

# The Stair: An Anthropological and Symbolic Element. A research on the stairs in the Long Chang Temple (China)

Weiqiao Wang

**Abstract:** In the era of mass production, architecture is also on its way to rapid construction and industrialization. Stair space is one of those architectonic elements to be sacrificed. Simultaneously, we also pursue the texture and quality of architectural space of heritage with nostalgia. The value of architectural heritage has received increasing attention, not only because of their historic significance, but also due to their inspiration for contemporary architecture design.

Based on the Buddhist heritage—Long Chang Temple, the article is trying to conclude the inspiration to the design of public space, especially the connection space through basic architectonic element—stairs. Through visiting and field mapping on the stairs, it analyzes the relationship between stairs and other basic elements of architecture including route, light, water and time. It focuses on how stairs transmit information and atmosphere of different spaces through corporal perception. The essence of stair, as an anthropological and symbolic element, results in an inspiration thinking for contemporary architectonic design.

**Key words:** stair, anthropological, symbolic, corporal perception.

## La escalera: un elemento antropológico y simbólico. Una investigación sobre las escaleras en el Templo de Long Chang (China)

**Resumen:** En la época de la producción en masa, la arquitectura está en camino a la producción rápida y la industrialización. El espacio de la escalera es uno de los elementos arquitectónicos que ha sido sacrificado. Al mismo tiempo, también perseguimos la textura y la calidad del espacio arquitectónico del patrimonio de nostalgia. El valor del patrimonio arquitectónico ha recibido una atención creciente, no sólo por su importancia histórica, sino también por su inspiración a la arquitectura contemporánea.

A partir del patrimonio budista, el Templo Long Chang, el artículo trata de llegar a la conclusión de la inspiración para el diseño del espacio público, especialmente el espacio de conexión a través de la escalera, uno de los elementos arquitectónicos básicos. A través de investigación y asignación de campos en las escaleras, se analiza la relación entre las escaleras y otros elementos básicos de la arquitectura: por ejemplo, el recorrido, la luz, el agua y el tiempo. Se centra en cómo las escaleras transmiten información de diferente espacio a través de la percepción corporal. La esencia de la escalera como un elemento antropológico y simbólico resulta en una inspiración pensada para el proyecto arquitectónico contemporáneo.

**Palabras clave:** escalera, antropológico, simbólico, percepción corporal.

### Scope and aims

In contemporary architecture design, public space, especially the connection space, plays a more and more important role. Stair, as a vertical transportation space, it takes more physical effort to walk on the stair than on the ground, which may result in tiredness, discomfort or even pant of breath. Instead of giving rise to tiredness and boringness for visitors, could stair space become more interesting to give better experience and corporal perception? In order to demonstrate this possibility, the

article is based on the 62 stairs of Long Chang Temple to investigate how they can transmit anthropological and symbolic significance of Buddhist space.

### Introduction of Long Chang Temple

*"Chinese Buddhist temple is the place where Buddhists practice, study and interpret Buddhist sutra as well as worship Buddha. Also, it is the place for holding religious ceremony, as well as other activities for the soul of a deceased person. Besides all of these, it is also the place for daily life of Buddhist."* Lin Luo Chen (Lin, 2013)

### —Location

Long Chang Temple [figure 1] is located on the hillside of Baohua Mountain in Jiangsu Province, China, which is close to Shanghai. Baohua Mountain is called “the first mountain of Lvzong” (LIU 1980), one of the most important schools of Buddhism in China. It is the highest mountain in the periphery, which is 431.2 meters above sea level. There is an area of over 50 kilometers, surrounded by over 360 mountains in different sizes. There is a well-known saying that “the sacred mountains are occupied by prestigious monks.” It implies that there is a special relationship between mountains and temples, which means that construction of temples has to be adapted to the change of topography of mountains.

