

# **The Benefit/Cost equation for Dispute Boards - Australian Experience**

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# The Benefit/Cost equation for Dispute Boards - Australian Experience

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# THE BENEFIT/COST EQUATION FOR DISPUTE BOARDS - AUSTRALIAN EXPERIENCE

## 1. Contracting Party Objectives

1. From an Owner's perspective, the most commonly stated objective is "value for money". This is usually measured in terms of the Time/Cost/Quality imperatives, often depicted by the diagram below.



2. From a contractor's perspective, similar measures apply. The Australian Constructors Association included the following amongst its stated objectives at the launch of the Dispute Resolution Board Australasia in 2003 as follows:

.....

- *Improve Contract Outcomes*
- *Run projects within budget for Time and Cost*
- *Manage issues during the currency of project*
- *Eliminate carry over issues to post completion*

.....

3. Thus from all parties' perspective, the simplest measures of a successful project is that it is on time, within the budget of the particular contract party, meets the quality and/or performance objectives expected of the finished product and any issues are resolved when, or very soon after, the project is operational.

## 2. Factors Influencing Construction Project Outcomes.

### *The Construction Environment*

4. Despite the dedication and skills of those who are associated with the various aspects of construction projects, perfection of individuals is a rarity and as we all know, a score of 10/10 on any task or assignment does not often happen. That applies whether one is setting up the contract documentation, producing the design, or planning and undertaking the construction of that design. The likelihood of imperfection increases non-linearly with size and/or complexity of the project and the time pressures often imposed on major infrastructure projects.
5. Imperfection and/or uncertainty are a reality of construction projects, and change during the course of a complex project is an almost inevitable outcome of that reality. Differences of opinion as to responsibility for unclear, “unexpected” or “unknown” issues frequently arise. These translate into “issues” or “conflicts” between the respective project teams. If differences of opinion harden or are allowed to fester, disputes are likely to develop<sup>2</sup>.

## 3. Do Traditional Contracting Practices consistently achieve the Party Objectives?

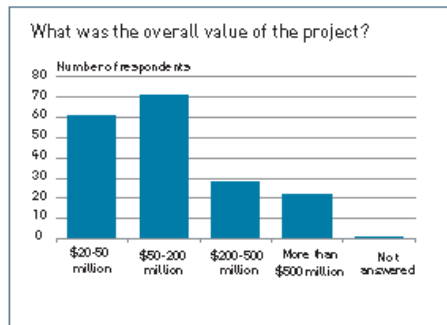
### *Out-turn Results, Time and Cost*

6. It is an historical fact that the desired results of one or both contracting parties frequently fall well short of their desired objectives. There have been many studies in multiple countries and different legal systems directed towards the identification of the reasons for this fact. One such study was initiated in Australia in October 2005 as a collaborative effort between the prominent legal firm Blake Dawson Waldron (now Ashurst) and the Australian Constructors Association to research the root causes of project pressure points. The study was based on an industry wide survey covering projects undertaken over the previous three years. Responses covered 183 projects encompassing all delivery modes and with an aggregate value exceeding A\$20 bn. The distribution of project values as recorded in the report is reproduced below:

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<sup>2</sup> **Terminology:**

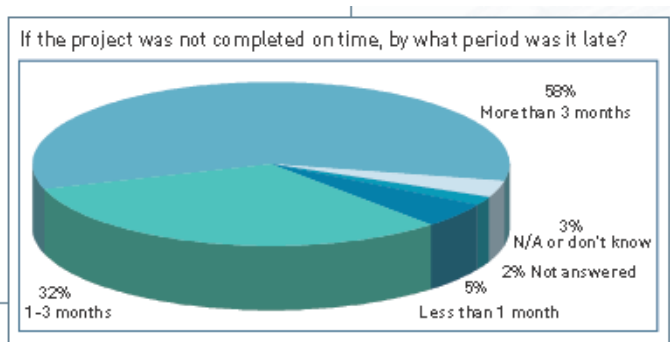
An **Issue** arises when the parties to a contract first identify differing opinions in regard to some matter associated with a party's contract obligations or scope of work. That may or may not lead to a **Claim**, which is a request for additional compensation by any party resulting from a particular issue. A **Claim** may lead to **Conflict** between the parties as to liability for payment. A **Dispute** arises when the claim has been rejected at the last level of job-site management.



7. The views expressed in the survey responses were then tested by follow up interviews with selected survey respondents and key industry players, including Infrastructure Partnerships Australia, AusCID, directors of the ACA and board members of both public and private sector principals.
8. Time and cost overruns were revealed as the two biggest causes of disputes in construction and Infrastructure projects. The first report was published in 2006<sup>3</sup>, and notes in the forward  
*Disputes are a factor in all major projects. Prevention is undoubtedly better than cure and it is vital that project participants agree in advance clear dispute avoidance and resolution mechanisms.*
9. The 2006 report has been followed by further reports in 2008 and 2011 (which are available on the same website). The later reports focus on the scope for improvement in specific causation issues identified in the 2006 report. So far as the author of this paper is aware, the initial statistics of the 2006 report have not been updated. Those most relevant to the subject of this paper are briefly summarised below. I refer to the results of this study in this paper as “*the industry norm for non-DB projects*”.

