# Relationship contracting, using the "commercial alliance contract model of delivery"

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**Abstract**

The paper we intend to present on relationship contracting is designed to expose strengths and weaknesses in current delivery models and to present a model called "the commercial alliance construction contract model" which we have developed that mitigates these faults.

The presenters have extensive experience in the delivery of alliance contracts. In recent times we have completed 2 contracts, converted an adversarial and prepared a future project using this model of project procurement and delivery.

The approach is from a practical "how to" perspective rather than theoretical.

The benefits of this model are; cooperation rather than competition, relationships rather than adversarial, outcome focused rather than self interest, distribution of risk rather than allocation, fast track rather than delayed set up time, liability identifiable not lost in a board.

The presentation will include testimonials from contractors who have experienced the model on works ranging from $6m. to $220m. covering a wide spectrum of infrastructure.

To date the model has resulted in all projects meeting time and cost expectations of the client.

The commercial alliance model can be readily adapted to all types of construction project or used to convert adversarial project in contractual distress without compromising the original agreement.

One of the main aims of the model is to focus the parties on best for project delivery rather than self-interests that is typical of adversarial style contracts.

The model when applied will provide the framework to allow a greater certainty at a lower risk, maximise financial return and maintain good working relationships between the parties.

## Introduction

Our presentation today is designed to introduce the audience to a model of contract delivery that has been successfully employed on recent design and construction infrastructure projects in Brisbane.

The concept of marrying different skills from different parties in an Alliance arrangement is an effective way of utilising business capabilities for the mutual benefit of the parties. What constitutes an alliance varies according to business needs and the individual's perception and experience. This variation many be a result of what the parties bring to the table and the desired outcome. But all alliances will have an administrative arrangement that is designed to be co operative rather than competitive. The competitive features of an adversarial contract under many circumstances may be counter productive, where as parties to an alliance generally, have a focus on what is best for the project.

The alliance model of delivery encourages cooperative and collaborative behaviour between the parties and promotes innovation and reward for effort.

The commercial alliance contract model is successful because complex construction projects can be fast tracked through the initialisation and planning phase without disputes.

Our presentation will introduce the commercial alliance contract model using as examples recently completed Brisbane Water infrastructure projects.

The alliance contract model can range from a pure alliance where an independent board is set up to manage the project and take on insurance an other liabilities to a commercial alliance where an executive team is set up to manage the project and the insurance and other liabilities are the responsibility of the contractor.

The commercial alliance model uses the competitive forces of the tendering process to ensure the results of the project are competitively driven throughout its life.

The projects we intend to include in this presentation are;

- Brisbane Inner City Bypass (ICB)
- Gold Creek Dam (GCD)
- Lake Manchester Dam Upgrade (LMDU)
- Australia TradeCoast (ATC)
- Heroes Avenue Sewer Syphon (Heroes)
- Bulimba Creek Sewer Upgrade (BCSU)

**Features of the commercial alliance contract model of delivery**

The Commercial Alliance Contract Model used by Brisbane Water in recent infrastructure projects includes the following categories of documents;

- a deed of agreement that defines the terms and conditions of the agreement,
- 20 annexures containing the principal's project requirements,
- 20 schedules in which the tenderers placed their replies to the Principals project requirements,
- the General Conditions of Contract and
- the technical specifications.

The contract is organised in a modular arrangement. The author has the flexibility to arrange these to reflect his needs.. The non-financial components eg administration, environmental plans, communication plans and workplace health and safety plans may be modified to suit the particular needs of the project.. The commercial arrangement can be modified to reflect gain share and pain share provisions and key performance indicators.

The author will determine how the project design and construction risks are to be distributed between the contractor and the client. This distribution can be revisited during the tender assessment and modification phase to reflect the contractor's preferred distribution of risks.

**Time for Work Under Contract (WUC)**

The model provides a fast and efficient way of getting projects from concept to construction implementation phase with a minimum of delay. It is not necessary to complete all the engineering and design work before going out to tender. The model's flexibility allows commitment based on conceptual design coupled with an agreed method of adjustment for design variations. This arrangement results in the initial tender price being amended by an agreed schedule of rates, which are applied to final design quantities.

Our experience has shown that projects fully designed prior to tender will add 12 months to the delivery time of an infrastructure project and the principal will be responsible for all design and quality risks.