### —History

Long Chang Temple was built in the first year (A.D. 502) of Liang Dynasty and logon name was Bao Chi Kung. Then after that until 1931, its name was Hui Chu Ssu while now it is called Long Chang Temple. Originally there were 999.5 bays in this temple (here one bay is equal to the distance between two rows of columns). According to rules of ancient China, only royal architecture could have more than 1000 bays. Compared to other temples, it was considered to have a significant scale at that time. In the later years or almost every dynasty, the temple has gone through several big evolutions because of fires, earthquakes, wars and so on. Nowadays there are only about 400 bays left with a total area of 7,240 m<sup>2</sup> and the available area is 5,725 m<sup>2</sup>. Among them, the major of the existing buildings [figure 2] were built during the Ming dynasty (A.D. 1368-1644) and Qing Dynasty (A.D. 1636-1912). This temple was considered as one of the most famous and visited Buddhist temple in Southeast China.

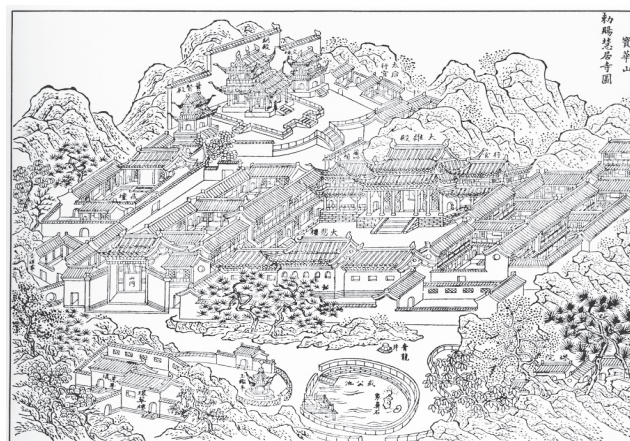
### —Construction process

*“Its peculiar plan, “built in the likeness of a lotus flower,” is well worth recording in drawing as well as in Buddhism and partly because of the role the monastery has played and still plays in the history of Chinese Buddhism and partly on account of the deviations from the orthodox plan type which characterize its layout.” --J. Prip-Møller (Prip-Møller 1937)*

From the quote of Prip-Møller (1937:1), who visited and mapped the temple in 1930s, we learnt that Long Chang Temple was quite famous for its special layout. It is a large temple with a small entrance. In contrast with other Buddhist temples that usually face to the south, it faces to the north. The construction of space was developed according to following symmetry principles and the respect for the topography changes of Baohua Mountain. There are several temple blocks in Long Chang Temple and each block has its own patio.

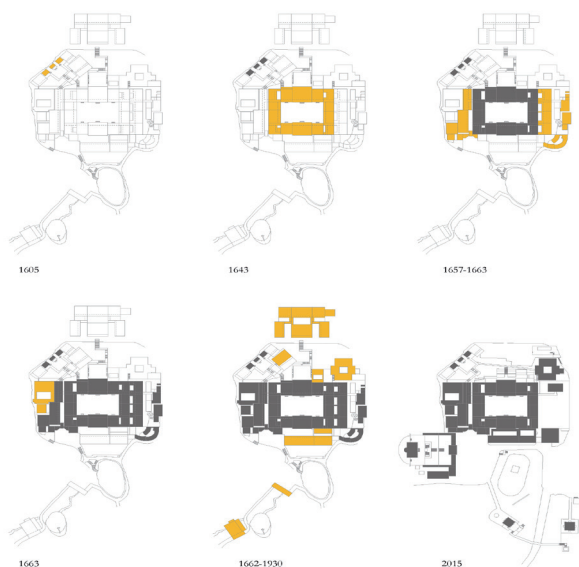


**Figure 1.-** The aerial view of Long Chang Temple, 2014. Photo by Yang Shuhui.



**Figure 2.-** Long Chang Temple, From woodcut in Bao Hua Shan chronicle. 1644-1911. LIU, M. (1980). *Bao Hua Shan chronicle*. Taipei: Mingwen Express.

