

Not only computing – also art

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The electric power of a vast horizon

As will be gathered from a number of articles in this issue, there is considerable and growing value in using the computer as a medium for teaching and training. Computer graphics, in particular, has great potential in helping to develop visual awareness in artists and designers. In the past this role has been the prerogative of practical work in drawing and sketching. Artists and designers learn to draw and sketch not only in order to master the craft of visual representation but also – and in the early stages, more importantly – to learn how to see things and, hence, how to comprehend their structures. The importance of this cannot be overestimated. Those who cannot draw or sketch usually fail to do so not because they do not know how to put meaningful marks on paper but because they have not learned to look at the world in an analytical way. More than half the battle in making a drawing consists in carefully examining what we see and trying to make structural sense of it. The rest is a set of tricks and short-cuts which can be learned from any competent teacher.

Architects in their early training are often required to go further than just sketching. They have to measure and record famous or otherwise interesting buildings in complete detail. They reproduce this work in a set of so-called 'measured drawings'. By doing this, they learn both the craft of surveying and a great deal about the way in which good architecture comes about. By having to scramble over a building and measure all its visible details one learns a great deal about it and, in the process, about buildings of a similar type and period. I have remarked before that going round photographing or simply looking at things is not enough to learn about them: only by sketching and measuring do we fully understand.

However, when I was a student, all drawing had to be done by hand and that, together with time restrictions, limited the amount of investigation that could be carried out. Nowadays, the use of computer graphics has made it possible to enhance the presentation of the results of the historical studies by allowing the creation of much more speedy and pictorial reconstructions. Some interesting work in that direction has been done by James Jackman at Middlesex Polytechnic. James, who teaches furniture design at Buckinghamshire College of Higher Education, explored three-dimensional modelling and visualisation systems and, in order, to illustrate his results, made use of the designs of buildings and furniture of the recent past.

In particular, he carried out visual reconstructions of one of the strange and imaginary buildings by the Italian Futurist architect, Antonio Sant'Elia, and of some of the furniture of the influential Dutch architect, Gerrit Rietveld. The work of Sant'Elia is extremely well-known to architects and art historians but almost not at all to the general public. This is hardly surprising because, as far as I am aware, none of his large scale architectural projects was ever built – although some uncharacteristic tomb and cemetery designs were completed.

Like all too many of his tragic generation, Sant'Elia was killed in the 1914–18 war and, ironically, was one of the first to be buried in a military cemetery he designed near Trieste. In his short life (he died when he was twenty eight), he was able to leave us a large number of designs for imaginary buildings which were to form part of the Futurist city. All the projects he designed were strikingly monumental with great emphasis on height and verticality and, although no buildings have ever been built which resemble them exactly, they foreshadow some of the later skyscraper scenes of modern America. As with most of the Futurist School,

Sant'Elia saw the electricity power station as the primary symbol of twentieth century life – indeed one of his colleagues, Filippo Marinetti, enthused

Nothing is more beautiful than a great humming power station that contains the hydraulic pressures of a whole mountain chain and the electric power of a vast horizon, synthesised in marble control panels bristling with dials, keyboards and shining commutators.

James Jackman has taken one of Sant'Elia's designs for a power station and modelled it with 3 D computer graphics hence allowing him to understand it more fully and us to see it from hitherto hidden viewpoints (Figures 1 and 2). Had Sant'Elia lived longer, he would

