

Form expression of “*Kelenteng* Hok Tek Bio” Chinese temple related to the function, building structure, and symbol

Rudy Trisno & Fermanto Lianto

To cite this article: Rudy Trisno & Fermanto Lianto (2023) Form expression of “*Kelenteng* Hok Tek Bio” Chinese temple related to the function, building structure, and symbol, Cogent Engineering, 10:1, 2166200, DOI: [10.1080/23311916.2023.2166200](https://doi.org/10.1080/23311916.2023.2166200)

To link to this article: <https://doi.org/10.1080/23311916.2023.2166200>



© 2023 The Author(s). This open access article is distributed under a Creative Commons Attribution (CC-BY) 4.0 license.



Published online: 16 Jan 2023.



Submit your article to this journal [↗](#)



View related articles [↗](#)



View Crossmark data [↗](#)



Received: 11 December 2018
Accepted: 03 January 2023

*Corresponding author: Fermanto Lianto, Architecture Department, Universitas Tarumanagara, Jakarta, Indonesia
E-mail: fermantol@ft.untar.ac.id

Reviewing editor:
Mariano Angelo Zanini, Department of Civil, Environmental and Architectural Engineering, Università Degli Studi Di Padova, Italy

Additional information is available at the end of the article

CIVIL & ENVIRONMENTAL ENGINEERING | RESEARCH ARTICLE

Form expression of “Kelenteng Hok Tek Bio” Chinese temple related to the function, building structure, and symbol

Rudy Trisno¹ and Fermanto Lianto^{1*}

Abstract: The design of the *kelenteng* (temple) building using a typology of the form of the Chinese temple building is very interesting to be used as a research issue, which raises some interesting questions, namely: (1) Does this aim at the uniformity of all the temples outside China?; (2) Is this building still feasible to use wooden structures?; (3) What about the “sign” meaning of the symbol? This study aims to find information on how the “*Kelenteng Hok Tek Bio*” (Chinese temple) in anticipating this problem with the development of people who tended to increase after the fall of the New Order government in 1998 Chinese religious rituals permitted again. The method is qualitative interpretative research. The conclusion obtained in this study is; (1) The “*Kelenteng Hok Tek Bio*” has *Si He Yuan* courtyard type in the middle of the building with a symmetrical form. It looks like a Chinese Temple; (2) The structure used is wood and concrete adapted to the spirit of the age; (3) The “sign” meaning is index, symbol, and icon. The findings are “function follows the form”, and the *kelenteng* has a courtyard, symmetrical form, wooden and concrete structures, the “sign” meaning of the building can be an index for Feng Shui, symbols for ornamentation, and icon for flora, fauna, even the *hànzì* script.

Subjects: Structural Engineering; Design History; Philosophy of Religion; Spiritualism; Chinese & Japanese Religions

Keywords: Building structure; Chinese temple; form expression; function; Hok Tek Bio; symbol

1. Introduction

The political influence can affect architectural works, as seen in the New Order regime, which was in power for 31 years. At that time, the New Order regime urged the new *kelenteng* (temple) to decide not to use the typology of the building forms of Chinese temples. *Kelenteng* building today is generally relics before the New Order regime. This is understandable because of the New Order government’s product at that time; the president was Suharto, who was in power in the era of 12 March 1967, to 21 May 1998. The ban was realised with Presidential Decree No 14 of 1967 by the New Order regime. This order can indirectly be interpreted to prohibit the construction of new temples by a typology of the expressions of buildings from China. This interpretation is further strengthened by replacing the names of *Kelenteng hànzì* temples with Indonesian.

ABOUT THE AUTHORS

Rudy Trisno is a professional Architect & Interior design and Associate Professor from the Master of Architecture at Tarumanagara University who studies; Architectural theory, Interior, Feng Shui, Japanese architecture, and Fashion architecture.

Fermanto Lianto is the Head of the Architecture Department, Faculty of Architectural Engineering, and Associate Professor from the Master of Architecture at Tarumanagara University who studies; Architectural theory, Housing, Structural systems, Territory, and Grounded theory method.

“*Kelenteng Hok Tek Bio*” (Chinese temple), based on RI Law Number 5 of 1992, was awarded as a cultural heritage temple. When the fallen New Order government was replaced with new leadership, namely President Abdurrahman Wahid or better known as Gus Dur, issued a Presidential Decree (Kepres) No. 6 of 2006 concerning the revocation of Presidential Instruction No. 14 of 1967, then the name of the “*Kelenteng Hok Tek Bio*” can be reused, but it is also permitted to carry out celebratory activities such as; Chinese New Year celebrations, *Cap Go Meh* (15th day after Chinese New Year), and Lion dance attractions (Indozone.id, 2020, February 5)

Kelenteng was once a place of worship for overseas Chinese (*Hua Ren*) to perform the ritual teachings of Confucius. But the current condition of the *kelenteng* is a place of worship for *Mahayana* Buddhism for Indonesian citizens of Chinese descent. The word *kelenteng* comes from the “sound” (onomatopoeia), often used at ritual events of Confucius’s teachings. At that time, carrying out the ritual of using sounds originating from the bell was repeatedly beaten with a tone of “*teng-teng*” (Cangianto, 2018). In the architecture of religious buildings in general, forms follow functions (Trisno & Lianto, 2018), but the design of the *kelenteng* form is very different because the *kelenteng* expression forms are sourced from Chinese temples typology. The ritual function follows the typology of Chinese temple forms. This can still be possible as long as the function of the local culture can fulfil and follow religious ritual activities (Trisno & Lianto, 2019). The design of the *kelenteng* building uses the typology of buildings originating from the Chinese temple. What is meant typology of the form of the Chinese temple is; the direction toward the South, the enclosure inside, the presence of a sky well, a signer at the entrance gate, a symmetrical form, and a division of hierarchy (Kartono, 2012).

The function can also be used to conduct activities for behaviour for human life for good, ethics, and morality. Simultaneously, the form is an expression of the mass, spatial, or form of a building function, including structure (Capon, 1999, p. 12). Function, structure, and form have the same value for designing architectural buildings without any different priority (Krier, 1982, p. 227).

Based on this phenomenon, the “*Kelenteng Hok Tek Bio*” is fascinating to be used as an issue in research because the ritual function of the temple originates from the typology of form expressions from Chinese temples, which are rich in symbols and also use wooden structures. So this “*Kelenteng Hok Tek Bio*” building; (1) Is the goal for the uniformity of all the temples outside China?; (2) Is this building still feasible to use wooden structures?; (3) What about the meaning of symbols? Based on this research issue, a hypothesis was made; that the function follows the expression of the form of the temple, structure, and symbol.

The benefits of this research can be used for; (1) Exposure to theoretical as a guide to “*Kelenteng Hok Tek Bio*” to anticipate the development of the times and the development of the people; (2) Exposure to practical as a guideline for designing concerning typology of Chinese temple forms, structure development, “sign” meaning.

2. Material and Methods

Searching state of the art of this research is carried out by searching using keywords; structure, Chinese temple, and symbol; the description can be seen in Table 1.

Table 1 shows the title of the expression form of “*Kelenteng Hok Tek Bio*” Chinese temple related to the function, building structure, and symbol. Other research have never been done, so the existence of this research can fill a vacuum that has never existed before. This study’s novelty is the expression form related to the function, building structure, and symbol.