Among them, there are three most important building blocks: Copper Temple, Mahavira Hall and Jietan Hall. Copper Temple is the oldest building in Long Chang Temple, constructed around the year 1605. The building block of Copper Temple is still the most ideal space for meditation and practice Buddhism, which atmosphere is more peaceful and quiet. Mahavira Hall is the largest construction block, which was erected 38 years later. Usually there are a lot of Buddhism activities been held here, which attract many of pilgrims to worship Buddha. The atmosphere of space here is more solemn and ceremonious. Jietan Hall, constructed around the year 1663, is the most unique place of Long Chang Temple where religious discipline is taught and examined. The atmosphere of space here is more serious and mysterious. The flexibility of the layout can be fully adapted to the terrain environment, time changes and religious activities needs. In this construction process [figure 3], the stairs play an indispensable role, connecting these scattered fragment space into an organic whole with a solemn atmosphere.

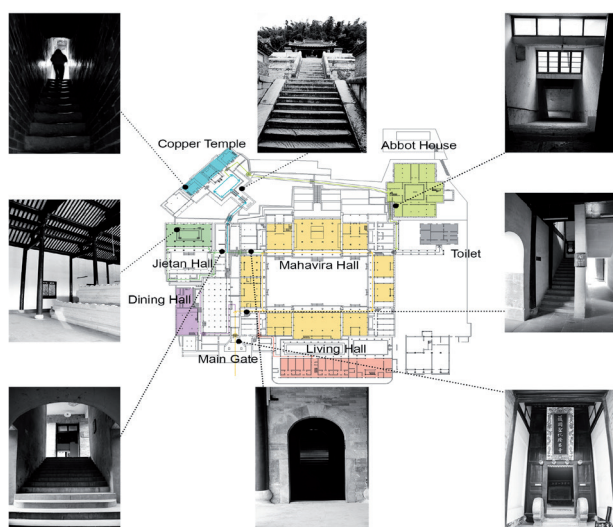


**Figure 3.-** Construction process of Long Chang Temple. Drawing by Author.

## The importance of stairs for Long Chang Temple

### — Introduction of the stairs

According to the investigation, there are totally 62 steps and stairs in Long Chang Temple, which are divided into 7 groups [figure 4]. Before the introduction, it is better that we could understand the differences between stairs and steps. Stair is the connecting element between different floors. Step refers to the element that connects indoor and outdoor space where there are usually 2 or 3 steps. The article treats steps and stairs in the same way, since it focuses more on their relationship with surroundings and how can they perform as anthropological and symbolic elements.



**Figure 4.-** Functional layout and important stairs. Drawing by Author (Plan of Long Chang Temple redrawn from the mapping drawing by Zhu Fuyi in 2014 and by J. Prip-Moller in 1937).

### —Relation with other elements

To deeply understand stairs in Long Chang Temple, the research is developed according to the following four aspects: narrative of route, reveal of light, path of water, stairs and time.

#### • Narrative of route

The beauty of a stair not only depends on its concrete, physical shape, but also its possibility to provoke abstract preliminary thoughts as well as its influence on the space around. The route for architecture is as important as the clue for the story. For Long Chang Temple, the design of visiting route plays a significant part on the expression of Buddhist spiritual connotation. Here the visiting route is divided into two parts, the mountain route and the visiting route inside the temple.

#### —The mountain route

The original way to reach Long Chang Temple is a curved mountain road surrounded by woods. Its slope is very gently that the height of each step is only 60mm. Step by step, visitors climb up the mountain become nearer to the temple unconsciously. During the journey of climbing, with the ripple of the stream, visitors will go through two gate houses, and finally reach the Ch'ien Kung Ch'ih, the public pond of the ordination. Then pass through Lung Well, which is considered of special importance to the Feng Shui of the whole place. Then after passing a small Tu Ti Miao, a temple for the local god, the pilgrim turns to the right and walking up a sloping road paved with great granite slabs, one finds himself on the big, similarly paved square in front of the monastery.

