

The TDI AWARDS 2008



FIRST 17-19 Age Group – Jerome Roberts
Electric Guitar with in-built amplifier
St Mark's Catholic School, Hounslow, Middlesex



FIRST 15-16 Age Group – Tom Collier
Sophisticated Bird Feeder
Langley School, Norfolk



SECOND 17-19 Age Group – Sam Perry
Guitar Stand and Seat
Royal Grammar School, Worcester

Yamazaki Mazak UK Ltd in Worcester were the hosts for this year's stunning finals of the Technology Design and Innovation Challenge (TDI). TEP and the MTA are delighted at the longstanding support of Yamazaki for this event. Once again, some of the very best of Britain's best young design talent competed at the finals. Created by the Technology Enhancement Programme (TEP) and supported by the Manufacturing Technologies Association (MTA) back in 2000, this year is the 8th year of the event. The finalist list has grown this year to 15 students aged 16-19. A large number of entries from right across the UK demonstrate the popularity and coverage of this event. The TDI event is now an established event on the calendar for Design Technology and Engineering, and celebrates the rich and vibrant nature of Engineering and Technology education in the curriculum.

Entries represented a wide cross section of technical expertise and application across engineering, electronics, CAD and CAM. Nick Stamp, the MTA Education and Training Coordinator commented, "Once again the standard at this year's competition was incredibly high. Work submitted by the students who made the final was truly innovative and all presented commercially viable products which were well thought out from the outset. The young engineers who take part in the TDI Challenge are those who will hopefully end up guiding the future of our industry."

Judges were drawn from the MTA's education committee and our thanks in particular go to Ian Good from Cincinnati Machine Tools and Paul Cross from EdgeCam for giving up their time to join students on the day. Employees at Yamazaki as well as visitors and attending teachers and parents had a rare treat browsing around the student displays.

Jerome Roberts of St Mark's Catholic School was announced as winner of the under 19 category with his most unusual and compelling electric guitar with an in-built amplifier and practice speakers. Tom Collier of Langley School was chosen as winner of the under 16 category with his highly commercial garden birdfeeder.

Jerome's concept was an electric guitar that was highly modified to feature and include a practice amplifier and speakers built in. The obvious benefit of which is not needing to carry and transport a practice 'amp'. The main body of the guitar was redesigned and machined to accommodate two moving coil speakers and a small amplifier. The cavities were covered of course by a scratchboard. The design portfolio was well explored with an emphasis on 3D CAD and this was a consistent feature in fact across almost all the entries and finalists.

Tom Collier's award in the under-16 age group was roundly agreed by all as a worthy one. His development and iteration of a sophisticated bird feeder leant heavily on 3D CAD and was immaculately presented including a staggering selection of models and prototypes. The various laser cut parts were also developed with software to refine and improve the stress and loading on joints and slotted parts. Tom talked the judges through the finite element analysis of the component design and was clearly ready to take orders!

Royal Grammar School, Worcester who are not only local but a regular participant in the TDI Awards secured a creditable 2nd place with Sam Perry's innovative guitar stand. This was a wonderful piece of sculpture as well as a highly functional guitar stand and seat. Sam was only too keen to give us all a solo guitar performance too. The assembly was constructed from laminates to a very high standard.



Technology Enhancement Programme



Continued overleaf →



🏆 SECOND 15-16 Age Group – Lauren Edwards
Changeable Edge-lit Acrylic 'Mood Lighting'
Richard Lander School, Cornwall

Lauren Edwards from Richard Lander School, another TDI favourite, was delighted with her 2nd place in the 15-16 award category. Her 'mood lighting' proved of great interest to the judges with its strong commercial viability. The lighting and components could be selected and changed easily from the different edge lit acrylic colours and themes and could be varied between being a pendant style to desk mounted lamp in a moment. With a selection of templates and prototypes Lauren (as with many entries) displayed her understanding and application of CAD and CAM based laser work.

Matthew Keeves from Ysgol David Hughes provided visitors with a breathtaking display of supporting graphics work for his 'hands free torch'. This was a battery powered high intensity LED device that was head mounted but around the ear and could be left or right handed. Developed again with some sophisticated laminated LOM based work on a laser. It defined itself as a very marketable idea and was well executed and deserved 3rd place in the 17-19 age group. Final award in the 15-16 age range went to Andrew Dunn from Yarm School. Andrew's Petsafe with electronic release was a compelling product for judges that took a great deal of discussion time. In essence, a large secure cat or dog kennel that provides a time delay and lock for opening and closing to secure pets outside. Some basic electronics and a control with additional construction work secured Andrew's award. Incidentally he also brought along for the judges a second project based on flood defence for homes which demonstrated ably Andrew's breadth of creativity and ideas.



