

## New Zealand Engineering Excellence Awards

The 2007 New Zealand Engineering Excellence (NZEE) Awards were held at TE PAPA on the Wellington waterfront on 21 November 2007.

Singer and personality Frankie Stevens hosted an entertaining evening attended by over 460 members of the engineering community, their partners and friends. The night provided great networking opportunities, with an enjoyable dinner, and pre- and post-event drinks.

The awards ceremonies continued throughout the evening, concluding with a short, interesting address from Commerce Minister Lianne Dalziel.

The Minister described the event as a chance to acknowledge the role of the engineering profession in the economic, social and environmental development of New Zealand. "These awards highlight those people and projects that have made the greatest contribution to those goals this year," she said. "The fact that the award winners are selected by the industry itself makes the event even more meaningful as all of the winners have passed an extreme version of peer review."

The awards are presented in two major areas – Individual Awards that recognise leadership, entrepreneurship and young engineers, and Category Awards that recognise achievement in the various industry areas. There is also a Supreme Award for the best of the Category winners.

"This year there were 58 entries spread across all eight categories," says **PROFESSOR DAVID ELMS DistFIPENZ**, Convenor of the Category Awards judging panel. "The majority were very good, and at times the judges found it hard to separate the close contenders."

**STEVE GENTRY DistFIPENZ**, Convenor of the Individual Awards judging panel, noted a similar trend, saying that the judges were very pleased to see interest in the individual awards continuing to build. "This is most evident in the New Zealand Young Engineer of the Year category, in terms of both the quality of the individuals entering and the overall number of entries. This must bode well for the future of the engineering profession," he says.

IPENZ would like to congratulate all of this year's finalists and award winners. Entries



Commerce Minister **Lianne Dalziel** presents the Supreme Award for New Zealand Engineering Excellence to **Paul Wymer MIPENZ** (centre), Managing Director of Construction Techniques Group Ltd, and **Simon Leitch** (right), Transpower Senior Development Engineer, for the Transpower Tower Foundation Strengthening – Upper South Island Grid Upgrade

to the 2008 New Zealand Engineering Excellence Awards will open in January 2008.

The New Zealand Engineering Excellence Awards are hosted by a consortium of five partners and 10 contributing organisations. The partners are: New Zealand Centre for Advanced Engineering (CAE), Association of Local Government Engineering New Zealand Inc (INGENIUM), Electricity Engineers' Association (EEA), Association of Consulting Engineers New Zealand (ACENZ), and the Institution of Professional Engineers New Zealand Inc (IPENZ).

The NZEE handbook as well as photos and news from the event are available from the New Zealand Engineering Excellence Awards website at [www.nzeeawards.org.nz](http://www.nzeeawards.org.nz) See page two for a complete list of winners, and pages six and seven in this issue of *engineering dimension* for a selection of photos from the night.

continued on page 02



### Inside this Issue:

- > NZEE Awards Winners p02
- > Ethics Talk p04
- > NZEE Awards photos p06
- > Timber Design Awards p08
- > Engineering Students Win Microchip Award p11

# NZEE Award Winners

## Category Award Winners

### Supreme Award for New Zealand Engineering Excellence 2007

Sponsored by Standards New Zealand

- Transpower tower foundation strengthening – Upper South Island grid upgrade, Construction Techniques Group Ltd

### Building and Construction

Sponsored by Department of Building and Housing

- Makatote Viaduct, ONTRACK

### Utilities, Networks and Amenities

Sponsored by New Zealand Utilities Advisory Group

- Transpower tower foundation strengthening – Upper South Island grid upgrade, Construction Techniques Group Ltd

### Roads and Transport

Sponsored by Road Controlling Authorities

- Makatote Viaduct, ONTRACK

### Information and Communication Technology

Sponsored by Kordia

- The Kupe Mobile Controller, ONTRACK and Xworks (NZ) Ltd

### Food, Bioprocess and Chemical

Sponsored by Massey University

- Watercare Biogas Cogeneration Plant, Maunsell Ltd

### Mechanical and Manufacturing

Sponsored by Industrial Research Ltd

- Watercare Biogas Cogeneration Plant, Maunsell Ltd

### Electrical and Systems

Sponsored by NHP

- Wainikasou Hydro Power Project, MWH New Zealand Ltd

### Sustainability and Clean Technology

Sponsored by IET

- Tenon Direct Geothermal Heat Project, Contact Energy Ltd

## Individual Award Winners

### William Pickering Award for Engineering Leadership

Sponsored by IPENZ Foundation

- Ian Parton DistFIPENZ CPEng

### New Zealand Engineering Entrepreneur of the Year

Sponsored by The Open Polytechnic of New Zealand

- Peter White-Robinson FIPENZ

### New Zealand Young Engineer of the Year

Sponsored by DownerEDi Works

- Tyrone Newson MIPENZ CPEng IntPE(NZ)

