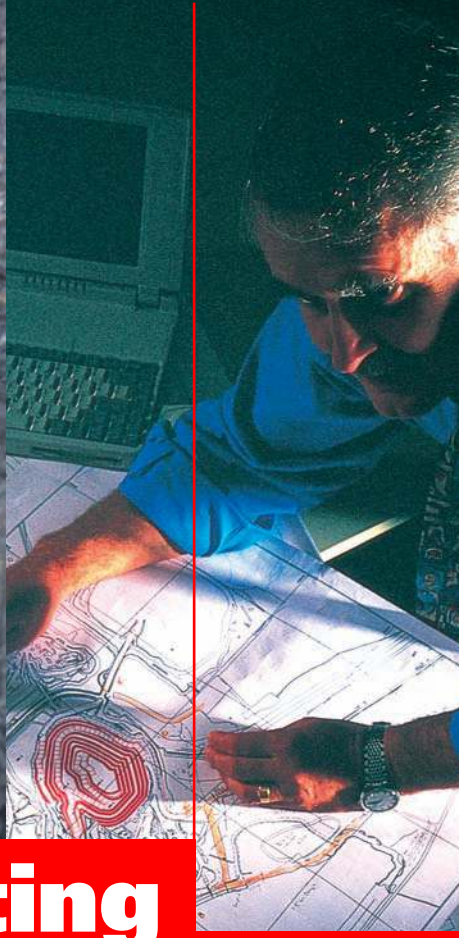


Relationship Contracting

Optimising Project Outcomes

Australian Constructors Association

Contents

Relationship Contracting

Relationship contracting is a flexible approach to establish and manage relationships between clients and contractors and to implement proven practices and techniques to optimise project outcomes.

"The quality of the management of relationships between clients and contractors is paramount to project outcomes that are world class and that enhance value for all the stakeholders. I endorse this very significant initiative by the Australian Constructors Association".

R J McNeilly
Executive Director and
President, BHP Minerals

"The principles underlying relationship contracting are generally consistent with those underpinning the way Defence does business, both now and into the future.
Our contract documentation is presently being refined to more clearly reflect this.
I strongly support the ACA initiative".

R W Corey
Head Defence Estate
Department of Defence

"Today there are many different approaches that are applied to project structures and organisations; from the traditional lump sum to "partnering" arrangements between the constructor and client.
No matter which structure is adopted, fundamental issues such as project scope and deliverables must be agreed. However for a project to be truly successful, the quality of the people and strength of the relationship is the key to success. Developing mutual respect and trust, that enables transparency and information sharing is the foundation for a successful outcome".

H M Morgan
Managing Director
WMC Resources Ltd

"For truly successful companies, the traditional master-servant relationship of project owner and project contractor is becoming obsolete. We have learnt that by sharing the risks, we share the rewards. By getting the fundamentals right, and the client-contractor relationship is the most fundamental of all, we tap the combined knowledge, expertise, and inventiveness of the whole: but this has to be anchored in the highest levels of professionalism. The ACA's initiative is a commendable step towards better business outcomes".

J Akehurst
Managing Director
Woodside Petroleum Ltd

"The Australian Constructors Association through its member companies has endorsed the principles and practices detailed in this publication. ACA believes that relationship contracting offers clients and contractors a framework through which project outcomes can be improved to the benefit of all stakeholders. We look forward to working with the industry's major clients to give effect to these principles and practices".

Wal King AM
President, Australian Constructors Association (ACA)

1.0 Executive Summary

ACA believes that relationship contracting is the way forward for the Australian construction industry. This publication discusses the need for change and outlines proven practices and techniques to optimise project outcomes.

ACA believes that successful relationship contracting is based on common sense, open mindedness, adaptability, inventiveness, prudent risk-taking, fairness and commitment.

The Australian Constructors Association (ACA) is a national organisation formed in 1994 to represent major contractors. The ACA Board members are the chief executives of each of its eighteen member companies. ACA member companies have a combined annual turnover of $15 billion, employ 49,000 people and account for around 30% of construction activity in Australia.

ACA is dedicated to making the construction industry more efficient, competitive and better able to contribute to the development of Australia, through positive leadership, open communication, and a commitment to infrastructure.

Industry Survey Conducted

A key objective of ACA is to improve the industry's commercial and contractual practices with the goal of optimising project outcomes for clients and contractors.

In 1998, the ACA undertook a survey of the industry's major private and public sector clients through a programme of interviews with their chief/senior executives to understand their:

- experience of contractors;
- expectations of contractors; and
- views on how project outcomes could be improved.

The ACA survey findings, with respect to clients' experience and expectations of contractors, included:

- project outcomes were sub-optimum on too many projects;
- clients continue to utilise traditional delivery systems which they acknowledge have shortcomings and that often lead to adversarial relationships and overruns in cost and time; and
- clients believe the following factors contribute to successful project outcomes:
  - clear project goals,
  - clear definition and understanding of the project scope,
  - clear understanding and appropriate allocation of risks,
  - agreed risk/reward arrangement,
  - appropriately skilled project staff, and
  - well defined communications through all levels of the contracting parties with proper empowerment for decision making.

The ACA survey also sought clients' views on the way forward, towards the development of what we have termed relationship contracting, utilising delivery strategies based on closer alignment of client and contractor goals and a better understanding of risk sharing - a win-win outcome.

Relationship Contracting

Relationship contracting is based on achieving successful project outcomes, which include:

- completion within cost;
- completion on time;
- strong people relationships between the parties resulting from mutual trust and co-operation, open and honest communication and free sharing of information;
- optimum project life cycle cost;
- achieving optimum standards, during execution and in service for safety, quality, industrial relations, environment, and community relations.

We have defined relationship contracting as a process to establish and manage the relationships between the parties that aims to: remove barriers; encourage maximum contribution; and allow all parties to achieve success.

ACA believes that:

- successful relationship contracting is based on commonsense, open mindedness, adaptability, inventiveness, prudent risk-taking, fairness, commitment, and the reflection of these values in behaviour by the contracting parties; and
- proven delivery strategies and techniques exist which optimise project outcomes and deliver optimum commercial benefits to all parties involved.

It is important to note that these proposals apply principally to major projects and are based on the views of clients associated with major projects.

Key Messages Identified

A number of key messages emerge from our work.

- Clients and contractors are best served when the delivery strategy utilised suits the project requirements.
- Many clients still utilise project delivery systems structured to alter the allocation of risk and neglect the opportunities to be gained through improving the relationship between the contracting parties.
- For larger projects, where there are many unknowns and uncertainties, the client can better manage its risks through a more cooperative approach where the risk is embraced rather than transferred.
- Where an examination of the risk allocation indicates that a risk embrace approach will be more suitable, relationship contracting offers the parties a variety of techniques to ensure that the goals of the client and contractor are closely aligned within a gainsharing/ painsharing framework that balances risk and reward and focuses both parties on an optimum project outcome.
- Relationship contracting requires the parties to become result focused and willing to challenge conventional standards. The focus is on a cooperative endeavour to improve project outcomes rather than establishing a legal regime to penalise non-conformance.

In the latter parts of this publication, we have set out some of the fundamentals of relationship contracting and discuss the practices, processes and techniques to guide clients and contractors.

We have included case studies of projects where the contracting parties utilised the practices and techniques of relationship contracting, resulting in very successful project outcomes.

It is ACA's view that a commitment by clients and contractors to work towards relationship contracting will result in a more efficient and effective Australian construction industry, and that the factors that result in a successful project should be understood and adopted as a benchmark.

The contractor and client must be result focused and willing to challenge conventional standards.

The Way Forward

ACA's key objectives are to promote and develop with their clients contractual relationships and project delivery systems which will:

- raise the standard of contract arrangements towards the development of a more efficient, equitable and globally competitive industry; and
- foster the development of relationship contracting within a competitively robust industry;

thereby delivering projects with significant price advantages and efficiencies, both in capital and operating cost terms, and other successful project outcomes for clients and contractors.

Relationship contracting incorporates proven delivery strategies and techniques which optimise project outcomes and deliver optimum commercial benefits to all parties involved.

2.0 Need for Change

The Australian construction industry has a history of adversarial behaviour, that has delivered sub-optimum results to clients and contractors. ACA is committed to improving commercial and contract relationships to deliver maximum benefits to all parties.

2.1 The Client Survey

ACA appointed Flagstaff Consulting Group Pty Ltd to undertake a survey of the industry's major clients through a programme of face-to-face interviews with chief/senior executives.

Sector	No. Interviewed
Mining & Resources	8
Building Owners & Developers	3
Government Organisations	8
Industrials	4
Utilities Groups	4
Major Retailers	2
Airports/Airlines	3
Banks	2
Total	34

Many existing contractual relationships, particularly traditional forms lead to adversarial behaviour between parties and this has a negative effect on project outcomes.

2.1.1 Feedback on Issues Raised

The following comments are considered representative of the input from clients.

- All parties agreed that shortcomings, some serious, existed in contractual relationships between clients and contractors and these had a negative effect on project outcomes.
- Many existing contractual relationships, particularly traditional forms, lead to adversarial behaviour between parties which has a negative effect on project outcomes.
- The majority of interviewees agreed with the point that the keys to a successful project are:
  - clarity of definition and understanding of the project scope;
  - a clear understanding of the risks in the project and an appropriate allocation of the responsibility for managing those risks;
  - a gain/pain sharing arrangement whereby the contractor risks his profit and head office overheads in return for an increase in his project return for achieving a superior project outcome for the client; and
  - clear and well defined communications through all levels of the contracting parties, with proper empowerment for decision making at all levels of the organisations.

There was a wide range of views as to the degree of risk that the contracting party should be asked to manage, even though clients generally understand the excessive costs of inappropriate risk allocation.

