

# The Exploration and Development of "Experimental Architecture" in China: The Case of Zhang Yonghe's Architectural Works

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## Abstract

The architectural practice of former Pritzker Prize jury member Zhang Yonghe and his "Very Architecture" studio has been attracting much attention. Zhang Yonghe has been dedicated to expanding the space of experimental architecture in the Chinese architectural industry as a whole, and has been highly criticized for the strong experimental nature of his architectural practice. This paper analyzes several design cases, such as "XI SHU HOUSE", "VERTICAL GLASS HOUSE", and "SHAN YIHU", and provides an insight into 's work on experimental architecture. Through the analysis of several design cases, such as "XI SHU HOUSE", "VERTICAL GLASS HOUSE" and "MOUNTAIN SPEAKING ROOM", this paper analyzes and studies the architectural thoughts and practice of architect Zhang Yonghe, trying to explore the experimentation in his architectural design process and the expression of design concepts, and provide a new reference perspective for the understanding of his practice.

## Keywords

Experimental architecture; Yungho Zhang; experimental; extraordinary architecture.

## 1. Quotes

Yonghe Zhang was one of the first Chinese contemporary architects to have a full educational and professional background in the West, and in 1997 he entered the Nanjing Engineering College Department of Architecture in 1997 and studied in the United States in 1984 at his own expense, successively studying at Ball State University and the University of California, Berkeley. In the mid-1990s, he and his wife founded the architecture studio "Very Architecture" in China, which was one of the early private architecture studios in China. Mr. Zhang is also one of the early pioneers of architectural thinking. Due to his rich educational background both at home and abroad, Mr. Zhang has a deep understanding of Chinese culture, and he is able to extract the core of Chinese traditional culture and express it fully in his architectural practice with his unique architectural approach. He believes that the evolution of architecture is based on reflection and experimentation.

Up to now, many scholars have studied and analyzed the master architect Zhang Yonghe and his design works, for example, Wei Fanbu and Shen Shaojie have carefully analyzed the "archetypes and constructions" of his architecture; Li Hui and Zhang Minghao have studied his guardianship typology theory and architectural composition techniques; Ruan Qingyue has extracted and elaborated the architectural view of the house in Zhang Yonghe's books "Composition" and "Eben Very Architecture", etc. Ruan Qingyue extracts and elaborates the architectural view of the house in Zhang Yonghe's book "Composition Book" and "Ebook Very Architecture", etc. Based on his predecessors' research, this paper analyzes the cases of "experimental architecture" created by Mr. Zhang Yonghe and his "Very Architecture" studio, and discusses his pioneering role in the field of "experimental architecture". This paper analyzes the case of "experimental architecture" by Mr. Zhang Yonghe and his "Very

Architecture" studio, exploring his pioneering role in the field of "experimental architecture" and providing a new understanding of Zhang and his experimental architecture.

## 2. Background and development of experimental architecture

The culture of Western architecture began to influence the development of Chinese architecture from around 1980, at a time when foreign architecture was mainly neoclassical. However, due to the war and the international embargo, China missed many necessary steps in the development of modern architecture in the world. To make up for this, architects began to explore critical and experimental architecture in the 1990s to catch up with the international tide of modern architecture. There are certain differences in the experimental explorations in architecture at home and abroad, among which the experimental objects are different and the experimental contents are also different. Although the experimental architecture in China cannot be compared with the experimental architecture in international architecture in terms of pioneering, it still has profound inspiration and significance for the development of Chinese architecture. Chinese experimental architecture breaks with tradition and convention, brings new situations, spaces and ideas to architecture through the implementation of new visions, and explores the direction of local architectural development in China.

The exploration of experimental architecture in China as long as consists of two types of architects, one is the returnee architects represented by Zhang Yonghe, Zhu Pei, Ma Yansong, etc., and the other is the local architects represented by Wang Shu, Liu Jiakun, Dong Yu Gan, etc. Among them, Mr. Zhang Yonghe was one of the earliest architects who explored experimental architecture after returning to China. He brought the theoretical knowledge and research paradigm he learned in the United States and other countries into our education and practice in the field of architecture, and let people see a different system of architectural education.

The 1990s in China, where Mr. Zhang Yonghe's party history is set, when experimental architecture did not yet have a unified platform or fixed organization, nor a unified style, characteristics, etc. Many of the designers he speaks of had very different perspectives and their working styles were also very different, but there were also similarities in Cui-chan, who often appeared in the same media, books or articles, and who also organized exhibition activities together etc. The experimental architecture of the 1990s as an experimental culture is different from the Western avant-garde (or pioneer) architecture of the early 20th century, but they are both innovators and practitioners of their time and an important force in the innovation of China's contemporary architectural education system and practice.

## 3. The case of experimental architecture in architectural design

This section provides a comparison and case study of Mr. Zhang Yonghe's experimental and innovative expressions of architecture, taking as examples the architectural practices he has designed - XI SHU HOUSE, VERTICAL GLASS HOUSE, and SHAN YIHU. In order to explore his attempts and contributions in the development of experimental architecture in China.

