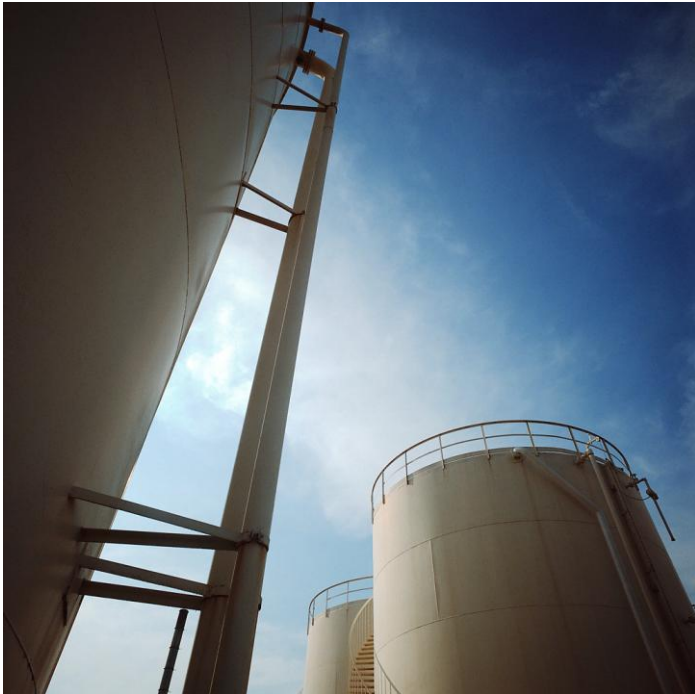


IPENZ ENGINEERING UPDATE June 2010



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Samplings from this Issue

- Consulting engineers: Myers-Briggs type and temperament preferences.
- Correlation between innovation and performance of construction firms.
- Tsunami loading of near-shoreline structures.
- A primer managing the flooding system's resiliency to climate change.
- Techno economic review of existing and new pumped hydro energy storage plant.
- Developing a model for prioritizing high crash road segments.

SPECIAL FOCUS...Tunnels and Tunnelling

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Management/Leadership/Strategic Planning/Recruitment/Training and Development/Project Management/Corporate Responsibility

√IPENZ 36/01 Consulting engineers: Myers-Briggs type and temperament preferences.

Culp, G and Smith, A. Leadership & Management in Engineering, Volume 9 Issue 2 (April 2009) Pages 65-70.

Myers-Briggs Type Indicator results from 740 professional employees of consulting engineering firms show that a greater percentage of consulting engineers have a Type preference for Introversion over Extraversion, Intuition over Sensing, Thinking over Feeling, and Judging over Perceiving than the national U.S. population. Substantially more consulting engineers have a Intuition-Thinking temperament than the national U.S. population. The differences in Type and temperament between consulting engineers, their clients, and the public can create communication challenges. The full range of Type and temperament preferences are of value in the diverse mix of work and related interactions with clients and the public inherent in the consulting engineering field. However 96 percent of individuals with Extraversion and Feeling preferences who enroll in engineering transfer to other fields in the first two years of college. Adjusting the first-year curricula so that individuals can see the value of their Feeling and Extraversion preferences in the world of consulting could lead to a more balanced mix of Types and temperaments within the pool of graduate engineers that can be drawn upon by consulting engineering firms.



√IPENZ 36/02 Taking Inventory of Myers-Briggs.

Juana.,L. T+D, Volume 64 Issue 4 (April 2010) Pages 18-19,

√IPENZ 36/03 Personalities into teams.

Wilde, D. Mechanical Engineering, Volume 132 Issue 2 (February 2010) Pages 22-25.

We take different approaches to problems, and the best solutions are achieved by the greatest diversity.

√IPENZ 36/04 An industry standard risk analysis technique.

Bahill, A. T. and Smith, E. D. Engineering Management Journal, Volume 21, Issue 4 (December 2009) Pages 16-29.

√IPENZ 36/05 Managing risk with a cultural perspective.

