

AWARDS FOR EXCELLENCE

TOP HONOURS FOR ENGINEERING EXCELLENCE

A 3D interactive model of the Sydney Opera House, a natural disaster mitigation project in Vietnam and a community development program for a remote indigenous community were among 30 impressive projects commended at our 22nd annual Awards for Excellence held at the Park Hyatt Melbourne last month.

With more than 400 professionals attending from the industry, this year marked the first time the prestigious event had ever been presented to a sold out crowd. From a pool of 73 outstanding entries, 23 were awarded gold awards of merit and silver awards of highly commended and a further seven projects received recognition.

“It is hoped that by showcasing the engineering and technical success of our industry leaders, more Australian firms will be inspired to expand their business horizons and match the high standard of excellence and innovation demonstrated by the award winners,” says ACEA Chief Executive Megan Motto.

Ms Motto says all entries demonstrated the high level of expertise and innovation that exists within Australia’s consulting firms.

“This is a difficult time for our industry with the skills shortage affecting firms across the board, and so it is particularly pleasing to see this outstanding achievement in technical and management excellence in ACEA member firms,” she says.

The award categories had been modified in this year’s program to accommodate more entries from a broader range of market sectors including the mechanical and electrical services fields. The new Building Services category included projects providing electrical, electronic, fire, air conditioning and hydraulic services.

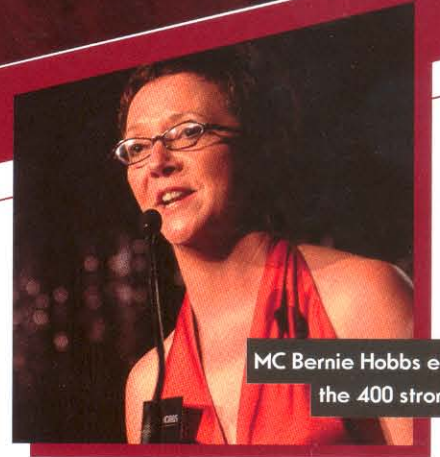
With a theme of musical theatre, guests were treated to a lavish evening of operatic standards from stars of The Phantom of the Opera production who continued their spectacular performance through to their encore finale.

Victorian Minister for Industry and Trade, Information and Com-



The crowd gathers on the prior to the awards

ENGINEERING'S NIGHT OF NIGHTS



MC Bernie Hobbs entertains the 400 strong crowd

munication Technology, and Major Projects, the Hon Theo Theophanous, spoke of the State Government's record infrastructure program and the different procurement methods used with reference to the Melbourne Rectangular Stadium Project, Melbourne Convention Centre and Biosciences Research Centre.

Meanwhile, the keynote speaker for the night, Victorian Building Commissioner Tony Arnel, urged ACEA's collaboration with World Green Building Council through the Green Building Council of Australia to develop templates for sustainable refurbishment and redevelopment.

"The building and construction industry is one sector that can improve both economic and environmental outcomes," he said.

A comprehensive two-part judging process ensured the highest possible standards of fairness and impartiality.

All entries received were passed to a Review Panel of experienced and distinguished consulting engineering professionals who provided detailed comment on each of the submissions to members of the Judging Panel, also made up of eminent engineers, as well as other professionals from the building and construction sector, including a prominent architect and a client representative.

Judging criteria applied to the selection of the awards principally included engineering excellence reflected in originality, innovation, engineering quality and service delivery and the degree to which the project met the client's needs, budget and expectations. Community, environmental and social impacts were also considered. [10]

PROJECT OF THE YEAR

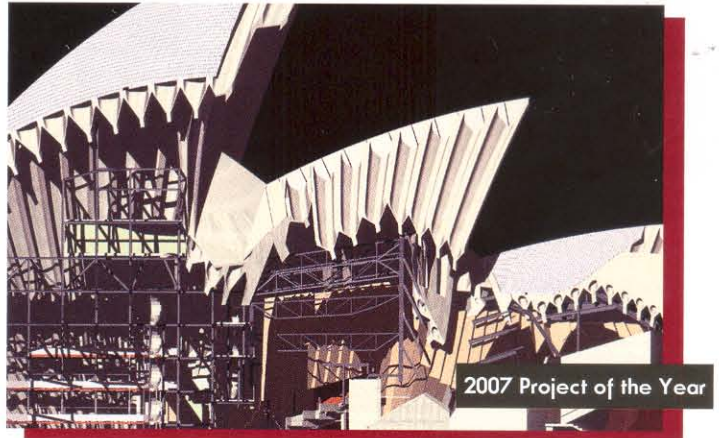
3D INTERACTIVE MODEL TO KEEP THE HOUSE IN ORDER

A digital 3D interactive model of Sydney's iconic Opera House, which acts as an integrated management tool for all aspects of the world-famous facility, was declared Project of the Year.