2.1. Material Review

“*Kelenteng Hok Tek Bio*” is a Chinese temple located in Bogor in 1872, initially with an area of 180 M² after a renovation of a building area of 635.5 M² with a land area of 1,397 M². This temple was formerly for the religious community of Confucius (Indozone.id, 2020, February 5). In 1992 it became a cultural heritage building; it uses a wooden structure system and is located on Jalan

Table 1. Research Examined Using the Keywords; Structure, Chinese Temple, and Symbol

No	Title	Description	Source
1	Building Structure System of Chinese Architecture, Past, and Present.	This writing discusses the system structure from the past until the present time. The structural system of the past used a lot of wood construction, which is widely used in Chinese temples.	Fermanto Lianto, <i>Civil Engineering Journal</i> , 4(1), 63–80, Jakarta, March 2013. (Lianto, 2013).
2	Visual Modeling of Chinese Temple Construction for Student Education.	The study discusses the construction of Chinese temples, the temple's tendency to use high-floor level, brick walls, columns, and wooden frame roofs.	Adrian H. Tan, Shilun Hao, Jiyuan Li, Lei Zhao, Fabian H. Tan, 122nd ASEE Annual Conference & Exposition. (Tan et al., 2015)
3	Chinese Art within Thai Temples in Malaysia: The Disappearance of Thai Art.	Thai temple ornaments are different from Thai temple ornaments in Malaysia because Chinese temple ornaments influence temples in Malaysia. This is because the majority of Chinese adherents would naturally be affected by the culture of local followers.	Punya Tepsing, <i>Asian Social Science</i> . 11(9), 43–51. (Tepsing, 2015)
4	Cultural Symbols in Chinese Architecture.	Culture is often seen as a symbol system that emerges from human interpretations of the world. In Chinese culture, symbols are symbols of <i>Yin-Yang</i> , colour, and numerology. In designing the Chinese temple, pay attention to <i>Yin-Yang</i> , part of <i>Feng Shui</i> .	Donia Zhang, <i>Architecture and Design Review</i> , 1, 1–19. (D. Zhang, 2018).
5	Recognition of symbols in different cultures: Chinese culture vs non-Chinese culture	Discuss the different symbols between Chinese culture and non-Chinese culture against three examples of symbols: Dragon, Monkey, and Fish. Of these three symbols, Chinese culture has a more in-depth and broader meaning than the non-Chinese religion.	Tian Shen, Thesis from Iowa State University. (Shen, 2017).
6	The form and meaning of the roof <i>kelenteng Sam Poo Kong</i> Semarang	<i>Kelenteng Sam Po Kong</i> was the first temple in Semarang, founded in 1724. The roof form of this building is very dominant.	Benedicta Sophie Marcella, <i>Jurnal Arsitektur Komposisi</i> , 10(5), 350–359, (Marcella, 2014)
7	Of Palaces and Pagodas: Palatial Symbolism in the Buddhist Architecture of Early Medieval China.	This study discusses the symbol of Buddhism as a place for worship. The symbol of mountain symbolises the area of the holy God. Symbols of stone and wood are often used in Chinese temples, and stones symbolise caves, while wood symbolises growth.	Tracy Miller, <i>Frontiers of History in China</i> . 10(2), 222–263. (Miller, 2015).
8	Chinese Architectural History in the Twenty-First Century.	This study discusses Chinese architecture in the 21st Century, including examples of <i>Yongle Daoist Monastery (Rui cheng)</i> in 1247–62, the wooden pagoda religious building in 1056, and <i>Song You Monastery</i> in 523. In this study, the Chinese temple uses wooden structures.	Nancy Shatzman Steinhardt, <i>Journal Society of Architectural Historians (JSAH)</i> , 73(1), 38–60. (Steinhardt, 2014).

(Continued)

Table 1. (Continued)

No	Title	Description	Source
9	<i>Kelenteng Jin De Yuan</i> is Chinese architecture in Jakarta's Chinatown region as an embodiment of cultural acculturation.	This writing reviews the acculturation of two cultures, Indonesia and China, located in the <i>Kelenteng Jin De Yuan</i> in West Jakarta, Indonesia.	Polniwati Salim, <i>Humaniora</i> , 3(2), 413–421. (Salim, 2012)
10	A historic research on the architecture of Fujianese in the Malacca Straits: Temple and Huiguan.	The study of Chinese immigrants on Mallaca Street in the <i>Hui Gan</i> temple was influenced by Chinese culture in historical studies.	Mei Qing, Thesis Department of Architecture the Chinese University of Hong Kong (Qing, 1999)
11	Translation of the Names of Chinese Temples from the Perspective of Culture.	The names of places of worship follow the Chinese <i>hánzì</i> script, like cultural awareness that must be respected and developed.	Guangqi Zhang, <i>Studies in Asian Social Science</i> , 1(1), 6–14. (G. Zhang, 2014)
12	The Spiritual Land Rush: Merit and Morality in New Chinese Buddhist Temple Construction.	The surge in the construction of Buddhist temples in mainland China is associated with the morality of priests and practitioners to make temple buildings in the countryside. This also has supported the morality of the Buddhist community in urban areas.	Gareth Fisher, <i>The Journal of Asian Studies</i> , 67(1), 143–170. (Fisher, 2008)
13	Tai Buddhist Practices in Dehong Prefecture, Yunnan, China Religion as Non-religion: The Place of Chinese Temples in Phuket, Southern Thailand.	This study discusses Chinese temples in Phuket. There are no <i>Bhiku</i> (Buddha priest) Chinese temples in Phuket, which is a dilemma in Bangkok. Chinese temples are different from Bangkok. Chinese temples in Bangkok are not always <i>Bhiku</i> .	Tatsuki Kataoka, <i>Southeast Asian Studies</i> , 1(3). (Kataoka, 2012)
14	Folk Temples and the Chinese Religious Economy.	Large temples in China are used for Buddhist religious rituals, <i>Daoism</i> , and other Chinese folk religions. Because the ritual needs were very much needed, the large temple was renovated for economically disadvantaged citizens to conduct their worship. This religion has existed before, and the government publicly accepts the current conditions, so many visitors.	Greame Lang, Selina Ching Chan, Lars Ragvald, <i>Interdisciplinary Journal of Research on Religion</i> , 1(4), 1–29. (Lang et al., 2005)

Surya Kencana No. 1, Babakan Pasar Village, Bogor Tengah District, Bogor City, West Java Province (Indozone.id, 2020, February 5) (Figure 1).

2.2. Theoretical Review

Based on the hypothesis that the function follows the expression of *kelenteng* form, structure, and symbol, the theory is taken as follows:

2.2.1. The form of the *kelenteng* building

“*Kelenteng Hok Tek Bio*” with its symmetrical form, is influenced by Chinese temple typology, the form of this building follows the form in the middle with a courtyard, so this temple is a *Si He Yuan* type (Kustedja, 2014). The primary function of the “*Kelenteng Hok Tek Bio*” building is to perform rituals by following the procedures performed by rituals in China. It is appropriate to use the

typology of Chinese temple buildings. So the *kelenteng* form is followed by its ritual function, or in other words, the function follows the form.

There is generally a courtyard in the middle of Chinese temple buildings, which shows the creator's visualisations as an intermediary space between the earth and sky (Norberg-Schulz, 1988, p. 237). The middle space is the Mundi axis, the centre of the world, which means the relationship between heaven and earth (Eliade, 2002). So in this courtyard, a ritual communication process takes place between the man on earth and his creator in the sky.

The ritual function of Chinese temples can be to adapt to local culture so that Chinese temples can be accepted by the surrounding community (Tepsing, 2015). The people of this *kelenteng* are Indonesian citizens of Chinese descent who follow the rituals of their ancestors. Chinese society respecting ancestors is essential because it is influenced by the philosophy of *Lao Tze* and Confucius (Chang & Wang, 1988). This is a strong reason why “*Kelenteng Hok Tek Bio*” buildings follow typology forms from Chinese temples.

