

NPWC/NBCC “No Dispute” Paper 11 - Alternative Contract Strategies

Set out below are the National Public Works Conference and the National Building and Construction Council's claims and disputes Joint Working Party comments and recommendations on Alternative Contract Strategies.

1. Issues

1.1 This paper identifies issues to be considered by Principals in the selection of the best delivery system for the various types of project.

1.2 The various contract strategies used for project delivery are often described under the following headings:

1. Traditional Contract Strategy
2. Detail Design and Construction.
3. Design and Construction Strategies
4. Project Management Strategies
5. Construction Management Strategies

1.3 Contract strategies 2, 3 4 and 5 are often referred to as “Alternative Contract Strategies”.

1.4 All parties agree that because of the variety of sets of circumstances that prevail at the inception of projects there is no one strategy which suits all projects and all Principals. The more a strategy is tailored for an individual project and Principal the more suitable and successful it is likely to be.

1.5 Set out below is a summary of some of the factors relevant to the selection of the optimum strategy for a particular project.

2. Traditional Contract Strategy

2.1 Under the traditional contract strategy the Principal engages professional consultants to prepare the concept design, the detail design and the contract documentation for the Works. The Principal then enters into a contract with a general contractor to construct the whole of the Works. Such a contract may be on the basis of a lump sum, provisional bill of quantities or schedule of rates. During the construction the consultants are normally engaged to provide advice to the Principal and to act as a certifier.

2.2 A traditional contract strategy may be the optimum strategy for projects where the following requirements are satisfied or substantially satisfied:

- (i) where the optimum design for the project can be established without involving the prospective builder or specialist Subcontractor;
- (ii) where the Principal prefers to manage the interface between the detailed design/documentation and construction, and to select and engage the consultants and have them directly responsible to the Principal;

- (iii) where the Principal requires the consultants to provide advice and monitoring of the project through the design, documentation and construction phases;
- (iv) where the time available for the project is such that the detailed design of the project is complete or may be substantially completed before construction commences; and
- (v) few variations to the project design are anticipated to be required during construction.

2.3 For example, the traditional contract strategy may be the optimum strategy:

- where the design is determined by factors such as environmental considerations, ground conditions and available natural resources, e.g. certain civil engineering projects such as earthworks and roadworks;
- where the detailed design is completed in advance of tendering and the allocation of construction funding.

2.4 It is recognised that certain Principals use traditional contract strategy for projects that do not satisfy or substantially satisfy (i), (iv) and (v) described above. However, the greater the departure from these three requirements, the greater the likelihood of project cost and time increases, claims and disputes.

2.5 Traditional contract strategy may not be appropriate for some forms of “fast-track” projects because the traditional “arms length” relationship between the design team and the construction team is inappropriate when the design is carried out concurrently with the construction of the project.

2.6 It is essential that the design team has broad site experience covering buildability knowledge, material and manpower availability, industrial relations and safety aspects. If this is not available it can be achieved by:

- (i) appointing a Contractor as a consultant on a fee basis:
 - the Contractor as a construction consultant, in a similar relationship to the Principal as the design consultants and other specialist consultants;
 - the Contractor to assess and advise on matters such as buildability, reduction of problems in design and documentation, costs, program, contract package, selection of a Specialist Contractor etc.; or
- (ii) appointing a consultant from a major construction industry organisation:

- the organisation to act as a bureau of construction consultants;
- the bureau to advise on construction consultants not necessarily in business as a 'Contractor' but having the recognised expertise;
- such an arrangement may offset the disadvantages of engaging a 'Contractor' who may be a prospective tenderer.

3. Detail Design And Construction Contract Strategy

3.1 Under a detail design and construction strategy, the Principal engages design consultants to prepare a concept design and performance specifications. The Principal then enters into a contract with a Contractor to prepare the detail design and documentation in accordance with the concept design to satisfy the performance specification, and to carry out the construction and commissioning of the project. The contract is usually for a lump sum or guaranteed maximum price that may be subject to adjustment for various neutral risk factors.

3.2. Detail design and construction strategy may be the optimum strategy when the following requirements are satisfied:

- (i) the Principal wishes to develop the concept design as well as the performance specification for the project; and
- (ii) the Principal requires the Contractor to be responsible for the detail design and documentation of the Project and the construction and commissioning of the project.

3.3 In a detail design and construction contract, construction can start, at the Contractor's risk, prior to the finalisation of the detail design, thereby reducing the project time to a minimum. This concurrence of detail design, documentation and construction is possible because the design team and the construction team can work closely together and avoid the formality necessary between the design team and the construction team when design is carried out at "arms length" to construction.

