

# appendix 13 – Procurement Strategy

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## Delivery Options Workshop Report.

### Introduction

A workshop was held on 11<sup>th</sup> August 2011 with representatives of the Queensland and Commonwealth Government to review six different project delivery options, namely:

- Traditional Lump Sum
- Construction Management with early contractor involvement and GCS (CM)
- Managing Contractor with early contractor involvement and GCS (MC)
- Traditional Design & Construct
- Alliance
- PPP

A description of each option is in Appendix 13

These options were assessed against Evaluation Criteria that were agreed as appropriate for this project.

The Assessment Criteria and the results of the assessment are attached to this report and included in Section 5 of the Preliminary Evaluation (PE).

### Participants

The participants in the workshop were:

NAME	ORGANISATION
Linda Cardew	Cairns Regional Council
Melanie Harris	Arts Queensland
Neil Fohrman	Arts Queensland
Deborah McLeod	Department of Public Works
Jeff Griffin	Department of Public Works
Dave Treby	Department of Public Works
Laura O'Brien	Queensland Treasury Corporation
Mark Rice	Queensland Treasury Corporation
Jozef Latten	Queensland Treasury Corporation
Ed Cory	Department of Infrastructure & Transport
Richard Coulson	Cox Rayner
Adam Thomas	Savills Project Management
Bob Minnikin	Savills Project Management

### Assessment outcomes.

It was agreed that the only funding strategy for this project is based on accessing \$40m from the Commonwealth Government under its stimulus program – *Infrastructure Employment program* which requires the funds to be expended by 30 June 2012. It is therefore critical that work commences on site in early 2012. It was agreed that the Traditional Lump Sum,

Alliance and PPP options could not be structured to meet this mandatory criteria. It is not possible, based on the extensive experience of the workshop members to have agreements in place for these options, to allow work to start till well after June 2012.

The PPP option was also considered inappropriate because, in the market sounding of building contractors there was little, if any, appetite for this option. The significant upfront costs were considered by the contractors to be excessive for this size project, particularly if it is staged, and there was an expectation that the Council would still have to accept significant risk.

Likewise in the market sounding of venue operators it was found that there was no appetite to operate the venue without significant Council support.

Finally in relation to the PPP it was agreed that it is very difficult for a council meet its community obligations and have the required cultural services delivered in a venue that is operated through a PPP.

As is shown in the assessment results there is little difference in the ratings from the Construction Manager and Managing Contractor options which are considered better than the traditional D&C option.

In the CM model the design risk remains with the client and whilst this can be passed through to the lead designer – Cox Rayner, a potentially adversarial situation arises with the contractor having an interest in increasing the number and value of variations and not trying to identify ways of minimising their impact.

In the proposed MC model the consultants should not be transferred until the design is progressed to a stage that the client considers that it will, if implemented to the minimum standards defined, still meet the client's needs. This may mean that some elements of the works may be defined through a performance brief.

Additional protection can be provided in the MC model through allowing the client to meet directly with the design team to obtain required information, albeit without the right to direct the designers. The designers can also be required to certify each month that the developed design is in accordance with the agreed Principal Project Requirement (PPR) or its equivalent with any agreed variation(s). A table of minor changes made to the PPR that the designers consider does not affect the intent of the PPR should also be tabled at least monthly.

A final decision between the CM and the MC options is yet to be made.

## **Attachments**

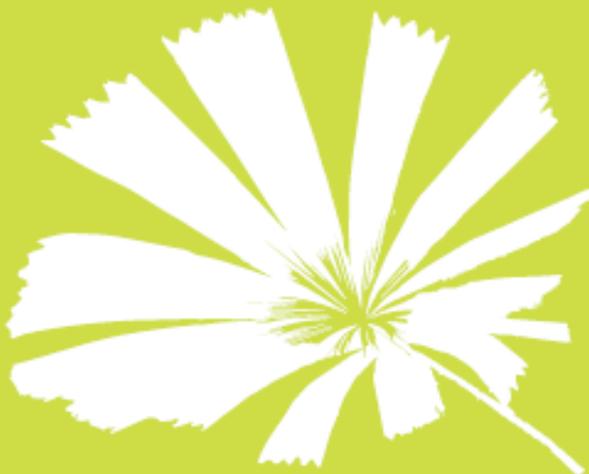
1. Assessment Results
2. Description of Options (Extract from PAF Guidelines – Procurement Options Analysis)

NO	EVALUATION CRITERIA	PRIORITY High/ Medium/ Low	RATING					
			Traditional Lump Sum	CM, with ECI, and GMP	MC, D and C with ECI, GMP and Consultant Novation	Alliance	PPP	D and C
1	⚡ <b>Timing.</b> To utilise available funding within the allocated timeframe there is an urgent need to start work as quickly as possible.	Very high to Critical to the project	*	✓✓✓	✓✓✓	✓	*	✓
2	⚡ <b>Early Works.</b> Because of time restraints it may be desirable to undertake early works. Ability of delivery option to incorporate early works.	High	*	✓✓✓	✓✓✓	✓	*	✓
3	⚡ <b>Design Control.</b> These are complex buildings, particularly the Performing Arts Complex. It is important that the client has certainty in relation to the design.	High	✓✓✓	✓✓✓	✓✓	✓✓✓	✓	✓✓
4	⚡ <b>Performance.</b> The buildings, have very high performance standards that must be met if they are to achieve the agreed outcomes.	High	✓✓✓	✓✓✓	✓✓	✓✓✓	✓	✓✓
5	⚡ <b>Buildability.</b> Due to building complexity and location, there are likely to be significant buildability issues.	Medium	*	✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓
6	⚡ <b>Innovation.</b> These are complex buildings that must accommodate the latest technology, and significant scope for innovation.	Medium	✓	✓✓✓	✓✓✓	✓✓✓	✓✓	✓✓
7	⚡ <b>Budget Certainty.</b> It is likely that commitments from State and Commonwealth Governments will be fixed. Cost overruns will not be acceptable to the CRC.	High	✓	✓✓	✓✓	✓	✓	✓✓
8	⚡ <b>Value for Money.</b> This is a high profile project which is required to demonstrate value for money.	Medium	✓✓	✓✓	✓✓	✓✓	✓✓	✓
9	⚡ <b>Variations.</b> This type of building is hard to fully document and there are likely to be changes to the design as it evolves. Changes must be accommodated within the agreed budget.	High	✓	✓✓	✓✓	✓✓	N/A	✓
10	⚡ <b>Risk.</b> The contract must transfer and mitigate identified risks appropriately.	High	✓✓✓	✓	✓✓	✓✓✓	✓✓✓	✓✓✓
11	⚡ <b>Operation.</b> It is anticipated that the CEP will have a long life span with the Council remaining responsible for the operation.	High	✓✓	✓✓	✓✓	✓✓	N/A	✓
12	⚡ <b>Market Appetite.</b> Refer market sounding.	Medium	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓	✓✓✓
13	⚡ <b>Stakeholder involvement.</b> It is likely that the CRC and other stakeholders will wish to have "ownership" of the project and therefore have input as it evolves.	Medium	*	✓✓	✓✓	✓✓	*	*

# Cairns Cultural Precinct

## Procurement Strategy

March 2011



Cairns  
Regional  
COUNCIL

## Revision Control Register

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<b>Rev No.</b>	<b>Date</b>	<b>Reason</b>	<b>Issued By</b>
01	3 March 2011	Preliminary issue	Adam Thomas

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## 1.0 Executive Summary

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Cairns Regional Council (CRC) has engaged Savills Project Management (Savills) to prepare a procurement plan for the proposed Cairns Cultural Precinct as part of the business case required in the Project Assurance Framework (PAF)

The final procurement management plan, together with the findings and recommended actions contained within, will serve as a management tool for providing the direction required for all procurement activities required for the Cairns Cultural Precinct. This document should be read in conjunction with the project Risk Management Plan and Probity Plan.

Savills have completed a preliminary procurement plan and ranking schedule, based on the extreme and high level project risks, and further discussion is now required to be conducted, with key stakeholders. In addition to representatives from Cairns Regional Council and Savills Project Management, this workshop should include other interested parties and external specialist advisers as required.

This preliminary report describes the systems that are commonly available and employed in project procurement, with a brief discussion of the risks, benefits, advantages and disadvantages of each system and suggestions as to the systems that best suits the Cairns Cultural Precinct.

The report further outlines the options that CRC could adopt to proceed with procurement for the Cairns Cultural Precinct project. The report considers current best practices with regards to delivery, contract and management systems and outlines the risks and project characteristics that need to be considered as they may influence the delivery system.