The relationship of function following the form can occur as long as the form can accommodate the function of the building, and all spaces have their benefits (Trisno & Lianto, 2019). It could even be neo-vernacular forms underlying the design of religious buildings during the ritual procession that can be fulfilled (Trisno & Lianto, 2020b). In China, the relationship of functions following the expression of Chinese temple forms has been used as a function (ritual) since ancient times until now (Fisher, 2008). Chinese temple uses the name in Chinese *hànzì* script because the source comes from China. The name in Chinese *hànzì* greatly influences the Chinese temple itself because the meaning of the name contained in the building of the Chinese temple harmonises with the surrounding environment (G. Zhang, 2014). In the New Order era, the name of this *kelenteng* was changed to the *Dhanagun* Vihara's name. After the fall of the New Order was replaced by Abdurrahman Wahid (Gus Dur), this temple returned its name to its previous name, “*Kelenteng Hok Tek Bio*” (Indozone.id, 2020, February 5). The effect of this name change is “*Kelenteng Hok Tek Bio*” becomes a tourist destination for foreign tourists as the oldest temple in Bogor.

One of the dominant factors of the *kelenteng* is the roof (Marcella, 2014). Almost all the *kelenteng* roof forms have the same type in Indonesia and China because they take the same source, namely the typology of the Chinese temple form. Because the form of the *kelenteng* in Indonesia has been based on two cultures, namely Indonesia and China (Salim, 2012), this problem has caused a slight change in function with the country of origin. However, it cannot be denied that all the *kelenteng* in Indonesia have been allied with local environmental conditions so they can be accepted in their environment. “*Kelenteng Hok Tek Bio*” has been acculturated, especially on local ornaments and symbols that adapt to Buddhism, but this change of function to form can still be announced.

2.2.2. The system of structure

Functions are closely related to structure (Cuvier, 2009, pp. 281–282). Architectural form is related to the structure (Krier, 1982, p. 227). “*Kelenteng Hok Tek Bio*” in the first stage in 1872 with an area of 180 M² using wood construction such as wood construction in China. If this wood construction was connected with the structure's development, then the wooden structure was the main structure (Steinhardt, 2014). Because as the main structure, the spirit of the age can be known at that time (Jodido, 2005, p. 12).

The “*Kelenteng Hok Tek Bio*” structural building system uses a wooden frame structure system; this main structure supports heavy loads from the roof, then is forwarded to the main column, and then the column is supported by beams. This wooden frame structure receives heavy loads from the roof, passed to the column and finally to the foundation of *San Shui* (Figure 2).

Figure 1. Initial building and renovation building.

Source: **Elaboration of the Concept of Ideologies, Hierarchy and Balance, At architectural Elements of Traditional Chinese *kelenteng* in *Si He Yuan* Type** (Kustedja, 2014; Maps, 2020)

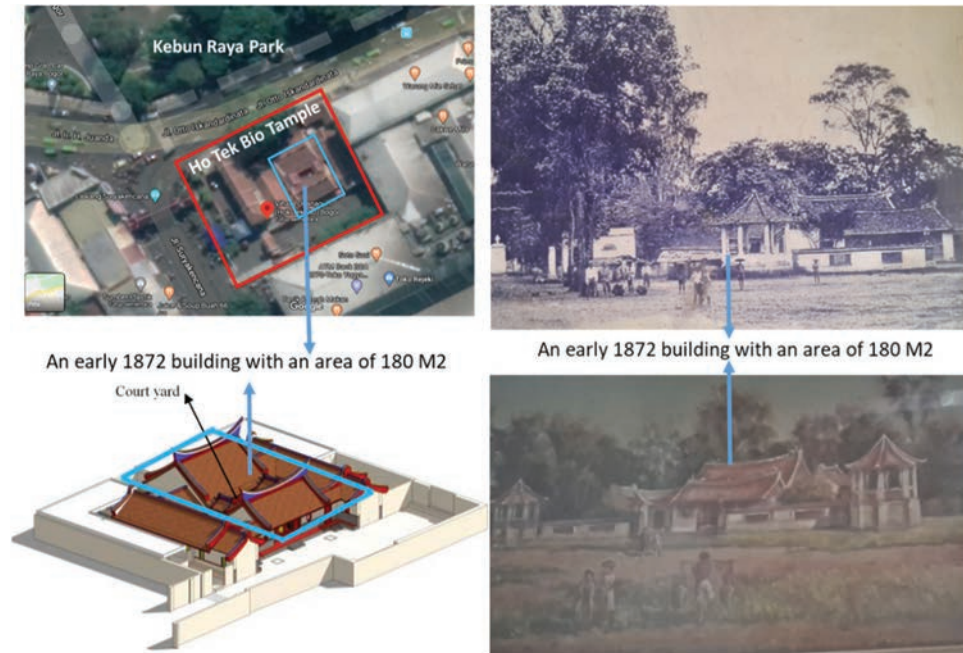
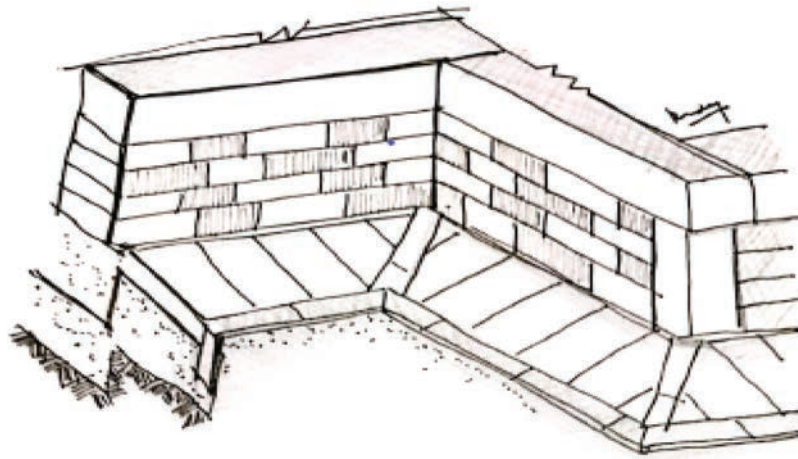


Figure 2. Foundation of San Shui.



Doors and windows only load; doors and windows are made flexible when the wooden frame structure (Ting Tang) can be removed (knockdown; Figure 3).

The roof structure (*Dou Gong*) is a characteristic of Chinese temple architecture (Marcella, 2014), rectangular roof truss (Figure 4); if the level floor is to be made, then boards and wooden beams support the level floor. Mixing limestone and clay is used to *listplank* roofs and roof tiles.

All loads from the roof are passed on the column to the foundation. This wooden structure is designed with a module system (Figure 5). This module system can be enlarged according to proportions that are harmonious with its loading structure.

The official building type with monumental-scale roof construction during the *song* dynasty experienced rapid development; this monumental-scale construction used wooden beams (*Cai Fen Zhi*). The structure consisted of tall columns of considerable size, with the framework of the *Dou*

Figure 3. Ting Tang wood frame structure.