Arup and project partner CRC for Construction Innovation were presented with both the Project of the Year Award and the Gold Award of Special Merit in the Information and Communication Technology (ICT) Projects category.

ACEA Chief Executive Megan Motto says computer-based technology has become an integral part of today's engineering service delivery and the possibilities for application were boundless.

"This is an example of world's best practice in building data repre-



2007 Project of the Year

sentation and shows that Australian firms are leading the way in the burgeoning ICT engineering field," she says.

"The use of Building Information Model (BIM) technology sets a new benchmark in the integration of many diverse elements such as structural, architectural, services, plant, facilities, furnishings and equipment information into a comprehensive 3D digital model."

The BIM technology is a welcome facility management aid for the large and complex Sydney Opera House and provides a complete visual representation of the building and all its elements including seven theatres, 37 plant rooms, 12 lifts and over 1,000 individual rooms.

The model is linked internally to a broad range of databases and reference information and integrates data from diverse sources including disparate software systems, hard copy and site investigation records.

"This is an exemplar project which clearly demonstrates the application of an integrated digital solution as a world class management tool that will improve facilities management in the landmark and iconic Sydney Opera House, with its complex structures and diversity of areas and activities," judges said.

With comprehensive digital building information and its internally linked databases just a mouse click away, BIM represents a powerful facilities management tool for a range of users including internal staff, contractors and external consultants as well as the broader community. [10]

AWARDS FOR EXCELLENCE



2007 Small Firm Award winners
celebrate their win

SMALL FIRMS AWARD

SMALL FIRMS WIN BIG

Although it was wonderful to see such a large number of entries in the Small Firms category, judges say they made this year of judging the most difficult yet.

All entries were of an extremely high calibre, but this year's Gold medal of Merit was awarded to Sydney-based Building Services Engineers who were engaged to provide the mechanical services for the Logan IKEA store.

By using fire sprinkler system tanks for chilled water storage, chilled

beams and high temperature chilled water, water-cooled chillers with oil-free compressors, economy cycle on all central air handling units and pre-cooling of all incoming outside air, Building Services Engineers developed an air conditioning system to maximise energy savings in future electricity consumption.

The company of 10 used a range of innovative ideas to reduce on-going energy consumption and costs of the store's air conditioning plant by up to 62 per cent.

Judges said, "As a small ACEA firm, Building Services Engineers demonstrated their capacity to apply innovative engineering to achieve major energy costs savings in a difficult environment."

The Silver award was presented to Holmes Fire & Safety who provided fire engineering services for extensions to the newspaper printing facility. Despite significant shortfalls with existing smoke exhaust systems, Holmes Fire & Safety utilised building attributes and existing systems to achieve an acceptable level of fire safety while minimising cost and disruption, demonstrated through the use of extensive smoke modelling.

Holmes Fire & Safety also picked up the Silver Award of Highly Commended for the Central Coast Leagues Club. Following various stages of building expansion the company was commissioned to investigate compliance with regulations and assess possible variations to Fire Order requirements. Holmes Fire and Safety delivered services which have improved public safety, with minimal costs and business interruption to the client.

These exceptional achievements from small firms highlighted how innovation and leading edge design, as opposed to company size, are key to delivering first class results for clients. [10]

A message from the sponsor: Coffey Geotechnics, sponsor of the Small Firm Award, would like to congratulate Building Services Engineers for their Gold Award of Merit in developing an air conditioning system that delivers significant energy savings in future electricity consumption. A fantastic outcome in delivering major energy cost savings to the client and the environment.

ENGINEERING'S NIGHT OF NIGHTS

YOUNG WOMEN USHER IN NEW ERA IN ENGINEERING

Two young women received top honours at the awards – one for revolutionary work on electromechanical automotive brakes, and one for leading the way for a new wave of global engineers.

ACEA Chief Executive Megan Motto says that during a time of crippling skills shortages it was particularly encouraging to see such quality entries in the student category.

“For ACEA member firms it is pleasing to see that the number of excellent entries into this category signals the outstanding quality of students who are about to embark on careers in the consulting engineering industry,” she says.

