

# Guangzhou Opera House: the Gem of Chinese Metropolis or not?

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## Abstract

In recent years, the Chinese government has invited many internationally renowned architects to design some local landmark buildings, and Zaha is one of them. The article first introduces the basic situation and cutting-edge design concepts of the Guangzhou Opera House designed by Zaha. The second part will discuss Guangzhou's geographical and economic background and the architectural culture and style of the Pearl River Delta. The last part will examine whether the Guangzhou Opera House has ignored cultural identity and regionalism.

## Keywords

Zaha Hadid, Guangzhou Opera House, Technology, Space Design, Structural Design, Development, Nationalism, Cultural Background.

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## 1. Introduction

In recent decades, with the rapid development of China's economy, China is committed to improving its international influence, eager to participate in the wave of economic globalization, and hopes to become a major force, so China and local governments have done a series to achieve this goal. Many Chinese metropolises have shown great demand for extraordinary architecture.

China's unique political background has eliminated many obstacles for architects and given them full freedom. So far, China's domestic architectural design has shown a leap-forward change. The output of overseas architectural design has become the main force of this transformation. Many internationally renowned architectural firms are increasingly participating in the bidding of some architectural design projects in China. Zaha Hadid is one of the representatives. As the first female winner of the Pritzker Architecture Prize, she has become one of the pioneers of contemporary architecture in the world.

In recent years, she has promoted her architectural concept to the world has achieved great success. And with the rapid development of science and technology, provides strong technical support for the liberation of this extreme architect. The Guangzhou Opera House as her first project in China, China's complex political and economic environment brought many opportunities and challenges to her design. This essay will introduce the design intent of the Guangzhou Opera House, including the facade and structural features, as well as the characteristics of the interior space, thus showing the impact of modern technology on the Guangzhou Opera House. In addition, a series of problems such as the gap between the construction technology and the Zaha innovative design concept will be discussed, resulting in a decline in the quality of the building.

Finally, the last part will discuss the geographical and economic background of Guangzhou and its role in the Guangzhou Opera House designed by Zaha. Although Zaha's groundbreaking design and her reputation have become a useful tool for the Chinese government to show its achievements and advertise itself to the world, for the Pearl River Delta region where Guangzhou is located, its own architectural culture and style and exotic integration and conflict of architecture is also a problem that

cannot be ignored. There is an argument that the Guangzhou Opera House has the problem of ignoring cultural identity and regionalism, and it has not become an effective means for China to show its nationalism to the world.

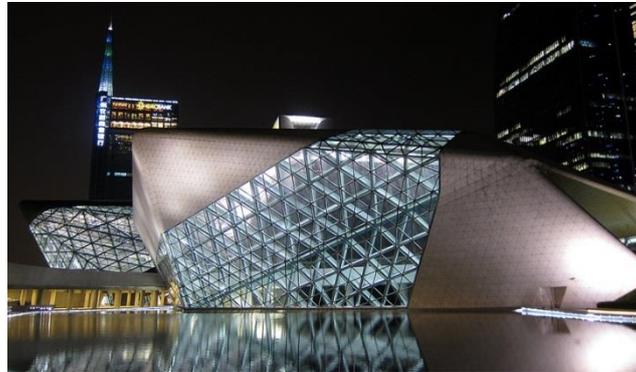


Fig 1. Night view of the Guangzhou Opera House (Baan, Iwan 2011)



Fig 2. Form of the Guangzhou Opera House (Waagner biro 2011)

## 2. Organization of the Text

### 2.1 Advanced Technology - the Foundation for Zaha's Ideas

#### 2.1.1 Design Background and Basic Situation of Guangzhou Opera House

At the beginning of the 20th century, Guangzhou, with its long history and rich cultural heritage, in order to further enhance the city's culture and international popularity, and to host the 2010 China Art Festival, Guangzhou decided to build the Guangzhou Opera House and strive to become the highest level in the Pearl River Delta region. Therefore, in November 2002, Guangzhou hosted the Guangzhou Opera International Design Competition. Guangzhou invited nine famous design firms from home and abroad to participate, including the architectural firm of Zaha Hadid in the United Kingdom, Gonzalesz Hasbrouck in the United States, and OMA in the Netherlands. Office.

