

# Protocol addresses risk and liability

by Christine Kanellakis

In November 2009 the Warren Centre for Advanced Engineering in Sydney launched the report *Professional Performance, Innovation and Risk in Australian Engineering Practice* (PPIR), authored by leaders in the engineering industry and supported by related associations, notably Engineers Australia.

Central to the report's approach were measures to improve the assessment, allocation and mitigation of risk and processes by which the liability of engineers could be better defined and controlled.

The PPIR Report is significant because:

- its core aim is to promote excellence in engineering performance through application of the PPIR Protocol (a world first) as the "third leg" of engineering professionalism alongside ethics and competency
  - the protocol clarifies widely accepted engineering practice in Australia against which the "duty and standard of care" of engineers can be objectively assessed
  - the initiatives in the report provide a strategy to address the dramatic changes in the operating environment of both engineers and corporations which have engineering at their core.
- The PPIR Protocol acts as a guideline, or "checklist", for engineers, covering the fundamental requirements for many of the engineering tasks in the ordinary course of engineering practice.

The protocol consists of eight elements covering definition of stakeholders and



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the engineering task, ensuring the competence of individual engineers and their team, statutory requirements and public interest, risk management, incorporation of innovation, management of the task and contractual issues.

The implementation phase of the PPIR project commenced in mid-2010, with a planned duration of three years. The initial activities have concentrated on communication of the PPIR philosophy, education and training of engineers in the application of the PPIR Protocol and roll-out of the protocol in engineering organisations.

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Bob Gussey, former chairman of the Construction Industry Institute Australia, is the PPIR project's risk adviser. He sees many organisations embracing best practice in risk management but for others it is simply segmentation and allocation of risk from one party to the other. In contrast, PPIR calls for "a formal, fully integrated, transparent approach to recognising and delineating all the risks and accountabilities in each engineering task, in a way that creates and promotes a shared understanding of a 'best for risk management' approach."

The risk management elements in the PPIR Protocol are based on informing and guiding the engineers and all stakeholders in relation to the engineers' role. They address the essentials of risk management as applicable to the engineering task, facilitate communication

between the interested parties through a common vocabulary and organise the risk management activities in the most efficient manner. Importantly, the guidelines include the use of a structure based on key elements of the engineering task to facilitate risk assessment within the allocated accountabilities.

The PPIR Protocol's risk management approach is intended to be complementary to accepted practices, such as the *ISO 31000* standard and its accompanying documents. As the PPIR report was finalised prior to publication of *ISO 31000*, further work is being done to harmonise the terminology and approach of PPIR with that included in the standard.

Liability of engineers is another key focus of the PPIR project.

Allison Grice, national legal & claims manager for CGU Professional Risks is leader of the PPIR project's recently formed Liability Team. In her view, the key liability and insurance challenges currently facing the Australian engineering profession are:

- establishing benchmark standards for the professional performance, and assessment of performance, of engineers
- establishing a system for the accreditation of engineers as expert witnesses and the acceptance of accredited experts in the legal and dispute resolution spaces.

Managing the exposure of engineers to legal liability arising from the provision of their professional services is a central focus of the profession, the public, the legal system and the professional indemnity insurers of engineers.

Engineers and affiliated professions would benefit enormously from better prescription of the touchstones of benchmark engineering practice, which the PPIR Protocol delivers.

National adoption of PPIR would give engineers certainty about the standards of practice against which their professional conduct, and that of their peers, will be assessed. It would also provide the legal system with a professional performance framework for the assessment of the legal liability of engineers and the resolution of disputes which involve them, by reference to the opinions of accredited expert engineers and to the Protocol.

The insurance industry would receive

## Risk conference

Engineers Australia's Risk Engineering Society will hold its RISK 2012 conference at the Crown Plaza Hunter Valley on 20-22 September.

