

TDI AWARDS 2006

Design and Innovation at the TDI Awards 2006 sets new standards

From a bumper entry of students work across the age range 14-19 the judges preselected just 12 finalists from across the UK to attend the TDI awards 2006. Once again the TDI Awards were hosted at the European headquarters and manufacturing centre of Yamazaki Mazak UK, based in Worcestershire. 2006 is the 5th year of the awards that have now become a popular and firm date on the D&T calendar.

Entries were all of an exceptionally high standard and displayed a wide breadth of practical skill, capability and creativity. All of the entries were and are based on coursework and exam project work in different age ranges. Most if not all the work exhibited had real commercial potential was accompanied by innovative ideas at this, the fourth year of the awards and innovation and creativity was evident across all the entries received. Entries were received from all over the UK and not limited to TEP schools.

TEP and the MTA are again delighted to team up and be supported by Mazak the World's largest supplier of CNC Lathes, Machining Centres and Manufacturing Systems. During the day of the event Dr David Jack the managing director of the plant was able to tour the displays and talk to teachers and students. Many employees and visitors also took time out to stroll around the exhibits and marvel at the quality of projects and the talent of the students.

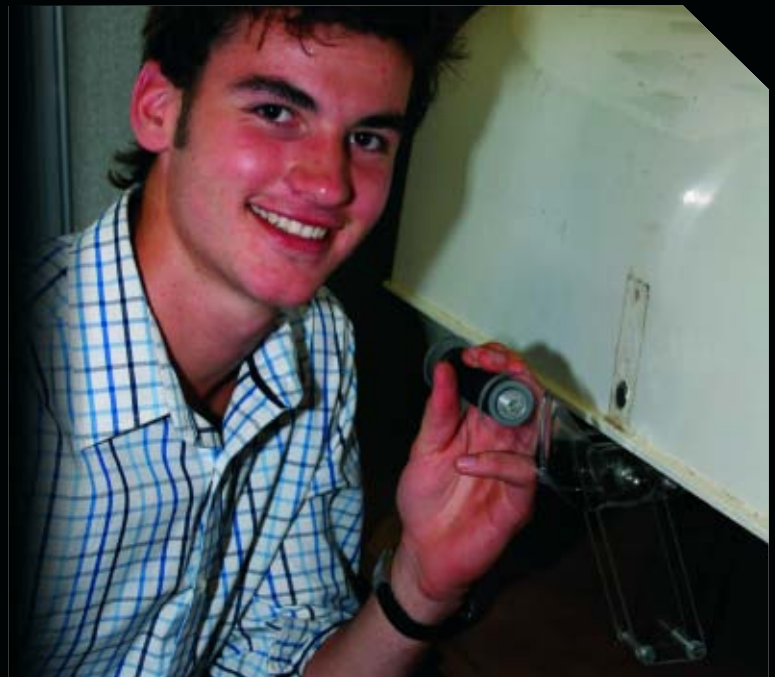
The plant is currently the most advanced of its type in Europe, providing machine tools and sophisticated manufacturing systems to customers in more than 30 countries throughout Europe and uses the most advanced manufacturing techniques in the industry. All the finalists and teachers were also given a VIP tour of the plant during the day.

The TDI Awards is as readers may know is a joint collaboration between TEP and the Machine Tool Industries National Association the MTA or Manufacturing Technologies Association.

Mazak - Factory Tour



1st - overall winner



Nicholas Fenton (17-19 Age Group)

Overall winner was Nicholas Fenton from Royal Grammar School for his 'Easy Lift' device for lifting and carrying competition rowing boats.

During the next few years the D&T community expects and anticipates the growth of vocational engineering education in schools and colleges. Much of the great work by Young Engineers and by awards like the TDI helps to 'flag up' the wonderful work already going on in individual schools as part of existing curriculum provision. The TDI awards once again celebrates and exemplifies the innovation in student work. Sadly most marking criteria at examination is still unable to reward and acknowledge the creative leaps and innovation taking place in coursework and learning by students. All the entries as in previous years displayed a great depth of understanding of their marketplaces and the need for designs and products that were all highly suitable for development into commercial products and applications.

Among the judges this year, were members of the MTA Education and Training Committee Chairman, Personnel Director of Cincinnati Machine UK Ltd, Ian Good and Bob Shanks from the Imagineering Foundation.

The quality of the work and personal presentations was quite outstanding and credit to all the finalists.



Technology Enhancement Programme



The overall winner for the 2006 Challenge was **Nicholas Fenton** (right) from **Royal Grammar School** based in Worcester. He had prototyped and developed an outstandingly simple yet effective device called **Easy Lift**, this was a CNC machined and lightly fabricated system of handles that fasten and fold into competition rowing boats for lifting and carrying them before and during competitions, ensuring no damage and ease of lifting. Both are real problems for crews and a real solution to overcome operational damage to fragile hulls that is all too common.

Second place in the 17-19 category was **Thomas Poole's Mechstand**, a really sound proposal and solution to lifting and working on cars. Using a conventional trolley jack users lift small to medium size cars and the Mechstand integrated with the trolley jack is locked in place then the trolley jack removed and deployed to lift another corner of the vehicle. The engineering, pattern making, casting and bench-work involved was an absolute credit to the school and exemplifies the way quality engineering skills and design ideas work well together. Most of the judges would happily have taken it away for home use themselves.

2nd - Thomas Poole

[17-19 Age Group]



Mechstand – Thomas Poole also from Royal Grammer School was a worthy second prize winner

Michael Leonard's 21st century window box idea illustrated well the point that simple ideas are often best. In this case an easily and safely deployed window box that accommodates pre-planted flower trays provides for watering and is safely locked onto and into modern window frames with no drilling or fasteners required. It represented a really neat and elegant solution that will find real world appeal for domestic buyers. The tension straps are locked into the window frame with a simple metal pressing and restrain the moulded window box that then hangs out from the frame as a cantilever.

