Spatial simulation environment for decision support

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Abstract

The city of Vienna (AUSTRIA) follows a long-term initiative to be sustainable and affordable. This initiative is getting increasingly difficult due to a changing energy landscape and the aim to increase the usage of renewable energies. Additionally Vienna is a growing city. Current population forecasts predict a growth of the population which will pass the two million mark within 2029. Thus the requirements on space, infrastructure and support systems and therefore planners and decision makers are increasing. Concerning these issues, the paper focuses on the city’s internal development potential as a basis for gaining new living and working areas. A model calculating the floor-area potential considering city development areas will be presented. This model establishes a basis for a simulation environment which is expandable via heating system models. The simulation environment is needed to test and visualize future scenarios. Thus it acts as an interactive, multi-scalar decision and planning support tool for interdisciplinary stakeholders. This generic approach aims to describe a process tool with the ability to be used in other cities and other disciplines.

Keywords: cooperative tool, decision support tool, 3D city model, simulation environment, spatial planning, energy planning