***Time performance:***

10. Survey findings:
  - Only 56% of projects identified in the survey were completed on time, taking into account granted Extensions of Time. (Thus on average, 44% ran late).
  - Of the projects which ran late, 58% ran more than three months late.



- Thus (58% x 44%) =26% were more than three months late.
- The greater the project value, the less likely it is that the project will finish on time.

<sup>3</sup> **Scope for Improvement:** a survey of pressure points in Australian construction and infrastructure projects;  
[http://www.blakedawson.com/Templates/Publications/x\\_publication\\_content\\_page.aspx?id=54519](http://www.blakedawson.com/Templates/Publications/x_publication_content_page.aspx?id=54519)

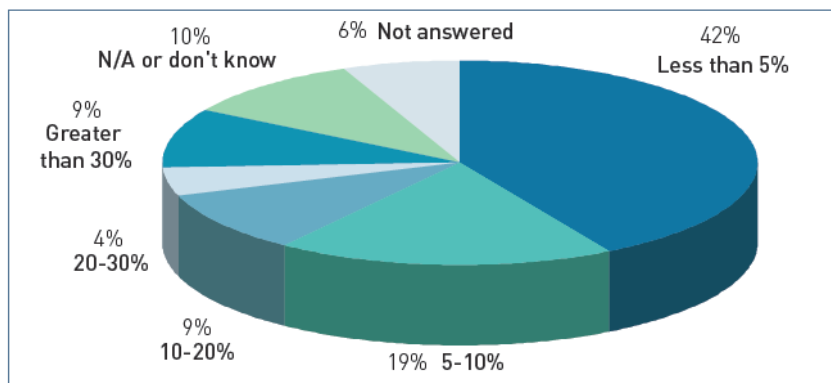
- 66% of projects valued between \$20 million and \$50 million were completed on time,
- only 50% of projects valued at over \$500 million were completed on time<sup>4</sup>.

11. Thus the “On-time” objective appears to fall well short of both parties objective.

***Distribution of disputes as a percentage of project value:***

12. Quote from report text: *“The overwhelming majority of respondents said they had invoked a dispute resolution process in their projects”*

What was the value of matters in dispute as a percentage of the contract price?



[Note that cost increases due to scope changes and agreed client-directed variations are a normal part of most construction contracts, and are not included in the class of “dispute costs”]

13. The survey data suggests fewer than 40% of all projects had no disputes. The weighted average of the survey data of the diagram above indicates a potential cost growth associated with disputes alone of 9.5%. The cost claimed may not of course equate to the actual cost recovered, but legal and expert costs associated with recovery attempts are substantial costs incurred by both parties which are not included in the “claim” amounts above.

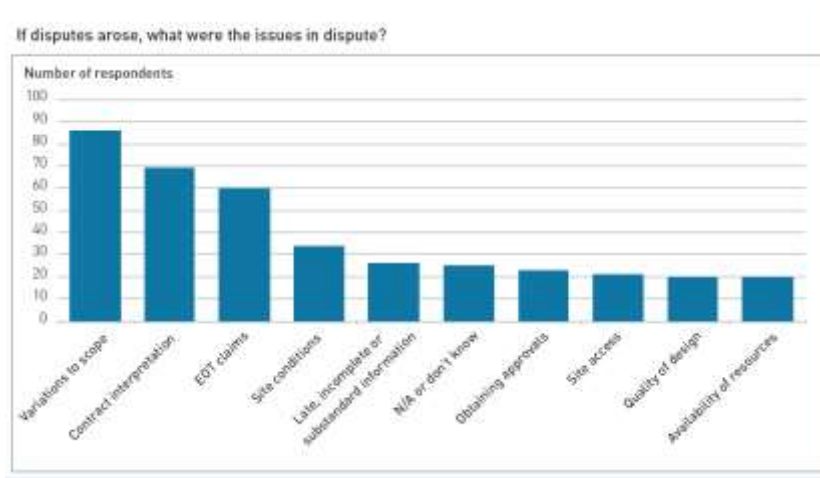
14. Clearly the “on budget” objective also appears seriously under threat.

***Issues giving rise to disputes***

15. The survey required respondents to record and rank the various causation factors giving rise to disputation. The diagram below indicates the results obtained. The highest ranked causes have been

<sup>4</sup> The average value of projects in the Australian DB data base is \$360m. Interpolating the BDW survey results suggests about 55% of equivalent value ‘non-DB’ projects were completed

regularly reported in a number of international studies on the same topic, so similar issues keep arising no matter what the contract conditions or the culture of the participants.



