

The YORTEK Award to Schools



YORTEK is the Association of High Technology and Related Growth Industries in North Yorkshire. It has over 50 members from businesses of all sizes who have joined together to create the right conditions for growth and expansion of high technology in North Yorkshire.

YORTEK is a unique organisation which was founded in April 1985 when twelve major high technology employers in the County joined forces with North Yorkshire County Council, The Department of Trade & Industry and the University of York. Its aim was to provide a local forum for high growth companies to exchange views on common problems and to co-operate for their mutual benefit in the organisation of valuable and relevant projects.

Companies which utilise modern technology in their products and processes, or make products in the high-technology chain, or supply products and services to high technology businesses and have a base in North Yorkshire are eligible to apply for membership of the Association.

Among the events organised by YORTEK are seminars on a variety of relevant topics such as exporting experience, patent law, total quality and marketing; export trade missions, major trade exhibitions; and the annual YORTEK award to Schools.

The YORTEK Award to Schools was launched in May 1986 when students between the ages of 14 and 18 in the County's Schools were invited to link with a local company and attempt to solve, within the school curriculum, a genuine problem being experienced by that company.

The aims of the Award are firstly to develop working links between the County's students and local industry which demonstrate that the school curriculum has a direct application in a constructive and stimulating way to contemporary challenges encountered in industry.

Secondly, it aims to encourage young people towards a career in modern industry; and thirdly to demonstrate the initiative and creative skills which are being developed within schools in North Yorkshire to industrialists.

The Award to Schools is open to pupils aged from 14-18 and is designed to be useful and enjoyable to the large numbers of students and

the local businesses they work with. For many students it sets the context for GCSE and A-level Design and Technology project work and it encourages liaison between the students and businesses.

A range of business links have been developed within the Award from large national industries to local farming industries, from major motor dealers to local cycle shops, and from advertising agencies to computer hardware and software firms.

Over the last five years the Award has grown and entries have come from almost half the County's schools and colleges. Area Heats have been required over the last few years in order to select a manageable number of finalists for the judges to consider in one day. The finals are traditionally held at the Merchant Adventurers' Hall in York, which has its own historical connections with the development of trade and industry.

■ YORTEK Award to Schools: 1992

The deserving overall winner of the 1992 YORTEK Award was Jill Ireland from Scarborough Sixth Form College, for her 'Automatic Off Loader'. Jill worked in conjunction with Swifts of Scarborough to produce this pneumatic device which released metal pressings from a forming machine. She was awarded the YORTEK Trophy and won a Roland A3 Plotter and Work Station for the school and cash prizes totalling £70 for herself.

