

IPENZ ENGINEERING UPDATE March 2008



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

√IPENZ 12/01 Breakthrough ideas for 2008.

Harvard Business Review, Volume 86 Issue 2 (February 2008) Pages 17-45.

HBR annual survey of ideas and trends that will make an impact on business. Some ideas discussed are:- a peer-to-peer economy in which consumers become consumer-producers; the expectations of Gen Y workers; a brain-friendly workplace that applies modern science to daily performance; are online games are preparing the twenty-first-century workforce; how true to yourself you'll be in the virtual world; people who blame technology for their bad behaviour; the advantages of socially responsible lobbying; list of sustainable and unsustainable trends.

√IPENZ 12/02 Transforming surveys into leadership tools.

Berk, J. Chief Learning Officer, Volume 6 Issue 12 (December 2007) Pages 40-45.

A well designed survey can provide good information for decision making and should facilitate the gathering of smart and useful ideas.

√IPENZ 12/03 The existential necessity of midlife change.

Strenger, C and Ruttenberg, A. Harvard Business Review, Volume 86 Issue 2 (February 2008) Pages 82-90.

As life expectancy in the West increases and companies can no longer promise lifelong security, many businesspeople will need to make major changes during middle age, embarking on a second life and a second career. They must start by getting beyond two pervasive and opposing myths. The first is that midlife marks the onset of decline. In fact, by middle age, most executives have gained a freedom that only self-knowledge can impart, and they relish unprecedented opportunities for personal growth. Midlife transitions, however, must be rooted in realism, not driven by the second myth, which paints middle age as a time of magical transformation. For companies, employees' midlife transitions represent both a challenge (senior managers seemingly on track to become CEO may instead leave) and an opportunity (other midlife executives, with different perspectives and experiences, may knock on the door). Organizations must help middle-aged executives through this difficult period, not just by offering a workshop or two but by providing ongoing coaching and opportunities for personal and professional development.

√IPENZ 12/04 Classification of knowledge within the electrical contracting industry: A case study.

Walters, R., Jaselskis, E and Kurtenbach, J. Leadership & Management in Engineering, Volume 7 Issue 1 (January 2007) Pages 11-17.

√IPENZ 12/05 Structural engineering competence in the computer era.

MacLeod, I. The Structural Engineer, Volume 85 Number 3 (6 February 2007) Pages 35-39.

√IPENZ 12/06 **Selection of engineering experts.**

Schwartz, M. Arbitration Journal, Volume 32 Issue 3 (September 1977) Pages 195-202.

Advice given in a 1977 article about how to select an expert witness in construction cases.

√IPENZ 12/07 **The new global manager: Learning cultures on the fly.**

Nardon, L. Organizational Dynamics, Volume 37 Number 1 (2008) Pages 47-59.

Working with global partners is an increasing trend. Learning about new cultures and business practices is part of this new work environment.

√IPENZ 12/08 **Where will we find tomorrow's leaders?**

Hemp, P. Harvard Business Review, Volume 86 Issue 1 (January 2008) Pages 123-129.

Unless we challenge long-held assumptions about how business leaders are supposed to act and where they're supposed to come from, many people who could become effective global leaders will remain invisible. This article describes the changing nature of leadership and what we can learn from parts of the world where people have not, until recently, had opportunities to become globally-savvy executives. The author highlights the challenges of finding and preparing people who can lead by stepping back and letting others come forward to make their own judgments and take risks.

√IPENZ 12/09 **Engineers learn “soft skills the hard way” : Planting a seed of leadership in engineering classes.**

Kumar, S and Hsiao, J. Leadership & Management in Engineering, Volume 7 Issue 1 (January 2007) Pages 18-23.

√IPENZ 12/10 **Lead your manager.**

Antonioni, D. Industrial Management, Volume 50 Issue 1 (January/February 2008) Pages 19-22.

Influencing your manager's decision requires good persuasive and strategic skills.

√IPENZ 12/11 **Learners in transition: The use of ePortfolios for women returners to science, engineering and technology.**

Herman, C and Kirkup, G. Innovations in Education & Teaching International, Volume 45 Issue 1 (February 2008) Pages 67-76.

The use of e-learning in science, technology and engineering to assist women returning to work after a career break.

√IPENZ 12/12 **Does senior leadership buy ROI for learning? Part I.**

Wilhelm, W. Chief Learning Officer, Volume 6 Issue 12 (December 2007) Pages 86-88.

Discusses a survey which examines the company's return on investment in learning.

