



CRC Construction Innovation
BUILDING OUR FUTURE

Guide to Leading Practice for Dispute Avoidance and Resolution: An overview



The Australian construction industry is a significant sector of the economy in its own right, employing close to one million people, and undertaking more than \$120 billion worth of work annually. It is a critical part of the economy and the people who work in the industry are proud of their achievements. However, the industry is bedevilled with a reputation for tough commercial behaviour, and a propensity to solve problems using formal dispute resolution.

The aim of the CRC for *Construction Innovation's* Dispute Avoidance and Resolution research and implementation project was to identify and communicate to key industry stakeholders strategies to avoid contractual disputes, and where disputes cannot be avoided, to manage disputes more effectively.

The resulting *Guide to Leading Practice for Dispute Avoidance and Resolution* is the culmination of original research; an extensive review of local and overseas literature on dispute causation and avoidance; and considerable input from clients, designers and contractors across the Australian infrastructure and building industry. We thank the members of the Dispute Avoidance and Resolution Taskforce, participating organisations who are members of the unique group of *Construction Innovation* partners, and the key national industry associations who contributed significantly to the success of this important industry initiative.

We look forward to industry adopting the Guide, and working together to improve the future of Australia's construction industry – developing a new era of enhanced business practices and innovation.



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The challenge

To avoid and resolve disputes a cultural change is required within the construction industry. Research undertaken for this project showed that there are six factors critical to minimisation and avoidance of disputes:

- i. Recognition that each construction project involves the creation of a new group of people with diverse interests. There is thus the need to create a culture within the group which is project oriented but which recognises the financial and social requirements of each participant, and facilitates the building of trust between them.
- ii. In selecting project participants, significant weight should be given to the attitude of a participant, as well as its capacity and pricing.
- iii. The early involvement of head contractors, designers and specialist subcontractors with the client and other project sponsors (including end users, financiers, and operators).
- iv. Sensible risk allocation.
- v. Appropriate delegation of authority, including financial authority, to problem solve rapidly.
- vi. Selecting a project delivery mechanism and contractual framework that reflects the matters above.

Without the cultural change inherent in adopting the concepts above, the Australian economy will continue to suffer wastage from disputes in the construction industry estimated at approximately \$7 billion per annum. Achieving cultural change will not be easy, but it is achievable and obviously worthwhile. It will require leadership and direction from the most senior executives of all industry participants.

The industry

The construction industry delivers vital infrastructure and buildings that are a foundation to the Australian economy. This *Construction Innovation* project was primarily concerned with issues arising in the course of non-residential building (including offices, hospitals, schools, shopping centres, factories, sports venues, and hotels), and infrastructure (including roads, railways, mines, power stations). It was not concerned with residential cottage building.

The Construction Forecasting Council reported in June 2009 that \$120 billion worth of such work (non-residential building, engineering construction, and apartment building) would be carried out in the 2008-09 year. Approximately one million people were employed in the industry in that year. The construction of every capital asset involves unique design, procurement and construction challenges. Different location and site conditions, construction methods, equipment and materials, and the assembly and management of a team of people to design, procure and construct each asset invariably mean the construction process is one of creating a prototype.

By its very nature, the delivery of a prototype is a dynamic process, requiring members of the project team to work together to continually fine-tune and adjust the detailed project requirements, project designs and construction methods, sequence, resources and logistics. Project teams are created anew for each project. People from different disciplines, and organisations, are engaged to design and construct different elements of each project. Problem solving is an integral part of managing construction projects to foster innovation, reduce rework, avoid waste, and reduce risks including those of issues escalating to become disputes requiring arbitration or litigation to resolve.

The same challenges also lead to wasted effort evidenced by, amongst other things, unnecessary or inadequate design documentation, poor quality, mis-communication, sub-optimal materials handling on site, and poor allocation and management of human and material resources.

The problem

The costs of contractual disputes, direct and indirect, are substantial. They are borne not only by clients, designers and contractors, but also by the community through, for example, additional taxation revenue needed to provide essential services, and the management of the taxpayer-funded Federal, State and Territory court systems to deal with disputes. There are direct costs in disputes such as legal services, arbitration, consultants, courts and the diversion of in-house resources (both legal and non-legal) to manage dispute resolution processes – for clients, designers and contractors. When disputes proceed to arbitration or litigation, the direct costs can be significantly high and are often comparable to the amount of the claim itself.

There are also indirect costs incurred by the parties such as delays to the project, adverse performance of the project, distraction and over-burdening of staff on the project, reduced morale, erosion of confidence and trust in working relationships, adverse impact on the reputation of the parties, emotional impact on people involved, lost opportunities for future work, destruction of business relationships, and the loss of people to the industry because of wasted effort, disillusionment and frustration.

