

# QUEENSLAND'S ECI CONTRACT

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## 1. INTRODUCTION<sup>1</sup>

This article describes the UK procurement model known as Early Contractor Involvement (ECI) and its development, modification and application by the Queensland Department of Main Roads (DMR) in response to a market in high value contracts in which buyers of construction engineering services outnumber sellers.

Five things were important in this development of ECI:

- Creating a flexible procurement model sensitive to market conditions where a variety of pricing mechanisms might all need to be considered.
- Integrating partnering within the framework of the contract without the “shared risks” philosophy of Project Alliancing.
- The applicability of the model to a program of projects as well as projects.
- Paying critical attention to UK developments in ECI and acclimatising the concept to Australian needs.
- Solving what may be called the value for money puzzle.

## 2. WHY INTRODUCE ECI?

An unprecedented surge in the Australian engineering construction market has created a market in Australia in high value contracts, that is, contracts or projects with a value of more than \$20m. The market is one in which there are few sellers and many buyers and demand is fast outstripping supply. Engineering construction on the Eastern Seaboard of Australia is

<sup>1</sup> This article is a mosaic of borrowings. Particular acknowledgment needs to be made to the officers of the Department of Main Roads who worked with the author and his colleagues, Neil Hampton and Jodi Palmer, in creating DMR's ECI contract. Figure 3, The Essential Provisions of ECI, derives from one of these officers, David Kelly. Figure 1, Comparing the Choices, and Figure 4, The Pressures on the RAP, derive ultimately from another, Mike Swainston. At the time of writing the concept of ECI has now been trialled in three projects, two of them by Reg Conroy, Director of Major Projects in Townsville, North Queensland. A second particular acknowledgment needs to be made to Forbes Johnston of Mott Connell for his work in explaining UK developments. Figure 2, Outline of the ECI Process, has been adopted from his work. A third acknowledgment needs to be made to Bob Giles of the Queensland Department of Public Works for material and comments on the MCC. A fourth acknowledgment needs to be made to the two part article by Arthur McInnis, “The New Engineering Contract: Relational Contracting, Good Faith and Co-operation—Part 1” [2003] ICLR 128 and “Part 2” [2003] ICLR 289 which re-echoes through Part 4 of this article.

forecast to peak at about \$22.2 billion in 2006/2007. At the same time the Queensland Government, through its South East Queensland Infrastructure Plan, is seeking to invest \$6.6 billion at 2006 estimates over a 20-year period, a considerable increase in the existing levels of capital works.<sup>2</sup> Increased demand has significantly increased labour rates for those working in both design and construction. Significant increases in material and subcontract costs are not yet evident in CPI indices but rise and fall or escalation provisions are beginning to reappear in contracts. Until 2008 suppliers, designers and contractors are expected to be able to be selective about the work for which they bid. Government departments face reduced numbers of tenderers, inflated tenders and an inability to achieve fixed price contracts.

In this market DMR by its rolling Road Implementation Plan seeks to deliver somewhere between 3.3% and 4.5% of the forecast engineering construction for the Eastern Seaboard. It is thus a comparatively small client and one whose work requires a high level of skill. It is also seeking design consultants and contractors capable of completing high-value contracts from an industry consisting of a small number of large contractors, very few medium-sized contractors and a host of small contractors. This in itself might suggest a need to resist the efficiencies of "bulking up" contracts and to program a large number of smaller contracts based where possible on incremental corridor enhancement approaches but DMR's Road Implementation Plan shows a proportion of high value contracts which in three years has increased from 30% to 44%.

Before introducing ECI, DMR's Project Delivery System listed five contract forms available for the completion of high-value contracts within the framework of a Major Works Pre-qualification System.<sup>3</sup>

In response to this changing market the Queensland Department of Public Works, the department comparable to DMR for the building industry, revised its two-stage design and construction contract known as the Managing Contractor Contract (MCC) with a similar aim to DMR of competing successfully in this market.<sup>4</sup>

### 3. WHY ECI?

#### 3.1 The State Purchasing Policy and the value for money puzzle

The Queensland State Purchasing Policy<sup>5</sup> requires departments and agencies to undertake procurement planning.

<sup>2</sup> The SEQ Infrastructure Plan is accessible at [www.coordinatorgeneral.qld.gov.au](http://www.coordinatorgeneral.qld.gov.au)

<sup>3</sup> See the Project Delivery System accessible at [www.mainroads.qld.gov.au](http://www.mainroads.qld.gov.au). Volume 1, Selection of Delivery Options, identifies the contract types as the Traditional Contract, the D & C Contract (including the Document and Construct and Design Construct and Maintain models), the Managing Contractor model, the Project Alliance (and its variant the Cost Reimbursable Performance Incentive Model) and the PPP and variants. The Major Works Pre-qualification System is Volume 3.

<sup>4</sup> The MCC is accessible at [www.publicworks.qld.gov.au/doingBusiness/downloadContracts.cfm](http://www.publicworks.qld.gov.au/doingBusiness/downloadContracts.cfm)

<sup>5</sup> The State Purchasing Policy is accessible at [www.qgm.qld.gov.au](http://www.qgm.qld.gov.au)

A new or modified method of government procurement such as ECI needs to be evaluated against existing procurement plans. Here these comprised the State Purchasing Policy and DMR's Departmental Procurement Plan.

The State Purchasing Policy has three primary objectives: support for government priorities, probity and accountability and value for money. The major concern with ECI was the value for money objective. The policy expresses the concept of value for money in this way:

**“Value for Money**

Each agency must seek to obtain value for money in its purchasing of goods and services. The concept of value for money is not restricted to price alone. The value for money assessment must include consideration of:

- contribution to the advancement of Government priorities;
- non-cost factors such as fitness for purpose, quality, service and support; and
- cost related factors including whole-of-life costs and transaction costs associated with acquisition, use, holding, maintenance and disposal.”

The essence of value for money is thus putting public funds to use in the most efficient, transparent and accountable manner. The value for money puzzle, as we have called it, was how to ensure competition and observation of these considerations in what is arguably procurement by sole invitation.

DMR also had a Departmental Procurement Plan. The development, implementation and application of ECI as an alternative delivery model was seen as potentially supporting departmental objectives including: encouraging innovative solutions to DMR's procurement needs, encouraging continuous improvement in the Queensland market and ensuring that risk management techniques were successfully used in procurement plans.

DMR issued a Significant Purchase Plan (the Plan) to verify DMR's assessment of the changing marketplace and the reactions of design consultants and contractors to it; to test marketplace reaction to ECI; and to define potential responses to the market place including ECI.

Significant purchases are purchases which are either relatively high in value, or difficult to secure, or represent a high level of risk, or are critical to a department's activities, or evidence a combination of these things. Procurement of either or both of design consultants or contractors for high value contracts when they were an increasing proportion of total Road Implementation Program expenditure clearly satisfied these criteria.

The Plan envisaged the Department's Project Delivery System ensuring that ECI be used in conditions including those where there was:

- significant local and national demand upon the civil infrastructure industry;
- little opportunity for significant increase in the supply market;

- a risk of over-supply of projects;
- a risk of reduced market participation in competitive bids.

The Plan recognised that assessing value for money by the comparative cost analysis of bids received was unlikely either to be often possible or to give a true indication of value for money to DMR in the current market.

At the same time the Plan specified that in the selection of a service provider potential value for money might be established by assessment of a number of non-cost considerations including commercial structure, financial capability, capability and experience, capacity for innovation, design and construction experience and capability, management strategies and nominated margins and mark-ups (including sample projects of similar nature for input/output cost comparison in consideration of the Stage 2 Offer of a risk-adjusted price).<sup>6</sup>

The Plan also endorsed a number of operational techniques to ensure value for money including client input during Stage 1 in a similar way to DMR's existing Project Alliance contracts. These techniques included: "open book accounting" for Stage 1 (to ensure value in the design costs and the estimated construction costs in developing the Stage 2 Offer of a risk-adjusted price) and DMR having an option of going to the open market for Stage 2, the construction phase, if it believed that the risk-adjusted price did not provide value for money.

