



**The Dispute Resolution Board Foundation**  
*Fostering Common Sense Dispute Resolution Worldwide*

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There will be simultaneous English-Turkish translation during the conference.  
*Konferans boyunca simultane İngilizce – Türkçe tercüme yapılacaktır.*

**Day 2: Saturday, May 15**

13:30	14:30	Lunch – Open Buffet <b>Special Presentation</b> "Experiences with the Application of DRBs to Relationship Contracts in Australia" <i>(please note there will not be translation services available for this presentation)</i> - <b>Graeme Peck and Alan McLennan, DRBF Australasian Chapter</b>
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# EXPERIENCES WITH DRBS IN RELATIONSHIP CONTRACTS IN AUSTRALIA

*G M Peck & A McLennan<sup>1</sup>*

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<sup>1</sup> The authors gratefully acknowledge the contributions of DRBA members R Finlay and G Easton by way of suggestions and editing.

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# EXPERIENCES WITH DRBs IN RELATIONSHIP CONTRACTS IN AUSTRALIA

## 1. Introduction

The term ‘Relationship Contracting’<sup>2</sup> embraces a number of contracting arrangements. The factor common to these is recognition that a co-operative and non-adversarial relationship will frequently produce a final project outcome benefiting all contract parties.

The concept as now understood appears to have grown from the project partnering concepts introduced by the American construction industry around 1989 and from the initial application of Alliance arrangements in the off-shore petroleum industry. A useful summary of the development of the Alliance arrangements in that industry is contained in a 1999 paper by Halman & Braks<sup>3</sup>. In the early 1990s, the combination of low oil prices and increasingly difficult field developments focused attention on a need to significantly reduce project out-turn costs, and led to those arrangements, which were judged to be very successful<sup>4</sup>. A 1999 Australian Constructors Association publication on Relationship Contracting<sup>5</sup> refers extensively to the Wandoo and East Spar offshore petroleum development experiences off the NW coast of Australia (1994-1997). The success of these projects was a significant factor in the introduction of Alliances into the Australian industry.

The original Alliance contract model (a ‘pure Alliance’) involves a ‘no blame’ approach – success or failure is a joint responsibility. Except in the case of wilful default, both the owner and the non-owner participants have collective ownership of all of the project risks and neither the owner nor any of the non-owner participants has any recourse to litigation, arbitration or other remedies against the other Alliance participants, even if the other participants are in breach of their contract or are negligent.

Since the appearance of these ‘pure Alliances’, there have been a variety of contracts developed which retain the focus on the benefits of co-operative and non-adversarial relationships developed in the original versions, but allocate risks between the parties in an agreed manner and maintain contractual arrangements whereby breaches by participants are actionable at law. These contractual arrangements go by various names but within this paper are broadly grouped under the heading of “Relationship Contracts”.

There has been a rapid growth in the use of Relationship Contracts within Australia over the past 6 to 7 years, almost entirely in public sector construction. The data base maintained by Alliancing Association of Australasia Ltd<sup>6</sup> includes 340 projects commenced since 1999, covering the complete range from partnering only to pure Alliance. The cumulative value since 2003 is approximately A\$81bn. For the past 3 years the annual value commenced each year has exceeded A\$17bn, which is around 30% of total public

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<sup>2</sup> Also described as ‘Relational Contracting’ in some countries.

<sup>3</sup> *Project alliancing in the offshore industry*; J I M Halman & B F M Braks; International Journal of Project Management, V 17, #2, April 1999, 71-76.

<sup>4</sup> The Institute of Petroleum (1994) *Cost Reduction Initiatives for the New Era*, Institute of Petroleum, London.

<sup>5</sup> *Relationship Contracting-Optimising Project Outcomes*, Australian Constructors Association, © 1999, section 8

<sup>6</sup> Alliancing Association of Australasia Ltd, [www.alliancingassociation.org](http://www.alliancingassociation.org)

sector expenditure on capital works<sup>7</sup>. Pure Alliances are generally associated with projects in the upper market price range, so by monetary value are in the majority but by number are in the minority

The object of this paper is to provide an overview of how the Australian construction industry has learnt from the experiences of other countries and industries which have adopted a Relationship Contracting environment, and how DRB concepts have proven of benefit in a number of major projects within this family of contracting arrangements.

## 2. Relationship Contracting concepts

### *General concept development*

It is well recognised that the successful delivery of any major capital project is substantially influenced by the contractual structure utilised. ‘Relationship Contracting’ has grown from the emerging realisation that the traditional adversarial contract arrangement may often not be in the best interests of either the project outcome or the participants involved in its delivery.

A relationship contract can be any contract which seeks to emphasise the relationship between the parties to achieve optimal outcomes for the job to be done by employing some form of management regime (whether within or outside the terms of the contract) to manage the relationship.

The simplest form is the well known concept of ‘project partnering’ introduced to the American construction industry in the late 1980s by the U.S. Army Corp of Engineers<sup>8</sup>. It was imported into Australia in the early 1990s. Where ‘project partnering’ is set up on a contract it is usually by way of a ‘Partnering charter’ which lies outside the contractual promises that exist in the commercial arrangement. Thus, the obligations in the partnering charter may be contractually non-binding. Project partnering has been the subject of criticism because of this fact<sup>9</sup>. It can only work with ongoing commitment by both sides at all levels.

At the other extreme, the ultimate form of relationship contracting is a project Alliance (‘pure Alliance’), in which the parties expressly agree to share commercial risk and reward, so that it is in the interests of all participants to work cooperatively and openly. A project Alliance contract also typically contains a “no disputes” clause. All differences are to be resolved by unanimous decision of the controlling group of the Alliance (the ‘Alliance Leadership Team’ or ‘Alliance Board’) and the contract typically contains express provisions that participants will have no legal or equitable cause of action against any other participant except in the case of wilful default.

Partnering and alliancing have a similar philosophy - achieving cooperation and alignment of objectives. However, whereas the obligations in the partnering charter may be considered as non-binding on the

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<sup>7</sup> *In Pursuit of Additional Value, A benchmarking study into alliancing in the Australian Public Sector, Oct 2009*; Department of Treasury and Finance, Victoria; report by Evans & Peck & University of Melbourne; [www.dtf.vic.gov.au/project-alliancing](http://www.dtf.vic.gov.au/project-alliancing); section 2.2

<sup>8</sup> US Army Corps of Engineers, *Partnering, Pamphlet 4*, IWR pamphlet-91-ADR-P-4

<sup>9</sup> *Implications of Partnering for Mining and Construction*, Dorte J. (1996) 12 BCL 174;