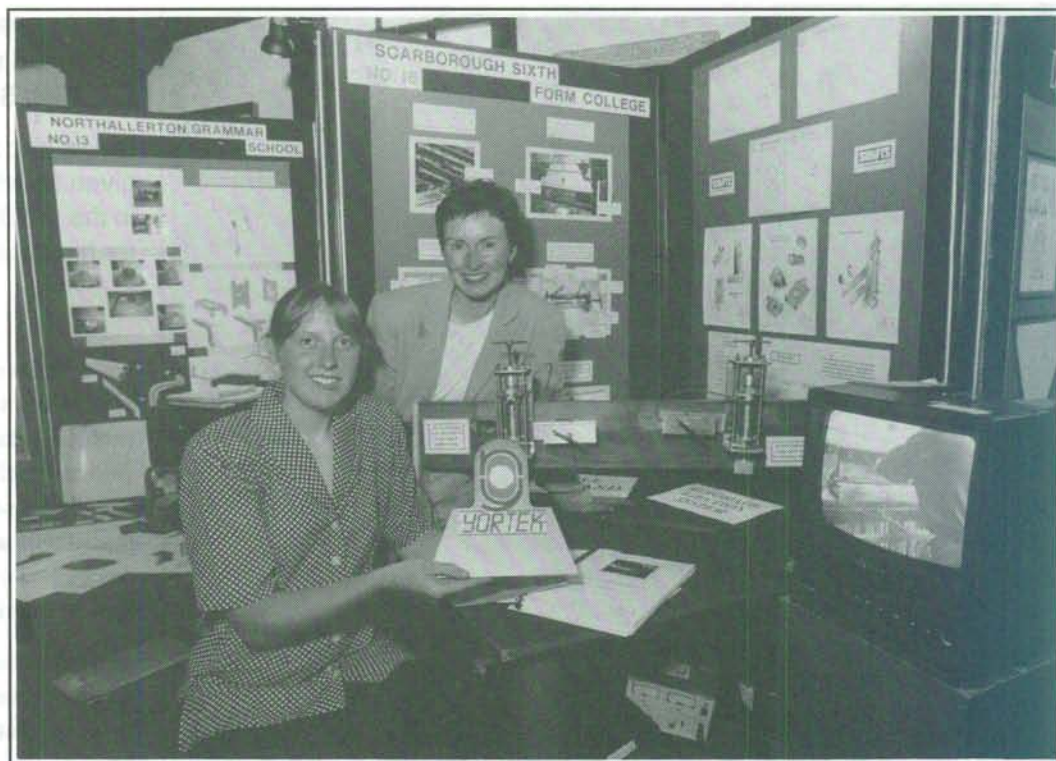
Richard Tessayman of Boroughbridge High School was the winner of the 14-16 age group with his grain monitor. This involved the application of sensing circuits and displays to produce a system to monitor the level of grain in storage silos. The device had been well tested in use in farming industry.

■ Past Successes and International Awards:

Students who have enjoyed success in the YORTEK Award go on to achieve national and international success.

In 1990, the YORTEK Award was presented to Katherine Light of St Aidan's CE High School. Katherine worked in a local motor dealership to produce a trolley to enable cars with their front suspension and wheels removed to be manoeuvred within the bodyshop.

The well deserved overall winner of the 1992 YORTEK Award was Jill Ireland from Scarborough Sixth Form College, for her 'Automatic Off Loader'. Pictured here with astronaut Helen Sharman.



This same year, a Special Merit Award was given to Jeffrey Snoxell of Whitby School in the 1990 YORTEK Award to Schools for his cycle simulator. The unit which Jeffrey designed and made allowed an ordinary cycle to be used on the simulator frame. By programming grid references into a micro computer, the effect of road gradients could be simulated and fed back to the simulator for training exercises.

Following his success in YORTEK, Jeffrey went on to win the 17-19 age group category in the National Finals of the Young Engineers for Britain London. In addition to cash prizes, Jeffrey and his teacher were treated to an industrial visit on one of Shell UK's offshore oil platforms.

Jeffreys' project was entered for the competition organised by the British Association for the Advancement of Science and took first prize in March 91. This presented the opportunity for Jeffrey to represent the UK in an International Engineering Fair in Florida.

Shipping problems for the simulator were encountered and overcome, the original computer program, written for the BBC was updated for Archimedes and a special 60Hz 250V power supply converter to run the computer, interfaces and monitor was constructed. The new system was tested on a special visit to Fylindales Early Warning

Station which is situated near to the school on the North Yorkshire Moors.

Of the 83 exceptional projects submitted from other countries such as Japan, Germany, Sweden, Italy, Ireland and all the American States, Jeffrey was awarded fourth prize in the Engineering section of the 42nd International Science and Engineering Fair. This was an excellent result and is an indication of the high standards which have become associated with pupils' work in Design and Technology in the County.

A further success from the 1990 Award was Victoria Barretts' 'Silent Drum Kit'. Victoria was awarded a special merit for her project, an electronic unit which allowed her to practice without disturbing other people. Victoria went on to win third prize in London at the National Finals and was also awarded the WISE (Women into Science and Engineering) Prize.