### **3.2 Why the available procurement models were not appropriate**

Evaluation of ECI against DMR's other contract types was not an objective of the Plan.

The contract types used by DMR may be described as a Traditional model, a D & C model and a Project Alliance model.<sup>7</sup> The Managing Contractor Contract is listed in the available contract types but is regarded there as a building form. With some qualifications, the PPP model, also listed as an available contract type, is required by state government policy to be considered for public infrastructure projects only where the whole of life project costs exceed \$100m. for a particular project or bundle of projects.<sup>8</sup> The choices for DMR were thus essentially choices between its existing D & C contract, a Project Alliance, the Department of Public Works' MCC and ECI.

<sup>6</sup> The Stage 2 offer, the risk adjusted price (RAP) and risk adjusted maximum price (RAMP) are explained later in section 6.2. The term risk adjusted price is usually used in this article to describe both.

<sup>7</sup> See n. 3, above, for further details.

<sup>8</sup> See [www.coordinatorgeneral.qld.gov.au](http://www.coordinatorgeneral.qld.gov.au) for the Queensland Government's PPP policy.

The D & C model and its variants will be familiar to construction lawyers the world over. The Project Alliance is considered briefly at 5.3, below. It remains to say a little about the features of the MCC.

The Department of Public Works describes its MCC contract as a Managing Contractor Design and Construct Negotiated Guaranteed Construction Sum (GCS) Contract.

In this contract:

- The tender process is a two stage process, involving the initial selection of a preferred tenderer and then the submission of a Guaranteed Construction Sum (GCS) Offer by the preferred tenderer. The process in general terms is:
  - Tenderers are provided with tender documents which include a Project Brief, setting out the requirements for the project. The Project Brief is intended to clearly and unambiguously set out all the project's requirements, including but not limited to the principal's project construction cost estimate, the design life and lifecycle considerations.
  - Tenderers initially tender lump sums for a Management Fee, Consultants' Fee, On Site Overheads Fee, and a Provisional Delay Allowance, as well as responding to non-price criteria. They may also offer incentive schemes based on painshare/gainshare principles. The potential for innovation is a criterion for tender selection.
  - Since tenderers do not guarantee the Construction Sum in tendering, the tendering process is quick and cheap.
  - A preferred tenderer is then selected. Notification of selection signifies the commencement of a GCS Establishment Period.
  - During the GCS Establishment Period, the preferred tenderer must work with its own consultants and the principal to develop a GCS Offer, by performing activities which typically include conducting value management workshops and providing advice with respect to cost planning, scheduling and buildability.
  - Upon written notice from the principal, the preferred tenderer must, within four weeks of receipt of that notice, tender a consolidated GCS Offer which includes a revised project brief (the GCS Offer Project Brief), the GCS and the time for practical completion.
  - The principal may accept or reject the preferred tenderer's GCS Offer. If the offer is accepted, a contract is formed. If it is rejected, the principal pays the preferred tenderer for the tenderer's work and the principal is then free to commence the process with the next preferred tenderer.
- The contract that follows is a single stage design and construction management contract under which:

- The managing contractor is entitled to be paid the Management Fee, the Consultants' Fee, the On Site Overheads Fee, the Actual Construction Sum to the limit of the GCS, and any bonuses or delay damages that become payable.
- The managing contractor is responsible for, and has control of the consultant design team.
- The managing contractor is required to procure performance warranties for specified items or elements of the works.
- There are bonus provisions reflecting either a capped bonus or a logarithmic incentive calculation in so far as GCS trade package costs are below the GCS or other incentives agreed with the managing contractor based on painshare/gainshare.

The MCC, itself a response to market conditions, clearly had elements of an appropriate delivery model but in the end ECI was seen as allowing:

- tenderers the highest opportunity for innovation;
- low bidding costs;
- the chance for both principal and contractor to negotiate risks rather than allocate them by the contract (Request for Proposal or tender documents include a preferred risk allocation matrix; see 6.5, below);
- the opportunity to benchmark tendered rates for Stage 1 against those achieved on comparable projects;
- a low level of resourcing from DMR at least in Stage 2;
- a high level of input into design;
- a high level of relationship management.

None of these things was unique to ECI. Relationship management and the tendering process very much reflected Project Alliancing. Again the staging of the contracting process reflected both Project Alliancing as DMR documents its two contract Project Alliances<sup>9</sup> and MCC. MCC had other characteristics important to ECI such as the high input into design that it allows the principal. However, MCC had been crafted for building construction; the managing contractor managed construction and did not carry it out; the contract reflected the simpler risk regime of building construction where the biggest single risk was market movement in subcontractor's prices; MCC did not contemplate a program of projects and, finally and perhaps most importantly, the contract did not integrate relationship management into the contract in the way that the Department's experience suggested was essential to a project's success.

<sup>9</sup> See Project Delivery System, Volume 5, accessible at [www.mainroads.qld.gov.au](http://www.mainroads.qld.gov.au) (see further note 3, above).

FIGURE 1: COMPARING THE CHOICES

<i>D&amp;C</i>	<i>MCC</i>	<i>Alliance</i>	<i>ECI</i>
Some potential for innovation	Some potential for innovation	High potential for innovation	High potential for innovation
Risks allocated	Risks allocated	Risks shared	Risks negotiated
Competitive	Competitive	Benchmarked	Benchmarked
Final \$ certainty	Final \$ certainty	Final \$ varies	Final \$ certainty
Low client resource	High client resource	High client resource	Low client resource Stage 2
Limited client design input	High client design input	Client design input	High client design input
High tender costs and resources	Low tender costs and resources	Low tender costs and resources	Low tender costs and resources
Relationship management is slight	Relationship management is slight	Relationship management is essential	Relationship management is essential

### 3.3 The UK Construction Task Force (Egan)

Sir John Egan, CEO of BAA, gave his report on the scope for improving the quality and efficiency of UK construction in *Rethinking Construction*.<sup>10</sup> The aim of the report was to learn as much as possible from those who had done construction successfully elsewhere.

The report identified five key drivers of change needed to set the agenda to revitalising the UK construction industry: committed leadership; a focus on the customer; integrated processes and teams; a quality driven agenda; and commitment to people (para. 17).

Egan suggested that experience indicated that overall the construction process could be subdivided into four complementary and interlocked elements which needed integration: product development; project implementation; partnering the supply chain; production of components.

A key feature of the integrated construction process that Egan advocated was that teams of designers, constructors and suppliers work together through a series of projects (i.e., a program of projects), continuously developing the product and the supply chain, eliminating waste in the delivery process, innovating and learning from experience (para. 40).

Egan envisaged a very different role for the construction supply chain. In Egan's view, the supply chain was critical to driving innovation and to

<sup>10</sup> Accessible at [www.constructingexcellence.org.uk](http://www.constructingexcellence.org.uk)

sustaining incremental and sustained improvement in performance. Partnering the supply chain was, however, far from being an easy option for constructors and suppliers. It was more demanding than conventional tendering, requiring recognition of interdependence between clients and constructors, open relationships, effective measurement of performance and an ongoing commitment to improvement. As such it required a shift in culture in an organisation or industry that was transformational rather than incremental in nature.

An essential aspect of partnering was the opportunity for participants in partnering to share in the rewards of improved performance (para. 45).

Egan saw his philosophy as one that could be implemented by:

- acquisition of new suppliers through value-based sourcing;
- organisation and management of the supply chain to maximise innovation, learning and efficiency;
- supplier development and measurement of suppliers' performance;
- managing workload to match capacity and to incentivise suppliers to improve performance;
- capturing suppliers' innovations in components and systems.

### 3.4 The UK experience with ECI

Before explaining ECI we need to say something about its UK history as far as an interested Australian observer can divine it.

Different UK agencies procure services differently. The history of ECI is the history of its use by one of these departments, the Highways Agency, referred to here by its initials HA.<sup>11</sup>

In the 1990s UK contractors were operating with margins of 1½% or less. There were contractor failures and quantity surveyors/consultants seem to have been more successful than contractors.