- Most clients are prepared to consider forms of risk sharing/gain (loss) sharing if it can be demonstrated that such a system will benefit the project outcomes. However, in some instances, there is a degree of cynicism that needs to be overcome before "alliancing" or other forms of "relationship contracting" will be entertained by certain clients.
- Many of the interviewees expressed the view that, if there is to be a progression towards "relationship contracting", there are a number of shortcomings that the contractors need to address. These include:
  - the contractor's project staff being required to be fully responsible for all aspects of their project and, in particular, for the performance of their many subcontractors;
  - the contractor's project staff, particularly the project manager, be appropriate for "relationship contracting" as distinct from "hard dollar contracting"; and
  - the contracting company needs to accept responsibility for the selection, training and performance monitoring of its staff.

Most clients also acknowledge that these same shortcomings apply to the client's project staff and need to be addressed similarly.

2.1.2 Feedback on the Way Forward

The comments below apply principally to major projects and come from clients associated with major projects.

- The majority of clients are supportive of the concept that, prior to detailed documentation, clients and their short-listed tenderers meet and, as a result of these meetings, the following documents would be prepared by the clients:
  - a Terms Sheet which sets out in plain English the respective obligations of each party to the fundamental issues in the contract. (The issues are listed in Section 7.2.3); and
  - a Risk Allocation Matrix in which all risks envisaged in the contract are identified and the responsibility for managing these risks is allocated.

  It was generally agreed that this approach should add an additional degree of commercialisation to the project outcomes, a degree missing when documents are prepared by clients and their advisers without reference to the construction industry.

  In the interviews, there were a number of varying approaches taken but the above comments are representative of the discussions.
- Clients generally agreed that they should devote more resources to improving their definition of the Scope of the Contract.
- With the outcomes of the Terms Sheet and Risk Allocation Matrix, the contract documentation can be produced which results in superior project outcomes and a reduction in adversarial behaviour of the parties.
- Clients were, generally, open minded as to the form the contract could take, such as traditional, some form of relationship contracting or another form. They do see that prior to entering into some form of relationship contracting both parties will need to commit resources to ensure the chemistry of the contracting parties is compatible and appropriate for the contract form and scope.
- Clients, in general, are supportive of sharing risks and rewards/losses. However, some remain cynical about the contractors' willingness to share in any losses. Contractors tend to become adversarial in such circumstances.

  Relationship contracting focuses on finding solutions to problems, rather than adversity and litigation.

Relationship contracting focuses on finding solutions to problems, rather than adversity and litigation.

Most clients are prepared to consider forms of risk sharing/gain (loss) sharing if this can be seen and demonstrated to benefit the project outcomes.

3.0 Management of Risks

Traditional risk transfer strategies often fail, due to poor risk allocation. Relationship contracting provides the approach whereby the various project risks are allocated to the party best suited to manage them.

3.1 Traditional Risk Transfer

All major projects involve inherent risks. At the onset of the project these risks are "owned" and managed by the client.

The traditional risk management strategy adopted by clients has been to transfer as much of this risk as possible to others. This approach is typically evidenced by lump sum, schedule of rates and turnkey projects. It is a strategy that has served clients well for many years, although it is not always the most appropriate strategy.

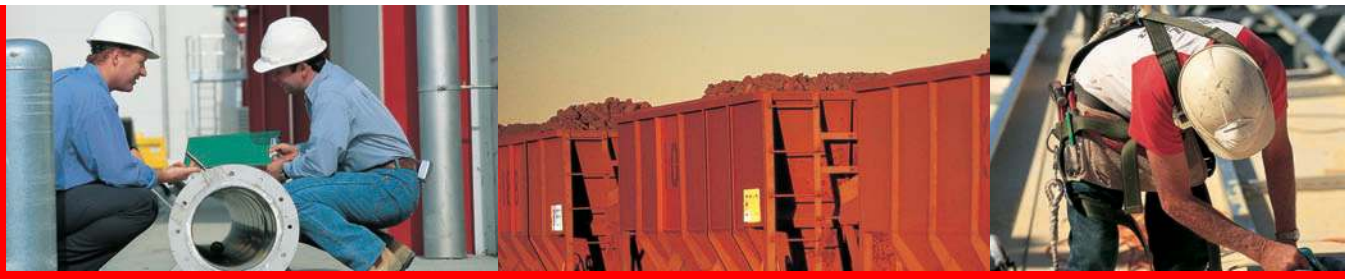
Poorly defined objectives, inadequate time and cost planning, unreasonable risk allocation and inadequate project personnel contribute to the failure of traditional risk transfer strategies.

Clients often try to transfer risks to designers and contractors that are more within the control of the client. This strategy is often pursued on the assumption that the extremely competitive nature of the Australian construction market will allow these risks to be transferred without paying any premium. However, this strategy often fails, creating an adversarial climate, a high level of commercial disputation, time and cost overruns and overall poor performance.

Poorly defined objectives, inadequate documentation, inadequate time and cost planning, unreasonable risk allocation and inadequate project staff contribute to the failure of these strategies.

Faced with a risk transfer strategy, it is often not in the contractor's interest to be flexible. However, given the adversarial nature of relationships, it may be in the contractor's interest to allow a problem to unfold rather than to deal with it positively. At its worst, the contractor's interests may be best served by pursuing strategies aimed at increasing the overall cost to the client.

Contracts fail if clients attempt to transfer all project risk to the contractor, or if the contractor seeks higher returns without accepting a greater proportion of project risk.



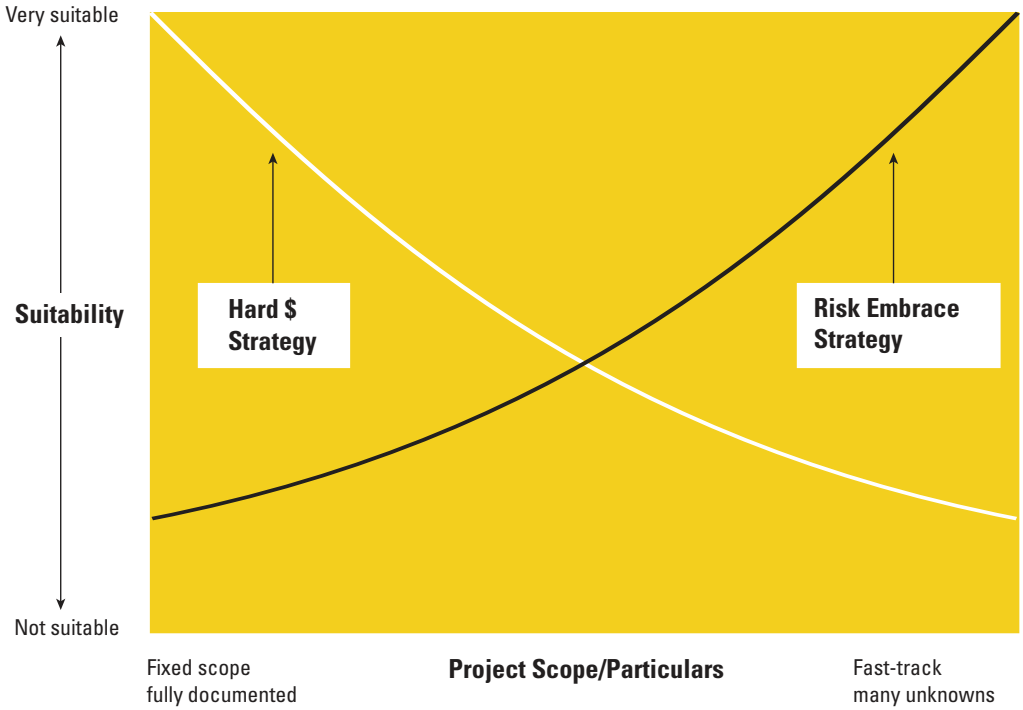
3.2 Risk Embrace Approach

The fundamental rationale for the client to utilise relationship contracting is that, in certain circumstances, the owner can better manage its risks by embracing them (rather than trying to transfer them) and then managing them within a flexible project delivery environment.

This requires a clear understanding of the principles of risk management within a project environment. A properly informed client will be able to recognise whether the circumstances suit a risk transfer or a risk embrace approach.

In certain circumstances the owner can better manage its risks by embracing them, (rather than trying to transfer them) and then managing them within a flexible project delivery environment.

Diagram 1: Risk Embrace Strategy



4.0 Relationship Contracting: Defined

Relationship contracting is not based on altruism - it is established as a business relationship designed to deliver optimum commercial benefits to all parties involved.

4.1 Core Values/Guiding Principles

The relationship between client and contractor cannot be taken for granted. Even where the parties have established a close business relationship on previous projects, it is still important to build the relationship for each specific project.

The relationship must be founded on a set of strong, mutually held core values and guiding principles.

Core Values	Guiding Principles
Commitment	Total commitment to achievement of the project goals - actively promoted by the chief executives of all parties
Trust	To work together in a spirit of good faith, openness, cooperation and no blame
Respect	The interests of the project take priority over the interests of any of the parties
Innovation	To couple breakthrough thinking with intelligent risk taking to achieve exceptionally good project outcomes
Fairness	To integrate staff from all parties on a 'best for job' basis
Enthusiasm	To engender enthusiasm for professional duties and the project's social activities

Relationship contracting is founded on the principle that there is a mutual benefit to the client and the contractor to deliver the project at the lowest cost - when costs increase both the contractor and the client are worse off.

The relationship is supported by a contractual arrangement formalising the risk-sharing arrangements. This relationship is founded on the principle that there is a mutual benefit to the client and the contractor to deliver the project at the lowest cost - when costs increase both the contractor and the client are worse off.

Ahead of all other considerations, successful relationship contracting is driven by strong people relationships.

4.2 Key Features

This publication contains three case studies of successful projects utilising some of the fundamentals, practices and techniques of relationship contracting.

In some of these cases the delivery strategy was formalised as a project alliance. The key features of this arrangement were:

- a focus on project results founded on successful business outcomes for all parties including rewards for exceptional performance;
- innovative contractual arrangements;
- access to and contribution by the best resources of each participant with an emphasis on working together efficiently;
- a clear understanding of individual and collective responsibilities;
- the success of the project was measured against key performance indicators;
- an emphasis on openness and cooperation between the parties; and
- an equitable risk/reward balance that aligned the commercial interests of the parties.

