

FIDIC PROCUREMENT PROCEDURES GUIDE

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Foreword

The International Federation of Consulting Engineers (FIDIC) published the First Edition of *Tendering Procedure* in 1982. This dealt primarily with procedures for awarding civil engineering contracts. The Second Edition, published in 1994, took account of the then current Fourth Edition of the *FIDIC Conditions of Contract for Works of Civil Engineering Construction* (the '1987 Red Book') and the Third Edition of the *FIDIC Conditions of Contract for Electrical and Mechanical Works* (the '1987 Yellow Book'). The opportunity was also taken to reflect the thinking of the International Financing Institutions (IFI's) and of the consulting engineering industry practice of the day.

This new guide is much more than a further edition of *Tendering Procedure*. First, it takes account not only of the publication of new FIDIC forms of contract since the late 1990's, particularly the new suite dated 1999, but also of the gradual introduction and widening acceptance of novel approaches to the procurement of engineering projects, including new methods of contract management and implementation.

Second, the early chapters give essential guidance on the underlying concepts and philosophy of projects in the broadest sense, to the point where a contract type is chosen. They stress that the tender process is preceded by important initial and feasibility studies and other vital professional activities. These activities must be carried out carefully as they provide the basis for the development of the all-important project strategy. Once the project strategy has been defined it must be followed throughout all the subsequent phases of the procurement. It is the project strategy that governs the tendering processes and, if correct, should ensure that a satisfactory project is achieved, that is to say, one in which there is clarity of objectives, ethical conduct, fair allocation of risks, and outcomes where the employer receives his project on time, within budget, and to the specified quality, and the contractors and advisers are paid a fair price for their services. In particular, a multi-discipline approach is adopted, making the guidance directly applicable to the increasingly common situation where civil, electrical, electronic, and mechanical works, information technology systems and other engineering services are provided within a single project.

Third, this guide provides up-to-date detailed guidance on each step in the tendering processes, complemented by

sample documents covering such matters as prequalification and instructions to tenderers. The intention is that users do not need to refer to all parts of this guide but will nevertheless easily find the practical advice for which they are looking to fulfil their specific duties successfully, and in accordance with best international practice. In addition, the established and well-known procedures of the IFI's are acknowledged, including their mandatory provisions.

Thus, this guide also promotes a freedom and flexibility which means that the procedures described can be adapted and used in conjunction with, for example, procedures normally adopted by some employers or which are required by the IFI's. Users are, however, reminded to be aware of the prevailing requirements and/or restrictions of certain employers and, particularly, of national and locally applicable laws and regulations, to ensure that all mandatory provisions are properly applied during tendering.

FIDIC believes that this new guide provides internationally acceptable, comprehensive, best-practice procedures, which will encourage and enhance the objective of receiving responsive, clear and competitive tenders, so that contracts can be awarded which will deliver satisfactory results. Users are also encouraged to refer to other relevant FIDIC publications, such as those on sustainable development, quality and integrity management, risk management and professional indemnity insurance, as well as the FIDIC standard forms of agreement and contracts.

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Disclaimer

The information contained in this guide is intended for use as a general statement only. Neither FIDIC nor any committee or individual connected with FIDIC can accept liability for any loss or damage which may be suffered by any person as a result of the use in any way of the information contained herein.

Any persons using such information or drafting tender dossiers, contracts, specifications or other

documents based thereon, or signing any contracts, should in all cases take appropriate professional advice on the matters referred to in this guide to ensure they are suitable for use in relation to any specific project. Users are themselves solely responsible for ensuring that any wording or information taken from this guide is consistent with and appropriate to the remainder of the material employed for their project.

Notes

In this guide, words and terms defined in the FIDIC forms of contract or other FIDIC publications are not distinguished in any special way, and users are referred to these sources for formal definitions, as required.

It is noted that a consulting engineer is a professionally qualified engineer in private practice, maintaining an engineering office, either alone or in association with other engineers, employing staff to provide consulting services. A consulting engineering

firm may be organised as a sole proprietorship, partnership or company, depending on the size and type of its operation and the conditions set by its national association.

Membership in a FIDIC national Member Association provides an assurance that the consulting engineer subscribes to a code of conduct on professional status, independence and competence, in accordance with FIDIC's Code of Ethics, see Appendix A.

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1 Introduction

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- 1.2 Organisation of the guide

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Fig. 1.1 Project development

1.1 Procurement

This guide presents a systematic approach to the procurement of engineering and building works for projects of all sizes and complexity. For the purposes of the guide, 'procurement' means the processes from identification of a project up to receipt of tenders and award of contracts for its implementation, i.e., up to the point of commitment to start the design and/or manufacture and/or construction, as the case may be.

This guide does not cover the subsequent phases for the construction and/or installation of the works or facility nor its operation thereafter.

The body who promotes the development and implementation of a project is often called the 'promoter'. However, he may also be called the 'owner', if that is applicable.

The owner is usually called:

- the 'client' when he employs a 'consultant', and
- the 'employer' when he employs a 'contractor'.

For consistency with FIDIC's standard contract forms, the promoter is throughout this guide called the 'employer' (even though, strictly speaking, he does not become an employer until he has entered into a construction contract with a contractor). Similarly, the term 'tender' is used for the offer to perform work submitted by a contractor, and this term is identical with the alternative term 'bid'.

This guide is primarily intended to assist employers interested in developing and implementing a project as well as their consultants. It will also be of interest to all other parties involved in engineering and the construction industry.

Generally, procurement activities up to the start of construction/installation are to:

- establish what is to be procured;
- decide on procurement strategy;
- solicit tender offers;
- evaluate tender offers; and
- award contracts.

Therefore, not covered by this guide are procedures to administer contracts and confirm compliance with requirements.

The path from identification of the need for a project until a reliable contractor is appointed is often a long and arduous journey with many pitfalls. The end purpose of the procurement journey is to obtain for the employer sound competitive tenders for his project from capable, experienced contractors. The tenders should be in accordance with the requirements of the 'tender dossier' – the set of documents prepared by the employer and issued to contractors to enable them to submit tenders – so that these tenders can be quickly and efficiently assessed and evaluated prior to contract award.

If the tender dossier and all its component documents have been properly and fully prepared by experienced staff, and the correct standard form of FIDIC's conditions of contract has been included, and the contract has been awarded in compliance with best accepted practice to a competent contractor, then the basis will have been provided for the satisfactory design, construction and/or installation and completion of the project within the allotted time, to the required quality and within budget.

1.2 Organisation of the guide

This guide begins by setting out basic matters that must be considered and studies that must be undertaken by an employer during the initial stages of a project. The text

continues by describing how typical projects develop from inception, through stages of initial and feasibility studies, through choice of a management structure and the selection

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of a contract type, to the establishment of a project strategy for consulting services as well as the tendering processes for works and the subsequent award of contracts for implementation.

The text is supported by flow charts and accompanying notes to illustrate the logical developments.

Chapters 2 - 6 are general sections applicable to the establishment of a project strategy for the various types of projects.

Chapters 7 and 8 follow, dealing with the prequalification of consultants and of contractors for construction works, respectively.

Experience has shown that for most projects, and especially those of significant cost and complexity, the prequalification of tenderers for works contracts is most desirable, since it enables the employer or his consultant to establish in advance the competence of contracting companies subsequently to be invited to tender. It is also in the interest of contractors since, if prequalified, they will know that they are competing against other firms, all of whom possess the required competence and capability. At the same time, contractors are provided with the opportunity and incentive to respond to invitations to tender for projects which they are qualified to undertake. The adoption of a prequalification procedure minimises tendering costs and ensures that all tenderers receive a fair and equal opportunity to submit their offers on a reasonable and comparable basis.

Chapter 9 provides FIDIC's recommendations for obtaining proposals for consulting appointments.

Chapters 10 - 14 contain, in separate chapters, a detailed description of the tendering requirements for each of the main types of works contract in common use, from invitation to tender to submission of tenders. They include descriptions of the documentation to be prepared and included in the tender dossiers.

The main types are also illustrated by flow charts. The aim has been to be brief, but to present the logic and factors that need to be considered by the presumptive employer. The reader should choose only the chapter applicable to his chosen project strategy. (It is not intended – and may even be confusing – for an

employer to read the other chapters dealing with contract types which do not apply to his chosen strategy. Where factors or processes are applicable to more than one contract type they are repeated in the respective chapters for the convenience of readers).

Chapter 15 is general and deals with the formal receipt and opening of all proposals and tenders.

Chapter 16 covers the evaluation of proposals for the award of consultancy appointments and the formation of consultancy services agreements.

Chapter 17 deals with the stage of procurement covering receipt and evaluation of tenders for works up to award of the contracts.

Chapter 18 describes the processes and documentation necessary for the award of consultancy appointments, and Chapter 19 for the award of works contracts.

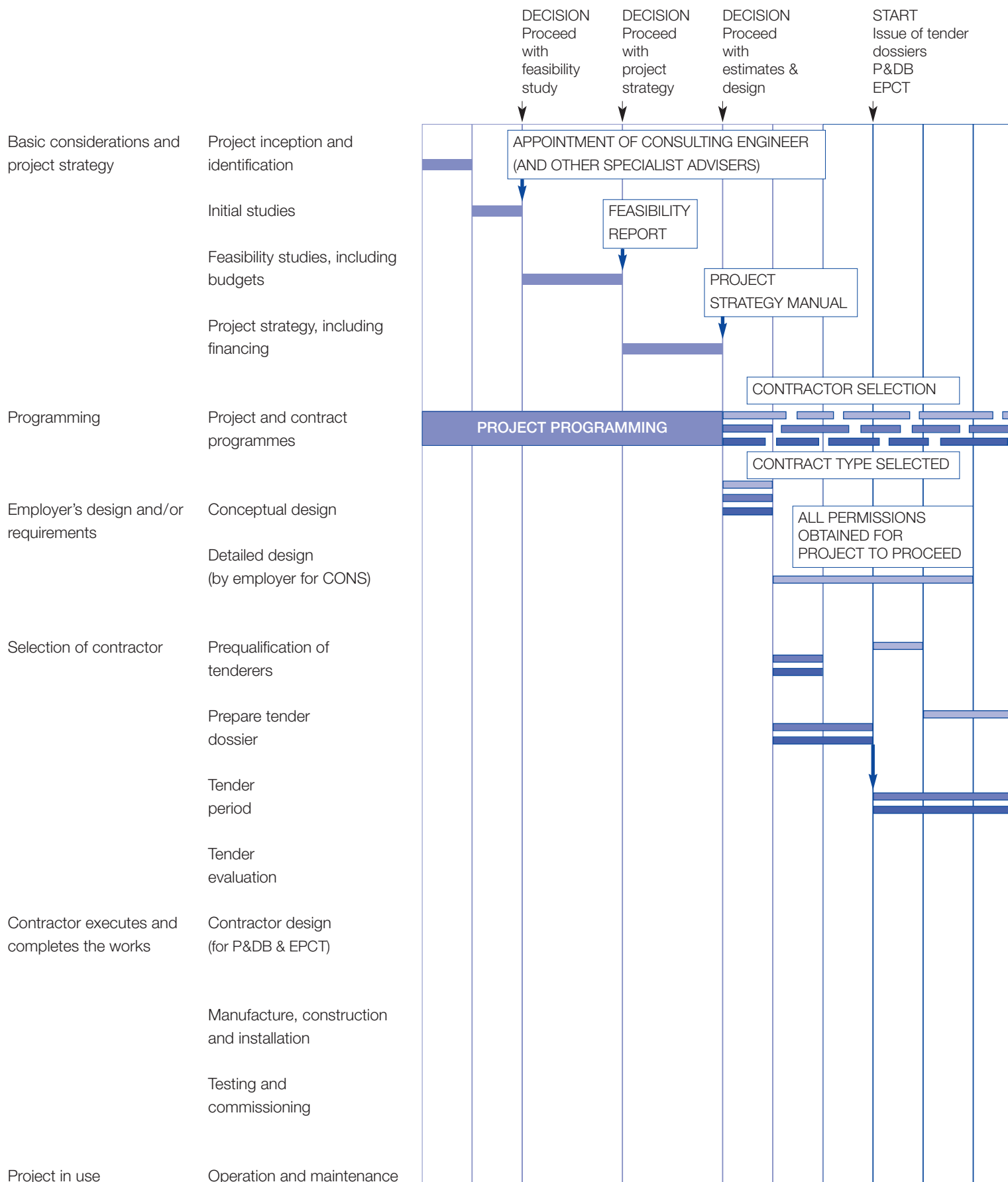
Appendices follow Chapter 19. For the purpose of making this guide as user-friendly as possible by reducing the general text, discussions and commentary on aspects of the procurement process which may be important for individual projects have been placed in the appendices. The appendices are noted in the applicable sections of the main text. It is hoped that readers will refer to the appendices that have relevance to their projects.

These recommended procedures are suitable for procurement of contractors for most engineering and construction works, but may need to be adapted to suit the particular requirements of an unusually large or complex project, and/or any special conditions imposed by the established procedures of a specific employer or financing institution. The recommended procedures reflect best current practice worldwide. FIDIC recommends their use by employers, consulting engineers, contractors, financiers, development agencies, and others involved throughout the global engineering industry.

The flow chart of Fig. 1.1 on the opposite page indicates the typical phases of development of a project from inception until completion and operation.

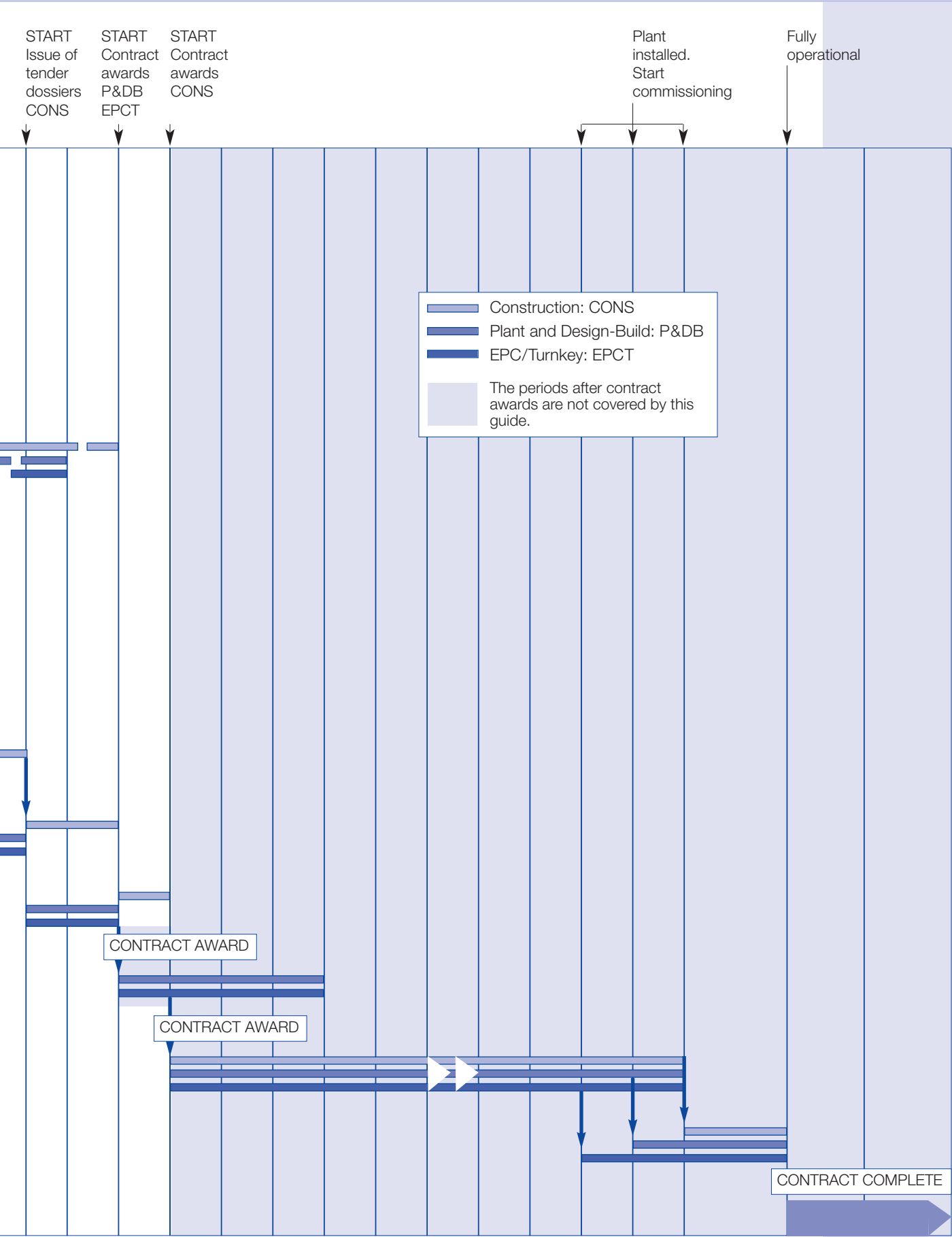
Fig. 1.1 – Project development

A conceptual illustration of the sequence of activities associated with project procurement.



Notes

- 1 Activities shown are sequentially indicative only and are not shown to any timescale.
- 2 Some activities may start before approval/authorisation/permission has been obtained. Under certain administrations this may not be possible, and the overall programme would be correspondingly lengthened.
- 3 In addition to the three major contract types of CONS, P&DB and EPCT shown on the chart, the other contract forms for Minor Works, Dredging and Reclamation Works, and Design, Build and Operate Projects may be used, as appropriate to the circumstances.
- 4 The design for the works may be carried out 'in-house' by the employer, or undertaken by a consulting engineer retained under an agreement with the employer or the contractor, as appropriate to the form of contract.



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2.1 Development of a project

When a need arises in a community, for example for the supply of electricity or water, the authorities responsible will have to take steps to satisfy that need, usually by the provision of a facility of some kind, such as an electricity generating station or a water treatment plant.

Unless the authorities have sufficient resources of their own to design and construct the required works, they will have to engage help from outside their organisation for this task. The same applies to a private individual wishing to construct a house, or to a private company wishing to obtain a facility, for example, a hotel building or a factory. The authority or private individual or company then takes on the role of 'employer' and his project is to procure or implement the required works or facility.

Procurement is the act of obtaining something, especially by care or effort, so the employer wishes to procure his project, or, in other words, to have his facility constructed or otherwise put into effect.

In this guide, the word 'project' covers all the stages from the initial idea to solve a need (or part of a need) by constructing a given physical asset or facility to the final taking over by the employer of the completed facility, and also, where prescribed, the operation thereafter of the facility to provide a service to the users. This guide, however, only deals with the 'procurement' stages of the project, i.e., up to the award of the contract or contracts for the construction or

implementation. Nevertheless, for an appropriate project strategy to be determined, it is necessary to take into consideration how the works stage shall be dealt with and who will operate the facility when construction is complete.

The employer may be a government, a government agency, a public company, a corporation or a private body, or an individual developer. The project can normally be expected to involve financing, design, manufacture, construction, installation of plant and equipment and, if necessary, operation and maintenance of the completed facility. Some projects may instead involve the decommissioning and demolition of a facility, or perhaps the clean-up of a polluted site, or some other undertaking. The actual physical work will be carried out by the contractor, who may be a single contracting company, or a joint venture or a consortium of contracting companies.

The works required to carry out a project, however small or large, will first need to be defined in outline by the one promoting the project, that is, the employer. Thereafter, the development of a physical project will entail several stages from initial and feasibility studies, through preliminary design to final engineering, before manufacture, construction and installation can be commenced. The extent of the design and level of detail to be specified by the employer will depend on the project strategy that is chosen, but they must anyway be sufficient to enable contractors to give responsive offers to carry out the required works.

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A project therefore goes through a number of identifiable stages before construction or implementation can commence (see Fig. 2.1):

- **Inception** Identification of a project based on need and defined purpose.
- **Initial studies** Preliminary consideration of possible solutions, alternatives and conceptual designs.
- **Feasibility** Studies to establish whether the proposed solution is viable.
- **Project strategy** Choice of implementation strategy and contract type.
- **Specification** Design criteria, technical requirements and performance targets to be established.
- **Design** Detailed design drawings and specifications or, alternatively, performance specifications to be prepared/developed.
- **Documentation** Preparation of tender dossier, including instructions to tenderers, conditions of contract and pricing document.
- **Prequalification** Selection of suitable contractors, often by prequalification.
- **Tendering** Invitation and receipt of tenders from contractors.
- **Evaluation** Checking and evaluation of tenders, selection of the contractor(s).
- **Contract(s)** Award of construction/implementation contract(s).

Thus the accepted tenders become the subject of contracts between the employer and the successful

tenderers, who then become the contractors for the execution of the various works.

After the procurement of the contractor (or contractors) for the physical works, there are further stages in the project cycle (which are not covered by this guide):

- **Final design** Contractor or employer may have continuing design obligations.
- **Manufacture** May be necessary on plant, process and other contracts.
- **Implementation** Construction and/or installation of the works.
- **Commissioning** Test running and 'taking-over' by the employer.
- **Operation** Operation, maintenance and training (OMT) may also be included in the contractor's work, or else by the employer.
- **Guarantee** Defects notification period during which the contractor is responsible for defects.

2.2 Parties involved

A number of parties will become involved during the various stages of an engineering project. These parties will provide the many specialists needed to carry out the large number of diverse tasks necessary to implement the project.

The party which will be involved in the project through all its stages from inception to completion and operation will be the employer, who will normally be the promoter or owner of the project, sometimes even called the client. It is for the employer's benefit, or at the employer's order, that the project is being procured and

implemented, and the employer will be paying for the project.

During the development stages of the project, from initial and feasibility studies, through conceptual and preliminary design up to final design, the employer will normally employ a consulting engineering firm to carry out the studies and design work. Large employers may have engineering staff of their own that can carry out some or all of this work in-house, but normally an employer will engage a consultant specialised in the actual type of project.

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The processes recommended for retaining the services of a single consultant or a firm of consulting engineers by an employer are described in Chapters 7, 9, 15, 16, and 18.

The consultant usually will continue to assist the employer throughout the procurement stage until the implementation contracts are signed. Thereafter, the consultant may be employed during the construction or installation stages to check that the work of the contractors is carried out in accordance with their respective contracts. For these duties the consultant would normally take on the role of engineer under the implementation contracts.

The contractors, who will carry out the physical execution of the required works, have in past decades only become involved in the project when it is time to award the construction or installation contracts. In recent years, for certain types of project, it has become more common for contractors to become involved earlier, and to carry out much of the detailed design work.

Thus, as far as the principal parties are concerned, their involvement will depend on the stage reached in the realisation of the project:

- Inception	EMPLOYER
- Development	EMPLOYER CONSULTANT (consulting engineer)
- Implementation	EMPLOYER ENGINEER CONTRACTOR

In certain types of two-party implementation contracts the duties of the engineer may be performed by the employer.

As far as other parties are concerned, they may or may not become involved as the project proceeds:

- Financing institutions	to provide loans and grants to the employer
- Banks	to provide working funds for the contractors
- Insurance companies	for insurance of the works
- Subcontractors	for specialist parts of the works
- Suppliers	for materials and equipment
- Specialists	of many disciplines
- Lawyers	to check documents for legal compliance

and never to be forgotten:

- The public	has the power to 'make or break' any project.
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2.3 Advisers: consulting engineers and other specialists

At the outset of most projects it is often difficult for an employer to fully grasp the complexities involved in the variety of professional services required to develop a solution. It may be necessary to appoint professional advisers, including consulting engineers, to provide the necessary expertise at the crucial early stages of the project. Working together, the employer and the consulting engineer can define the project objectives in detail and agree upon the services required to make the project a reality.

Other specialist advisers may include economists and

environmentalists to advise on the short and the long-term commercial viability of the project, bankers on funding methods and sources, insurers on risk aspects, and others, such as lawyers, on land and legal issues.

Whether professional advisers or the employer's own staff or a mix of both are employed, it is vitally important that the employer ensures that one senior manager is responsible for defining the tasks, priorities and programmes for carrying out the initial and subsequent feasibility studies, as well as for monitoring the progress of the studies to completion.

2.4 Initial studies

The object of the initial studies is to enable the employer to decide whether or not to proceed to the stage of

preparation of detailed feasibility studies of the proposed project. It will be necessary to set realistic parameters in terms

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of scope, location, time and cost. Early tasks will include identification of options, the preparation of conceptual designs and the consideration of suitable sites for the project together with estimates of the time and cost constraints. An initial appreciation of the potential size and complexity of the project usually assists in the examination of other subjects within the studies.

Larger and more costly projects will generally require more thorough and detailed consideration than smaller projects but, whatever the size, assessments are to be made of the overall time scale of implementation, the approximate capital and life-cycle costs and potential sources of finance for the project.

Other matters may include the need for initial reviews of the economic and social viability, future

sustainability and the impact on the environment of the project in the context of current and foreseeable future economic and commercial conditions. The responsibility for financing and managing future operation and maintenance of the project will also need foresight.

Consideration may also be given at this early stage, depending upon the size and scope of the project, for the need to divide the project into separate contracts for ease of management and administration during the implementation phases. In addition, preliminary assessments of major risks and the capability and strength of the employer's resources for managing all aspects of the implementation of the project will need to be examined.

2.5 Decision to proceed with feasibility studies

The results of the initial studies will influence the decision on whether or not to proceed to the stage of undertaking full-scale feasibility studies to verify the overall economic and social viability of the project.

Following a decision to proceed, it will normally

be necessary for the employer to arrange for the preparation of suitable feasibility studies with the aim of reaching a recommendation, in the form of a report, on whether or not to continue with the implementation of the project.

2.6 Feasibility studies

The aim of feasibility studies is to confirm the investment justification of the project and to determine the most advantageous method for its implementation. The scope of the feasibility studies will generally vary according to the nature, size, importance, complexity, and urgency of the project.

Feasibility studies preclude progressing directly from initial studies to detailed project designs by providing the opportunity for consideration of alternative methods and options for project delivery.

It is also to be noted that, if particular alternative methods and options for project delivery have been shown to be unsatisfactory at the feasibility studies stage, the need to undertake detailed studies at a later stage of such methods and options can be avoided, with a likely saving in both cost and time.

The feasibility studies are to:

- provide a preliminary identification of the scope and cost of the project and its principal technical parameters;
- evaluate financing, operation and maintenance and to specify their required time schedules;
- identify financing sources;
- assess whether the project is justified from both an economic and a social viewpoint;
- select the optimum project option;
- identify potential problems related to the delivery and running of the proposed project.

At the feasibility studies stage neither all details of the technical solutions nor conditions related to delivery and implementation of the project are likely to be known. In this preparatory phase of the project the

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estimates made of the total time and costs required to execute the project will be preliminary. The fundamental aim of the feasibility studies is to provide confirmation or rejection of the justification to proceed with implementation of the project.

The matters listed below, therefore, although not necessarily comprehensive, are to be considered and studied. They will form the basis, as applicable, of the Feasibility Studies Report:

- Location: planning
geophysical studies
- Legal: laws and regulations
- Financing: project viability
- Programmes and time constraints
- Scope and design
- Operation and maintenance

- Preliminary cost estimates
- Employer involvement during implementation
- Project risk
- Environmental impacts and sustainability

These matters, and the Feasibility Studies Report itself, are described in further detail in Sections 2.6.1 to 2.6.10 below and 2.7, which indicates the format and content of a typical Feasibility Studies Report.

In subsequent stages of preparation of the project, data and estimations are developed in greater detail to provide increasing accuracy. Depending on the character of the project, the approximate accuracy of assessments at the feasibility study stage should normally aim to be in the range of $\pm 20\text{-}30\%$.

2.6.1 Location: planning; geophysical studies

It may be necessary to consider alternative sites with regard to land purchase price, ease of access, environmental considerations, construction costs, life-cycle costs, and installation, operation and maintenance factors, in order to assess the most advantageous location for the project.

Of particular importance is the need to undertake thorough land use, aerial, photographic and, where appropriate, hydrographic surveys together with geological and geotechnical sub-surface investigations of the potential locations for the facilities. This will be essential for the development of suitable designs. It also will reduce the likelihood of unforeseen conditions being encountered during implementation, which could have an adverse effect on the final cost of the project.

Such preparatory surveys and investigations normally require the placing of contracts with specialist site investigation firms.

It is most important to carry out comprehensive site investigations over the chosen locations for the project. Failure to carry out thorough and comprehensive site investigations prior to design and construction work may well result in unavoidable changes to the required works during implementation, with consequent delays in completion and unexpected additional costs. The cost of the site investigations will be a small percentage of the total project cost. The potential savings by avoiding such additional costs, which would almost inevitably arise from delay owing to late re-design following the discovery of unforeseen ground conditions during construction, are likely to far outweigh the initial cost of proper site investigations.

2.6.2 Legal: laws and regulations

The employer will have to consider what effect applicable laws may have upon his proposed project. Major works may require government legislation or a government licence before construction can begin. Normally requisite steps for such would have to be initiated by the employer, and the time required to formulate and pass the legislation or obtain the licence would have to be allowed for in the overall project programme. In any case, irrespective of the size or

importance of the project, the works may require agreements to be made and ratified between affected countries and/or parties, or consents to be obtained.

The employer may also have to investigate any laws and regulations that relate specifically to the project, particularly those concerning land use, ownership, mineral rights, and environmental aspects.

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Designers will have to adhere to local building, environmental and other regulations and controls over industrial and infrastructure development.

Even at this early stage, the employer should be aware that, assuming the project advances to the implementation stage, permits, licenses and authority approvals of various types may be required under the applicable laws before construction can commence. A wide variety of laws and regulations (including case law) of the country where a project is to be carried out may apply to procurement procedures including any resulting works contract. These may differ according to whether the project is a public one, that is, one being carried out for a sovereign state or one of its agencies, or a private one, that is, one carried out for a private developer or investor. The laws and/or regulations may be mandatory in nature (e.g., because they are matters of public policy in the state concerned) and, therefore, must be complied with whereas some regulations may be optional, or may be subject to exemptions, and consequently, may be departed from in an individual contract. This is a matter which needs to be determined in each case.

While local legal advice will be necessary when preparing documentation for a project, the laws and regulations may include, by way of example, those dealing with:

- the procurement and tendering for projects, public and private;
- a specific industry or business;
- zoning;
- building permits, licences or approvals;
- operating licences or permits;
- environmental matters;
- local and foreign labour, including laws and regulations governing wages, conditions of employment, health,

- safety, and welfare;
- subcontracting, including nominated subcontractors, liens on plant and equipment, legislation, and the protection of subcontractors' rights;
- protection of antiquities, fossils and articles of value found on the site;
- liquidated damages, whether payable for delay or non-performance;
- the taking over or acceptance of the works;
- liability for defects after completion or take over, e.g., decennial liability;
- variations of the works, including whether prior agreement is necessary;
- foreign currency;
- taxation, customs duties and other governmental impositions;
- the right of the contractor to suspend work for non-payment or some other reason;
- the right of the employer to terminate;
- intellectual and industrial property rights;
- insurance, including any mandatory obligation to insure;
- performance security and retention money;
- advance payments and security therefor;
- forms of demand guarantees and surety bonds;
- value engineering;
- limitations on rates of interest, such as usury;
- limitations of liability and limitations on forfeiture;
- bribery and corrupt practices; and
- dispute resolution procedures and arbitration.

It may need to be ascertained and, in some cases, confirmed in the works contracts or in a consultancy agreement for a given project which party (the employer, the contractor or the engineer) is expected to be responsible for complying, or ensuring compliance, with laws and regulations dealing with these and other matters.

2.6.3 Financing: project viability

During the initial studies a preliminary assessment of the approximate capital cost of the project and, where appropriate, the life-cycle cost of the completed facility including operation and maintenance will have been made.

How and where the finance is to be obtained is a fundamental consideration, and will have an important bearing on the manner in which the project is

implemented and budgets established. Whether the finance will be provided by the employer or whether it will come from outside his organisation, reliable cost estimates will certainly be required.

Funding providers will normally require comprehensive economic studies to be carried out to confirm the commercial viability over the whole life of the proposed facility in terms of projected revenue flow or

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cost-benefit. For some projects they may require detailed and careful analyses to demonstrate the social as well as the economic benefits. In such cases, and particularly for all large and complex projects, employers are advised to appoint economists, specialist consultants and financiers to carry out these studies.

Financing of the project by some funding providers may be conditional on analyses that demonstrate the

beneficial life-cycle economic results and social viability of the project. They may also stipulate terms which affect the work scope, location, time and cost of the project. Such financing may dictate the form or forms of contract and how project risks are to be allocated.

2.6.4 Programmes and time constraints

The initial studies will normally contain an approximate estimate of the expected time programme for development of the project. During the feasibility studies this estimate should be examined and elaborated into a reasonably detailed overall time programme. An indication of the main phases which should be included in the programme is given below in Section 4.1.

The overall time programme is of great importance because it indicates the times when significant milestones are planned to be achieved. For example, the date when commercial production of the facility is planned to commence forms an integral part of the financial calculations. The project cash-flow is dependent on the time schedule. So are many other essential project matters, such as the times to be allowed for studies, design, tendering, construction, completion, and so on. Many of the cost estimates are also reliant on the time programme, as costs are normally time-related. Resources will have to be planned and provided and it will have to be ensured that they are sufficient to enable milestones to be met.

If the date for completion of the project is fixed in advance, e.g., facilities to be completed in time for an Olympic Games, it is absolutely necessary to have a reliable time programme, essentially worked out backwards from the fixed completion date, and containing throughout ample reserve time in case of unexpected difficulties.

A major failing of many employers is to underestimate the time required for administrative activities, e.g., purchase of land for the project, and obtaining permissions from authorities. Sufficient time must be allowed for all activities throughout the development of the project. Particularly in the early stages it is necessary to allow sufficient time for the vital initial and feasibility studies to be performed properly.

Certainly time programmes may have to be adjusted at later stages, but the time programme prepared during the feasibility studies is of major importance for all subsequent planning and actions.

2.6.5 Scope and design

The employer will need to decide whether he wishes to have control himself over the detailed design development of the project or whether he wishes the selected contractor or contractors to be responsible for this aspect of the work.

In any event, development by the employer of an initial conceptual design is required as the basis for estimating the cost of the project, the time it will take, and other relevant matters. It is usual for the employer to appoint a consulting engineer or specialist designer for this task.

Alternative design solutions should be considered during the feasibility stage. Those that meet the employer's objectives should be cost estimated, and a comparison made to determine the best solution from the financial aspect. The

employer may also wish other aspects, apart from lowest cost, to be taken into consideration, such as environmental, aesthetic and social aspects and the time for implementation. Designers should consider the possible future need to add to, alter or modify the project. They should also consider decommissioning and/or demolition at the end of the useful working or operational life of the facility, including the possibility of recycling materials.

The designs must comply with all planning, zoning and construction or building laws and regulations applicable in the region of the project. The designers should establish suitable specifications for the materials, plant and equipment, workmanship, quality, and health and safety standards for the construction and installation work.

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2.6.6 Operation and maintenance

The employer will have to consider whether a facility, when completed, is to be handed over to him for operation and maintenance or whether he will require a contractor to undertake this work. If a contractor is to operate and maintain the facility, will it be on a permanent basis, or only for a transition period?

If only a transition period is required, then the arrangement might usefully include training of the

employer's own personnel to be ready to take over the operation progressively or at the end of a fixed period.

Aspects determining whether the employer should operate and maintain his facility himself, or whether he should employ a contractor for this work are discussed in Appendix 2.6.6.

2.6.7 Preliminary cost estimates

Preliminary cost estimates are an essential part of any feasibility study. If there is more than one acceptable solution, then a cost estimate should be made for each solution.

What is to be included in the cost estimate will depend upon the nature of the project and on the circumstances of the employer, for example, his funding arrangements or his engagement after hand-over of the facility. If the project is to construct a road or water pipeline it may suffice for the cost estimate to cover the costs up to completion of construction.

If, however, the project is for the provision of an industrial plant, it can be expected that it is the total cost of the project over the lifetime of the plant which is of most interest to the employer, rather than just the cost of constructing the facility. The total cost of the project would then be the sum of all initial costs, the cost of construction or implementation of the facilities, plus the cost of operation and maintenance over the project's life cycle.

Items that should normally be included in a preliminary estimate of the capital cost of a project cover the costs of studies, design, construction, plant and equipment, and – if applicable – operation and maintenance for a specified period. These might be:

- Studies

- Geological and land surveys
- Site and soil investigations
- Access and transportation studies
- Natural and manufactured materials
- Identification of suitable sources of finance
- Conceptual design
- Environmental studies

- Design and specification

- Preliminary design
- Specification of materials and plant
- Final design and construction drawings
- Preparation of tender dossier

- Selection of contractors

- Tenderer prequalification
- Tendering procedure
- Tender analyses
- Contract award procedure

- Implementation

- Design and manufacture of plant and equipment
- Construction of civil works
- Installation, testing and commissioning
- Supervision and control of construction
- Handing over procedures
- Guarantee period

- Operation and maintenance

- Training of operatives and labour
- Supervision and control of maintenance
- Raw material for operation
- Spares and maintenance materials
- Periodic overhaul and maintenance.

All these assessments and estimates, representing anticipated future expenditure, should be time-related against the overall project programme to give an indication of the financing requirements over time.

If the project is for a commercial operation that is expected to provide an income after completion of construction/installation, then an estimate of income over time should be prepared. This can be compared with the costs of the project to judge its economic viability.

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2.6.8 Employer involvement during implementation

The degree to which the employer has the knowledge, resources, experience, and desire to be involved in the development of the design, the supervision of the construction or installation works, the subsequent operation and maintenance of the facilities, and in the overall administration of the project must be considered and clarified by the employer at an early stage. His wishes in this regard will have an important effect on the project strategy and on the choice of forms of construction and other contracts to be adopted in implementing the project.

Employer involvement during implementation is discussed further in Section 3.9.

2.6.9 Project risk

Project risks can be considered under two categories: risks which are unavoidable and risks which could be avoided or 'controlled' by the parties to the project. The feasibility studies should include identification and consideration of the significant risks associated with the project, and the optimum way to manage and control these risks should be indicated.

As a general rule responsibility for risk should be allocated to the party best able to manage and control the risk. An equitable sharing of risk will promote efficient management of the risk and will reduce potential for adverse impacts on the project. Contracts which have a reasonably balanced sharing of risks, as defined in their terms and conditions, are considered to provide the lowest outturn cost for the project in comparison with other forms of contract. Contracts where the contractor is required to carry the majority of risks are generally expensive.

account of the impact of all types of project risk. If the employer bears certain of the risks, he will have to pay the financial effect only if any of those risks eventuate. If the contractor is asked to bear risks, he will anyway have to make allowance for them in his contract price, whether they eventuate or not, and the employer will pay for that allowance.

Many risks can be set off by the purchase of insurance cover. As this is a specialist subject it is advisable to refer such matters to insurance specialists so that estimated costs can be determined.

Cost and time estimates will need to take some

Project risk is discussed further in Section 3.12.

2.6.10 Environmental impacts and sustainability

Almost all projects have some impact on the environment, at least in the immediate locality. This may be an inevitable consequence of the construction or installation work, or due to the subsequent operation of the facility. The impact may be of short or of long duration, and the impact may be of minor consequence or it may be severe.

An environmental impact assessment report is required for virtually all projects of a significant size, and most funding institutions make such a report compulsory. This report will catalogue the expected effects of the project on the environment, including the sociological effects on the local population and the anticipated effects on flora and fauna as well as on the surrounding countryside, rivers and so on. The

report should identify all effects, whether positive or negative. The feasibility studies should address how any adverse effects of the impacts can be managed and contained within acceptable limits.

The need to make development sustainable is based on sound evidence showing that man is using up critical resources and ecological carrying capacity faster than they can be renewed, replaced or replenished. This is happening at all levels, from local pollution of streams and lakes, to the loss of biodiversity and a warming of the Earth probably caused by human activities. At the same time, competition for scarce resources involving, for example, water removal from major rivers and aquifers, deforestation and depletion of fish stocks,

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causes socio-political conflicts within and between countries. The evidence is viewed by many as sufficient to change our approach to economic growth.

For these reasons, many employers aim to commit to the principles of sustainable development in their projects by building or refurbishing facilities and infrastructure using designs and methodologies that make more efficient use of resources and energy, protect ecological systems and benefit community needs. Consulting engineers and others concerned should foster the aims of sustainable development in their work and encourage their clients and others to adopt designs and methods that will maintain and improve the quality of life without jeopardising the ability of future generations to do the same.

Designers, therefore, taking regard to the working life of the project, should prepare sustainable schemes and specifications for the project including

managed maintenance programmes and planned decommissioning at the end of the project's working life.

A document published by FIDIC entitled *Project Sustainability Management Guidelines* provides guidance to assist consulting engineers and their clients in setting meaningful sustainability goals and objectives for their projects.

Sustainable design and development is discussed further in Appendix 2.6.10.

2.7 Feasibility Studies Report

At the end of the feasibility studies a comprehensive report should be prepared. Most financing agencies make mandatory the submission of a Feasibility Studies Report with clear recommendations, and often they will specify the format and contents of the report. In any case, a clear and well set out report will greatly assist the understanding, recommendations and conclusions of the feasibility studies.

The report should begin with a brief description of the employer's proposals together with a summary of the recommendations for methods of implementation. This part of the report should be written in non-technical language so that it can be rapidly understood by those who do not wish to spend time reading details. The report could then describe the background and history behind the need for the project and, if appropriate, will state any special requirements or limitations imposed by the employer on the scope of the studies.

The report should continue by recording the facts and data from the examination of each of the subjects studied, and include explanations of the technical analysis, interpretation and conclusions regarding each subject. At least the following should be covered:

- Location: planning; geophysical studies
- Legal: laws and regulations
- Financing: project viability
- Programmes and time constraints
- Scope and design
- Operation and maintenance
- Preliminary cost estimates
- Employer involvement during implementation
- Project risk
- Environmental impacts and sustainability.

The report should then provide the general conclusions to be drawn from the analyses of the recorded facts and data. These may include:

- Assessing whether the project is economically viable, based on realistic cost estimates, and, if so, proposed sources of finance together with an evaluation of the financing alternatives.
- The advantages and disadvantages of the employer being directly responsible for operating and maintaining the completed facility, and any alternative arrangements which could be made.
- The overall time programmes for land purchase,

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completing negotiations for finance, obtaining approvals and licences, and other preliminary arrangements as may be necessary, for preparing the designs and the tender dossier, for the tendering and tender evaluation periods as well as for the construction and installation periods, and, if required, the period for the operation and maintenance to be carried out by a contractor.

- Assessing whether the proposed project is justified from the social and/or sustainability viewpoints.
- Identification of potential problems related to the delivery and operation of the project.

Recommendations for implementation, or otherwise, of the proposed project will be drawn up based on the conclusions of the studies. If it is considered viable, the report

should indicate the most advantageous project option. The conclusions will also provide information of use in the development of the project strategy and the form or forms of contract to be adopted.

The quality and usefulness of the feasibility studies will depend upon the time available to complete them, the validity and sufficiency of the information used, and, in particular, the soundness of the experience and expertise of those carrying out the work.

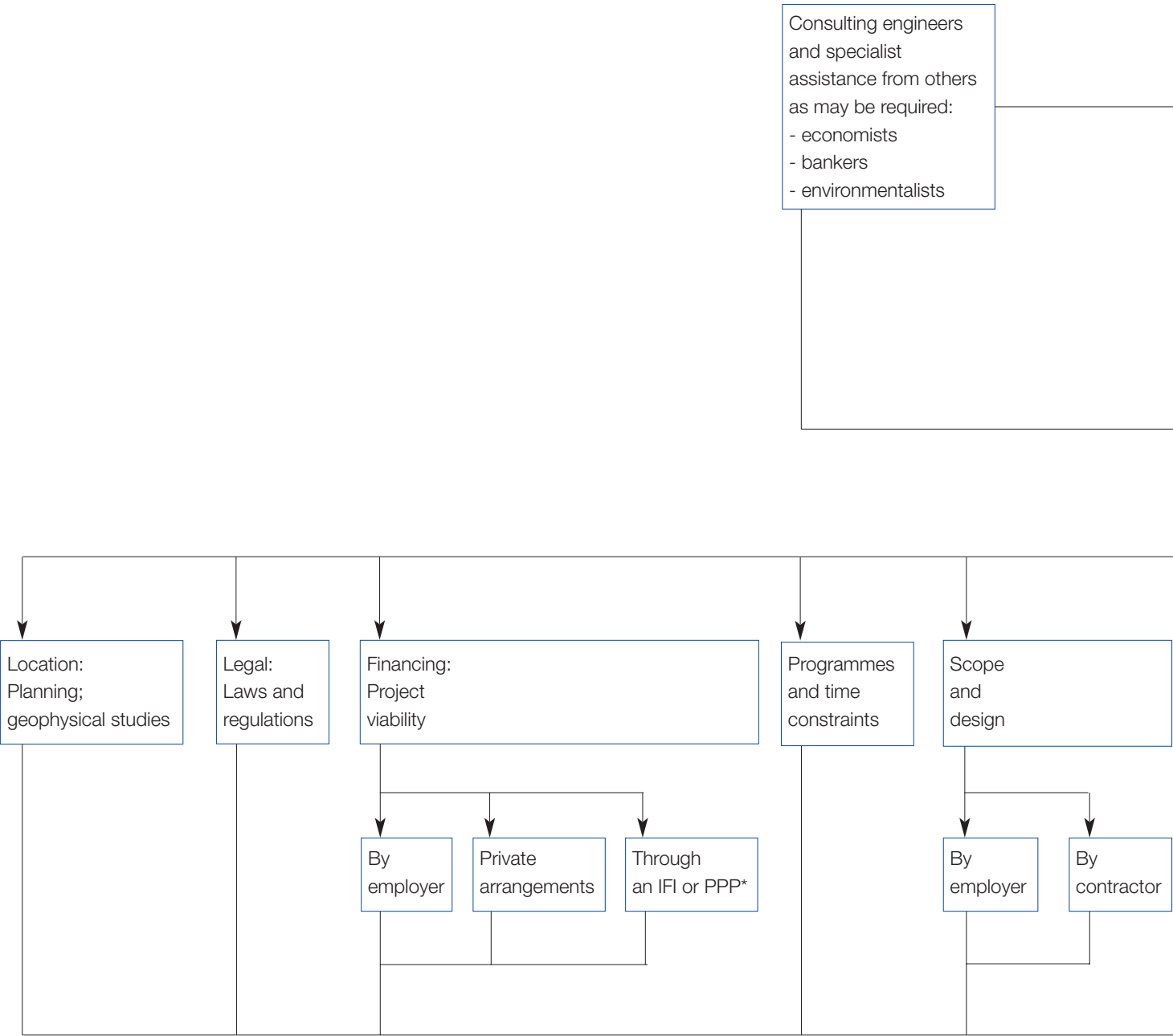
A typical format for a Feasibility Studies Report is included in Appendix 2.7.1.

Fig. 2.1 – Basic considerations

Flowchart notes

Activity	Description
Project inception and identification	The procurement process begins with identification of the purpose and need for a project. Projects may be promoted by governments, government agencies, public companies, corporations or private bodies.
Initial studies	The object of the initial studies is to enable the employer of a project to decide whether to proceed to the stage of detailed feasibility studies.
Advisers: consulting engineers and other specialists	Depending upon the size and complexity of the project, assistance and advice from consulting engineers and other specialists may be sought.
Decision to proceed with feasibility studies	The initial studies will influence the decision whether or not to proceed with feasibility studies of the overall viability of the project.
Feasibility studies	The matters shown in Figure 2.1 for consideration are to be studied to form the basis of the Feasibility Studies Report.
- Location - Planning; geophysical studies	Alternative sites should be considered. Geophysical investigations should be carried out for design purposes and to reduce the likelihood of unforeseen ground conditions.
- Legal - Laws and regulations	The importance of obtaining legal approval and adhering to regulations affecting the project must be recognised.
- Financing - Project viability	Identification of the sources of finance is key to the success of a project. Projects may be financed directly by the employer, by loans from International Financing Institutions (IFI's) or by grants from wealthy countries. Life-cycle project costs should be shown to be socially and economically beneficial.
- Programmes and time constraints	It is important to prepare a realistic project programme of all activities.
- Scope and design	The employer has to decide whether he has the resources to design the works in-house or whether a separate designer is to be appointed. Alternatively, the design responsibility for all or parts of the works may be given to the contractor(s).
- Operation and maintenance	The employer must decide at an early stage whether he has the experience, knowledge and resources to carry out the operation and maintenance of the completed facility or whether contractor(s) should do this work.
- Preliminary cost estimates	The total capital cost of the project and of ongoing operation and maintenance costs are to be assessed.
- Employer involvement during implementation	The degree to which the employer has the wish, knowledge, resources, and experience to be involved in the implementation of the project must be clarified.
- Project risk	The proportions of the risks to be borne by the contracting parties will govern the terms and conditions of the works contracts.
- Environmental impacts and sustainability	Specialists should examine the sustainability of the project and study the effects that the proposed works may have on the environment.
The Feasibility Studies Report	The report is to be clearly set out and well-written. It will commence with a summary of its findings and recommendations for project implementation. The report will contain detailed results of the findings and conclusions of the studies and give advice and recommendations for the project strategy to be adopted.

Fig. 2.1 – Basic considerations.



* PPP: Public-Private Partnership

Project inception and identification

providing purpose, need and objective

Initial studies

to include:

Initial concept of size and complexity of project	Conceptual designs
Sources of finance	Overall time programmes
Assessments of capital and life-cycle costs	Economic and social viability of project
Responsibility for future operation and maintenance	Impact on environment/sustainability
In-house resources	Major risks

Decision to proceed with feasibility studies

Feasibility studies

to include issues for consideration given below.

Operation
and
maintenance

By
employer

Outsourced
contractor

By
contractor

Preliminary
cost
estimates

Employer
involvement during
implementation

Very
involved

Little
involved

Project risk

High

Medium

Low

Environmental
impacts and
sustainability

Feasibility Studies Report

provides basis for the development of a project strategy

3 Developing a Project Strategy

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3.1	General	3.12	Risk
3.2	Financing	3.12.1	Risk allocation
3.2.1	Traditionally financed projects	3.12.2	Contract price
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3.3	Contract packaging	3.15.1	Remeasurement
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3.10	Role of the contractor during implementation	Fig. 3.2	Developing a project strategy
3.11	Role of the engineer during implementation		

3.1 General

The recommendations contained in the Feasibility Studies Report will provide the basis upon which the appropriate project procurement strategy is developed.

Irrespective of the size of the project the employer will look for a strategy in tendering processes leading to contractual arrangements that will provide a defect-free project, fit for its purpose, completed in a timely fashion and within budget. In addition the adopted strategy for the project should take account of the need for economic whole-life operating and maintenance costs.

The employer should consider retaining the expertise and experience of consulting engineers and perhaps other specialists to assist in developing a suitable project strategy and in managing the processes required. In this regard the reader is referred to:

- Chapter 7 Prequalification: Consultancy Appointments
- Chapter 9 Consultancy Appointments
- Chapter 15 Receipt and Opening of Proposals and Tenders
- Chapter 16 Evaluation and Recommendations: Consultancy Appointments
- Chapter 18 Award of Contracts: Consultancy Appointments

The size, complexity, value and location of the project will dictate, to a large extent, the general management

structure for the project. The management structure will develop from the strategy adopted and will need to be clearly defined. This will enable all involved to be aware of their responsibilities and levels of authority.

After receipt and approval of the Feasibility Studies Report the employer will arrange for the conceptual designs for the works to be progressed to the preliminary design stage. (For some design-build and turnkey contracts the contractor may take over the design from the conceptual design stage.)

In the initial stages of the development of the project strategy:

- the overall project time programme will be reviewed;
- the estimated capital cost of construction and installation of the facilities included in the preliminary designs will be evaluated;
- the life-cycle costs of operation and maintenance will be estimated;
- identification will be made of the sources of finance and the manner in which funds will be made available;
- the relative magnitude and complexity of the project will be assessed;
- the overall economic and social viability of the project will be reviewed;
- the environmental impact assessments will be reviewed; and
- the environmental sustainability of the project will be confirmed.

3 Developing a Project Strategy

The size and complexity of the project may indicate that the construction and installation of the facilities should be carried out under a number of separate contracts. In such a case it will be necessary to define the work to be executed under each contract. This is often known as contract packaging.

Thereafter, major issues which will require consideration and decisions in the formulation of the project strategy will include:

- programme for receipt of financing;
- time programme for each contract;
- cost estimate for each contract;
- responsibility for operation and maintenance;
- responsibility for the designs to be provided to, and/or to be carried out by, the contractor;
- role of the employer during implementation;
- role of the contractor during implementation;
- role of the engineer during implementation;

- risk management planning;
- apportionment of risk between the employer and the contractor;
- arrangements for insurances;
- arrangements for prequalification of tenderers;
- basis on which the contractor will be paid; and
- decision on whether or not to proceed.

These issues are considered in greater detail in the following sections from which the fundamentals of the project strategy can be established. The project strategy will lead to the appropriate type for each contract, and to the conditions to be incorporated into each particular contract, as described in Chapter 5.

3.2 Financing

Fundamental to any project is the provision of finance, i.e., funds to pay for the construction work and the plant and equipment to be installed, together with the overall administrative and design development costs. A preliminary assessment of the approximate capital cost of the project will be available from the initial studies and the Feasibility Studies Report. This information will assist the employer to seek and obtain the necessary funding for the project. Such funds may come from one or several sources.

A relatively small or medium-sized project would typically be financed directly by the employer, whether in the private or in the public sector. The employer might be a private individual or private developing company, or might be a local authority or government department or agency.

An employer in the private sector, such as a substantial commercial company, contemplating such a project, would generally have the resources to finance the work directly, or would be able to apply for and obtain suitable bank funding and/or raise equity capital by the issue of shares. An employer in the public sector would generally be a department or agency of government with finance raised by taxes, or through grant aid.

For large construction or development projects, employers in some countries may have adequate funds of their own to finance the project, but for the majority of employers it is necessary for them to borrow the required funds. In developing countries, finance for the work of the consultants can sometimes be obtained from an International Financing Institution (IFI) established in the country of the consultant. However, financing for the construction work, or a portion of it, is usually by way of 'soft' loans from one or more of the larger IFI's.

For larger, usually public sector projects, too costly to be financed directly by taxes, employers typically seek loan funding from the Multilateral Development Banks (MDB's) such as The World Bank, or through grants.

Alternatively, where these sources are not available, large projects may be financed with private participation. Privately-Financed-Projects (PFP's) are based on an agreement in which the original initiator of the project, known as the 'principal', who holds the legal power to do so, grants exclusive rights to an organisation, normally a consortium of contractors, for the responsibility of financing, design, construction, operation and maintenance of an asset or facility over the period of the agreement.

3 Developing a Project Strategy

It has to be borne in mind that, particularly where private sector finance is to be involved, financiers will participate only under terms that will, as far as reasonably foreseeable, ensure a safe return on their outlay. The terms will

determine the risk to be carried by the financiers and will affect the conditions that will apply to the engineering contracts.

3.2.1 Traditionally financed projects

For traditionally financed projects being promoted by governments or other bodies for the benefit of the public, funds have normally been raised by central or local government through taxation or similar levies, or else provided by grants or obtained by government borrowing. This is the usual case in developed countries. In developing countries, where a project is often too costly to be financed directly by taxes, and where national funds are insufficient for the desired development of the infrastructure, financing is usually met, or partly met, by loans or grants from the IFI's such as The World Bank, the Asian Development Bank, the African Development Bank, the Inter-American Development Bank, or the other Multilateral Development Banks.

However, many other projects are financed directly by promoters (employers) who have sufficient own funds, or who obtain loan funding from banks, finance houses or other private lenders. Examples of such organisations might be electricity supply corporations, oil refineries, manufacturing companies, and private developers.

If the employer is a central or local government body or an incorporated company, a consultant or contractor entering into a valid contract with such body can normally assume that the body has, or will obtain, the required funds for the work. However, the legal status of government bodies and companies varies, and consultants or contractors should,

before entering contracts, take local legal advice to check on the status and authority of the prospective employer.

If the employer is not a government body or an incorporated company, and, for example is a private person or otherwise unincorporated, then a consultant or contractor should check that funds are actually available and that the person(s) signing the contract have the necessary resources and authority to make the requisite payments when due.

3.2.2 Privately financed projects

It has become increasingly common for the financing of public projects to be provided by the private sector. One usual way to achieve private participation for such projects is for the government or national authority to issue a 'concession' whereby the 'concessionaire' is granted the right to provide a particular 'service' to the public sector.

Instead of a government raising its own funds, e.g., by taxation, to construct a particular road or railway or water supply or similar, the government grants a concession whereby it gives a private group (usually of contractors, suppliers, financiers and operators) the right to construct the facility and operate it for a fixed number of years. The group will provide the financing, which will be recouped over the

years of operation by charges made to the users of the service. In a typical such Build-Operate-Transfer (BOT) project the contractor group will hand the facility over to the government at the end of the concession period, which could typically be 20-30 years.

Several variations to the BOT theme have been developed. These 'total project solutions' include Build-Own-Operate-Transfer (BOOT), Build-Lease-Transfer (BLT), Design-Build-Finance-Operate (DBFO) and a number of other similar arrangements. Some governments have actively encouraged the private financing of infrastructure and other projects and a considerable number of projects are now being financed by private funds. Such projects have included construction and

3 Developing a Project Strategy

running of schools, prisons, hospitals, water and sewage treatment plants, roads, and railways. The contracts usually include financing, design, construction, operation, and maintenance of the facilities, but tuition in schools and medical staff in hospitals are not included.

The majority of BOT type schemes are 'project financed'. In project finance, as the term is commonly used, a project is developed and financed on a 'non-recourse' or 'limited recourse' basis. In other words, the

project is expected to pay for itself, or largely pay for itself, in the long run. Those lenders providing the initial funds for the project look primarily to the revenues generated by the completed facility for repayment of the loans, and to all the project assets as security for the loans. 'Project finance' differs from traditional loan structures in that lenders generally have recourse only to the assets of the project or limited recourse to other assets or finance.

3.2.3 Public-Private Partnerships (PPP's)

It is clear that a number of useful and socially desirable projects will never manage to be entirely financed on a non-recourse basis, i.e., entirely pay for themselves over time. For example, a road construction project in a remote area cannot be expected to raise sufficient income via road tolls to recoup the outlay. For such projects it will be necessary to raise other funds to supplement the private sector financing. Probably the local government will have to provide the extra funding

necessary. In such cases where public funding has to complement private funding, the project is nowadays commonly called a 'PPP' project, i.e., a 'Public-Private Partnership' project.

Further information on such PPP projects is given in Section 5.6.2.

3.2.4 Contractor financed projects

As a further variation on the BOT theme, some larger construction companies have themselves identified promising projects, for example, hydropower projects, in various countries. They have then contacted the local national authorities and presented them with a proposal for design and construction, and often operation for a number of years, of the facility. As regards financing of the project, the construction company or consortium will usually have arranged for the provision of the necessary finance, possibly in return for the granting of a concession to operate the facility.

There also exist a number of large construction projects, for example motorway projects, where the contractor consortium has itself provided the financing against the granting of an operation concession for a considerable number of years, for instance, 25 years, during which it can recoup its outlay, including the costs of borrowing the funds and profit, by charging users for the use of the facility by means of road tolls.

3.3 Contract packaging

For small or minor works projects only one construction/installation contract will normally be sufficient. In some cases, however, an employer may wish to purchase plant and equipment separately from the construction contract.

For medium to large projects, such as a hydropower project, there may be several contracts, often divided according to type of work, for instance, a civil works contract, a mechanical plant contract for the

turbines, another plant contract for the generators, a contract for the switchyard equipment, and so on. There may also be contracts for design and supervision by the engineer.

For such projects, and for larger multi-discipline projects, and complex projects, as well as mega-projects, decisions on the number and scope of contracts may be extremely critical to the eventual success of the project.

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When deciding on contract packaging, the first consideration is to determine who will have the responsibility for co-ordinating the different works comprising the project. In the hydropower project example above, probably the employer will have this responsibility. He will have engaged a consultant to design the hydropower plant and to prepare the tender dossiers for the various contracts. The consultant will have prepared co-ordinated designs, as well as an overall time programme which will show the implementation time for each contract. The various contractors will undertake to complete their works by the specified dates, and if they fail they will have to pay to the employer damages for delay.

Nevertheless, this arrangement has the disadvantage that the failure of one of the contractors may adversely affect and delay the activities of the other contractors. This would be likely to give rise to costly claims from the other contractors, who would have been delayed through no fault of their own. Such claims would be difficult to resist, making the project more expensive for the employer.

The alternative is to place the responsibility for co-ordination of the different works on the contractor. This can be done in several ways, for example: by having one main contractor who will have subcontractors; by using a management contractor; or by placing a design-build or a turnkey contract. By using such 'single responsibility' arrangements, the employer is relieved of the responsibility for

co-ordination. If the project is late, or fails in another way, it will be the responsibility of the contractor.

The cost and risk of the co-ordination will anyway have to be paid by the employer, and if the contractor is responsible for the co-ordination then that will be reflected in his increased contract price.

There are other factors that have an influence on the division or otherwise of the total project work into several contracts. If finance cannot be arranged to cover the entire project, or if the timescale of the project means that the different parts are spread over considerable time, then consideration should be given to division into packages. If the project is very large and there is doubt that a single contractor or consortium could manage the whole works, or be interested in accepting the large risk entailed, it might be advisable to split it into packages. Similarly, the employer might wish to ensure that local contractors are given the chance to compete for parts of the project.

Sometimes it is felt that having a number of contracts may give the employer more control than under a single contract for the entire project, and may be more economical by maximising competitive pricing. However, these advantages may be offset by the greater co-ordination risk being borne by the employer.

3.4 Budget planning

The Feasibility Studies Report will have provided a first assessment of the capital cost of the project. It should also have investigated the life-cycle cost of the completed project and the estimated revenue inflow over time. It should at least have estimated the annual running costs of the completed facility for the first few years of operation. Most financiers require a 'bankability report' in order for them to assess the probable financial result of the project, before they will be prepared to decide on whether or not to provide finance for the project. Such a report is normally based on the findings of the Feasibility Studies Report.

Assuming financing has in principle been arranged, perhaps from several sources, it will be the task of the employer to prepare a more detailed cash-flow budget showing expenditure during the procurement and the works implementation periods. The budget should be expanded to cover at least the first few years of operation, showing the

operation and maintenance costs as well as the projected revenues from the facility.

Depending on how recent and how reliable the figures in the Feasibility Studies Report are considered to be, the employer may decide to have an up-to-date cost estimate prepared. Such cost estimate would form the basis for his budgeting of the costs (and expected revenue) from the decision to proceed with the procurement of the project to the first few years after completion and commencement of operation.

If the employer is to be responsible for the design of the project, the first period after the decision to proceed will be taken up with the design and preparation of the design documentation, i.e., the specifications, drawings and technical schedules. If the contractor is to be responsible for the design, the employer will have to prepare the performance

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specifications and probably some degree of preliminary design. Thereafter the tendering documents, called the tender dossier, will have to be prepared by the employer, and usually the prequalification documents, and the prequalification process undertaken. All this work will normally be carried out by the employer's consultant. Preparation of the detailed design, including site investigations, detailed surveys and similar tasks, and preparation of the tender dossier, on an employer-designed project may involve many months of work.

For contractor-designed works, preparation by the consultant of the performance specifications and preliminary design may take less time. If the project is to be divided into several contracts, then this work will have to be carried out for each contract. The employer will therefore have to include in his budget for the fees of the consultant for this work.

While these preparatory tasks are being carried out by the consultant, the employer may have several preliminary tasks apart from general planning, such as acquisition of the site, obtaining necessary permissions for the work, liaison with public authorities, and providing information to the public. All these tasks require financing, which must be included in the employer's budget estimates.

While the tender dossier for a contract is being finalised, the prequalification process can proceed, resulting in a list of prequalified contractors. Thereafter the dossier can be distributed to these tenderers, and the tender period can commence. Tenders must be returned within a fixed time, which will depend on the urgency and complexity of the project and on the tender dossier and/or any minimum time stipulated by the prospective lenders.

The time for return of tenders may vary from two days in urgent simple cases to three months or even longer. The tenders must then be examined and evaluated, and followed by award of the contract. Expenses for the employer's work and the consultant's fees during this whole period stretching over a number of

months need to be included in the employer's budget. It is not unusual for delays to occur and sometimes re-tendering may be necessary.

When the contract with the successful tenderer has actually been signed, then the procurement stages have been completed and the implementation period commences.