In this market:

- there were routine cost overruns;
- a contractor won a contract on price and made his money on claims. A designer working for a contractor had a duty in designing to help the contractor formulate his claims whilst his professional indemnity insurance might be answerable for the cost overruns;
- HA was a skilled player.

By 1998 HA overruns on projects may have averaged 20%. A study undertaken by Mott MacDonald for HM Treasury reported across a wider

<sup>11</sup> HA is an Executive agency of the UK Department of Transport responsible for the management, maintenance and improvement of the English network of trunk roads and motorways. Its website [www.highways.gov.uk](http://www.highways.gov.uk) gives some details of HA's 2001 Procurement Strategy: "Delivering Best Value Solutions and Services".

spectrum of projects that 73% of them were being delivered over budget and 70% were being delivered late.

The turnaround was marked by Egan's work in setting the agenda for modernising construction and the UK Government's decision to procure through partnering not price. HA may have been the last government agency to respond to this decision.

By 2000 designers and contractors had few or no resources for implementation of the UK Government's ambitious 10-year plan known as "Transport 2010". The program required delivery of £170 billion worth of transport projects by an integrated procurement strategy suitable for one project or a program of projects. This suggests obviously similar market conditions to those we have described in Queensland.

The essential features of HA's procurement strategy were:

- it was intended to develop longer term partnerships with suppliers chosen by a best value supplier selection process;
- it allowed successful teams to be retained by the chosen suppliers;
- it encouraged the maximum use by suppliers of HA's developed skills and invested knowledge;
- it aimed to create integrated delivery teams through new forms of contract such as ECI;
- it aimed to achieve value for money by a performance measurement system which stressed continual improvement and incentivised performance by bonuses (for example, there were no liquidated damages for delay);
- ECI was expressed to be a partnering contract.

Partnering has been one of the success stories of ECI. During Phases IA and IB of the process<sup>12</sup> the client, consultant and contractor co-locate and work together as a team, taking advantage of the strengths of each. No differentiation or separation is made between them.

The initial projects under "Transport 2010" were complex upgrades of existing corridors. By 2005 only 20% of what was required had been delivered.

Now all HA schemes are ECI except:

- privatisations; and
- maintenance procurement.<sup>13</sup>

In early projects, HA's process seems to have been

- an Expression of Interest stage;

<sup>12</sup> See Figure 2 for the phasing of ECI.

<sup>13</sup> HA uses a Managing Agent Contractor (MAC) contract for maintenance in 9 out of 14 maintenance areas. The form has recently been enhanced. See generally the Procurement Strategy Review 2005 accessible at [www.highways.gov.uk/business/10852.htm](http://www.highways.gov.uk/business/10852.htm)

- tender documents including NEC (New Engineering Contract) Option C with Target Cost being set at tender;
- tenders which were assessed on Quality and a Target Cost based on the outline design. Bids were assessed on a 60/40 Quality/price basis.

HA then introduced two major changes. First, HA removed the price element from the procurement strategy for ECI procurement. As a result, contractors and consultants are now selected on a Quality proposal with the Target Cost being set post-tender at a specific time determined to suit the circumstances of Phase 1 of particular projects. This has brought cost certainty into ECI schemes.

Secondly, to reduce procurement time and effort across all categories of procurement, HA introduced prequalification of contractors and designers with two elements:

- (a) CAT score (CAT = Capability Assessment Tool);
- (b) PPD (PPD = Past Performance Data).

CAT was introduced to improve the consistency, transparency and robustness of tender selection and encourage a programme of supplier development aimed at improving the effectiveness of suppliers encouraging suppliers to align their business with HA.

HA appears to have said from the outset that with ECI it was trying to get “closer to fewer” and that this meant getting “closer to better” tenderers.

Developed in consultation with the construction industry CAT and PPD help identify the suppliers most likely to deliver best value solutions and services. Using a framework of indicators, CAT measures the approach and potential effectiveness of individual companies.

CAT is based on business excellence criteria rather than proven ability to design and build roads. This may mean some organisations with not so high road skills may have very good CAT scores. PPD is based on experience with previous schemes and unlike CAT is self-scored. A written submission of CAT and PPD scores will pre-qualify the contractor and designer. (The submission is a joint submission by the contractor and designer.)

There are four steps in the bid process:

- interview,
- presentation,
- questions and answers,
- scenario planning—the assessment by HA of the contractor's and designer's ability to respond to a hypothetical project situation.

In the Construction Phase, construction cost estimates by HA have been a target cost or GMP. There will be key KPIs and specific pain/gain share

schemes which mean a contractor can obtain an improved return (compared to obtaining such returns by the use of claims). Contractors can write these margins and contracts into future workload with additional certainty and thus enable greater investment in staff, skills, equipment and systems on a basis of sustainable incremental improvements. All this reflects a national concern with the problems caused to the supply chain by volatility in forward programmes.<sup>14</sup>

All ECI contracts to date have included an element of pain/gain share based on the Target Cost. If the Out-turn Price is 10% above or below the Target Cost, the cost or benefit is shared 80% to client, 20% to the contractor. If the Outturn Cost is 20% above or below the Target Cost, the cost or benefit may be shared 50% to the client and 50% to the contractor. If the Outturn Cost is more than 30% from the Target Cost, the cost or benefit may be shared 20% to client, 80% to the contractor.

Contractors and consultants during the design phase are reimbursed their costs plus a declared margin, using “open book accounting”.

The first ECI scheme was the A500 Stoke Pathfinder Scheme. ECI is the delivery model for major newbuild projects and HA is still experimenting. Current schemes such as the A19 and Seaton Burn Roundabout Schemes are likely to be considered the benchmark for future projects.

### **3.5 ECI and PPPs**

Although HA introduced ECI to deal with skill shortages threatening implementation of “Transport 2010” in 2002 HA considered its introduction in major projects to be procured using private finance including the Design, Build, Finance and Operation (DBFO) contract under the UK Government’s PPP initiative. This introduction was to be effected either by:

- appointing a contractor and designer who then became the supplier of construction services to a Special Purpose Vehicle or SPV which successfully bid the DBFO contract;
- appointing an SPV from the outset with financing being the subject of a separate tendering process.<sup>15</sup>

Initially SPVs had been formed by contractors and designers then financiers and road operators. An interesting but not unexpected recent development has been the emergence of operator-based SPVs who would procure construction from outside the SPV. This is to be expected because

<sup>14</sup> There has been a rapid growth in recent years in the UK of the use of framework agreements for public sector procurement. These agreements, a subject in themselves, increasingly incorporate the language and concepts of relational contracts.

<sup>15</sup> See, generally, “Improving DBFOs” (HA, December 2002). As at December 2005 the new contract and associated procedures were being developed.

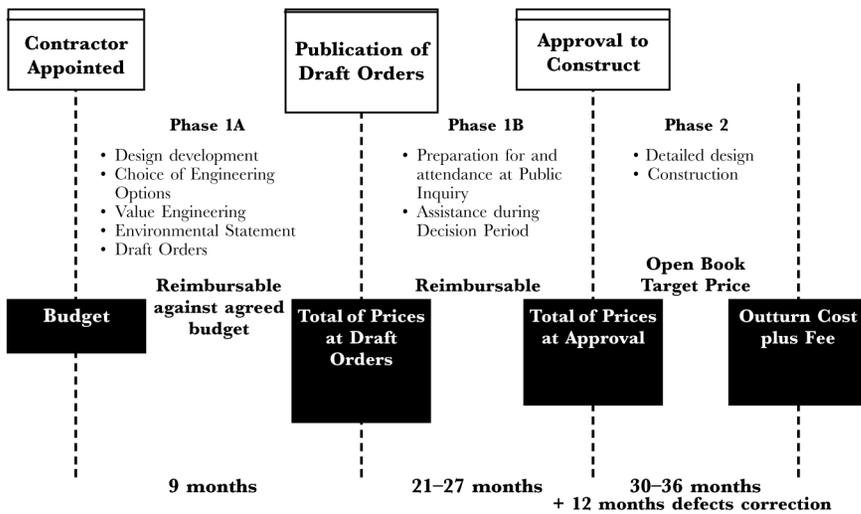
it is the operator that carries the obligations and risks of operating and maintaining the facility for the duration of the concession period.