### Award for Excellence in Engineering Journalism

Sponsored by IPENZ Foundation

- John Gerritsen, for "Engineering a Future", *New Zealand Education Review*



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(1) From left: IPENZ's **Charles Willmot MIPENZ**, Award Sponsor Department of Building and Housing's **John Gardiner FIPENZ** and ACENZ CEO **Kieran Shaw CompIPENZ** (2) Representatives from Massey University, sponsors of the Food, Bioprocess and Chemical Category Award (3) Attendees arrive for dinner (4) Air New Zealand CEO **Rob Fyfe FIPENZ** and ONTRACK CEO **William Peet MIPENZ** discuss the Awards (5) IPENZ Chief Executive **Andrew Cleland FIPENZ** (6) Table of dignitaries (7) **Francis Small DistFIPENZ** (left), **Hon Dr Nick Smith** (centre), **Hon Dr Ashraf Choudhary** (8) The 460 attendees stand for the National Anthem

# Engineering in the South Pacific – Part Two

After examining some of the engineering concerns in smaller South Pacific nations in the November issue, this month *engineering dimension* looks at how IPENZ can provide support to help address these engineering issues.



Many South Pacific nations have relatively small populations with little direct access to first-rate engineering training. The Islands are often geographically isolated, endure severe weather conditions and suffer from accelerated materials degradation.



During the South Pacific Engineering Forum held in Wellington earlier this year, representatives from around the Pacific discussed the engineering challenges that these conditions cause. The Forum suggested several principles that may help address these challenges.

- Develop and maintain a South Pacific Building Code, with regular reviews and updates.
- Develop suitable compliance documents, such as Standards. This may involve extending Australian/New Zealand Standards to include South Pacific nations.
- Develop a means to carry out reliable construction materials testing across all South Pacific nations. This may require mutual assistance schemes.
- Introduce internationally-benchmarked competence standards that recognise

engineers who are competent to practice in South Pacific conditions.

- Benchmark Fijian and Papa New Guinean qualifications in relation to these competence standards.
- Restrict professional engineering work to certified competent engineers.
- Improve access to professional development, perhaps facilitated by IPENZ.
- Improve engineering trades training throughout the South Pacific. IPENZ could act as a funding advocate for training that raises capability.
- Create a professional identity for engineers. This could be achieved through an association built around provision of professional development, adherence to the agreed competence standards, and development and enforcement of technical standards.



The Forum focused much of its time and attention on civil engineering and construction issues, so it was decided to consider specific possibilities for improvement in that context. The Forum suggested that:

- IPENZ could assist in project planning and design, where engineers need to take a lead role and ensure that there is adherence to good design practice.
- New Zealand building consent authorities could assist by increasing regulatory capability, enabling proper evaluation of building permit proposals, with the regulator seeking proper engineering advice and peer review.
- New Zealand building consent authorities could also assist by helping to implement good practice. In construction, for example, with a well-functioning building regulator, engineers should be called in to monitor construction to ensure that the design is fully realised and properly implemented.

Forum representatives also proposed that the best way to move forward on the more specific issues was to establish a professional association supporting engineering in the South Pacific. The Forum recommended the creation of the South Pacific Engineers Association (SPEA).

> The next issue of *engineering dimension* takes a closer look at what SPEA might look like – its role in the South Pacific, its structure and how it would function in practice.



Photos courtesy of Arthur Budvilietas and Fisilau Leone

# Ethics Talk

**ANDREW CLARK**, Manager – Ethics and Discipline, takes a closer look at the third value of the IPENZ Code of Ethics.

## **Commitment to Community Well-being**

*Members shall recognise the responsibility of the profession to actively contribute to the well-being of society and, when involved in any engineering activity, shall endeavour to identify, inform and consult affected parties.*

Under this clause you should have due regard to:

- Applying your engineering skill, judgement and initiative to contribute positively to the well-being of society.
- Endeavouring to identify, inform and consult parties affected, or likely to be affected, by your engineering activities.
- Recognising in all your engineering activities your obligation to anticipate possible conflicts and endeavouring to resolve them responsibly, and where necessary using the experience of the Institution and colleagues for guidance.
- Treating people with dignity and having

consideration for the values and cultural sensitivities of all groups within the community affected by your work.

- Endeavouring to be fully informed about relevant public policies, community needs and perceptions which affect your work.
- As a citizen, using your engineering knowledge and experience to contribute helpfully to public debate and to community affairs, except where constrained by contractual or employment obligations.

This value of the IPENZ Code of Ethics outlines the expected behaviour of an engineer when contributing to engineering activities in the wider community and the effects of engineering activities on the wider community.

There is a requirement for the engineer to identify the effects that the engineering

activity may incur on the community and consult with those parties that are most likely to be affected.

At a personal level the engineer is obliged to understand the issues concerning the work being performed. This would ensure that the work contributes to the well-being of the community and the work is appreciated by that community.

The engineer is encouraged to participate in the development of the community by using their engineering knowledge in a constructive manner and offering guidance as how a community project should proceed. This ethical value provides the basis of how an engineer can conduct themselves in a community project and provide leadership to ensure that a community project is successfully completed.