It is normal and practicable for the employer to have separate budget allocations for the design period, the tendering period, the manufacturing, construction and installation period and then for the operation/maintenance period. For the first three periods the budget will only consist of outgoings, while the operation period may include income from the product output of the facility.

When budgeting for each of these periods it is important for the employer to allow sufficient funds for contingencies. Extra costs may arise and any of the periods may have to be extended owing to the occurrence of unexpected difficulties and problems. Economists and administrators in the employer's organisation and in the lending institutions are often reluctant to allow contingency amounts to be included in the budget. However, engineering projects are prone to the occurrence of unforeseen difficulties – each engineering project is often a 'prototype' where exactly similar previous experience does not exist. Such projects often involve underground and other work where the conditions cannot be fully known in advance. They may also be affected by factors such as price escalation, currency fluctuations, inclement weather, political decisions, changes in legislation, and force majeure, particularly when construction, installation and commissioning extends over several years.

Consequently, if the employer wishes his project to proceed without stoppages and delay caused by lack of funds in the budget – all causing even more expense – it is essential for him to allow, and be permitted to allow, for adequate contingency amounts in his budgets for each of the procurement stages.

3.5 Contract time programming

Project time programming includes not only the overall project programme but also the programme for

each of the separate contracts (if there are more than one) which form a part of the overall project. Each of

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these time programmes must be integrated into the overall project programme.

It is to be noted that employers often tend to underestimate the time required for, and sometimes the extent of, permissions and licences that are required by the governmental and local authorities before construction of a project can commence. An early investigation of exactly what is required, and a realistic time allowance in the overall programme, will help avoid subsequent irritating and expensive delays.

The initial stages of the development of the project strategy will have called for a review of the overall project time programme. However, as a result of decisions on contract packaging, clarity of the requirements for licences and permissions, and other developments, it may be necessary to revisit the review. This further review and, if necessary, adjustment, is to check and ensure that, among other things, the simultaneous activities being carried out by two or more contractors during implementation will not be in conflict, and are adequately co-ordinated.

Decisions with regard to responsibility for detailed design may also affect the earlier review of the project time programme. If a contractor is to be responsible for detailed design, he will not commence this work before contract award. On the other hand, if the employer is to be responsible for the detailed design, he will be able to start long before contract award.

Other issues to be borne in mind in developing contract time programmes for individual contracts include appropriate time allowances for the requisite contractor mobilisation. Time will be required for such early activities as:

- mobilisation – and possible importation – of site staff and labour;
- provision of housing, if necessary, for staff and labour;
- making arrangements for obtaining local natural materials;
- manufacture and delivery – including possible importation – of construction equipment and materials for the works; and
- obtaining licences, permits and grant of approvals, as required.

In addition to the time periods required for design, manufacture, delivery, construction, and installation, generous time periods must be allowed for testing and inspection of the works, for commissioning and, as may be required and appropriate, for trial running of the completed facility.

After take-over there follows the defects notification period(s), i.e., the period within which defects in the work shall be notified to the contractor for rectification, otherwise known as the 'guarantee period'.

Project time programming is described further in Chapter 4, Section 4.1.

3.6 Cost estimates

As development of the project strategy proceeds, the capital cost of the project will be better able to be estimated than at the time of the preliminary estimates made during the feasibility studies stage, as will the ongoing costs of operation and maintenance after completion of the project.

The preliminary cost estimates discussed in Section 2.6.7, and included in the Feasibility Studies Report, should be reviewed, revised and updated – perhaps several times as the project develops – as better and more accurate information becomes available.

The cost estimates for the total project will form the basis for seeking and obtaining the finance for the project.

If outside financing is to be required for the project, for

example, from one of the IFI's or MDB's, it is most advisable to inform the IFI or MDB at as early a stage as possible that the project is under development and will require financing. The IFI or MDB will certainly require convincing that the project is viable and perhaps more worthy of financing than other projects on its waiting list. Nevertheless, as it is often several years before funds become available, the earlier the IFI or MDB can put the project on its list the more chance that funds will become available when required by the project.

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3.7 Operation and maintenance

An important factor in the development of the project strategy is whether the employer will himself take over the operation and maintenance of the facility when construction/installation is complete, or whether this is to be done by the contractor.

As mentioned in Chapter 2, Section 2.6.6, aspects of this question are discussed in Appendix 2.6.6.

3.8 Design responsibility

Another important factor in the development of the project strategy that must be addressed is whether the employer will wish to have control over the detailed design development of the project or will prefer the selected contractor or contractors to carry out this work.

Unless the employer has the in-house capability to undertake the detailed design, it will be necessary for him, if he wishes to retain control over the design development, to appoint a separate designer, or designers, for this task. An independent designer is able to give impartial advice and recommendations to his client, i.e., the employer, without being influenced by a contractor's commercial considerations.

With a more complex and specialised project such as a long suspension bridge or a process plant there may well be a perceived need for separate designers with specialist technical knowledge and expertise to be responsible directly to the employer.

On the other hand the integration of design and construction under the responsibility of the contractor is likely to provide the advantages of early collaboration between the design and construction teams, leading to cost and time savings in the overall completion of the project.

Whoever carries out the designs must comply with all applicable planning and construction or building laws and regulations. The designers will be required to establish suitable specifications and quality, health and safety standards for the construction and installation work.

The designers should also take into consideration possible future needs to add to, alter or modify the project, and to allow for de-commissioning and/or demolition and recycling at the end of the useful working or operational life of the facility.

Of particular importance are thorough land, hydrographic and geotechnical surveys for the project. Such surveys involve specialist contracts. Comprehensive site investigations of high quality over the chosen location for the project will enable accurate planning and designs, and will save money in the long run by avoiding redoing of planning and design work that does not suit the actual conditions. The cost of such site investigations will be a small percentage of the total project cost, but the potential savings in additional costs, arising from delay due to re-design following unforeseen ground conditions being encountered during construction and installation, are likely to far outweigh the initial cost of the investigations.

For each contract, the party responsible for the design will develop it during the detailed design stage. If the employer is responsible for the design (except to the extent that 'contractor-design' is specified in the contract), he will have a greater control over the details. However, problems may arise from the division of responsibility between the designer and the contractor. The specifications must therefore clearly state which (if any) parts of the works are to be designed by the contractor, and should also specify the appropriate criteria with which these parts shall comply.

If the contractor is to be responsible for the design, he will wish to develop it in his own interests, subject to any constraints in the contract. The employer will have less control over the design than he would have if he was responsible for providing it. Under contractor-design, the contract price would typically be tendered on a lump-sum basis, so that any change in cost (increase or decrease) to the contractor, resulting from design development, would not be passed on to the employer.

Where design is the responsibility of the contractor he will wish to economise, in terms of his

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costs, which may be at the expense of quality. Therefore, it is considered essential that the employer has (or procures) expert technical services, to ensure that his requirements are elaborated fully and precisely in the tender dossier, and are achieved in practice. If expertise is unavailable, problems may arise, particularly in respect of quality, the need for variations, and ultimate responsibility for design.

Designers, particularly if being retained by a contractor on a contractor-designed project, need to check whether they are required to accept a more onerous and implied 'fitness for purpose' risk rather than the normal 'reasonable skill and care' risk.

It is to be noted that, under a contract for which the contractor is responsible for the design, variations (if any) should be instructed by the employer in the form of varied requirements with which the contractor's design must comply, and not as a varied design instructed by (or on behalf of) the employer, otherwise responsibility for the design may be shifted from the contractor onto the employer. The costs and

other consequences of variations should be agreed in advance, so as to minimise disputes.

In practice, these aspects can make contracts for which the contractor is responsible for design appear somewhat inflexible. 'Contractor-design' is typically less amenable to variations initiated by the employer, compared with 'employer-design' where the designer is independent of the contractor.

Although contractor-design prevents the employer from having a close involvement in the design process, it does enable him to have the benefits of:

- lump-sum pricing;
- the contractor's undivided liability for the works (including design); and
- the potential savings (in cost and time) due to a degree of overlap of design and construction.

3.9 Role of the employer during implementation

A factor in the development of the project strategy is to determine to what extent the employer wishes to be involved in the implementation phase of the works. Generally, the employer will always wish to be involved to a greater or lesser extent during this phase. In any case, he will be involved in such tasks as provision of the site (perhaps including land acquisition), various approvals, permits and licenses, and payment to the contractor.

Greater involvement will be necessary where the employer wishes to keep close control of and monitor construction work that has to be compatible with, for example, subsequent installation of plant and equipment. If the engineer is named in the contract, this involvement will occur through him, as in accordance with the FIDIC forms of contract, whenever carrying out duties or exercising authority

under the engineering contract, the engineer will be acting for the employer.

If the employer does not wish to be involved with design or construction details, does not envisage that he would wish to make changes to the works during their execution and, in particular, wants the contractor to carry out the detailed design, then standard forms of contract are available to meet such needs. These forms of contract are particularly convenient where, for example, the employer's resources are limited by the numbers of suitably qualified and experienced staff. However, such contracts have the disadvantage that the employer would be unable, without negotiating amendments to the terms and conditions of the contract, to instruct changes to or be involved in the design or execution of the works.

3.10 Role of the contractor during implementation

The contractor's role is to execute and complete the works, for which he has submitted his winning tender, in accordance with the contract he has signed. He has to do this in accordance with all the requirements set out in the various

contract documents. The conditions of contract establish the terms under which he shall operate, and the rights, duties and responsibilities of the parties. The specifications and drawings describe the technical requirements of the works. If something

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is not set out in any of the documents forming the contract, the contractor does not have to do it. Thus, if something which the employer wishes to be included in the works has been omitted from the contract documents, a variation will have to be instructed and requisite extra payment made to the contractor.

The contractor (except where specified otherwise) shall provide all plant and contractor's documents specified in the contract, and all labour, materials, construction equipment, supervision, consumables, and other things and services, whether of a permanent or temporary nature, required to carry out and complete the works. The contractor prepares the time programme, which shall comply with the deadlines set out in the contract, and he is responsible for ensuring that he completes the works within the required time. He is normally responsible for the design and execution of all temporary works, and he is responsible for the management and safety of all site operations and for his methods of carrying out the works. He is responsible to the extent specified in the contract for the design and specification of the works.

The contractor is also responsible for the care of the works throughout the construction period until the works are handed over to the employer. He accepts and complies with instructions from the engineer or, if the form of contract does not provide for an engineer, from the employer or his authorised representative. Normally the contractor ensures that all necessary insurances for the works, for third-party liability and for his own staff and work force are in place.

Under contracts where the employer provides the design, the contractor will not be responsible for the function of the completed facility, provided he has complied with all the requirements of the contract. Further, if during the construction period he encounters unforeseeable adverse physical conditions or artificial obstructions on the site, he will normally be reimbursed for any extra costs and granted any extra time required for completion caused by such conditions or obstructions.

Under contracts where the contractor undertakes the complete design and implementation of the works, however, the contractor will be responsible for ensuring that the completed facility is fit for its intended purpose. In such contracts the employer sets out the

employer's requirements for the works, i.e., he sets out the purpose, scope and/or outline design and/or other data which he requires, but without detailed specifications or drawings. The contractor will accept the outline design prepared by the employer, and then will elaborate and complete the design to final design stage to enable him to construct the facility. Usually under such 'design-build' or 'turnkey' contract arrangements the risks and costs associated, not only with foreseen, but also with unforeseeable difficulties, are borne by the contractor.

Additional payment and extensions of time may be claimed by the contractor in case of extra work ordered by the employer and under certain other circumstances, all in accordance with the conditions of contract. The contractor has the right to terminate his contract in the event of serious default by the employer.

Normally there will be one main contractor responsible for the execution of the works, and he would have a number of subcontractors undertaking specialist engineering activities. The subcontractors would be responsible to the main contractor for workmanship, performance and progress. The main contractor would be responsible for all subcontractors' works as if he himself had undertaken them.

Under many contract forms the employer may choose the subcontractor for a particular task based on his knowledge of his specialist skills or for some process which the employer especially wishes to be incorporated. Subcontractors chosen in this way are known as 'nominated subcontractors' and once they have been accepted by the main contractor become his subcontractors and are responsible to him. The main contractor is responsible for the work of nominated subcontractors as for his own subcontractors.

In major projects it is frequently the case that a number of contractors form a joint venture or consortium, often by way of a special new company, for the purpose of undertaking the contract as main contractor. In such cases the same principles apply as if only one company was the main contractor.

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3.11 Role of the engineer during implementation

There are only two parties who sign a traditional construction contract, the employer and the contractor. However, by signing the contract these parties agree that a third party, namely the engineer, shall undertake a number of necessary duties to administer the contract and ensure that the works are carried out in accordance with it, and to ensure that the parties fulfil their respective obligations. All instructions and any variations that the employer may wish to give or make are directed through the engineer, who will give appropriate instructions or variations to the contractor. However, the engineer has no authority to change or amend the contract.

There will be a separate contract, usually called an agreement, between the employer – who appoints the engineer – and the engineer.

In some forms of contract, notably contracts for minor works and for turnkey works, there is no engineer, and his duties will be carried out by the employer himself, often through his employer's representative.

In FIDIC's traditional construction and plant contracts the engineer has two distinct roles. The first is to be the 'extended arm of the employer' in that he acts for the employer in carrying out his specified duties of administering the contract, supervising the work carried out by the contractor, ensuring that the contractor complies with the terms of the contract, and checking that the work in progress and the completed work is as specified. His second role is to make a determination – which shall be fair and in accordance with the contract – on each matter where the parties are not in agreement. A disagreement might concern a technical or a procedural matter, or the rights and obligations of either of the parties, e.g., a payment to or from either party or a time extension to the contractor.

In contracts where the employer (or his consultant) has carried out the design and prepared the technical specifications and drawings, the engineer also has extensive duties of checking and testing the ongoing work of the contractor. The aim is to ensure – as far as is possible – that the work executed by the contractor is carried out in accordance with the specifications, i.e., that the plant and materials supplied are to the specified standard and quality, that the workmanship is to the required standard, that the facilities are constructed and the plant installed as shown on the drawings and specifications, that the time programme is

adhered to, and that the contractor receives the correct payment for his work.

To enable him to perform his duties, the engineer may have to employ at the site a considerable staff of technical engineers, in several disciplines, and administrative personnel. He may also have to employ inspectors to check plant being manufactured at factories and elsewhere off-site. On his appointment, the engineer should establish a detailed programme and necessary routines to be followed by his supervision staff.

Because the engineer gives consent or approval to materials, plant or workmanship, it does not mean that the engineer assumes any responsibility for that material, plant or workmanship – the responsibility remains with the contractor to provide what is agreed in the contract and to abide by the contract's terms.

In 'design-build' types of contract where the contractor has carried out the major part of the design, the engineer's duties may be less extensive as regards detailed checking of the contractor's work. This is because the contractor has the responsibility that the completed facility will work as planned, i.e., is 'fit for purpose'. If it does not function as planned, it will probably be due to inadequate or incorrect design, but it might also be due to poor materials or workmanship. To the employer it is immaterial as to which of these factors has caused the failure, as all of these come under the responsibility of the contractor.

Under such contracts it is necessary for the employer, or his consultant, to provide at least a 'performance specification' or perhaps an outline or preliminary design. This will be included in the tender dossier in the employer's requirements where the employer will also specify all other requirements he may have for the work. The contractor will then have to develop and complete the design – including checking of the employer's preliminary design – to enable him to construct the works and to take his responsibility that the completed facility will be fit for the purposes intended. Consequently, after contract signature, the engineer will have to review the contractor's designs and proposals for general conformity with the requirements laid down in the contract.

Whereas the engineer might not have to carry out all detailed ongoing checking which is required under an employer-designed contract, he still has extensive duties, such as:

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- checking the contractor's work for compliance with the requirements of the contract;
- approving tests on completion of the works, and sometimes performance tests after completion;
- monitoring construction time programmes;
- issuing necessary variations;
- providing cost monitoring and certification of the contractor's applications for payment; and
- determining on claims for extra payment and/or time extensions.

The engineer's role requires considerable professional knowledge and expertise, and the frequent exercise of sound, mature judgement to the highest ethical standards.

3.12 Risk

The construction and engineering industry is a high risk industry. There are serious risks for all parties involved, and these have to be addressed and suitably dealt with by the parties. It is thus fundamental for those involved to understand the concept of risk and to know how to manage properly the many and varied risks which may be encountered.

Management of the risks, and their allocation between the parties, may be said to have an overriding importance in any engineering project, and to govern the conditions under which the work is executed, the cost of the work, and often the eventual overall success or failure of the project, not only to the employer but also to the contractor, the subcontractors and the others involved. A main purpose of the conditions of contract is to identify the principles of allocating the risks facing the contracting parties.

The risks in achieving completion of a contract within the originally programmed time and within budget can be reviewed under two categories: risks which are unavoidable and risks which could be avoided or 'managed' by the parties. The Feasibility Studies Report should have included an indication of the significant risks associated with the project.

Unavoidable risks include, among others: exceptionally adverse physical and climatic conditions; political decisions; unforeseeable shortages caused by epidemics or government actions; archaeological discoveries, force majeure events and contractor insolvency.

Avoidable risks which could be 'managed' include, among others: failures of temporary or

permanent works during construction; defects in construction; loss or damage to plant or materials during transport; delay or disruption due to failure to provide drawings or access to the site in time; changes to specifications or other variations.

If a constructed facility has a defect it could have been the result of a number of circumstances, e.g., poor design, bad materials, bad workmanship, wrong instructions, adverse weather conditions, force majeure, and war. If the defect is so severe that it cannot be rectified and the completed facility cannot fulfil its intended function, then it may be that the cause is defective design. Thus, one of the most important considerations regarding risks in an engineering contract is which party shall carry out and be responsible for the design, as discussed in Section 3.8 above.

Before undertaking any major project it is recommended that the prospective employer considers the need to carry out a comprehensive risk analysis. Such analysis should, as a minimum, include a 'qualitative risk analysis', this is the process of assessing the impact and likelihood of identified risks, and a 'quantitative risk analysis', that is the process of analysing numerically the probability of each risk and its consequences on project objectives as well as the extent of overall project risk. Such analyses should provide the prospective employer with a suitable basis for his risk management planning, and should be included in the Project Strategy Manual (see Section 6.2).

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3.12.1 Risk allocation

Every risk must be allocated to one or other of the two parties to a contract, i.e., the employer or the contractor. A risk cannot be not allocated to one or other of the parties – a risk cannot “be left hanging in the air”. An overriding principle is that the most beneficial distribution of risks is to allocate each risk to the party that is best able to deal with and handle that particular risk. Such risk distribution will in general lead to the lowest contract price.

This principle, however, is not always easy to follow as it can be difficult to determine which party can deal best with a certain risk. Nevertheless, in all construction and engineering contracts the contractor certainly is the best placed to deal with all risks concerned with the planning and execution of the work, for example, the provision of labour, materials and construction equipment, and all risks that may arise therefrom, such as the quality of materials and workmanship, the safety of site operations and so on. All risks arising from design are obviously borne by the party responsible for the design, and similarly all financing risks are borne by the parties providing the finance. The employer clearly has to take the risks of providing the site and seeing that it is available for the contractor to carry out his work, and usually all risks arising from information he has collected about the site and other information contained in the tender dossier. Traditionally, the

employer will choose to bear the risks of unknown or unforeseeable circumstances.

Practice over many years and a great many projects has shown that a sensible, balanced risk sharing between the contractor and the employer results in the lowest overall total cost for completed projects. Balanced risk sharing follows the mentioned principle that the party most suitable to bear a particular risk is allocated that risk. Thus the contractor takes all the risks associated with his business of contracting, while the employer takes the risks, inter alia, of the unforeseen and unexpected, i.e., items that are difficult or impossible to price accurately in advance. Consequently, the employer only pays the extra costs incurred when an unforeseeable event or circumstance actually occurs – he does not have to pay what the contractor would have allowed for in his price to cover himself for the risk of that event or circumstance eventuating.

3.12.2 Contract price

It is to be noted that “risks cost money”. The party allocated a risk is responsible for the consequences if an undesirable event or circumstance actually occurs as a result of that risk. Therefore, from the employer’s point of view, the fewer risks he asks the contractor to bear, the lower the contract price will be.

At the one end of the scale, where a cost-plus or reimbursable type of contract is used, the employer carries the bulk of the risks, and the initial contract price is low. On such contracts whenever an unexpected undesirable event occurs the contractor is reimbursed his extra costs by the employer. The result is that the final contract price is often much higher than the initial price.

At the other end of the scale, where a fixed price or turnkey type contract is used, the employer seeks to pass over as many of the risks as possible to the contractor, and the initial contract price is high. The aim in this case is that the employer will not pay any extra – although invariably some

extra will be payable – but the final price will anyway be close to the initial price. A sensible and fair sharing of risks between the employer and the contractor produces over the long run the lowest final contract prices, considerably lower than is the case for either of the extremes mentioned above, i.e., reimbursable type versus fixed price, turnkey type.

This is the route that FIDIC has traditionally followed, and there is a balanced risk-sharing between the employer and the contractor in the *FIDIC Construction Contract* and the *FIDIC Plant and Design-Build Contract*. There is, however, the likelihood that the final price may be higher than the accepted contract amount at contract signature, and that also the time for completion may be longer than expected. In the *FIDIC EPC/Turnkey Contract*, more risk is placed on the contractor, to try to ensure a final price and time, fixed from the outset.

In the latter type of contracts, where the contractor takes all or most of the responsibility for both design and construction and, consequently, most of the risks, completion

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tends to be achieved in a timely fashion. This is mainly due to the closer coordination possible between design and construction teams. However, such contracts are

likely to be more costly than the traditional forms on account of the additional risks carried by the contractor (see Fig. 3.1).

3.13 Insurance

All parties will try to reduce exposure to their risks as far as is possible. To this end it is normal for the parties to arrange for insurance to the extent that such is available on reasonable terms.

Normally an employer will make it a condition in the tender dossier that the contractor takes out insurance to cover several categories of risk. The reason is that if an event occurs, for which the contractor is responsible, which has expensive consequences, the contractor may not have the finances to cover them. The contractor and/or the employer could then be reimbursed from the insurance company. The insurances should be taken out in the names of both the contractor and the employer. In effect the cost of the insurances will be met by the employer, as it will be reflected in the contractor's prices. It is therefore not wise for the employer to demand an unreasonable level of insurance from the contractor.

The categories of risk for which an employer usually requires the contractor to insure against are:

- loss or damage to the works, plant, materials, and contractor's documents, and to the contractor's equipment;
- third party liability for loss, damage, death or bodily injury to any physical property or any person;
- liability for injury, sickness, disease, or death to any person employed by the contractor.

The applicable law may also require the contractor to have other insurance cover, for example, insurance for the use of motor vehicles is compulsory, almost universally.

The insurances are to be in place before the contractor commences work at the site. The contractor is responsible for the care of the works until they are handed over to the employer on or after completion. Thus, if a fire or another event causes loss or damage at any time during the construction period the contractor

will be responsible for the consequences. If a fire destroyed the works at an early stage in their construction, the damage would be relatively small. However, if the damage occurred later it would be more severe, with maximum possible damage immediately before hand-over of the completed facility. The works insurance will mean that both the contractor and the employer will be covered for the costs of replacing or repairing the loss or damage.

It is important to keep in mind that the amount of the works insurance cover shall be the current replacement value. On a contract stretching over several years, the replacement value of a destroyed facility may be considerably larger than the original construction price. The insured value should also include the costs of demolition, removal of debris, professional fees, and profit.

When setting the amount of the third party insurance cover, it is useful to try to consider what the maximum damage to third parties that a catastrophic accident could cause. For example, if the contract is for work on an airfield, perhaps the maximum damage might occur if one of the contractor's trucks was crossing the runway and was hit by a landing aircraft.

On larger projects it is not unusual for the employer to take out an insurance policy that covers much of the contractor's risks as well as his own. On very large, multi-contract projects, the employer may consider taking out one 'umbrella' policy to cover all parties involved, including designers, contractors and subcontractors. Such a policy avoids arguments as to which insurer shall pay if a claim arises, and may be cheaper than having a number of different insurances.

Insurance is a specialised industry. Issues, particularly on large multi-contract projects, can become complex and, in most cases, it is advisable to refer such matters to insurance specialists.

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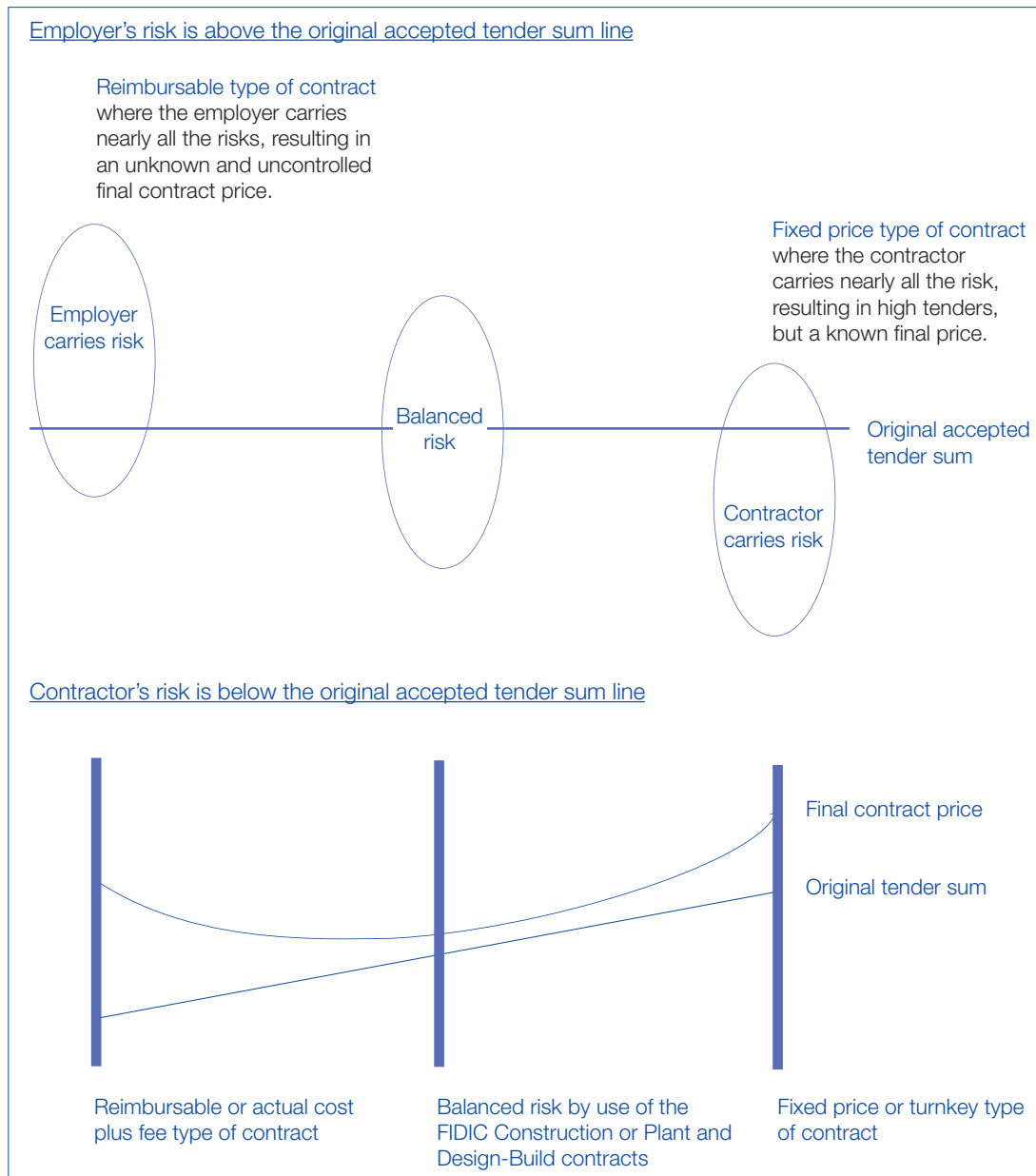


Fig. 3.1 – Apportioning risk

A sharing of the risks can be a more acceptable solution, resulting in a lower final contract price.

3.14 Prequalification of tenderers

Experience has shown that, particularly for contracts which include contractor-design, prequalification of tenderers is a highly desirable component of the overall strategy, and will save the employer and the lesser qualified prospective tenderers much time and effort. Prequalification enables the employer to establish in advance the competence of prospective tenderers. He may then select a limited number of companies or joint ventures whom he will subsequently

invite to tender. Restricting tendering to a pre-determined number of tenderers encourages the better qualified to tender in the knowledge that they have a reasonable chance of success.

Procedures for the prequalification of prospective tenderers may be imposed by applicable laws and regulations, or by the requirements of the financial institutions that will be

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providing funds for the project. Some institutions mandate procedures which do not permit any limit on the number of prequalified tenderers. This is often unfortunate as the employer may be overwhelmed with many tenders, most of which would not anyway be acceptable, and all these tenderers will have been involved in considerable unnecessary and wasted work preparing their tenders. More importantly, the more attractive tenderers will probably have considered it not worthwhile to compete against such a large field.

Typically, the employer initiates the prequalification stage of the project by publishing advertisements which either:

- contain briefly all necessary information on the project, and on how applicants should apply for prequalification; or
- describe how to obtain a document which contains all the prequalification information and application requirements.

A sound advice to employers is: "Never prequalify any contractor to whom you would not wish to award the contract." The time to exclude unsuitable contractors is at the prequalification stage, not after tenders have been received.

The procedures for prequalification are described in Chapter 7 – Prequalification: Consultancy Appointments and Chapter 8 – Prequalification of Tenderers: Contracts for Works.

3.15 Contract price and payment

FIDIC contracts provide the employer with flexibility in the selection of the most suitable method of paying the contractor and the payment provisions.

The principal payment methods and contract price formats are:

- Remeasurement

The contract price is determined based on the actual quantities of work performed.

- Lump sum

The contract price is the lump-sum amount accepted for the performance of the whole works.

Other formats may also be used such as:

- Reimbursement

The contract price is determined using actual costs as a basis.

- Target price

The contract price is based on a target amount together with a shared proportion of the difference between the target amount and the final amount.

Irrespective of the selected contract price format, the contract price may be subject to adjustment in accordance with the terms of the contract to take account of events that occur during the execution of the works, such as variations, imposition of new taxes, and valid contractual claims.

The format selected for establishing the contract price will impact on the level of risk taken by each party, the amounts to be paid, the administration of progress payments, and the valuation of variations.

An important basic difference between remeasurement and lump sum is the allocation of risk in respect of the accuracy of the estimated quantities that are used as a basis for the contract price.

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3.15.1 Remeasurement

A remeasurement contract is where the contractor is paid for the actual quantities of work performed based on tendered rates and prices. This is the traditional approach or method for much civil engineering and building work.

With a remeasurement contract each tenderer inserts unit rates in a bill of quantities prepared by the employer. The bill of quantities lists descriptions and estimated quantities of work items to be performed. This facilitates receipt by the employer of tenders priced in comparable formats.

When the contract is signed, based on the tendered price, the amount signed is called the accepted contract amount. This may not be the actual amount that the employer will pay, i.e., the contract price, because the amount will be determined based on a remeasurement of the actual quantities of work items performed multiplied by the unit rates tendered by the contractor. A contract subject to remeasurement must include detailed rules setting out the method of measurement of the works, based on measurements taken from the drawings and/or physical measurements taken on the site.

Progress payments during the construction work are calculated based on the actual quantities of work items carried out, and at the rates set out in the bill of quantities.

A contract subject to remeasurement would suit a project where the quantities of work are uncertain, and where changes to the required works may be made after the contract has been awarded.

The *FIDIC Construction Contract* is frequently used where the contract price is determined by remeasurement of quantities actually performed.

3.15.2 Lump sum

The essence of a lump-sum contract is that the contractor performs and completes the works in return for a lump-sum payment.

Based on the proposed contract documents such as the drawings and specifications included in the employer's requirements, each tenderer will offer a lump-sum price for completion of the works. On complex projects this may be impractical and not cost effective as the contract price will include for any inaccuracy in the contractor's tender estimates, and will include amounts for risk and contingencies that may not be encountered.

However, at the time of contract award the employer and contractor know the amount to be paid for the complete works. This may be a significant factor for the financing of the project. On the other hand, the employer will not benefit from any savings that the contractor may be able to make compared to his tender estimate.

The lump-sum accepted contract amount is often broken down into a schedule of rates to facilitate the calculation of progress payments and for use in the valuation

of variations. The schedule of rates may include a list of lump-sum prices for which payment becomes due on achievement of predefined 'milestone' events.

The following are some situations for which different formats of lump-sum contracts may be appropriate:

- Lump-sum tender without any supporting details

This may be suitable for minor works where variations are not anticipated and the works will be completed in a short time period, perhaps requiring only one payment to the contractor.

- Lump-sum tender with schedules of rates prepared by the tenderer

This alternative may be suitable for a larger contract where variations may occur, and stage payments are required, and the employer does not wish to prescribe the format and content of the schedules of rates.

- Lump-sum tender with schedules of rates prepared by the employer

This is the same as above but the employer prepares a

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schedule of rates, which the contractor prices for the purpose of the valuation of any variations and for stage payments.

The *FIDIC Plant and Design-Build Contract* and the *FIDIC EPC/Turnkey Contract* are often used where the contract price is a lump sum.

3.15.3 Reimbursement

Under a reimbursement contract the contractor performs work as required by the employer and, provided the contractor does so in accordance with the contract terms, the contractor is reimbursed for all the costs he incurs including any agreed amounts for overheads and profit. The employer benefits from any engineering, material or construction cost savings, but carries the risk of cost increases. The employer does not know the actual contract price until the works are complete.

This payment method has the disadvantage that the contractor has little incentive to complete the contract expeditiously: the more material and other resources he uses, and the longer he takes to complete the work, the greater his costs and, therefore, the greater the reimbursement he receives and the larger the profit he makes.

This option would suit a project where the extent of work cannot be ascertained before the contract is awarded. It would require a specific set of particular conditions or procedures to be set out in the contract governing how the actual costs expended shall be verified.

3.15.4 Target price

At the time of contract award a target price is determined based on lump-sum prices, remeasurement rates and prices, or anticipated costs. The contract will set out specific terms that describe the method by which the final price is to be calculated.

This option would suit a project where the employer wishes to share the financial risk with the contractor. It also provides the contractor with incentive to work as expeditiously as possible, in order to enhance his chances of sharing a positive financial result.

In the event that the final price is less or more than the target price, the employer and the contractor will share the financial benefit or burden. Based on an agreed formula, an amount will be added to or deducted from the target price in order to determine the contract price to be paid to the contractor.

3.16 Decision to proceed

Having considered all aspects of the issues involved, as discussed above, the basis of the project strategy can be established, and the decision can be taken of whether or not to proceed with the project.

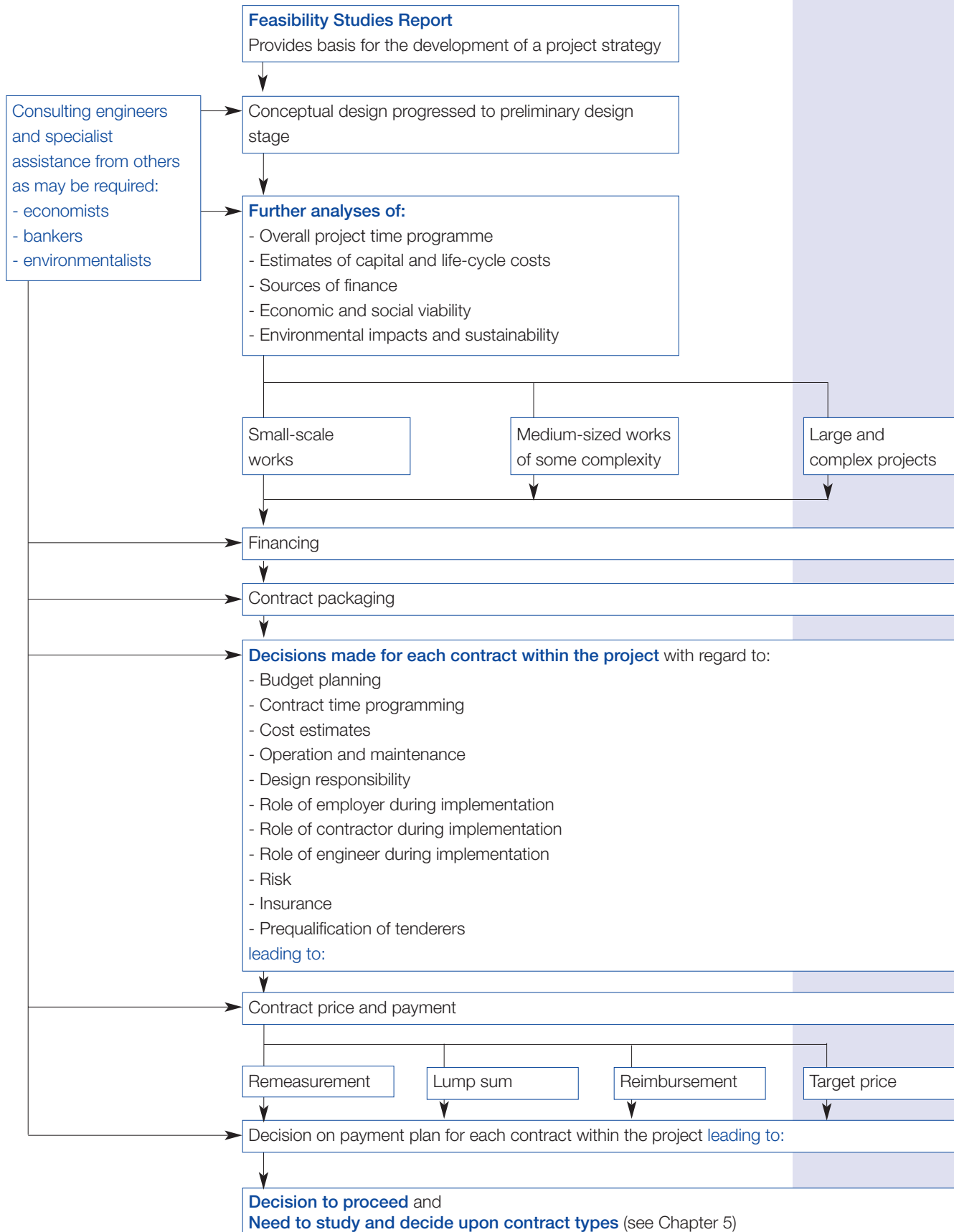
If it is confirmed at this stage that the project should go forward, then:

- the management structure for the procurement of the project should be established (see Chapter 4 and Section 6.1),
- decisions upon the appropriate contract type between employer and contractor for each contract should be made (see Chapter 5), and
- the principles of the chosen and agreed project strategy should be carefully recorded in the Project Strategy Manual (see Section 6.2).

Fig. 3.2 – Developing a project strategy

The principal contract types are briefly described.

Development	Description
Recommendations within Feasibility Studies Report	The recommendations of the feasibility studies should have taken due account of the size of the project and other matters considered in the initial studies.
Further analyses	The overall project time programme must allow sufficient time for all the preliminary activities of studies, arrangements to secure finance, all governmental and legal approvals, tendering and contract award procedures, manufacture and delivery of plant and materials, design, construction, installation, testing, commissioning, and handover operations. Reviews of capital and life-cycle costs, the sources of finance, the economic and social viability, environmental impacts, and sustainability of the project will be necessary to further advise and satisfy the organisation(s) that will finance the project.
Consulting engineers and professional advisers	Further to that already obtained earlier at the basic considerations stage, and depending upon the size and complexity of the project and on the resources of the employer, assistance and advice from consulting engineers and other specialists may be necessary.
Small-scale works	These are projects of relatively small value and for which the construction and/or installation time is short. Larger scale works of a simple and repetitive nature may also be considered to fall into this category.
Medium-sized works of some complexity	Examples are traditional civil works, buildings, infrastructure, and plant and equipment for power, water, and sewage treatment plants.
Large and complex works	Large industrial processing and manufacturing projects such as steel or chemical works or large scale infrastructure development works are in this category.
Financing	Preferred and alternative sources of financing to be studied.
Contract packaging	Depending upon the project strategy to be adopted it may be expedient to break up and divide the project into a number of separate contracts each with its own procurement strategy.
Decisions reached for each contract within the project from studies and analyses	The decisions reached from the results of the initial and feasibility studies together with the further analyses will provide the project strategy to be adopted, prior to decisions on the payment and contractual terms to be written into each contract
Payment terms for each contract	Although one of the four different methods considered here would normally be adopted for a contract, it is possible to introduce more than one method for parts of the works.
- Remeasurement	The work carried out is measured and then priced by multiplying the actual quantities completed by the unit rates entered in the bill of quantities forming a part of a contract.
- Lump sum	Schedules provide prices to be paid to the contractor on completion of a major stage, section or part of the works. The prices may be adjusted due to variations to the works but are not normally subject to adjustment for the effects of inflation or deflation in the costs of labour and materials.
- Reimbursement	The contractor is paid all the actual costs of labour, materials and plant plus a fixed sum or a percentage for financing, overheads, management and profit.
- Target price	The target price is the anticipated final cost agreed between the employer and contractor at the commencement of the works. In the event that the final admeasured price is less or more than the target, the contractor will share the savings with the employer or share the burden of the overrun in cost, as the case may be, subject to previously agreed formulae.
Decision on the payment plan for each contract within the project	As a result of decisions being made on all the issues studied and reviewed under Chapter 2 – Basic Considerations, and Chapter 3 – Developing a Project Strategy, the appropriate selection of FIDIC conditions of contract, as described in Chapter 5, can then be made.



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4.1.3	Public procurement regulations	4.4.2	Employer's responsibilities
4.2	Project financing schedule	4.5	Corruption

4.1 Project time programming and planning

The importance of project time programming and planning cannot be overstressed. Normally, a preliminary overall programme covering all major activities of the whole project is prepared in the early stages. As a minimum, this programme will comprise the main phases and activities of the project, namely:

- project inception and identification
- initial studies; appointment of the consultant
- feasibility studies; consideration of alternative solutions
- initial cost estimates and budget
- project strategy and financing
- land acquisition arrangements
- project time programming
- engineering development and preliminary cost estimates
- detailed design, specification and detailed cost estimate
- contract packaging and contract strategy
- tender dossiers preparation
- obtaining grants, permits and licences for construction
- prequalification of tenderers
- preparation of tenders by contractors
- evaluation of tenders
- award of contract(s)
- utilities relocation
- contractor design, manufacture, construction, and installation
- testing and commissioning
- operation and maintenance
- guarantee undertakings.

4.1.1 Contract time programmes

Depending upon its size and complexity and upon the strategy adopted for its implementation, a project may be apportioned into several contracts. Such contracts may be carried out consecutively, but more often they will be carried out concurrently or overlapping in time.

Sufficient time must be allowed and incorporated in the overall project time programme, not only for the later construction and installation activities of the works, but also

The programme should also establish all milestones of significance in connection with each phase.

A typical overall project programme is shown on the project development flowchart of Fig. 1.1. It is important to note that this programme only indicates a sequence of activities, and does not indicate the relative time duration of the activities.

for the all-important preparatory tasks, followed by the tendering activities necessary for the procurement of contracts in accordance with good practice prior to contract award and commencement of work on-site. It is also important that the activities involved in the contract procurement process are carried out in a systematic and timely manner. They too are, therefore, to be carefully planned.

Experience has shown that problems frequently occur

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in connection with land acquisition of the site for the construction of the works and also with the location or relocation of utility services. Purchase or expropriation of land for the construction of any project, and for the necessary relocation of services, should be completed before the construction contracts are signed. This may be particularly valid for roads, railways, pipelines and similar projects where the land has to be obtained from a number of owners. In numerous cases, difficulties in securing the necessary land have led to serious delays, disturbances and consequent extra costs for employers.

Some employers try to pass to the contractors the task and the risk of obtaining the necessary land for the project. This practice is not generally recommended, as the employer is usually in the best position to obtain the land and would anyway have to pay the contractor the cost of the land. More importantly, the contractor should not be asked to take the risk of the time that may be required for this task and the associated uncertainties. Many contractors would, rightfully, refuse to accept such a requirement.

To ensure compliance with the overall project time programme, detailed schedules should be made for implementing the tendering procedure for each contract (if more than one) forming part of the project. These schedules should specify duration and deadlines for at least the following activities in connection with each potential contract:

- land acquisition and funding (if applicable)
- preparation of tender dossier, including:
 - design and specifications team's activities
 - quantity surveyor team's activities
 - contractual team's activities
- preparation of prequalification documents
- periods for seeking and gaining documentation approvals and authorisation, including: legal issues regarding land use and ownership and compliance with regulations applicable to construction works, transport, the natural resources of water and the opening of quarries
- prequalification of tenderers
- obtaining tenders
- opening of tenders
- evaluation of tenders
- award of contract.

Sufficient time should be allowed in each time programme or schedule for the employer to make necessary decisions and to give or obtain the required approvals. In particular, financing institutions will generally require time for scrutiny and approval of tender dossiers.

Further information about content and scope of each of these activities is given in later chapters.

4.1.2 Planning considerations

When preparing the programme for each contract, it is important to ensure that the sequence of activities is such that all necessary data and information are available when each activity is to be carried out. This applies in particular to the order in which the activities involved in the preparation of tender dossiers and in the preparation of prequalification documents are carried out. Consideration should be given to the extent the tender dossiers should be prepared and agreed, before the prequalification documents can be finalised and issued. This has to be decided for each intended contract, since key information from the tender dossiers will often have to be incorporated in the prequalification documents in order to give adequate details to those seeking prequalification.

It should be recalled that the employer's work and the consultant's fees during this whole period

stretching over a number of months need to be included in the employer's budget. It is not unusual for delays to occur and sometimes re-tendering may be necessary.

It should also be recalled that the manufacture/construction/implementation period commences once the contract with the successful tenderer has been signed and the procurement stages have been completed.

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4.1.3 Public procurement regulations

Many states and international financing organisations have strict regulations covering public procurement, and it is obligatory that these are complied with. By way of example, a party involved in public procurement in the European Union (EU) should be aware that:

- Public procurement in the EU is governed by a number of directives and regulations that are implemented in the national legislation of EU member states.
- These directives and regulations require detailed procedures to be followed for the procurement and award of public contracts whose value equals or exceeds various financial thresholds.

- The public procurement procedures include requirements relating to:
 - transparency of information;
 - the publication of information notices drawn up in accordance with standard forms;
 - time limits for carrying out procurement activities;
 - alternative types of procurement procedure such as open, restricted, negotiated, and competitive dialogue;
 - the criteria for contract award such as the “lowest price only” or “most economically advantageous tender”.
- Full details of EU procurement regulations should be obtained by reference to the EU and member states’ publications.

4.2 Project financing schedule

Management of the financing of a project involves not only the provision of the necessary funds, but also the flow of the funds to pay for the various activities and meet costs at the times when they are required. Therefore, a financing time schedule should be prepared in conjunction with the project time programme.

Sources of financing and the economic analyses required by the providers of the finance are summarised in Sections 2.6.3 and 3.2.

If financing is being provided by the government or from within the employer’s organisation, the relevant application rules can be expected to apply, particularly with regard to approval of the use of the funds and the advance notice required before each instalment is needed. It is important for the employer to follow all the required rules to ensure that the flow of funds is maintained throughout the implementation phases. If a contract under implementation is suspended owing to the lack of employer’s funds the consequences can be financially very severe for the employer, in addition to the other undesired effects.

If financing is to be provided by one or more of the International Financing Institutions (IFI’s), then it is usually necessary to contact the IFI at an early stage, and probably several years before the funds will be required. This will provide the IFI with the chance – if it is likely to approve financial assistance for the project – to put the project onto its list of projects worthy of financing. Thus, by the time the project has matured to the implementation stage, the IFI will

have the necessary funds earmarked for the project. The IFI’s have mandatory, and sometimes complicated, regulations that must be strictly followed. These may apply to the agreement to make a loan to the project, but also to the actual use of the funds provided. If the regulations are not abided by, the IFI will normally cancel the loan. The IFI certainly will wish to examine and approve the financing time schedule.

The financing time schedule should be prepared at the same time and in coordination with the project time programme, and to the degree of accuracy possible at that time. As the phases of the project progress, the financing schedule should be updated and developed to correspond to the latest information. All the various tasks listed in Section 4.1 above should be shown and priced on the financing schedule, together with the times when the various amounts will be required. Obviously the costs for the preliminary studies and the various design and tendering stages will normally be relatively small compared with the capital outlay during the manufacturing, construction and installation stages. It is common for the costs for the consultancy services and other preliminary works to be financed by one of the smaller IFI’s, whereas financing of the construction and the plant manufacture and installation is financed by one or more of the larger IFI’s.

The amounts to be paid under engineering contracts are well known for being often subject to changes. These may be the result of ordered variations, quantities of work being more than originally estimated, increases in taxes and costs generally, and many other reasons. Therefore the financing

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schedule should always contain reasonable allowance for such contingencies.

The employer's financial department should constantly follow up in detail the provision and use of the funds according to good accounting practices, ensuring that funds are always available in the correct amounts to

make the checked and approved payments to the contractors, suppliers, consultants and others concerned.

4.3 Management of tendering

On a complex engineering project there may be several contracts to be awarded. There will also be many persons or parties, apart from the general public, who have an interest in the project, and most of these will have different specialities and interests. For instance, a large employer organisation will have various departments with different functions, e.g., financial control, legal matters, operation and maintenance, personnel, and public relations, each with an interest in the project but with different specialities and probably different priorities and objectives.

Therefore, particularly on a large and complex project, but even on a relatively simple one-contract project, to manage the tendering procedures effectively and without confusion, it is strongly recommended that the employer or the engineer (or the employer's representative) appoints one suitable senior and experienced person to be in charge of the tendering procedures, i.e., a 'tendering coordinator'.

If selection of tenderers is to be through a prequalification procedure, then the tendering coordinator should be in charge of this procedure as well, with duties similar to those for the actual tendering procedure.

The tendering coordinator will be mainly responsible for:

- despatching the tender dossier to each prospective tenderer;
- ensuring that each tenderer has formally acknowledged receipt of the tender dossier;
- managing the site visit, having ensured that tenderers have received details of the arrangements (the tendering coordinator should prepare an agenda, appropriate supplementary briefing information for the visitors, and a record of the visit); and

- receiving and responding to queries from prospective tenderers as follows:

- a question which could have been asked by any tenderer
(for example, seeking clarification of any aspect of the tender dossier or of any arrangements on-site, a clarification which will apply whoever is awarded the contract) should be answered as described in the instructions to tenderers, typically by the tendering coordinator issuing a 'list of tenderers' questions' with the employer's answers to all tenderers;
- a question which relates solely to the tenderer's particular proposals for carrying out the contract (for example, regarding the acceptability in principle of a possible alternative design) should be regarded as confidential and answered to the enquiring tenderer only, the other tenderers not being advised;

If amendments need to be made to the tender dossier the tendering coordinator should issue to prospective tenderers an addendum to tender dossier, and ensure that each tenderer has formally acknowledged receipt.

Unsuccessful tenderers will retain the copyright of their designs. The employer must return their designs, without copies being retained and without releasing details to the successful tenderer, i.e., the contractor.

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4.4 Employer's information to tenderers

Before a serious offer for an engineering project can be submitted by a tenderer, the tenderer must have adequate information and data about the actual site conditions as well as all relevant information about the country or province in which the site is situated, such as governing laws and regulations, the labour market, the availability of materials, transportation facilities, weather conditions, and all other factors that may affect the work he will be required to carry out and the risks he will assume. Clearly, the more factual information that the employer can give to the tenderers the better. Not only will the individual tenderers avoid the costs and effort of making their own investigations, but comprehensive information from the employer will mean that all tenderers can submit their tenders on the same basis, which will facilitate comparison and evaluation of the tenders.

For many types of project, the employer may have carried out relevant investigations. These could include studies concerning feasibility (to verify the likelihood of the project being economically advantageous), and various sub-surface, hydrological and environmental investigations. Tenderers typically need the factual results of all these investigations, so that they can foresee the conditions in which the works are to be implemented.

Tenderers for a construction contract need to study hydrological and sub-surface data, to the extent that this data is relevant to the particular type of works, in order to plan and estimate the costs of the excavation and other related works.

In contracts which include a significant element of contractor-design, tenderers will require additional data on hydrological, sub-surface and other conditions on the site (again, to the extent that this data is relevant) in order to design and determine the details of the works for which costs are to be estimated. Tenderers for contractor-design works require as much data as that required by the employer's designer under an employer-designed form of contract. They may even require more data, because the employer's designer would co-ordinate the pre-tender sub-surface investigations to suit, for example, his preferred location for each pier of a multi-span bridge. In contrast, when the employer arranges for pre-tender investigations in order to obtain the data needed by the tenderer's designers, he may find it difficult to anticipate their preferred locations.

Tenderers require extensive data for the preparation of tenders for a type of contract under which the majority of the

risks and foreseeable and unforeseeable problems are to be borne by the contractor at a fixed contract price. If, for example, the risk of sub-surface conditions is allocated to the contractor, each tenderer needs to assess how difficult the actual conditions may be, both in terms of working in these conditions and in terms of their effect on the design of the permanent works. If the risk of adverse sub-surface conditions is significant, taking into account the type of works, it may be in the employer's interests for the contract to allocate this risk to the employer either by amending the contract conditions or by adopting a more equitable form of contract.

Similarly, if other risks which are to be carried by the contractor under a fixed price type of contract are significant, the employer should carefully consider the consequences of allocating these risks to the contractor. A fairer allocation of risks under a more equitable form of contract might well yield a better probability of success.

Conversely, less risk entails less need for pre-contract data. For example, under a contract for the supply of an item of plant, the supplier will not need data which has no effect on the item's design. He may need to have details of the environmental and other conditions in which the plant will be required to operate, but would not normally be interested in knowing the depth of bedrock around the site.

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4.4.1 All relevant data

Under the FIDIC forms of contract the employer is required to make available 'all relevant data' in his possession, which would include;

- data which he obtained from investigations for the works; and
- data obtained by others, including data which may be publicly available but is in the employer's possession.

The employer should make as much information as possible available to tenderers, although it would be unwise for him to state that no other information was available. For a successful contract, it is in both parties' interests for all of the tenderers and (subsequently) both of the parties to have as much factual information, relevant to the site and works, as is available. However, the employer's obligation is only to make "all relevant data on sub-surface and hydrological conditions" available. The employer does not have to (although he may) make available:

- any data which is clearly not relevant to the contractor's performance of obligations under the contract;
- information which is known to be incorrect and thus not data (but dubious data should be made available, albeit with suitable explanations);
- experts' opinions and other non-factual interpretations, which are not data;
- information which is neither data on sub-surface conditions nor data on hydrological conditions noting that:
 - 'sub-surface conditions' are the conditions below the surface, including those within a body of water and those below the river-bed or sea-bed;
 - 'hydrological conditions' means the flows of water, including those in rivers and the underwater currents in open seas, and
 - 'environmental aspects' include such matters as the (known or suspected) presence of pollutants.

4.4.2 Employer's responsibilities

Under the FIDIC forms of contract the employer asserts that all his relevant data have been made available to the tenderers, but he also asserts that he shall similarly make available to the contractor any data which thereafter comes into his possession. Failure by the employer in this respect may have significant consequences under the contract in general and, in particular, under the clauses dealing with the extent to which conditions will be regarded as being 'unforeseeable'. In some countries, negligent or intentional withholding of data may entitle the contractor to termination, and consequential personal injury may result in civil and/or criminal liability. In any case, withholding of significant data may result in the contractor making a claim for misrepresentation.

The employer should endeavour to ensure that he obtains all his data as early as possible: preferably before the tender dossier is issued to prospective tenderers, so that they can study the data before they visit the site for the first time. Under the FIDIC forms of contract the employer makes data available at the latest by 28 days before the tenders must be submitted, so that the tenderers have this time within which to review the final items of data and finalise their tenders. If

important or unexpected data becomes available thereafter, such data must be made available, and it may be appropriate to consider postponing the date for submission of tenders.

Under most contracts the contractor's price is deemed to have been based on the information given to him by the employer before contract signature as well as what the tenderer could reasonably have found out during the tendering period, including at the site visit. Therefore, if the employer's information was inadequate or incorrect, the result may be at least a claim from the contractor for extra payment and/or extra time.

However, the contractor is responsible for the interpretation of the site data, and for obtaining other necessary information, so far as was practicable. The practicality of obtaining information will clearly depend upon the time allowed for the preparation of the tender, and for aspects such as the accessibility of the site. For most employer-design contracts, the contractor will be deemed to have obtained all other necessary information to the extent which was practicable, which clearly depends upon the cost and time necessary to obtain the information, within the prescribed tendering period.

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Under design-build and turnkey type contracts, the employer's information is equally important, but often the contractor is required, before or sometimes after contract signature, to verify the data given by the employer, and take over the responsibility for it, with the employer only being liable to the limited extent specified in the contract.

The employer should therefore provide as much useful information to tenderers as possible. However, the information should be factual. It should be the actual borehole reports, the actual weather statistics, the actual records of river flows, etc. It should not contain conclusions reached by the employer or his staff on that data. It is up to the tenderers to come to their own conclusions as to what the data mean to the employer's

work and his risks. For example, if the borehole data shows dry boreholes, the employer should not then inform the tenderers that the work will be carried out 'in the dry'. If he does so, then immediately water from whatever source is encountered, the contractor can be expected to consider making a claim.

4.5 Corruption

Corruption is a serious problem in certain parts of the world. Such corruption may be limited, or may even be widespread, and it is known that certain countries accept some forms of corruption as part of normal business practice. The construction industry unfortunately provides a number of opportunities for individuals or companies to believe they can achieve an unfair advantage by resorting to corrupt dealings.

FIDIC is totally opposed to corruption in all its forms, which it believes is a major factor in sabotaging the good efforts of those interested in relieving poverty and other ills in many developing countries. In all countries where it is present it provides unfair gain – albeit sometimes short-lived – to those involved while placing unnecessary financial burdens on the law-abiding citizens.

Tendering procedures promoted by FIDIC are devised to emphasise transparency at all stages of the process, with the aim of eliminating corruption, fraud and collusion, and the FIDIC forms of contract contain strict undertakings by the parties to counteract such practices. The FIDIC forms contain the following or similar strict clauses in relation to the avoidance of corruption:

"If the employer determines that the contractor has engaged in corrupt, fraudulent, collusive or coercive practices, in competing for or in executing the contract, then the Employer may, after giving 14 days' notice to the contractor, terminate the contractor's employment under the contract and expel him from the site, and the provisions of Clause 15 (Termination by Employer) shall apply as if such expulsion had been made under Sub-Clause 15.2.

For the purposes of this Sub-Clause:

- a 'corrupt practice' means the offering, giving, receiving or soliciting of any thing of value to influence the action of a public official in the procurement process or in the contract execution.
- b 'fraudulent practice' means a misrepresentation of facts in order to influence a procurement process or the execution of the contract to the detriment of the employer, and includes collusive practice among tenderers (prior to or after tender submission) designed to establish tender prices at artificial non-competitive levels and to deprive the employer of the benefits of free and open competition.
- c 'collusive practice' means a scheme or arrangement between two or more tenderers, with or without the knowledge of the employer, designed to establish tender prices at artificial, non-competitive levels.
- d 'coercive practice' means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the procurement process or affect the execution of a contract."

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5.1 General

Standardisation, both in technical and administrative matters, is desirable for the satisfactory execution of many types of commercial projects. Major projects, whether they are predominantly building, civil engineering, chemical engineering, electrical engineering, mechanical engineering, or any interlocking combination, are often technically complex. With the resulting complexity of contractual relationships, it is becoming increasingly important for them to be based upon a form of contract with which the contracting parties and financial institutions are familiar.

In the majority of cases, the contracting parties will react favourably to standard forms of contract, which should lessen the likelihood of unsatisfactory performance, increased costs and disputes. Where the contract is to be based on standard conditions, tenderers should not need to make financial provision for unfamiliar contract conditions. The widespread use of standard conditions also facilitates the

training of personnel in contract management and administration, reducing the need for them having to work with ever-changing contract conditions.

The scope of the project and the aims and wishes of the employer will influence the management structure to be developed for the project and the contractual relationships to be formed between the parties.

Different contractual relationships will require different conditions of contract. It is also to be noted that within a larger project there is likely to be more than one type of contract adopted.

Recommendations for the use of particular FIDIC standard forms for the conditions of contract suitable for the various contract types that may be applicable within each project are given in the following, together with descriptions of

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some of the more usual wishes of employers and the likely effect of such wishes on the final contract prices. In addition, typical management structures, appropriate to particular contractual relationships and to the employer's requirements, are described and illustrated with appropriate charts.

FIDIC has published standard forms of contract since the 1950's, and they have colloquially been known according to the colour of their cover, notably the 1987 Red Book for construction works and the 1992 Yellow Book for electrical and mechanical works. FIDIC's current range of conditions of contract includes:

- *FIDIC Client/Consultant Model Services Agreement* (White Book, 4th Edition 2006), recommended for general use for the purposes of pre-investment and feasibility studies, designs and administration of construction and project management, where proposals for such services are invited from consultants.
- *FIDIC Short Form of Contract* (Green Book, 1st Edition 1999), recommended for building or engineering works of relatively small capital value and/or short construction time. Depending upon the type of work and the circumstances, this form of contract may also be suitable for contracts of greater value, particularly for relatively simple or repetitive work.
- *FIDIC Conditions of Contract for Construction* (1999 Red Book or CONS, 1st Edition 1999), recommended for building or engineering works designed by the employer or by his representative, the engineer. However, the works may include some elements of contractor-designed civil, mechanical, electrical and/or construction works.
- *FIDIC Conditions of Contract for Plant and Design-Build* (1999 Yellow Book or P&DB, 1st Edition 1999), recommended for the provision of electrical and/or mechanical plant, and for building or engineering works designed by the contractor.

- *FIDIC Conditions of Contract for EPC/Turnkey Projects* (Silver Book or EPCT, 1st Edition 1999), which may be suitable, where:

- a higher degree of certainty of final price and time is required, and
 - the contractor takes total responsibility for the design and execution of the project, with little involvement of the employer.
- *FIDIC Conditions of Contract for Design, Build and Operate Projects* (Gold Book or DBO, 1st Edition 2008), recommended for the provision of electrical and/or mechanical plant or systems, and for building or engineering works designed by the contractor where the contractor is required to operate and maintain the completed facilities for a number of years.
- *FIDIC Conditions of Contract for Dredging and Reclamation Works* (2006 Blue-Green Book or Dredgers Contract, 1st Edition 2006).

The *FIDIC Contracts Guide* (1st Edition, 2000) and the *FIDIC DBO Contract Guide* (1st Edition, 2011) give comprehensive guidance on the use of the three major forms of contract – the Construction, Plant and Design-Build and EPCT contracts – and on the Design-Build-Operate Contract, respectively.

Selection of the appropriate form of contract is critical to the success of a project. However, the appropriate form cannot be selected until certain decisions have been made on project procurement aspects. While the decision making process is illustrated in Table 5.1 – Features of contract types, and the charts of Fig. 5.1 – Contract types, the important procurement aspects are described in the general guidance on the selection of the appropriate form, as set out in Sections 5.2 to 5.11 below.

5.2 FIDIC Client/Consultant Model Services Agreement

FIDIC has developed a standard form of agreement for use when an entity wishes to retain the services of a consultant to carry out specific services of a consulting or advisory nature. The entity may be an employer or developer wishing to develop or monitor a

project, a contractor wishing to have design work carried out, an IFI, or any other organisation requiring consulting services or advice. Under such arrangements that organisation is referred to as the client and it will sign an agreement with the consultant.

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FIDIC's standard form is called the *FIDIC Client/Consultant Model Services Agreement* (White Book), currently 4th Edition, 2006. It is recommended for general use for the purposes of pre-investment and feasibility studies, designs and administration of construction and project management, both for employer-led design teams, and for contractor-led design teams under design and build procurement, where proposals for such services are invited on an international basis. It is equally adaptable for national agreements.

The *FIDIC Client/Consultant Model Services Agreement* represents the basic form of an agreement of appointment between a client and his consultant. It is intended to cover the minimum requirements of a typical appointment contract. Additional or amended clauses may be required to address particular project and commercial issues between the parties.

As for the other FIDIC contracts and agreements, the clauses which are considered to be of general application have been grouped together in the general conditions. It is

intended that where applicable the general conditions shall be linked together with the particular conditions which must be specially drafted to suit each individual agreement and type of service required.

FIDIC publishes a *White Book Guide* which includes comments on clauses in the model services agreement and notes which may be helpful in the preparation of the necessary appendices to the White Book, namely: A – Scope of Services; B – Personnel, Equipment, Facilities and Services of Others to be Provided by the Client; C – Remuneration and Payment; and D – Time Schedule for Services.