Professor Heinz Wolff, Science Director of Mission Juno, the project to put the first British astronaut on the Soviet space station, 'Mir', chaired the judging panel and presented the awards.

The following year, Simon Walmsley of Scarborough Sixth Form College took the 1991 YORTEK Award with his 'Pneumatic Folding Device'. The idea for Simon's design came after a study placement with a Plastics welding firm in Scarborough which manufactured a



Left: In 1990, the YORTEK Award was presented to Katherine Light of St Aidan's C E High School.

Below left: A Special Merit Award was given to Jeffrey Snoxell of Whitby School in the 1990 YORTEK Award to Schools for his cycle simulator.

variety of welded plastic products including a special box to hold computer manuals. The problem which Simon faced was to produce a device which would fold the box into shape and hold it securely whilst the seams were sealed with a high frequency welder. The device had to be easy to operate and require no special training.

The initial design process took a long time, and involved extensive research and experimentation with pneumatics. Additionally he was asked to incorporate some design work done by the company several years before. Simon explained that he was pleased with the outcome. The project had been a challenge especially as he had not worked with pneumatics before.

Simon was a deserving overall winner, but worthy of success in the younger age category was the team from Ryedale School. The four 14 year old pupils designed and made a 'Printer Folding Jig'. The idea presented itself when the youngsters set up their own trading company as part of the 'DTI Enterprise in the Curriculum' initiative.

Working with a local printing firm, their product was a colourful stationary pack and when the first 300 wallets were delivered as flat guillotined sheets, the job of folding them proved to be fiddly, tedious and very time consuming. When the printers explained that this hand folding was the usual method for out-workers the group decided to design a folding jig to speed up the process and improve accuracy. Their jig reduced the folding time from 2 minutes to just 45 seconds and the group expected to develop the jig so that a variety of shapes and sizes could be accommodated.

Special merit awards were given to Martin Solan of St Aidan's C E High School for his 'Live Fish Separator', a device developed in conjunction with a local trout farm, to separate and count fish. Other winners of merit awards





Left: A further success from the 1990 Award was Victoria Barretts' 'Silent Drum Kit'.

independence in everyday life. He was looking to adapt his design to control home lights, televisions and video recorders. Bradley was one of the joint First Prize Winners in the National Final of Young Engineers for Britain. Bradley followed Jeffrey Snoxell's path through the British Association for the Advancement of Science competition. He went on to represent the UK at the International Engineering Fair in Seville held in the World Trade Centre of EXPO 92.

Professor Heinz Wolff presented the awards again in 1991 and it is perhaps fitting that the Science Director of the mission to put the first British astronaut in to space should be succeeded by that astronaut as Chairperson of the Judging Panel for the 1992 Award.

Astronaut Helen Sharman OBE led the panel of judges, comprising Industrialists and Educationalists, and presented the prizes. She commented 'It has been a great pleasure to talk to the children. The standard of work is superb and it is great to see real life projects getting into schools thanks to the efforts of YORTEK.'

In conclusion she said 'We have to make the most of our opportunities to convert them in to worthwhile technologies for our environment. My philosophy is simple — grab the opportunity and go for it.'

Yortek is very grateful to the Award sponsors — Energy Facilities Management Ltd, Hegner UK, Technology Teaching Systems Ltd and Tunstall Group plc — who provided prizes along with YORTEK.

Arrangements are in hand for the 1993 YORTEK Award to schools. Schools are already making initial entries of projects, even though the dates for the Area Heats and the Grand Final seem distant as yet.

This gives credence to the confidence of schools and pupils that the links between schools and industry can produce first class results in schools.

were Jonathan Beresford of Settle High School, for his 'Sheep Pen'. This which allows sheep to be held securely and tipped over onto their backs in order that their feet can be trimmed, had been well tested in the farming industry. Substantial interest was shown in the unit when it was exhibited at the Great Yorkshire Show.