### > From the IPENZ Code of Ethics:

(The Chartered Professional Engineers of New Zealand Rules (No 2) 2002, Part 3 – Code of Ethical Conduct (Rules 43, 44 and 45) uses similar wording):

- 1. Take reasonable steps to safeguard health and safety**  
A Member must, in the course of his or her engineering activities, take reasonable steps to safeguard the health and safety of people.
- 2. Have regard to effects on environment**
  - (1) A Member must, in the course of his or her engineering activities –
    - a) have regard to reasonably foreseeable effects on the environment from those activities; and
    - b) have regard to the need for sustainable management of the environment.
  - (2) In this context, sustainable management means management that meets the needs of the present without compromising the ability of future generations (including at least the future generations within the anticipated lifetime of the end products and by-products of activities) to meet their own reasonably foreseeable needs.
- 3. Act with honesty, objectivity and integrity**  
A Member must act honestly and with objectivity and integrity in the course of his or her engineering activities.

# Questions on Confidential Reporting

Since the launch of Confidential Reporting on Matters in Engineering (CRoMiE), a number of Members have asked questions to clarify the scheme.

Question	Answer
What is the legal requirement for the Manager – Ethics and Discipline to keep report details confidential? In the United Kingdom I understand there is a statutory obligation for confidentiality?	The Manager – Ethics and Discipline is an IPENZ Member and as such is governed by the IPENZ Code of Ethics. Consequently, there is no need for a statutory obligation for confidentiality.
What is the composition of the panels of experts who review the de-identified reports?	Panels will not be formed until a case needs to be investigated and reported. Ad hoc panels of experts will be established to deal with each matter according to the subjects under investigation.
How often will panels meet?	Voluntary panels will be formed and dissolved on an ad hoc basis.
Who will keep the reports and will they be available to interested parties on request?	Reports will be freely available to anyone. There is no intention that reports should remain unavailable or be for Members only. If reports are to be of value, the more people made aware of them the better the system will work.
Will the structural lessons learned be reported? In the SESOC journal, for example?	The structural lessons will be made available to SESOC for whatever action the SESOC Committee determines appropriate.
Where examples of bad practice are identified, will the report include examples of good practice that can be used for learning purposes?	There is no reason why examples of good practice should not be publicised alongside examples of bad practice. Indeed, Clause 5.5 of the IPENZ Code of Ethics states: “Wherever possible, share information about your experiences and in particular about successes and failures.” However, CRoMiE is primarily intended to identify areas of poor practice.

## CPD – It’s All About Relevance!

International engineering institutions and professional bodies in New Zealand typically set targets for the level of continuing professional development (CPD) that should be undertaken by their members. Meeting these targets is used as evidence that an individual is currently competent to practice.



Within the engineering profession in New Zealand, the CPEng Act introduced the requirement for applicants to demonstrate current competence through a regular reassessment process. CPD is now a means to an end, not an end in itself, and consistent with this change, you may notice that when recording your CPD online there is no longer a “weighting column” on the form. All CPD you undertake should be recorded, but the most important thing is not the total hours, or assigning a certain weight to these hours, but what you learned from the event and how you apply it to your engineering practice.

Equally, IPENZ no longer accredits CPD courses or events offered by other

organisations, or assigns CPD “points” to such courses. The true test for any CPD activity is its relevance to the individual engineer’s practice, not a generic IPENZ assessment of relevance or quality.

When it comes to competence assessment for Membership or registration (including reassessment for CPEng), the key test is not whether you have amassed a certain quantity of CPD, but whether you have taken reasonable steps to develop and maintain your competence in your current practice area. While it may be difficult to evidence this without at least 50 hours of high-quality CPD per year, this is a guide, not a target.

Competence assessment applications need to include:

- Evidence of a planned approach to professional development:

As part of the self review for competence assessment, you are asked to explain your personal professional development strategy and how this has supported the type of engineering activities you undertake.

If your area of practice has changed over the last five years, you are asked to describe how your CPD strategy supported that change.

- Evidence of appropriate steps to keep up-to-date with key developments:

You need to identify recent major CPD activities covering all parts of your practice area, summarise the learning and identify how it influenced your practice.

You should also be able to readily answer the following question, which is posed as part of the self review: Within your practice area, can you describe how engineering practice has changed in the last five years as a result of new knowledge or changed regulations?



- (A) Awards host **Frankie Stevens**
- (B) Building and Housing Minister **Shane Jones** (left) and **Bob Hodgson FIPENZ** (centre) present the Award for Excellence in Engineering Journalism to **John Gerritsen**
- (C) ONTRACK's **William Peet MIPENZ** (left) and **Kate Taylor** (centre) with Category Awards Convenor Professor **David Elms DistFIPENZ Ashley Harper MIPENZ** (left) from INGENIUM, Air New Zealand CEO **Rob Fyfe FIPENZ** (centre) and ACENZ President **Andrew Read FIPENZ**
- (D) Attendees from the New Zealand Computer Society
- (E) ONTRACK and XWorks NZ (Ltd) representatives receive their Information and Communications Technology Award. From left: **Kelvin McVinnie** (Xworks), **John Skilton MIPENZ** (ONTRACK), **Trevor Pollock** (ONTRACK), **Aaron Groad** (Xworks), and **Kevin Buckle** (Xworks)
- (F) **Kepa Morgan MIPENZ** (left) talks to **Gemma** and **Bob Newson** (second, third left) and **Stuart Mitchell** (right) while enjoying pre-event drinks
- (G) **Laurence Zwimpfer MIPENZ**, winner of the 2006 William Pickering Award for Engineering Leadership
- (H) Entrepreneur of the Year Award winner **Peter White-Robinson FIPENZ** shows off his award to wife **Sharon**



