

**Safe and Sound?**  
**The public value trade-off in worker safety and public  
infrastructure procurement**

Paper for the IRSPM Panel on Public Values in Infrastructure, Potsdam April 2–4, 2007

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*Determining suppliers of public goods and services through ‘best value’ considerations has emerged as a viable alternative to market-based mechanisms that tended to rely on lowest cost. This type of procurement process has thereby enabled a focus on value-adding activities that may deliver innovative delivery mechanisms or services. Improved occupational health and safety (OHS) performance, through these ‘extra-market’ mechanisms, has become a salient issue in an Australian (and indeed global) industry context. In particular, the notion of selecting contractors according to their ability to deliver sound OHS outcomes has been given increasing attention in the scholarly literature and by forward-thinking clients. This approach reflects contemporary public values relating to the expectation that paid work should not involve preventable injuries or fatalities and should offer a working environment that encourages more than a minimalist approach to safety. As the internal labour market of public services is externalized and previous in-house regulations and safeguards are no longer in force, ways of achieving safe work practices through procurement regimes need to be advanced. The premise is that public infrastructure provision through private contracts should encourage safe occupational practices.*

#### **1. Introduction and contextual overview**

The Australian construction industry has long been regarded as having an unacceptable occupational health and safety (OHS) record (Cole, 2003; Lingard and Rowlinson, 2005; Wild, 2005). Studies in other nations have provided comparable nations (e.g., Alves Dias, 1995; Suraji *et al.*, 2001). As a result, improving safety on-site has emerged as a matter of great concern, especially for government agencies and regulatory authorities. Since the inherent hazards of on-site construction work make construction workers highly vulnerable, safety, it follows, should be regarded as one of the most salient public values, and one which needs to be taken into account when decisions are made with regard to the procurement of infrastructure. This is especially pertinent to public sector clients. Yet other public values currently appear to militate against worker safety being given the importance that it should warrant.

This paper, which draws upon qualitative data from an Australian research project focussing on the development of a voluntary code of practice for construction industry OHS commissioned by Engineers Australia and supported by a variety of peak organizations,<sup>1</sup> contends that improved OHS is now increasingly seen as a public value in construction procurement. However, other public values, it stands to reason, must also necessarily be considered when contracts are awarded for publicly-funded or subsidized projects. In light of this, it is argued that public sector decision-makers are under increasing pressure to balance

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<sup>1</sup> In particular, the Australian Contractors’ Association, Property Council of Australia, Royal Australian Institute of Architects, Association of Consulting Engineers Australia, Australian Procurement and Construction Council, Master Builders Australia and the CRC for Construction Innovation.

improved OHS performance (at least beyond what is currently stipulated by law or regulation), with a variety of other public values, including value for money, feasible cost, timely completion, suitability for purpose, and public accountability.

Public value trade-offs are particularly pertinent in relation to public-private partnership (PPP), whereby arrangements are made that serve the interests of both the private sector and government (van Ham and Koppenjan, 2001; Hodge and Greve, 2005; Jefferies, 2006). PPPs are perceived by Australian governments, in addition to those of many OECD nations, to be the most cost-effective delivery method for procuring public infrastructure (Duffield, 2001). Of the various forms, private finance initiatives (PFIs) are the most common specific means to secure funding in a construction industry environment (Pitt *et al.*, 2006). According to these arrangements, government takes advantage of private sector management skills, while private resources rather than solely public monies are put at risk. As Bovaird (2004) suggests, this kind of relationship goes far beyond a simple mutual agreement and, in many cases, refers to transferring responsibilities, especially with regard to the more problematic infrastructure-based services expected by the general public. These partnerships aim to provide high levels of transparency in order to assure competitiveness and value for money (Pitt *et al.*, 2006), and also require the building of strong relationships across the sectors involved in order to engender trust and reciprocity (Acar and Robertson, 2004). This creation of trust is contingent on mutual agreement regarding which public values are most pertinent to the successful completion of the project (Moore, 1995). In the case of most PPPs, however, the most salient of the public values incorporated into the decision-making process is 'best value' (Zhang, 2006), to the exclusion of safety for those involved in project delivery.

In PPP arrangements, public and commercial project objectives, especially in view of the rent-seeking activities of the latter, may not be entirely compatible, which entails the necessity of safeguarding mechanisms. Indeed, El-Higzi (2002) points out that the most important long-term objectives of any company are survival and growth. In view of this, there is the potential for tensions to emerge between more traditional economic-centred and performance-based public values and improved OHS performance. This paper will discuss the political and public-values context in which public infrastructure decision-making is made, the degree to which trade-offs are made in the decision-making process, and the compatibility of improved OHS with other public values. The paper concludes by presenting a set of recommendations for balancing improved OHS performance expectations with other publicly-held values.