Paul Edmonson of South Craven School took the third merit award for his 'Hands off Throttle Control'. This was designed to satisfy a need experienced by radio controlled car racers. The electronics module which is fitted into the transmitter sends pulses to the car whilst waiting for a race to start, thus warming up the engine.

Bradley Boyes of Whitby School designed an 'Eye Response Control System for an Electronic Wheelchair'. The operator who wears a pair of modified spectacles, can control the direction and forward/backward movement of the chair by winking an eye. The spectacles contain an infra-red sender and receiver which activates the control circuitry when the 'wink' varies the distance between the spectacles and the operators eye muscles.

Bradley expected to develop his design to help people with little or no limb control gain more

Report on HMI Invitation Conference: Access and Achievement in Design and Technology for Pupils in Special Schools

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'HMI organised an Invitation Conference on 20-21 November 1992 in order to acknowledge and share developments in the management and planning of the design technology curriculum in special schools.

A prime objective of the conference was to enhance communication between teachers in special schools and Local Authority Inspectors and Advisers, voluntary organisations and local and national businesses and industries. HTs of special schools and LEAI from 47 local authorities were represented, together with representatives from a selection of the aforementioned bodies.

The focus of session ranged over management issues in DT, planning and evaluating the curriculum, assessment of pupils' capability and achievement, the context of the review of the NC statutory order for technology, regional activities and development planning.'

In her introduction to the conference, HMI Margaret Brookes offered participants the opportunity to share examples of how networks, local partnerships and individual schools are working in the area of Design and Technology for pupils in Special Schools. She expressed her hope that examples of good practice by teachers who have found successful ways of working would help provide a foundation for future development. She promised that her colleagues would share their views on these developments, particularly in the area of assessment.

After the introduction, colleagues looked at development in planning and managing design and technology, the assessment of capability, the use of information technology and discussed existing network support. Rather than reviewing these sessions, I feel that it would be of interest to point out some of the generally agreed focus points for the future that were voiced after HMI Vic Green's evening presentation.

In reflecting on the revision of the National Curriculum Technology orders, he sympathised with the fact that there were shortages of published teaching materials and praised the hard work put in by many special school staff in that curriculum area. He explained that of the 39 school samples reported on in the 1991/1992 HMI survey, 78% were deemed satisfactory or better in their delivery of the subject whereas only 59% of mainstream schools were seen to be satisfactory, or better.

However, planning was generally seen as short term in many schools at a time when an on-going team approach was needed. He felt that assessment in special schools was often too complex and that the manageability of many schemes needed to be reviewed. He saw the role of the school's Technology co-ordinator as central to future improvements. He went on to explain that the rewrite of the orders must be seen in the context of the HMI remit. Part of the requirement was to review Programmes of Study to ensure that pupils worked with construction materials, components and systems. Another part was to help the assessment of performance through a range of activities. As a result, level-specific knowledge will be tied to Programmes of Study in Maths, Science and Art. The current 11 or 12 strands of progression has been rewritten into 5 without loss, in his opinion, in order to simplify tracking and assessment. He assured us that the basic conceptual approach of Technology within the National Curriculum will be maintained. Design and Technology, he assured us again, will continue to involve the application of knowledge and skills when producing good quality products, but that there is nothing wrong with making and remaking in order to produce a design fit for its purpose.

That presentation helped focus discussion and development planning for the rest of the conference but I feel that it was the delegates based in schools who gained most from the regional groupings when planning future cross-institution links. Although much good work has been done, as we saw from colleagues presentations and discovered in conversation with other delegates, it was clear that some of us need to review the focus of design and technology activities in order to ensure a worthwhile learning experience for all pupils. Access to the curriculum area has been improved where the school co-ordinator has come to terms with the tensions between National Curriculum expectations and operating level. We know that the majority of published material is not suitable. We know that cultural expectation puts undue pressure on pupils when taking home work centred on 'construction materials', but we also know that there is a way for a flexible recording and assessment process to support and encourage pupils who are involved in genuine design and make activities in which they share ownership.