Ellingson, J. Risk Management, Volume 56, Issue 10 (December 2009) Pages 50-53.

√IPENZ 36/06 Cranking up wrench time.

Shallwani, A. Mechanical Engineering, Volume 132 Issue 2 (February 2010) Pages 26-29.

A chemical plant applies six sigma analysis to keep its technicians efficient and its machinery reliable.

√IPENZ 36/07 **Are you ready to rebound?**

Sull, D. Harvard Business Review, Volume 88, Issue 3 (March 2010) Pages 70-74.

The article focuses on seven questions that should be asked in order to develop and implement corporate strategies and to make decisions about unexpected opportunities. The questions discussed include "Do you miss opportunities that others spot?," "Do you reward mediocrity and call it Teamwork?"

√IPENZ 36/08 **Pressure, layoffs and long hours generate post-traumatic construction disorder.**

Korman, R and Parsons, J. ENR (15 March 2010) Pages 24-28.

Discusses burnout.

√IPENZ 36/09 **The Acceleration trap.**

Bruch, and Menges, J. Harvard Business Review, Volume 84 Issue 4 (April 2010) Pages 80-86.

The article refers to the so-called acceleration trap which results from constant activity or change and can lead to loss of focus in organizations and employee burn out. How Lufthansa, Phoenix Contact, and Hilti companies managed the slowing down and speeding up cycles in their industries is mentioned. The focus is on maintaining corporate capacity while reducing employees' workload and recognizing the effects of overloading, multiloading, and perpetual loading patterns on employees. Ideas for preventing over-acceleration such as establishing a clear strategy for the decision making related to ending nonessential tasks and announcing an end to an existing high-energy phase or a moratorium on new initiatives are mentioned. Strategies for regenerating energy and commitment are noted.

√IPENZ 36/10 **Correlation between innovation and performance of construction firms.**

Choi, S., Jang, H. and Hyun, J. Canadian Journal of Civil Engineering, Volume 36, Issue 11 (November 2009) Pages 1722-1732.

√IPENZ 36/11 **The nature of claims – managing the risks.**

Lane, P. Institution of Civil Engineers. Proceedings - Management, Procurement and Law, Volume 162, Issue 4 (November 2009) Pages 185 –190.

√IPENZ 36/12 **Construction learning curves.**

Thomas, H. R. Practice Periodical on Structural Design & Construction, Volume 14, Issue 1 (February 2009) Pages 14-20.

√IPENZ 36/13 **Building value through sustainable project management offices.**

Hurt, M and Thomas, J. Project Management Journal, Volume 40 Issue1 (2009) Pages 55-72.

√IPENZ 36/14 **New labour, public–private partnerships and rail transport policy.**

Jupe, R. Economic Affairs, Volume 29 Issue 1 (March 2009) Pages 20-25.

√IPENZ 36/15 The championing of environmental improvements in technology investment projects.

Markusson, N. Journal of Cleaner Production Volume 18, Issue 8 (May 2010) Pages 777-783.

The literature on environmental champions emphasises the effective action of environmentally committed individuals. This paper draws on case studies of process technology investment projects in chemical and dairy companies in the UK and Sweden. The analysis is based on a political process perspective on organisations. By analysing the career histories of environmental champions as well as their behaviour in the investment projects, the paper shows how their championing behaviour is shaped by dynamic interaction with the organisational context, as well as a broader range of motivations and interests, including career opportunities and private life concerns.

√IPENZ 36/16 Collaboration in planning sustainable developments.

Jackson, J. I. Proceedings of the Institution of Civil Engineers: Management, Procurement and Law, Volume 162, Issue MP2 (May 2009) Pages 69-74.

√IPENZ 36/17 The natural advantage of regions: Linking sustainability, innovation, and regional development in Australia.

Potts T. Journal of Cleaner Production Volume 18, Issue 8 (May 2010) Pages 713-725.