## **2. Public values in public infrastructure procurement**

As stated above, the externalization of the provision of major infrastructure by public sector agencies raises many questions with regard to ensuring that public value expectations are met during the selection, design and execution phases of an infrastructure project destined for public use. This viewpoint also pertains, by extension, to private sector clients delivering infrastructure once provided and operated by government. Of especial interest are cases where infrastructure intended for public use is provided by a privatized entity. Indeed, since many public amenities once owned and operated by government have been transferred to the private sector (Schipke, 2001; Zohlhöfer and Obinger, 2006), amplification of such infrastructures still broadly falls under the rubric of public infrastructure provision. This means that government, being expected to deliver the public values inherent in such infrastructures (De Bruijn and Dicke, 2006), should concern itself with ensuring that activities relating to these infrastructures are aligned with broader public value expectations.

Thus the public value of safety, i.e., that workers have the right to carry out their paid duties without incidence of death or debilitating injury, emerges as an especially important

value. Indeed, under Australian law, employers have a duty of care to provide their workers with a safe workplace. Indeed, the Supreme Court of Victoria (1992) has determined that “one of the chief responsibilities of all employers is the safety of those who work for them.” Such a duty has been held by Australian courts to apply not only to direct employees of a firm, but also to a firm’s subcontractors (Rozen, 2004). No culpability, however, has yet been assigned to a client for failing to ensure worker safety, even though recent literature suggests that subcontractors should be regarded as being employed by the client rather than principal contractors (Arditi and Chotibhongs, 2006). These considerations emerge as especially important when it is considered that roughly 80 per cent of contract expenditure in OECD nations relates to subcontracting (Packham *et al.*, 2001).

That on-site safety has become a public expectation, in much the same way as long-term sustainability and environmental protection, is clearly demonstrated by the efforts being made by various levels of government to improve the OHS record of the Australian construction industry (Royal Commission into the Building and Construction Industry, 2002). The media, it might be argued, has also played a part with regard to exposing the inadequate attention traditionally paid to worker safety on construction sites, something which has allowed the issue of worker safety to take on mainstream importance in contemporary discourses on work and public values.

Problems, however, emerge when it comes to realizing the public value of worker safety. Indeed, this public value, in addition to long-term sustainability and environmental protection, have traditionally tended to lose their salience when they clash with more thoroughly embedded public values such as reasonable cost, timeliness of completion and quality (Jones *et al.*, 2006). Yet the rising acceptance of corporate social responsibility (CSR), according to which firms need to realize the potential impact that their activities have on the environment, their workers, and society as a whole, has prompted forward-thinking firms to come to the realization that value need not only be represented in terms of project-specific income, or savings realized (Pitt *et al.* 2006). Rather, the concept of value relies on overall standards of quality measured according to a variety of criteria. ‘Value for money’, moreover, should not be at the expense of the safety of employees employed by the principal contractor. Unfortunately, there has traditionally been a lack of concern, in Australia, with regard to attention being paid to public concerns such as pollution, waste, noise and safety (Smith and Love, 2001, p. 73).

A recent Australian investigation conducted by Mills (2005) concluded that attitudes regarding prequalification in contractual agreements are mainly dominated by concern for past performance rather than worker safety. The top five criteria for public and private sector clients combined were, in order, “Details of past projects/track record, Success of completed projects, Bank reference, Past project time performance” (Mills, 2005, p. R85). The criterion of “OH&S key personnel” ranked a lowly 32 out of 39 for the combined group.<sup>2</sup> Mills’s study also contends that contractors and clients (both public and private) generally do not share the same views on important selection criteria and the values encompassed by those criteria. Even more surprising is that public sector contractors, in the same study, rated “OH&S key personnel” more lowly (ranking of 13) as a determinant of tender success than their private sector counterparts (ranking of 16).

## **2.1. Theoretical constructs**

Some theoretical bases for the argument contained herein warrant discussion. The definition of public values can be quite broad. Even though different authors writing on this subject use similar concepts such as ‘public interests’, ‘public norms’, ‘general interest’, ‘public values’

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<sup>2</sup> Separate results for public and private sector clients are not provided, though the responses of 15 public sector clients representing 9 agencies were included in the sample.

and ‘public objectives’, these terms can all mean very different things (De Bruijn and Dicke, 2006). Such authors generally argue that the protection of individual public values represents costs, and that each public value taken into consideration generally requires a trade-off in order to engender overall efficiency (De Bruijn and Dicke, 2006). According to this reasoning, if all public values are given equal salience, it would be impossible, in most cases, to realize a project in any workable sense. Thus the relative nature of public values means that they are often conflictive, i.e., public values always compete with each other and trade-offs are necessary (Moore, 1995). These trade-offs are required even when they may be seen as inconvenient for some of the different stakeholders involved in the realization process. As De Bruijn and Dicke (2006) suggest, these kinds of sacrifices are sometimes perceived as necessary, even by those most inconvenienced by these trade-offs in the first place.