3.4 In a detail design and construction contract the Contractor is not entitled to extension of time or increase in the contract sum for variations to the detail design caused by the progressive development of the design during the construction phase, or for late supply of design information, lack of coordination between documents and errors in the bills of quantities except where these are caused by the Principal directing variations to the Principal's specified quality and performance requirements. There is an incentive for the detail design and documentation to be fine-tuned by the use of buildability studies and value management to ensure that the adopted detail design and construction methodology minimises time and costs, whilst complying with the Principal's specified quality and performance requirements.

3.5 In a detail design and construction strategy, the control of the detail design passes from the Principal to the Contractor. Care should be taken to ensure that the concept

design and performance specifications prepared by the Principal's consultants are stated in clear, objective performance terms, because failure to do this may cause disputes as to whether the Contractor's detail design satisfies the requirements of the "concept design and performance specifications".

4. Design And Construction Contract Strategy

4.1 In this project delivery system the Principal contracts directly with an organisation which is responsible for providing the design, documentation, construction and commissioning of a project to satisfy the Principal's specified performance and quality requirements. The contract is usually for a lump sum or guaranteed maximum price which may be subject to adjustment for changes initiated by the Principal and may be subject to adjustment for various neutral risk factors.

4.2. Design and construction contract strategy may be the optimum strategy when the following requirements are satisfied:

- (i) the Principal's brief for the project can be properly identified and expressed in objective, performance terms; and
- (ii) the Principal requires tenderers or the Contractor to develop concept design(s) to satisfy the Principal performance brief for the Project.

4.3 For the reasons set out in section 2 above, construction can commence, at the Contractor's risk, prior to the finalisation of the detailed design, thereby reducing project time to a minimum.

4.4 Care should be taken to ensure that the Principal's brief is stated in clear, objective, performance terms, because failure to do this may cause disputes as to whether the Contractor's design satisfies the requirements of the concept design and performance specifications provided by the Principal.

5. Project Management Strategy

5.1 In this project delivery system the Principal engages an agent, (a Project Manager), to provide a management service for all phases of a project from inception to completion and who, in particular, undertakes for a fee the management of the consultants and trade contractors for the project within the parameters defined by the Principal.

5.2 There is no universally accepted understanding as to what is meant by the term "Project Management". This lack of an accepted definition is further confused by the fact that several of the organisations comprising the Project Team may each have a key member of their organisation with the position title of "Project Manager".

5.3 The following list of Project Manager's responsibilities and the following comments on the relationships between the Project Manager and the consultants may assist clarify the meaning of "Project Management Strategy" as used in this paper.

5.4 The Project Manager's responsibilities include:-

- (i) documenting, letting and administering consultancy agreements with design consultants and specialist consultants;
- (ii) developing a master design and specification for the project;
- (iii) preparing and controlling a master program for the project setting out the times within which the various parts of the project including all relevant on site and off site construction activities are to be executed. The master program should include the dates by which information and decisions are required from the Principal, design consultants, specialist consultants, authorities and others involved in the project;
- (iv) preparing and controlling a master cost plan setting out all relevant cost analyses, budgets, cost control systems and the like;
- (v) preparing and controlling a master rate of expenditure plan setting out rates of expenditure and the requirements of monetary funds for the project;
- (vi) developing and implementing an industrial relations and safety program dealing with matters such as the location and type of amenities for the project workforce, the communication framework with union and safety representatives, the basis for the prequalification of potential direct contractors, dispute resolution procedures and the like;
- (vii) developing and implementing a quality assurance program with respect to both the design and the construction of the project;
- (viii) preparing contract documentation for direct contracts with specialist contractors, incorporating the designs and specifications prepared by the design consultants;
- (ix) entering into direct contracts with specialist contractors, the Project Manager acting as disclosed agent of the Principal;
- (x) administering direct contracts with specialist contractors on behalf of the Principal;
- (xi) providing certain common user facilities such as craneage, scaffolding and the like;
- (xi) reporting regularly to the Principal on all aspects of the project relevant to the management agreement.

5.5 The Project Manager's relationships with the Principal and Consultants may be summarised as follows:

- (i) Under a project management contract strategy the Project Manager enters into a project management contract with the Principal and is responsible to the Principal for managing both the design and the construction of the project.
- (ii) However, unlike the Contractor under a design and construction strategy, the Project Manager is usually engaged on a fee-for-service basis and does not assume the

time and cost risks associated with a design and construction contract. The risk allocation depends upon the particular requirements of the Principal and the project.

- (iii) The Project Manager engages the design consultants and specialist consultants required for the project. Certain Project Managers may have in-house design and specialist resources and, with the Principal's approval, the Project Manager may elect to use its own resources rather than engage external consultants.