### 3.6 ECI and program projects

In 2003 it was HA's stated intention to pursue Packaged Schemes using ECI in particular on junction improvements along a motorway route. The contractor was to be nominated on the basis of a CAT and quality submission and the Target Cost for the first scheme within the package was to be used as a benchmark for the remaining schemes within the package. The first contract comprising six junction improvements was awarded in 2003 and the latest program project, which packages two schemes, seems to be the A19 and Seaton Burn Roundabout projects already referred to.

### 3.7 ECI explained<sup>16</sup>

FIGURE 2: OUTLINE OF ECI PROCESS



The ECI contract is modelled on the November 1998 edition of the Engineering and Construction Contract (NEC). It is not known if modifications are contemplated to reflect the Third Edition of the NEC which was not available when Queensland's ECI was drawn.

As we have seen, ECI is a procurement strategy aimed at:

- developing longer term partnerships with suppliers;
- allowing successful teams to be retained by the suppliers;

<sup>16</sup> This explanation largely derives from HA's Guidance Manual (GM).

- encouraging maximum use to be made by both HA and the suppliers of developed skills and invested knowledge (HA Guidance Manual (GM), para. 2.1);
- appointing an SPV from the outset with financing being the subject of a separate tendering process;
- achieving value for money by a performance measurement system which stresses continual improvement targets (GM, para. 2.3); and
- using “open book accounting” techniques in conjunction with reimbursement based on actual cost (but incentivised) on achieving various targets (GM, para. 2.4).

The contract is expressed to be a partnering contract (GM, para. 14.5). As we have seen there may be more than one scheme within a contract (i.e., a programme of works rather than a single project).

### **3.8 KPIs and bonuses**

The strategy aims to incentivise performance by three bonuses (a design bonus, a construction bonus and a final bonus) (see GM, para. 3.2).

The specification or “Works Information” sets out the HA’s objectives and links each of these objectives to a series of KPIs monitored regularly. The contractor’s quality promises made at time of tender are incorporated in the Contractor’s Quality Plan (GM, para. 22.2).

Performance is measured against 6 KPIs:

- client satisfaction with the product;
- client satisfaction with the service;
- cost predictability;
- time predictability;
- defects;
- safety (GM, para. 23.1).

Achievement of these KPIs and evidence of continuous improvement is required to allow work to continue (GM, para. 23.5).

A Risk Management Schedule identifies key risks to achieving the KPIs. The contractor’s Quality Plan and procedures must address the method of managing these risks and thus achieving the HA’s objectives (GM, para. 3.3). A Scheme Risk Register is submitted at tender and is expanded during Phase 1A until it becomes a complete Scheme Risk Register by the end of Phase 1A (GM, para. 14.10). At the end of Phase 1A there should also be a target programme for construction and a target price for Phase 2 (GM, para. 14.13).

The HA appoints a consultant to identify the needs and objectives for the proposed contract to prepare tender documents and assist in contractor selection. A contractor is selected before the statutory procedures for contract award have been implemented. The consultant who will be retained by the employer will act as client adviser and supervisor. HA also

has a Project Manager (GM, paras. 11.4–11.14: the duties of each of these are explained in Appendix 2 to the GM).

There is also a Project Board made up of senior representatives of the employer (probably the Project Manager and the HA consultant) and of the contractor, intended, like an Australian Alliance Board, to give strategic advice but not decisions (GM, paras. 11.15 and 11.16). An adjudicator appointed jointly by the employer and the contractor deals with disputes (paras. 11.17–11.18).

There are three contract stages or phases. Phase 1A covers the period from the starting date to the issue of the statutory draft orders. Phase 1B covers the period from the issue of draft orders up to the Notice to Proceed to Construction. Like Phase 1, Phase 2, the construction phase, divides into two sections, the first ending with completion of construction work and the second including landscaping and after-care (GM, para. 12).

Also, as we have said there are no damages for late completion: reliance is placed on the bonuses (and gain/pain share regimes if included) as positive incentives for delivery (GM, para. 12.3).

A Scheme Budget is used to calculate and pay bonuses (GM, para. 13.1).

Activities during Phase 1A include the creation of the Schedule of Costs components and design decisions (see GM, para. 14.9).

A Scheme Risk Register which is intended to cover Phase 1B and Phase 2 is completed by the end of Phase 1A (GM, para. 14.10). Risks within the Register are dealt with under the contract but the Register identifies risk cost allowance and risk management procedures (GM, para. 14.11).

For Phase 1A the contractor is paid Actual Cost calculated in accordance with the Schedule of Costs Components plus a fixed fee of 7.5% (GM, para. 15.1).

At the end of Phase 1A, prices based on the forecast Actual Cost of the work together with the contractor's fee for the work form the target for Phase 2.

During Phase 2 the contractor is paid actual costs plus a percentage fee (GM, para. 18.2).

### *Design bonus*

The contractor is paid a design bonus if he designs a scheme within the Scheme Budget. This bonus equates to 25% of the forecast savings against forecast total costs and is paid in monthly instalments during Phase 2 (GM, para. 17).

### *Construction bonus*

The contractor is paid a construction bonus. This is a share of any savings against the target costs for the Phase 2 construction works. The formula for

calculation of the bonus is set out in the contract. The percentages on savings are lower than those for cost overruns so as to recognise that a part of the saving may result in a final bonus being earned (GM, para. 18).

#### *The final bonus*

The final bonus is calculated at completion of the final scheme (there may be more than one scheme within a contract). The final bonus is calculated by comparing the total expenditure incurred by the HA across the scheme or package of schemes and the Contract Budget. If the total expenditure incurred is lower than the Contract Budget the contractor is paid 25% of the savings of the Contract Budget capped at 10% of the Contract Budget so that, e.g., with a 25% bonus share the maximum that would be paid would be 2.5% of the Contract Budget. If the Contract Budget is exceeded no final bonus is payable but, even in such circumstances, the contractor does not share in any cost overruns except to the extent that he may have partaken in construction costs (see GM, para.19 and Appendix 3).

Finally, The ECI contract is expressed to be written in ordinary language and as far as possible to use only words which are in common use so that it is easily understood. "A fundamental objective of the contract is that its use should minimise the instances of disputes. For this reason subjective words like 'fair', 'reasonable' and 'opinion' have been avoided where possible" (GM, para. 6).

## 4. ECI AND RISK MANAGEMENT—LEGAL CONSIDERATIONS<sup>17</sup>

### 4.1 Introduction

In a sense it can be said that there are no legal considerations to ECI. There are no precedent contracts. There is no history of judicial interpretation. However, the draftsman is drafting for the unknown requiring him or her to record the parties' bargain and to remove legal uncertainty by expressing concepts such as good faith, less they not be imposed by the ultimate interpreters of the parties' agreement, the courts. Put differently perhaps, because the parties are bargaining in the long shadow of the law it is important to consider what the law may be and how the draftsman can capture it. In particular, the draftsman of a contract such as the ECI contract needs to take account of the fact that construction contracts may

<sup>17</sup> In addition to Arthur McInnis, "The New Engineering Contract: Relational Contracting Good Faith and Co-operation" [2003] ICLR 128 and 289, the reader is referred to R Austen-Baker, "A Relational Law of Contract?" (2004) 20 JCL 125.

be classified as relational contracts rather than discrete contracts as well as research on contracting parties' behaviour, long-term contracting, collaborative contracting, fiduciary relationships and effective dispute management.

#### **4.2 Discrete and relational contracts**

Typically discrete contracts are short in duration, involve limited personal interactions, allow easy and precise measurement by the parties of performance and require minimal future co-operation. In comparison, relational contracts are either long term or complex or both, require extensive personal interaction and interdependence, require sophisticated management and measurement of performance, and fail without extensive co-operation.