***Level of satisfaction with Dispute resolution processes in common use.***

16. The report notes that “when disputes do arise, parties are often dissatisfied with the resolution procedures stipulated by the contract.” Across all project values and organisations, 33% were satisfied with the time taken to resolve disputes, 39% were satisfied with the cost of dispute resolution but only 22% were satisfied with the process.

It was also found that satisfaction with the effectiveness of a dispute resolution method used decreased as the project value increased. In projects worth \$200-\$500 million, only 9% of respondents were satisfied that the resolution process used was effective compared to 25% in the \$20-\$50 million range.

17. Expressed negatively, across all project values, 78% of respondents were dissatisfied with the dispute resolution process. For projects in the \$200-\$500 million range, 91% were dissatisfied with the effectiveness of the dispute resolution method used, compared to 75% dissatisfied in the \$20-\$50 million range. So even at the lower end of the ‘>\$20m-and-above’ contract value range, **the dominant industry view was that there had to better methods of dispute resolution than those in common use.**

***Close out time for resolution of disputes***

18. The report notes Industry experience that much of the ‘dispute resolution’ effort carries on after the projects are completed. 41% of disputes took up to 3 months to resolve. 16% of the balance took over 12 months to resolve (i.e., 9% took more than one year to resolve). In some cases, several years elapsed before resolution was achieved. From the perspective of both the contract parties and the community, this is wasted effort

### ***Influence of DRBs on the 2006 report statistics***

19. The BDW/ACA survey was completed in 2006, based on projects undertaken in the period 2003-2005, DRBs<sup>5</sup> were just beginning to make an appearance on the Australian construction scene. The Dispute Resolution Board Australasia ('DRBA') was formed in May 2003. A 1998 survey published in the IAMA journal<sup>6</sup> noted that at that time, only 8% of respondents had any direct experience with DRBs compared 80 to 90% of respondents who were familiar with Arbitration, Mediation and Expert Determination. Little had happened to change that situation prior to DRBA formation. Thus very few of the survey respondents had been exposed to DRBs during the 2003-2005 period of projects covered by the survey.
20. The section of the BDW/ACA 2006 report dealing with recommendations for improvement includes the following:
- *Traditionally, insufficient attention has been given to dispute resolution clauses prior to contract signing.*
  - *Consider alternative approaches to dispute resolution which are **proactive**, such as appointing a neutral and independent specialist from the industry to act as a sounding board for the benefit of the project as a whole...* (emphasis added)
- Thus, notwithstanding the limited exposure of the industry to DRB concepts at that time, the second of the BDW/ACA report findings quoted above comes very close to describing the concept underlying the DRB process.
21. An effective issue management process focused on interparty relationships is therefore a primary requirement for successful delivery of any construction project

## **4. The actual growth of DBs within Australia**

22. The first use of a DB in Australia was on the Sydney Ocean Outfalls contract commencing in 1987. That use came about because of the influence of the USA consulting engineers who were prominent in those projects, and preceded the formation of DRBF International in 1996 by 9 years.

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<sup>5</sup> The terms 'Dispute Board' or 'Dispute Resolution Board' are generic and include the 'Dispute Review Board' (DRB) – USA origin, providing nonbinding recommendations; the 'Dispute Adjudication Board' (DAB) a FIDIC model based on the US model, but which provides an interim binding decision; and the 'Combined Dispute Board' (CDB) which is a hybrid of DRBs and DABs created under a scheme introduced by the ICC in 2002. More recently, the term "Dispute Avoidance Board" (also 'DAB') has come into use within Australia. For convenience of reference, the term 'DB' used in this document encompasses all the above variants.

<sup>6</sup> Peter M Trainer, *Dispute avoidance and resolution in the Australian construction industry- part 1* (1998) 17 (1), *The Arbitrator & Mediator*, 32-57.



Figure 1 below shows the growth of DB usage by number of contracts since that first use in 1987.