√IPENZ 12/13 **Education report: For sustainability and clean-energy majors, global warming is hot.**

Nicholson, T. ENR, (22/29 October 2007) Pages 44, 47.

The demand for education in sustainability is growing fast.

√IPENZ 12/14 **Learning is a powerful tool.**

Bingham, T and Galagan, P. Training and Development, Volume 62 Issue 1 (January 2008) Pages 30-37.

CEO of Caterpillar Inc, discusses the value of learning and the key to investing in employee education.

√IPENZ 12/15 **Seeing differently: putting MBA learning into practice.**

Hay, A. International Journal of Training & Development, Volume 10 Issue 4 (December 2006) Pages 291-297.

MBA's have often been criticized. This paper looks at how these programmes can contribute to management and company practice.

√IPENZ 12/16 **As new tool lands on more campuses, students seek 'A' in BIM.**

Rubestone, J. ENR, (22/29 October 2007) Pages 40, 43.

Building information Modeling is the new tool in the construction industry.

√IPENZ 12/17 **What affects earning potential in learning and performance?**

T+D Training and Development, Volume 62 Issue 2 (February 2008) Pages 38-42.

A survey of salaries of professionals in the U.S. reveals there is still a large gap between men and women in the same profession.

√IPENZ 12/18 **Contractor safety: building trust and communication.**

Ayers, D. Occupational Hazards, Volume 69 Issue 10 (October 2007) Pages 64-74.

Health and safety aspects of a project are discussed.

√IPENZ 12/19 **Personal equipment for protection against falls – fundamental principles.**

Thomas, D. The Structural Engineer, Volume 85 Number 4 (20 February 2007) Pages 16-19.

Outlines principles for planning, management and use of personal fall protection equipment for work at height.

√IPENZ 12/20 **Using situational interviews to assess engineering application fit to work group, job and organization requirements.**

Maurer, S. Engineering Management Journal, Volume 18 Issue 3 (September 2006) Pages 27-35.

√IPENZ 12/21 **The supply of and demand for technician and professional engineers 1967-1973.**

Taylor, J and Stevenson, D. New Zealand Engineering, Volume 27 Issue 1 (1972) Pages 22-29.

Have the recruitment issues for engineering sector changed?

“The survey shows that there is a considerable shortage of both technician and professional engineers which is likely to continue indefinitely unless drastic steps are taken to improve the supply situation.”

√IPENZ 12/22 **The silver lining in shift work: Can your organization take advantage of it?**
Barnett, R and Hall, D. Organizational Dynamics, Volume 36 Number 4 (2007) Pages 404–417.

√IPENZ 12/23 **Project management of unexpected events.**
Söderholm, A. International Journal of Project Management, Volume 26 Issue 1 (January 2008)
Pages 80-86.

Unexpected events and environmental impact not planned for are common during project implementation. This article explores how unexpected events are dealt with in projects using qualitative case study data from four different cases. Results show four different approaches to deal with unexpected events.

√IPENZ 12/24 **The psychology of managing project cost.**
Aikens, T, ICE: Proceedings of the Institute of Civil Engineers: Management, Procurement and Law, Volume 160 Issue MP2 (May 2007) Pages 51–53.

√IPENZ 12/25 **Problems encountered by owners of design–build projects in Singapore.**
Yean Yng Ling, F and Huat Meng Poh, B. International Journal of Project Management, Volume 26 Issue 2 (February 2008) Pages 164-173.

Even though design–build (DB) arrangements have several advantages, project owners are not using them to a large extent. This may be due to some inherent problems that owners face in their DB projects. This study investigates the problems and difficulties that Singaporean owners face in DB projects and how project managers can help them overcome these problems.

√IPENZ 12/26 **Risk management and value management in project appraisal.**
Afila, D and Smith, N. ICE: Proceedings of the Institute of Civil Engineers: Management, Procurement and Law, Volume 160 Issue MP2 (May 2007) Pages 63-67.

Examines preferences in the use of both risk management and value management techniques for making critical decisions in project viability.

√IPENZ 12/27 **Risk in the strategic planning process.**
Funston, Ri and Ruprecht, B. Business Performance Management, Volume 5 Issue 2 (May 2007)
Pages 4-7.

Risk strategies in business planning should involve being able to identify failures in order to increase knowledge about future risk.

**Technical Aspects of Engineering –Abstracts
for most available upon request.**

√IPENZ 12/28 **Going organic: using evolution in civils design.**
Ponterosso, P and Fox, D. Civil Engineering, Volume 160 Issue 1 (February 2007) Pages 43-48.