It is noted that the current programme is having a significant impact on the procurement plan and ranking schedule, in particular, the urgency to stimulate the local economy which will maintain support from the Commonwealth Government to provide \$40m from its Stimulus Program. In addition, there are numerous other risks which have been considered in the ranking schedule, and development of this plan, in particular those listed below. It is critical that the procurement plan adequately reflects the mitigation of risk by allocating and transferring risk efficiently.

- Ability to produce tender and contract documents in an extremely short period of time that can be relied upon to deliver the outcomes required
- Ability to commence works on site, as soon as possible (and therefore maintain Commonwealth support)
- Ensuring that the final product satisfies the objectives of the project
- Ensuring that the final project cost does not exceed the project budget

The most important risk transfer is the signing of the builder's contract as it is the largest single transaction in the project and it passes the responsibility for delivery of a project from Council to the contractor. The strength of the contract relies on the quality of definition in the contract in particular the documentation that defines the works that are to be delivered. It is critical that the documents issued to the contractor are clear and unambiguous in detailing the project requirements.

The roll of the contractor in advising Council and the consultant team on Cairns Cultural Precinct, on aspects such as buildability, specification, options and program and their respective relationships is paramount. Conversely, decisions on design made by a contractor without fully understanding the operation of a performing arts venue can result in the project not achieving the required outcomes. Therefore, it is critical in finalising the procurement strategy to understand the ability of likely contractors to fully understand the operation of a specialist performing arts venue, and the ability of the design team to produce contract documentation within an extremely short timeframe.

Full details are included within section 5 of this preliminary report, however the initial findings indicate that a Guaranteed Maximum Price contract, with early input from a preferred contractor, and novation of the design team when the works are well defined would be the most suitable type of delivery option. There are advantages in not novating the design team, namely greater design control, however the ongoing design risks particularly those associated with coordination are considered to be probably unacceptable. Ways to mitigate the loss of design control in the preferred option are to be considered further.

## 2.0 Introduction

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Brief introduction and details from the project brief

## 3.0 Components of Procurement Methodologies

### 3.1 Options

The selection of a procurement methodology involves establishing:

- a **delivery system** that incorporates the most appropriate overall arrangements for the procurement;
- a **contract system** for each of the contract or work packages involved as the components of the chosen delivery system;
- a **management system** detailing how the procurement will be managed by Council, to suit the delivery system and contract system(s) selected.

The following **delivery** systems have been considered:

Single contract	Where Council awards one contract with one contractor to undertake all or the majority of the project works, usually also involving consultant engagements to provide management and design services
Multiple contract	Where Council divides the project into, and awards a number of contract packages, possibly for trades (such as the provision of all the steelwork or concrete) or discrete parts of a project (such as the construction of a single building or section of a building or supply of major equipment), usually also involving consultant engagements

The following **contract** systems have been considered:

Traditional Lump Sum Construct Only	Contract for construction for a lump sum with the design fully documented (or nearly so) by the Council's design team prior to awarding the contract..
Open Book Construct Only with/without a GMP (refer below)	As above but with the documentation generally provided progressively and the Council only paying for the actual cost.
Design Development and Construct	Contract for construction and design based on at least a concept design
Design and Construct with/without a GMP (refer below)	Contract for construction and design based on at least a project / functional brief
Design, Novate and Construct with/without a GMP (refer below)	contract for construction and design where the previously engaged designer(s) is novated to the contractor
Design Development Construct and Maintain	Contract for construction, design based on at least a concept design, and then maintenance of the constructed asset
Design Construct and Maintain	Contract for construction, design based on at least a project/functional brief, and then maintenance of the constructed asset
Guaranteed Maximum Price	A form of contract where the contractor is only paid for the actual cost of the works, but guarantees a maximum price, the GMP. The contractor may share in savings that are achieved against the GMP.

Managing Contractor	Where one contractor is engaged very early in the life of the project by Council, after competitive tendering for management fees and other payment arrangements, to manage and undertake the scope definition, design, documentation and construction of the project works using consultants and subcontractors, under a contract involving incentives for achieving agreeing target price limits and other performance when the scope is defined
Alliance Contract	Involving an agreement between Council and other entities to undertake work cooperatively, reaching decisions jointly by consensus, using an integrated management team and intensive relationship facilitation, where the entities each cover some project risks and potentially gain some rewards, to achieve agreed outcomes relying on good faith' and trust and using an open-book approach in determining costs and payments
Private Finance Project	Where Council arranges asset procurement under an agreement with a private sector entity, involving entity financing, development, ownership/control (possibly operation) and provision of the asset for a concession period

The following **management** systems have been considered. Each system also involves a project officer and support personnel to act for Council:

Project management	Where the overall management of the whole project is the responsibility of consultant, in-house or another Council personnel (a person or team) engaged as a project manager
Project/construction management	Project management and a more intense approach to managing the construction phase of the project, where direct labour or many small work/contract packages are involved
Project/contract management	Project management, but for the management of Council interface with only one main contract for the remainder of the project work, such as a D&C contract, managing contractor contract or GMP by consultant, in-house or another Council personnel (a person or team) engaged as a contract manager

### 3.2 Characteristics, Constraints and Risks

It is essential that the management and delivery systems are selected early in the life of a project. The contract system selection may occur at the same time, but could occur or be confirmed later and progressively as the project is clarified.

The risks, advantages and disadvantages with each of the delivery, contract and management systems and their characteristics are described in subsequent sections of this report. These are to be considered in the selection process with the identified project risks, constraints and characteristics.

Council related project constraints and characteristics will include available budget, budget flexibility and contingencies, funding source, cashflow restrictions, time available for completion and its flexibility, staging needs, completeness and clarity of project brief, influence required with design, design standards available, technology, project stakeholders, and availability of appropriate in-house resources (including for planning, design and management).

Physical project constraints and characteristics include the type of work, type of asset, site characteristics, work and design complexity, location of work site and size of project.

### 3.3 Risk Management

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The selection of the delivery and contract systems is completed in parallel to the development of risk management plans, as these systems can affect the allocation of risks (whether to Council, consultants, contractors or others), types and levels of risk, and the likelihood they will occur.

For example under a single contract system, risks associated with the coordination of component work packages are with the contractor, whereas some of these can remain with Council under a multiple contract system.

Where late brief or design changes are anticipated, either through late client changes or inadequate time to prepare the initial documents, there are generally increased risks to Council. A well-defined brief/design reduces the likelihood of late changes being required. Both the single and multiple contract delivery systems could involve similar risk with design changes, depending on the extent of the design involved under a contract. A multiple contract delivery system allows more flexibility with change, with parts of the project generally being contracted as they are sufficiently well defined.

If the brief/design is ill defined for a contract with any delivery system, particularly with a D&C contract, there is a greater risk to Council of design/construction not meeting expectations or more costly post contract design changes being needed to address shortcomings. Construct only contracts allow Council to fully develop the scope/design and reduce these contract risks. Managing contractor, contracts with a GMP, and alliance contract systems can also reduce such risks, with projects where the scope needs to be resolved and developed as part of the contract work.

- Questions to be considered in the allocation of risk include:
- Who has the greater degree of control over the risk eventuality?
- Who is best placed to identify, assess, evaluate and manage the risk?
- What allocation of risks to each party is best for the project?
- Who can best allocate the risk to another party (such as an insurer) that can cover, control or manage the risk?

A risk to a contractor that cannot be realistically priced in a competitive tendering environment may force the contractor to under allow for the risk, and then seek compensation through the contract or at law if the risk event occurs, or alternatively the contractor may allow a premium in the tender price that may not be required. This risk allocation would not generally give the best outcome for the project. Council taking the risk and providing for it to be addressed if it eventuated could avoid unnecessary Council cost.

A preliminary Risk Management Plan and initial Risk Register have been prepared for review in advance of a risk workshop taking place.

## 4.0 Generic Delivery, Contract and Management Systems

### 4.1 Features of Delivery Systems

#### 4.1.1 Single Contract Delivery System

##### Characteristics

With a single contract delivery system, one major contract is used to carry out the majority of the project works and usually determines most of the cost of the project. Some pre-contract management/coordination and brief/design preparation are required, usually involving consultant engagements, the amount of which will depend upon the contract system adopted. A project or contract manager and Council project officer would normally provide the pre and post contract management required for Council.

Any contract system may be used with this delivery system. A managing contractor, alliance contract and a PFP scheme may also be used, to allow for more scope development and other special project needs under the contract. They are considered separately as delivery systems below.

##### When Used

A single contract delivery system is the most appropriate choice where:

- there is no advantage to be gained in using several contract packages;
- enough time is available, and there is no need for fast tracking using more packages;
- one contractor can most efficiently manage the mix and scale of work, particularly where a more conventional contract form is appropriate;
- the project budget needs to be evaluated/validated prior to construction starting;
- the whole scope of work can be agreed, readily defined and documented early in the life of the project and
- Council is seeking, and the project suits, the simplest system to coordinate.