FIDIC also publishes a standard form of *Joint Venture (Consortium) Agreement* for use between consultants wishing to undertake a project for a client under a joint venture arrangement, and a standard form of *Sub-Consultancy Agreement* for a consultant wishing to employ a sub-consultant for a particular commission.

5.3 Minor works contracts

A minor works form of contract was originally developed by FIDIC for projects with capital value under US\$ 500,000, a construction time of not more than six months,

and without the need for specialist sub-contracts. However, it has been shown that the form can be suitable for certain larger construction projects and for longer construction time.

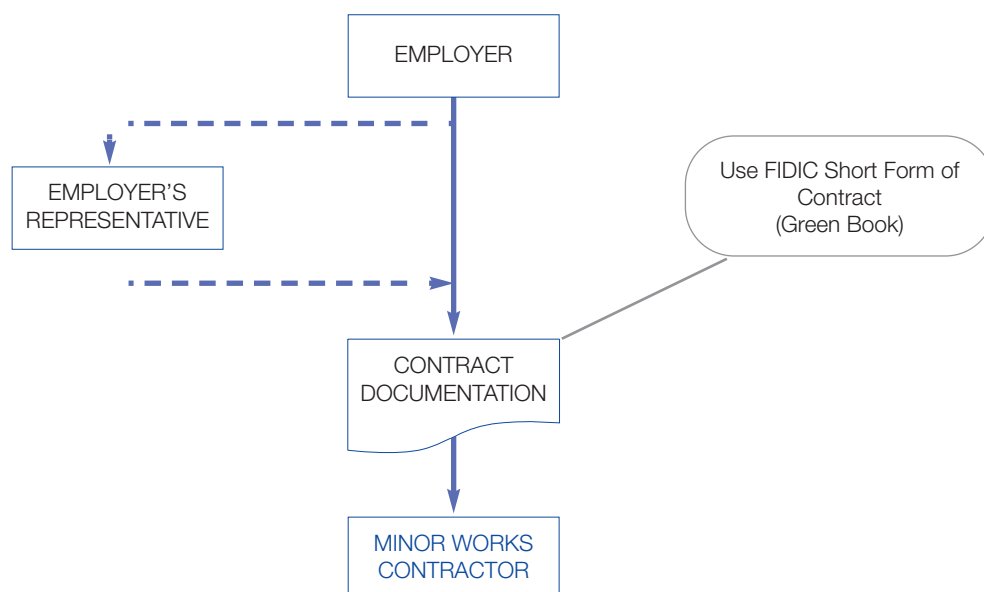


Fig. 5.2 – Minor works: typical management structure

Minor works are considered to be those of relatively small capital value, or of short duration or are relatively simple or repetitive in nature, without the need for specialist subcontractors.

Note: the employer may appoint an employer's representative to act for the employer.

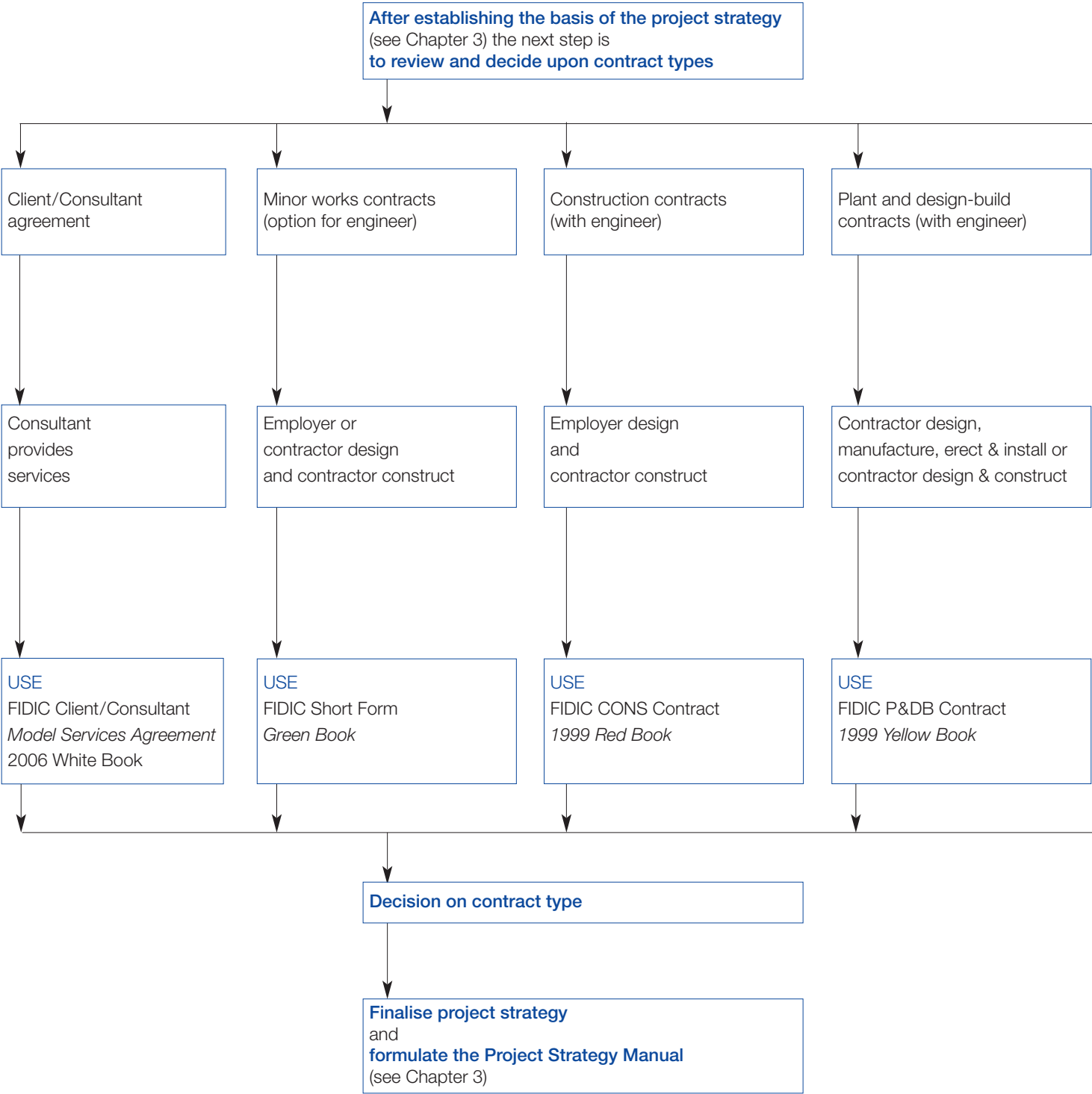
Fig. 5.1 – Contract types: flowchart notes

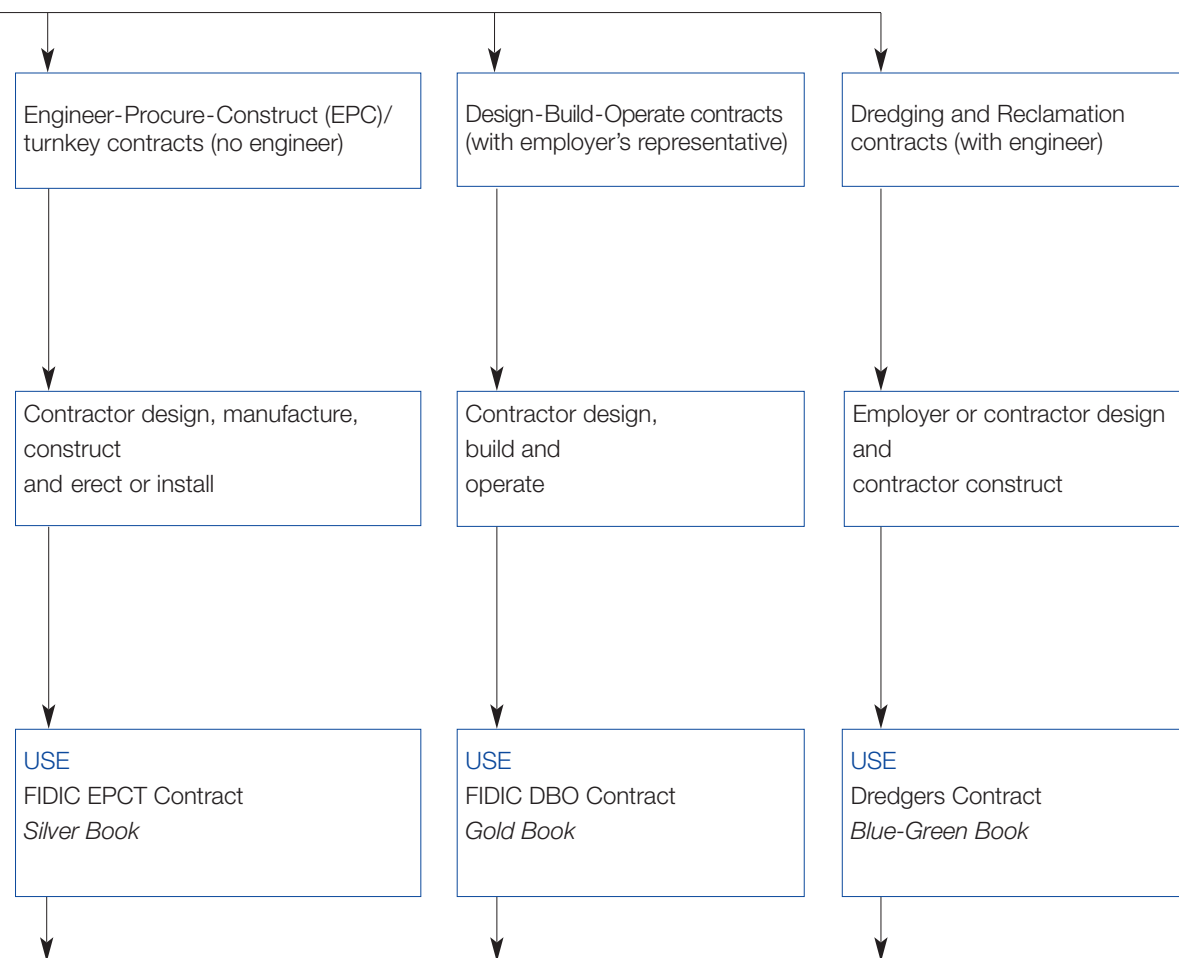
The principal contract types are briefly described.

Contract	Description
Minor Works	Works of relatively small value and for which the construction and/or installation time is short. Larger scale works of a simple and repetitive nature may also be considered to fall into this category. For such contracts FIDIC recommends that the <i>FIDIC Short Form of Contract</i> (Green Book) is used.
Construction (with engineer)	Nearly all design for traditional contracts for civil engineering infrastructure and buildings is done by the employer or his retained consulting engineer. The engineer administers the contract, monitors the construction work and certifies payment by measurement of work done valued at the tendered unit rates, schedules of prices or lump sums. The employer is kept fully informed and can vary the works through the engineer. For such contracts FIDIC recommends the use of the <i>FIDIC Conditions of Contract for Construction for Building and Engineering Works designed by the Employer</i> (1999 Red Book).
Plant and Design-Build (with engineer)	The majority of the design for traditional contracts for electrical and mechanical plant, including erection on-site, is done by the contractor to meet the outline or performance specifications prepared by the employer. Similarly, in design-build contracts the contractor will carry out the majority of the design, including design for infrastructure and other works as required, to fulfil outline or performance specifications prepared by the employer. The engineer administers the contract, monitors manufacture, delivery and erection on-site or construction and certifies payment normally according to achieved milestones on a lump sum basis. The employer is kept fully informed and can vary the works through the engineer. For such contracts FIDIC recommends the use of the <i>FIDIC Conditions of Contract for Plant and Design-Build for Electrical and Mechanical Plant, and for Building and Engineering Works, designed by the Contractor</i> (1999 Yellow Book).
Engineer, Procure, Construct/Turnkey (with employer's representative)	For large projects where the employer: - wishes the contractor to take total responsibility for design and construction and to hand over a completed facility 'at the turn of a key'; - does not wish to be involved in the day-to-day progress of the work; - is prepared for the project to be organised on a strictly two party approach, i.e., without an engineer being named in the contract; and, in particular, is prepared to pay the contractor more for carrying the risks associated with a high certainty of final price and time, the <i>FIDIC Conditions of Contract for EPC/Turnkey Projects</i> (Silver Book) can be used. This form of contract is not suitable in situations where there may be high unforeseeable risk.
Design, Build and Operate (with employer's representative)	A variant to the design-build contract requires the contractor, upon completion of the works, to be responsible for the operation of the facility for a pre-determined period. The engineer administers the contract, monitors manufacture, delivery and erection on-site, construction and subsequent operation and will certify payment due in accordance with the contract. The employer is kept fully informed and can vary the works through the employer's representative. For such contracts the use of the <i>FIDIC Conditions of Contract for Design, Build and Operate Projects</i> (Gold Book), which incorporates the requirement for operation by the contractor, is recommended. The tender documents should be prepared by suitably qualified engineers who are familiar with technical aspects of the operational works.
Dredging and Reclamation (with engineer)	For dredging, reclamation and ancillary construction works it is assumed that the contractor will not be responsible for extensive design. Realistic and balanced risk allocations need to be embodied in the terms of the contract for application in the event of weather and adverse subsurface conditions causing delay and creating additional costs. For such contracts, FIDIC recommends the use of the <i>FIDIC Form of Contract for Dredging and Reclamation Works</i> (Blue-Green Book). It is to be noted that the contractor's normal defect rectification responsibilities are excluded from this form of contract.

Note: As indicated in Fig. 2.1 - Basic considerations and its accompanying notes, numerous factors are involved in the process to decide upon the form of contract under which the work is to be carried out.

Fig. 5.1 – Contract types





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The form is regularly used in suitable cases for contracts with value of up to US\$ 10,000,000. For simple repetitive work there may be no upper limit to the contract sum.

Regarding the duration of the construction time, the limiting factor is the time when the contract sum can remain fixed, i.e., without allowance for escalation and other changes in costs. Usually contractors will agree to keep prices firm for up to 12 months, and sometimes even up to 18 months, but thereafter some provision for price escalation should be included in the contract.

Under the usual arrangements for this type of project:

- the employer provides the finance;
- the works comprise construction but may include, or wholly comprise, electrical, mechanical or other engineering work;
- the contractor constructs the works irrespective of whether the design is provided by the employer or by his representative (if any) or by the contractor;

- the employer may wish to order variations to the works;
- the employer may wish to appoint an individual or firm, as his representative, to carry out certain duties; and
- the employer has optional choices for valuation and payment methods.

If these arrangements suit the employer's requirements, FIDIC recommends using the *FIDIC Short Form of Contract* (Green Book).

The *FIDIC Short Form of Contract* has been prepared with short sentences and simple straightforward language, and is suitable when the work is uncomplicated, and the parties do not wish the complexities of the forms of contract for major works. The Short Form is only 10 pages in length, and the simple language assists easy translation.

A typical management structure for a Minor Works contract is shown on Fig. 5.2.

5.4 Construction contracts

Procurement of construction works has for many years principally taken place according to a standard pattern. Following the earlier stages of the project, such as pre-feasibility and feasibility studies, the body responsible for the development of the project, i.e., the owner or employer, will engage a consultant to develop conceptual or preliminary designs, perhaps illustrating various alternatives. After decision on the preferred solution, the consultant will then prepare the final design of the project. Normally, the final design prepared by the consultant will be a comprehensive set of drawings and technical specifications which will show and describe in detail exactly what works are required, what quality standards shall apply to the various materials and workmanship, and often precisely the methods by which the various parts of the work shall be carried out.

The consultant prepares the tender dossier which shall contain, not only the drawings, technical specifications and other documents describing the technical requirements, but also the conditions of contract setting out the legal and commercial requirements for the execution, i.e., the 'rules of the game', the bill of quantities and the other documents

necessary for contractors to submit their tenders. The tender dossier should generally comprise the following principal documents:

- instructions to tenderers (how and when to submit the tender, etc);
- information to tenderers (information about the site, local conditions, etc.);
- general conditions of contract (standard form for all construction work);
- particular conditions of contract (applying to the specific project);
- technical specifications (for materials, workmanship, etc.);
- bills of quantities (for measurement and payment of work done);
- various forms (of tender, agreement, securities, etc.);
- drawings (showing where and what physical parts are to be constructed).

In parallel with the preparation of the tender dossier, the employer or his consultant should give notice of the project in suitable publications and then list those contractors expressing the wish to participate in

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tendering for the works. If the work is of a high or complicated standard or involves specialised competence requiring an experienced contractor, then a prequalification procedure may be necessary. The purpose of prequalification is to ensure that only contractors who are capable of satisfactorily carrying out the work, and are financially stable, shall be permitted to submit a tender (see Chapter 8 – Prequalification of Tenderers: Contracts for Works).

The tender dossier will then be distributed to those contractors wishing to participate or, in the case of prequalification, to those who are prequalified, and they will be invited to submit their tenders. In applicable cases a site visit will be arranged so that all tenderers can familiarise themselves with the actual local conditions. Allowance shall be made for tenderers wishing to ask questions or for clarifications, and strict procedures shall apply to the way answers shall be given.

Strict rules also apply to the conduct of the tendering procedure and the opening of tenders and their subsequent evaluation. It is advisable, and mandated by the IFI's, that an

independent committee be established for this purpose, and to oversee the tender evaluation process, the actual evaluation often being carried out by the employer's consultant.

Criteria to be used in the evaluation of tenders shall be set out in the tender dossier, and these will be applied by the evaluation committee. The tenders will first be checked for compliance, both technical and contractual, with what is set out in the tender dossier. The complying tenders will then be evaluated, and as a rule the contractor submitting the 'lowest evaluated tender' will be awarded the contract for construction of the works.

When the contract has been awarded and the work carried out, payment is made to the contractor on the basis of completed work. At the end of every month the work completed is measured, and then payment is calculated by multiplying the units of each work item satisfactorily completed by the unit rate stated in the relevant bill of quantities. This type of contract is often referred to as a 'remeasured work contract'. Thus payment can also be said to be made on 'inputs', i.e., the contractor is paid against the inputs he delivers.

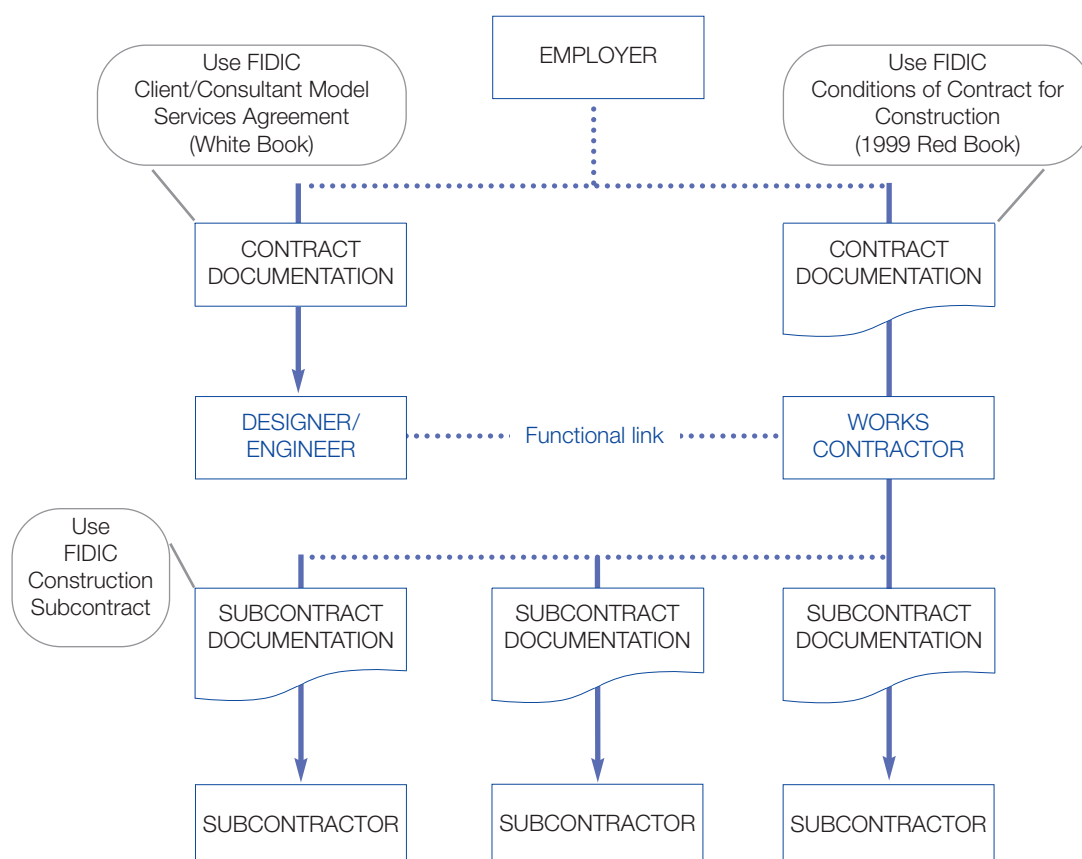


Fig. 5.3 – Construction contracts: typical management structure

For building and engineering works designed by the employer. Sometimes called design-bid-build contracts.

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This procedure for the procurement and engagement of the contractor for the execution of engineering works, usually works of civil engineering construction, e.g., infrastructure, buildings, hydropower plants, roads, railways, tunnels, and bridges, has been the norm for many decades both for national and international projects. It is applicable to civil works construction projects of all sizes, from medium to very large and complicated projects, where the employer (or his consultant) has prepared the design, or most of the design.

FIDIC's recommended procedure for obtaining tenders for such a construction project is set out in Chapter 11 – Obtaining Tenders: Construction Contracts.

A typical management structure for a traditional construction project is shown in Fig. 5.3.

Larger and more complex than minor works projects, traditional construction projects involve civil engineering and building works required by an employer who, unless he carries out the design in-house, would normally commission a consulting engineer to design the works. It is to be noted that traditional construction projects often also include some elements of contractor-designed civil, electrical or mechanical engineering work.

Under the usual arrangements for this type of project:

- the employer:
 - provides the finance;
 - appoints a consulting engineer to carry out the design work and prepare the bill of quantities;
 - appoints the engineer to administer the contract, monitor the construction works and certify payment.
- the engineer (on behalf of the employer) may initiate variations;
- the employer wishes to be kept fully informed;
- payment to the contractor will be according to a bill of quantities or lump sums for approved work done;
- the employer seeks to ensure an equitable sharing of construction risks in the contractual arrangements, e.g., he takes the risk of unexpected adverse ground conditions; and
- owing to the decision to carry a part of the construction risk, the employer accepts that the quantities are estimated and overruns may occur to the original contract sum and, possibly, the completion date.

If these arrangements suit the employer's requirements, FIDIC recommends using the FIDIC Conditions of Contract for Construction for Building and Engineering Works designed by the Employer, commonly known as CONS or the 1999 Red Book.

5.5 Plant and design-build contracts

5.5.1 Electrical and mechanical plant designed by the contractor

Contracts for the supply and installation of plant and equipment, as opposed to civil works construction, involve the design, manufacture, supply, installation, and commissioning of specially engineered plant and equipment, such as turbines, generators, boilers, switchyards, pumping stations, telecommunications equipment, process and treatment plants, and the like for power, water, sewerage, telecommunication, and similar projects.

Procurement of works covering the supply and installation of plant and equipment has traditionally closely followed the same procedure as for construction works described above, however with certain significant differences. The differences are due to the disparity between the two types of projects, of which the following

features can be especially noted:

- much of the plant is manufactured off-site at a factory, whereas for construction work the execution of the work is for the most part carried out at site;
- the detailed design of the plant is the responsibility of the contractor, with usually only concept or preliminary design being done by the employer;
- the contractor is usually associated with a plant manufacturer or supplier alone or associated with a civil works contractor;
- payment is mainly on a schedule of payments based on achievement of predefined measurable progress or milestones; and
- testing and commissioning are more comprehensive and stringent on a plant project.

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With regard to the design of the plant and/or equipment, this is the responsibility of the contractor, who will design his plant or equipment to fulfil outline or performance specifications set by the employer or his consultant, normally contained in the document entitled 'employer's requirements'.

Thus, when the consultant prepares the tender dossier he will usually only include drawings to show the location, size, connection points, interfaces, and limits of delivery of the plant or equipment and such other information as may be necessary for the contractor, but no detailed design of the plant or equipment itself.

Notes concerning the preparation of the employer's requirements are given in Appendix 5.5.1.

The essential differences indicated above often require that the total payment will be divided into a number of lump sums, corresponding to completion of the various important stages of the work. Payment will then be made when each

'milestone' is achieved, for example, 20% of the contract sum as advance on contract signature, 30% on completion of manufacture of the plant, 10% on shipping, 10% on arrival at site, 20% after installation and successful commissioning, and the final 10% after compliant performance testing.

The procurement process, while still in accordance with the usual principles of international competitive bidding, may be carried out according to two distinct procedures. The first is 'single-stage tendering' and the second is 'two-stage tendering'.

Single-stage tendering

The procedure for single-stage tendering for plant and equipment is very similar to that for construction works described above. The consultant prepares the tender dossier for which an output or a performance specification is included (which contains the employer's requirements, but does not include the detail design of the plant) which is distributed to interested contractors/suppliers.

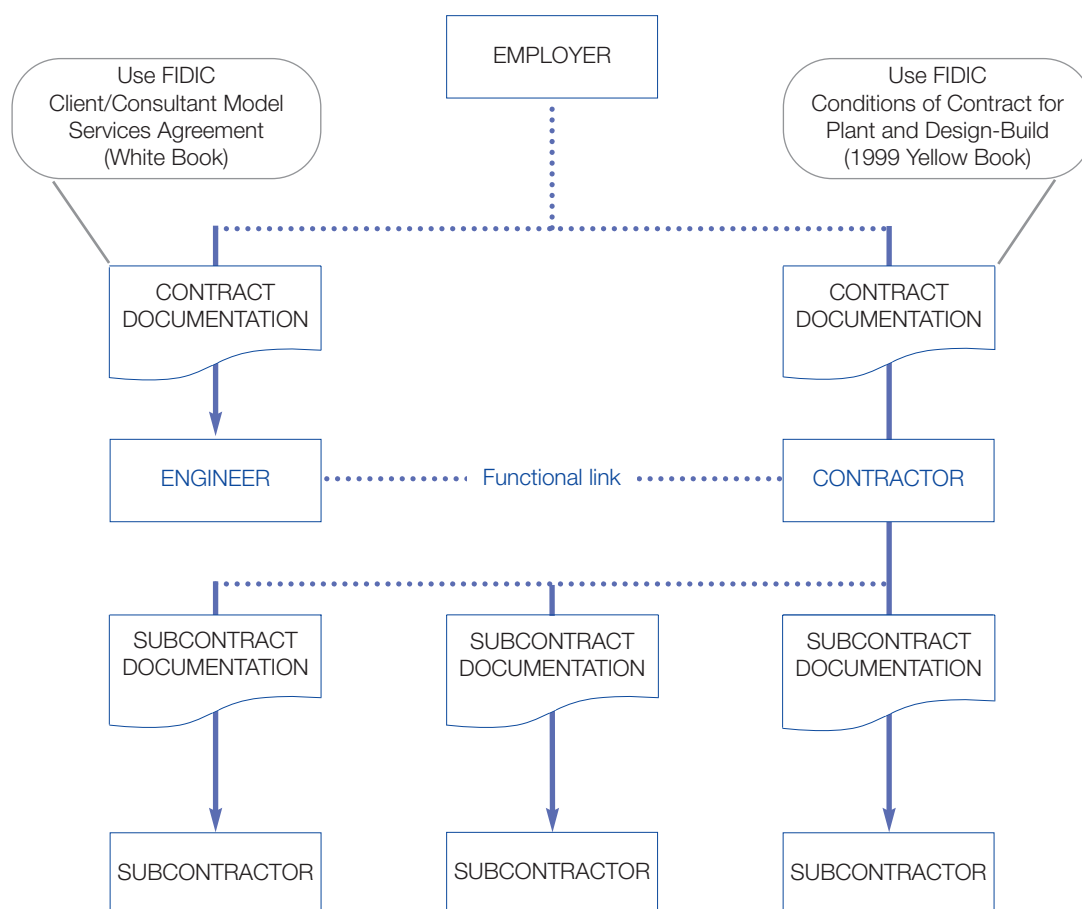


Fig. 5.4 – Electrical and mechanical plant contracts and contractor-designed construction contracts: typical management structure

For electrical and mechanical plant, and for engineering works, designed by the contractor. Sometimes called design-build contracts.

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Usually the tenderers will have been chosen through the prequalification process, but in cases where there is only a limited number of possible contractors/suppliers the invitation to tender may be sent directly to all of them.

When the tenders are received they are evaluated by the employer or his consultant according to the evaluation criteria contained in the tender dossier. As before, invariably the 'lowest evaluated tender' or the one considered to be the 'economically most advantageous' tender is the successful one. When the contract has been awarded, payment is made to the contractor on a lump-sum basis on the successful completion of each stated 'milestone'. This single-stage tendering procedure for plant and equipment procurement has been the norm for many decades.

Two-stage tendering

The second procedure, the two-stage tendering procedure, has been introduced mainly for the purpose of allowing contractors/suppliers more chance to offer their own solutions to the employer's requirements. The reasons for and essential features of the two-stage tender process can be expressed as follows:

- 1 Most systems or equipment requirements can be solved in more than one way [1].
- 2 By employers specifying only the required function, i.e., 'functional' or 'performance' specifications, contractors and suppliers are free to present their own solutions. The employer can therefore benefit by choosing the most beneficial solution.
- 3 However it is not usually easy to compare different solutions and determine which is the most beneficial.
- 4 The World Bank and other International Financing Institutions have as their procurement policy that

contracts should be awarded to the qualified bidder who offers the 'bid offering the lowest evaluated cost to the Borrower' [2].

- 5 For turnkey contracts or contracts for large complex plants or works of a special nature or for procurement of equipment which is subject to rapid technological advances, The World Bank, the European Bank for Reconstruction and Development and other IFI's allow a two-stage bidding process [3], as follows:
 - In the first stage the employer provides a conceptual design or performance specification to which bidders provide unpriced technical proposals. These technical proposals may include a list of any deviations to the technical and commercial conditions in the employer's documents or any alternative technical solutions (provided that such deviations or alternative solutions do not change the basic objectives of the project) [4].
 - Following evaluation by the employer of the first-stage bids, the employer may conduct a clarification meeting with each qualified bidder [5] where the whole bid is reviewed. Any required modifications will be noted in a memorandum.
 - The second-stage bid [6] will consist of an updated technical bid incorporating all required modifications, plus the commercial bid.
 - The employer will check that all modifications and conditions have been complied with and then award the contract to the lowest evaluated bidder.

The two-stage tendering process is acceptable and standard practice on international projects for the supply and installation of large and/or complex plants and/or equipment [7].

The two-stage tendering process lends itself to procurement based on performance-type specifications. A useful paper setting out the advantages and

References

- [1] Consider various methods for: water or sewage treatment plants; harbour handling equipment; railway rolling stock; IT equipment; manufacturing plants; transmission lines; and virtually any other plant project, and even civil works such as bridge construction, buildings and road construction.
- [2] World Bank Guidelines for Procurement Sub-Clause 2.4.
- [3] World Bank Guidelines for Procurement Sub-Clause 2.6.
- [4] World Bank SBD Supply and Installation of Plant and Equipment – Two Stage – ITB Sub-Clause 9.2
- [5] World Bank SBD for Supply and Installation of Plant and Equipment – Sub-Clause 18.1.
- [6] World Bank SBD for Supply and Installation of Plant and Equipment – Sub-Clause 19.1
- [7] Both the single stage and the two stage tendering procedures are described and embodied in the World Bank Standard Bidding Documents for Supply and Installation of Plant and Equipment dated November 1997 (Revised January 1999). Appendix 5 – Two-Stage Bidding Procedure Flowchart shows the procedure for the World Bank's two-stage tendering process.

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disadvantages of Performance-Based Procurement (PBP) as well as its basic features is to be found at Appendix 5.5.2.

Management structure

A typical management structure for a traditional electrical and mechanical plant project is shown in Fig. 5.4.

Larger and more complex than minor works projects, traditional plant projects involve the design, manufacture, delivery, erection, testing, and commissioning of mechanical and electrical plant by a contractor to an outline or performance specification prepared by the employer.

Under the usual arrangements for this type of project:

- the employer:
 - provides the finance; and
 - will appoint the engineer to administer the contract, monitor the design and manufacturing activities, the installation and erection on-site and construction work and to certify payment; and

- the engineer may initiate variations; and
- the employer wishes to be kept fully informed, and
- payment to the contractor will be according to achieved milestones generally on a lump-sum basis; and
- the employer seeks to ensure an equitable sharing of construction risks in the contractual arrangements; and
- owing to a decision to carry a part of the construction risk, the employer accepts that overruns may occur to the original contract sum and, possibly, the completion date.

If these arrangements suit the employer's requirements, FIDIC recommends the use of the FIDIC Conditions of Contract for Plant and Design-Build for Electrical and Mechanical Plant, and for Building and Engineering Works, designed by the Contractor, commonly known as P&DB or the 1999 Yellow Book.

5.5.2 Building and engineering works designed by the contractor

As an alternative to the design of building and engineering works being carried out by the employer or his consultant, it is sometimes decided that the design should be carried out by the contractor, and that it should be the contractor who is responsible for the design and that the completed works will be fit for purpose and otherwise satisfactory. This arrangement is usually called 'design-build'.

Under design-build contracts the employer provides his employer's requirements and the contractor shall design and build/construct the facility in accordance with these.

Thus design-build contracts are similar to plant contracts, as described in Sub-Section 5.5.1 above. However, instead of designing the electrical, mechanical or other plant, the contractor will in this case design the building or engineering facility before he builds/constructs it.

As for plant contracts, the contractor will design and build/construct the works according to outline or performance specifications set by the employer or his consultant. When the consultant prepares the tender dossier he will usually only include drawings to show the outline, conceptual or preliminary design of the building or facility, together with the location, limits of delivery and such other information as may

be necessary for the contractor, but no detailed design of the building/facility itself.

A useful discussion setting out the advantages and disadvantages of Performance-Based Procurement (PBP) as well as the basic features of this procurement approach is to be found at Appendix 5.5.2.

The tender dossier will comprise similar content to that of a construction contract. However, as for a plant contract, the technical specifications of the construction contract will be replaced by the employer's requirements which must contain all the technical and other requirements, which the employer wishes the contractor to carry out or comply with. Also, as for a plant contract, a schedule of payments will usually replace the bill of quantities.

Notes concerning the preparation of the employer's requirements are to be found at Appendix 5.5.1.

The procurement process, while still in accordance with the principles of international competitive bidding, may be carried out according to either single-stage tendering or two-stage tendering as described above in Section 5.5.1 for a plant contract.

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Under the usual arrangements for this type of project:

- the employer:
 - provides the finance; and
 - will appoint the engineer to administer the contract, monitor the design and construction activities and certify payment; and
- the engineer may initiate variations, and;
- the employer wishes to be kept fully informed; and
- payment to the contractor will be according to achieved milestones generally on a lump-sum basis; and
- the employer seeks to ensure an equitable sharing of construction risks in the contractual arrangements; and
- owing to a decision to carry a part of the construction risk, the employer accepts that overruns may occur to the original contract sum and, possibly, the completion date.

A typical management structure for a design-build project designed and constructed by the contractor is shown on Fig. 5.4.

If these arrangements suit the employer's requirements, FIDIC recommends the use of the FIDIC Conditions of Contract for Plant and Design-Build for Electrical and Mechanical Plant, and for Building and Engineering Works, designed by the Contractor, commonly known as P&DB or the 1999 Yellow Book.

5.6 Engineer-Procure-Construct (EPC)/turnkey contracts

5.6.1 Employer financed

In recent years considerable effort has been expended in trying to find viable alternatives to the traditional way of procuring construction works and obtaining plant and equipment. There are several reasons for this, but perhaps the most important has been the lack of public funds to finance infrastructure and other development.

Traditionally, funding of public development projects has been done by government with public funds (either raised from taxation or financed by multilateral or bilateral IFI's). Whereas all involved would like to know at the outset what the final contract price actually will be, it is imperative where private funds are concerned that the final contract price (and time of completion) is as certain as is humanly possible. Whereas government can usually find additional funds to cover a project cost overrun, private investors will not fund a project at all unless they can be sure of the final sum and final time so that their calculations can be relied upon. This has led to the need for contract forms where the emphasis is on a fixed final price and time as an alternative to the traditional forms where the final price and time are somewhat variable.

Complementary to the above, a further reason for wishing to deviate from the traditional method is the

desire of owners, investors, and developers who do not have their own technical staff capable of designing the facility in question, or who do not wish to take the responsibility of designing their own facility, to go directly to suitable contractors to design and construct their project on a 'turnkey' basis. Some also believe that the total implementation time can be shortened if the design work is carried out by the contractor during the early stages of the contract, e.g., partly in parallel with his mobilisation work.

The term 'turnkey' can mean different things to different people. In its purest form it means the complete design and construction of a facility, for example a factory, by a contractor. On completion he will merely hand over the 'key' to the owner, i.e., the employer, who will 'turn the key' and the factory will start up and begin to produce its product. The specification provided by the employer will be a performance-type specification, i.e., defining the output and performance to be achieved by the facility, with very little, if any, detailed requirements. However, turnkey projects also include the whole range of projects, from those with minimum specification by the employer right through to those with very detailed and complex requirements being specified by the employer. Sometimes an employer will specify in great detail

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sections of the work, while leaving the remaining sections with minimal specification.

Normally the majority of the design in a turnkey project is carried out by the contractor, but on occasion a substantial part of the design is provided to the contractor by the employer. The term 'turnkey' can perhaps be said to be more used in Europe, while the substantially equivalent term used in the US and elsewhere is 'EPC' meaning 'Engineer-Procure-Construct'.

For this type of project, the contractor is responsible for all the engineering, procurement and construction to provide a full-equipped facility ready for operation (at the 'turn of the key').

Notes concerning the preparation of the employer's requirements are given in Appendix 5.5.1.

Examples of fixed-price EPC/turnkey projects include:

- a process plant or a power plant;
- an infrastructure project such as a road, rail link, bridge, water or sewage treatment plant, transmission line, or even a dam or hydroelectric power plant;
- a building project generally complete with all furniture, fittings and equipment.

Under the usual arrangements for this type of project:

- the employer:
 - provides the finance for the project, and
 - wishes the contractor to take total responsibility for the design and construction of the facility and to hand it over ready to operate 'at the turn of a key'; and
 - wishes a high degree of certainty that the agreed contract price and time will not be exceeded, and

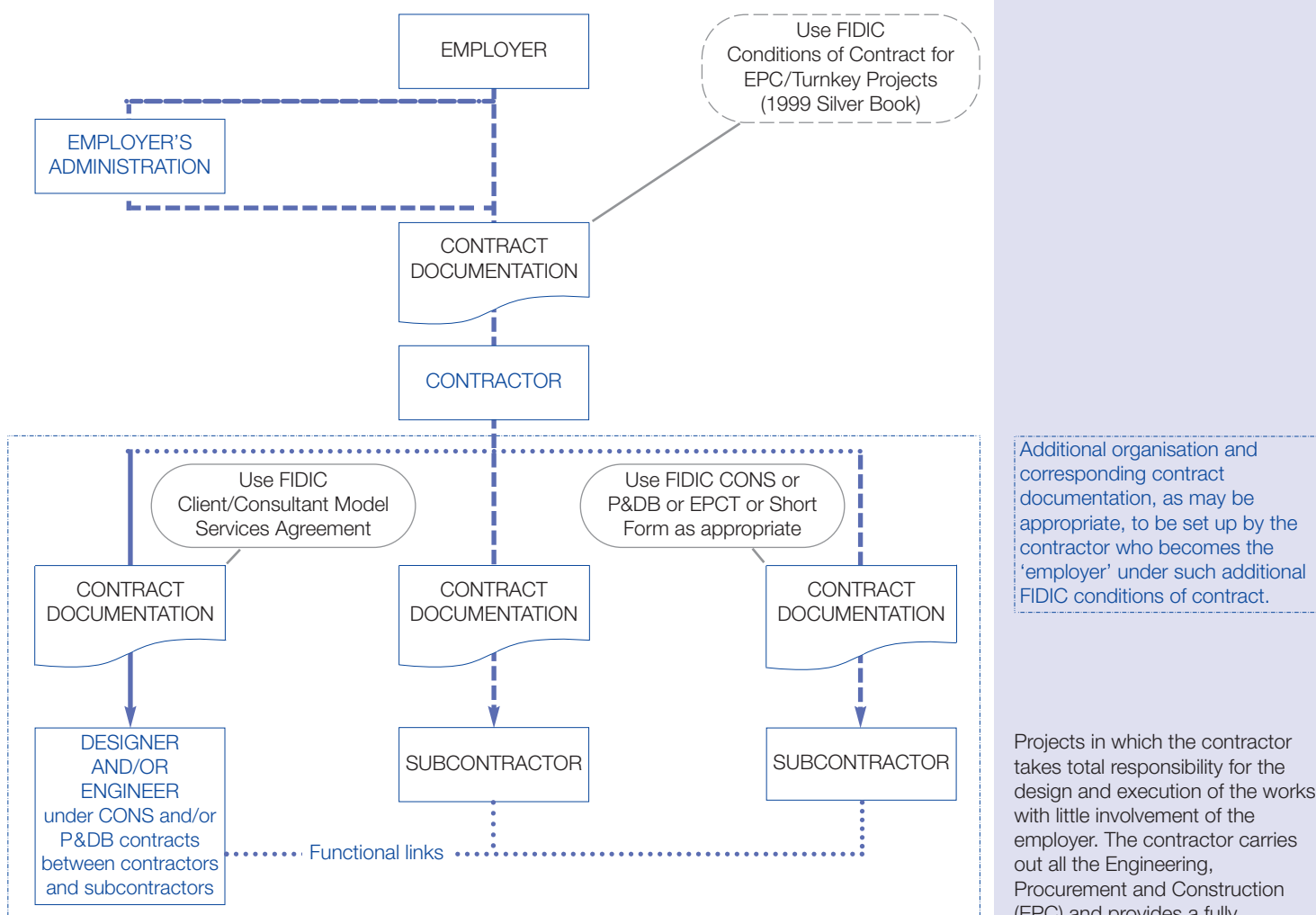


Fig. 5.5 – EPC/turnkey contracts: typical management structure

Projects in which the contractor takes total responsibility for the design and execution of the works with little involvement of the employer. The contractor carries out all the Engineering, Procurement and Construction (EPC) and provides a fully equipped facility, ready for operation at the 'turn of the key'.

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- wishes the project to be organised on a strictly two-party approach, i.e., without an engineer or, in the case of a building project, without an architect being involved; and
- does not wish to be involved in the day-to-day progress of the work, provided the end result meets the performance criteria he has specified; and
- is willing to pay more for the construction of his project (than would be the case if CONS or P&DB were used) in return for the contractor bearing the extra risks associated with enhanced certainty of final price and time. However, if the project involves sub-surface works in uncertain and difficult ground, or involves other risks which are difficult for a tenderer to foresee and price, the risk of such unforeseeable physical and other conditions should be borne by the employer.
- the contractor, if he does not have the resources and expertise to undertake all the work himself, may enter into services or subcontract agreements, as appropriate, to carry out parts of the works.

If these arrangements suit the employer's requirements, FIDIC recommends using the FIDIC Conditions of Contract for EPC/Turnkey Projects, commonly known as EPCT or the Silver Book, for the contract between the employer and the contractor.

If unforeseeable physical conditions are likely, but the employer still wishes to utilise the Silver Book features, then FIDIC recommends that Clause 4.12 of CONS or P&DB be suitably embodied in the particular conditions of EPCT.

Similarly, if other EPCT risks are significant, the employer should carefully consider the consequences of allocating them to the contractor. FIDIC's publication of EPCT does not constitute any indication of its suitability for a particular set of circumstances. P&DB's fairer allocation of risks may yield a better probability for success.

The contractor should ensure that, if he intends to subcontract work, the terms of the subcontract do not expose him to additional unnecessary risk under the terms of the EPC/turnkey conditions of contract with the employer.

A typical management structure for a fixed-price EPC or turnkey project designed and constructed by the contractor is shown on Fig. 5.5.

5.6.2 Contractor financed – BOT type projects

Another trend away from traditional procurement developed in recent years is the method by which a contractor (or group of contractors) is granted a 'concession' by a government or national authority (which is authorised to do so) to provide a particular 'service' to the public sector. Instead of the government raising its own funds, for instance, by taxation, to construct a particular road or railway or water supply or similar, the government grants a concession whereby it gives a private group (usually of contractors, suppliers, financiers, and operators) the right to construct the facility and operate it for a fixed number of years.

The group (i.e., the concessionaire) will provide the financing which will be recouped over the years of operation by charges made to the users of the service. In a typical Build-Operate-Transfer (BOT) project the contractor group will hand the facility over to the government at the end of the concession period, which would typically be 20-30 years.

Several developments to the 'BOT theme' have emerged during the last few years. These 'total project solutions' include Build, Own, Operate and Transfer (BOOT), Build, Lease and Transfer (BLT) and a number of other similar arrangements. In the UK, 'PFI', the Private Financing Initiative, aimed at encouraging the private financing of construction projects. This opened the way to a large number of projects being financed by private funds. Such projects have included the construction and operation as a public service of schools, prisons, hospitals, water and sewage treatment plants, and roads. The concessions usually included financing, design, construction, operation and maintenance of the facilities. For example, in some cases school and hospital catering have been included, but tuition and medical staff were not included.

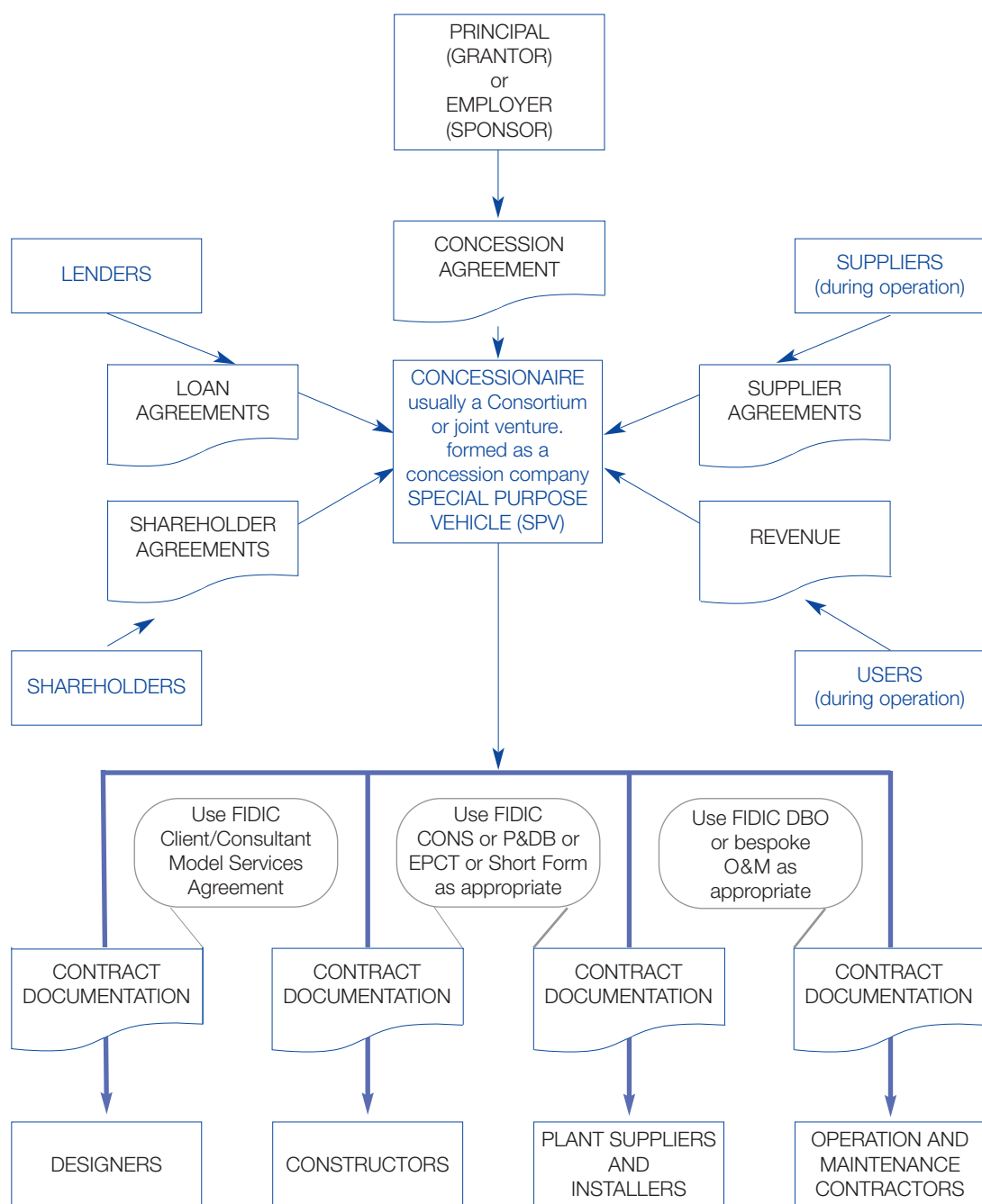
The majority of BOT type schemes are 'project financed'. In project finance, as the term is now commonly used, a project is developed and financed on

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a non-recourse or limited recourse basis. In other words, the project is expected to pay for itself, or largely pay for itself, over the concession period. Those lenders providing the initial funds for the project look primarily to the revenues generated by the completed facility for repayment of the loan, and to all the project assets as security for the loan. Project finance differs from traditional loan structures in that (in the event of default by the concessionaire) lenders generally have recourse

only to project assets or limited recourse to other assets or finance.

As far as the World Bank and other IFI and donor organisations are concerned, they are and will continue to be major lenders for any such approved projects. It is clear that a number of useful and socially desirable projects will never manage to be entirely financed on a non-recourse basis, i.e.,



All agreements/contracts will be with concessionaire/ concession company/SPV.

Fig. 5.6 – Privately financed EPC/turnkey contracts: typical management structure

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entirely pay for themselves over time. For such projects it will be necessary for these lenders, and probably the local government as well, to provide the extra funding necessary. In such cases where public funding has to complement private funding, the project is commonly called a 'PPP' project, a 'Public-Private Partnership' project.

Some notes on Privately Financed Projects (PFP's) and Public-Private Partnerships (PPP's) are given in Appendix 5.6.2.

Another basic idea behind BOT projects is that the concessionaire shall in effect achieve the lowest 'lifetime' cost of the project. The lifetime cost is a combination of the capital cost and the annual operation and maintenance costs. The concessionaire therefore has to balance his capital outlay against his maintenance and operation costs. Thus, if he is to operate the completed facility for many years, he probably will see to it that the quality of the facility is such that little maintenance or rehabilitation will be required, and that operation will be as efficient as possible. In such cases

employers do not have to be too concerned about checking the quality of the contractor's construction work. However, if the concessionaire is only required to operate and maintain the facility for a few years, the tendency will be to provide a lower quality facility, just sufficient to last until the end of the concession period.

Therefore, the quality of the facility can be expected to be related to the time the concessionaire will be required to operate and maintain the facility – the shorter the time the lower the quality. This means that for projects where there is a short operation period by the concessionaire the employer may have serious difficulties in obtaining a high-quality facility. The condition required of the physical assets at the time of final handover to the employer therefore has to be carefully considered and specified in the concession agreement.

A typical and simplified management structure for a privately-financed turnkey contract is shown in Fig. 5.6.

5.7 Design, build and operate contracts

Following the publication of the 1999 FIDIC Conditions of Contract for Plant and Design-Build, it became clear that there was a growing need for a document which combined a design-build obligation with a long-term operation commitment.

The Design-Build-Operate (DBO) approach to contracting combines long-term operation (and maintenance) of a facility into one single contract awarded to a single contractor. The contractor will usually be a joint venture or consortium representing all the skills called for in a DBO arrangement.

This arrangement will be attractive to many owners and employers and also to contractors for a variety of reasons. For owners, the most important benefit probably will be that they will have the assurance that the facility will remain in good operating condition, at least until the end of the contracted operation period. This must be felt to be an advantage by those owners who have seen their facilities suffer failure or rapid deterioration soon after handover from the construction contractor, owing to inadequate design, low quality materials or poor workmanship.

Under the DBO regime, the contractor will be responsible, not merely for providing the facility, but in fact for providing a lasting service. The contractor will be encouraged to provide a facility of good quality in all respects, otherwise he will suffer during the operation period by way of heavy maintenance, repair and replacement costs. For the contractor, he will normally be given the opportunity to provide a lasting system of his own choice which should provide benefits owing to balancing construction costs against long-term maintenance (and operating) costs. He should also benefit from a relatively long-term assured income.

Whilst it is recognised that there are alternative scenarios encompassing the DBO concept – for example the green-field scenario of DBO, and the brown-field scenario of Operate-Design-Build – it was also recognised that different scenarios require different contract conditions. Also, the conditions applicable to short-term operation differ considerably to those applicable to long-term operation. A further consideration was whether it was best to approach a DBO project as a single long-term contract or two separate or linked contracts.

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FIDIC has chosen to adopt the green-field DBO, with a 20-year operation period, and has selected the single contract awarded to a single contracting entity (which will almost certainly be a consortium or joint venture) to optimise the coordination of innovation, quality and performance, rather than award separate contracts for design-build and for operation. The contractor has no responsibility for financing the project nor for its ultimate commercial success. This is the basis upon which the DBO contract has been prepared.

The FIDIC Conditions of Contract for Design Build and Operate Projects, the Gold Book, as written, is unsuitable for contracts which are not based on the traditional DBO sequence, or where the operation period differs significantly from the 20 years adopted.

Users who wish to adopt these conditions for use on a different scenario, such as a brown-field scenario, or with an operation period significantly different to the 20-year period assumed, are referred to the FIDIC DBO Contract Guide, which identifies the areas which will require amending and gives comprehensive guidelines and suggestions on how they should be addressed. However, the guide does not claim to address all issues requiring attention, and users should seek expert advice.

The DBO contract is recommended for general use where tenders are invited on an international basis.

Modifications may be required in some jurisdictions, particularly if the conditions are to be used on domestic contracts.

As for the other FIDIC contract forms, the DBO contract attempts to include all conditions of a general nature, which are likely to apply to the majority of DBO contracts, into Part 1 – General Conditions. However it was recognised that many employers or governments or even different jurisdictions may require special conditions of contract, or indeed particular procedures, which differ from those included in the general conditions. For this reason, the DBO document contains Guidelines for the Preparation of Special Conditions which are intended to assist users in drafting clauses to replace or supplement the clauses to be found in Part 1.

FIDIC also recognises that the successful performance of a long-term DBO contract requires that the parties fully understand the overall time framework and the need for a long-term commitment by both the employer and the contractor. In trying to achieve this understanding and commitment, it has been necessary to introduce new procedures and new terminology which are not found in the other FIDIC forms of contract.

The FIDIC Conditions of Contract for Design Build and Operate Projects includes a number of visual flow charts to facilitate this understanding. The flow charts show the critical

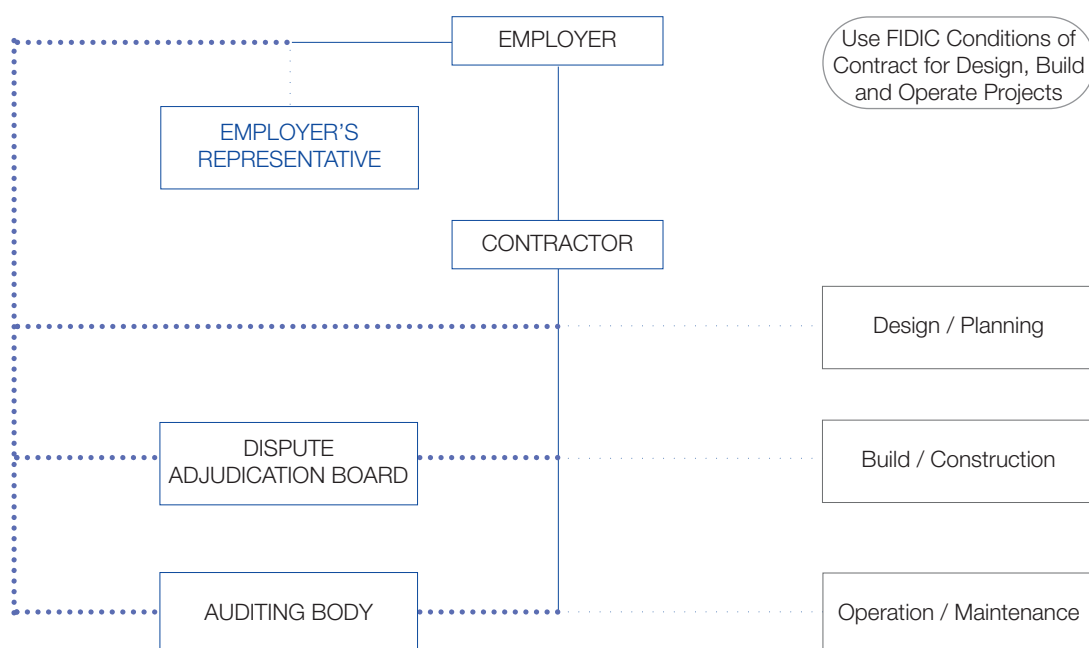


Fig. 5.7 – Design, build and operate contracts: typical management structure

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sequences of activities which are specific to the DBO form of contract. These cover:

- the full sequence of Design, Build and Operate activities;
- the sequence of payment events;
- the determinations of the employer's representative under Sub-Clause 3.5; and
- the handling of claims and the settlement of disputes under Clause 20.

The contract also includes a number of sample forms to help both parties have a common understanding of what is required by third parties such as providers of securities and guarantees, and what is considered to be accepted good practice by FIDIC and the major International Funding Institutions. Users are warned once again that if these forms are changed in any significant way, there is a risk that the balance of the

contract and the specific wording of the clauses may be compromised.

A typical and simplified management structure for a design, build and operate contract is shown in Fig. 5.7. It shows the overall responsibility of the contractor to design, build and then operate a facility, probably by forming a consortium or joint venture of suitable firms.

For projects for the design-build and operation of a facility or installation FIDIC recommends using the FIDIC Conditions of Contract for Design, Build and Operate Projects, commonly known as DBO or the Gold Book, for the contract between the employer and the contractor.

5.8 Dredging and reclamation works contracts

Dredging and reclamation work is usually procured as for other types of civil engineering construction work, as described in Section 5.4 above. However, there are important differences which need to be taken into account when preparing tender dossiers for these rather specialised activities, including the following:

- the contractor is not normally held responsible for remedying defects and/or for maintenance of the works after taking-over;
- the works are usually taken over in sections as they are completed;
- the contractor can only work economically if he is allowed to work continuously on a twenty-four hour basis, including local holidays and rest days;
- equipment costs (mobilisation, supply and demobilisation), predominantly including dredgers and ancillary vessels, form a much higher proportion of total cost for a dredging and reclamation contract than is the case for general construction;
- the contractor's equipment almost invariably includes vessels on charter, so the employer cannot be given the unrestricted right to sell such items in certain situations of contractor default;
- the employer may effect cover against the risks of non-completion by increasing the amount of the performance security;

- quantities stated in the bill of quantities will be less accurate than is normal in other branches of civil engineering, owing to the relative difficulty of surveying existing sub-water surfaces;
- the availability to tenderers of all data related particularly to ground, hydraulic and environmental conditions, and all other relevant aspects, is especially important, as is the necessity for a site visit; and
- appropriate insurances, including marine risks, will be required.

These and other special considerations relating to obtaining tenders for dredging and reclamation work are discussed in more detail in Chapter 14.

For projects for dredging and/or reclamation works FIDIC recommends using the FIDIC Conditions of Contract for Dredging and Reclamation Works, commonly known as the Blue-Green Book, for the contract between the contractor and the employer.

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5.9 Other contract types

5.9.1 Construction management contracts

A typical management and organisational structure for a construction management contract is shown in Fig. 5.8.

In this type of project, which is normally divided into a number of separate 'works packages', the employer enters into an agreement with a designer for the overall design of the works and, at the same time, concludes an agreement with a construction management contractor who is to liaise closely with the designer and be responsible for managing the implementation of the works.

The construction management contractor will arrange for the invitation of tenders for the separate works packages for contracts to be entered into directly with the employer.

The contractual risks which are not passed on to the individual works contractors will be carried by the employer, while the construction management contractor will be paid a management fee.

The aims of these arrangements for construction management contracts is to increase the involvement of constructors during the design stages of a project, and to reduce the overall period from project inception to project completion. An advantage of these arrangements over the traditional methods of project procurement is considered to be that the designers can concentrate on their design work while leaving the supervision of construction to the management teams.

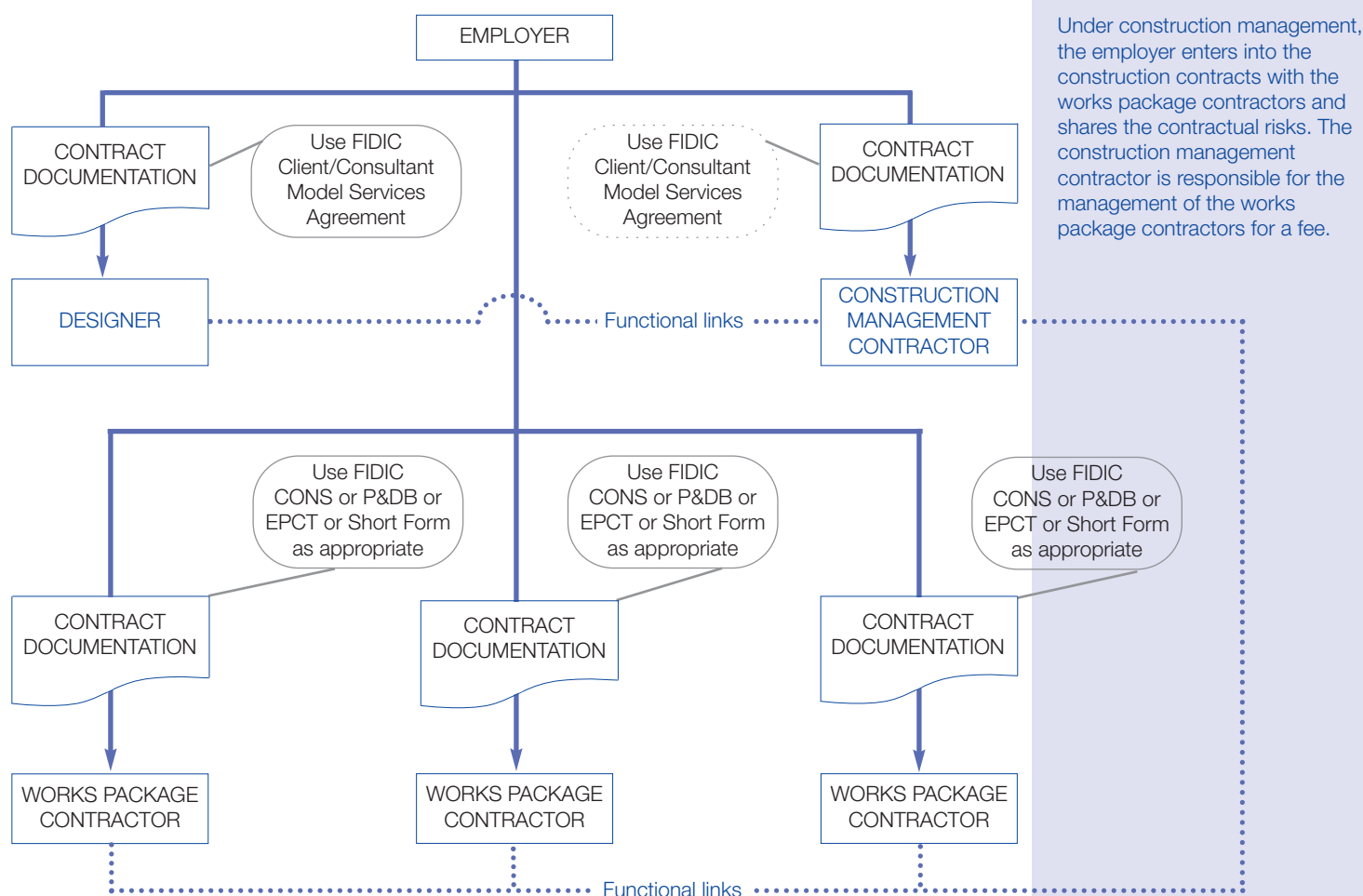


Fig. 5.8 – Construction management contracts: typical management structure

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Under the usual arrangements for this type of project:

- the employer:
 - provides the finance; and
 - appoints the construction management contractor to administer the contract, monitor the design and manufacturing activities and the installation and erection on-site and the construction work, and to certify payment; and
- the construction management contractor may initiate variations; and
- payment to the contractor will be according to achieved milestones generally on a lump-sum basis or on a measure and value basis depending upon the form of conditions of contract used; and
- the employer seeks to ensure an equitable sharing of construction risks in the contractual arrangements.

