



Independent Review of Infrastructure Australia

Submission relating to

**National Guidelines for Infrastructure Project Delivery:
Approaches to infrastructure project delivery**

Prepared by:

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About the authors



Emeritus Professor Derek H.T. Walker
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Derek Walker is Emeritus Professor at RMIT University where he researches project management, specifically in infrastructure integrated project delivery and Alliancing. In 2018 he won the International Project Management Association (IPMA) research excellence award for lifetime achievements in project management research. His 2020 book *The Routledge Handbook of Integrated Project Delivery* is a 28 chapter book co-edited with Professor Steve Rowlinson of Hong Kong University. The book he co-authored with Keith Hampson of the Sustainable Built Environment National Research Centre *Procurement Strategies: A Relationship Based Approach* (Walker and Hampson, 2003) formed a pivotal influence in following research into Alliancing and was an original source of independent academic study of the National Museum of Australia project that has been cited widely. Derek has published more than 100 refereed scientific journal papers and more than 70 book chapters. His current specialisation is collaboration and innovation in integrated project delivery with a focus on infrastructure and building projects.



Professor Keith Hampson
CEO, Sustainable Built Environment National Research Centre

Professor Keith Hampson is recognised globally for his award-winning collaborations translating research into practice in the construction industry. He established and is Chief Executive Officer of the Sustainable Built Environment National Research Centre and its CRC for Construction Innovation predecessor. He is also recent past President of the International Council for Research and Innovation in Building and Construction (CIB). Keith holds degrees in civil engineering (Hons) from Queensland University of Technology (QUT), an MBA from QUT and a PhD from Stanford University. He holds fellowships at the Australian Academy of Technology and Engineering, Engineers Australia and the Australian Institute of Company Directors. Keith has authored more than 200 publications, delivered on millions of dollars in industry research and mentored future leaders globally.

Scope and stakeholder perspective

This submission comprises the authors' reflections as academic research practitioners on *Alliancing* as a form of project procurement and delivery and the usefulness of the Australian Department of Infrastructure and Transport guidelines.

The authors also reflect on comments made to them by research colleagues internationally.

A focus on Alliancing and National Guidelines for Infrastructure Project Delivery

Both Professors Walker and Hampson have been involved in research into procurement and specifically alliancing as a form of project delivery for more than two decades.

Recently, Professor Walker has been active in research into Alliancing and other Integrated Project Delivery forms that led to publication of many academic papers and two books (Walker and Lloyd-Walker, 2015; Walker and Rowlinson, 2020).

Professor Hampson and Professor Walker have co-authored numerous academic papers. Moreover, they co-authored a book *Procurement Strategies: A Relationship Based Approach* (Walker and Hampson, 2003) based on a two-year longitudinal study of the *Project Alliance* for the 1999 [Acton Peninsula Project for the National Museum of Australia, Canberra](#). The Acton Peninsula project alliance was the first project alliance in building construction in the world.

Professors Walker and Hampson have widely cited Infrastructure Australia's various guidelines (Department of Infrastructure and Transport, 2011f;2011e;2011a;2011b;2011d;2011c;2015) in publications and found them to be comprehensive and comprehensible authoritative sources to use. They have individually interviewed and spoken with many Alliancing practitioners and form the view that these guides are useful and worthwhile.

On Alliancing and when it should be used

Findings from an Australian Research Council and Project Management Institute grant study identified the contexts where Alliancing may be best used, as shown on Table 1.

Table 1. Identified motivations to collaborate in an Integrated Project Delivery (IPD) form of contractual arrangement