As a general rule the single contract is the most common system adopted. Being the simplest form to coordinate, it should always be considered

Advantages	Disadvantages
Council it is only necessary to award one main contract at an appropriate time to achieve the desired completion date.	Not as suitable for fast tracking by overlapping design and construction as a multiple contract delivery system, although this can be achieved, at least in part in some forms of single contract
Most of the project coordination risk is with the contractor, and the management for Council is minimised.	The brief and/or design and specification must be clear for the full project to avoid changes that are usually more costly after a contract award.
A better overall market-based contract/project cost estimate can be obtained early in the life of the project.	Not as flexible as other delivery systems for special projects if the scope needs development or changes are likely after the contract award. There is greater risk of costly variations if the scope is not well defined when the contract is awarded.

#### 4.1.2 Multiple Contract Delivery System

##### Characteristics

With a multiple contract delivery system, the project is delivered through several work packages that are initiated progressively, each involving a contract system. The work packages selection must be well planned and structured to suit the project implementation required. The Council retains the risks associated with the coordination of the contract packages, but the system offers more timing and work flexibility.

The system allows some contract work to begin before all contract documentation is complete for the project. It allows contracts to be let as documents for each package are prepared to suit a staged program for the project. Risks can then be addressed, as they are understood, in the various contract packages as they are awarded progressively.

The system allows project/program time compression with the staging, and can provide more time for Council to control or influence the design process. Any later changes to design requirements in later packages can then be more economically and readily accommodated.

A multiple contract delivery system requires decisions to be made on the contract system for each of the contract packages involved, and whether they will be independent or related work packages or interdependent trade packages, or a combination of these.

The system is suitable for projects where the early involvement of a key contractor(s) and other special features are required, the flexibility and other advantages (with less management and coordination for Council) of this delivery system may also be obtained with managing contractor delivery system.

This system may involve additional establishment/mobilisation costs if different contractors are used.

The multiple contract delivery system is suitable for projects where:

- separate components of the construction are spatially independent and should be completed separately for this and other reasons, where the extra flexibility, staging and separate packaging are necessary or advantageous;
- risk management requires some components to be completed earlier to identify or resolve issues, such as where there are potential foundation problems and an initial contract is awarded for foundation preparation to address the risks ahead of, and to help define, the subsequent work; and
- separate work package contracts are required to deal separately with particular complexities or specialist work associated with parts of the project
- there is a need to start the works before the full scope is well defined

## 4.2 Features of Contract Systems

### 4.2.1 Traditional Lump Sum Construct Only

#### Characteristics

With a Traditional Lump Sum Construct Only contract, Council and a consultant Design Team prepares the detailed design for the whole of the works (except for some detailing such as workshop drawings).

A contract, based on a lump sum price or a schedule of rates (where the quantities are uncertain), is awarded for the completion of the remaining design/documentation and construction of the works.

#### When Used

A traditional construct only contract may be appropriate for projects where the following requirements are substantially satisfied:

- the optimum design can be developed without involving the prospective contractor or specialist subcontractors;
- Council prefers and is able to manage the interface between the detailed design and construction, and select and engage, and be directly responsible for, the design consultants;
- there is enough time available for the detailed design to be completed before construction must commence to complete the project on or within time; and
- Council prefers to have the design fixed prior to construction contract award.
- When all project funding is already in place and a single contract can be let for the whole of the works

Advantages	Disadvantages
A detailed design is available before construction contract award, potentially allowing the highest level of Council control and satisfaction with product detail and quality.	Increased overall project duration with the longer lead-time to prepare the design and tender documents.
Risks to Council are reduced with the design essentially completed to suit Council requirements prior to construction, and with the resulting simpler contract management.	Little cash flow control after letting contract.
More likely to obtain appropriate and better tenders/prices for fully defined contract works where they are well defined.	The greater document complexity and volume with Council controlled design may lead to more errors and omissions, and increase the potential for contract claims and extra costs.
There are lower tenderer tendering costs, and Council tender process costs.	Less opportunity for contractor innovation.
There is a larger pool of suitable tenderers, which increases the scope for competitive prices/tenders for some contracts.	Not necessarily least end cost.
	Greater potential for design and construction coordination and buildability problems resulting in increased costs.
	Council's directly arranged design and project management resources, effort and costs are greater.

### 4.2.2 Design Development and Construct

#### Characteristics

With a design development & construct contract, Council prepares a concept design (and possibly does some design development) and performance specifications, using external consultant resources.

A contract is awarded for the design development/documentation and construction of the works. The contract often involves a lump sum price, but may be based on a schedule of rates where some quantities are uncertain. The contract can also be based on a GMP with or without a share of savings.

### When Used

Projects suited to the DD&C system will be those where:

- the concept design and design brief can be clearly and well defined;
- there are well established standards for design development, such as standards for details and finishes;
- there would be some design and construction coordination and buildability risks with the construct only system that are to be avoided;
- Council seeks to retain more control over concept design and/or does not have the resources or time available, or need, to complete the design;
- the requisite specifications for the developed design, including the product and material standards/performance to be used, can be clearly described, or some proprietary designs and/or construction processes are available in the marketplace and may be more economical than using special designs; and
- the contractor is not required to perform extensive investigation work and interact extensively with outside authorities in completing design.

When all project funding is already in place and a single contract can be let for the whole of the works

Advantages	Disadvantages
Council can substantially determine the concept design and need only nominate the performance criteria required to regulate design development.	The cost to tenderers of preparing tenders is higher, potentially reducing tenderer interest and competition.
Council's risk is reduced with the contractor being responsible for, and best able to manage, detailed design and its coordination with construction.	With less Council design there is risk to that contract design documents may not be specific enough or may be ambiguous, increasing quality, outcome and cost risks.
Reduced Council risk of design related changes being needed, and resulting contractor cost/time claims, because the concept design is set.	The tender prices may carry a higher risk premium, as the contractor bears more design risk than with the construct only system.
Fewer Council arranged resources are required for design than with construct only, and with contract management than with D&C.	Council initiated variations are more costly if the contractor's design/construction is disrupted.
Greater potential for cost and time savings with faster and more efficient construction, with the contractor better able to tailor design detail to preferred construction methods, and the overlapping of design and construction.	The numbers of competent potential tenderers is less than for some construct only contracts, especially for smaller projects.
	More contract management for Council than for construct only contracts.

### 4.2.3 Design, Novate and Construct

#### Characteristics

The design, novate & construct contract system is similar to the DD&C system, though usually requiring less design development by the contractor. It has the distinguishing feature of allowing the use of the same designer/design team from design conception to completion.

When the DN&C contract is let there is also a novation of Council's design agreement with the designer to the contractor. Novation involves signing over the contractual relationship between the designer and Council to create a contractual relationship on exactly the same terms between the designer and the contractor. The contractor then assumes full and unambiguous responsibility for the whole design as well as for the construction. The contractor takes over responsibility for paying the designers fees for work done to complete the design from the time of novation. The contract usually involves a lump sum price, but may be based on a schedule of rates where some quantities are uncertain. The contract can also be based on a GMP with or without a share of savings.

Controls can be built into the contract to allow Council direct access to the design consultants to verify that the detailed design work being done under the control of the contractor conforms to the design intent work of the consultants prior to novation.

### When Used

This system is best selected where:

- Council needs full control in producing the concept design and the design continuity achievable with the same designer completing design development;
- the project involves large, one-off unusual works with special design needs;
- the design brief/concept design and Council's design agreement with the designer are clear and well defined;
- details of the required design development, including the product and material standards required, to satisfy the design brief, can be clearly described prior to novation;
- appropriate alternative design resources may not be available to the contractor; and
- there is a significant extra benefit to Council with having the contractor responsible for all design and documentation, and the contractor having full access to the original designer and its knowledge of the design issues.
- When there are significant detailed design coordination issues and the responsibility for this can be best managed by the contractor.
- When all project funding is already in place and a single contract can be let for the whole of the works

Advantages	Disadvantages
The continuity with the designer's involvement in all design and documentation reduces some of the risk with special designs of the intent not being understood and quality not meeting Council's needs and expectations.	The contractor and designer may be disadvantaged by having to enter an engagement on terms predetermined by others, thus increasing costs. It is possible the designer/contractor may not ratify the novation.
The contractor is able to improve design buildability in developing the concept design, which should lead to more efficient and effective construction.	There is potential for complex litigious problems if the relationship between designer and contractor deteriorates. If parties have not worked together well before, and are not matched carefully there is a "forced marriage" risk.
Functional/concept design planning and some design details are developed to fully meet Council's requirements before contract award, as for DD&C, giving an advantage over the	There may be a premium in the tender prices for uncertainties and additional risks such as latent conditions, designer relationships and design errors, which may or may

D&C system.	not eventuate.
The other advantages of the DD&C system listed above	The other disadvantages of DD&C, with some possible reduction in Council's design document risks.
	The design coordination risk is with the contractor who is generally best able to manage this risk

#### 4.2.4 Design and Construct

##### Characteristics

Under a design & construct contract, Council prepares a project brief, and performance and quality requirement specifications (and possibly does part of a concept design). A contract is awarded to prepare or complete the concept design, and for design development/documentation and construction of the works. The contract usually involves a lump sum price or is based on a schedule of rates. The contract can also be based on a GMP with or without a share of savings.