Under a relational contract the obligations the parties recognise to each other are determined less by their promises to each other, more by their relationship, less by what they have agreed, and more by how they will agree to handle matters in the future. A relational contract is thus a relationship where the parties are interdependent. Mutual trust, good faith, fairness and co-operation are essential in such a relationship not merely desirable. Long-term or complex contracts like construction contracts lend themselves to relational contract theory and the jurisprudential norms said to flow from it: good faith, fairness and co-operation.

Co-operation should be the key to successful contracting by a relational contract because it is only under a discrete contract that a party can seek to maximise self-interest. In part they can do this because of the legal theory of "presentation", a theory that all the parties' risks to a contract are allocated or allocable at the time they contract.

Classical contract theory, by which we mean here the contract theory existing before relational contract theory, assumes parties perform their contracts as agreed and that a party can insist upon his rights under the law. Under this theory there ought to be no room for an additional unexpressed obligation to co-operate. However, common law courts have insinuated the obligation into contracts by a variety of devices including the general rules of interpretation and implication of terms.

In Anglo-Australian law the implication of terms such as a duty of co-operation between the contracting parties fulfils an important function in promoting the reasonable expectations of parties and filling the void created by the absence of a general doctrine of good faith and fair dealing. Fair dealing is used here to mean observance of fairness in fact something that may be treated either as a separate requirement of pre-contractual relations or as one aspect of a general contractual obligation of good faith.

This implied duty of co-operation is usually thought of as a positive duty (co-operation) and a negative duty not to prevent performance or completion (prevention) and the pre-conditions of implication are thought of as necessity and reasonableness.

It is possible for the requirement of co-operation to determine the boundaries of risk. If co-operation can function as a contract control mechanism in this way it is also possible that the contract can be written around this.

There is a further reason to attempt this. This is that, increasingly, there are recognisable limits to presentation. In particular:

- The successful management of complex large value projects has to be fluid and dynamic. With increasing complexity and uncertainty there may be no ideal strategy for distributing risk at the time of contracting so that parties must expressly or impliedly agree to adjust initial risk allocation in the light of future events.
- In Australia at least contracts may also be subject to proactive interpretation as a result of the provisions of legislation such as the Trade Practices Act 1974 (Cth) or the state Fair Trading Acts which deal with unfair trading, misrepresentation and misleading and deceptive conduct.
- The long-term relational contract is sometimes considered as analogous to a partnership. In such a relationship efficient long-term contractual behaviour must be consciously and unconsciously co-operative for the relationship to succeed. However, just as it will not be possible to set out in detail and in advance the risks to be allocated so it will not be possible to set out all the ways in which co-operation will maximise joint interests.

How then does the draftsman draft for co-operation?

### **4.3 Drafting for co-operation**

In relational contracts, it is the relations at play which determine how much risk is borne by each of the parties. Research has also shown that people will perform disadvantageous contracts in the hope of a future relationship, that parties are willing to renegotiate a contract if it turns out badly for the other party and finally that people are willing to recognise a wider range of excuses for performance failures than the contract recognises so that few disputes are recorded and even fewer result in formal dispute resolution.

Rather than ignore this behaviour and these expectations it is better to listen and draft to take account of them so that the contract that is drafted will be used by the parties to it, e.g.:

- encourage greater transparency in pricing and the exchange of information in formulating pricing to discourage claims. Administrative or “early warning” provisions as well as an expression of the

concepts of good faith and fair dealing can also help minimise or deal with claims and disputes. All of these are mechanisms which if used properly can help avoid the breakdown of a relationship and the costs associated with that;

- assume equality between the parties and give a detailed procedure to facilitate renegotiation and adjudication rather than litigation.

Contracting parties who anticipate that their relationship will last a long time will have to phrase their contractual obligations in vague aspirational language to enable them to deal with unidentified future problems because the co-operative conduct needed to achieve successful long-term co-operation in such a relationship cannot be specified in advance any more than the shares in the results of that co-operation can be specified in advance. This is why the parties must accept, for example, the expression of a general and productively vague norm of fairness in the conduct of their relationship. The contract using this vague aspirational language is sometimes spoken of as an “open textured contract”, that is, one where the language is open and contextual rather than fully defined and prescriptive.<sup>18</sup> If this flexibility poses a perceived increase in process or procedural risk it can and should be met by new procedural or even organisational solutions. For example, in long-term contracts one needs a new framework for dispute resolution such as mediation or third-party adjudication through means such as a Dispute Review Board (an option within DMR's ECI contract). This is because traditional dispute settlement is too often too slow and in many cases not used until after the relationship between the parties has been brought to an end.

It is also true that conditions of contract in a long-term relational contract can only be purposeful if they draw on the rules, techniques and vocabulary of the best project management and with proper regard for modern management methods (e.g., in change management programming and notice provisions).

Next, contracts should also maximise the use of drafting techniques which ensure communication. Everyone, French or English, Japanese or Australian, lawyer or labourer, contractor or subcontractor should have an agreement they can understand and use. With this in mind it is possible, for example, for a contract to be a series of wall charts. The search is for contractual provisions and contracts which are sufficiently open to account for human realities and draw parties together as change unfolds rather than pull them apart.

Finally, in the completed construction contract, viewed as a commercial contract, fiduciary relationships or duties may not arise but with an open

<sup>18</sup> The term has usually been applied to statutes as meaning not fully defined and requiring an interpreter to look to judicial argument or pronouncement to define the meaning of the concept. See J Popple, *Shyster and the Authorisation of Copyright Infringement* (1992), p. 2 (viewed at <http://cs.anu.edu.au/techreports/1992/TR-CS-92-08.pdf#search=%22open%20textured%22> on 2 October 2006).

textured contract it needs to be recognised that not all possibilities will be covered including the possibility of the implication of fiduciary relationships or duties. When, in addition, the parties expressly contract to act in their mutual interest and in a spirit of co-operation (e.g. as in Project Alliances where the parties contract to do things on a “best for project basis”) by expressing matters such as shared objectives, accounting obligations and the exchange of information or the use of an optional trust mechanism, a judicial finding of a fiduciary relationship and fiduciary duties is possible if not likely. It is indisputable that contractual and fiduciary relationships can co-exist. Nor should it be in question that a fiduciary relationship if it is to be found to exist must accommodate itself to the terms of the contract on their true interpretation.

For construction contracts to succeed they need to recognise these matters and where possible recognise them expressly unless the parties want to rely on the uncertainties of the law. One reason why partnering has failed in Australia may well be just this, that it does not seek to express itself contractually but rather to insist that it is a management model outside the contract. In this way it lets in the law. DMR had gone some way to recognising this in drafting extended partnering into its existing contracts types before it “hard wired” relationship management into its ECI contract.

As matters stand:

- contract law continues to play a marginal role in long-term continuing business relationships, that is, people do not plan as carefully nor do they pay as much attention to their contractual obligations as lawyers and judges might think;
- classical notions of contract perpetuate disputes because they seek to solve disputes in terms of the parties’ promises to each other not present or future realities. This is like driving a car by looking through the rear mirror. The rules governing a relational contract do not presume that past promises should govern the parties’ future. They presume that the rules will be that the parties want to resolve conflict and preserve their relationship;
- construction contracts other than ECI and relational contracts, “relationship contracts”, are not drawn in this way.

## 5. AUSTRALIANISING ECI

### 5.1 Differences between the UK and Australian construction markets

There are significant differences between UK procurement practice and Australian procurement practice. The UK statutory framework includes for example:

- The current UK procurement relations such as the Public Contracts Regulations 2006 and Utilities Contracts Regulations 2006 which implement EU Directives. They may still need to be amended as a result of the European Court of Justice judgment in *Alcatel Austria v. Bundesministerium fuer Wissenschaft und Verkehr*, Case 81/98 (the *Alcatel* case) and subsequent case law following the same line. English local authorities, which have significant road responsibilities outside HA's trunk roads and motorways, are also subject to requirements to achieve "best value" procurement under the Local Government Act 1999.
- The Housing Grants, Construction and Regeneration Act 1996 (HGCRA).
- The Construction (Design and Management) Regulations 1994.

