Water Infrastructure as Inter-scale Design Tool for Spatial Strategy Making
Dike System in Pearl River Delta as Case Study

Keywords: Scale, Infrastructure, Spatial Pattern, Landscape, Pearl River Delta, Research by Design

Urbanism / Urban Design - Theory & Methods

Area of Research: Urbanism

Research Summary: Delta region is one of the most essential urban territories because of its high ecosystem richness, water vulnerability, and population density. The Pearl River Delta is the fastest urbanizing delta regions in the last 30 years in terms of population and built-up area growth. With the goal of economic growth, the way of the urbanization expansion and industrialization has threatened the ecosystem, urban life and water safety. The region is searching for effective spatial tools to promote social, economic and environmental sustainability in multi scales. The dike system has been the oldest water infrastructure in the region that helps the citizens shaping their land with water. And it still playing an important role in the fast urbanization of the delta area. With its inter-scalar characteristic, the water infrastructure might be a good design tool to understand the Pearl River Delta area and contribute to a more sustainable spatial pattern.

Research Methodology: Layer approach from Landscape Ecology is introduced to decompose the complex territory into layers of landscape, infrastructure and occupation. Historical maps and archives on occupation and dike construction are organized and analyzed in a temporal-spatial scales model. The changes of both spatial and governmental characteristic scales are used to explain the spatial intervention and interaction among the layers.

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Main Question: How to use water infrastructure to understand the spatial pattern and prepare for the future challenges in a fast urbanizing delta like the Pearl River Delta?

Deliverables: Perspective on understanding and promoting integrated spatial strategy in multi scales in the delta region.

Link(s): http://homepage.tudelft.nl/q7q71/

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