If these arrangements suit the employer's requirements, FIDIC suggests using the FIDIC

Client/Consultant Model Services Agreement, commonly known as the White Book, for the agreements between the employer and the designer and between the employer and the construction management contractor.

For the various works packages FIDIC suggests using either the FIDIC Conditions of Contract for Construction for Building and Engineering Works designed by the Employer, commonly known as CONS or the 1999 Red Book, or the FIDIC Conditions of Contract for Plant and Design-Build for Electrical and Mechanical Plant, and for Building and Engineering Works, designed by the Contractor, commonly known as P&DB or the 1999 Yellow Book, or the FIDIC Conditions of Contract for EPC/Turnkey Projects, commonly known as EPCT or the Silver Book, whichever may be applicable, for the contracts between the employer and the works package contractors.

5.9.2 Management contracting contracts

A typical management and organisational structure for a management contracting contract is shown in Fig. 5.9.

In management contracting, the client/employer appoints designers and a separate management contractor. The project is divided into works packages and tenders are invited for each contract to be entered into with the management contractor, who carries those contractual risks that are not passed on to the individual contractors.

The responsibility lies with the management contractor for managing the overall project procurement process and for the coordination and supervision of the works contractors.

The management contractor may also be responsible for the design. He is paid a management fee.

The suitable FIDIC forms of contract may be similar to those for construction management contracts as in Section 5.9.1. However, it will be the management contractor who enters into contracts with the works package contractors, and not the employer.

5.9.3 Supply contracts

FIDIC does not have a standard form of contract for supply only contracts as there are ample standard forms produced by other institutions. For example, in the UK the Chartered Institute of Purchasing and Supply publishes model forms and other literature, including advice on e-commerce, though in practice most organisations have evolved their own procedures to suit their particular requirements and practice. The International

Chamber of Commerce (ICC) based in Paris also publishes many books and guides on established good practice in the conduct of international trade and finance.

Useful notes in this connection may be found in Appendix 5.9.3 – Purchasing, Expediting and Inspection.

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5.10 Alliance contracts, framework agreements and partnering

5.10.1 Alliance contracts

Alliance contracts between employers and contractors have been developed with the prime aims of cost and time reduction in the completion of large complex, multi-discipline, multi-contract projects and the avoidance of conflict and disputes. Other aims have been to improve the quality of completed works and safety records in the execution of works.

In the execution of the works the employer will wish to minimise his total costs of the project and its ongoing future operation and maintenance costs – and the contractor will wish to make a profit.

To achieve these aims it is clear that the employer will ideally wish to see no delays in the implementation of the

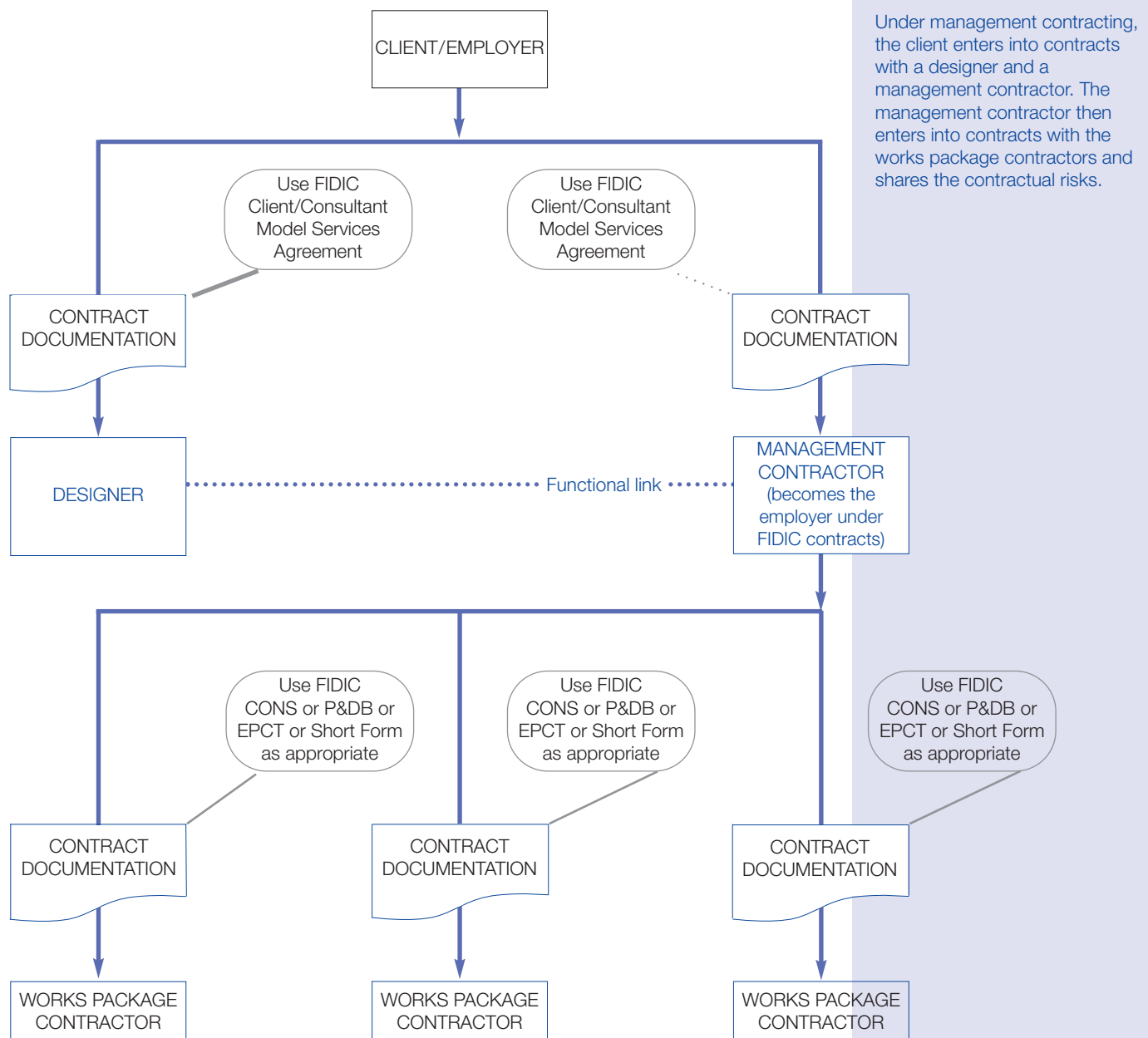


Fig. 5.9 – Management contracting contracts: typical management structure

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works and no monetary claims that would increase the costs of the works. On the other hand, the contractor will wish to make an acceptable profit.

With a lump-sum/turnkey contract the contractor will allow in his tender for the cost of the risks as well as other possible unforeseen costs. If the potential risks are not experienced and the unforeseen costs do not arise, the contractor's tender will be unnecessarily high. In addition, the contractor can be expected to be looking for every opportunity to submit claims for additional costs and associated additional time for all changes and adjustments to increase his profit.

On the other hand, with the payment terms of a reimbursable type of contract, under which the contractor is repaid all he has spent together with a percentage to represent profit, there is no incentive for the contractor to reduce expenditure.

It is obvious, therefore, that neither the lump-sum/turnkey type nor the reimbursable type of contract is likely to provide the necessary incentives to achieve the aims sought.

An alliance contract strategy attempts to achieve its aims by adopting all of the following key features:

- Firstly, and most importantly, the senior personnel of the organisations to form the alliance must be committed to the aims of the alliance and have mutual trust and understanding.
- That is to say, the employer's aims must be understood and accepted by the contractor who will help to achieve those aims and the means by which the

contractor will make his profit must be understood by the employer who will help in obtaining it.

- The alliance should be initiated at the inception of the project so that the experience and expertise of contractors may be able to influence advantageously the development of design and, possibly, materials and plant procurement early on.
- A definition of how the risks to be carried by each party to the contract are to be equitably shared will be drawn up and included in the alliance contract agreement.
- A reasonable final cost target for the contract and of the contract period will be agreed between the parties.
- The alliance contract agreement will be drafted with incentives of financial reward for the contractor to reduce the targeted out-turn costs and/or the contract period.
- All personnel of both parties involved in the contract must understand and work towards meeting the aims of the alliance.
- The alliance contract agreement will contain detailed procedures to be followed with respect to cost and time claims. Failure to follow the procedures in a timely fashion may lead to failure in the aims of the alliance.
- An alliance charter, which will not be legally binding, may be agreed and signed by the senior personnel of the alliance to set out its principles and aims.

5.10.2 Framework agreements

A framework agreement is a long-term agreement entered into between an employer and a contractor that incorporates agreed specifications and rates and prices for work packages to be carried out as and when instructed by the employer.

In recent years, employers in the transportation and utilities industries have found framework agreements to be a convenient method of initiating and commencing work at short notice.

The method requires all the procedures of prequalification, tender dossier preparation, tender preparation and submission by contractors and subsequent tender analysis and evaluation, to be carried out in advance of the need to start the first works package.

A framework agreement, once signed, does not necessarily provide work immediately to the contractor but does provide the mechanism for ordering the

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commencement of work when required. Individual works packages may still be subject to limited competition.

An advantage of the method is that it enables employers to plan works packages well in advance knowing that the chosen contractor will be mobilised to commence operations relatively quickly whenever needed.

5.10.3 Partnering

The construction industry has not been considered an efficient industry. This has largely been due to the adversarial relationships and confrontational attitudes that have developed over the years between the various players within the industry.

The development of varying contractual arrangements between the different parties, particularly the contractual terms relating to payment and to the allocation of risk, has not infrequently led to delays in completion and to claims from contractors for additional project costs. In turn, unsettled issues have resulted in reference of contractual disputes to arbitration and to the courts.

Much of this has arisen owing to the differing immediate aims and expectations of the various parties involved in a project. These include maximisation of cash flow and profit, in the case of contractors and suppliers, and minimisation of ultimate costs in the case of employers.

Partnerships have been advocated in recent years to reduce the contractually confrontational attitudes that develop between the parties to an engineering project, while at the same time providing the contractor with acceptable profit and the employer with good quality engineered works in a timely fashion at reasonable cost.

Partnering commitments are normally set down in the

Subject to the introduction of appropriate wording in the particular conditions, any of the standard FIDIC conditions of contract may be suitable for use within a framework agreement.

form of a charter and may be signed by key responsible persons of each of the organisations entering into the partnership agreement.

It is important to note that the partnership charter or agreement is not legally binding in itself and does not alter the legally binding terms of the engineering contracts between the various parties. The success of the charter will depend on the mutual trust to be developed between and among the persons within the partnering organisations.

However, it must be appreciated that problems may arise which will be unable to be resolved under the partnering charter and litigation may follow: partnering is not a panacea for all difficulties.

Partnering is about ensuring that people within the partnering organisations work closer and better together with the mutual aim of satisfactory project completion to the benefit of all.

5.11 The appropriate FIDIC form of contract

In answer to the question “Which FIDIC conditions of contract should be used?” the considerations listed below should be examined.

These considerations are also summarised in Fig. 5.10.

Short Form

Consider using the FIDIC Short Form of Contract (the Green Book) if:

- the work involved in carrying out the contract is relatively simple or repetitive; and
- the assessed construction period is short; and
- the estimated final contract price is relatively small; and
- irrespective of whether:
 - the design is to be carried out by the employer or the contractor; and
 - the contract involves construction, electrical, mechanical or other engineering work.

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However, if the work involved in carrying out the contract is larger and/or more complex than would be suitable for the use of the FIDIC Short Form of Contract, the various situations and requirements described in the paragraphs below should be considered in order to choose the appropriate form of contract.

1999 Red Book

Consider using the FIDIC Conditions of Contract for Construction (the 1999 Red Book) if:

- the work in carrying out the contract comprises infrastructure works of e.g., roads, bridges, airports, docks and harbours, railways and buildings; and
- the employer is to carry out all, or most, of the design; and
- the engineer is to administer the contract, monitor the construction work and certify payment; and
- the employer is to be kept fully informed of all aspects of progress; and
- the employer can initiate variations to the works, and
- payment to the contractor will be according to a bill of quantities or lump-sum payments for approved work done.

1999 Yellow Book

Consider using the FIDIC Conditions of Contract for Plant and Design-Build (the 1999 Yellow Book) if:

- the work involves the manufacture of electrical and/or mechanical works, including installation and erection on-site, and
- the contractor is to carry out most of the design including the detailed design of the plant or equipment, so that the plant meets the performance specification prepared by the employer; and
- the engineer is to administer the contract, to monitor the manufacture of the plant or equipment and its erection on-site and to certify payment; and
- the employer is to be kept fully informed of all aspects of progress; and
- the employer can initiate variations to the works; and
- payment to the contractor will be according to achieved milestones that are generally on a lump-sum basis.

Gold Book

Consider using the FIDIC Conditions of Contract for Design, Build and Operate Projects (the Gold Book first published in 2008) if:

- the work involves a design-build obligation with a long-term, say 20 years, operational commitment; and
- the work is to be awarded to a single contracting entity (which will almost certainly be a consortium or a joint venture); and
- the contractor has no responsibility either for financing the project or for its ultimate commercial success; and
- the work is to be based on the traditional Design-Build-Operate sequence and the operation period will not differ significantly from 20 years.

1999 Yellow Book

Consider using the FIDIC Conditions of Contract for Plant and Design-Build (the 1999 Yellow Book) if:

- the work involves the construction of various infrastructure and other types of works projects, and may include the manufacture of electrical and/or mechanical works, including installation and erection on-site; and
- the contractor is to carry out the majority of the design of the infrastructure works and including the detailed design of the plant or equipment, so that the project fulfils the requirements of the outline or performance specification prepared by the employer; and,
- the engineer is to administer the contract, to monitor the construction work, to monitor the manufacture of the plant and equipment (if any) and its erection on-site, and to certify payment; and
- the employer is to be kept fully informed of all aspects of progress; and,
- the employer has the right to initiate variations to the works; and,
- payment to the contractor will be according to achieved milestones generally on a lump-sum basis.

Silver Book

Consider using the FIDIC Conditions of Contract for EPC/Turnkey Projects (the Silver Book) if:

- the work involves the construction of various infrastructure and other types of projects and may include the manufacture of electrical and/or mechanical works, including installation and erection on-site; and
- the work could, for example, be a Privately Financed (or Public-Private Financed) project of the Build-Operate-Transfer or similar type, where the concessionaire takes total responsibility for financing (except for any public funds), design, construction and operation of the project; or

5 Contract Types

- the work could be a process or power plant, a factory or an infrastructure project for roadworks, rail link, bridge, water or sewage treatment works, transmission line, dam or hydropower plant or similar where the employer wishes to implement the project on a fixed-price turnkey basis; or
- the work could be a building project where the employer wishes to have his building constructed on a fixed-price turnkey basis complete with all furniture, fittings and equipment; and
- the contractor is to take total responsibility for the complete design, manufacture, erection, installation, and construction of the facility or infrastructure, as the case may be, and to hand it over complete and ready to operate 'at the turn of a key' and thereby fulfilling the requirements of the agreed outline or performance specification prepared by the employer; and
- the employer wishes a high degree of certainty that the agreed contract price and time will not be exceeded and,
- the employer wishes the contract to be organised on a strictly two-party approach, that is to say without an engineer or intermediary being involved; and
- the employer does not wish to be involved in the day-to-day progress of the work, provided that the end result meets the performance criteria he has specified; and
- the parties concerned, that is the sponsors, financial lenders and the employer, are willing for the contractor to be paid more for the completion of the project (than would normally be the case if, say, the FIDIC Conditions of Contract for Plant and Design-Build were used) in return for the contractor bearing the extra risks associated with enhanced certainty of final price and time.

Although FIDIC cannot prevent EPCT being used in circumstances for which it is inappropriate, FIDIC stresses that EPCT should not be used (and that P&DB may be preferable) in the following circumstances:

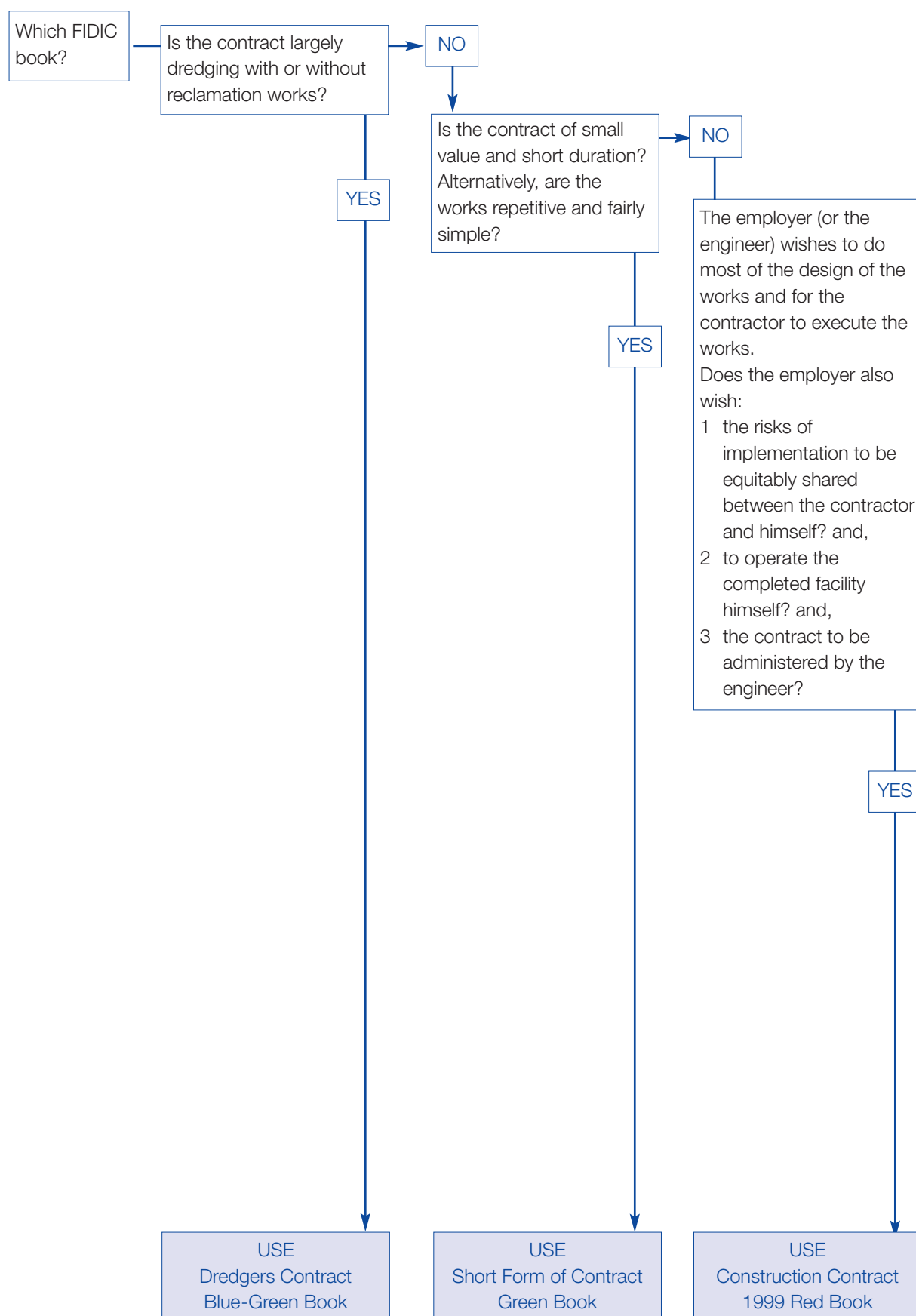
- 1 If there is insufficient time, or insufficient information, for tenderers to scrutinise and check the employer's requirements or for them to carry out their designs, risk assessment studies and estimating before submitting their tenders. Tenderers need to take particular account of EPCT Sub-Clause 4.12 (under which the contractor is responsible for the consequences of encountering unforeseeable ground conditions) and EPCT Sub-Clause 5.1 (under which the contractor is responsible for certain aspects of the employer's requirements, such as the applicability of ISO standards). Therefore, tenderers need information on the matters related to such risks and they need time to assess it and to evaluate all risks.
- 2 If construction will involve substantial work underground or work in other areas which tenderers cannot inspect. For these types of works, the risks of encountering unforeseen conditions may be considerable and the lowest tender may be the one submitted by the least knowledgeable tenderer or most reckless gambler, rather than the best tenderer.
- 3 If the employer intends to supervise closely or control the contractor's work, or to review most of the construction drawings. With the greater extent of contractor's risks, he needs to have greater freedom of action and less interference by the employer.
- 4 If the amount of each interim payment is to be determined by an official or other intermediary. EPCT does not provide for an engineer to administer the contract and determine the amount of each monthly (or other) interim payment. Therefore, payments should be pre-determined against clear milestones and defined in a schedule of payments.

It is to be noted that some contractors may decline to tender for contracts based on the Silver Book owing to the increased risk the contractor will bear under this form of contract.

The above commentary indicates the importance of selecting the appropriate procurement strategy, and of then selecting the appropriate FIDIC conditions of contract, taking account of the need to ensure that tenderers are provided with the data necessary for tendering. Selection of the appropriate form of contract requires important decisions to be made on procurement strategy, and it is to be noted that there are different FIDIC conditions of contract for contractor-design: P&DB and EPCT (as well as the DBO contract).

Tender dossiers for contractor-design contracts must be drafted with care, particularly in respect to quality, tests and performance criteria. If tender documents are deficient, the employer may pay an exorbitant price for unacceptable works. He must therefore ensure that adequate resources are allocated to the skilled tasks of drafting the technical and commercial aspects of the tender documents, and of analysing the tenderers' proposals.

Fig. 5.10 – Which FIDIC conditions of contract to use



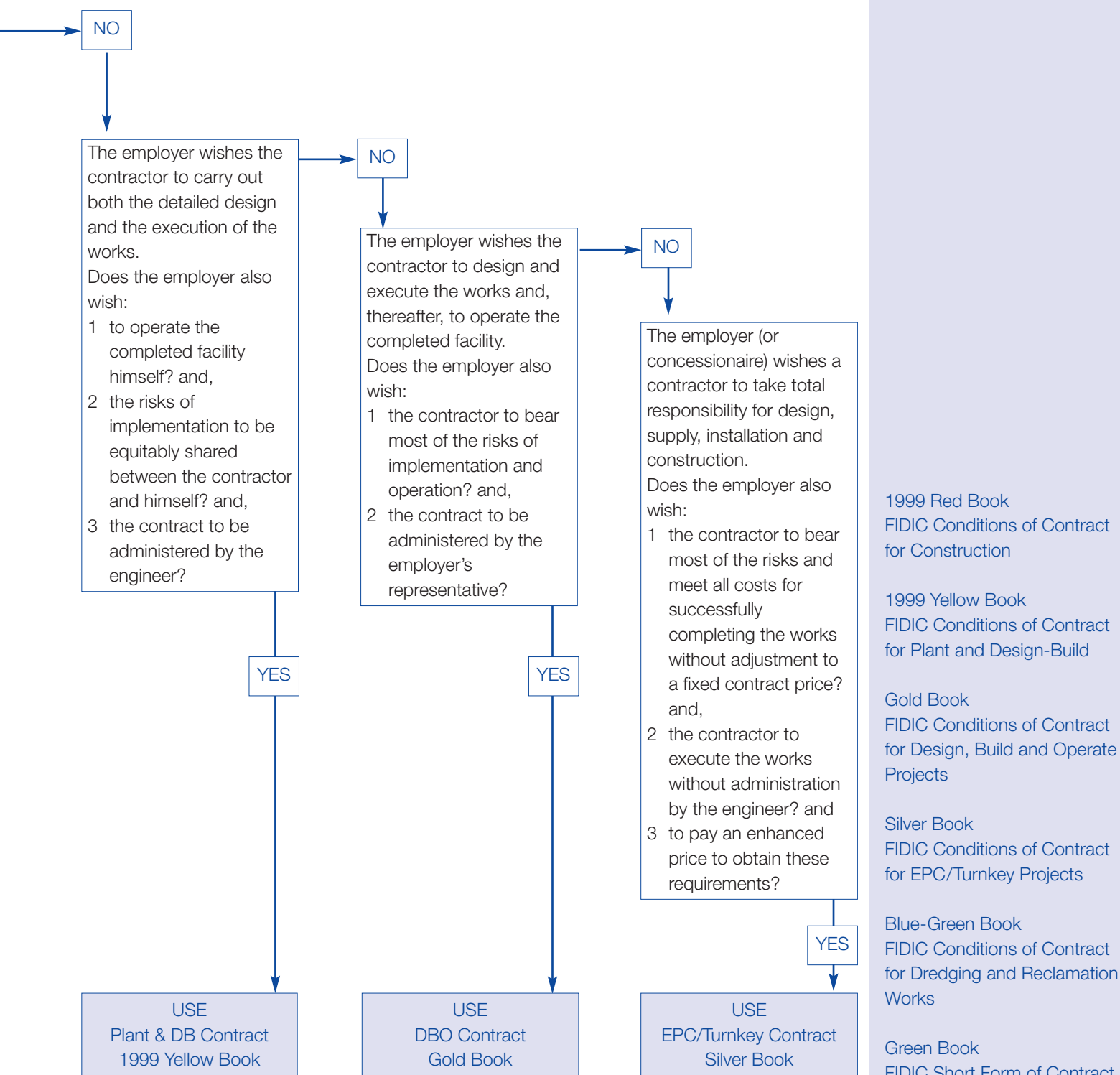


Table 5.1 – Features of contract types (types of projects are indicative only)

There exists a range of differences. Differences and combinations may occur for individual projects.

Type of project	Applicability	Design responsibility	Employer Involvement	Risk allocation
Minor works projects	Small works of short duration or simple repetitive works of larger value.	Employer	Fully involved through the authorised person. Variations possible.	Balanced risk sharing. Employer carries design, unforeseeable risks, force majeure, etc.
Traditional construction projects (with engineer)	Traditional civil works, buildings and infrastructure.	Employer	Fully involved through the engineer. Variations possible.	Balanced risk sharing. Employer carries design, unforeseeable risks, force majeure, etc.
Traditional plant (M&E) projects (with engineer)	Plant and equipment for power, water, sewage treatment, industrial complexes, etc.	Contractor	Fully involved through the engineer. Variations possible.	Balanced risk sharing. Employer carries unforeseeable risks, force majeure, etc. Contractor carries design, fit for purpose.
Design-build projects (with engineer)	Buildings, civil works, infrastructure.	Contractor	Fully involved through the engineer. Variations possible.	Balanced risk sharing. Employer carries unforeseeable risks, force majeure, etc. Contractor carries design, fit for purpose.
Fixed-price turnkey projects	Any large project, plant or industrial complex.	Contractor	Very limited. Variations not permitted. No engineer.	Employer carries e.g., war risk. Contractor carries other risks.
Dredging and reclamation projects	Marine and river dredging and land reclamation works.	Employer	Fully involved through the engineer. Variations possible.	Balanced risk sharing. Employer carries design, unforeseeable risks, force majeure, etc.
Design, build and operate projects	Any large project, plant or industrial complex.	Contractor	Fully involved through the employer's representative. Variations possible.	Balanced risk sharing. Employer carries unforeseeable risks, force majeure, etc. Contractor carries design, fit for purpose.
Privately Financed Projects (PFP)	Roads, infrastructure, buildings, etc., under concession from the employer.	Contractor	Very limited. Variations not permitted. No engineer.	Contractor as concessionaire carries almost all risk.
Construction management projects	Buildings, infrastructure, etc.	Employer	Involved through the construction management contractor. Variations possible.	Depends on choice of FIDIC form of contract.
Management contracting projects	Buildings, infrastructure, etc.	Employer or management contractor	Limited involvement through the designer. Variations not permitted.	Management contractor carries construction risks (as the surrogate employer).

Note: The term 'employer' in the table above refers to the party who has entered into a contract with the contractor and would not necessarily be the owner or promoter of the project, as described in the text of this guide.

Financing	Payment method	Standard contracts	Other documents	Handover	Comments
Employer	Bill of quantities, lump sums or cost reimbursement.	FIDIC Short Form of Contract (Green Book).	Specifications and drawings by the employer or the contractor as defined.	On completion of construction	Suitable for smaller works. Large variations to be avoided as they could create contractual claims.
Employer	Bill of quantities remeasured at unit rates. (alternative: schedule of payments).	FIDIC Conditions of Contract for Construction (1999 Red Book).	Specifications and drawings by the employer.	On completion of construction	Generally considered lowest outturn cost. With design complete at tender stage, lack of opportunity for integration of construction expertise or supply chain involvement in design. Adversarial. Unreliable completion date.
Employer	Schedule of payments or lump sums (parts may be remeasured)	FIDIC Conditions of Contract for Plant and Design-Build (1999 Yellow Book).	Basic requirements and/or performance specifications by the employer.	On completion of installation and testing	Generally considered lowest outturn cost. Design changes initiated by the employer could adversely affect cost and time. Less certain final cost. Unreliable completion date.
Employer	Schedule of payments or lump sums (parts may be remeasured).	FIDIC Conditions of Contract for Plant and Design-Build (1999 Yellow Book).	Basic requirements and/or performance specifications by the employer.	On completion of construction	Good coordination possible between designers and constructors. Design changes initiated by the employer could adversely affect cost and time. Less certain final cost. Unreliable completion date.
Employer or Private	Schedule of payments or lump sums (parts may be remeasured)	FIDIC Conditions of Contract for EPC/Turnkey Projects (Silver Book).	Basic requirements and/or performance specifications by the employer.	On completion of construction	More certain out-turn cost and completion date. Performance Based Procurement (PBP). However, likely to provide an expensive project strategy.
Employer	Bill of quantities, lump sums or cost reimbursement.	FIDIC Conditions of Contract for Dredging and Reclamation Works (Blue-Green Book).	Specifications and drawings by the employer.	At end of operation period	Contract conditions take cognizance of potential additional risks to be encountered in marine environments.
Employer or Private	Schedule of payments or lump sums (parts may be remeasured).	FIDIC Conditions of Contract for Design, Build and Operate Projects (Gold Book).	Basic requirements and/or performance specifications by the employer.	On completion of construction	Good coordination possible between designers and constructors. Design changes initiated by the employer could adversely affect cost and construction time. Less certain final cost.
Private or Public-Private Partnership (PPP)	Concessionaire borrows for construction. Debt repaid by income from users.	FIDIC Conditions of Contract for EPC/Turnkey Projects (Silver Book) or FIDIC P&DB or FIDIC DBO.	Basic requirements and/or performance specifications by the employer.	At end of the operation period	Concessionaire provides a service. Employer does not have to fund Performance-Based Procurement (PBP)
Employer or Private	Depends on choice of FIDIC form of contract.	FIDIC Client/Consultant Model Services Agreement (White Book) with other books as appropriate.	Specifications and drawings by the employer.	On completion of construction	The employer (owner) has an agreement with the designer and enters into separate contracts with a contractor for each works package.
Promoter or Private	Management contractor to decide.	FIDIC Client/Consultant Model Services Agreement (White Book) with other books as appropriate.	Specifications and drawings by the employer or the management contractor.	On completion of construction	The employer (owner) has separate agreements with a designer and a management contractor. Works contracts are entered into by the management contractor who carries the "employer's" risks.

6 The Project Strategy

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6.1	Employer's management structure of procurement	6.2	Project Strategy Manual
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6.1 Employer's management structure of procurement

6.1.1 General

Chapter 2

Chapter 2 discussed the basic considerations leading to the Feasibility Studies Report.

Chapter 3

If the Feasibility Studies Report indicated that the project would be viable and worthwhile, then Chapter 3 dealt with the development of a suitable project strategy and the matters that an employer should consider before taking the project further.

Chapter 4

Chapter 4 discussed some aspects of managing the procurement process.

Chapter 5

Chapter 5 described the various types of contracts that are available and indicated which would be most satisfactory for the project in question.

Throughout all the above stages it is necessary for the employer to maintain strict control of the studies and development work being carried out so that the costs are limited, so that the decisions taken are based on sound logic, and so that a reasonable time programme is followed. To this end the employer should ensure that he provides suitable leadership and continuity throughout these stages.

6.1.2 Use of consultants for studies

Depending on the extent of the employer's organisation, and if the project is not too complex, the employer may be able to develop the project in-house, i.e., with his own resources. However, during the initial studies period it is usual for an employer to engage a consultant, i.e., a suitable consulting engineering firm, to carry out these studies. The consultant will organise the various studies that are necessary and provide (or arrange for the provision of) the specialists in the required disciplines, e.g., geologists, cartographers, hydrologists, etc.

The consultant will need to have someone in the employer's organisation as contact person with whom to liaise on many aspects of the work. For example, the employer may be required to provide existing maps and weather records, or to arrange for permits for the consultant's staff to enter the land areas where the facility may be constructed. Thus it is essential for the employer to name one suitable person to this liaison

post. It is also essential that this liaison officer has the authority on behalf of the employer to provide the consultant with the necessary assistance, and to make decisions regarding the progress of the studies, without delaying the consultant's work. It can be frustrating for the consultant and adversely affect his work if the liaison officer is not capable, or not suitably empowered by the employer, or is frequently changed.

The studies' phases of the project will probably be complete with the presentation of the Feasibility Studies Report including a proposal for a conceptual or preliminary design of the proposed facility. This stage will be followed by the stage for development of the design and, in due course, choice of the project strategy. Again the work during this design stage may usually be carried out by the consultant. However, the specialists during this stage, e.g., doing the design work or considering the contractual aspects, may have different disciplines from those engaged in the earlier studies,

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although a large consulting firm should also have available these specialists. In any case, during this stage close contact with the employer by the design consultant will still be necessary. Matters may arise on a daily basis where input from the employer will be necessary, and therefore it is essential that the employer appoints a

suitable liaison person who is easily contactable by the consultant, and who has the employer's authority to answer questions and make decisions.

6.1.3 Design and project strategy decision

The conceptual or preliminary design phase leads into the development of the project strategy. No doubt the consultant will make recommendations as to the project strategy that will be most suitable for the project. However, the project strategy will depend also on the intentions and future plans of the employer. Therefore the project strategy that will determine the further development and implementation of the project must be carefully considered and discussed in depth between the employer and his consultant. The consultant can explain and guide, but senior policy-makers of the employer should also be actively involved in the choice. The importance of a correct decision on the project strategy cannot be over-emphasised. The success or failure of the project will rest upon the

strategy chosen, and having started with one particular strategy, it is very difficult and very expensive to change to another strategy later on. For example, if it is first decided that the employer shall do the design, it is very difficult at a later stage to change to contractor-design; or if it is decided to divide the project into several different contracts, it is difficult at a later stage to change the contract packaging; or if the employer has decided on a turnkey contract and then later decides to introduce extensive variations to the works, this is likely to cause serious problems and certainly considerable extra costs.

6.1.4. Tender stage

The decision on the project strategy to be followed will probably include the decision on which contract type(s) shall be utilised. Having reached this stage, it will be time to commence preparation of the tender dossier – the document that will be distributed by the employer to prospective tenderers. If the employer is to provide the design, then the tender dossier will contain the full design documentation, including technical specifications and drawings, to enable the contractor to construct the works. If the contractor is to design the works, then the tender dossier will only contain conceptual or preliminary design documentation and outline or performance-type specifications. Typically,

the consultant will prepare the tender dossier and its enclosed documentation on behalf of the employer.

Towards the latter stages of preparation of the tender dossier, the employer or his consultant will prepare the documentation for the prequalification of tenderers, and set in motion the prequalification procedures. In due course the tender dossier will be distributed to those tenderers who have been accepted as being prequalified. For control of these tendering procedures it is recommended that the employer appoints a 'tendering co-ordinator' as described in Section 4.3 above.

6.1.5 Continuity of consultant

There are many advantages in having the same consultant who carries out the preliminary studies to continue with the design, and also with the subsequent stages, i.e., preparation of the tender dossier and tendering procedures, followed by supervision of the construction or installation work. In other words, to employ the same consultant throughout all stages of the development of the project. However, the consultant

must continue to show that he is suited to the various tasks, and he must maintain the confidence and trust of the employer. Some employers and funding agencies demand a change of the consultant before a new stage of the project on the grounds that the consultant might cover up in a subsequent stage a mistake made in an earlier stage. This unfortunately means that the advantages of retaining the same consultant, e.g., the

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consultant's familiarity with the project, and often with its background, and the built-up co-operation and trust with the employer's organisation, will be lost. It will take time for the

new consultant to assimilate the project history and to develop a close working relationship with the employer.

6.1.6 Preparation of the manual

This Chapter 6 follows on the previous chapters by discussing the requirements necessary for the employer to ensure that the strategy he has decided upon is followed and will lead to successful procurement of suitable contractors and ensure the successful implementation of the project. This chapter also points to the necessity to categorically record the project strategy that has been decided upon. This is best done in the form of a Project Strategy Manual which will be distributed to the employer's management staff and project

team. The procedures set out in the manual are expected to be strictly followed by all the employer's staff.

The manual will also serve to record the bases for the decisions made in the development of the project strategy. This will be invaluable at later stages of the project when questions may be raised about decisions taken earlier, and when possible re-evaluation of aspects of the project are undertaken.

6.2 Project Strategy Manual

6.2.1 General

The Project Strategy Manual may be prepared to follow the headings given in Chapter 3 – Developing a Project Strategy. It should extract from the development process the matters that will be of importance during the implementation stage of the project. The principles and decisions set out in the manual should then be followed by all the employer's staff. It is most important to follow without deviation the adopted decisions throughout the whole implementation stage. Much confusion can be caused if changes are made to the adopted philosophy during implementation, with consequent time and cost effects. To change the type of contract, for example, during implementation is almost impossible. To change the time programme, or to change the scope of work, or make other radical changes of another type during the implementation stage will, as a minimum, cause a variation to the contractor's work, and may, as a maximum, lead to serious difficulties, complications and argument, with possible termination of the contract as a final result.

The Project Strategy Manual should therefore be prepared with care, and should be made available to all the employer's management and project staff, and it should be obligatory that all follow the directions and procedures set out in the manual. It may also be useful for the manual to be made available to the project financiers, government policy-makers, and others concerned.

The manual should commence with an outline description of the project as a whole, and of the various contracts involved in the project, if there are to be several contracts. If it is a large and/or complicated project, the description of the whole project might be followed by a more detailed description of the particular contract or discipline in question, for use by those involved with only specific parts.

6.2.2 Finance

The provision of sufficient funds to finance the implementation of the facility, and thereafter its operation and maintenance, is a primary duty of the employer. The manual should state where finance for the project, and for each contract, is being obtained. It should include any regulations, restrictions or obligations imposed by those providing the finance, which must be complied with by the employer's staff. There should be a cash-flow diagram indicating the expected

cash-flow requirements throughout the implementation period, together with any maximum or minimum limitations to applications for periodic funds.

Procedures for applications for funds by the employer, together with information about time notices required, possible securities required by the financiers, standard form for the employer's application, required signatories, their powers of

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attorney, and the documentation to be attached to periodic applications and to final applications, should be included. The manual should also contain precise information concerning who in the employer's organisation may sign applications for funds, any limitations to such authority, as well as complete addresses and other practical information regarding submission of applications for funds.

The manual should contain full information of all bank or other guarantees or securities required from contractors and others during the project implementation

period and any guarantee periods. Those within the employer's organisation responsible for handling, preserving and safeguarding all such securities should be stated.

Employers should not forget to include in their budget requirements sufficient funds for financing the Dispute Adjudication Board.

6.2.3 Budgeting

The Project Strategy Manual should state which department or person within the employer's organisation is responsible for preparing the project budget, both the overall budget and also the detailed budgets for each contract within the project, as well as the costs for the employer's staff and other expenses, as indicated in Section 3.4 above. The budgets should be monitored and updated at regular intervals. They should include procedures for early warning in case any particular budget provision is likely to be exceeded, so that the employer can be made aware of the situation and steps taken in time to control the expenditure.

As stated in Section 3.4 above, it is prudent for an employer to include adequate contingency allowances in his budgets. Firm restrictions should be placed on the use of such contingencies, but most projects need variations of one type or another, as it is impossible to foresee all eventualities that may occur on an engineering project. This is even often true in the case of so-called fixed-price turnkey contracts. Such variations or unforeseen eventualities usually result in the

genuine requirement for extra payment from the employer. It is not therefore prudent for an employer to refuse to include a contingency allowance in a contract, because as soon as a genuine requirement for extra payment to the contractor arises the employer does not have funds available, and the process of organising further funds can take a long time.

6.2.4 Payment to contractors

The manual should include details of the full procedure for obtaining periodic and final payment applications from the contractor(s). Such details should cover the times when applications for interim payments may be submitted, or, if applicable, the milestones that need to be reached before an application can be made. It should be stated precisely which documents should accompany a payment application from a contractor, and who should sign such documents or how they should be verified.

How the works completed by the contractor should be measured or certified for payment will normally be set out in the relevant clauses of the contract. However, for the sake of clarity, and for the information of staff (for example, in the finance department, who might not be familiar with the details of the contract), the requirements for acceptance or otherwise of the contractors' invoices or statements should also be set out in the manual. The procedure to be followed in case there is disagreement between the contractor and the

6 The Project Strategy

measurement engineer or other person certifying the payment due should also be set out in the manual for the avoidance of confusion resulting in possible late payment to the contractor.

The employer's staff should be made aware in the manual of the serious consequences of payments being made late to contractors, not only the payment of interest or financing charges, but the eventual claim for damages or even termination. A contractor is dependent on receiving his due payments in time, which can be called his 'lifeblood'. Late payment will not only undermine the relationship between the parties, but may also cause cash-flow problems for the contractor that may have serious adverse effects on his business.

All too often staff in employers' organisations have not understood the seriousness to the contractor when payments are made late. Sometimes late payment is not at all the fault of an employer, but is due to 'red tape' along the payment line, even in the financier's organisation. Therefore it is essential for the employer to consider when preparing the tender dossier and before signing any contract that he and his staff can abide by the times for payment specified in the contract. If the employer believes that he may have difficulty in making payment to the contractor within the time specified in the contract, then it is far better for him to increase the specified time period to one with which he can comply.

6.2.5 Other contents

A Project Strategy Manual typically also includes, together with any other specific project matters, such matters as:

- land/property acquisition
- technical and design standards
- environmental policy
- planning/programming
- risk identification, assessment and management
- cost control
- health and safety policy
- training
- contract details
- public relations policy
- purchasing/expediting/inspection
- quality control/assurance standards and procedure.

7 Prequalification: Consultancy Appointments

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7.1 General

Unless the owner or promoter of a project has sufficient suitable, competent staff to undertake the necessary professional work, he will require assistance and support to carry out the crucial early studies described in Chapter 2 and to develop the project strategy described in Chapter 6. The owner will also need help to prepare some or all of the detailed engineering and technical design for the project and, possibly, for the subsequent supervision of the works after the award of an implementation contract.

Such assistance may be obtained by the owner, as the client, entering into a consultancy services agreement with a suitable consulting engineer or other consultant to provide the services required.

As mentioned in Chapter 3, it is important that, if the services of a consulting engineer are considered necessary or even indispensable for the satisfactory implementation of the project, a suitable appointment should be made as early as possible. In addition to the information given in this chapter the reader is referred to the chapters listed below which describe the subsequent procedures leading to a satisfactory consultancy services appointment:

- Chapter 9 Consultancy Appointments
- Chapter 15 Receipt and Opening of Proposals and Tenders
- Chapter 16 Evaluation and Recommendations for Award: Consultancy Appointments
- Chapter 18 Award of Contracts: Consultancy Appointments

Selecting a consultant is one of the most important decisions to be made by a client. The success of any project often depends upon obtaining the most able, experienced and reputable expertise available.

The best project results are achieved when there is a true professional relationship of absolute trust between the client and his consultant. This is because the consultant must make sound, objective decisions and act in the best interest of his client at all times. The method of selection should therefore seek to develop mutual confidence between the two parties.

There are two key issues to consider when deciding the method of selection to apply.

- 1 It is very difficult, if not impossible, to write a precise professional performance specification for a consultant for the equitable application of competitive selection. If the competitive selection is based on price, different consultants may anticipate providing very different levels of service which are likely to be reflected in the differences between the offered fees. This difficulty arises because factors such as the extent of investigations, the consideration of alternatives, the quality of design and level of innovation cannot be quantified.
- 2 Successful and satisfactory consulting services depend on sufficient time being spent on the project by properly qualified and suitably experienced people. The method of

7 Prequalification: Consultancy Appointments

selection should not force consultancy fees down to the point where consultants cannot afford to allocate properly qualified staff for sufficient periods of time. Inadequate fees lead to the reduction of the scope and quality of the service by less time being spent on the project and/or lower paid and usually less qualified personnel being assigned to the work.

The most important criteria on which to judge a prospective consultant's suitability to carry out services for a particular project are:

- professional competence and reputation
- managerial ability
- availability of suitable experienced staff
- impartiality
- fairness of fee structure
- professional integrity
- quality assurance system.

Whenever an appointment for consultancy services is planned, prequalification of applicants is strongly recommended to ensure that they have the

necessary resources and experience to perform the intended services satisfactorily, and that they meet any eligibility criteria required by applicable laws and regulations.

Although there are many similarities between competitions for consultancy services and competitions for works contracts, there are sufficient differences for the procedures to be described separately. It is to be noted that when a contractor gives an offer to carry out work his offer is normally called his 'tender' (or 'bid'), whereas when a consultant is offering his services his offer is normally referred to as his 'proposal'. This chapter, therefore, describes the procedures for prequalification for consultancy services appointments, whilst Chapter 8 covers the prequalification of tenderers for works contracts.

The procedures described and recommended in this chapter should be consistent with the current legal framework and financial regulations applicable to the project.

7.2 Selection methods

It is firmly believed that it is neither in the best interest of the client nor of the project itself that consultants be selected on the basis of a procurement system which includes a price comparison of their professional services. Once a price is introduced the selection process becomes biased in favour of lowest fee rather than quality.

Practice has shown that lower consulting fees do not give any assurance of lower total project costs. In fact, the opposite is generally true. Lower consulting fees may mean:

- inadequate investigations,
- less consideration of alternatives,
- poor engineering and design,
- less attention to detail,
- use of less qualified staff, and
- other means of reducing the cost of consultancy work.

All of these factors will react negatively on the development of the project, and may lead to higher implementation costs. Considering that the total cost of

consulting fees for a project is typically only a small percentage of the total implementation costs – construction work and plant/equipment comprising the majority of costs – and noting that an experienced professional consultant can often save much construction work by elegant design solutions, avoidance of mistakes and other wasted time and costs, it will be clear that a small increase in the cost of consulting services can lead to large savings in the overall construction costs.

The method that best serves the client's interests is known as 'quality-based selection'. That is, the client chooses the consultant on the basis of professional competence, managerial ability, availability of resources, professional independence, fairness of fee structure, professional integrity, and quality assurance systems. After the choice is made, the client negotiates the fee structure with the consultant for entering into a consultancy services agreement.

Detailed guidance on the selection of consulting engineers together with the advantages to be gained in

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the adoption of the quality-based selection procedure is to be found in the FIDIC publication Quality-Based Selection for the Procurement of Consulting Services and also in the FIDIC Guidelines for the Selection of Consultants.

Some jurisdictions and client bodies specifically forbid selection of consultants on the basis of price. If, however, a client is compelled to include price as an element in the selection of his consultant, then there are different procedures for calling for consultancy proposals and different methods for the subsequent selection of consultants in which the price of the services is an element in the final choice. Procedures and basic methods of selection in which price plays a part in the decision-taking process are described in Chapter 9 – Consultancy Appointments.

Wherever established procurement procedures require prices for professional services to be prepared, guidance is

also given in the publication FIDIC Guidelines for the Selection of Consultants mentioned above.

These distinctions are pointed out at this stage because the recommended initial prequalification processes for quality-based selection are normally more rigorous than for other methods. The reason for this is that in quality-based selection most of the important aspects of the overall evaluation processes will already have been completed at the end of the prequalification stage.

Whichever method is adopted it will be necessary to prepare a list of consultants considered to be qualified for the project as described in the section below.

7.3 Preparation of prequalification documents for consultancy services

The prequalification documents for consultancy services appointments are prepared by or on behalf of the client and will normally include:

- letter of invitation to apply for prequalification;
- information about the prequalification procedure;
- project information, and information about the scope of services to be tendered; and
- prequalification application forms and prequalification questionnaires.

The prequalification procedure should:

- be based on questionnaires.
A standard questionnaire will help maintain conformity of information sought, thus making the responses quicker and cheaper to provide, and at the same time making them more readily comparable.
- be relatively simple and yet flexible so as to permit consideration of new organisations.
- take account of both the technical and financial aspects of the project.
- allow for the updating of information previously provided by firms to the same client for an earlier project, thus avoiding unnecessary duplication of effort.
- authorise the client to seek supplementary information from other sources.

The prequalification documents should include at least the following particulars:

- name, address, telephone and telefax numbers and email address of the client;
- location where the project will be implemented;
- description of the project and scope of services to be carried out under the consultancy services agreement;
- if the project is to be subdivided into a number of consultancy services packages:
 - the scope of the consultancy services involved in each, and
 - information as to whether it is possible to submit proposals for one, more than one, or for all packages.
- anticipated time programme, indicating the proposal preparation period, date for entering into a consultancy services agreement and any other relevant key dates;
- form of agreement to be used;
- criteria for prequalification (see Section 7.6 below);
- anticipated sources of finance;
- payment arrangements envisaged (including currencies);
- insurances to be carried by the successful applicant;
- whether cost adjustment formulae will be included;
- language and law of the consultancy services agreement;
- any aspect of the intended consultancy services which is unusual and would thus have a bearing on the consultant's obligations;
- consultant's liability for defects;

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- professional indemnity insurance cover required; and
- aggregate limit of liability.

Prospective applicants should also be advised of:

- The policy of the client concerning preference for local products and services.
- The attitude of the client to joint ventures.

It is recommended that joint ventures should be allowed to prequalify but, in doing so, each member of the joint venture should submit separate prequalification documentation. However, because it reduces the breadth of competition, any subsequent formation of joint ventures from amongst prequalified organisations should be restricted. Nevertheless, a prequalified organisation should be allowed to strengthen its capability by the subsequent incorporation, during the proposal evaluation period, of non-prequalified firm(s), subject to the approval of the client.

- The number of copies of prequalification applications to be submitted.
- The terms of payment for the services which are to be incorporated into the consultancy services agreement.

Choices for the payment methods available are indicated in Figure 7.1 – Choice of fee payment terms. Whichever method is adopted, it is clearly advantageous to the client if the briefing information available to the consultant at the time of the appointment is as full and complete as possible: the greater the information available the less will be the initial investigations and studies required to be carried out by the consultant and, correspondingly, the lower will be the total fee.

- The name, address and latest date for receipt of submissions, including any particular instructions for labelling.
- The language to be used for the submission.
- The currency to be used for presenting financial information.
- Any requirement for power of attorney for authorised signatories.

If the project involves or may involve the exchange of confidential information or the client wishes to control the release of information about the project into the public domain, the client should require the consultant to enter into a confidentiality agreement.

7.4 Invitation to prequalify

The client would normally publish a notice inviting interested consultants to apply for prequalification documents. The notice should state that the quality-based selection method is to be applied or, if not, that proposal dossiers will be issued only to a limited number of consultant firms/joint ventures selected by or on behalf of the client as having the necessary qualifications to perform the work satisfactorily.

The notice should be published in appropriate newspapers, official publications, technical journals and on the internet, to give sufficient publicity according to the particular circumstances of the project. The notice may also be issued to financing institution representatives, if relevant, and to government agencies responsible for foreign trade so that the international community receives timely notification of the proposed project and instructions on how to apply.

The notice would need to be in accordance with any government regulations and should be reasonably brief and contain:

- name of the client;
- description and location of the project and scope of the consultancy services;
- estimated cost range or budget for the services;
- sources of finance;
- anticipated time programme dates (i.e., for entering into consultancy services agreement, completion and any other key dates);
- the payment terms, as appropriate, see Figure 7.1;
- planned dates for quality-based selection negotiation or for issue of proposal dossiers and submission, as appropriate;
- criteria for quality-based selection or for prequalification;
- criteria for selection of short-listed applicants;
- criteria for evaluation of proposals;
- instructions for applying for prequalification documents;
- date by which applications to prequalify must be submitted; and
- minimum qualification requirements and any particular aspects which could be of concern to prospective applicants.

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The period between the notice of invitation to prequalify and the latest date for the return of completed applications should not be less than four weeks.

- FIDIC Member Associations;
- persons or organisations that have employed consultants for similar projects.

Subject to any local regulation, in addition to the issue of a notice of invitation to prequalify, as described above, names of possible consultants can be obtained from other sources including:

7.5 Issue and return of prequalification documents

On receipt of requests from applicants, the client should issue the prequalification documents. These documents should state how an application is to be packaged and submitted.

In the event that the quality-based selection method is not to be adopted and if it is intended to charge for the subsequent issue of the proposal dossier, details should be given in the prequalification notice. However, it is customary to issue dossiers free of charge.

The client should acknowledge receipt of the completed prequalification applications.

7.6 Assessment of prequalification applications

It is usual for the client to appoint a committee of suitably experienced persons to evaluate the applications and prepare a shortlist of suitable consultants. The evaluation analysis can conveniently be described in two stages.

The first stage requires the committee to check the completeness of applications and the eligibility of applicants to prequalify. An applicant declared bankrupt or convicted of fraud, money laundering or corruption or who has knowingly

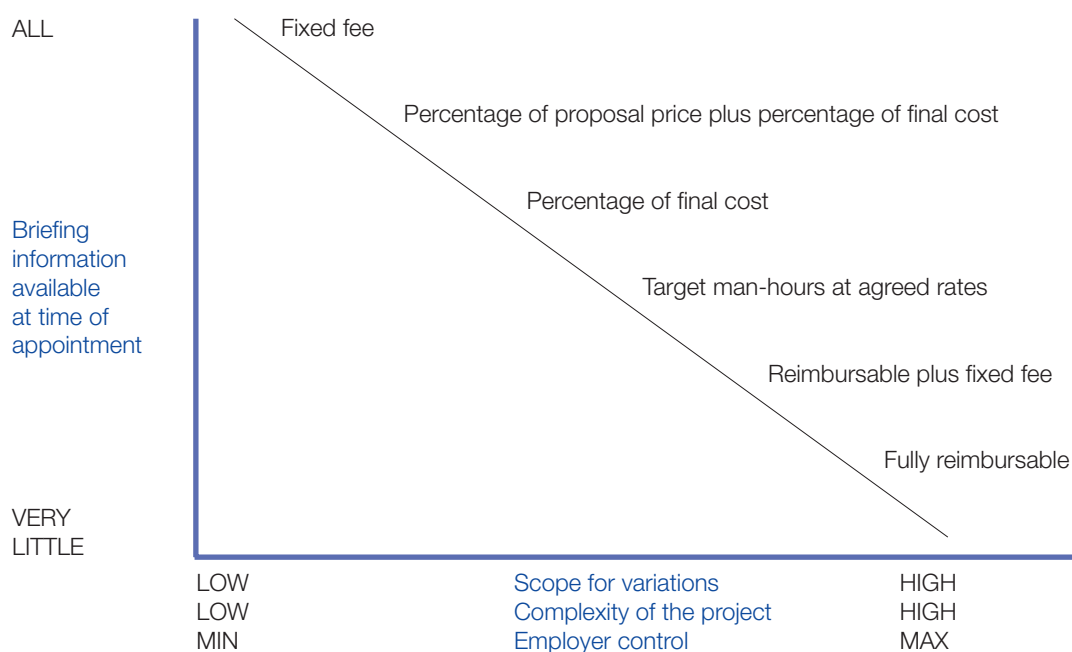


Fig. 7.1 – Choice of fee payment terms

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submitted false information with the object of gaining prequalification should be excluded from the evaluation.

In addition, the committee should be satisfied that the applicant has the financial resources and backing to meet salaries, wages, materials, supplies and all other costs until the forecast payments become due under the agreement and to meet the costs of all other ongoing commitments during the period of the services. As a guide the committee will expect the total annual turnover of the applicant to be in the order of at least three times the anticipated annual turnover of the contract. Failure to meet the minimum financial requirements should result in the applicant being excluded from further evaluation.

The results of this first stage of the assessment can be conveniently recorded, as shown in Table 7.1 - Analysis of prequalification applications for consultancy appointments, by marking either 's' for suitable or 'u' for

unsuitable applicants against each of the described criteria.

The outcome of the subsequent assessment of the second stage of the evaluation process for prequalification for the quality-based selection, as compared with prequalification for the submission of proposals in which price will be a subject of comparison, will differ.

The important difference is that with quality-based selection the chosen applicants with whom negotiations are to be carried out are identified upon completion of the prequalification stage.

However, if price is to be a factor in the evaluation, the successful applicant is not known until completion of evaluation of all proposals received at the end of an evaluation period, as described in Sections 9.3 and 16.3.

7.6.1 Assessment for quality-based selection

When the quality-based method of selection is adopted, great care must be taken to identify differences at the prequalification stage between potential applicants' abilities and qualities. The aim at the prequalification stage is to rank all applicants so that it is the highest ranking applicant only who is taken forward to negotiate a consultancy services agreement.

It is recommended that the second stage of the quality-based selection analysis uses a numerical comparison between applicants for each of the criteria. Each criterion is given a maximum score of 100.

To avoid possible distortion in scoring values, which might be caused by different evaluators marking

relatively high or low, the scoring against each criterion for all applicants should be made by the same evaluators, who should be not less than four, and the scores averaged. To assist in the comparison of applicants, it is also recommended that all applicants are scored for a particular criterion before considering the next criterion.

It is suggested and recommended that the criteria to be considered for comparison between applicants should include all, but need not be limited to, the following factors:

- Organisation and management; administration; location of offices.
- Available resources in terms of management capability

Prequalification Criterion	Code for Prequalification Applicants											
	1	2	3	4	5	6	7	8	9	10	11	12
Eligibility and Completeness of Application	s	s	s	s	s	s	s	u	s	s	s	s
Financial Stability	s	s	s	u	s	s	s	s	s	s	u	s

Notes

- 1 An 's' is marked for suitable and a 'u' for unsuitable applicants.
- 2 Applications found to be incomplete or ineligible or lacking in financial stability are excluded from the second-stage of the analysis for quality-based selection and from the third stage of the analysis for selection with price comparison, as applicants 4, 8 and 11 marked by a 'u' in this example.

Table 7.1 – Analysis of prequalification applications for consultancy appointments: 1st stage
Matrix example for the evaluation of eligibility and completeness of applications and of financial stability

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- and experience of professional and technical staff.
- Extent to which any consultancy services would be likely to be subcontracted.
- Relevant projects completed; capacity to complete the work; project performance skills; past performance for other clients; methodology; innovation; efficiency.
- Relevant projects in progress.
- Experience in both the type of consultancy services required and the country or region in which the relevant works contracts are to be undertaken.
- Relationships with local consultants, taking into account any potential language difficulties.
- Quality assurance procedures, health and safety plan and environmental policy.

Prequalification Criterion	Code for Prequalification Applicants										Weighting Applied		
	1	2	3	4	5	6	7	8	9	10	11	12	
1 Structure, organisation & management	75	65	75	-	70	90	95	-	50	80	-	65	20%
2 Available resources & design capability	60	75	85	-	65	95	95	-	15	70	-	65	35%
3 Services to be subcontracted	15	10	25	-	90	50	5	-	0	0	-	0	-10%
4 Experience: relevant projects completed	90	60	60	-	20	85	85	-	90	90	-	70	20%
5 Experience: relevant projects in progress	85	60	75	-	15	85	85	-	85	85	-	40	20%
6 Experience: geographical	35	30	45	-	60	50	45	-	20	10	-	25	5%
7 General suitability	30	20	25	-	30	30	40	-	25	30	-	25	5%
8 Quality assurance system, health and safety plan and environmental policy	50	50	40	-	40	50	50	-	60	10	-	60	5%

- Notes
- 1 Applications found to be suitable with regard to eligibility, completeness of application and financial stability are evaluated in the second stage of the analysis. Applicant numbers 4, 8 and 11 are excluded as a result of the findings shown in the example of Table 7.1.
 - 2 The average scores against each of the criteria out of a maximum of 100 for each criterion are entered in this matrix in this second stage of the analysis.
 - 3 In this analysis, all applicants, except numbers 4, 8 and 11 are taken forward for the scores to be weighted.

Table 7.2 – Analysis of prequalification applications for consultancy appointments
Quality-based selection: 2nd stage - scoring

Prequalification Criterion	Reference Code for Prequalification Applicants										Weighting		
	1	2	3	4	5	6	7	8	9	10	11	12	Applied
1 Structure, organisation & management	15.00	13.00	15.00	-	14.00	18.00	19.00	-	10.00	16.00	-	13.00	20%
2 Available resources & design capability	21.00	26.25	29.75	-	22.75	33.25	33.25	-	5.25	24.50	-	22.75	35%
3 Services to be subcontracted	-1.50	-1.00	-2.50	-	-9.00	-5.00	-0.50	-	0.00	0.00	-	0.00	-10%
4 Experience: relevant projects completed	18.00	12.00	12.00	-	4.00	17.00	17.00	-	18.00	18.00	-	14.00	20%
5 Experience: relevant projects in progress	17.00	12.00	15.00	-	3.00	17.00	17.00	-	17.00	17.00	-	8.00	20%
6 Experience: geographical	1.75	1.50	2.25	-	3.00	2.50	2.25	-	1.00	0.50	-	1.25	5%
7 General suitability	1.50	1.00	1.25	-	1.50	1.50	2.00	-	1.25	1.50	-	1.25	5%
8 Quality assurance system, health and safety plan and environmental policy	2.50	2.50	2.00	-	2.00	2.50	2.50	-	3.00	0.50		3.00	5%
Average weighted scores:	70.25	67.25	74.75	-	41.25	86.75	92.50	-	55.50	78.00		63.25	

- Notes
- 1 The criteria headings and weighted percentages to be applied will have been set out in the proposal request and cannot be amended at the prequalification evaluation stage.
 - 2 In the example above applicant number 7 would be invited to negotiate a consultancy agreement as described in Chapters 9 and 16. Applicants with lower scores would be held in reserve.

Table 7.3 – Analysis of prequalification applications for consultancy appointments
Quality-based selection: 2nd stage - effect of weighted percentages

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Each criterion will have been previously given a weighting factor as shown on the right-hand side of the example shown in Table 7.2. The average score against each criterion for each applicant is then adjusted by the weighted percentage. Table 7.3 provides an example of the effect of the weighted percentages.

In Tables 7.2 and 7.3 it is considered for this example that the subcontracting of services would be a detriment to the quality of services to be provided and, accordingly, has been given a negative weighting. While negative weighting and scoring will not generally be necessary, the example demonstrates how negative weighting may sometimes be appropriate.

The criteria headings and weightings may, of course, be adjusted to suit the circumstances of the project. Where appropriate and feasible, it is of advantage to interview each applicant's management

and key personnel, to visit their offices and work places, to examine systems and methods of work, to hold discussions with their past clients and to inspect their completed projects. This is important if the scores of the highest ranking applicants are very close to assist in making a final decision.

The agreed decisions on the shortlist by the committee are then recorded on an evaluation matrix form, an example of which is provided by Table 7.3.

If the quality-based selection method is adopted, the highest ranked applicant – applicant number 7 in the example matrix shown in Table 7.3 – should be invited to negotiate a consultancy services agreement. In the event that the negotiations with the highest ranked applicant founder, the next highest ranked applicant should be invited to negotiate.

7.6.2 Assessment for subsequent selection with price comparisons

The second stage of the analysis for selection with price comparison will determine, for each of the applicants remaining at the end of the first stage, their suitability based on criteria for comparison between applications and may include but need not be limited to the following:

- organisation and management; administration; location of offices;
- available resources in terms of management capability and experience of the consultant's professional and technical staff;
- extent to which any consultancy services would be likely to be subcontracted;
- relevant projects completed; capacity to complete the work; project performance skills; past performance for other clients; methodology; innovation; efficiency;
- relevant projects in progress;
- experience in both the type of consultancy services required and the country or region in which the relevant works contracts are to be undertaken;
- relationships with local consultants, taking into account any potential language difficulties;
- quality assurance procedures, health and safety plan and environmental policy.