A "supply and install" contract can be a form of D&C contract.

##### When Used

D&C contracts are suitable for projects where:

- there are well established standards for works component details, finishes and other design, and Council wishes to avoid many of the risks with design born with some other contract systems;
- a straightforward, more precise, properly defined and concise brief can be prepared, and there are few complex issues to resolve, and little likelihood of changes after the contract award;
- Council has insufficient time or resources, or no need, to use the construct only or DD&C contract systems;
- encouraging tenderers to offer alternative design concepts and/or details may result in cost savings and other benefits for Council;
- Council's requirements and required outcomes can be identified clearly at the time of entering into a contract; and
- using specialist firms, proprietary designs and construction processes available in the marketplace may be more economical than using special project specific designs.

With this system, post contract design changes are likely to be more costly as there is greater potential to disrupt the contractor's design dependent work program. Uncertainty in the project brief could result in a need for contract variations and/or in disputes over interpretations.

The system would not be the most suitable where the requirements and required outcomes cannot be properly identified at the time of entering into a contract, and there are possible latent conditions and uncertainties involved. Then the tenders may be qualified or include contingency sums, removing time and cost advantages with the system

Advantages	Disadvantages
Project time can be reduced by starting construction prior to the finalisation of all detailed design, at the contractor's risk.	Council initiated design changes or other variations may be more costly where design/construction is disrupted.
For suitable contracts, the full benefit may be obtained of applicable proprietary designs and products, and related construction processes, available in the marketplace.	If the project brief is uncertain, there is more risk the contractor will justify claims for the rectification of work, or produce work below the anticipated quality/standard, where the requirements are unclear. This and the greater design quality risk generally means ensuring design quality may be more difficult, and contract management more complicated.

The contractor assumes total responsibility for the project works.	Tender prices may be higher to compensate for the additional contractor risks involved.
Fewer directly arranged Council resources are required for design, offset to some extent by more complicated contract management.	More costly for tenderers to prepare tenders.
There is wider scope for innovation by the contractor.	If fewer tenderers are invited to reduce tendering costs this may reduce competition.
	Number of competent potential tenderers is more limited, especially for smaller projects.

#### 4.2.5 Design, Construct and Maintain

##### Characteristics

Under a design, construct & maintain contract, Council prepares a project brief, performance and quality requirement specifications, and possibly part of the concept design (a concept design and possibly more design is completed for DDC&M and DDCO). The specifications include asset condition monitoring indicators and maintenance conditions to ensure the finished works/assets continue to perform during the maintenance phase. Typically, a contract is awarded for the concept design (for DC&M/DCO), design development/documentation, construction of the works involving a lump sum price, with maintenance (for say up to 10 or 12 years) of the works based on a schedule of rates.

##### When Used

DC&M and DDC&M contracts are suitable for projects where maintenance of the constructed asset is required, with the advantages this provides with contractor responsibility/incentives for designing and constructing to optimise asset quality and maintenance needs, and where D&C and DD&C contract systems, respectively, would also be preferred. Where also required, including operation further enhances the incentives for optimising asset quality

The issues with design changes with DC&M and DDC&M contracts are the same as for D&C and DD&C contracts respectively. Uncertainty in the maintenance specification would produce contract variation risks and/or disputes over interpretations. Changes to the design or construction that change the asset impact on maintenance will also involve related variation risks.

The systems are inappropriate if the requirements and required outcomes cannot be properly identified at the time of entering into a contract. As for D&C/DD&C contracts, without sufficient certainty, the tenders may be qualified or include contingency sums that would negate time and cost advantages with the systems. Certainty with maintenance conditions is also required to avoid the risks involved.

Advantages	Disadvantages
The contractor is more likely to deliver a better product at the end of the construction phase to optimise asset quality, and better address maintenance needs.	Council must be able to define what it wants during the maintenance period.
The contractor's liability for defective works is extended beyond what is normally the limit by law	More costly to tenderers to prepare tenders, and to Council for the tender process, with the design and maintenance involved.
Project time can be reduced by starting construction prior to the finalisation of all detailed design, at the contractors risk.	The other disadvantages of D&C/DD&C, as applicable, with some reduction possible in design quality risks, but increases in contract management costs with maintenance.

There is wider scope for innovation in design, construction and maintenance by the contractor.	Tender prices may be higher for design and construction to compensate for the additional risks involved.
The contractor assumes total responsibility for the works and their maintenance.	Higher tendering costs involved, potentially reduce competition.
Fewer directly arranged Council resources are required for design than with construct only, offset to some extent by more complicated contract management.	Council initiated design and other variations may be more costly where design/ construction is disrupted and/or maintenance is affected.
The other advantages of the D&C and DD&C systems, as applicable.	The number of competent potential tenderers is more limited with design and maintenance being involved, potentially reducing competition.
Fewer directly arranged Council resources and less effort are required for maintenance, offset by the extra contract administration required over the maintenance period.	Most likely building contractors do not have a maintenance arm and could subcontract the maintenance activities, which may involve more risks with ensuring the constructor and maintainer synergies and asset/maintenance optimisation sought with the system.
More potential for better and more coordinated maintenance than if it was done by other means.	System is not suitable for smaller projects.
	More risks with contractor maintenance activities because end users occupy the site, requiring better coordination and cooperation between the various parties involved.

#### 4.2.6 Guaranteed Maximum Price

##### Characteristics

The guaranteed maximum price contract system is designed to provide greater certainty with the contract end cost and completion date. The GMP system can be combined with the DD&C and D&C systems if required or left as a Construct Only contract.

The system is designed to reduce the scope for changes to the contract price and completion date, and to reduce Council's direct management effort.

The system is particularly useful where limited design has been completed, and there is a need to commence early works on site while the design is being developed. The contractor would be appointed on a fee basis for stage 1, to manage the early works, and provide buildability input in the design development phase to bring documentation to approximately 75% complete.

Once the documents are at 75% the contractor will then formalise the Guaranteed Maximum Price, and if the sum is acceptable the contract will be executed for the remainder of the works. If the GMP is not acceptable Council can then elect to either consider value engineering options to reduce the scope of work, or go to tender based on the 75% design documents.

The contractor will report back to Council with recommendations for the letting of each sub-contract, including comparison with the amounts included in the GMP. The GMP can include an amount for design co-ordination issues, so that any issues that arise as the design develops can be captured within the overall GMP

With the system, where Council directs a variation increasing the work, the contractor is required to propose offsets with reduced quality, less design and/or a reduction in scope, where this it is needed to maintain the original contract price. There is also provision for the quick resolution of disputes over the value of such offsets/variations using an independent expert for a prompt, binding decision.

Where the project is completed below the GMP, then a share of savings would be provided (based on a previously agreed ratio)

The successful contractor will agree the GMP with risk sharing / sharing of costs as submitted in the initial tender. The contract to be carried out on an open book basis with agreement by Council to the tenderers for each Trade Package, and to the selection of the successful Trade Package Sub Contractor.

