Not only computing — also art

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The mother of the arts

In the more than 15 years that I have been writing these columns, I have often drawn your attention to the increasing role that computing is playing in architecture. Most large architectural practices — and many smaller ones — use computing extensively.

The main use is still for producing working drawings by means of drafting systems but, gradually, presentation drawings and the act of designing are also featuring computing. As the larger practices do the lion's share of the work in the UK, it is now safe to say that most new commercial and public buildings are created with the assistance of computing. Indeed, some of the very large projects now being undertaken (Stansted Airport, for example, or Canary Wharf) could not have been dealt with in reasonable time were it not for the considerable assistance that computing can give to architects.

Part of the impetus for the introduction of computing to this area comes from the interest that the architect's professional body, the Royal Institute of British Architects (RIBA) has taken since the mid-sixties. There has been an annual RIBA computer exhibition and conference for some years and it has a computer sub-committee which, from time to time, undertakes new initiatives and missionary work. But perhaps the most interesting activity is carried out by the commercial arm of the body: RIBA Services Ltd. As part of its many duties, RIBAS runs a library service called RIBACAD. This comprises supplying printed data sheets on manufacturers' products (Figure 1) as well as tapes and discs of computer information on them, produced in AutoCad format — allowing drawings to be created in various scales (Figures 2 and 3).

The advantage of this service to computer-using architects is obvious: all the tedious, error-prone and detailed business of creating input data on such things as drainage goods, lifts, catering equipment, sanitary fittings and so on, is taken care of by a group whose job it is to make the details accurate and authentic. Those architects who do not use an AutoCad system but one of the three non PC-based popular architectural systems (or one of the 20 or so PC systems) are also catered for, in that the manufacturers of these systems translate the RIBAS data into their own formats and supply these to their users. The advantage to the product manufacturers (who pay for the major part of the service) is also clear. It ensures that detailed data on their products is available as the drawings are being prepared — and hence, that their products are more likely to be specified when the building is being constructed.

Currently there are about 5000 drawings available, containing details of 35 manufacturers' products — and this number is growing all the time. If the idea becomes the success I think it will be, other professions are likely to follow and I look forward to the day when 3-D graphic details of virtually every manufactured object are freely available in computer-readable form.

Fig 2 & 3 — AutoCad: allowing drawings to be created in various scales

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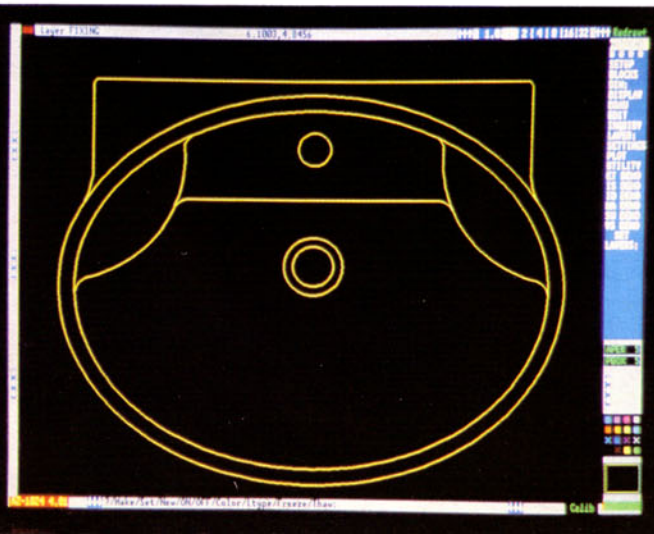