The route up to the mountain is winding and long. To some extent, being influenced by the circumstances and walking repeatedly step by step, visitors will gradually calm down and feel the religious atmosphere more and more intensely. In this sense, the winding route is the transitional link between the secular world and the religious world and it leads people to the pure land of religion naturally.

#### —The route to worship Buddha in the temple

According to the rules of Buddhism, it is said that visitors should worship Buddha and visit temple in the clockwise manner, which creates a best way to visit the whole temple. On the main route of visiting Long Chang Temple, there are three stairs [figure 5] which play important role on connecting three main building blocks. They are a set of steps in the Main Gate of temple, the stair between Mahavira Hall and Jietan Hall and the stair between Jietan Hall and Copper Temple.

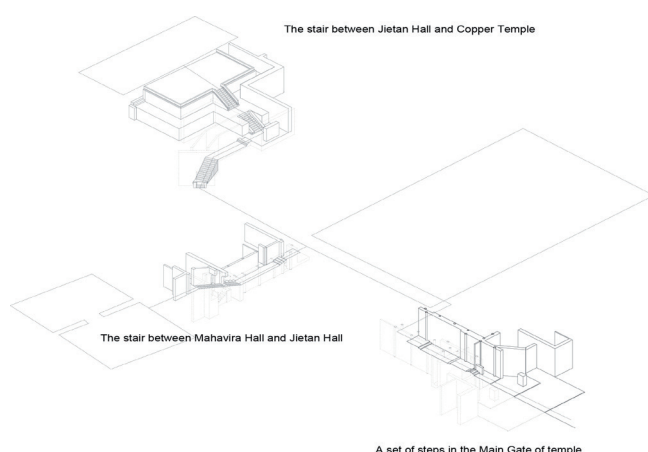
A set of steps in the Main Gate of temple [figure 6] is set as a dedicated media to lead visitors to pass through the gate slowly and quietly. Although only six steps to climb up while two to climb down, there are differences in their size, height



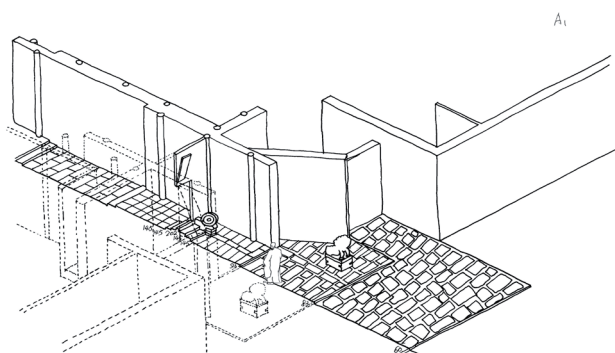
and material. All these change and details are working on rendering the atmosphere of entering the temple, and visitors have to notice the existence of steps and walking slowly and carefully, especially with devout gesture to pass through the Main Gate.

The stair between Mahavira Hall and Jietan Hall is a long stair with 25 steps, which is set between two walls. In the platform of the stair, there is two doors on both sides of the wall, leading to two patios of odorous osmanthus trees. The mysterious light entering from two doors attracts visitors to explore it in their steps slowly and carefully. The shifting light in the stairs guides visitors from the bustle and bright Mahavira Hall to the quiet and solemn Jietan Hall.

The stair between Jietan Hall and Copper Temple is a straight open stair of 40 steps. There is cloud pattern on the walls on both sides of the stair, which is good at creating strong religious atmosphere as well as stressing the specialty of Copper Temple. Through change of details, visitors could deeply feel the religious significance of the temple.



**Figure 5.-** The relationship between three important stairs in the main route. Drawing by Author.



**Figure 6.-** The details of a set of steps in the Main Gate of temple. Drawing by Author.

*"Our body is both an 'object among objects and the which sees and touches them.'"*—Maurice Merleau-Ponty (PALLASMAA, 2012)

If the temple is imagined as a story, the route is the clue while the stairs are often the turning point or even climax. Stairs influence on people's feeling about the route and surroundings by influencing the steps and directions of walking. Stairs, in a sense, do have influence when visitors come to understand the story of the temple through their steps.

