

Interactive Visualisation for the Internet in Landscape Planning with VrmI

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Interactive visualisations, in particular for the internet, offer new perspectives and possibilities for visual communication in the designing process. Geometry- and attribute-data combined via hyperlinks open a wide area of potentials for landscape planning to create geographic knowledge- and information-bases on the internet.

VRML (Virtual reality modelling language) is one of the leading technologies to create navigable, hyperlinked interactive worlds on the internet since 1994, and it is the international standard file format (ISO/IEC 14772) for describing interactive 3D multimedia. This language can be seen as the 3D equivalent of HTML.

The advantage of VRML is that it is widely platform-independent, easy to create by exporting from standard 3D-Graphics Software, and it works well with the newer browser generations. The current version (VRML97) contains a wide range of interactive nodes to bring "life and motion" into these worlds. This offer a tool to visualise 3D content, make them experienceable and combine them with other data, graphic and/or multimedia components from the internet. In particular, projects with public participation or projects of public interest, can be easily extended with these features.

On the other hand, bottlenecks like internet-bandwidth and computer performance (on the client-side), make it difficult to create landscapes that are detailed enough to serve "reality" with a picture quality and polygon size that can be handled by nearly all clients.

In particular, in landscape architecture it is difficult to create high-end VR-projects for average desktop-computers because of landscape structures like vegetation and complex terrains which need thousands of polygons to be displayed in an realistic way. This fact can drastically reduce the usability of VRML for landscape visualisations. By this way, it is necessary to find and to use optimisation techniques to reduce the scene to a meaningful size, but to retain an acceptable quality.

This process of reduction is necessary to guarantee usable scenes, but means also, that the designer needs to work on two different models, one detailed model for the construction and building process as well as for high-end renderings, and one file-size-optimised model for the internet. This fact makes it essential to use a well-structured project-management for data-handling, from the beginning of the planning process. This presentation tries to show the potentials, but also the problems of interactive worlds for landscape planning. Beside the VRML-language, alternative technologies (e.g. Quicktime VR) will be explained and compared.