The *Construction Innovation* analysis of available industry data regarding the direct cost of resolving disputes, and feedback from clients, contractors and legal practitioners, indicates that an industry-wide general magnitude estimate of the direct cost of resolving disputes of between about \$560 million and \$840 million per year.

When the direct cost of resolving disputes is added to the avoidable costs, the total waste exceeds \$7 billion per year, given construction industry turnover of \$120 billion in 2008-09. This turnover figure includes the value of engineering projects, non-residential building and apartment building projects, but excludes the value of residential cottage building. Disputes and a disruptive industry environment also contribute to inflation of future project cost through higher tendered prices based on previous experience in similar work incorporated into a “business as usual” approach. This represents a tragic loss to the Australian community and the Australian economy in terms of the lost opportunity to deliver real value through improved transport, health, education, infrastructure, facilities and services. If the unnecessary cost can be avoided by appropriate attitudes and practices, the same capital and human resource pool would be released to produce significantly more public and private infrastructure and services for the benefit of the community as a whole.

The dispute avoidance checklist

Construction Innovation found there are readily available opportunities to improve the performance of construction projects that could annually deliver an additional \$7 billion of value to the Australian economy. Those opportunities require the elimination or minimisation of causes of disputes within different phases of the project delivery process, and are reflected in the checklist below.

The power to influence the elimination or minimisation of causes of disputes changes as projects unfold – clients and other project sponsors (financiers, end users, operators) have greatest ability to take advantage of opportunities at the beginning of projects. Designers and contractors assume control through the design and construction of projects.

Early in a project's life the project sponsors' visionary and strategic activities include deciding whether a need is best met by construction of an asset, settling on an approach to risk management, and deciding on a procurement strategy. It is here that clients and project sponsors have the greatest ability to minimise disputes and maximise value. Informed leadership decisions, supported by in-house or consultant construction project skills, have the ability to minimise the risk of disputes. They are similar to the decisions taken in the establishment of any ongoing enterprise.

The research identified a number of causes of disputes that occur again and again on construction projects, in Australia and other countries. Some are in the control of the client or its advisers, whilst others are in the control of designers or contractors. Those causes, whether they lead to the need for formal dispute resolution or not, are wasteful and contribute to the inclusion of unnecessary "business as usual" contingencies in the cost structure of the industry.

Informed clients and other project sponsors (or "wise buyers") understand that each construction project is essentially a prototype, and will be designed and constructed by a team of people brought together in a virtual organisation specifically for that purpose. Unless key people in that team have previously worked together, and for the client, it is all but certain that there will be little if any trust between them, or between the client and the team.

Research shows clearly that the level of trust present has a direct impact on team relationships, and on the project environment or culture. If the project environment is characterised by poor team relationships, there is likely to be considerable wasted effort on the project, and the likelihood of disputes over technical or commercial matters is greatly increased.

There are strategic decisions that clients and other project sponsors can take during the earliest stages of project initiation to signal both a level of trust, and trustworthiness. This is done to reduce the risk of disputes, and minimise wasted effort. In the right circumstances, designers and contractors will willingly respond to the client signalling trusting behaviour, by bringing their skills to bear to reduce cost, shorten construction time, and optimise functionality. They will avoid opportunistic decisions that could otherwise be taken to force additional costs on the client.

There is nothing particularly complicated or difficult in the decisions that clients and other project sponsors, designers and contractors can take to create trusting relationships and a positive project environment.

Client and project sponsor decisions

1. Identify need

The need being addressed by funding a construction project should be clearly identified and articulated. The project may deliver an asset that satisfies a business need (creating wealth measured in dollars) or a social need (improving services to a community from a new school, hospital, road or other facility). Designers and other advisers should have a clear understanding of the need to be able to suggest design options and develop concept designs.

2. Project team selection

Designers and other advisers are selected based on their ability to work well together as a team, as well as their technical skills and track record. Particularly with more complex projects, greater certainty of cost and constructability is achieved when the client engages a head contractor and key subcontractors to work with engineers, architects and other advisers on option development and early design and planning work.

3. Scope of work

The scope of the work and the functionality or performance characteristics to be delivered by the asset should be clearly documented. This should include the time within which the asset is required, and take into account the characteristics of the site on which it is to be constructed, including adequate geotechnical analysis.

4. Adequate finance

Sufficient finance must be available to undertake the project. Given that construction projects demonstrate most of the characteristics of prototypes, and therefore changes in their technical or commercial parameters is common, the budget should include prudent contingencies for possible changes in time or cost required, or changes in functionality.

