

# THE QUNLI STORM WATER PARK IN CHINA TO RETAIN AND FILTRATE STORM WATER

by Kim Assaël

Since 2009 the city of Qunli in Northern China, has got an innovative urban storm water park that act as a [green sponge](#) and a natural reserve of water in the middle of the city.

The *Qunli Storm Water Park* has been recognized by the 2015 edition of the [Energy Globe Award](#) for its innovative capacity to retain and filtrate storm water from the city and protect against flooding.

In 2009, the College of Architecture and Landscape of Peking University has been charged to re-design the former degraded wetland of Qunli by the Urban Planning Institute of Harbin, Administration department of Qunli area.



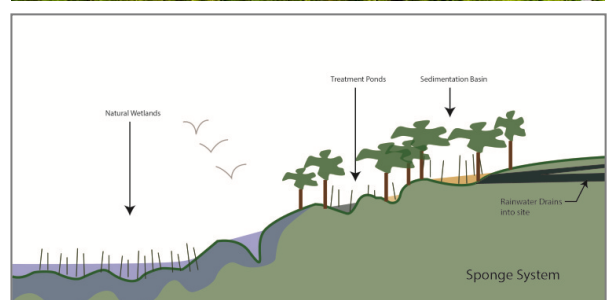
The design of the *Qunli Stormwater Park* adopted an ecologic approach to solve a relevant problem of the city, situated along the Songhua River which has historically flooded the plains along it's boarder. As cities expand, the tendency is to encroach on wetlands and in the city of Qunli the 34.2 hectares of former wetlands are surrounded on four sides by roads and buildings. From June until August, rainfall (accounting 60-70 % of the annual rainfall) generates serious floods. To address these problems, current solutions based on conventional underground pipe and pump systems present many disadvantages because they require very expensive constructions which do not solve the problem of drainage and generate waste of rainwater.



The Project of the College of Architecture and Landscape of Peking University adopted a urban ecology approach of nature conservation transforming the dying wetland into a *green sponge*. This innovative urban ecosystem includes a wet area which cleanses and stores urban storm water, recharges the aquifer, protects native habitats and also offers recreational and aesthetic experiences.



The Project, in its structural components, has been completed in the record time of 18 months. The [construction of the Storm Water Park](#) with a multilayered design strategy, has left untouched the central part of the existing wetland, has created a necklace of ponds-and-mounds surrounding it, with a filtrating and cleansing buffer; in addition a network of elevated paths, with platforms, pavilions and viewing towers, into the pond-and-mound ring, allows visitors to take advantage of this green space.



The resulted storm water Park of Qunli serves as an urban park collecting storm water from the new urban district being built around its perimeter and provides multiple ecosystems services by collecting, cleansing, and storing storm water, infiltrating into an aquifer, protecting and recovering native habitats, and helping with flood prevention.

In particular, the Qunli Storm Wather Park [brings the following advantages](#) :

- It can retain and filtrate up to 500,000 m<sup>3</sup> of storm water annually and has successfully solved the storm water inundation problem for an area of 3 km<sup>2</sup> (10 times the area of the park).
- Water quality has improved dramatically since the storm water is being filtrated by a bio-swales system.
- Many native species of flora and fauna have been spotted in the park, including more than 20 new species of birds now using the wetlands, which can be observed from the two viewing towers.
- It serves as a unique public space for the residents of the new community, which has increased the value of the land surrounding the park by 100% within 2 years.
- Real estate values have also doubled since the completion of the park with an increase in the economical development of Qunli and a rapid urbanization of the nearby rural areas.
- The multi-functional approach of such landscape features provides a great social space of recreation and social interaction for the urban crowd generating an added public social value.

Qunli is one of the *Sponge Cities* promoted by the Central Government of China to innovate old sewer system for draining rain water with the aim to meet the target of 80% of urban areas collecting the 70% of the rainwater by 2030.

Along with the expansion of urbanization and the climate change that causes unpredictable precipitation, urban floods caused by storm water become a global issue and the multi-functional approach adopted with the Storm water Parks for the management of wetlands is spreading internationally. This positive environmental engineering urban planning, is being adopted in Uganda, Romania, Laos PDR. Opportunities to integrate them in urban planning are growing in Bangladesh, Nepal, in Ghana, and in Caribbean coastal areas, too.

The [World Wetlands Day](#) celebrating every year the adoption of the Convention on Wetlands in 1971, is an important initiative to help raise public awareness about the value of wetlands. Since 1997 the [Ramsar initiative](#), involving 169 international partners and 2.299 sites for a total area of 225,517,367 hectares, provides materials that are also of interest to take advantage of wetlands in the implementation of urban parks to collect, filtrate and reuse storm water.

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