- (iv) The design consultants and specialist consultants are engaged by the Project Manager either acting as disclosed agent of the Principal or, alternatively, as sub-consultants to the Project Manager, as may be agreed between the Principal and the Project Manager. On building projects the architect is often engaged by the Project Manager to co-ordinate the design work carried out by the other design consultants as well as performing the architectural design.

- (v) If the design consultants and specialist consultants are engaged as sub-consultants to the Project Manager, the Principal has no contractual relationship with the consultants and the Project Manager is responsible to the Principal for the adequacy of the consultants' work. On the other hand, if the consultants are engaged by the Manager acting as disclosed agent of the Principal, the Principal has a contractual relationship with the consultants. In the latter case the Project Manager would normally be responsible to the Principal for the co-ordination and control of the consultants' work but would not normally be responsible for the adequacy of the consultants' work. However, the precise nature of the relationships between the Project Manager, the Principal and the consultants would depend upon the terms and conditions of the various consultancy agreements between the parties.

5.6 The project management strategy may be the optimum strategy:

- (i) when the project has a budget which may necessitate additions or deletions that would not be economic or efficient in a lump sum tendered situation;
- (ii) where the project warrants continuing review and/or refinement because of its magnitude, complexity or prestige;
- (iii) where the Principal's requirements are not adequately defined or may be redefined during the design/construction process;
- (iv) where the Principal requires a continuing involvement with the day to day running of the project;
- (v) where funding allocation for the Project

requires the Principal's detailed involvement in the cost management of the Project and/or the stage by stage approval of the Project.

- (vi) where unacceptable risk would be placed upon a single contractor;
- (vii) where there are complex staging requirements such as the maintenance of user processes during construction.

6. Construction Management Strategy

6.1 In this project delivery system the Principal engages an agent (a Construction Manager, usually a general contractor), to provide a service for the construction phase normally provided by a general contractor particularly related to the control, management and co-ordination of the construction of the project. The Principal engages the design consultants and specialist consultants for design and documentation.

6.2 With this project delivery system the Construction Manager is responsible to the Principal for the control, management and coordination of the construction of the project. This system is appropriate:

- (i) when the project has a budget which may necessitate additions or deletions that would not be economic or efficient in a lump sum tendered situation;
- (ii) where the project warrants continuing review and/or refinement because of its magnitude, complexity or prestige;
- (iii) where the Principal's requirements are not adequately defined or may be redefined during the design/construction process;
- (iv) where funding allocation for the project requires the Principal's detailed involvement in the management of the cash flows or the stage-by-stage approval of the project.
- (v) where unacceptable risk would be placed upon a single contractor;
- (vi) where there are complex staging requirements such as the maintenance of user operations during construction;
- (vii) where there is a possibility of disruption during construction which it would be unreasonable to expect the contractor to bear;
- (viii) on default of a contractor under a traditional contracting system;
- (ix) where control over expenditure is required;
- (x) where construction cost savings can be achieved in a falling market;
- (xi) where the Principal has the in-house skills and resources to manage the interface between the Design Manager and the Construction Manager.

7. Conclusion

7.1 The various specialist roles provided by design consultants, financiers, specialist consultants and specialist subcontractors are always required for any particular

project, regardless as to the contract strategy adopted for that project. The differences between the various contract strategies relate to the manner in which the various specialist roles are coordinated and the risks carried by those members of the Project Team responsible for the coordination and the integration of the various specialist activities.

7.2 The increasing sophistication and complexity of building and construction projects and the increasing need to complete projects in the minimum practical time demands ever-increasing professionalism from every member of the Project Team.

8. Summary Of Findings

8.1 There is no one strategy that suits all projects and all Principals.

8.2 Traditional contract strategy may be appropriate where the Principal wishes to manage the interface between detailed design/documentation and construction, to maintain a direct relationship with the design consultants and to exercise direct control over the cost, details of construction and overall quality of the project.

8.3 Traditional contract strategy should not be used on some forms of fast track project.

8.4 Detail design and construction may be appropriate where the Principal wishes to develop the concept design but wishes to contract out of the responsibility for the interface between detail design/documentation and construction.

8.5 Design and construction contract strategy may be appropriate where the Principal's brief can be properly identified and expressed in objective performance terms and the Principal wishes tenderers or the Contractor to develop a suitable concept design and detailed design for the project.

8.6 Project Management contract strategy may be appropriate for projects where it is not feasible to obtain viable lump sum prices for the whole of the works.

8.7 Construction Management contract strategy may be appropriate for projects where it is not feasible to obtain viable lump sum prices for the whole of the works, but where the Principal wishes to manage the interface between the design team and the construction team and to control cash flow.

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