does not destroy the identity and values of the district. Applying a method to combine the new with the old physical of the district, for example, the renovation of the old row houses along the Mekong River, and improving the usability of the old building as a restaurant, coffee shops, clothing stores, and walking street activities are in line with concept of neighborhood transformation which must not destroy valuable elements, but should combine the new with the old physique of the community (Worskett, 1969). According to the theory of perception image of the city revealed that the neighborhood is unique to the city and people perceive and recognize that uniqueness. Resulting in the impression of the people comprising 1) the route (path) of the Mekong waterway by boat and the land route on Sunthon Wichit Road 2) the community center (node) for organizing the tradition and exercise areas; 3) a district, a pedestrian street, and an Indochina market; 4) an edge, a bicycle path along the Mekong River, and 5) a landmark, the Vietnam Memorial Clock Tower, old row houses along the Mekong River, and Nakhon Phanom Immigration (Lynch, 1960).

Row houses in the old commercial area of Nakhon Phanom Province is a historic commercial district. In the development of commercial buildings in the old Nakhon Phanom commercial district, in the beginning, most of the row houses were owned by Chinese merchants, constructed by Vietnamese craftsmen, which is along the Mekong River, and expanded on both sides of Sunthon Wichit Road. With characteristics of a single- storey row house in the style of mixed local Chi-

nese influences. It is the introduction of the style of row houses that are popularly built in the south of China, combined with the technique of using brick and hardwood materials that can be found locally. Later, during the Indochina War and the propagation of Christianity by French bishops, the style was combined with single- storey row house buildings scattered throughout the commercial district. The merchants then turned to build two- storey row houses that were influenced by France. But also focused on arranging the living space in a mix of local Chinese style and constructed by Vietnamese craftsmen. This characteristic is with weight-bearing walls. After the city expanded along Pastoral Bancha Road, Chinese merchants moved out of the old trading district and built a new modern-style row house, 2-3 storey high, and a structure with reinforced concrete. The contractors were hired in the area with a simple design, focusing on using the area for trading as the main function. From the study, it was found that the single- storey row houses were mixed with local Chinese influences, lined parallel to the Mekong River, the usage of the building is flexible, and has social and cultural value. This corresponds to the study of the characteristics of the row houses in the riverside commercial district (Ngawtrakun, 2008). The architectural characteristics consisted of 1) the planning of the row houses along the road and the Mekong River. There is a walkway in front (arcade), used as a connection between the buildings, and used as a selling area. 2) 3-5 column division, but the interior uses interconnected areas. 3) The shape of a row house, from the view at the front from the road, a row house is seen with a height of a single-storey, but looking back from the Mekong River, a row house is seen with 2-3 storey in height. Two gable roof shapes combine together, facing Sunthon Wichit Road and facing the Mekong River. 4) The front of the row house is a trading area, bearing wall structure, brick, and hardwood materials. The back is a residential area with a hardwood structure. 5) The row house has a balcony at the back that connects to the basement, and 6) The front door is a double door along the column. So, it is easy to access and place.

The row houses in this old commercial area are worth preserving because of the expression of the value of row houses is preserving their historic value, which embodies the construction heritage of Vietnamese craftsmen. Architecture value, the use of brick wall materials and hardwoods in the area and aesthetic value have a unique style and are suitable for the location. And the age value of the row houses is 50-110 years old, in line with the concept (ICOMOS, 1987). Currently, many row houses in this commercial area have changed their usability to meet the usage and support business of tourism, which is consistent with Sutthitarn's findings (2011). Conservation guidelines for row houses have presented and exchanged ideas with the community and conservation methods suitable for Chinese and Vernacular styles of one-storey row houses and French-influenced style of two-storey row houses were used. Conservation methods were 1) conservation of the original height ratio (Feilden, 2003), 2) conservation of shape and roofing materials, walls, and balconies using replication methods and 3) reinforcement to strengthen structures using stabilization and consolidation methods (The Fine Arts Department, 1990). For the modern style of row houses, also suggest applying conservation methods in every element of the row houses.

Recommendations

From policies and plans to promote tourism in Nakhon Phanom Province, Nakhon Phanom City Planning and Design Project developed as a classic city along the Mekong River. As a result, this old commercial district developed a physical structure. The local authorities have renovated the exterior of six row houses by using the concept of decorating the walls with synthetic wood materials. The steel sheet roof uses bright colors: light green, yellow, pink, blue and red, to create the ultimate eye-catcher for tourists. This concept may result in the loss of the historical value of the row houses and the architectural identity of the area. Therefore, local authorities, owners or tenants of the row houses, and conservation scholars, including tourists, should assess the visual quality of the row houses along the Mekong River in these commercial districts both before and after the renovation. Furthermore, conducting public relations to create knowledge for people in the community to realize the value and importance of the row houses in this commercial district before proceeding to renovate the row houses in the future. In addition, the impact of the construction of a bicycle path along the Mekong River along the back of the row houses, causes the view from outside and inside to be obscured and also causes residents to lack privacy in using the space at the back of the row house as tourists are using the bike path all the time, especially in the morning and evening. It should include designs of a balcony or blinds as the part of the back of them, resembling the traditional style as much as possible.

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