The combined impacts of the financial crisis and climate change are driving the evolution of sustainable business and changing the way that governments plan for development. Markets are emerging for a range of environmentally orientated products and services as societies move (or lurch) towards reducing impacts and adapt to changing conditions. National governments are actively formulating policy and providing investment to develop green economies as one of the responses to the global financial crisis. Many of the political and economic drivers have been focused at the international and national scale, and while critical for setting the national framework for development, it often neglects the key role that regions and localities can play in ecological modernization. This paper explores two regional case studies in New South Wales (NSW), Australia, that are initiating shifts towards networks of sustainable businesses and communities and offers recommendations for further policy development. The focus of this paper is on the evolving regional sustainability market and its relationship to other social institutions including governments, communities and the individual. The unifying concept is the idea of the 'natural advantage', a model that integrates innovation and sustainability as a part of the regional development policy agenda.

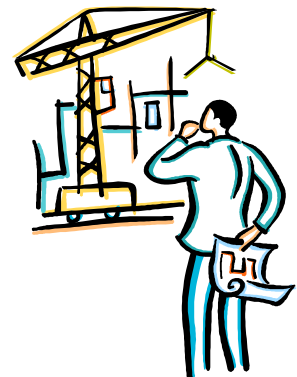
Technical Aspects of Engineering

√IPENZ 36/18 Assessment of a technique for the torsional response reduction of seismic isolated asymmetric structures.

Adibramezani, M., Moghadam, A and Ziyacifar, M. Journal of Applied Sciences, Volume 9 Issue 15 (2009) Pages 2653-2670.

√IPENZ 36/19 Seismic performance of waffled-slab floor buildings.

Vielma, J., Barbat, A. and Oller, S. Proceedings of the Institution of Civil Engineers : Structures and Buildings, Volume 162 Issue SB3 (June 2009) Pages 169-182.



√**IPENZ 36/20 Total expected cost design method for reinforced concrete members based on current Canadian code provisions.**

Feldman, L. R. Canadian Journal of Civil Engineering, Volume 36, Issue 11 (November 2009) Pages 1689-1699.

√**IPENZ 36/21 Simplified analysis of a low-rise building seismically isolated with stable unbonded fiber reinforced elastomeric isolators.**

Toopchi-Nezhad, H., Tait, M. and Drysdale, R. Canadian Journal of Civil Engineering, Volume 36 Issue 7 (July 2009) Pages 1182-1194.

√**IPENZ 36/22 Behaviour of adhesive steel anchors under impulse-type loading.**

Braimah, A., Contestabile, E. and Guilbeault, R. Canadian Journal of Civil Engineering, Volume 36, Issue 11 (November 2009) Pages 1835-1847.

IPENZ 36/23 Tsunami loading of near-shoreline structures: A primer.

Palermo, D. Canadian Journal of Civil Engineering, Volume 36, Issue 11 (November 2009) Pages 1804-1815.

√**IPENZ 36/24 Alemanes footbridge.**

Ramírez Chasco, F., Seco Meneses, A.; Prieto Cobo, E. Practice Periodical on Structural Design & Construction, Volume 14, Issue 1 (February 2009) Pages 21-28.

√**IPENZ 36/25 Predicting flutter speed of a cable-stayed bridge.**

Mishra, S. S. and Krishna, P. Proceedings of the Institution of Civil Engineers: Bridge Engineering, Volume 163, Issue BE1 (March 2010) Pages 13-17.

√**IPENZ 36/26 Replacement of the stays on a major cable-stayed bridge.**

Sandberg, J. and Hendy, C. R. Proceedings of the Institution of Civil Engineers: Bridge Engineering, Volume 163, Issue BE1 (March 2010) Pages 31-42.



√**IPENZ 36/27 Observed increases in offshore pile driving resistance.**

Bhattacharya, S., Carrington, T. and Aldridge T. Proceedings of the ICE – Geotechnical Engineering, Volume 162 Issue GE1 (February 2009) Pages 71-80.

√**IPENZ 36/28 Coating properties and test procedures.**

Leeds, J. M. and Leeds, S. S. Pipeline & Gas Journal, Volume 237 Issue 3 (March 2010) Pages 50-54.