A full alliance will further delay project delivery while suitable consortia are identified, test driven and a final preferred consortia is chosen.

The projects identified in this presentation had the following commercial and contractual arrangements;

- Inner City Bypass (ICB)-was a design and construct contract, initially hard dollar converted to alliance agreement by a Deed of Agreement at a time when the design was largely complete.

- Australia Trade Coast (ATC)- was a design and construct contract, prepared as a commercial alliance that had the design of infrastructure in the tender documents.
- Gold Creek Dam (GCD)- was a design and construct contract, the design was at concept stage at time of tender. Variations were valued using rates provided by the tenderer with their submission.
- Hero's Avenue Sewer Syphon- was a design and construct contract, the design was largely completed prior to the original contract being executed. The original contract was a hard dollar adversarial contract , which was converted to alliance agreement using a deed of agreement.
- Lake Manchester Dam Upgrade Project (LMDU)- will be a design and construct contract, with a concept design provided at the time of tender. The final design will be the responsibility of the contractor and the contract value will be adjusted using information from a priced tender schedule provided by the tender with their submission.

The arrangement to use a commercial alliance model has the following benefits;

- Delays associated with the preparation of full working details prior to costing were mitigated because commercial factors were used to chose successful consortia.
- Risks associated with misalignments and omissions were not opportunistic claims for the contractor, the TP is only adjusted by approved variations but paid for at cost plus a mark up for overhead and profit plus any gainshare or painshare.
- Project team is rewarded for all innovation.
- Client had the opportunity to be fully involved with the design development of project during the design and implementation stage.

**Cost**

The commercial alliance model is designed around a contract that rewards success and penalises failures. Success occurs when the run out cost of the project is less than the Target Price and the residual is shared as a gainshare. Failure occurs when the run out cost of the project is more than the Target Price and the over run is shared as a painshare.. The painshare penalty is capped at the contractor's overhead and profit. When costs exceed this point, the principal is liable for all direct costs until the project is completed. This sharing of gains and the impact of losses are the commercial driver that influences the parties' behaviours under contract.

To estimate a TP a tenderer needs to know the scope, quality and timing of the works. The initial target price is based on either the tenderer's design or the conceptual design provided by the client. Both these approached have been used successfully in recent times. Lake Manchester was bid based on a concept design derived from a feasibility report, which was converted into a bill of quantities. Where as ATC was bid based on a detailed designs provided by the client for guidance, which then formed the basis of the tenderer's design submission.

The legal and insurance risks associated with the design and the construction of the works for the commercial alliance model are the contractor's responsibility, However the parties share the financial risks for design and construction cost over runs by way of the pain share arrangement of the commercial arrangements under contract. A feature of the alliance contracts implemented to date was Council's obligation to pay all project costs, which included all direct cost (plant, labour, material and subcontractors) plus project on site overhead, and a mark up for off site overheads and profit when the sum of the direct cost plus overheads and profit are less than the Target Price.

Progress payments are 'payment on account", prepared and paid monthly. The value of monthly progress claims is the sum of project direct cost plus an allowance for overhead and profit. The progress payment is not based on percentages of the Target Price but actual cost to date. Construction costs associated with defects or latent conditions are included in progress payment not separated as contractor's responsibility. If this amount is not made up through efficiencies in other areas of work the net effect of the additional cost is to reduce gainshare and increase the risk of painshare adjustments under contract. It is in the interest of the parties to ensure they a well constructed Quality Control and Assurance systems in place and well managed for the mitigation of rework and defects for WUC.

## Administration

Administration for the design and construct commercial alliance contract includes a Project Management Group (PMG) that handled day to day contract provision and a Project Executive Group (PEG) that provided strategic direction and approval of variations. The PMG is made up of 4 people 2 representing the contractor and 2 representing the principal that is responsible for managing all financial and non-financial issues arising from day to day operations. The PEG is responsible for providing direction on time, cost, scope, and quality issues.

## Scope

The scope of the works under contract is managed by the superintendent. The superintendent is appointed by the Principal and is required to act as his agent at times. When the superintendent is not acting as the Principals agent he is to act in good faith.

Generally the Principal is the only person with the power to approve a design. The acceptance of the design is the mandatory for the commencement of construction activities relating to the design.