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(Q)

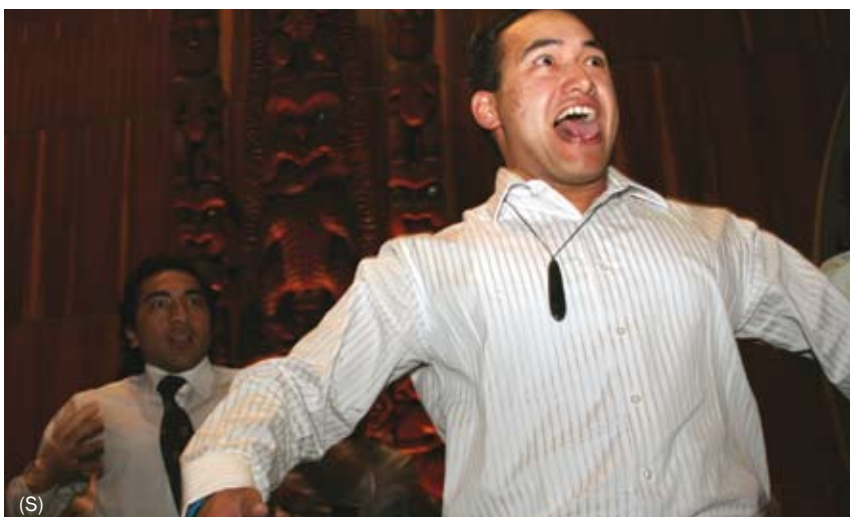


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- (J) Air New Zealand CEO **Rob Fye FIPENZ** (left), **Shaun Coffey** of Award Sponsor Industrial Research Ltd, and Building and Housing Minister **Shane Jones** present the Mechanical and Manufacturing Award to Maunsell's **Warwick Cutfield MIPENZ**
- (K) Building and Housing Minister **Shane Jones** (left) and Department of Building and Housing CEO **Katrina Bach** (second left) present the Building and Construction Award to ONTRACK's **Walter Rushbrook MIPENZ** (third left) and **Matt Callaghan MIPENZ**
- (L) Engineering MP **Philip Heatley** (left) and Award Sponsor NHP's **Craig Vallance** (centre) present the Electrical and Systems Award to **Robin Spittle MIPENZ** of MWH New Zealand Ltd
- (M) IPENZ President **Jeff Jones FIPENZ**
- (N) **Sean Edgington** with **Emma White-Robinson** at the pre-event function
- (O) **Ian Parton DistFIPENZ**, winner of the 2007 William Pickering Award for Engineering Leadership
- (P) The Awards line-up
- (Q) Supreme Award for Engineering Excellence presenters Commerce Minister **Lianne Dalziel** (left), Director of Westlake Consulting and CAE Board member **Richard Westlake** (centre), and Standards NZ CEO **Debbie Chin** (right)
- (R) The ONTRACK team with their scoop of Awards
- (S) Rousing support for New Zealand Young Engineer of the Year Award winner **Tyrone Newson MIPENZ**



(S)

# Timber Design Awards Announced

Winners of the Carter Holt Harvey Timber Design Awards 2007 were announced at a cocktail function held on Friday 9 November 2007 at Construction Marketing Services, Auckland.

The awards are open to projects submitted by architects, engineers, builders and other designers that use timber. Twenty-one entries over three categories were received.

## Joint Commercial/Public Architectural and Engineering Excellence Award

Winners: **HARRY STREET** and **DAMIAN MCBRIDE MIPENZ** for Te Puia, Creative Spaces Ltd and Sinclair Knight Merz

The judges commented that the Te Puia project demonstrates a simple engineering concept with a complex architectural overlay. The designers have worked together to create a building that is both spatially engaging and structurally fine. The cultural consideration of this project is sophisticated as is the nature of the gathering and community spaces that the building provides.



**Harry Street** and **Damian McBride MIPENZ** for Te Puia Creative Spaces Ltd and Sinclair Knight Merz



**Frank O'Boyle GIPENZ** for the Riverton Focal Point Development, Opus International Consultants Ltd

## Young Engineer Award

Highly Commended: **FRANK O'BOYLE GIPENZ** for the Riverton Focal Point Development, Opus International Consultants Ltd

The awards offer a category for engineers 30 years and younger, that can be judged solely on engineering merits of the project. The projects do not need to be architectural masterpieces, but do require innovation and sensitivity with intelligent use of timber components. This year's highly commended award goes to Frank O'Boyle's design of the Riverton Focal Point. The design illustrates a sensitive and elegant use of timber balustrades and timber decking together with a simple wharf structure.