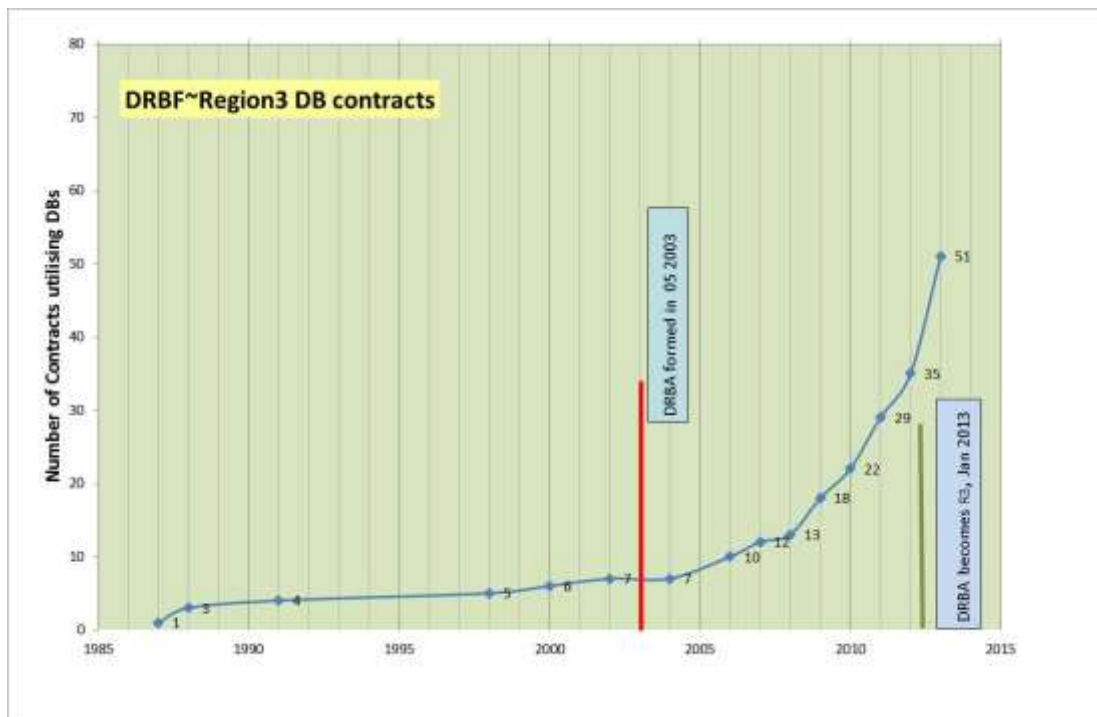


Figure 1

23. The increasing industry focus on methods of improving contract outcomes and reducing the level of disputation certainly created fertile ground for a concept such as that offered by DBs. However, Australian experience is that the formation of an active local group promoting their use is essential before significant industry acceptance (at the Contract drafter level) is likely.

24. With active local support, and the excellent track record that both sides of the industry quickly recognised, the growth in the use of DBs within Australia has become almost exponential.

By April 2014, the value of DB contracts completed or in progress (again, actual unescalated values) was \$A17,630m. Of this total, \$A11,360m represent 34 completed or substantially completed contracts, and \$A6,270m represents 17 in-progress contracts.

25. The contracts which have successfully utilised DBs (in any of their various forms) within the Australian and New Zealand industries encompass virtually the full range of contract types. The list below represents the % distribution of all contract types used since 1987.

Construct only	D & C	D C & M	EPC	ECI Construct only	ECI, D & C	DBOM	Design Supply install Commission	PPP	Management	Cost reimbursable
19.6%	41.1%	5.4%	3.6%	7.1%	8.9%	3.6%	3.6%	3.6%	1.8%	1.8%

26. PPPs are about to be introduced. Two current projects are at an advanced stage of 'Requests for Proposals'. The structure of the DBs for these projects has been explained in Mr Finlay's session 1 paper. Suffice to say here, this is another example where past experiences have demonstrated to the contracting parties that there has to be a better way to approach dispute management, and the benefits of methods focussed on avoidance (rather than a cheaper way to proceed with after-the-event dispute resolution) are becoming a primary focus of experienced contract participants. The two PP projects have been included in the "contract types" tabulation above, but are not included in the project statistics considered in the later sections of this paper.
27. The following sections of this paper provide an overview of the benefits available from well-structured DBs and discuss the actual performance of completed<sup>7</sup> projects which have utilised DBs, since the first serious efforts to introduce the concepts and procedures commenced in the post 2005 period.

## 5. The DB difference - Proactive processes for avoidance of disputes

28. Other presentations in this conference are dealing with the fundamentals of DBs. At the risk of repetition, the following summarised extracts from the 1996 *Dispute Review Board Manual*<sup>8</sup> reflect many of the concepts identified in the Australian research studies already referred to above.

- *Disputes result in a substantial dilution of effort, delays, and diversion of capital.*
- *Inefficient contracting practices can constitute a serious barrier to the application of new technology and to the containment of rapidly escalating construction costs and contract disputes.*
- *Many of the specific recommendations .....are aimed at mitigating the deleterious effect of claims, disputes, and litigation upon the efficiency of the construction process.*
- *DRBs have been found to be applicable in all sectors of the construction industry.*
- *Project partnering ..... involves building a mutual understanding of goals and objectives among key people on the job, and .. achieves its most dramatic success when both contract parties are committed and a problem resolution hierarchy is established that extends to the upper levels of management.*
- *The positive (as opposed to adversarial) attitudes fostered by partnering are fully compatible with the non-adversarial resolution of disputes facilitated by DRBs.*

29. The objectives of the DB concept as set out above reflect basic commercial common sense, viz:

- Encourage the parties to articulate issues as they arise

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<sup>7</sup> The analysis of project statistics which follows includes three projects in excess of 95% complete and one above 90%..

<sup>8</sup> *Dispute Review Board Manual*, McGraw-Hill 1996; Matyas, Mathews, Smith, Sperry

- Promote discussion and resolution of issues by the parties while the work is in progress
- Establish a pre-agreed panel of experts with continuous knowledge of the project and exposure to any issues while the work is in progress to provide a sounding board of difficult issues as they arise, and a quick and simple method of resolving issues that the parties are unable to resolve by discussion.