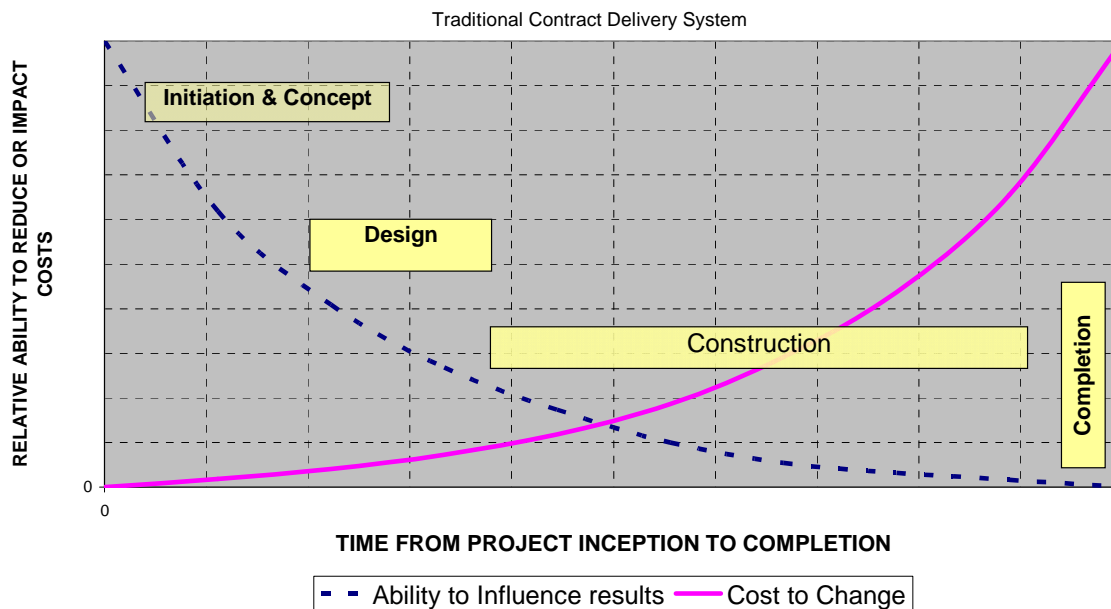
parties, alliancing includes those objectives as express terms in a construction contract. Since the early Alliances, there have been a number of lesser variants of relationship contracts developed which incorporate contract provisions aimed at turning the moral commitments of a standard partnering charter into express contract obligations while at the same time retaining a number of features of existing “non-relationship” contracts. These lesser variants generally include a provision along the lines of a typical partnering charter that any decisions made by either party during the relationship management process are “deemed not to increase, diminish, waive or otherwise affect a party’s rights, obligations or liabilities under or arising out of the Contract or vary the Contract”.

### Choice of Delivery process

The question arises – how might one decide whether a relationship contract is superior to a traditional contract, and if it is, what is the most appropriate form of relationship contract?

Figure 2 is an oft reproduced representation of ‘cost reduction opportunity’ and ‘cost to change’ vs. ‘project development stage’. The considerations behind this diagram have influenced the development of all of the ‘Design & Construct’, ‘Early Contractor Involvement’ and ‘Alliance’ forms of contracting, and in particular on how these forms of contracting can influence project costs and improve project outcomes through cooperative arrangements in the early stages of the project.

**Figure 2:**  
**FACTORS INFLUENCING PROJECT COST with elapsed TIME**



As a project increases in complexity and/or unpredictable external factors take on a more significant influence on the project form or management, delivery methods or initial concepts may need to be modified. Rather than try to transfer the risks, the most sensible commercial risk management approach for an Owner may well be to embrace some or all of the risks, then proactively participate in the management of them within a flexible project delivery environment. Various methods of determining the most suitable delivery system are used. One which is becoming common in Australia is based on a numerical ‘circumstance rating’ scale. Criteria influencing project risks are determined at an

organisational level and assigned percentage weightings according to perceived importance to the particular organisation. The sum of all item weightings is 100%. Each individual item is rated on a scale of 1 to 10 for the project under consideration. The criteria chosen and weighting given to each item are likely to vary between organisations but factors similar to the tabulation below<sup>10</sup>, tend to appear in most versions. The ‘combined circumstance rating’ is a measure of the relative project delivery risk.

**DELIVERY MECHANISM SELECTION CRITERIA**

Item	Criteria	Wght	Low Rating	1	10	High rating
1	Importance of project to Owner	XX	Minimal			Critical
2	Owner's risk culture	XX	Risk averse			Mature
3	Scope definition	XX	High			Minimal
4	Budget constraints	XX	Low			Highly Constrained
5	Schedule constraints	XX	Minimal			Highly Constrained
6	Project complexity	XX	Low			Highly complex
7	Industry & Stakeholder risk	XX	Low, known			High, Unpredictable
8	Community Risk	XX	Low			High
	Totals	100%				

Score for each item is the product of (weight)x (rating). Thus a weighting of 20% for (1) & a rating of 9 (= near critical) yields a 'Circumstance rating' contribution of 0.2x9 = 1.8. The combined rating score (maximum 10) determines type of suitable delivery mechanism. A "pure" Alliance is usually seriously considered for a combined score above about 8. There are no hard and fast boundaries for most appropriate contract type, but the ranges indicated on Figure 3 are reasonably commonly accepted.

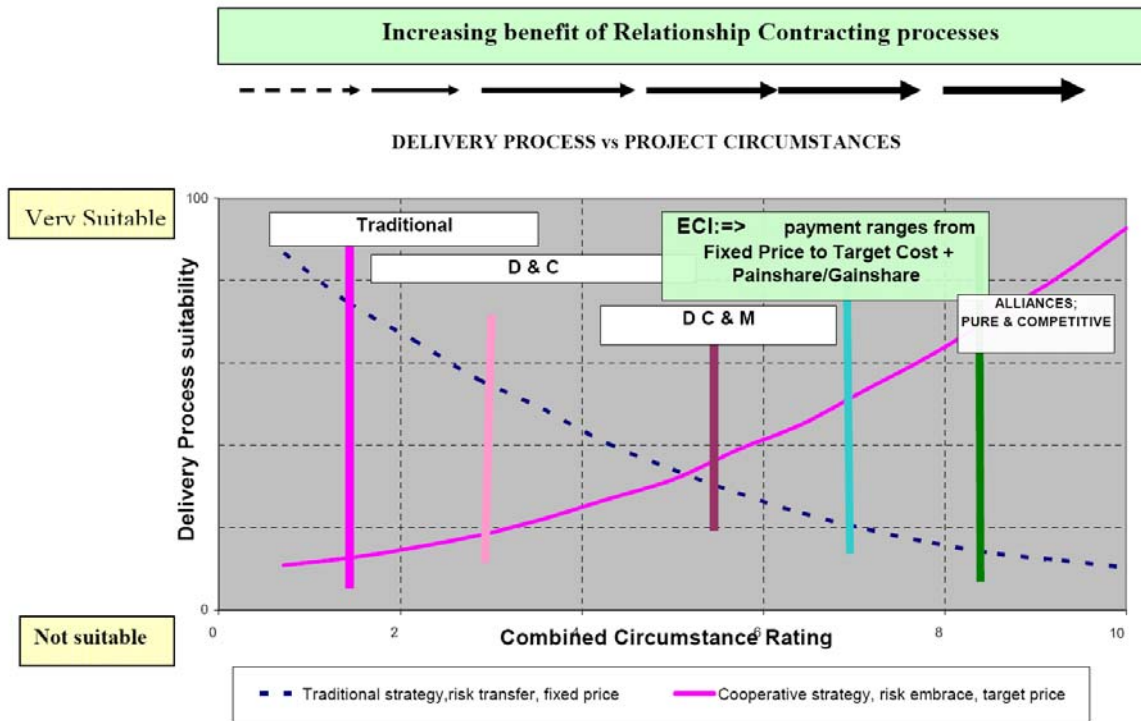
Figure 3 following is a diagrammatic representation of the relative suitability of common delivery forms compared to the combined project circumstance rating, according to the tabulation above. Similar diagrams have been reproduced in a number of publications<sup>11,12</sup>.