A number of models have been used to support relationship contracting, using either a single or multiple contract arrangement.

Each of these models has at its core an agreement for relationship contracting. This establishes the delivery vehicle, sets out the objectives of the parties, establishes the commercial arrangements between the parties, and the organisation structure and decision-making processes.

The agreement should be flexible enough to accommodate the entry of additional participants where it benefits the project to do so.

The commercial risk/reward arrangements can be established in a variety of ways to suit the

needs of the project. Typically the commercial outcome for the various parties will be linked to the achievement (or non-achievement) of key objectives such as:

- capital cost;
- delivery schedule;
- operating costs;
- life cycle costs;
- environmental performance; and
- occupational health and safety.

The commercial risks should be commensurate with the potential rewards, the degree of influence which a party exerts over the outcome and the extent to which the party has taken ownership of the agreed target. The primary driver of these type of relationships is the appropriate sharing of cost under-runs or over-runs.

4.3 Suitability Matrix - Project Delivery Systems

Clients and contractors are best served when the project delivery system best suits the project requirements.

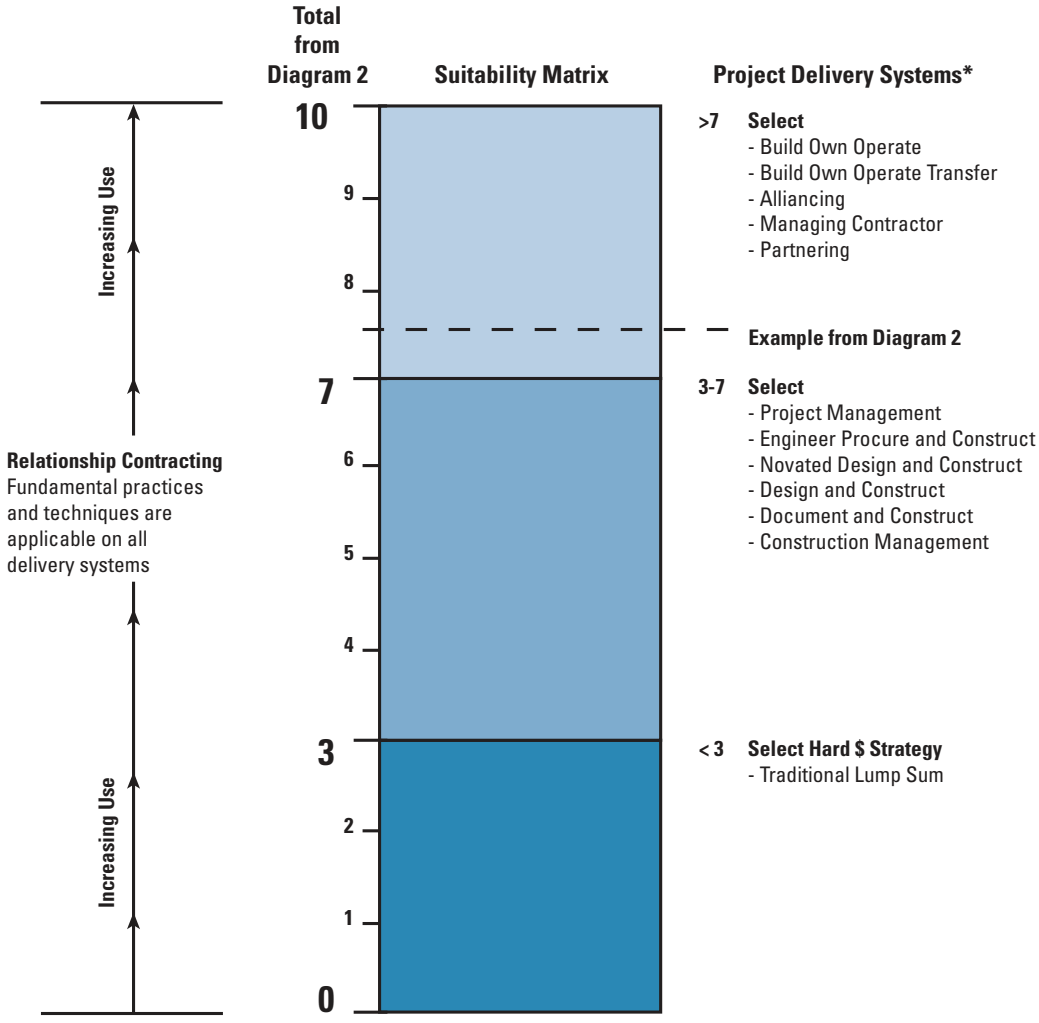
An example of a suitability matrix for evaluating and selecting the appropriate project delivery system is illustrated in Diagrams 2 and 3.

Diagram 2: Suitability Matrix - Project Delivery Systems (Worked Example)

	Weight	Low rating	1	2	3	4	5	6	7	8	9	10	High rating
1 Is early delivery of project of value to owner?	20%	No value at all									1.80		Of great value
2 Nature of work - green field versus brown field?	15%	Total green field site								1.20			Many critical interfaces with existing operating facilities
3 Technology - proven or radical?	10%	Well proven stable technology (will not evolve during project)							0.70				New and/or evolving technology
4 Risk culture of owner?	10%	Totally risk averse - risk transfer culture								0.80			Strategic management of risk - sophisticated view of risk
5 Tight guaranteed maximum price (GMP) essential for project sanction?	10%	Tight GMP essential							0.70				Owner flexible within range
6 Industrial relations environment?	10%	Very low risk									0.90		Very high risk
7 Proven relationship contracting record with potential engineering contractors?	8%	No track record or bad track record								0.64			Good track record
8 Sensitivity to disruption from aboriginal/heritage/environmental issues?	7%	Very low risk							0.49				Very high risk
9 Owner's understanding/experience of project delivery process?	5%	Little experience					0.25						Very experienced
10 Will construction require single (multi-discipline) or many contractors?	5%	Will require many different contractors				0.20							Could be constructed by one contractor
	100%	Drop-down totals	-	-	-	0.20	0.25	-	1.89	2.64	2.70	-	= 7.68 (Refer Diagram 3)

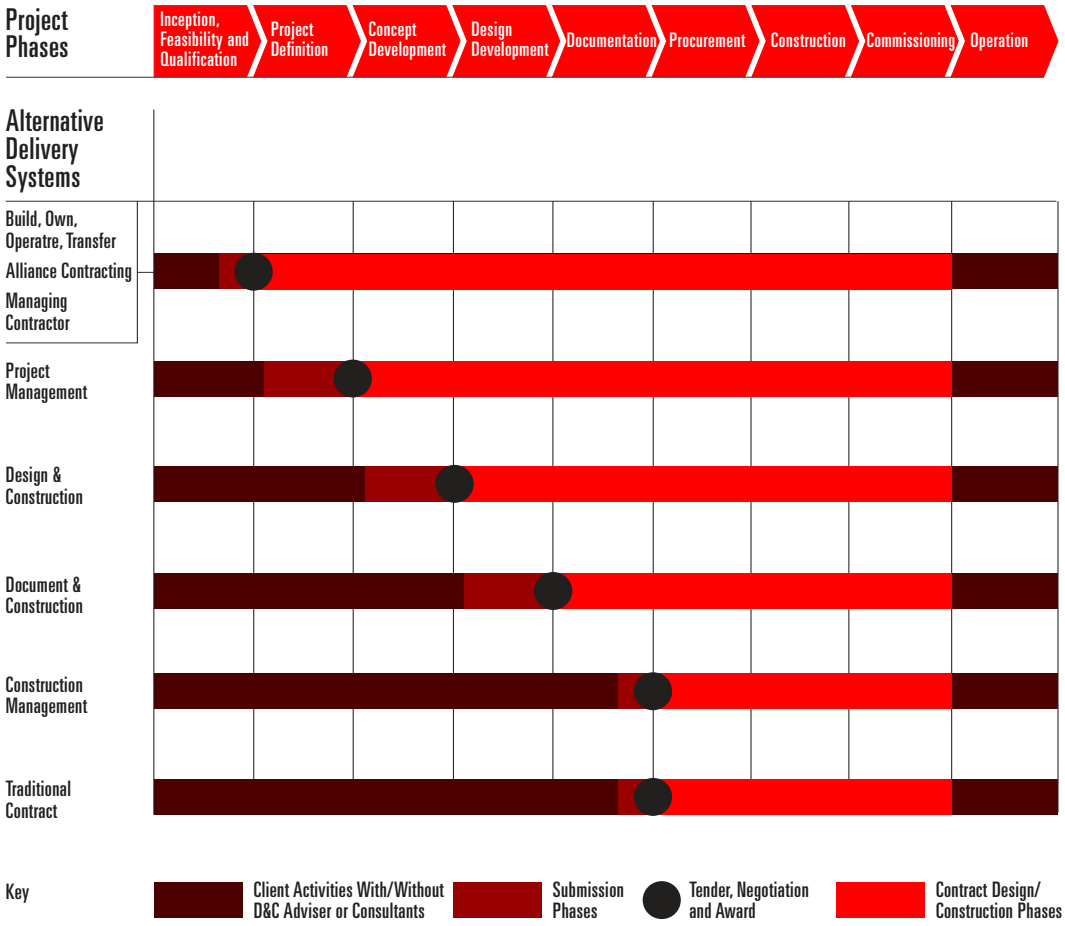
Diagram 3: Selection - Project Delivery Systems

Clients and contractors are best served when the project delivery system best suits the project requirements.



* **Note:** These project delivery systems are described in more detail in diagram 4.

Diagram 4: Alternative Project Delivery Systems



Involving the key parties very early in the project's life will maximise the very high potential for effecting optimum project outcomes.

