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*Editorial*

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## Preface

### Construction Informatics Today

Construction informatics is still a young discipline with less than 30 years of age, but it has already undergone several changes since its establishment in the 70s. Today it features three main disciplines that can be characterised as computational mechanics engineering, computational design engineering and computational organisational engineering. The roots of construction informatics lie in computational mechanics. Extended by computer-aided drafting in the 80s, this is still believed to be a synonym for construction informatics by the majority of end users in civil engineering. However, while computational mechanics engineering is striding more and more away because of its strong inter-relationship with numerical mathematics, the other two disciplines are evolving in close inter-relationship, both dealing with information and knowledge management.

In these days we know that information and knowledge management require enormous computational power and sophisticated methods of reasoning. They are touching the boundary of human intelligence but are still far away from achieving real complex and autonomous reasonable behaviour. These are demands that are not yet sufficiently satisfied. Currently, Semantic Web and Grid are technologies that are expected to provide a considerable push forward, while in basic informatics computational reasoning algorithms are developed and methods for related application domains are explored, e.g. for computational conceptual design, automated consistency checking, long-term transactions in information and knowledge retrieval, managing of multiple model spaces, nD models etc.

As the discipline construction informatics has been changing through the years, job profiles have been changing, too. Development of own programmes from scratch was the most widely spread job at the beginning, and large companies established their own software divisions, which were outsourced in later years to be finally sold out. Remaining parts of software divisions survived as small units or were even established anew with completely new objectives: end-user support, system administration, as well as system and tool specification and maintenance on "project demand" basis. Even renown software companies go this way forced by the globalisation. To date, programming services are available everywhere and can be acquired from nearly everywhere with only marginal and therefore cost-efficient additional effort, whereas conceptual and strategic developments are becoming more and more sophisticated, very personal and economic-sensitive tasks which cannot be distributed throughout the world and cannot be so easily integrated only by means of collaboration support tools. Conceptual and strategic developments require eye-to-eye discussions and explanations. They are headquarter tasks, and moreover, they strongly depend on the culture. It is especially in this kind of tasks where academic efforts are most valuable, helping to bridge cultural boundaries and to push knowledge frontiers. The last new type of tasks is customization. It does not only need eye-to-eye contact with the client but also a deep understanding of the local culture, much more than the strategic tasks mentioned above.

Many of today's aspects of construction informatics are visible in these proceedings. Coming from virtually every corner of the world, the papers submitted to the conference cover a broad spectrum of topics to provide a true panoramic picture. Contributions address process modelling and management, conceptual data modelling, semantic interoperability, advanced information and knowledge management methods as well as advanced design and simulation methods, reliability, security, risk and construction management issues, distributed systems, facilities, infrastructure and assets management and, last but not least, studies, analyses and lessons from practice. With that, the long tradition of the CIB-W78 conferences as promoters of innovative construction informatics themes is kept upright and continued.

*Raimar J. Scherer*  
Dresden, July 2005

## Word of Gratitude

Numerous persons engaged time and efforts to make these proceedings and the conference possible. First and foremost the authors of the papers and the participants at the conference. Reviewers worked very hard to ensure time schedules. Numerous members of the scientific committee promoted the conference in various ways. Last but not least, the team at the Institute for Construction Informatics at the Technical University of Dresden provided dedicated help and support. Our warm gratitude goes to each and all of them.

*The Editors*

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