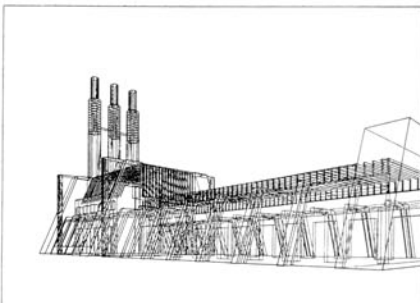


Figure 1

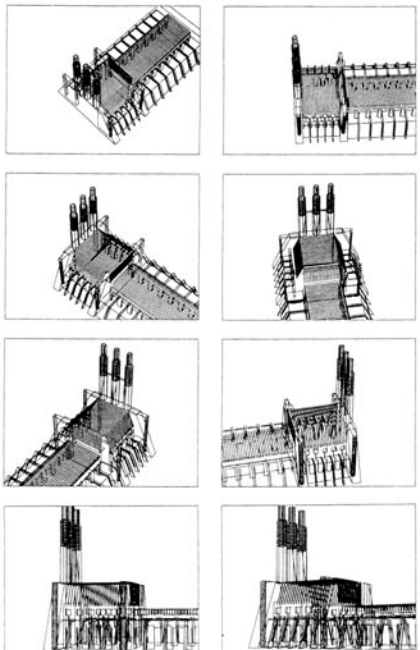


Figure 2



undoubtedly have changed the face of modern culture. As it is, the Futurist experiments are simply an interesting backwater in the mainstream of modern art. I am surprised however that this year, the centenary of his birth, Sant'Elia is not celebrated for his unique contribution to the history of architecture.

Putting on De Stijl

Rietveld's furniture was of an uncompromising sort. Largely made up of slabs and blocks, it appears at first glance severe and uncomfortable. His chairs, in particular, look as though no-one would want to sit on them - an impression, I am assured by those who have modern copies, that is mistaken. Doing his most important work between the wars, Rietveld was perhaps more responsible than anyone else for the characteristic qualities of modern Dutch architecture and figured largely in the De Stijl group of artists and designers of the Twenties. Once again, in order to gain a deeper understanding of Rietveld's work and to illustrate further the potential of computer graphics, James has modelled some of his pieces including one in particular that I have always admired, the table lamp of 1925 (Figure 3). Other items include the buffet of 1920 (Figure 4) and a 1963 chair (Figure 5). All these illustrations are in wire frame or linear representations but James also made fully rendered views which need colour reproduction to do them justice.

As more and more schools of architecture and design move into computing, I expect to see a burgeoning of this sort of study. By examining in detail the works of the past, we learn not only about them and their place in the scheme of things but also something about the possible scope and potential of computing in art and design.

The moving finger writes

Most word processing and page layout output is of a conventional single or double column format aimed at clarity of presentation - and this is as it should be. Graphic designers however are beginning to look at the way in which page layout and text programs, especially those on the Macintosh, can be used to make more imaginative output. Some of the efforts of student designers are

worth examining and the recent degree shows of the various schools of art were replete with interesting examples. Figures 6-9 by Middlesex Polytechnic students of art and design show the way in which lettering can be set on convoluted paths by using some Macintosh packages. Conventional printing techniques for doing this sort of thing are costly and time consuming. The Macintosh and laserprinter route allows inexpensive and rapid experimentation (although there is a danger that the effects can be overdone.) Figures 6 and 7 are by Daniel Edwards, Figure 8 by Gavin Twigger and Figure 9 by Andrew Simpson.

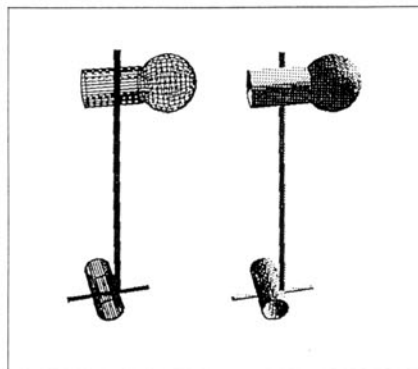


Figure 3

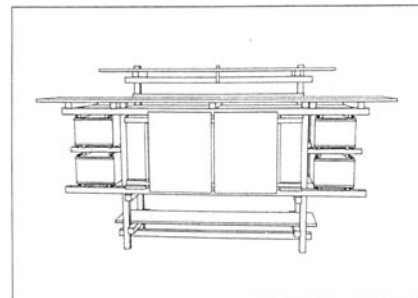


Figure 4

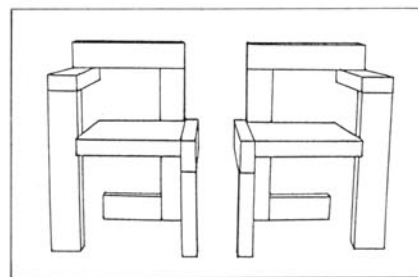


Figure 5



Figure 6



Figure 7



Concept Design And Typographical Elements By Dewallery

Figure 8



Figure 9