In the end, Zaha Hadid's "double peddles" stood out and won the competition. At this point, Guangzhou Opera Design has become a milestone for Zaha in China, opening the way for her architectural design market in China.

The Guangzhou Opera House is located on the central axis of Guangzhou New City. It covers an area of 43,000 square meters and has a building area of 73,000 square meters. It consists of a 1,800-seat theater and a 400-seat multi-purpose theater and supporting facilities. The shape of the Guangzhou Opera House is like two large and one small stone (Fig2). The idea of the opera house comes from the interaction between architecture and nature, reflecting the way it is transformed by the river, while the Pearl River erodes the surrounding square into a city landscape. Such as hills, pools.

Zaha has rooted her design in a dynamic urban space, not only ingeniously linking the Guangzhou Opera House with the mother of the Pearl River in Guangzhou, but also infiltrating the landscape

elements into the architectural form and the architectural space, making the interior and exterior of the building Urban space becomes a different but continuous segment, and through the method of cutting and connecting, the building and the city are harmoniously symbiotic. On the other hand, Hadid insists on his architectural philosophy, the rough surface is like a wave that shows fluidity and seamlessness. This unique technique has been widely used in many Hadid projects and is in Guangzhou. The theater is well represented.

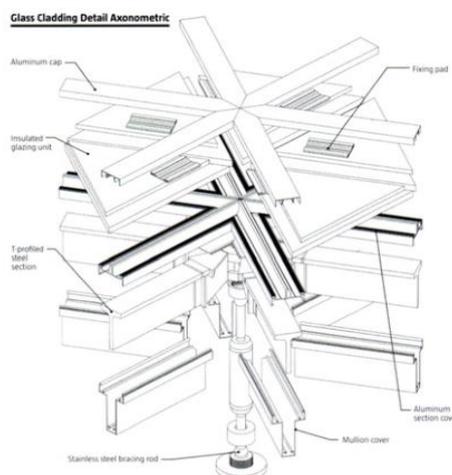
### 2.1.2 An Exploration of the Structure of Guangzhou Opera House

In addition, due to the modernity pursued by Zaha Hadid at work, her architecture requires advanced technology as a strong support. The rapid development of technology in the 21st century provides an opportunity to realize building structures and materials with unprecedented characteristics, from digital models to on-site construction, and finally the construction of this organic structure with waterworn rocks requires very advanced computational technologies. The external crystallisation and the complex and smooth surface of the auditorium were completed by different procedures, such as Rhino and Maya. The organic form of the building is achieved by splines, blobs, NURBs, and particles organized by scripts of the dynamic systems of parametric design.

As the project director of the Guangzhou Opera House, Schumacher described the structure of the opera house as “a volume within a volume”. The exterior structure of the concrete theater in the main building is formed by several giant steel frames protruding from all directions to form a shell with flat triangular steel members. (fig 4) The facets meet in the rounded corners, causing each facet to pivot towards the next facet, the facets themselves gather on the sprocket and extend from Schumacher's "knot" to form these huge stars Connector.



