

THE ENVIRONMENT AND *FENG SHUI* APPLICATION IN CHEONG FATT TZE MANSION, PENANG, MALAYSIA

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ABSTRACT

Feng Shui, literally translated as wind and water, forms part of the Chinese traditional architecture theory. The philosophy aims to achieve harmonious equilibrium among nature, buildings and people. It continues to be used in dwelling site selections and layout of buildings as well as in the environmental planning, especially in the Form School *Feng Shui* school of thought. It focuses on site analysis, landscapes and building placements with emphasis on designing with nature and the environment. This *Feng Shui* approach can be traced in the building design of the *Peranakan* style architecture of Cheong Fatt Tze Mansion, a unique architecture in George Town, Penang. It is a mix of Chinese, Malay and colonial building styles. Unfortunately, this mansion has not been verified with the *Feng Shui* approach in relating the architecture with nature, despite a claim that was made of its application and for other buildings of the same style. This study addresses the cultural sensitivity of this architecture as a case study in embracing nature for its *Feng Shui* application. Qualitative analysis was employed to determine whether the design of this mansion corresponded well with favourable architectural conditions placed in the environment as stated in the Form School approach. The method applied included measured drawings, ethnography study of the *Peranakan* culture, interviews with identified *Feng Shui* masters and the mansion's owners. The mansion's architectural design conformed to the philosophy adapted from the Form School approach, especially in the architectural language. The conformity further addresses challenges and opportunities in pursuing the sustainable design approach based on the significance of *Feng Shui*, pertaining to the minimum use of energy and exploitation of natural ventilation and natural lighting. The *Feng Shui* Form School approach has significantly demonstrated the interrelationships between the architecture and the environment, specifically in this *Peranakan* architecture of Penang.

Keywords: *Feng Shui, environment, Form School, Peranakan architecture.*

1 INTRODUCTION

Feng Shui forms an integral part of traditional Chinese architecture theory. According to Lee [1], *Feng Shui* has been employed to aid in site selection for dwellings as well as building layouts. This timeless philosophy which emphasises harmonious relationships between man and nature is generally divided into two schools of thought known as the Form School and the Compass School [2]. While the latter focuses on astronomical factors and calculations, the former focuses on site analysis of landscapes. This study focuses on the Form School approach as it places emphasis on designing with nature and the environment. Furthermore, this approach has been recognised to have logical construction basis for use in building environment analysis [2], [3]. On closer inspection, the influence of the Form School *Feng Shui* approach can be identified in the design of *Peranakan* style architecture in George Town, Penang, Malaysia (Fig. 1); notably the Cheong Fatt Tze Mansion. In general, *Peranakan* architecture, also known as Straits Chinese architecture celebrates the confluence of Chinese, Malay as well as Javanese, Batak, Thai and European cultures in its design [4], [5]. Although Cheong Fatt Tze Mansion forms a unique cultural heritage with hybrid architectural style and Chinese influences, the adaptation of the *Feng Shui* Form School approach in the mansion's design and layout relating architecture with nature has yet to be verified. Furthermore, the principles of *Feng Shui* Form School approach have not been





Figure 1: Penang and South-east Asia region [6].

studied together with the *Peranakan* architecture. Thus, this study addresses the cultural sensitivity of the *Peranakan* architecture through a case study of the Cheong Fatt Tze Mansion to understand how its architecture embraces nature for its *Feng Shui* application.

2 LITERATURE REVIEW

2.1 *Feng Shui*

According to Mills [7], *Feng Shui* is difficult to define due to its extensive history with various terms used to denote this theory throughout its development. Before the term *Feng Shui* was used, *Kan Yu* was one of the most commonly used terms. The term *Kan Yu* refers to observing the way of heaven and investigating the way of earth [8]. Today, according to Mills [7], the term *Feng Shui* is widely used to illustrate the theory as a form of art, science, a body of knowledge, a way of discerning the environment as well as superstition. However, *Feng Shui* scholars found that *Feng Shui* has reasonable logical value rather than mere superstitious [9]–[11]. In fact, *Feng Shui* which translates literally to “wind” (*Feng*) and “water” (*Shui*) is based on the examination of astronomical and natural phenomena as well as human behaviour [12]. While in the past, *Feng Shui* was used to determine the location of houses or graves [2], this theory is now continually used and explored as part of traditional Chinese architectural theory for site selection of dwellings and building layouts [1]. According to Mak and So [2], the practice of *Feng Shui* theory is divided into two schools of thought, influenced by the development and achievement of science, technology, architecture, philosophy, astronomy, medicine, culture and literature in China. The two schools of thought are the Form School and the Compass School [2]. The Form School, the older of the two focuses mainly on site analysis of landscapes while the Compass School is fundamentally governed by astronomical factors and calculations using *Luopan*, a *Feng Shui* compass [13]. As time progresses, principles of the Form School approach continue to form the core of *Feng Shui* practice even though new systems and criteria are established by contemporary *Feng Shui* practitioners [2], [3].

