



**The BUSINESS/HIGHER EDUCATION ROUND TABLE
& the AUSTRALIAN COUNCIL OF ENGINEERING DEANS**
present

***BUILDING
TOMORROW'S
ENGINEERS***

***A Significant Opportunity for All Stakeholders,
including BUSINESS & INDUSTRY to Discuss
the Future Development and Requirements of
the Engineering Profession***

**Wednesday, 20 February, 2008
ANZ Pavilion, The Arts Centre, Melbourne**

PRINCIPAL SPONSOR



**ENGINEERS
AUSTRALIA**

SUPPORTED BY



**Australian Academy of Technological
Sciences and Engineering**

Australia's economic future is dependent upon the effective management of globally competitive and innovative organisations. Human enterprise is a key element. The engineering graduate of tomorrow will be different from today's. How different is the issue? B-HERT, the ACED, and Engineers Australia believe there is a need to focus on the knowledge, skills, and attributes those entering the engineering profession will need in the future. They are crucial to the nation's future.

'Australia is experiencing an estimated shortfall of more than 18,000 engineers.... The shortage shows no sign of easing over the next three to five years, Entec general manager Robin Tarr says.' BRW, May 10 – 17 2007 p. 16

Engineers, be they civil, electrical, mechanical, chemical, electronic, information technology, mining, metallurgical, hydraulic, environmental, biomedical, or any other branch of the science, play an integral and critical role in every sector of business and industry, from basic R&D to final outcome.

Australia graduates about 5 000 engineers a year, but 1st year enrolments are decreasing. Between 2001 and 2005 the number of Australians commencing degrees in engineering fell by more than 8 per cent. At the current rate Australia will (in terms of graduates per million of population) fall from

5th last in the OECD to 3rd last in the next two years. We will be graduating 16 per cent less than the number awarded in 1998. Mexico and Turkey will have overtaken us. Not much further to fall!!!

In 2003 China awarded 351,537 bachelor degrees in engineering (cf. US National Science Foundation Reports). The really significant aspect is that this is **three times** the numbers who were graduating 15 years ago. **40 per cent of Chinese graduates are engineering graduates. In Australia only 10 per cent of graduates are in engineering - OECD average 14 per cent.**

During the years spent studying at university there is the greatest opportunity to not only impart technical skills but also to influence, shape, and refine a student's overall behavioural competencies.

This is a unique opportunity to bring together the leaders in engineering and mathematical sciences education in academe, senior industry representatives, and the professions, for the purpose of enhancing the outcomes and the value of engineering education for all stakeholders. There is enormous potential for industry and business to derive increased value from links with universities, and for universities similarly to benefit from increased clarity on the needs and motivation of its relevant stakeholders.

- **Deans and senior academics from all relevant disciplines.**
- **Senior executives from business and industry, especially those within sectors dependent on engineering skills.**
- **Senior executives from private providers, including vocational education and training.**
- **Senior HR and Organisational Development Executives from business and industry.**
- **Senior executives from professional associations.**
- **Senior officers and policy makers from all levels of government .**
- **Employer Group and Trade Union representatives.**

WHY?

There a number of issues to be explored including:

- Clarifying the needs of business and industry.
- Improving mutual understanding between employers and academe.
- The relevance of curriculum, course structure, and pedagogical development.
- Exploring issues in lifelong learning and continuing professional development.
- Debating the need for and benefit of generic and employability skills.
- Development of collaborative course modules.
- The adequacy of school preparation in subjects such as mathematics and science.
- Sharing of best practice - international developments in engineering education.
- Better balancing between the demand side and supply side.

