

"WHAT IS ECAADE"

Tom Maver

Professor

University of Strathclyde, Glasgow

Professor Maver emphasised that the central interest of ECAADE is not computers but design. He described the current resurgence of interest in the UK in design, as a human activity.

The Science and Engineering Research Council (SERC) in the UK commissioned a working party on design. Their recently published report established the need for the development of systematic design methods.

Design may be seen as an "integrating theme" for all engineering discipline. The fresh political interest in design offers an opportunity for ECAADE.

The construction industry, in the UK accounts for about 12% of the Gross Domestic Products. With an annual expenditure of 2300 MGBP and 2 million directly employed workers it is the largest single industry employer.

In this context it can be seen that the social implications of design are very large indeed.

Human abilities have historically been amplified in three ways. In terms of physical power, by inventions such as lever and engine, in terms of the senses, by inventions such as the microscope and radio and in terms of the intellect, by computers.

Computer may be characterised as amplifier of the intellect and in this way they may help us to gain an insight into design.

Computer programs are both the product and the process of study. ECAADE needs to consider the impacts of CAD on practice, on research, and on education.

PRACTICE

The uptake of CAD in practice has been quite small. There are a number of important issues:

Competence: Practitioners need to learn how to use CAD competently.

Integration: CAD offers an opportunity to increase integration between members of the design team.

Accountability: CAD increases the ability of designers to demonstrate the basis of particular design decisions.

Performance specifications: Building design differs from engineering design in not designing to performance specifications.

RESEARCH

We have now a tool for embodying past and present which enables us to focus an future research. Much of past research ends up in PhD dissertations which sit on library shelves.

Yet we see building failures. Many of these could have been avoided if the research which had been carried out had been promulgated fully.

Computers may embody the present and present outcomes for example by simulating the complex energy flow into and out of buildings. A central issue is to understand how our design decisions affect the quality of the built environment.

With properly designed computer software we can model the causal mechanisms, therefore we can use the computer to do research.

We need also to do research about computers. Information technology, artificial intelligence, knowledge engineering, these are our central area of interest.

We should allocate some research money commensurate with the importance of the industry. In past we perhaps didn't have the mechanisms to do research, now they exist.

EDUCATION

There are at least two important approaches in the education of new architects. We must teach them about CAD and also we must put computers at their disposal when teaching them design.

PROGRESS SO FAR

ECAADE is a young organisation, this is its third conference. The existence of ECAADE is due in a large measure to the hard work of Rik Schijf (and especially Tom Maver himself, reporters' notice).

Some of the achievements so far are as follows:

- a set of lecture notes in Dutch and English.
- a directory of the activities and facilities in the schools of architecture in Europe.
- studio projects have been developed, which make use of computers, students are asked to produce appraisals of their designs.

- Much experience has been built up in the "teaching of teachers".
- there is now a growing movement for the joint development of software.

Professor Maver ended his speech hoping that "over the next two and a half days this conference should turn its attention to at least three issues:

- to advance teaching and education
- to advance research
- to relate the first two to practice

We now have an opportunity to use CAD as an "integrating theme" for our cooperation. It is a perfect subject for collaboration not just across international but also professional boundaries".

DISCUSSION FOLLOWING TOM MAVER' S TALK

Q: Could you give us a set of priorities among the issues? For instance it seems that "teaching teachers" is a very important area where much effort could be concentrated. Will it be possible for us to hear more about the Eindhoven exercise?

A: The Eindhoven workshop is a very exiting and appropriate first step in teaching teachers about CAD. It has been run twice. The first time for 20 people and the second for 12. I hope that we will hear more about it during the next few days.

CAD TECHNOLOGY, ITS EFFECTS ON PRACTICE AND THE RESPONSE OF EDUCATION, AN OVERVIEW.

William Mitchell
 Professor
 University of California
 Los Angeles

As a context the history of the CAD field in the USA may be sketched in terms of the four generations of hardware.

1ST GENERATION (60' s)

Serious work in CAD begun in the 60' s. Ivan Sutherland of MIT

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