## 6. Comparative Performance ~ DB Contracts vs "Industry norm" non-DB contracts

30. As already noted, Australian experience with DBs commenced in 1987. Seven contracts were completed between 1987 and 2005 with a value of A\$632 million (un-escalated). While it is known that no issues went beyond the DB on any of those seven contracts, they are not included in this analysis because the relevant data is not available.

Table 1 below summarises the available data since 2005.

<b>STATUS OF DB CONTRACTS IN AUSTRALIA SINCE 2005</b>			
		No. of contracts	Gross Value at Award
		44	A\$15,924m
Range in contract value			A\$31m to A\$1,960 m
Average value at Award (\$M)			A\$ 362
		<b>Table 1</b>	

31. Seventeen of the 44 projects above are currently in various stages of construction below the 'substantial completion' cut-off limit used for the data of this analysis. The value of this 'in-progress' segment is slightly over A\$6,000 million. [I note that almost without exception, the performance trend of the 'in-progress' projects mirror that of the completed ones].
32. The performance of the other twenty seven 'completed' DB contracts is compared with the "Industry norm" non-DB projects (covered by the BDW survey reported above) in the following paragraphs. The DB sample relates to projects with a value range between \$31m and \$1,957m and an average value of \$357m. The value range of the "Industry norm" non-DB projects is identified in paragraph 6 above. 123 of the 183 projects fall in a directly comparable range.

DB CONTRACTS COMPLETED SINCE 2005	
No. of Contracts complete or substantially complete	27
Value at Award for 'complete' projects	A\$9,652m
Average value at Award	A\$357
Table 2	

**Comparative Out-turn Cost Performance – DB contracts vs “Industry norm” non-DB contracts**

33. The relevant section of the BDW survey report was focussed the potential cost growth associated with contractual claims over and above the agreed price increase due to scope growth. The data available does not separately identify the ‘normal’ scope growth component.

The DB records allow the actual increase related to from normal scope growth and contractual claims to be separated. Thus the comparison in the table below is the average 1.9 % actual for DB contracts compared to the 9.5% -average figure of claims for “Industry norm” non-DB contracts.

DB CONTRACTS COMPLETED SINCE 2005		Comparative Out-turn Cost Performance			
		DB contracts performance	"Industry norm" Non-DB contracts performance		
1	Value at Award for 'complete' projects	\$9,652	base figure	A\$ 20bn, (award + agreed scope changes)	
2	Gross value of Agreed scope changes (% of 1)	\$881m	9.1%	(split not available)	
3	Gross value of Claims settled in addition to Agreed Scope Changes (% of 1+2)	\$196m	1.9%	actual recovery unknown	9.5% claimed,
Table 3					

34. While the actual recovery against the “industry norm” non-DB ‘amount claimed’ is unknown, the author’s personal experience over many years suggests that **the most probable outcome for the “industry norm” data is likely to be well above the actual DB figure for settled claims of 1.9%.**

**Comparative Time performance: - DB contracts vs “Industry norm” non-DB contracts**

35. Meeting the required contract performance time is rated by both Principals/Owners and Contractors as one of the two most important requirements for project outcomes. Both the “industry norm” data established by the 2003-2005 survey data and the DB records for Australian projects provide quite a comprehensive break-up of the results from each project group.

Comparative Completion Time Performance		
	DB contracts performance	"Industry norm" Non-DB contracts performance
On time or ahead	81%	56%
Late	19%	44%
> 3 months late	4%	26%

Table 4

36. The 'time' performance of the DB contracts is substantially better than the "Industry norm" sample. In absolute terms, the data suggests that:
- The chance of an "Industry norm" project **running late** is 2.3 times greater than that for a DB project
  - The chance of an "Industry norm" project **running more than 3 months late** is 6.5 times greater than that for a DB project

***Comparative commercial closure time: DB contracts vs "Industry norm" non-DB contracts***

37. There are several fundamental differences in the dispute management process of DB contracts compared to non-DB contracts.
- i. The DB generally becomes aware of the issue(s) from an early stage of their development. It is able to guide the parties in the appropriate direction towards resolution. E.g., it can encourage them to agree costs and facts on a "without prejudice" basis as the work proceeds, pending resolution of liability questions.
  - ii. Progressive agreement of costs and facts frequently leads to a commercial settlement between the parties.
  - iii. If the matter becomes a formal referral, the DB is in a much better position to agree 'liability only' questions with the parties than an external party appointed to hear the matter under any of the 'after-the-event' conventional processes (whether formal or ADR).

The following statistics demonstrate these benefits of the DB processes.