PROGRAMME

Date: Wednesday, 20 February 2008

Venue: ANZ Pavilion, The Arts Centre, St Kilda Road, Melbourne

8.00am	Registration
8.30am	Welcome David Hind FTSE, MIEAust CPEng, President, Business/Higher Education Round Table Julie Hammer AM CSC FIEAust FRAeS, National President, Engineers Australia Professor Elizabeth Taylor AO FIEAust CPEng, Pro Vice-Chancellor and Executive Dean, Faculty of Sciences, Engineering & Health, Central Qld University; Chair, Australian Council of Engineering Deans
8.45am	Opening Address: Senator the Hon Kim Carr, Minister for Innovation, Industry, Science and Research (invited)
9.15am	Invited Address: Professor Robin King FIEAust CPEng, The Carrick Review of Engineering Education
9.40am	Workshop Sessions: Clarifying the needs of business & industry
	9.40 – 10.30am Workshop A: Designing the Responsive Curriculum Ross Young, Executive Director, Water Services Association of Australia Dr Maurice Allen FIEAust CPEng, Director, Education & Assessment, Engineers Australia Richard Bevan FIEAust CPEng, CEO, Transend Professor Caroline Crosthwaite, Director of Studies, Faculty of Engineering, Physical Sciences & Architecture, University of Queensland Professor James Trevelyan FIEAust CPEng, Mechatronics Discipline Chair, School of Mechanical Engineering, University of Western Australia
	10.30 – 11.20am Workshop B: Workforce Planning & Skills Shortages Peter Taylor FIEAust CPEng FASCE FIPWEA, CEO, Engineers Australia Peter Cockbain FIEAust CPEng, Technical Director, AmpControl Paul Douglas FTSE HonFIEAust CPEng EngExec, CEO, Sinclair Knight Merz Anne Byrne and Julian Sharrad, Skills Analysis and Quality Systems, Dept of Education, Employment and Workplace Relations (DEEWR).
11.20am	Morning Tea
11.45am	Panel Discussion: Engineering Graduates in a Global Context: - The New Model <i>Re-thinking undergraduate and graduate engineering education:</i> Chair – Rolfe Hartley FIEAust CPEng FIPENZ, Immediate Past President, Engineers Australia Craig Saddler, President, Boeing Australia (invited) Professor Ian Cameron, School of Chemical Engineering, University of Queensland Professor David Smith FIEAust CPEng, Faculty of Engineering, University of Melbourne Vicki Thomson, Executive Director, Australian Technology Network Dr Trevor Evans, HonFICHEM, CEng, CSci., CEO, Australian Academy of Technological Sciences and Engineering
12.45pm	Keynote Address: Professor Paul Greenfield AO FTSE HonFIEAust CPEng Vice-Chancellor, The University of Queensland
1.15pm	Lunch
2.00pm	Workshop Sessions: The Future Requirements of the Profession
	2.00 – 2.45pm Workshop C: Accreditation & Standards Professor Alan Bradley FIEAust CPEng, Accreditation Manager, Engineers Australia Professor Archie Johnston FIEAust CPEng, Dean, Faculty of Engineering, University of Technology, Sydney Professor Robin King FIEAust CPEng, The Carrick Review of Engineering Education
	2.45 – 3.30pm Workshop D: Linking Research & Development into Practice Professor Yianni Attikiouzel AM FTSE FIEAust CPEng, Executive Dean, Division of Science and Engineering, Murdoch University Professor Chris Cook FIEAust CPEng, Dean, Faculty of Engineering, University of Wollongong Dr David Skellern FTSE, CEO, NICTA (invited) Professor Mike Dureau FTSE HonFIEAust CPEng, Executive Director, The Warren Centre
3.30pm	Panel Discussion: Working & Learning - broadening skills in a context of change
	Chair: Professor Ashley Goldsworthy, AO OBE FTSE FCIE, Executive Director, B-HERT Professor David Beanland AO FTSE FIEAust CPEng, Former Vice-Chancellor, RMIT University John Vines OAM, CEO, APESMA Assoc. Professor Roger Hadgraft GradIEAust, Director, Engineering Learning Unit, University of Melbourne Leigh Paskin, Associate, Hatch Associates Professor Lesley Parker AM FTSE, Chair, ATSE Education Forum Bob Paton, CEO, Manufacturing Skills Australia
4.15pm	Close – networking drinks



B-HERT is devoted to improving the performance of both business and higher education for the benefit of Australian society. As a not-for-profit organisation created in 1990, it is the only body where leaders of Australia's business, research, professional, and academic communities come together to address important issues of common concern, to improve the interaction between Australian business and higher education institutions, and to help guide the future directions of higher education.