Discusses corrosion resistant pipeline coatings.

√**IPENZ 36/29 Sustainability in the bio/agro industry: A case study.**

Engelhardt, D. Proceedings of the Institution of Civil Engineers: Waste and Resource Management, Volume 163, Issue WR1 (February 2010) Pages 3-8.

√**IPENZ 36/30 Managing the flooding system's resiliency to climate change.**

Gersonius, B. et al. Proceedings of the Institution of Civil Engineers: Engineering Sustainability, Volume 163, Issue ES1 (March 2010) Pages 15-22.

√**IPENZ 36/31 Flood detention reservoirs: Geotechnical aspects of design and construction.**

Brown, A. Dams and Reservoirs, Volume 18, Number 2 (July 2008) Pages 71-77.

√**IPENZ 36/32 Flood protection with dams and flood control reservoirs – before and after the extreme flood event of August 2002, Saxony.**

Müller, U. Dams and Reservoirs, Volume 18, Number 2 (July 2008) Pages 85-91.

√**IPENZ 36/33 Cyberinfrastructure for flood mitigation in Taiwan.**

Chung, T.-L. et al. Proceedings of the Institution of Civil Engineers: Water Management, Volume 163, Issue WM1 (January 2010) Pages 3-11.



√**IPENZ 36/34 Analysis of the formation and failure of Ram Creek landslide dam, South Island, New Zealand.**

Nash, T. et al. New Zealand Journal of Geology & Geophysics, Volume 51 Issue 3 (September 2008) Pages 187-193.

√**IPENZ 36/35 Impact of Hurricane Ivan on Grenada water supply.**

Peters, E. J. Proceedings of the Institution of Civil Engineers: Water Management, Volume 163, Issue WM2 (February 2010) Pages 57-64.

√**IPENZ 36/36 Modelling the impact of urbanisation on flood runoff volume.**

Kjeldsen, T. R. Proceedings of the Institution of Civil Engineers: Water Management, Volume 162, Issue WM5 (October 2009) Pages 329-336.

√**IPENZ 36/37 Intake shape and boundary-related considerations in the operation and design of storm-sewer drop structures.**

Auckland, A., Nistor, I. and Townsend, R. Canadian Journal of Civil Engineering, Volume 36, Issue 11 (November 2009) Pages 1825-1834.

√IPENZ 36/38 **Assessment of hydrodynamic separators for storm-water treatment.**

Wilson, M. et al. Journal of Hydraulic Engineering, Volume 135, Issue 5 (May 2009) Pages 383-392.

√IPENZ 36/39 **Intensity and characteristic length of braided channel patterns.**

Ashmore, P. Canadian Journal of Civil Engineering, Volume 36, Issue 10 (October 2009) Pages 1656-1666.

√IPENZ 36/40 **Modelling wave deformation due to submerged breakwaters.**

Kriezi, E. and Karambas, T. Proceedings of the Institution of Civil Engineers: Maritime Engineering, Volume 163, Issue MA1 (March 2010) Pages 19-29.

√IPENZ 36/41 **The time evolution of scour around offshore structures.**

Harris, J. M., Whitehouse, R. J. S. and Benson, T. Proceedings of the Institution of Civil Engineers: Maritime Engineering, Volume 163, Issue MA1 (March 2010) Pages 3-17.

√IPENZ 36/42 **Noise measuring technique and field evaluation based on the effects of vehicles and pavement types.**

Mun, S. and Cho, D. Canadian Journal of Civil Engineering, Volume 36, Issue 11 (November 2009) Pages 1816-1824.

√IPENZ 36/43 **Developing a model for prioritizing high crash road segments.**

Boroujerdian, A. M., Saffarzadeh, M and Abolhasannejad, V. Proceedings of the Institution of Civil Engineers: Transport, Volume 163, Issue TR1 (February 2010) Pages 19-28.

