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Engineering Update from Energy Library

October / November 2011



Welcome to the new "**Engineering Update**" which continues the monthly update formally sponsored by IPENZ.

The purpose of this newsletter is to update Energy Library members' knowledge in a broad range of engineering disciplines as well as management and human resource issues.

All items listed are available to you as part of your Energy Library membership and you can request items by emailing the item code to library@energylibrary.org.nz.

We would welcome some membership feedback about what we should cover in our Special Topic section.

Members who request items from this update will go in the draw to win a large Energy choc bar.





MANAGEMENT/ STRATEGIC PLANNING

PROJECT MANAGEMENT

RISK MANAGEMENT

CORPORATE RESPONSIBILITY

ENG 51/01 How to lead during a crisis: Lessons from the rescue of the Chilean miners.

Useem, M. et al. MIT Sloan management review, Volume 43 Issue 1 (Fall 2011)
Pages 37-44.

ENG 51/02 The hold-up problem in the management of construction projects: A case study of the Channel Tunnel.

Chen-Yu Chang and Ive, G International Journal of Project Management, Volume 25, Issue 4
(May 2007) Pages 394-404.

ENG 51/03 Pioneers push paradigm shift.

Post N. ENR (19 September 2011) Pages 39-44.
Use of integrated project delivery on a hospital project proves very successful.

ENG 51/04 The hold-up problem in the management of construction projects: A case study of the The role of sustainability advisers in developing sustainability outcomes for an infrastructure project: lessons from the Australian urban rail sector.

Scanlon, J and Davis, A. Impact Assessment & Project Appraisal, Vol. 29 Issue 2 (June 2011)
Pages 121-132.

ENG 51/05 Integrating environmental and international strategies in a world of regulatory turbulence.

Wijen, Frank; van Tulder, Rob. California Management Review, Vol. 53 Issue 4 (Summer 2011).

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ENG 51/06 An 'engineer-client' framework for participation in community-scale infrastructure projects.

Mulligan J et al. Proceedings of the ICE - Engineering Sustainability, Volume 164, Issue 1, (March 2011) Pages 35-47.

The importance of community participation in projects in the developing and developed world is widely recognised, despite considerable debate regarding what participation means in practice. In the developing world context, there is a distinct debate on how participation can achieve its stated goals of creating 'ownership' among targeted beneficiaries without becoming susceptible to elite capture or excluding marginalised groups. Projects that involve engineering analysis present a further challenge: to incorporate external technical expertise in decision-making so that project outcomes are improved, without compromising the participative process. The paper sets out a practical framework that reconciles the critical importance of early, meaningful community involvement in decision-making with the active role of the engineer as a technical adviser and facilitator. It is targeted for application in community-scale infrastructure development projects, where the community is the primary targeted beneficiary. The framework draws a parallel with a traditional engineer-client relationship, in which the client's (in this case the community's) needs and preferences drive the design process and in which final design approval rests with the client, but where the engineer plays an active role in helping to understand and interpret the client's needs and develops engineering responses through an iterative, responsive design process.

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

ENG 51/07 Project management and green buildings: Lessons from the rating systems.

Wu, P. and Low, S. P. Journal of Professional Issues in Engineering Education & Practice, Volume 136, Issue 2 (April 2010) Pages 64-70.

ENG 51/08 The accuracy of hybrid estimating approaches: A case study of an Australian state road & traffic authority.

Li, L. Engineering Economist, Vol. 55 Issue 3 (July 2010) Pages 225-245.

Optimism bias and strategic misrepresentation are the two main factors that result in persistent cost overruns in infrastructure projects. Reference cost forecasting (RCF) is being used to mitigate them. To fit in with their unique operating environments, organisations often develop hybrid approaches that blend RCF with others, for example the conventional fixed contingency approach. The results of estimation accuracy of some road projects carried out by an Australian State Road & Traffic Authority are presented in this study, whereby primarily RCF is blended with a fixed contingency approach. A comparison of these results with historical results from infrastructure projects and other samples is then made.

ENG 51/09 Delusion and deception in large infrastructure projects: Two models for explaining and preventing executive disaster.

Flyvbjerg, B et al. California Management Review, Volume 51 Issue 2, (Winter 2009) Pages 170-193.