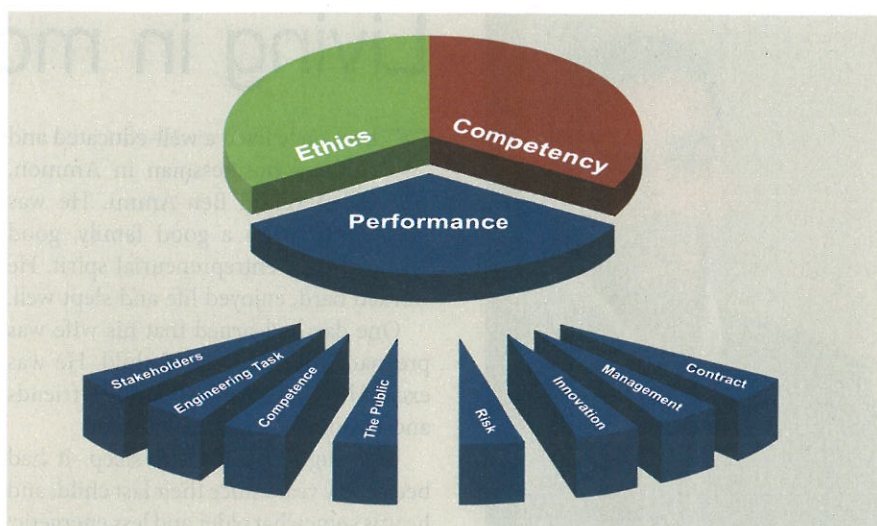
The conference is being held in conjunction with Engineers Australia's Mining Electrical and Mining Mechanical Engineering Society Convention.

For more information go to [www.engineersaustralia.org.au/risk](http://www.engineersaustralia.org.au/risk) ■

greater comfort about the management of risk and assessment of liability in the engineering and legal professions, making engineering risks more attractive to insurers and reducing the cost of professional indemnity insurance for engineers.

Information on the PPIR project, including specifics on the PPIR Protocol, is being disseminated through briefings to key stakeholders, seminars, conference participation and via the project's website and professional networking sites. ■

Christine Kanellakis is director of the PPIR Implementation Project. For further information on the PPIR project visit [www.ppir.com.au](http://www.ppir.com.au). To keep up to date on developments engineers can join the Implementing PPIR group on LinkedIn.



Engineering professionalism consists of performance, ethics and competency. The PPIR Protocol breaks down performance into eight elements.

## Preparing for climate risks

by Nick Apostolidis

Australia has long been recognised as having one of the most variable climates on the planet. Contrary to popular perception, most other countries think we are doing a good job in managing such variability and look to our solutions and policies as being best practice. For example, the Americans think our security-through-diversity approach to water supply is industry-leading. China believes our water management and allocation policies are best practice. Europeans see our demand management initiatives as being positioned well ahead of any other practice.

It is disappointing to see the good work we have recently done in Australia to improve our water security being ridiculed in the media as being wasteful because suddenly we have record rainfalls and our dams are full again.

While we cannot accurately predict the future, data recorded over the past century indicate the climate is becoming warmer and as a result we can expect our weather to be more extreme. More rain has fallen in areas such as the east coast of North and South America and northern Europe since 1900 but less has fallen in the Mediterranean and parts of Africa and Asia. Since 1970, eastern and southwestern Australia have become much drier.

Weather patterns in the Pacific are also playing a role. A jump in El Niño (warming) events after 1977 brought



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drought to Australia but since 2008 La Niña (cooling) has returned with record rainfall and floods.

These trends suggest we can expect higher temperatures and more severe droughts but also more intense storms and coastal flooding throughout the world. Therefore, the challenges we had to face in Australia will be replicated in other parts of the world with traditionally more stable climates. Australia is a lucky country. We have the resources and talent to overcome such extreme events. Many countries around the world do not.

We cannot "climate-proof" our infrastructure. We can better understand the risks we face and plan for extreme events such as the millennium drought or the

Queensland floods, which highlighted the importance of understanding the consequences of building in flood-prone areas.

Having to cope with such variability poses many challenges for our governments. The investment needed is much greater than in other countries with more stable and predictable weather patterns.

In a variable climate environment, we have to have some climate-independent sources of water such as desalination, but we can also push the boundaries in improving water use efficiency in agriculture and design our cities to be more resilient to this variability.

Land use planning, design and modelling all have roles to play as engineers, planners and architects go back to the drawing board and ask the hard questions. Is designing only for a one-in-100-year flood appropriate? Should we consider building to category five cyclone conditions in coastal areas?

Limiting development in vulnerable areas is preferred, but not always realistic as most settlements were established near water, leaving them exposed to flood.

While levees, dykes or bunds can help protect existing assets, more modelling and mapping are needed to identify vulnerable areas and plan for new developments. A review of building codes and standards is also needed so that materials match the appropriate level of risk. ■

Nick Apostolidis is responsible for the development of GHD's global water business.