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Maximising the Benefits of CAD Systems in Architectural Education

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Abstract

The positive impact of Computer Aided Design (CAD) in professional architectural practice has been in focus in recent times but relatively little has been written on its significance in the education of the contemporary architect. It is common knowledge that the profession of architecture is currently undergoing enormous strains as it battles to keep abreast of trends and developments in a period of series of rapid advancement in science, technology and management (RIBA, 1992). Whilst attempts are being made to redress the shortcomings of the profession in the above context, the requirements for architectural education are yet to forge a coherent strategy for the implementation of CAD/IT in the curriculum of schools of architecture.

In almost every other field, including engineering, medicine and the humanities, computing application to problem-solving and decision-making is seen as a way forward as we move into 21st century. Architectural education must integrate CAD/IT into the teaching of core modules that give the architect distinctive competence: **studio design**. That is one of the best ways of doing justice to the education of the architect of today and the future. Some approaches to the teaching of CAD in schools of architecture have been touched upon in the recent past. Building upon this background as well as an understanding of the nature of design teaching/learning, this paper *examines* ways of *maximising* the benefits of *CAD systems* in architectural *education* and of bringing computer aided designing into the *studio* not only to enhance design thinking and creativity but also to support interactive processes. In order to maximise or optimise any function, one approach is to use the hard systems methodology which utilises analytic, analogic and iconic models to show the effect of those factors which are significant for the purposes being considered. The other approach is to use the soft systems methodology in which the analysis encompasses the concept of a human activity system as a means of improving a situation (Checkland and Scholes, 1990:68).

The use of soft systems methodology is considered more appropriate for dealing with the problem of design which is characterised by a flux of interacting events and ideas that unroll through time. The paper concludes that the main impediment to maximising the benefits of CAD systems in architectural education is not only the inappropriate definition of the objectives for the implementation of CAD education but also that the control subsystems are usually ill-structured and relatively poorly defined. Schools must attempt to define a coherent and consistent policy on the use of CAD systems as an integral part of studio design and evolve an in-house strategic and operational controls that enable the set objectives to be met. Furthermore, it is necessary to support the high level of productivity from CAD systems with a more efficient management system, especially in dealing with communication, data sharing via relational database, co-ordination and integration. Finally, the use of soft systems methodology is recommended as the way forward to optimising CAD systems in design education as it would provide continuous improvements while maintaining their productive value.

References

Checkland, P and Scholes, J, 1979, Soft Systems Methodology in Action, Wiley, Chichester.
RIBA, 1992, Strategic Study of the Profession – Phase 1: Strategic Overview, RIBA, London.

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