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ENG 51/10 Reforming the process for infrastructure planning in the UK/England 1990-2010.

Marshall, T. TPR: Town Planning Review, Volume 82 Issue 4 (May 2011) Pages 441-467.

ENG 51/11 Understanding and improving your risk management capability: Assessment model for construction organizations.

Zou, P et al. Journal of Construction Engineering & Management, Volume 136 Issue 8 (August 2010) Pages 854-863.

ENG 51/12 Buckley shapes Cardno's future.

Rubin D. ENR (25 July 2011) Pages 18-20.

Discusses the growth of Australian engineering company Cardno.



HUMAN RESOURCES

TRAINING/HEALTH/SAFETY

PROFESSIONAL DEVELOPMENT/SELF IMPROVEMENT

ENG 51/13 How to hang on to your high potentials.

Fernández-Aráoz, C et al. Harvard Business Review, Volume 89 Issue 10 (October 2011) Pages 76-83.

Despite high unemployment, the war for talent rages on. Only 15% of companies in North America and Asia feel they have enough qualified potential successors to fill their top jobs, and the picture is only slightly better in Europe. The best weapon companies can wield are programs that develop their "high potentials"- the people they hope to develop into their future leaders. In a large-scale study of how companies assess and manage their rising stars, the authors have identified some guiding principles for developing high potentials.

ENG 51/14 Creating employee networks that deliver innovation.

Whelan, E et al. MIT Sloan management review, Volume 43 Issue 1 (Fall 2011) Pages 37-44.

ENG 51/15 What if you have been retrenched? Look toward the bright side: capitalize on your psychological capital.

Toor, S. Leadership & Management in Engineering, Volume 10 Issue 3 (July 2010) Pages 103-107.

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ENG 51/16 The relationship you need to get right.

Harvard Business Review Volume 89 Issue 10 (October 2011) Pages 131-134.

Effective sponsors can help catapult junior talent into top management tiers, and good protégés can greatly expand the reach and impact of senior leaders-but the relationship works only when both parties recognize that it's a mutually beneficial alliance, a truly two-way street. Seeking to better understand this crucial dynamic, the authors, from the Center for Work-Life Policy, surveyed and spoke with thousands of professionals. Their findings constitute an invaluable guide. Sponsors should, among other things, advocate for their protégés' promotions, coach them, call in favors for them, and help them make connections. Protégés must be loyal, contribute 110%, and bring complementary skills and networks to the table. No matter what your career level, such relationships are lifelong projects to be carefully cultivated, consistently nurtured, and periodically refreshed.

ENG 51/17 A stitch in time saves nine: Leveraging networks to reduce the costs of turnover. Ballinger, G et al. California Management Review, Vol.53 Issue 4 (Summer 2011) Pages 111-133.

ENG 51/18 Quantitative methods for design-build team selection.

El Asmar, M et al. Journal of Construction Engineering & Management, Volume 136 Issue 8 (August 2010) Pages 904-912.

ENG 51/19 Examining the safety road map.

Hekmat, M. J. Professional Safety, Volume 56, Issue 3 (March 2011) Pages 30-32.

ENG 51/20 Lessons from the tragic death of Brodie Panlock.

National safety magazine (May 2010) Pages 32-36.

The suicide of a café worker, which followed a year of workplace bullying, is a pointed reminder to employers of their obligation to protect the mental health of their workers.

ENG 51/21 Job safety analysis its role today.

Glenn, D. D. Professional Safety, Volume 56, Issue 3 (March 2011) Pages 48-57.

ENG 51/22 Asbestos still with us: Repeat call for a universal ban.

Archives of Environmental & Occupational Health, Volume 65, Issue 3 (July/September 2010) Pages 121-126.

ENG 51/23 Can instruction in engineering ethics change students' feelings about professional responsibility?

Hashemian, G. and Loui, M. C. Science & Engineering Ethics, Volume 16, Issue 1 (March 2010) Pages 201-215.

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ENG 51/24 Human well-being and flowing work in an intelligent work environment.

Reijula J. et al. Intelligent Buildings International, Volume 3, Issue 4 (2011) Pages 223-237.

ENG 51/25 Designing and implementing a performance measurement system.