√IPENZ 36/44 **Simulated safety performance of rear-end and angled vehicle interactions at isolated intersections.**

Cunto, F. and Saccomanno, F. Canadian Journal of Civil Engineering, Volume 36, Issue 11 (November 2009) Pages 1794-1803.

√IPENZ 36/45 **An improved thermal response test for U-tube ground heat exchanger based on optical fiber thermometers.**

Fujii, H. et al. Geothermics, Volume 38 Issue 4 (December 2009) Pages 399-406.

√IPENZ 36/46 **Techno-economic review of existing and new pumped hydro energy storage plant**

Deane, J., Ó Gallachóir, B and McKeogh, E. Renewable and Sustainable Energy Reviews Volume 14, Issue 4, (May 2010) Pages 1293-1302.

√IPENZ 36/47 **A review of materials, heat transfer and phase change problem formulation for latent heat thermal energy storage systems (LHTESS).**

Agyenim, F et al. Renewable and Sustainable Energy Reviews Volume 14, Issue 2, (February 2010) Pages 615-628.

Focus on...Tunnels and Tunnelling



√IPENZ 36/48 **Case study on seismic tunnel response.**

Stavroula, K et al. Canadian Geotechnical Journal. Volume 45 Issue 12, (December 2008) Pages 1743-1764.

Discusses the damage suffered by the Bolu highway twin tunnels in Turkey during an earthquake in 1999.

√IPENZ 36/49 **Nonlinear response of deep immersed tunnel to strong seismic shaking.**

Anastasopoulos, J et al. Journal of Geotechnical & Geoenvironmental Engineering, Volume 133 Issue 9 (September 2007) Pages 1067-1090.

√IPENZ 36/50 **Heathrow Terminal 5: Tunnelled underground infrastructure.**

Williams, I. Proceedings of the Institution of Civil Engineers :Civil Engineering, Volume 161 Special Issue 1 (May 2008) Pages 30-37.

√IPENZ 36/51 **Boston's massive jacked tunnels set new benchmark.**

Powderham., A et al. Proceedings of the Institution of Civil Engineers: Civil Engineering, Volume 157 Issue 2 (May 2004) Pages 70-78.

Cost savings of US\$300 million resulted when cut-and-cover construction was replaced by tunnel jacking on Boston highway network.

√IPENZ 36/52 **Development of an inspection system for cracks in a concrete tunnel lining.**

Seung Y et al. Canadian Journal of Civil Engineering, Volume 34 Issue 8 (August 2007) Pages 966-975.

√IPENZ 36/53 **Reliability analysis of shotcrete lining during tunnel construction.**

Yang, C., Xu, M; and Chen, W. Journal of Construction Engineering & Management, Volume 133 Issue 12 (December 2007) Pages 975-981.

√IPENZ 36/54 **Mixture design of pavement surface course considering the performance of skid resistance and disaster proof in road tunnels.**

Zhongyin Guo; Qun Yang; Benmin Liu. Journal of Materials in Civil Engineering, Volume 21 Issue 4 (April 2009) Pages 186-190.

√IPENZ 36/55 **New methods for road tunnel fire safety evaluation and upgrading.**

Zhoury, G., Walley, D. and McWilliams, D. Proceedings of the Institution of Civil Engineers : Structures and Buildings, Volume 162 Issue SB3 (June 2009) Pages 183-198.

√IPENZ 36/56 **International tunnel fire safety design practices.**

Miclea, P. et al. ASHRAE Journal, Volume 49 Issue 8 (August 2007) Pages 50-60.

√IPENZ 36/57 **Lessons learned from catastrophic fires in tunnels.**

Carvel, R. Proceedings of the Institution of Civil Engineers :Civil Engineering, Volume 161 Special Issue 2 (November 2008) Pages 49-53.

√IPENZ 36/58 **M25 Holmesdale Tunnel : Setting a new standard for safety.**

Tomkins, J. et al. Proceedings of the Institution of Civil Engineers :Civil Engineering, Volume 162 Issue 1 (February 2009) Pages 19-26.