**FREQUENCY OF DISPUTES AND NATURE OF DECISION REQUIREMENTS**

	DB projects	"Industry norm"
% of Completed DB projects with zero disputes requiring DB determinations	78%	
% of "Industry norm" projects that have not required external dispute mechanisms invoked		<40%
% of Completed DB projects that have required DB determinations	22%	
% of "Industry norm" projects that have required external dispute mechanisms for resolution		>60%
average no. of disputes per 'dispute project'.	1.2	unknown
<b>Number of disputes requiring determination of both Liability &amp; Quantum</b>	<b>0</b>	unknown, but based on experience, "MOST"
<b>Quantum of all DB determinations to date has been settled between the parties following Liability determination</b>		

Table 5-A

**Period after actual PC for settlement of all contract claims**

	DB contracts completed since 2005	"Industry norm" Non-DB contracts performance
<b>At or before PC</b>	81%	<u>Uncertain</u> , but strong suggestion that significantly less than 50% in this category
<b>&lt; 3 mths after PC</b>	15%	41%
<b>3 mths to 1 year</b>	4% (1 contract, 4 mths)	9.40%
<b>&gt; 1 year</b>	None	"some"

Table 5-B

38. The possible criticism of the comparisons above lies in the disparity of sample size. The value of contracts in the DB sample is about 50% of that for the "Industry norm" sample, which is reasonable. However, the number of contracts in the 'similar value' range is 27 vs 120, so is certainly open to criticism when considering statistical comparisons. For that reason, it is useful to consider reported data from much larger DB data samples in the USA

**7. Some comparative USA data**

39. The DRBF website<sup>9</sup> includes a data base of projects with a substantial record of projects around the world, but with the majority within North America.
40. The North American record through 2010 includes over 2,200 projects with a construction value in excess of US\$ 200 billion. Appendix 1 of this paper includes several extracts from various sources which provide excellent support for the Australian statistics set out in the previous section of this paper. The recorded data reveals very similar history to the experience we have found over the past 8 years in Australia. In the author's view, USA experience firmly validates the Australian experience.
41. The following summary from the Florida Department of Transport data included in Appendix 1 is repeated below for convenience of reference.

"Summary of FDOT Experience:

- Spend approximately 0.1 % p.a.
- Save approximately 5 % in direct project cost
- Litigation has been reduced to a rarity
- One significant litigation would cost more than the total yearly investment in DRBs "

## 8. The cost of a DB – a disincentive or a sensible Insurance premium?

### ***Potential DB benefits***

42. One of the most common factors raised against the use of Dispute Boards is the fixed cost of having one. The argument is usually expressed along the following lines:
- "why should I pay for something that I may never need? I am better off to wait and see how I go, and call in the lawyers if and when I get into trouble".*
43. The answer to this question should be self-evident from the statistics set out in the previous sections of this paper. Considering the joint contract party objectives set out in section1 above:
- Potential time saving :
    - The chance of an "Industry norm" project **running late** is 2.3 times greater than that for a DB project
    - The chance of an "Industry norm" project **running more than 3 months late** is 6.5 times greater than that for a DB project
  - Potential Cost saving:
    - Of the order of 3-5% of overall price
  - Dispute avoidance potential:
    - The likelihood of contract disputes arising is about 3 times greater on "Industry-norm" projects than on equivalent DB projects.
  - Contract closure time:

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<sup>9</sup> DRBF website : [www.drb.org](http://www.drb.org)

- There is a greater than 90% probability that closure of DB contracts will be achieved at or shortly after PC, compared to less than half that probability for “Industry-norm” projects.
- There is a very low probability that DB contract closure will not be achieved by 4 months after PC, compared to a 10% probability that closure of “Industry-norm” projects will drag on for one or more years.

44. The FDOT reference repeated at paragraph 41 above is a significant understatement of the benefits of DB projects compared to “Industry-norm” projects.

### ***The Insurance Premium***

45. Insurance of many risks is common place on all construction contracts. Contract Works Insurance (‘CWI’) is a universal requirement (sometimes by Owner, sometimes by Contractor with Owner as a named beneficiary). CWI premiums vary with project type but in the author’s experience, are typically in the range of 0.6% to 1% of the contract sum. This is but one of several other insurance policies commonly taken out by both parties on major contracts. Insurance companies must make a profit, so on average the amount collected by these policies must be significantly less than the amount paid out in premiums.

46. It is not practical to insure with an Insurance company against time over-runs or contractual claims. However, self-insurance is practical!

47. Considering the benefits of DB contracts compared to “Industry-norm” contracts, it is far more logical to class the cost of a DB as an insurance premium against the likelihood that a project will run late, or experience substantial cost overruns due to contractual issues, or remain with an uncertain financial outcome for one or more years after its physical completion, or all of these factors.

48. There can be no upfront premium “quote”. The question then is what is the likely premium, and is it justified when compared to the risk?

49. It is relatively simple for a Principal or Contractor to make a reasonable estimate of the probable cost of routine DB meetings (usually about 3 monthly intervals) and monthly retainers for the DB’s review of site meeting minutes, monthly reports and generally and keeping up to date with progress reports. [DB fee structures in Australia are generally comprised of a monthly retainer (usually equivalent to a fee of approximately one day), a fixed fee for routine meetings, travel expenses at cost, and an hourly rate for time spent on Referrals].

