

Bangkok Shophouse: An Approach for Quality Design Solutions

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Abstract

The shophouse is one of the most popular building types in Bangkok. It can serve for both business and habitation: ground floor used for commerce and higher floors used for residence. However, as it is built as a continuous line along the road, and blocks the access to the inner property, these poor shophouse development and plan have caused problems such as disorganized and non-developable properties, poor ventilation, and inadequate daylight (1981:24-29). These in turn have negative effects on health and living conditions of their inhabitants.

In order to improve the shophouse quality, the key is to understand its typology. This paper focuses on investigating the typology of the shophouse in Bangkok based on researcher's definitions, building regulations, and type studies: spatial organization, physical and stylistic characteristics (Habraken, 1988). The purpose of these studies is to investigate and document the variations or changes in the shophouse.

The survey and observation are applied to understand the Bangkok shophouse typology. The findings then indicate a suitable approach toward the design solutions to improve the quality of the existing shophouse and new design in the future.

Introduction

In Bangkok, the most obviously seen is the skyline of high-rise buildings; however, on the streets level, the buildings that one can see are continuous rows of 3 - 5 storeys shophouses built along the roads with a various appearance designs. Without a clear and strong city planning, shophouses have been spread around the city where almost everywhere the roads can give their accessibility.

In addition, one of the main reasons makes these shophouses popular because of their functional change abilities. They have been developed to serve the functions of both residence and commerce. The lower floor and/or mezzanine is normally used or rented for the various businesses such as office, small grocery shop,

medical clinic, small industrial business, café, etc. The upper floors are usually used for the residence or other purposes depending on the users such as office area, storage, weekend schools, rental for others, etc.

It can be seen that shophouse owners can adjust or change the interior spaces as they want. However, they have been excluded from decision making on design or build process to suit their requirements at the beginning. The decision power from the land developers or private investors on development of property or housing project is based on economic factor aiming for more benefits than the quality of living. These cause the poor conditions of living such as lack of natural lighting and ventilation.

The idea of solving the problem is to study its characters and present conditions to understand its architectural typology. Later, the design can cope with the users in terms of the design and build processes and can efficiently respond to its uses and increase quality of living.

Figure 1: Shophouses in Bangkok (Photograph: Tirapas)



Method

The study starts from evaluating the definitions from various studies and regulations of shophouse to identify its problems and limitations. Further, the investigation uses the way of looking type addressed by John N. Habraken (Habraken, 1988) to analyze the spatial organization, physical characters, and stylistic characters of the Bangkok shophouse based on the survey and observation of 100 shophouses which covered high and mid-density areas of Bangkok. These studies will be

analyzed, synthesized, and concluded; and will serve as recommendations for a quality improvement.

The Definition of Problems

The present characters of the Bangkok shophouse are derived from the Chinese shophouse introduced by King Rama V. These shophouses are only two storeys high, by which the ground floor is used for commercial activities, while the upper floor is used for residential activities. It still remains today.

With enormous number of them and their impacts on the city, many studies have given its definition. The characteristic studies point out strongly the physical and spatial characters: the row of building, multi-uses for both residence and commerce on different levels, degree of use toward residential or commercial, and income earning from its uses (Nimmanhemint, 1981:43; Suchakul, 1982:4). Neither definitions determine the real function of the shophouse, but rather indicate the multi-function nature of the shophouse type.

The Regulation Problems

According to the regulations, its definition is “a set of buildings that has more than two units and between each unit has a fire resisting wall.” (Riensriwalai, 2005:3-207). This gives two main characters; a row of buildings and a shared fire-resistant party wall between each unit. It also suggests the material used for the strong and fire-resistant structure and party wall. Thus, it is common to see the main structural material as reinforced concrete and party wall as brick wall.

In addition, there are detailed descriptions of its physical characters in order to control its built-form such as the min. width of unit, the length of a shophouse row, max. length of each unit, set back from the property line at the back, etc. (Riensriwalai, 2005:3_209-216). However, its purposes are ambiguous. These give its opportunities to be adjusted and changed according to users’ will, budget, location, and business potentials.

Typology Study

Spatial Character

The typology study focuses onto three 3 aspects; spatial, physical, and stylistic characters. The spatial organization explains how each “spatial element” (Abiden, 1981:55) is related to each other and illustrates their relationships to each other. The results from the survey have shown that there are 8 spatial elements defined according to its use and location: Front entrance (F), Hall (H), Service area (S), Back area (B), Room (RM), Roof deck (R), Terrace (T), and Circulation (C). All these spatial elements have two ways of relationships to one another: loose and strong relationship.

Front entrance (F) is a space in front of the shophouse. It generally connects to a front public space or a street. It is one of the spatial definition conflicts either public or private space. It is normally defined by the Terrace (T) over it. Mostly, inhabitants claim it by adding overhang, furniture, plants, or putting different pavement materials to distinguish it from the public

pathway. This area can be rented for a vendor shop or small booth.