Similarities or differences in terminology therefore need careful and accurate translation to contemporary Australian practice. For example, there is no Australian equivalent to the UK statutory scheme of procurement, no UK equivalent to the Trade Practices Act (TPA) and Fair Trading Acts (FTAs) which dominate the Australian commercial landscape,<sup>19</sup> and a modified scheme of dispute resolution to that introduced in the UK in 1996 by HGCRA. As we shall see, there is also a widespread use in Australia of Project Alliancing whereas the UK has developed partnering.

## 5.2 Relationship contracting and ECI

According to the Australian Contractors Association (ACA) relationship contracting is:

- "A process to establish and manage the relationships between the parties that aim to:
- remove barriers
  - encourage maximum contribution
  - allow all parties to achieve success."<sup>20</sup>

Relationship contracting is contracting by means of a relational contract, relational contracting in some UK literature. Understandably, the ACA expresses the process without reference to the theory of relational contracts.

We need to make three points about this expression:

- allowing all parties to achieve success means allowing them to achieve success without disputes;
- managing a contractual relationship includes:

<sup>19</sup> This is not to ignore HGCRA or older legislation such as the Misrepresentation Act 1967 or the Unfair Contract Terms Act 1977 although the last is much more concerned with consumer protection than commercial construction contracts.

<sup>20</sup> Australian Contractors Association Paper, *Relationship Contracting—Optimising Project Outcomes* (Sydney: 1999), p. 4.

- agreeing project objectives;
- agreeing procedures for communication including project meetings, their timing and agenda;
- a process for resolving issues before they become formal disputes;
- a process for managing risk.
- All this is is the language of Australian Project Alliancing but ECI does not have additional features of alliancing including:
  - performance obligations which are collective in that the parties agree to share all risks and reward; importantly, under ECI, project goals do not limit legal liabilities;
  - agreed business outcomes reflected in performance-driven payment incentives and pain/gain sharing;
  - or an equitable showing of any profit or loss (although under DMR’s ECI contract the contractor may be asked to suggest incentives as part of the Stage 2 Offer);
  - the parties’ agreement to avoid litigation by resolving issues within the alliance.

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. However with ECI all these things occur within the framework of an agreement. Parties are not left to an initial undocumented agreement between them or their representatives the focus on which dwindles as disagreements arise.

As we have seen, ECI is not a new concept but rather the rethinking of previous delivery methods including, partnering and Project Alliancing. ECI goes further by:

- including this negotiating phase in the contract with sufficient flexibility not to strangle the process; and
- recognising that management of the relationship can improve the management of risk as well as incentivise innovation, performance, reduce costs and reduce the potential for disputes;
- recognising current industry market conditions and forces and the availability of resources. An ECI contract theoretically can be commenced with very little design and planning. It also frees up a large part of the market of designers to work on real projects rather than tender designs. This is because the ECI method does not require an up-front tender of price or of the design that would otherwise be necessary to calculate that price or even design proposals. These can be required if wanted but they are not necessary.

### 5.3 Project Alliancing<sup>21</sup>:

Alliance contracting in Australia needs particular mention here. As we have seen, ECI and Project Alliancing are distinct but some Project Alliancing concepts are part of the ECI model just as some of the concepts of partnering found expression in Project Alliancing. The successes of Project Alliance contracts is underpinned by a combination of factors including the attention given to relationship management in participant selection and project implementation. Alliances were used with great success in the UK in the 1980s and have a wide range of promoters in Australia.

DMR was an early adopter of alliancing in Queensland using it successfully for the Norman River Bridge project as early as 1999.

Australia has developed Project Alliancing rather than partnering. The UK in contrast has developed partnering and standardised forms of partnering contract such as the Association of Consulting Architects PPC 2000 and the New Engineering Contract (NEC) as well as the framework agreements to which reference has already been made.

The author's perspective on Australian partnering has already been mentioned. It has not worked because its proponents have insisted that it is a management tool capable of standing outside the contract.<sup>22</sup> In Australia, the Trade Practices Act 1974 (Cth) and the state FTAs already referred to blur the legal boundaries between contract and non-contract. One commentator has referred to this as "the fuzzy edge disease" where, if the parties do disagree, the result is messy litigation about who said what and when and claims are founded on statutory or common law misrepresentation with allegations that particular contract provisions have been waived or are otherwise not enforceable.

### 5.4 When is Project Alliancing best used?

Project Alliancing has been most successful on projects where the principal has been unable to identify, and the contractor has been unable to price, the risks involved. If risks can be easily identified, fairly allocated and fairly priced another model may be appropriate. Thus if the initial process of open negotiation for which ECI allows removes uncertainty as to risks and

<sup>21</sup> For an introduction to Australian Alliancing see: J J Myers, "Alliancing Contracting: A Potpourri of Proven Techniques for Successful Contracting" [2001] ICLR 56; D Jones, "Project Alliances" [2001] ICLR 411; R Quick, *Relationship Contracting: Partnering and Alliancing* (Brisbane: 2003); A Chew, "Alliancing in Delivery of Major Infrastructure Projects and Outsourcing Services in Australia—An Overview of Legal Issues" [2004] ICLR 319. The State Government of Victoria in April 2006 released a highly informative Project Alliancing Practitioners' Manual (See [www.dtf.vic.gov.au](http://www.dtf.vic.gov.au)). For particular considerations of the Project Alliance contract structure see in addition the *Case Study of the Action Peninsula Development* (Brisbane: QUT, 2001) which records the ways in which Project Alliances were being documented in Australia as the century opened.

<sup>22</sup> Not that the contract/non-contract distinction has been always been successfully maintained in the UK. See, e.g., *Birse Construction Ltd v. St David Ltd* [1999] BLR 194.

allows a contractor to price and accept them then ECI may be appropriate.

It has been said that an alliance is typically suitable where there are:

- (a) numerous complex and/or unpredictable risks;
- (b) complex interfaces;
- (c) difficult stakeholder issues;
- (d) complex external threats or opportunities so that either or both of the threats or opportunities can only be managed collectively;
- (e) very tight timeframes (driven by project risk rather than organisational capacity);
- (f) a high likelihood of project redefinition (e.g., due to technological change, political influence, etc.);
- (g) a need for owner involvement during delivery.<sup>23</sup>

It is also important that an alliance contracting partner other than the owner has limited liability because of this continuing uncertainty as to risk. When his share of profit and pain share/gain share is exhausted an alliance participating contractor other than the owner usually has no further liability in the absence of wilful default. This contrasts markedly with ECI where the innocent party has the full range of legal remedies for default.

### **5.5 Risk management under ECI**

Construction lawyers would regard as axiomatic that a principal:

- by pre-construction planning, exploration and design effort, can reduce risks;
- may ask the contractor to price control a neutral or insurable risk;
- should not ask a contractor to price an unquantifiable risk or a risk within the principal's control.

Perhaps the only benefit to a principal of paying a contractor to take an unquantifiable risk is that the principal will be certain of the price. However, the principal can almost be certain that he will pay too much. In the present oligopolistic market in Australia if a contractor is prepared to take a risk he can price for the worst. Any cap or target is likely to include too large a contingency for risk. This is one recurrent criticism of the Project Alliance Target Cost Estimate. One option being seen in the Australian market is a schedule of rates or cost plus contract without any target or cap.

ECI by contrast seeks to optimise risk allocation by the application of risk management techniques in a co-operative environment. This in turn means genuine value for money can emerge because both parties ultimately enter

<sup>23</sup> See the *Project Alliancing Practitioners' Manual* at 3.1.

the Stage 2 construction contract at a price that both parties have agreed with eyes open and a shared understanding of project risks and of who will have the responsibility for managing each of them. The price it should be noted is not necessarily a fixed price or RAP. It may be a lump sum, a capped price or RAMP or a schedule of rates or cost plus or a combination of these. The procurement model is that flexible.

### **5.6 When is ECI best used?**

In Queensland if a Project Alliance is not suitable the immediate procurement choices are now the Department of Public Works' MCC or DMR's ECI.