B-HERT plays an important role in helping to shape Australia's higher education system by influencing thought leaders and developing practical, workable policies and strategies for addressing issues in which business and universities have a shared interest.



ENGINEERS
AUSTRALIA

Engineers Australia is the largest and most diverse association for engineers in Australia and is one of the world's most respected engineering associations with in excess of 84,000 members.

Engineers Australia's primary purpose is to promote and advance the science and practice of engineering through the efforts of our constituent Colleges, Technical Societies and special interest groups.

Strategically, Engineers Australia works towards this goal via the pursuit of eight key objectives that include increasing the standing and recognition of engineers via the professional development of members and the achievement of Chartered status.

Engineers Australia is governed by a national Council and Congress. It operates in every state and territory and has numerous overseas chapters throughout Asia, Europe and North America.

Founded in 1919 its patron is His Excellency the Governor-General of the Commonwealth of Australia, Major General Michael Jeffery, AC, CVO, MC, HonFIEAust.



The Mission of the Australian Council of Engineering Deans, as set out in the Constitution, is "To promote and advance engineering education, research and scholarship in Australia."



The Academy of Technological Sciences and Engineering is an independent non-government organisation dedicated to the promotion in Australia of scientific and engineering knowledge to practical purposes. It is an association of 750 professional men and women who are elected as Fellows of the Academy on the basis of their achievement in the application of science, technology and engineering to Australian life.

ATSE seeks to play a significant role in helping to shape how Australia debates and tackles the major challenges of energy, climate change, water, infrastructure and education, especially the pressing need for more scientists and engineers.



BUILDING TOMORROW'S ENGINEERS REGISTRATION FORM

(Please photocopy for additional delegates)

Registration Closes
15 February 2008

This is an Input Taxed event

COST
1 Day Forum Registration
Building Tomorrow's Engineers

20 February 2008
\$150.00 including morning tea,
lunch & post-forum drinks

Post:
Business/Higher Education Round Table
ABN 80 050 207 942
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More information
can be found at www.bhert.com
or by contacting the B-HERT Secretariat on
(03) 9419 8068

**Building Tomorrow's Engineers on 20 February 2008 at ANZ Pavilion,
Lvl 8, The Arts Centre, St Kilda Rd, Melbourne.**

Please Print in black ink

Title:.....Name:

Position:

Organisation:

Address:

.....Postcode:

Phone:.....Fax:

E-mail:

Payment details

I will be attending the **Building Tomorrow's Engineers Forum on 20 February 2008 @ \$150.00**

Amount Payable: \$.....

Cheque Please make cheques payable to **Business/Higher Education Round Table**

Credit card Type: **Visa** **Mastercard** **AMEX**

Number:

Cardholder's Name: Expiry:

Signature:

We regret no refunds will be made, however substitute delegates are welcome.

Registrations will only be accepted on an official registration form. One per delegate is required and should reach B-HERT by no later than Friday 15 February. Notification of substitute delegates must be received by Monday 18 February.

The personal information on this registration form will be held in the strictest confidence. It will be added to our database and will be used for information alerts about other B-HERT events and initiatives. Periodically we may share information with other professional associations to promote relevant matters of interest. Attendee lists may be listed under our event page on our website. If you DO NOT WANT to be alerted to upcoming events or listed please indicate below.

Please do not alert me to upcoming events

Please do not include me in the attendee list on your website

B-HERT reserves the right to alter or amend the program where necessary.