

## **The Significance of the Traditional Courtyard Components of Shophouses in George Town, Penang Malaysia**

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### **Abstract**

A courtyard is an architectural design component commonly applied in tropical buildings for its social and environmental purpose. The traditional courtyard shophouses in George Town, Penang in Malaysia were influenced by the eastern and western cultures. The city of George Town was added to the UNESCO's world heritage list in 2008 to acknowledge its rich cultural heritage that constitutes of unique architectural and cultural townscape along the Straits of Melaka. In many researches, the style of shophouse (eclectic style) will be called for a building that is greater than hundred years. They are rich in design and art components featured in its architecture that is still surviving until today. This unique type of structure clearly shows the influences of Chinese, Malay, Indian and European styles; matured and merged together in response to the local environment. From the Chinese influence, in the courtyard was introduced. The courtyard is a significant typological element in a shophouse. In George Town, the traditional courtyard shophouses have characteristics that are appropriate for the local region. However, most traditional shophouses faced alterations and deterioration and become a major concern in Penang. In addition, there has been a tendency proven since over thirty years ago of excessive replacement the traditional courtyard houses with multi-storey buildings. All of these have seriously affected the cultural continuity of the traditional shophouses form. This paper employed the qualitative research approach that obtained data from the observation and secondary sources to understand the design of the traditional courtyard architectural components of shophouses. The findings of the research point towards the understanding of the significance of the traditional courtyard, environmental aspect and design variants of shophouses.

**Keywords:** Courtyard Function, Design Variants, Environmental Aspect

### **Introduction**

A courtyard is an architectural design element commonly applied in tropical buildings for its social and environmental. However, effort to examine its usage and design variants is limited. This paper focuses on the application of courtyards in the context of traditional courtyard architecture of eclectic style shophouses of George Town, Penang. The courtyard shophouse patterns could be found in many parts of Malaysia, but the most typical forms are those located in two Old Heritage Cities in Penang and Melaka, since over two hundred years ago. Furthermore, these cities were successfully added to the UNESCO's world heritage list in 2008 to acknowledge its rich cultural heritage that constitutes of unique architectural and cultural townscape along the Straits of Malacca. This traditional courtyard shophouse architecture depicts an exciting heritage, especially the courtyard styles and popularly known as the courtyard house. Nevertheless, the air well functions as an internal courtyard which is typical of residences all over China. In fact, it is rich in design and art components feature in its architecture that is still conserved until today. The Straits Eclectic Style came about during a prosperous era in the history of George Town in between the 1840s to 1910s. It was also during the period when George Town experienced an influx of Chinese immigrants. The paper concludes with an outline of means to optimise the significance of courtyard in architecture of shophouses.

## Literature Review

### Courtyard Function

A courtyard is a common architectural feature that has been applied for thousands of years in many parts of the world particularly in shophouses. Courtyards were often the primary meeting places for specific purposes including gardening, cooking, working, playing, sleeping (Edwards et al., 2006). As an open space within a cluster or urban fabric, courtyard fulfils various functions, social, leisure and microclimate. The importance of such a space was by their being located in central sites within the urban fabric or building. Surrounded by arcades and colonnades, paved, landscaped with water bodies, various plants, shade and light, they all played an important role in our social and working life (Meir, 2000). Moreover, courtyard as a space can provide climatic as well as visual or acoustic protection. The courtyard geometry as well as its material makeup should be considered in the design stage in order to provide the highest level of thermal comfort possible (Meir, 2000). In addition, the courtyard was developed to be climate responsive. Furthermore, the courtyard can be utilized as an appropriate place for promoting natural, healing environment. According to Rust (2010), architects could place healing components of nature in courtyards within the building footprint of shophouses, along with windows at the end of corridors to allow natural light to filter through to the public and private areas. Shade, water, trees and flowers, wind, pavement, and colours could induce positive effects towards the five senses of the human body.

### Courtyard Configuration

A courtyard does not have a fixed plan. Although the basic plan of a residential courtyard is usually rectangular or square, it can also be circular or curvilinear. Through history, this basic plan of the courtyard has been modified to fulfil many environmental aspects such as topography, site restriction, building orientation and function to create new shapes of courtyard such as U, L, T or Y (Das, 2006; Reynolds, 2002). However, the plan design in surfaces tends to be rectangular or square most often. In addition, the design form of courtyard can be fully enclosed (four sided), semi enclosed (three sided) or in some cases even two sided (Meir, Pearlmutter & Etzion, 1995). The courtyard form also has been applied in multistorey housing. Furthermore, the courtyard shophouse, a residential compound with buildings surrounding a courtyard on our (or sometimes three) sides, has been representative of housing patterns for over one thousand years (Liu & Awotona, 1996).

