

Foreword

In 1987, Ervin H. Zube (1931-2002) and his colleagues reviewed various simulation techniques, and concluded that the future of 3D landscape visualization would be in computer graphics. The breakthrough for 3D landscape simulations came when image-processing techniques were merged with geometric modeling. These techniques enhanced image quality and opened the door for real-time rendering of virtual models. Real-time visualization on standard desktop computers has been triggered by the fast growing market for computer games, and subsequently used by millions of enthusiastic computer game players.

Still, it remains a major challenge to render landscapes photo-realistically with a high level of detail, especially when it comes to *real-time*. However, the question of how much photo-realism, level of detail and interactivity is needed in landscape planning and design, and at what stages in planning and design, remains unresolved. At the same time, deliberate Non-Photorealistic Rendering (NPR) is a new and promising approach that needs to be looked at in more detail.

In the light of continuing advances a question comes up: how can these technological developments be applied in formal public participation procedures or informal stakeholder participation? Visualization can support the communication of the impacts of planning and design outcomes that do not yet exist. In the past, landscape visualization has been mainly understood as a medium for presentation and marketing of plans and designs. Modern participatory planning processes, as opposed to traditional planning practices, demand interactive tools, e.g. integrated visualization systems or planning support systems, perhaps combined with traditional media as well as high-level moderation skills.

These proceedings cover contributions from the International Conference on Information Technologies in Landscape Architecture, held in Dessau, Germany, May 26 – 28, 2005.

All contributions have been fully reviewed.

This conference is the sixth in a series of conferences offered by the Master of Landscape Architecture (MLA) Program at Anhalt University of Applied Sciences. The conference was organized in cooperation with Bauhaus Foundation Dessau, and the Lenné3D Research Project and takes place in the immediate neighborhood of the historic Bauhaus on the campus of the Anhalt University of Applied Sciences.

The increase in the number of accepted contributions meant that for the first time the conference has been held over three days, with several sessions held parallelly. This remarkable success is very likely the result of the topicality of this year's main topics: real-time visualization and participation. Previous conferences focused on trends in online landscape architecture, landscape modeling, GIS and virtualization. Wichmann Verlag also published the proceedings of these conferences.

Most of the speakers have a background in landscape architecture, landscape planning and related disciplines. They are researchers, practitioners, and educators. Rather than merely focusing on technological aspects of hard- and software, several authors concentrate on appropriate representational techniques and the information needs within projects. This year

we also had many contributions from computer graphics specialists who presented their application-oriented software developments. Several contributions show amazing advances in photorealistic rendering. The papers in these proceedings are organized according to the set of topics. The keynotes are used as the introduction to the proceedings. The first chapter addresses new approaches for integrated landscape visualization systems, particularly focusing on technology and software development. The implications of real-time visualization and participation for the planning process are the subject of Chapter 2. The third chapter includes the discussion and presentation of participation and communication techniques. Chapter four takes up ecosystem and land-use modeling for landscape visualization. Chapter five concerns visual quality modeling using virtual environments. Finally, the sixth chapter, is devoted to a topic area that emerged from the submissions: game engine-based landscape visualization.

We wish to thank all of our contributors. There is much we can learn from each other! In particular, we would like to thank Prof. Klaus Selle for his contribution “The End of Public Participation? Stories of the Transformation of an Old Notion”. Gerold Olbrich, the editor at Wichmann, made it possible to have the proceedings edited and printed in time for the conference. His assistance is greatly appreciated. Then there are those who are not named in this book but without whose help it would not have been possible; our layout experts Matthias Hensel and Thomas Reum from ATELIER BERNBURG and our English language consultant Jeanne Colgan, helped this year by Manind Prasad, proof-read the texts of non-native speakers; from the MLA team our secretary Brandon Klug for all the additional correspondence and English corrections, our team of technical assistants Marcel Heins, Matthias Pietsch and Christian Schulz for the technical backup of the conference itself. To all of them thank you for work once again above and beyond the call of duty!

Thanks also to the conference sponsors – leading and emerging technology vendors. Their hands-on workshops were a notable addition to the 2005 conference.

And thank you to our families for their patience and support.

Anhalt University, the Bauhaus Foundation, Dessau and the city of Dessau are wonderful hosts for this international conference.

Bernburg, Berlin, Melbourne and Sheffield, April 2005

Erich Buhmann, Philip Paar, Ian Bishop and Eckart Lange

PS: Please count yourself as invited and pass on to your landscape architecture and environmental planner colleagues interested in IT issues:

Anhalt University welcomes you again on the **18th** to the **20th** of **May, 2006** for next years' conference on “**Knowledge-Based Landscape Modeling**” in Dessau !