

CONCEPT AND FORM IN ARCHITECTURE: An Experimental Design Studio Using the Computer

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ABSTRACT

This paper describes the use of digital media in a first year undergraduate architectural design studio. It attempts to address the importance of developing a design process that is redefined by the use of computing, thereby integrating concept and perception. The theoretical foundations of such a process are examined and a comparison of two beginning design studio classes, one using digital media and the other employing traditional design media, is described.

INTRODUCTION

Compared to other disciplines, architectural education places more emphasis on the skills students will need to be successful professionals. Thus, architectural education is generally defined as "a process that renews and reinforces the architectural profession" (SpreckelMeyer, Carswell, & Domer, 1985). As society shifts from an industrial to an information-based society, many in the field have called for changes in the way students are being trained. In short, architectural education has become a pressing issue. How should we educate future architects? This paper addresses the use of digital technology as one part of the answer to this question.

The use of computers in the architectural profession is not new. Since the 1960's, their use as drafting tools has increased the cost efficiency of providing architectural services. The use of computers as design tools is relatively new, but is gaining in popularity. However, very few methods have been developed for integrating and eventually teaching architectural design by using this powerful media.

Is it the conflicting roles of theory and practice in architectural education today, that impedes the development of computer design methods that apply to design process? Theory, after all, is concerned with guiding principles and the conceptual nature of design; practice is oriented towards the end result and the pragmatics associated with achieving the built work. Theoretical investigations encourage speculation and frequently challenge the status quo. Practice, on the contrary is dependent on continuity and derives its authority in part from tradition. So far, the computer has found a role in practice where the task oriented nature of the machine lends itself to the information ordering aspect of architectural production. But among students, faculty, researchers, and professionals there is still uncertainty as to how computing might change the way we teach and learn design.

In general the integration of computers in disciplines such as architecture has been slow for several reasons. First, in the field of architecture, computers have been seen as just another medium of representation. Substituting the computer for tracing paper does not effect a change in design process, it simply speeds it up. The computers true potential for impacting the *design process* has thus been overlooked. Furthermore, since the process of design is often individualized and shaped by the temperament of the designer, it has resisted attempts at rational modeling, which is assumed to be a prerequisite to the use of computers in design. Second, new design methods which are shaped by the medium of computing have not yet emerged, at least not in any comprehensive form. If the full potential of computing in architectural design is to



