Design Paths to Ecological Urbanism by Kongjian Yu
Comparative Case Studies of Zhongshan Shipyards Park and Tianjin Qiaoyuan Park
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Abstract

As cities today are transforming and impacting the nature so much today, they need to be considered into ecological design. The phenomenon of pollution and degradation of natural system is even more severe in some developing countries like China. The cities are transforming so rapidly that the ecological environment need to be more dynamic to adapt to the changes.

The paper studies two ecological park design by Kongjian Yu, a Chinese ecological urbanism pioneer. Rooted from Kongjian Yu’s theory and publication, the two cases are his representative works in different period, and his exploration of ecological urbanism is different. The paper studies the ecological design of the two projects, and analyzes what, how, why of the incentives of the design. Critiques of long term maintenance and the relationship of ecology and urbanism is discussed. Comparisons are made between these two projects in the same framework. In the end, the paper discusses the successful reasons of these projects, and whether it is replicable in other countries.
Kongjian Yu and his Theory
Bibliography

"Kongjian Yu received his Doctor of Design Degree at The Harvard Graduate School of Design in 1995. He joined the SWA Group from 1995 till 1997 in its Laguna office at California. He has been a professor architecture and landscape architecture at Peking University since 1997, and the founder and dean of the Graduate School of Landscape Architecture at Peking University. He is also the founding dean of the newly established College of Architecture and Landscape Architecture at Peking University. He is the founder and president of Turenscape, which is an internationally awarded firm with about 600 professionals and is one of the first and largest private architecture and landscape architecture practices in China. Dr. Yu is visiting professor of landscape architecture and urban planning and design, Harvard University Graduate School of Design, and serving as Master Jury for the Aga Kahn Architecture Award.

Dr. Yu has been practicing in the fields of architecture, landscape and urban planning and design. He has won numerous international awards in the past years for his ecologically and culturally sensitive projects, including 8 ASLA Awards including the 2010 award of excellence and other seven honor awards (The American Society of Landscape Architects), 2009 ULI Global Award for Excellence, World’s Best Landscape Award of the World Architecture Festival (2009), Twice Ar Emerging Architectural Award Commended and Highly Commended (Architectural Review), 4 Excellence on the Waterfront Awards, twice World’s Best Landscape Award on the International Architecture Festival and many international competition prizes."

Source: http://www.turenscape.com/home.php
Kongjian Yu and his Theory
“Big Foot” aesthetics

Urbanity citified small foot
The unhealthy, and deprived of productivity, low performance but considered to be "beautiful"

Rustic rural big foot
Healthy, productive, high performance but considered to be "rustic"

He trumpets instead the virtues of “big foot” aesthetics, rooted in the productive landscapes and cultural practices of ordinary people.

Against the tidy and the ornamental, he celebrates the messy and the rustic: “the beauty of weeds”.

Summary
Chapter I: Lessons from others' mistakes: City Beautiful Movement

Chapter II: The Wrong Path of Chinese Urban Landscape: "City Makeup Movement" led by overnight millionare and farmers

Chapter III: A path to urban landscape: "anti-planning" and implementation of ecological infrastructure

The success of Zhongshan Shipyard Park--Yu's impact from theory to practice

During one of Yu's lecture to the mayors in China in in Beijing University in 1999, the vice mayor of the city of Zhongshan was impressed by his ideas of ecological urbanism. He invited Yu to design a featured park in Zhongshan. Yu insisted to be invited to design the park but refused to take part in the tender, as he said he would lose because his ideas were not recognized by the professional commitee.

After the design presentation, most of the governors in Zhongshan supported Yu. However, only one of the professional specialist supported Yu. Then the government hold a public voting which is very rare at that time. Amazingly, more than 80% of the citizens supported Yu's design. It led to the question that who should make the decision--governors, specialist or the public? In China, most of the design projects are decided by the government, and the public do not have chance to participate their own future environment. Zhongshan Shipyard Park is a successful case showing that the public can make the right choice, and they are eager to call for an ecological urban environment.
Zhongshan Shipyard Park
Zhongshan, Guangdong, China

Client: Zhongshan city government
Area: 11 hectares
Date of Design: June 2000-February 2001
Date of Complete: 2002
1. General Project Description

Zhongshan Shipyard Park is Yu’s first major built project. Zhongshan is a city in Pearl River delta in southern China, and started ornamental landscape in large scale when it became one of the first cities to start tourist landscapes in China. However, the Shipyard Park boasted a totally different aesthetics of messy landscape of weeds and industrial heritage. Moreover, this park is one of the first parks without fences and open to the public in China.