Hall (H) is a space inside next to the Front entrance (F). This space is a multipurpose area, which can serve either living or commercial function or both. As its physical design, it normally has double height volume with small windows on the front façade for natural lighting and ventilation.

Service area (S) is all service functions such as kitchen, bathroom, washing area, and drying area. These areas are normally not provided in the original shophouse; thus, the inhabitants will add them in the middle of the shophouse or extend to the back or locate it on the Roof deck (R).

Back area (B) is a space from the rear property line to the shophouse. According to the regulation, the shophouse must provide at least 3 m. as the building set back. However, the inhabitant often extends a area to the back of the shophouse. In many cases, the Back area is used as a service area.

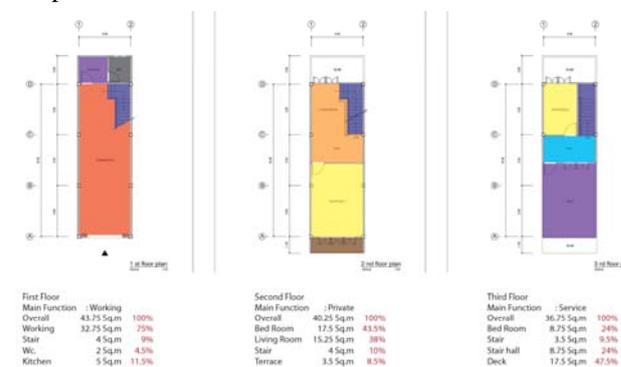
Room (RM) is an enclosed (defined by the internal wall) or unenclosed space (defined by furniture or equipment) on each floor. It can apply any function depending on the inhabitants’ preferences, except from the functions that are mentioned in Service area (S).

Roof deck (R) is a space on the top which happens only on the flat roof type. It is usually considered as a vertical extension of the shophouse. Room (RM) can be built for various purposes such as bedroom or service functions.

Terrace (T) is normally on the front façade. It is extended about 1 m. connecting the private and public for recreation purpose. However, it is often used for service purposes such as drying clothes, placing air conditioning system, and planting potted plants.

Finally, Circulation (C) connects spatial elements of the shophouse together. The physical element of this is stairs which normally attached to one of the party walls at the back of the shophouse.

Figure 2: The plans present a spatial organization of a shophouse.



As a result, a conclusion can be drawn regarding spatial organization of the shophouse;

- Hall (H) varies in size; however, it is placed at the front. As its large volume, double-storey height, it creates a sense of welcome and offers an opportunity for creating a commercial space. The Hall (H) can be divided into Room (RM) for other activities. The

more inner, the more private and informal activities will there be.

- Room (RM) also varies in size depending on its uses and purposes. It is often located in the middle of the ground floor. In contrast, on the upper floors, a main priority Room (RM) will be located next to the front and back façades; while the second priority room will be put at the inner area next to the major one.
- Service area (S) is often located at the back and sometimes on Roof deck (R). However, on the upper floors, service area can be placed in the middle or at the back. This exemplifies a Thai culture that private and service spaces should be away from the public.
- Terrace (T) is a controversial space. Terrace (T) is normally a private realm, but it also expresses the private to the public (Krier, 1983:64). It has less relation with the public, except for visual connection. Often, it is served as service area. Its original essence has been lost.

Physical Character

The physical elements study emphasized on the level of dominance and (hierarchical control) (Habraken, 1998:30). The level concept explains the control ability for adjusting and transforming physical elements based on restrictions of the higher level. At the same time, the physical elements of the lower levels are moved or changed according to the restrictions given by the higher level elements. In the shophouse, the highest level elements are major structures: columns, beams, floor, and roof floor. The lower level elements are floor finishing, party wall, internal and external walls, and stairs. The lowest level elements are furniture and household equipment (which is not the main study in this paper).

The column is 20 x 20 cm. reinforced concrete. It determines the boundary of the shophouse: height and width. It is also a shared element among units. As the built-modular structure of 4x4 m. module (The width is normally 4 m.), the columns give a ratio expansion (width: length) of 1:1 up to 1:6 toward the back. Sometimes, the head of the columns are left on the top for future expansion on Roof deck (R).

The beam and floor structure is normally prefabricated concrete planks on beams in the interval floors; however, the ground and roof floor are cast in floor slab. The roof normally has two types: flat roof and tilt roof. The flat is the most popular as it allows the building expansion and used for drying cloth and recreation.