Diagram 5 illustrates the benefit of involving all key parties at the initiating stage of the project, because it is during this stage that the ability to influence the final cost of the project is the greatest. Diagram 4 shows the project delivery systems (eg Alliancing, Project Management, Design and Construction) which facilitate the early appointment of the key parties.

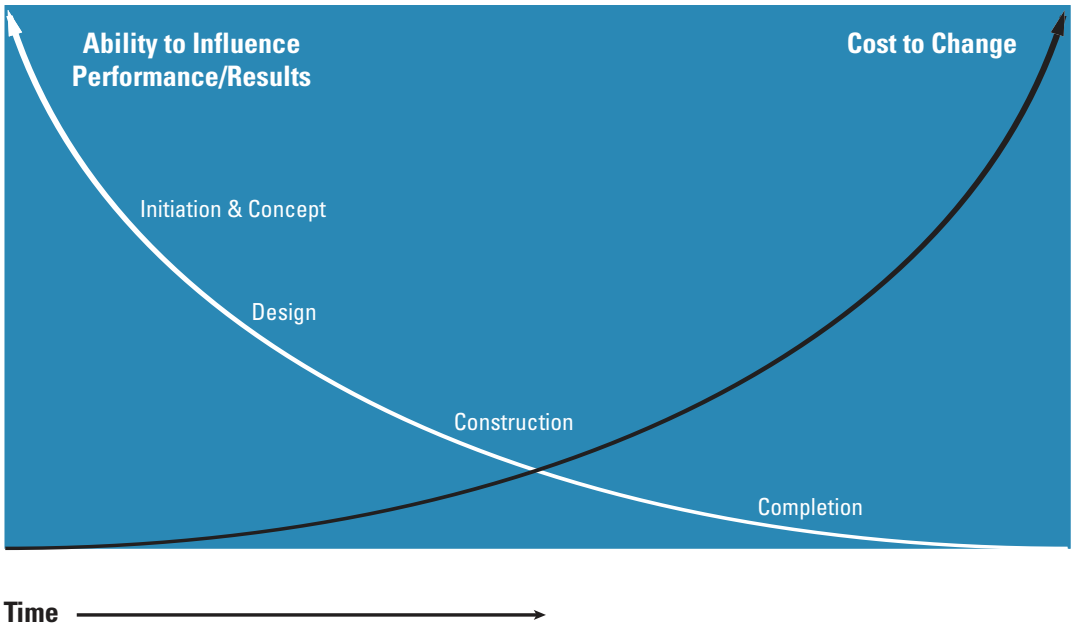
The 'ability to influence performance/results' (ie to reduce the overall project cost, or build in additional value, or similar) is highest at the very early conceptual stage of the project. It is still very significant in the design stages of projects, but by the time construction gets under way, the ability to influence cost has become comparatively low.

At the same time, the "cost to change" any aspect of the project is low at the early stages, but increases rapidly in the final stages. Therefore, it pays to fully examine all alternatives and factors which may be subject to change early in a project process.

Relationship contracting allows the cost of change curve to be flattened by aligning both the client and contractor to the objective of minimising cost. The curve is many times steeper in a traditional adversarial type contract.

Relationship contracting facilitates the 'ability to influence performance/results' (ie to reduce the overall project cost, or build in additional value is greatest at the conceptual and early design stages of the project).

Diagram 5: Project Cost Reduction Opportunity
(Traditional contract delivery system)



5.0 Relationship Contracting: The Benefits

Commitment to a common goal and a clearly defined project scope enables clients and contractors to deliver optimum project outcomes that go beyond time, cost and quality.

The benefits offered by relationship contracting to clients and contractors include:

- Time
  - certainty of project time
  - reduced project delivery time
- Cost
  - optimum project life cycle cost
  - reduced capital expenditure costs
  - acceptable financial results for both clients and contractors commensurate with their inputs and the risks undertaken by each party
  - improved operating performance
- Risks
  - better management of inherent risks
  - clearly defined risk allocation/sharing at outset
- Relationships
  - enhanced business relationships
  - establishment and achievement of common/aligned goals
  - improved behaviour of the parties to the contract, especially where the contract experiences practical and/or financial difficulties
  - a greater personal satisfaction for all project parties
  - avenue for repeat business with resulting benefits to clients and contractors
- Flexibility
  - increased flexibility to match changing project requirements
  - "cost of change" curve will be significantly flatter
- Technology/Innovation
  - greater incentive and encouragement to innovate in design, technology, systems, processes and techniques
  - greater incentive and encouragement to apply the latest technology
- Optimum Standards
  - optimum standards of quality, safety, industrial relations, community relations and environmental performance during the project execution and in operation
  - development of the industry's professionals and workforce
  - increased industry research and development as a result of improved financial certainty
  - world best standards of project delivery.

Key benefits of relationship contracting include, enhanced business relationships and improved behaviour of the parties to the contract, especially where the contract experiences practical and/or financial difficulties.

There is a no blame approach - success or failure is a joint responsibility. This is a significant departure from traditional project practice.

6.0 Relationship Contracting: The Fundamentals

The success of relationship contracting depends on the willingness of both clients and contractors to commit to change at an individual and project level.

Fundamentals

1. **Alignment of Goals**
2. **Risk Allocation**
3. **Clearly Defined Project Scope**
4. **Form of Contract**
5. **Integrated Project Team**
6. **Gainshare/ Painshare**
7. **Open Honest Communications/ Behaviour/Change of Attitude**
8. **Public Sector Issues**
9. **Facilitators**
10. **Legal Advisers**
11. **Third Party Advisers**

6.1 Alignment of Goals

Relationship contracting requires that all parties to the contract agree to align their individual goals, thereby establishing common or aligned goals for the project.

Agreement to these project aligned goals and the establishment of an effective Integrated Project Team will facilitate achieving total commitment from the parties and their staff to successfully complete the project. The proven technique of workshopping is critical to achieving agreement between the parties.

Parties work in a cooperative environment with common goals as opposed to the traditional "conflict" environment.

Alignment of goals is best achieved by the client taking a share of the project's risk. Even taking a 10% share of the project's risk produces a complete change to the attitude of the client at all levels. They cooperate to reduce costs rather than to increase costs. Contracts become enjoyable and productive rather than adversarial and negative. Under an adversarial contract, inspectors often insist on the contractor spending $100,000 to give the client a $1,000 benefit.

Under relationship contracting, if the client is carrying 10% of the risk, the inspector will only insist on the contractor spending $10,000 for a $1,000 benefit for the client - a massive improvement.

One of the common project goals will be the agreed Project Target Cost. The gainshare/ painshare mechanism is structured so that the parties (client, designer and contractor) will either win or lose together. There can be no blame - success or failure is a joint responsibility. This is a significant departure from traditional project practice.

6.2 Risk Allocation

As highlighted in Section 3.0, equitable risk allocation is at the core of successful relationship contracting, with the various project risks assumed by the party best suited to manage them. To ensure appropriate risk allocation, a risk management analysis should be carried out.

The nature and scope of the project risks must be evaluated. Requests for tender documents should include either a risk allocation schedule or require tenderers to complete their own risk allocation schedule as part of the tender. The relationship contracting agreement is then structured to reflect the agreed risk allocation.

The relationship contracting agreement relies on realistic and sensible expectations on both sides. The agreement will fail if clients attempt to transfer all project risk to the contractor, or if the contractor seeks higher returns without accepting a greater proportion of project risk.

6.3 Clearly Defined Project Scope

The importance of complete and unambiguous project goals and a project scope cannot be over emphasised - it sets the direction for all subsequent work.

When the outcomes of a project are less than satisfactory, it is often due more to unclear goals and scope, rather than poor design or management.

The work required to achieve the goals and scope of the project is carried out by a number of parties. It is critical to define completely and unambiguously the extent of the work to be carried out. This serves as a basis for the agreement/contract carried out by each party to identify all interfaces.

6.4 Form of Contract

Australian Practice

Currently, Australian construction clients use unamended or modified versions of the traditional Standard Forms of Contract, eg. AS4000 - 1997, or forms of contract developed by the clients' legal advisers. These latter forms and modified versions of Standard Forms of Contract tend to be adversarial in nature and, as such, do not facilitate optimum project outcomes. Whilst the tendency is recognised in Australia, little has been done to improve the contract form.

International Practice - "Improved" Construction Contracts

This is in contrast to the UK where the Institution of Civil Engineers has produced an alternative form of contract, the New Engineering Contract, a contract form that is gaining industry support. This contract form incorporates a number of recommendations relevant to the development of relationship contracting. These recommendations include:

- fair dealings between all stakeholders to the project;
- firm duties of teamwork, shared financial motivation to achieve goals and win-win solutions to projects;
- clear roles and duties definitions for the parties. Defined project manager, contract administrator and arbiter roles and clearly nominated client's representative;
- appropriate risk allocation amongst the parties;
- minimal changes to pre-planned works and a mechanism to evaluate such changes, including an independent adjudication where required;
- agreed methods and times for progress payments. Not solely by monthly valuations, ie upon achieving milestones;
- providing for speedy dispute resolution if any conflict arises; and
- incentives for exceptional performance.

The underlying philosophy of the New Engineering Contract is to encourage efficient and effective project management on construction contracts, and it particularly encourages trust and effective communication between the parties. The style is plain English and it is markedly different to the standard Australian forms.

6.5 Integrated Project Team

The Integrated Project Team is comprised of senior member(s) from each of the parties involved in a project. The client is a member of this team.

This Integrated Project Team approach eliminates the traditional client/client representative/ designer/contractor hierarchies.

The team has the responsibility and accountability to make all key decisions and to drive the project to achieve the aligned goals. It is therefore important that there is a clear understanding of the individual and collective responsibilities and accountabilities.

The selection of parties to relationship contracting is crucial to achieving successful project outcomes. The selection needs to be based on criteria including, but not limited to, commercial and technical competence.

Equitable risk allocation is at the core of successful relationship contracting, with the various project risks assumed by the party in the best position to manage them.

