

IPENZ ENGINEERING UPDATE July 2010



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SPECIAL FOCUS...CORROSION IN THE MARINE ENVIRONMENT

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

√IPENZ 37/01 Ten of the best.

Atkins, A. Employment Today, Issue 141 (September/October 2009) Pages 34-37.

This article sums up the ideas in each of ten popular management books. The books discussed are: Fish!; Who Moved My Cheese?; The One Minute Manager; The Leadership Challenge; Getting to Yes; The 7 Habits of Highly Effective People; How to Win Friends and Influence People; Blink; Good to Great; Leading Change.

√IPENZ 37/02 Are you a high potential?

Conger, D. A., Hill, J. A. and Ready, L. A. Harvard Business Review, Volume 88, Issue 6 (June 2010) Pages 78-84.

The article refers to personnel management research which focused on how organizations identify and develop high potential employees and discusses the qualities of executives who were previously identified as high potential managers. Topics include building trust and credibility among stakeholders and colleagues, attaining strategic or financial goals, and gaining new types of knowledge. The discussion focuses on characteristics that have been found in successful people such as being ambitious, developing catalytic learning capability, exhibiting an entrepreneurial spirit, and having the ability to recognize opportunity and obstacles.

√IPENZ 37/03 Turn the job you have into the job you want.

Wrzesniewski, A., Berg, J. M. and Dutton, J. E. Harvard Business Review, Volume 88, Issue 6 (June 2010) Pages 114-117.

The article refers to statistics from a survey in the United States concerning job satisfaction that was conducted by The Conference Board and explains a concept called job crafting which can empower employees, prevent disengagement, and lead to job satisfaction. An exercise in job crafting is based on visualizing one's job in a way that one's passions, strengths, and motivations are incorporated into the job. Topics include work tasks, relationships, and perceptions which can be changed and become sources of satisfaction. The before and after diagrams of a fictional marketing executive who has started the process of job crafting are discussed.

√IPENZ 37/04 Prioritizing project selection.

Koç, A. et al. Engineering Economist, Volume 54, Issue 4 (2009) Pages 267-297.

√IPENZ 37/05 Roles of the external IT project manager.

Reich, B. H. and Sauer, C. Communications of the ACM, Volume 53, Issue 5 (May 2010) Pages 126-129.

Outsourcing corporate information technology (IT) projects may mean that external project managers are required to fill a variety of roles. These include maintaining allegiance with their firms and clients, perhaps serving as account managers as well as being professional leaders.

√IPENZ 37/06 **Quantifying project management delay cost through simulation modeling.**
Cernauskas, D. and Kumiega, A. Cost Engineering, Volume 50, Issue 5 (May 2008) Pages 16-

√IPENZ 37/07 **Mentoring millennials.**

Meister, J. C. and Willyerd, K. Harvard Business Review, Volume 88, Issue 5 (May 2010) Pages 68-72.

The article focuses on Generation Y, the people who were born between the years 1977 and 1997 and are also known as the Millennials, and on mentoring in business. Research by the authors indicates that the Millennial generation is a socially aware group who want to be engaged with work that is fulfilling and purposeful and that they expect to feel successful in their work. The concept of microfeedback and its use in coaching employees is discussed. The microfeedback system, which was developed by executive Susan Hutt, is similar to that of a social networking company called Twitter. The characteristics that Millennials want a boss and a company to have and five things that Millennials want to learn are noted. Examples are given of group, anonymous, and reverse mentoring approaches.

√IPENZ 37/08 **Attributes of a harmonious project team.**

Rad, P. F. Anantatmula, V. S. AACE International Transactions (2009) Pages 000.000.1-000.000.9.

√IPENZ 37/09 **Beyond typical teams: Hot groups and connective leaders.**

Lipman-Blumen, J. and Leavitt, H. J. Organizational Dynamics, Volume 38, Issue 3 (July/September 2009) Pages 225-233.
In these changing times, organisations are looking for groundbreaking ways of reaching their goals. Self-forming groups, here called 'hot groups', as well as connective leaders may be key in this Connective Era. The article discusses why there is a need for hot groups, provides a definition, considers three types of connective leaders and then gives some examples of real and virtual hot groups.