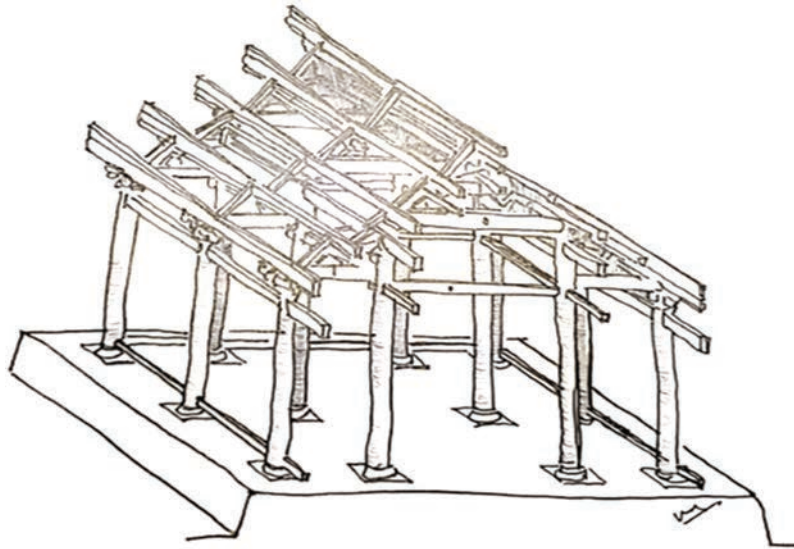
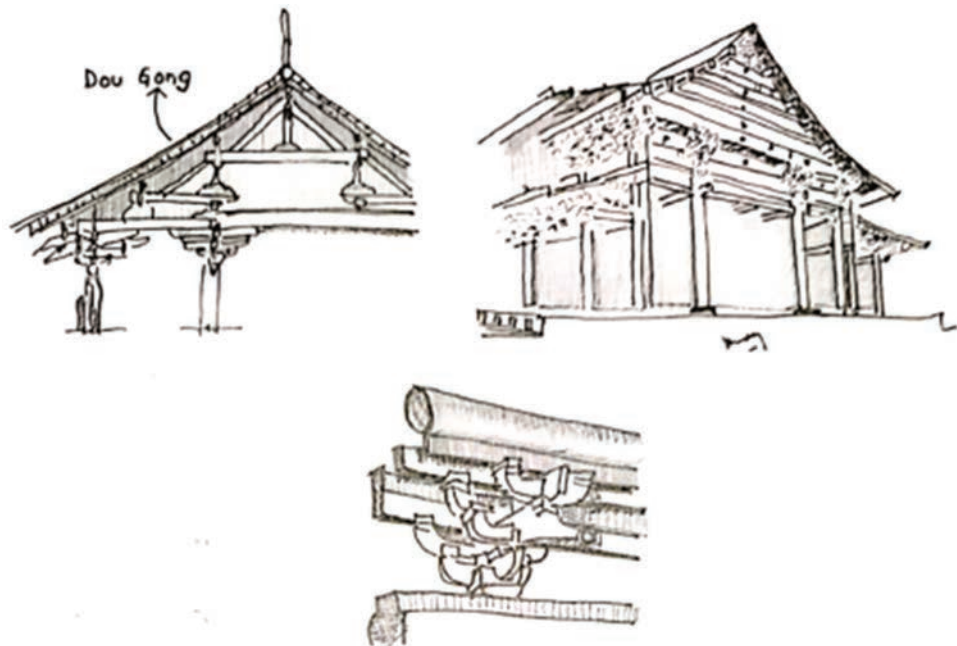


Figure 4. Wooden roof frame Dou Gong structure.



Gong roof (bracket), and the top construction is the roof. The *Dou Gong* wood construction structure is a combination of the *Dou* system and the *Gong* of the *Qing* dynasty architectural style.

2.2.3. The “sign” meaning of symbols

The *kelenteng* form following the typology of the Chinese temple also follows symbols at that time. The meaning of symbol in the *kelenteng* has meaning as a manifestation of the building’s expression of worship. The relation between function and form that are loaded with this symbol has meaning in the building itself (Capon, 1999, p. 12). This problem distinguishes between religious buildings and other buildings (Trisno & Lianto, 2020a).

There is a signification of symbols related to the people's psychology towards the ritual procession (Gervais, 2013). Semiotic theory taken on this *kelenteng* is the theory of Charles Sanders Peirce (Sobur, 2006) that humans can reason through; (1) The icon is a "sign" that relates between signifier and signified together in its natural form if the more simplified icon is a physical object either two or three dimensions that resemble what is presented, this presentation is a "sign" by similarity; (2) The index is a "sign" that shows a cause and effect relationship between signifier and signified, and this cause and effect relationship has a specific meaning; (3) The symbol is a "sign" indicating the natural connection between signifier and signified. Relations between them occur based on community conventions.

Feng Shui is an index, and this relationship is the cause-and-effect relationship between *Feng Shui* and the *kelenteng* because the cause-and-effect relationship provides harmony with the environment. *Kelenteng* buildings generally face to the South (Kartono, 2012), which follows the layout of *Feng Shui* with the following details; (1) In the lead to the South is called the Phoenix bird; (2) Behind towards the North is called a turtle with the assumption that the mountain is higher than other buildings; (3) The left towards the east is called the green dragon, which in principle must be a little higher with the suitable building; (4) The right-hand side facing west is called the white tiger (Yap, 2004, pp. 108–111).

Symbols on the *kelenteng* building in the form of ornaments, the use of red, and ornamentation of the *kelenteng* building are influenced by symbols, *Feng Shui*, mysticism, and Chinese people's beliefs (D. Zhang, 2018). This ornament is given to the roof, walls, floors, building roof structures, and furniture inside the building. The ornaments are usually fauna, flora, natural images, geometry, and legend. Fauna is often used; dragons, tigers, storks, and more. Flora is; lotus, bamboo, chrysanthemum, cypress, and others (Moedjiono, 2011).

Icons often used in *kelenteng* are Yin-Yang, swastika, eight cardinal directions (*Bagua*; D. Zhang, 2018) ornament icons, flora, fauna, *hànzì* calligraphy meaningful prayers and praise to the Gods, and geometric shapes. The meaning of semiotics in the "sign" of icon, symbol, and index is an intellectual process from the mind (Proust, 2012). This thought can help enrich and clarify a work based on the logic of truth and the falsification of signs that might occur (Zoest, 1993).

Based on the theories from this hypothesis, an interpretive qualitative research method was chosen with indicators derived from the approaches described above. So to analyse this "*Kelenteng Hok Tek Bio*" using the following research indicators; (1) The form of the *kelenteng* building; (2) The system of structure; (3) The "sign" meaning of symbols.

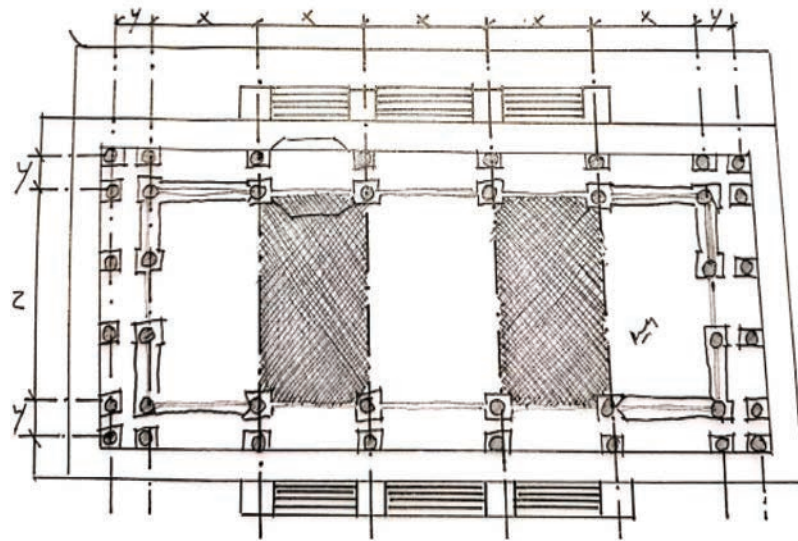
3. Results and Discussion

"*Kelenteng Hok Tek Bio*" is the oldest temple in Bogor, and the first phase was established in 1872, while renovation phase two (before it became a cultural heritage building in 1992) is unknown. This renovation year would likely be based on the contribution of the people, and it may be challenging to know the second phase of renovation because of the gradual construction.

3.1. The form of *kelenteng* Building

This *kelenteng* has a courtyard in the middle of the building (Figure 6). The courtyard is directly illuminated by natural lighting. This courtyard is the relationship between humans (*Ren*) on earth (*Di*) in horizontally with God in the sky (*Tian*) vertically; the sky relationship, earth, and humans are called *Tian Di Ren*. This relationship is a manifestation of the axis Mundi or the centre of the world. Both of these vertical and horizontal relationships create a sacred atmosphere. Besides, the direction of the "*Kelenteng Hok Tek Bio*" building leads inward. It makes openings towards the courtyard as a safe territory boundary from the temple, a manifestation of security and safety (psychological needs; Lianto et al., 2017).

Figure 5. Structure of construction with a system module.



