

## The International Design & Technology Show — 1993 Model

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The International Design & Technology Show still managed to achieve its annual hype with virtually all stands occupied, the aisles filled with enthusiastic — even excited — visitors and a pervading aura of confidence.

Considering the tribulations of the subject area in the past year it is difficult quite to see why. Perhaps the reason is the special combination the show achieves with its three-day time capsule. To the exhibitors — mostly used to the tough industrial context in which they sell machine tools, vacuum machines and work stations — the teacher punter must be a rare delight, keen to discuss the products, read the literature and, in the new freedom of LMS, often to place a firm order. And for the teachers, the displays of the high spending equipment manufacturers offering high-tech audio-visual presentations, hands-on demonstrations and drinks with the senior executives offer a heady experience compared with the book displays at most teachers' conferences.

With this dynamic combination the International Design & Technology Show looks set to continue indefinitely; certainly the ingredients were all there this year.

The very extensive programme of lectures mounted by the organisers was generally well attended — particularly the Keynote David Brown Memorial lecture given by Richard Tufnell on the future of testing National Curriculum Technology. This and all the presentations offering a possible glimpse of the eventful future were filled with keenly interested, even anxious teachers as was the stand of the Design and Technology Association with its offers of advice, support — and professional insurance.

The 'live displays' by pupils also attracted much interest. The fact that this year all were presented by independent schools not subject to National Curriculum requirements was, rightly or wrongly, attributed to the influence of the show's patron — John Patten.

Another source of information for teachers was the range of stands of the GCSE Examinations Boards, always well attended. There was particular interest this year in stands of two new GCSE providers, City and Guilds and RSA both of whom were releasing information on their new ranges of vocationally oriented technology GCSEs. This new product in the examinations market comes as a result of substantial governmental and industrial

enthusiasm and the uptake among schools is keenly awaited. Both Examining Boards representatives reported substantial enthusiasm and are looking forward to turning that into paid-up entries.

If information for teachers was a priority for many attenders, information for children was a key product for many of the exhibitors. Particularly notable were the range of new software packages for schools. Heavily presented was the Design Council's Design Image Bank. This major new database, available in April 1994, will provide teachers of Art, Design and Technology with some 2,000 images selected from the Design Council's Picture Library and has been developed in collaboration with the National Council for Educational Technology. There is a range of customisation available including the option of 'on screen captions', searches by key words or free text, display of selections of multiple images and addition of on-screen notes. Images can be printed and downloaded for class and project use. Categories of objects include furniture, graphics, telephone, domestic appliances, lighting, exhibitions, packaging, textiles and clothing. However, the system requirements of the Design Image Bank are likely to be not generally available in many schools. They include 100% IBM-compatible PCs with 80386 processors, hard disc and 720k 3.5" drives.

A still more ambitious program, also generated in liaison with NCET, is the Manufacturing by Design software produced by a consortium led by the Confederation of British Industries National Manufacturing Council. This is a thorough going computer assisted design software package and unlike the Design Council's software which simply illustrates products, this is a virtually interactive package in which students are using computerised processes to actually design objects and systems which include, for example, the mechanism for a toothpaste dispenser, electronic circuits for satellite communication systems, detergent containers, factory floor layouts and much else. The software package with the trade name DesignView goes well beyond the current requirements of most schools but offers the huge advantage that senior pupils will not bump up against a resource imposed ceiling in their more ambitious work. A resource pack containing a teachers' guide and graded pupil tasks and tutorials along with a series of case studies will



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British Telecom,  
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London.  
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City & Guilds,  
326 City Rd,  
London.  
EC1V 2PT

The Design Image Bank,  
Marketing Department,  
FREEPOST,  
The Design Council,  
28 Haymarket,  
London.  
SW1Y 4YZ

Design & Technology  
Association,  
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Economatics Limited,  
Epic House,  
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Attercliffe,  
Sheffield.  
S9 5AA

ESA McIntosh Limited,  
Mitchelston Drive,  
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HME,  
Priory House,  
Saxon Park,  
Hanbury Road,  
Stoke Prior,  
Bromsgrove,  
Worcestershire.  
B60 4AD

Kuretake Company Limited,  
10 Moons Park,  
Burnt Meadow Rd,  
Redditch.

be available. Linked with the launch, in Spring 1994, will be a series of 'regional celebrations' and a display of selected work from participating schools in the summer of 1994. A possibility of taking some of the more successful designs into manufacture is also on offer. Details are available from Nick Capstick at NCET.

Control systems are at the heart of much of school technology in both primary and secondary schools and Economatics remains one of the leading providers of resourcing. This year the company is demonstrating the development of a Logicator graphical design environment for computer-controlled algorithms. Using this system flow charts can be rapidly drawn and tested, modified, adapted or abandoned. Requiring no computer skills the system enables the teacher to concentrate on control design rather than on basic coding. The company has also established a range of dedicated Fischertechnik packs that will allow the permanent construction of models that can be used to demonstrate control through the company's Smart Box system with which of course the Logicator is wholly compatible.