√IPENZ 37/10 **Strategic development of business models: Implications of the web 2.0 for creating value on the internet.**

Wirtz, B. W., Schilke, O. and Ullrich, S. Long Range Planning, Volume 43, Issues 2-3 (April/June 2010) Pages 272-290,

To remain competitive, most would agree that companies need to continuously adapt and develop their business models. Nevertheless, not much is known about how this transformation can be achieved and how different types of business models should be adapted. This paper utilises the '4C' Internet business model typology to discuss how recent Internet changes – the emergent Web 2.0 phenomenon – is impacting on its four business model types. As the rules of the 'create and capture value' game are being changed by Web 2.0 characteristics and trends, established Internet business models are becoming less effective. The authors develop a comprehensive Web 2.0 framework that is applied to two cases and verified via interviews with Internet business managers and also develop some strategic recommendations.

√IPENZ 37/11 Operating risk: the Achilles' heel of major infrastructure projects.

Allport, R. Proceedings of the Institution of Civil Engineers: Civil Engineering, Volume 158, Issue 3 (August 2005) Pages 130-133.

The civil engineering profession has significantly improved its ability to deliver major infrastructure projects on time and within budget. However, the operating performance of such projects leaves more to be desired. This paper examines the nature and scale of operating risks and sets out to explain why operating performance seldom matches expectations. It looks in particular at new-build urban rail schemes, where operating outcomes are found to differ significantly and systemically from expectations, usually for the worse. It concludes that a radical change in approach for such schemes is needed.

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http://www.ice.org.uk/services/services_journals.asp

√IPENZ 37/12 Optimizing operations using mobile and wireless technology.

Stern, C. and Iadarola, B. American Water Works Association, Volume 102, Issue 1 (January 2010) Pages 20-24.

√IPENZ 37/13 The mediation of construction disputes: Recent research.

Gould, N. and King, C. Proceedings of the Institution of Civil Engineers: Management, Procurement and Law, Volume 163, Issue MP1 (February 2010) Pages 29-39.

Mediation can no longer be said to be a new phenomenon for the resolution of construction disputes. It has been used, in the commercial context, for the resolution of disputes in a wide range of industry sectors both before the commencement of and during formal proceedings. There are some useful data in respect of the use and effectiveness of mediation in the construction industry and court-annexed mediation services, however these are mainly anecdotal. In order properly to assess the effectiveness and cost savings associated with mediation in the construction industry, an industry-based survey was developed between King's College London and the Technology and Construction Court. This paper explores the results of that survey which indicate that the court appears to be dealing with fewer disputes which relate to changes in the scope of works, project delays and site conditions than those generally arising 10 years ago. The incentives to consider mediation provided for by the Civil Procedure Rules appear to be effective; and that those advising the parties to construction disputes now routinely consider mediation to try and bring about a resolution of the dispute. It is clear that mediation has transformed from a novel idea to an indispensable tool for construction litigators.

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**√IPENZ 37/14 Talk me through it: The next level of performance management.**

Russell, J. and Russell, L. T+D, Volume 64, Issue 4 (April 2010) Pages 42-48.

For both managers and staff, the performance review is rarely experienced as a positive annual event. Why is this so and is there a better way to structure it? The structure of the performance coaching conversation is such that it deals with many of the issues concerning the traditional review whilst enhancing communication, understanding and trust between the participants. A strong partnership for performance is the basis of an effective performance coaching conversation.

√IPENZ 37/15 Measuring judgements to improve performance.

Blockley, D. and Godfrey, P. Proceedings of the Institution of Civil Engineers: Civil Engineering, Volume 158, Issue 3 (August 2005) Pages 124-129.

Engineers have always had to make professional judgements but these decisions are now being scrutinised and challenged as never before. Examples range from risk assessments to tender evaluations and the delivery of 'best value'. This paper explains that professional engineering judgements are an expression of responsibility in which our values lead to a preference. It then shows how such judgements can be measured and analysed using the principles of soft performance management and, more importantly, what actions we should take as result. Four case studies demonstrate how the principles can be put into practice.

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Technical Aspects of Engineering Abstracts for most available on request.

√IPENZ 37/16 Shear strengths of prestressed concrete beams part 1: Experiments and shear design equations.

Laskar, A., Hsu, T. T. C. and Mo, Y. L. ACI Structural Journal, Volume 107, Issue 3 (May/June 2010) Pages 330-339.

√IPENZ 37/17 Shear strengths of prestressed concrete beams part 2: Comparisons with ACI and AASHTO provisions.

Laskar, A., Hsu, T. T. C. and Mo, Y. L. ACI Structural Journal, Volume 107, Issue 3 (May/June 2010) Pages 340-345.

√IPENZ 37/18 Reinforced concrete caissons for port structures in Spain.

Esteban Lelfer, F. and Rey Romero, V. D. Proceedings of the Institution of Civil Engineers: Maritime Engineering, Volume 162, Issue MA2 (June 2009) Pages 73-81.

