

## **Exploration of an Environmentally Friendly Form of City Development Combined with a River: An Example of a Four-Dimensional Analysis Based on the Expansion of the City of Jinan across the Yellow River**

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**Abstract :** In order to study the topic of cities crossing rivers, a Four-Dimensional Analysis Method consisting of timeline, X-axis, Y-axis, and Z-axis is proposed. Policies, plans, and their implications are summarized and researched along with the timeline. The X-axis is the direction which is parallel to the river. The research area was chosen because of its important connection function. It is proposed that more surface water network should be built because of the ecological orientation of the research area. And the analysis of groundwater makes it for sure that the proposal is feasible. After the blue water network is settled, the green landscape network which is surrounded by it could be planned. The direction which is transversal to the river (Y-axis) should run through the transportation axis so that the urban texture could stretch in an ecological way. Therefore, it is suggested that the work of the planning bureau and river bureau should be coordinated. The Z-axis research is on the section view of the river, especially on the Yellow River's special feature of being a perched river. Based on water control safety demands, river parks could be constructed on the embankment buffer zone, whereas many kinds of ornamental trees could be used to build the buffer zone. City Crossing River is a typical case where we make use of landscaping to build a symbiotic relationship between the urban landscape architecture and the environment. The local environment should be respected in the process of city expansion. The planning order of "Benefit- Flood Control Safety" should be replaced by "Flood Control Safety - Landscape Architecture- People - Benefit".

**Keywords :** blue-green landscape network, city crossing river, four-dimensional analysis method, planning order

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