<sup>10</sup> The criteria included in the tabulation have been used by West Australia Main Roads for their purpose, see reference 10 following.

<sup>11</sup> *Relationship Contracting-The Main Roads Experience*, M Henneveld (Commissioner, WA Main Roads), 7 August 2007;

<sup>12</sup> *Relationship Contracting- Principles and benefits*, D Savage, FIDIC Conference, Singapore, September 2007

Figure 3



Reproduced from:  
*Relationship Contracting- The Main Roads Experience*  
 M Henneveld, Commissioner WA Main Roads, August 2007

As indicated diagrammatically in Figure 3, the benefits of Relationship Contracting principles progressively increase with increasing combined circumstance rating score. However, the fundamental practices and techniques add value on most delivery systems.

There have been recent suggestions that Alliances have been over-used within the Australian public sector<sup>13</sup>. The authors' view is that as public authorities gain experience with the various forms of relationship contract, the proportion of 'pure Alliances' is likely to reduce in favour of those forms presently in the middle ground of Figure 3. This appears to be a conclusion of the recent study commissioned by Victorian State Treasury already referenced<sup>14</sup>.

It is in the other than 'pure' Alliance area where the use of DRBs is proving extremely helpful.

### ***UK Highways Developments in Relationship Contracts:***

<sup>13</sup> Private communication, A Mignot, Executive Director, Alliancing Association of Australasia.

<sup>14</sup> See previous reference 6, at section 6.3 thereof.



Shortly after the publication of the 1998 UK Government's Construction Task Force Report *Rethinking Construction*<sup>15</sup>, the UK Highways Agency (HA) in 2001 embarked upon a new procurement strategy embodying a number of relationship contracting concepts<sup>16</sup>. The construction contract adopted for most of its major projects was based on the 1998 ECC Target-Cost Option, with the stated objectives of:

- reimbursement of actual cost and payment of bonuses,
- fair allocation of risks
- financial incentives to complete within the contract budget and contractual performance indicators
- Partnership approach based on long-term relationships  
(*'Partnership' in the sense here appears to be different from 'partnering' of the USA model, but the EEC contract does provide for a Partnering Charter, in the latter sense*)

Progress on HA's 2001 strategy has been the subject of several articles and reviews<sup>17, 18</sup>. The 2007 Nichols report contained a number of criticisms of the HA budgeting and estimating, but relevantly reported that: *early experience of Early Contractor Involvement (ECI), the method of procurement now widely adopted by the HA, suggests that schemes are being delivered to time and budget once they enter construction.* (emphasis added).

The previous history of HA projects had been reported<sup>19</sup> as 70% late, 73% over budget, average contract price over-run 20%. The HA approach has been subsequently followed by a number of UK agencies<sup>20</sup>.

### ***Australian developments in Relationship Contracts***

The first Australian state to follow the Relationship Contracting path for its highway construction program was Queensland. USA style partnering had been used extensively in various states from about 1992 in projects for highways, hospital and prisons, some in conjunction with ECI forms of contract. As already noted, the original project partnering concept is contractually non-binding. It works best when a process is used that rapidly escalates unresolved issues to senior management level, and expressly requires regular face to face interaction between senior party representatives during the progress of the work. This fact lies behind the inclusion of express contract provisions in the later developments of Relationship Contracts within Australia, in conjunction with DRBs on the larger value and/or more complex contracts.

Commencing about 2003, Queensland followed the Early Contractor Involvement ('ECI') process adapted from that of the UK Highways Authority. The Queensland experience was the subject of a 2007 paper by R Quick<sup>21</sup>, which amongst other things noted

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<sup>15</sup> *Rethinking Construction*, July 1998 report of the Construction Task Force to the Deputy Prime Minister, John Prescott, on the scope for improving the quality and efficiency of UK construction. Chaired by Sir John Egan, otherwise known as the Egan report, <http://www.constructingexcellence.org.uk>;

<sup>16</sup> *Procurement Strategy Review 2005*, Steve Rowsell, HA Procurement Director; [www.highways.gov.uk/business/1177.aspx](http://www.highways.gov.uk/business/1177.aspx)

<sup>17</sup> *Ibid*, pp 2-4.

<sup>18</sup> *Review of Highways Agency's Major Roads Programme*; Report to Secretary of State for Transport, March 2007, Mike Nichols Chairman & Chief Executive, The Nichols Group

<sup>19</sup> Study by Mott MacDonald for HM Treasury, quoted by R Quick at pp 11-12 of reference 22 following

<sup>20</sup> *Roads: Client Focus: Early Contractor Involvement*, Phil Bishop, Contract Journal 08 Aug 2007, [www.contractjournal.com/Articles/2007/08](http://www.contractjournal.com/Articles/2007/08);

<sup>21</sup> *Queensland's ECI Contract*, R Quick, Solicitor, Gadens Lawyers, Brisbane; *The International Construction Law Review*, 2007 [Pt 1], pp 4-35, at p.24.

*ECI recognises the way many in the private sector of the construction industry already do business. They negotiate planning design, risk and price prior to entering into a formal contract. ...ECI is not a new concept but rather the rethinking of previous delivery methods including, partnering and Project Alliancing.*

The ECI concept used within Australia endeavours to capture the benefits of construction and buildability expertise at the earliest practical stage in the concept development, articulate and agree as between the parties with whom identified risks best sit, and finally enter into a contractual arrangement which incorporates the agreed risk allocation within the price structure. Each party remains responsible for its own contractual obligations.

The payment mechanism may be based on any arrangement the parties may agree. The options include fixed price for some or all components, an open book target cost arrangement for some or all direct cost items, a risk adjusted fixed price, or a risk adjusted maximum price (guaranteed Maximum Price or 'GMP'). Any or all of the above may include painshare/gainshare arrangements.

This form of relationship contract is now in use by at least four state road authorities in Australia and is rapidly gaining acceptance. It has also been adapted to a number of other industry groups including water supply, power supply networks, and rail. The latter covers both infrastructure construction and rolling stock design and manufacture<sup>22</sup>.

The most important relationship features in use on these contracts are:

(a) Governance and Integrated Management

The key feature is the use of integrated management teams which work in a collaborative environment. The highest level team (variously called Senior Project Group, Project Leadership Team, Project Leadership Group) comprises off-site representatives of the parties and the most senior on-site representative of each party. For convenience, this group is hereafter referred to as the Project Leadership Team (PLT). The on-site management team is called the Project Management Team (PMT).

(b) Relationship Management

Formal relationship management procedures are included in the contract agreement and these include the creation jointly of a Relationship Management Plan, a Relationship Management Team, Relationship Charter and Principles, and regular review and evaluation processes.

(c) Issue Resolution

Typically the contract agreement requires the parties to collaborate and act in good faith. The parties are required to set up an Issue Resolution process based on hierarchical relationships and seek to resolve issues at the lowest possible level and in the shortest possible time.

Appendix 2 hereto summarises some typical contract provisions in current use within Australia covering the above matters.

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<sup>22</sup> Refer Appendix 3.

While these arrangements still include the usual exclusion provisions of a standard partnering charter, they enforce a discipline which involves the necessary senior organisational commitment on a regular basis.

The examples discussed in the following sections of this paper refer to Australian experience with DRBs in relationship contracts. They vary across the spectrum from ECI with target cost and painshare/gainshare arrangements to modified lump sum. All have large contract values and include express relationship arrangements and DRBs.