### When Used

A GMP contract may be appropriate for projects where the following requirements are substantially satisfied:

- The building is of a specialist nature, where Council wishes to maintain control over the development of the design
- Council is able to manage the interface between the detailed design and construction to a point in time, and select and engage, and be directly responsible for, the design consultants, prior to novation if appropriate;
- There is insufficient time available for the design to be adequately developed before construction must commence to achieve particular milestones
- When all project funding is already in place and a single contract can be let for the whole of the works

Advantages	Disadvantages
Lower level of contract management required by Council with reduced potential for claims where other issues and disputes are minimised.	Further restriction to the field of capable and willing tenderers
Restricted right of contractor to claim with less complicated contract provisions, provided the contractor is not inclined to raise issues to cover costs and disputes are minimised.	GMP not known until the Early Works on site would have been substantially commenced.
Greater potential for the end cost to approximate the original contract price, if tender price competition does not result in an unrealistically low contract price and related disputes.	Greater requirement for Council to manage the design process.(Final coordination through the contractor
Greater potential for on time completion through reduced opportunity to claim extensions of time and optional bonus provisions.	Limited number of contractors experienced in this type of contract system
Discouragement of Council variations that increase the scope.	Lack of understanding within State Government as to the benefits of this contract system
The other advantages of the D&C and DD&C systems, as applicable, however Council maintains control of the design up until a pre-determined point	Consultants novated too late in the procurement phase, thereby not allowing innovation savings
Reduced tender costs to the contractors, and a shortened tender period	
Given that the fee and margin are fixed, this alliance provides incentive to the contractor to focus on the project rather than the bottom line	

Input into the selection process of sub-contractors by Council may increase the number of local contractors involved in the project	
The Guaranteed Maximum Price is fixed and the contractor wears the risk for industry price fluctuations	
The early (enabling) works can be managed by the contractor in accordance with the construction programme.	
The contractor and Council work collaboratively, ensuring a certain standard and quality is achieved on the project	

#### 4.2.7 Managing Contractor Delivery System

##### Characteristics

The managing contractor system is for projects where the scope of work requires substantial development to suit a basic project brief, and there are advantages in involving a contractor early to manage and help with this development and then design and construct the project works. The managing contractor is generally engaged early to commission, manage and accept responsibility for a team of consultants that develops the brief and designs the project works, and a team of subcontractors that constructs the project works.

Only projects with special needs suit or require this approach, and for these the managing contractor system provides unique advantages.

A number of managing contractor system approaches are available. The contract initially involves a design and project management agreement and then usually provides guaranteed lump sum ceiling priced DD&C/D&C agreements, negotiated after the scope is sufficiently developed under the contract. Some provisions for price changes and the sharing of savings with incentive fees are included. Mechanisms are usually included to assist relationship management and the removal of barriers.

A managing contractor contract is not a lump sum contract. It involves the payment of actual reasonable costs (up to the ceiling priced or guaranteed construction sum(s) for construction work, or up to a guaranteed total price for all the work to suit a target set by Council) plus fees, plus the incentive fees where targets are bettered.

The managing contractor confirms the project brief, and develops the design brief, concept design and design. During this, Council has the opportunity to influence or change design with a minimum of risk of unreasonable additional design and construction costs. Reasonable actual costs are identified or agreed and paid with the fee percentage.

This Council input into design, and greater potential to influence both the design and construction processes allowed, involves less Council cost/time risks with changes than would be involved with D&C and DD&C contracts, with their greater potential for related disruption and higher contractor claims. The potential for late changes is less, because the managing contractor is not asked to offer lump sum ceiling prices until the design is sufficiently advanced and resolved with Council.

The system allows flexibility with subcontract times for completion and staging with the subcontract work packages identified and developed with the managing contractor, before subcontracts are awarded, reducing the scope for disruption or delay costs with changes that are passed on to Council.

The managing contractor is selected as an expert in the management of large design and construction projects. At the same time, Council can have a say in the managing contractor's early selection of the best design consultants and the most efficient construction subcontractors. Both design and construction are competitively tendered with the engagement of consultants and subcontractors, giving assurances about the value for money achieved.

More Council influence and involvement in selecting and monitoring consultants and subcontractors is usually involved to verify value for money. A possibility also exists for Council to novate consultants at a point in time. Open-book approaches may also be used to verify costs. This extra involvement entails more administration, but the system requires less overall management for Council than would be required with full design and construction management with a project manager, as more is contracted to the managing contractor.

The additional administration includes monitoring the tender process for the selection of design consultants and subcontractors, obtaining and negotiating the guaranteed construction sum(s), verifying consultant and subcontractor costs, and a more complicated process of verifying the progress and final payments. Approaches can be used that allow for less involvement in these processes, with some increased risks with demonstrating value for money.

A contract manager would normally also be engaged and/or a Council project officer appointed to manage the managing contractor contract and support Council. Less management is required of them relative to other systems with difficult projects (e.g. a single D&C/DD&C contract may involve less generally, but would not suit such projects).

### **When Used**

The special types of projects that need the managing contractor approach, would have many or all of the following characteristics that mean they would not be delivered as well by other means:

- project threats and opportunities that are best managed collectively by the key participants, including more involvement by Council in delivery;
- significant/many unknown factors that are complex to resolve in the time available, including unclear or uncertain scope, uncertain and unpredictable risks, changeable project criteria and/or changeable scope throughout the initial delivery;
- delivery times that are early/tight and fixed;
- funding that is fixed;
- early key participant input and industry innovation are required, such as special technology input and/or progressive technical updates;
- project risks and their management are more complex generally;
- more conventional risk allocation, to suit the participant that would normally best manage the risk, would be unrealistic at the time the participants need to be engaged;
- the various diverse interests of the key participants need to be brought together early/expeditiously to allow the project to proceed;
- stakeholder interfaces and relationships are substantial, complex and/or difficult to manage, particularly in the time available; and
- Council accepts that risk management requires a special delivery approach.

For difficult projects the advantages of the system are shown below. There are also details of the potential disadvantages because of the inherent uncertainties with such projects and the methodologies needed to deal with them. These system disadvantages are generally only involved, relative to other more conventional delivery/contract systems, until a guaranteed construction sum(s) or guaranteed total price, with agreed contractual dates for completion, are in place

Advantages	Disadvantages
Allows collective stakeholder resolution of early scope issues, with fuller Council and expert initial input into design with less cost risk and more control of scope/value.	Early “cost plus” arrangement (within tendered fee and subcontract package limits) with more early risks to Council of exceeding cost targets.
Allows earlier completions with the overlap of design and construction, and staging, and allows the early start to construction without waiting for full design completion.	Early target rather than fixed time periods (within tendered subcontract package limits) with more early risks to Council of exceeding time targets) limits.
Provides more flexibility and is better able to deal with complexity in developing the scope and design, giving better outcomes, for suitable projects.	Greater early dependence on good relationships and contractor efficiency, with managing project risks, and achieving targets and outcomes.
Gives greater flexibility to accommodate design influences/changes during early design with less cost risk.	Early risks to Council of not achieving best value for money outcomes, with inappropriate contractor management.
Allows the early involvement of all key project participants in developing responses to the project objectives.	More contract administration, but less overall management for Council than with other options for special projects.
Encourages the early involvement of hard dollar contractor management in project management with incentives, for special projects, and reduces the need for separate overall project management support for Council.	Less early incentive to expedite design, and greater early risk with having late design decisions and design changes, requiring greater discipline and prudent management by Council and contractor.
Gives management advantages, for special projects, relative to other delivery systems because of the type of managers/management more likely to be provided.	Difficulty with setting appropriate target prices early to suit the expected work scope based only on a project brief and possibly some concept design details.
Provides greater potential for more efficiencies/optimum design and savings that are shared with Council with incentive payments.	Potential for Council to have expectations exceeding the brief and targets set, reducing the incentive for the contractor to agree guaranteed construction sums and/or work within the targets.
Provides many of the other advantages of “relationship contracting” with its mechanisms for resolving issues and sharing benefits for special projects.	Number of competent and willing potential tenderers is more limited, and higher margins for the management provided and different profit potential involved may be expected.

#### 4.2.8 Alliance Contract Delivery System

##### Characteristics

An alliance contract is an agreement between two or more entities that undertake to work cooperatively, reaching decisions jointly by consensus, using an integrated management team and intensive relationship facilitation. These entities each cover some project risks and potentially gain some rewards in achieving the agreed outcomes, relying on good faith and trust, and using an open-book approach to identifying costs and payments.

Alliance contracts are part of a range of delivery and contract systems that involve “relationship contracting” that include processes to manage relationships, remove barriers, and maximise the contributions made and successes achieved by all the participants.

Alliance participants are selected early in the project on the basis of factors other than price, including the alignment expected with, and the relationships expected between, the participants. Council chooses the entities it regards as most able to deliver the required project outcomes, including value for money. Time is spent in the selection of participants, involving discussion, alignment, senior executive meetings and workshops, to establish trust, explore relationships and identify the right personnel and participants.

The participants in alliances vary to suit the project. All the key participants in a project could be parties to the alliance contract. As a minimum Council, the designer and key construction contractor(s) would normally be involved.

Typically, the project participants could also include, consultants, expert advisors (could also be engaged separately, particularly relationship/alliance facilitation, time, cost and KPI experts), key management providers and specialist contractors/suppliers. Participants may be identified as consortium teams, individual organisation or persons. Some organisations, including contractors and subcontractors, could be involved in a project through more conventional contracts.

The participants are represented equally (say up to 2 people each) on a management “board” with an equal say in decisions that are made by consensus (except with changed project scope and funding, that are determined by Council or client).

The people provided by the participants form an integrated management team (headed by one person as project manager) in a single office with positions filled on a “best for project” basis (not necessarily to suit their employees role). The people are given clearly defined roles and responsibilities and are required to make decisions on a “best for project” basis. A project officer and Council personnel would normally represent Council on the “board” and management team.