“Kelenteng Hok Tek Bio” adopts the type of *Si He Yuan* Chinese temple typology with a courtyard in the middle of the *kelenteng* building and also symmetrical form composition (Kustedja, 2014). Due to the city’s development and the location of the *kelenteng* opposite the Kebun Raya Park, the location of this *kelenteng* is very strategic for commercial areas, causing the left and right sides of the *kelenteng* to be interspersed with shopping buildings.

The position of this *kelenteng* building is on the corner of the street and surrounded by shops, so if you enter this building, it must be from an axis that is small enough for only one car and the dead-end (see, Figure 6). The axis pattern on buildings with *Si He Yuan* type is one of the characteristics of Chinese buildings since ancient times called *Hutong* (Ren, 2011). This building has no desire to change its position in front of the highway and the Kebun Raya Park because it pays attention to the layout of *Feng Shui*.

“Kelenteng Hok Tek Bio” in Figure 6 is a renovated building with a building area of 635.5 M² on a land area of 1,397 M² (Indozone.id, 2020, February 5); phase one can be seen in Figure 1. At stage two, it is unknown what year to renovate it, to find out when this building is about to do renovated can be traced to the building structure technology used because the structural technology can determine the spirit of the age of the building (Jodido, 2005).

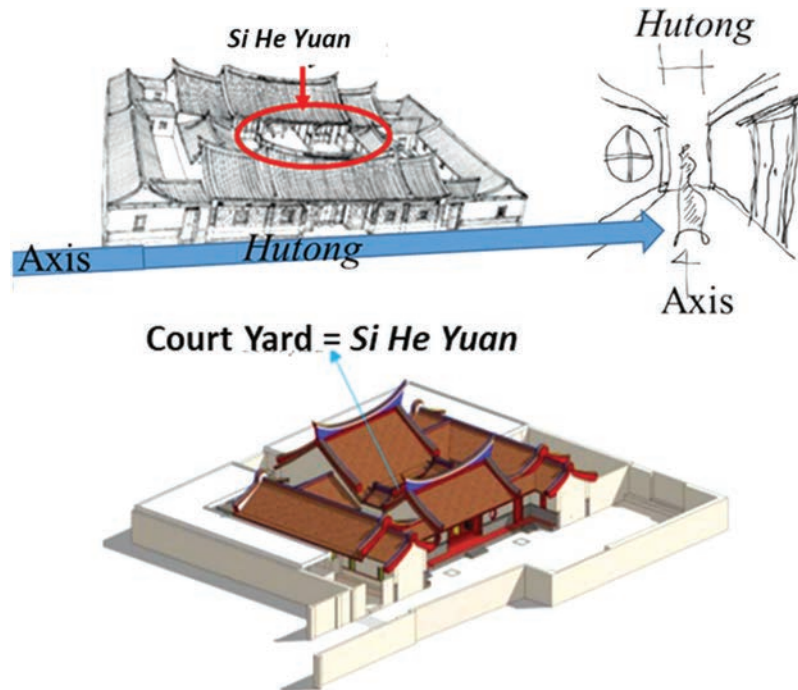
3.2. The system of structure

“Kelenteng Hok Tek Bio” building structure consists of two stages, the first stage is a wooden structure, and the second stage is a concrete structure. The first structure is all columns, beams, and roofs made of wood, while the second stage is roofs and columns made of concrete (Figure 7).

By looking at the two differences between the wood construction system and concrete construction, it can be said that the concrete structure is the second stage. It is estimated that the year of manufacture is after 1960 because reinforced concrete only entered Indonesia after 1960 by referring to the standard of reinforced concrete from the Netherlands in 1955. Reinforced concrete was founded by a resident of the German state named Koenen in 1886 by officially publicising the theories of reinforced concrete and the design of reinforced concrete structures (Sa’adah, 2017).

Figure 6. The roof picture in the middle is *Si He Yuan* courtyard type and *Hutong*.

Source: *Elaboration of the Concept of Ideologies, Hierarchy and Balance, At architectural Elements of Traditional Chinese kelenteng in Si He Yuan Type* (Kustedja, 2014)



It is seen in Figure 8 in the form of the roof and details of the end of the beam using a wooden roof truss structure called *Dou gong*. So the building with a wooden structure is the first embodiment of the building, while the additional building uses concrete in its columns and roof.

3.3. The “sign” meaning of symbols

Analysis of meaning to use the semiotic theory from Peirce by grouping index, symbol, and icon on the “*Kelenteng Hok Tek Bio*” as for the details as follows:

3.3.1. Index

The index relationship in this *kelenteng* is a cause-and-effect relationship between *Feng Shui* and the *kelenteng* building. The concept of *Feng Shui* in the “*Kelenteng Hok Tek Bio*” is the concept of *Feng Shui* with its flows of form with the philosophy that the temple is sitting on the mountain facing the river. *Kelenteng* generally faces the South (Kartono, 2012) because the “*Kelenteng Hok Tek Bio*” follows temples from China, which usually face the South, supporting the region’s climate,

Figure 7. The structure of “*Kelenteng Hok Tek Bio*”.

Source: *The Concept of Ideologies, Hierarchy and Balance, At architectural Elements of Traditional Chinese kelenteng in Si He Yuan Type* (Kustedja, 2014).

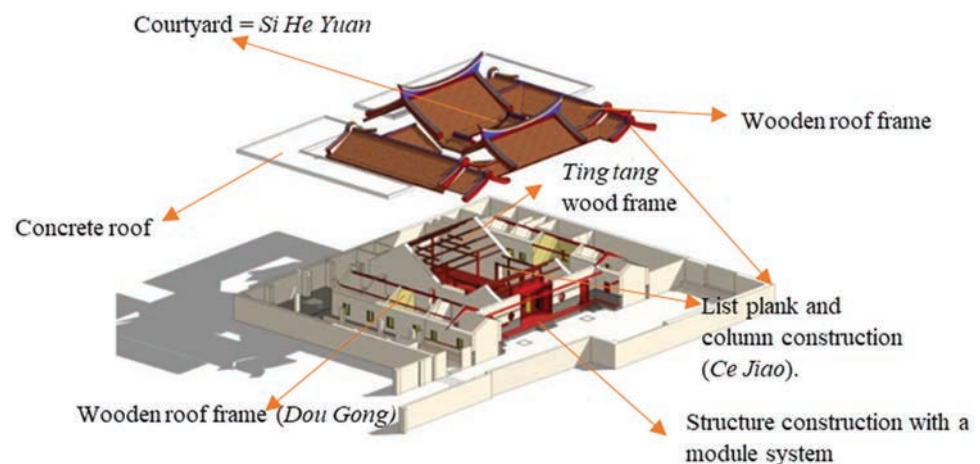


Figure 8. The wooden roof frame structure of the Dou Gong and Ting Tang on “Kelenteng Hok Tek Bio”.

Source: *The Concept of Ideologies, Hierarchy and Balance, At architectural Elements of Traditional Chinese kelenteng in Si He Yuan Type* (Kustedja, 2014).



which has four seasons. The direction facing the South gets the most sunlight because the South, according to the concept of *Feng Shui*, is an element of fire. Details of the *Feng Shui* concept of flow form are described as follows.

In the “Kelenteng Hok Tek Bio” facing to the South (symbolising the phoenix bird), the first access to this building is obstructed by a shopping mall (Figure 1), so the main access door facing to the South is obstructed. The entrance access is turned towards the west (Figure 9). The building in the east or also called the green dragon, the height of this building is not visible but visibly higher than the building in the west. Still, after measurements are made, it can be seen that the condition is taller than the building in the west (Figure 10); the building is located west (symbolising the white tiger) and is lower than the building in the east (symbolising the green dragon). The building in the South is called a turtle, and the building in the North is the tallest.