### ***Role of a DRB***

A DRB is an important feature of the Issue Resolution process in the larger Relationship Contracts. The DRB's function is integrated with the Issue Resolution procedure and the DRB typically has the final level of responsibility to recommend on or determine (on an interim binding basis) matters in dispute.

### ***Conditions of Contract utilising Relationship principles and a DRB***

The forms of contract and delivery methods selected by Owners for major projects in Australia have varied according to market demand, the risk profile for the project and particular Owner preferences. It is common to find purpose written contracts on major projects where DRBs have typically been utilised. The FIDIC and MDB forms of contract have had little application in Australia. There are a number of Australian Standards for construct only, design and construct and similar forms of contract. The purpose written contracts have, in a number of cases, used a "standard" form of contract but with appropriate modifications.

These practices have demonstrated that it is relatively simple to incorporate provisions leading to effective relationship management practices, and effective DRB provisions<sup>23</sup> into any contract.

## **3. Typical Processes for Relationship Contracts**

### ***Contractor Selection and Price setting***

Non-Owner participants in 'pure Alliances' are almost always selected on the basis of non-price criteria, e.g. track record, quality of personnel proposed, demonstrated understanding of the project and risks, propensity for working in a collaborative contract.

Lesser forms of relationship contracts usually involve a Contractor selection process based on a combination of price and non-price criteria, with weightings for each according to delivery mode and organisational preference.

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<sup>23</sup> where the value and/or complexity justifies the use of a DRB

Whether based on the selection process summarised above, or directly negotiated based on past performance, a ‘preferred proponent’ is appointed and a two stage process then follows.

- Development– Stage 1 (design development, risk allocation, risk adjusted price, etc.). The Relationship framework is developed in Stage 1 and extends into Stage 2
- Delivery – Stage 2 (full design and documentation, delivery, commissioning and handover). This phase may be based on any arrangement between traditional fixed price delivery through to Target Cost with or without pain-share/gain-share and/or incentive arrangements linked to Key Performance Indicators (KPIs).

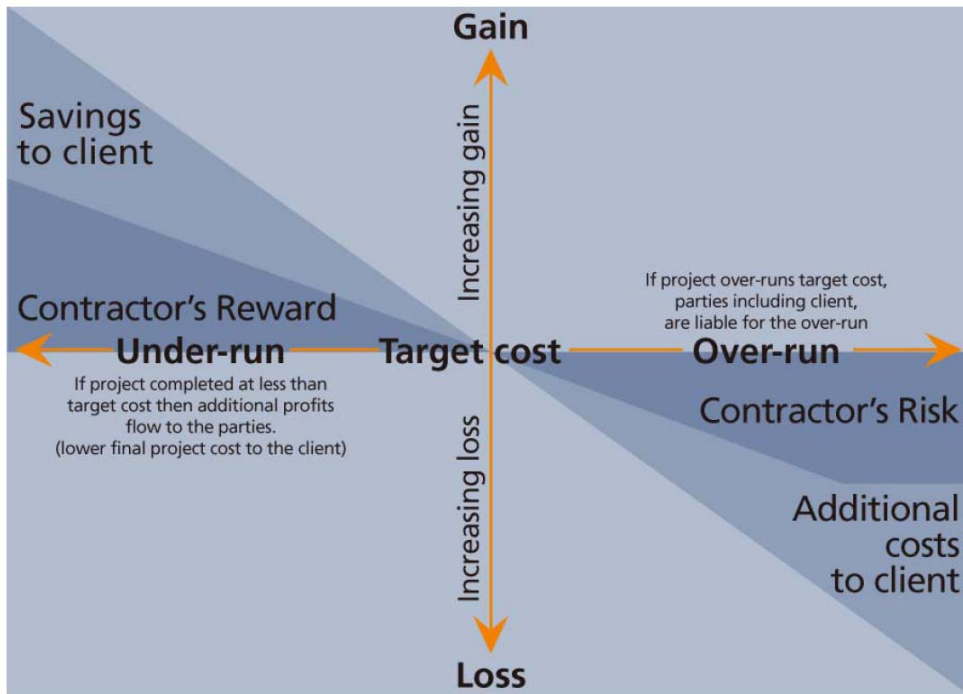
The final target price is set at the end of Stage 1 when the design is well advanced and agreed between Owner, Designer and Constructor. This applies whether it is full design and construct, or the Owner retains design responsibility with the contractor participating as part of the team providing constructability and risk minimisation expertise during the development of the design from initial concept (as existed at time of ‘Invitation to Tender’ or ‘Expression of Interest’) to near final when the Target Cost, Risk Adjusted, Guaranteed Maximum or Fixed Price, is settled.

Risk pricing is examined and it is not unusual for some component of risk money to be shared on either a provisional sum basis or (more usually) a pain/gain share formula with time, margin (and perhaps more) at risk.

### ***Pain-share/gain-share arrangements***

A typical form of pain-share/gain-share arrangement for a ‘pure Alliance’ is identified in Figure 4 below. This diagrammatic form is likely to vary in “hybrid” Alliances. In a traditional Design and Construct or Construct-only arrangement with partnering overlay provisions, there may be no financial risk sharing other than as expressly provided by the ‘Change Event’ provisions of the Contract.

**Figure 4:**  
**Typical Pain-Share/Gain-Share Mechanism, ‘pure Alliance’**



Any Target Cost which is set at the end of Stage 1 is not fixed as an absolute – it moves up or down if end requirements and/or scope changes occur. These issues are subject to agreement at the Alliance Leadership Team ('ALT') level in the case of a 'pure Alliance', or as provided in the Contract provisions in the case of other arrangements.

Any incentive arrangements over and above the painshare/gainshare will usually also be linked to various KPIs related to time, safety, quality, environment, community relations and the like.

#### 4. Examples of DRBs in Relationship Contracts

It is sometimes suggested by both Owners and Contractors that DRBs have no role on Relationship Contracts, because Relationship Contracts have inbuilt mechanisms to deal with issues and disputes. However, the reality has been that DRBs are very effective when the Relationship Contract includes strong relationship principles, backed up by effective joint management. The DRB provides an independent and impartial means of project monitoring and review. The cooperative framework assists the DRB to facilitate resolution of issues and avoidance of disputes.

Australia presently has several DRBs under way on contracts in the relationship category (Gross value approaching A\$2.8 bn), one construction project currently at Stage 1 development as an ECI arrangement and at least one public sector 'pure Alliance' where the Owner has appointed an independent Chairperson for the Alliance Leadership team ('ALT') to assist the parties to reach a unanimous decision on any difficult questions. The independent Chair has no casting vote but acts in effect as a DRB in dispute avoidance mode. An interesting development is that at least three private Alliances set up to

undertake major sections of work within fixed price Public Private Partnerships and Design Construct & Maintain arrangements have also utilised the ‘independent member ‘ concept (not necessarily Chairperson) for their ALTs.

All of the Owners, Contractors and DRB participants have learnt from the above, including some "to be avoided next time" lessons. The examples following discuss some of the salient points flowing from these experiences.

### ***Example 1. Motorway Interchange Project***

This project commenced life as an A\$200m fixed price design and construct contract. It involved an extremely complex interchange between two existing motorways constructed under very heavy traffic in a “brownfield” site. The motorways at the time were operating beyond their real capacity. The project was tendered in 2004, but for various reasons not awarded until Dec 2006 – to quote the Owner, “within minutes of the expiry of the validity period”. At time of tender, industry pricing was in a very competitive phase, but by time of award resources were fully occupied and prices had moved up considerably.