## Residential Architectural Excellence Award

Winner: **JEREMY SMITH** for Kumutoto Bay Bach, Irving Smith Jack Architects

Judges noted that this is an architectural response to the client's desire for habitation without losing the joys of holiday camping in the bush. The architects have provided a sensitive, well sited building that engages sympathetically with its surroundings. The inverted truss roof structure provides a clever solution with the muted timber palette forming soft, natural, spaces. This is very much an interior scheme with much focus on the openings in the building skin and the letting in of light similar to the breaks in the forest canopy.



**Jeremy Smith** for Kumutoto Bay Bach, Irving Smith Jack Architects

# Notice of Annual and Special General Meetings

## The Institution of Professional Engineers New Zealand Incorporated

### Special General Meeting

The IPENZ Board has called a Special General Meeting to make changes to Rule 27, the Rule under which Technical and Special Interest Groups are established and governed. The SGM will be held at the Sudima Hotel, Christchurch International Airport, Christchurch at 5.00pm on Friday 14 March 2008.

### Agenda

1. Confirmation of Notice of Meeting
2. Apologies
3. Changes to the Rules of the Institution: Notice of Motion. The President shall move and the Deputy President shall second the motion that Rule 27 be repealed and replaced by the amended Rule that can be found at [www.ipenz.org.nz/ipenz/finding/proposal-for-amendment-of-rule27.pdf](http://www.ipenz.org.nz/ipenz/finding/proposal-for-amendment-of-rule27.pdf)

### Annual General Meeting

The 94th Annual General Meeting of The Institution of Professional Engineers New Zealand Incorporated will be held at the Sudima Hotel, Christchurch International

Airport, Christchurch on Friday 14 March, immediately following the SGM.

### Agenda

1. Notice of the Meeting – Confirmation
2. Apologies for Absence
3. Visitors
4. Obituaries
5. Honours Lists
6. Confirmation of Minutes of 93rd Annual General Meeting held on 22 March 2007
7. Matters Arising
8. Announcement of Board Election Results
9. Vote of Thanks to Scrutineers
10. Vote of Thanks to Retiring Board Members
11. Approval of 2006/2007 Annual Report and Statement of Accounts
12. Motions on Which Prior Notice Has Been Given
13. Appointment of Auditor
14. Vote of Thanks
15. General Business
16. Adjournment to Fellows and Achievers Dinner
17. Announcement of Honorary and Distinguished Fellowship Awards

## The Institution of Professional Engineers New Zealand Practice College

### Annual General Meeting

The fifth Annual General Meeting of the Institution of Professional Engineers New Zealand Practice College will be held at the Sudima Hotel, Christchurch International Airport, Christchurch on Friday 14 March, immediately following the adjournment of the AGM.

### Agenda

1. Notice of the Meeting – Confirmation
2. Apologies for Absence
3. Confirmation of Minutes of Fourth Annual General Meeting held on 22 March 2007
4. Presentation of Annual Report
5. General Business

### Dr AC Cleland

Chief Executive

Registered office and postal address of the Institution of Professional Engineers New Zealand: 158 The Terrace, PO Box 12 241, Wellington. Email: [CEO@ipenz.org.nz](mailto:CEO@ipenz.org.nz)

## Schools Update

2007 has been an extremely positive year for the Schools team. Both Futureintech and Techlink have secured extended contracts based on the success of their performance to date, while Futureintech has exceeded all its targets and is reaching unprecedented numbers of students, teachers and careers advisors.

Ambassador numbers continue to grow and there are now over 300 young technologists,

scientists and engineers volunteering with Futureintech in schools around New Zealand, supporting the curriculum and promoting their careers. The Transpower Neighbourhood Engineers Awards, which encourages students to think like engineers and address a need in their local community, attracted a record breaking number of entries and registrations are flooding in for 2008.

New publications have been regularly produced by Techlink and Futureintech, and have been positively received by schools, while the new Futureintech website has attracted much complimentary feedback.

The Schools team would like to thank everyone who has supported us this year. We look forward to working with you in 2008.

## IPENZ Membership Changes to November 2007

### Elected to Graduate Member

AO Aimusu, DA Alexander, Y Al-Safi, LRK Alwis, A Arunthavasoathy, AR Barzin, DT Batchelor, MN Beijeman, V Bhakhavan, J Bi, SD Blackbourn, MB Brown, JH Bydder, L Cao, LXY Chan, S Chang, F Cheng, SF Chituta, CK Chua, BII Chuo, TCB Chuo, PJ Cole, JA Collie, SC Cooper, DA Cross, SM Crundwell, AJ Cutts, TJ Dakers, MMC De Silva, ARM Douglas, AD Ellmers, C Everett, ML Fowler, H Franz, KHY Fung, U Ganeshan, B Ghosh, B Gloria, ED Gordon, JWI Grant, ML Griffiths, RAS Gunathilake, JB Hall, M Hamilton, DS Harbutt, RD Harrison, DM Hiscock, SHP Hon, H Hui, BJ Hutchison, K Hyde, S Islam, RH Julian, EAH Kamona, AAA Khan, AMY Khoo, O Khudair, AD Kitching, BH Knyvett, M Krishnaiyan, J Kruyshaar, VS Kumarasingham, NWL Kuok, CRN Kurniawan, N Lagadec, M Lai, CWH Law, SM Lawrance, DP Lawrence-Sansbury, AE Leitch, L Li, W Li, M Liang, O Liaqat, J Lin, SL Livesay, HKC Ma, DWJ Macdonald, GR Mathur, JA Masemann, TD Maw, HA McKinnon, AE Mitchell, JJ Mitchell, D Mudu, DA Murdock,

