

## Chapter XIII

# An ePlanning Case Study in Stuttgart Using OPPA 3D

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### ABSTRACT

*Urban Planning is a multi-disciplinary process. Social-economic, environmental and natural resources issues need to be considered to ensure urban sustainable development and to enhance the quality of human life. As a result, it is necessary to investigate different urban planning techniques and possible new ways to facilitate the urban planning process. In this context, ePlanning, an important section of eGovernment, emerged. In order to enhance the capability of ePlanning, different ePlanning systems have been developed for different planning tasks and purposes. However, the state of the art in ePlanning practice is mainly limited to text or 2D maps. 3D visualization is rare, especially interactive visualization for public participation. Based on the preliminary research in an EU-funded project (i.e. Virtual Environmental Planning Systems), this chapter presents an online 3D public participation system for urban development called OPPA 3D, and its potential benefit to Rosensteinviertel regeneration in Stuttgart.*

## **INTRODUCTION**

In most countries of North West Europe (NWE) public participation is an inherent part of urban planning process. Many local authorities in these countries intend to employ different Information Communication Technologies (ICTs) to facilitate consultation and participation, or have already initiated such movement (ODPM, 2004). The need for assistance in performing all these planning activities has led to the rapid development of urban information systems, especially ePlanning systems for eParticipation. It is proposed that an effective ePlanning system will increase the likelihood of effective urban development and public participation.

It is obvious that the meaning of eParticipation is not only to digitalize existing planning and decision-making processes but also look for innovative participation possibilities to encourage the positive public involvement using ICTs. Considering the new media and technologies, a wide range of new possibilities is open to be investigated in variant ways for eParticipation, such as online 3-dimensional (3D) visualization. Currently, although research in ePlanning has overcome some problems in the technical development field, the state of the art in eParticipation practice is still limited to text or 2D maps. 3D visualization is rare, especially interactive online visualization (Hamilton et al., 2001; Song, 2004).

Based on the situation discussed above, the motivation for this chapter is concerned with the need to develop ePlanning systems which can use online 3D visualization to enhance public participation, and to assess benefits of potential planning proposals in the field of urban planning. The main focus of this chapter is an Online Public Participation Application in 3D (OPPA 3D) for urban development, which has been developed in an EU-funded project called Virtual Environmental Planning Systems (VEPs) and is to be evaluated in the Rosensteinviertel regeneration in Stuttgart, Germany.

This chapter firstly presents a background to the research, based on the review and analysis of knowledge on ePlanning and eParticipation. Then, it goes to the practical fieldwork, i.e. Stuttgart case study in the context of VEPs project. VEPs is a collaborative project concerned with the development of ePlanning systems. As the pilot case study of VEPs, Rosensteinviertel regeneration in Stuttgart provides the context for the development and assessment of OPPA 3D. In practical sections, general introduction of VEPs project, VEPs tools and Rosensteinviertel case study are depicted first, followed by the development process of OPPA 3D (Online Public Participation in 3D) and its potential benefits in the city's planning process. The development of OPPA 3D comprises three phases. The first phase involves data gathering and analysis of OPPA 3D at the early stage, including summarizing planning scenario and identifying key user groups. The second phase is the Modeling and Matching design process of OPPA 3D, which produced the functionality of the system. The third phase illustrates some technical issues in the implementation process of OPPA 3D. The chapter is concluded by some potential influences 3D ePlanning systems could make in the urban planning process in the near future.

## **BACKGROUND: EPLANNING AND EPARTICIPATION**

### **ePlanning Systems in Context of eGovernment**

The strategic goal for 2010 set for Europe is "to become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion." (Lisbon European Council, 2000) This new style of society is defined as the 'Information Society', in which Information Communication Technologies (ICTs) are in general use. eGovernment has been defined

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