The contract included a DRB as well as a facilitated relationship management process. The structure of the latter involved Owner, Owner representative, Owner representative’s agent, Contractor and Designer. However, the contract did not expressly include for any joint management process of the kind indicated in section 2 hereof.

The DRB nomination and appointment process proceeded after award. There were no unusual delays in the process, and the DRB was established within about three months of award. However, there were no significant exchanges between the DRB and contract parties until after the first DRB meeting (approximately 4 months after award). Meeting procedures and documents to be provided to the DRB were not settled until after the first meeting, and it was not until about 6 months after award that the DRB began to understand the finer details of the project and identify potential problems. Potential contractual or commercial issues in the initial technical exchanges between design teams, relating to departures from the original concept design put forward with the tender, were not initially communicated to the DRB.

As the project unfolded, it became apparent that the responsibilities and roles of the parties were not always clear. The design and design approval processes were problematic, ground conditions were difficult and the relationship management principles were not followed. The work involved 12 major traffic switches, but eventually this expanded to 54 subsection switches.

There was a gradual build up of issues and claims, with some eventually affecting progress on site. The DRB was able to promote early resolution of a number of issues without disputes, but several disputes were referred to the DRB for resolution by the standard process.

Senior executives from the contracting parties became concerned that delivery under the prevailing contracting arrangements would not achieve the original project objectives. The DRB was requested to develop and facilitate a shift to an open-book, jointly managed contract, built on effective relationship principles. This was successfully achieved, and the DRB thereafter operated within the relationship framework and worked with the newly created joint ‘Project Leadership Team’ (PLT), to progressively

resolve all issues and to avoid any disputes, to ensure the project was completed within all the negotiated parameters and without the need for formal dispute resolution in this phase.

Issues carried over from the period prior to the new arrangements were the subject of a mediated settlement process facilitated by the DRB.

The lessons learnt or reinforced from this project were threefold:

- i. Early appointment of the DRB is highly desirable, particularly in Design and Construct contracts.
- ii. Contract arrangements on complex projects which incorporate positive relationship obligations from the outset will be superior to those that do not and can work extremely well in conjunction with a DRB.
- iii. DRBs can be very effective, beyond their traditional role of dispute resolution, when the parties are prepared to embrace flexibility in the operation of the DRB.

### ***Example 2. Motorway Upgrade Project***

This project involves a fixed price, design, construct and maintain arrangement with the design and construct value in excess of A\$1.5 bn. The contract was purpose written and incorporates wide ranging risk allocation to the Contractor. The contract contained a number of Separable Portions (SPs) each with a very challenging completion date and substantial liquidated damages.

The original contract included a provision for joint meetings at two levels:

- (a) The Project Monitoring Group comprising senior on-site management of the parties, and
- (b) Site meetings involving site personnel from each of the parties.

These contract provisions, however, do not create a Relationship Contract.

The DRB was appointed within 1 month of contract award and the first two meetings had taken place within 6 months. Completion of the first SP occurred quite early in the overall program, with a program duration recognised from the outset in project minutes as “very tight”. The physical work involved construction over deep soft soil deposits, and the duration of the program was dependent on the accurate calculation of preload durations, which are known to be inherently variable.

The program for the first SP was initially perceived by the DRB as involving a significant technical risk, so questions were raised in the first meeting between the DRB and the parties as to what action was possible if the predictions of preload durations proved not to be accurate and in any event, what was the driver behind the first SP completion date. Open discussion between the senior off-site executives present at the DRB meeting led to development of temporary technical alternatives which, although still challenging, gave a reasonable probability that the objective of the initial SP could be achieved. The contract definition of the SP completion was modified by agreement between the parties, without further DRB involvement and with no cost or time variations. In the event, had the original SP definition been maintained, its completion would have been about four months late compared to achievement on time with the revised agreement.

By the time of the second DRB meeting, serious water restrictions imposed by the external controlling statutory authority because of a severe drought were threatening the overall program. The DRB encouraged the parties to engage in a facilitated workshop (chaired by a 3<sup>rd</sup> party facilitator) to agree a practical solution on a best-for-project approach at least cost to whichever party carried the risk of such an event. Again, this arrangement led to an ultimate agreement between the parties which avoided any necessity for the liability issue to be dealt with by the DRB.

Whether because of these early experiences or for other reasons, shortly after the second DRB meeting a special meeting of senior executives of the contract parties agreed to adopt a “partnering” process specifically designed for a complex project of this scale. The agreed arrangements followed the pattern described in section 2 hereof, and effectively changed the behavioural arrangements to those of a Relationship Contract. The amended process did not change either the original risk profile or the pricing arrangements.

Relationship Management was effective overall and at each level. The genuine commitments of the Parties to work together cooperatively and to ensure that issues and disputes never blocked the progress of the works, was sustained over the life of the project.

Whilst several other major issues have been encountered through the Project, the parties in conjunction with the DRB have effectively dealt with each of these in ways that did not impact on the delivery of the project. All issues of significant concern have been the subject of joint presentations at DRB meetings with options openly discussed. The parties have worked through the majority themselves. The project is nearing completion, all original intermediate SPs to date have been achieved and final completion of the original scope of work has a target date almost 6 months ahead of the original date.

There is no doubt that the cooperative spirit engendered by the combination of the Relationship Management practices used across the teams and units of the project, and the pro-active role adopted by the DRB, have been very helpful in allowing issues to be resolved and disputes avoided.

### ***Example 3. City Water Supply Dam Augmentation Project***

This dam augmentation project was relatively complex, involving a spillway upgrade, wall strengthening, and raising the wall. The dam is located in a monsoonal rainfall area and is prone to high intensity flooding through the wet season. The project value was approximately AUD\$90M, and the contract was a form of Early Contractor Involvement (ECI).

The basic General Conditions of Contract was Australian Standard AS 4000 (1997) typically used with traditional contracts. Relatively simple modifications were made consistent with the use of a DRB, Relationship Contracting principles and the ECI arrangements. The following table indicates the clause modifications to AS 4000. It can be seen that very few modifications were required to adapt the standard contract to the required form.



AMENDED CLAUSES TO AS 4000 (1997)		
Clause	Title	Page
1	Interpretation and construction of Contract	1
1A	Commitment to Relationship Contract	8
1B	Project Leadership Team	9
1C	Joint Management Team	10
1D	Early Warning Notice	12
1E	Key Performance Indicators	12
2	Nature of Contract	12
2A	Risk Pool	14
42	Dispute resolution	63
42A	Dispute Resolution Board	64

In this case the designer was engaged by the Owner. Three short-listed tenderers worked collaboratively in workshops with the Owner and the designer during the design development stage to optimise the design and to maximise constructability aspects. During this period, risk allocation and contract details were agreed as were the joint governance and management processes and the relationship management provisions.

Once the scope, the design and other contractual arrangements were agreed (including the composition of the DRB), the short listed tenderers independently submitted their final prices. The Contractor was finally selected using both price and non-price criteria. The relationship management processes developed in Stage 1, continued in use throughout Stage 2, delivery.

Management of the project occurred through the Project Leadership Group (off-site senior representatives) and the Joint Management Team (on-site representatives).