50. While these costs are usually considered as shared 50:50, the reality is the Principal pays. The Contractor will simply include an estimate of his 50% share in his quoted price. Hence it is the totality of the “routine meeting fees and expenses plus retainers” that represents the insurance premium.

51. DB time spent on Referrals (Dispute Determinations) is usually dealt with on an hourly rate basis, and fees are always split 50:50 between the parties. This cost component cannot be estimated in advance, but several things are certain:



- A determination of a dispute Referral by a DB will cost a small multiple of that by any other ‘conventional’ dispute resolution process;
- only about 20% of DB contracts ever experience a Referral,
- given the above, the budgetary impact on both parties will be very much less than that of other ‘conventional’ dispute resolution process.

**Typical cost ranges for DBs in Australia**

52. The available cost records for the projects completed or underway have been used to assess the Routine DB fees as a % of contract sum at award, and the order-of-magnitude fees associated with referrals. In some cases, actual DB costs are known. In others, fees and expense estimates have been based on confidential advice of individual Board members with knowledge of the schedule of fees included in the DB Agreements, their own fees and expenses and the frequency of meetings. In all cases, the fee estimates for routine services are believed to be within about 10%, and cover the total of fees paid by both Owner/Principal and Contractor.
53. The fee estimates for “Referrals” have not been identified below for the reasons noted in paragraph 51 above. However, they will be referred to in the verbal presentation of this paper.
54. Projects have been grouped according to the values below and whether 1-person or 3-person DBs. One-person DBs are generally associated with smaller value projects, although project complexity is also a factor in the lower range capital values. Because DB meeting schedules are generally similar, fees and expenses for larger value projects tend to be a lower % of contract value. However, the larger value projects tend to involve more experienced DB members, so higher fee rates.

Distribution of DBs by Contract value					
	\$30m-\$100m	>\$100m- \$300m	>\$300m - \$600m	>\$600m	
3 person Board	16%	20%	23%	16%	
1 person Board	14%	11%	0%	0%	
<b>% of total sample in value range</b>	<b>30%</b>	<b>32%</b>	<b>23%</b>	<b>16%</b>	<b>100%</b>

**Table 6**

55. DB fee ranges as % of contract value:

DB member costs for any specific project include travel time and expenses. These can have a significant impact on the DB costs for remote area projects. DB member location relative to any project also has an impact, although this is generally less significant than project location. Thus there is always a reasonably wide spread in the fee % of costs for similar value DBs. Australia has rarely used a 1-person DB on projects above \$150m capital value.

<b>Routine DB fees &amp; Expenses as % of Contract value</b>				
	\$30m-\$100m	>\$100m- \$300m	>\$300m - \$600m	>\$600m
3 person Board	0.129%	0.149%	0.085%	0.063%
Range of fees	0.065% - 0.228%	0.036% - 0.248%	0.057% - 0.117%	0.038% - 0.089%
1 person Board	0.090%	0.071%	na	na
Range of fees	0.049% - 0.181%	0.056% - 0.186% (2 only)	na	na

**Table 7**

56. The data of Table 7 indicates the average insurance premium that a Principal can expect to pay for a DB contract within Australia. The upper limit is likely to be about 0.25% of the capital value at award. Using the average values, a figure of about 0.15% would be a realistic advance estimate of the probable cost of a 3-person DB, and about 0.1% for a 1-person DB in the "less than \$100m" project range.

## 9. Conclusion

57. The ultimate decision for adoption of a DB lies with the Principals and their legal advisors.

58. The reality of experience in Australia mirrors quite closely that reported by a number of long-term users of the concept, particularly that of the USA. In summary:

- Potential time saving :
  - The chance of an "Industry norm" non-DB project **running late** is 2.3 times greater than that for a DB project
  - The chance of an "Industry norm" non-DB project **running more than 3 months late** is 6.5 times greater than that for a DB project
- Potential Cost saving:
  - The potential out-turn cost of a DB contract is 3-5% lower than the same contract completed under "Industry norm" non-DB conditions.
- Dispute avoidance potential:
  - The likelihood of contract disputes arising is about 3 times greater on "Industry-norm" projects than on equivalent DB projects.
- Contract closure time:
  - There is a greater than 90% probability that closure of DB contracts will be achieved at or shortly after PC, compared to less than half that probability for "Industry-norm" projects.
  - There is a very low probability that DB contract closure will not be achieved by 4 months after PC, compared to a 10% probability that closure of "Industry-norm" projects will drag on for one or more years.