Changes to the scope, program and quality are managed by way of superintendent directions. These direction where applicable become variations and adjustments to the Target Price.

The management of scope changes are the responsibility of the Project Management Group, and the certification of variations is the responsibility of the Project Management Group or executives.

## Brisbane Inner City Bypass (ICB)

### Project description

The project was a hard dollar design and construct arrangement that was converted to a design and construct commercial alliance contract through a deed of agreement. The value of the work was approx. $210m.and involved the construction of 2 tunnels (cut and fill), via ducts and bridges, 2 overpasses and 4.5km of motorway with associated on and off ramps.[1]

During the construction phase the contract came under stress from adversarial and competitive forces resulting in substantial differences and subsequent claims. These forces diverted administration attention from productive work to non-productive work.

A view was formed by the parties that here “had to be a better way of delivering the project”. The design and construct commercial alliance model was selected as a suitable delivery model and the parties commenced negotiations for its implementation.

The resulting delivery model resulted in a focus on productive time best for project attitudes and reduced unproductive administrative time.

### Contract features

The contract contained the following features;

- A best for project attitude included in a project charter,
- Collaborative administration approach to design and construction development,
- A target price estimate for project evaluation and gain and pain share provision,
- A Dispute resolution process that used an independent third party who had the knowledge and capability to decide, with out the need of any external assistance and
- Fare and reasonable risk allocation.

### Conclusion

The project delivery using the adversarial contract was unsuccessful. The competitive approach distracted the administrative team and absorbed limited resources on non-productive work. The collaborative approach embraced in the design and construct commercial alliance model resulted

in co-operation between the parties and an administration team that was focused on a best for project outcome. The project as a result of this change came in on budget and on time.

## Gold Creek Dam (GCD)

### Project description

The project included the stabilisation of an earth embankment puddle clay dam wall and the upgrading of the intake tower and outlet pipework on a dam that was constructed in 1887. The dam developed leaks and the dam regulator ordered the work to be completed according to the act.

The value of the work was $7m. and it was completed using a design and construction commercial alliance contract model. The target price estimate for the work was based on conceptual plans and schedules that were gradually firmed up as the final designs were approved. After the final design the quantities for WUC were estimated and their differences were adjustments to the Target Price.

### Contract features

The contract contained the following features;

- Administration involved an executive group,
- A best for project attitude included in a project charter,
- Collaborative administration approach to design and construction development,
- A target price estimate for project evaluation and gain and pain share provision, and
- A Dispute resolution process that used an independent third party who had the knowledge and capability to decide, with out the need of any external assistance.

### Conclusion

The project was completed on time and the contractor received a shared of the residual or gain share. The collaborative approach to the design and construction process resulted in an efficient designs and delivery outcome.. The contractor stated that the project was one of the most successful contracts they had completed in recent times because of the collaborative administration approach.

## Lake Manchester Dam Upgrade (LMDU)

### Project description

This project was prepared as a design and construct commercial alliance contract, based on concept drawings. The work included installation of anchors through the dam wall and the upgrading of the spillway, for a probable maximum flood event. The dam was constructed in 1916 and was categorised in a recent feasibility report as a high hazard. The value of the work was estimated to be $40m and this price was to be adjusted as quantities for the final designs were reached.

### Contract features

The contract is designed to contain the following features;

- A best for project approach,
- Management including an executive management group,
- Design and construction innovation,
- Fare and reasonable distribution of risk
- Collaborative administration approach to design and construction development,
- A target price estimate for project evaluation and gain and pain share provision, and
- A Dispute resolution process that will use an independent expert.

## Australia TradeCoast Sewer (ATC)

### Project description

Tenders were prepared for this project as a design and construct commercial alliance contract. The tenderers were provided with design drawings prepared by Brisbane Water that were 85% complete, from which they were to complete their proposed contract design. This design was the basis of their tender estimate and the basis of the target price. The design and construction risk sat with the contractor and only variations to the scope constituted grounds for a variation.

The project included 3 pump stations and 12 kms. of rising main, as well as a river crossing 800m long. The river crossing was completed using a Horizontal Directional Drill at a depth of –65m under the riverbed.