The criteria must include less tangible factors associated with attitudes and receptiveness to co-operation, such as:

- appropriate behaviour as members of a team;
- establishing relationships with suppliers and subcontractors;
- making available key personnel and their personal commitment to achieving project goals;
- integrating staff from one party into another where it best suits project needs;
- continuous performance improvement programme; and
- eliminating inefficiencies at all interfaces.

The Integrated Project Team must be committed to achieving the project goals. It must operate on mutual trust that puts the best interests of the project ahead of purely self - centred gains, achieving a single and unified team.

The Integrated Project Team must be committed to achieving the project goals. It must operate on mutual trust that puts the best interests of the project ahead of purely self - centred gains, achieving a single and unified team.

Training and guidance by an experienced consultant "facilitator" is essential to achieve and maintain an effective Integrated Project Team.

6.6 Gainshare/Painshare

The parties (client, designer and contractor) to an agreement should be aligned not only through common goals, but also through shared business interests in the project's success, firmly linking profitability to performance. This approach, to be successful, must operate at all levels of the project, not just at the top.

By aligning parties to the project's goals, they can be motivated to question costs, pursue best value and to innovate. It is possible to provide an environment that both effects behavioural change and fosters technical excellence.

This behavioural change requires the parties to operate with "open books" and the mutual review of all parties' costings.

This methodology is used to establish the Project Target Cost and continues throughout the life of the project.

Under a reward and risk approach - a gainshare/painshare mechanism - the profit of the parties would be reduced in the case that the Project Target Cost is exceeded and increased in the case where the actual costs are less than Project Target Cost, in accordance with agreed formulae.

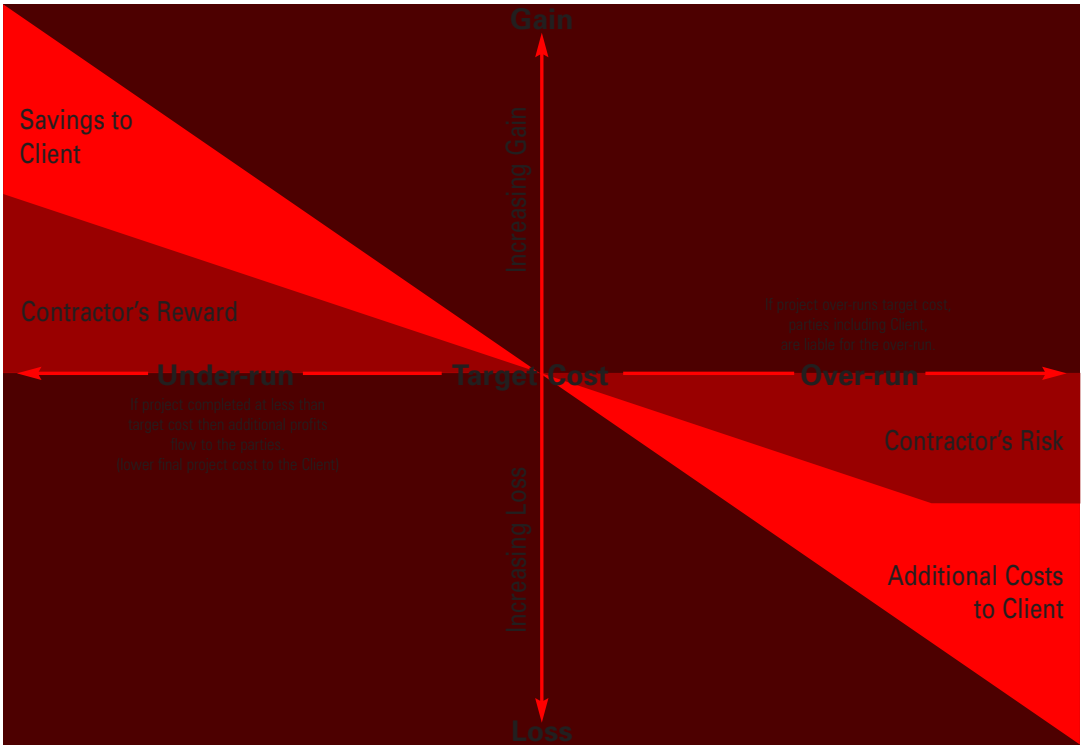
The gainshare/painshare split between the parties is generally based on a 50% allocation to the client and 50% divided in proportion to the other parties' contribution in the Project Target Cost.

The gainshare/painshare mechanism is structured so that the parties will either win or lose together.

This mechanism can also:

- incorporate other key performance indicators and a performance guarantee for the completed project/facility; and
- provide a key motivator and opportunity for the relationship contracting parties to achieve exceptional performance.

Diagram 6: Gainshare/Painshare Mechanism



The gainshare/ painshare mechanism is a key motivator for both the client and contractor to achieve exceptional performance.

6.7 Open Honest Communications/Behaviour/ Change of Attitude

For relationship contracting to be successful, all parties need a positive change in habits, behaviour and attitudes towards project outcomes and towards one another.

This is achieved by formulation and agreement of project aligned goals, establishment of the Integrated Project Team and implementation of training techniques and skills development to sustain a team building environment and performance. This includes:

- comprehensive induction of all new members joining the team;
- external coaching and guidance to assist and reinforce the team approach; and
- workshop sessions to identify concerns and pinpoint key issues which need resolution, and setting stretch targets.

Open, honest communication between all individuals is effected by their belief that they are members of the team and that the entire team is focused on achieving the project aligned/ common goals.

Open, honest communication between all individuals is effected by their belief that they are members of the team and that the entire team is focused on achieving the project aligned goals.

6.8 Public Sector Issues

The issue of "value for money" is central to the probity concerns of government. For example where a project is assessed against a number of criteria which provide benefits when assessed against cost, represents value for money.

This outcome is relevant to project delivery systems, such as project management, managing contractor and project alliancing, due to the fact that assessment of tenders on these delivery systems is not based on "hard dollar" tendering.

These delivery systems do provide a significant assurance of value for money. They are based on a cooperative approach, a philosophy of no disputes and no blame, and a containment of costs within Guaranteed Maximum Price or estimated Target Cost of the project.

This can provide a more effective guarantee of value for money than "traditional" projects with a propensity for conflict, claims and general price blowouts.

In government contracts, a probity auditor can be appointed as an independent observer of the decision making process in the evaluation of expressions of interest or tenders.

The public sector should ensure that the selection criteria and selection process is clearly communicated and transparent to all involved parties and monitored by a probity auditor.

6.9 Facilitators

Relationship contracting requires a substantial change in behaviour by the client, designers, suppliers and contractors.

Facilitators have been valuable contributors to the successful establishment and ongoing performance of the Integrated Project Team.

The facilitator should assist and work with the Integrated Project Team to:

- build best practice behaviours;
- develop an environment of trust, co-operation and open communication;
- develop the goal of achieving excellent results; and
- maintain a focus on common project goals and the team.

6.10 Legal Advisers

The traditional role of lawyers in drafting construction contracts has been to advise the client (whether it be owner or contractor) as to the relevant allocation of risks in any given project, and to ensure that the client's objectives are reflected properly in the contract documentation. The very nature of that role has often led to a one sided perspective in the drafting and negotiation of contract documentation. Client's and contractor's attitudes in the contracting process have also driven this approach.

The challenge to legal advisers to clients and contractors in the implementation of relationship contracting will be to fully embrace the new approach to the relationships between contractors and clients.

Lawyers must recognise that the type of documentation and language used can assist in the development of open and honest relationships between clients and contractors and optimise project outcomes. This will involve a substantial shift in perspective in advising clients and contractors. Lawyers have an important role to play in educating their clients as to the benefits of relationship contracting.

With the commitment of their clients to the objectives of relationship contracting, lawyers will then be able to assist the process by drafting more appropriate documentation to reflect the common goals of the client and contractor with an equitable risk allocation.

The key to successful relationship contracting will be to ensure that the form of contract documentation is appropriate to the business relationship between the clients and the contractors and which assists in administration of the contract and achievement of project outcomes.

Those documents will also need to provide adequate forums for discussion, teamwork and open and honest communications which lie at the core of a successful project.

Clients and contractors must direct lawyers to prepare contract documentation which operates as a management tool designed to facilitate the business relationship.

6.11 Third Party Advisers

The most valuable input from third party advisers typically occurs at the outset of discussions between the parties about a proposed relationship contracting project delivery strategy, during project formation and definition, and during the development of formal contractual and commercial arrangements.

There is also a useful role for independent reporting on performance and progress.

The specific role of third party advisers typically includes:

- reviewing the operation of proposed commercial arrangements between parties to the relationship contracting project delivery strategy;
- advising on suitable contractual and commercial arrangements including allocation of responsibilities and the structure of risk/ reward sharing mechanisms;
- implementing workshop approaches for developing a group approach to identification of goals and objectives, stakeholder interests, functional performance requirements, and risk and constraints; and
- reviewing and reporting on progress and achievement of outputs during the project.

Third party advisers must be able to effectively communicate suggestions and opinions to all parties and to achieve a high level of confidence by the group in the result of its activities.

Relationship contracting can assist in developing contracts where both clients and contractors have a common incentive to minimise the cost of the project.

Facilitators have been valuable contributors to the successful establishment and ongoing performance of the Integrated Project Team.

7.0 Relationship Contracting: Practices and Techniques

Depending on the procurement and delivery system adopted, the practices and techniques of relationship contracting can be implemented at the initiation and concept stage of the project - through to design, construction, completion, handover and operations.

7.1 Contractor Actions

The achievement and maintenance of the relationship utilises the following practices and techniques.

7.1.1 Trust and Openness in Dealings

For relationship contracting to be successful, both clients and contractors need to be open and trusting in their dealings with each other and to resolve all issues as they occur. This is not currently the position, but the project case studies included in this publication illustrate that these relationships can be developed and they do result in far superior outcomes than using adversarial attitudes.