2.2 The Form School

Contemporary *Feng Shui* scholars and researchers recognise the Form School approach as the most influential approach in analysing built environment [3], [14]–[17]. According to Skinner [13], He and Luo [18], design and construction of castles, palaces and towns in China have been using *Feng Shui* principles since ancient times. The Form School approach examines the physical surrounding of a site in order to identify the flow of *Qi*, believed to be the cosmic spirit giving life and energy to all things [13]. Based on *Zang Shu* (The Book of Burial) by Guo Pu, *Qi* can be moved by the wind (*Feng*) and collected in water (*Shui*) which are the two main elements in *Feng Shui* [19]. The basic observations in Form School approach are the form of mountains and hills, the flow of the water, and the relationship between hills and water. While there are different criteria being developed by contemporary *Feng Shui* scholars, the principles of the Form School approach still remain [2], [3]. Built upon various contemporary *Feng Shui* scholars' design criteria, Mak and Ng [3] and Mak and So [2] introduced the *Feng Shui* concept design criteria. In this paper, the *Feng Shui* concept design criteria were employed in the research as it adopts the principles and practices of Form School approach. Each of the criteria clearly specifies favourable and unfavourable conditions. This paper will focus on both the external and internal layout criteria to understand how the architecture of Cheong Fatt Tze Mansion of the *Peranakan* architecture embraces nature for its *Feng Shui* application (Table 1).

2.3 *Peranakan* architecture

Peranakan or Straits Chinese architectural style (Fig. 2) is influenced by the *Peranakan* culture born from the long history of the *Peranakan* or *Baba Nyonya* community who settled in the British Straits Settlement, known subsequently as Straits Chinese Settlement. Influenced by a confluence of Chinese, Malay, English and local cultures [20], the cultural practices of the *Peranakan* seeped into everyday life from language, food, daily apparels as well as the architecture throughout Malaysia especially in Penang and Malacca as well as in Singapore. Dwellings of the *Peranakan* in the maritime towns portray a fusion of European,

Table 1: *Feng Shui* concept design criteria [2].

Favourable Conditions for <i>Feng Shui</i> criteria	
Criteria	Condition
Front of the site	Level ground and open space in front.
Rear of the site	Back with mountain and building.
Sides of the site	Surrounded by buildings and plants.
Orientation	South and East facing.
Trees	Trees on the sides of building and on the West side.
Pond	Pond in front yard and close to building.
Layout	Kitchen on the perimeter.
Windows	South and East facing.
Unfavourable Conditions for <i>Feng Shui</i> criteria	
Criteria	Condition
Topography	Level.
Street Location	Corner of street.
Windows	North and West facing.



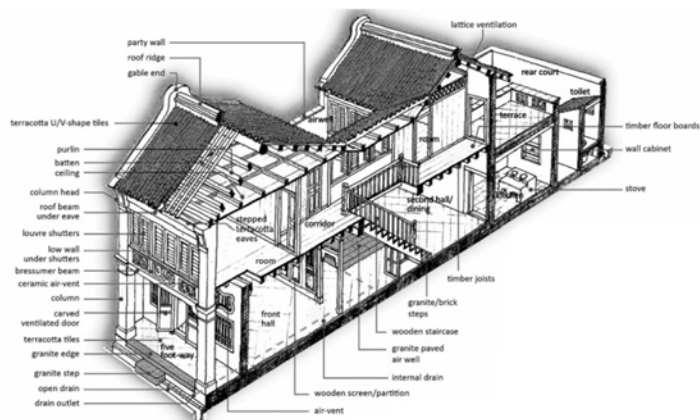


Figure 2: Sectional layout of a typical *Peranakan* shophouse [21]–[24].



Figure 3: Site surrounding of Cheong Fatt Tze Mansion.

Chinese and Malay influences which came to be known as “Chinese Baroque” architecture due to significant influences of Chinese and European building styles [4].