There are three important theoretical approaches with regard to public values. These have been elaborated in detail elsewhere (e.g., De Bruijn and Dicke, 2006). A broad summary, therefore, will suffice. The first is the universalistic approach, which considers public values at an abstract level. The very nature of this approach means that trade-offs are not possible, especially since the universalistic approach has an affinity with the natural law perspective, which maintains that certain rights are accorded by nature and must therefore be respected (Lasswell and McDougal, 1992; Passerin d’Entrèves, 1994). The second approach is the stakeholder approach, whereby public values are the result of public debate and stakeholder negotiations regarding the conception and realization of a particular project (Van Gestel *et al.*, 2007). Values may be considered at an abstract level, yet trade-offs between these values are necessitated as part of the negotiation process. This means that some public values will lose their salience, or else be passed over entirely. The third approach, viz., the insitutional approach, holds that public values are not universal, yet neither do they result from stakeholder interaction. Rather, perceptions of public values are sector, culture and time specific. Likewise, the trade-offs produced will differ according to the sector, the national context, or even the historical circumstances on account of actors being embedded in an institutional environment that constrains and shapes their behaviours and rationalities (Meyer and Rowan, 1977; Ostrom *et al.*, 1990; March and Olsen, 1989; Van Gestel, 2005).

In light of the above, it would appear that the stakeholder approach best explains what has traditionally occurred (and, in many cases, what currently occurs) in construction-industry contexts, especially with regard to the public value of worker safety. Indeed, *all* stakeholders in a negotiation process would agree, at an abstract level, that the protection of construction workers is of extreme important. This was borne out by qualitative data collected for this paper. For example, although it was reported by designers that OHS was traditionally deemed “the constructor’s job,” they now increasingly view safety as a consideration: “I’m seeing a trend whereby the ability to constantly deliver on the safety aspects of a job is almost a requisite for whether you get the rest of it right.” Yet interview data also make the claim that, “for the designers, ... the point of view of safety as a public value is not about workers directly, but about what it is that the client wants from them.” This point is also illustrated by the following from a constructor: “There are two sets of values: one set that the corporate guys wrote, someone drafted and then stuck in an annual report; and then there are the real values, which aren’t written down anywhere. They are the values you find when you have a look into the business.”

When it comes to operationalizing public values, then, safety may not be given the prominence that has been accorded to it in an abstract sense. This is especially so when a client’s desire for a reasonable price, timeliness of construction and overall quality are matched with a constructor’s desire to maximize returns and thereby ensure ongoing profitability (i.e., the “real values”, as explained above). This observation generally coheres with Woodward’s reflection (1997) that, on the whole, construction management has

generally being influenced by three dominant values, viz., time, cost and quality. Yip (2000) adds to this by stating that these values are mainly encouraged by the client, more so since the client controls the initial budget and is the one most concerned with the final outcome of the construction process. It is for this reason that Coble and Blatter (1999) and the CFMEU (2003) contend that the underlying cause of poor OHS in construction is “a culture of cost cutting.” The stakeholder approach therefore explains, to some degree, why safety has generally failed to matter as much as it should in the designer’s office, or on-site.

## **2.2. Mechanisms of control**

In order to establish an accurate balance between different public values, De Bruijn and Dicke (2006) contend that a combination of three well-known control mechanisms should be followed since this has a greater potential to lead to stability among the different public values that need to be considered in an infrastructure project.

The first mechanism described is hierarchy. This refers to realizing public values by means of regulations. These can be of either a legal or voluntary nature. Thus the realization of public values becomes a norm that must be followed by the main stakeholders. With regard to the creation of a voluntary code of practice, such a code could eventually lead to long-term legislative change (Helby, 2000). De Bruijn and Dicke (2006) argue that self-regulation can be a powerful trade-off for certain values. Helby (2000, p. 4), however, argues that stringent regulations may be viewed by stakeholders and indeed practitioners as “unnatural,” especially if they compromise the normal dynamic structure of operations. Thus the formulation and attempted application of hierarchy in order to impose a public value does not mean that the value in question will reach operational levels. This was demonstrated by some of the data collected for the project described herein. Indeed, this data suggested that, even in cases where construction sites have operationalized their own self-imposed safety regulations, individuals may not necessarily follow them.

The second mechanism is network. This refers to a negotiated agreement being established among the different stakeholders involved. Such a process, therefore, seeks to establish a mutual understanding and acceptance of a public value. For instance, the creation of a voluntary code of practice for OHS in the Australian construction industry is predicated on common agreement being established among the main stakeholders. In this case, key parties would refer to peak organizations representing the interests of clients, designers and constructors, in addition to regulatory bodies, the property sector, the supplier network, the education sector, and various professional organizations (Commonwealth of Australia, 1999). In this way, it is argued, some kind of workable balance with regard to trade-offs could be reached.