7.1.2 Appropriate Behaviour

The majority of both contractors' and clients' staff have gained their professional experience on construction projects with traditional forms of contract. As such, they have been involved in contracts fundamentally adversarial in nature. As the industry progresses to relationship contracting, behaviour appropriate for traditional contracting is not totally appropriate for relationship contracting. Behavioural modification will be required to maximise the benefits of this new contracting form.

Companies will need to train and educate their staff and the staff of their sub-contractors and suppliers in the particular requirements for successful relationship contracting. In this training, particular emphasis will be placed on criteria in addition to bottom line profit at the expense of all else.

Companies will need to train and educate their staff and the staff of their sub-contractors and suppliers in the particular requirements for successful relationship contracting. In this training, particular emphasis will be placed on criteria in addition to bottom line profit at the expense of all else. These additional criteria would include client relationships, client attitude to repeat business, community attitudes, environmental performance and occupational health and safety performance.

7.1.3 Sub-contractors and Suppliers

Contractors must manage and work with sub-contractors and suppliers to create a team environment which will achieve the optimum project outcomes, without compromising safety and quality and which will not erode the sub-contractors' and suppliers' profit.

Greater emphasis on "best value" strategy rather than "lowest price" strategy is required.

The implementation of progressive inspections of sub-contractors' work off site and on site, rather than final inspections, is also required to enable more cost effective, earlier solutions to problems which invariably arise and the earlier rectification of defective work to the benefit of all parties.

7.1.4 Techniques

Set out below are brief descriptions of successful relationship contracting techniques and Diagram 7 shows the implementation of the techniques over the life of the project.

Planning/The Project Plan

Sound planning to provide a structured, documented and monitorable approach to manage the design, procurement, construction and completion of project/facility to meet defined operational, time, cost, quality, safety, industrial and environmental requirements.

Controls Engineering

The tools and systems developed and implemented to monitor, review and report on project/facility performance to achieve improvements, based on agreed deliverables and key performance indicators.

Design Co-ordination/Integration

Co-ordination/Integration of all design activities for the project/facility to meet defined operational, time, cost, quality, safety and environmental requirements.

Value Engineering/Workshopping

An Integrated Team workshop that identifies/defines and provides value solutions for project elements or addresses significant issues arising during any stage of the project.

Completion Engineering

A planned, structured, documented and monitorable approach to manage all outstanding construction works, design consultants' and statutory authority's approvals, interfaces with all parties, maintenance and operation manuals, and inspections and commissioning tasks to meet the requirements agreed with the client and to other defined contract requirements.

Project Alignment Group - Client/Contractor/Designer/Commercial Interests Parties

Regular meeting of all parties to the project agreement. "Empowered" senior management forum for technical and commercial interaction to ensure leadership and timely decision making.

Monthly Reports

Reports specifically developed for each project/facility to provide concise and accurate reporting to the Project Alignment Group, focusing on critical issues, priorities for action and performance against key performances indicators.

Innovation

Provision of incentive forums and adequate time for all the parties to be innovative in their organisation and management of people, markets, monies, materials and technology. This can result in new or improved design, practices, processes, products, systems and techniques which will provide improved project/facility outcomes.

Project Review/Audit

Project Review/Audit provides an independent, structured review of project/facility performance. The Review/Audit is carried out by an independent party to review operational, cost, time, quality, safety, environmental and reporting performance against agreed/contract requirements.

Key Success Factors and Performance Indicators

Key success factors and performance indicators, would include performance operating standards, environmental, health and safety, cost, time, quality, industrial relations and other factors/indicators.

Stretch Targets

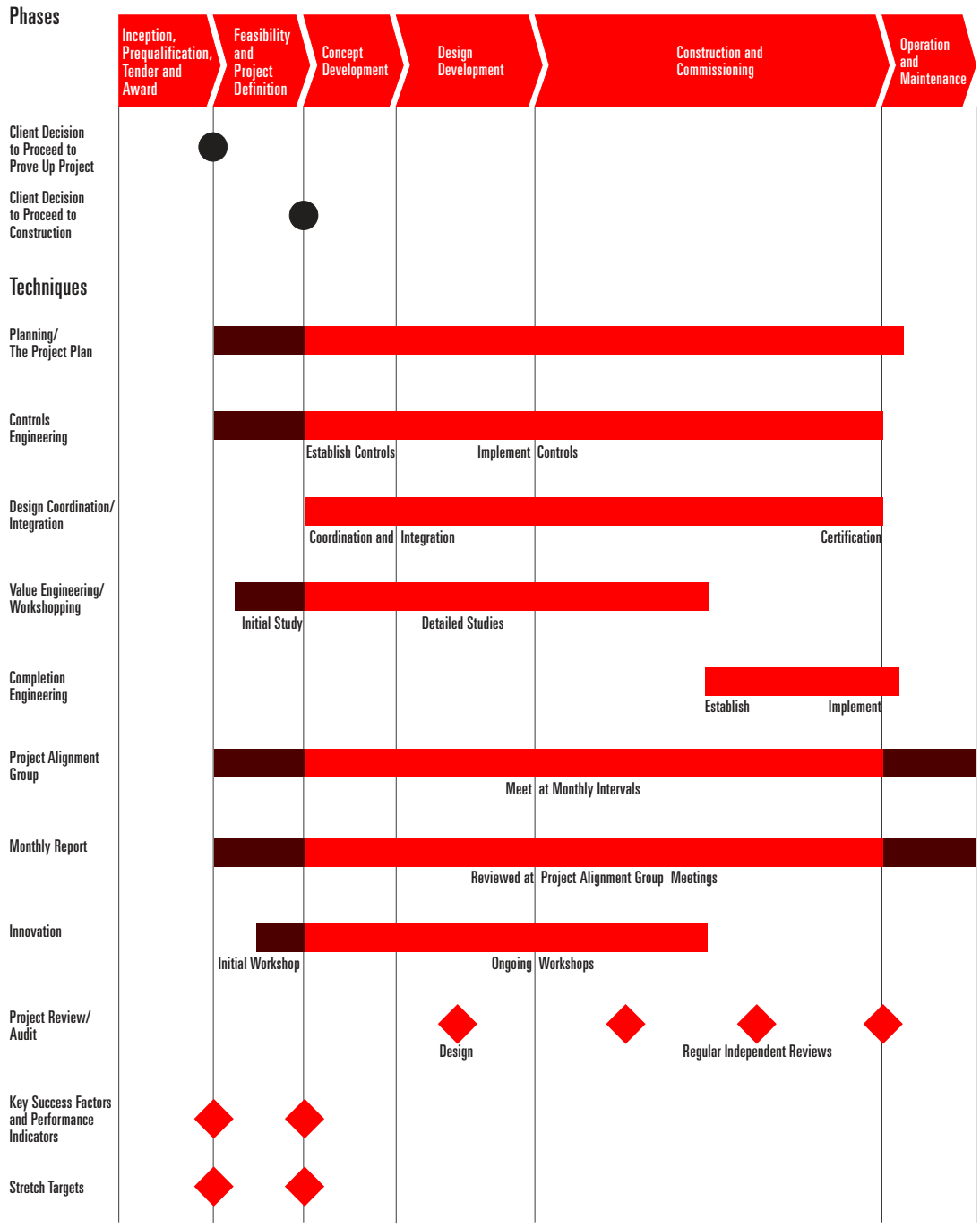
Stretch Targets are defined as very ambitious targets that are committed to without the parties quite knowing how they can be achieved. Achieving a stretch target requires a change in the previous ways of doing things, high levels of performance and problem solving, and being innovative and using the latest technology.

Achieving a stretch target requires a change in the previous ways of doing things, high levels of performance and problem solving, being innovative and using the latest technology.

Sound planning is undertaken to provide a structured, documented and monitorable approach to manage the design and construction of a project/facility to meet defined operational, time, cost, quality, safety, industrial and environmental requirements.

Diagram 7: Relationship Contracting Techniques

Nearly all relationship contracting techniques can be implemented irrespective of the project delivery system.



7.2 Client Actions

The ACA client survey identified a number of client-initiated practices that can also contribute to improved project outcomes and which are consistent with relationship contracting. These practices are described below and summarised in a table included in Section 7.2.10.

7.2.1 Pre-qualification of Contractors

The parties agree that the most efficient project delivery will be achieved when bids are sought from a short list of tenderers who are competent and equipped for the project. The selection criteria will be determined by clients but the contractors could provide input to these required criteria, such as comments on the proposed criteria to be adopted.

Adopting a pre-qualification process and a short listing of tenderers would ensure that the selected tenderers would dedicate more appropriate resources to their tender as they would assess their chances of success as higher than in an open tender. Further, the tender evaluation process by the client should be more efficient than in a larger and more disparate field of tenderers.

From an industry viewpoint, short listing of contractors will benefit the industry by reducing the costs of preparation/submission of abortive tenders. The cost of tender preparation is a major component in any contractor's head office cost and reducing this cost can only benefit the clients in the medium to long term.

7.2.2 Improved Project Scope Definition

The more detailed the definition of the scope of the project and the better the degree of pre planning and investigation, the more accurate will be the tender price. In addition, the contingency allowance that the contractor must include in their tender for unknown/ill-defined aspects of the project will be reduced. This should result in a reduced and more appropriate tender price with improved certainty of outcome.

7.2.3 Terms Sheet of Fundamental Issues in the Contract

In any contractual relationship, there are a small number of issues that are fundamental to the establishment of the relationship. Below is a list of issues that could be discussed and agreed between the clients and the pre-qualified contractors and included in the Terms Sheet.

In any contractual relationship, there are a small number of issues that are fundamental to the establishment of the relationship.

Agreement to these issues would bring an additional degree of commercialisation to the project outcome - a degree which could be missing if the contract is documented without contractor input. Contractors would agree to be open and frank in their input to these discussions - a result of relationship contracting where trust and openness is an essential ingredient. The issues include:

- form and scope of contract - refer to Section 7.2.5;
- warranties to be provided;
- securities, retentions and performance requirements;
- client representative/powers and duties;
- management regimes/forums/reporting requirements/project communication;
- insurance requirements;
- time aspects - risks, extensions of time, cost and responsibilities;
- payment terms, certainty of payment;
- variations - cost responsibilities;
- default, suspension, termination;
- force majeure;
- existing conditions/latent conditions;

- risk identification/allocation - capping of contractor's risk acceptance/reward/loss if appropriate as in alliance contract;
- dispute resolution procedures;
- quality requirements; and
- environmental standards.