**Fig 3.** Concrete skeleton under construction (Zaha Hadid Architects,2009)



**Fig 4.** The detail illustrating the complicated tectonic (Zaha Hadid Architects,2009)

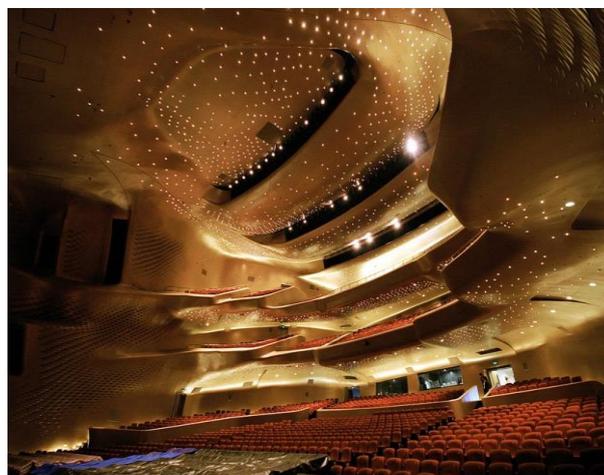
### 2.1.3 Zaha's Design Philosophy

The acoustic engineering of the inner auditorium is another difficulty. In order to require an auditorium to meet world-class standards, composite materials need to be laid and stitched together to provide various types of sound-absorbing properties. Zaha Hadid insists that the interior must be similar to the look of a building that resembles a seamless effect. 16 In this case, the sound needs to be transmitted in a more concentrated way to reduce the volume to the rear. For design purposes, Hadid worked with Marshall Day Acoustics to perform more than 150 experiments on the organic contour of the space. Finally, the fiberglass reinforced gypsum (GFRG) panel is suitable for indoor spaces (Fig 5). Panels made from this innovative material are custom-molded at the factory, constantly modifying digital model data and eventually assembling it on site. Finally, the auditorium shows a fluid impression of space with dazzling gold to meet the needs of top acoustics (Fig 6).

Finally, Zaha Hadid insists on his own concept that the concept of seamlessness and mobility penetrates into the external skin and interior space. New computing techniques and new engineering concepts are widely used in parametric fabrication, complex structural design, and acoustic performance. In other words, advanced technology plays an important role in the realization of Hadid's radical ideas.



**Fig 5.** GFRG material sample (Guangzhou Zhujiang Foreign Capital Architectural Design Institute)



**Fig 6.** Interior of the organic form of the auditorium (Zaha Hadid Architects,2011)

## 2.2 Developing China - Giving Freedom to Zaha

### 2.2.1 China's Policy Background

Since the 1980s, with the implementation of China's reform and opening-up policy, the Chinese government hopes to continuously improve its international influence, thereby bringing more international trade and improving overall economic strength.

As one of the major economic zones in China's coastal areas, the Pearl River Delta region has given many preferential policies and economic support to the region, and the development of urban construction is one of the main means to enhance international influence. The Chinese government has invited many Internationally renowned architects have participate in the construction of modern Chinese cities, creating many epoch-making buildings for these cities. In this case, many large cities in China, such as Beijing, Shanghai, and Guangzhou, have many skyscrapers and landmarks in a short period of time. In the eyes of Hadid, China at this time is like a blank, full of infinite possibilities and freedom. The economic strength of the government and the policy support of the Guangzhou Municipal Government became the basis for the birth of the Guangzhou Opera House.

### 2.2.2 Guangzhou and Zaha, Achieving Each Other



Fig 7. Pearl River Delta Map (Yuyang Liu)

Guangzhou, an important starting point for the Maritime Silk Road, more than 2,000 years ago, China transported tea, silk, and porcelain to the far west through Guangzhou, and traded with many countries in the West. Since then, Guangzhou has become an important port city. Connect China and the foreign world. Now Guangzhou, as the capital of Guangdong Province, is located along the Pearl River, adjacent to Hong Kong and Macao. (Fig7) The superior geographical position will continue the glory of ancient times. According to statistics, between 1978 and 1995, China attracted 128 billion US dollars directly from foreign countries. Investment accounts for 40% of all foreign direct investment in developing countries in the world. Therefore, under the open policy, Guangzhou has gained enormous benefits from economic globalization. Guangzhou can be regarded as a global pioneer in the Chinese economy. The rapid rise of Guangzhou is also the epitome of China's success in recent decades.