The third mechanism is market. To return to the example of a voluntary code of practice for OHS, such a code may not actually affect practice and behaviour on-site. This may be true even after integrated negotiation has occurred among the most prominent stakeholders within the industry. As a consequence, De Bruijn and Dicke (2006) suggest that competition can be used as a motivation for the different stakeholders to work together in order to realize public values. Thus market agreements that aim to protect public values may not only be useful with respect to establishing OHS as a primary public value, but also have the potential to safeguard the value at an operational level. It emerges, therefore, that embracing a public value such as worker safety could lead to a distinctive competitive advantage. That reputational capital allows one organization to differentiate itself from competitors is vital to the concept of brand positioning (Cooper and Dukart, 1997; Rechenhain, 2004; Tosun, 2004), something which could ultimately represent a vital difference in highly competitive sectors such as the construction industry (ICAF, 2001). Despite this, constructors interviewed for this research were unsure about such theoretical constructs. Indeed, one constructor stated that “If you are

really serious about stopping people from getting hurt, it can *never* be a competitive advantage.”

In sum, a combination of the three control mechanisms discussed *supra*, viz., hierarchy, network and control, has the potential to make the public value of worker safety more salient during the conception, detailed planning and realization of major infrastructure. To summarize, hierarchy involves regulations that will lead to industry norms, network ensures consensus and attempts to achieve balance between trade-offs, while market guarantees that providers of infrastructure will compete with each other, not just on the basis of price and quality, but also on account of the ability to ensure a safe work-site. Yet, for the latter to occur, enhanced worker safety, as an industry value, *must* be driven by the client. Adherence to only one of these mechanisms, it follows, would not bring about the most optimal realization of safety as a public value in infrastructure procurement.

### **2.3. Concretizing public values**

Looking for a balanced trade-off in order to maximize public values is one of the main concerns in modern management strategies (Cole and Parston, 2006). According to Cole and Parston (2006), one of the principal value drivers is the achievement of high performance. Yet high performance, according to the reasoning employed previously in this paper, will necessarily mean different things to different stakeholders. Moreover, the ways in which to achieve overall high performance will also necessarily differ. Thus the varying ways in which organizations involved in project realization attempt to achieve high performance can easily lead to trade-offs with regard to specific public values.

If the organization does not know how to measure or else concretize each of these values, this can potentially lead to a lower overall performance in the long term (Cole and Parston, 2006). Therefore, a cohesive management strategy needs to bear in mind all the outcomes that the project aims to achieve, rather than just one single outcome. Trade-offs, of course, always entail less than optimum consequences for some of the parties involved in a negotiation process. Thus the ideal means to arrive at final decisions would look at all the potential outcomes and make sure that every single contributing organization is aware of the nature of these outcomes. What is more, all the parties would need to determine if the predicted consequences fall beneath their respective thresholds of tolerance.

### **3. Public values and the client**

The paper will now examine the notion of the public value of worker safety and differences between private and public sector attitudes. This is especially the case since, as described above, the provision of many public services, as a result of neo-liberal economic thought (Quiggin, 2002), is now undertaken by private sector organizations operating beneath a broad regulatory framework imposed by government (Cannadi and Dollery, 2005). Such transferred public services, many of which might be defined as “natural monopolies” (Cannadi and Dollery, 2005, p. 113), include garbage collection, railways, energy and water supply, and airports. Since these public values were once realized by government on behalf of the public, that is, before their transfer to the private sector, the public still looks to government to ensure that the public values at stake continue to be realized in an equitable, accessible and transparent fashion in order to ensure that rent-seeking behaviour on the part of private concerns does not infringe upon the public good. Many public values, of course, are realized by means of the provision of infrastructure. Some examples include a ready and accessible supply of water and energy, in addition to accessible transport infrastructure such as bridges, roads, railways and airports.

In the following section, data gleaned from interviews of case studies pertaining to OHS in the Australian construction industry will be used. Within the construction process three main parties are involved, these being the client, designer and constructor. Of concern with regard to promoting more integrated approaches to safety is that the traditional methods of construction tend to reinforce the division of professions in design and construction, all the while removing the client from operational decision-making (Gray *et al.*, 1994).