The marking will be subjective and, as already assessed for eligibility and completeness of application

and financial stability, will be recorded as 's' for suitable or 'u' for unsuitable.

The agreed decision of the selection committee is then recorded on an evaluation matrix form, an example of which is shown in Table 7.4. In practice certain criteria for some applicants are not likely to be entirely satisfactory. In such cases supplementary notes may be made of any shortcomings for attachment to the evaluation form.

For the procurement of consulting services in which price is to play a part in the selection process, it would normally be satisfactory to carefully select not more than three to five applicants from the prequalification analysis who have been described as 'suitable' as, for example, three to five applicants from numbers 1, 2, 3, 6, 7, and 10 shown in Table 7.4.

Whenever the number of prequalified applicants is greater than five, the analysis of the prequalification applications may be re-examined carefully to reduce the number. A review of any supplementary notes attached to the evaluation form should be made by the committee to identify the best prequalified candidates.

A review may be supplemented by previous experience of the client and by confidential enquiries

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made to previous clients, trade associations and directories or national company registers. The committee may also wish to visit some of the firms, to meet with senior staff, to examine systems and methods of work, and to enquire as to computer hardware and software capabilities.

If the number of prequalified applicants is less than three, the client may invite additional applications for prequalification analysis.

The committee should record and document the reasons for the decisions made in reaching the final shortlist of prequalified applicants.

An unofficial advice to clients is “do not prequalify any consultant to whom you would be unhappy to award the consultancy services agreement”. The success of the project may depend to a large extent on the close co-operation and trust between the client and his consultant. Clearly, a client must have a substantial reason for excluding a consulting firm from prequalification.

7.7 Notification to prequalification applicants

When the recommended quality-based selection method is adopted, it is advised that a minimum of three and not more than five of the highest ranked applicants are held in reserve in the event that negotiations with the initially identified, highest ranked applicant founder. The remainder should be advised that their applications have not been successful.

When price is a factor in the subsequent evaluation process and the list of selected and prequalified applicants has been prepared, successful applicants should be notified and requested to confirm their intention to submit a proposal. This should ensure, as far as possible, an adequate number of

competitive proposals. If a potential consultant wishes to drop out at this stage, the next best-placed applicant should be invited and requested to confirm his intention to submit a proposal.

Following this, all applicants should be notified of the list of selected prequalified consultants without their being given an explanation of the decisions.

The client should advise successful applicants when they can expect to receive proposal dossiers, and should notify all other prequalification applicants that they have not been selected.

Prequalification Criterion	Code for Prequalification Applicants											
	1	2	3	4	5	6	7	8	9	10	11	12
1 Structure, organisation and management	s	s	s	-	s	s	s	-	u	s	-	s
2 Available resources and design capability	s	s	s	-	s	s	s	-	u	s	-	s
3 Experience: relevant projects completed	s	s	s	-	u	s	s	-	s	s	-	s
4 Experience: relevant projects in progress	s	s	s	-	u	s	s	-	s	s	-	u
5 Experience: geographical	s	s	s	-	s	s	s	-	u	s	-	u
6 General suitability	s	s	s	-	s	s	s	-	s	s	-	s
7 Quality assurance system, health and safety plan and environmental policy	s	s	s	-	u	s	s	-	s	s	-	s

- Notes
- 1 Applications found ineligible or lacking in completeness of application or financial stability are excluded from the second-stage analysis, as are applicants number 4, 8 and 11 in this example.
 - 2 An 's' is marked for suitable and a 'u' for unsuitable.
 - 3 Any application marked with a 'u' against a prequalification criteria should be rejected.
 - 4 In the example above, applicants number 1, 2, 3, 6, 7, and 10 are satisfactory and, therefore, prequalified to prepare and submit proposals in which price will play a part.

Table 7.4 – Analysis of prequalification applications for consultancy appointments
Applications in which price will be a factor: 2nd stage - suitable/unsuitable marking

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7.8 Financing agencies' guidelines

Many projects in developing countries are financed by the International Financing Agencies (IFI's) or bilateral financing agencies. These financing institutions and agencies generally require that the works contracts and consultancy services agreements are procured under their own guidelines. Whilst there are many similarities between the procurement guidelines of the various institutions and agencies, they differ significantly as regards selection methods, prequalification procedures, instructions to tenderers, standard bidding documents, standard contracts, evaluation criteria, etc.

In view of the great variety of procurement guidelines, and as they are generally well documented, further details are not presented here, but readers are referred to the various websites of these financing institutions or agencies for information about their specific requirements. In general, the guidelines of these bodies correspond well to FIDIC's guidelines.

8 Prequalification of Tenderers: Contracts for Works

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8.1 General

Prequalification of tenderers is strongly recommended to ensure that tenders are sought only from contractors for works whom the employer has established as having the necessary resources and experience to perform the intended work satisfactorily and as meeting any eligibility criteria that may be required by the applicable laws and regulations.

The procedures described and recommended in this

chapter, and in Chapters 15, 17 and 19, should be applied consistently within the current legal framework and financial regulations applicable to the project.

For example, some financing institutions require that all applicants, who possess the ability to perform the proposed contract, should be prequalified.

8.2 Tendering methods

Before dealing with the documents to be prepared for prequalification enquiries, it is useful to be aware of the alternative methods of tendering which can be employed.

The method to be adopted will be influenced by the size, complexity and anticipated cost of the contract and

should be clearly stated in the prequalification invitation documents.

Descriptions of four of the more usual methods, generally known as the 'open', 'selective', 'negotiated' and 'competitive dialogue' methods, are given below.

8.2.1 Open

Notices advertising the call for tenders from contractors for works are given wide publicity through appropriate media. The number of responses and subsequent tenders is unlimited. Each respondent to the call for tenders is sent both a prequalification questionnaire and a tender dossier.

A completed prequalification questionnaire is then submitted with the tender to the employer.

This method is not generally recommended by FIDIC as it is clearly wasteful of tenderers' and employers' resources. However, the procurement regulations in the country must be checked because the open method may be obligatory for public works projects under the regulations of some jurisdictions. The method is more frequently used for contracts of small value.

8 Prequalification of Tenderers: Contracts for Works

8.2.2 Selective

This method is also known as the 'restricted' method. In the first stage of this method invitations to prequalify for submission of tenders are issued through appropriate media to contractors for works. Subject to any regulations governing tendering procedures applicable in the country, invitations may also be made by direct approaches to suitable firms.

Following the issue of prequalification questionnaires and the return of completed submissions, a list is prepared of all the applicants who satisfactorily meet the prequalification criteria.

In the second stage of this method a limited number of prequalified firms or joint ventures is then asked whether they wish to tender for the specific contract.

In his own interests (unless he is not permitted by regulations to do so), the employer should limit the number of prequalified tenderers. The invitation to prequalify issued by the employer should ideally indicate the number of firms and joint ventures which is expected to be prequalified. This number should be determined carefully, taking account of the requirements of any financial institution providing funds for the project, and of the work required for the preparation of a compliant tender.

Whereas a maximum of six to eight tenderers might be appropriate for an uncomplicated employer-designed construction contract, five might be preferable for contractor-designed works, while three might be sufficient for complex turnkey works.

8.2.3 Negotiated

This method is typically used only in situations where:

- there is urgency in getting work done, or
- a satisfactory tender is not expected from a repeat of a tender enquiry from which no award was made, or
- minor work cannot be separated without disadvantage from larger work already awarded, or
- specialised equipment can only be supplied by one firm, or
- the work is subject to secrecy regulations.

In such situations negotiations normally take place with one selected contractor. The selection is made from a list of firms who have met the qualifying criteria. However, a minimum of three tenderers may be required under some jurisdictions and circumstances. If negotiations take place with more than one tenderer, the confidentiality of each of the negotiations must be strictly maintained.

8.2.4 Competitive dialogue

This is a relatively new method which is being progressively used for large and complex infrastructure projects. It is adopted where the employing authority is not readily able to finalise the technical requirements of the project by itself and identifies a need to discuss in detail all aspects of the proposed project with tenderers.

Discussions or 'dialogues' with tenderers prior to tender submission will cover all technical and environmental aspects and specifications, as well as financial, legal and commercial issues including payment terms.

The main features of the method are:

- discussion takes place with selected tenderers to identify and define solutions to meet the needs and

- requirements of the employing authority;
- discussion may be conducted in successive stages with the aim of reducing the number of tenders;
- there are explicit rules on post-tender discussion;
- contract award is made on the most economically advantageous tender complying with the award criteria.

The main differences from the negotiated method are that a structured tendering approach is adopted in the development of the technical specifications, and that further discussions for clarification only may be held with the tenderers after submission of tenders.

Prior to prequalification and the submission of tenders a notice of invitation to take part in a competitive

8 Prequalification of Tenderers: Contracts for Works

dialogue is issued through appropriate media to organisations, often joint ventures of contractors, to undertake the works. The notice states the award criteria and the number of organisations that are expected to be selected to take part in the competitive dialogue.

From a prequalification analysis the employing authority selects at least three organisations to take part in the competitive dialogue. The discussions then take place separately with each organisation. The employing authority ensures that each organisation is treated equally and its information kept confidential. The discussions may proceed in stages to reduce the number of solutions being discussed and may involve interviews and written and oral presentations together with simulated exercises that try to identify future problems and risks that may develop during implementation.

When acceptable solutions are defined, a date is then usually set for the tenderers to submit their tenders based on the requirements that were formed at the conclusion of the dialogue.

Tenders may be required to follow a two-stage process, as described in Chapter 17.

Without changing the fundamental requirements of the project or the terms of the contract, the employing authority may seek further clarification from tenderers. The contract is awarded on the basis of the most economically advantageous tender in accordance with the award criteria.

8.3 Prequalification documents: contracts for works

Prequalification documents should give information about the project/contract, the prequalification procedure, the tendering procedure and the contract award criteria. They should set out the dates for return of the completed prequalification documents and for issue of the tender dossier, the tendering period and the programmed contract award date. The documents must also specify what data is required from contractors wishing to prequalify.

The prequalification documents are prepared by or on behalf of the employer and will normally include:

- letter of invitation to apply for prequalification;
- information about the prequalification procedure;
- project information, and information about the scope of the contract to be tendered;
- prequalification application forms and questionnaires.

The prequalification procedure should:

- Be based on questionnaires.
A standard questionnaire will help maintain uniformity of information sought, thus making the responses quicker and cheaper to provide, and at the same time making them more readily comparable. Questionnaires should be so worded that responses may be classified quickly and easily by evaluators.
- Be relatively simple and yet flexible so as to permit consideration of new organisations.
- Take account of both the technical and financial aspects of the project/contract.

- Allow for the updating of information previously provided by contractors to the same employer for an earlier project, thus avoiding unnecessary duplication of effort.
- Authorise the employer to seek supplementary information from other sources.

In order to ensure orderly and easily appraised responses, the FIDIC Standard Prequalification Form for Contractors, reproduced in Appendix 8.3.1, is recommended. However, applicable laws and regulations may prescribe detailed procedures for the prequalification of tenderers, in which case due regard must be taken of these requirements.

The prequalification documents should include at least the following particulars:

- Name, address, telephone and telefax numbers and email address of the employer.
- Name, address, telephone and telefax numbers and email address of the engineer (if appointed) or other employer's representative.
- Location of the project/contract.
- Description of the project and scope of work to be included in the contract, including, if necessary, any requirement for training of operators and/or post-commissioning operation and maintenance.
- If the project is to be subdivided into a number of works packages:
 - the scope of the work involved in each, and
 - information as to whether it is possible to tender for one,

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- more than one, or for all works packages.
- Anticipated time programme, indicating the tender period, contract award date, design/manufacture/construction/installation/commissioning periods and any other relevant key dates.
- Form of contract to be used.
- Criteria for prequalification, described in Section 8.6 below.
- Criteria for evaluation of tenders.
- Details of any work intended to be carried out by nominated subcontractor(s).
- Anticipated sources of finance (including any requirements for contractor financing).
- Payment arrangements envisaged (including currencies).
- Any financial guarantees including parent company guarantees, if applicable, to be given by the tenderer.
- Whether provision for changes in cost will be included (cost escalation/inflation provisions).
- Language and law of the contract.
- Any aspect of the intended work which is unusual and would thus have a bearing on the contractor's obligations.
- Charges for purchase of tender dossier, if applicable.

Prospective applicants should also be advised of the following:

- The policy of the employer concerning the use of local labour, facilities and materials.

- The attitude of the employer to joint ventures.

It is recommended that joint ventures should be allowed to prequalify but, in doing so, each member of the joint venture should submit separate prequalification documentation. However, because it reduces the breadth of competition, any subsequent formation of joint ventures from amongst prequalified organisations should be restricted. Nevertheless, a prequalified organisation should be allowed to strengthen its capability by the subsequent incorporation, during the tender period, of non-prequalified firm(s), subject to the approval of the employer.

- The number of copies of prequalification applications to be submitted.
- The name, address and latest date for receipt of submissions, including any particular instructions for labelling.
- The language to be used for the submission.
- The currency to be used for presenting financial information.
- Any requirement for power of attorney for authorised signatory.

If the project involves or may involve the exchange of confidential information, or the client wishes to control the release of information about the project into the public domain, the client should require the contractor to enter into a confidentiality agreement.

8.4 Invitation to prequalify

The employer should publish a notice inviting interested contractors to apply for prequalification documents. Except when a call for open tenders is made (when the tender dossier will be issued with the prequalification documentation) the notice should state that tender documents will be issued only to a limited number of companies/joint ventures selected by or on behalf of the employer as having the necessary qualifications to perform the work satisfactorily.

The notice should be published in appropriate newspapers, official publications, technical journals, and on the internet, to give sufficient publicity according to the particular circumstances of the project/contract. The notice may also be issued to financing institution representatives, if relevant, and to government agencies

responsible for foreign trade so that the international community receives timely notification of the proposed project and instructions on how to apply.

The notice should be reasonably brief and, where possible, contain:

- Name of the employer.
- Name of the engineer (if appointed), or other employer's representative.
- Location of the project/contract.
- Description of the project/contract and scope of work.
- Estimated cost range or budget for the contract.
- Sources of finance.
- Anticipated programmed dates (i.e., award of contract, completion and any other key dates).

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- Planned dates for issue of tender dossiers and submission of tenders.
- Criteria for prequalification.
- Criteria for selection of short-listed tenderers.
- Criteria for evaluation of tenders.
- Instructions for applying for prequalification documents.
- Date by which to submit applications to prequalify.
- Minimum qualification requirements and any particular aspects which could be of concern to prospective tenderers.

The period between the notice of invitation to prequalify and the latest date for the return of completed applications should not be less than four weeks.

For most contracts, the notice of invitation should be published between ten to fifteen weeks before the planned date for issue of tender dossiers, and completed prequalification applications should be submitted to the employer four to eight weeks before that date.

8.5 Issue and return of prequalification documents

On receipt of requests from respondents, the employer should issue the prequalification documents. As mentioned in Section 8.3, the FIDIC standard prequalification form is shown in Appendix 8.3.1.

The documents should state how the application is to be packaged and returned.

The employer should acknowledge receipt of the completed prequalification applications from the respondents.

If it is intended to charge for the issue of the tender dossier, details should be given in the prequalification documents.

8.6 Assessment of prequalification applications

The employer should evaluate the prequalification applications to identify those companies/firms/joint ventures considered to be suitably qualified and experienced to undertake the intended contract. For this task it is usual for the employer to appoint a committee of suitably experienced persons to evaluate the applications and prepare a shortlist of suitable contractors.

The committee should check the eligibility of applicants to prequalify and that the applications are complete. An applicant declared bankrupt or convicted of fraud, money laundering or corruption or who has knowingly

submitted false information with the object of gaining prequalification should be excluded from the evaluation.

The committee should be satisfied that the applicant has the financial resources and backing to meet salaries, wages, materials, supplies, and all other costs until the forecast payments become due under the contract, and to meet the costs of all other ongoing commitments during the period of the contract. As a guide the committee will expect the total annual turnover of the applicant to be at least three times the anticipated annual revenue from the contract. Failure to meet the minimum financial requirements should result in

Prequalification Criterion	Code for Prequalification Applicants										
	1	2	3	4	5	6	7	8	9	10	11
Eligibility and Completeness of Application	u	s	s	s	s	s	s	s	s	s	s
Financial Stability	s	s	s	u	s	s	s	s	s	s	s

- Notes
- 1 An 's' is marked for suitable and a 'u' for unsuitable applicants.
 - 2 Any application marked with a 'u' against either criterion should be rejected.
 - 3 In the example above, applicants 1 and 4 would be rejected.

Table 8.1 – Analysis of prequalification applications for the tendering of contracts for works
Matrix example for the evaluation of eligibility and completeness of applications and of financial stability

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the applicant being excluded from further evaluation by the committee.

A convenient method of comparison of eligibility, completeness of applications and financial stability of the applicants is by the completion by members of the committee of the form shown in Table 8.1. Each applicant, having been given a reference code, is marked as either 'suitable' or 'unsuitable'. Unsuitable applicants would normally be excluded from further consideration.

The committee should then determine for each applicant its capacity and suitability based on:

- Structure and organisation; location.
- Available resources in terms of management capability, technical staff, construction equipment, fabrication facilities, and any other relevant factors such as, if appropriate, training facilities and operation and maintenance capabilities.
- Extent to which any work would be likely to be subcontracted.
- Experience in both the type of work and the country or region in which it is to be undertaken.
- Relationships with local companies, taking into account any potential language difficulties.
- Quality assurance procedures; health, safety and environmental policy.
- Litigation and arbitration history.
- Security level required.

Evaluation of the capacity and suitability of potential contractors should be made on the basis of the prequalification application. This may be supplemented by previous experience of the employer and by

confidential enquiries made to previous employers or clients, and from trade associations and directories or national company registers.

A convenient method of comparing applications is to record scores against criteria representing various aspects of the submissions. The resulting scores are then suitably weighted. An example of this method is illustrated in the analysis given in Tables 8.3 and 8.4.

An example of the use of a matrix comparison form before the application of weighting is illustrated in Table 8.3. The criteria are shown on the left-hand side of the table while columns are provided for entries of the scores against the headings under each of the prequalification applicants 1 to 11 (eleven applicants in this example). The scoring against each criterion is in the range 0-100, 100 being 'exceptional' and going down through the ranges of 'very good', 'good', 'average', 'poor' and 'weak' to 0 showing 'no data'.

It is good practice for the same evaluators, who may be more but never less than two, to score each criterion for each applicant and for the evaluators' scores for each criterion for each applicant to be averaged. This method avoids possible distortion in scoring values, which might be caused by different evaluators marking relatively high or low. To assist in the comparison of applicants, it is also recommended that the evaluators score all applicants for a criterion before the next criterion is considered.

In the case of joint ventures, for which each member will have been given separate subjective scores under each criterion, it is suggested that averages of the

Criterion	Maximum Score	Prequalification Form	Weighting Percentage
1 Structure and organisation	100	C, E and F	10%
2 Resources: directors, managers and staff	100	G and H	10%
3 Resources: labour force/subcontractors	100	I	5%
4 Resources: plant, equipment and facilities	100	J	5%
5 Experience: geographical	100	K	5%
6 Experience: relevant contracts completed	100	L	15%
7 Experience: all contracts in progress	100	M	15%
8 Quality assurance system, health and safety plan and environmental policy	100	N, O and P	15%
9 Litigation and arbitration history	100	S	20%

Maximum possible: 100%

Table 8.2 – Prequalification form and weighting factor for each criterion for Tables 8.3 and 8.4

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Prequalification Criterion	Code for Prequalification Applicants										Weighting to Apply	
	1	2	3	4	5	6	7	8	9	10	11	
1 Structure and organisation	-	90	87	-	75	60	78	58	70	89	82	10%
2 Resources: directors, managers and staff	-	67	89	-	59	89	87	78	67	86	82	10%
3 Resources: labour force/subcontractors	-	74	85	-	78	60	78	83	77	78	76	5%
4 Resources: plant, equipment and facilities	-	78	83	-	85	88	75	89	66	85	79	5%
5 Experience: geographical	-	76	63	-	65	69	78	87	90	56	88	5%
6 Experience: relevant contracts completed	-	70	75	-	77	67	88	90	90	55	50	15%
7 Experience: all contracts in progress	-	68	65	-	80	66	66	50	55	85	73	15%
8 Quality assurance system, health and safety plan and environmental policy	-	85	88	-	75	86	90	95	95	86	84	15%
9 Litigation and arbitration history	-	40	45	-	60	66	70	60	50	48	70	20%

Notes 1 The average scores of evaluators are given against each criterion for each suitable applicant.
2 Maximum score against each criterion is 100.
3 In the example above, applicants 1 and 4 had been eliminated after the evaluation of eligibility, completeness of application and financial stability.

Table 8.3 – Analysis of prequalification applications for the tendering of contracts for works
Matrix example: scoring sheet

Prequalification Criterion	Code for Prequalification Applicants										Weighting Applied	
	1	2	3	4	5	6	7	8	9	10		11
	-											
1 Structure and organisation	-	9.00	8.70	-	7.50	6.00	7.80	5.80	7.00	8.90	8.20	10%
2 Resources: directors, managers and staff	-	6.70	8.90	-	5.90	8.90	8.70	7.80	6.70	8.60	8.20	10%
3 Resources: labour force/subcontractors	-	3.70	4.25	-	3.90	3.00	3.90	4.15	3.85	3.90	3.80	5%
4 Resources: plant, equipment and facilities	-	3.90	4.15	-	4.25	4.40	3.75	4.45	3.30	4.25	3.95	5%
5 Experience: geographical	-	3.80	3.15	-	3.25	3.45	3.90	4.35	4.50	2.80	4.40	5%
6 Experience: relevant contracts completed	-	10.50	11.25	-	11.55	10.05	13.20	13.50	13.50	8.25	7.50	15%
7 Experience: all contracts in progress	-	10.20	9.75	-	12.00	9.90	9.90	7.50	8.25	12.75	10.95	15%
8 Quality assurance system, health and safety plan and environmental policy	-	12.75	13.20	-	11.25	12.90	13.50	14.25	14.25	12.90	12.60	15%
9 Litigation and arbitration history	-	8.00	9.00	-	12.00	13.20	14.00	12.00	10.00	9.60	14.00	20%
Total weighted score:	-	68.55	72.35	-	71.60	71.80	78.65	73.80	71.35	71.95	73.60	

Notes 1 The average scores of evaluators are given against each criterion for each suitable applicant.
2 In the example above, applicants 1 and 4 had been eliminated after the evaluation of eligibility, completeness of application and financial stability.
3 In the example above, if five prequalified candidates were to be selected, these would be 7, 8, 11, 3, and 10.

Table 8.4 – Analysis of prequalification applications for the tendering of contracts for works
Matrix example: application of weighting, showing effect of percentage weighting

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members' scores under each criterion are calculated and then entered on a new matrix sheet to represent the score of the joint venture. Alternatively, the scores of each member could be weighted in proportion to its stated financial percentage commitment to the joint venture.

Each criterion will have been previously weighted. The average score against each criterion for each applicant is then adjusted by the weighting percentage. Table 8.2 gives the corresponding page or pages of the standard prequalification form, shown in Appendix 8.3.1, for each of the criteria in the examples of Tables 8.3 and 8.4, together with the weightings and maximum possible score.

The total score of each applicant is then calculated as a percentage of the maximum possible score of 100.

The applicants with the highest percentages are then considered to be the best qualified.

The prequalification criteria and weightings may, of course, be adjusted to suit the circumstances of the

project/contract. It is to be added that where appropriate and feasible, discussions may be held with applicants.

In this regard it will be noticed that no provision has been made in the examples given to show the effect of prequalification submission for training of the employer's personnel or for ongoing operation and maintenance of a completed facility (Forms Q and R of Appendix 8.1). If such information is required from the applicants, it is then necessary to take account of this by the introduction of additional criteria to Tables 8.3 and 8.4 and by suitable adjustment of the weighting percentages to ensure that the maximum total score remains at 100.

Any information provided by prequalification applicants on Form U – Additional Information of the standard prequalification form should be taken into account by the shortlist committee in the assessment of Forms E to T, as may be appropriate.

8.7 Selection of tenderers

Contractors considered ineligible from the assessments above, and those who do not meet the satisfactory financial requirements, should be excluded from the final stage of the selection process.

It is recommended that the selection of tenderers is made from those with the highest percentages assessed in the analysis procedure described above in order to arrive at:

- no more than eight for an uncomplicated employer-designed construction project; or
- no more than five for contractor-designed works; or
- no more than three for a complex turnkey contract or for tenderers selected under the competitive dialogue method; or
- usually one but not more than three for negotiated tenders.

An advice to employers is "do not prequalify any contractor to whom you would be unhappy to award the

contract". Clearly, an employer must have a substantial reason for excluding a contractor from prequalification.

Where the tenderer is a subsidiary in a group of companies, it needs to be appreciated that the only security for the performance of the subsidiary is the subsidiary's assets and that it would be wholly imprudent and unwise to rely on the fact that the subsidiary is part of a larger and/or well-known group of companies. In such a case the employer should consider insisting on receiving a guarantee from the parent company which would have the assets and resources necessary to assure good performance of the construction contract.

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8.8 Notification to prequalification applicants

When the list of selected and prequalified tenderers has been prepared, successful applicants (except in the case of the open tendering method, where tenders will have already been submitted) should be notified and requested to confirm their intention to submit a tender. This should ensure, as far as possible, an adequate number of competitive tenders. If a potential applicant wishes to drop out at this stage, the next best-placed applicant should be invited and requested to confirm his intention to submit a tender.

Following this, all applicants should be notified of the list of selected tenderers without giving explanation of the decisions.

The employer should advise successful applicants when they can expect to receive the tender dossier, and should notify unsuccessful applicants that they have not been prequalified.

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Contents

9.1	General	9.3.3	Issue of proposal dossier
9.2	Quality-based selection: request for proposals	9.3.4	Applicants' queries
9.3	Proposals with price as a factor	9.3.5	Addenda to proposal dossier
9.3.1	Proposal methods	9.3.6	Submission of proposals
9.3.2	Basic pricing methods	9.3.7	Subsequent processes

9.1 General

In the following, by 'applicant' is meant the consultant who is applying to be awarded a consultancy agreement by the client for the execution of certain consultancy services. The consultant may be a consulting engineer or other professional, who will be a suitably qualified person or engineering firm or consortium (or other joint venture) of such firms. The consultancy services may involve giving advice or carrying out investigations, studies, designs, supervision of construction or installation works, or any other such services in connection with engineering projects of any type.

Chapter 7 has described procedures for the prequalification of applicants for consultancy appointments. In carrying out the prequalification processes the client wishing to retain professional services will have decided whether or not price is to be a factor in the choice of the consultant.

If the quality-based selection procedure is chosen, in which a fair and satisfactory price is to be negotiated, the selection of the consultant will have already been decided by use of the process described in Section 7.6.1. The

subsequent process is to negotiate a scope of services and a suitable fee structure with the selected firm, as described in Section 9.2 below.

However, if – against FIDIC's recommendations – price is to play a part in the decision-making process, the preferred and recommended procedure for selection of a consultant is to:

- Identify not more than three to five prequalified consultants with relevant experience as described in Section 7.6.2.
- Issue proposal dossiers to the chosen consultants with requests for proposals, as described in Sub-Sections 9.3.1 to 9.3.7.
- Evaluate the submitted proposals and recommend the acceptance of the most economically advantageous tender as described in Chapters 16 and 18.

9.2 Quality-based selection: request for proposals

Under the quality-based selection method, which is the method recommended by FIDIC, the choice of the most technically satisfactory consultant will already have been made upon completion of the prequalification processes.

The client then has to invite the highest ranked consultant to commence negotiations to develop jointly a scope of services, fee and commercial terms and to conclude a consultancy services agreement.

Information to be provided to the highest ranked applicant, after completion of the prequalification procedure and prior to the start of the negotiations, should include:

- The scope of services required.
- Terms of reference and supporting documents.
- List of additional information to be provided by the consultant.
- Date by which an agreement is to be concluded.
- Expected start date and programme for the provision of the services.
- Arrangements – as may be required – for visiting the site of the proposed works.

Further aspects of the negotiations are described in Chapter 16.

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9.3 Proposals with price as a factor

The procedures to be followed in obtaining competitive proposals for consultancy appointments if price is to be an element in the choice of applicant, are described in the sub-sections below.

Where established procurement procedures require prices for professional services to be prepared, guidance is also given in publication FIDIC Guidelines for the Selection of Consultants.

9.3.1 Proposal methods

Two of the generally adopted methods for obtaining proposals for consultancy services appointments are known as the 'selective' and 'negotiated' method. Both are described below.

Selective method

The selective method is also known as the 'restricted' method.

In this method invitations to prequalify for the submission of proposals are issued by the client through appropriate media to consultants for services. Subject to any laws and regulations governing procedures for the submission of consultancy proposals applicable in the country, invitations may also be made by direct approaches to suitable consultants.

From the responses received, a list is prepared of all applicants who satisfactorily meet the prequalification criteria, as described in Chapter 7, and a shortlist is prepared of a limited number of prequalified consultants or joint ventures, who are then invited to submit a proposal.

In his own interests (unless he is not permitted by regulations to do so), the client should limit the number of prequalified applicants on the shortlist. The invitation to prequalify issued by the client should ideally indicate the number of consultants and joint ventures which are expected to be on the shortlist.

This number should be determined carefully, taking account of the requirements of any financial

institution providing funds for the project, and of the work required for the preparation of a compliant proposal.

Typically up to five but not less than three applicants would be selected from those qualified to be invited to submit proposals.

Negotiated method

The negotiated method is typically used only in situations where:

- there is urgency in provision of the services, or
- the required services are relatively limited and cannot be separated without disadvantage from larger services already awarded, or
- the services are subject to secrecy regulations, or
- a satisfactory proposal is not expected from a repeat of an invitation for proposals from which no award was made, or
- the agreement arises from the result of the rules of a design competition.

In such situations negotiations may take place between the client and, separately, with one or more selected applicants, as may be appropriate. The selection is made from a list of consultants who have already met the qualifying criteria. However, a minimum of three applicants may be required in some jurisdictions and circumstances. If negotiations take place with more than one applicant, the confidentiality of each of the negotiations must be strictly maintained.

9.3.2 Basic pricing methods

There are a number of different methods for the selection of consultants in which price plays a part in the decision-making process, following prequalification and submission of proposals. These methods are described below.

Two-envelope method

This method is similar to the recommended quality-based selection method, with the difference that the applicants are asked to submit a priced proposal in

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two sealed envelopes: the first contains the engineering and management proposal, the second the pricing.

All the engineering and management proposals are evaluated and ranked in order of merit. The second envelope of the highest ranked applicant is then opened and the rates and pricing information then form the basis for negotiations to lead to a consultancy services agreement.

All other second envelopes should remain sealed and, if agreement is reached with the highest ranked applicant, should be returned unopened to their respective applicants.

However, if agreement is not reached with the highest ranked applicant, he should be notified in writing and negotiations undertaken with the second highest ranked applicant and so on until a satisfactory agreement is concluded.

Cost-weighted method

In this method, consultants are asked to submit their proposals in two parts. The first part comprises the engineering and management submissions. These are evaluated and assigned weighted scores against a set of qualification criteria. The totals of the engineering and management scores for each applicant are then ranked. Proposals with a total score below a predetermined minimum may be omitted from further evaluation. The rates and prices submitted in the second envelopes are then analysed and ranked.

FIDIC recommends that no more than 10 percent of the assessed final price score should be added to the engineering and management qualification score. An example of this method of selection is demonstrated in Section 16.3.

Design competition with prices

A design competition between qualified consultants is

normally paid for by the client on a predetermined cost basis. If this is not done, design competitions have the effect of raising overall prices.

The competing consultants are sometimes requested to submit their fee proposals and/or estimates of construction and installation costs with their designs.

The client has the advantage of having a clear idea of the consultant's proposed solution and its costs, as the quality and scope of the work can be more clearly defined. However, the method has the disadvantage of being an expensive approach to selection and can mean that too much emphasis is placed on technical rather than managerial ability.

Budget method

In this method, applicants are provided with a budget figure together with terms of reference outlining the consultancy services required. The applicants submit their detailed proposals to meet the client's requirements.

Selection is then made on the basis of the best quality proposal submitted which meets the client's requirements for a price within the budgeted cost.

Price negotiation method

With the issue of terms of reference and description of the scope of the services required, selected or prequalified applicants are asked to negotiate their fees. With consultants competing against each other, this method may degenerate into a reverse-auction with the result that the price of offered services may be driven down resulting in a lower quality of service. This method is not recommended by FIDIC.

9.3.3 Issue of proposal dossier

After the prequalification and preparation of a shortlist of suitable applicants and with price playing a part in the decision-taking process, the client should issue a proposal dossier to each short-listed applicant formally inviting it to submit a proposal for carrying out the required services.

It is not usual to require consultants to pay for the proposal dossier, and nor should the consultant applicants be required to obtain a tender bond or other security, as in the

case with contractor tendering.

The proposal dossier should contain at least:

- The scope of services required.
- Terms of reference and supporting documents.
- Deadline for submission.
- Date up to which a short-listed applicant may request clarification of requirements.

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- Basis of evaluation.
- Instructions, as may be appropriate, if it is required that the proposal is to be submitted using the two-envelope system in which the wrapped tender contains two separately sealed envelopes: one holding all the tender documents exclusive of any pricing information; the other holding the proposed prices for the services.
- List of information to be included in the proposal.
- Period during which proposals are binding.
- Expected selection date, start date and programme for the provision of the services.

Where appropriate, the request for a proposal should also include the following details which may influence the cost of providing the services:

- Methodology to be adopted.
- Alternatives to be considered; innovative approaches.
- Transfer of knowledge and technology, local participation and training required.
- Detailed target or budget cost estimates for the project.
- Project programme.
- Arrangements – as may be required – for visiting the site of the proposed works.
- Statement that any additional information or clarification

of the proposal dossier will be provided simultaneously to all applicants within a stated number of days prior to the proposal submission deadline.

The submitted proposal will be expected to cover such topics as:

- Past experience with similar projects.
- Details of consultant's organisation, project and financial control.
- Type of organisation and managerial approach proposed for the services.
- CV's of key personnel.
- Size of consultancy and staff responsibilities.
- Quality assurance system.
- Knowledge of local conditions.
- Local resources.
- Planned methodology.
- Resources.
- Approach and commitment to technology transfer.

The proposal dossier should be compiled and set out in such a manner that the anticipated responses would be readily comparable for the purposes of evaluation of the proposals.

9.3.4 Applicants' queries

Applicants' queries can be handled during the proposal submission period by correspondence or by applicants' conference or by a combination of these methods.

The intended method or methods should be described in the proposal dossier.

9.3.5 Addenda to proposal dossier

Explanations, revisions, additions, or deletions to the proposal dossier may be necessary during the proposal submission period and these should be notified in accordance with the procedure described below.

Each addendum should, when issued, carry a serial number for reference purposes and contain a receipt slip which should be signed by the applicant and returned immediately to the client.

Every addendum must be issued to each applicant that is invited to submit a proposal.

Addenda should be complete and clear and applicants should not have to consider and decide

whether other changes to the documents are required as a consequence. Addenda become part of the proposal dossier.

The client should avoid the issue of addenda, if possible. If unavoidable, the client should consider extending the proposal submission period to allow applicants a reasonable time for their incorporation. It should also be remembered that changes of a minor nature can usually be dealt with in discussions with the selected applicant prior to award. Addenda should never be issued during the latter part of the proposal submission period.

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9.3.6 Submission of proposals

It is the responsibility of applicants to ensure that their proposals are delivered to the client by the due submission date and time, properly signed by authorised signatories.

Applicants should be instructed to return their proposals double-wrapped in plain envelopes or packages using pre-addressed labels provided by the client. The labels are to be affixed to the outer wrapping and should preferably be distinctive and carry the words “Proposal for Agreement No. - to remain sealed until official opening”.

Each applicant should ensure that both his name and address are clearly marked on the inner wrapper to enable the client to identify the applicant in the event of a late tender having to be returned unopened.

9.3.7 Subsequent processes

The procedures to be followed for the receipt and opening of proposals are described in Chapter 15.

If quality-based selection is adopted, Chapter 16 describes the practice and process to be followed in negotiations. It also describes the evaluation processes for

proposals in which the prices are an element in the assessments.

10 Obtaining Tenders: Minor Works Contracts

Contents

- 10.1 General
- 10.2 Preparation of tender dossiers
- 10.3 Tender procedure

10.1 General

The recommended form of contract for engineering and building work of relatively small capital value is the FIDIC Short Form of Contract (the Green Book) comprising:

- Agreement: Offer; Acceptance; Appendix
- General Conditions
- Particular Conditions
- Rules for Adjudication
- Notes for Guidance (not forming part of the contract)

Depending on the type of work and the circumstances, the conditions may be suitable for contracts of greater value. They are most likely to be suitable for fairly

simple or repetitive work or work of short duration without the need for specialist subcontracts.

Under the usual arrangements for this type of contract, the contractor constructs the works in accordance with a design provided by the employer or by his consultant. However, this form may also be suitable for contracts which include, or wholly comprise, contractor-designed civil, mechanical and/or electrical works. In addition, the employer has a choice of various valuation methods.

10.2 Preparation of tender dossier

A single document is provided for the form of tender and the agreement. The intention is that all necessary information should be provided in the appendix to the agreement, the latter incorporating the tenderer's offer and the employer's acceptance in one simple document.

The general conditions are expected to cover the majority of contracts. Nevertheless, users are able to introduce particular conditions if they wish, to cater for special cases or circumstances. The general conditions and the particular conditions together comprise the conditions of contract governing the rights and obligations of the parties.

One result of this simple form of contract is that there is an increased burden on the employer to set out in the specification and drawings the full scope of works, including the extent of any design to be done by the contractor.

There is no engineer or employer's representative in the formal sense used in most of the other FIDIC forms of contract. The employer takes all necessary actions. However, the employer must nominate his authorised spokesman and, if he wishes to engage a consultant to administer the contract, may appoint a representative with specific delegated duties and authority. The contractor also nominates a representative. Although there is no reference to an impartial engineer, the employer may appoint an independent engineer to act impartially, should he wish to do so.

The conditions contain no overall limit on the contractor's liability. If such a limit is required, a clause should be inserted in the particular conditions.

To assist in the preparation of tender dossiers using these conditions, the publication includes notes for guidance.

10.3 Tender procedure

The following chapters present a systematic approach to the obtaining and evaluation of tenders which apply to

various contractual arrangements for major works. These approaches are also generally suitable for minor works.

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11.1 Preparation of tender dossier

11.1.1 General

In this chapter the promoter of a contract is referred to as the employer. Strictly the term 'employer' should only be used after a contract has been signed but it is used here, when describing the employer's activities in obtaining tenders before the award of a contract, for the sake of simplicity and clarity.

Before the employer can obtain tenders from suitable contracting companies he must have prepared:

- a list of tenderers whom he will invite to tender; and
- a set of tender documents (the tender dossier).

The employer must also initiate the appropriate notification procedures required by applicable laws and/or the funding agency(ies).

The list of suitable tenderers will normally have been arrived at following a prequalification process, as described in Chapter 8.

The tender dossier is prepared by the employer, or by a consultant on behalf of the employer. It will normally include:

- letter of invitation to tender;
- instructions to tenderers;
- form of letter of tender and appendix to tender;
- conditions of contract (general conditions and particular

conditions) together with any sample forms such as bank guarantees;

- specification;
- drawings;
- bill of quantities with method of measurement and payment procedure;
- schedule of rates and/or prices;
- other schedules for completion by tenderers;
- information data; and
- list of additional documents/information to be submitted by tenderers.

The scope of the contract and an outline of the tender documents should be prepared before the prequalification documents (when applicable) in order to achieve consistency between these two sets of documents.

Some of the above items, such as the letter of invitation to tender and the instructions to tenderers will normally not form part of the contract agreement (see Chapter 19). It is therefore essential that all requirements and conditions applying after award of contract are incorporated elsewhere in the tender dossier.

Detailed features of each of the documents to be included in a typical tender dossier are described below.

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11.1.2 Letter of invitation to tender

The letter of invitation to tender should be on the employer's official headed paper and should include:

- tender reference and title;
- list of documents issued (i.e., included in the tender dossier);
- receipt form for the tender dossier (to be signed and returned by each tenderer);
- instruction to inform the employer/engineer in writing of any significant changes to the data supplied in the prequalification application; and
- date, time and place of tender submission and tender opening.

The letter of invitation should be kept as short as possible. Detailed information on tendering should be contained in the instructions to tenderers.

An example letter of invitation is given in Appendix 11.1.1. This example is a suggestion, and should be carefully reviewed and amended as necessary to take account of the relevant circumstances. It avoids repeating information contained in the other tender documents, in order to avoid inconsistencies.

11.1.3 Instructions to tenderers

General

The instructions to tenderers should be prepared by or on behalf of the employer to meet the particular requirements of individual contracts. The purpose of the document is to convey information and instructions that will govern the preparation, submission and evaluation of tenders.

When tenders have been received and evaluated this document will no longer be needed, and it should not form part of any resulting contract. It should therefore not contain any text which remains valid after award of the contract.

Tenderers should be notified of the language in which the tenders are to be written. They should also be notified of the number of copies of their tender that are required, stipulating that one set of the documents should be clearly marked "Original Tender" and the others (which should be photocopies) marked "Copy" and that, in the event of discrepancy, the "Original Tender" shall take precedence.

If a power of attorney is required for the authorised signatory(ies) of the tender, precise requirements should be given.

The tenderers' attention should also be drawn to any requirement for documents to be notarised and legalised at the embassy or consulate of the employer's country.

Tenderers should be informed whether the successful tenderer will be required to establish a locally registered company for the purpose of the contract, or to have an agent.

The instructions to tenderers should state that the employer does not bind himself to award a contract to any of the tenderers.

Remuneration is not normally made to tenderers who submit tenders, so there should be a stipulation that all costs and expenses associated with the preparation and submission of tenders shall be borne by the tenderers.

Tender period

When determining the tender period, the employer must ensure that adequate time is allowed for tenderers to prepare their tenders, taking into account the size, complexity and location of the project. Important factors to be considered are whether there is likely to be a number of major subcontractors from whom tenderers will have to obtain offers, or whether supply of materials and plant generally only involves 'off-the-shelf' supplies.

Some straightforward or repeat work may not require a long tender period. On the other hand, complex projects, works requiring considerable pre-tender investigation of site conditions, and projects likely to be tendered for by consortia, may require tender periods of

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a number of months. In any case, it is unwise for an employer to allow too short a period, resulting in tenderers having insufficient time to consider fully their risks and obligations, or to allow too long a period, which may result in tenderers not commencing serious preparation work until well into the tender period.

Documents

The instructions to tenderers should contain a list of the documents required to form a complete tender.

Tenderers should be informed that a tender will be rejected unless it is substantially responsive.

It should be made clear to tenderers that any corrections must be initialled. Documents provided in electronic format should be protected so that they cannot be changed.

Alternative tenders

Tenderers should be informed whether alternative tenders will be considered, and if so, what technical and commercial conditions will be applied. In any event, a compliant tender is normally a precondition for considering alternative tenders.

Alternative tenders must include a comprehensive and precise description of the parts of the tender documents which have been altered. The alternative tender should include full details of commercial terms and conditions, specification, drawings, calculations, environmental impacts and costs for the parts of the works that have been altered, in order to allow a fair technical and financial evaluation of the alternative proposal.

Modification to tenders

The tenderer should be informed that, if he has delivered, posted or dispatched his tender prior to the formal submission date he has the right to modify or make corrections to it, provided that any such modifications or corrections are received by the employer in writing prior to the deadline specified for submission of tenders. The original tender thus modified or corrected would then be considered as the official tender.

Financing arrangements

Tenderers should be informed of the source(s) of finance, their amount and related conditions for the proposed works.

Where tenderers are required to provide financing they

should be instructed to provide information as to their source(s) of finance, their amount and the conditions which will apply.

Currencies and payments

Specific instructions should be given concerning the currencies to be used in the preparation of the tender. Tenderers should also be advised in which currency/currencies payments will be made.

Where tenderers are required to express their tenders in a single currency (usually the currency of the country in which the works are to be carried out), it is necessary to define the rates of exchange which have been used to convert the various currencies in which payment is required into a single currency unit. As more than one tenderer may request part payment in one particular currency, it is preferable that the exchange rates to be used should be consistent and, therefore, that they should be defined by the employer and notified to each tenderer a reasonable time before the date of submission. Normally, these rates should be the selling prices quoted by the local central bank, and the rates should be those quoted at the time of closing 28 days before the tender submission date. The rates quoted will then be incorporated in the contract when awarded.

If payments are to be adjusted for changes in the cost of labour and/or materials, the formulae for calculating such changes and the source(s) of the applicable published indices for use in the formulae should be included in the conditions of contract. If these formulae use different currencies, care should be taken to ensure that variations in their respective rates of exchange do not lead to distortions.

Preference for local products and services

Tenderers should be advised if and how preference, if any, for local products and services will be applied in the evaluation of tenders.

Tender security

The requirements for a tender security, if any, will be determined by the circumstances of each contract. If a tender security is required, a form should be included in the tender dossier. An example form of tender security is shown in Appendix 11.1.2. The amount and currency(ies) of the security should be stated. In all cases, the guarantor(s) or the surety or sureties must be satisfactory to the employer. If a tender

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security has been requested, any tender which has not been so secured will be rejected.

Tenderers should be advised of the period of validity which is required for the tender security, and the events which will entitle the employer to cash the security. The period of validity of the security should equal the period of validity of the tender plus the time allowed for the successful tenderer to provide his performance security under the terms of the eventual contract between the contractor and the employer. Tenderers should be informed that their tender securities will be returned to them as soon as the security is no longer in full force and effect.

The employer should select the type and amount of security most appropriate to the contract to be awarded. It is preferable that the amount of security should be stated as a specific sum rather than as a percentage of the tender price.

Evaluation criteria

The evaluation criteria, which will form the basis for the selection of the most advantageous tender, should be stated. The criteria should be consistent with the information which tenderers are asked to submit and may include updating of the information supplied as part of the prequalification procedure.

If a specific method of evaluation is to be used in selecting the successful tender, the method should be described in the Instructions to tenderers.

While evaluation generally may be primarily on the basis of tender price, other factors which could be relevant to achieving best value for money include:

- time for completion;

Notes to Table 11.1

- [1] Drawings and calculations; technical descriptions; proposals for management, designers, subcontractors and suppliers; proposals for site establishment/facilities; programme for design (if any) and construction; payment plan/cash flow forecast; proposed methods of construction, with resources; proposed environmental protection measures; health and safety and environmental protection plan; quality management and control; and pricing document.
- [2] Site investigation reports and environmental impact assessments.
- [3] Late arrivals, altered figures, incomplete submissions, and deviations.

Table 11.1 – Instructions to tenderers checklist

Language of the tender.
Number of copies of the tender that are required.
Which documents have to be filled in by the tenderer and returned by the submission date, and which have to be signed.
Precise requirements for each tenderer to provide a power of attorney for the authorised signatory(ies) to the tender.
Any special rules regarding treatment of taxes, duties and other fiscal matters in the tender.
Validity period of the tender.
Any documents other than those issued as part of the tender dossier which the tenderer must include with his tender, see Note [1] for examples.
Financing (contractor funding), if applicable.
Procedure for issuing addenda to the tender documents.
Procedure for dealing with queries raised by tenderers.
Instructions for packing, labelling and addressing the tender (including a supply of standard labels if this is the practice of the employer).
Procedure to be adopted for tenderers to visit and inspect the site.
Procedure for inspecting any special documents not issued with the tender dossier, see Note [2] for examples.
Circumstances under which alternative offers may be submitted.
Confidentiality of tender documents.
Procedure for the return of tenders submitted by unsuccessful tenderers (if required).
Procedure for dealing with requests for extension of time by tenderers.
Arrangements for the opening of tenders.
Procedure for dealing with arithmetic errors found in tenders during evaluation.
Rules relating to disqualification/rejection of tenders, see Note [3] for examples.
Any unusual features of the particular tendering procedure.
Information about the requirements of local (national) regulations.
Information about the evaluation criteria and method.
Award of contract procedure, including submission of the performance security, appointment of the Dispute Adjudication Board (DAB), and other formalities.

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- suitability of technology and personnel;
- life-cycle cost of the works;
- environmental impact during the lifetime of the project;
- avoidance of hazardous materials;
- quality and serviceability of specialised contractor's equipment;
- project financing;
- operation and maintenance costs; and
- claims record.

These factors should, to the extent practicable, be expressed in monetary terms and/or given a weighting in the evaluation provision of the tender dossier. To help users, a detailed example of a tender evaluation process is given in Chapter 17.

Performance security

If a security (guarantee or bond) for performance is required, the type and terms should be specified in the conditions of contract.

The terms should include the period of validity of the

security, the procedure to be followed if the security is forfeit, arrangements for its release and the currency of any monetary transactions involved.

The procedure for the successful tenderer to submit the performance security should be described in the instructions to tenderers.

Checklist

The checklist given in Table 11.1 may help in the preparation of instructions to tenderers and shows subjects which should be covered.

Sample form

An example form of instructions to tenderers is given in Appendix 11.1.3. This example is a suggestion, and must be carefully reviewed and amended to take account of the employer's normal procedures and requirements, and all other relevant circumstances for each tender enquiry.

11.1.4 Conditions of contract

The recommended form of contract for construction is the FIDIC Conditions of Contract for Construction for Building and Engineering Works designed by the Employer. This publication comprises:

- General Conditions;
- Appendix: General Conditions of Dispute Adjudication Agreement and (Annex) Procedural Rules;
- Guidance for the Preparation of Particular Conditions;
- Annexes: Forms of Securities (Example Forms of Parent Company Guarantee, Tender Security, Performance Security, Advance Payment Guarantee, Retention Money Guarantee, Payment Guarantee by Employer);
- Forms of Letter of Tender with Appendix to Tender, Contract Agreement and Dispute Adjudication Agreement.

Detailed guidance on its use is given in The FIDIC Contracts Guide.

This form of conditions of contract has been prepared to provide a fair sharing of risk and responsibility between the employer and the contractor, and contains many interdependent clauses. They should therefore be adopted with as few alterations as possible.

Where general conditions need to be changed, the amendments and additions must be contained in particular conditions, not in amended and/or retyped general conditions. This is so that tenderers can rapidly identify any changes and assess their effects from the well-known and widely accepted FIDIC form of contract.

11.1.5 Specification

The specification document is where the employer specifies his precise requirements for all matters not covered by the conditions of contract or shown on the drawings. It is here that he gives all details and descriptions of the materials, plant and equipment, workmanship and other matters required for or relevant to the construction of the works, and (if necessary) a time programme showing the work sequence, phases and completion dates. Contents of the specification

must include for such topics as those listed in Table 11.2 – Typical specification items.

These matters should not be covered in the instructions to tenderers, because they would then not be contractually binding. However, they are all referred to in the conditions of contract. It is important to ensure that all these topics are dealt with once only and not duplicated

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unintentionally, which may cause inconsistencies and ambiguities.

The specification defines precisely the scope and technical requirements of the contract, including quality, performance and testing, and any requirements for training and transfer of technology. However, it is not necessary to specify any matters which are imposed by the applicable laws.

The quality of materials and the standards of workmanship to be provided by the contractor must be clearly described, together with requirements for quality assurance to be performed by the contractor and the required health, safety and environmental measures to be observed during the execution of the works. The extent, if any, to which the contractor will be responsible for the design of the permanent works should also be specified. Details should be included of samples to be provided and tests to be carried out by the contractor during the course of the contract.

Any limitations on the contractor's freedom of choice in the order, timing or methods of executing the work or sections of the works should be clearly set out and any restrictions in his use of the site, such as interface requirements with other parts of the work, or provision of access or space for other contractors, should be given.

The specification should as far as possible follow recognised local (national) and international standards. The specification should also promote the broadest possible competition, and to this end should not specify or describe materials, plant or equipment which are available from only one supplier. If the naming of a sole

Table 11.2 – Typical specification items

Definition of the location of the site.
Permissions being obtained by the employer.
Phased possession of foundations, structures, plant or means of access.
Detailed specification of materials to be used.
Detailed specification of plant forming part of the permanent works.
Detailed specification of workmanship.
Requirements for temporary works and contractor's equipment.
Any design to be carried out by the contractor.
Other contractors (and others) on the site.
Setting-out points, lines and levels of reference
Involvement of third parties.
Environmental constraints
Access constraints: road, rail, air and sea.
Electricity, water, gas and other services available on the site.
Employer's equipment and free-issue material.
Facilities for the employer's personnel.
Samples
Testing during manufacture and/or construction.
Tests on completion.
Taking-over procedure
Operational training for the employer's personnel.
As-built drawings and other records of the works.
Operation and maintenance manuals.
Provisional sums

supplier, or the description of any material, plant or equipment available only from an indicated manufacturer or supplier, is unavoidable, then the specification should state that material, plant or equipment of equal quality will be acceptable.

11.1.6 Drawings

The drawings included in the tender dossier should provide the tenderers with sufficient detail to enable them, in conjunction with the specification, to make an accurate assessment of the nature and scope of the works.

The drawings primarily describe pictorially each physical item of the permanent works. Some employers' practice is to put much materials and workmanship detail on the drawings and less in the text of the specification. However, others prefer to have more

detailed written text in the specification and less on the drawings. Whatever the practice, it is most important to specify each element of a work item only once. Repeating any descriptive requirement, often done in slightly different wording and in different parts of the contract, is a recipe for ambiguity with consequent dispute, and should be avoided.

All the drawings should be listed in the specification.

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11.1.7 Schedules, including bill of quantities

The schedules are prepared by the employer/engineer and included in the tender dossier, and, where required, are to be completed by the tenderers. The form and extent of the schedules will depend on the information and data which the employer requires, both for the tender evaluation and for inclusion in the contract. The schedules include the bill of quantities, and may include other data, lists and schedules of rates and/or prices. When preparing the schedules, the employer should consider carefully the extent of information required, taking account of the work being imposed on each tenderer, as well as on the employer's or engineer's personnel who will be carrying out the detailed evaluation and comparison of the tenders. Requesting tenderers to give unnecessary or over-detailed information in the bill of quantities and other schedules should be avoided wherever possible.

The bill of quantities should comprise brief identifying descriptions and estimated quantities of work comprised in the execution of the works. The employer may choose to divide the bill of quantities into work groups or otherwise to facilitate comparison of tenders, as well as to facilitate the making of interim payments during the progress of the work. However, the bill of quantities should be formed in such a way as to ensure that tenderers fill in rates and prices that cover, without duplication or omission, for the total work to be carried out as well as for all other obligations of the contractor under the contract. The preamble to the bill of quantities should describe the measurement procedures adopted for its preparation and to be used in measuring work done, which may be a published standard method or the employer's own. The method of measurement and payment for each work item may be related instead to the corresponding technical clause in the specification.

11.1.8 List of documents/information to be submitted by tenderers

The employer should specify the documents and information that tenderers are required to submit with their tenders. To ensure completeness and uniformity between tenderers, a suitable form should be prepared and issued as part of the tender dossier.

Information should not be sought on matters which affect neither the evaluation of tenders nor the subsequent contract.

In order to assist the employer in forward budgeting, tenderers may be requested to provide with the tender an

As an alternative to a bill of quantities, the employer may ask for tenders on a lump-sum basis. It is also common for parts of the works to be priced on the basis of one or more lump sums, the remainder being priced on the basis of a bill of quantities. If the tenders are based, partly or wholly, on lump sums, a breakdown of such sums into constituent parts should be provided by tenderers.

Where there is the possibility of variations or extra work, particularly where work not covered by the unit rates in the bill of quantities is involved, it is usual to have a schedule of rates or prices to enable valuation of the varied or extra work, and also a daywork schedule to pay for work of a minor or incidental nature. As such schedules are not subject to competition in the offered tender price before inclusion in the contract, the employer should check that the rates or prices given are consistent with the price level of the bill of quantities.

The schedules may also include other information of all types required from tenderers. Some lists may require information and prices, such as lists of recommended spare parts, others may just require information, such as lists of proposed subcontractors.

Section 11.1.8 gives a list of additional information often required from tenderers. After the evaluation of tenders and the choice of the most advantageous tender, the employer and the successful tenderer decide on which parts of the additional information shall be included in the contract. Such information becomes part of the schedules, which are defined as 'the documents completed by the contractor as included in the contract'.

estimate of disbursements (excluding provisional sums) to be made by the employer during the period of the contract. The instructions to tenderers should clearly state the periods to be adopted for this estimate.

The estimates of cash flow will not become part of the contract. This is because the figures may have to be reviewed and adjusted as the work proceeds. The expenditure under provisional sums will affect the figures, and so also will changes in the source of supply of goods and modifications to either or both the programme or the extent of the works.

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Depending on particular requirements, the information required may include items listed in Table 11.3. This list is indicative and is not intended to be exhaustive.

It should be clearly stated which items will form part of the tender evaluation and which items are to be incorporated into the contract.

11.2 Issue of tender dossier

The tender dossier should be issued by the employer only to those firms which have been selected to tender.

If a charge for documents is to be made, issue should only be against payment.

As an alternative to posting, or despatching by other means, tenderers should be given the option of collecting tender documents from the employer from the due despatch date. Tenderers should be asked whether they wish to collect the documents and, if so, be instructed as to the time and place for collection.

11.3 Visit to site by tenderers

A formal visit to the site by all the tenderers should be arranged by the employer as laid down in the instructions to tenderers. If possible, individual tenderers should not be refused permission to visit the site at other times, but care should be taken to ensure that the same information is given to each tenderer.

The primary purpose of the visit is to enable each tenderer to inspect the site and obtain all relevant information required for the preparation of his tender.

Tenderers should be advised of the probable duration of the formal visit, the period during which the visit may be made and the maximum number of persons from each tenderer allowed to participate.

The arrangements for the site visit should be determined so that equal opportunities are open to all tenderers. The visit should take place at approximately the end of the first half of the tender period and should include a tenderers' conference.

Tenderers should make their own travelling arrangements and bear the costs, including fares, accommodation and subsistence and they should be advised of this in the instructions to tenderers.

It is usual for tenderers to be given a receipt certifying their visit to the site, which should be included with their tender.

The employer:

- is only responsible for making those arrangements necessary for the actual inspection of the site;
- should make a record of tenderers' representatives visiting the site;
- may require tenderers visiting the site to indemnify the employer/engineer against any claims for damage, injury or death as a result of the visit.

Table 11.3 – Documents to submit with tenders

Tenderer's organisation for executing the contract.
Tender programme for execution of the works.
Breakdown of prices.
Estimates of cash flow.
List of proposed major subcontractors, together with details of those parts of the works which the tenderer would propose to subcontract.
Details of key staff who would be employed on the contract.
Proposed guarantor or surety for performance security.
Proposal for accommodation of the contractor's employees.
Projected build-up of labour on the site, both local and foreign.
Contractor's estimated electrical power requirements on the site.
Method statements.
List of contractor's equipment proposed.
Update of prequalification information, e.g., financial status and contracts in hand.

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11.4 Tenderers' queries

Tenderers' queries can be handled by correspondence or by tenderers' conference or by a combination of these methods.

The intended method or methods should be described in the instructions to tenderers.

11.4.1 Correspondence method

A tenderer requiring clarification of any document in the tender dossier should submit his queries to the employer or engineer in writing, as stated in the instructions to tenderers.

required to acknowledge receipt of all the information.

The employer/engineer should prepare and despatch written replies to queries. These replies, together with the text of the queries, should be issued to all tenderers without quoting the source of the queries, and the tenderers should be

Tenderers should be instructed that queries will not be accepted by the employer/engineer unless received 28 days before the date for submission of tenders.

Replies to queries should, where appropriate, be issued as addenda to the tender dossier.

11.4.2 Tenderers' conference method

With the conference method, queries from the tenderers to the employer/engineer are dealt with at a tenderers' conference arranged by the employer, normally taking place at the time of the site visit. Tenderers' queries should be in writing and should identify the party raising the query.

Within a reasonable time after the conference, the employer/engineer should send all tenderers, whether present at the conference or not, a full set of minutes recording both the queries and formal replies. Where appropriate, an addendum to the tender dossier should be issued. Receipt of the minutes should be acknowledged by the tenderers. Representation from each tenderer should be limited to two or three persons at the conference.

As far as possible, oral answers should be given by the employer/engineer during the conference.

11.5 Addenda to tender dossier

Explanations, revisions, additions or deletions to the tender dossier may be necessary during the tender period and these should be notified in accordance with the procedure described below.

extending the tender period to allow tenderers a reasonable time for their incorporation. It should also be remembered that changes of a minor nature can usually be dealt with in discussions with the selected tenderer prior to award.

Each addendum should, when issued, carry a serial number for reference purposes and contain a receipt slip which should be signed by each tenderer and returned immediately to the employer.

The tender period should not be extended unless the circumstances are exceptional. In considering the need for extensions which might arise, either as the result of major amendments to the tender documents or as a direct request from one or more tenderers, the following criteria should be applied:

Addenda should be complete in themselves and should not rely on tenderers having to appreciate the implications and decide whether other changes to the documents are required as a consequence. Addenda become part of the tender dossier.

- Is there a convincing reason for granting an extension?
- Would the refusal of an extension reduce the number of tenders to be submitted?
- Would an extension give preferential treatment to those tenderers who are unable to meet the original tender submission date?
- Would an extension create unacceptable delay to the project programme?

The employer/engineer should avoid if possible the issue of addenda during the latter part of the tender period. If unavoidable, the employer/engineer should consider

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11.6 Dispute Adjudication Board (DAB)

The FIDIC Conditions of Contract for Construction stipulates the establishment of a 'standing, or 'full-term' Dispute Adjudication Board (DAB) before the commencement of the contract works, which typically will visit the site on a regular basis thereafter. The DAB is to comprise one or three members depending on the size and complexity of the contract works, and an important purpose is to assist the parties to avoid disputes. Normal exchanges of viewpoint or differences of opinion between the parties are not considered as disputes. However, when it becomes apparent that it is not possible for the parties to come to agreement on a contentious matter then it can be said that a dispute has arisen. If a dispute does arise then either party may refer the dispute to the DAB, which will then adjudicate on the dispute and give its decision on the entitlements of each party with regard to the dispute. The DAB's decision is binding on the parties, and is to be given prompt effect by both parties and the engineer. If a party does not accept the DAB's decision, that party may give notice of its dissatisfaction, and the dispute may then be submitted to arbitration. The decision shall nevertheless be binding and complied with until the arbitration award is made.

Until the mid-1990's the FIDIC forms of contract had an independent 'engineer' who was required to be impartial when making decisions on matters concerning the rights and obligations of the parties, e.g., when assessing and awarding extensions of time or dealing with claims from either party. This procedure led to complaints that the engineer might not always act in an unbiased manner, as he was appointed by and paid for by the employer. FIDIC therefore introduced the DAB procedure where the DAB members are required to be independent of the parties and be strictly unbiased in all their actions and decisions. True impartiality of every DAB member is

essential for the DAB's proper and fair operation, and the FIDIC DAB agreements contain strong sanctions to ensure the independence and impartiality of the DAB members.

Consequently, for international contracts, i.e., where the parties come from different countries, no DAB member should be from the same domicile as any of the contracting parties or the engineer. The reason is that in many jurisdictions it may be very difficult for a national to find or decide against his own state organisation. Such a situation (appointment of a national) can lead to that DAB member departing from the independent and impartial role that is required of every member. It is unfair to place a DAB member in such a situation. Furthermore, a similar situation may arise if either party makes a habit of appointing the same DAB member for successive projects.

In order to establish the DAB in an effective way and without delay, it is recommended that the employer includes in the tender dossier a short list of persons, with their CV's, who the employer considers suitable to act as members of the DAB. Each tenderer then may accept the employer's list, or delete names from the list and/or add names of his own choice. This may help the parties to agree upon the members of the DAB, so that their selection may be confirmed in conjunction with the signing of the contract. To avoid subsequent problems, it is important that the DAB is put in place at or about the time the relevant contract is signed.

As the costs of the DAB are to be met equally by the employer and the contractor, both parties must remember to include adequate funds in their financial calculations for these costs.

11.7 Submission of tenders

It is the tenderers' responsibility to ensure that their tenders, properly signed by authorised signatories, are delivered to the employer by the submission date and time.