### Contract features

The contract contained the following features;

- A best for project attitude by the parties in the project charter,
- Collaborative administration approach to design and construction development, however only performance parameters were considered variations, changes to layout for the contractors convenience and any design development innovation was not considered to be a variation to the target price,
- A target price estimate for project evaluation and gain and pain share provision based on the contractor original design and construction methodology, and
- A Dispute resolution process that used the superintendent as an adjudicator to decide the outcome. If the parties were unhappy with the decided result they could pursue the matter via litigation.

### Risk allocation

Most Councils are risk adverse. BCC was acutely aware that the uncertainty of the geotechnical conditions associated with the river crossing and the design parameters of the pump stations and rising mains, would result in tenderers factoring risk money or fat to cover the unknowns.

The financial mitigation of these risks were addressed by the following process:

1. The contractor was given sufficient information and time for the development of plans by their consultant on which to base their tender estimate.
2. The tenderer submitted a target price to do the design and construction work.
3. The contract document included a provision in the commercial arrangement that obligated council to pay all costs.
4. If the turn out price over ran the target price the over run would be shared by the parties as a penalty the maximum deducible from the contractor's payment being the value of their overheads and profit on the project. This deduction was the limit of their financial risk.
5. This limitation was the maximum amount the contractor had at risk as a penalty .

Other provision in the contract deed of agreement and general conditions of contract that shared or mitigated risks where;

1. The removal of liquidated damages,
2. The cost of all defects and repairs being included in contractors costs,
3. The removal of all latent conditions, other than those particularly identified as a special condition of the contract.
4. The removal of delay and disruption claims,
5. The removal of wet weather claims
6. The inclusion of an internally managed dispute resolution procedure.

As well as this new administration provisions were used to mitigate design and construction risk. These provisions included the following;

1. A collaborative approach to project implementation.
2. A project management group (PMG) comprising 2 representatives from each party that co-operatively managed the project administration of day to day activities.
3. A project executive group (PEG) comprising a representative from each party that provided direction and advice to the PMG on strategy and disagreements.

4. A superintendent provided by the council, charged with responsibility of contract interpretation and implementation with respect to fair and unbiased certification and quantification of progress and claims.
5. The role of the superintendent as the adjudicator of disputes.
6. Technical meetings were frequent and designed to clarify technical submissions. These were free of contractual limitation and technical debate prospered. All issues of a contractual nature were presented to the PMG for consideration.

It was further agreed during the course of the project that correspondence would be kept to a minimum and all contractual agreements and clarifications would be recorded in the PMG minutes. This worked to reduce the amount of unnecessary paperwork and allowed all project members the maximum time spent on project goals. At the end of the project the contractor provided a copy of all their site records for councils achieves.

**Conclusion**

The project was considered to be successful. It met a challenging time requirement set by the state government and the balance of the work was completed on time and under budget. The quality and design of the finished product was the best ever seen in council. It was viewed by the project administrators as easy to manage with fewer resources and more productive outcome than experienced in the past. The contractor was happy with margin of greater than 6% and council was happy project stayed within budget.

**Heroes Avenue Sewer Syphon (Heroes)**

**Project description**

This project has a chequered history of delays and cost overruns. Consultants were engaged to prepare contract documents and concept design. The concept design covered the location of pipelines and manholes. The council provided the project administration staff to supervise the contractor during the implementation phase. The micro tunnelling and manhole construction was complex because the structure was located besides the river in geotechnically risky ground conditions.

The scope of work included 2 micro tunnels 1.5mdia approx 300m long (each) and 3 major manholes 8 m. diameter and approx.30m. deep, 2 in rock and 1 in river gravel using diaphragm wall technique.

The original program, by the contractor was ambitious and shortly after commencement delays were experienced. These delays were a result of variations directed by the superintendent and latent conditions. As a result of these delays the contractor presented significant delay damages and extension of time claims.

**Contract features**

The original contract was adversarial in nature comprising a lump sum component plus a schedule of rates component. The lump sum applied to all permanent structures and the schedule of rates applied to all excavation. The schedule of rates reflected a baseline geotechnical philosophy for varying ground conditions and material types. This philosophy applied when excavated material quality changed for the worse. A new rate, previously agreed and included in the schedule would be identified and applied to the changed condition. This approach is a relatively new approach but it is based on sound logic. In the event the condition was outside the scope of the schedule the changed condition may be considered a latent condition the responsibility for which sat with the council.