The early shophouses were narrow in its width and higher in height. Usually, the width will be around six to seven meters followed by thirty meters in length by which sometimes can be up to sixty meters. The narrow façade which is usually less than ten meters in width is due to taxation rules imposed by the British (Ahmad, 1994). They imposed the tax by the number of windows per façade. Shophouses were built side by side with a common party wall. The walls were built out of bricks and were plastered. One of the typical interior features is the courtyard (air-well), also known as the 'deep well', located inside the center of shophouses, is an interior courtyard space rising from a sunken well or sink to the roof eaves. The traditional courtyard shophouses are long internal spaces with no openings at the side of the shophouses require the use of several courtyards (air-wells) (Figure 1). It enhances ventilation of the shophouses and lights up the rear section to ensure a good air flow (Zwain & Bahauddin, 2015).

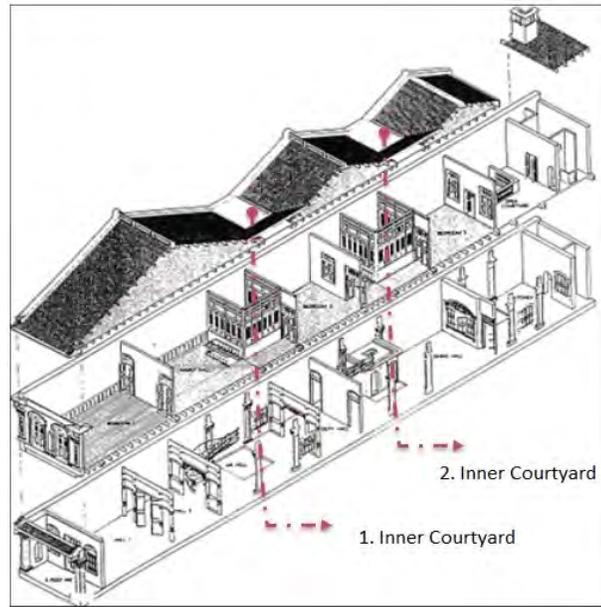


Figure 1: Axonometric Views of a Typical Shophouse  
 Source: George Town Historic Cities of the Straits of Malacca Book

Courtyards of shophouses were originally designed to be fully open to the sky in order to function effectively as natural ventilation assisting in the natural evaporation of groundwater from the breathable walls and floor. Tan (2015) stated that at one time people began to install sliding roofs with polycarbonate sheet coverings. The effect is that air circulation and natural ventilation are reduced by at least 60 per cent, which may cause further problems to the building. Such installation often damage timber or roof eave features. Concerns for security have seen the introduction of timber and metal grilles at a high level. Again, this may cause damage to the original fabric and reduce the natural ventilation and the general well-being of the traditional shapes in the George Town city, Penang.

### Methodology

This paper applies a qualitative research method depending on observation through phenomenology documentation. The information collections such as visual data and secondary data are gathered. This will be supported by the architectural detail studies on the traditional courtyard shophouses (Malay: rumah kedai) built in between 17th to early 20th century. Not many other researchers investigate on the traditional courtyard shophouse. Most traditional shophouses faced alterations and deterioration and become a major concern in Penang, it is crucial to study the significance of the traditional courtyard, environmental aspect and design variants of shophouses.

### Result of the Analysis

#### The Traditional Courtyard Architectural Components

Traditional courtyard shophouses are analyzed within the city of George Town, Penang (north of Malaysia). A courtyard is a form of construction that have a presence since the humans started to build their houses (Bridson, 2012). Moreover, the courtyard is an architectural component that suits the local culture and local society (Knapp, Ong & Wang 2010). Furthermore, the elements

of interior space are the major entities that provide meaning to the overall space. Elements of the interior space define the space, thereby creating boundaries, and play an important part in defining the function of space. These elements provide identity and authenticity to the interior space (Tahir, Usman, Ani, Surat, Abdullah & Nor, 2005). The best examples of 17<sup>th</sup> to early 20<sup>th</sup> century architecture for courtyard shophouses in Malaysia can be seen in the cities of Penang and Maleka (Khoo, 2007). Interior elements in traditional courtyard shophouses in George Town has not been adequately researched. To fill this gap, this study aims to identify the common interior design components in traditional courtyard shophouses in Malaysia in contrast to those of traditional courtyard shophouses in the old George Town city.