As a city with a history of more than 2,000 years, as China's urbanization process intensified in recent years, many traditional houses have been demolished and replaced by many modern buildings. Guangzhou has lost some historic urban glory. Compared to the lack of history and culture in Shenzhen and Hong Kong, Guangzhou wants to make up for this deficiency with its past historical pride. The Guangzhou Opera House tries to restore Guangzhou's cultural dominance in southern China. Therefore, the Guangzhou Municipal Government is willing to spend huge sums of money to provide a free platform for Zaha to complete her radical innovation design in China. The unprecedented support of the Chinese government has become an indispensable decisive condition.

In contrast, in the mid-1990s, when Hadid was still a rising architectural star, there was hardly any architectural work, and she won an international competition designed by the Cardiff Bay Opera in Wales. It was a breakthrough moment for Hadid. However, the government refused to pay for her design costs because of the high cost, and the strange shape of the opera house was criticized by many circles, and the project was eventually handed over to a smaller talent. This result is devastating for Hadid and a blow to the history of architecture. To a certain extent, the Guangzhou Opera House is Hadid's defense, and Guangzhou has given her the opportunity to prove herself.

All in all, the open policy has changed the economic status of China's Pearl River Delta region and has had a positive impact on the rise of Guangzhou and China's development. Strong economic strength has become the basic condition for the completion of the Guangzhou Opera House. In addition, Guangzhou's determination to restore cultural dominance has provided Zaha Hadid with generous architectural areas and freedom. After that, Hadid has plenty of room to realize her radical ideas. In return, the Guangzhou Opera House has contributed its strength to the development of international trade.

### **2.3 Behind the Prosperity Scene - the Loss of Culture and Nationalism**

#### **2.3.1 The Traditional Style of the City and Zaha's Radicalism**

After China in the 1980s, with the intensification of urbanization, architecture is no longer local or regional and follows the principle of universality. Many big cities are like a model of the same city. The layout is geometric and meshed. At the same time, there are fewer and fewer buildings with urban historic and national spirits, and modern architecture with functional supremacy has become the main type. In nominal terms, it is for economic development, but it has lost the historical spirit unique to the city. As discussed earlier, on the one hand, the Chinese government wants to enhance China's international reputation through the reputation of the Guangzhou Opera House and Zaha Hadid in order to achieve more international trade and economic strength. On the other hand, Guangzhou City wants to restore its cultural dominance in the Pearl River Delta region, so it does not hesitate to spend a lot of social resources to build the Guangzhou Opera House. It is hoped that the Guangzhou Opera House will become a historic landmark building with the purpose of carrying city history and Promoting nationalism.

In Rossi's book *The Architecture of the City*, Rossi has always emphasized the significance of monuments in the city. The monument not only carries the history and memory of a city but also gives the city space spiritual sustenance. If a building is commemorative and historic, it should be attached to the memory of the people living on this land, the past history that carries this three-dimensional space, recording the changes of time, and more importantly, maintaining the past, The common memory of the people living in this field now and in the future, this is the bearing of history, but also the inheritance of the national spirit. Therefore, a good building, especially in the special period when China is eager to reshape nationalism, the construction of a specific area should not only meet the functional needs but also connect the building with the local history.

On the contrary, it is disappointing that Zaha Hadid ignored the historical connection between the area and the building and did not achieve the desired effect. She regarded China as a "blank canvas" and made the Guangzhou Opera House realize the experimental field of her own radical ideas, Guangzhou Opera House has shown to some extent her lack of historical identity in the city, and it is even more impossible to achieve the purpose of transmitting Chinese nationalism. It is undeniable that the traditional concept of "double peddles" left a deep impression on the public. It is said that Hadid is inspired by the interaction between nature and architecture to reflect the mobility of space. However, her intentions for regional thinking focused only on the form of architecture, which was criticized as being too superficial. The shape of the two rocks is indeed attractive, but without the connection between the regional background and her design, the Guangzhou Opera House is like two cold rocks standing on the edge of the Pearl River, only the rough structure and the gray skin. There is no trace of contact with this city with more than 2,000 years of history.