### **3.1. Redefining the client's role in infrastructure provision**

It was found that safety, as a public value, is generally expected to be driven by the constructor at an operational level. Indeed, in all the case studies examined as part of the broader Safer Construction project of which this research forms a part, leadership, during the execution stage of the infrastructure realization process, was always provided by the constructor. However, for the designers and constructors, it is clear that the client is the party with the potential to make safety a priority from conception through to commissioning. According to one designer, "I'd say that clients are a big, big influence. As soon as clients say we are not going to give you this job because you haven't convinced us that you have credible safety practices, you either go out of business or you change" (designer). Yet the results of the interviews, with regard to the salience of the public value of worker safety on-site, were quite variable and sometimes contradictory, all of which demonstrates a lack of clarification about worker safety, and again demonstrates a pressing need to concretize this value.

In general, the interviews support the notion that safety is a significant abstract value within the Australian industry. Still, there is a feeling that 'value', in the sense of the infrastructure being fit for purpose at an appropriate financial cost, is increasingly becoming a highly important client desideratum (Ryan *et al.*, 2006). The perspective of the client, however, remains ambiguous, at least according to the data collected. Indeed, although clients regard safety as an important public value, Australian owners and clients do not feel the need to become involved in safety issues on-site, or, what is much worse, at project conception. One designer contended that "Safety is at the front, but not at the forefront." In accord with this viewpoint, which is also supported by Mills's study (2005), the message from the client, according to another constructor, is that safety is merely one of many public values to be considered, despite the rhetoric that is being increasingly espoused to the contrary: "The message in construction is always about getting the job done, whatever you have to do, get the job done and 'by the way do it safely'." Many constructors, at present, do not even understand why a client would want to concern itself with safety in the first place. One constructor even asked "What is the value proposition for a client to do that? [i.e., prioritize worker safety]."

Thus a relatively high degree of apathy still exists among clients procuring infrastructure, despite claims that there are good reasons for a client to promote worker safety, such as the negative publicity ensuing from death or serious injury on-site, delays resulting from such incidents, and liability costs incurred as a result of accidents (Davies and Tomasin, 1996). It is readily agreed, however, both by interviewees and the bulk of scholarly literature (e.g., Samelson and Levitt, 1982; Hinze and Raboud, 1988; Jaselskis *et al.*, 1996; Bluff, 2003; Mills, 2005), that clients have the opportunity to be the main drivers of improving worker safety on construction sites. This is an especially relevant consideration for those designers who do not yet view worker safety as a particularly important aspect of their brief. Such designers continue to ignore the increasing salience of worker safety as a public value, and that there is an expectation for this value to be safeguarded by those with the ability to do so. Yet, as one designer points out, worker safety too often "gets pushed down and the result is an accident on-site." Designers and constructors are also aware of the difficulties inherent in trying to make the clients regard worker safety as a primary value, especially when costs could increase if safety for workers is prioritized: "There is no doubt that the costs of

accidents in dollar terms ... are three or four million dollars before you blink” (designer). Thus clients “need to understand the value that they are getting from these increased costs.”

Overall, the client represents an important contributing party within the management of a construction project (Barnes, 1988; Neap and Aysal, 2004). This is not only because the client is the party providing funds for project execution, but also because the client is the party most likely to add value to the project and clearly define responsibilities in a contractual sense (Samelson and Levitt, 1982).

### **3.2 Public and private compared**

There are two types of clients to consider, viz., public ones and private ones. The former have an obligation to provide some form of service and are thus accountable to society, while the latter’s main obligation is to maximize shareholder benefit to the exclusion of other objectives (Rowlinson, 1999). Some private clients, of course, desire to become more involved in protecting workers on-site, as case study data from the Safer Construction project have revealed. However, there is (or so it is reported) considerable resistance within this sector regarding the need to be more responsible for worker safety. As one private sector client representative put it, “All those people who say the client should be more involved don’t understand that the client is going to be less involved, because they have more important things to do.” Indeed, some clients fail to see any connection between themselves and responsibility for the worker: “Clients cannot be compelled to adopt best OHS practices because it is a free market economy.”

For some clients, value for money will clearly become more important. If a relationship between this value and the public value of worker safety becomes more entrenched, this has the potential to affect their monetary interests. Such a scenario, it is argued, would force presently apathetic clients to become interested in ensuring the salience of worker safety on their projects. Thus, for the private sector client to recognize and operationalize safety as a primary public value, “There has to be a heavy value statement from a company’s shareholders or for those that the client acts for, in order for safety to become a major issue” (private sector client).

On the other hand, governments, as procurers of infrastructure, have rather different responsibilities, especially if they are viewed as acting in accordance with public interests, and concomitant values. Within this sector, the value of safety need not be so closely tied to the concept (and indeed public value) of securing ‘value for money’, at least in a traditional sense. For the public sector client, therefore, the rubric of ‘value for money’ can easily be expanded in order to accommodate worker safety. For example, that no workers were killed or injured during the realization of a public infrastructure project should emerge as a ‘value for money’ outcome that delivers the public values of value for money and worker safety: “It is easy for government clients to put the safety message across, but private sector clients focus on matters that are linked to returns on equity” (private sector client representative).