7.2.4 Risk Allocation

As a part of the development of the Terms Sheet in Section 7.2.3, it is important that all the risks that are likely to be encountered in the contract and that will require management are identified. Following identification, discussion between client and contractor will allocate the responsibility for the management of each of these risks to the party best equipped to manage them.

Further details are included in Section 6.2.

The point by point agreements through the Terms Sheet are provided to the contract drafters for forming into contract documents which will be accepted and "owned" by all parties.

7.2.5 Forms of Contract

There are a number of possible Forms of Contract and in each circumstance the most appropriate form should be adopted.

Further details are included in Section 6.4.

7.2.6 Acceptable Contract Rewards

In discussions on any form of relationship contracting, it is critical that both parties understand and accept that the contractor is entitled to an industry acceptable level of reward for an industry standard project, an increased reward for a superior project performance and an inferior or nil reward for an inferior performance.

It is also fundamental that the client benefits from the relationship arrangement by sharing in the project performance results. Therefore, before any contract is entered into, formulae would be established providing appropriate compensation for actual performance.

This generally requires that the contract is performed in an "open book" manner, with the contractor risking his total margin (profit plus head office overheads) in exchange for an increase in his margin for superior project outcome.

7.2.7 Contract Documentation

Having progressed all of the above matters to agreed conclusions, the point by point agreements could then be provided to the contract drafters for forming into contract documents which will be accepted and "owned" by all parties. This will result in a much less adversarial approach to the contract, and a superior commercial outcome for the client.

7.2.8 Trust and Openness in Dealings

Refer to Section 7.1.1.

7.2.9 Appropriate Behaviour

Refer to Section 7.1.2.

7.2.10 Summary Table

The following table summarises the practices required for successful relationship contracting, as set out in 7.2.1 to 7.2.9.

Requirements for Improving Project Outcomes	Client Actions
1. Pre-qualification of contractors	Clients to develop criteria using contractor input as required and pre-qualify contractors at earliest appropriate time based on nominated client criteria.
2. Improved project scope definition	Clients to improve detail of scope definition, increasing up-front resources to ensure scope definition is appropriate.
3. Terms Sheet of fundamental issues in the contract	Clients to initiate and develop, in conjunction with the short listed contractors, as considered necessary either separately or collectively.
4. Risk Allocation Matrix	Clients to initiate and develop in discussion with contractors - either separately or collectively.
5. Forms of Contract eg. lump sum, schedule of rates, alliancing, gain/loss sharing, partnering etc.	Clients to select form of contract, following input from contractors as necessary to optimise project.
6. Acceptable contract rewards	Clients to nominate, following discussions with contractors: • Base level return for industry standard result • Gain/loss sharing for superior/inferior project result.
7. Contract documentation	Clients to document based on previously agreed Terms Sheet and other criteria. Standard documentation to be used wherever feasible.
8. Trust and openness in dealings	Clients to work to develop improved openness and trust in contract dealings.
9. Appropriate behaviour	Clients to educate and train their staff and third parties in appropriate behaviour in relationship contracting. Third parties would include lawyers, EPCM contractors or project managers.

Clients and contractors need to commit to work together to foster relationship contracting to effect a more efficient and effective Australian construction industry.

8.0 Case Studies

Relationship contracting has been successfully implemented by leading Australian construction companies in a diverse range of projects - setting new benchmarks and delivering exceptional outcomes.

8.1 Wandoo B Offshore Oil Platform

Client
Ampolex Limited

Project Delivery Method
Alliance

Principal Project Participants
Ampolex, Brown & Root, Keppel Fels, Leighton Contractors, Ove Arup & Partners

Project Description
The project required the development of an oil field, located offshore Western Australia, 75 kms north west of Dampier in relatively shallow water depth of 55 metres. Target production rates were set at 40,000 barrels of oil per day, extracted from a total throughput of 120,000 barrels of liquid per day.

The physical nature of the deposit created reservoir engineering problems which had to be resolved, meaning that the field was always a commercially marginal and high-risk deposit. The engineering solutions adopted to recover and process the oil had to be delivered within tight time and budget constraints to ensure that the returns satisfied Ampolex's acceptance criteria.

Project Period
The project was designed, constructed and commissioned in 26.5 months from December 1994 to March 1997. This compares with an industry norm for a similar project of 34 months based on a study of 300 projects from 26 operators.

Project Cost
A$364 million for design and construction from a total budget of A$480 million.

Project Process - Contract Implementation
The Wandoo B project's success was largely due to the style of contract chosen – alliancing. The term 'alliance' as used in this context, is a unique method of bringing companies together in a working relationship based on trust and cooperation to produce results to benefit all participants. The key feature is the focus of all the parties on a common goal for the project. An alliance should be thought of as a virtual corporation – a separate body with its own identity and culture, supported by the participants.

A contract is set up to provide that each party's profit and corporation overhead is at risk, based on the OVERALL project result, not just that party's portion – hence rewards flow from JOINT, rather than individual effort.

To achieve this style of contract requires a trusting relationship between all parties, with a clear understanding of each other's expectations and values. A successful outcome from alliancing requires ongoing learning and alignment of management, staff and individuals, so that the process becomes the evolution of a culture of collaboration, mutual respect, integrity, innovation and 'no blame', with the focus on results.

At the core of alliancing is the courage to embrace a new way of doing business – of breaking with past methods when appropriate, of shedding corporate and individual baggage and of generating new possibilities. It's about changing the mind-set.

Why an Alliance?
The concept of alliancing came to the attention of Ampolex senior management as an arrangement where owners, both large and small, could deliver large projects with only a small management team. Furthermore, overseas research proved that alliance teams

could be 'super' enthusiastic; organisations using alliancing were forecasting extraordinary savings in time and cost; and seamless integration is achievable between clients and contractors with efficiencies flowing from the breaking down of traditional barriers.

The Alliance team was selected on the basis of assessment against criteria established by Ampolex which included technical competence, acceptance of a business assessment, acceptance by the CEO of each participant to a total commitment to the Alliancing concepts and agreement to put 100% of gross margin (ie profit & corporate overhead) at risk in return for gain sharing arrangements.

After selecting the Alliance team, a technical study period of three months was commissioned to analyse numerous alternative solutions, identify the optimum platform configuration and determine whether that solution was able to meet the Ampolex criteria for project sanction.

A project office was established in Perth and an Alliance Board was also established with representatives of each party entitled to exercise one vote, with all decisions requiring the consent of all parties. The client and contractors were therefore equal in decision making and influence on the Alliance.

The Board appointed a Project Director to mould the various groups into an Alliance operation. In this instance the person chosen was a representative of Leighton Contractors Pty Ltd.

Ampolex formed a special purpose company, Wandoo Alliance Pty Ltd, with the same board as the Wandoo Alliance, as the vehicle for major procurement of services and materials as well as provision of offices and general support and administrative services.

Direct procurement in the name of Ampolex was particularly useful as it preserved all warranties for the end user and achieved significant cost savings.

Developing the 'Alliance' Culture

The Alliance sought to develop its own unique culture, requiring individuals to become result focused and willing to challenge conventional standards. The main principles underlying this culture were to:

- Work together in a spirit of openness, cooperation and 'no blame';
- Use innovative methods to bring the Wandoo field on stream at the lowest possible cost whilst meeting the design basis, operating standards and schedule;
- Disclose to each other cost and technical information;
- Bring full commitment to effective interfacing between the parties;
- Strive for continuous improvement; and;
- Integrate staff from one party into another where it best suited project needs.

An external consultant, JMW Consultants Inc. was appointed for the duration of the project to facilitate the Alliance objectives and coach the team members in developing and maintaining the culture.

Client Satisfaction

The Wandoo Full Field Development was an outstanding success. Ampolex was able to bring a significant asset into production in a time that is at least seven months faster than benchmarked world performance for similar platforms, and at a cost where savings of $13 million against the sanctioned project budget were realised.

The Alliance performed in an environment of mutual trust and respect, with open access to all project costs of the parties, and the owner and the participants departed confident of their ability to work together again.

Ampolex is on record as saying that *"…a properly formed alliance will deliver exceptional savings in project time and project cost to the client, resulting in exceptional profits for all participants, and exceptional satisfaction to each individual employed within the alliance."*

8.2 East Spar Development

Client
Western Mining Corporation

Project Delivery Method
Alliance

Principal Project Participants
Western Mining Corporation, Kvaerner R J, Brown Pty Limited, and Clough Limited

Project Description
To develop a gas condensate field located offshore Western Australia, 40kms west of Barrow Island in 95 metres of water. Proven, plus provable reserves, estimated at 443 billion cubic feet of gas and 28 million barrels of condensate.

Project Period
Project designed and constructed between February 1995 and November 1996.

Project Cost
A$270 million

Project Process - Contract Implementation
The Clough/Kvaerner joint venture was selected by the client, Western Mining Corporation (WMC), after submitting an expression of interest along with other potential consortia.

Three contracting parties, including the Owners/Operators, formed an "alliance" which contracted with the "Owner".

A project office was established and staffed by personnel from WMC, Clough and Kvaerner. An Alliance Board was selected with two representatives from each of the three parties to the Alliance with the chair being taken in turn by each party.

The Alliance Board selected the Project Manager and Section Managers on the basis of skill appropriate for the roles. In the event, each party provided managers to the project team.

The next step was the development of a design and budget. This was done in an open manner with the three parties being full partners to all negotiations over design options and price. With the concept design and budget price developed, an Alliance contract was agreed and a profit and loss sharing formula determined.