Council would normally agree to pay participants for their base costs, as confirmed by open-book audit and/or negotiation, plus pre-determined corporate overhead and profit margins, so long as the target costs for the project are not exceeded and target performance is achieved. These margins would be reduced or not paid if the target costs were exceeded or target performance was not achieved. The proportion at risk would be determined by agreed risk/reward curves or formulae. Other incentives may also be involved, linked to performance targets, such as the payment of agreed shares of cost savings or the deduction from payments of agreed shares of cost overruns, adjusted to suit other performance (using KPI) and shared in proportion to each non-client/Council participant’s pre-agreed involvement.

The liability and pain of the non-client/Council participants is capped (and Council has the remaining liability), with the participants agreeing they have no recourse to litigation except for willful default, failure to maintain insurance, non-payment, failure to honor an indemnity or failure to give audit access. PI insurance does not cover areas where the insured’s liability is

waved, so special Council liability provisions and insurance cover are required where professional risks are high and the consequences are substantial.

### **When Used**

Alliance contracts may be more effective and beneficial than other alternatives, and be the best approach, when most of the following project constraints and characteristics exist for large and complex (probably high profile) projects:

- improved and extraordinary outcomes are sought under extraordinary circumstances, through the extra relationship facilitation and motivation possible through an alliance, including with project location and/or complexities that are exceptionally challenging;
- threats and opportunities are involved that are best managed collectively by the key participants, including more involvement by Council in delivery;
- budget is fixed and limited and requires a special or extraordinary effort to achieve the outcomes expected;
- time and the other challenges with the project do not allow other alternatives, and require a special or extraordinary effort, including where more conventional contracts would not be possible when the participants need to be engaged;
- project scope is unclear or uncertain, and is very difficult to properly define in the time available with significant/many unknown factors involved;
- project risks are uncertain or unpredictable, and project criteria may be changeable;
- considerable complexity is involved, with little time to resolve the issues, such as environmental issues, and those that require special and complex key stakeholder involvement;
- there is a need for early advice from a range of key stakeholder experts to help together to define the scope and resolve the issues involved;
- there are various diverse key stakeholder interests to be brought together early and expeditiously;
- key stakeholder interfaces and relationships are complex and/or particularly difficult and require a special approach such as complex Council, consultant and contractor interaction and management with large design and construct projects; and
- community interests are complex and require a special approach.
- With other delivery and contract systems, for applicable projects the constraints would lead to greater risks to outcomes and more potential for problems. Under an alliance contract extraordinary issues and problems are able to be dealt with on the best for the project basis, facilitated by the non-adversarial alliance approach and mechanisms, including the cooperative and collaborative behavior encouraged, the collective decision-making and integrated management involved.

An alliance contract will not be suitable, where:

- Council, consultant, contractor other participant personnel to be involved are not experienced at (to some degree), or suited to, successfully working, or not able to work, as a team with the attitudes and approaches needed for an alliance;
- Council is not convinced the risk management needed requires this special delivery approach;
- the non-client/Council participants required do not have the attitude, capacity, expertise, or corporate cultures needed for an alliance;
- the project is relatively small, and the additional tender process and alliance implementation costs are not consistent with the project value and the benefits to be gained; or
- more conventional delivery and contract systems will achieve the outcomes required, such as where the project is not as complex, there is little room for improving outcomes with such an effort, the outcomes can be achieved more readily by other means with less intensive relationship facilitation, and time is available to resolve complexity/issues and complete design without alliances.

There is usually an inherent early uncertainty about project outcomes because of the special nature of applicable projects, and not just the system, that would be the same or worse with other systems. The system also involves inherent risks and benefits as follows.

Advantages	Disadvantages
Lower industry tendering costs and reduced, but more intense, tender evaluation period(s).	Less tender price competition and related certainty with value for money.
More reasonable risk allocation for non- Council/client participants (but greater potential risk to Council).	Higher costs and more effort involved facilitating relationships and determining costs.
Better potential for maximising innovation and product efficiencies with special projects.	Responsibility with risks may not be as clear.
Better incentives for safer working conditions with special projects.	More risks with controlling the direct costs.
No dispute culture and better potential for win/win outcomes with special projects.	More potential for quality to be compromised to meet cost targets, mitigated by quality targets and more Council involvement.
Potential for reduced project costs, earlier completion and better outcomes generally with special projects under extraordinary circumstances, and with the incentives for cost savings and cost transparency available.	High level of dependence on relationships, teamwork and the adaptability and performance of individuals, more demanding on all the personnel involved, and difficult culture and attitude shifts/changes required of many.
More project management efficiencies with integrated management for special projects.	Extra direct Council involvement, cost and input required, though probably less than other systems for special projects.
Allows early key participant input and involvement, allowing better development of the responses to the project objectives with special projects.	The non-client/Council participants could expect and receive a higher margin (including profit) than with other systems for the additional resource intensive and demanding input and commitment required.
Improved design and quality outcomes with special projects.	Higher consultant costs are more likely (but lower construction costs potential greater).
Better potential for job satisfaction and skill enhancement for the people involved.	Much lower liability cap for non-client/Council participants and loss of Council/client litigation/legal rights, and reduced PI cover to suit lower limits to the liability of professionals.
Capped liability and risk; better potential for win/win outcomes; and better potential for enhanced corporate reputation, satisfaction and skill development, particularly with achieving enhanced goals, and making culture and attitude changes.	Disadvantages for the non-client/Council participants with the extra effort required to provide a return (possibly due to the project demands as much as the system), particularly with stretch goals, extra people management, and culture and attitude shift/change required; opening of books' to public scrutiny and having accounts to suit; more demands on people; and requirement to provide the best people, expertise, resources and skills available to the one project.

#### 4.2.9 Privately Financed Project

##### Characteristics

The procurement of capital works may involve the use of private sector funding with “privately financed project” (PFP) delivery, such as “build own operate transfer” (BOOT) and “build own transfer” (BOT) schemes.

Privately financed projects involve the private sector financing and developing an asset with developer ownership/control (possibly operation) and provision of the asset for a concession period. The Council may contribute through land, capital works, risk acceptance, revenue diversion or the purchase of agreed services related to the asset, such as their maintenance. The approach is generally used to cover economic and social infrastructure, and typically includes both a capital works component and an ongoing service delivery component.

Suitable projects are usually initiated by seeking expressions of interest, and then a request for detailed proposals from a short listed panel of respondents, and the selection of a developer from the proponents. The invitation for expressions of interest and request for detailed proposals would define the scope of work/options being sought from the private sector and the basis/criteria for the evaluation of responses and proposals.

Arranging a PFP agreement requires more effort, expert advice, management and support for Council than other systems. A contract manager would normally be engaged and/or Council project officer appointed to manage the agreement and support Council. Less management may be required than for other systems after the agreement is in place, as more is contracted to the developer.

The following are some general PFP agreement characteristics:

- risk management processes would be used to ensure that all project risks are properly assessed, valued (where appropriate) and allocated to the party best able to manage them in any agreement;
- the Government would not guarantee private sector borrowing's or take an equity share holding;
- the return to a developer and, where applicable, to Council, would only reflect the risk(s) borne;
- adverse affects on consumer rights would be prohibited;
- assets would be developed (and operated) in accordance with appropriate Australian and international standards, and the developer would be required to obtain and conform with appropriate Development Approval conditions and regulations, including those covering the protection of the environment; and
- core services related to the asset would be delivered by the public sector, and non-core services would be delivered by the private sector where this provides better value for money.

##### When Used

Projects requiring private sector financing that are able to provide a return to a private sector developer, with long concession/service delivery periods, possibly up to 25 years or more for some assets, and with a total contract value of \$20 million or more may suit this delivery system.

Such projects must meet the same standards of economic, social and environmental evaluation set for publicly funded projects, and a PFP option must be shown to give a better overall outcome for the Government in these areas relative to other delivery systems (using comparator model assessments).

Advantages	Disadvantages
Enables much of the impact of obtaining capital funding to be either totally or partially absorbed by the private sector or spread over a much longer period than for other systems.	Possible public misconceptions about the benefits and nature of the project as a private sector initiative rather than, and in comparison with, a Government initiative.
For applicable projects, the asset management risk rests with the private sector developer, not only during construction but also during part or all of the life of the asset.	The need for officers and advisors/consultants with the right level of less common contract experience necessary to thoroughly assess financial/technical proposals, to manage the tender process and negotiations with potential developers, and to document and manage the PFP agreement.
Provides more economic asset development and, where applicable, associated service provision for special projects.	More Council cost/time with the efforts of the above advisors/consultant and other resources, and developing the comparator model/assessments required, and much higher industry tendering cost.
Lower overall Council asset delivery and management cost, offset to some extent by higher Council tender process costs.	Potential for asset quality to be compromised, and the real relative cost/benefits to be unclear, unless there is complete and appropriate documentation of asset quality requirements, proper comparator model and allowance for the proper confirmation of outcomes.
	Less Council control over the asset quality.