√IPENZ 37/19 Toward a better understanding of the dynamic characteristics of single-storey braced steel frame buildings in Canada.

Lamarche, C-P. et al. Canadian Journal of Civil Engineering, Volume 36, Issue 6 (June 2009) Pages 969-979.

√IPENZ 37/20 Shoreline evolution and management of Hawke's Bay, New Zealand: Tectonics, coastal processes, and human impacts.

Komar, P. D. Journal of Coastal Research, Volume 26, Issue 1 (January 2010) Pages 143-156.



√IPENZ 37/21 **Holocene rupture of the Repongaere Fault, Gisborne: Implications for Raukumara Peninsula deformation and impact on the Waipaoa Sedimentary System.**

Berryman, K. New Zealand Journal of Geology & Geophysics, Volume 52, Issue 4 (December 2009) Pages 335-347.

√IPENZ 37/22 **M.S. Yalin's contribution to bedload transport in rivers: 46 years of hindsight.**

Parker, G. Canadian Journal of Civil Engineering, Volume 36, Issue 10 (October 2009) Pages 1579-1586.

√IPENZ 37/23 **Local scour characteristics downstream of diversion barrages.**

Ghosh, M. K., Kumar, G. and Sen, D. Proceedings of the Institution of Civil Engineers: Water Management, Volume 162, Issue WM5 (October 2009) Pages 309-319.



√IPENZ 37/24 **Applying life-cycle assessment to low carbon fuel standards-How allocation choices influence carbon intensity for renewable transportation fuels.**

Kaufman, A. S. et al. Energy Policy, Volume 38, Issue 9 (2010) Pages 5229-5241.

√IPENZ 37/25 **Greening local energy: Explaining the geographic distribution of household solar energy use in the United States.**

Zahran, S. et al. Journal of the American Planning Association, Volume 74, Issue 4 (Autumn 2008) Pages 419-434.

√IPENZ 37/26 **Planning for sustainable utility infrastructure.**

Hunt, D. V. L. et al. Proceedings of the Institution of Civil Engineers: Urban Design and Planning, Volume 62, Issue DP4 (December 2009) Pages 187-201.

√IPENZ 37/27 **Re-engineering cities as forces for good in the environment.**

Beck, M.B. et al. Proceedings of the Institution of Civil Engineers: Engineering Sustainability, Volume 163, Issue ES1 (March 2010) Pages 31-46.

√IPENZ 37/28 **Duct design fundamentals.**

Brooks, P. J. ASHRAE Journal, Volume 52, Issue 1 (January 2010) Pages 30-38.

√IPENZ 37/29 **Delivering Wadi Dayqah, Oman's tallest dam.**

Prisk, M., Richards, M. and Hieatt, M. Proceedings of the Institution of Civil Engineers: Civil Engineering, Volume 162, Special Issue 2 (November 2009) Pages 42-50.

√IPENZ 37/30 **Dam ageing diagnosis and risk analysis: Development of methods to support expert judgment.**

Peyras, L., Royet, P. and Boissier, D. Canadian Geotechnical Journal, Volume 43, Issue 2 (February 2006) Pages 169-186.

√IPENZ 37/31 **Determination of water quality variables, endotoxin concentration, and Enterobacteriaceae concentration and identification in southern High plains dairy lagoons.**

Purdy, C. W., Clark, R. N. and Straus, D. C. Journal of Dairy Science, Volume 93, Issue 4 (April 2010) Pages 1511-1522.

√IPENZ 37/32 **Effect of geometrical dimensions and waste water temperature on the performance of an induced air flotation unit for the treatment of industrial waste water.**

Al-Maliky, Bash, S. A. Modern Applied Science, Volume 4, Issue 6 (June 2010) Pages 14-19.

√IPENZ 37/33 **Ozone-contactor flow visualization and quantification using three-dimensional laser-induced fluorescence.**

Kim, D. et al. American Water Works Association, Volume 102, Issue 1 (January 2010) Pages 90-101.

√IPENZ 37/34 **Building liveable major urban streets: Begin Road, Tel-Aviv.**

Rofê, Y. and Ishaq, R. Proceedings of the Institution of Civil Engineers: Urban Design and Planning, Volume 62, Issue DP4 (December 2009) Pages 169-178.

√IPENZ 37/35 **Evaluation of sustainable urban redevelopment scenarios.**

Lombardi, P. Proceedings of the Institution of Civil Engineers: Urban Design and Planning, Volume 62, Issue DP4 (December 2009) Pages 179-186.