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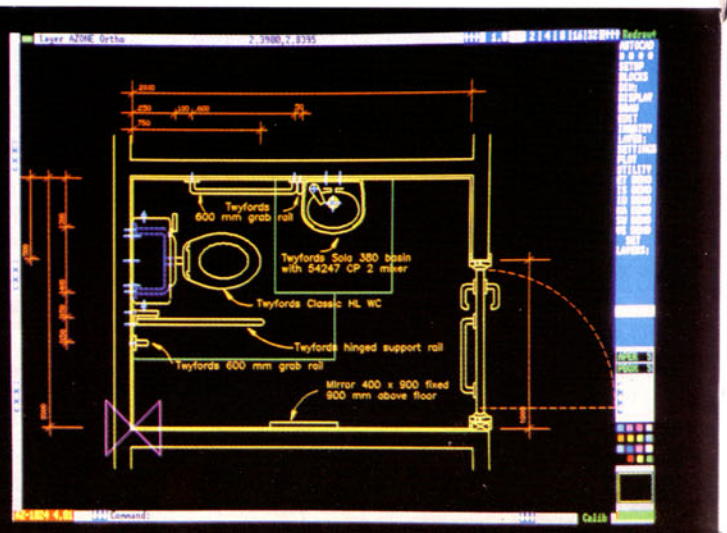

A completely different approach to using computing in architecture was presented at a conference in Delft that I attended recently. Indeed, the two methods of computer use are so fundamentally different that, on first examination, it might be thought that they cannot possibly be related to the same thing — namely creating buildings. An Austrian architect, Manfred Wolff-Plottegg, takes the view that CAD workers should not worry that the computer is a device with limited intelligence. Rather, we should exploit the fact that it only 'knows' about pixels, lines and planes and can tell us nothing about the relationship between these things and the reality that they might present.

Furthermore, given this lack of understanding on the part of the machine (which is not likely to improve over the foreseeable future), we should not bother to write special programs for architectural purposes. We should simply get the computer to generate more or less random patterns of lines and planes and then use our *own* intelligence to interpret these as representing architectural entities!

Thus, when designing a house by means of computers, the architect gets the machine to generate a random display (Figure 4) and then, either alone or in company with his client, decides what elements in the drawing should represent particular elements in the building: a wall here, a staircase there, a balcony somewhere else. He then uses a general-purpose perspective program to retain some of these elements and to create others. Alternatively, he might start from data produced by an earlier design exercise, or even from data prepared for some entirely different purpose altogether. In this way he gradually homes-in on a suitable design (Figures 5 and 6). Obviously Wolff-Plottegg's buildings are not like those you will find on the average Barrett estate: they are individualistic and highly idiosyncratic. They are examples of what he calls the 'binary house'. Surprisingly though, they are coherent works of architecture in the current European Deconstructivist style. I'm sorry I don't have a picture of a finished building for you but this successful architect has designed many buildings with this approach. If a picture comes to hand later, I will let you see it.

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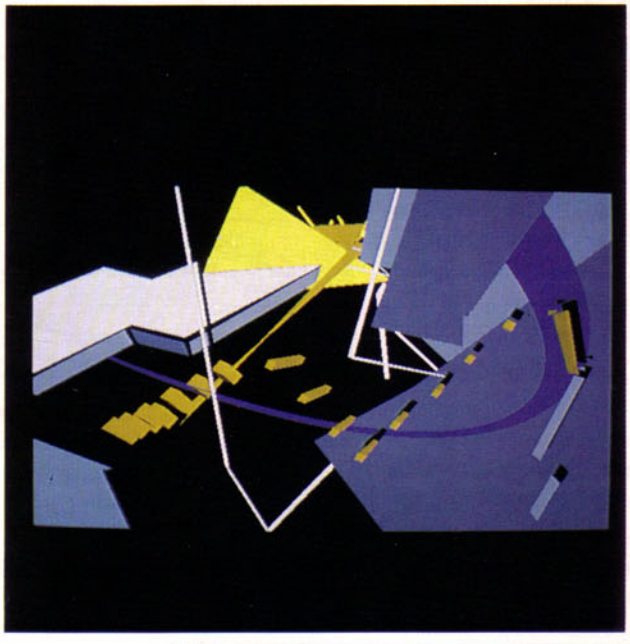

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