In terms of architectural language, *Peranakan* dwellings are symmetrical in their layout with the entrance located at the middle and windows flank both sides of the façade. On the exterior, typically a *ji-ho* – a Chinese inscribed signboard will be hung above the ornately carved entrance door known as the *pintu pagar* [4]. Wood carved ventilation openings with symbolic decorations are also common exterior features [5]. *Peranakan* architecture’s internal layout is generally made up of a reception hall, an ancestral hall, kitchen, bedrooms as well as introduction of an air well or courtyard in bigger homes. A significant characteristic of *Peranakan* architecture, the introduction of air wells in the centre of dwellings is reminiscent of Chinese courtyard houses and affords enhanced ventilation and interior day lighting into the usually deep plan of shophouses (Fig. 3) [4].

3 METHODOLOGY

The ethnography study of *Peranakan* culture was undertaken with Cheong Fatt Tze Mansion selected as the case study. To understand the Form School *Feng Shui* approach in the design of this mansion, the design criteria developed by Mak and Ng [3] and Mak and So [2] was adopted in this study. Interviews with the mansion’s owners were undertaken during the site visit. After the site visit, a qualitative analysis using measured drawings were employed to determine whether the design of the Cheong Fatt Tze Mansion corresponded well with

favourable architectural conditions placed in the environment as stated in the Form School approach. Findings were then confirmed through interviews with identified *Feng Shui* masters.

3.1 Ethnography study

The culture of the Baba-Nyonya is strongly embedded in this architecture. It depicts a blend of many cultures of Malaysia, a blend of the Chinese culture brought in from the mainland; the British colonial influence that was imported from England as well as the Malay cultural elements that can be observed in the tropical architectural components.

3.2 Cheong Fatt Tze Mansion

Cheong Fatt Tze Mansion, also widely known as the Blue Mansion was built by the Chinese immigrant merchant Cheong Fatt Tze at the end of the 19th century [22]. The mansion is famous for its opulence and eclectic architectural elements as well as *Feng Shui* application. According to Loh-Lim [23], its architecture demonstrates Cheong Fatt Tze's captivation with western artisanship and his rising significance as a Chinese official and reflects both national and regional influences with a distinct mixture of materials, motifs, decorative style as well as architectural language.

3.2.1 Architectural elements of Cheong Fatt Tze Mansion

Cheong Fatt Tze Mansion is an example of an eclectic mix of styles with contrasting elements such as Scottish cast-iron balusters with Cantonese timber lattices as well as English Art Nouveau stained glass windows with Hokkien "*Chien Nien*" (cut and paste shard works) (Figs 4–7) [23]. The architectural elements of the Cheong Fatt Tze Mansion are summarised in Table 2.

3.2.2 *Feng Shui* application

According to Dijk [25], Cheong Fatt Tze Mansion has been noted as a dwelling with perfect *Feng Shui* by geomancers. It was recorded that the mansion was built under the supervision of some of the best *Feng Shui* experts of the period [26]. Nevertheless, while there were few elements of *Feng Shui* identified by Skinner [26] and Loh-Lim [23] (Table 3), the identified *Feng Shui* elements were not clearly defined and classified into the two different schools of thought. Apart from that, most of the identified elements were found to be related to the Compass School. This study thus looks into the application of Form School approach in the Cheong Fatt Tze Mansion.

3.2.3 Cheong Fatt Tze as a case study

There were two reasons Cheong Fatt Tze was chosen as the case study. Firstly, the characteristics of the mansion such as architectural style, exterior and interior features, reflect those of *Peranakan* architecture as shown in Table 4. Secondly, the application of *Feng Shui* was recorded during the construction of the mansion.

4 FINDINGS

In general, while the layout of the mansion was built based on the Form School approach to *Feng Shui*, the façade design as well as materials and detailing of the mansion adhered to *Peranakan* Architecture characteristics with its eclectic mix of exterior and interior features as described in Table 4. As rather than concentrating on the overall stylistic characteristics



Figure 4: Terracotta roof tiles and decorative mosaic porcelain.



Figure 5: Timber filigree carvings and coloured tiles.



Figure 6: Victorian Scottish cast-iron columns and railings.



Figure 7: Stained glass panels.

Table 2: Architectural elements of Cheong Fatt Tze Mansion [24].

Architectural Elements	Description
Roof	Terracotta roof tiles.
Timberworks	Timber filigree carvings, teak beams, solid paneled doors with craved architraves and timber louvered windows.
Ironworks on balustrades, columns and spiral stairs	Victorian Scottish cast-iron columns and railings.
Stained glass windows	48 Art Nouveau stained glass panels.
Decorative paintings	On gables of the buildings, beams border at the main courtyard, and internal walls.
Decorative mosaic porcelain works	Porcelain works with elaborate patterns of men, women, animals and sceneries depicting Chinese mythology.
Plaster and paint	Lime plaster and lime wash paint.
Tiles	Coloured tiles imported from Stoke-on-Trent in Staffordshire, England.