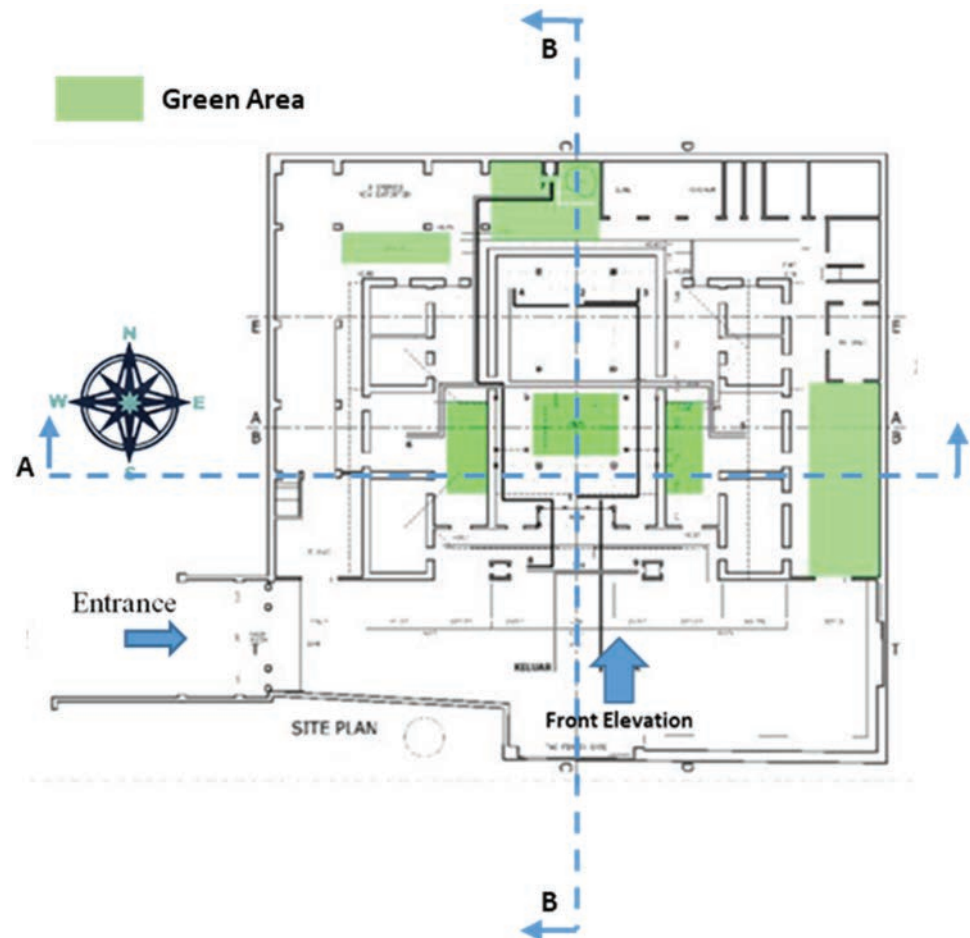
So, the meaning of the index is obtained from the *kelenteng* building with *Feng Shui*, which is the relationship of *Feng Shui* symbols intangible like a White tiger in the west, Green dragon in the east, Turtle in the North, and Phoenix bird in the South. But there is also a relationship between the index of the tangible symbol and the *kelenteng*. For example, the direction of the building facing South symbolises the element of fire, and the colour of the fire is red, which causes the *kelenteng* to be dominated by red because red represents the element of fire which is interpreted as the source of life. Giving a red colour identifies the colour of the *kelenteng*; this can also be said to be the index relationship between the red colours of *Feng Shui* that is tangible with the *kelenteng* building.

3.3.2. Symbol

The symbol on the “Kelenteng Hok Tek Bio” is an ornament whose form has been understood by the public, such as a Dragon and *Qilin* (a pair of sacred beings in Chinese legend resembling horses but resembling giraffes). The dragon symbol can be on the building column and can also be on the roof of the building. Especially if the dragon is on the roof of the building, then the observer’s view can have two meanings as a symbol or index. If it is considered a symbol if the dragon form is observed by observers as an ornament, while the dragon form is associated with buildings because a cause and effect relationship occurs, then the cause and effect relationship is called an index. Connecting the building index with the tangible dragon symbol can be interpreted by the observer as a *kelenteng* building (Figure 11).

Figure 9. Floor plan of “Kelenteng Hok Tek Bio”.

Source: *The Concept of Ideologies, Hierarchy and Balance, At architectural Elements of Traditional Chinese kelenteng in Si He Yuan Type* (Kustedja, 2014).



3.3.3. Icon

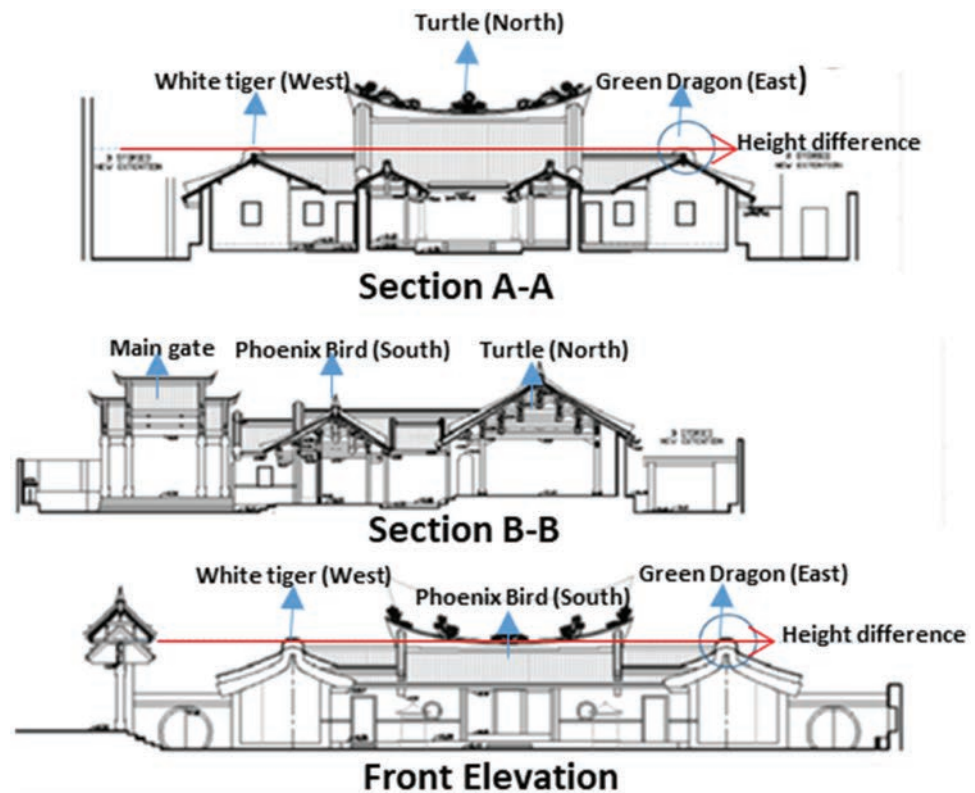
The icon is similar to a sign; the icon on the “Kelenteng Hok Tek Bio” can be a flower “sign” and Chinese *hànzì* script. The flora “sign” of the Lotus flower symbolises that flowers that grow in dirty areas can provide beautiful flowers; besides these beautiful flowers, humans can eat these flowers. The meaning of icon of the Lotus flower means that people who are kind and right can undoubtedly survive even in dirty environments (Figure 12).

The *hànzì* script icon was made in calligraphy as praise and prayer to the gods. The calligraphy at the main gate was named the “Kelenteng Hok Tek Bio,” defined as luck and moral temple (Figure 13). The calligraphy of the *hànzì* script is said to be an icon because the meaning of the *hànzì* script comes from simplified symbols. It can be seen that the ancient *hànzì* script (Figure 13) then changes along with the times can be seen in the simplified *hànzì* script.

