Foreword on the Spatial Analysis Methods documented in the catalogue

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Findings of the 2TaLL research project present a series of new analysis methods that facilitate studies on the impact of new buildings on a city. In particular, visibility studies based on Visual Protection Surfaces provide new opportunities for an urban planning practice that respects historical urban heritage. For example, the protection of urban skylines in historical cities can benefit much from the new possibilities offered by the analysis. Beside the visibility, the authors also examine qualities of public spaces and the shadowing effect produced by tall buildings in their surroundings. The megatrend of progressing urbanization and the growing need for built-up structures of high density will strongly influence urban development in Europe in the next decades. This emphasizes the necessity for modern digital planning tools as those developed in the 2Tall project.

The integration of the third dimension in the visibility analysis of urban areas enables new and innovative systematical view analyses. The most important one is the comprehensive analysis of buildings visibility which combines the height of a building with its visual impact, namely the Visual Impact Size method. The innovative visualization method is capable of delivering a quantitative analysis in the form of an informative map which shows the visual impact of a building on its urban surrounding as well as its magnitude. A huge advantage is that the analysis is not restricted to selected standpoints but covers all possible points of view in an urban area. For this reason, the visibility analysis is considered comprehensive.

Case studies of such cities as Dresden, Brussels, Munich, Berlin, Frankfurt, Rotterdam, Delft and others provide very good examples of how advanced 3D-city models (including semantic information) can be used. In the years to come, such models will be created for a number of cities all around the world. The architectural research group has not only harnessed astonishing technical skills necessary to develop software for the computation of Visual Protection Surfaces, they also resolved challenges related to various input data types and formats such as Lidar data and CityGML.

The examples provided by the authors of the 2TaLL research project are visually appealing and illustrate the practical application of the method and consequently the huge potential of analysis methods developed. Hopefully, the research team can continue and further their work in this field.