#### 4.2.10 Contract System Risks

As outlined above there are advantages and disadvantages with each contract system. The most significant differences are the amounts and types of risks to the contractor and Council with the various systems. There is less risk to the contractor involved with CO and more with D&C contracts. However, the risk to Council of design quality and building functionality not meeting expectations increases with an increase in design being done by the contractor. This risk is less where the design expected is well understood, such as for residential / industrial or commercial buildings or when reproducing a well defined asset. Also, with managing contractor and alliance contract systems this risk can be reduced for special projects.

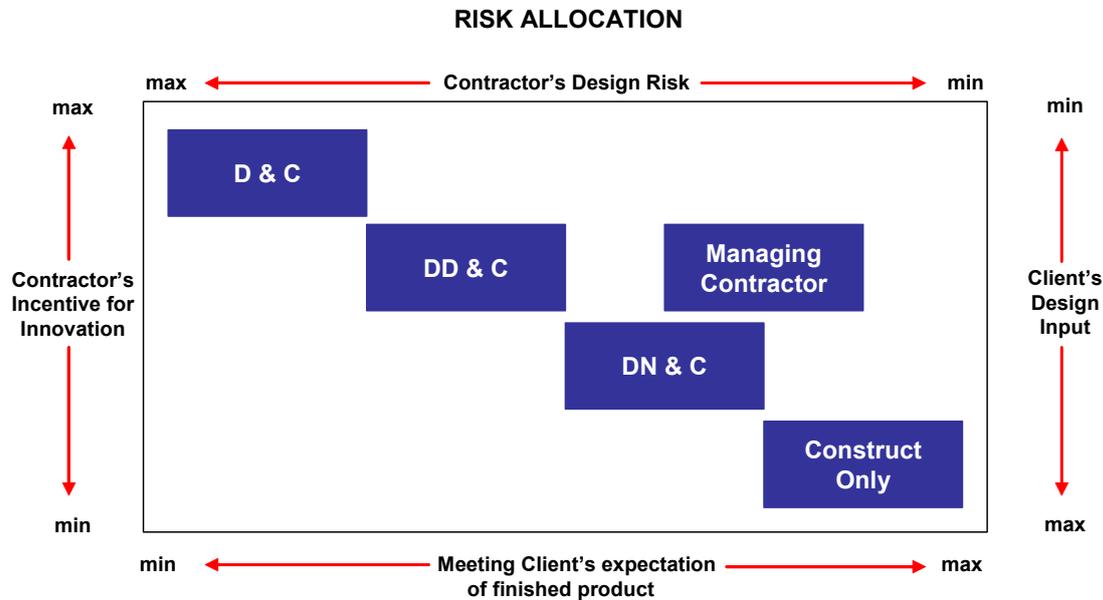
Including maintenance in a contract can reduce the design and quality risks to Council, as there is more incentive for the contractor to optimise asset quality and maintenance needs, which may mean improved design and construction quality to optimise construction and maintenance costs.

Other risks to Council increase with D&C/DC&M and DD&C/DDC&M (though less so) relative to CO contracts with:

- longer tender and evaluation periods being needed and greater related costs being involved, where more design and other services are required of the contractor;
- cost and time impacts of Council generated design changes being greater where the contractor does more design; and
- larger contingencies in tender prices being likely to allow for risks to the contractor where the design is less developed at the tender stage.

Conversely, where the contractor does more design, risk to Council diminishes with less potential for costs due to Council's design documentation errors and consequent contractor claims. Some of the risk relativities with the various contract systems are illustrated below.

The D&C system gives a greater ability to fast track a contract by allowing the greatest potential to overlap design and construction. Construct only does not allow this overlap. D&C also involves a greater cost to tenderers with tender preparation. Construct only involves the least cost to tenderers. Managing contractor and alliance contracts allow overlapping and fast tracking with less cost to tenderers.



D&C contracts may reduce the overall project costs and/or time for some but not all projects. Generally it is likely that the overall project time will be reduced with this system because of the greater potential to overlap design and construction. There is also generally some potential with D&C/DD&C based contracts for cost savings due to the contractor's ability to better match design to existing design/products and preferred/efficient construction methods, though in some cases the allowances made for design risks may offset some or all of these savings.

Because less design information is included in a D&C contract and the contractor's planning and work depends more on how this is interpreted, the potential is greater for costs and time to increase with any changes needed to clarify or alter requirements. Also, there is more risk with a D&C contract, where requirements and expectations are not made clear, of the quality of the final product not achieving the level of Council satisfaction likely with a CO contract that specifies the design. Where there are difficulties with covering all the functional/performance requirements and product purposes in preparing the specifications for a D&C contract, the risks are greater with achieving the design and construction outcomes sought.

### 4.3 Features of Management Systems

#### 4.3.1 General

Council would normally engage/appoint a project/contract manager (a person or team) and/or a project officer (internal) for the overall management of a project. The project/contract manager and the project officer would then be responsible for the overall management of the project, including anything from several to only a few contracts. The project/contract manager would normally be engaged early in the life of the project subsequent to the project officer's (and advisors') assessment and confirmation of Council needs and their early identification of project scope.

An internal project officer would normally be appointed and supported by other Council personnel and possibly other advisors. If insufficient Council personnel are available to undertake, or they are not accustomed to undertaking, the required

project/contract management responsibilities, Council would normally engage an external project/contract manager (as a person or team). This would require a management agreement between Council and the external project/contract manager. In general, the role of a project/contract manager and/or project officer is to assist Council to ensure the successful completion of the project, through planning, programming, organisation, coordination, monitoring, management and surveillance of the work required, including through Council's other consultants and contractor(s) involved

#### **4.3.2 Project Management**

The project manager manages the engagement of appropriate consultants to carry out any design/documentation involved and other activities for the project. The consultants may be engaged under a contract/agreement with Council, with a project manager providing Council's representative or acting as an agent of Council.

The project manager is responsible for the coordination and management of each contract with a consultant, and for ensuring that contract work complies with the contract. The project manager is not directly responsible for the adequacy of the consultants' work.

Following preparation of sufficient documentation, the project manager manages the engagement of building/construction contractors for Council. The project manager manages the contracts between Council and building/construction contractors, and provides a person to act as Council's authorised person (or representative) under the contracts.

A multiple contract delivery system requires additional management by the project manager, outside the building/construction contracts, of the interface between contracts, and the time and other performance of all contractors. CO/DD&C contracts require some pre-contract design management by the project manager.

#### **4.3.3 Project/Construction Management**

If the construction component of the project includes multiple contract delivery and multiple trade or many small contracts, the project manager may be required to use more of its personnel for the more intense construction management involved, or Council may engage a construction manager (as a person or team) with a project and/or design manager (person or team). A construction manager could manage the trade or many small contracts as a "head contractor" responsible for project construction, and direct the day-to-day activities of the trades/small contractors.

Any such construction manager would not normally undertake construction work, but may arrange preliminaries and common services under separate small contracts. A construction manager would help to identify the specific contract packages, document tender requirements, manage contract awards and manage the contracts. A construction manager would work closely with the design management before and during construction to help address programming, coordination and any buildability issues before contractors are engaged.

#### **4.3.4 Project/Contract Management**

With a single contract delivery system, a project may not require as much management or ongoing coordination for or on behalf of Council. The one contract will then determine the project completion date. The level of pre and post contract management/coordination required for Council will vary and depend upon the contract system adopted. Construct only contracts require more pre-contract management and coordination, in completing pre-contract design, than D&C contracts, which require more post-contract management for Council to achieve the design outcomes required through the contract.

Managing contractor and PFP delivery, and possibly a single D&C (and DD&C in some cases) contract, require less management for Council. Where less is required, only the smaller contract manager (person or team) and/or the project

officer (and advisors) may be needed to manage Council's interests before and under the contract. With an alliance contract, a separate project or contract manager would not be needed and the project officer (and probably expert advisors) would be included and work in the alliance management team for Council.

#### 4.3.5 Project Director Role

The project officer (Project Director), in-house support personnel and and/or other advisors:

- ensure that a satisfactory project scope description in a brief and tender documents are prepared to call tenders for a project/contract manager;
- call tenders for a private sector project/contract manager;
- ensure the people involved with handling tenders have no actual or perceived conflicts of interest;
- ensure the tender evaluation, selection and review of recommendations are completed following the receipt of tenders, make a submissions to any expert reviewers involved, and obtain approval to award a contract and issue a letter of award to engage a project/contract manager;
- appoint and brief a project/contract manager;
- review the project/contract manager's tender documents before calling tenders, and recommendations following the receipt of tenders, for contracts/consultancies;
- administer the project/contract management agreement and monitor the activities of the project/contract manager and its ability to satisfactorily complete the project, report on a regular basis on the project/contract manger's performance and take any necessary corrective action;
- maintain effective separation of any other conflicting Council activities; and
- plan and document all tender evaluation and probity assurance processes prior to their implementation.