🏆 Finalist – Alastair Scott
Care home alarm system

Finalists in the 14-16 category also included Alastair Scott's innovative 'Care home alarm system' based around easily developed electronic modules this was a low cost self powered and mobile device. Mike Burns set up his really striking 'folding hockey goal set' judges could clearly see the point and need for portable and collapsible system. Sam Tonkin's 'BiPOD' - folding trailer tent for cyclists was of keen interest and showed the potential for integrating camping and cycle trailers that judges felt had been unseen and untried before. One or two visitors tried out the folding floor and bed too.

Chris Rowley's 'Karyak' was a very imaginative approach to storing and transporting canoes and kayaks on car roofs. Everyone acknowledged the potential for the design and the ease with which they could be lifted and locked onto a car roof rack.

Perhaps a special award for largest project entered should have gone to Matthew Wraight from Simon Langton Boy's School. His absolutely in-your-face off road buggy caught everyone's attention for sheer scale and ambition. Developed around a 4 stroke twin motorcycle engine Matthew had literally developed the space frame chassis, drive train, controls, suspension and steering himself and while not entirely a new idea the scale of effort involved and the number of workshop skills involved was applauded.

Ahkil Shah from Dame Alice Owen's school had developed a modular medical storage system for home use and made a strong case for



🏆 Finalist – Mike Burns
Folding hockey goal set



🏆 THIRD 17-19 Age Group – Matthew Keeves
'Hands Free' LED Torch
Ysgol David Hughes, Anglesey



🏆 THIRD 15-16 Age Group – Andrew Dunn
Petsafe - secure cat or dog kennel
Yarm School, Stockton-on-Tees



🏆 Finalist – Sam Tonkin
Bike Trailer Tent



Finalist – Chris Rowley
'Karyak' - Kayak/Canoe carrier



Finalist – Mathew Wraight
Off road buggy



Finalist – Ahkil Shah
Medical storage system.

making medical conditions and treatment something not to hide away in cupboards but to acknowledge and make part of mainstream daily culture and life. Jonathan Engstrom, again from the Royal Grammar School was a worthy finalist with his electric guitar stand and storage and display system, only just back from a recent gig it demonstrated an unusual application and approach to laser cut, self assembly storage.

A most welcome visitor to this year's final was Yale Brewer from Eastbourne College who returned to the event two years after winning in 2006 with his brilliant Fence Post Extractor that mounted onto the front or rear hydraulics of a tractor. Not content with the project and its obvious success and market ready status Yale went off and developed it much further and returned this year to show the work in a much refined and even bigger form! Yale clearly demonstrated with his commitment and effort to further develop the product before market and had integrated the support and commercial flair needed to succeed. The TDI panel awarded Yale a special one-time award of funding towards his degree starting this autumn term at Bristol University, and with a promise from him to keep a blog of his engineering progress on the TEP website!

Finalists and winners received book tokens, vouchers and certificates of their day out at the TDI Awards and in particular winners also were presented with laptops, digital camera systems and digital video recorders.

TEP and the MTA have written back and thanked all the entry schools from the initial mailbag. We would also like to thank again all the schools, colleges and students for the exciting and compelling range of excellent work submitted. The work was so varied, interesting and of a high standard, making short-listing the finalists really quite hard work.

Nick Baldwin, Director of TEP described the event as *"demonstrating the great efforts of teachers and students across all the other entries. They exhibited such a diverse range of technological understanding and capability and are a wonderful example of the ongoing creativity and high standards of engineering, designing and making in schools and colleges."*

The (MTA) Manufacturing Technologies Association is the leading UK trade association representing companies who manufacture or import products in the machine tool, equipment and manufacturing technologies sector.

You can also view the finalists with their work and a wider selection of images on the TEP website.

The TDI AWARDS 2008



SPECIAL AWARD – Yale Brewer
Fence post extractor



Finalist – Jonathan Engstrom
Electric guitar stand