### 2.3.2 The Radicalization of Chinese Urban Style

In China today, due to the lack of modern architecture that is characteristic of Chinese national culture, more and more experimental buildings have replaced traditional Chinese architecture. Under this circumstance, the spread of Chinese architectural culture and national spirit was blocked by aggressive forces. In addition, the Chinese government not only focuses on efficiency and economic development, but also because the Chinese government admires foreign architects and their international reputation, so the laissez-faire attitude toward building invasion inevitably leads to the destruction of regional identity.

A similar situation also occurred in Beijing, the capital of China. The National Grand Theater of China, designed by French architect Paul Andreu. But because its location is located in China's most politically sensitive area, close to the west side of Tiananmen Square and the Great Hall of the People, near the Forbidden City, the futuristic design of the theater has caused considerable controversy. Many people criticize this design for not respecting Chinese tradition. Culture and history. Although Paul Andrew countered that although ancient Chinese traditional buildings are indeed valuable, as the capital of the country and a very important international city, Beijing must embrace modern architecture. His design, large open spaces, water, trees, red walls, and the Great Hall of the People's Assembly, used to complement ancient buildings, are designed to blend in with the surroundings rather than standing by them. Such rhetoric is the same as Zaha's excessive attention to the architectural form of the Guangzhou Opera House, thus neglecting the connection with the history of the city of Guangzhou.

## 2.4 Is the Guangzhou Opera a Gem in a Chinese Metropolis?

### 2.4.1 The Promotion and Improvement of Guangzhou Opera House to Guangzhou

Is the Guangzhou Opera a gem in a Chinese metropolis? The answer is not unique. It is undeniable that the Opera House promoted the local economic development and became a landmark building in Guangzhou, which played a role as an economic catalyst to some extent. In the 21st century, especially in fast-growing China, the construction of the Guangzhou Opera House has had a positive effect on improving China's global influence. At the same time, some big cities in China also need the reputation of world-famous architects, like Zaha. As a public building, the Guangzhou Opera House will be further developed in the form of future public buildings such as museums and libraries in Guangzhou. The opera house itself also has many features. For example, the large public square formed by the combination of architecture and surrounding landscape, the outer skin of the building like a rock-like shape, and the complex architectural structure, these highly individual forms make the Guangzhou Opera House become two gems next to the Pearl River.

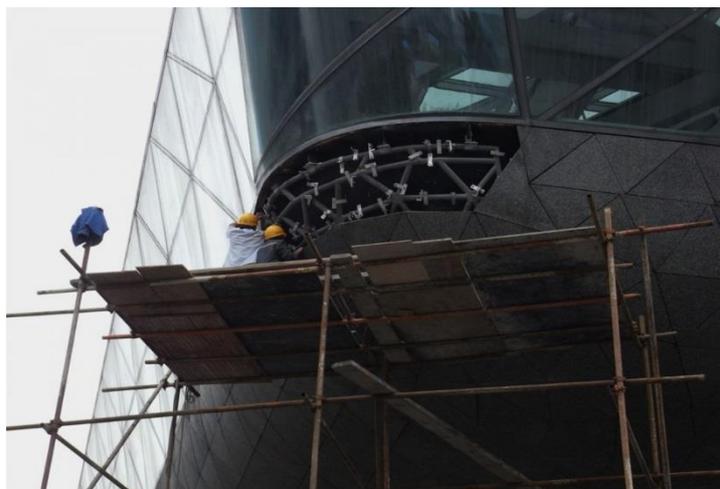
The above-mentioned promotion of the Guangzhou Opera House and the realization of Zaha Hadid's radical ideas have two external factors that cannot be ignored. On the one hand, in the process of design and construction, the application of advanced technology has been pushed to a new level. The powerful technology transforms the organic form of Hadid from a picture to a digital model, and finally uses parametric technology to transform the digital model into a physical building. Complex building structures and the use of new materials are also the best examples of advanced technology. On the other hand, geopolitical background supports the realization of the Guangzhou Opera House in an economic and political way. After the 1980s, Guangzhou, as one of the first cities in China's economic globalization, has been at the forefront of China's economic strength and openness. The Chinese government wants Guangzhou to become the economic center of the Pearl River Delta region, thus promoting the entire Pearl. The development of the triangle region. With its own stable economic growth, Guangzhou has provided strong economic support to expensive buildings while giving international architects full freedom, including Zaha Hadid.

