

PPIRTM Overview

Summary

In November 2009 the Warren Centre for Advanced Engineering launched the report *Professional Performance, Innovation and Risk in Australian Engineering Practice (PPIRTM)*, authored by leaders in the engineering industry – see www.ppir.com.au to download a copy.

The PPIRTM report introduces:

- The PPIRTM Protocol for Performance – a guide to professional performance in engineering;
- The PPIRTM Protocol for Engagement – a guide to achieve optimum outcomes and value for money when contracting to undertake an engineering task; and
- Initiatives to improve professional, liability and legal frameworks in, and raise the status of, engineering.

The PPIRTM Report is significant because:

- its core aim is to promote excellence in engineering performance through application of the Performance Protocol, as the third leg of engineering professionalism (ethics, competency and performance);
- the Performance Protocol provides a framework for defining widely accepted engineering practice in Australia against which the 'duty and standard of care' of engineers can be objectively assessed;
- the Engagement Protocol provides a framework for reaching a clear and shared understanding of the engineering task and how to establish a cost-effective, balanced working relationship for undertaking and accomplishing the task; and
- the initiatives in the report provide a change plan for the engineering industry and profession to address the changes in the operating environment of both engineers and corporations which have engineering at their core.

In July 2010 the Warren Centre commenced a second industry-funded project, *Engineering Professional Performance*, which aimed to create and test the tools required to implement the change plan set out in the PPIRTM report. These tools, consisting of an industry adoption guide and training modules were made available to sponsors in mid-2013.

In August 2013 the Warren Centre commenced a third industry-funded project, *Mobilising PPIR*, in which the sponsors aim to roll out PPIRTM in their organisations and achieve widespread support for PPIRTM.

Mobilising PPIR Sponsors

Leading Sponsors

Leighton Holdings

Platinum Sponsors

Ausgrid

GHD

Golder Associates

Sinclair Knight Merz

Thales Australia

Transgrid

Transport Projects Division
of Transport for NSW

Gold Sponsors

Norton Rose Fulbright

Pentair Water &
Environmental Systems

Silver Sponsors

Regional Rail Link Authority
Victoria

Tracey, Brunstrom &
Hammond

Supporting Organisations

Transport

& Main Roads (QLD)

CGU

Engineers Australia

Consult Australia

ATSE

ICCPM

IChemE

AIPM

Contemporary Realities

In recent decades there has been a dramatic shift in the commercial and professional contexts in which professional engineers operate. Our research revealed that this shift is due to the cumulative effect of the following:

- complex and legalistic commercial relationships with inadequate focus on the engineering task;
- insufficient engineering involvement in procurement (which has been described as being “of the tick the box variety”);
- risk management being dominated by risk segmentation and misallocation;
- insurance underwriters finding it difficult to understand the risks as presented and to accurately assess parties’ exposures (which has at times resulted in difficulties in obtaining Professional Indemnity insurance)
- litigation being time-consuming and costly, its outcomes unpredictable and the quality of engineering expert testimony often questionable; and
- community expectations of professional engineers being, at times, unrealistic.

When the Warren Centre first started to consider these issues, it focused on the changes that needed to be made by those who worked with professional engineers and engineering corporations, such as engineering clients and the legal, insurance and financial services sectors. Over time, however, the discussion shifted. Instead of asking how engineers needed everyone else to change, the question became how professional engineers and the engineering industry should respond to the changes in their environment.

The question posed was: “How does the professional engineer approach and arrange a new task and how is it undertaken to ensure delivery of the final agreed outcome”.

Engineering performance is seen as forming the “third dimension” of engineering professionalism. Whilst there are generally accepted and well-defined sets of ethical and competency standards in engineering, there is a missing link: there is currently no standard of professional performance for professional engineers.



Three dimensions of Engineering Professionalism

This definition of “professional performance” lies at the heart of objectives of the PPIRTM Report and the change plan which the report outlines.