Motivation	Explanation
1. Best value	IPD forms often place greater effort and emphasis on ensuring the <i>purpose</i> of the project is clear. Greater consideration is placed on coherence in strategy, on supporting sustainability and on creating a 'big picture' view of the project value outcome, increasingly incorporating social responsibility and triple bottom line (3BL ¹) considerations. Even financial bottom line-focused business managers have accepted that a focus on cost without consideration of value is restricting and delivers sub-optimal outcomes (Porter and Kramer, 2011).
2. Emergency recovery	Emergency situations and recovering from a crisis or disaster require swift responses in an environment where little may be known about the scope and scale of recovery works. A series of such situations is well documented in the literature (Waugh and Streib, 2006; Weick and Sutcliffe, 2007) and more recently by Wearne and White-Hunt (2014) in their book on managing the urgent and unexpected. Here, the key objective is to start recovery work very quickly while at the same time providing sufficient resilience to enable rapid changes in direction and/or emphasis. This requires deep collaboration to ensure agility, responsiveness and reflexivity.
3. Experimental	An experimentation strategy is needed when developing innovation and building new competences. Sometimes a project is triggered by the need to experiment. Brady and Davies (2004) class projects whose prime purpose is co-learning and exploration as 'vanguard' projects. These projects may be designed to develop completely new standalone outcomes; be part of a ramping-up of a learning curve to move to a more production-line approach for new standard-type projects; or used to pilot new products, assemblies, systems or procedures as was the case on the Terminal 5 Heathrow Airport project (Doherty, 2008).
4. Competitive resource availability environment	In highly buoyant economic times, government agencies and other highly constrained (employment levels and conditions) organisations may engage in IPD to offer opportunities to upskill and retain key employees. In less buoyant economic times, they may feel that they are in a strong position to demand more from those delivering projects. The business boom-and-bust cycle and the long lead time required to prepare staff capabilities for involvement in complex project delivery means that for government authorities, agencies and many large bureaucratic project owners (POs), retaining key staff and accessing expert temporary staff can present a significant challenge (Gardner, 2002; Martin and Schmidt, 2010).
5. Relational rationale	The relational rationale implies a perceived need to create, nurture and maintain a form of a relationship, though the extent of commitment may vary. Some choices may be based on negative past experiences to overcome problems caused, or at least exacerbated, by the chosen project delivery form. Other choices are based on positive past experience with use of a specific form of procurement that worked well within that context.
6. Known risks	Uncertainty and risk are acknowledged as present within all projects, to varying degrees, with some projects experiencing high levels of uncertainty that may also be difficult to quantify (Atkinson, Crawford and Ward, 2006). This, Atkinson, et al. (2006 p688) acknowledge, requires "management flexibility and tolerance of vagueness". Typically, on highly complicated projects dealing with known-unknown risks, the PO does not have sufficient knowledge about potential solutions to adequately frame their brief or define requirements. They are aware of what they don't know, and they are also aware of what other parties do not know. Collaboration, in this context, allows consideration of a wider range of potential solutions and a richer conversation about how to achieve the project goals.
7. Unknown risks	Dealing with unknown risks (unknown-known and unknown-unknown risks) poses a particular challenge to traditional and low-level IPD forms because high levels of specification inhibit performance through encouraging defensive routines and associated high levels of transaction cost. In this hyper-uncertain and ambiguous context the PO and project delivery management team members need a system that allows rapid flexibility to adapt to emerging realities, with high-level collaboration to facilitate maximising access to relevant knowledge, skills, attitudes and experience to resolve uncertainty. In this situation, all parties know that there are risks out there that they do not know enough about to identify, plan for and deal with. Sourcing expert advice, through an IPD form, is necessary for complex or chaotic situations when cause and effect loops are disjointed, but where patterns may be discerned (Kurtz and Snowden, 2003; Snowden and Boone, 2007).

¹ 3BL refers to three bottom-line performance values: financial, environmental and social outcomes.

Throughout the past decades of interviewing Alliancing practitioner experts, Professors Walker and Hampson have seen cases of Alliancing used successfully for the above contexts.

More recently, [Victoria's Level Crossing Removal Program \(LXRP\)](#) has successfully used Alliancing in an integrated program of projects, achieving substantial cost and time savings. Interviews with LXRP senior managers revealed that the context of these projects (brownfield sites with many unknowns and close to live electrified operating train lines) made them ideal for the integrated and highly collaborative form of delivery.

On reflecting on a number of recent public-private partnership (PPP) projects, Professors Walker and Hampson contend that Alliancing may have been a more realistic and better delivery approach. One (unnamed) project involved considerable disputes between a state government and the PPP entity over discovery of excessive levels of contaminated soil to be removed that was significantly greater than that allowed for in the PPP construction budget. It resulted in significant delays and high-cost impacts in the dispute between the Design & Construct contractor for the PPP owner and between the PPP and state government. These situations could have been more effectively resolved within an Alliancing context in the following ways:

- A. The target out-turn cost/time would have been more likely to be realistic (Walker, Love and Matthews, 2022; Walker, Vaz Serra and Love, 2022) with a more appropriate owner contingency developed
- B. An alliance approach would have enabled a fair and just solution to unexpected events, with greater clarity about the proportion each party (Alliance team and/or project owner) would bear for the impact of cost and time excesses.

Conclusion

In summary, Professors Walker and Hampson contend that Alliancing is a highly effective delivery approach where the situation demands this approach (as indicated in Table 1) and where the participants (project owner, design team, contractors etc) have sufficient skills and competencies to effectively collaborate as an integrated team in an Alliance format. Project Alliance Agreements (as Australian Government guidelines make clear) are highly valuable in framing and designing appropriate governance systems to deliver these projects.

Professors Walker and Hampson are available for consultation as may be required to add clarity and/or depth in this key area of infrastructure procurement and national opportunities for alliancing.

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