Gosselin, M. CMA Management, Volume 84, Issue 7 (November 2010) Pages 14-18.

ENG 51/26 Manage your energy not your time.

Schwartz, T. Harvard Business Review, Volume, 85 Issue 10 (October 2007) Pages 63-73.
As the demands of the workplace keep rising, many people respond by putting in ever longer hours, which inevitably leads to burnout that costs both the organization and the employee. Meanwhile, people take for granted what fuels their capacity to work -- their energy. Increasing that capacity is the best way to get more done faster and better. Time is a finite resource, but energy is different. It has four wellsprings -- the body, emotions, mind, and spirit -- and in each, it can be systematically expanded and renewed. In this article, Schwartz, founder of the Energy Project, describes how to establish rituals that will build energy in the four key dimensions.

ENG 51/27 Rethinking wrench time: Don't blame the workers.

Buckley B. ENR (6 June 2011) Pages 32-36.

Time measurement and productivity.

ENG 51/28 Finding the right learning mix.

Dublin, L. Chief Learning Officer, Volume 10, Issue 8 (August 2011) Pages 36-39.



TECHNICAL ARTICLES

(ABSTRACTS AVAILABLE ON REQUEST)

ENG 51/29 Wireless technologies for the monitoring of strategic civil infrastructures: an ambient vibration test on the fatih Sultan Mehmet suspension bridge in Istanbul, Turkey.

Picozzi, M et al. Bulletin of Earthquake Engineering, Volume 8, Issue 3 (June 2010) Page 671-

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ENG 51/30 The right stuff.

Bergeron, A. ENR (26 September 2011) Pages 40-43.
Use of embedded sensors on a twin span bridge in Louisiana.

ENG 51/31 Application of direct displacement based design to long span bridges.

Adhikari, G et al. Bulletin of Earthquake Engineering, Volume 8, Issue 4 (August 2010) Pages 897-

ENG 51/32 Prototype system for earthquake early-warning and alert management in southern Italy.

Iannaccone, G et al. Bulletin of Earthquake Engineering, Volume 8, Issue 5 (October 2010) Pages 1105-

ENG 51/33 The 2010 Chilean earthquake: gas distribution system resilience.

Enrique Acuna, C. Journal of Pipeline Engineering, Volume 9, Issue 3 (September 2010) Pages 197-201.

ENG 51/34 Analysis of mechanical behavior of corroded reinforced concrete structures.

Hanjari, Z. K. et al. ACI Structural Journal. Volume 108, Issue 5 (September/October 2011) Pages 532-541.

ENG 51/35 Tests show premature failure of shear-stud reinforcement.

ENR (29 August 2011) Pages 13-15.

ENG 51/36 Experimental investigation of reinforced concrete exterior beam-column subassemblages for progressive collapse.

Yap, L. S., and Li. B. ACI Structural Journal Volume 108, Issue 5 (September/October 2011) Pages 542-552.

ENG 51/37 Self-repairing structural sensors designed to withstand extreme events.

Jones, J. Civil Engineering, Volume 81, Issue 9 (September 2011) Pages 38-38.

ENG 51/38 Design charts for piles supporting embankments on soft clay.

Poulos, H. G. Journal of Geotechnical and Geoenvironmental Engineering, Volume 133, Issue 5 (2007) Pages 493-501.

ENG 51/39 Continuum deformation and stability analyses of a steep hillside slope under rainfall infiltration.

Borja, I. B. and White, A. J. Acta Geotechnica. Volume 5, Issue 1 (April 2010) Pages 1-

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ENG 51/40 Response parameters for characterization of infiltration.

Rahardjo, H. et al. Environmental Earth Sciences. Volume 60, Issue 7 (June 2010) Pages 1369-

ENG 51/41 The mechanism of a railway landslide caused by rainfall.

Xu, O. and Zhang, L. Landslides, Volume 7, Issue 2 (June 2010) Pages 149-

ENG 51/42 Deep subsea oil and gas infrastructure development: some challenges and solutions.

Das, D. K. and Gonzalez, Jose. Journal of Pipeline Engineering, Volume 9, Issue 3 (September 2010) Pages 161-166.

ENG 51/43 Potential of a hybrid wind-diesel-compressed air system for nordic remote Canadian areas.

