

## Message from the Minister

Humans have an amazing capacity to develop new and improved ways to function as a community, and express themselves as individuals. That spirit of ingenuity and invention is captured in DesignTECH, a showcase of exemplary major works from the NSW Higher School Certificate Design and Technology course.

We all use the products of design and technical innovation on a daily basis, yet few of us understand the complexity of the journey from 'problem' to 'solution'. Visitors to this exhibition have a unique opportunity to see how these students have approached and addressed the challenges they have faced on that journey.

For students embarking on these courses in 2013 and beyond, DesignTECH also provides a great insight into the work and application required to achieve at the highest standards in this course.

As always, the range of projects featured in DesignTECH is inspiring. Several feature health and safety or environmental objectives, others aim to improve our domestic or recreational activities. In each case, the hard work and creativity of these students shines through.

Design and Technology is one of eight Technology Education courses available through the HSC. In 2012, more than 3,200 students undertook the course and 22 projects were selected for DesignTECH at the Powerhouse Museum. These projects have been selected to represent a range of project types, and to showcase the work of young men and women from different locations and school systems.

Congratulations to each of the students represented in DesignTECH, and thank you to the teachers and family members who have supported them. Our thanks also to the sponsors and partners of the Board involved in presenting DesignTECH, in particular the Powerhouse Museum.

A handwritten signature in black ink, appearing to read "A. Piccoli", is positioned above the name of the Minister for Education.

The Hon. Adrian Piccoli MP  
Minister for Education

## The Powerhouse Museum Award for Innovation in Design



Each year the Powerhouse Museum presents an award to one of the students whose major work is selected for display in DesignTECH. The Museum's award recognises product innovation in such areas as new uses of materials, new design and fabrication processes, or a new or improved design for an existing product.

The award is given for the product that best demonstrates a thorough approach to product innovation. This may include consulting with potential users and with expert makers of similar products, generating alternative designs and production methods, exploring opportunities to reduce environmental and health risks over the product's life cycle, ensuring compliance with relevant standards, and testing and evaluation.

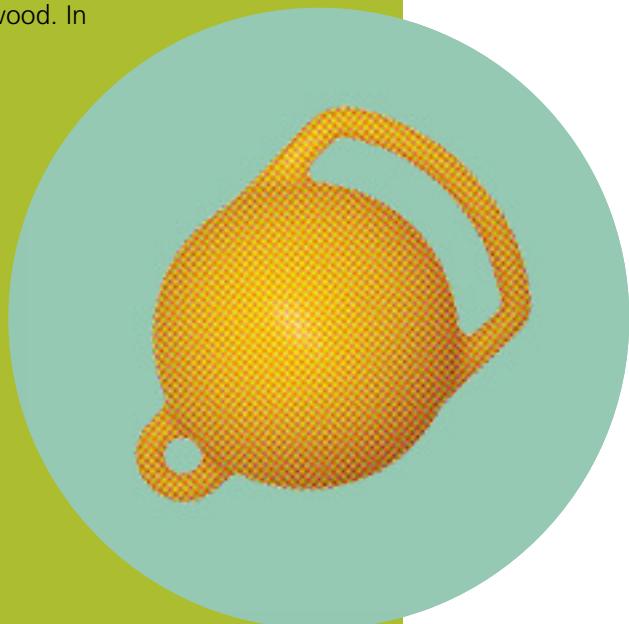
The winner of the Powerhouse Museum Award for Innovation in Design receives a certificate, a \$500 prize, and a one-year membership to the Powerhouse Museum.



## The Alan Broady Memorial Award

This award is named in honour of Mr Alan Broady, who was a principal lecturer in Industrial Arts at the Sydney Teachers College from 1948 to 1984. The Teachers College is now part of the Faculty of Education and Social Work at the University of Sydney. The award of \$500 is made possible through a bequest from the Alan Broady Memorial Trust.

Alan Broady had a particular interest in design and initiated a Major Design Project as the culmination of the then Bachelor of Education (Industrial Arts) degree. He also had a flair for projects incorporating wood. In recognition of his work this award is given for projects successfully integrating design and materials.



## **A message from the Director of the Powerhouse Museum**

Welcome to the DesignTECH 2012 exhibition at the Powerhouse Museum.

I was encouraged to note the recommendations of the NSW Government's Industry Action Plan for NSW Manufacturing, published last September, which gave significant focus to design-led innovation as a key strategy for competitiveness for NSW manufacturers.

Importantly the Plan notes the importance of education and training, at both secondary and tertiary levels, in laying the foundations for our future manufacturing success. Our ongoing partnership with the NSW Board of Studies and the Department of Education and Communities is an excellent example of a program which can acknowledge student success and, in turn, encourage interest to pursue this field in both tertiary studies and future career options.