√IPENZ 37/36 **Sensitivity of the traffic flows in transportation networks.**

Moridpour, S. Journal of Urban Planning & Development, Volume 135, Issue 2 (June 2009) Pages 56-65.

√IPENZ 37/37 **Analyzing the effect of bicycle facilities on commute mode share over time.**

Krizek, K. J., Barnes, G. and Thompson, K. Journal of Urban Planning & Development, Volume 135, Issue 2 (June 2009) Pages 66-73.



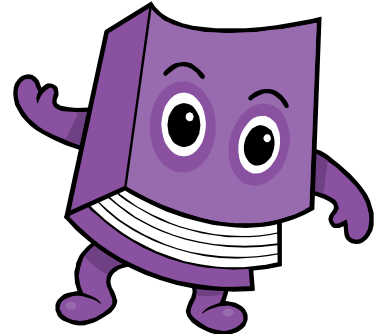
√IPENZ 37/38 **Studies on pumping power in terms of pressure drop and heat transfer characteristics of compact plate-fin heat exchangers – A review.**

Ismail, L. S., Velraj, R. and Ranganayakulu, C. Renewable and Sustainable Energy Reviews, Volume 14, Issue 1 (January 2010) Pages 478-485.

√IPENZ 37/39 **Tracking industrial energy efficiency and CO2 emissions in support of the G8 Plan of Action.** Paris: IEA/OECD, 2007
Energy efficiency in the industrial sector has improved in the past 25 years, but more remains to be done.

BOOKS AND STANDARDS in Energy Library

These can be borrowed directly by Energy Library members or via interlibrary loan by non members



√IPENZ 37/40 **Strengths finder.** Rath, Tom. New York: Gallup Press, 2007.
The author of this book considers that developing your strengths is the most important aspect of personal development. He explains how to establish what sort of personality you have e.g. are you an Arranger or an Includer? Do you excel at intellection, or self assurance? You should build on these strengths as the best way to attain more satisfaction in life, and to help others.

√IPENZ 37/41 **Lead your boss: The subtle art of managing up.** Baldoni, John. New York: Amacom, 2010.
How to cultivate the skills that make you effective in the workforce, and how to influence your colleagues (especially upwards).

√IPENZ 37/42 **Blue ocean strategy: How to create uncontested market space and make the competition irrelevant.** Kim, W. Chan; Mauborgne, Renee. Boston: Harvard Business School Press, 2005.
The writers of this book contend that, instead of fighting for a segment of a hotly contested market, it is more fruitful to seek out uncontested markets. The book is designed to assist companies develop a marketing strategy based on that. The parts cover what a blue ocean strategy is, and how to formulate and execute such a strategy.

√IPENZ 37/43 **10 days to faster reading.** Marks-Beale, Abby. New York: Philip Lief Group, 2001.
This book is an easily-read aid to faster reading. The author describes methods to increase your comprehension and concentration, to cover more material, and to enjoy reading more.

√IPENZ 37/44 **IEC 60480: 2004. Guidelines for the checking and treatment of sulfur hexafluoride (SF6) taken from electrical equipment and specification for its re-use.** 2nd ed.

√IPENZ 37/45 **AS 1683.24: 2001 Methods of test for elastomers. Method 24: Determination of the resistance of vulcanized or thermoplastic rubbers to ozone cracking-static strain test.**

Special focus – Corrosion in the marine environment

√IPENZ 37/46 **Performance of permeability-reducing admixtures in marine concrete structures.**
Dao, V. T. N. ACI Materials Journal, Volume 107, Issue 3
(May/Jun 2010) Pages 291-297.

√IPENZ 37/47 **Corrosion of epoxy-coated rebar in marine bridges – Part 1: A 30-year perspective.**
Lau, K. Sagüé, A. A. and Powers, R. G. Corrosion, Volume 66,
Issue 6 (June 2010) 13 Pages.



√IPENZ 37/48 **Corrosion of epoxy-coated rebar in marine bridges – Part 2: Corrosion in Cracked Concrete.**
Lau, K. Sagüé, A. A. and Powers, R. G. Corrosion, Volume 66, Issue 6 (June 2010) 16 Pages

√IPENZ 37/49 **Estimating uncertainty in maximum pit depth from limited observational data.**
Melchers, R. E. Corrosion Engineering, Science & Technology, Volume 45, Issue 3 (June 2010) Pages
240-248.
Estimating the effects of exposure to the marine environment on structural steel.