Tenderers should be instructed to return their tenders double-wrapped in plain envelopes or packages using pre-addressed labels provided by the employer. The labels are to be affixed to the outer wrapping and should preferably be distinctive and carry the words "Tender for

Contract No. - To remain sealed until official opening". Tenderers should ensure that both their name and address are clearly marked on the inner wrapper to enable the employer to identify the tenderer in the event of a late tender having to be returned unopened.

If tenders are delivered by hand, tenderers should obtain a receipt from the employer recording the date and time of delivery.

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12.1 Preparation of tender dossier

12.1.1 General

In this chapter the promoter of a contract is referred to as the employer. Strictly the term employer should only be used after a contract has been signed but it is used here, when describing the employer's activities in obtaining tenders before the award of a contract, for the sake of simplicity and clarity.

Before the employer can obtain tenders from suitable contracting companies he must have prepared:

- a list of tenderers whom he will invite to tender, and
- a set of tender documents (the tender dossier).

The employer must also initiate the appropriate notification procedures required by the applicable laws and/or the funding agency(ies).

The list of suitable tenderers will normally have been arrived at following a prequalification process, as described in Chapter 8. The procedure for obtaining tenders for plant and design-build contracts includes several special features since:

- the contractor is responsible for the design;
- the plant and equipment is manufactured off-site;
- testing, commissioning and performance are based on 'functional' and/or 'output' requirements.

Further details of these features, and their effect on the tendering procedure, are to be found in Section 5.5.

The tender dossier is prepared by or on behalf of the employer, or by a consultant on behalf of the employer. It will normally include:

- letter of invitation to tender;
- instructions to tenderers;
- forms of letter of tender and appendix to tender;
- conditions of contract (general conditions and particular conditions) together with any sample forms, such as bank guarantees;
- employer's requirements;
- schedules for completion by tenderers including pricing;
- information data; and
- list of additional documents/information to be submitted by tenderers.

The scope of the contract and an outline of the tender documents should be prepared before the prequalification documents (when applicable) in order to achieve consistency between these two sets of documents.

Some of the above items, such as the letter of invitation to tender and the instructions to tenderers will

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normally not form part of the contract agreement (see Chapter 18). It is therefore essential that all requirements and conditions applying after award of contract are incorporated elsewhere in the tender dossier.

Detailed features of each of the documents to be included in a typical tender dossier are described below.

12.1.2 Letter of invitation to tender

The letter of invitation to tender should be on the employer's official headed paper and should include:

- tender reference and title;
- list of documents issued (i.e., included in the tender dossier);
- receipt form for the tender dossier (to be signed and returned by each tenderer);
- instructions to inform the employer/engineer, in writing, of any significant changes to the data supplied in the prequalification application;
- information on whether single- or two-stage tendering; and

- date, time and place of tender submission and tender opening.

The letter of invitation should be kept as short as possible. Detailed information on tendering should be contained in the instructions to tenderers.

An example letter of invitation to tender is given in Appendix 12.1.1. This example is a suggestion, and should be carefully reviewed and amended as necessary to take account of the relevant circumstances. It avoids repeating information contained in the other tender documents, in order to avoid inconsistencies.

12.1.3 Instructions to tenderers

General

The instructions to tenderers should be prepared by or on behalf of the employer to meet the particular requirements of individual contracts. The purpose of the document is to convey information and instructions that will govern the preparation, submission and evaluation of tenders. When tenders have been received and evaluated, this document will no longer be needed, and it should not form part of any resulting contract. It should therefore not contain any text which remains valid after award of the contract.

Tenderers should be informed if the tendering is to be carried out according to the two-stage procedure (see Section 5.5.1 for a description and further details), whereby unpriced technical solutions are presented in the first stage, and the price for an approved solution in the second stage.

Tenderers should be notified of the language in which the tenders are to be written. They should also be notified of the number of copies of their tender that are required, stipulating that one set of the documents should be clearly marked "Original Tender" and the others (which should be photocopies) marked "Copy" and that, in the event of discrepancy, the "Original Tender" shall take precedence.

If a power of attorney is required for the authorised signatory(ies) of the tender, precise requirements should be given.

The tenderers' attention should also be drawn to any requirement for documents to be notarised and legalised at the embassy or consulate of the employer's country.

Tenderers should be informed whether the successful tenderer will be required to establish a locally registered company for the purpose of the contract, or to have an agent.

The instructions to tenderers should state that the employer does not bind himself to award a contract to any of the tenderers.

If remuneration is to be made to tenderers who submit responsive tenders, the amount should be stated. If not, it should be stipulated that all costs and expenses associated with the preparation and submission of tenders shall be borne by the tenderers.

Consideration should be given to offering some remuneration to tenderers if they have to undertake extensive studies and preliminary design work in order to submit a responsive tender.

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Tender period

When determining the tender period, the employer must ensure that adequate time is allowed for tenderers to prepare their tenders taking into account the size, complexity and location of the project. Important factors to be considered are whether there is likely to be a number of major subcontractors from whom tenderers will have to obtain offers, or whether supply of materials and plant generally only involves off-the-shelf supplies.

Some straightforward or repeat work may not require a long tender period. On the other hand, complex projects, works requiring considerable pre-tender investigation of site conditions, local circumstances, and/or preliminary design, and projects likely to be tendered for by consortia, may require tender periods of a number of months.

In any case, it is unwise for an employer to allow too short a period, resulting in tenderers having insufficient time to consider fully their risks and obligations, or to allow too long a period, which may result in tenderers not commencing serious preparation work until well into the tender period.

Documents

The instructions to tenderers should contain a list of the documents required to form a complete tender.

Tenderers should be informed that a tender will be rejected unless it is substantially responsive.

It should be made clear to tenderers that any corrections must be initialled. Documents provided in electronic format should be protected so that they cannot be changed.

Alternative tenders

The employer may not wish to specify a particular design or type for the plant/equipment required, nor the method of construction/installation, because he wishes specialist contractors to offer their own solutions and proprietary systems which will fulfil his overall performance requirements.

However, if the employer has indicated the design he requires, then tenderers should be informed of whether alternative tenders will be considered or not, and if so, what technical and commercial conditions will apply. In any event, a compliant tender is normally a precondition for considering alternative tenders.

Alternative tenders must include a comprehensive and precise description of the parts of the tender documents which have been altered. The alternative tender should include full details of commercial terms and conditions, specification, drawings, calculations, environmental impacts and costs for the parts of the works that have been altered, in order to allow a fair technical and financial evaluation of the alternative proposal.

Modification to tenders

The tenderer should be informed that, if he has delivered, posted or dispatched his tender prior to the formal submission date, he has the right to modify or make corrections to it, provided that any modifications or corrections are received by the employer in writing prior to the deadline specified for submission of tenders. The original tender thus modified or corrected would then be considered as the official tender.

Financing arrangements

Tenderers should be informed of the source(s) of finance, their amounts and related conditions for the proposed works.

Where tenderers are required to provide financing they should be instructed to provide information as to their source(s) of finance, their amount and the conditions which will apply.

Currencies and payments

Specific instructions should be given concerning the currencies to be used in the preparation of the tender. Tenderers should also be advised in which currency/currencies payments will be made.

Where tenderers are required to express their tenders in a single currency (usually the currency of the country in which the works are to be carried out), it is necessary to define the rates of exchange which are to be used to convert the various currencies in which payment is required into a single currency unit.

As more than one tenderer may request part payment in one particular currency, it is preferable that the exchange rates to be used should be consistent and, therefore, that they should be defined by the employer and notified to each tenderer a reasonable time before the date of submission. Normally, these rates should be the selling prices quoted by the local central bank, and the rates should be those quoted at the time

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of closing 28 days before the tender submission date. The rates quoted will then be incorporated in the contract when awarded.

If payments are to be adjusted for changes in the cost of labour and/or materials, the formulae for calculating such changes and the source(s) of the applicable published indices for use in the formulae should be included in the conditions of contract. If these formulae use different currencies, care should be taken to ensure that variations in their respective exchange rates do not lead to distortions.

Preference for local products and services

Tenderers should be advised if and how preference, if any, for local products and services will be applied in the evaluation of tenders.

Tender security

The requirements for a tender security, if any, will be determined by the circumstances of each contract. If a tender security is required, a form should be included in the tender dossier. An example form of tender security is shown in Appendix 12.1.2. The amount and currency(ies) of the security should be stated. In all cases the guarantor(s) or the surety or sureties must be satisfactory to the employer. If a tender security has been requested, any tender which has not been so secured will be rejected.

Table 12.2 – Examples of tender documents

Documents other than those issued as part of the tender dossier which the tenderer must include with his tender include:

- Drawings and calculations
- Technical descriptions/specifications
- Proposals for management
- Designers
- Subcontractors and suppliers
- Proposals for site establishment/facilities
- Programme for design and construction
- Payment plan/cash flow forecast
- Proposed methods of construction, with resources
- Proposed environmental protection measures
- Health and safety and environmental protection plan
- Quality management and control
- Pricing document

Table 12.1 – Instructions to tenderers checklist

- Language of the tender.
- Whether single- or two-stage tendering will apply.
- Number of copies of the tender that are required.
- Which documents have to be filled in by the tenderer and returned by the submission date and which have to be signed.
- The precise requirements for each tenderer to provide a power of attorney for the authorised signatory(ies) to the tender.
- Any special rules regarding treatment of taxes, duties and other fiscal matters in the tender.
- Validity period of the tender.
- Any documents other than those issued as part of the tender dossier which the tenderer must include with his tender (see Table 12.2 for examples).
- Financing (contractor funding) if applicable.
- Procedure for issuing addenda to the tender dossier.
- Procedure for dealing with queries raised by tenderers.
- Instructions for packing, labelling and addressing the tender (including a supply of standard labels if this is the practice of the employer).
- Procedure to be adopted for tenderers to visit and inspect the site.
- Procedure for inspecting any special documents not issued with the tender dossier (e.g., site investigation reports and environmental impact assessments).
- Circumstances under which alternative offers may be submitted.
- Confidentiality of tender documents.
- Procedure for the return of tenders submitted by unsuccessful tenderers (if required).
- Procedure for dealing with requests for extension of time by tenderers.
- Arrangements for the opening of tenders.
- Procedure for dealing with arithmetic errors found in tenders during evaluation.
- Rules relating to disqualification/rejection of tenders (e.g., late arrivals, altered figures, incomplete submissions, and deviations).
- Any unusual features of the particular tendering procedure.
- Information about requirements of local (national) regulations.
- Information about the evaluation criteria and method.
- Award of contract procedure, including submission of the performance security, appointment of the Dispute Adjudication Board (DAB), and other formalities.

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Tenderers should be advised of the validity period required for the tender security, and the events which will entitle the employer to cash the security. The period of validity of the security should equal the period of validity of the tender plus the time allowed for the successful tenderer to provide his performance security under the terms of the eventual contract between the contractor and the employer. Tenderers should be informed that their tender securities will be returned as soon as the security is no longer in full force and effect.

The employer should select the type and amount of security that is most appropriate to the contract to be awarded. It is preferable that the amount of security should be clearly stated as a specific sum rather than as a percentage of the tender price.

Evaluation criteria

The evaluation criteria, which will form the basis for the selection of the most advantageous tender, should be stated. The criteria should be consistent with the information which tenderers are asked to submit and may include updating of the information supplied as part of the prequalification procedure.

If a specific method of evaluation is to be used in selecting the successful tender, the method should be described in the instructions to tenderers. An example of a method of evaluation is described in detail in Chapter 17.

While evaluation generally may be primarily on the basis of tender price, other factors which could be relevant to achieving best value for money include:

- time for completion;
- suitability of technology of tenderer's proposal;
- life-cycle costs of the works;

- environmental impact during the lifetime of the project;
- avoidance of hazardous materials;
- quality and serviceability of plant;
- project financing;
- operation and maintenance costs;
- claims record;
- suitability of management/staff;
- suitability of construction methods and sequence.

These factors should, to the extent practicable, be expressed in monetary terms and/or given a weighting in the evaluation provision of the tender dossier.

Performance security

If a security (guarantee or bond) for performance is required, the type and terms should be specified in the conditions of contract. The terms should include the period of validity of the security, the procedure to be followed if the security is forfeit, arrangements for its release and the currency of any monetary transactions involved.

The procedure for the successful tenderer to submit the performance security should be described in the instructions to tenderers.

Checklist

The checklist given in Table 12.1 may help in the preparation of instructions to tenderers and shows subjects which should be covered.

An example form of instructions to tenderers is given in Appendix 12.1.3. This example is a suggestion, and must be carefully reviewed and amended to take account of the employer's normal procedures and requirements, and all other relevant circumstances for each tender enquiry.

12.1.4 Conditions of Contract

The recommended form of contract for design and build is the FIDIC Conditions of Contract for Plant and Design-Build for Electrical and Mechanical Plant, and for Building and Engineering Works, designed by the Contractor. This publication comprises:

- General Conditions;
- Appendix: General Conditions of Dispute Adjudication Agreement and (Annex) Procedural Rules;
- Guidance for the Preparation of Particular Conditions;

- Annexes: Forms of Securities (Example Forms of Parent Company Guarantee, Tender Security, Performance Security, Advance Payment Guarantee, Retention Money Guarantee, Payment Guarantee by Employer);
- Forms of Letter of Tender with Appendix to Tender, Contract Agreement and Dispute Adjudication Agreement.

Detailed guidance on its use is given in the FIDIC publication The FIDIC Contracts Guide.

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It should be noted that this form of conditions of contract has been carefully prepared, and contains many interdependent clauses. They should therefore be adopted with as few alterations as possible. Where general conditions need to be changed, the

amendments and additions must be contained in particular conditions, not in amended and/or retyped general conditions. This is so that tenderers can rapidly identify any changes and assess their effects, from the well-known and widely accepted FIDIC form of contract.

12.1.5 Employer's requirements

This document is where the employer specifies his precise requirements for the completed works, including all matters not covered by the conditions of contract. It is here that he gives his performance or output specification for the completed works, in other words the performance or result that the completed installation or facility must achieve. If the employer has any particular requirements as to how any parts of the works shall be constructed or installed, it is here that his wishes must be expressed.

If the employer has prepared a 'conceptual design' or 'preliminary design' which the contractor must accept and use as the basis for development, this must also be included in the employer's requirements. Usually, the employer will also wish to include an outline time programme showing the desired work phases and completion dates.

If the employer omits to state certain of his requirements in this document, then the contractor will not be obliged to carry them out, unless they are subsequently ordered as variations, with consequent price and time changes.

The document entitled employer's requirements must include topics such as those listed for convenience in Table 12.3 – Typical employer's requirements items.

These matters should not be covered in the instructions to tenderers, because they would not then be contractually binding. However, they are all referred to in the conditions of contract. It is important to ensure that all topics are dealt with once only and not duplicated unintentionally, which may cause inconsistencies and ambiguities.

The extent of the contractor's design obligation must be defined without doubt, including responsibility for all design from initial concept, or alternatively, checking and assuming responsibility for the employer's conceptual or preliminary design, followed by all

subsequent stages of design development and implementation to completion of the works.

Table 12.3 – Typical employer's requirements items

Definition of the location of the site.
Definition and purpose of the works.
Scope, design and other technical criteria.
Applicable technical standards, codes and regulations.
Quality and performance criteria.
Permissions being obtained by the employer.
Customs requirements.
Proposed or required time programme.
Phased possession of foundations, structures, plant or means of access.
Other contractors (and others) on the site.
Setting-out points, lines and levels of reference.
Involvement of third parties.
Environmental constraints.
Access constraints: road, rail, air and sea.
Electricity, water, gas and other services available on the site.
Employer's equipment and free-issue material.
Criteria for design personnel.
Contractor's documents required, and whether required for information, review and/or approval, and number of copies.
Facilities for the employer, the engineer and his representative, as well as for the contractor's personnel.
Samples.
Testing during manufacture and/or installation and construction.
Tests on completion
Damages for failure to pass tests on completion.
Operational training for the employer's personnel.
As-built drawings and other records of the works.
Operation and maintenance manuals.
Tests after completion
Damages for failure to pass tests after completion.
Provisional sums.

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The employer's requirements will define precisely the scope and technical requirements of the contract, including quality, performance and testing, and any requirements for training and the transfer of technology. However, it is not necessary to specify any matters which are imposed by applicable laws.

The quality of materials and the standards of workmanship must be clearly described to the extent not covered by the applicable laws, but in terms which are not so detailed as to reduce the contractor's design responsibilities. On the other hand, they should not be so imprecise as to be difficult to impose, and not reliant on the future opinions of the engineer, which tenderers may consider impossible to forecast. Sampling and testing both on- and off-site can be specified, but more often the employer is interested mainly in the result to be achieved. Thus, he may leave the detailed specification to the contractor, in the knowledge that the contractor's responsibility is to provide a fully functioning facility which will fulfil his performance specifications. Therefore, it is most important that the employer's

requirements should specify all tests on and after completion to demonstrate that the completed works meet the performance criteria.

The employer's requirements should also make the contractor responsible for quality assurance, as well as the required health, safety and environmental measures to be observed during the execution of the works.

Any limitations on the contractor's freedom of choice in the order, timing or methods of designing and executing the work or sections of the works should be clearly set out and any restrictions in his use of the site, such as interface requirements with other parts of the work, or provision of access or space for other contractors, should be given.

The employer's requirements should promote the broadest possible competition by being as flexible as possible, thereby encouraging tenderers to adopt an innovative approach, however respecting both recognised local (national) and international standards.

12.1.6 Drawings

The employer's requirements may include drawings, on which the proposed works may be outlined. In such cases, the employer's requirements should define the extent to which (for example) the works must comply with the outline. The incorporation of design aspects into the drawings should be carried out with care, with full consideration being given to the

consequences, including any ultimate responsibility for this design by the employer.

The drawings should be listed in the employer's requirements.

12.1.7 Schedules, including schedule of prices and/or payments

The schedules are prepared by the employer/engineer and included in the tender dossier, and, where required, are to be completed by the tenderers. The form and extent of the schedules will depend on the information and data which the employer requires, both for the tender evaluation and for inclusion in the contract. An example list of schedules is given in Appendix 12.1.4.

The schedules should reflect the type of contractor-design to be included in the contract. These schedules may include a questionnaire, tables and/or lists, setting out the information required from the tenderers. When preparing the schedules, the employer should consider carefully the extent of information required, taking account of the work being imposed on the tenderers and on his own personnel, who will be carrying out the detailed evaluation and comparison of tenders. Requesting tenderers to fill in unnecessary or over-detailed information in the schedules should be avoided.

Plant and design-build contracts are usually carried out on a lump-sum basis. This can include pricing the works on the basis of several lump sums, each representing a defined section of the works. The schedule of prices (or pricing document) may provide identifying descriptions and estimated quantities of work to be carried out in each section, thus facilitating the breakdown of such lump sums into constituent parts.

Where there is the possibility of variations or extra work, it is usual to have a schedule of rates to enable valuation of the varied or extra work. A daywork schedule may also be included to pay for work of a minor or incidental nature. As such schedules are not subject to competition in the same way as the tender price, the tender evaluation should include a check that the rates proposed are reasonable before including them in the contract. However, the employer should avoid making variations as far as possible.

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The schedules may also include other information of all types required from tenderers, such as lists of recommended spare parts and proposed subcontractors. Section 12.1.9 below gives a typical list of additional information often required from tenderers. After evaluation of tenders and the choice of the most

advantageous tender, the employer and the successful tenderer decide on which parts of this additional information shall be included in the contract. Such information becomes part of the schedules, which are defined as 'the documents completed by the contractor as included in the contract'.

12.1.8 Contractor's proposal

The contractor's proposal is the document containing the tenderer's preliminary design, which he has prepared and submitted with his tender. The employer should define in the instructions to tenderers what will be regarded as a responsive tender. The employer might, on the one hand, prefer an outline, in order to minimise the costs of tendering and/or of the evaluation and comparison of tenders. However, he might prefer detailed drawings, in order to reach agreement on the details at the outset.

Although the employer can specify what will constitute a responsive tender, tenderers will be reluctant to carry out a costly detailed design if they consider that they will have little chance of recovering their costs

through being awarded the contract. Typical contents for a contractor's proposal are given in Appendix 12.1.5.

In his proposal, the tenderer should identify any aspects where he proposes not to comply with any particular aspect of the employer's requirements, so that these deviations can be resolved before the tender is accepted. If deviations are not identified, and thus are not clarified in the contract, the employer's requirements take precedence. However, if the contractor's proposal includes elaboration of any matter which is consistent with the other contract documents, the matter becomes an obligation, and either party can enforce it.

12.1.9 List of documents/information to be submitted by tenderers

The employer should specify the documents and information that tenderers are required to submit with their tenders. To ensure completeness and uniformity between tenderers, a suitable form should be prepared and issued as part of the tender dossier.

Information should not be sought on matters which affect neither the evaluation of tenders nor the subsequent contract.

In order to assist the employer in forward budgeting, tenderers may be requested to provide with the tender an estimate of disbursements (excluding provisional sums) to be made by the employer during the period of the contract. The instructions to tenderers should state the periods to be adopted for this estimate.

The estimates of cash flow will not become part of the contract as the figures may have to be reviewed and adjusted as the work proceeds. Expenditure under provisional sums will affect the figures, and so also will changes in the source of supply of goods and modifications to the programme or the extent of the works.

Table 12.4 – Documents to submit with tenders

Tenderer's organisation for executing the contract.
Tender programme for execution of the works.
Breakdown of prices.
Estimates of cash flow.
List of proposed major subcontractors, together with details of those parts of the works which the tenderer would propose to subcontract.
Details of key staff who would be employed on the contract.
Proposed guarantor or surety for performance security.
Proposal for accommodation of the contractor's employees.
Projected build-up of labour on the site, both local and foreign.
Contractor's estimate of the electrical power requirements on the site.
Method statements.
List of contractor's equipment proposed.
Update of prequalification information, e.g., financial status and contracts in hand.

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Depending on particular requirements, such additional information may include some or all of the items listed in Table 12.4. This list is not intended to be exhaustive.

It should be clearly stated which items will form part of the tender evaluation and which items are to be incorporated into the contract.

12.2 Issue of tender dossier

The tender dossier should be issued by the employer only to those firms which have been selected by the employer to tender.

If a charge for documents is to be made, issue should only be against payment.

As an alternative to posting, or despatching by other means, tenderers should be given the option of collecting tender documents from the employer from the due despatch date. Tenderers should be asked whether they wish to collect the documents and, if so, be instructed as to the time and place for collection.

12.3 Visit to site by tenderers

A formal visit to the site by all the tenderers should be arranged by the employer as laid down in the instructions to tenderers. If possible, individual tenderers should not be refused permission to visit the site at other times, but care should be taken to ensure that the same information is given to each tenderer.

The primary purpose of the visit is to enable each tenderer to inspect the site and obtain all relevant information required for the preparation of his tender.

Tenderers should be advised of the probable duration of the formal visit, the period during which the visit may be made and the maximum number of persons from each tenderer allowed to participate.

The arrangements for the site visit should be determined so that equal opportunities are open to all

tenderers. The visit should take place at approximately the end of the first half of the tender period and may include a tenderers' conference.

Tenderers should make their own travelling arrangements and bear the costs, including fares, accommodation and subsistence and they should be advised of this in the instructions to tenderers.

It is noted that the employer:

- may require tenderers visiting the site to indemnify the employer/engineer against any claims for damage, injury or death as a result of the visit;
- is only responsible for making those arrangements necessary for the actual inspection of the site;
- should make a record of tenderers' representatives visiting the site.

12.4 Tenderers' queries

Tenderers' queries can be handled by correspondence or by tenderers' conference, or by a combination of these methods.

The intended method or methods should be described in the instructions to tenderers.

12.4.1 Correspondence method

A tenderer requiring clarification of any document in the tender dossier should submit his queries to the employer/engineer in writing, as stated in the instructions to tenderers.

The employer/engineer should prepare and despatch written replies to queries. These replies, together with the text of the queries, should be issued to all tenderers without quoting the source of the queries, and the tenderers

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should be required to acknowledge receipt of the information.

Tenderers should be instructed that queries will not be accepted by the employer/engineer unless

received not less than 35 days before the date for submission of tenders.

Replies to queries should, where appropriate, be issued as addenda to the tender dossier.

12.4.2 Tenderers' conference method

With the conference method, queries from the tenderers to the employer/engineer are dealt with at a tenderers' conference arranged by the employer normally taking place at the time of the site visit. Tenderers' queries should be in writing and should identify the party raising the query.

As far as possible, oral answers should be given by the employer/engineer during the conference.

Within a reasonable time after the conference, the employer/engineer should send all tenderers,

whether present at the conference or not, a full set of minutes recording both the queries and formal replies. Where appropriate, an addendum to the tender dossier should be issued.

Receipt of the minutes should be acknowledged by the tenderers.

Representation from each tenderer should be limited to two or three persons at the conference.

12.5 Addenda to tender dossier

Explanations, revisions, additions or deletions to the tender dossier may be necessary during the tender period and these should be notified in accordance with the procedure described below.

Each addendum should, when issued, carry a serial number for reference purposes and contain a receipt slip which should be signed by each tenderer and returned immediately to the employer. Addenda should be complete in themselves and should not rely on tenderers having to appreciate the implications and decide whether other changes to the documents are required as a consequence. Addenda become part of the tender dossier.

The employer/engineer should avoid if possible, the issue of addenda during the latter part of the tender period. If unavoidable, the employer/engineer should consider extending the tender period to allow tenderers a reasonable time for their incorporation. It should also

be remembered that changes of a minor nature can usually be dealt with in discussions with the selected tenderer prior to award.

The tender period should not be extended unless the circumstances are exceptional. In considering the need for extensions which might arise, either as the result of major amendments to the tender documents or as a direct request from one or more tenderers, the following criteria should be applied:

- Is there a convincing reason for granting an extension?
- Would the refusal of an extension reduce the number of tenders to be submitted?
- Would an extension give preferential treatment to those tenderers who are unable to meet the original tender submission date?
- Would an extension create unacceptable delay to the project programme?

12.6 Dispute Adjudication Board (DAB)

The FIDIC Conditions of Contract for Plant and Design-Build stipulates the establishment of an 'ad hoc'

Dispute Adjudication Board (DAB) with the purpose, if a dispute arises, of adjudicating on the dispute and giving

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its decision on the entitlements of each party with regard to the dispute. The DAB is to comprise one or three members, depending on the size and complexity of the contract works and the matter in dispute, who are only appointed if and when a particular dispute arises, and whose appointment typically expires when the DAB has issued its decision on the dispute.

Normal exchanges of viewpoint or differences of opinion between the parties are not considered as disputes. However, when it becomes apparent that it is not possible for the parties themselves to come to agreement on a contentious matter then it can be said that a dispute has arisen. If a dispute does arise then either party may refer that dispute to the DAB. The DAB's decision is binding on the parties, and is to be given prompt effect by both parties and the engineer. If a party does not accept the DAB's decision, that party may give notice of its dissatisfaction, and the dispute may then be submitted to arbitration. The decision shall nevertheless be binding and complied with until the arbitration award is made.

Until the mid-1990's the FIDIC forms of contract had an independent 'engineer' who was required to be impartial when making decisions on matters concerning the rights and obligations of the parties, e.g., when assessing and awarding extensions of time or dealing with claims from either party. This procedure led to complaints that the engineer might not always act in an unbiased manner, as he was appointed by and paid for by the employer. FIDIC therefore introduced the DAB procedure where the DAB members are required to be independent of the parties and be strictly unbiased in all their actions and decisions. True impartiality of each and every member of the DAB is essential for the proper and fair operation of the DAB, and the FIDIC DAB agreements contain strong sanctions to ensure the independence and impartiality of the DAB members.

Consequently, for international contracts, i.e., where the parties come from different countries, no DAB member should be from the same domicile as any of the contracting parties or the engineer. The reason is that in many jurisdictions it may be very difficult for a national to find or decide against his own state organisation. Such a situation (appointment of a

national) can lead to that DAB member departing from the independent and impartial role that is required of every member. It is unfair to place a DAB member in such a situation. Furthermore, a similar situation may arise if either party makes a habit of appointing the same DAB member for successive projects.

In order to establish the DAB in an effective way and without delay when it is called upon to make a decision on a dispute, it is recommended that the employer includes in the tender dossier a short list of persons, with their CV's, who the employer considers suitable to act as members of the DAB. Each tenderer then may accept the employer's list, or delete names from the list and/or add names of his own choice. This may help the parties to agree upon the members of the DAB in conjunction with the signing of the contract, so that the DAB may be rapidly appointed without disagreement and delay if called upon to decide on a dispute.

As the costs of the DAB are to be met equally by the employer and the contractor, both parties must remember to include allowance in their financial calculations should these costs arise.

For many design-build contracts, particularly those where works are to be carried out on the site from an early stage, experience has shown that it is most advantageous to have a 'standing' DAB in place from the commencement of the works, and which is active throughout the contract, rather than having an ad-hoc DAB that only comes into operation after a dispute has arisen. An important purpose of a standing DAB is to assist the parties to avoid contentious matters actually developing into disputes, and this is not possible when the dispute has already arisen. The FIDIC Conditions of Contract for Construction makes provision for a standing DAB (see Section 11.6 above) and these provisions can be easily incorporated into a plant and design-build contract in place of the ad-hoc procedure.

12.7 Submission of tenders

Tenders are binding for a fixed period which must be at least for a sufficient period for proper evaluation and contract award.

It is the responsibility of tenderers to ensure that their tenders are delivered to the employer by the due submission date and time, properly signed by authorised signatories. If

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there is a two-stage tendering procedure then this applies to each of the stages.

Tenderers should be instructed to return their tenders double-wrapped in plain envelopes or packages using pre-addressed labels provided by the employer. Labels should preferably be distinctive and carry the words "Tender Document - To remain sealed until official opening". The labels should identify the particular contract for which the tender is submitted but neither the label nor any other markings on the outer wrapper of the tender envelopes or packages must identify the tenderer. The identity of the tenderer is to be concealed between the outer and inner wrappings of the tender envelopes or packages for use in the event of late tenders having to be returned unopened.

The employer should mark all tenders with the time and date of receipt and ensure that they are kept secure and unopened until the date and time appointed for the official opening. If tenders are delivered by hand, tenderers should obtain a receipt from the employer recording the date and time of delivery.

Tenders received after the appointed time should be immediately returned, unopened, to tenderers, accompanied by an explanatory letter giving the date and time of receipt.

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13.1 Preparation of tender dossiers

13.1.1 General

In this chapter the promoter of a contract is referred to as the employer. Strictly the term 'employer' should only be used after a contract has been signed but it is used here, when describing the employer's activities in obtaining tenders before the award of a contract, for the sake of simplicity and clarity.

When considering embarking on an EPC/turnkey contract, an employer should study carefully the introduction to the FIDIC Conditions of Contract for EPC/Turnkey Projects.

Before the employer can obtain tenders from suitable contracting companies or consortia for an EPC/turnkey project he must have prepared:

- a list of tenderers whom he will invite to tender; and
- a set of tender documents (the tender dossier).

The employer must also initiate the appropriate notification procedures required by applicable laws and/or the funding agency(ies).

The list of suitable tenderers will normally have been arrived at following a prequalification process, as described in Chapter 8. However, if the project is for construction of a very specialised facility, such as a factory for manufacture of a particular product, or a process plant of a specialised type,

there may only be a limited number of contracting companies with the required expertise. In such cases prequalification may be unnecessary, and the employer may himself prepare a list of those companies or consortia who specialise in the required work and whom he wishes to invite.

For this type of contract the number of tenderers invited to tender should be strictly limited. If the work is very specialised, and there is keen competition between the specialist firms, it may suffice with as few as three tenderers being invited. In most cases the number of invited tenderers should certainly not exceed six or seven. This is because the tenderers are required – before tender submission and contract award – to have thoroughly examined all possible difficulties and risks that may be encountered, and to have allowed for them in their tender price. This may involve extensive investigation and preliminary design work, before tenders can be submitted. This preliminary, normally unpaid, work requires considerable input from each tenderer and may be costly.

If there are many invited to tender then the individual tenderers are likely to consider that the effort and expense are probably not worthwhile. As a result the tenderers may withdraw from tendering, or alternatively may submit a poorly worked-through offer with possible negative results for the tendering process.

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The procedure for obtaining tenders for an EPC/turnkey project also includes a number of special features because:

- the contractor is responsible for the design;
- the plant and equipment is manufactured off-site;
- testing, commissioning and performance are based on 'functional' and/or 'output' requirements.

Section 5.6 give further details of these special features, and their effect on the tendering procedure.

The tender dossier is prepared by the employer, or by a consultant on behalf of the employer. It will normally include:

- letter of invitation to tender;
- form of letter of tender;
- instructions to tenderers;
- conditions of contract (general conditions and particular conditions) together with any sample forms such as bank guarantees;

- employer's requirements;
- schedules for completion by tenderers, including pricing;
- information data; and
- list of additional documents/information to be submitted by tenderers.

The scope of the contract and an outline of the tender documents should be prepared before the prequalification documents (when applicable) in order to achieve consistency between these two sets of documents.

Some of the above items, such as the letter of invitation to tender and the instructions to tenderers will normally not form part of the contract agreement (see Chapter 19). It is therefore essential that all requirements and conditions applying after award of contract must be incorporated elsewhere in the tender dossier.

Detailed features of each of the documents to be included in a typical tender dossier are described below.

13.1.2 Letter of invitation to tender

The letter of invitation to tender should be on the employer's official headed paper and should include:

- tender reference and title;
- list of documents issued (i.e., included in the tender dossier);
- receipt form for the tender dossier (to be signed and returned by each tenderer);
- instruction to inform the employer, in writing, of any significant changes to the data supplied in the prequalification application (if applicable);
- information on whether single- or two-stage tendering; and
- date, time and place of tender submission and tender opening.

The letter of invitation should be kept as short as possible. Detailed information on tendering should be contained in the instructions to tenderers.

An example letter of invitation to tender is given in Appendix 13.1.1. This example is a suggestion, and should be carefully reviewed and amended as necessary to take account of the relevant circumstances. It avoids repeating information contained in the other tender documents, in order to avoid inconsistencies.

13.1.3 Instructions to tenderers

General

The instructions to tenderers should be prepared by or on behalf of the employer to meet the particular requirements of individual contracts. The purpose of the document is to convey information and instructions that will govern the preparation, submission and evaluation of tenders. When tenders have been received and

evaluated, this document will no longer be needed, and it should not form part of any resulting contract. It should therefore not contain any text which remains valid after the award of the contract.

Tenderers should be informed if the tendering is to be carried out according to the two-stage procedure (see Section 5.5.1 for more details), whereby unpriced

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technical solutions are presented in the first stage, and the price for an approved solution is then presented in the second stage.

Tenderers should be notified of the language in which the tenders are to be written. They should also be notified of the number of copies of their tender that are required, stipulating that one set of the documents should be clearly marked “Original Tender” and the others (which should be photocopies) marked “Copy” and that, in the event of discrepancy, the “Original Tender” shall take precedence.

Precise requirements should be given if a power of attorney is needed for the authorised signatory(ies) of the tender.

The tenderers’ attention should be drawn to any requirement for documents to be notarised and legalised at the embassy or consulate of the employer’s country.

Tenderers should be informed whether the successful tenderer will be required to establish a locally registered company for the purpose of the contract, or to have an agent.

The instructions to tenderers should state that the employer does not bind himself to award a contract to any of the tenderers.

If remuneration is to be made to tenderers who submit responsive tenders, the amount should be stated. If not, it should be stipulated that all costs and expenses associated with the preparation and submission of tenders shall be borne by the tenderers.

Consideration should be given to offering some remuneration to tenderers if they have to undertake extensive studies and preliminary design work in order to submit a responsive tender.

Tender period

When determining the tender period, the employer must ensure that adequate time is allowed for tenderers to prepare their tenders, taking into account the size, complexity and location of the project. Important factors to be considered are whether there is likely to be a number of major subcontractors from whom tenderers will have to obtain offers, or whether supply of materials and plant generally only involves ‘off-the-shelf’ supplies.

Some straightforward or repeat work may not require a long tender period. On the other hand, complex projects,

works requiring considerable pre-tender investigation of site conditions, local circumstances, and/or preliminary design, and projects likely to be tendered for by consortia, may require tender periods of a number of months. In any case, it is unwise for an employer to allow too short a period, which means that tenderers have insufficient time to consider fully their risks and obligations, or to allow too long a period, which may result in tenderers not commencing any of the required serious preparation work until well into the tender period.

Documents

The instructions to tenderers should contain a list of the documents required to form a complete tender.

Tenderers should be informed that a tender will be rejected unless it is substantially responsive.

It should be made clear to tenderers that any corrections must be initialled. Documents provided in electronic format should be protected so that they cannot be changed.

Alternative offers

Often for this type of project the employer will not have specified a particular design or type for the plant/equipment required, nor the method of construction/installation, because he wishes specialist contractors to offer their own solutions and proprietary systems which will fulfil his overall performance requirements. However, if the employer has indicated the particular design he requires, then tenderers should be informed of whether alternative tenders will be considered or not, and if so, what technical and commercial conditions will apply. In any event, a compliant tender is normally a precondition for considering alternative tenders.

Alternative tenders must include a comprehensive and precise description of the parts of the tender documents which have been altered. The alternative tender should include full details of commercial terms and conditions, specification, drawings, calculations, environmental impacts, and costs for the parts of the works that have been altered, in order to allow a fair technical and financial evaluation of the alternative proposal.

Modification to tenders

The tenderer should be informed that, if he has delivered, posted or dispatched his tender prior to the formal

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submission date he has the right to modify or make corrections to it, provided that any such modifications or corrections are received by the employer in writing prior to the deadline specified for submission of tenders. The original tender thus modified or corrected would then be considered as the official tender.

Financing arrangements

Tenderers should be informed of the source(s) of finance, their amount and related conditions for the proposed works.

Where tenderers are required to provide financing they should be instructed to provide information as to their source(s) of finance and the conditions which will apply.

Currencies and payments

Specific instructions should be given concerning the currencies to be used in the preparation of the tender. Tenderers should also be advised in which currency or currencies payments will be made.

Where tenderers are required to express their tenders in a single currency (usually the currency of the country in which the works are to be carried out), it is necessary to define the rates of exchange which are to be used to convert the various currencies in which payment is required into a single currency unit. As more

Table 13.2 – Examples of tender documents

Documents other than those issued as part of the tender dossier which the tenderer must include with his tender include:

- drawings and calculations
- technical descriptions/specifications
- proposals for management
- designers
- subcontractors and suppliers
- proposals for site establishment/facilities
- programme for design and construction
- payment plan/cash flow forecast
- proposed methods of construction, with resources
- proposed environmental protection measures
- health and safety and environmental protection plan
- quality management and control
- pricing document.

Table 13.1 – Instructions to tenderers checklist

- Language of the tender.
- Whether single- or two-stage tendering will apply.
- Number of copies of the tender that are required.
- Which documents have to be filled in by the tenderer and returned by the submission date and which have to be signed.
- Precise requirements for each tenderer to provide a power of attorney for the authorised signatory(ies) to the tender.
- Any special rules regarding treatment of taxes, duties and other fiscal matters in the tender.
- Validity period of the tender.
- Any documents other than those issued as part of the tender dossier which the tenderer must include with his tender (see Table 13.2 for examples).
- Financing (contractor funding) if applicable.
- Procedure for issuing addenda to the tender dossier.
- Procedure for dealing with queries raised by tenderers.
- Instructions for packing, labelling and addressing the tender (including a supply of standard labels if this is the practice of the employer).
- Procedure to be adopted for tenderers to visit and inspect the site.
- Procedure for inspecting any special documents not issued with the tender dossier (e.g., site investigation reports, environmental impact assessments).
- Circumstances under which alternative offers may be submitted.
- Confidentiality of tender documents.
- Procedure for the return of tender documents submitted by unsuccessful tenderers (if required).
- Procedure for dealing with requests for extension of time by tenderers.
- Arrangements for the opening of tenders.
- Procedure for dealing with arithmetic errors found in tenders during evaluation.
- Rules relating to disqualification/rejection of tenders (e.g., late arrivals, altered figures, incomplete submissions and deviations).
- Any unusual features of the particular tendering procedure.
- Information about requirements of local (national) regulations.
- Information about the evaluation criteria and method.
- Award of contract procedure, including submission of the performance security, appointment of the Dispute Adjudication Board (DAB), and other formalities.

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than one tenderer may request part payment in one particular currency, it is preferable that the exchange rates to be used should be consistent and, therefore, that they should be defined by the employer and notified to each tenderer a reasonable time before the date of submission. Normally, these rates should be the selling prices quoted by the local central bank, and the rates should be those quoted at the time of closing 28 days before the tender submission date. The rates quoted will then be incorporated in the contract when awarded.

Normally EPC/turnkey contracts are procured on a fixed-price lump-sum basis. However, if payments are to be adjusted for changes in the cost of labour and/or materials, the formulae for calculating such changes and the source(s) of the applicable published indices for use in the formulae should be included in the conditions of contract.

Preference for local products and services

Tenderers should be advised if and how preference, if any, for local products and services will be applied in the evaluation of tenders.

Tender security

The requirements for a tender security, if any, will be determined by the circumstances of each contract. If a tender security is required, a form should be included in the tender dossier. An example form of tender security is shown in Appendix 13.1.2. The amount and currency(ies) of the security should be stated. In all cases the guarantor(s) or the surety or sureties must be satisfactory to the employer. If a tender security has been requested, any tender which has not been so secured will be rejected.

Tenderers should be advised of the period of validity which is required for the tender security, and the events which will entitle the employer to cash the security. The period of validity of the security should equal the period of validity of the tender plus the time allowed for the successful tenderer to provide his performance security under the terms of the eventual contract between the contractor and the employer. Tenderers should be informed that their tender securities will be returned to them as soon as the security is no longer in full force and effect.

The employer should select the type and amount of security most appropriate to the contract to be awarded. It is preferable that the amount of security should be stated as a specific sum rather than as a percentage of the tender price.

Evaluation criteria

The evaluation criteria, which will form the basis for the selection of the most advantageous tender, should be stated. The criteria should be consistent with the information which the tenderers are asked to submit and may include updating of the information supplied as part of the prequalification procedure.

If a specific evaluation method is to be used in selecting the successful tender, the method should be described in the instructions to tenderers. An example of a typical evaluation method is described below in Chapter 17 – Tender Evaluation and Recommendations: Contracts for Works.

While evaluation generally may be primarily on the basis of tender price, other factors which could be relevant to achieving best value for money include:

- time for completion;
- suitability of technology;
- life-cycle costs of construction and plant;
- environmental impact during the lifetime of the project;
- avoidance of hazardous materials;
- quality and serviceability of plant;
- project financing;
- operation and maintenance costs;
- claims record;
- suitability of management/staff;
- suitability of construction methods and sequence.

These factors should, to the extent practicable, be expressed in monetary terms and/or given a weighting in the evaluation provision of the tender dossier.

Performance security

If a security (guarantee or bond) for performance is required, the type and terms should be specified in the conditions of contract.

The terms should include the period of validity of the security, the procedure to be followed if the security is forfeit, arrangements for its release and the currency of any monetary transactions involved.

The procedure for the successful tenderer to submit the performance security should be described in the instructions to tenderers.

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Checklist

The checklist given in Table 13.1 may help in the preparation of instructions to tenderers. The checklist shows subjects which should be covered when preparing the instructions.

An example form of instructions to tenderers is given in Appendix 13.1.3. This example is a suggestion, and must be carefully reviewed and amended to take account of the employer's normal procedures and requirements, and all other relevant circumstances for each tender enquiry.

13.1.4 Conditions of contract

The recommended form of contract for engineer, procure and construct (EPC) or turnkey works is the FIDIC Conditions of Contract for EPC/Turnkey Projects. This publication comprises:

- General Conditions;
- Appendix: General Conditions of Dispute Adjudication Agreement and (Annex) Procedural Rules;
- Guidance for the Preparation of Particular Conditions;
- Annexes: Forms of Securities (example forms of Parent Company Guarantee, Tender Security, Performance Security, Advance Payment Guarantee, Retention Money Guarantee, and Payment Guarantee by Employer);
- Forms of Letter of Tender, Contract Agreement and Dispute Adjudication Agreement.

Detailed guidance on its use is given in the FIDIC publication The FIDIC Contracts Guide. It should be noted that:

- This form of conditions of contract has been carefully prepared, and contains many interdependent clauses.

They should therefore be adopted with as few alterations as possible.

- Where general conditions need to be changed, the amendments and additions must be contained in particular conditions, not in amended and/or retyped general conditions, so that tenderers can rapidly identify any changes from the well known and widely accepted FIDIC form, and assess their effects.
- This form of conditions of contract has been prepared to provide as certain a final price and time for implementation as reasonably possible. To this end more risks are passed over to the contractor, the total price is a fixed lump sum, it is intended that the employer will not require variations to the works, and other provisions are included to reduce the risk of changes to the price and time for completion.
- The employer should expect to pay a higher price as the contractor includes in his price for a higher level of risk.
- If contractors are unwilling or unable to quantify the risk it is likely to result in unresponsive tenders, which may cause delay to the procurement process.

13.1.5 Employer's requirements

The employer's requirements is where the employer specifies his precise requirements for the completed works, including all matters not covered by the conditions of contract. It is here that he gives his performance or output specification for the completed works, in other words, the performance or result that the completed installation or facility must achieve.

If the employer has any particular requirements as to how any parts of the works shall be constructed/ installed, it is here that his wishes must be expressed.

If the employer has prepared a 'conceptual design' or 'preliminary design' which the contractor must accept and use as the basis for development, this must also be included in the employer's requirements. Usually, the employer will also wish to include an outline time

programme showing the desired work phases and completion dates.

If the employer omits to state certain of his requirements in this document, then the contractor will not be obliged to carry them out, unless they are subsequently ordered as variations, with consequent price and time changes.

The contents of the document entitled employer's requirements must include for topics such as those listed in Table 13.3.

These matters should not be covered in the instructions to tenderers, because they would then not be contractually binding. However, they are all referred to in the conditions of contract. It is important to ensure that all

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topics are dealt with once only and not duplicated unintentionally, which may cause inconsistencies and ambiguities.

The extent of the contractor's design obligation must be defined without doubt, including responsibility for all design from initial concept, or alternatively, checking and assuming responsibility for the employer's conceptual or preliminary design, followed by all subsequent stages of design development and implementation to completion of the works.

The employer's requirements will define the performance required of the completed facility, and – to whatever degree that the employer wishes to specify – the scope and technical requirements of the contract, including quality, performance and testing, and any requirements for training and technology transfer. However, it is not necessary to specify any matters which are imposed by applicable laws.

The employer may wish to specify, for some or all of the works, the quality of materials and the standards of workmanship to be provided by the contractor. He may also specify samples to be provided and tests to be carried out by the contractor during the course of the contract. However, more often the employer is basically interested in the result to be achieved, and will be satisfied to leave the detailed specification for the contractor to choose, knowing that the contractor's responsibility is to provide a fully functioning facility which will fulfil the required performance specifications. Therefore the employer's requirements should fully specify all testing and other measures to be taken on and after completion to prove that the completed utility fulfils the stated performance criteria.

The employer's requirements should also make the contractor responsible for quality assurance, as well as the required health, safety and environmental measures to be observed during the execution of the works.

Any limitations on the contractor's freedom of choice in the order, timing or methods of designing and executing the work or sections of the works should be clearly set out and any restrictions in his use of the site, such as interface requirements with other parts of the work, or provision of access or space for other contractors, should be given.

13.1.6 Drawings

The employer's requirements may include drawings (drawings should be listed), on which the proposed works may be outlined. In such cases, the employer's requirements should define the extent to which (for example) the works must comply

Table 13.3 – Typical employer's requirements items

Definition of the location of the site.
Definition and purpose of the works.
Scope, design and other technical criteria.
Applicable technical standards, codes and regulations.
Quality and performance criteria.
Permissions being obtained by the employer.
Customs requirements.
Proposed or required time programme.
Phased possession of foundations, structures, plant or means of access.
Other contractors (and others) on the site.
Setting-out points, lines and levels of reference.
Involvement of third parties.
Environmental constraints.
Access constraints: road, rail, air and sea.
Electricity, water, gas and other services available on the site.
Employer's equipment and free-issue material.
Criteria for design personnel.
Contractor's documents required, and whether required for information or review, and number of copies.
Facilities for the employer, his representative and the contractor's personnel.
Samples.
Testing during manufacture and/or installation and construction.
Tests on completion.
Damages for failure to pass tests on completion.
Operational training for the employer's personnel.
As-built drawings and other records of the works.
Operation and maintenance manuals.
Tests after completion.
Damages for failure to pass tests after completion.
Provisional sums.

The employer's requirements should promote the broadest possible competition by being as flexible as possible, thereby encouraging tenderers to adopt an innovative approach, however respecting both recognised local (national) and international standards.

with the outline. The incorporation of design aspects into the drawings should be carried out with care, with full consideration being given to the consequences, including any ultimate responsibility for this design by the employer.

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13.1.7 Schedules, including schedule of payments

The schedules are prepared by the employer and included in the tender dossier, and are, where required, to be completed by the tenderers.

The form and extent of the schedules will depend on the information and data which the employer requires, both for the tender evaluation and for inclusion in the contract. An example list of schedules is given in Appendix 12.1.4.

The schedules should reflect the type of contractor design to be included in the contract. These schedules may include a questionnaire, tables and/or lists, setting out the information required from the tenderers. When preparing the schedules, the employer should consider carefully the extent of information required, taking account of the work being imposed on the tenderers, and on his own personnel, who will be carrying out the detailed evaluation and comparison of the tenders. Requesting tenderers to give unnecessary or over-detailed information in the schedules should be avoided.

Usually the employer will require the works to be completed on a fixed-price lump-sum basis. This can include pricing the works on the basis of several lump sums, each representing a defined section of the works. The schedule of payments (or pricing document) may

provide identifying descriptions of work to be carried out in each section, thus facilitating the possible breakdown of such lump sums into constituent parts.

Where there is the possibility of variations or extra work, it is usual to have a schedule of rates to enable valuation of the varied or extra work. A daywork schedule may also be included to pay for work of a minor or incidental nature. As such schedules are not subject to competition in the same way as the tender price, the tender evaluation should include a check that the rates proposed are reasonable before including them in the contract. However, the employer should avoid making variations as far as possible.

The schedules may also include other information of all types required from tenderers, such as lists of recommended spare parts and proposed subcontractors. Section 13.1.9 below gives a typical list of additional information often required from tenderers. After evaluation of tenders and the choice of the most advantageous tender, the employer and the successful tenderer decide on which parts of this additional information shall be included in the contract. Care should be taken to avoid unnecessary requirements that interfere with the contractor's execution of the works.

13.1.8 Tender

The tender is the document containing the tenderer's offer to carry out and complete the works. It should be his complete offer to fulfil all the employer's requirements as well as to comply with the conditions of contract and other provisions of the contract. The tender should be accompanied by all information required.

In his tender, the tenderer should identify any aspects where he proposes not to comply with any

particular aspect of the employer's requirements, so that these deviations can be resolved before the tender is accepted. If deviations are not identified, and thus are not clarified in the contract, the employer's requirements take precedence. However, if the contractor's tender includes elaboration of any matter which is consistent with the other contract documents, the matter becomes an obligation, and either party can enforce it.

13.1.9 List of documents/information to be submitted by tenderers

The employer should specify the documents and information that tenderers are required to submit with their tenders. To ensure completeness and uniformity between tenderers, a suitable form should be prepared and issued as part of the tender dossier.

Information should not be sought on matters

which affect neither the evaluation of tenders nor the subsequent contract.

If tendering is to take place according to the two-stage procedure, then the whole and complete technical solution being offered by the tenderer must be submitted in the first stage. No rates or price information

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are submitted in this stage, only technical and perhaps contractual information.

During or after evaluation, the employer may require amendments to the technical solution. If the tenderer and the employer come to agreement on the technical solution with amendments (if any), then the tenderer calculates his price for the agreed solution, and his price and amended solution are then submitted in the second stage.

If the tenderer is proposing a specific system or equipment or method to fulfil the performance specification, then he must provide sufficient information for the employer to be able to adequately evaluate his proposal, for purposes of comparison with the competing offers.

In order to assist the employer in forward budgeting, tenderers may be requested to provide with the tender an estimate of disbursements to be made by the employer during the period of the contract. The instructions to tenderers should state the periods to be adopted for this estimate.

Depending on particular requirements, additional information may include some or all of the items listed in Table 13.4. This list is not intended to be exhaustive.

Table 13.4 – Documents to submit with tenders

Tenderer's organisation for executing the contract.
Tender programme for execution of the works.
Breakdown of prices.
Estimates of cash flow.
List of proposed major subcontractors, together with details of those parts of the works which the tenderer would propose to subcontract.
Details of key staff who would be employed on the contract.
Proposed guarantor or surety for performance security.
Proposal for accommodation of the contractor's employees.
Projected build-up of labour on the site, both local and foreign.
List of contractor's equipment proposed.
Update of prequalification information, e.g., financial status and contracts in hand.

It should be clearly stated which items will form part of the tender evaluation and which items are to be incorporated into the contract.

13.2 Issue of tender dossier

The tender dossier should be issued by the employer only to those firms which have been selected by the employer to tender.

If a charge for documents is to be made, issue should only be against payment.

As an alternative to posting, or despatching by other means, tenderers should be given the option of collecting tender documents from the employer from the due despatch date. Tenderers should be asked whether they wish to collect the documents and, if so, be instructed as to the time and place for collection.

13.3 Visit to site by tenderers

A formal visit to the site by all the tenderers should be arranged by the employer as laid down in the instructions to tenderers. If possible, individual tenderers should not be refused permission to visit the site at other times, but care should be taken to ensure that the same information is given to each tenderer.

The primary purpose of the visit is to enable each tenderer to inspect the site and obtain all relevant information required for the preparation of his tender.

Tenderers should be advised of the probable duration of the formal visit, the period during which the visit may be made and the maximum number of persons from each tenderer allowed to participate.

The arrangements for the site visit should be determined in order that equal opportunities are open to all tenderers. The visit should take place towards the end of the first half of the tender period and may include a tenderers' conference.

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Tenderers should make their own travelling arrangements and bear the costs, including fares, accommodation and subsistence and they should be advised of this in the instructions to tenderers.

The employer is only responsible for making those arrangements necessary for the actual inspection

of the site. The employer should make a record of tenderers' representatives visiting the site.

The employer may require tenderers visiting the site to indemnify the employer against any claims for damage, injury or death as a result of the visit.

13.4 Tenderers' queries

Tenderers' queries can be handled by correspondence or by tenderers' conference, or by a combination of these methods.

The intended method or methods should be described in the instructions to tenderers.

13.4.1 Correspondence method

A tenderer requiring clarification of any document in the tender dossier should submit his queries to the employer in writing, as stated in the instructions to tenderers.

tenderers should be required to acknowledge receipt of the information.

The employer should prepare and despatch written replies to queries. These replies, together with the text of the queries, should be issued to all tenderers without quoting the source of the queries, and the

Tenderers should be instructed that queries will not be accepted by the employer unless received not less than 28 days before the date for submission of tenders.

Replies to queries should, where appropriate, be issued as addenda to the tender dossier.

13.4.2 Tenderers' conference method

With the conference method, queries from the tenderers to the employer are dealt with at a tenderers' conference arranged by the employer normally taking place at the time of the site visit. Tenderers' queries should be in writing and should identify the party raising the query.

both the queries and formal replies. Where appropriate, an addendum to the tender dossier should be issued.

As far as possible, oral answers should be given by the employer during the conference.

Receipt of the minutes should be acknowledged by the tenderers.

Within a reasonable time after the conference, the employer should send all tenderers, whether present at the conference or not, a full set of minutes recording

Representation from each tenderer should be limited to two or three persons at the conference.

13.5 Addenda to tender dossier

Explanations, revisions, additions or deletions to the tender dossier may be necessary during the tender period and these should be notified in accordance with the procedure described below.

Each addendum should, when issued, carry a serial number for reference purposes and contain a receipt slip which should be signed by each tenderer and returned immediately to the employer.

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Addenda should be complete in themselves and should not rely on tenderers having to appreciate the implications and decide whether other changes to the documents are required as a consequence. Addenda become part of the tender dossier.

The employer should avoid if possible, the issue of addenda during the latter part of the tender period. If unavoidable, the employer should consider extending the tender period to allow tenderers a reasonable time for their incorporation. It should also be remembered that changes of a minor nature can usually be dealt with in discussions with the selected tenderer prior to award.

The tender period should not be extended unless the circumstances are exceptional. In considering the need for

extensions which might arise, either as the result of major amendments to the tender documents or as a direct request from one or more tenderers, the following criteria should be applied:

- Is there a convincing reason for granting an extension?
- Would the refusal of an extension reduce the number of tenders to be submitted?
- Would an extension give preferential treatment to those tenderers who are unable to meet the original tender submission date?
- Would an extension create unacceptable delay to the project programme?

13.6 Dispute Adjudication Board (DAB)

The FIDIC Conditions of Contract for EPC/Turnkey Projects stipulates the establishment of an 'ad hoc' Dispute Adjudication Board (DAB) with the purpose, if a dispute arises, of adjudicating on the dispute and giving its decision on the entitlements of each party with regard to the dispute. The DAB is to comprise one or three members, depending on the size and complexity of the contract works and the matter in dispute, who are only appointed if and when a particular dispute arises, and whose appointment typically expires when the DAB has issued its decision on the dispute.

Normal exchanges of viewpoint or differences of opinion between the parties are not considered as disputes. However, when it becomes apparent that it is not possible for the parties themselves to come to agreement on a contentious matter then it can be said that a dispute has arisen. If a dispute does arise then either party may refer that dispute to the DAB. The DAB's decision is binding on the parties, and is to be given prompt effect by both parties. If a party does not accept the DAB's decision, that party may give notice of its dissatisfaction, and the dispute may then be submitted to arbitration. The decision shall nevertheless be binding and complied with until the arbitration award is made.

Until the mid-1990's the FIDIC forms of contract had an independent 'engineer' who was required to be impartial when making decisions on matters concerning the rights and obligations of the parties, e.g., when assessing and awarding extensions of time or dealing with claims from either party. This procedure led to complaints that the engineer might not always

act in an unbiased manner, as he was appointed by and paid for by the employer. FIDIC therefore introduced the DAB procedure where the DAB members are required to be independent of the parties and be strictly unbiased in all their actions and decisions. True impartiality of each and every member of the DAB is essential for the proper and fair operation of the DAB, and the FIDIC DAB agreements contain strong sanctions to ensure the independence and impartiality of the DAB members.

Consequently, for international contracts, i.e., where the parties come from different countries, no DAB member should be from the same domicile as either of the contracting parties. The reason is that in many jurisdictions it may be very difficult for a national to find or decide against his own state organisation. Such a situation (appointment of a national) can lead to that DAB member departing from the independent and impartial role that is required of every member. It is unfair to place a DAB member in such a situation. Furthermore, a similar situation may arise if either party makes a habit of appointing the same DAB member for successive projects.

In order to establish the DAB in an effective way and without delay when it is called upon to make a decision on a dispute, it is recommended that the employer includes in the tender dossier a short list of persons, with their CV's, who the employer considers suitable to act as members of the DAB. Each tenderer then may accept the employer's list, or delete names from the list and/or add names of his own choice. This may help the parties to agree upon the members of the DAB in

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conjunction with the signing of the contract, so that the DAB may be rapidly appointed without disagreement and delay if called upon to decide on a dispute.

As the costs of the DAB are to be met equally by the employer and the contractor, both parties must remember to include allowance in their financial calculations should these costs arise.

For many EPC/turnkey contracts, particularly those where works are to be carried out on the site from an early stage, experience has shown that it is most advantageous to have a 'standing' DAB in place from the

commencement of the works, and which is active throughout the contract, rather than having an ad-hoc DAB that only comes into operation after a dispute has arisen. An important purpose of a standing DAB is to assist the parties to avoid contentious matters actually developing into disputes, and this is not possible when the dispute has already arisen. The FIDIC Conditions of Contract for Construction makes provision for a standing DAB (see Section 11.6 above) and these provisions can be easily incorporated into an EPC/turnkey contract in place of the ad-hoc procedure.

13.7 Submission of tenders

Tenders are binding for a fixed period, which must be at least sufficient for a proper evaluation and contract award.

It is the responsibility of tenderers to ensure that their tenders are delivered to the employer by the due submission date and time, properly signed by authorised signatories.

If there is a two-stage tendering procedure, then this applies to each of the stages.

Tenderers should be instructed to return their tenders double-wrapped in plain envelopes or packages using pre-addressed labels provided by the employer. Labels should preferably be distinctive and carry the words "Tender Document – To remain sealed until official opening". The labels should identify the particular contract for which the tender is submitted but neither the label nor any other markings on the outer wrapper of the tender envelopes or packages must identify the tenderer.

The identity of the tenderer is to be concealed between the outer and inner wrappings of the tender envelopes or packages for use in the event of late tenders having to be returned unopened.

The employer should mark all tenders with the time and date of receipt and ensure that they are kept secure and unopened until the date and time appointed for the official opening. If tenders are delivered by hand, tenderers should obtain a receipt from the employer recording the date and time of delivery.

Tenders received after the appointed time should be immediately returned, unopened, to tenderers, accompanied by an explanatory letter giving the date and time of receipt.

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Table 14.2 Information to be Submitted with Tenders

14.1 Preparation of tender dossier

14.1.1 General

Before the employer can obtain tenders from suitable contracting companies he must have prepared:

- a list of tenderers whom he will invite to tender; and
- a set of tender documents (the tender dossier).

The employer must also initiate the appropriate notification procedures required by applicable laws and/or the funding agency(ies).

The list of suitable tenderers will normally have been arrived at following a prequalification process, as described in Chapter 8.

The tender dossier is prepared by the employer, or by a consultant on behalf of the employer. It will normally include:

- letter of invitation to tender;
- instructions to tenderers;
- form of letter of tender and appendix to tender;
- conditions of contract (general conditions and particular conditions) together with any sample forms such as bank guarantees;
- specification;
- drawings;
- schedules for completion by tenderers, including bill of quantities and/or schedule of prices;
- site data;

- list of additional documents/information to be submitted by tenderers.

Some of the above items, such as the letter of invitation to tender and instructions to tenderers will normally not form part of the contract agreement (see Chapter 19). It is therefore essential that all requirements and conditions applying after award of contract are incorporated elsewhere in the tender dossier.

Detailed features of each of the documents to be included in a typical tender dossier are described below.

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14.1.2 Letter of invitation to tender

The letter of invitation to tender should be on the employer's official headed paper and should include:

- tender reference and title;
- list of documents issued (i.e., included in the tender dossier);
- receipt form for the tender dossier (to be signed and returned by each tenderer);
- instruction to inform the employer/engineer in writing of any significant changes to the data supplied in the prequalification application; and
- date, time and place of tender submission and of tender opening.

The letter of invitation should be kept as short as possible. Detailed information should be contained in the instructions to tenderers.

An example letter of invitation is given in Appendix 14.1.1. This example is a suggestion, and should be carefully reviewed and amended as necessary to take account of the relevant circumstances. It avoids repeating information contained in the tender documents, in order to avoid inconsistencies.

14.1.3 Instructions to tenderers

General

The instructions to tenderers should be prepared by or on behalf of the employer to meet the particular requirements of the individual contract. The purpose of the document is to convey information and instructions that will govern the preparation, submission and evaluation of tenders. When tenders have been received and evaluated this document will no longer be needed, and it should not form part of any resulting contract. It should therefore not contain any text which remains relevant after award of the contract.

Tenderers should be notified of the language in which the tenders are to be written. They should also be notified of the number of copies of their tender that are required, stipulating that one set of the documents should be clearly marked "Original Tender" and the others (which should be photocopies) marked "Copy" and that, in the event of discrepancy, the "Original Tender" shall take precedence.

If a power of attorney is required for the authorised signatory(ies), precise requirements should be given.

The tenderers' attention should be drawn to any requirement for documents to be notarised and legalised at the embassy or consulate of the employer's country.

Tenderers should be informed whether the successful tenderer will be required to establish a locally

registered company for the purpose of the contract, or to have an agent.

The instructions to tenderers should state that the employer does not bind himself to award a contract to any of the tenderers.

Remuneration is not normally made to tenderers who submit tenders, so there should be a stipulation that all costs and expenses associated with the preparation and submission of tenders shall be borne by the tenderers. However, consideration could be given to offering some remuneration to tenderers if they have to undertake extensive studies and/or preliminary design work in order to submit a responsive tender.