#### • Reveal of light

*"Architecture is the masterly, correct and magnificent play of masses brought together in light."* —Le Corbusier (PALLASMAA, 2012)

The stairs, essentially, is kind of traffic space, where light is required as best tool to show the change of heights. Usually, the first and last step as well as the turning platform need more light to call enough attention to visitors. Besides ensuring safety, light could bring more significance for stair space. It may suggest the importance of entrance, indicate the direction of route and introduce information of space around the stair.

#### —The boundary of stair

Generally, stair itself defines the possibility walking range while the introduction of light creates the real range for personal perception. For example, the stair from Mahavira Hall to Jietan Hall, there is a beam of mysterious light performing as hint of entrance. Stair is set inside a closed space. There are two small doors in the transitional platform so that the light can shine in. As light illuminates two small doors, together with the lightened platform create an important dividing line in the continuous stair. It creates a poetic pause in this platform of stair. Even though visitors still stand inside the stair space while they might be already attracted by scenery in the patio along with the entering direction of light. To some extent, the light here contributes to introducing the information of patio to enclosed stair space. Actually, it forms the real boundary of experience for visitors.

#### —Definition for light

Although light could define the boundary of stair, similarly stair space could decide the entering way of light. Usually, stair is set in an enclosed space. Then according to Feng-shui as well as construction demand, windows and doors are added to bring light and circulation for stair space.

#### • Path of water

In ancient China, water was considered as kind of

fortune, which was expected to be treated well. Usually, deep, clear and quiet water is regarded as beauty while torrential, rushing and noisy as inauspiciousness. It is very important to build up a legitimate drainage system in the temple. Long Chang Temple is on the halfway up the hill and faces north. The space layout is compact.

#### –Defined the path for flow

There are 10 groups of steps in Patio Danchi and they almost appear in the same way. The middle of Danchi is higher than the rest and the southeast corner is the lowest. The drainage of Danchi is elaborate and set up at the border all around the patio. There is small hole under the steps so that water can flow through them. However, the set of steps in front of Mahavira Hall is the exceptional case that without drainage hole, which manifests that it is more important than other set of steps. Therefore, rain water will flow clockwise and goes through those drainage holes. Finally, it accumulates at the southeast corner, falls into underdrain and finally converges with Jiegong Pool. It shows that drainage design is quite important in traditional society of China while steps can participate in determining the path for flow.

#### –Stress the importance of stairs

Concrete design of stair could affect the flow path of water, while through some decoration and construction details, water could stress the importance of stairs, for example, working as an emphasis on the juncture. In the stair up to Copper Temple, there is a drain passage made by marble in the juncture of corridor and outside stair. In rainy day, the sound of running water could be noticed before stepping to the stair from the sheltered corridor. It reminds the visitors that it is a turning point of space, after which stair will lead visitors to upper temple.

#### • Stairs and time

All the senses, including vision, are extension of the tactile sense; the senses are specializations of skin tissue, and all sensory experience are models of touching and thus related to tactility.

#### –The marking of time

*“Se debe tener en cuenta que las escaleras no son un elemento que se diseñe para cada individuo, sino que son genéricas. Es el hombre el que se adapta al diseño de las escaleras al utilizarlas, y a sus medidas genéricas que definen las dimensiones de huellas y tabicas.”* --Juhani Pallasmaa (PALLASMAA, 2012)

The relationship between individuals and stairs doesn't only depend on one of them. In fact, experience of real moment that how our bodies get in touch with stairs seems more important. As body is the best media to

measure the scale of stair. Time can change the state presented by stair, which made it more suitable for walking. Here time is reflected in the running process between visitors and stair. For example, the stair inside Beamless Hall is a result of time. Each step in the stairs to Beamless Hall has two pits between the tread and riser which is obvious in the light. This is the imprinting of time. It persists the walking status of visitors and shows it by the variance of the surface.

