

## Reactivating Public Life through Water. Lessons from the Forgotten Historical Canals in Guangzhou

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Learn from the Past



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system, connecting the lake and wetlands around the city, which were a buffer zone for flooding and had ecological functions that greatly improved capacity for water storage (Fig. 1).

This systematically arranged water system worked as the backbone of the urban public space. The relationship between landscape composition, urban areas, and the canal system illustrate the city's different functional forms based on geographical conditions, the natural environment and their location within the city. Water influenced the form of streets, cities and gardens, and it provided (and enriched) the urban canal landscape which formed the ancient city of Guangzhou. This socially and ecologically inclusive urban environment was built on the city's water management system and resulted in three types of waterfronts.

## 1 Waterfront Commercial Zones

Waterfront commercial zones developed from a natural harbour with a drainage function into a diverse riverbank that influenced the street pattern. The urban canal system supported the city's production and trade functions, which were the lifelines of Guangzhou's commercial development. Many strip-like waterfront commercial spaces were formed inside and outside the ancient city of Guangzhou, basically relying on the development of ports along the Pearl River, or on the main waterways of the city (Fig. 2).

## 2 Waterfront Residential Zones

Compared to the commercial areas, the waterfront residential zones had a more intense street pattern and use of public space. The canals were the backbone of these areas, acting as a transportation network connecting the different layers of these public spaces. The narrow canals also made the relationship between people, the built environment, and the water more intense. The built environment, together with the canals, were the backdrop for various lively activities. The waterfront residential zones in the ancient city of Guangzhou were initially concentrated in the inner harbour and wharf at the centre of the urban canal network. Various types of buildings, such as

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What can be learned from the historical situation to re-activate the urban canals as carriers of socially and ecologically inclusive urban space?

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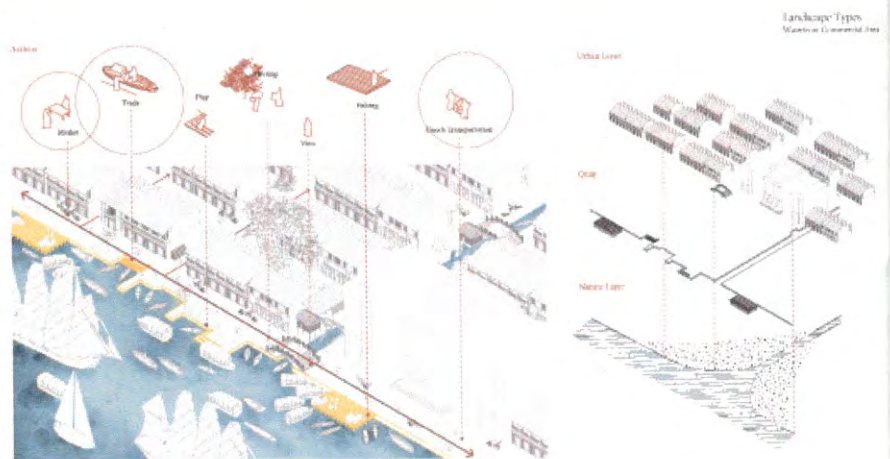


Figure 2. Design Principles in Waterfront Commercial Area, (drawing by Yu Zheng)

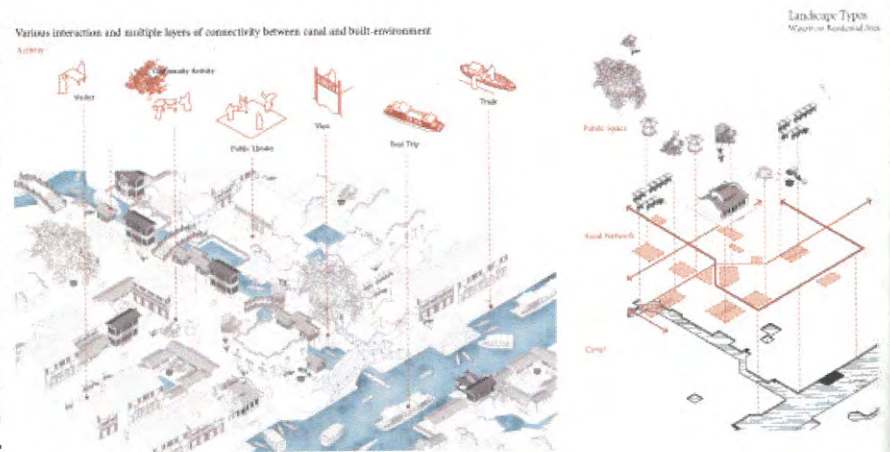


Figure 3. Design Principles in Waterfront Residential Area (drawing by Yu Zheng).

inns, temples, businesses, and community centres were formed along the waterways. The canals were the backbone of the urban public space structure. Not only were there many buildings standing next to the water, but there were also public spaces, especially at the bridgeheads, such as small piers, performance stages, old trees, temples, etc., making these zones of the social and cultural centre of the old city (Fig. 3).