University of Melbourne graduate Denise Lam was presented with the ACEA Student Project Award for her successful investigation in the use of estimation techniques to reduce the hardware requirements and the subsequent cost of one of the leading prototype brakes.

Current prototype electromechanical brakes employ force sensors to measure the clamping force between the brake pads and disc. Obtaining an accurate force measurement is difficult and costly due to high temperature conditions around the brake pads. The goal of Denise’s project was to develop a number of innovative solutions to address these problems. Such solutions in the automotive industry, where cost is such a vital factor, would contribute towards widespread acceptance of drive-by-wire systems in everyday passenger vehicles and a new era of safety.

“The judges saw Denise’s project as an impressive innovation which, even though small in scope, holds the potential to usher in a new era of safety and may have a major impact on the automotive industry,” says Ms Motto.

Taking home the Future Leaders Award was Natalie Nottage, a successful young consultant leading the way for a new wave of global engineers.

“Natalie has demonstrated a determined focus on continuing professional development and innovative consulting work during overseas postings,” Ms Motto says. “The judges were impressed by her extensive international expertise and the milestones she has achieved early in her career. Her determined focus on continuing professional development and innovative consulting work associated with overseas postings showed Natalie is leading the way for the new wave of global engineers.” [NO]

INFRASTRUCTURE PROJECTS ENGINEERS BRIDGING THE GAP

A 90 kilometre very high bandwidth optical fibre network linking Adelaide’s university campuses to significantly improve the flow of information between major research, medical and educational facilities, was among a number of impressive infrastructure projects recognised at the awards.

A Gold Award of Merit for Transport and Civil Infrastructure was presented to GHD for their work on Australia’s third largest cable stayed bridge, the 520 metre-long Green Bridge, now known as the Eleanor Schonnell Bridge spanning the Brisbane River.

The bridge, with its 70 metre-high support towers, provides access for bus, pedestrian and cycle traffic and incorporates unique ‘green’ solutions for rainwater runoff and solar powered lighting.

Judges said, “In their unique design of the cable stayed bridge, GHD has applied innovative engineering to deliver an aesthetic and lightweight structure which incorporates

energy neutral features and sustainable construction materials.”

In the same category, a Silver Award of Highly Commended was presented to Sinclair Knight Merz (SKM) for the \$524 million Albury Wodonga Hume Freeway Project – the largest roads infrastructure project in regional Australia.

The project consists of 17.4 kilometres of four lane freeway, 35 bridges and 7.5 kilometres of shared pedestrian/cycle path, and involved cooperation and liaison with the federal government, two state governments and regional local governments.

The project has strengthened the major national transport link between Sydney and Melbourne, improved safety and travel conditions for local, regional and interstate traffic and delivered major social benefits to the Albury and Wodonga communities.

“This award recognises SKM’s major engineering contribution to a large and complex national infrastructure project involving cooperation and liaison with the governments at all levels,” judges said.

SKM also received a Silver Award of Highly Commended in the Information Communications Technology (ICT) Projects category for their work on the South Australian Broadband Research and Educational Network (SABRENet).

As technical specialist adviser and construction manager, SKM supervised the design and construction of the SABREnet high volume broadband network, providing virtually unlimited high-speed broadband capacity for South Australia’s research and education community. [NO]



Denise Lam accepts the Student Project Award

AWARDS FOR EXCELLENCE

INDUSTRIAL AWARD

OPAL REACTION AWARDS PROJECT WITH GOLD

The Open Pool Australian Light-water (OPAL) reactor snatched a Gold Award of Merit in the Industrial category for its impact on the economic and social life of Australia.

As principal design consultant, Connell Wagner provided structural, civil, electrical and mechanical designs for ANSTO's 20 megawatt replacement research reactor at Lucas Heights in southern Sydney. Connell Wagner also provided services in fire and life safety analysis and advanced design analysis relating to earthquake resistance.

The judges commented on the project's ability to address major technical challenges in the unique and challenging environment of nuclear research and development.

"In breaking new ground in a unique and challenging field, Connell Wagner demonstrated a high level of technical excellence, originality and quality in meeting the exacting needs of the client," they said.

The multi-purpose facility for radioisotope production, irradiation services and neutron beam research replaces the High Flux Australian Reactor (HIFAR), built in 1958. OPAL produces double the power and irradiation of HIFAR and up to four times the quantity of life-saving medical isotopes.