#### 4.3.6 Project Manager Role

The project manager is responsible for organising appropriate resources and ensuring the completion of some or all of the following activities, depending on the procurement strategy adopted and the role required. A contract manager would only be responsible for those activities related to setting up the contract (and any consultancies needed), contract management/administration and coordinating Council input to design and other contract activities.

- Documenting, arranging and administering consultancy agreements with design consultants and other specialist consultants on behalf of Council.
- Developing a project brief, concept designs/design briefs, design and specifications (as applicable) for the project and contract packages using the consultants.
- Preparing, monitoring and controlling an overall program for the project, setting out the times within which the main parts of the project are to be executed, including all relevant on site and off site activities. The program would include the dates by which actions, information and decisions are required from Council, design consultants, specialist consultants, authorities and others involved in the project.
- Examining options for resolving problems, delays and bottlenecks, and taking appropriate action to mitigate delays and resolve problems.
- Ensuring all the necessary skilled personnel/contractors/consultants, materials and equipment are available when required.
- Reporting on overall cost plan/statements setting out all relevant elemental cost estimates and budgets (prepared by the appointed Quantity Surveyor), and providing all necessary project cost control systems.
- Developing and implementing, usually through the main construction contractor(s), industrial relations and health and safety management for the project dealing with such matters as:
  - Developing and the location and type of amenities for the project workforce;
  - the communication framework with contractor, union, and health and safety representatives; and
  - dispute resolution and other project wide procedures and the like.

- implementing a quality and other management plans for the project manager's involvement in both design and construction for the project.
- Preparing documentation for tender processes and contracts, incorporating the designs and technical specifications prepared by the design consultants, and required commercial conditions.
- Organising the awarding of contracts between Council and contractors, allowing for the pre-qualification of appropriate potential contractors.
- Administering contracts with contractors on behalf of Council.
- Undertaking the necessary liaison with, and managing the involvement of, external persons, organisations and other project stakeholders, as required.
- Reporting regularly to Council on all aspects of the project relevant to the project management agreement

## 5.0 Delivery and Contract System Selection for Cairns Cultural Precinct

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### 5.1 Programme

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CRC have advised that the Australian Federal Government are committed to providing \$40m of grant funding to the Cairns Cultural Precinct, subject to the expenditure of this amount occurring prior to 30 June 2012.

This milestone has a significant impact on the project programme and the procurement options available.

A copy of the current master programme is included within Appendix A of this document.

### 5.2 Ranking Schedule

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We have made an initial assessment of the possible delivery options and consider that there are two options that are worth detailed consideration namely:

- 1) Design Novate and Construct with a GMP and share of savings. The major risk with this is the loss of design control by Council. Conditions can be built into the contract to minimize this risk. These would include Council's right of direct access to the novated designers to ensure that the design intent of the brief (Principal's Project Requirements PPR) is not being compromised in the detailed design work. Consultants would also be required to certify monthly that design intent has not been compromised.
- 2) Construct only with a GMP and share of savings with early contractor involvement in the design development. This will give the Council greater control of the design but it will also mean that the Council will retain the design risks including design coordination risks and design delay risks. These risks to Council can be minimized through transfer to the design consultants but this can incur additional costs. It also creates an adversarial situation with the contractor who will not be motivated to work around coordination problems or design delays.

It is recommended that a workshop is held to review the different delivery options and their relevance to this project. This should be structured to evaluate each option in detail.

To assist in selection of the most appropriate delivery and contract system for this project, a preliminary ranking schedule has been developed. Each delivery and contract system has been awarded a rating against the risks contained within the preliminary risk register that have been rated as high or extreme, the rating being reflective of the comparable size of risk issue / exposure, with the weightings being determined by whether the risk is high or extreme.

We have also included a qualitative assessment of the various contract systems in the table below:

CONTRACT SYSTEM TYPE	KEY COMMENTS
Construct only	<p>Greater level of control of the outcomes, with all consultants retained by Council, however high level of exposure to design errors, co-ordination issues. Insufficient time during the business case preparation to document adequately, and it would be anticipated that there would be significant amounts of incomplete design.</p> <p>OVERALL ASSESSMENT FOR CCP – NOT RECOMMENDED</p>
Design & Construct (D&C)	<p>Tender based on concept scheme plans and project brief. Very limited control over the final outcomes of the project, with no design input from the client's consultants. Contractor to select his own design team. With an increased tender period, and with an expected date of finalizing funding in early February 2012, it is unlikely that the contractor would have sufficient time from appointment to have achieved \$40m expenditure by June 2012</p> <p>OVERALL ASSESSMENT FOR CCP – NOT RECOMMENDED</p>
Design Develop & Construct (DD&C)	<p>Tender based on DA plans and project brief. Slightly increased, but still limited control over the final outcomes of the project, with no design input from the client's consultants. Contractor to select his own design team. With an increased tender period, and with an expected date of finalizing funding in early February 2012, it is unlikely that the contractor would have sufficient time from appointment to have achieved \$40m expenditure by June 2012</p> <p>OVERALL ASSESSMENT FOR CCP – NOT RECOMMENDED</p>
Design Novate & Construct	<p>Tender based on DA plans and project brief. Slightly increased, but still limited control over the final outcomes of the project The client's consultants are all novated to the Contractor, however it is usual for the contractor to want to change construction methodologies etc which can result in the functionality of the design (and outcomes) being compromised. With an increased tender period, and with an expected date of finalizing funding in early February 2012, it is unlikely that the contractor would have sufficient time from appointment to have achieved \$40m expenditure by June 2012</p> <p>OVERALL ASSESSMENT FOR CCP – NOT RECOMMENDED</p>
Design Develop, Construct & Maintain	<p>Same as for DD &amp; C, but with the contractor also taking responsibility for maintenance over an extended period. Some advantages, however potential problems could also occur with quality of maintenance.</p> <p>OVERALL ASSESSMENT FOR CCP – NOT RECOMMENDED</p>
Design Construct & Maintain	<p>Same as for D &amp; C, but with the contractor also taking responsibility for maintenance over an extended period. Some advantages, however potential problems could also occur with quality of maintenance.</p> <p>OVERALL ASSESSMENT FOR CCP – NOT RECOMMENDED</p>
Guaranteed Maximum Price	<p>The initial tender will be based on the DA plans and project brief. While tendering occurs, Council's designers will continue with the development of detailed design for the Stage 1 works, and design development for the remainder of the project. Council will retain control of the consultants for the duration of the project. A Guaranteed Maximum Price will be provided by the contractor once the design achieves 75% completion, and any savings on completion of the project, will be</p>

	<p>shared between Council and the Contractor. This procurement option provides the highest likelihood of \$40m expenditure by 30 June 2012, as the design will continue during the tender period.</p> <p>OVERALL ASSESSMENT FOR CCP – FOR DISCUSSION</p>
Managing Contractor	<p>Tender based on DA plans, however the tender will only be for prelims and margin. The consultant team will be novated to the managing contractor, who will then manage and develop the scope and design using the consultant team, in conjunction with Council. Incentives can be used to develop initial target price limits. A guaranteed maximum price can be developed, however this then resembles more of a traditional DD&amp;C approach. The design team will not be able to progress design during the tender process and it is unlikely that the contractor would have sufficient time from appointment to have achieved \$40m expenditure by June 2012. Limited control of the design development, and issues may arise where decisions affecting the operation of the building may arise.</p> <p>OVERALL ASSESSMENT FOR CCP – FOR DISCUSSION</p>
Alliance	<p>An Alliance type contract arrangement for CCP would be difficult to establish within the timeframe available. Resources from within Council would be required who have experience in this form of contract. There would be an increased level of risk for Council on this project.</p> <p>OVERALL ASSESSMENT FOR CCP – NOT RECOMMENDED</p>
Private Finance Project	<p>A PFP type contract arrangement for CCP would be difficult to establish within the timeframe available. Resources from within Council would be required who have experience in this form of contract. There would be an increased level of risk for Council on this project. It is unlikely that a business case based on the revenue from a performing arts centre and the limited amount of retail would make this attractive for proponents.</p> <p>Council would have limited control on the outcomes of the project.</p> <p>OVERALL ASSESSMENT FOR CCP – NOT RECOMMENDED</p>

## Appendix A – Master Programme

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