3rd - Michael Leonard [17-19 Age Group]



Michael Leonard from Totton College was awarded 3rd place for his elegant 21st Century Window Box

Yale Brewer from Eastbourne College arrived for the final, fortunately without his tractor (room was at a premium) and gave an absolutely breathtaking display of his work – a **Fence Post Extractor** that mounts onto the front or rear hydraulics of a tractor. A truly enormous volume of effort had gone into this well engineered product that was 'market ready and well field tested' during the project's development. Yale was awarded 1st prize for his age category and was clearly a great salesperson; we look forward to seeing his ideas and commercialism succeed in the years ahead.



1st - Yale Brewer

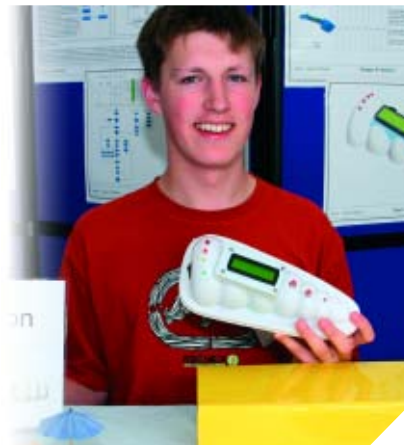
[15-16 Age Group]

Fence Post Extractor – Yale Brewer from Eastbourne College came first in his 15-16 age group

James Pallister from Teignmouth Community College warmed all the judges up with his innovative **Suntan Timer**. Suntanning dangers are highly topical and very real and his design responded well to consumers, providing a balance of high-tech response using PIC technology to create a unique timer based on sun conditions and skin protection factors. Judges could clearly see the commercial potential. We were delighted when James achieved 2nd place in his age category for his idea and presentation. Once again he was a natural salesperson and knew in detail the PIC aspects of his work when quizzed.

This year for the first time saw a small number of truly unique pieces of furniture reach the final, including **Douglas Morton's Convertible desk/dining table/coffee table** with some advanced engineering built in with sliding components and tension bars creating a highly desirable and unusual steel and glass sculpture. **Jonathon Northfield** displayed his attractive **Modular shelving** idea but in particular the most 'tested' piece of furniture by judges was a remarkably different **Garden Sun Lounger** by **Jonathan Marsh** from **Oakham School**. Its elegant curved lines and dominant form in laminated veneers and adjustable sunshade captured a few glances on this hot judging day. **Emily Richards' Flat-pack style table** was an intriguing piece of engineering with a peg and cable system for retaining and tensioning the legs and arms in place.

2nd - James Pallister [15-16 Age Group]



James Pallister from Teignmouth Community College warmed the judges with his 'Suntan Timer' winning him second place

3rd - Douglas Morton [15-16 Age Group]



This well-built Convertible Coffee/Dining Table won Douglas Morton from Blundells School third place

TDI AWARDS 2006

Continued

Finalists



Emily Richards



Jonathan Marsh



Joseph Payton



Luke Rudge



Jonathan Oliver Norfield

Rapid prototyping and the use of advanced manufacturing was not too far away during this year's final with some compelling ideas and prototype work on a Water saving tap design from Joseph Payton and a Violin Bowing aid for students from Luke Rudge, both students studying at Oldbury Wells School.

Special Award Torsten Sherwood

A special prize this year was awarded to **Torsten Sherwood** for his outstanding design and foliowork supporting his practical work that was a **Special Needs Toy** that had been extensively researched and tested and caught the eye and the imagination of everyone.



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 or digital video recorders for their school.

The judges were impressed, not only by the standard of the entry, but the integration of so many technologies. CAD/CAM was as usual a significant but not dominant element in almost every entry and students displayed outstanding mastery of various CAD software packages in developing and presenting ideas, and advanced modelling.

Once again we feel that the TDI awards have shown us all some truly excellent work from across the subject. TEP would like to thank all the judges who took part on the day, parents and teachers who helped make the day and the student work possible. Our thanks also to the MTA and in particular **Mary Lee, Michelle Grady and Megan Pirie** for organising the event and of course **Yamazaki Mazak UK Ltd** for hosting the event.

➔ You can also view the finalists with their work and some related video footage on the TEP website under the video gallery section.



WINNERS	Age Group	Project Name	School Name	Pupil Name
1st Overall	17-19	EasyLift	Royal Grammar School	Nicholas Fenton
2nd	17-19	Mechstand	Royal Grammar School	Thomas Poole
3rd	17-19	21st Century Window Box for Multi-Storey Buildings	Totton College	Michael Leonard
Finalist	17-19	Dining Table-Flatpack	New College-Telford	Emily Richards
Finalist	17-19	Garden Sun Lounger	Oakham School	Jonathon Marsh
Finalist	17-19	Water Saving Tap	Oldbury Wells School	Joseph Payton
Finalist	17-19	Violin Bowing Aid	Oldbury Wells School	Luke Rudge
1st	15-16	Agricultural Fence Post Extractor	Eastbourne College	Yale Brewer
2nd	15-16	Suntan Timer	Teignmouth Community College	James Pallister
3rd	15-16	Convertible Coffee/Dining Table	Blundells School	Douglas Morton
Finalist	15-16	Modular Shelving	Simon Langton School for Boys	Jonathon Norfield
Special	15-16	Special Needs Toy	Oakham School	Torsten Sherwood