#### –Monologue of material

*“We wanted to let this historic terrain speak for itself.”* --Peter Zumthor (Durisch 2014).

The old building itself couldn't speak, while through material, it reflects the story of time. In Long Chang Temple, most of the stairs are made by rough stone, which properly record the story that happen during hundreds of years. While in some of the long stairs, new stone is getting on well with old one. Together with some unexpected plants, they are showing time in a concrete and detailed way. Besides, the relationship between stairs and time is also embodied with pre-judgement of time. Many of the stones that make up the stairs are surface treated. It is presumable that the designer took into consideration that stairs will be more and more frictionless after years. People make it frictionless and it will do harm to people. Different kinds of stripes imply the significance of different stairs. In Long Chang Temple, time is demonstrated in these concrete images, pattern, handrail, decoration and so on. While the most important thing is that visitors could sense the trace of time through the change of material and finally themselves also become part of the story of time.

### Research methodology

The research is mainly formed by three parts: investigation, analysis and reflections.

#### —Method of investigation

The author regards herself as a research instrument to perceive how stair performs as an anthropological and symbolic element in the space. Objectively, the body of author here becomes a criterion to evaluate stair as well as an instrument to experience the stair. The 62 existing stairs and steps are main subject for investigation. Historical records, old photos, architecture mapping in past time are supplement materials for investigation. The significance is to replenish objectivity through understanding the knowledge of history. Through analysis of experience perception, like sense of seeing, hearing, smelling and touching, it is deeply investigated the relationship with other elements: route, light, water and time.

— *Method of analysis*

Four aspects (route, light, water and time) are followed to analyze 62 steps and stairs. What's more, prototypes and axonometric diagrams are drawn out in order to analyze different stairs in a more objective way.

— *Method of reflections*

With the support of anthropological and phenomenal theory, general conclusion and several principles will be abstracted in order to provide constructive inspiration for contemporary architecture.

**Clear results**

Through investigating in Long Chang Temple, a series of photos, drafts and data demonstrate how stairs can actively participate in creating better atmosphere of space. 62 stairs are separated into 6 groups according to their responding function. The functional layout and visiting route layout indicate that stair space, as an anthropological and symbolic element, plays indispensable role in the layout of Long Chang Temple, as specified in the following four areas:

Role transition: stair could actively participate in space design, especially the visiting route. For example, the set of steps in the Main Gate, by changing the size and paving material of steps, directly leads to the changes of visitors' walking speed, rhythm and posture.

Atmosphere catalyst: the relationship between the stair and its impact on the space can be summarized as three situations: gradual change, abrupt change and contrast. Stair plays the role of transition among spaces while light could bring more significance for stair space.

Cultural hint: to some extent, in Long Chang Temple the symbolic meaning of stair is more important than its real function. Therefore, stair stands for more cultural connotation by influencing the motion of the individual's body.

Time scale: time is the element invisible that only individuals can feel that it is flowing. The relationship between stair and time is essentially the relationship between stair and individuals. Visitors could sense the trace of time through the change of material and finally their pace on the stairs also become part of the story of time.

The stair, as a public space, is actually a crucial design element for contemporary architecture. Research on the stairs in Long Chang Temple, gives us a new revelation about how stair could be used as an anthropological and symbolic element. Therefore, in contemporary

architectural design, it is needed to reinterpret and redefine the layout of the stairs with other elements of the place. Through the perception of the body, stair can perform as a platform for dialogue between different spaces.

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**Wang Weiqiao**[Wangweiqiao714@gmail.com](mailto:Wangweiqiao714@gmail.com)

Wang Weiqiao is an architect, graduated from Tongji University (Shanghai, China) and PhD in Advanced Architectural Design at the Polytechnic University of Madrid (with scholarship from the Chinese government, CSC-UPM). In recent years, her research has focused on the Chinese heritage, especially focusing on Buddhist temples. Among them, she pays a lot of attention on studying the heritage preservation and its compositional inspiration to contemporary architecture design.