It is significant and heartening that this is the longest continuing partnership since the Museum opened on this site in 1988. Many of the students, whose work has been featured in the exhibition over these years, have gone on to successful careers in the design sector, and it has been particularly rewarding to hear them speak of the significance of DesignTECH in influencing their career direction.

The seminar program, which accompanies the exhibition, plays an important role in communicating the professional and personal satisfaction that comes from responding to a design challenge, and arriving at a solution that has the potential to change lives. I'm delighted that the curatorial team at the Powerhouse is once again participating in the program, sharing their expertise about the collection and how it can support students in their studies.

Please join me in congratulating the students whose work is featured in the exhibition and wishing them every success for the future.

Dr Dawn Casey PSM FAHA  
Director  
Powerhouse Museum

## The UNSW Built Environment Award for Sustainability in Design



UNSW  
AUSTRALIA

### Built Environment

UNSW Built Environment (UNSW BE) focuses on the design, construction and management of a valued and sustainable world.

Our students consider the environment from a global perspective whilst delivering practical applications and solutions. They are encouraged to think creatively and work professionally.

We recognise the role of built environments in reflecting, shaping, supporting and influencing human activity. UNSW BE equips students with the skills, education and experience to produce designs that impact the well-being of communities around the world.

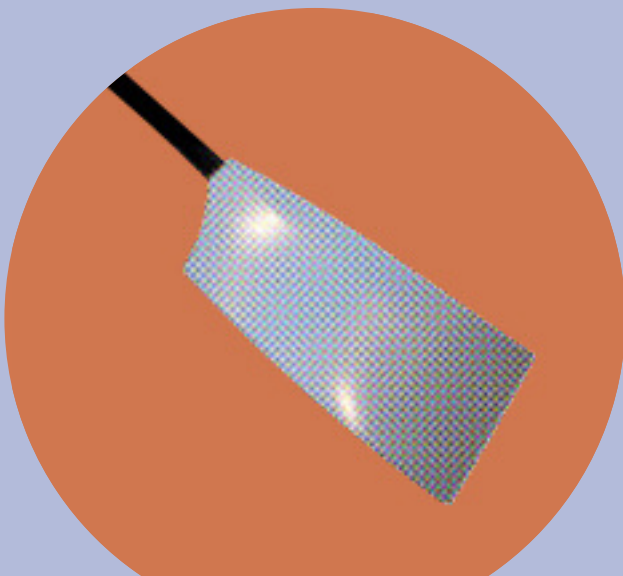
This award is given to the student and project that best identifies the need for sustainability in design and incorporates key elements throughout the design process.

## Shelston IP – Award



Shelston IP is one of Australia's leading specialist intellectual property (IP) firms, offering the full range of IP and related legal services from patent, trademark and design registration, through to strategic IP portfolio management, commercialisation and enforcement.

This \$500 award recognises the student whose project embodies the greatest potential for IP protection and commercialisation and who demonstrates the best understanding of that potential. This may involve the student identifying the problems of previously known products in the same field, the key characteristics of his or her product that address those problems, the IP rights most relevant to the protection of such characteristics, and the relationship between those rights and the commercialisation potential of the product.





## Transportation Trolley

**Melanie Altit**

Moriah College

Melanie's trolley makes it easy to store beauty products quickly and neatly. Her trolley will help makeup artists and hairdressers provide a polished and professional service.



## Preparing for Kokoda (DVD and booklet)

**Katherine Barter**

Newcastle Grammar School

Katherine's own experiences inspired her to create these detailed explanations and demonstrations of the medical, equipment, physical and cultural preparations needed to walk the infamous Kokoda track.



## eHouse – Sustainable/ Affordable House Design

**Mark Bersolto**

Canobolas Rural Technology High School

Mark has designed an affordable house that uses environmentally friendly features, including thermal mass, natural ventilation, orientation and insulation.



## Adjustable wakeboard rack

**Zachariah Bostock**

The Riverina Anglican College

When a boat is loaded with gear it restricts what you can do in the water, so Zachariah devised a rack that attaches to the boat to hold wakeboards, skis and a kneeboard.

*Provisional patent number: 2012905524*





## The Buoyant Oceanic Safety System (BOSS)

**Mathew Butler**

Knox Grammar School

Mathew's system incorporates new technology to help lifeguards communicate at the beach. It can be positioned to face swimmers and can be seen and heard in most conditions.

*Provisional patent number: 2012905403*



## Disaster relief water purification product

**Kaytlyn Davis**

Cherrybrook Technology High School

This cooking pot that doubles as a water-purifying device could save millions of lives each year. Kaytlyn's design uses distillation to collect clean water in the oversized rim of the lid.