The best technical, project control, safety, quality and procedures available from three parties were adopted by the integrated project team.

A rigorous reporting system was adopted and regular detailed progress review meetings, between the project team, the Alliance Board and, at less regular times, with the Owner's stakeholders, ensured all the issues were aired.

In addition, target performance criteria were established for all the issues mentioned and a personal performance Incentive System was instituted to allow all project team members to share the Contract Incentive Payment if all the performance targets were met.

Selection of people for the integrated team was on a 'best qualified for the job' basis, as was the need for a 'team player' track record. This ensured a very high quality team. Risks were managed by those best qualified/experienced to

do so, and this helped address the major problems effectively.

The thrust of an alliance is to align the goals of the client and the contractor – to get them on the same side. This is done by structuring the contract so that the contractor's reward increases as the total cost reduces and his reward reduces as the total contract costs increase.

A difficulty which can arise is in agreeing the target cost. The contractor would like a higher target cost, the client a lower target cost. At East Spar the difference was 10%. The solution was to accept both figures with a reduced bonus/penalty sharing of 1:6 between the two figures.

The diagram below shows the agreed risk and reward arrangement. Point 1 on the graph was the client's estimate, point 2 was the contractor's estimate. For costs below point 2 earnings were shared equally. For costs above point 1 losses were shared equally.

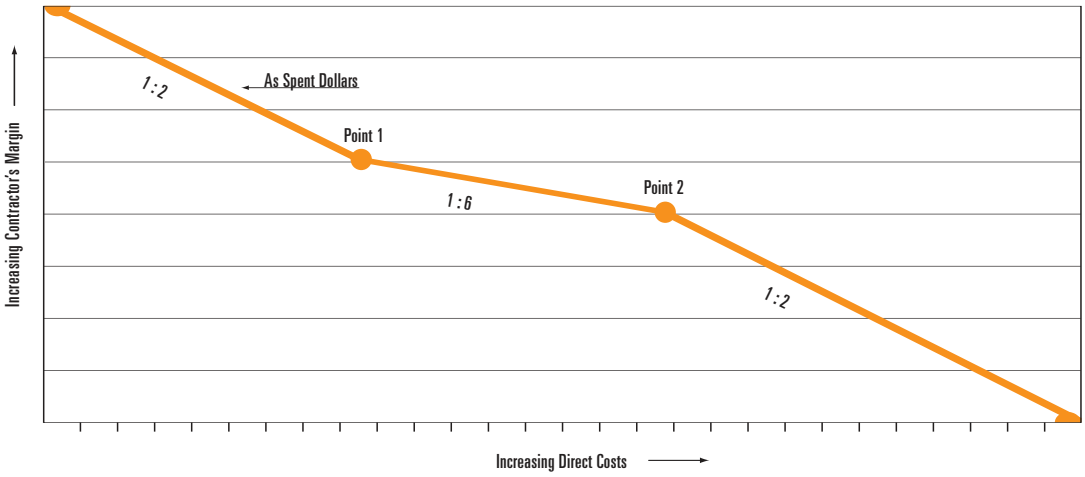
In fact the final actual direct costs after a number of major changes were very close to the client's target.

Why an Alliance?

The preferred option in contract style was an open cost, risk/reward sharing alliance – with target cost, schedule and operating costs and availability targets agreed at the outset.

This style was chosen primarily due to the inability to define the project's scope at the outset, the very tight window of opportunity to meet the delivery date of gas to the Goldfields pipeline, and thus a necessity for FLEXIBILITY in the contract to address expected significant changes – an expectation which was realised, with the open, risk sharing format ensuring a successful, minimum conflict result.

Diagram 8: East Spar Alliance Risk/Reward - As Spent Dollars





Major Benefits of the Alliance Contracting Style

- Saved time and met schedule.
- Flexibility allowed critical path work to proceed while offshore problem areas were addressed.
- Client/contractor relationship was very amicable and technical problems and issues were addressed without the normal commercial problems preventing the best solution being found quickly.
- Working relations between team members were focused on doing the job without letting contractual problems interfere – a 'whole of life' approach to the job was thus possible.
- Overall cost was minimised since all stakeholders had an incentive to improve in order to share in the outcome.
- The traditional inertia on technical issues was removed and significant innovation was achieved due to the incentive to improve outcome.
- A 'fair' margin was negotiated in the original contract and then some additional margin was achieved.
- The ability to develop long-term relations has been beneficial to negotiating future work between the parties.
- There was no owner's representative team which resulted in costs savings and removal of a source of conflict.
- Project decisions were taken by mutual agreement between all parties and thus implementation was able to proceed far more quickly.
- A 'whole of life' cycle approach to job decisions, equipment selection etc. was successfully implemented due to the co-operative team approach and the contract provisions to adjust the target if an issue justified it. An example was a $1 million increase in target to use common equipment to the existing gas treatment compressors.

Factors Critical to the Project Success

Openness, cooperation and the sharing of risk/reward were all critical factors to the success of this project.

The commercial structure on East Spar was the key to providing the 'natural incentive' to ensure that openness and cooperation actually occurred. The attractive risk/reward regime was the core of this natural incentive since it was the driver of the aligned commercial interests.

The East Spar project presented very significant risks to each party, but also presented the opportunity for extra reward and a fair based margin as well.

Selection of project personnel, a strong facilitated training program for people to work in the new environment of openness, and a major effort by the Alliance Board and senior project team members to develop good personal relations, allowed problems to be addressed with the 'Best Interest of the Project' always at the centre of decision making.

A distinguishing feature of the project was the great satisfaction experienced by all participants. A general expression was how refreshing and stimulating it was to work in an atmosphere where everyone was constructive and trying to solve problems.

Unexpected latent soil conditions required a complete change in concept which was accommodated smoothly with innovative engineering. Under a conventional contract there would have been long delays and cost overruns.

The stark difference between the constructive, cooperative atmosphere of an alliance with all parties having a common goal and the legalistic, adversarial atmosphere of a conventional contract was very apparent.

8.3 Boyne Smelter Expansion Alumina & Bath Handling Systems

Client
Comalco

Project Delivery Method
Performance Incentive Cost Reimbursable Contract

Principal Project Participants
Comalco, Barclay Mowlem Construction Limited (BMCL), Bechtel Minenco Joint Venture

Project Description
Barclay Mowlem was selected to part design, manufacture, part supply, install, test and commission the Alumina and Bath Handling System for the Boyne Smelter Expansion. The major elements of Barclay Mowlem's $19 million contract were the construction of civil foundations, 14 large steel storage bins and associated steelworks, two Air Lift Towers and associated galleries, installation of specialist equipment supplied by Alesa Alusuisse and Aluminium Pechiney and associated electrical works.

This was recognised as one of the more difficult and complex portions of Comalco's new third Potline at their Boyne Island Smelter.

The project achieved world's best practice for construction of this kind of smelter, not only in the time taken to complete, but also in the innovative management techniques applied during construction.

Barclay Mowlem embraced the implementation of the following behaviour drivers, instigated by the Client's Agents – Bechtel Minenco Joint Venture:

- Performance Incentive Contracting;
- Partnering;
- Gainsharing;
- Leadership Model; and
- Project Development Partnership Site Agreement.

Performance Incentive Delivery System
This delivery system was chosen for its suitability to this particular style of contract.

- Design not fully developed (fast tracking required).
- Early delivery very important to the owner.
- Some brownfield work.
- Flexibility of owner on price and delivery method.
- All stakeholders had a sophisticated view of risk management.

Major Benefits of Delivery Method
The success of this project was outstanding. By completing the project on time and within budget Barclay Mowlem ensured that the first hot metal milestone on the project was achieved well ahead of schedule.

The major benefits to stakeholders were as follows:

- The project was completed in a 'world's best' construction time for this type of facility;
- Costs were well within budget;
- The contractor was encouraged to strive for continuous improvement;
- The contractor had less risk of losing money;
- The client had the flexibility to change the scope of work; and
- Two thirds of the people working on the project thought it was an above-average work environment, and 75% of the people working on the project thought there was a good feeling of teamwork, cooperation and trust.

Project Process - Contract Implementation

To achieve optimum levels of project delivery success, the following performance incentives were set up:

- A 'fee modifier', based on monthly agreed scores on key performance indicators, was applied to the monthly claimed base fee, with a range of plus or minus 30%;
- The contractor shared 50% of the 'cost under-run' on the Target Estimate set up early in the project; and
- A 'gainsharing' scheme was established to share the financial rewards for good performance. In BMCL's case it was distributed 50% to the workforce, 25% to staff and 25% to the company.

Apart from the revenue performance incentives noted above, several other management systems were established as 'behaviour drivers' to ensure that the project was successful.

- A Partnering Charter was established at a two-day workshop held in the early stages of the project and then followed up by monthly reviews of the partnership's performance on the selected objectives, ie safety, achieving or bettering of target milestone dates, maximising profit for all, continuous improvement, effective management, good communication, achievement of a quality product, and encouragement of a culture of belonging and achievement. This helped to build the level of trust, teamwork and commitment of all the participants.
- All staff undertook leadership training.
- The site agreement, the "Project Development Partnership Agreement", which drove the project, encouraged a culture of leadership responsibility, employee responsibility and gainsharing – which was endorsed by the unions.

Developing the Alliance Culture

An equitable risk/reward balance flowed through to the various stakeholders on the project. The client obtained a new plant at the lowest cost possible, and much earlier than expected, and the contractors on the project had the least possible risk of losing money.

The continuous monitoring of the achievements or failures of the partnership between the client (CSD), the client's agent (BMJV) and the contractor (BMCL) on a monthly basis brought any resultant issues out into the open so that they could be successfully dealt with at the time.

It was an interesting dynamic of the rating process that Barclay Mowlem's own scoring of "contractor's performance" at the regular review sessions were always lower than the client's.

It was significant that the partnering scores associated with each of the established objectives were communicated from management through to the workforce on a regular basis enabling all of the people contributing to see how they could improve the overall success of the project.

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