Objectives

The objectives of the PPIRTM report were to:

- (a) Define ‘professional performance’ by individuals in the practice of engineering by expressing in words:
 - a. what is professional practice when undertaking and managing a task in any field of engineering;
 - b. the basics of managing risk in a task, particularly where engineering innovation is applied;
 - c. the framework that should govern the relationship between the professional engineer and the parties to an engineering task;
 - d. what society should reasonably expect in relying on the special qualifications of the professional engineer; and
 - e. the legal basis from which the duty and standard of care of the professional engineer should be assessed in retrospect.
- (b) Propose a set of initiatives to bring about change in the professional, liability and legal frameworks that govern engineering, so that:
 - a. there is recognition of engineering professionalism in the law;
 - b. there is a greater recognition of engineering issues and innovation, particularly in contractual frameworks;
 - c. the relevance and quality of expert testimony is improved and strategies are put in place to address insurer’s concerns;
 - d. fewer professional liability issues arise and outcomes are more predictable;
 - e. innovation re-emerges as a driving force in Australian engineering practice; and
 - f. the status of engineering is raised.
- (c) Ensure that the outcomes of these changes offer material benefits to everyone involved in buying, selling and using engineering products and services.

The Change Plan

The change plan in the PPIRTM report envisages industry-wide adoption of the PPIRTM Protocols for Performance and Engagement – see www.ppir.com.au to download copies.

The *Performance* Protocol:

- (a) informs and guides the professional engineer acting individually or as a team member on the essentials of performance in undertaking an engineering task and all parties to, and stakeholders in, an engineering task on the role and obligations of the professional engineer and the effective use of such services; and
- (b) defines the essentials of performance against which the duty and standard of care of the professional engineer can be assessed objectively, both in prospect and in retrospect.



The eight elements of the PPIRTM Protocol

The *Engagement* Protocol:

- (a) informs and guides clients, suppliers and employers on the essentials of making effective use of the knowledge and experience of professional engineers to achieve optimum outcomes and value for money when undertaking an engineering task;
- (b) operates as a template to reach a clear and shared understanding of what the engineering task is about and how the parties can establish a cost-effective, balanced working relationship to undertake and accomplish the engineering task.

The PPIRTM Report proposes related initiatives that, together with the PPIRTM Protocols, form an integrated roadmap for change:

- (a) the new concept of an Integrated Element Structure and a formal, fully integrated 'best for risk management' approach;
- (c) a co-ordinated approach for the engineering industry and profession to improve the liability frameworks that impact on engineering.

Addressing the Contemporary Realities

The professional engineers and organisations that adopt the Performance and Engagement Protocols would address the "Contemporary Realities" referred to in page 2 above as follows:

- *Commercial Relationships* - Professional engineers would consult with parties to the task and agree the objectives and extent of the engineering task. At the corporate level, the parties would

www.ppir.com.au

assess and agree the objectives and extent of the engineering task, exploring in particular the relevant expectations and outcomes and perceived best interests of the client using the Engagement Protocol.

- *Procurement* - Both the professional engineer and the client/supplier would focus on defining the engineering task, rather than following a form for procurement that does not match the task. Part of the role of the professional engineer is to liaise with the client to define that task.
- *Risk Management* – the risk management approach in the Protocols promotes the principle that risk be managed by the party best able to manage the risk. This includes principles to ensure delegation is not made where there is not the capacity to manage or bear the risk.
- *Insurance* - The Performance Protocol gives insurers a tool to assess professional performance in the professional indemnity context. Better definition of the task and better risk management will also assist insurers to understand the contractual exposure of engineering companies, which will impact contract works insurance.
- *Litigation* - Performing professionally and being supported in that performance by all parties is more likely to result in getting things right up front, which in turn should result in less litigation. Where there is litigation the Performance Protocol will assist to identify and narrow the areas of dispute. It will also ensure greater predictability of result if expert witnesses use the Performance Protocol to assess the performance of professional engineers and, ultimately, the performance of the party contracted to deliver engineering products and services.
- *Community Expectations* - Although this aspect will take a longer time to address, a greater understanding of what professional engineers do is the starting point for changing the expectations of the wider community and PPIR™ can contribute to that better understanding.

Benefits

The change plan proposed in the PPIR™ Report is specifically designed to offer benefits to all those involved in buying, selling and using engineering products and services. Some of these benefits are set out in the table below.

What does PPIR™ offer you?	
For the professional engineer <ul style="list-style-type: none"> • A guide on performing engineering tasks professionally • A clear definition of expectations and responsibilities of individuals & teams • Greater confidence in future assessment of professional judgement • Complement top/down corporate processes 	For the public <ul style="list-style-type: none"> • A defined template for 'best practice' • A clear and shared understanding of tasks • 'Value for money' in engineering endeavours • Less disputes, better ADR, better expert testimony, streamlining litigation
For buyers of engineering services <ul style="list-style-type: none"> • 'Best for project' philosophy • Better risk management • Mechanism for measuring the performance of contractors • Fewer disputes / quicker resolution 	For suppliers of engineering services <ul style="list-style-type: none"> • Emphasis on defining the task, not on remedies • Better risk management • Innovation & improved insurance risk profile • More balance and equity – a level playing field

www.ppir.com.au

Further, the PPIR™ change plan can lead to:

- wider recognition of Australia's high engineering standards;
- increased competitiveness of Australian engineering world markets;
- undergraduates being better prepared to become professional engineers;
- improved awareness of the professionalism of engineering that will help attract young people into engineering careers.