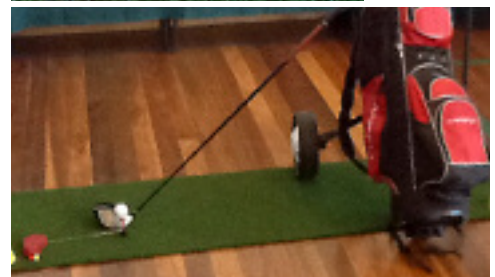


## Street art lighting installation

**Esra Capa**

MLC School

Esra's aim is to discourage criminal behaviour by combining a CCTV camera with a light that projects images through a faceplate. The faceplate can be changed to project different designs.



## Tee Buddy

**Jesse Dunn**

Camden High School

Jesse's Tee Buddy uses a mechanism that automatically retracts a tee back into a case, overcoming the frustrating, costly and time-wasting loss of tees while playing golf.

*Provisional patent number: 2012905499*



## Autistic sensory learning centre

**Lucy Ford**

St Vincent's College

Lucy focused on meeting the educational and emotional needs of the autistic child. This learning centre is specially designed to inspire autistic children and helps with their integration into mainstream classes.

*Image courtesy of the Powerhouse Museum, 2013.*



## Clique On (shoe accessories)

**Chelsea Gilchrist**

Callaghan College Jesmond Senior Campus

'Clique on' is a series of magnetic accessories that makes the one pair of shoes adaptable for any occasion. Chelsea wanted to make fashion affordable, for the buyer, and for the environment.



## Don't break your heart

**Christina Georgiou**

St Euphemia College

Christina hopes that her wearable art piece made from recycled materials will educate and inspire women about the dangers of heart disease, and about the need to conserve our environment.

*Image courtesy of the Powerhouse Museum, 2013.*



## SoloSafe Man Overboard System

**Hamish Gullick**

Kirrawee High School

Hamish's SoloSafe system helps in recovering a sailor overboard, with a towed platform, a storage unit for sustenance, equipment to assist in reboarding and items such as EPIRB/flares to call for help.





## Tasmanian deforestation textile garments

**Gabrielle Ingham**

Monte Sant' Angelo Mercy College

Gabrielle has created two garments to draw attention to the effects of deforestation. The 'Rainforest Dress' uses natural images and fibres, while the 'Destruction Dress' is short, referencing a depleted environment.



## Ironstein

**Zaarkacha Marlan**

All Saints' College Bathurst

Zaarkacha's revision of the ironing board makes it easier to iron difficult areas like collared shirts and the button area of pants. The removable clamping system makes it lighter and safer to transport.



## Dynafork – The variable handling bike fork

**Andrew Lucas**

Albury High School

Andrew's Dynafork makes bicycles more versatile. By turning a hex bolt located between the handlebars, it transforms a road bike into a touring bike, or a mountain bike into a racing bike.



## Flipsock

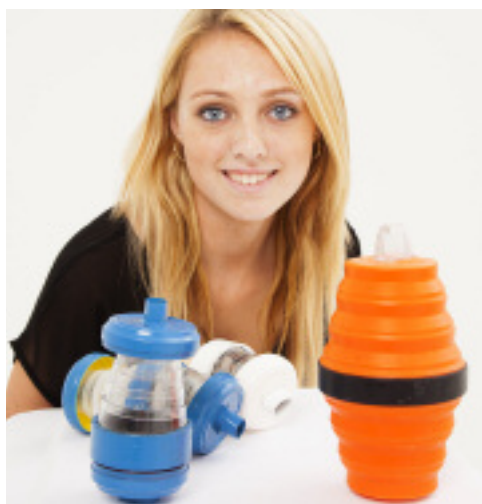
**Stephanie McIntosh**

Mount St Joseph Milperra

The Flipsock attaches a fin more securely by adding it to a sock. Stephanie wanted to make fins harder to lose in the ocean, and easier for use by people with medical conditions such as arthritis.

*Provisional Patent Number: 2012905657*

*Trademark for 'Flipsock' – IP Number: 01533096*



## Collapsible asthma spacer

**Laura Schouten**

Cherrybrook Technology High School

Asthma spacers increase the amount of medication reaching the lungs. Laura's design makes it is easier to have an asthma spacer available, and to store one in a first aid kit.

*Image courtesy of the Powerhouse Museum, 2013.*

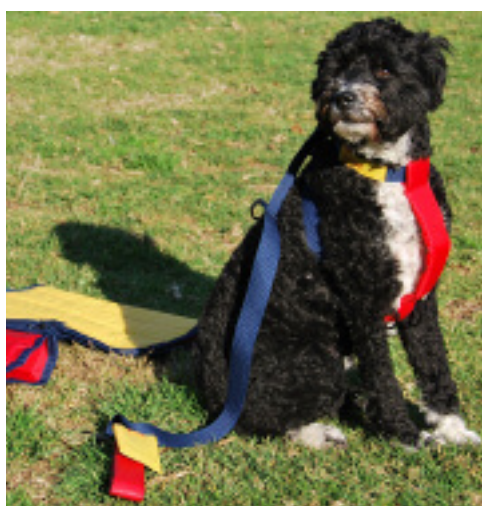


## Rowing simulator

**Mitchell Shaw**

The Scots College

Mitchell has devised a rowing simulator that means young rowers can learn to row in the safe, controlled environment of a swimming pool with their coach close by.