Ibrahim, H. et al. Energy Procedia, Volume 6 (2011) Pages 795-804.

ENG 51/44 Pipeline design: are current pipe standards adequate?

Haswell, J. and Boothby, P. Journal of Pipeline Engineering, Volume 10, Issue 1 (March 2011) Pages 5-17.

ENG 51/45 Fundamentals of zero liquid discharge system design.

Shaw, W. Power, Volume 155, Number 10 (October 2011) Pages 56-63.

ENG 51/46 Critical infrastructures in Russia: Geographical analysis of accidents triggered by natural hazards.

Elena, P. Environmental Engineering & Management Journal (EEMJ), Volume 10, Issue 1 (January 2011) Pages 53-58.

ENG 51/47 Water demand management optimization methodology.

Friedman, K. et al. American Water Works Association Journal, Volume 103, Issue 9 (September 2011) Pages 74-85.

ENG 51/48 Intrusion detection system for water storage facilities.

Ashton, P. J. American Water Works Association Journal. Volume 103, Issue 10 (October 2011) Pages 34-36.

ENG 51/49 Planning renewal of water mains while considering deterioration, economies of scale and adjacent infrastructure.

Water Science & Technology: Water Supply, Volume 10, Issue 6 (2010) Pages 897-906.

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ENG 51/50 Service-oriented advanced metering infrastructure for smart grids.

Chen, S. et al. Journal of Energy & Power Engineering, Volume 5, Issue 5 (May 2011) Pages 455-460.

ENG 51/51 Biorefinery technologies for biomass upgrading.

Demirbas, A. Energy Sources Part A: Recovery, Utilization & Environmental Effects, Volume 32 Issue 16 (October 2011) Pages 1547-1558.

ENG 51/52 Lille 2004 and the role of culture in the regeneration of Lille métropole.

Paris, D. and Baert, T. TPR: Town Planning Review, Volume 82, Issue 1 (January 2011) Pages 29-44.

ENG 51/53 Flagship regeneration project as a tool for post-disaster recovery planning: the Zeytinburnu case.

Ozcevik, O. et al. Disasters, Volume 33 Issue 2 (April 2009) Pages 180-202.

ENG 51/54 Stirred grinding of coal bottom ash to be evaluated as a cement additive.

Kizgut, S. et al. Energy Sources Part A: Recovery, Utilization & Environmental Effects, Volume 32, Issue 16 (October 2010) Pages 1529-1539.

ENG 51/55 Catastrophic event modeling in the Gulf of Mexico—I. insurance markets and risk techniques.

Kaiser, M. J. et al. Energy Sources Part B: Economics, Planning & Policy, Volume 5, Issue 1 (January 2010) Pages 74-80.

ENG 51/56 Catastrophic event modeling in the Gulf of Mexico—II. industry exposure and value at risk.

Kaiser, M. J. et al. Energy Sources Part B: Economics, Planning & Policy, Volume 5, Issue 2 (April 2010) Pages 147-154.

ENG 51/57 Predicting the human losses implied by predictions of earthquakes: Southern Sumatra and Central Chile.

Wyss, M. Pure & Applied Geophysics, Volume 167 Issue 8/9 (August 2010) Pages 959-965.

ENG 51/58 CWA 316(b) Update: Fish guidance and protection.

Someah, K. Power, Volume 155, Number 10 (October 2011) Pages 50-55.

ENG 51/59 Assessment of the environmental destructive effects of building dams.

Pirestani, M. R. et al. World Academy of Science, Engineering & Technology, Volume 80 (August 2011) Pages 374-378.

ENG 51/60 An analytical solution for earthquake-induced hydrodynamic pressure on gravity dams.

Khiavi, M. P. World Academy of Science, Engineering & Technology, Volume 80 (August 2011) Pages 312-316.

ENG 51/61 Structural failures of earth dams in Nigeria: A case study of Cham dam in Gombe State.

Umaru, A. et al. Journal of Engineering & Applied Sciences, Volume 5, Issue 11 (2010) Pages 47-52.



SPECIAL TOPIC:
WATER REUSE

ENG 51/62 A public-private partnership: American Water's revolutionary water reuse system for the Patriots' home.