The unique incorporation of recently developed nuclear fission technology with components designed and constructed to world's best nuclear safety standards make OPAL one of the most performance-efficient research reactors in the world. It offers more advanced neutron scattering capabilities and an increased understanding of atomic structures at a scale of detail not previously available in Australia. [NO]

PROJECT WINNERS

Building		
Gold	Arup	Aurora Tower
Silver	Taylor Thomson Whitting and Bornhorst & Ward	Queensland Gallery of Modern Art
Certificate	Hyder Consulting	Westpac Place
Transport & Civil Infrastructure		
Gold	GHD	Green Bridge Project
Silver	Sinclair Knight Merz	Albury Wodonga Hume Freeway Project
Industrial		
Gold	Connell Wagner	ANSTO - Australia's New OPAL Reactor
Silver	Sinclair Knight Merz	New Printing Facility for Australian Provincial Newspapers (APN)
Water		
Gold	URS Australia / Murrumbidgee Irrigation	Large Scale Water Saving Initiative - The Barren Box Swamp Project
Certificate	MWH Australia	Warragamba and Nepean Deep Water Recovery
Certificate	Connell Wagner	Grange Golf Club Wetland & ASR Scheme
Energy & Resources		
Silver	GHD	Mallaty Creek Pipeline Project
Environmental		
Silver	Norman Disney & Young	Digital Harbour Port 1010, Docklands
Certificate	Connell Wagner	Prince Henry Redevelopment, Little Bay

ENGINEERING'S NIGHT OF NIGHTS



The nights 'Project of the Year' winners celebrate their win

ICT Projects

Gold*	Arup / CRC for Construction Innovation	Adopting BIM for facilities management: Solutions for managing the Sydney Opera House
Silver	Sinclair Knight Merz	SABRENet Project (South Australian Broadband Research and Education Network)

Community & Urban Development

Gold	Kellogg Brown & Root (KBR)	Natural Disaster Mitigation for Floodplain Communities of Vietnam
Silver	Maunsell Australia	Toomelah/Boggabilla Aboriginal Community Development Program
Silver	Sinclair Knight Merz	Something Concrete

Building Services

Gold	NDY	Brisbane Square
Silver	Connell Wagner	Millennium Arts Projects at Queensland Cultural Centre

Specialist Services

Gold	Hyder Consulting	North-South Rail Corridor Study
Silver	Holmes Fire & Safety	Central Coast Leagues Club
Certificate	Norman Disney & Young	Eureka Tower - An Evacuation Solution for Australia's Tallest Residential Building
Certificate	Coffey Geotechnics	Five Islands Road Project

Project Management

Gold	Kellogg Brown & Root	M2006 Commonwealth Games
Silver	Sinclair Knight Merz	Kiln 11

International / Export Projects

Silver	Sinclair Knight Merz	Doha Cauldron
Certificate	Hyder Consulting	Festival Waterfront Centre, Dubai Festival City

SPECIAL AWARDS

Award for Education & Training

Gold	Livelt Health & Safety Practice Culture Program	Sinclair Knight Merz
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Future Leaders Award

Gold	Natalie Nottage	URS Australia
Silver	Robbie Marshall	Cardno QLD
Silver	Jacinta McMahon	URS Australia
Certificate	Daniel Lambert	Arup
Certificate	Vikki Wardley	Sinclair Knight Merz

Student Project Award

Denise Lam	Clamp force estimation in an e-brake	University of Melbourne
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Small Firm Award

Gold	Building Services Engineers	IKEA Logan Store Low Energy Airconditioning
Silver	Holmes Fire & Safety	Central Coast Leagues Club

Presidents Award

ACEA (NSW)	Engineering: Design your World (DVD)
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THANK YOU TO THE JUDGING PANEL

The success of the awards is reliant on a number of volunteers, who donate their time and support to the annual Awards program. We would like to say a special thank you to the ACEA Awards Judging Panel and Review Panel. ACEA acknowledges and values the support and contributions of all judges in the Awards program.

Special thanks to the following judges who show tremendous generosity and dedication to strengthening the integrity of the ACEA Awards: Jack Wynhoven (Head Judge), Bob Gussey, Grahame Campbell, Keith Hampson, Dale McBean and Howard Tanner.

The judges were supported by a panel of referees who specialise in the various engineering disciplines in line with our range of project categories who are made up of: Dale McBean, (Head Reviewer), Gordon Stace, Joe Marson, Tony Denham, Malcolm Gallasch, Bill Southwood, Rod Jeffery, Louis Challis and Clive Humphries.

We also thank our Special Awards judging panel of John Vines, Pam Behnke and Roger Olds. [NO]

* Project of the year

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