The DRB met on a 2-monthly basis and coordinated its meetings with the Project Leadership Group. On this project, the dispute avoidance initiatives of the DRB were very effective and no disputes were referred for resolution. Cooperative working relations were maintained on site and good project outcomes were achieved for all parties.

As noted above, the ultimate contract provisions were little different to those of a traditional arrangement. The important differences were the commitment to Relationship Contracting, arrangements supporting that commitment, recognition of some shared risks and the use of a DRB.

This project is a good example of how effective DRBs can be in relationship contracts with joint management arrangements in place. The Owner's response as to why he elected to proceed as he did with both Relationship Contracting procedures and a DRB was "We had previous experience with litigation on similar projects, and decided there had to be a better way to go." This same Owner is currently proceeding with two other DRB contracts similarly structured.

#### ***Example 4. Major Highway Upgrade Project on a “Greenfield Site” (current project)***

This is a current project (about 50% complete) to upgrade 9.0km of rural highway to motorway standard through hilly countryside. The project is located in a relatively high rainfall area and this gives rise to environmental issues. There are also slope stability and hard rock excavation issues to manage.

The contract value is approximately A\$100m. It is an Early Contractor Involvement form of contract with a two-phase price competitive selection process. In the final contractor selection phase, the successful tenderer proposed a contract arrangement with similar characteristics to Alliancing. This was attractive to the Owner and has been adopted. Features include:

- defined joint governance framework involving a Project Leadership Group and a Project Management Team
- guaranteed maximum price, but with shared savings
- open-book accounting
- KPI gain share/pain share arrangements
- active relationship management processes at all levels
- a defined Issue resolution process that involves the DRB routinely participating with the PLG in issue avoidance and, if necessary, dispute resolution.

The attendance of DRB members at the PLG meetings allows for efficient and effective transfer of information and, in turn, the involvement of PLG members in the DRB meetings is encouraging maximum commitment to early resolution of issues (and avoidance of disputes).

#### ***Example 5: Design, Build and Commission rail cars for a rolling stock upgrade of a major city passenger network.***

This contract is the third stage of a multi million dollar rolling stock upgrade for the Sydney city and suburban passenger rail network. The contract stage value exceeds A\$300m. The two previous stages have involved the same contracting parties working under a traditional fixed price D & C contract arrangement, with no partnering provisions and no DRB. Both previous stages have resulted in major disputes leading to substantial and costly arbitration proceedings.

The Owner decided that the same philosophy could not be carried forward into Stage 3, and the Stage 3 Contract was modified to include for formal relationship arrangements, an open book target Cost arrangement with painshare/gainshare provisions, and a three party DRB. This represents a significant shift in the contracting philosophy from that adopted on the two previous stages, and is another example of recognition that co-operative (or collaborative) contract arrangements will frequently produce a superior outcome to that achieved by traditional adversarial arrangements.

The Relationship framework adopted follows closely to the example set out in Appendix 2. The provisions covering the modified arrangements have simply been added by way of additional clauses to the original traditional contract arrangement.

The design had been substantially developed during the first two stages and the Target Cost was benchmarked against one of last versions produced under the Stage 2 contract. Thus in essence this revised arrangement can be included amongst the 'ECI' Relationship Contracting arrangements.

The DRB provisions are relatively standard, with a focus on dispute avoidance in the first instance. DRB decisions on any formal referrals are interim binding.

This contract has been underway for about 6 months. To date the relationship aspects are working well, with extremely positive reactions from the teams of both contract parties.

### ***Example 6: Design, Supply Test and Commission of a Digital Train Radio System for an electrified rail network.***

This contract is essentially a fixed price contract arrangement. It involves development of new technology and/or adaption of overseas technology for a digital radio system to suit various train types (new and old) operating on the electrified network in and around Sydney. The adaptation involves both software and hardware issues.

The 'fixed price' contract involves some complex technology interfaces. Specialised equipment being supplied from several overseas suppliers must be integrated into one system, some requirements of which can only be settled after an initial testing period. Certain aspects of the integration are recognised in the contract as potential Variations, with any price and time impacts "to be agreed".

The Owner is the same entity as is involved in Example 5. Based on the previous experiences described in that example, a similar formal relationship philosophy has been adopted. A three party DRB has also been appointed.

This contract has only recently commenced.

### ***Example 7: Service tunnel for HV power supply upgrade for Sydney.***

This contract involves a purpose written ECI form of contract with the majority of design responsibility with the Owner. The task involves a 3.4 km x 3.5m internal diameter TBM tunnel with full segment lining passing through a complex network of existing rail, road and service tunnels and around and in close proximity to a number of deep city basements. Lateral connections from the tunnel must interface with a number of existing main city substations via short stub tunnels, shafts and directional drilling. The contract has been negotiated with the contractor who recently completed a similar but shorter tunnel around the opposite side of the city. It has two distinct stages, with provision to proceed or not at the end of the first stage.

Stage 1 is underway and involves the Contractor working with Owner and the design team to refine the design and settle constructability issues, program and target price. Payment to the Contractor during Stage 1 is on the basis of hourly rates and expenses for agreed personnel assigned to the project team.

The target price is arrived at by an open book estimating process with an external independent third party comparative check estimate .

The Contract provides for a 3 person DRB, which will be established at same time as Stage 2 is confirmed.

The preferred option for Stage 2 is to achieve a substantially fixed price agreement. However, the Contract also includes for a Geotechnical Baseline Reference Framework<sup>24</sup>, with ‘normal’ rates for mid range ground conditions, increased rates for upper range ground conditions, and cost reimbursable arrangements for work outside the upper range limits. In essence, there are pre-agreed geotechnical risk limits beyond which the Owner carries the financial risk. Relationship principles are incorporated into the contractual arrangement.

This contract has only just begun and represents a significant philosophy change from the Owner’s historical procurement strategy. The most recently completed tunnel adopted informal relationship practices and was the Owner’s first experience of a DRB and the Geotechnical Baseline Reference approach. The latter tunnel was on time, on budget and dispute free. This history contrasts with the previous two tunnels which experienced substantial time and budgetary over-runs and significant disputation ongoing for several years after completion.

This contrast has been a major influence in the approach adopted for this current project, which will be of significantly larger value than any similar tunnels yet undertaken by the Owner.

## 5. CONCLUSIONS

All of the relationship contracts (except ‘pure Alliances’) pass specific risks to the constructor. Some may pass on very significant risks. The allocation of risk, the interpretation of the contract clauses that deal with risk and the application of particular factual and practical manifestations of the risks to the contractual arrangements [particularly cost and time factors] are the factors which cause issues and then disputes to emerge. This is just as true in relationship contracts as it is in traditional contracts.

**Dispute avoidance is emerging as a primary role for DRBs** – at least as important as dispute resolution recommendations.

The chance of success in avoiding disputes is greatly enhanced in an atmosphere of openness and frankness where full disclosure and feedback are freely given and ongoing dialogue is permitted. In principle, truly effective relationship contracts will create from the outset an open, cooperative environment, and by doing so, allow DRBs the best opportunity to assist in avoiding the escalation of issues into disputes.

The DRB process itself provides an opportunity for a regular independent review of project developments, thereby assisting with the discipline needed to maintain the parties’ relationship commitment in the face of sometimes difficult commercial developments, and assist with early and positive issue resolution. The Australian experience has demonstrated that the DRB process is admirably suited to this role.