√IPENZ 36/59 **Real-time fire and smoke detection using camera sequence image in tunnel environment,**

Lee,B and Han, D. International Journal of Information Acquisition, Volume 4 Issue 4 (December 2007) Pages 327-338.

√IPENZ 36/60 **Road tunnel ventilation and fire control regulations, standards, and guidelines.**

Bendelius, A. ASHRAE Transactions, Volume 114 Issue 2 (2008) Pages 273-282.

√IPENZ 36/61 **Safety assessment of concrete tunnel linings under fire load.**

Pichler, C., Lackner, R and Mang, H. Journal of Structural Engineering, Volume 132 Issue 6 (June 2006) Pages 961-969.

- √IPENZ 36/62 **A Numerical and experimental study of pollutant dispersion in a traffic tunnel.**
Chung-Yi Chung; Pei-Ling Chung. Environmental Monitoring & Assessment, Volume 130 Issue 1-3 (July 2007) Pages 289-299.
- √IPENZ 36/63 **The impact of the tunnel exhausts in terms of heavy metals to the surrounding ecosystem.**
Jozic, M., Peer, T and Türk, R. Environmental Monitoring & Assessment, Volume 150 Issue 1-4 (March 2009) Pages 261-271.
- √IPENZ 36/64 **Modified grey model for estimating traffic tunnel air quality.**
Cheng-Chung Lee et al. Environmental Monitoring & Assessment, Volume 132 Issue 1-3, (September 2007) Pages 351-364.
- √IPENZ 36/65 **Developing a near-optimal lowest-consumption tunnel lighting system using software agents through power line communications.**
Protogerios, N et al. Journal of Computing & Information Technology, Volume 15 Issue 2, (June 2007) Pages 185-191.
- √IPENZ 36/66 **Tunnel lighting management.**
Di Lecce, P. Light & Engineering, Volume 17 Issue 3 (2009) Pages 43-53.
- √IPENZ 36/67 **Research and analysis of luminance in the tunnel access zone.**
Kobayashi, S et al. Light & Engineering, 2009, Volume 17 Issue 4 (2009) Pages 75-79.
- √IPENZ 36/68 **Study on 3D geological model of highway tunnels modeling method.**
Zheng, K.. Journal of Geographic Information Systems, Volume 2 Issue 1 (2010) Pages 6-10.
- √IPENZ 36/69 **Acute decompression illness in UK tunnelling.**
Lamont, D and Booth, R. Proceedings of the Institution of Civil Engineers: Civil Engineering, Volume 159 Issue 4 (November 2006) Pages 185-191.
- √IPENZ 36/70 **Channel Tunnel Rail Link : Planning and people.**
Proceedings of the Institution of Civil Engineers :Civil Engineering, Volume 156 Special Issue 2 (November 2003).
Entire issue devoted to the history, planning and financing processes for the Channel Tunnel Rail Link.



√IPENZ 36/71 Channel Tunnel Rail Link:: Section 1.

Proceedings of the Institution of Civil Engineers :Civil Engineering, Volume 156 Special Issue 2 (November 2003)

Entire issue devoted to the first section of the Channel Tunnel Rail Link, which was opened in September 2003. 11 papers.

√IPENZ 36/72 Channel Tunnel Rail Link : Section 2

Proceedings of the Institution of Civil Engineers :Civil Engineering, Volume 160 Special Issue 2 (November 2007)

Entire issue devoted to the second and final section of the Channel Tunnel Rail Link, which was opened in November 2007. 11 papers.

EIANZ Environment Update



This month Energy Library is pleased to announce the publication of the inaugural EIANZ Environment Update, a new service resulting from a partnership with the New Zealand chapter of the Environment Institute of Australia and New Zealand (EIANZ).

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The special topic in the May 2010 issue is Biodiversity. Other topics covered include: Public environmental reporting; Public participation in environmental decision making; Sustainability; Water; Climate change; Environmental management systems; Environmental education and environmental practice; Business and management.

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