For example, you can see the word mountain written 山 (*Shān*) derived from the picture of the mountain, the fire describing the blaze written 火 (*Huǒ*), the mouth is taken from the image of the mouth 口 (*Kǒu*), and the rice field refers to the fields seen from above 田 (*Tián*; Shiang, 2000). So the *hànzì* script is an icon with meaning derived from the meaning of the writing itself (Figure 14).

Figure 10. Front Elevation and Section of “Kelenteng Hok Tek Bio”.

Source: *The Concept of Ideologies, Hierarchy and Balance, At architectural Elements of Traditional Chinese kelenteng in Si He Yuan Type* (Kustedja, 2014).



4. Conclusion

Based on the above analysis, it can be confirmed that the hypotheses taken are; that the function follows the expression of the form of the temple, structure, and symbol; it is appropriate that the taking of theories derived from hypotheses is significant.

Based on the indicators in the research method, it can be concluded as follows;

- (1) The form of “Kelenteng Hok Tek Bio” has a courtyard in the middle of the building with an asymmetrical form; this *kelenteng* belongs to the type of *Si He Yuan* that corresponds to the typology of the form of the Chinese temple so that it has the same form as in China.
- (2) The structure of “Kelenteng Hok Tek Bio” is divided into two stages, first made in 1872 with an area of 180 M² using wooden construction following the typology of the form of the Chinese temple. The second phase was estimated after 1960 with reinforced concrete construction, including the concrete roof with a total area of 635.5 M², and the second stage building is an additional building as a result of the development of the people.
- (3) The “sign” meaning of symbols is classified based on index, symbol, and icon. *Feng Shui* is the meaning of the index because the meaning of the symbol is intangible, while the dragon symbol on the roof of the building is an index because the dragon symbol on the roof is

Figure 11. Symbol of “Kelenteng Hok Tek Bio”.

Source: The door as a symbol in Chinese vernacular architecture in an old temple building on the island of Java (Kustedja et al., 2013).



Figure 12. Lotus icon at “Kelenteng Hok Tek Bio”.

Source: The door is a symbol in Chinese vernacular architecture in an old temple building on the island of Java (Kustedja et al., 2013).



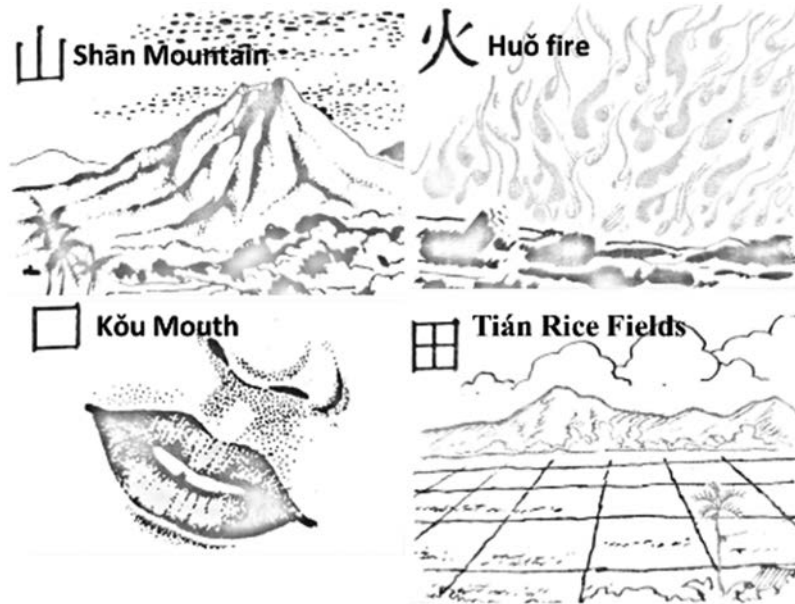
Figure 13. Calligraphy icon at “Kelenteng Hok Tek Bio”.

Source: The door is a symbol in Chinese vernacular architecture in an old temple building on the island of Java (Kustedja et al., 2013).



Figure 14. Icon of Chinese hànzi (汉字).

Source: Japanese characters: practical hànzi 1 (Shiang, 2000)



tangible. At the same time, the symbol is the meaning that can be directly seen in general in ornamentation in the “*Kelenteng Hok Tek Bio*,” for example, dragon and *Qilin*. The icon is a “sign” that represents the original form, such as a Lotus flower, and even the hànzi script is applied as calligraphic writing, including the icon, because all hànzi characters are sourced from the symbol that represents it.

The findings of these studies are;

- (1) Function follows form.
- (2) The temple has a courtyard in the middle of the building and the front yard.
- (3) The symmetrical form of the building.
- (4) The structure of the *Kelenteng* building is used in wooden and concrete, following the spirit of the times.
- (5) The meaning of a building “sign” can be a Feng Shui index, a symbol of ornament, and an icon for flora, fauna, or even the hànzi (汉字) character.

Funding

The authors received no direct funding for this research.

Author details

Rudy Trisno¹
 ORCID ID: <http://orcid.org/0000-0001-7357-1291>

Fermanto Lianto¹
 E-mail: fermantol@ft.untar.ac.id

ORCID ID: <http://orcid.org/0000-0002-0249-4660>
¹ Architecture Department, Universitas Tarumanagara, Jakarta, Indonesia.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Citation information

Cite this article as: Form expression of “*Kelenteng Hok Tek Bio*” Chinese temple related to the function, building structure, and symbol, Rudy Trisno & Fermanto Lianto, *Cogent Engineering* (2023), 10: 2166200.

References

- Cangianto, A. (2018, July 10). Istilah Kelenteng dalam bahasa Indonesia. Retrieved June 14, 2020, https://www.academia.edu/37020922/Istilah_Kelenteng_dalam_bahasa_Indonesia
- Capon, D. S. (1999). *Architecture theory lecture Volume two Le Corbusier's legacy*. John Wiley & Sons Ltd.
- Chang, A., & Wang, D. (1988). *The Tao Architecture*. Princeton University Press.
- Cuvier, G. (2009). *Robert Kerr as Essay on the Theory of the Earth*. Cambridge University Press.
- Eliade, M. (2002). *Sacred and Profane*. Fajar Pustaka Baru.
- Fisher, G. (2008). The Spiritual Land Rush: Merit and Morality in New Chinese Buddhist Temple Construction. *The Journal of Asian Studies*, 67(1), 143–170. <https://doi.org/10.1017/S0021911808000053>
- Gervais, W. M. (2013, July 9). Perceiving Minds and Gods: How Mind Perception Enables, Constrains, and is Triggered by Belief in Gods. *Perspectives on Psychological Science*, 8(4), 380–394. <https://doi.org/10.1177/1745691613489836>