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<sup>24</sup> The Geotechnical Baseline Framework, or GBR, establishes the ground condition risk that the contractor is expected to accept.

The Australian experience to date also reflects the success of the combination of project partnering and DRB involvement on the Washington Metro as recorded by James Haggins<sup>25</sup> as follows:

*.....we experienced better cost control, reduction in schedule growth, a significant reduction in paperwork, and successful attainment of our valued engineering objectives...and NONE of the contracts that embraced the principles of the DRB using non-binding recommendations and Partnering have resulted in litigation. ....*

Some Australia users of Alliances are also finding the DRB concepts beneficial. There are now several examples covering both private and public Alliances where an independent person with similar skills to those of a DRB Chairperson has been appointed to act as Chair or a member of the Alliance Leadership Team. This role does not carry a casting vote, but is deemed to have benefit in assisting the other ALT members to come to the required unanimous agreement on difficult matters.

At the end of the day, the investment in a DRB is another form of insurance. As with any insurance, the party investing in it must judge the relative benefits of taking the risk and paying the insurance premium. Australian experience to date suggests a DRB is very cheap insurance when used on correctly chosen projects.

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<sup>25</sup> *Dispute Review Boards using non-binding recommendations in the Public Sector*, James R Haggins, DRBF 'Forum', V 13, #3, Aug 2009

## APPENDIX 1

### *Penetration of ECI usage into the USA*

An interesting expansion of ECI usage into USA road contracts has been reported by a USA study team that visited Europe and the UK to “*review and document international policies, practices, and technologies for potential application in the United States*” to investigate methods of improving upon the negative aspects of traditional contracting processes in the USA<sup>26</sup>.

The research team ...*observed construction management methods that promote alignment of team goals, integrated use of risk analysis techniques, strategic use of alternative delivery methods, procurement systems that set a framework for success, contract payment methods that support alignment and trust, ... and a greater partnership between public and private agencies.*”...

Upon their return they recommended to the South Carolina Department of Transportation<sup>27</sup> a target pricing proposal based on the equitable risk sharing model of the UK Highways Authority. This project proceeded through to near finality but was unable to be concluded because of a legal challenge to South Carolina’s Design-Build legislation. It subsequently proceeded as a traditional design-build tender process and a contract was awarded to the originally selected ECI contractor ...“*at a significantly higher cost than originally estimated in the partnership proposal*”<sup>28</sup>.

During the course of the research team’s activities on return to the USA, it was also discovered that a form of target pricing had already been employed in the state of Washington on the Hood Canal Bridge<sup>29</sup>.

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<sup>26</sup> *Early Contractor Involvement and Target Pricing in U.S. and UK Highways*, K R. Molenaar, J E. Triplett, J C. Porter, S D. DeWitt, and G Yakowenko, *Transportation Research Record: Journal of the Transportation Research Board*, No. 2040, 2007, pp. 3–10.

<sup>27</sup> *Ibid*, p 4 & 6-8

<sup>28</sup> *Ibid*, p.8

<sup>29</sup> *Ibid*, pp.4 & 8-10.

## APPENDIX 2

### *Examples of contract provisions dealing with relationship requirements.*

Typical provisions are similar to the following:

1. The parties will establish a Project Leadership Team (PLT) consisting of the Owner Representative, the Contractor Representative; one person from each party holding a position more senior than the latter two persons and such other persons as the parties agree. [“Such other parties” would normally include Design team members during the design phase, safety team members as and when deemed appropriate, Operations personnel when relevant, etc]
2. The objectives of the PLT are to monitor the overall progress of the project; build and maintain a collaborative working relationship between the parties; ensure the working relationships of the PLT members set an appropriate example to others involved in the Contract Work; assist with the resolution of any matters referred to the PLT by a party; promote a collaborative and co-operative environment between Owner and the Contractor with respect to solving of [all issues relevant to performance of the Work].
3. The Contractor must, if requested by Owner, procure the attendance at the meetings ... of Subcontractors who may provide information towards and/or assist in achieving the objectives of the PLT.
4. The PLT will meet monthly or as otherwise agreed by the parties. The role of chairperson for meetings of the PLT will alternate between the Contractor Representative and the Owner Representative with the latter to chair the first such meeting.
5. Either party is entitled to request a PLT meeting at any time, subject to the availability of the PLT members. Each party will use its best endeavours to ensure that its PLT members are available for such additional meetings.

A fairly standard form of ‘Partnering Charter’ exclusion is included, viz:

Nothing which occurs during a PLT meeting will:

- (i) relieve either party from, or alter or affect, its liabilities or responsibilities whether under this Contract or otherwise according to law;
- (ii) prejudice either party's rights against the other party whether under this Contract or otherwise according to law; or
- (iii) be construed as a direction by either party to do or not do anything.

Where a Target Cost option is used, the PLT meeting provisions would also include text along the following lines.

1. The parties will work together to agree the format and content of the Cost Report to be prepared and submitted each month by the Contractor.
  2. The Contractor will provide a Cost Report to each PLT meeting which will include as a minimum:
    - (b) the current Forecast Actual Out-turn Cost, together with:
      - i. any Expected Cost Over-run or Under-run;
      - ii. any contingency in the Target Outturn Cost which is being released; and
      - iii. the current expected Gainshare / Painshare together with the strategies which the Contractor is implementing to maximise the potential Gainshare, minimise any Painshare and minimise the Actual Outturn Cost.
      - iv.
- 

A current version of the ECI contract that is in common use in Queensland contains more specific clauses in relation to both Integrated Governance arrangements, and Relationship Management. Sections 1 , 2 and 3 following are summaries only of the Queensland ECI contract provisions.

### **1. PROJECT LEADERSHIP GROUP (PLG)**

The Project Leadership Group is a senior management group which provides overall monitoring, guidance and leadership on all aspects of the work under the Contract.

#### **Duties of PLG:**

- set policy and give philosophical and strategic direction for the project within the boundaries set out in this contract;
- provide leadership and set a visible example for all to see of senior management commitment to the Relationship Management ideals;
- establish with the Project Management Team clearly defined objectives, outcomes and deliverables for the project;
- initiate and /or approve commitment of resources to the project and provide high-level support to the Project Management Team;
- monitor the performance of the project against agreed objectives and implement appropriate measures to correct undesirable trends;
- review eligibility of entitlement of claims outside specified time restrictions on a case by case basis with reference to the specific circumstances and an assessment of what is fair and reasonable under those circumstances, and
- resolve any differences and issues that are referred to it, including implementation of the Issue Resolution Process if necessary.

#### **PLG Process:**

To be set up within 7 days of award & remain in place until PC

To include representatives of the Principal, the Contractor as agreed during Stage 1

The Principal's Representative is one of the Principal's delegates.

Typical agenda for PLG meetings to include review of:

- the progress of the Contract based on the Contractor's Monthly Report;
- matters referred by the PMT for decisions;
- the Actual Construction Costs to date compared with the measured value of work completed;
- variance between GMP and budget costs on a quarterly basis;



- "opportunities" to generate savings through changes to the Scope of Works; performance against the Project Incentive Bonus and determine progressive disbursement and allocation;
- matters on which the parties are unable to agree; and
- any other items identified by the Principal's Representative or the Contractor's Representative.

The Chairperson of each meeting of the PLG must provide to the Principal and the Contractor a written report within 2 days after each PLG meeting.