ECI is best used if:

- It is possible to remove initial uncertainties as to risk to the extent that the parties can agree on the price and treatment of risks.
- A Project Alliance is not suitable for reasons including there being no appetite for the shared risk profile of Project Alliancing that derives from continuing commercial uncertainty, no commitment to Project Alliancing principles, or the absence of the key drivers that would make a Project Alliance suitable.
- There is high market demand for both contractors and designers so that contractors or designers or both are able to seek better returns elsewhere. As we have seen, DMR developed its ECI contract believing that the market for providing road engineering services could not cope with the demand for road infrastructure spending by other procurement methods and that ECI would mean a reduced load on contractors and designers during the tender period, freeing them to undertake more projects than would otherwise be possible.
- There is a high risk of not obtaining competitive tenders using other procurement methods.
- Better value for money can be achieved by involving the contractor early in the planning/design process.

### **5.7 How does ECI achieve value for money?**

#### *Competitive tendering*

- Hourly rates. The initial hourly rates for Stage 1 are competitively tendered and include overhead and profit.
- Productivity (for risk adjusted price for Stage 2 work). Productivity benchmarks feed into the price for Stage 2.

Extracting value from the tendering process requires commitment and particular skills. The initial tender process must ensure that the right information is requested and it must be objectively evaluated and scored. DMR have shown a preparedness to look at long-term results by adopting a two envelope tender system for price and non-price criteria, respectively.

*Early engagement of the contractor*

This:

- allows the greatest possible value to be added to risk management, project planning, design and construction in particular by integrating whole of life considerations;
- allows innovative value engineering. It is a commonplace that 95% of the savings can be achieved in the first 5% of the design.

*A risk adjusted price for Stage 2*

This allows for:

- the competitively tendered historic productivity data for plant, equipment, trades and materials;
- competitively tendered rates for contractor's and designers' personnel;
- subcontract prices procured through competitive tenders during Stage 1.

As we have seen a risk adjusted price may not necessarily be a lump sum price.

*Agreed risk management*

The parties can decide if DMR will pay to transfer risks.

The model should result in DMR paying for an agreed risk profile because risks are proactively identified and assigned to whoever is best able to manage them during Stage 1. Additionally any risks recognised during development of the RAP can have provisional sums applied or even capped provisional sums, Maximum Sums, with their own individual pain/gain regime applied to them.

The outcome of this approach should be that risk contingency allowances in the contract price are minimised and any savings due to effective risk management and the absence of claims shared.

*Principal's termination for convenience*

A principal must be able to decide if he can fund the project. If after all possible has been done in Stage 1 DMR is still not satisfied with a contractor's Stage 2 offer DMR can invite competitive tenders from the market. The contractor cannot put in a second bid. The same right exists in a Project Alliance and the MCC.

*Managing the relationship*

Managing the relationship by the application of an escalating issue resolution process nips in the bud claims and disputes.

### 6. DMR'S ECI CONCEPTS AND HOW THEY WORK CONTRACTUALLY

#### 6.1 The essential provisions of the ECI contract

FIGURE 3: THE ESSENTIAL PROVISIONS OF ECI

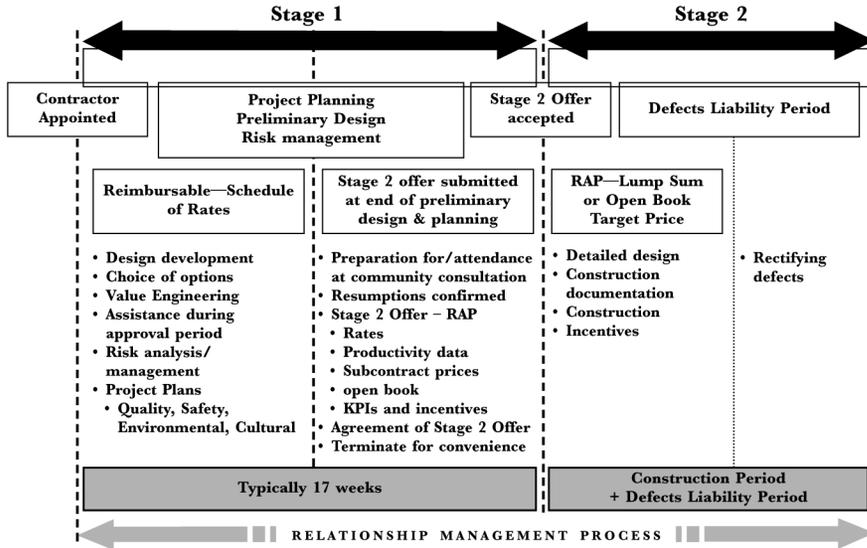


Figure 3 is intended to make these points:

- There are 2 stages. Stage 1 ends with the acceptance of the Stage 2 offer of the risk adjusted price.
- The Figure 3 shows the contractor being appointed at the outset time during concept planning although the actual point of commencement may be dependent on project characteristics and the level of development of the project by DMR. It could equally well have shown a designer being appointed at the outset and then the contractor being appointed when the concept design was 60–70% complete.
- The risk adjusted price will usually be called for when the design is 60–70% complete and construction detailing 30% complete. It will have been developed prior to this time on an “open book” basis by means including facilitated workshops.
- The risk adjusted price need not be a lump sum. Unlike the position in the UK, in Queensland to date the price has been a lump sum. Possibly the price can be a target price (RAMP) or other pricing structure.
- A bonus regime may have been worked out in Stage 1 although the contractor’s Stage 2 offer may contain his incentive proposals for Stage 2.

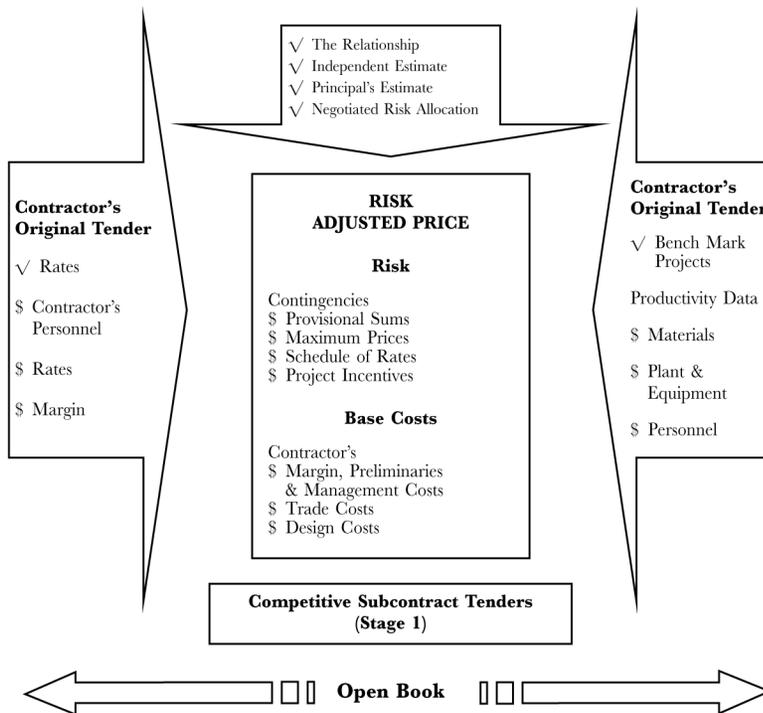
- Relationship management will operate from beginning to end of the contract.

**6.2 RAPs and RAMPs**

The risk adjusted price will be determined once the design is sufficiently advanced to have the required level of confidence in the pricing. (Typically, as we have said, this will be when approximately 70% of design and 30% of the construction detailing are complete.) We have said that a risk adjusted price need not be a lump sum. The MCC contemplates a price that is a guaranteed maximum price—a RAMP. (See 6.5 and the comment on “Maximum Price” below.)

The risk adjusted price is fully competitive. Pressures making it so include the contractor’s original tender, the transparency of the “open book” arrangements in Stage 1 and the requirement to obtain competitive subcontract tenders as illustrated by Figure 4.