Four Concepts:
1. Value the ordinary and even the outmoded and consider the socialist industrial heritage of the 1950s, 1960s and 1970s to be as precious as that of ancient traditional culture
2. Make the park integral to the urban landscape and open to the public, free of customary fees for local citizens and tourists
3. Establish a new aesthetic favoring untrimmed and “weedy” native, low-maintenance plants
4. Design the park to aid flood control, adapting it to water level fluctuations.
2. Water Design

The shipyard park was originally an abandoned shipyard beside Qijiang River that crossing the city of Zhongshan. The Water Management Bureau regulated that the river corridor at the east side of the site should be extended from 60 meters to 80 meters (197 to 262 feet) for storm water management. Ten old banyan trees had to be cut down as they were on the way of the course. Instead of cutting down the trees, the design dug out a riverway on the other side of the trees and leaving the trees an island.

3. Plant Design—the beauty of weeds

Instead of neat and tidy plants, Yu's theory is to find the beauty from weeds that are natural and messy. The idea was implemented in Zhongshan Shipyard Park as well. Different native plants were planted according to the habitat condition. However, the result is not usually that ideal. Actually many plants were trimmed into geometric shrubs by the workers who misunderstood his aims. The maintenance of the plants is not low cost. Sometimes one species replaced the other species and the habitat became unhealthy. Long term maintainance should also be designed in the beginning.

Significance of Zhongshan Shipyard Park:
This design was presented three times to the public through models and graphics. After construction was finished, it was also shown on national television with the result that local people and people throughout the nation were deeply touched and moved. The design explains itself as to how landscape architects can turn a wrecked site into a beautiful, meaningful and functional place, as well as to the important role landscape architects can play in urban renovation.
Qiaoyuan Park
Tianjin, China

Client: Environment construction and Investment Co., Ltd, Tianjin City
Area: 22 hectares
Date of Design: October 2005-May 2008
Date of Complete: 2008

Aerial Map showing the location of Qiaoyuan park surrounded by highway and residential buildings.
1. General Project Description

What is the site condition before?

**Wetland--shooting range--garbage dump and drainage sink**

The site is located in a northern metropolitan city Tianjin. The landscape used to be flat wetlands. After urban sprawl and industrialization, the site became a shooting range, and then it was deserted and transformed into a garbage dump and a drainage sink. The soil is heavily polluted and was saline and alkaline. A highway and overpass was on the west and north of the site, and slums and poor neighbourhood was on the east and south.

What led to the transformation?

The local **residents** called for change of the site condition in 2006, and the **municipal government** committed to a park on the site.

What is the conceptual idea of the design?

The idea of the project is **“let nature do her work”**. The topography of the park is totally transformed from flat into mound, pond and dry lands with different plant communities. At the same time, both the soil condition and plants can transform dynamically according to different seasons. The park not only clean the soil and purify stormwater, but also play the role of a recreational and educational public space for the neighbourhood.
2. Ecological design
   --"The Adaptation Palettes"

Unlike Zhongshan Shipyard Park which is geometric, Qiaoyuan Park is very free and organic in form. Not only the form looks free, but also the function and reaction of the park is more flexible. Why does the park have this free dotted form? According to Yu, the inspiration is from the adaptive vegetation communities that once dotted the landscape in this area.

The concept of the park is "The Adaptation Palettes". The form looks like palettes, and I think it also gives the idea that different natural elements can move and adapt into different pads, just like color can mix and add into different palettes. Everything is dynamic but not static.

The used-to-be flat landscape was transformed into twenty-one ponds and mounds. Soil that dig out from ponds was piled up into mounds--simple and low cost. The pond depressions were varied from 10 to 40 meters (30 to 130 feet) in diameter and from 1 to 5 meters (3 to 16 feet) in elevation above sea level.

