

Restoration of Urban Landscape in Early Modern Naniwa-city Based on Deciphering Historical Pictures

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Japanese infrastructure was constructed by the large-scale urban developments both, in the post-war reconstruction period (1945-1954) and in the high economic growth period (1955-1972). Landscapes of nature and of the history have been lost while convenient cityscapes were formed by the urban developments. For this problem, a law was established to support urban design to make use of local culture and history. On the other hand, landscape simulations have been becoming easy-to-use for persons concerned by evolution of geo-spatial information technology. Moreover, the scheme of the beautiful country creation policy summarized in 2003 has the main object which changed landscape are compared analyzed by simulations using the Geographic Information System.

It is important to design of conservation or preservation in contemporary cities. Therefore, analyzing from the viewpoint for landscape about the historical cityscape is necessary. Naniwa city is the old name of Osaka city in Kinki area in early modern time in Japan. It is one of the big three cities. It has a lot of cultural materials. In this study, the authors analyze the sights in the historical pictures painting Naniwa city. The three-dimensional models are simulated to analyze the landscapes of some parts of the Naniwa city.

A terrain model is important for urban landscape simulation. After experiencing these process, the old terrain model, which is of early modern Japan, was created from present digital elevation model (DEM) data, which was added correction of the historical records. The old terrain model was assembled allowing the movement of coastline and an amount of grand subsidence. The sights in Naniwa were identified by hotspot analysis based on historical pictures with geocoding. Old main roads were put on the map in the same way. By the analysis of the location, a area restored was chosen the Shitennoji temple area beside old main road. In a landscape simulation by using a three-dimensional urban model, huge data volume always becomes a problem. Therefore, the model of Naniwa was made by the technical skills of landscape engineering a field of vision, a view points, levels and so on. The authors classified the levels to create three-dimensional model which control the data volume. The authors made three pictures. First was the picture written by Sadanobu Hasegawa in Naniwa Hyakkei pictures. In this picture, it is cleared that the relation between the place of mountain and tower are different of real space. Second picture is by Utagawa. It is compared with the contemporary space. Third is the tower and the Shitennoji temple in the foreground.

The analysis between in Naniwa City is simulated by the using geo-information technologies. In this study, the landscape of Naniwa was clear using landscape simulation by three-dimensional urban models. The landscape transition was understood by landscape simulation from the same viewpoint. The authors continue landscape restoration because it was not sufficient landscapes of Naniwa.

Keywords: historical picture, restoration, geo-information technology