5. Risk management

A thorough risk register, identifying possible risks to achieving required time, cost and functionality, and strategies to mitigate those risks, is shared with designers and contractors. Responsibility for managing each risk is clearly allocated to the organisation or person best able to manage it, and that organisation or person is paid to assume the risk.

6. Procurement strategy

The procurement strategy for construction is adopted after a considered analysis of available options, and the client's key strategic drivers. Those drivers generally include:

- how well the scope of the project has been defined
- the time within which the asset is required, the likely time to construct it and the purpose for which it is required
- the complexity of the design
- the level of certainty about market costs and availability of necessary design and construction capability
- the funding available, including contingencies
- the risk appetite of the client and other project sponsors
- the client's experience of construction projects.

7. Design

The level of design made available for the market to price is appropriate to the procurement strategy and the level of risk the client expects contractors to take. As a general rule the more design detail and information about the site of the project made available to potential head contractors and subcontractors, the lower the risk to them.

8. Risk allocation

The head contract documentation for the project prepared by the client reflects the clear and unambiguous risk allocations that were part of the package of information made available for the market to price. Any changes made necessary as a result of firming up prices or the scope of the project are clearly identified. The introduction of integrated digital modelling or virtual prototypes early in the design process has significantly reduced the need for contingencies, improved clash detection, reduced waste and wasted effort, and improved construction optimisation at design stage.

9. Client project management

The client's most senior representative charged with making decisions under the head contract is given a clear brief to act in the best interests of the project, including monitoring the quality of project team relationships. That representative may be an employee of the client, or a consultant.

10. Communication protocols

The head contract will require communication protocols that encourage open communication and the solving of problems or issues as quickly as possible. It will include a framework for formal, proactive, issue resolution, focused on rapid identification of issues and escalation of issues that cannot be resolved by agreement at site level, to the lowest possible level of off-site negotiation and resolution.

11. Dispute resolution

Formal dispute resolution may be aided by the use of processes involving independent monitoring of project issues, and "coaching" to assist in their resolution.

Project team decisions

12. Project team planning

Once the head contractor has been appointed, its task of building team relationships with designers and subcontractors, and the client's representatives, begins in earnest. There are a series of planning, design, and other tasks that provide opportunities to the head contractor to build team relationships. Most importantly, as with any business or sporting team, objectives should be aligned and agreed if effort is not to be wasted and disputes avoided.

13. Subcontract risk allocation

The first step is to make sure that subcontract documentation mirrors the technical and commercial elements of the head contract and is consistent with information made available for the market to price. Subcontract risk allocations for individual trade packages should be consistent with those in the head contract.

14. Project team relationships

The head contract documentation should require the head contractor to take responsibility for and to monitor and report on project team relationships. One approach to this is for the head contractor to develop a formal project business plan, with the involvement of the designers and subcontractors. The process of doing so does two things. First, it documents the way the team will work together to undertake particular tasks including design coordination, programming, safety management, material handling and so on. Second, by agreeing on those practical tasks in a collaborative way, business relationships are developed, trust has the opportunity to be shown and a set of agreed project objectives is established.

15. Integrated design

Some head contractors are only engaging subcontractors that are prepared to produce digital models of their components (including formwork, mechanical ductwork, and pipework) at the same time as the design team, so enabling the integration of all information into a single model. This provides clash detection and integrated data early in the design and construction process.

16. Proactive issue resolution

The project business plan will include communication protocols that encourage open communication, and the solving of problems or issues as quickly as possible. The plan will include a framework for formal, proactive, issue resolution, focused on rapid identification of issues, and escalation of issues that cannot be resolved by agreement at site level, to the lowest possible level of off-site negotiation and resolution. Formal resolution may be aided by the use of processes involving independent monitoring of project issues, and "coaching" to assist in their resolution.

Where to from here?

Construction Innovation encourages the industry to carefully consider the *Guide to Leading Practice for Dispute Avoidance and Resolution*. It details the issues summarised and suggests strategies to reduce the likelihood of disputes occurring, as well as techniques and processes to deal with disputes more effectively. *Construction Innovation* encourages CEOs and senior executives of clients and other project sponsors, designers and contractors to adopt and implement the suggested strategies and turn presently wasted resources into additional wealth and productive investment to improve the quality of life for the Australian community.

The Guide can be downloaded from the following websites:

CRC for *Construction Innovation* – www.construction-innovation.info

Australian Constructors Association – www.constructors.com.au

Australian Construction Industry Forum – www.acif.com.au

Association of Consulting Engineers Australia – www.acea.com.au

Australian Procurement and Construction Council – www.apcc.gov.au

Queensland University of Technology – <http://eprints.qut.edu.au>

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