Masterplan of the park. The image shows the concept of "The Adaptation Palettes." The orange path network link different ponds, wetlands and urban structures together. Source: http://www.turenscape.com/English/projects/project.php?id=339
3. Adaptation of plants

As the soil is saline and alkaline, it is hard for trees to grow here. However, other species that grow in the marshes can survive and grow well. Time and space can be felt in the park during different seasons and different places. In the rainy summer, some depressions turn into ponds, some into wetlands, and some stay dry. The saline-alkaline soil of the dry depressions has improved, and nutrients have been deposited in the deeper ponds that catch storm water.

Plants vary according to different water table and pH values. Initially mixed seeds were sowed in different ponds and mounds, and other native species were also able to grow at the same time. The park is educational as people can feel the ecological dynamics when recreating in the park. The park is managed by nature processes after human sowed the first seeds. Water table also varies when it is raining or dry.
Photos of Qiaoyuan in different period of the year. Source: http://www.turenscape.com/English/projects/project.php?id=339

Visitors can stay and sit on the wooden platforms surrounded by wetlands. Red asphalt paths go through the network and let visitors have multiple choices of exploration. Signage describe the species and ecological process of the park and people can learn from it when visiting the park.


4. Ecological Urbanism: an ecological island?

Qiaoyuan Park is successful because it does not only solve the polluted garbage place, but also create an innovative ecological park form that stimulate and educate people. According to Yu, "The park achieved its goals within two years. Storm water is retained in the depressions; diverse water-sensitive communities have evolved. Seasonal changes in plant species occur and integrate with the beauty of the “messy” native plant landscape. In the first two months of its opening, from October to November 2008, about 200,000 people visited the park; hundreds still visit everyday." (Source: Saunders, William, ed. 2012. Designed Ecologies: The Landscape Architecture of Kongjian Yu. 1st edition. Basel: Birkhäuser Architecture.)

When zooming out to a larger scale, the park seems like an ecological island. The interface of the park to the city is very geometric and urban—the park is enclosed by the urban form on the entrance side, and it is not accessible on the highway side. According to Professor Anne Spirn, this is the designer’s intention: let people come into a totally different world from the city and explore it like in a wonderland. This relate to the matter of scale. If the park is too small, it will not act ecological function properly. If it is too large and isolated, how can the city benefit from it? Is it possible for the adjacent neighbourhood get more real estate development? If it is not supported by a strong government with funding, how will this design happen and generate in a different context? Possibly the project should be both ecological and economic beneficial for the local community, and developers would possibly consider the surrounding neighbourhood to develop together with the park.
## Comparisons

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| Client: Zhongshan city government  
Area: 11 hectares  
Date of Design: **June 2000-Feb 2001**  
Date of Complete: 2002 | | | |
| **Tianjin Qiaoyuan Park** | Organic ponds and weaved paths in the park; geometric structure on the interface of the city side. | Water fluctuates in different space and time, and it nurtures different species and purify the saline soil. | Species adapted in different ponds or wetlands. |
| Client: Environment construction and Investment Co., Ltd, Tianjin City  
Area: 22 hectares  
Date of Design: **October 2005-May 2008**  
Date of Complete: 2008 | | | |
Why can Yu succeed?

First, Yu has great professional skills and business management. The quality of the projects are completed very well. His GSD background does not only provide him with the cutting edge knowledge and skills, but also the channel to communicate with international academia. When he went back to China, he is very easily to get recognized by the government because he attached with the power with tremendous lectures and also public his talk to mayors. His ecological urbanism theory is closely related to the requirement of ecological environment from both the citizens and government. The prosperous real estate market in China also gives the opportunities for him to combine the theory and practice together. Moreover, the success of his first projects made him famous in landscape design both in China and international world, and his team get more and more successful projects based on the foundation of the previous ones.

Can his success be replicated?

In western world, especially in the US, one's power is not large enough to make decisions. Yu is distinguished as landscape architecture just started pace as a subject in China during 1990s. He is like a missionary to bring the ideas from US and mixed it with Chinese context. Today as China is not so separated as before, especially there are so many students study abroad, it is hard to have a second Yu to impact the market so largely. The real estate market in China is not so prosperous now than previous years. To get more ecological projects built, designers should work closely with real estate developers to make both ecological and economic profits.

Though the contexts in China and US are very different, the western world can learn from Kongjian Yu. His publication and personal impact to the government can be replicated from individuals or organizations as well.
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