RL Nanavakkara, SV Nathen, DJ Noakes, M Okamoto, RA Orange, LC Padilla Jr, PJ Padilla, LC Palma, TR Patil, SJ Pearce, H Pearse-Danker, C Phang, CJ Poland, HM Porter, AN Prasad, MWA Rainey, JE Rechenmacher, DA Reyes, SH Robertson, MB Robinson, CLW Scott, LM Scott, ID Scott-Woods, DM Selby, RM Sharobim, RG Simmonds, J Singh, N Smith, A Soma, M Sterl, D Stern, JA Stinson, AL Suligan, IJ Sutherland, CS Tham, W Tsai, C Tudo-Bornarel, DL Udhani, RM Vant, J Varghese, JS Vergel De Dios, DS Vernon, SP Vidhyadharan, TD Wade, IS Wallia, F Wang, NFD Ward, JE Webel, RI Whiteman, MJ Williams, ACH Wong, MLH Wong, W Wu, P Yadav, S Zhou

### Elected to Professional Member

MP Baker, C Barrow, GA Birdling, JE Bretherton, PD Chapman, HH Cheung, P Clark, RCG Cleeton, M Clemson, RG Cole, ME Collier, TJ Conder, CC Davidson, NGMI Dayananda, MF Earley, CJR Edwards, CA Ellis, MJ Erskine-Shaw, MK Fakir, ST Fawaz, RM Firth, LN Fischer, D Fitzmaurice, MJ Flatters, BH Fountain, CP Hatley, DA Hogg, SF Hoolaafolau, E Holtrigter, DC Horne, AN

Ingram, JF Kingsford, A Kouzmin, U Kumar, TQ Lam, MRE Lander, CLC Law, JN Lloyd, GI Lowe, DJ Mahony, LTC Marr, BC McQueen, NJ Meeten, GN Melvin, MW Milke, DP Mitchell, RW Moore, AP Mulholland, PC Mulqueen, MS Nasif, K Ohlbock, ES Okba, BC Perry, P Prakash, AGAS Premathilaka, DJ Prentice, AG Prosser, KM Purton, FBA Rahman, MJP Revill, AT Ross, E Sagy, BJ Sandison, SL Sayers, BJ Sharman, PJ Simcock, MB Spooner, JD Sternberg, AF Sullivan, RP Theakston, GJ Thomas, JJ Thornton, NHT To, SL Tone, RA van Lierop, RA Wagner, SD Weaver, JA Wedgwood, MWL Wee, AN Wheeldon, KG Wigram, AJ Wilkins, JJ Witt, MK Wood

### Elected to Technical Member

OJ Asbury, TN Moulder, MJ Parkes, KR Towl

### Elected to Affiliate Member

Y Al-Safi, RD Brown, KA Churchill, PM Corna, JN Couchman, CJ Edwards, D Evans, RL Gant, PJ Hendon, S Hodgson, R James, SF Mvere, AJ Quigley, JT Strawbridge

## Life Member

IPENZ congratulates **JOHN BOYD MIPENZ** for achieving 50 years of Membership, and for his appointment to Life Member of the Institution.

John graduated from the University of Canterbury in 1953 (then Canterbury University College) with a degree in civil engineering. Beginning his career with a Ministry of Works (MoW) cadetship, he spent a great deal of his early career in a variety of interesting MoW locations – Invercargill, Christchurch, Gisborne, Wellington head office, and the Cobb Valley power scheme.

His engineering work has also been interesting and various. He conducted radiographic analysis of penstock welds at the Cobb Valley power scheme, worked as Area Engineer at East Cape, was in charge of highway construction at Matawai, and served as County Engineer at Waikohu County Council for three years.

He then rejoined the MoW as Area Engineer North Canterbury, a role that frequently took him to the Chatham Islands to investigate civil works and act as engineering advisor to the local county council.

Eight years later, John opted to return to study, obtaining a Diploma of Landscape Architecture. After graduating, he took a position with Town and Country Planning for two years before he was appointed to Assistant District Highway Engineer in Christchurch, a position he held until his retirement in 1988.

Since the late 1980s, John has kindled a successful new career as an exhibiting artist and sculptor.



**John Boyd MIPENZ**, Life Member of IPENZ

## Engineers Celebrate Research Quality Awards

University of Canterbury engineering researchers have received four new research awards that acknowledge and celebrate the high quality of research being undertaken at the University's College of Engineering.