Tender period

When determining the tendering period, the employer must ensure that adequate time is allowed for tenderers to prepare their tenders, taking into account the size, complexity and location of the project. An important factor to be considered is whether there is likely to be a number of major subcontractors from whom tenderers will have to obtain offers.

Some straightforward or repeat work may not require a long tender period. On the other hand, complex projects, works requiring considerable pre-tender investigation of site conditions, and projects likely to be tendered for by consortia, may require tender periods of a number of months.

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In any case, it is unwise for an employer to allow too short a period, resulting in tenderers having insufficient time to consider fully their risks and obligations, or to allow too long a period, which may result in tenderers not commencing serious preparation work until well into the tender period.

Documents

The instructions to tenderers should contain a list of the documents required to form a complete tender.

Tenderers should be informed that a tender will be rejected unless it is substantially responsive.

It should be made clear to tenderers that any corrections must be initialled. Documents provided in electronic format should be protected so that they cannot be changed.

Alternative tenders

Tenderers should be informed whether alternative tenders will be considered or not, and if so, the technical and commercial conditions that will apply. In any event, a compliant tender is normally a precondition for considering alternative tenders.

Alternative tenders must include a comprehensive and precise description of the parts of the tender documents which have been altered. The alternative tender should include full details of commercial terms and conditions, specification, drawings, calculations, environmental impacts and costs for the parts of the works that have been altered in order to allow a fair, technical and financial evaluation of the alternative proposal.

Modification to tenders

Tenderers should be informed that, if a tenderer has delivered, posted or dispatched his tender prior to the formal submission date he has the right to modify or make corrections to it, provided that any modifications or corrections are received by the employer in writing prior to the deadline specified for submission of tenders. The original tender thus modified or corrected would then be considered as the official tender.

Financing arrangements

Tenderers should be informed of the source(s) of finance, their amount and related conditions for the proposed works.

Where tenderers are required to provide financing they should be instructed to provide information as to their source(s) of finance and the conditions which will apply.

Currencies and payments

Specific instructions should be given concerning the currencies to be used in the preparation of the tenders. Tenderers should also be advised in which currency/currencies payments will be made.

Where tenderers are required to express their tenders in a single currency (usually the currency of the country in which the works are to be carried out), it is necessary to define the rates of exchange which are to be used to convert the various currencies in which payment is required into a single currency unit. As more than one tenderer may request part payment in one particular currency, it is preferable that the exchange rates to be used should be consistent and, therefore, that they should be defined by the employer and notified to each tenderer a reasonable time before the date of submission. Normally, these rates should be the selling prices quoted by the local central bank, and the rates should be those quoted at the time of closing 28 days before the tender submission date. The rates quoted will then be incorporated in the contract when awarded.

If payments are to be adjusted for changes in the cost of labour and/or materials, the formulae for calculating such changes and the source(s) of the applicable published indices for use in the formulae should be included in the conditions of contract.

Preference for local products and services

Tenderers should be advised if and how preference, if any, for local products and services will be applied in the evaluation of tenders.

Tender security

The requirements for a tender security, if any, will be determined by the circumstances of each contract. If a tender security is required, a form should be included in the tender dossier. An example form of tender security is shown in Appendix 14.1.2. The amount and currency/currencies of the security should be stated. In all cases the surety or sureties must be satisfactory to the employer. If a tender security has been requested, any tender which has not been so secured will be rejected.

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Tenderers should be advised of the period of validity which is required for the tender security, and the events which will entitle the employer to cash the security. The period of validity of the security should equal the period of validity of the tender plus the time allowed for the successful tenderer to provide his performance security under the terms of the eventual contract between the contractor and the employer. Tenderers should be informed that their tender securities will be returned to them as soon as the security is no longer in full force and effect.

The employer should select the type and amount of security most appropriate to the contract to be awarded. It is preferable that the amount of security should be stated as a specific sum rather than as a percentage of the tender price.

Evaluation criteria

The evaluation criteria, which will form the basis for the selection of the most advantageous tender, should be stated. The criteria should be consistent with the information which tenderers are asked to submit and may include updating of the information supplied as part of the prequalification procedure.

If a specific method of evaluation is to be used in selecting the successful tender, the method should be described in the instructions to tenderers.

While evaluation generally may be primarily on the basis of tender price, other factors which could be relevant to achieving best value for money may be applicable.

Performance security

If a security (guarantee or bond) for performance is required, the type and terms of the security should be specified in the conditions of contract. The terms should include the period of validity of the security, the procedure to be followed in the event that the security is forfeit, arrangements for the release of the security, and the currency of any monetary transactions which are involved.

The procedure for the successful tenderer to submit the performance security should be described in the instructions to tenderers.

Table 14.1 – Instructions to tenderers checklist

Language of the tender.
Number of copies of the tender that are required.
Which documents have to be filled in by the tenderer and returned by the submission date and which have to be signed.
Precise requirements for each tenderer to provide a power of attorney for the authorised signatory(ies) to the tender.
Any special rules regarding treatment of taxes, duties and other fiscal matters in the tender.
Validity period of the tender.
Any documents other than those issued as part of the tender dossier which the tenderer must include with his tender.
Procedure for issuing addenda to the tender documents.
Procedure for dealing with queries raised by tenderers.
Instructions for packing, labelling and addressing the tender (including a supply of standard labels if this is the practice of the employer).
Procedure to be adopted for tenderers to visit and inspect the site.
Procedure for inspecting any special documents not issued with the tender dossier (e.g., site investigation reports and environmental impact assessments)
Circumstances under which alternative offers may be submitted.
Confidentiality of tender documents.
Procedure for the return of tenders submitted by unsuccessful tenderers (if required).
Procedure for dealing with requests for extension of time by tenderers.
Arrangements for the opening of tenders.
Procedure for dealing with arithmetic errors found in tenders during evaluation.
Rules relating to disqualification/rejection of tenders (e.g., late arrivals, altered figures, incomplete submissions and deviations).
Any unusual features of the particular tendering procedure.
Information about requirements of local (national) regulations.
Information about the evaluation criteria and method.
Award of contract procedure, including submission of the performance security, appointment of the Dispute Adjudication Board (DAB), and other formalities.

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Checklist

The checklist of Table 14.1 is included to assist in the preparation of instructions to tenderers and shows subjects which should be covered.

14.1.4 Conditions of contract

The recommended form of contract for dredging and reclamation is the FIDIC Conditions of Contract for Dredging and Reclamation Works. This publication comprises:

- Agreement; Offer; Acceptance; Appendix
- General Conditions
- Particular Conditions
- Rules for Adjudication
- Notes for Guidance
- Annexes: Forms of Securities (example forms of Performance Security, Advance Payment Guarantee, Retention Money Guarantee).

This form of conditions of contract has been prepared to provide a fair sharing of risk and responsibility between the employer and the contractor, and contains many interdependent clauses. It should therefore be adopted

14.1.5 Specification

The specification defines precisely the scope and technical requirements of the contract.

The quality of materials and the standards of workmanship to be provided by the contractor must be clearly described, together with requirements for health, safety and environmental measures to be observed during the execution of the works.

Dredging and reclamation work usually requires various permits, licences and approvals to be obtained in order for the works to proceed. These often take a considerable amount of time to obtain and those that are provided by the employer or that are to be obtained by the contractor should be clearly specified.

The dredging equipment forms a significant proportion of the total cost of a dredging and reclamation contract. The selection of appropriate dredgers and supporting vessels is fundamental to the tender price and contract duration and the following are some of the main issues that need to be specified:

This example is a suggestion, and must be carefully reviewed and amended to take account of the employer's normal procedures and requirements and all other relevant circumstances for each tender enquiry.

without alteration or with as few alterations as possible.

Where general conditions need to be changed, the amendments and additions must be contained in particular conditions, not in amended and/or retyped general conditions. This is so that tenderers can rapidly identify any changes and assess their effects from the well-known and widely accepted FIDIC form of contract.

- The nature of the material to be dredged and/or used in the reclamation (to be determined by surveys and included in the site data).
- Ordnance, wrecks and obstructions (to be determined by surveys and included in the site data).
- The depth of dredging and quantity of material to be handled.
- The location of disposal or reclamation areas (which will affect sailing and/or pumping distances).
- The ground conditions at the reclamation site (which will affect settlement and the quantity of fill material required).
- The season of execution (which will affect productivity due to varying weather conditions).
- The period for execution (which will impact on availability of dredging equipment).
- Environmental, pollution and navigation restrictions (which may dictate a specific method of work).
- Maintenance and handover requirements (which impact on the length of time that the dredging equipment is required to be deployed).

The survey requirements should also be specified. As a minimum these will include an 'in survey' of the site prior to

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dredging and reclamation work commencing and an 'out survey' to verify that the completed works have been carried out to the specified lines and levels. A plus/minus tolerance should be specified for both lines and levels.

The extent, if any, to which the contractor will be responsible for the design of the permanent works should also be specified. Details should be included of samples to be provided, surveys to be performed and tests to be carried out during the course of the contract.

Any limitations on the contractor's freedom of choice in the order, timing or methods of executing the work or sections of the works should be clearly set out

and any restrictions in his use of the site, such as interface requirements with other parts of the work, or provision of access or space for other contractors, should be given in the specification.

The specification should promote the broadest possible competition by being as flexible as possible, thereby encouraging tenderers to adopt an innovative approach respecting, however, both recognised local (national) and international standards.

14.1.6 Drawings

The drawings included in the tender dossier should provide tenderers with sufficient detail to enable them, in conjunction with the specification, to make an accurate assessment of the nature and scope of the works.

Boundaries and limits for the purpose of measurement and payment for dredging and reclamation should be defined on the drawings.

Drawings should be listed in the specification.

14.1.7 Bill of quantities

The bill of quantities/schedule of prices should provide identifying descriptions and estimated quantities of work to be carried out. A method of measurement should describe how the works are to be measured such as the difference between an 'in survey' and 'out survey' or measurement in the hopper of the dredger or lines and levels shown on the drawings.

The bill of quantities should include items to allow the tenderer to state working and standby rates for all the main dredging equipment and support vessels.

If the tenders are based on lump sums, a breakdown of such sums into constituent parts should be provided by the tenderer.

14.1.8 Site data

This should include all data in the employer's possession relevant to the execution of the works,

including hydrological, sub-water surface and sub-bottom conditions, and environmental aspects.

14.1.9 List of documents/information to be submitted by tenderers

The employer should specify the documents and information that tenderers are required to submit with their tenders. To ensure completeness and uniformity between tenderers, a suitable form should be prepared and issued as part of the tender dossier.

which affect neither the evaluation of tenders nor the subsequent contract.

In order to assist the employer in forward budgeting, tenderers may be requested to provide with the tender an estimate of disbursements (excluding provisional sums) to be made by the employer during the

Information should not be sought on matters

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period of the contract. The instructions to tenderers should state the periods to be adopted for this estimate.

These estimates of cash flow will not become part of the contract as the figures may have to be reviewed and adjusted as the work proceeds. Expenditure under provisional sums will affect the figures, and so also will changes in the source of supply of goods and modifications to the programme or the extent of the works.

Depending on the particular requirements, such additional information may include some or all of the documents listed in Table 14.2.

This list is not intended to be exhaustive. It should be clearly stated which items will form part of the tender evaluation and which items are to be incorporated into the contract.

Table 14.2 – Information to be submitted with tenders

Tenderer's organisation for executing the contract.
Tender programme for execution of the works.
Method statements.
Breakdown of prices.
Estimates of cash flow.
List of proposed major subcontractors, together with details of those parts of the works which the tenderer would propose to subcontract.
Details of key staff who would be employed on the contract.
Proposed guarantor surety for performance security.
Proposal for accommodation of employees.
Projected build-up of labour on the site, both local and foreign.
List of contractor's equipment proposed.
Update of prequalification information, e.g., financial status and contracts in hand.

14.2 Issue of tender dossier

The tender dossier should be issued by the employer only to those firms who have been selected by the employer to tender.

If a charge for documents is to be made, issue should only be made against payment.

As an alternative to posting, or despatching by other means, tenderers should always be given the option of collecting tender documents from the employer from the due despatch date. Tenderers should be asked whether they wish to collect the documents and be instructed as to the time and place for collection.

14.3 Visit to site by tenderers

A formal visit to the site by all the tenderers should be arranged by the employer as laid down in the instructions to tenderers. If possible, individual tenderers should not be refused permission to visit the site at other times, but care should be taken to ensure that the same information is given to each tenderer.

The primary purpose of the visit to the site by tenderers is to enable each tenderer to inspect the site and obtain all relevant information required for the preparation of his tender.

Tenderers should be advised of the probable duration of the visit, the period during which the visit may be made and the maximum number of persons from each tenderer allowed to participate.

The arrangements for the site visit should be determined so that equal opportunities are open to all

tenderers. The visit should normally take place towards the end of the first half of the tender period and should include a tenderers' conference.

Tenderers should make their own travelling arrangements and bear the costs, including fares, accommodation and subsistence and they should be advised of this in the instructions to tenderers.

The employer should only be responsible for making those arrangements necessary for the actual inspection of the site.

The employer should make a record of tenderers' representatives visiting the site.

The employer may require tenderers visiting the site to indemnify the employer/engineer against any claims for damage, injury or death as a result of the visit.

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14.4 Tenderers' queries

Tenderers' queries can be handled by correspondence or by tenderers' conference, or by a combination of these methods.

The intended method or methods should be described in the instructions to tenderers.

14.4.1 Correspondence method

Any tenderer requiring clarification of any document in the tender dossier should submit his queries to the employer/engineer in writing, as stated in the instructions to tenderers.

and the tenderers should be required to acknowledge receipt of the information.

Tenderers should be instructed that queries will not be accepted by the employer/engineer unless received 35 days before the date for submission of tenders.

The employer/engineer should prepare and despatch written replies to queries. These replies, together with the text of the queries, should be issued to all tenderers without quoting the source of the queries,

Replies to queries should, where appropriate, be issued as addenda to the tender dossier.

14.4.2 Tenderers' conference method

With the conference method, queries from the tenderers to the employer/engineer are dealt with at a tenderers' conference arranged by the employer to take place at the time of the site visit. Tenderers' queries should be in writing and should identify the party raising the query.

whether present at the conference or not, a full set of minutes recording both the queries and formal replies. Where appropriate, an addendum to the tender dossier should be issued.

As far as possible, oral answers should be given by the employer/engineer during the conference.

Receipt of the minutes should be acknowledged by the tenderers.

Within a reasonable time after the conference, the employer/engineer should send all tenderers,

Representation from each tenderer should be limited to two or three persons at the conference.

14.5 Addenda to tender dossier

Explanations, revisions, additions, or deletions to the tender dossier may be necessary during the tender period and these should be notified in accordance with the procedure described below.

Addenda become part of the tender dossier.

Each addendum should, when issued, carry a serial number for reference purposes and contain a receipt slip which should be signed by each tenderer and returned immediately to the employer.

The employer/engineer should avoid, if possible, the issue of addenda during the latter part of the tender period. If unavoidable, the employer/engineer should consider extending the tender period to allow tenderers a reasonable time for their incorporation. It should also be remembered that changes of a minor nature can usually be dealt with in discussions with the selected tenderer prior to award.

Addenda should be complete in themselves, and should not rely on tenderers having to appreciate the implications of the tender and decide whether other changes to the documents are required as a consequence.

The tender period should not be extended unless the circumstances are exceptional. In considering the need for extensions which might arise, either as the result of major amendments to the tender documents or

14 Obtaining Tenders: Dredging and Reclamation Works

as a direct request from one or more tenderers, the following criteria should be applied:

- Is there a convincing reason for granting an extension?
- Would the refusal of an extension reduce the number of tenders to be submitted?
- Would an extension give preferential treatment to those tenderers who are unable to meet the original tender submission date?

- Would an extension create unacceptable delay to the project programme?

14.6 Dispute Adjudication Board (DAB)

The FIDIC Conditions of Contract for Dredging and Reclamation Works stipulates the establishment of a 'standing' or 'full-term' Dispute Adjudication Board (DAB) before the commencement of the contract works, which typically will visit the site on a regular basis thereafter. The DAB is to comprise one or three members depending on the size and complexity of the contract works, and an important purpose is to assist the parties to avoid disputes. Normal exchanges of viewpoint or differences of opinion between the parties are not considered as disputes. However, when it becomes apparent that it is not possible for the parties themselves to come to agreement on a contentious matter then it can be said that a dispute has arisen. If a dispute does arise then either party may refer that dispute to the DAB. The DAB will then adjudicate on the dispute and give its decision on the entitlements of each party with regard to the dispute. The DAB's decision is binding on the parties, and is to be given prompt effect by both parties and the engineer. If a party does not accept the DAB's decision, that party may give notice of its dissatisfaction, and the dispute may then be submitted to arbitration. The decision shall nevertheless be binding and complied with until the arbitration award is made.

Until the mid-1990's the FIDIC forms of contract had an independent 'engineer' who was required to be impartial when making decisions on matters concerning the rights and obligations of the parties, e.g., when assessing and awarding extensions of time or dealing with claims from either party. This procedure led to complaints that the engineer might not always act in an unbiased manner, as he was appointed by and paid for by the employer. FIDIC therefore introduced the DAB procedure where the DAB members are required to be independent of the parties and be strictly unbiased in all their actions and decisions. True impartiality of each and every member of the DAB is essential for the proper and fair operation of the DAB, and the FIDIC DAB agreements contain

strong sanctions to ensure the independence and impartiality of the DAB members.

Consequently, for international contracts, i.e., where the parties come from different countries, no DAB member should be from the same domicile as any of the contracting parties or the engineer. The reason is that in many jurisdictions it may be very difficult for a national to find or decide against his own state organisation. Such a situation (appointment of a national) can lead to that DAB member departing from the independent and impartial role that is required of every member. It is unfair to place a DAB member in such a situation. Furthermore, a similar situation may arise if either party makes a habit of appointing the same DAB member for successive projects.

In order to establish the DAB in an effective way and without delay, it is recommended that the employer includes in the tender dossier a short list of persons, with their CV's, who the employer considers suitable to act as members of the DAB. Each tenderer then may accept the employer's list, or delete names from the list and/or add names of his own choice. This may help the parties to agree upon the members of the DAB, so that their selection may be confirmed in conjunction with the signing of the contract.

As the costs of the DAB are to be met equally by the employer and the contractor, both parties must remember to include in their financial calculations for these costs.

As an alternative to a 'standing DAB', which is appointed at the commencement of the contract and is active throughout the contract, provision may be made for an 'ad-hoc' DAB which will only be appointed when a dispute actually arises (see Section 12.6 above).

14 Obtaining tenders: Dredging and Reclamation Works

14.7 Submission of tenders

It is the responsibility of tenderers to ensure that their tenders are delivered to the employer by the due submission date and time, properly signed by authorised signatories.

Tenderers should be instructed to return their tenders double-wrapped in plain envelopes or packages using pre-addressed labels provided by the employer. The labels are to be affixed to the outer wrapping and should preferably be distinctive and carry the words "Tender for Contract No. - To remain sealed until official opening".

Tenderers should ensure that both their name and address are clearly marked on the inner wrapper to enable the employer to identify the tenderer for use in the event of a late tender having to be returned unopened.

If tenders are delivered by hand, tenderers should obtain a receipt from the employer recording the date and time of delivery.

15 Receipt and Opening of Proposals and Tenders

Contents

- 15.1 General
- 15.2 Initial preparations
- 15.3 Receipt of proposals/tenders
- 15.4 Opening of proposals/tenders

15.1 General

The guidelines for procedures described in this chapter apply equally to the receipt and opening of proposals for consultancy services and of tenders for works contracts.

All procedures adopted should also comply with the applicable laws and regulations.

15.2 Initial preparations

Before the opening of proposals/tenders the client/employer should make arrangements to appoint the chairman and members of an 'evaluation committee' of which the 'proposal/tenderer coordinator' shall normally be a member. The evaluation committee shall conduct the opening of proposals/tenders and organise and manage the subsequent evaluation process.

The evaluation committee should normally comprise up to no more than six persons and should be formed sufficiently early to ensure that the appointed members will be available throughout the whole of the evaluation and recommendation processes.

However, it may be necessary, particularly in the case of large and complex works contracts, for the client/employer to co-opt a number of assistants to help in undertaking the detailed tasks of evaluation and analysis of the proposals/tenders

The chairman and all members of the evaluation committee and all co-opted assistants should be carefully chosen from suitable and experienced persons aware of the need for confidentiality at all stages in the evaluation process.

It will be the task of the committee to ensure that the processes are carried out and the recommendations made in a transparent manner in accordance with established strict anti-corruption procedures.

Depending upon the magnitude of the task involved, the work of the evaluation committee may take place over a period of 60 up to 90 days in evaluating tenders for works,

although a shorter period would normally be sufficient for proposals for consultancy and other services.

The evaluation committee and its assistants should be allocated suitable accommodation in which they can work. Access to the accommodation should be strictly controlled and rigidly restricted to authorised persons. The accommodation should be able to be locked in the absence of authorised persons. If considered necessary or expedient, security de-bugging of the premises in which the evaluation is to take place may be undertaken.

The accommodation should be provided with internal photocopying and typing facilities and external telephonic and electronic communication would normally be barred.

An initial task of the chairman of the evaluation committee should be to inform the members of their specific duties and responsibilities and to stress to them the importance of confidentiality during the whole evaluation process. In particular, the chairman should stress that no proposal/tender or part of a proposal/tender should leave the allocated evaluation area before the final completion of the work of the committee.

15 Receipt and Opening of Proposals and Tenders

15.3 Receipt of proposals/tenders

Clear procedures and instructions should be established by the client/employer for the receipt of proposals/tenders and for ensuring that the procedures described below are followed. This is necessary to safeguard the confidentiality of proposals/tenders.

Those submitting will have been instructed to label their submitted envelopes and packages with the words "Proposal/tender to remain sealed until official opening" and with a code to identify the particular contract. The identity of the submitters must not be visible on any envelope or package, prior to the official opening.

Proposal/tender envelopes and packages may be delivered by mail or by hand. If delivered by hand, the bearer is to be given a receipt by the employer recording the date and time of delivery.

The procedures and instructions should ensure that proposal/tender envelopes and packages are identified and numbered upon delivery, stamped with the date and time of receipt and immediately placed unopened in a locked 'proposal/tender box' or room for storage until the fixed date and time of opening.

A proposal/tender received after the appointed time for opening should be immediately returned unopened to the submitter, who will be identified by a process of elimination or, in the situation where there is more than one late offer, by removal of the outer wrapper to expose the name of the submitter. The returned offer should be accompanied by an explanatory letter giving the date and time of receipt.

15.4 Opening of proposals/tenders

The time fixed for the opening of proposals/tenders should be as soon as reasonable after the time for receipt. A recommended procedure would be for the closing time of receipt to be 12:00 noon on a specified date at the offices of the client/employer, and the official opening to commence at 14:00 on the same day at the same venue.

The evaluation committee will open the proposals/tenders.

Depending upon applicable laws and regulations or procedures adopted by the client/employer, the opening session may be carried out in one of a number of ways as appropriate to the circumstances.

- In public

The date, time and place of opening should be advertised in the press and notified to proposers/tenderers.

- Restricted

In the presence of those proposers/tenderers wishing to attend, all having been advised of the date, time and place of the opening.

Under both the in-public and restricted procedures any persons specifically invited by the client/employer may

also attend, as would representatives of any government or other authority who are required so to do.

- In private

Where the offers are opened in closed session by members of the evaluation committee. This procedure is not usually appropriate when public funding is involved.

At the date and time fixed for the official opening, the client/employer should check and display the sealed condition of each offer prior to its being opened.

Upon opening the proposals/tenders, the chairman of the evaluation committee should announce and record at the time that each envelope or package is opened:

- proposer's/tenderer's name;
- proposal/tender price;
- price of alternative proposals/tenders, if appropriate; and
- tender security (if required).

However, in the case of consultancy proposals under the quality-based selection approach (see Section 9.2) the proposal or alternative proposed price shall not

15 Receipt and Opening of Proposals and Tenders

be announced. The procedure for the receipt and opening of proposals/tenders in the second stage of a two-stage tendering procedure will follow that of the first stage.

If appropriate, the chairman of the evaluation committee may also announce that reservations or deviations appear to be included in a covering letter or other attached document. However he will not normally read out such reservations or deviations, and will certainly be unlikely to be able to determine their financial or other effect on the proposal/tender. This determination should be left to the evaluation process as described in Chapter 16/Chapter 17.

Following this, the chairman should announce and record the names of any proposers/tenderers disqualified owing to late or non-receipt of proposals/tenders.

At the opening stage, it is advisable to allocate a confidential code to each proposer's/tenderer's documents.

For example, for six offers the code could be in the series 1 to 6. Both original documents and all copies should be marked with the allocated code. The marking is recommended for both confidentiality purposes and convenience during the subsequent detailed evaluation period when, depending upon the size of the submissions, a number of evaluators may be employed.

The evaluation committee should check and record the general compliance of each submission with the instructions given in the proposal/tender dossier.

This preliminary check should confirm whether the following has been complied with or submitted:

- the proposal/tender had been correctly wrapped and sealed;
- the form of offer has been correctly completed and signed;
- the tender security has been provided (for tenders for works);
- the required details of a joint venture, if applicable, have been provided; and
- the correct copies of schedules and other documents, whether in hard copy or CD format, and as requested in the instructions.

Two members of the evaluation committee in attendance at the opening of offers will normally initial each page of each original document.

The evaluation committee should record on suitable forms a list of every original document submitted with each proposal/tender together with a note of the number of copies received of each document. The completed forms will provide a record of the proposal/tender opening session. The forms should be signed by the chairman of the evaluation committee and appropriate witnesses.

The original of each proposal/tender is normally placed in safe keeping by the chairman of the evaluation committee. Copies are used for evaluation.

The opening of offers should always be held on the fixed day that has been advised and should not be delayed.

FIDIC recommends that, unless specifically required by applicable laws and regulations or by financing or other institutions, the opening of offers using the in-public procedure should be avoided. The reason for this recommendation is that disclosure of the offered sums is likely to create unnecessary and premature speculation that the contract will be awarded to the submitter of the apparently lowest sum. As the technical and financial content of the offers has still to be evaluated, any speculation at this early stage will be premature and may be misleading, and subsequent correction may cause complications.

16 Evaluation and Recommendations: Consultancy Appointments

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Table 16.5 Evaluation for consultancy appointments: 3rd stage - Matrix example: combined scoring

16.1 General

The criteria used for evaluating proposals should concentrate on bringing out and emphasising skills and expertise relating to a tenderer's understanding of the client's needs in terms of creativity, innovativeness, relevant experience, mature judgement, and best practice, all in the best interest of the client in return for fair and adequate payment.

As mentioned in Chapter 7, the selection of a consultant based on quality ultimately provides the best value for the client. Experience has shown that the competence of the consultant is the key to an efficient, cost-effective and successful project. The Quality-Based Selection (QBS) process encourages consultants to continually improve their skills and strive for creativity and innovation because their selection depends on it. The client is the beneficiary of these best practices at competitive fees.

Clients should note that a consultancy appointment is not to be viewed in the same light as a contract for the construction of a facility or for the supply of materials or equipment. The appointment of a consultant can be compared to the engagement of a medical doctor or a lawyer in that the employer or client is appointing a professional adviser to give the best possible advice based on his professional skill, education and practical experience. Whereas a contractor constructing a project is primarily a 'business-man' intent upon

making a reasonable financial profit from his participation in the project, the consultant's main interest should be to impart to the project good professional advice aimed at ensuring successful execution of the project for the benefit of his client, i.e., the employer. As for the client employing a doctor or a lawyer, it is foolhardy to look blindly at the cheapest. The client should consider first the documented ability of the doctor or lawyer, and thereafter expect to reimburse him at a reasonable level. The same applies to the appointment of a consulting engineer.

Detailed guidance on the selection of consulting engineers together with both the advantages to be gained in the adoption of the quality-based selection procedure and the disadvantages of other procedures, is to be found in the publication FIDIC Guidelines for the Selection of Consultants.

However, despite FIDIC's advice to the contrary, where established procurement procedures require prices for professional services to be compared, guidance is also given in the FIDIC publication mentioned above.

The FIDIC Client/Consultant Model Services Agreement (the White Book) may be used to establish a fair and sound relationship between the client and the consultant, and will protect both parties.

16.2 Quality-based selection

Section 7.6 explained that, if the quality-based selection method is to be adopted, the highest ranked

applicant at the end of the prequalification procedure will be invited to negotiate a consultancy services agreement.

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Information to be provided to the consultant prior to the start of negotiations should include:

- The scope of services required.
- Terms of reference and supporting documents.
- List of additional information to be provided by the consultant.
- Date by which an agreement is to be concluded.
- Expected start date and programme for the provision of the services.
- Arrangements, as may be required, for visiting the site of the proposed works.

All the criteria considered at the time of prequalification (see Chapter 7) should be reviewed in depth during the negotiations to ensure that written prequalification information submitted by the preferred consultant is not only comprehensive but up-to-date.

The negotiations for the fee structure will be based on an agreed scope of services which takes into consideration commercial and legal requirements, including time schedules, payment terms and appropriate risk allocations between the parties.

The client may refer to fee schedules by various FIDIC Member Associations and/or client bodies to assist in the negotiations.

If agreement cannot be reached with the highest ranked prequalified applicant, the negotiations shall be terminated and commenced with the second ranked applicant, and so on down the list until agreement is finally reached.

16.3 Evaluation of proposals with price comparison

Normally, the evaluation of proposals is undertaken by an appointed evaluation committee. The formation of an evaluation committee is described in Section 15.2. It is important that the evaluation committee is appointed early and that all necessary arrangements for carrying out the evaluation work in a confidential manner are in place before the date for the opening of proposals.

Evaluations in which the financial offers are considered in the comparisons of proposals may be considered in three stages: the first stage checks the eligibility of each applicant and the completeness of the proposals; the second stage considers the engineering and managerial capabilities of the applicants; the final stage compares capabilities with the financial offers.

1st stage: Eligibility, completeness of proposal and financial stability

While the eligibility check would have been carried out for prequalification, it is advisable to check again to ensure that circumstances have not changed. An initial task is also to check the completeness of each proposal to ensure that all documentation required has been correctly submitted.

Thereafter, it is necessary to check the financial

stability of each applicant. Again, this check would have been made previously for prequalification, but it is inevitably worthwhile to ensure that no adverse movement has occurred to the financial status of an applicant.

The committee should be satisfied that the applicant has the financial resources and backing to meet salaries, wages, materials, supplies, and all other costs until the forecast payments become due under a consultancy services agreement and to meet all other ongoing commitments during the period of the consultancy services.

As a guide the committee will expect the total annual turnover of the applicant to be on the order of at least three times the anticipated annual turnover of the services. Failure to meet the minimum financial requirements should result in the applicant being excluded from further evaluation. These checks complete the first stage of the evaluation.

The results of the first stage analysis of eligibility, completeness and financial stability can be conveniently recorded on an evaluation matrix form by marking each applicant as either 's' for suitable or 'u' for unsuitable against the described criteria, an example of which is shown in Table 16.1. Any applicant marked as unsuitable against any criterion should be rejected at this stage.

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2nd stage: Engineering & managerial capabilities

Careful comparison of the proposals is then required in the second stage of the analysis to evaluate the engineering and managerial capabilities by use of a subjective scoring system to rank the applicants in order of merit.

A convenient method of comparing proposals in the second stage analysis is to record subjective scores against criteria representing various aspects of the submissions. The resultant scores are then suitably weighted. An example of use of this method is given in the evaluation matrices shown in Tables 16.2 and 16.3.

The criteria in the example are:

- Organisation and management
- Available resources: design capability
- Services to be subcontracted
- Experience: relevant projects completed
- Experience: relevant projects in progress
- Experience: geographical
- General suitability: language
- Quality assurance system; health & safety; environmental policy

In Table 16.2 and 16.3 it is considered for this example that the subcontracting of services would be

Proposal Evaluation Criterion	Applicant Code				
	1	2	3	4	5
Eligibility and Competence of the Tenderer	s	s	s	s	s
Financial Stability	s	s	s	s	s
Notes	1 An 's' is marked for suitable and a 'u' for unsuitable. 2 Any tenderer with a 'u' mark against any criterion should be rejected. 3 In this example, all tenderers are taken forward to Stage II.				

Table 16.1 – Evaluation of proposals for consultancy appointments
1st stage - Eligibility, completeness of proposal and financial stability
 Matrix example: suitable/unsuitable marking

Proposal Evaluation Criterion	Applicant Code					Weighting to Apply
	1	2	3	4	5	
Organisation and management	75	75	95	95	80	20%
Available resources: design capability	60	85	95	95	70	35%
Services to be subcontracted	15	25	5	5	0	-10%
Experience: relevant projects completed	90	60	85	85	90	20%
Experience: relevant projects in progress	85	95	85	85	85	20%
Experience: geographical	35	45	50	50	65	5%
General suitability: language	30	25	35	40	25	5%
Quality assurance system; health and safety; environmental policy	50	40	50	50	60	5%
Notes	1 Scores are the average scores of all evaluators for each proposal under each criterion. 2 The effect of the application of the weighting percentages is shown in Table 16.3. 3 The criteria and the weighting percentages to be applied are examples only: the particular circumstances of the proposed project will define the requirements for possible alternative or additional criteria and weightings to be included in a proposal dossier.					Total: 100%

Table 16.2 – Evaluation of proposals for consultancy appointments
2nd stage - Engineering and management capability
 Matrix example: average of evaluators' scores

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detrimental to the quality of services to be provided and, accordingly, has been given a negative weighting. While negative weighting and scoring will not generally be necessary, the example demonstrates how negative weighting may sometimes be appropriate.

Where appropriate and feasible, discussions may be held with applicants. This provides an opportunity of meeting and assessing the personal capabilities of key personnel who would be intimately associated with the project.

The criteria above are shown on the left-hand side of the matrices while columns are provided for entries of the scores against the criterion under each of the applicants numbered 1 to 5 (five applicants are considered in this example). The scoring against each criterion is in the range 0 - 100, 100 being 'exceptional' and going down through the ranges of 'very good', 'good', 'average', 'poor' and 'weak' to 0 showing 'no data'.

It is good practice for the same evaluators, who may be more but never less than two, to score each criterion for each proposal and for the evaluators' scores for each separate criterion for each proposal to be averaged. This method avoids possible distortion in scoring values, which might be caused by different evaluators marking relatively high or low. To assist in the comparison of proposals, it is also recommended that the evaluators score all proposals for a particular criterion before the next criterion is considered.

Each criterion will have been previously weighted. The average score against each criterion for each proposal is then adjusted by the weighting percentage. In the example given in Table 16.3, the effect of the weighting percentages is shown in the matrix. The criteria and weightings may, of course, be adjusted to suit the circumstances of the project.

3rd stage: Capabilities and proposal prices

For scoring comparison with the proposal sums, the engineering and management scores are then calculated as follows:

- the proposal with the highest percentage is given a technical score of 100;
- the other proposals are scored by the ratio:

$$\text{Technical score of proposal under consideration} = \frac{[(\text{weighted score of proposal under consideration}) / (\text{weighted score of best technical proposal})] \times 100}$$

From the engineering and managerial scores shown in Table 16.3 the best three proposals, namely 3, 4 and 5, are short-listed and taken forward for comparison of their financial scores.

Consideration has now to be given to the financial aspects of the proposals. It is necessary to check that the fee structures, on which the rates and prices and totals of the proposal sums have been submitted, are acceptable for comparison purposes.

Applicants should be advised of any arithmetic errors in their proposals. Any other clarifications should be sought from the applicants as necessary, such as, for example, the reasons for any abnormally low-priced proposals.

From the analyses of the proposal sums the assessed effective total proposal prices from the applicants are assessed. The assessed total prices are then calculated as follows:

- the lowest assessed total price is given a financial score of 100;
- the other proposals are scored by the inverse ratio:

$$\text{Financial score of proposal under consideration} = \frac{[(\text{lowest total assessed total price}) / (\text{assessed total price being considered})] \times 100}$$

Using the method of scoring explained above, the financial scores and their relative rankings are shown in Table 16.4. The most economically advantageous proposal is identified by combining the evaluated engineering and managerial scores with the financial scores on a 90/10 basis.

In the example shown in Table 16.5 it will be seen that, after adding the engineering and technical scores multiplied by 0.90 to the scores of the financial scores multiplied by 0.10, applicants numbered 3 has the most economically advantageous proposal. However, it is also to be noted that this applicant is neither the highest ranked applicant in the engineering and managerial evaluation nor the applicant with the lowest assessed total price.

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Proposal Evaluation Criterion	Applicant Code					Weighting to Apply
	1	2	3	4	5	
Organisation and management	15.00	15.00	19.00	19.00	16.00	20%
Available resources: design capability	21.00	29.75	33.25	33.25	24.50	35%
Services to be subcontracted	-1.50	-2.50	-0.50	-0.50	0	-10%
Experience: relevant projects completed	18.00	12.00	17.00	17.00	18.00	20%
Experience: relevant projects in progress	17.00	19.00	17.00	17.00	17.00	20%
Experience: geographical	1.75	2.25	2.50	2.50	3.25	5%
General suitability: language	1.50	1.25	1.75	2.00	1.25	5%
Quality assurance system; health and safety; environmental policy	2.50	2.00	2.50	2.50	3.00	5%
Total average weighted score:	75.25	78.75	92.50	92.75	83.00	
Notes	1 The proposal with the highest average technical and managerial weighted score, applicant 4 in this example, is given a final evaluation score of 100 and the remaining applicants are given a final engineering and managerial score in the ratio of (actual average weighted score/highest average weighted score) x 100, as shown below. 2 In this example the three highest scoring applicants numbers 4, 3 and 5, are short-listed and taken forward for comparison with the financial scores.					
Applicant Code:	1	2	3	4	5	
Total weighted score:	81.13	84.91	99.73	100.00	89.49	

Table 16.3 – Evaluation of proposals for consultancy appointments
2nd stage - Engineering and management capability
Matrix example: application of evaluators' scores

Applicant Code	Assessed Total Proposal Price, \$USD	Financial Score	Financial Ranking
1	389,422	97.44	2
2	392,678	96.64	4
3	390,648	97.14	3
4	408,655	92.86	5
5	379,472	100.00	1

Table 16.4 – Evaluation for consultancy appointments
3rd stage - Financial scoring

Applicant Code	Engineering & Managerial Score	Financial Score	Engineering & Managerial Score x 0.90	Financial Score x 0.10	Overall Final Combined Score
1	81.13	97.44	73.01	9.74	82.75
2	84.91	96.64	76.42	9.66	86.08
3	99.73	97.14	89.76	9.71	99.47
4	100.00	92.86	90.00	9.29	99.29
5	89.49	100.00	80.54	10.00	90.54

Table 16.5 – Evaluation for consultancy appointments
3rd stage - Matrix example: combined scoring

Note
In this example, all applicants are taken forward for comparison and evaluation with their engineering and management capability.

Note
In this example, applicant 3 is considered to be the most economically advantageous proposal.

16 Evaluation and Recommendations Consultancy Appointments

16.4 Award recommendations

Upon completion of the quality-based selection process or, alternatively, where price is an element in the selection process, a report of recommendation for the award of a consultancy services agreement will normally be prepared for submission to the client by the evaluation committee.

The report will contain:

- a summary of the recommendations followed by a detailed text of the object, method and conclusions of the quality-based selection negotiations;

or, where a number of proposals have been analysed:

- proposals opening (as appropriate) and initial review;
- evaluation process/procedure;

- reasons for rejection of proposals; and
- recommended proposal with reasons for recommendation.

If the client accepts the recommendation he may proceed to prepare and sign an agreement for the required services with the recommended consultant.

In the process of awarding the consultancy agreement, relevant provisions set out in Chapter 19 concerning the award of contracts for works may be applicable. However, it is not normal for the consultant to be asked to provide a performance security as described in Section 19.5.

16.5 Rejection of all proposals

In the unlikely event of rejection of all applications and proposals, the applicants should be advised of the reason. If new proposals are to be invited, the client should carefully review the causes leading to the rejection and should consider modifying the prequalification documents or proposal dossiers or adding to the list of applicants before inviting new proposals. It is also recommended that any new proposal dossiers should be updated to incorporate any modifications previously issued as addenda to proposal dossiers and/or replies to applicants' queries.

Proposals should not be rejected and completely new proposals invited against the original proposal dossiers for the sole purpose of trying to obtain lower prices.

Subject to any particular conditions or regulations governing the formation of agreements, if the client is

considering the rejection of all proposals because the lowest priced proposal exceeds the cost estimates or the client's budget by a significant amount, the client may negotiate with the most favourably placed applicants.

In conducting such negotiations, the guiding principle must be to ensure that the confidentiality and fairness of competition is preserved. In the event of a satisfactory agreement not being negotiated, all proposals may be rejected.

Rejection of all proposals is also justified when:

- proposals are not substantially responsive to the issued proposal dossier; or
- too few proposals are received to ensure competition.

16.6 Notification to unsuccessful applicants

Upon commencement of the consultancy services, the client should promptly notify the other successful prequalification applicants held in reserve (for

a quality-based selection process) or other applicants in writing that their proposals have been unsuccessful.

17 Tender Evaluation and Recommendations: Contracts for Works

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17.1 Evaluation committee

Tenders are confidential and all tender evaluation work should be carried out confidentially. The only exception to this is where the tender opening is held in public and the names of each tenderer and their tender sums are announced. However, even in such cases all subsequent tender assessment and evaluation work is to be carried out confidentially.

Normally the evaluation of tenders is undertaken by an appointed evaluation committee. The formation of an evaluation committee is fully described in Section 15.2, to which the reader is referred. It is important that the evaluation committee is appointed early and that all necessary arrangements for carrying out the evaluation work in a confidential manner are in place before the date for the opening of tenders.

An initial task of the chairperson of the evaluation committee will be to inform the members and co-opted members of the evaluation committee of their specific duties and to stress to them the importance of confidentiality during the whole tender evaluation process. At this early stage the chairperson will usually find it convenient to appoint a coordinator or secretary to organise and manage all the subsequent administration tasks throughout the whole evaluation and recommendation processes. This work should be carried out in an orderly manner to a predetermined time schedule leading to contract award.

In Section 8.2.4, a description is given of the competitive dialogue method of obtaining tenders for large and complex contracts. With this method, technical solutions and specifications are jointly developed through progressive dialogue with selected contractors which then form the bases for the submission of priced tenders. The submissions may involve a two-stage tender process in which the technical submissions are considered and clarified through further discussions prior to the submission of final prices. Whichever method is adopted the final evaluation of tenders will follow the general procedures outlined in this chapter.

If there is a two-stage tendering procedure, for example for a contractor-designed turnkey project, when the first stage deals with outline technical proposals only, the procedure described in Section 17.2.2 would apply in the second stage, which would include any amended technical proposals together with the tender price and other financial proposals.

Similarly, when the two-envelope tendering method is used, the procedure described in Section 17.2.2 would apply after the engineering and technical group has completed its evaluations and upon opening of the second envelope

17 Tender Evaluation and Recommendations: Contracts for Works

17.2 Tender evaluation tasks

The tasks of evaluation of tenders for works can conveniently be carried out under the following headings:

1 Administrative and contractual

Typically this group will form the lead group headed by the appointed coordinator or secretary. This group will undertake and be responsible for the general administration of the committee.

This group will deal with tenderers' contractual submissions and tender qualifications and modifications. The group will liaise closely with the other groups.

2 Financial and pricing

This group will check for arithmetic errors in the tenders, review rates and prices and will examine financial offers (if applicable), calculate future comparative cash-flow requirements and assess comparative final cost predictions including operating and maintenance costs.

3 Engineering and technical

This group will study the relative proposed time

programmes and construction and installation methods of the tenderers.

It is normal good practice for the engineering and technical group to be restricted from gaining access to any pricing or other financial information about any of the tenders during the period of their evaluation. This ensures that the evaluation of technical matters is not influenced by the evaluators knowing the lower or higher priced tenders.

Significant matters to be scrutinized in the tenders would have been explained in the instructions to tenderers to assist tenderers in the preparation of their tenders. These matters would include the methods of tender evaluation and the particular factors which influence the tender analyses. The objective of the evaluation is to lead to a fair and objective judgment.

A method of evaluation recommended by FIDIC is for a contract to be awarded to the most economically advantageous tender established by weighting the evaluated engineering and technical content of a tender against its evaluated financial cost on an 80/20 basis as described in Section 17.6.

17.2.1 Administrative and contractual group tasks

Headed by the tendering coordinator and working closely with the chair of the evaluation committee, this group will carry out and take responsibility for all administrative tasks, including making available tender documentation for and liaison with other groups of the committee. Ultimately, based on its own analyses and those of the other groups, it will normally prepare the final report and recommendation for contract award for submission to the employer.

Depending upon the particular arrangements being made, the group may be responsible for the following administrative matters:

- Maintenance of the records of the tender opening meeting (see Chapter 15).
- Preparation of a detailed tender evaluation time programme – setting out interim and final report dates and taking particular note of the tender validity period and the available evaluation resources.

- Careful checks to ensure that all the submitted copies of each tender document are exactly the same as the original tender document.
- Ensuring that each original tender is held securely and safely – and not used for tender evaluation by any member of the evaluation committee.
- Maintenance of records of the names and times of all evaluation committee members and co-opted members entering and leaving the tender evaluation area.
- Obtaining and maintenance of all signed 'declarations of impartiality and confidentiality' from evaluation committee members and co-opted members, if such declarations are required by the employer.
- Making additional copies of tender submissions (or parts of tender submissions), as may be required by members of the different groups for their evaluation work, and maintaining a record of the additional copies produced.
- Ensuring that no part of a tender submission (or a copy), which is made available to a group member

17 Tender Evaluation and Recommendations: Contracts for Works

specifically engaged in technical evaluations, bears either the name of a tenderer or any tendered rate, price or sum.

In this latter regard it is important to note that those parts of tenderers' covering letters involving price or financial matters should be blacked-out before being handed to members of the engineering and technical evaluation group or, alternatively, restricted to evaluation by the administrative and contractual group and the financial and pricing group only. This is necessary to avoid undue influence over the technical evaluation of the tenders.

- Preparation and issue of any correspondence and communication with tenderers regarding clarification of aspects of a tender.
- Preparation of interim reports as may be called for by the employer during the tender evaluation.
- Preparation of the final report and recommendation for contract award for submission to the employer.
- Preparation of correspondence to tenderers whose tenders are rejected.

Specific tender evaluation tasks to be undertaken by

17.2.2 Financial and pricing group tasks

Working in close liaison with the administrative and contractual group, the financial and pricing group will be responsible for the tasks listed below and will report, normally in writing, to the administrative and contractual group.

Tasks of the financial and pricing group will include reviews and analyses including:

- checking for possible pricing errors:
where arithmetical errors are found, these should be corrected in accordance with the provisions in the instructions to tenderers;
- identifying pricing anomalies – either abnormally high or low;
- valuation of deviations;

7.2.3 Engineering and technical group tasks

Working without knowledge of either the tender rates and prices or other financial proposals which may be included in the tender submissions, this group will analyse and make comparative assessments of the engineering and technical aspects of the tenders, as listed below:

- time programme;
- construction methods/temporary works;

the administrative and contractual group will begin by a review of all tenders. The review will scrutinise and check general compliance with the instructions to tenderers to ensure that the tenders are consistent with the invitation to tender and are without errors or omissions.

The scrutinies will include:

- form of tender;
- tender security;
- for open tenders, checking that the prequalification information is complete;
- tender validity;
- guarantees: e.g., parent company;
- securities: e.g., performance; advance payment;
- warranties: e.g., collateral; contractor design;
- insurances;
- record of litigation and arbitration history.

Further procedural advice and recommendations on how this group should examine and evaluate any tender qualifications and alternative tenders are given in Sections 17.3 and 17.4 below.

- advances and downpayments;
- capital cost;
- discounted cash flow and net present value;
- time programme of payments;
- costs of alternative tenders;
- retentions;
- financing arrangements;
- financial offers (if applicable);
- payment currencies;
- securities;
- interest rates;
- contract price adjustment proposals;
- daywork rates; and
- operating and maintenance costs (as may be appropriate).

- plant and equipment;
- materials compliance;
- specification compliance;
- qualifications to the tender dossier, as may be advised by the administrative and contractual group;
- alternative tenders (if appropriate);
- contractor-design proposals (if appropriate);
- management;

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- staff: experience and qualifications;
- labour: build-up; run-down and source;
- health and safety policy and record;
- quality assurance;
- compliance with local regulations, e.g., labour, building, environment.

17.3 Tenders containing qualifications

A qualified tender is one where the tendering contractor does not provide an offer fully complying with the terms and conditions included in the tender dossier but submits a tender that in some way deviates from the required terms and conditions. Such tenders containing qualifications cause the employer difficulty when reviewing tenders and can inhibit fair evaluation by rendering the tender unable to be readily compared with the others.

The objective when employers prepare tender dossiers should be to reduce the likelihood of tenderers wishing to submit qualified tenders. This is achieved by the preparation of tender dossiers that are unambiguous and by anticipating and avoiding terms and conditions that are inappropriate for the scope of the contract or the project circumstances.

The employer often states in the instructions to tenderers that tenders containing qualifications may be rejected. There may, however, be circumstances where it is in the best interests of the employer that he should consider and assess the qualifications in tenders.

If the employer anticipates that tenders may contain qualifications, to facilitate comparison of tenders he may in the instructions to tenderers:

- provide a schedule for tenderers to list, describe and price qualifications; and
- require tenderers to submit a conforming tender as well as the alternative tender that includes qualifications.

Where a tender contains qualifications, the tenderer should normally be asked for them to be

withdrawn. Alternatively and where the monetary value of a qualification is not provided by the tenderer, the value of the qualification should be determined by the employer and added to or subtracted from the tender price to arrive at the anticipated real cost of the tender for comparison with other tenders received. The calculation should be carried out using information contained in the tender or, if appropriate information is not given, by applying commercial rates and prices.

If the nature of the qualifications is such that it is impossible to determine their monetary value, it is recommended that the tender should be judged to be substantially unresponsive and returned to the tenderer.

The procedure for dealing with qualifications will depend on the employer's policy towards tenders which do not comply fully with the instructions to tenderers. The procedure described above is the one recommended by FIDIC as most likely to ensure fairness to both employers and tenderers and in the long term to ensure that employers receive compliant competitive tenders. Certain employers, particularly those who receive a number of tenders each year, may prefer to adopt a stricter approach and to reject any tenders which contain qualifications. If this is the case, a statement to this effect should be included in the instructions to tenderers and this procedure should then be strictly observed.

Where financing institutions are involved, their procedures may prescribe strict rules for dealing with qualifications and in particular are likely to prohibit any change in tender price.

17.4 Alternative tenders

The instructions to tenderers should have stated the policy regarding alternative tenders. If alternative tenders are to be considered, the employer should examine the contractual, engineering and technical

aspects of any alternative submitted to see if it is acceptable. If it is, then its cost should be evaluated and ranked in the order of evaluated costs. The finally accepted tender for an alternative design may not be

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that from the tenderer submitting the most advantageous conforming tender and the employer should be permitted to accept the alternative design if it is in his interests to do so. However, alternatives should only be considered if a compliant tender has also been submitted, otherwise there is a risk that

all tenderers might submit tenders for alternative designs, none of which might be acceptable to the employer. The employer should make a detailed assessment of all conforming tenders using the evaluation criteria specified in the tender documents.

17.5 Tender evaluation methods

While the foregoing sections and sub-sections of this chapter describe the matters to be considered in the evaluation of tenders, some recommendations are needed to provide evaluators with suggestions for the methods to be used for making comparisons between tenders and between the different aspects and issues contained within tenders.

The evaluation process is typically carried out in two, or perhaps three, stages. The first stage of evaluation could involve confidential interim reports from the evaluation groups to the chairman of the evaluation committee. On the basis of

the reports the committee will reduce the total number of tenderers to a shortlist of, say, three or four.

At this stage, the employer may wish to seek clarification of information contained in the short-listed tenders. The employer should not raise queries in such a manner as to elicit supplementary information beyond the minimum required for clarification and should state that any such further information given will be disregarded. At the same time, a summary of any arithmetical correction made by the employer should be submitted to the respective tenderers for agreement.

17.5.1 Administrative and contractual group methods

A list of every original document submitted with each tender together with a note of the number of copies received of each document will normally have been recorded by the tender evaluation committee, as suggested in Section 15.4.

It is recommended that comprehensive notes of the details of any errors, omissions, non-compliances, shortcomings, qualifications, and alternatives are made, as it will be necessary to advise the other evaluation groups of these as appropriate for the possible need to clarify these with the relevant tenderer. It is particularly important to record all

qualifications within the tenders which should be dealt with as described in Section 17.3.

Scrutiny of all the particular documents listed in Section 17.2.1 should be carried out with care to ensure that they have been fully and correctly completed and endorsed.

Tenders found to be substantially unresponsive should be rejected and returned to the tenderers.

17.5.2 Financial and pricing group methods

Tenderers should be advised of any arithmetic errors in their tenders and other clarifications should be sought as necessary. The group should carry out net present value and discounted cash-flow calculations, taking into account funding offers, if applicable, and requirements for advance payments, for the overall comparison of the financial offers of the tenders.

In addition to potential front-end loading of tenders and possible abnormally low-priced tenders, which may require clarification and/or confirmation from the tenderers, the principal issues which have to be analysed by the group both for compliant and alternative tenders include:

- bills of quantities/pricing document;
- daywork rates and prices;
- contract price adjustment formulae;
- down payments and projected cash-flow schedules;
- funding offers (if applicable);
- financial effect of acceptable qualifications;
- net present values and discounted cash flows; and
- risk.

From the analyses the assessed effective total tender price for each tender is established. The lowest assessed total tender price is given a financial score of 100. The other tenders are scored by the inverse ratio:

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$$\begin{aligned} &\text{financial score of tender under consideration} \\ &= (\text{lowest assessed total tender price}) / \\ &\quad (\text{assessed total tender price being considered}) \times 100 \end{aligned}$$

In the example shown in Section 17.5.3, four tenders, namely A, B, E, and H, with the best engineering and technical evaluation scores are short-listed and chosen for consideration with their total assessed tender prices. Using the method of scoring explained above, the financial scores of the four tenders are shown in Table 17.4.

On completion of the above procedures the tenders should be placed in order of evaluated cost.

The financial scores of all tenders are then made available for the overall evaluation described below in Section 17.6.

17.5.3 Engineering and technical group methods

Typically it is the engineering and technical content of tenders which causes the greatest concern in the evaluation process. A method of comparison recommended by FIDIC is described in this section.

A convenient method of comparing tenders is to record subjective scores against criteria representing various aspects of the submissions. The resultant scores are then suitably weighted. An example of this method using a matrix is given below.

The subjects of an example evaluation form shown in Table 17.1 provide the criteria as listed below

- Organisation structure: key personnel
- Resources: labour and subcontractors
- Resources: plant and equipment
- Time schedule: programme
- Method statements
- Commitments: other contracts in progress
- Quality assurance system
- Health and safety
- Environmental policy
- Litigation and arbitration history.

The criteria listed above are shown on the left-hand side of the form while columns are provided for entries of the scores against the criteria under each of the tenderers A to H (eight tenderers in this example). The scoring against each criterion is in the range 0-100, 100 being 'exceptional' and going down through the ranges of 'very good', 'good', 'average', 'poor' and 'weak' to 0.

It is good practice for the same evaluators, who may be more but never less than two, to score each criterion for each tender and for the evaluators' scores

for each separate criterion for each tender to be averaged. This method avoids possible distortion in scoring values, which might be caused by different evaluators marking relatively high or low. To assist in the comparison of tenders, it is also recommended that the evaluators score all tenders for a particular criterion before the next criterion is considered.

Each criterion will have been previously weighted. The average score against each criterion for each tender is then adjusted by the weighting percentage. In the example given in Table 17.2 the effect of the weighting percentages is shown.

The tenderer with the highest percentage is then given a technical score of 100. The other tenders are scored by the ratio:

$$\begin{aligned} &\text{Technical score of tender under consideration} \\ &= (\text{weighted score of tender under consideration}) / \\ &\quad (\text{weighted score of best technical tender}) \times 100 \end{aligned}$$

The criteria and weightings may, of course, be adjusted to suit the circumstances of the project. Where appropriate and feasible, discussions may be held with applicants. This provides an opportunity of meeting and assessing the personal capabilities of key personnel who would be directly involved with the contract.

From the engineering and technical scores obtained the best four tenders, namely A, B, E, and H, are short-listed and taken forward for comparison with the financial scores.

Tender Evaluation Criterion	Tenderer Codes							Weighting to Apply
	A	B	C	D	E	F	G	
Organisation structure: key personnel	87	90	89	81	92	76	79	10.0%
Resources: labour and subcontractors	76	87	67	66	80	60	78	10.0%
Resources: plant and equipment	85	76	89	53	87	65	85	12.5%
Time schedule: programme	83	76	67	67	76	70	83	15.0%
Method statements	92	85	78	76	92	53	87	20.0%
Commitments: other contracts in progress	67	69	56	76	50	56	67	10.0%
Quality assurance system	89	59	90	58	83	87	89	5.0%
Health and safety	80	87	85	79	84	76	74	5.0%
Environmental policy	79	70	83	76	84	85	67	5.0%
Litigation and arbitration history	76	76	67	56	90	83	57	7.5%
Notes	1 Scores are the average scores of all evaluators for each tender under each criterion. 2 The criteria and the weighting percentages to be applied are examples only: the particular circumstances of the proposed contract will define the requirements for possible alternative or additional headings and weighting percentages to be included with the tender dossier. 3 The effect of the application of the weighting percentages is shown in Table 17.2.							

Table 17.1 – Evaluation of tenders for works

Matrix example: average of engineering and technical evaluators' scores

Tender Evaluation Criterion	Tenderer Codes							Weighting Applied
	A	B	C	D	E	F	G	
Organisation structure: key personnel	8.70	9.00	8.90	8.10	9.20	7.60	7.90	10.0%
Resources: labour and subcontractors	7.60	8.70	6.70	6.60	8.00	6.00	7.80	10.0%
Resources: plant and equipment	10.63	9.50	11.13	6.63	10.88	8.13	10.63	12.5%
Time schedule: programme	12.45	11.40	10.05	10.05	11.40	10.50	12.45	15.0%
Method statements	18.40	17.00	15.60	15.20	18.40	10.60	17.40	20.0%
Commitments: other contracts in progress	6.70	6.90	5.60	7.60	5.00	5.60	6.70	10.0%
Quality assurance system	4.45	2.954	4.50	2.90	4.15	4.35	4.45	5.0%
Health and safety	4.00	4.35	4.25	3.95	4.20	3.80	3.70	5.0%
Environmental policy	3.95	3.50	4.15	3.80	4.20	4.25	3.35	5.0%
Litigation and arbitration history	5.70	5.70	5.03	4.20	6.75	6.23	4.28	7.5%
Average engineering and technical weighted score:	82.58	79.00	75.91	69.03	82.18	67.06	78.66	83.23
Final engineering and technical evaluation scores:	99.22	94.92	91.20	82.91	98.74	80.56	94.50	100.00
Notes	1 The tender with the highest average engineering and technical weighted score, in the example tender H, is given a final evaluation score of 100; remaining tenders are given a final engineering and technical score in the ratio of actual average score/highest average score, as shown in the final row above. 2 In this example, the four highest scoring tenderers H, A, E, and B are short-listed and taken forward for consideration with the financial offers. 3 The criteria and the applied weighting percentages will have been set out in the tender dossier and cannot be amended at the tender evaluation stage.							

Table 17.2 – Evaluation of tenders for works

Matrix example: application of weighting percentages to engineering and technical evaluators' scores

Tender Code	Total Tender Price, USD	Financial Score	Tender Code	Engineering & Technical Score	Financial Score	Engineering & Technical Score x 0.80	Financial Score x 0.20	Overall Final Combined Score x 0.20
A	26,894,224	100.00	A	99.22	100.00	79.38	20.00	99.38
B	28,879,437	93.13	B	94.92	93.13	75.94	18.62	94.56
E	27,635,864	97.32	E	98.74	97.32	78.99	19.46	98.45
H	27,135,864	99.11	H	100.00	99.11	80.00	19.82	99.82

Table 17.3 – Evaluation of tenders for works

Financial scoring

Table 17.4 – Evaluation of tenders for works

Matrix example: combined scoring. In this example, tender H is considered to be the most advantageous offer.

17 Tender Evaluation and Recommendations: Contracts for Workss

17.6 Overall adjudication of tenders and recommendations for award

The most economically advantageous tender is identified by combining the evaluated engineering and technical assessments with assessed tender prices on an 80/20 basis.

In the example shown in Table 17.4 it will be seen that, after multiplying the engineering and technical scores by 0.80 and the scores of the tender prices by 0.20, the tender with the lowest assessed tender price, tender A, is not ranked as the most economically advantageous tender: the first ranked tender is H, the highest ranked in the engineering and technical adjudication.

Upon completion of the adjudication of tenders the evaluation committee will normally prepare a report with a recommendation for award to the employer. The tender evaluation report should contain as a minimum the following:

- Executive summary
- Introduction

- Prequalification - process and outcome
- Description of the tender process
- Tender evaluation
 - Receipt and opening of tenders
 - Administration and contractual matters
 - Qualifications and contractual issues
 - Alternative tenders
 - Financial analysis and price comparisons
 - Engineering and technical appraisal
 - Conclusions
 - Preferred tenderer
- Recommendation for award
- Annexes
 - Minutes of meetings of the tender committee
 - Minutes of the final meeting of the prequalification committee
 - Report of the tender opening meeting
 - Forms used for tender evaluation
 - Completed compliance check forms
 - Copies of clarification correspondence with tenderers
 - Price comparison and analysis sheets
 - Completed technical review summary form.

17.7 Rejection of all tenders

In the unlikely event of rejection of all tenders, the tenderers should be advised of the reason. If new tenders are to be invited, the employer should carefully review the causes leading to the rejection and should consider modifying the tender documents or adding to the list of selected tenderers before inviting new tenders. It is also recommended that any new tender documents should be updated to incorporate any modifications previously issued as addenda to the tender dossier and/or replies to tenderers' queries.

Tenders should not be rejected and completely new tenders subsequently invited against the original tender dossiers for the sole purpose of trying to obtain lower prices.

The release of tender securities should not be withheld, even if it is the intention of the employer to invite some or all of the tenderers to re-tender against new tender dossiers.

Subject to any particular conditions or regulations governing the award of contracts, if the employer is considering the rejection of all tenders because the lowest tender exceeds the cost estimates or the employer's budget by a significant amount, the employer may negotiate with the most favourably placed tenderers.

In conducting such negotiations, the guiding principle must be to ensure that the confidentiality and fairness of tendering is preserved. In the event of a satisfactory contract not being negotiated, all tenders may be rejected.

Rejection of all tenders is also justified when:

- tenders are not substantially responsive to the tender dossiers; or
- too few tenders are received to ensure competition.

18 Award of Contracts: Consultancy Appointments

18.1 Letter of acceptance

18.2 Negotiations

18.3 Letter of intent

18.4 Pre-award work agreement

18.5 Performance security

18.6 Contract agreement

18.7 Notification to unsuccessful consultants

Table

Table 18.1 Checklist of documents forming part of the contract

18.1 Letter of acceptance

The client will normally seek to enter into a consultancy services agreement with the proposer who appears to have the capability and resources to carry out the agreement effectively, whose proposal has been determined to be responsive to the proposal dossier and who has offered (all aspects taken into consideration) the most favourable and economically advantageous proposal.

The client should notify the preferred consultant in writing that the proposal has been accepted and draw attention to any arithmetical errors which were corrected during the evaluation process.

The award must be made during the period of proposal validity or any extension thereto accepted by the consultant in his proposal.

At the latest before taking the award decision, the client should have ensured that there is no alert relating to prior misdemeanours by the selected consultant.

If the proposal does not require any clarification then the client may simply enter into the agreement by a signed letter of acceptance.

Generally, however, the client and consultant need to reach agreement with regard to any outstanding matters, including remuneration and the method of payment. The clarification of aspects of the proposal may also be required before the proposal can be accepted, and the agreement signed. The FIDIC Client-Consultant Model Services Agreement (the White Book) does not specify the format of the acceptance.

Some clients send a formal letter of invitation to negotiate to the selected consultant. Following negotiation, and after agreement has been reached with regard to any outstanding matters, the client should send a letter of acceptance to the preferred consultant, indicating that he has accepted the consultant's proposal. What has been accepted

may not be the consultant's original proposal, but something that has been modified in the process of negotiation.