Not only that, in recent years, the export of national traditions in the world has become more and more important, and the output of nationalism and traditional culture is regarded as an important international means. As a city with a long history, Guangzhou strives to restore its cultural dominance in this environment, so as to achieve the purpose of spreading Chinese traditional culture and

nationalism to the whole world. Therefore, the Guangzhou Opera House has become a spotlight to attract the world's attention, let the world begin to understand China, understand Guangzhou, and become the main way to advertise China, attracting more investment and bringing more international trade. To promote the economic development of Guangzhou and even China.



**Fig 8.** The lack of Guangzhou Opera House landscape (Adam, Mayer. 2011)



**Fig 9.** Falling granite slab (Adam, Mayer. 2011)

#### 2.4.2A Series of Practical Problems Brought by the Guangzhou Opera House

However, people should also consider the impact of the fantasy scene. To some extent, huge concrete and steel structures make an intervention for the entire urban landscape. As a city with more than 2,000 years of history and rich cultural essence, Guangzhou has a strong urban personality. Zaha Hadid has inserted a radical shape and unconventional structure, which makes the Guangzhou Opera House suddenly stand in the city financial district, and the opera house is inconsistent with the surrounding environment, and to some extent devours the city's personality and history.

Moreover, with reference to Hadid's idea of the disintegration of the site boundary, the landscape of the Guangzhou Opera House consists only of squares, pools, and some grasslands. The design is intended to expose the building in an all-around way, more to show the shape of the building itself, so there are no visual obstacles from all directions. Considering that there is no canopy in the Guangzhou Opera House when people walk from huge squares to buildings, people have to suffer from the harsh southern sun of China, and there is no outdoor rest area, so tourists have no choice but to sit under the shadow of the high ramp. (Fig8) In this case, the experience of visitors will drop a lot.

Although Hadid has always stressed that the design idea of the Guangzhou Opera House is uniquely influenced by the Pearl River Valley, the final form is like two pebbles eroded by rivers. It seems that the idea respects the local culture of Guangzhou, whether it is from the perspective of Chinese nationalism, or the experience of tourists, such an explanation is not sufficient. Moreover, Hadid has always regarded China as a blank canvas, and his own design ideas can be played on Chinese land, ignoring the historical and cultural background of Guangzhou. The opera house designed in this case is easy to lose the characteristics and quality of the local culture.

In addition, behind the high cost of the government, there is still a problem we cannot ignore - unsatisfactory construction quality. This point has been criticized by China, focusing too much on speed and achievement, but ignoring the process and quality. Construction in China is known as "increasing weeds". Although it took more than five years to complete the building, the appearance of the building has not yet reached people's expectations. Granite tiles are connected in a clumsy way, some of the seams do not meet, some granite has fallen and was replaced, (Fig 9) Some people believe that the poor quality of construction is due to the lack of skilled labor in China, and there are no strict regulations and management during the construction process. But the more important reason is that the complex shape of the building is related to the lack of rigorous details in the architectural drawings. In this design, Zaha uses parametric methods to deal with the shape, paying too much attention to the appearance of the building, and using a large-area continuous free curtain wall to reflect the mobility of the building. As a result, the construction of its specific project is more difficult, resulting in the final construction quality being difficult to guarantee.

### 3. Conclusion

We have to admit that the completion of the Guangzhou Opera House has brought specific positive effects to the city of Guangzhou. However, from the perspective of Chinese nationalism, the Guangzhou Opera House hardly conforms to the characteristics of a Chinese city. Still, Zaha Ha is the product of a simple expression of radical thought. The Guangzhou Opera House is her first in China. To a certain extent, an architectural work has made Guangzhou a label of Zaha, rather than a driving force to promote Chinese nationalism to the world.

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