From left, **Dr Philippa Martin**, **Professor Desmond Taylor FIPENZ**, **Professor Tadao Takaoka** and **Dr Rajesh Dhakal**

The inaugural recipients, **PROFESSOR DESMOND TAYLOR FIPENZ** and **DR PHILIPPA MARTIN** (electrical and computer engineering), **DR RAJESH DHAKAL** (civil engineering) and **PROFESSOR TADAO TAKAOKA** (computer science and software engineering), were presented with their awards at a recent ceremony.

"It's always nice being recognised for one's work," says Professor Taylor. "My department nominated me for the award and I hope that the committee choosing me represents recognition of a number of years of research by our research group at a high level."

Professor Taylor is currently conducting research on advanced wireless systems, in particular software defined radios and so-called cognitive or smart radio systems with major additional interests in modulation, coding and equalisation.

Professor Takaoka said that he was especially pleased to receive the award. "As I organise researchers in computer science, electrical engineering, and environmental science, I feel I was recognised as a representative of the research team, meaning that the research activity in this area is recognised as important," he says.

Professor Takaoka is interested in researching the speed of algorithms, a concept he says will play an important role for science and engineering in the future, just as differential equations influenced many engineering problems. He says it is not exaggerating to say our society will be run by algorithms in the future.

Dr Martin was awarded a young research award for her work designing advanced digital communication systems and algorithms focusing on error control coding and decoding, coded modulation, iterative processing, space-time coding and co-operative communications.

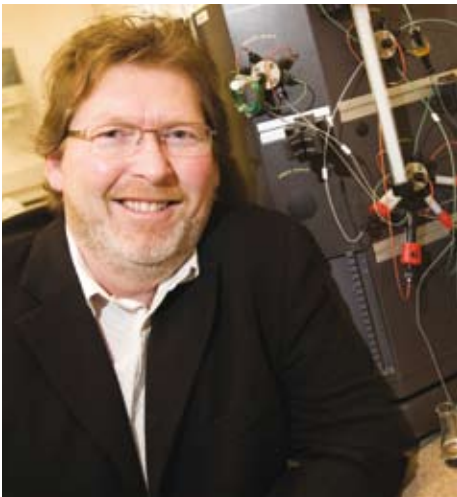
"The great thing about research is that I never get bored – there is always something new to explore and invent," says Dr Martin. "The most interesting part of my research is visualising a new communication environment and then developing a new way to exploit its potential."

Dr Dhakal, the other recipient of a young researcher award, says he thinks it is wonderful that research efforts and achievements have been recognised and rewarded.

Currently he is involved in research projects related to seismic loss assessment of structures, development of innovative technologies to mitigate seismic risk, seismic design of reinforced concrete structures, and fire behaviour of structures.

# International Award Recognises Chemical Engineer

**PROFESSOR CONAN FEE FIPENZ** has been awarded the 2007 Fonterra Award for excellence in chemical engineering at the annual Chemeca conference in Melbourne.



**Professor Conan Fee FIPENZ**

The award consists of a \$4,500 prize and a certificate of excellence. It recognises outstanding contributions in the industrial application of novel technology in the bio-processing field from an individual or group of chemical engineers in Australia or New Zealand. Professor Fee was the only New

Zealander to receive a chemical engineering award.

Professor Fee's research focuses on three areas of bio-separation and bio-molecular engineering. His research into modifying and purifying PEGylated proteins has helped an important class of bio-therapeutics that increases circulation half-lives in the body and therefore greatly improves therapeutic effectiveness.

In collaboration with SensorTec, Dexcel and Swedish firm Amersham Biosciences, Professor Fee has also developed an on-farm robot to capture milk proteins. As some milk proteins break down quickly after the milk is taken from the cow, especially in the factory during pasteurisation, it is preferable to extract and stabilise those high-value proteins at the raw-milk stage. Professor Fee devised a robotic machine coupled to an automated milking system that extracts proteins from milk immediately, maximising yield and activity.

His third area of interest is post-ruminal drug delivery, a field that looks at the controlled release of drugs in cows. His work has been carried out with Dexcel, InterAg and the

University of Waikato. Professor Fee says it was important to develop pH-responsive polymer microcapsules where the drug was delivered into the abomasums (stomach), not the rumen. "We are looking at the polymer capsule pores remaining closed while in the rumen, then opening and releasing drugs after passing into the abomasum, where it is more acidic," he says.

Initially considering civil engineering as a first-year student, Professor Fee became interested in organic chemistry, so he decided to pursue chemical engineering instead. He completed his PhD at the University of Canterbury in 1989 with a thesis on blood flow disturbances and atherosclerosis.

Stimulated by his various research interests and postgraduate students, Professor Fee says the award "reflects who I work with and the good working environments first at the University of Waikato and now at Canterbury. You need good support and research students around. I love being involved and like to renew my research every five years. The great thing in this field is that new things come along all the time."

## Engineering Students Win Microchip Award

Two Manukau Institute of Technology (MIT) engineering students have won Microchip Awards for their final-year projects, and high-level industry recognition for their achievement.

Bachelor's students **JEDY SHISHBARADARAN** and **ANDREW LYON** each received A\$1,000 and a Microchip development tool for using Microchip products in their practical projects.