Indeed, clients representing the public sector, according to interview data, have a different perception of their role in the industry, especially on account of their desire to accept safety as an important public value. Such clients are also aware that it is important to be involved in the safety process: “That is not to say that everyone in the public service [who] gets involved in the construction does [understand their obligations with respect to safety], particularly with the decentralization that has occurred in a lot of the jurisdiction” (public sector client). The view was also expressed that public sector clients “take OHS extremely seriously and have been doing so for many years .... It is something that is re-looked, readdressed and reconsidered on a constant basis.”

The reason that the public sector is keen to accept safety as a primary public value in infrastructure procurement seems to be related closely to public opinion, “If there is a death

on a government project, politically that is just hideous” (public sector client). If the interview data is given credence, the public sector is aware that, as a client of designers and the broader construction industry, its influence with regard to worker safety rests on going beyond a merely supervisory level. This concurs with research, such as that of Smith and Love (2001), suggesting that clients need to become more involved in the general construction process, and thereby promote more integrated approaches regarding design and construction (Love *et al.*, 2000). Public sector clients are also now recognizing that improving designers’ attitudes with respect to accepting responsibility for worker safety is contingent on improving their own attitudes and behaviour (Coble and Blatter, 1999; Campion, 2000). In addition, clients are aware of the influence that they can have on the behaviours and practices of designers and constructors.

In short, it emerges that the developing trend of public sector clients ensuring the safety of workers on construction sites may have an important part to play with respect to changing attitudes *throughout* the industry. Thus public sector clients have the ability to set standards that the rest of industry will follow. This also relates, by extension, to the way in which clients should behave, especially with regard to the extent that they factor in important public values into the decision-making process when infrastructure is procured. As one public sector client put it, “It is about leading by best practice, but it is more than that. It is leading almost by *de facto* requirement. It is effectively saying, that best practice is the best way to behave, so there is an expectation [that other clients] clients will behave that way.”

Clients in the public sector thus have the opportunity to drive safety as priority; first, by establishing it a primarily selection criteria in the contractual process, and then by encouraging the private sector to follow their example.

#### **4. Conclusions**

This paper has attempted to point a way forward with regard to ensuring that the public value of safety is given the salience that it deserves during the realization of public infrastructure. As a concomitant, pathways to ensure the increased prominence of worker safety should also assist with respect to ensuring that similar traditionally ‘soft’ public values, such as sustainability and environmental protection, are given the attention that they deserve and are not traded-off during the negotiation phases. More importantly, it has been argued that worker safety needs to be operationalized as a value by means of greater concretization, that is, by rigorous definition of the concept and incorporation into requested tender documentation.

The client, it emerges, has the greatest potential to affect change, not necessarily on account of ongoing involvement in the realization of infrastructure, but because the client has the potential to make optimum worker safety a project deliverable. In this way, worker safety forms parts of the overall concept of value. This is especially true for public sector clients given that the community does indeed place a high value on the preservation of life and the prevention of injury on-site. In these circumstances, the possibility of some added cost is balanced by a guarantee of improved safety on-site. Thus best-practice (or indeed leading practice) worker safety, specifically defined as such, should be incorporated into contract selection criteria and given the same weighting as more traditional public values such as low cost, quality and timeliness of completion. In accord with this, worker safety would no longer be viewed as an incidental consideration—it would become a core value.