Table 3: Identified *Feng Shui* elements in Cheong Fatt Tze Mansion [13], [23].

Identified <i>Feng Shui</i> elements in Cheong Fatt Tze	
1.	Orientation of the building unparalleled to Leith Street.
2.	Five Courtyards.
3.	Drainage System.
4.	Three bays wide as odd number considered as Heaven numbers.
5.	Gold coins buried at strategic place.
6.	Period of construction.

Table 4: Characteristics of *Peranakan* architecture and Cheong Fatt Tze Mansion [24].

Characteristic	<i>Peranakan</i> Architecture	Cheong Fatt Tze Mansion
Architectural style	A mixture of Chinese, Malay, Batak, Thai and European elements.	A mixture of Chinese, Malay and European elements.
Exterior features	Symmetrical organisation.	Symmetrical organisation.
	Five-foot walkway at the front of the building.	Five-foot walkway at the front of the building.
	Security bars on windows.	Security bars on windows.
	Gable and pitch roofs.	Gable and pitch roofs.
Interior features	Cast iron for the pillars and balcony balustrade.	Victorian Scottish cast-iron columns and railings.
	Coloured tiles from all periods: Victorian, Edwardian, Art Nouveau, Art Deco, 1950s and 60s pop art.	Coloured tiles imported from Stoke-on-Trent in Staffordshire, England.
	Air well.	Five air wells.
	Plaster ceiling ornaments.	Plaster ceiling with decorative works in the form of peonies and gold butterflies in the corners.
	Ventilation opening or partition was carved in wood with decoration.	Timber partition between main hall and central courtyard was carved in wood with decoration.
	The front hall or sitting area functioned as reception hall while the dining room; rear verandah and side rooms are the private family area.	The main hall functioned as reception hall while the dining room, rear verandah, and side rooms are the private family area.
	Antique furniture.	Antique furniture.

of buildings, the Form School approach focuses mainly on the overall setting, orientation and space planning of the mansion. Thus, findings of this research reveal that the mansion's architectural design conformed mostly to favourable conditions adopted from the Form School approach, especially in its external and internal layout. Table 5 depicts findings of favourable criteria while Table 6 shows the unfavourable criteria as well as a solution to mitigate the situation. It is imperative to say that the architecture of the Cheong Fatt Tze Mansion although is seen as applying the traditional beliefs of *Feng Shui*, the building has exhibited its agreement with nature to strengthen the understanding of *Feng Shui* of having practical applications in this architecture. The favourable conditions have allowed the

Table 5: Favourable conditions for *Feng Shui* criteria in Cheong Fatt Tze Mansion.

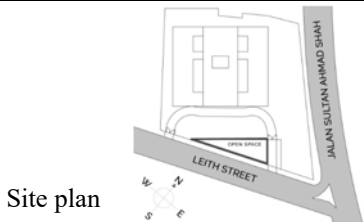



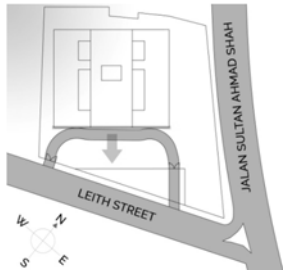

<i>Feng Shui</i> criteria	Diagrams	
<u>Front of the site:</u> Level ground and open space in front.		
	The mansion's main entrance fronts a level ground with a big open lawn, conforming to favourable conditions of the form school criteria. Coupled with the front windows and air wells in the mansion, this configuration encourages cross ventilation into the interiors effectively.	
<u>Rear of the site:</u> Backed by mountain and building.		
	A favourable condition prescribed by the form school approach is to have the rear of the mansion backed by mountain (Penang hill) and buildings. The mansion is seen to conform favourable to this criteria which provided shade and reduced the exposure of the rear to the hot sunlight of the tropical climate.	
<u>Sides of the site:</u> Surrounded by buildings and plants.		There were buildings and plants on both sides of the mansion, which shaded the exterior façade of the mansion from the direct east–west sun exposure, thus lowering down the surrounding temperature.
<u>Orientation:</u> Facing South and Facing East.		
	The mansion's front façade orientates towards South and East conforming to the favourable conditions, minimising impact of the hot evening sunlight into the internal spaces within the building.	

Table 5: Continued.