## Multipurpose dog safety harness / dog jacket

**Lilli Stomland**

SCEGGS Darlinghurst

Lilli's dog needed a single, multipurpose garment that incorporated a harness, coat, life vest, seatbelt and lead. It is made from material that is lightweight, flexible, water-resistant and fast drying.



## Portal diary

**William Tapp**

SHORE – Sydney Church of England Grammar School

William has designed an iPad application prototype that replaces the printed school diary. Its features include a timetable, homework/study planner, Board of Studies link and links to the school's online portal.



## Environmentally conscious bags

**Mikala Tavener Hanks**

Cheltenham Girls' High School

Handbags are a mixture of art and functionality. This provided Mikala with the incentive to design handbags that are fashion conscious, substantial and environmentally sound.



## Dress made from Merino wool

**Jessica Zinga**

Barrenjoey High School

Jessica chose Australian Merino wool to construct her dress as it is a renewable, recyclable and biodegradable resource. She has promoted the dress to inspire people to purchase Merino wool products.

## Powerhouse Museum Design Highlights and Resources

### + Exhibitions and events – [www.powerhousemuseum.com](http://www.powerhousemuseum.com)

- *Love Lace* – an exhibition featuring 130 lace works by 134 artists and designers from 20 countries. Closes 21 July 2013.
- *Australian International Design Awards* – the Powerhouse selection from the annual Australian International Design Awards.
- *Engineering Excellence* – winning projects from the annual Engineering Excellence Awards.
- *DesignTECH* – outstanding projects by 2012 HSC Design & Technology students. Closes 12 May 2013.
- *Ecologic: creating a sustainable future* – this exhibition looks at the risk of climate change and the role of design in providing sustainable solutions.
- *Student fashion* – showcasing outfits by four top graduating students from Sydney fashion schools. This year the display also features the work of eight former students who have gone on to successful fashion careers. 9 March – 31 August 2013.
- *Wallace & Gromit's world of invention* – explores innovation and creativity in design and looks at how Intellectual Property helps protect ideas. Closes 26 May 2013.
- *Faith, fashion, fusion: Muslim women's style in Australia* – an exhibition about the emerging modest fashion industry in Australia. Closes 14 July 2013.
- *George Nelson: architect, writer, designer, teacher* – looks at the work of this significant 20th century American designer. 26 July – 3 November 2013.

Note: Dates may be subject to change. Please check the Museum website.

### + Online resources – [www.powerhousemuseum.com/online](http://www.powerhousemuseum.com/online)

The Museum has a wide range of design resources online.

Highlights include:

- *Australia innovates*: an online guide to innovation in Australian industries
- *Australian designers at work*: meet six designers and learn about how they work
- *D\*Hub*: online design magazine and gateway to the world's best design collections
- *HSC technology syllabus support*: case studies in design, technology and cultural diversity
- *Sydney designers unplugged*: case studies from seven design studios
- *Electronic swatchbook*: thousands of fabric samples from the 1830s to the 1920s
- *Search the collection*: search over 60,000 objects collected from 1880 to the present day. This interactive database contains thousands of images and information from the Museum's collection, much of it made public for the first time.



*Dream Lantern*  
by Guo-Yi Wong, featured in  
*Love Lace*  
Photo by Marincio Kojdanovski.

### + Thinkspace: Creative Digital Media Workshops –

[www.powerhousemuseum.com/thinkspace/index.php](http://www.powerhousemuseum.com/thinkspace/index.php)

Thinkspace is the Powerhouse Museum's digital learning precinct, offering workshops and short courses to develop your creative and media production skills, including digital video editing, digital music production, digital storytelling, web 2.0 and online research, songwriting and movie-making.

### + Powerhouse Publishing – [www.powerhousemuseum.com/publications](http://www.powerhousemuseum.com/publications)

An extensive range of books relating to permanent and temporary design exhibitions.

For more information on education programs and resources visit

<http://www.powerhousemuseum.com/education/> or subscribe to our Education News at

<http://www.powerhousemuseum.com/education/teacheremailsingup.php>

To make a booking for a school visit, phone (02) 9217 0222, fax (02) 9217 0622 or email [edserv@phm.gov.au](mailto:edserv@phm.gov.au)