## References

- Acar, M. and P.J. Robertson (2004). "Accountability Challenges in Networks and Partnerships: Evidence From Educational Partnerships in the United States", *International Review of Administrative Sciences*, 70(2): 331–344.
- Alves Dias, L.M. (1999). "Construction Safety Coordination in Portugal", in id. and R.J. Coble (eds.), *Proceedings of the Conference on Construction Safety Coordination in the European Union*, CIB Publication 238, CIB Working Commission W99. Lisbon: CIB, pp. 153–163.
- Arditi, D. and R. Chotibhongs (2005). "Issues in Subcontracting Practice", *Journal of Construction Engineering and Management*, 131(8): 866–876.
- Barnes, M. (1988). "Construction Project Management", *Project Management* 6(2): 69–79.
- Bovaird, T. (2004). "Public-Private Partnerships: From Contested Concepts to Prevalent Practice", *International Review of Administrative Sciences*, 70(2): 199–215.
- Bluff, L. (2003). "Regulating Safe Design and Planning of Construction Works: A Review of Strategies for Regulating OHS in the Design and Planning of Buildings, Structures and Other Construction Projects", Working Paper 19. Canberra: National Research Centre for Occupational Health and Safety Regulation, Australian National University.
- Bruijn, H. de and W. Dicke (2006). "Strategies for Safeguarding Public Values in Liberalized Utility Sectors", *Public Administration* 84(3): 717–735.
- Campion, C. (2000). "The Impact of Design on Contractor Health and Safety", *Journal of Occupational Safe and Safety*, 26(6): 501–506.
- Cannadi, J. and B. Dollery (2005). "An Evaluation of Private Sector Provision of Public Infrastructure in Australian Local Government", *Australian Journal of Public Administration*, 64(3): 112–118.
- CFMEU (2003). "Safety on Australian Construction Sites", Construction, Forestry, Mining and Energy Union (Australia), available at: <http://www.cfmeu.asn.au/construction/pdfs/safetyFeb03.pdf> (accessed February 2007).
- Coble, R.J. and L.R. Blatter (1999). "Concerns with Safety in Design/Build Process", *Journal of Architectural Engineering*, 5(2): 44–48.
- Cole, M. and G. Parston (2006). *Unlocking Public Value: A New Model for Achieving High Performance in Public Service Organizations*. New York: John Wiley & Sons.
- Cole, T. (2003). *Final Report of the Royal Commission into the Building and Construction: Summary of Findings and Recommendations Volume 1*. Canberra: AGPS.
- Commonwealth of Australia (1999). *Building for Growth: An Analysis of the Australian Building and Construction Industries*, available at: [http://www.industry.gov.au/assets/documents/itrinternet/Building\\_for\\_Growth\\_Industry\\_Analysis20050808135954.pdf](http://www.industry.gov.au/assets/documents/itrinternet/Building_for_Growth_Industry_Analysis20050808135954.pdf) (accessed February 2007).
- Cooper, L. and J. Dukart (1997). "Carriers Study to Build Brand Equity", *Communication Week*, 3(3): 65.
- Davies V.J. and K. Tomasin (1996). *Construction Safety Handbook*, 2<sup>nd</sup> edn. London: Thomas Telford.
- Duffield, C.F (2001). *An Evaluation Framework for Privately Funded Infrastructure Projects in Australia*, PhD Thesis, Department of Civil and Environmental Engineering, University of Melbourne.
- El-Higzi, F.A. (2002). "Examining International Trade Flows for Australian Construction Companies", *International Journal of Social Economics*, 29(6): 491–507.
- Gestel, N. van, J.F.M. Koppenjan, I. Schrijvers, A. van de Ven and W. Veeneman (2007). "Public Values in Transport and Energy Projects", Paper for IRSPM Panel on Public Values and Infrastructure Policies, Potsdam 2007, Nijmegen/Delft, forthcoming.

- Gray, C., W. Hughes and J. Bennett (1994). *The Successful Management of Design Management*, Centre for Strategic Studies in Construction. Reading: University of Reading.
- Ham, J.C. van and J.F.M. Koppenjan (2001). "Building Public-Private Partnerships: Assessing and Managing Risks in Port Development", *Public Management Review*, 3(4): 593–616.
- Helby, P. (2000). "Voluntary Agreements, Implementation and Efficiency. Reflections on Transferability to Voluntary Agreement Schemes at the European Level", Presentation at the VAIE Conference, Brussels, 26 January, available at: [http://www.akf.dk/vaie\\_en/papers/taske.pdf/](http://www.akf.dk/vaie_en/papers/taske.pdf/) (accessed February 2007).
- Hinze, J. and P. Raboud (1988). "Safety on Large Building Construction Projects", *Journal of Construction Engineering and Management*, 114(2), 286–293.
- Hodge, G. and C. Greve (2005). *The Challenge of Public Private Partnerships. Learning from International Experience*. Cheltenham: Edward Elgar.
- ICAF (2001). "Industrial Studies 2001", Industrial College of the Armed Forces (USA), available at: <http://www.ndu.edu/icafe/industry/IS2001/construction.htm> (accessed February 2007).
- Jaselskis, E., S. Anderson and J.S. Russell (1996). "Strategies for Achieving Excellence in Construction Safety Performance", *Journal of Construction Engineering and Management*, 122(1): 61–72.
- Jefferies, M. (2006). "Critical Success Factors of Public Private Sector Partnerships: A Case Study of the Sydney SuperDome", *Engineering, Construction and Architectural Management*, 13(5): 451–462.
- Jones, P., D. Comfort and D. Hiller (2006). "Corporate Social Responsibility and the UK Construction Industry", *Journal of Corporate Real Estate*, 8(3): 134–150.
- Lasswell, H.D. and M.S. McDougal (1992). *Jurisprudence for a Free Society: Studies in Law, Science and Policy*. Leiden: E.J. Brill.
- Lingard, H. and S. Rowlinson (2005). *Occupational Health and Safety in Construction Engineering Management*. London: Spon Press.
- Love, P.E.D., B.M. Wood, D. Picken and B. Confoy (2000). "The Privatization of Correctional Facilities in Australia", *Facilities*, 18(1/2): 56–65.
- March, J.G. and J.P. Olsen (1989). *Rediscovering Institutions: The Organizational Basis of Politics*. New York: Free Press.
- Meyer, J. and B. Rowan (1977). "Institutional Organizations: Formal Structure as Myth and Ceremony", *American Journal of Sociology*, 83: 340–363.
- Mills, A. (2005). "Client and Contractor Attitudes to Prequalification", *ACE International Transactions*: R81-R89.
- Moore, M.H. (1995). *Creating Public Value*. Cambridge, MA: Harvard University Press.
- Neap, H.S. and S. Aysal (2004). "Owners Factor in Value-Based Project Management in Construction", *Journal of Business Ethics*, 50(1): 97–103.
- Ostrom, E. (1990). *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press.
- Packham, G.A., B. Thomas and C.J.M. Miller (2001). "Partnering in the Welsh Construction Industry: A Subcontracting Perspective", WEI Working Paper 19. Pontypridd: Welsh Enterprise Institute/University of Glamorgan Business School.
- Passerin d'Entrèves, A. (1994). *Natural Law: An Introduction to Legal Philosophy*. New Brunswick, NJ: Transaction Publishers.
- Pitt, M., N. Collins and A. Walls (2006). "The Private Finance Initiative and Value for Money", *Journal of Property Investment & Finance*, 24(4): 363–373.