By bringing into force the proposals outlined in the PPIR™ Report, the engineering industry and profession can raise its public profile, its economic productivity and its international competitiveness. It can deliver to the economy and public at large outcomes that will gain and deserve increased recognition for the vitally important role played by engineering in everyday Australian life.

Mobilising PPIR™

In August 2013 the Mobilising PPIR project was commenced. This project is coordinated by the Warren Centre and aims to implement the change program in the PPIR™ Report, namely to achieve widespread support of PPIR in the engineering industry and profession, by:

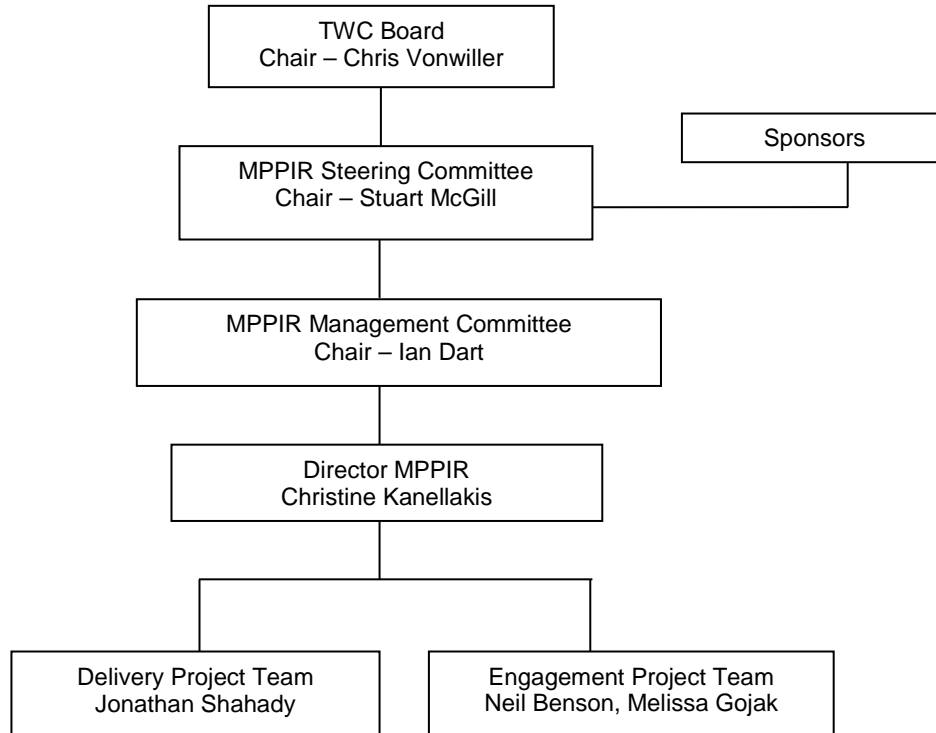
- Promoting sponsorship of Mobilising PPIR
- Promoting adoption of PPIR by procurers of engineering products and services, including State and Federal government procurement agencies
- Promoting and supporting pilots and roll-outs of PPIR
- Collating and disseminating findings from the PPIR pilots and roll-outs
- Promoting certification where roll out of PPIR takes place
- Promoting adoption of PPIR in undergraduate and post-graduate tertiary qualifications
- Promoting adoption of PPIR by professional associations

The project team will also take advantage of opportunities that arise to create:

- an expert witness program based on PPIR; and
- an independent body to take custody of PPIR from The Warren Centre.

The structure of the Mobilising PPIR project follows the usual Warren Centre structure of industry funded projects, as follows:

Structure of the Mobilising PPIRTM Project



Further Information

If you would like further information on the Mobilising PPIR Project or if you would like to get involved in a pilot, as a sponsor or as a volunteer please contact:

Christine Kanellakis

Director PPIR
 02 9787 5736
 0411 191 761
christine@ckonsult.com.au.

13.05.14