FIGURE 4: THE VALUE OF ECI—  
THE PRESSURES ON THE RAP



The pressures on the RAP include the obligation to obtain competitive subcontract tenders. This is very important because 60% of the works can

ordinarily be and should be tendered. Project Alliancing also uses this device.

Plant and equipment rates given at tender time can be benchmarked by DMR with internally and externally tendered contracts.

DMR has to validate that the risk adjusted price is value for money. At this point DMR has the ability to terminate the contract if it believes the risk adjusted price does not represent value for money, e.g., because it fails to meet DMR's initial Project Works Budget. In such circumstances DMR retains complete ownership of the IP (intellectual property) in the design and is able to take the project to the market to obtain a new contractor.

### **6.3 Relationship Management Process**

The parties are required to participate in relationship workshops to engender a team approach to the Stage 1 work. This is when the project risks are identified in detail and their allocation and management during Stage 2 is agreed.

Although the process is necessary to extract maximum value from negotiation of risks because it cannot be mandated, the Relationship Management Process is voluntary, i.e., both parties can withdraw from it.

### **6.4 Risk identification**

Whilst DMR indicates a preferred risk allocation in the tender documentation, all risks are open for negotiation prior to acceptance of the Stage 2 offer.

The concepts of a Stage 2 offer and risk adjusted price are intended to ensure that all identified risks are openly acknowledged and allowed for in the agreed risk adjusted price. It is anticipated that unidentified risks will be allocated equitably by the terms of the contract.

The terms of the contract within the tender documents may be amended as a result of negotiation of the Stage 2 offer according to the risks identified, the parties' agreement as to how they should be managed and any incentive and penalty attaching to successfully managing risk that is allocated to the contractor. Because the contract encompasses Stages 1 and 2, a deed of variation accepting the Stage 2 offer may record the results of negotiation.

### **6.5 The progress of an ECI contract in detail**

#### *Procurement and tender evaluation*

DMR may initially engage designers to begin planning and preliminary design in the majority of projects. Contractors may be sourced from an expression of interest process or from the Department's prequalification register.

A contractor will be engaged through a competitive tender process based on price and non-price criteria.

The contract price is not determined at tender time. Tenderers therefore submit rates for their personnel and the personnel of the proposed designers and rates for plant and equipment. These rates and productivity data are used to verify the risk adjusted price that is to be included in the contractor's Stage 2 offer and the risk adjusted price must be consistent with them.

### *Contract stages*

The ECI contract is a two-stage design and construction contract:

In Stage 1:

- planning and preliminary design is undertaken by DMR, assisted by the contractor and the designers engaged by the Department in addition to planners/designers that the Department may have retained for any prior planning work;
- DMR, the contractor and the designers undertake value engineering to identify potential value-adding opportunities;
- the Department's designers' agreements are terminated and these designers are re-engaged by the contractor, or the contractor engages either alternative or additional or both designers according to the accepted tender. DMR may retain its original planners/designers if it wishes where they are not re-engaged by the contractor;
- risk is negotiated and a risk register developed. DMR obtains other approvals and acquires land. Service relocation may be performed by the contractor as "early work";
- DMR requests the Stage 2 offer after satisfactory completion of its Detailed Planning and Preliminary Design Report and when it has land and approvals in place. The timing of the RAP can be complicated as DMR must obtain the necessary approvals and land acquisitions.

The tender documents indicate the percentage completed of the various components of the Detailed Planning and Preliminary Design Report at the date of tender invitation, and the anticipated percentage completed at date of acceptance of tender.

It is DMR's contractual responsibility to prepare the Detailed Planning and Preliminary Design Report during Stage 1 of the contract. The contractor's responsibility is to assist with this:

- the contractor submits a Stage 2 offer, including a risk adjusted price for the completion of the design and documentation and construction of the works based on agreed modifications of risk;

- DMR may invite tenders from other contractors if the Stage 2 offer is not initially accepted by DMR.

In Stage 2, provided that DMR accepts the contractor's Stage 2 offer:

- the contractor and the contractor's designers complete detailed design and prepare construction documentation in accordance with the brief and the Detailed Planning and Preliminary Design Report;
- the contractor and subcontractors construct the works;
- the works must comply with the contract, including the Brief, Detailed Planning and Preliminary Design Report, detailed design and construction documentation and be fit and adequate for their intended purpose;
- the form of contract and contract administration are similar to the construction phase of a traditional document and construct contract, on the basis that the preliminary design is substantially complete at the time of development of the risk adjusted price, with special conditions to identify project specific conditions.

As we have seen, payment for this phase may reflect a number of pricing mechanisms.

## 6.6 Payment

### *During Stage 1*

For Stage 1, detailed planning and preliminary design are carried out as daywork and the contractor is reimbursed for the time of its personnel and designers at the rates contained in the contractor's tender on an "open book" basis. The rates for the contractor's personnel allow for overheads and margin. The contractor is not paid overheads or margin on the contractor's designers' costs.

The contractor may also receive a design bonus if the total contract price based on the Stage 2 offer is less than DMR's Project Works Budget.

### *During Stage 2*

For Stage 2, documentation and construction of the works, the contractor is paid the agreed contract price, the risk adjusted price contained in the Stage 2 offer and accepted by Main Roads.

The risk adjusted price will typically be a mix of lump-sum and schedule of rate items with or without provisional sums. Main Roads will have validated the risk adjusted price with value for money and in this connection, as we have said, it must be consistent with the productivity data and rates provided with the original tender.

The risk adjusted price includes allowance for everything to:

- detail design;
- document the project works; and
- construct the project works,

in accordance with the contract.

It will allow for:

- provision of all materials, labour, plant and equipment;
- everything else necessary for the execution and completion of the project works and the contractor's obligations under the contract; and
- the risk allocation negotiated and agreed during Stage 1 which will depend upon the level of investigations during Stage 1 (e.g., geotechnical investigation, level of design) and will depend upon the risk profile of the Stage 2 works.

The ECI contract also envisages the possibility of a "Maximum Price" with shared savings rather than a lump sum on components of, or all of, the Stage 2 documentation and construction works or items that are subject of a "Maximum Price" are performed as daywork on an "open book" basis and the contractor is paid actual costs or usual agreed rates plus an agreed amount for profit and overheads in a fashion similar to the usual treatment of provisional sum work or items. However, a "Maximum Sum" is the limit to the amount payable by the Department for the relevant "Maximum Sum" work or item and DMR may share savings with the contractor where less than the "Maximum Sum" is spent.

### **6.7 Issue resolution**

ECI's Issue Resolution Procedure allows for the escalation of unresolved issues through levels of delegates who are given time sufficient to find the facts necessary to decide the issue. The principal's representative makes a final decision on such issues taking account of delegates' recommendations or opinions.

Use of the procedure is a mandatory preliminary to formal dispute resolution. Formal dispute resolution is either by Dispute Resolution Board or the usual conference between the parties at their most senior level, then arbitration or litigation. In this way the procedure adapts typical partnering escalation issue resolution procedures to the contract. The procedure also preserves a party's legal remedies in a way that Project Alliancing does not, except in cases of wilful default.

## **7. SOME CONCLUSIONS**

Out of a framework of procurement planning, the Department's experience with Australian delivery models such as Project Alliancing and analysis

of yet other models such as the Queensland Department of Public Works' MCC, DMR refashioned the Highways Agency's ECI contract into a procurement model:

- capable of responding to a market where demand outstrips supply;
- giving value for money to a government principal;
- which is a relational contract with a continuing emphasis on relationship management and which integrates partnering techniques proven in Project Alliancing into its processes; and
- which is potentially suited to both building and engineering construction.

In the end this last point may yet be the most important. Like the UK's NEC contract on which the Highways Agency's ECI contract relies, the MCC formally adopted some ECI techniques before any other form of contract in common use. The MCC, the Highways Agency's ECI contract and DMR's ECI contract signpost the way to embodying ECI techniques in any construction contract with a careful understanding both of what makes ECI work and what are the circumstances under which it has to be made to work.