59. The “insurance premium” to have the benefit of the potential gains above is in the order of 0.1% to 0.25% of the construction cost of the project.
60. The author firmly believes this is a commercial opportunity that should be very seriously considered by those responsible for design and construction of major capital works.
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## Appendix 1

### Selected extracts from DRBF website and other sources

1. North American record thru 2010.
  - Number of completed projects: over 2,200
  - Total construction value: over US\$200 billion
  - 60% of projects with DRBs had no disputes
  - 98.4% of projects with DRB recommendations had no subsequent arbitration or litigation
2. The % of projects with disputes in the above tabulation (i.e., referrals to the DRB) appears to be distorted by a few early and very large projects which had some difficulties.
3. Anecdotal evidence <sup>10</sup> is that early in the process it was experimental, and many issues were brought to the DRBs that should never have reached the stage of a hearing. The level of referrals has reduced significantly as contractors come to realise that the DRB is not there to remove from them the responsibility for adopting a realistic and sensible approach to claim submissions, and DRB members have gained experience and adopted a much more proactive approach. It was reported that current practitioners expect that between 70% and 80% of DRB contracts will have no referrals. (emphasis added).
4. Florida Department of Transportation (FDOT) experience:

The Florida Department of Transportation has been a DRB user since 1994. More than 469 DRB contracts had been completed by the end of 2009. Records provided by FDOT have been used as the for several research studies into the cost/benefit of DRBs vs non-DRBs<sup>11</sup> published in 2013.

A second presentation by the co-author of the above paper (Assoc. Professor Ellis of the University of Florida<sup>12</sup>) included the following report by the Florida Inspector General of Audit of a 2002 audit of the FDOT DRB Program.

<b>Contracts Lasting Longer Than 1 Year</b>	<b>No. of Contracts</b>	<b>% Time Overrun</b>	<b>% Cost Overrun</b>
<b>DRB Contracts</b>	15	1.84%	12.12%
<b>Non DRB Contracts</b>	60	19.10%	17.89%

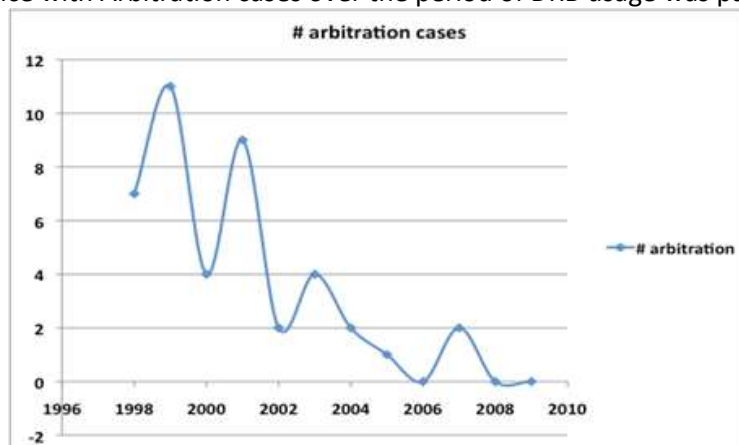
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<sup>10</sup> Private communication, J Norton, DRBF Executive Board, April 2011.

<sup>11</sup> *Analysis of Construction Dispute Review boards*, D Azdas & R D Ellis, DRBF Forum, V 17, #3, Sep 2013; [reproduced with permission from ASCE Journal of Legal Affairs and Dispute Resolution in Engineering and Construction Aug 2013, Vol. 5, No. 3, pp. 122-127]

<sup>12</sup> *Success of DRBs in Florida*, Ralph Ellis, Presentation to DRBF Florida Chapter

Apart from the reduction in cost overruns and the much improved time performance, their experience with Arbitration cases over the period of DRB usage was particularly dramatic.



**DRB Influence on Arbitration Cases**

The FDOT experience over more than 10 years with DRBs was summarised as follows:

- Spend approximately 0.1 %
- Save approximately 5 % in direct project cost
- Litigation has been reduced to a rarity
- One significant litigation would cost more than the total yearly investment in DRBs

5. Washington Metropolitan Area Transit Authority:

The following extracts from a paper by James R. Haggins, former Assistant General Manager for the Washington Metropolitan Area Transit Authority<sup>13</sup> speak for themselves:

*A user's view- Washington Metro experience*

- *Nearly two decades since DRB and Partnering, began:..*
- *there have been only six DRB traditional hearings and one informal hearing. The Board of Contract Appeals was discontinued within five years of including DRB and Partnering provisions in major construction contracts.*
- *...NONE of the contracts that embraced the principles of the DRB ..... have resulted in litigation.*
- *we experienced better cost control, reduction in schedule growth, a significant reduction in paperwork, and successful attainment of our valued engineering objectives*
- *.....other positive by-products .. – no late deliveries, no fatal accidents, a significant reduction in worker injuries and lost work day cases, improved quality work and a reduction in the amount of punch list work.*
- *I do not think these results are coincidental. I firmly believe that this success is directly attributable to the use of the principles of the Dispute Resolution Board, nonbinding recommendations and the Partnering process.*

<sup>13</sup> DRBF Forum, V 13, Aug 2009 "DRBs using Non-binding recommendations in the Public Sector", James R. Haggins,