Jedy worked on a free space optical communication system as his research project. Free space optics is a branch of telecommunication which uses light as its medium for transmitting and receiving data. Due to its high security and high data rates it's widely regarded as the next generation of wireless communication.

His research project aimed to design and develop a compact portable system capable of transmitting audio or data in ambient light conditions. It is a proposed communication system for the Victoria University robot project in situations where radio frequency and other wireless technologies are not feasible.

"There is nothing more a student could ask for than being recognised and awarded for effort that has gone into making this research a success," says Jedy. He adds that his supervisor supported him throughout the project.

The original idea behind Andrew Lyon's project – a data logger for electronic

scales – was to create a tool to help service technicians diagnose faults in electronic scales and weighing platforms, such as truck scales. If, for example, a scale had been overloaded, a log of the scale's activity would provide a clear record of this.

Electronic scales output a relatively large amount of data – up to 20 readings per second. To be useful as a diagnostic tool, the data logger had to store at least 250 megabytes or a week's worth of data. To achieve this, weight readings are extracted from the data output of an electronic scale, and then written to a flash storage card by a Microchip PIC18 microcontroller, in a format that allows for easy analysis on any PC.

Andrew says that receiving the award will motivate him to extend himself in his studies, and it will help with his long-term career plans in the field of embedded design.

The awards are granted by Microchip Technology Australia, a leading microcontroller and analogue semiconductor provider, and are reserved for tertiary



**Andrew Lyon** demonstrates his award-winning project – a data logger for electronic scales

engineering students who use Microchip products in their practical projects.

This is the third-year running that MIT students have achieved this recognition since the inception of the awards in 2005.

# Planning Your Development



## Graduate Development Portfolio

The new IPENZ Graduate Development Portfolio has been designed to support Graduate Members planning their competence development over a four- to five-year professional formation period. During these years, graduates will build up their portfolio of evidence, which they can eventually use to apply for one of the IPENZ competency-based Membership classes and current competence registers.

Whether graduates are on the path towards becoming a Professional Engineer, Engineering Technologist or Engineering Technician, the portfolio approach can be used to record their developing competence. The forms and documentation that are the basis of the portfolio can be submitted directly as part of a competence assessment application.

Copies of the new portfolio will be sent to new Graduate Members from December. Current Graduate Members can download the portfolio from the Members' Area of the IPENZ website [www.ipenz.org.nz](http://www.ipenz.org.nz)

## New fee structure for IPENZ short courses

From December 2007, IPENZ short courses will have a new fee structure.

The new fees include a small reduction to the standard one-day course fee for IPENZ Members and a corresponding increase for non-members. A series of concession passes also encourage individual members and organisations to plan their CPD activities in advance.

### The new standard one-day course fees are:

- IPENZ Members \$475 per day (previously \$495)
- non-members \$575 per day (previously \$550)
- IPENZ Technical Group Members \$495 per day (unchanged)

Three concession passes are being introduced:

### Professional Development Partner flexi-pass

Ten one-day events vouchers with a 12-month expiry date – \$3,750

The PDP flexi-pass is available to Professional Development Partners and current IPENZ Endorsed Employers.

It may be used across a number of delegates by each Professional Development Partner, equating to \$375 per day, and a saving of at least \$120 over the previous fee structure.

### Non-PDP flexi-pass

Five one-day events vouchers with a 12-month expiry date – \$2,150

The non-PDP flexi-pass is available to anyone. It may be used individually, or across a number of delegates by an employer and equates to \$430 per day course.

### Solo voucher

Two one-day events vouchers with a 12-month expiry date – \$750

A solo voucher is only available to IPENZ Members, and equates to \$375 per day course.

To purchase a concession pass, or those organisations wishing to participate, should contact the Professional Development Team at [ProfDevAdvisor@ipenz.org.nz](mailto:ProfDevAdvisor@ipenz.org.nz)

The great news is that there is no limit on the number of passes an employer can purchase. It is envisaged that the scheme will encourage employers and individuals to identify skill gaps and think about their CPD requirements in advance.

Note that the new fee structure and passes do not apply to affiliated courses offered in conjunction with other training providers, while technical courses or seminars may be charged at different rates depending on the event.

## Course calendar 2008

The full programme of standard courses offered in 2008 has now been finalised and a summary course information brochure is being printed.

In-house courses are still able to be run by negotiation with individual organisations, so if you are interested in running any of our courses in house, please contact Paul Gardner at [ProfDevManager@ipenz.org.nz](mailto:ProfDevManager@ipenz.org.nz) who will work with you to plan the event.

In 2008, several technical courses will run by expression of interest pools. Course descriptions will remain online and Members can register their interest in a particular course. Once enough people register their interest, a course date will be organised and those who have signed up will be notified. This is to avoid the disappointment of having to cancel courses in areas where there may be little calling for an event. It also allows IPENZ to better focus its efforts and resources.

Distance learning postgraduate engineering modules will also be offered in association with several universities both in New Zealand and overseas. These provide more CPD opportunities, particularly for Members who may be geographically isolated.

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