The lower level elements are party wall, internal wall, and stairs. The party wall is shared between each unit. It can be identified in two levels; higher or lower level. This depends on the control ability of users. In case one owner has two units, the party wall can be demolished or changed. Otherwise, the adjustment or modification is prohibited. According to the regulation, the material used must be fire-resistant; therefore, brick is the first choice because it is cheap, available, and suited for labor skill. The internal wall which divides the interior spaces is mostly lightweight materials: wood,

gypsum board, glass panel, etc. This has the most impact on the spatial quality: atmosphere, lighting condition, and ventilation.

The shape and location of stairs have great influence on the space usage. The shape is regularly L-shaped as it suits to the rectangular plan of the building. Its location is at the back of the shophouse to give more area for the front part for the commercial purpose. However, on the upper floors, it causes too huge area at the front; thus it causes the middle part's inefficient use and dark when the internal wall is added.

Figure 3: The stairs at the back causes the middle area inefficiently used and dark. (Photograph: Tirapas)



Stylistic Character

The stylistic character of the shophouse mainly focuses on both façades: the front and back. The façade represents the activities, functions and social status of inhabitants toward the public; thus, the front façade has been designed and has applied various elements to serve as the public representation. The back façade is less public but more of private and service functions. Thus, the back facade has fewer elements than the front facade.

According to pedestrians' perception, the front façade can be seen into two levels: ground and upper floors. The ground level is seen on the pathway level. It is an area where the public and private are connected (Krier, 1983:52). The façade of ground floor can be seen in two different types: totally open and window display. The totally open front shop is applied to those that are more of public activities. The operating door is steel shutter or wooden folding door. The window display is for enclosed or private activities. The window display materials are glass panel or glazing with aluminum frame. The shop sign is placed above the door or put on the window display.

Figure 4: Left: The ground level, Front entrance (F), reflects the function of the shophouse. Right: Terrace (T) is used for service functions. (Photograph: Tirapas)



The upper level can be seen from a distance, on or across the street which emphasizes the city image. The upper floors are more private; thus, the windows can link the inside and outside together. It normally has 3-4 wooden or aluminum windows, a door to go out to Terrace (T), and concrete shading devices.

The window is the main source of natural light and ventilation. The inhabitants normally add curtain or overhang shading to protect the strong direct sunlight. For the commercial shophouses, the façade will be partial or totally covered with commercial billboards. This is the most problematic issue for the natural lighting and ventilation of the shophouse.

Public and Private Use

From the study, the spatial organization reveals the relationship between public and private use in the shophouse. The Front entrance (F) is the most public area; while the public degree is lesser at the inner areas and on the upper floors. However, the Back area (B) is frequently used for the service functions. The Back (B) and Service areas (S) can be viewed as private for the inhabitants, which are put at the back and upper floors.

The Roof deck (R) and Terrace (T) are mostly used for service activities. But both areas lack of the relationship to the outside environment. This results from the climate and city pollution. Terrace (T) is a controversial space. It can be viewed as private and public depending on the degree of inhabitant's use.

Circulation (C) is not only the linkage but considered as unclear function. In some cases, especially on the upper floors, it is a multi-purpose area either for public or private uses. Hall (H) is most public space in the shophouse, while Room (RM) is most used for the private activities. These are the best defined of use.

Change Usages and Location

As mentioned, the shophouse is the changeable building. The spatial elements are Hall (H), Room (RM), Roof (R), and Circulation (C). These elements are different in sizes but generally remain at specific locations. The Front entrance (F) and Terrace (T) relate to its appearance to the public. It can be changed according to inhabitant's purposes and uses. The Back area (B) and Service area (S), on the other hand, are more fixed at specific locations. It can change in size but not as much as other spatial elements.

This indicates a variation of representation and interpretation of the shophouse. Various sizes and proportions can be defined as individual preferences and interpretations; however, the basic system, parts and relations, are constant (Habracken, 1988).

Change Usages, Structure, and Façade

The dominant level limits changes abilities. The lower level is the important part being controlled by the inhabitants. The living quality can be increased with a natural lighting and ventilation at the materials and opening of the internal wall (Chuntamara, et al., 2010). The stairs also play an important role of planning Room (RM) and Circulation (C).

The windows and doors on the external walls are difficult to change because of its cost effectiveness and construction methods (brick wall). Moreover, the billboards covering the façade have limited the degree of receiving natural lighting and ventilation.

Suggestion

All three characters of shophouse are related. The physical characters are the key to possible changes. Therefore, to improve the quality of living, the level of control is the main idea. The physical elements both the dominant and the lower ones must be carefully designed. The main physical structure as the dominant elements should be designed to support the spatial organization and to allow changes.

The stairs should be put in the middle; therefore, Room (RM) can be on the front and back sides to receive more natural light and ventilation. The internal and exterior walls should be separated from the dominant physical elements so it becomes easy to change and to meet natural lighting and ventilation needs to the interior activities. This idea will bring the inhabitants in the process of design for their own spaces, uses, and express identities toward the public.

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