√IPENZ 37/50 **Impact of climate change on corrosion risks.**
Roberge, P. R. Corrosion Engineering, Science & Technology, Volume 45, Issue 1 (February 2010)
Pages 27-33.

√IPENZ 37/51 **Possible effects of climate change on atmospheric corrosion in Australia.**
Cole, I. S. and Paterson, D. A. Corrosion Engineering, Science & Technology, Volume 45, Issue 1
(February 2010) Pages 19-26.

√IPENZ 37/52 **Galvanic corrosion performance of high-strength copper-nickel alloys in seawater.**
Barik, R. C. et al. Corrosion, Volume 65, Issue 6 (June 2009) Pages 359-367.

√IPENZ 37/53 **Investigating corrosion protection of offshore wind towers: Part 1: Background and test program.**
Momber, A. W. et al. Journal of Protective Coatings & Linings (April 2008) Pages 30-32,34,37-38,41-43.

√IPENZ 37/54 **Investigating corrosion protection of offshore wind towers: Part 2: Results of the site tests**
Momber, A. W. et al. Journal of Protective Coatings & Linings (April 2008) Pages 24-30,32,34.

√IPENZ 37/55 **Reinforcement corrosion in concrete exposed to the North Sea for more than 60 years.**

Melchers, R. E. and Li, C. Q. Corrosion, Volume 65, Issue 8 (August 2009) Pages 554-566.

√IPENZ 37/56 **Behavior of thermal-sprayed Al, Zn, and Zn/Al coatings in tropical marine environments.**

Salas, O. et al. Materials Performance, Volume 47, Issue 11 (November 2008) Pages 42-46.

√IPENZ 37/57 **Effect of inhibitors on the corrosion of AISI-1018 steel in sea-water environment.**

Misbahul Amin, M. and Rafezi Ahmad, K. International Journal of Materials Science, Volume 3, Issue 2 (2008) Pages 171-176.

√IPENZ 37/58 **Electrochemical monitoring of selective phase corrosion of nickel aluminum bronze in seawater.**

Lenard, D. R., Bayley, C. J. and Noren, B. A. Corrosion, Volume 64, Issue 10 (October 2008) Pages 764-772.

√IPENZ 37/59 **In situ corrosion protection of oil risers and offshore piles.**

Aghajani, A. Materials Performance, Volume 47, Issue 4 (April 2008) Pages 38-42.

√IPENZ 37/60 **Inhibitive and bactericidal effects of natural naphthenates on steel corrosion in sea water.**

Samedov, A., Alieva, L. and Abbasov, V. Protection of Metals, Volume 44, Issue 4 (July 2008) Pages 397-401.

√IPENZ 37/61 **Liquid galvanic coating defends concrete rebar with cathodic protection.**

Anonymous. Materials Performance, Volume 47, Issue 3 (March 2008) Pages 16-18.

√IPENZ 37/62 **Some recent developments in corrosion assessment and management for steel ships and offshore structures.**

Paik, J. K., Thayamballi, A. K. and Melchers, R. E. Marine Technology and SNAME News, Volume 45, Issue 2 (April 2008) Pages 94-100.

√IPENZ 37/63 **Effectiveness of fiber-reinforced polymer in reducing corrosion in marine environment.**

Suh, K.. et al. ACI Structural Journal, Volume 104, Issue 1 (2007) Pages 76-83.

√IPENZ 37/64 **Corrosion behavior of zinc, galvanized, mild steel in water-concrete environment.**

Blaszczynski, T. and Lowinska-Kluge, A. Corrosion, Volume 63, Issue 11 (November 2007) Pages 1063-1069.

√IPENZ 37/65 **Cathodic protection of concrete structures containing calcareous aggregates in tropical-humid marine environments.**

Sosa, M. et al. *Anti - Corrosion Methods and Materials*, Volume 54, Issue 2 (2007) Pages 103-110.

√IPENZ 37/66 **Development of reliability-based renewal criteria for marine structures.**

Ivanov, L. D. et al. *Marine Technology and SNAME News*, Volume 44, Issue 4 (October 2007) Pages 226-233.

√IPENZ 37/67 **Modeling of long-term corrosion loss and pitting for chromium-bearing and stainless steels in seawater.**

Melchers, R. E. and Jeffrey, R. *Corrosion*, Volume 64, Issue 2 (February 2008) Pages 143-154.

√IPENZ 37/68 **Recent progress in the modeling of corrosion of structural steel immersed in seawaters.**

Melchers,, R. *Journal of Infrastructure Systems*, Volume 12 Issue 3 (September 2006) Pages 154-162.

Other Resource Listings from Energy Library

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