All matters arising at a meeting of the PLG must be determined by unanimous agreement of the PLG delegates. If unanimous agreement cannot be reached on any matter it must be determined by the Dispute Review Board. (*emphasis added*)

## **2. PROJECT MANAGEMENT TEAM (PMT)**

### **PMT Process:**

- To be set up within 7 days of award & remain in place until PC
- To include representatives of the Principal, the Contractor and the Contractor's Designer & from time to time any Subcontractors or other persons who may be able to assist the PMT in performance of its functions
- each delegate to the PMT may be required to execute a warranty that they will perform all duties and act in Good Faith.
- Typical agenda for PMT meetings to include review of:
  - the Contractor's activities, the Principal's duties, programming including 1 month look ahead, budgeting and costs, quality, safety;
  - Any changes which the Contractor considers require adjustment to any or all of the Project Works Budget, GMP and Contractor's Fee, Project completion date;
  - matters on which the parties are unable to agree; and
  - any other items identified by the Principal's Representative or the Contractor's Representative.

The PMT must provide a written report within 2 days after each PMT meeting to Principal & Contractor.

All matters arising at a PMT meeting must be determined by unanimous agreement of the delegates. Absent a unanimous agreement on any matter, it must be referred to the Project Leadership Group (PLG) for a determination.

### **Routine reports by Contractor**

Normal provisions are included for daily, weekly and monthly routine reports by the Contractor.

## **3. RELATIONSHIP MANAGEMENT (STAGE 2)**

*Author's note: The extent of these provisions is too long to summarise effectively as has been done for sections 1 and 2 above. The following index of sub-headings is included to give an overview of the matters covered.*

**Good Faith**

**Parties' Obligations**

**Interpretation**

**3.4 Relationship Management**

**3.4.1 Relationship Management planning workshop**

**3.4.2 Rating, Reviewing and Discussing Relationship Objectives**

**3.4.3 Costs and Consequences of Relationship Management**

*(This subclause includes a fairly standard type of partnering liability limitation provision.)*

- c) ... the parties agree that,
  - i) any decision (whether oral, written or by conduct) made or withheld by or on behalf of the Principal or the Contractor or by the Principal's Representative to use relationship management as a means of project management or means of application of the terms of the Contract under Clause 3.4, and
  - ii) any acknowledgment, statement, and agreement made or withheld in relation to or arising out of the obligations in Clause 3.4;

is deemed to not increase, diminish, waive or otherwise affect a party's rights, obligations or liabilities under or arising out of the Contract or vary this Contract.

### **APPENDIX 3**

#### ***Selection of Photographs of example projects.***

*[The authors gratefully acknowledge permission of the various project Owners and Contractor participants to include the references to their projects in section 4, and the photographs which follow]*

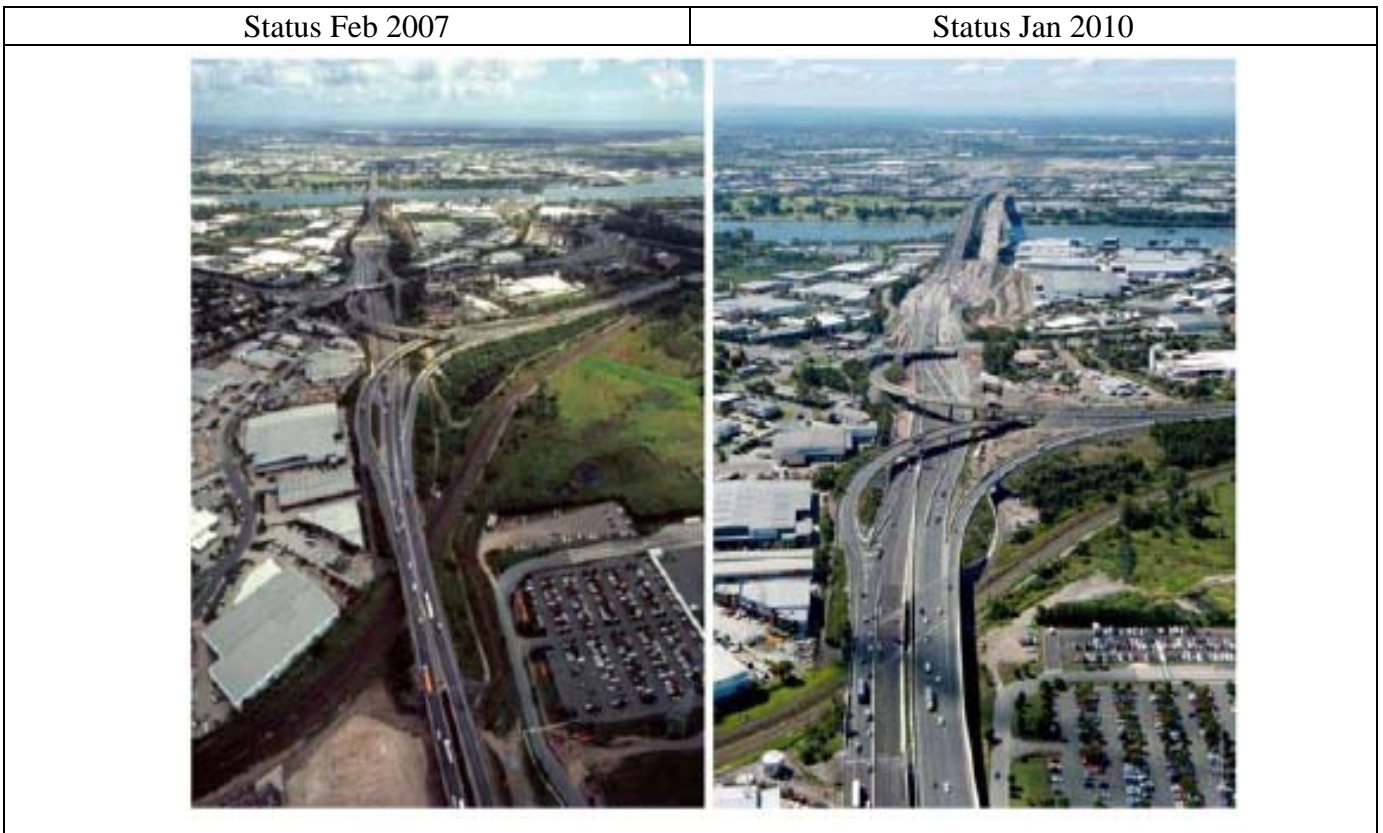
**Project #1:**

Fixed price D & C project with a DRB; initial partnering converted to Relationship during the project



**Project # 2**

Fixed Price D & C project with a DRB; initial partnering converted to effective Relationship during the project



Status Feb 2007

Status Jan 2010



**Project # 3**

ECI Construct Only with a DRB; established as fixed price relationship contract, with Risk Pool & KPIs



**Project # 5**

D & C for new suburban passenger cars. Converted from fixed price traditional used for Stages 1 & 2 to Target cost with pain-share/gain-share relationship contract, with a DRB for Stage 3.



<b>Station 8</b> Shell Harnesses	<b>Set:</b> H32	<b>Car:</b> OD6965 (TC65)
	Trailer car	



**Project # 7**

ECI predominantly Construct only, with a DRB; Target Cost Fixed Price, with Geotechnical Base Line Framework & Painshare/gainshare.

*[Note; photo is recently completed similar profile tunnel]*