### 3 Waterfront Gardens

Waterfront gardens include public, private, and royal gardens. There used to be harmony between the built environment and nature in ancient Guangzhou. People could enjoy panoramic views as well as store or drain water in the dynamic waterscape. Waterfront gardens were the most abundant water landscape in ancient times and were mostly distributed around the waterways. The waterfront yard connected to



Figure 4. The system waterfront gardens in Guangzhou (drawing by Yu Zheng).

the urban water system, which not only prevented the water from drying up, but also played a role in reducing temperature and preventing drought during intense heat, and, more importantly, it could drain flood water quickly during the rainy season. The inclusion of trees and plants were also beneficial to the microclimate of the garden, and simple adjustments could enhance the practicability and convenience of the water court. The waterfront garden was the centre of the green structure of ancient Guangzhou (Figs. 4 and 6).

What can be learned from the historical situation to reactivate the urban canals as carriers of socially and ecologically inclusive urban space? Design principles learned from history are divided into two separate but interconnected aspects: landscape and water management. The connectivity between public space and water is a key aspect of Guangzhou's urban landscape. The analysis of the city's management of its water network throughout history provides the

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base for spatial design principles (Fig. 5). The analysis of waterfront commercial area shows the diverse interface brought variety to water as public space. The analysis of waterfront residential area shows how the systematic water network worked with natural water purification system and artificial retention pond. These offer a template for sustainable water management in the city in the future. Both aspects, landscape and water management, should work with the natural environment to play their role in improving the spatial quality of the city and increase its capacity to resist flood and drought.

In conclusion, this study of the city's history shows how canals have shaped the built environment, and these design principles, based on the canals that worked so well in managing Guangzhou's water system in the past, should also ensure the creation of good quality space, with both space and water playing important roles in people everyday lives. 💧

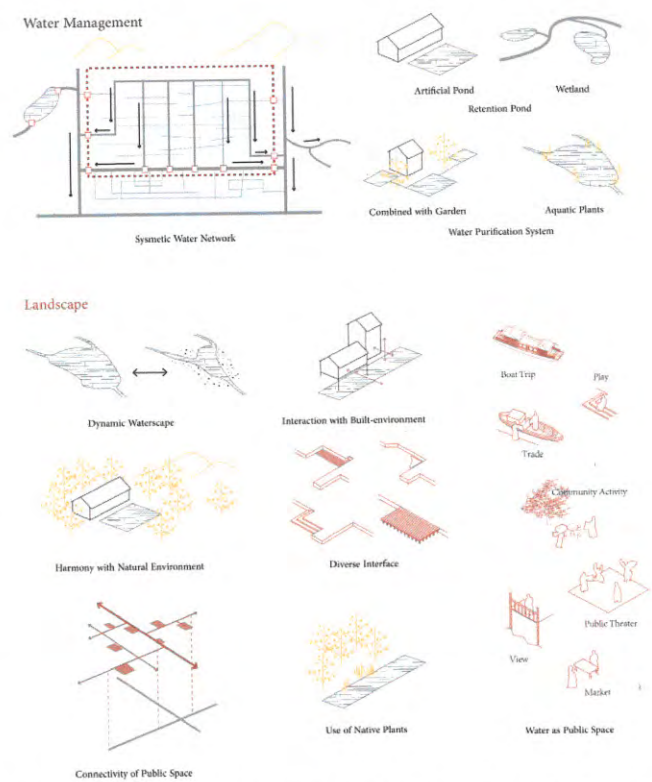


Figure 5. Design principles learned from historical analysis (drawing by Yu Zheng).



*House of a Chinese Merchant, near Canton.*

Figure 6. The waterfront gardens of Guangzhou as recorded by the English architect Thomas Allom around 1850 (private collection Steffen Nijhuis).

\* This contribution is an abridged version of: Zheng, Y., S. Nijhuis & G. Bracken (2022) 'Historical Canals as Urban Landscape Infrastructure in Guangzhou: Reactivating Public Life through Water', in: Nijhuis, S., Y. Sun & E. Lange (Eds.) *Adaptive Urban Transformation. Urban Landscape Dynamics, Regional Design and Territorial Governance in the Pearl River Delta, China*. Springer Nature (forthcoming), and is based on a MSc-graduation thesis entitled: Zheng, Y. (2021) *Live BY Water: Designing the Historic Canal System of Guangzhou as Urban Landscape Infrastructure*. TU Delft, Landscape Architecture. Supervised by: S. Nijhuis and G. Bracken.

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