There is however, a system available for schools who wish to explore the logic and logistics of real control systems without having to run their own computer systems. This is the British Telecom's State Machine which is a totally self contained micro-processor controlled programmable control system. A control program specified using 'state transition diagrams' is directly copied onto the front panel of the micro-processor using patch-wires. The unit is mains operated and is capable of powering a wide range of sensors and drivers for school projects. A great advantage of the State Machines is that they allow teachers to separate thinking about the problem from the implementation technology. In turn of course the State Machine designs can be realised as computer programs by using solid state or fluidic logic when schools wish to move forward. The potential for school development is immense and the prospect of a sharply diminished role for PCs exciting. Meanwhile State Machine programs are being developed to provide simple cheap machines, without the programming panel, which may be built into actual projects themselves. Further information is available from 0800 252 144 and contact may be made, through this number, with the Suffolk teachers who are actively developing the technology in the Living

Science and Technology project sponsored by BT Laboratories.

Many schools are actively developing the production of printed circuit boards and exhibitors were offering strategies to assist schools in the process. One of the most comprehensive is the Fastrax system offered by Techsoft. This simple and inexpensive system has been developed to allow the production of a wide range of PCBs from simple through to complex double-sided boards. The comprehensive library facilities allow standard component libraries (which are supplied) to be used. Alternatively user-defined components or even whole circuits may be saved as library items. This allows the creation of small systems boards which can easily be loaded and 'joined' together to form complete circuits. Data from other PCB drawing systems may be used in conjunction with the original material being loaded on Fastrax.

The actual production of PCBs in schools is likely to be helped by the new low cost multi PCB processing station designed by HME Technology. With an impressive range of production capability and electrical and chemical safety features, the operation of the machine is likely to fall well within the capability of most schools. In particular the installation has an extensive range of 'pupil proof' features.

Many stands emphasised the problem of storage of design and technology equipment and materials but a new emphasis this year was on security of storage. Link51 were particularly offering secure, lockable, burglar-proof storage for some of the more valuable items of the Design & Technology teacher's resource collection. The interest shown by teachers suggested that they had identified a real need. Safety was another strong aspect and Amtex were demonstrating what is likely to be a winning innovation for all teachers who use small soldering irons. The soldering iron on offer was not new but the electrical cable that connected it had a previously unavailable characteristic: it could not be melted by the very soldering iron that it was powering. And for those with low budgets Amtex was able to supply cables for rewiring existing soldering irons of any make.

Materials testing was heavily featured by Testbed Technology; their new Bench Mark Materials Testing Kit offered a low cost way to investigate the properties of a range of



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London.  
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Techsoft (UK) Ltd,  
Old School Lane,  
Erryrys Mold,  
Clwyd.  
CH7 4DA

Testbed Technology Limited,  
The Science Park,  
Hutton Street,  
Blackburn.  
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materials from steel to plastic, from polythene to textiles. The Kit allowed testing to be performed on tensile strength, compression, shearing, bending and hardness with two electric meters indicating the results on a mains driven amplifier unit.

Art materials were much in evidence; the Berol stand was presenting a new range of acrylic paints which had two characteristics, one was that they were shinier than ever before, the second was that by mixing with a fabric medium fluid (also on offer) they could be used effectively for fabric printing.

On the Kuretake stand the Posterman colour markers were evoking a good deal of interest; these poster markers were in use to make designs on ceramic and plastic objects which had a fair degree of permanency and, according to many teachers, a good deal of pupil acceptability.

An attractive innovation on the ESA McIntosh stand were the new low voltage outlets which could be slotted into any proprietary trunking system in schools and which delivered safe, low voltage supplies available in any part of the system. Each outlet, consisting of a 2 gang blanking plate, is pre-assembled with its own transformer and capable of delivering variable low voltage from 1.5 volt to 15 volts at 500 mA.

But the prize for the simplest and neatest design on offer in the whole show must go to Berna Assemblers, their new and astonishingly simple system for clamping fragile objects of any shape and form which will be a boon to every student and teacher who needs an extra pair of hands or even an extra set of fingers. The Assemblers are a pair of a polycarbonate jaws. The rubber buffers fitted to the jaws are flexible enough to fit most contours. The jaws are reversible so the Assembler can also be used as a spreading tool. Devised by a French Professor of Physics the Assemblers are distributed by Shesto Limited.

As one talked to the enthusiastic salesmen and manufacturers of this plethora of new, clever ideas, a recurring question arose. Have they all been created in accordance with the same National Curriculum recommended design and make procedures that the teachers examining them are expected to adopt? Alas the answer, in most cases, was no. The origins of most products were much more spasmodic — bright ideas in the bath, ruminations on the back of an envelope or simply the realisation that there was a gap in one's catalogue or that one's competitors had tapped a winning line that one's own company should immediately emulate. The true course of rational design was almost everywhere augmented by a mixture of gut feelings, imitation, exploitation and sheer crude opportunism.