

## **Zhenjiang Sponge City Project**

21 April 2016 CHINA EVERBRIGHT WATER LIMITED 中国光大水务有限公司



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- The Origin of Sponge Cities in China
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- What is a Sponge City
- Zhenjiang Sponge City Project
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## The Origin of Sponge Cities in China





## Significant Reduction in Permeable Surfaces due to Urbanisation



#### **Highly developed zones**

#### Less developed zones





- Many cities in China have waterlogging issue due to heavy rainfall, therefore, waterlogging problem needs to be solved.
- At the same time, China is also facing with severe water shortage. Approximately twothird of the cities in China are affected by both severe shortage of water as well as water pollution.
- Water shortage has become a constraint in the process of China's sustainable economic development.





## Construction of Sponge Cities – National Action Plan





- In the Central Urbanisation Work Conference which was held in December 2013, the President Xi Jinping mentioned, "To construct sponge cities with natural accumulation, natural infiltration and natural purification abilities."
- In October 2014, the Ministry of Housing and Urban-Rural Development issued "Technical Guidelines for Sponge City Construction"
- In January 2015, the Ministry of Finance of China issued the "Notice on Carrying out Pilot Sponge City Construction with Central Financial Support"
- In April 2015, the first 16 pilot sponge cities were jointly announced by the Ministry of Finance, the Ministry of Housing and Urban-Development and the Ministry of Water Resources
- In March 2016, the application for the second batch of sponge cities was opened



#### What is a Sponge City?



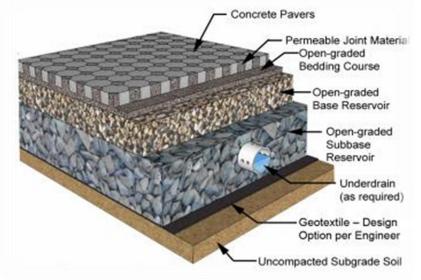


- A "sponge city", also known as "low impact development rainwater system", refers to a city with a water system which operates like a sponge to absorb, store, infiltrate and purify rainwater and to release the same for reuse when necessary.
- The construction of a "sponge city" involves (a) undertaking works to protect existing urban ecosystems, (b) the ecological restoration and repair of existing urban ecosystems and (c) the low impact development of new and existing urban ecosystems.
- A "sponge city" project is part of an integrated environmental water service, which involves the construction, maintenance and operation of grass channels, rain gardens, sunken green spaces, urban storm water drainage pipes, pump stations and waste water treatment plants.



A<sup>4</sup>Sponge city" refers to a city where its urban underground water system operates like a sponge to absorb, store, leak and purify rainwater, and release it for reuse when necessary.

## 光大水务 The Construction of a Sponge City in China includes



#### **Rainwater Seepage**



#### **Rainwater Bioretention**



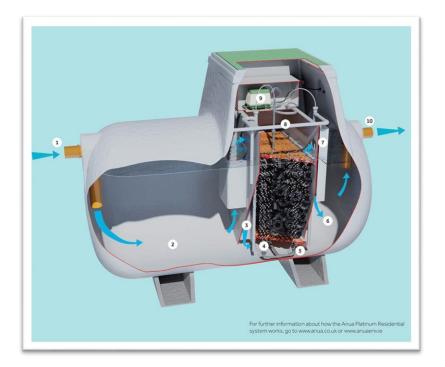
**Rainwater Drainage** 



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### 光大水务 The Construction of a Sponge City in China includes





#### **Rainwater Purification**

#### **Rainwater Reuse**

# 光大水务 The Construction of a Sponge City in China includes



**Water Purification Plant** 







## Construction of Zhenjiang Sponge City Project





#### **Construction of Zhenjiang Sponge City Project**

The joint venture company ("Project Company") will invest in the construction and operation of:

- a waste water treatment expansion project of 75,000 m<sup>3</sup> per day (National Grade 1B discharge standard)
- an advanced waste water treatment facility of 200,000 m<sup>3</sup> per day (National Grade 1A discharge standard)
- rainwater pump stations
- drainage networks
- rainwater storage tanks
- the ecological restoration and repair of certain rivers



- The Project Company will be established with a registered capital of RMB462 million.
- The Group will hold a 70% equity stake in the Project Company with the remaining 30% equity stake to be held by Zhenjiang Waterworks Corporation, which is an indirect wholly-owned subsidiary of the Stateowned Assets Supervision and Administration Commission of the Zhenjiang People's Government.
- The investment contributed by the Project Company is RMB1.385 billion.
- The concession period of the Zhenjiang Sponge City Project is 23 years.



- Revenue for the project comes from the service fees paid by the Government for the Government procured services.
- The total service fee paid by the Government include (i) services fees in relation to waste water treatment, river ecological restoration and repair, and operation of the rainwater pump stations, drainage networks and rainwater storage tanks; and (ii) amounts representing the return on the Project Company's investment.



## Opportunities for Sponge Cities in China





- China's Ministry of Finance issued "Notice on Carrying out Pilot Sponge City Construction with Central Financial Support".
- The Central Government will provide special financial assistance for the pilot sponge cities for three years. The amount of subsidy depends on the city size – for example, the Municipality receives RMB600 million per year, the provincial capital city receives RMB500 million per year and the other cities receive RMB400 million per year. For those with PPP model of a certain scale, they will receive an additional grant of 10% on the foregoing basis.



#### 大水务 Capacity of China's Market For the Construction of Sponge Cities

- According to a survey by the Ministry of Housing and Urban-Rural Development in 2010 for 349 cities on their waterlogging conditions, between 2008 to 2009, there were varying degrees of waterlogging in 289 cities – representing 80% of the total survey respondents.
- In October 2015, the Ministry of Housing and Urban-Rural Development stated that more than 130 cities have proposed a sponge cities construction plan.

The market for the construction of sponge cities is estimated to be trillions RMB



## Thank you!