- Indozone.id. (2020, February 5). Retrieved June 19, 2020, <https://www.indozone.id/travel/gmsoBY/5-fakta-menarik-klenteng-ho-tek-bio-bogor/read-all>
- Jodido, P. (2005). *Visual Dictionary of Chinese Architecture*. Taschen.
- Kartono, L. (2012). Arsitektur Tionghoa di Surabaya, Apanya yang Unik (Chinese Architecture in Surabaya, What's Unique). In *Prosiding Seminar Nasional Arsitektur Tionghoa di Jawa* (pp. 13–23). Jurusan arsitektur Fakultas Teknik Universitas Tarumanagara.
- Kataoka, T. (2012, December). Tai Buddhist Practices in Dehong Prefecture, Yunnan, China. Religion as Non-religion: The Place of Chinese Temples in Phuket, Southern Thailand. *Southeast Asian Studies*, 1(3), 461–485. <https://englishkyoto-seas.org/wp-content/uploads/010305.pdf>
- Krier, R. (1982). *On Architecture*. Papadakis.
- Kustedja, S. (2014). Konsep Ideologi, Hirarki dan Keseimbangan pada Elemen Arsitektur Klenteng Tradisional Berdenah Tipe Si He Yuan (The concept of ideology, hierarchy and balance in traditional temple architectural elements is based on the Si He Yuan type). Program Doktor Arsitektur Universitas Katolik Parahyangan.
- Kustedja, S., Antariksa, & Salura, P. (2013). Elaborasi makna pintu sebagai simbol dalam arsitektur vernakular Tionghoa pada bangunan keleneng tua di pulau Jawa (Elaboration of the meaning a door as a symbol in Chinese vernacular architecture in an old temple building on the island of Java). *Zenit*, 2(2), 116–130. <https://garuda.ristekbrin.go.id/documents/detail/297953>
- Lang, G., Chan, S. C., & Ragvald, L. (2005). Folk Temples and the Chinese Religious Economy. *Interdisciplinary Journal of Research on Religion*, 1(4), 1–29. <https://www.religjournal.com>
- Lianto, F. (2013). Building Structure System of Chinese Architecture, Past, and Present. *Civil Engineering Journal*, 4(1), 63–80. https://www.researchgate.net/publication/317768033_BUILDING_STRUCTURE_SYSTEM_OF_CHINESE_ARCHITECTURE_PAST_AND_PRESENT
- Lianto, F., Arifin, L. S., & Dwisusanto, Y. B. (2017). Role of Corridor in Territorial Meaning Formation in “Owned Low-Cost Apartments” (Rusunami) Bidara Cina, Jakarta, Indonesia. *International Journal on Advanced Science, Engineering and Information Technology*, 7(2), 399–405. <https://doi.org/10.18517/ijaseit.7.2.2095>
- Maps, G. (2020). Retrieved June 17, 2020, <https://www.google.co.id/maps/place/Vihara+Dhanagun/@-6.6032934,106.7980612,270m/>
- Marcella, B. S. (2014). Bentuk dan Makna Atap Kelenteng Sam Poo Kong Semarang. *Jurnal Arsitektur Komposisi*, 10(5), 350–359. <https://ojs.uajy.ac.id/index.php/komposisi/article/view/1094/924>
- Miller, T. (2015). Of Palaces and Pagodas: Palatial Symbolism in the Buddhist Architecture of Early Medieval China. *Frontiers of History in China*, 10(2), 222–263. <https://doi.org/10.3868/s020-004-015-0014-1>
- Moedjiono. (2011, January). Ragam Hias dan Warna Sebagai Simbol Dalam Arsitektur China. *Modul*, 11 (1), 17–22. <https://doi.org/10.14710/mdl.11.1.2011.%25p>
- Norberg-Schulz, C. (1988). *Architecture Meaning and Place*. Rizzoli International Publication.
- Proust, M. (2012). *Remembrance of Thing Past: Swann's Way & Within a Budding Grove*. Knopf Doubleday Publishing Group.
- Qing, M. (1999). *A Historic Research on the Architecture of Fujianese in the Malacca Straits: Temple and Huiguan*. Department of Architecture, The Chinese University of Hong Kong. <https://core.ac.uk/download/pdf/48535739.pdf>
- Ren, X. (2011). *Building Globalization transnational architecture production in urban China*. The University of Chicago Press.
- Sa'adah, S. (2017). *Sejarah Perkembangan Teknologi Beton Di Indonesia (History of Concrete Technology Development in Indonesia)*. Universitas Negeri Malang Fakultas Ilmu Sosial Jurusan Sejarah.
- Salim, P. (2012, October). Arsitektur Cina Pada Klenteng Jin De Yuan di Kawasan Pecinan Jakarta Sebagai Suatu Perwujudan Akulturasi Kebudayaan. *Humaniora*, 3(2), 413–421. <https://www.neliti.com/id/publications/166944/arsitektur-cina-pada-klenteng-jin-de-yuan-di-kawasan-pecinan-jakarta-sebagai-sua>
- Shen, T. (2017). Recognition of symbols in different cultures: Chinese culture vs. non-Chinese culture. Iowa State University. <https://lib.dr.iastate.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=6427&context=etd>
- Shiang, T. T. (2000). *Aksara Jepang: Kanji Praktis 1 (Japanese characters: Practical hānzi/漢字* (Vol. 1). Gakushudo.
- Sobur, A. (2006). Analisis teks media: Suatu pengantar untuk analisis wacana, analisis semiotik, dan analisis framing (Media text analysis: An introduction to discourse analysis, semiotic analysis, and framing analysis). Remaja Rosdakarya.
- Steinhardt, N. S. (2014). Chinese architectural history in the twenty-first century. *Journal Society of Architectural Historians (JSAH)*, 73(1), 38–60. <https://doi.org/10.1525/jsah.2014.73.1.38>
- Tan, A. H., Hao, S., Li, J., Zhao, L., & Tan, F. H. (2015, June 14–17). Visual modeling of Chinese temple construction for student education. 122nd ASEE Annual Conference & Exposition (pp. 1–23). Seattle, Washington: American Society for Engineering Education. <https://doi.org/10.18260/p.25044>
- Tepsing, P. (2015). Chinese Art within Thai Temples in Malaysia: The Disappearance of Thai Art. *Asian Social Science*, 11(9), 43–51. <https://doi.org/10.5539/ass.v11n9p43>
- Trisno, R., & Lianto, F. (2018). Catholic church is the divinity symbol with the case study of Santa Theresia church in Jakarta, Indonesia. *International Journal of Engineering and Technology (IJET)*, 10(3), 865–872. <https://doi.org/10.21817/ijet/2018/v10i3/181003099>
- Trisno, R., & Lianto, F. (2019). Relationship between function-form in the expression of architecture creation. *Advance Preprint*. <https://doi.org/10.31124/advance.8275322>
- Trisno, R., & Lianto, F. (2020a). A liturgical relation with the spatial configuration and architectural form of the catholic church. *International Journal on Advanced Science Engineering Information Technology*, 10(2), 843–851. <https://doi.org/10.18517/ijaseit.10.2.6184>
- Trisno, R., & Lianto, F. (2020b). Function-form relation of neo-vernacular architecture of salib suci church, Jakarta, Indonesia. *ISVS e-journal*, 7(1), 49–54. http://isvshome.com/pdf/ISVS_7-1/ISVSej-7.1.6-Rudy-Final.pdf
- Yap, J. (2004). *Stories and Lessons on Feng Shui*. Mastery Academy of Chinese Metaphysics Sdn. Bhd.
- Zhang, G. (2014). Translation of the names of Chinese temples from the perspective of culture. *Studies in Asian Social Science*, 1(1), 6–14. <https://doi.org/10.5430/sass.v1n1p6>
- Zhang, D. (2018). Cultural Symbols in Chinese Architecture. *Architecture and Design Review*, 1, 1–19. <https://doi.org/10.24294/adr.v1i1.2>
- Zoest, A. V. (1993). *Semiotika tentang tanda, cara kerja, dan apa yang kita lakukan dengannya (Semiotics about the sign, how it works, and what we do with it)*. Yayasan Sumber Agung.



© 2023 The Author(s). This open access article is distributed under a Creative Commons Attribution (CC-BY) 4.0 license.



You are free to:

Share — copy and redistribute the material in any medium or format.

Adapt — remix, transform, and build upon the material for any purpose, even commercially.

The licensor cannot revoke these freedoms as long as you follow the license terms.

Under the following terms:

Attribution — You must give appropriate credit, provide a link to the license, and indicate if changes were made.

You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

No additional restrictions

You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits.

***Cogent Engineering* (ISSN: 2331-1916) is published by Cogent OA, part of Taylor & Francis Group.**

Publishing with Cogent OA ensures:

- Immediate, universal access to your article on publication
- High visibility and discoverability via the Cogent OA website as well as Taylor & Francis Online
- Download and citation statistics for your article
- Rapid online publication
- Input from, and dialog with, expert editors and editorial boards
- Retention of full copyright of your article
- Guaranteed legacy preservation of your article
- Discounts and waivers for authors in developing regions

Submit your manuscript to a Cogent OA journal at www.CogentOA.com