√IPENZ 12/29 **Developer's challenge to construction: innovate for destiny.**

Sawyer, T. ENR, (3 December 2007) Pages 24-27.

Construction of a building which recycles its construction waste and aims to be a model for use of renewable resources and advanced technology.

√IPENZ 12/30 **Submeters facilitate green building sustainability.**

Mellstin, D. Electrical Wholesaling, Volume 88 Issue 12 (December 2007) Pages 48-50.

The trend is to develop green sustainable buildings. Submeters have been used as a tool for gathering first level data to save energy consumption costs.

√IPENZ 12/31 **Experimental dynamic analysis of the Kingston Communications Stadium.**

Reynolds, P., Pavic, A and Carr. The Structural Engineer, Volume 85 Number 8 (17 April 2007) Pages 33-39.

√IPENZ 12/32 **Baseball park in nation's capital is on its way to break the speed.**

Post, N. ENR, (10 December 2007) Pages 28-31.

Use of fast tracking techniques, including a 3d steel model enabled the completion of a sports arena within 23 months.

√IPENZ 12/33 **Future-proof: Upton upon Severn viaduct, UK.**

Sreeves, J. Civil Engineering, Volume 160 Issue 1 (February 2007) Pages 33-38.

It is not usual to move highway structures, but the new Upton upon Severn viaduct has been designed so it can be moved at a later date.

√IPENZ 12/ 34 **Use of alternative materials to reduce shrinkage cracking in bridge decks.**

Brown, M et al. ACI Materials Journal, Volume 104 Issue 6 (November/December 2007) Pages 629-637.

√IPENZ 12/35 **Case study: applying a regional CGE model for estimation of indirect economic losses due to damaged highway bridges.**

Tirasirichai, C and , D. Engineering Economist, Volume 52 Issue 4 (2007) Pages 367-401.

Repair of the existing infrastructure is only a portion of the cost when an area suffers damage and loss due to earthquakes. This study estimates Indirect economic losses by using a computable general equilibrium model (GGE).

√IPENZ 12/36 **Kinematics of movable bridges.**

Wallner, M AND Pircher, M. Journal of Bridge Engineering, Volume 12 Issue 2 (March/April 2007) Pages 147-153.

IPENZ 12/37 **Serviceability design of columns.**

Eyre, J and Croll, J. The Structural Engineer, Volume 85 Number 3 (6 February 2007) Pages 28-32.

The removal of slenderness limits from codes of practice is discussed.

√IPENZ 12/38 **Fundamentals of safety relief systems.**

Reindl, D and Jekel, T. ASHRAE Journal, (February 2008) Pages 22-29.

Discusses changes to ASHRAE Standard 15 “ Safety standard for refrigeration systems”.

√IPENZ 12/39 **Evaporative system for water and beverage refrigeration in hot countries.**

Saleh, A and Al-Nimr, M. Proceedings of the Institution of Mechanical Engineers, Volume 22 Issue A8 (December 2007) Pages 1099-1105.

√IPENZ 12/40 **Applying VFDs to refrigeration systems.**

HPAC Engineering, Volume 79 Issue 10 (October 2007) Pages 48-51.

The use of variable frequency drives (VFDs) in supermarkets to control compressor and fan motors has become a key factor in reducing energy costs.

√IPENZ 12/41 **Sub-hourly simulation of residential ground coupled heat pump systems.**

Kummert, K and Bemier, M. Building Services Engineering Research and Technology, Volume 29 Issue 1 (February 2008) Pages 27-44.

√IPENZ 12/42 **Movement of air in industrial plants.**

Robinson, K. Heating/Piping/Air Conditioning Engineering : HPAC, Volume 80, Issue (February 2008) Pages 38-44.

√IPENZ 12/43 **A combined heat and power system for the College of Engineering-University of Louisiana at Lafayette .**

Reynolds, C Kozman, T and Lee, J. Energy Engineering, Volume 105, Issue 1 (2008) Pages 65-78.

√IPENZ 12/44 **Condensing economizers.**

DeFrees, J. et al. ASHRAE Journal, Volume 49, Issue 11 (November 2007) Pages 16-23.

√IPENZ 12/45 **Major factors influencing productivity of water and wastewater treatment plant construction: Evidence from the deep south USA.**

Mojahed, S and Aghazadeh, F. International Journal of Project Management, Volume 26 Issue 2 Pages 195-202.

This paper presents the result of a survey study that was conducted among the construction contractors in the deep south USA that build water and wastewater treatment plants in order to identify the major factors influencing productivity of construction projects.

