Digital Architectural Practice as a Challenge for Digital Architectural Technology Elements in the Era of Digital Design

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Abstract : In the field of contemporary architecture, complex forms of architectural works continue to emerge in the world, along with some new terminology emerged: digital architecture, parametric design, algorithm generation, building information modeling, CNC construction and so on. Architects gradually mastered the new skills of mathematical logic in the form of exploration, virtual simulation, and the entire design and coordination in the construction process. Digital construction technology has a greater degree in controlling construction, and ensure its accuracy, creating a series of new construction techniques. As a result, the use of digital technology is an improvement and expansion of the practice of digital architecture design revolution. We worked by reading and analyzing information about the digital architecture development process, a large number of cases, as well as architectural design and construction as a whole process. Thus current developments were introduced and discussed in our paper, such as architectural discourse, design theory, digital design models and techniques, material selecting, as well as artificial intelligence space design. Our paper also pays attention to the representative three cases of digital design and construction experiment at great length in detail to expound high-informatization, high-reliability intelligence, and high-technique in constructing a humane space to cope with the rapid development of urbanization. We concluded that the opportunities and challenges of the shift existed in architectural paradigms, such as the cooperation methods, theories, models, technologies and techniques which were currently employed in digital design research and digital praxis. We also find out that the innovative use of space can gradually change the way people learn, talk, and control information. The past two decades, digital technology radically breaks the technology constraints of industrial technical products, digests the publicity on a particular architectural style (era doctrine). People should not adapt to the machine, but in turn, it's better to make the machine work for users.

Keywords : artificial intelligence, collaboration, digital architecture, digital design theory, material selection, space construction