# Digital Architecture and Construction

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First International Conference on
Digital Architecture and Construction

# Digital Architecture and Construction 2006

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# Digital Architecture and Construction

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# Preface

In the early stages of its employment, architects approached computer technology as an assistance technique that would enhance architectural practice. The scope of this engagement was captured in the phrase 'computer-aided architectural design.' In the four decades since that time, the role of computer technology in architecture has gained a marked significance and led to a different approach to physical production/construction. The scope has now been extended for architects to contemplate 'totally digital architecture design/construction.'

The main focus in the development of digital tools for enhancing the practice of architecture has been the facility with which the various tasks involved have been represented, enabled or enhanced using computer technology. The digital representation of architectural entities and the digital manipulation of those entities have provided alternate means to produce architecture (construction). Drawing, modeling, performance simulation, design collaboration, construction management and building fabrication are now routinely performed using computer-based technology. This success has revealed the untapped potential of the computational representation of architecture.

Developments in digital technology based on the study of natural processes such as neural processing, genetic evolution and emergence now suggest that the elusive nature of creative architectural thought can be articulated enough to be applied in a technologically-mediated environment. Digital tools may finally reveal what other architectural tools have hitherto concealed – the architectonics of architecture. Therein lays promise *(Ganapathy Mahalingam)*. The future of digital tools rests on the extent to which architects can accept that exemplary architectural designs that can be created in a computer-mediated environment and that digital thinking is indeed architectural thinking.

The digital age has radically reconfigured the relationship between conception and production, creating a direct digital link between what can be conceived and what can be built through "file-to-factory" processes of computer numerically controlled (CNC) fabrication *(Branko Kolarevic)*.

This newfound ability to generate construction information directly from design information is what defines the most profound aspect of contemporary architecture. The close relationship that once existed between architecture and construction (what was once the very nature of architectural practice) could potentially reemerge as an unintended but fortunate outcome of the new digital processes of production.

The digital generation of information to manufacture and construct buildings can render the present inefficient hierarchies of intermediation unnecessary.

The 1st International Conference on Digital Architecture & Construction considers these facts in the meeting. As architecture design and constructability becomes a direct function of computability, the question is, what new instruments of practice are needed to take advantage of the opportunities opened up by the digital modes of production?

The Editors,
Seoul, 2006

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