### **Courtyard Functions of Shophouses**

The traditional courtyard shophouses has been utilized for many purposes through the history of the George Town city in Penang, Malaysia. The courtyards fulfil five main functions. Courtyards were utilized as a garden, daylight element, ventilation system and playground (Figure 2), shows that almost all the courtyards are utilized as gardens as well as for daylighting as well as natural air purposes. These open-to-sky spaces may be backyards, small air wells and most commonly, internal courtyards. Depending on their size, these courtyards may be landscaped spaces for quiet reflection, places to dry laundry, vents for cooking fumes or toilet odours or spaces for any number of household activities.



*Figure 2: Air Well Improves Ventilation of Shophouse*  
Source: Architecture Department of Taylor's University, (2015).

Chinese strongly believe that water represents 'wealth' and hence they designed drain pipes in a way to force rainwater flowing around the house first before being discharged into the drain outside. This design ensures that wealth (rainwater) will circulate within the house for a long time spent. Some families have also constructed an indoor well to store rainwater, directed from drain pipes. The outlets of these drain pipes were often moulded into interesting fish sculptures. The first air well area also serves as a recreation place where families playing *mahjong* and *cherki* (card game in Hokkien) under the void. It leads into the ancestral hall on the ground floor (Elnokaly & Wong, 2015).

### **Design Variants of Courtyard**

The design variants of traditional courtyards of shophouses, such as its shape, size and details of the enclosing structure or walls of a courtyard vary among regions and functions and in some cases among houses or building owners. Semi enclosed courtyards are the common courtyard shape of shophouse buildings (Figure 3), shows that out of 3 traditional courtyards of shophouses, the most common geometric form is rectangular.

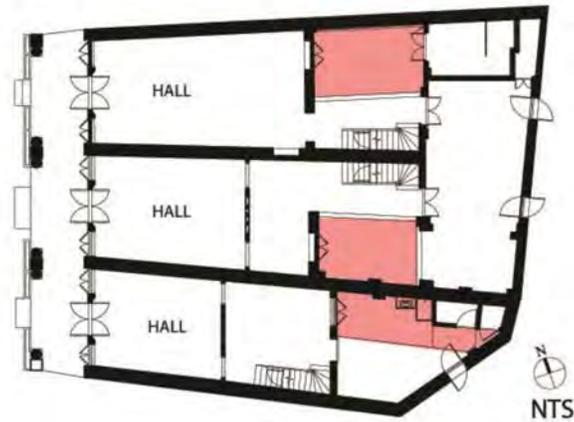


Figure 3: Locations of Air Wells at Ground Floor  
 Source: Measured Drawing Lorong Ikan, Penang Group, 2016

### Conclusion

This paper has presented about the significance of the courtyard architectural shophouse style by which the uniqueness identity came through the vernacular authentic Chinese. It can be seen in the spatial layout, which strongly represented the ancient Chinese beliefs related with mainland dwelling. The research findings of this study has brought the author towards a significant understanding of the specific of traditional courtyard architectural components and cultural influences that govern the design of the traditional courtyard shophouses, concerning with functions and design variants of courtyard of eclectic traditional courtyard shophouses style, George Town, Penang. These shophouses are perfect example of architecture that fully utilized materials which are locally available such as lime, clay stone and timber. There are similarities observed between shophouses possessing architectural features such as air vents and courtyard (air well) that help to provide the building with natural cooling and its ventilation within the building itself. However, the massive urbanization has led towards the destruction of the built cultural heritage building as well as creating new challenges for the intangible cultural heritage. A traditional courtyard shophouse ought to revamp the presents of conventional structure in order to enhance the building performance toward greener design in parallel to support the sustainable development. As thoroughly discussed, the courtyard houses with major traditional features are here to stay. This is to ensure that the presence of shapes and its distinct architecture would be well preserved in the future. The only exception is that some changes are being (or are about to be) made to the old style of the courtyard houses, which is a reflection of the social and cultural changes. Apart from that, this could also be secured with the protection of World Heritage Site, UNESCO.

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