

eCAADe 2009 - Keynote Presentation

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Social Experiments in Design Technology

The delivery of a successful project demands high levels of collaboration across an expanded design team, which now includes consultants, fabricators and contractors as well as architects and engineers. The pace of development in design technology has been very rapid during the last few years and there are now many software products which offer high levels of sophistication. Most provide associative and parametric modelling strategies, which can be further enhanced and extended by the use of scripting languages.

Designers are becoming tool-builders while fabricators are becoming digital craftsmen. With the advent of fast efficient drawing extraction the industry is at last making determined steps towards a model-driven process. However there is no integrated platform which supports the free exchange of ideas, combined with the evaluation of performance, experimentation with production techniques and the evolution of project-specific workflows.

In education the design schools have been quick to recognise the potential of the new design technology. This has led to a rapid expansion in course curricula that now offer many new specialisations, most of which also need to be under-pinned by a good grounding in descriptive geometry, mathematics and physics. The architect as a generalist, who coordinates the work of specialists, is being challenged by an increasing breadth of technical studies that require more than just a superficial depth of understanding.

In practice the gulf is widening even more rapidly. New graduates, who often have spectacular expertise in modelling and fluency in scripting languages, do not yet have the design and construction experience necessary to direct their efforts to best effect. On the other hand people running project teams do not have the technical background to understand the potential of the skills and resources that are available.

Today there is no longer the continuity that used to derive from apprenticeship. As we experiment we find that tools based on new ideas and techniques can radically change workflow - but fear of the unknown can provoke resistance.

So the problems we face in harnessing the new technology are as much social and cultural as they are technical. The presentation will focus on developing attitudes towards tool-building with the aim of integrating design, analysis and production. This is part of a continual and quite gradual process, which requires the ability to play interpretive roles that help to bring about cultural change. Examples will be shown from the work of the Specialist Modelling Group at Foster+Partners who now have ten

years experience in deploying design technology in an environment where research is intensely project driven.