√IPENZ 12/46 **Biofouling control options for cooling systems.**

Daniels, D and Selby, T. Power, Volume 151 Issue 9 (September 2007) Pages 58,60,62,64,66,68-69.

√IPENZ 12/47 **Investigation and modeling of solar UV-induced chlorine decay in disinfection contact basins at full-scale wastewater treatment plants**

Gu, A and Neethling, J. Water Environment Research, Volume 80, Issue 2 (February 2008) Pages 179-185.

√IPENZ 12/48 **Antimicrobial resistance in escherichia coli isolated in wastewater and sludge from poultry slaughterhouse wastewater plants.**

Journal of Environmental Health, Volume 70, Issue. 7 (March 2008) Pages 40-45.

√IPENZ 12/49 **The performance of UASB reactors treating high-strength wastewaters**

Aslan, S and Sekerdag, N. Journal of Environmental Health, Volume 70, Issue 6 (January/February 2008) Pages 32-36.

√IPENZ 12/50 **Detecting Changes in Water Quality Data**

McKenna, S., Wilson, M and Klise, K. American Water Works Association. Journal, Volume 100, Issue. 1 (January 2008) Pages 74-85.

√IPENZ 12/51 **Drought relief in South East Queensland, Australia provided by membrane reclaimed water.**

Freeman, S et al. American Water Works Association. Journal, Volume 100, Issue 2 (February 2008) Pages 40-52.

√IPENZ 12/52 **Iron and copper release in drinking water distribution systems.**

Shi, B and Taylor, J. Journal of Environmental Health, Volume 70 , Issue 2 (September 2007) Pages 29-36.



Feature Focus

Planning aspects of wind farms

√IPENZ 12/53 **Change in public attitudes towards a Cornish wind farm: Implications for planning.**

Eltham, D., Harrison, G and Allen, S Energy Policy, Volume 36 Issue 1 (2008) Pages 23-33.

IPENZ 12/54 **Promotion of new wind farms based on a decision support system.**

Ramirez-Rosado, I et al. Renewable Energy, Volume 33 Issue 4 (2008) Pages 558-566.

The integration in electric power networks of new renewable energy facilities is the final result of a complex planning process. One of the important objectives of this process is the selection of

suitable geographical locations where such facilities can be built. This selection procedure can be a difficult task because of the initially opposing positions of the different agents involved in this procedure.

√IPENZ 12/55 **Wind energy projects in New York: Facing the siting issue.**

Colello, V. Environmental Quality Management, Volume 15 Issue 1 (Autumn 2005) Pages 105-110.

√IPENZ 12/56 **Crossing the great divide – Using multi-method analysis to understand opposition to windfarms.**

Haggett, C and Toke, D. Public Administration, Volume 84 Issue 1 (2006) Pages 103-120.

√IPENZ 12/57 **Local acceptance of wind energy : factors of success identified in French and German case studies.**

Jobert, A., Laborgne, P and Mimler, S. Energy Policy, Volume 35 Issue 5 (2007) Pages 2751-2760.

IPENZ 12/58 **Property stigma : wind farms are just the latest fashion.**

Sims, S and Dent, P. Journal of Property Investment and Finance, Volume 25 Issue 6 (2007) Pages 626-651.

√IPENZ 12/59 **Green vs. green: Measuring the compensation required to site electrical generation windmills in a viewshed.**

Groothuis, P., Groothuis, J and Whitehead, J. Energy Policy, Volume 36 Issue 4 (2008) Pages 1545-1550.

Proponents of wind power note that wind is a green energy source. Yet locating electrical generating windmills has become difficult in some localities because of potential negative externalities.

IPENZ 12/60 **Positive planning for wind-turbines in an urban context.**

Peel, D and Lloyd, M. Local environment, Volume 4 (August 2007) Pages 343-354.

A case study at a site in Scotland.

√IPENZ 12/61 **Community perspectives of wind energy in Australia: The application of a justice and community fairness framework to increase social acceptance.**

Gross, C. Energy Policy, 35 Issue 5 (2007) Pages. 2727-2736.

√ IPENZ 12/62 **Avoiding confrontation: securing planning permission for on-shore wind energy developments in England: comments from a wind energy developer.**

Beddoe, M and Chamberlin, A. Planning Practice & Research, Volume 18 Issue 1 (February 2003) Pages 3-17.

√ IPENZ 12/64 **Wind energy policy, planning and management practice in the UK: Hot air or a gathering storm?**

Strachan, P. et al. Regional Studies, Volume 38 Issue 5 (July 2004) Pages 549-569.