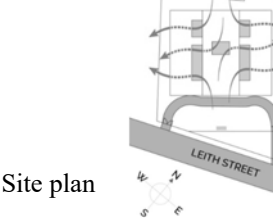




Feng Shui criteria	Diagrams	
<p><u>Trees:</u> Trees on the sides of the building and on the West side.</p>	<p>Site plan</p> 	
<p><u>Pond:</u> Pond in front yard and pond close to building.</p>	<p>Site plan</p> 	
<p><u>Layout:</u> Kitchen on the perimeter area.</p>		<p>Ground floor plan</p>
<p><u>Windows:</u> Facing South and Facing East.</p>	<p>Site plan</p> 	
	<p>The mansion had windows located at the South and East as recommended in <i>Feng Shui</i> as the location of the windows are able to minimize the hot evening sunlight while maximizing daylight into the internal spaces.</p>	

Table 6: Unfavourable conditions for *Feng Shui* criteria in Cheong Fatt Tze Mansion external and internal layout.


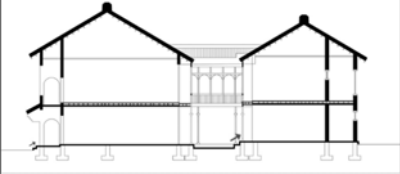
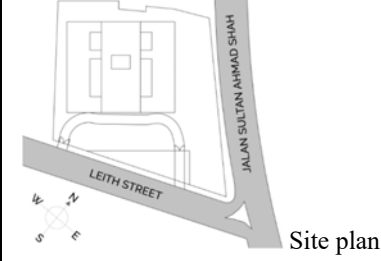
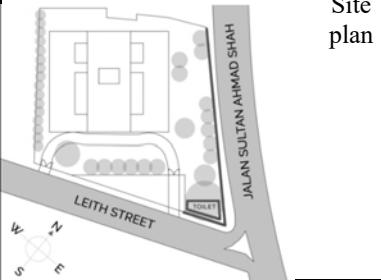

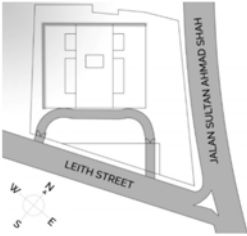


<i>Feng Shui</i> criteria	Diagrams	
<u>Topography:</u> Level		
	While a level ground in front the mansion is considered favourable, topography wise, a level ground for the whole mansion layout is considered unfavourable. One of the reasons may be due to the possibility of flooding from the surrounding into the interior spaces.	
Solution	 Section	As a solution to the unfavourable existing topography level, the mansion introduced steps up from the front lawn into a portico before entering the main entrance of the mansion.
<u>Street Location:</u> Corner of streets	 Site plan	In terms of location, for a building to be located at the corner of the streets are considered unfavourable. This condition may be due to noise and air pollution, especially at street intersections.
Solution	 Site plan	 High perimeter wall Toilet area
	While the mansion is located at a corner between two streets, to counter this unfavourable condition, high perimeter walls were erected along the perimeter of the two streets. In addition, the mansion was set back significantly from the streets and injected greeneries as well as service area on either of these two perimeters.	

Table 6: Continued.

<i>Feng Shui</i> criteria	Diagrams	
<p><u>Windows:</u> Facing North Facing West</p>	 <p>Site plan</p>	<p>Orientation of windows on the façade to the North and West are under unfavourable conditions as internal spaces would be more exposed the hot evening sunlight.</p>
<p>Solution</p>	 <p>Site plan</p>	 <p>Although the mansion had windows on both the North and West façade, this unfavourable condition was mitigated by having the area facing towards North and West planted with landscape, which also acted as shading for the mansion.</p>

building to withstand the elements through the understanding of designing and applying the right architectural components to agree with nature. Rather than fighting against the environment, it was built according to the requirements of the surroundings. These findings allow the researcher to look further into establishing a formal checklist for ensuring that similar buildings have all the required components to establish a link between *Feng Shui* and nature.

5 CONCLUSION

With interview verification of the findings from *Feng Shui* masters, this study illustrates that Cheong Fatt Tze Mansion with its opulent *Peranakan* architecture conforms to the external and internal *Feng Shui* layout criteria by Mak and Ng [3] and Mak and So [2]. Besides, the findings also demonstrate how the architecture of Cheong Fatt Tze Mansion embraces nature through its *Feng Shui* application, optimising both natural ventilation and daylighting while reducing solar heat gain through its orientation and landscape features. This conformity further addresses challenges and opportunities in pursuing the sustainable design approach based on the significance of *Feng Shui*, pertaining to the minimum use of energy and exploitation of natural ventilation and natural lighting. The *Feng Shui* Form School approach has significantly demonstrated the interrelationships between the architecture and the environment specifically in this *Peranakan* architecture of Penang. Findings from this study can be used as a stepping-stone to inform designers, cultural researchers as well as heritage conservationists in the application of Form School *Feng Shui* in *Peranakan* architecture as well as a way to build in harmony with the environment.

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