Shields, D. C. Global Business & Organizational Excellence, Volume 30, Issue 5 (July/August 2011) Pages 56-63.

ENG 51/63 Reuse feasibility of pre-treated grey water and domestic wastewater with a compact household reverse osmosis system.

Engin, G. et al. Desalination & Water Treatment, Volume 29, Issue 1-3 (May 2011) Pages 103-109.

ENG 51/64 Integration of water reuse in the planning of livable cities.

Wilderer, P. A. and Huber, H. Intelligent Buildings International, Volume 3, Issue 2 (2011) Pages 96-106.

ENG 51/65 Water reuse and wastewater minimization in chemical industries using differentiated regeneration of contaminants.

Selene Mar et al. Industrial & Engineering Chemistry Research, Volume 50, Issue 12 (June 2011) Pages 7428-7436.

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ENG 51/66 Integrated water management and environmental justice - public acceptability and fairness in adopting water innovations.

Feldman, D. L. Water Science & Technology: Water Supply, Volume 11, Issue 2 (2011) Pages 135-141.

ENG 51/67 Fish processing wastewater treatment by combined biological and chemical processes aiming at water reuse.

da Silva Manetti et al. Desalination & Water Treatment, Volume 29, Issue 1-3 (May 2011) Pages 196-202

ENG 51/68 Eliminating 'Yuck': A simple exposition of media and social change in water reuse policies.

Leong C. International Journal of Water Resources Development, Volume 26, Issue 1 (March 2010) Pages 111-124.

ENG 51/69 Greywater treatment with biological aerated filter (BAF) for urban water reuse.

Water Science & Technology: Water Supply, Volume 10, Issue 6 (2010) Pages 907-913.

ENG 51/70 Reuse of greywater for irrigation around homes in Australia: Understanding community views, issues and practices.

Pinto, U. and Maheshwari, B. L. Urban Water Journal, Volume 7, Issue 2 (April 2011) Pages 141-153.

ENG 51/71 Affluent effluent: growing vegetables with wastewater in Melbourne, Australia--a wealthy but bone-dry city.

Barker-Reid, F. et al. Irrigation and Drainage Systems, Volume 24, Issue 1/2 (June 2010) Pages 79.

ENG 51/72 Formulation of synthetic greywater as an evaluation tool for wastewater recycling technologies.

Hourlier, F. et al. Environmental Technology, Volume 31, Issue 2 (February 2010) Pages 215-223.

ENG 51/73 Cost-benefit analysis of water-reuse projects for environmental purposes: A case study for Spanish wastewater treatment plants.

Molinos-Senante, M., Hernández-Sancho, F. and Sala-Garrido, R. Journal of Environmental Management, Volume 92, Issue 12 (December 2011) Pages 3091-3097.

ENG 51/74 Design robustness of local water-recycling schemes.

Rozos, E. et al. Journal of Water Resources Planning & Management, Volume 136, Issue 5 (September 2010) Pages 531-538.

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ENG 51/75 Reuse potential of laundry greywater for irrigation based on growth, water and nutrient use of tomato.

Misra, R. K. et al. Journal of Hydrology, Volume 386, Issue 1-4 (May 2010) Pages 95-102.

ENG 51/76 Reuse of domestic greywater for the irrigation of food crops.

Finley, S. et al. Water, Air & Soil Pollution, Volume 199, Issue 1-4 (May 2009) Pages 235-245.

ENG 51/77 Simultaneous treatment of greywater and waste gas in a biological trickling filter.

McLamore, E. et al. Water Environment Research, Volume 80, Issue 11 (November 2008) Pages 2096-2103.

ENG 51/78 Degraded water reuse: an overview.

O'Connor, A. G et al. Journal of Environmental Quality, Volume 37, Issue 5 (September/October 2008) Pages 157-168.

ENG 51/79 Life cycle impact assessment of greywater recycling technologies for new developments.

Memon, F. A. et al. Environmental Monitoring & Assessment, Volume 129, Issue 1-3 (June 2007) Pages 27-35.

ENG 51/80 The road not taken: traditional excreta and greywater management may point the way to a sustainable future.

Bracken, P. et al. Water Science & Technology: Water Supply, Volume 7, Issue 1 (2007) Pages 219-227.

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