At the original Practical Completion date the works were only 25% complete, there were $8m worth of claims on the table, the contractor cashflow was $5m negative and the riskiest part of the works remained to be completed.

It was obvious that continuing down the adversarial path was going to end a serious dispute. To mitigate this risk the council worked together to formulate and implement a new way of administering and paying the contract works.

The new contractual arrangement that was executed had the following features;

- The original contract was left in place to prevent any further delays with council approval.

- The original specifications and technical performance requirements were left in place
- A Deed of Agreement (DOA)was executed that defined how the new arrangement was to administered and how it was to be paid.
- All claims for time and cost were resolved and included in DOA.
- The DOA included a new contract sum and date for Practical Completion.
- The new commercial arrangement included a provision to reward for saving under the TP and limited the pain in the event of the TP being overrun.
- Council obligation was to pay all costs and contractor risk was all his overheads and profit.

**Risk allocation**

The risk profile for the project changed considerably with the execution of the DOA. In accordance with the original contract the contractor's obligation to meet technical and warranty requirements remained unchanged.

- Design and construction risk was the contractors.
- All direct job cost risk was the councils.
- The limit of contractors financial risk was limited to their overheads and profit.
- Defects and excepted latent conditions were shared by the contractor and the council.
- Identified latent conditions were the responsibility of the council.
- Conclusion

**Appendix A**

**Testimonial.**

**McConnell Dowell- Russell Rooney (request for testimonial sent by email 16 August 06**

**1. Describe nature of initial contract in the light of it being "adversarial".**

The initial 'as-executed' contract documentation was a heavily amended version of AS4902 with both supplemental conditions and annexures added to the standard form of contract. These amendments were significant in terms of both quantum and content. Substantial modifications had been made to clauses relating to latent conditions, time and progress, variations, and notifications of claims (Clauses 25,34,36,and 41 respectively). The sum outcome of these changes was to place acute responsibility on both the Contractor and the Superintendent to ensure contractual obligations were satisfied.

The project scope involved a series of high-level technical challenges and these placed an elevated degree of reliance upon the geological information provided. Further, the project time frame was greatly compressed, and any delay would place the contract under immediate duress. As such, the framework for a potential adversarial environment was established.

**2. Describe how risk allocation and contract structure resulted in contract going hay-wire.**

The challenges of the project involved some relatively severe technical risk in comparison to the value of the project. The allocation of these risks was poorly defined if not poorly understood. The contract was classified a 'Design and Construct', however various aspects of the project were client designed and geological investigations had been carried out which were then used to formulate a contractual baseline. The nett result was a form of contract where risk allocation and profile appeared to be well understood by each party, but the other party did not necessarily share the reciprocal view.

As noted, the modified contract documents obligated both parties to communicate to a rigidly prescribed format in the event that formal contractual communication was required. The obligations of both Contractor and Superintendent were onerous, time consuming, and distracting from the execution of the works themselves. Moreover, entrenched contractual

positions were quickly established with both parties taking deeply polarised views on the allocation of the project risk.

**3. Describe how agreement was reached to pursue to alliance model of delivery and how your interests influenced this and how they were met by the change.**

As the contract progressed, the commercial disparity between contractor and the employer was becoming increasingly conflicting. Additionally there was ongoing potential for further contractual dispute as a result of the continuing technical and geological risks associated with the project. With Council and McConnell Dowell becoming increasingly varied in their anticipated outcome, it became quickly apparent that a contractual dispute was inevitable. Both parties were decisive in their desire to avoid ongoing contractual discourse or worse, litigation. To avoid this, candid and meaningful dialogue was therefore quickly initiated in a genuine attempt to reach a satisfactory contractual model going forward. The result was a comprehensible and unambiguous model that acceptably addressed the historical events and concisely dealt with the issues going forward.

**4. Describe how administration of contract changed as a result of the change, brought about by the deed of agreement to apply relationship principals**

Considerable engineering and resource was yet to be employed on the contract. There were significant design changes, technical challenges and unidentified risks to resolve. The advent of the amended contractual model enabled a renewed focus on the construction tasks at hand. Thereafter, contractual matters were dealt with efficiently and professionally and a number of challenges were easily overcome that ordinarily would have provided ample opportunity for contractual disagreement under the original framework.

**Connell Wagner- Harry Ashe**
Verbal only

**Brisbane City Council- Jim Reeves**
Verbal only