### 3.1. Silhouette Books

It is located on Chegongzhuang Street in Haidian District, Beijing, with a total floor area of about 120-130m<sup>2</sup>. The base is located on the east side of an office building built in the 1950s, it is an existing space facing the road, originally a passageway linking north and south, and on the west side of the office building, the same as the base. The same space exists on the west side of the office building, in the same place as the base, and since it is also a passageway, various vehicles and pedestrians often come and go, and several bicycles are parked there. Through the current state of the space on the west side, the historical scene of the space on the east side can be seen. The design of this bookstore is replaced by the overlap of the past use of the base and the

bookstore, which is the result of what will happen in the near future. The collage of bicycles and bookshelves is completed with the "mobile book". The book mobile cannot travel at age, but it can rotate on its axis, supported by a steel column with a circular cross-section as a pivot. The movement of the car carrying the books is a continuation of the traffic on the street, and it gives the bookstore a certain urban character.

The most attractive feature of the exterior of the XISHU Study House is the book carts on either side of the door, black iron bookshelves that are cold and artfully supported by the wheels of a bicycle. This mysterious "icon" represents Mr. Zhang's understanding of contemporary Chinese culture. In the design of Beijing's Shishu House, Zhang's strategy bears many similarities to deconstructionism, but instead of the superficial unease of the Western approach, the spatial palette is formed by the quiet dignity of the Eastern approach and the simple formal vocabulary of contemporary architecture. And its experimental nature is full of reflection and wisdom, so the designer can gain freedom and individuality from it.

### 3.2. Vertical Glass House

Vertical Glass House was completed in 2013 as a contemporary house in Shanghai, with 4 floors and a floor area of about 36m<sup>2</sup>, using cast-in-place fair-faced concrete walls. Mr. Zhang Yonghe was awarded the Best Work Award in the International Residential Design Competition held by New Architecture magazine in Japan in 1991 for this design.

In the vertical glass house, the sky overhead and the land beneath are seen through the glass, while the connection to the urban environment is cut off by solid walls. Instead, the extreme urbanity of the solid walls prepares the way for a return to nature. Between sky and earth, the transparency of vertical glass also reveals the mechanics of the modern house and its dependence on furniture and equipment. The spaces in the vertical glass house exist simultaneously. The glass floor and the floor slab divide the spatial sequence, that is to say, a sequence that is formed simultaneously. This narrative sequence is just a superposition of scenes. At the same time, the spaces as well as the secondary spaces reflect the concept of equivalence of oriental spaces. The Vertical Glass House is a search for transparency in the vertical phase of the building, while criticizing the modernist concept of horizontal transparency. As a prototype of the modern urban house, the Vertical Glass House is an expression of the spiritual dimension of creating a personal meditative space by placing the occupant in it through closed walls, transparent floors and roofs, and also by building stairs, superimposing the required equipment, plumbing and furniture. It is also an expression of the physical dimension through the creation of staircases and the superimposition of required equipment, plumbing and furniture on the visible home system. The Vertical Glass House is another interpretation of the concept of "architecture as a machine for living".

### 3.3. Mountain Whisperer

Mountain Language is located in the mountains within Huairou County, a northern suburb of Beijing, and is based in an abandoned terraced field at the foot of the mountain. People come here to gather with friends and share the wilderness of the mountains, so what is needed is an open living space. Therefore, on the existing terraces with a height difference of 1m, a conforming sloping roof creates such a limited space. The design concept of this building is to carefully consider and deal with the relationship between the building and the site and the natural landscape. And to minimize the impact on the environment. Therefore

In Mountain Whisper, the large open space is not divided into smaller spaces, but by smaller spaces. Although the small spaces are mainly in the form of thick walls, the height of the small spaces is lower than the ceiling height of the large spaces while not destroying the integrity of the large spaces. The thick walls contain toilets, storage, fireplaces, and other uses while also dividing the space. A thick wall is also a house within a house. The concept of a house within a

house is extended by three lofts that protrude from the roof. Each of the three lofts is on a different thick wall and offers the opportunity to integrate with the landscape, not only as bedrooms, but also as three miniature residences situated on a sloping artificial hill. The Mountain Language Room is structured in steel and stone walls, with a structural system in two parts: as a frame part of the structure and as a shear wall and enclosed part. Spatially, it is divided into spaces by the height difference of the space and the roof. This ensures the fluidity of the space and a good view.

The architecture of Mountain Whispering Room acquires a specific and clear function, establishing the relationship between people and natural scenery, especially the relationship between people and the Chinese landscape. The design of a long window in Mountain Whispering Room is to emphasize the Chinese characteristics in the composition of Chinese paintings similar to the scenery seen from the window. At the same time it is also an experimental thinking of Mr. Zhang Yonghe in his architectural practice.

#### 4. Conclusion

Through an examination of Zhang Yonghe's educational experience and early works, it is clear that thinking about Chinese architecture cannot be separated from the influence of Western architectural design development in China. Zhang Yonghe's exploration of Chinese experimental architecture after his return to China all reflects his bold and avant-garde design philosophy, while the architectural design has Chinese imagery and local characteristics. Mr. Zhang Yonghe's exploration of Chinese experimental architecture is bold, avant-garde, innovative and daring, and more importantly, culturally confident for the Chinese. The most important characteristic of experimental architecture is that it is different from mainstream architecture. The most important feature that distinguishes experimental architecture from mainstream architecture is originality in theory and practice. At the same time Chinese modern experimental architecture is composed of experiments. Zhang Yonghe is a representative of contemporary Chinese architects whose efforts and contributions to the exploration of experimental architecture in China are represented. This flow of ideas coincides with the prosperous development of China. It is an architectural exploration of the question of where China is headed and a response to the idea.

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