- Quiggin, J. (2002). "The Fiscal Impact of the Privatisation of the Victorian Electricity Industry", *Economic and Labour Relations Review*, 13(2): 326–339.
- Rechenthin, D. (2004). "Project Safety as a Sustainable Competitive Advantage", *Journal of Safety Research*, 35(3): 297–308.
- Rowlinson, S. (1999) "A Definition of Procurement Systems", in S. Rowlinson and P. McDermott (eds.), *Procurement Systems: A Guide to Best Practice in Construction*. London: Spon Press, pp. 27–34.
- Royal Commission into the Building and Construction Industry (2002). Overview of the Nature and Operating of the Building and Construction Industry, available at: <http://www.royalcombc.gov.au/docs/DP%201%20Overview.pdf> (accessed February 2007).
- Rozen, P. (2004). "Of Window Sills and Board Rooms: An Employer's Responsibility to Ensure the Safety of its Workplace", *Employment Law and Industrial Relations 2004: Session 9: Occupational Health and Safety*. Melbourne: Leo Cussen Institute.
- Ryan, N., M. Charles and K. Hampson (2006). "Government Policy and Promoting Collaboration in the Australian Construction Industry", in K. Brown, K. Hampson and P. Brandon (eds.), *Clients Driving Construction Innovation: Mapping the Terrain*. Brisbane: Icon.Net, pp. 267–274.
- Samelson, N.M. and R.E. Levitt (1982). "Owners' Guidelines for Selecting Safe Contractors", *Journal of the Construction Division*, 108(2): 617–623.
- Schipke, A. (2001). *Why do Governments Divest: The Macroeconomics of Privatization*. Berlin/New York: Springer.
- Smith, F. and P.E.D. Love (2001). "Adapting to Clients' Needs in Construction: A Dialogue", *Facilities*, 19(1/2): 71–78.
- Supreme Court of Victoria (1992). In *Holmes v R.E. Spence and Co Pty Ltd* 5 VIR 119 at 123.
- Suraji, A., R. Duff and S.J. Peckitt (2001). "Development of the Causal Model of Construction Accident Causation", *Journal of Construction Engineering and Management*, 127(4), 337–344.
- Tosun, N. (2004). "Financial Value and Public Relations", *Corporate Communications: An International Journal*, 9(3), 202–208.
- Wild, B. (2005). "Occupational Health and Safety: The Caring Client", in K. Brown, K. Hampson and P. Brandon (eds.), *Clients Driving Construction Innovation: Mapping the Terrain*. Brisbane: Icon.Net, pp. 22–39
- Woodward, J.F. (1997). *Construction Project Management*. London: Thomas Telford.
- Yip, S.L.J. (2000). "New Directions of Environmental Management in Construction Accepted Levels of Pollution", *Structural Survey*, 18(2): 89–98.
- Zhang, X. (2006). "Public Clients' Best Value Perspectives of Public Private Partnership in Infrastructure Development", *Journal of Construction Engineering and Management*, 132(2): 108–114.
- Zohlhöfer, R. and H. Obinger (2006). "Selling off the 'Family Silver': The Politics of Privatization", *World Political Science Review*, 2(1), available at: <http://www.bepress.com/wpsr/vol2/iss1/art2> (accessed February 2007).