It is therefore important that the letter of acceptance indicates clearly what has finally been accepted, both in terms of scope of services and remuneration, as well as the legal framework for the agreement between the parties. The letter of acceptance should:

- refer to the agreement and the services to be provided;
- refer to and attach any agreed memorandum of understanding (or memorandum of pre-award clarifications);
- accept the proposal as clarified/amended in discussions and possibly in an agreed memorandum of understanding;
- state the agreed compensation that the client will pay to the consultant in accordance with the terms of the contract;
- list the documents that constitute the agreement;
- require the submission by the consultant of the various documents required to be submitted under the agreement, such as insurance documentation.

The letter of acceptance is normally regarded as the instruction for the consultant to proceed. If the wording of the letter indicates that this is the intention, it must be remembered that an enforceable contract now exists between the parties, even if the formal agreement has not yet been completed. The letter of acceptance will constitute the formation of the agreement that may be formalised by a contract agreement for the services.

18 Award of Contracts: Consultancy Appointments

18.2 Negotiations

The process of proposal clarification and/or negotiation may involve several meetings and may result in information that is additional to that set out in the proposal dossier and submitted as part of the proposal.

In negotiating an agreement with the proposer, the negotiations should include discussion of:

- the Terms of Reference (ToR);
- the methodology;
- the time programme;
- staffing;
- personnel schedule;
- the client's counterpart inputs and facilities;
- the quantities of cost items in the firm's financial proposal; and
- the general and special conditions of the agreement.

Financial negotiations should include clarification of the consultant's tax liability in the client's country (if any). Great care is required during the process of proposal clarification and/or negotiation to ensure that fair competition rules are not contravened and that it does not result in a counter offer being made by the client.

The discussions should not substantially alter the original ToR or the terms of the agreement, lest the quality of the services, their cost, and the relevance of the initial evaluation be affected. Major reductions in work inputs should not be made solely to meet the budget.

Having selected the consultant on the basis of, among other things, an evaluation of proposed professional staff, the client expects to negotiate a agreement on the basis of the professional staff named in the proposal. Before negotiations, the client will require assurances that the professional staff will be actually available. The client will generally not consider substitution of the staff or experts unless both parties agree that undue delay in the selection process makes

such substitution unavoidable, or for reasons such as death or medical incapacity. For some clients, if it is established that key staff were included in the proposal without confirming their availability, the consultant may be disqualified and negotiations continued with the next ranked proposer.

Any key staff proposed for substitution should have equivalent or better qualifications and experience than the key staff initially proposed. Any proposed substitute should be submitted by the consultant within a specified period of time. Proposed unit rates for remuneration should not be altered and other expenses should not be negotiated on account of staff substitutions.

When all issues have been adequately clarified and/or negotiations concluded, the client should prepare a memorandum of understanding or a memorandum of pre-award clarifications recording details of all the matters that have been clarified and agreed.

The memorandum of understanding should be submitted to the proposer for his agreement and signature and will constitute the basis upon which an agreement could be concluded. The agreed memorandum of understanding should incorporate statements that it:

- shall be binding on the proposer as an acceptable clarification or amendment of his proposal until its validity period expires;
- shall be wholly subject to a subsequent services agreement; and
- shall not bind the client nor commit him to entering into any agreement under any terms.

18.3 Letter of intent

When the proposer has agreed the memorandum of understanding then the client may enter into an agreement with him by a letter of formal acceptance, signed by the client.

Where it is not immediately possible for the client to sign the agreement and issue a formal letter of acceptance, the client may wish to advise the proposer of his intention to award the agreement. However, this

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does not normally establish any binding obligation on the client to carry out his intentions. To eliminate uncertainty on this point, FIDIC recommends to stipulate in the letter that the letter does not establish any legally binding obligation on the client.

A letter of intent should not be used to require proposers to carry out preparatory work in expectation of an award. If the client requires preparatory work to be commenced, but is not able to issue a formal letter of

acceptance, then the client and the proposer should agree specific terms and conditions for any pre-award work.

It should be noted however, that it is relatively rare for a letter of intent to be issued for consultancy services.

18.4 Pre-award work agreement

Where it is not immediately possible for the client to sign the agreement and issue a formal letter of acceptance, the employer may wish the proposer to commence work in anticipation of the issue of a formal letter of acceptance.

In such situations, which are fairly rare for consultancy services, the client and the proposer should agree specific terms and conditions for any pre-award work. Care should be exercised in formulating an agreement for any pre-award work so that it is not construed as being the letter of acceptance.

Any pre-award work agreement should normally contain:

- a clear statement that the client intends to issue a formal letter of acceptance to the proposer;
- details of work that the proposer is to undertake;
- the basis of payment for work authorised and a limit (if any) to the financial liability which may be incurred before formal acceptance; and
- a statement that if the agreement is subsequently not awarded to the proposer, the properly audited costs incurred by him in performing work authorised will be paid by the client, but otherwise the client shall have no other obligation to the proposer.

As mentioned, for consultancy services, the client generally does not issue a letter of intent and it is fairly rare for there to be pre-award preparatory work. The more usual process is to incorporate the final ToR and the agreed

methodology in the scope of services which forms an annexe to the contract agreement for services.

Successful negotiations conclude with a review of a draft agreement that includes the agreed scope of services annexe, and the client and the consultant will initial a final agreement.

If negotiations fail, the client will invite the consultant whose proposal received the next highest score to negotiate, and so on, until an agreement is reached. The consultant shall be informed of the reasons for termination of the negotiations. Once negotiations are commenced with the next ranked consultant, the client should not reopen the earlier negotiations. After negotiations are successfully completed the client should promptly notify other consultants which made proposals that their proposals were unsuccessful.

18.5 Performance security

Unlike contracts for works, proposal and performance securities and liquidated damages are not recommended for

consultancy services. More generally, any form of contract guarantee, such as a money deposit, bid bonds, performance

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bonds and retention funds, serve little useful purpose. Their enforcement is often subject to judgment calls, they can be easily abused, they tend to increase the costs without obvious benefits to the client, and they have an adverse effect on the relationship between the client and consultant which should be based on mutual trust and cooperation. In addition, because the timely

delivery of services depends in many ways upon actions by the client it is difficult to establish the sole responsibility of the consultant when there are delays, so the application of liquidated damages is not recommended for consultancy services.

18.6 Contract agreement

It is in everyone's interests to have a formal contract drawn up and signed as soon as possible after the issue of the letter of acceptance. This will finally confirm the understanding of all parties about what is to be done, and for how much.

Whichever way the contract agreement is made it is important that all of the issues be fully documented. The formal agreement is the complete written contract between the client and consultant. It will comprise at least a formal statement of agreement, signed by both parties, along with the scope of services to be supplied, the remuneration to be paid, the time schedule, and the legal framework within which the contract will be carried out.

In order to promote clarity of the services agreement, the client should prepare the agreement, which should be signed by the client and consultant. This should include all the documents that form the agreement, such that each page is identified by a document reference or title and each page is numbered in the format "page x of y".

The documents to be incorporated in the signed agreement will be those required by the particular form of agreement being used (for example, the FIDIC White Book) and will also need to incorporate any clarification/amendments that have been agreed following submission of the proposal during negotiation.

In preparing the agreement for signature, the client should prepare a dossier record and include:

- explanatory note;
- minutes of any negotiation meetings;
- where appropriate, a copy of the financing agreement authorising the project;
- copies of the call for proposals, announcements,

shortlist report, proposal opening report, evaluation report, guidelines for applicants, proposal opening and administrative check report, evaluation reports, and any other relevant information;

- three originals of the proposed agreement based on a standard form such as the FIDIC White Book.

A useful checklist of the documents which would be included and which would form part of an agreement is given in Table 18.1.

This formalisation of the agreement by a contract agreement may be a legal or procedural requirement for it to be effective. For an agreement under the FIDIC White Book it is envisaged that the agreement will only come into full force and effect on the date stated in the agreement. The letter of invitation to make proposals and the instructions to proposers issued by the client should not normally be included in the agreement.

Table 18.1 – Checklist of documents forming part of the agreement

Contract Agreement with Memorandum (if any)
Letter of Acceptance dated
Letter of Proposal dated
Addenda to the Proposal Dossier Nos.
Conditions of Client/Consultant Services Agreement
- General Conditions of Agreement
- Particular Conditions of Agreement
A. References from Clauses in the General Conditions
B. Additional Clauses (if any)
Appendx A Scope of Services
Appendx B Personnel, Equipment, Facilities and Services to be Provided by the Client
Appendx C Remuneration and Payment
Appendx D Time Schedule

18 Award of Contracts: Consultancy Appointments

18.7 Notification to unsuccessful consultants

After the award to the selected consultant and counter signature of the agreement the client may publish the award, and promptly notify the other proposers in writing that their proposals have been unsuccessful.

The client should consider publishing the following information:

- the names of all consultants who submitted proposals;
- the technical points assigned to each consultant;
- the evaluated prices of each consultant;
- the overall ranking of the consultants;
- statistical information concerning the procurement procedure;
- the name of the winning consultant and the price, duration, and summary scope of the agreement;
- the value of the agreement.

The same information should be sent to all consultants who submitted proposals within a specified time (say 15 days from receipt of the countersigned agreement by the client).

In the publication of contract award the client may specify that any consultant who wishes to ascertain the grounds on which its proposal was not selected should request an explanation from the client. The client should promptly provide the explanation as to why such proposal was not selected, either in writing and/or in a debriefing meeting, at the option of the consultant. The requesting consultant should bear all the costs of attending such a debriefing.

It is to be noted that information relating to the

evaluation of proposals and recommendations concerning awards should not be disclosed to the consultants who submitted the proposals or to other persons not officially concerned with the process, until the publication of the award.

However, in the case of a request for further information from a consultant who was not successful, it is the general practice to disclose any information which is not confidential. An example may be comments regarding their strengths and weaknesses as this may assist them to be successful in future calls for proposals.

After counter signature of the agreement, the client should return the unopened financial proposals to the unsuccessful proposers as soon as possible.

In some cases, notably for awards by public authorities, a contract award notice must be submitted to the funding agency no later than a fixed number of days after the conclusion of the agreement. The contract award notice may then become the basis for publishing the award, generally depending on the value of the award, except where the contract is declared secret or where the performance of the contract must be accompanied by special security measures, or when the protection of the essential interests of the client is involved, or the beneficiary country so requires, or where the publication of the award notice is deemed not to be appropriate.

19 Award of Contracts for Works

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19.1 Letter of acceptance

A contract for works will be created when the employer accepts, without reservation, a letter of tender.

The employer will normally seek to award the contract to the tenderer who appears to have the capability and resources to carry out the contract effectively, whose tender has been determined to be responsive to the tender dossier and who has offered (all aspects taken into consideration) the most favourable and economically advantageous tender. The award must be made during the period of tender validity or any extension thereto accepted by the tenderers.

If the tender does not require any clarification then the employer may simply award the contract by a signed letter of formal acceptance of the tender.

The agreements to the FIDIC Short Form of Contract and the FIDIC Form of Contract for Dredging and Reclamation Works envisage this simple procedure and set out a printed form for the offer and acceptance within the agreement.

In respect of the other FIDIC forms of contract, the format of the acceptance is not specified as it is often necessary for the employer/engineer to require clarification of aspects of tenders before a tender can be accepted.

For contracts based on the FIDIC Conditions of Contract for EPC/Turnkey Projects, a letter of acceptance is not issued as it is envisaged that following receipt of tenders

there is a period of negotiation to select the most favourable tender with the contract only coming into full force and effect on the date stated in the contract agreement.

When a letter of acceptance is required it should:

- refer to the contract and the works to be executed;
- acknowledge receipt of the letter of tender;
- refer to and attach any agreed memorandum of understanding (or memorandum of pre-award clarifications);
- accept the tender as clarified/amended by the agreed memorandum of understanding;
- state the accepted contract price that the employer will pay to the contractor in accordance with the terms of the contract;
- list the documents that constitute the contract;
- require the submission by the contractor of the various documents required to be submitted under the contract, such as performance security, the advance payment guarantee, and insurance documentation.

The letter of acceptance will constitute the formation of the contract that may subsequently be formalised by a contract agreement.

19.2 Memorandum of understanding

The process of tender clarification and/or negotiation may involve several meetings and may result in information that is additional to that set out in the tender dossier and submitted as part of the tender. Great care is required during the process of tender clarification and/or negotiation to ensure

that fair competition rules are not contravened and that it does not result in a counter offer being made by the employer.

When all issues have been adequately clarified and/or negotiations concluded, the employer/engineer

19 Award of Contracts for Works

should prepare a memorandum of understanding or a memorandum of pre-award clarifications recording details of all the matters that have been clarified and agreed. Either of these two documents may include details of the agreed arrangements for the appointment of the Dispute Adjudication Board (DAB).

The memorandum of understanding should be submitted to the tenderer for his agreement and signature and will constitute the agreed basis upon which a contract could be concluded. The agreed memorandum of understanding should incorporate statements that it:

- shall be binding on the tenderer as an acceptable clarification or amendment of his tender until its validity period expires;
- shall be wholly subject to a subsequent contract agreement; and
- shall not bind the employer nor commit him to entering into any contract under any terms.

When the tenderer has agreed the memorandum of understanding then the employer may award the contract to the tenderer by a letter of formal acceptance, signed by the employer.

19.3 Letter of intent

Where it is not immediately possible for the employer to award the contract and issue a formal letter of acceptance, the employer may wish to advise the tenderer of his intention to award the contract. However this does not normally establish any binding obligation on the employer to carry out his intentions. But to eliminate any uncertainty on this point, FIDIC recommends to stipulate in the letter that it does not establish any legally binding obligation on the employer.

A letter of intent should not be used to require tenderers to carry out preparatory work in expectation of a contract award. If the employer requires preparatory work to be commenced, but is not able to issue a formal

letter of acceptance, then the employer and tenderer should agree specific terms and conditions for any pre-contract work.

19.4 Pre-contract work agreement

Where it is not immediately possible for the employer to award the contract and issue a formal letter of acceptance, the employer may wish the tenderer to commence work in anticipation of the issue of a formal letter of acceptance.

In such situations the employer and tenderer should agree specific terms and conditions for any pre-contract work. Care should be exercised in formulating an agreement for any pre-contract work so that it is not construed as being the letter of acceptance.

Any pre-contract work agreement should normally contain:

- a clear statement that the employer intends to award the contract and to issue a formal letter of acceptance to the tenderer;
- details of such parts of the works (e.g., mobilisation, ordering of materials, letting of subcontracts, etc.) that the tenderer is to commence and execute;
- the basis of payment for work authorised and a limit (if any) to the financial liability which may be incurred before formal acceptance of the tender; and
- a statement that if the contract is subsequently not awarded to the tenderer, the properly audited costs incurred by him in performing work authorised will be paid by the employer, but otherwise the employer shall have no other obligation to the tenderer.

19 Award of Contracts for Works

19.5 Performance security

It is normally a requirement of the contract that the contractor shall furnish a performance security within the time, and in the amount, currency and form, prescribed in the contract. Where the employer is relying on project funding from external financial institutions, he should confirm the form of performance security to be used with that institution.

The performance security should be furnished before the expiry of the validity period of the tender. Tenderers should be informed in the tender dossier of the consequences of failing to produce a performance security according to the stated requirements. Such consequences would normally be that the contract is declared null and void and the contractor forfeits his tender security.

The employer is then free to award the contract to the next most favourable tenderer.

If the timing is such that it will be impossible for the contractor to provide the performance security before the validity period of the tenders has expired, and in compliance with the terms of the contract, the employer should protect himself by asking the other tenderers to extend the validity period of their tenders accordingly. Refusal by any tenderer to extend the validity period of his tender for this reason would not entitle the employer to call his tender security.

As soon as the successful tenderer has furnished the performance security, the tender security provided by each tenderer should be returned.

19.6 Contract agreement

In order to promote clarity of the conditions of contract, the employer/engineer should prepare the contract agreement, which should be signed by the employer and contractor. This should specify all the documents that form the contract, such that each page is identified by a document reference or title and each page is numbered in the format "page x of y".

The documents to be incorporated in the signed contract agreement will be those required by the particular form of contract being used and will also need to incorporate any clarification/amendments that have been agreed following submission of the tender.

Table 19.1 gives a checklist of the documents which would be included and which would form part of a contract.

This formalisation of the contract by a contract agreement may be a legal or procedural requirement for the contract to be effective. For contracts based on the FIDIC Conditions of Contract for EPC/Turnkey Projects form it is envisaged that the contract will only come into full force and effect on the date stated in the contract agreement.

The letter of invitation to tender and the instructions to tenderers issued by the employer to tenderers should not normally be included in the contract.

Table 19.1 – Checklist of documents forming part of the contract

Contract Agreement with Memorandum (if any)
Letter of Acceptance dated
Letter of Tender dated
Appendix to Tender (as may be amended and agreed after tender submission)
Addenda to the Tender Dossier Nos.
General Conditions of Contract
Particular Conditions of Contract
Specification(s)/Employer's Requirements
Drawings
Bill of Quantities with Method of Measurement and Payment, if appropriate
Schedules of Rates or Prices
Other Schedules completed by Tenderer
Forms of Security
- Parent Company Guarantee
- Performance Security – Demand Guarantee or Surety Bond
- Advance Payment Guarantee
- Retention Money Guarantee
- Payment Guarantee by Employer
Dispute Adjudication Agreement
- General Conditions
- Procedural Rules

19 Award of Contracts for Works

19.7 Notification to unsuccessful tenderers

Upon the furnishing of the performance security by the successful tenderer in accordance with the provisions of the contract, the employer/engineer should promptly notify the other tenderers in writing that their tenders have been unsuccessful.

arrange for the return of such securities to the unsuccessful tenderers.

At the same time, if tender securities have been provided by tenderers, the employer/engineer must

References

- FIDIC Client/Consultant Model Services Agreement, 4th Edition, FIDIC, 2006.
- FIDIC Joint Venture (Consortium) Agreement, 1st Edition, 1992.
- FIDIC Sub-Consultancy Agreement, 1st Edition, FIDIC, 1994.
- FIDIC Model Representative Agreement, Test Edition, FIDIC, 2004.
- FIDIC Guide to the Joint Venture and Sub-Consultancy Agreements, 1st Edition, 1994.
- FIDIC Definition of Services Guidelines – Building Construction, 2009.
- FIDIC Conditions of Contract for Construction, 1st Edition, 1999.
- FIDIC Construction Subcontract, 1st Edition, 2011.
- FIDIC Conditions of Contract for Plant and Design-Build Projects, 1st Edition, 1999.
- FIDIC Conditions of Contract for EPC/Turnkey Projects, 1st Edition, 1999.
- FIDIC Conditions of Contract for Design, Build and Operate Projects, 1st Edition, 2008.
- FIDIC Short Form of Contract, 1st Edition, 1999.
- Form of Contract for Dredging and Reclamation Works, 1st Edition, 2004.
- FIDIC Tendering Procedure, 1st Edition, 1982.
- FIDIC Tendering Procedure, 2nd Edition, 1994.
- FIDIC Conditions of Contract for Works of Civil Engineering Construction, 4th Edition, 1987.
- FIDIC Conditions of Contract for Electrical and Mechanical Works, 3rd Edition, 1987.
- The FIDIC Contracts Guide, 2000.
- FIDIC DBO Contract Guide, 2011.

Appendix A

FIDIC Code of Ethics

The International Federation of Consulting Engineers (FIDIC - Fédération Internationale des Ingénieurs-Conseils) recognises that the work of the consulting engineering industry is critical to the achievement of sustainable development of society and the environment.

To be fully effective not only must engineers constantly improve their knowledge and skills, but also society must respect the integrity and trust the judgement of members of the profession and remunerate them fairly.

All Member Associations of FIDIC subscribe to and believe that the following principles are fundamental to the behaviour of their members if society is to have that necessary confidence in its advisers.

Responsibility to society and the consulting industry

The consulting engineer shall:

- Accept the responsibility of the consulting industry to society.
- Seek solutions that are compatible with the principles of sustainable development.
- At all times uphold the dignity, standing and reputation of the consulting industry.

Competence

The consulting engineer shall:

- Maintain knowledge and skills at levels consistent with development in technology, legislation and management, and apply due skill, care and diligence in the services rendered to the client.
- Perform services only when competent to perform them.

Integrity

The consulting engineer shall:

- Act at all times in the legitimate interest of the client and provide all services with integrity and faithfulness.

Impartiality

The consulting engineer shall:

- Be impartial in the provision of professional advice, judgement or decision.
- Inform the client of any potential conflict of interest that might arise in the performance of services to the client.
- Not accept remuneration which prejudices independent judgement.

Fairness to others

The consulting engineer shall:

- Promote the concept of Quality-Based Selection (QBS).
- Neither carelessly nor intentionally do anything to injure the reputation or business of others.
- Neither directly nor indirectly attempt to take the place of another consulting engineer, already appointed for a specific work.
- Not take over the work of another consulting engineer before notifying the consulting engineer in question, and without being advised in writing by the client of the termination of the prior appointment for that work.
- In the event of being asked to review the work of another, behave in accordance with appropriate conduct and courtesy.

Corruption

The consulting engineer shall:

- Neither offer nor accept remuneration of any kind which in perception or in effect either a) seeks to influence the process of selection or compensation of consulting engineers and/or their clients or b) seeks to affect the consulting engineer's impartial judgement.
- Co-operate fully with any legitimately constituted investigative body which makes inquiry into the administration of any contract for services or construction.

Appendix 2.6.6 - Basic Considerations

Operation and Maintenance

Projects to be operated and maintained by the employer

With regard to large, complex projects, the question arises as to which party shall operate and maintain the completed facility, and the two cases are commented upon, the first being where the employer will take over the facility on completion of construction/installation and commissioning.

For an employer to take over and satisfactorily operate and maintain a large, complex project it is necessary for the employer to have a well-trained, experienced and competent staff. Some training may be included in the contractor's/supplier's contract but this would normally be insufficient in the case of complex plant and systems.

Whereas in Europe, North America, Japan, and other developed countries the typical employer may have a competent and experienced staff to operate and maintain the new facility, plant or system, in much of the developing world the employer's organisation is not capable of satisfactorily operating and maintaining complex power and process plants, equipment and/or systems over extended periods, at least not without the help of the manufacturer/supplier.

Therefore, generally speaking, projects to be operated by the employer after commissioning should be restricted to those employers with the necessary staff organisation, which usually means to employers from the developed countries. If complex projects with these features based in the developing countries are intended to be operated by the employer, then it is normally essential that significant training and back-up resources are provided by the contractor/manufacturer/supplier. These resources should normally be provided for in the plant, equipment or systems contract.

Such projects can with much benefit be procured on the basis of performance or functional specifications, rather than on the basis of traditional detailed specifications and drawings. However, the contractor is usually only responsible for the functioning of his plant until the end of the defects notification period, i.e., the guarantee period.

Tenders are submitted on the basis of the construction/installation/provision of the facility, and, apart from any guarantee obligations, the contractor receives full payment upon satisfactory commissioning of the facility.

Projects to be operated and maintained by the contractor

With regard to large, complex projects, the second case to be studied is where the employer does not take over the facility on completion of construction/installation and commissioning, but the contractor operates and maintains the facility for a pre-agreed number of years, and in fact provides a service (supply of fresh water, supply of electric power, availability of road stretch, etc.). At the end of the operation period the facility should be handed over to the employer as a going concern.

This scenario should be ideal for many projects being financed by IFI's in a large number of developing countries, and should help eliminate those 'white elephant' projects where expensive facilities are constructed but never operated satisfactorily to provide the intended service for the end users. The end users are often village and town dwellers, and are often the poor whom the donors are intending to reach.

In such countries employers typically lack the required staff and resources to take over and satisfactorily operate and maintain a large, complex plant or system. For such projects it is necessary for the employer to have well-trained and experienced, competent staff. Although some training may be included in the contractor's/supplier's contract, this has typically proved to be insufficient, with poor results as the consequence.

The proposed solution is to leave the responsibility for the operation of the plant or system to the contractor who has supplied it for an agreed number of years. He will take the responsibility for maintaining the plant or system to provide the specified service to the users. In this way the 'white elephant' syndrome will be eliminated, and the end users will receive and benefit from the intended service. In addition, it would normally be a contractual requirement that the contractor takes steps to train local personnel, thus benefiting the country's development.

Objection may come from some contractors/suppliers. Often their primary objective is to sell their plant, equipment or system. They are reluctant to become involved in a faraway country among unfamiliar and often difficult surroundings, in an environment which is totally different. However, many responsible contractors understand that the best way to expand their market is to ensure that the products they make and sell also operate satisfactorily in practice. Therefore, it is for their own benefit that they do all that is necessary to

Appendix 2.6.6 - Basic Considerations Operation and Maintenance

ensure the satisfactory and lasting operation of their plant, equipment or system. Consequently, they should be encouraged by the donors to ensure that the intended service actually is provided by contractor involvement during the operation period.

Ideally such contractors should endeavour to use as much local resources as possible. The more local technicians they can train to satisfactorily operate the facility the less will be the cost to them, and the more chance they will have to sell further plant in that country.

Therefore the tender should include, not only the cost of the facility itself, but also the costs for operation and maintenance and for the actual provision of the intended service for the whole pre-agreed operation period. The contractor will obviously utilise local resources as far as he judges prudent, and each tenderer should himself judge what resources he will have to engage from his own staff to supervise and assist the local staff and labour resources to ensure that the operation of the service is satisfactory during the said period. This will also encourage manufacturers to make and supply plant and equipment that is easy to operate and requires little maintenance and is suitable for the ambient conditions. Thus, the tenders will actually represent the life-cycle cost of the service, and it will be the tenderer who offers the lowest total life-cycle cost (i.e., cost of provision of the facility plus the cost of operation and maintenance for the stated number of years) who will be awarded the contract. The operation and maintenance cost should be stated for each year.

The evaluation of tenders based on the concept of life-cycle cost means that the total cost of construction of the facility plus the costs of operating and maintaining the facility over a given number of years can be compared for the different tenders. Basically an employer should be more interested in the total actual cost of the project over a number of years rather than just the cost of the construction. The principle means that it is up to the tenderer to choose whether he wishes to provide a high-quality facility which will therefore have lower operational and maintenance costs, or whether he decides to have a lower quality facility, which will cost more to operate and maintain.

There is a serious consideration with regard to life-cycle costing in that a good product may have a much longer lifetime than a poorer product. The true life-cycle

cost for comparison purposes would be to take the lifetime length of the better product and compare that with the total cost of the poorer product over that same number of years, i.e., meaning that the poorer product would have to be replaced with a new product when its lifetime was over. To simplify the proposal evaluation the employer should fix the number of years which will be considered in the evaluation. The evaluation should then be adjusted to account for the longer lifetime of the better product.

There is, of course, the danger that a tenderer may give an incorrect estimate of the cost of operation and maintenance in order to improve his winning chances. However, the contractor will be required to stick by his estimate, and by the standard of the service, with financial penalties for failure. It is often advantageous to have bonus provisions if the specified standard of service is exceeded. This can be an important encouragement to contractors providing higher quality products.

Such projects should, with much benefit, be procured on the basis of performance or functional specifications, rather than on the basis of traditional detailed specifications and drawings of sometimes outdated technology. Tenderers will thus be encouraged to offer solutions they know work well, and to offer equipment that requires minimum maintenance and maximum reliability. During the operation period the contractor will be encouraged to achieve innovation and efficiency in the operation work to his financial benefit.

Payment will normally be made for the construction/manufacture of the facility on the basis of a schedule of payments according to work milestones achieved. However, a substantial security will be retained to ensure that after commissioning the facility works on a 'fit for purpose' basis. Payment for the operation period will be made on a regular time basis, provided that the required service quality is held.

One objection from certain major donors is that their grants are time-limited, and long-term engagements are not acceptable. Depending on the individual projects, solutions or partial-solutions to this problem may exist.

FIDIC now has a standard form of contract for design, build and operate projects, namely the DBO Contract, or Gold Book, see Sections 5.1, 5.7 and 5.11.

Appendix 2.6.10 - Basic Considerations Sustainable Development

In the cause of advancing the state of practice in sustainable development engineering, the conundrum facing engineering consultants, clients and policymakers today is this: how do you induce engineering firms to apply a more sustainable but relatively untried technology on projects in an environment where the failure of the technology to perform as expected can expose the firms to claims of negligence?

A good place to start is to change the engineering services procurement and contracting process in a way that will enable project owners to identify and select knowledgeable and experienced project teams, encourage these project teams to try new and promising technologies, provide mechanisms for managing change, and allow the sharing of risks and rewards among the participants.

Achieving conditions of sustainable development will be a long journey. Progress will be achieved through the efforts of consulting engineering firms working with their clients to identify and apply new technologies that will deliver increasingly more sustainable performance. An essential enabling document for this process is a form of contract that will set the appropriate boundaries, conditions and controls on the engineering work to satisfy clients, while still giving the engineering firms sufficient leeway to try innovative approaches, employ new technologies and otherwise advance the state of the practice.

To these ends, the contract document must:

- Be able to handle multi-discipline and multi-firm project teams.
- Allow and encourage cooperation among team members such that the members work closely together and share information freely.
- Manage input from multiple stakeholders, both internal and external.
- Allow the creation of designs which incorporate promising but relatively new and unproven technologies for the purpose of achieving higher levels of sustainable performance.
- Manage change in the form of application problems and/or unexpected results.
- Incorporate learning and knowledge sharing as a defined deliverable.
- Make possible the equitable sharing of risk and rewards.

The development and widespread dissemination and acceptance of such a document will be a substantial contribution to progress toward conditions of sustainable development.

The publication FIDIC Project Sustainability Management Guidelines gives further information on aligning a project to society's goals for sustainable development.

Appendix 2.7.1 - Basic Considerations

Feasibility Studies Report

A Feasibility Studies Report should include as a minimum the following contents:

- Title page with authors' and recipients' details
- Contents list
- Executive summary
- Introduction
- Description of each subject:
 - Scope of studies
 - Methods adopted
 - Data collection
 - Analysis
 - Comparisons and interpretation
- Conclusions
- Recommendations
- Appendices:
 - References
 - Drawings
 - Tables
 - Charts
 - Calculations

Appendix 5.5.1 - Contract Types

Preparation of the Employer's Requirements

1 Introduction

'Employer's Requirements' is a term that is used in the FIDIC Conditions of Contract for Plant and Design-Build and in the FIDIC Conditions of Contract for EPC/Turnkey Projects, and also in the FIDIC Conditions of Contract for Design, Build and Operate Projects. Employer's requirements is a document that specifies the purpose, scope, and/or design and/or other technical criteria, for the works.

A general obligation is that the works shall include any work which is necessary to satisfy the employer's requirements or is implied by the contract as necessary for stability or for the completion, or safe and proper operation, of the works. There is also a general obligation on the contractor that when completed the works shall be fit for the purposes for which the works are intended as defined in the contract.

The employer's requirements are therefore crucial in defining the works and must include all things that the employer requires in respect of the execution and completion of the works, including the requirement as to the 'intended purpose' of the works.

The FIDIC Conditions of Contract for Plant and Design-Build and the FIDIC Conditions of Contract for EPC/Turnkey Projects impose differing obligations on the employer and contractor in respect of responsibility for the accuracy, sufficiency and completeness of the employer's requirements.

It has been a long held principle of FIDIC to allocate risk between the parties on a fair and equitable basis, taking account of such matters as insurability, sound principles of project management, and each party's ability to foresee and mitigate the effect of the circumstances relevant to each risk.

The FIDIC Plant and Design-Build Contract generally follows this fair and equitable basis in that, subject to the contractor exercising due care when scrutinising the employer's requirements, the employer retains general responsibility for risks associated with the accuracy, sufficiency and completeness of his employer's requirements.

This is not the case in respect of the FIDIC Conditions of Contract for EPC/Turnkey Projects where certainty of the final price and time is a primary requirement of the employer. Save for the limited exceptions stated at Sub-Clauses 5.1(a) to (d) under the FIDIC Conditions of Contract for EPC/Turnkey Projects, the contractor has the primary responsibility for risks

associated with the accuracy, sufficiency and completeness of the employer's requirements.

The content of the employer's requirements should be restricted to define the specific parameters for the works and must be prepared specifically for the particular FIDIC form of contract that is to be used.

2 Content of the employer's requirements: FIDIC Plant and Design-Build Contract

For contracts based on the FIDIC Conditions of Contract for Plant and Design-Build:

the employer's requirements should describe all specifications, requirements, regulations, procedures, interfaces, data, information, and the like for the design, execution and completion of the works. Some of the matters to be set out in the employer's requirements under plant and design-build conditions of contract are detailed in Table 5.5.1A below.

3 Content of the employer's requirements: FIDIC EPC/Turnkey Contract

For contracts based on the FIDIC Conditions of Contract for EPC/Turnkey Projects:

the employer's requirements should describe the principles and basic design of the plant on a functional basis. It is inappropriate to set out requirements that interfere in the contractor's process of design, execution and completion of the works. Some of the matters to be set out in the employer's requirements for EPC/turnkey projects are detailed in Table 5.5.1B, below.

4 Content of the employer's requirements: FIDIC Design, Build and Operate Contract

For contracts based on the FIDIC Conditions of Contract for Design, Build and Operate Projects:

the employer's requirements should be based on those for plant and design-build projects described above but with additional requirements regarding the length of operation and maintenance. Some of the matters to be set out in the employer's requirements for design, build and operate projects are detailed in the Table 5.5.1A.

Appendix 5.5.1 - Contract Types

Preparation of the Employer's Requirements

Table 5.5.1A - Matters to be set out in the employer's requirements: FIDIC Plant and Design-Build Contract

Conditions of Contract for Plant and Design-Build: Contents of the employer's requirements

GENERAL: This document specifies the purpose, scope and/or design and/or other technical criteria for the works. Conditions of Contract Ref.

1	Scope and description of the works, including scheme drawings and the intended purpose of the completed works	4.1
2	Care and supply of drawings	1.8
3	Planning, zoning and other permissions obtained by the employer	1.13
4	Rights of access to the site	2.1
5	Cooperation: coordination with contractors	4.6
6	Cooperation: possession in accordance with the contractor documents	4.6
7	Protection of the environment	4.18
8	Electricity, water and gas	4.19
9	Employer's equipment and free-issue material	4.20
10	Training	5.4
11	Engagement of staff and labour	6.1
12	Facilities for the employer's personnel	6.6
13	Royalties	7.8
14	Other information/requirements	
15	Site data	
16	Programme, including milestones	
17	Working hours	
18	Diversions routes: rail and road	
19	Plant possessions	
20	Health and safety	
21	Security	
22	Quality management and assurance	

DESIGN: This section specifies the terms, conditions and requirements related to design.

1	Design requirements (including design criteria, if any)	5.1
2	Contractor's documents	5.2
3	Other standards relating to the design	5.4
4	Other information/requirements	
5	Technical specifications	
6	Drawings	
7	Preparation of technical solutions	
8	Responsibility for obtaining approvals	
9	Preparation of preliminary and final designs	
10	Performance of designer's supervision duties	
11	Preparation and submission of applications for building/construction permits, and responsibility for obtaining permits	

CONSTRUCTION AND COMPLETION: This section specifies the terms, conditions and requirements related to construction and completion.

1	Other standards relating to construction	5.4
2	As-built drawings	5.6
3	Operation and maintenance manuals	5.7
4	Tests on completion	9.0
5	Employer's taking over	10.0
6	Defects	11.0
7	Tests on completion	12.0

Appendix 5.5.1 - Contract Types

Preparation of the Employer's Requirements

Table 5.5.1B - Matters to be set out in the employer's requirements: FIDIC EPC/Turnkey Contract

Conditions of Contract for EPC/Turnkey Projects: Contents of the employer's requirements

GENERAL: This document specifies the purpose, scope and/or design and/or other technical criteria for the plant on a functional basis. Conditions of Contract Ref.

1	Scope and description of the works on a functional basis, including scheme drawings and the intended purpose of the completed works.	4.1
2	Care and supply of drawings	1.8
3	Planning, zoning and other permissions obtained by the employer	1.13
4	Rights of access to the site	2.1
5	Cooperation: coordination with contractors	4.6
6	Cooperation: possession in accordance with the contractor documents	4.6
7	Protection of the environment	4.18
8	Electricity, water and gas	4.19
9	Employer's equipment and free-issue material	4.20
10	Training	5.4
11	Engagement of staff and labour	6.1
12	Facilities for the employer's personnel	6.6
13	Royalties	7.8

DESIGN: This section specifies the terms, conditions and requirements related to design.

1	Design requirements (including design criteria, if any) on a functional basis	5.1
2	Contractor's documents	5.2
3	Other standards relating to the design	5.4

CONSTRUCTION AND COMPLETION: This section specifies the terms, conditions and requirements related to construction and completion.

1	Other standards relating to construction	5.4
2	As-built drawings	5.6
3	Operation and maintenance manuals	5.7
4	Tests on completion	9.0
5	Employers taking over	10.0
6	Defects	11.0
7	Tests on completion	12.0

Appendix 5.5.2 - Contract Types

Performance-Based Procurement (PBP)

Advantages and disadvantages of PBP

Traditional procurement has worked satisfactorily for the majority of projects for many years. It is accepted worldwide, people are familiar with its use, and there is a great deal of experience of how it works in practice. There is nothing wrong with the principle of traditional procurement. It has been tried and proved and has shown to be an excellent system for a wide range of projects. It should and will continue to be used for many years to come.

However, problems have been faced with traditional procurement. Among the major problems that sometimes have dogged traditional procurement can be named the often severe cost and time overruns, which actually have been a major motive force in the development of Performance-Based Procurement (PBP). Another problem has been the widespread resorting to 'claimsmanship' by contractors to try to improve their financial returns or to recuperate contract financial balance generated by low prices offered initially in order to win the contract. A serious disadvantage with traditional procurement is that the final cost and time are uncertain, which leads to budgeting and financing problems. For these reasons, and because it is always wise to be on the lookout for beneficial alternatives, other ways of achieving the same end are coming to the fore. Among these can be named PBP.

If a comparison is made between PBP and traditional procurement, it becomes clear that apart from the said disadvantages of the traditional system, there can be other important disadvantages with continuing use of the traditional system for certain types of project, and potential benefits will be lost. Some of the more important aspects are the following:

- 1 The rate of technical development today is very high. The prime example may be the IT sector, but several other sectors are developing technically rapidly as well. Often it is the established manufacturers who lead the technical research and development, and naturally they do not wish to share their trade secrets with others. Consultants can obviously only prepare specifications for known and proven plant or equipment. This may result in the project specifications calling for plant, equipment or solutions which are no longer at the forefront of technical development in the industry. In the case of unproved

new technology this may be beneficial, but in other cases it may be a disadvantage. This lag is further increased by the time – often considerable – between preparation of the specifications and commencement of the construction and/or installation work.

- 2 Those preparing specifications for projects procured by the traditional method are forbidden to specify one particular brand or product, even if they – quite impartially – may know that a particular product or solution is the most advantageous for the work in question. By allowing contractors/manufacturers to offer their own solutions it will be possible for the employer to choose that particular product or solution.
- 3 One important effect for aid projects may be that the technology gap between the developed and the developing nations not only remains but also widens.
- 4 Detailed specifications prepared in the traditional way close the door to creativity of the plant developers and equipment manufacturers. This frequently means that some advantageous technically and environmentally advanced solutions are not even eligible to be considered.
- 5 In addition to fast technological development, there is a strong tendency to the standardisation of equipment in many areas. Instead of offering 'tailor-made' solutions suppliers offer more and more modular solutions, among other things, characterised by a high degree of prefabrication, low engineering costs and short delivery times.
- 6 Detailed specifications lead to modifications and adjustments that are not required for functional reasons, are costly and with longer delivery times.

These disadvantages when using traditional procurement can largely be counteracted by the use of PBP (Performance-Based Procurement).

Some of the more important advantages of using PBP – apart from those named above – may be generally listed as follows, although they may not apply in all circumstances:

- Variety of solutions, not tied to one design.
- Latest more efficient/cheaper technology can be offered.

Appendix 5.5.2 - Contract Types

Performance-Based Procurement (PBP)

- Industry encouraged to carry out research and development
- Avoidance of preparation of detailed specifications by the employer.
- Employer does not have to possess advanced technical knowledge.
- Contractors do not have to reveal 'trade secrets' and confidential information.
- Shorter implementation time.
- Responsibility for function of project passed from the employer to the contractor.
- Limited capital expenditure by the employer, capital recovered (at least partly), when service provision included (e.g., BOT-type projects).
- The employer often purchases a functioning service, not just a facility.
- Greater supplier involvement, responsibility and risk.
- Less chance of 'price dumping' by less serious contractors.
- Avoidance of less competent and less experienced contractors.

Significant disadvantages associated with the use of PBP may be:

- Unfamiliarity with the preparation of performance/functional specifications by some employers – 'new thinking' required.
- Difficulty to compare different offers and solutions – need for qualified specialist consultants to check solutions proposed.
- Unfamiliarity with employer and engineers' role during implementation – 'new thinking' required.
- Only major contractors can compete.
- Larger cost of tendering for competing contractors.

There may be a number of other advantages and disadvantages, some only applicable to particular projects. These, together with the more important ones listed above, need to be studied when the procurement strategy for a particular project is being worked out.

Basic features of the PBP process

The question of PBP has to the highest degree to do with cost efficiency and functional reliability. It is therefore notable that performance-based specifications are nearly exclusively used for so-called 'project financed' facilities. This is an area where the requirement for cost efficiency from the investors' side is extremely high. The same applies to their requirements for safety and reliability of operation.

The use of performance or functional specifications is not limited to one type of project. For many projects preparing

the specification by the employer based on the function the facility or system or equipment is required to perform is an alternative to the employer preparing detailed specifications.

Some of the basic features of PBP are as follows:

- Tenderers are invited and encouraged to propose the technical solutions they think are the most suitable, as seen from their own background.
- The specifications provided by the employer describe the end performance or function required, and are not detailed specifications. Thus technical requirements are expressed in functional terms and to defined technical standards.
- The contractor, i.e., the successful tenderer, will prepare all detailed specification and design so that his proposed system/facility/equipment meets the specified end performance or function.
- The tender dossier should include a draft of the complete contract agreement so that tenderers know precisely what is expected to be included in the final contract.
- Tendering will take place according to the two-stage procedure, the first stage being submission and evaluation of the technical proposal. Any required modifications to the technical proposal and the tender price will be submitted in the second stage.
- The evaluation criteria will be clearly set out in the tender dossier, and in such form that each tenderer will himself be able to evaluate the economical effect of his technical proposals.
- The employer shall be bound to ensure evaluation of tenderers' proposals strictly in accordance with the stated criteria.
- The employer must ensure that he has adequate professional capability to check that proposed technical solutions fully match the specified performances and technical standards.
- The employer must ensure that he has qualified resources to fulfil his role during the implementation period.
- The contractor will assume complete responsibility for his offered system/facility/equipment and he shall warrant that it fulfils the 'fit for purpose' criteria.
- If the system/facility/equipment is to be taken over by the employer on completion, then a suitable taking-over procedure shall be specified in the tender dossier.
- If the system/facility/equipment is to be operated and maintained by the contractor after completion to provide a service for users, then required service standards shall be specified in the tender dossier for the whole operation period.
- The tender dossier shall specify what availability guarantees

Appendix 5.5.2 - Contract Types

Performance-Based Procurement (PBP)

are required and, if applicable, also in combination with operation and maintenance undertakings from the contractor.

With regard to payment for projects based on performance specifications, the actual payment provisions will have to be individually tailored to respond to the circumstances of the project in question. Generally, payment conditions comparable to those normally used for plant supply and erection will apply during the construction phase, regard however being taken to the requirement to retain sufficient securities to ensure that the facility – after completion – actually works satisfactorily in practice and meets the agreed performance standards.

Thus payment will normally be according to a 'schedule of payments' corresponding to 'milestones' achieved. It is perhaps usual to have a 10% advance payment, followed by several – perhaps up to 10-15 milestones – with part payment being made on completion of each milestone. It is recommended that each milestone be very clearly described in the contract documents so that there can be no argument as to when each part payment is due. The schedule of payments should be designed to achieve an 'interest neutral cash flow' for the contractor so that he is not subjected to unnecessary financial costs, which would tend to raise his tender sum.

Appendix 5.6.2 - Contract Types

Privately Financed Projects (PFP's) and Public-Private Partnerships (PPP's)

Privately Financed Projects (PFP's) are based on an agreement in which the original promoter, known as the principal or grantor (usually a government or government department), who holds the legal power to do so, grants exclusive rights to the concessionaire (a private body, normally a consortium) for the responsibility of financing, design, construction, operation, and maintenance of a facility over the period of the agreement.

It is necessary that the agreement provides a satisfactory basis for attracting finance for the implementation of the project.

The terms of the agreement provide for either:

- regular payments from the principal to the concessionaire, or
- the revenue flow from the operation of the asset to the concessionaire, or
- a mixture of both,

to allow the concessionaire to repay financing, design, construction, and operation and maintenance costs and to make a margin of profit.

These projects are generally of the 'build, own, operate, transfer' (BOOT) type or one of its numerous derivatives. The principal provides a conceptual performance (output) specification for issue to bidding consortia. A consortium is made up of fund providers, designers, constructors, specialist facility operators, and other specialists. At the completion of the bidding process the successful consortium is chosen, enters into a concession agreement with the principal, becomes the concessionaire for the period of the concession and sets up a Special Purpose Vehicle (SPV) as a legal entity to enter into engineering contracts.

In public-private partnerships (PPP's), there is a combination of finance from both the public and private sectors, sometimes assisted by loans from international financing institutions. However, the contractual arrangements are generally more complex than with the wholly privately funded concession type of projects.

Normally the concessionaire will have to consider and decide upon the contract packages into which the project is to be divided and will become the employer for each of the contracts awarded.

It is recommended that the employer uses the FIDIC Client/Consultant Model Services Agreement, commonly known as 'The White Book', for the purposes of pre-investment and feasibility studies, designs, project management and administration of the works, as may be required by the employer.

A review of the advantages and disadvantages of the various FIDIC forms of conditions of contract will have to be carried out to choose the most advantageous form to be used for each particular construction or engineering contract package. It is recommended that the concessionaire considers the arrangements suitable for use for the different forms as described in Chapter 5, as appropriate, to assist in making the choices.

Upon expiry of the concession the facility is handed back to the principal in full working order.

A typical and simplified management structure for a PFP turnkey project is shown in Chapter 5 at Fig. 5.6.

Appendix 5.9.3 - Contract Types

Purchasing, Expediting and Inspection

Introduction

Purchases by means of 'purchase orders' are frequently used by employers/clients to cover transactions with manufacturers, distributors, agencies, and suppliers for obtaining equipment, materials and proprietary items. The scope may be limited to supply only, or extend to some or all of design, erection, installation, testing, commissioning, spare parts and servicing, operation and maintenance, being required of the vendor.

In developed countries, the various statutes covering the sale and supply of goods and services codify the relevant legal principles. They do not displace the law of contract except where inconsistencies arise.

Objective

The following notes are intended to provide a guide to a uniform, comprehensive procedure for making purchases by a consultant on behalf of a client, within the scope of a project appointment. The notes may also be of value to employers wishing to make their own direct purchases. The intention is to minimise the risk of disputes arising in the course of dealing with such transactions.

Procedure

- Ensure that every purchase is arranged by means of a clear offer and a matching acceptance.
- Prepare a full scope of work, including, for example, technical requirements and quantities for each item or service to be supplied.
- Prepare a pricing document, if needed.
- Prepare a delivery programme, including inspection requirements, shipping plan and point(s) of delivery.
- Prepare commercial terms and conditions, including payment and documentary proof of performance, and an invitation letter.
- Draw up a list of suitable companies to be invited to submit quotations, after prior check of ability to meet both technical and commercial requirements, and financial stability.
- Obtain approval from the client to proceed based on prepared documents (as above), taking care that the final document is complete, that it conforms with preferred practice, and that the budget is properly allocated.
- Issue enquiry documents to short-listed companies

(normally a minimum of three companies): this is an invitation to do business.

- The quotations (or tenders) received are the offers.
- Analyse and evaluate the offers, and recommend a preferred offer (with reasons).
- If the preferred offer does not conform to the enquiry, then negotiations must take place until agreement on terms is reached, taking care to identify counter-offers.
- The purchase order is the acceptance of the finally agreed offer, completing the formation of the contract, which should include all relevant documents from the enquiry procedure.

Warnings

The procedure for making purchases may seem deceptively simple. There are, however, many pitfalls, for example:

- Contracts for the supply of goods and services do not – in many countries – have to be in writing to be legally enforceable, and may therefore be created by conduct.
- A buyer's order without prior negotiation is the offer, and the seller's unqualified acknowledgement is the acceptance, thus creating the contract.
- A seller's qualified response to a buyer's order is a counter-offer, which is often relevant when there are standard written terms and conditions of business on the reverse of company letterhead.

Expediting

Expediting means the progressing of manufacture and supply of equipment, materials and information required by others, to enable design, construction and installation to proceed in accordance with a project time programme. This activity takes place mainly off-site in factories and workshops.

Expediting can be a very important tool for project management in ensuring that programme requirements are met, or in identifying problems as early as possible to enable remedial action to be taken. It should start from the time of placing an order, the frequency of visits depending on the anticipated performance of the supplier concerned. Depending on the location and number of suppliers relative to the project site, there may be a team of field expeditors, each based near to suppliers in different places, and coordinated by a project expeditor in the core project team.

Appendix 5.9.3 - Contract Types

Purchasing, Expediting and Inspection

Inspection

Inspection should be carried out in factories/works during manufacture and prior to dispatch, to impose the specified level of quality control on suppliers. Quality control on site is dealt with separately, though the continued involvement of specialist off-site inspectors may be needed.

The inspectors carry out stage and final inspections as specified, including the witnessing of performance tests before delivery. These activities can be co-ordinated with those required by the client, insurers, and other third-party interests.

The degree and extent of inspection will vary depending on the articles being supplied, but all orders should state the inspection requirements (see above). This ensures that the supplier understands the standards he is required to achieve. Satisfactory inspection must not relieve the supplier or any other concerned contractor of his responsibility for fulfilling the contractual obligations. The rights of inspection should also not normally be waived.

Equipment and materials should not be released for dispatch from the factories/works until the appropriate inspection certificates have been issued by the inspecting authority according to the specified procedure.

Conclusion

Purchasing, expediting and inspection should be recognised in project procedures as part of the consultant's project management service. These activities have also to be linked with the technical disciplines (including design), cost control and planning/programming to ensure compliance with the project plan.

Appendix 8.3.1 - Prequalification of Tenderers: Contracts for Works

Standard Prequalification Form for Contractors

- A. Title Page
- B. Notes to Applicants
- C. Joint Venture
- D. Financial Statement
- E. Structure and Organisation 1
- F. Structure and Organisation 2
- G. Resources: Personnel 1
- H. Resources: Personnel 2
- I. Resources: Labour Force, Subcontractors and Fabrication
- J. Resources: Contractor's Plant, Equipment and Facilities
- K. Experience: Geographical
- L. Experience: Relevant Projects Completed
- M. Experience: All Projects in Progress
- N. Quality Assurance System
- O. Health and Safety Plan
- P. Environmental Policy
- Q. Training
- R. Operation and Maintenance
- S. Litigation and Arbitration History 1
- T. Litigation and Arbitration History 2
- U. Additional Information

Appendix 8.3.1 - Prequalification of tenderers: Contracts for Works
Standard Prequalification Form for Contractors - A

Name and address of the Contractor

Name of the Employer

Title and location of the Project

Name of the Engineer

Date

Appendix 8.3.1 - Prequalification of Tenderers: Contracts for Works

Standard Prequalification Form for Contractors - B

Project

Company

Note to Applicants

1. Please answer all questions and provide information as requested.
2. Supplementary pages may be photocopied or copied and inserted if required.
3. Please number each page in the space provided at the top of each page.
4. Please retain a copy of your complete submission.
5. If a joint venture is proposed, all companies are to respond to all questions.
6. Pages Q and R are not to be completed unless specifically stated to be required.
7. Project financial data is to be given in US dollars unless otherwise requested.

Standard Pages

- | | |
|--|--|
| A. Title Page | L. Experience: Relevant Projects Completed |
| B. Notes to Applicants | M. Experience: All Projects in Progress |
| C. Joint Venture | N. Quality Assurance System |
| D. Financial Statement | O. Health and Safety Plan |
| E. Structure and Organisation 1 | P. Environmental Policy |
| F. Structure and Organisation 2 | Q. Training |
| G. Resources: Personnel 1 | R. Operation and Maintenance |
| H. Resources: Personnel 2 | S. Litigation and Arbitration History 1 |
| I. Resources: Labour Force, Subcontractors and Fabrication | T. Litigation and Arbitration History 2 |
| J. Resources: Contractor's Plant, Equipment and Facilities | U. Additional Information |
| K. Experience: Geographical | |

Additional Pages

Please list below any additional pages attached to each standard page.

Appendix 8.3.1 - Prequalification of Tenderers: Contracts for Works

Standard Prequalification Form for Contractors - C

Project

Company

Joint Venture

If the company intends to enter into a joint venture for the project, please give the following information, otherwise state "not applicable".

1. Names and addresses of joint venture partners
2. Name of company leading the joint venture
3. Name and address of bankers to the joint venture

Appendix 8.3.1 - Prequalification of Tenderers: Contracts for Works

Standard Prequalification Form for Contractors - D

Project

Company

Financial Statement

1. Capital

Authorised

Issued

2. Annual value of contract work undertaken for each of the last five (5) years and projected for the current year

Year	Current					
Home						
Abroad						

3. Approximate value of work in hand

4. Please attach copies of the company's previous five (5) years' audited accounts (profit/loss, assets/liabilities) and other financial data which you consider to be useful. List all attachments below.

5. Name and address of bankers from whom references can be obtained

Appendix 8.3.1 - Prequalification of Tenderers: Contracts for Works

Standard Prequalification Form for Contractors - E

Project

Company

Structure and Organisation 1

1. Name of company

Address

Telephone number

Telefax number

E-mail

Web site

Registered office address
2. Description of company (for example,
General Civil Engineering Contractor)
3. Number of years experience as a
general contractor
- in own country
- internationally
4. Number of years experience as a
sub-contractor
- in own country
- internationally
5. Names and addresses of associated
companies to be involved in the project,
and whether parent/subsidiary/other
6. If the company is a subsidiary, what
involvement, if any, will the parent
company have in the project?

Appendix 8.3.1 - Prequalification of Tenderers: Contracts for Works

Project

Company

Structure and Organisation 2

7. Names and addresses of any associates the company has in the country of the project, knowledgeable in the procedures of customs, immigration, etc.
8. Please indicate here or attach an organisation chart showing the company structure including the positions of directors and key personnel, if relevant.

Appendix 8.3.1 - Prequalification of Tenderers: Contracts for Works

Standard Prequalification Form for Contractors - G

Project

Company

Resources: Personnel 1

1. Number of staff

- Technical

- Administrative

2. Please list present Executive Directors

Name

Present position

Years of experience with
the company and/or in the
industry

Appendix 8.3.1 - Prequalification of Tenderers: Contracts for Works
Standard Prequalification Form for Contractors - H

Project

Company

Resources: Personnel 2

3. List below information about other key personnel who will be committed to the contract for its duration. Use additional sheets as may be necessary.

Name

Present position

Years of experience with the company and/or
in the industry

Major works for which responsible (type and value)

Linguistic ability relevant to the project

Name

Present position

Years of experience with the company and/or
in the industry

Major works for which responsible (type and value)

Linguistic ability relevant to the project

Appendix 8.3.1 - Prequalification of Tenderers: Contracts for Works Standard Prequalification Form for Contractors - I

Project

Company

Resources: Labour Force, Subcontractors and Manufacture/Fabrication

1. On the basis of the information provided in the prequalification documents indicate the likely source of the labour force required to undertake the work.

2. If it is foreseen that any part of the contract will be sub-contracted state the type of work to be undertaken by the subcontractor(s) and, if known, give the name and address of the subcontractor(s) to be used.

3. Manufacture/fabrication facilities (to be completed only if relevant to the project).

Summary

Description

Location

Capacity

Annual throughput

Appendix 8.3.1 - Prequalification of Tenderers: Contracts for Works

Standard Prequalification Form for Contractors - J

Project

Company

Resources: Contractor's Plant, Equipment and Facilities

1. On the basis of the information provided in the prequalification documents please indicate the equipment and facilities considered by the company to be necessary for undertaking the project and whether this is already in the company's ownership or will be purchased or hired.

Appendix 8.3.1 - Prequalification of Tenderers: Contracts for Works

Standard Prequalification Form for Contractors - K

Project

Company

Experience: Geographical

1. Countries in which work similar to the project has been undertaken.

2. Summary of experience of company in country of the project and/or neighbouring states.

Appendix 8.3.1 - Prequalification of Tenderers: Contracts for Works

Standard Prequalification Form for Contractors - L

Project

Company

Experience: Relevant Projects Completed

Please fill in information about the relevant projects completed over the past six years.
Use additional sheets as may be necessary.

1. Name of employer

Name, location and type of project

Name of (consulting) engineer responsible
for supervision

Contract price and date

Percentage of participation of company
in the project

Was contract satisfactorily completed,
including time provision

2. Name of employer

Name, location and type of project

Name of (consulting) engineer responsible
for supervision

Contract price and date

Percentage of participation of company
in the project

Was contract satisfactorily completed,
including time provision

Appendix 8.3.1 - Prequalification of Tenderers: Contracts for Works

Standard Prequalification Form for Contractors - M

Project

Company

Experience: All Projects in Progress

Give information about all projects in progress, including those where the company has received a letter of intent, but a formal contract has not yet been awarded. Use additional sheets if necessary.

1. Name of employer

Name, location and type of project

Name of (consulting) engineer
responsible for supervision

Value of contract

Value completed and certified

Percentage of participation of company
in the project

Percentage of practical completion

Scheduled date of completion of work

2. Name of employer

Name, location and type of project

Name of (consulting) engineer
responsible for supervision

Value of contract

Value completed and certified

Percentage of participation of company
in the project

Percentage of practical completion

Scheduled date of completion of work

Appendix 8.3.1 - Prequalification of Tenderers: Contracts for Works
Standard Prequalification Form for Contractors - N

Project

Company

Quality Assurance System

1. Please describe the company's quality assurance system.

Appendix 8.3.1 - Prequalification of Tenderers: Contracts for Works Standard Prequalification Form for Contractors - O

Project

Company

Health and Safety Plan

1. Please describe the company's health and safety plan.

Appendix 8.3.1 - Prequalification of Tenderers: Contracts for Works
Standard Prequalification Form for Contractors - P

Project

Company

Environmental Policy

1. Please describe the company's environmental policy.

Appendix 8.3.1 - Prequalification of Tenderers: Contracts for Works

Standard Prequalification Form for Contractors - Q

Project

Company

Training

1. If the contractor will be required to provide training for operatives of the completed project, please name the location(s) where this would be carried out and the method of training to be provided.

Appendix 8.3.1 - Prequalification of Tenderers: Contracts for Works

Standard Prequalification Form for Contractors - R

Project

Company

Operation and Maintenance

1. If the contractor is required to operate and maintain the facility, please indicate in general terms the manner and methods by which this would be carried out.

Appendix 8.3.1 - Prequalification of Tenderers: Contracts for Works Standard Prequalification Form for Contractors - S

Project

Company

Litigation and Arbitration History 1

1. Please describe the company's history of litigation and/or arbitration from contracts executed or completed during the last six years or currently under execution.

Appendix 8.3.1 - Prequalification of Tenderers: Contracts for Works
Standard Prequalification Form for Contractors - T

Project

Company

Litigation and Arbitration History 2

1. Please indicate for each year, the name of the employer, the main claims and counterclaims (if any) in the litigation or arbitration, the respective amounts claimed and counterclaimed (if any), the court or arbitral institution or arbitration rules concerned and the amount awarded to and/or against the company, as appropriate.

Appendix 8.3.1 - Prequalification of Tenderers: Contracts for Works Standard Prequalification Form for Contractors - U

Project

Company

Additional Information

1. Please add further information which you consider to be relevant to the evaluation of your application for prequalification.

If you wish to attach other documents, please list them below.

Appendix 11.1.1 - Obtaining Tenders: Construction Contracts

Example Letter of Invitation to Tender

Contract: _____

Project: _____

We confirm having advised you that

[OR: We are pleased to notify you that] you have been prequalified

OR: you have been selected as a prospective tenderer]

for the above Contract.

The Government of _____ has received

[OR: has applied for]

a loan from the _____ towards the cost of the above Project. Part of the proceeds of this loan shall be used for the payments to the Contractor under this Contract, the other parts being used to finance other contracts included in the Project.

We have appointed as the Engineer: _____

They will soon be issuing, on our behalf, the Tender Dossier listed in Clause 1 of the Instructions to Tenderers.

We now invite you to submit a Tender in accordance with the Instructions to Tenderers which form the first part of the Tender Dossier. In the Instructions, the following details are stated to be included in this Letter of Invitation:

- a. Clause 2 refers to the eligibility of the above-named entity, to whom this letter is addressed;
- b. Clause 3 refers to requests for clarification being sent to the Engineer who is named above;
- c. Clause 4 refers to a joint site visit by representatives of the tenderers, and we recommend that you send either one or two representatives to the site for this visit. It will commence at _____
- d. Clause 6 refers to the submission of your Tender, which must be received at the address stated in the Clause not later than 10:00 local time on the Tender submission date of _____
- e. Clause 7 refers to the opening of Tenders in the presence of representatives of the tenderers, which will commence at 10:05 on the Tender submission date stated above.

Please confirm, within a week of receiving this letter, that you have received the complete Tender Dossier, and also advise us whether you will submit a Tender in accordance with the Instructions to Tenderers.

Appendix 11.1.2 - Obtaining Tenders: Construction Contracts

Example Form of Tender Security

Brief description of Contract: _____

Name and address of Beneficiary: _____
(whom the Tender Dossier defines as the Employer).

We have been informed that _____ (hereinafter called the "Principal") is submitting an offer for such Contract in response to your invitation, and that the conditions of your invitation (the "conditions of invitation", which are set out in a document entitled Instructions to Tenderers) require his offer to be supported by a tender security.

At the request of the Principal, we (name of bank) _____ hereby irrevocably undertake to pay you, the Beneficiary/Employer, any sum or sums not exceeding in total the amount of _____ (say: _____) upon receipt by us of your demand in writing and your written statement (in the demand) stating that:

- (a) the Principal has, without your agreement, withdrawn his offer after the latest time specified for its submission and before the expiry of its period of validity, _____ or
- (b) the Principal has refused to accept the correction of errors in his offer in accordance with such conditions of invitation, or
- (c) you awarded the Contract to the Principal and he has failed to comply with Sub-Clause 1.6 of the conditions of the Contract, or
- (d) you awarded the Contract to the Principal and he has failed to comply with Sub-Clause 4.2 of the conditions of the Contract.

Any demand for payment must contain your signature(s) which must be authenticated by your bankers or by a notary public. The authenticated demand and statement must be received by us at this office on or before (the date 35 days after the expiry of the validity of the Letter of Tender) _____, when this guarantee shall expire and shall be returned to us.

This guarantee is subject to the Uniform Rules for Demand Guarantees, published as number 458 by the International Chamber of Commerce, except as stated above.

Date: _____ Signature(s): _____

Appendix 11.1.3 - Obtaining Tenders: Construction Contracts

Example Form of Instructions to Tenderers

This example form has been drafted as a suggested model from which users may prepare their own Instructions, copying text as they consider appropriate. However, many employers, International Financial Institutions and other entities have standard forms, which may be equally suitable for use with FIDIC's general conditions, and may incorporate requirements which are specific to the entity promulgating its standard form. The following example clauses are offered as suggestions for those who do not have such standard forms, and for those who may wish to review and develop their own standard forms whilst incorporating their specific requirements.

The instructions to tenderers should not form part of the eventual contract, and should not contain any text which remains relevant after award of the contract.

The instructions to tenderers specify the procedures to be followed until the employer either enters into a contract or advises tenderers that the employer does not intend to do so. In order to facilitate the preparation of the instructions, any data which typically is unknown at this stage is referred to as being contained in a letter of invitation.

1 Introduction

1.1 These Instructions to Tenderers ("these Instructions") relate to a Letter of Invitation ("the Invitation"), in which a prospective tenderer is invited to submit a Tender. The Invitation, which (in the case of any discrepancy) takes precedence over these Instructions, specifies:

- a the company or joint venture, who is considered to be eligible as described in Clause 2 of these Instructions and who is thus invited to submit a Tender;
- b the Engineer, to whom requests for clarification may be sent as described in Clause 3 of these Instructions;
- c details of how to participate in the site visit by tenderers (or how to obtain such details), if such a visit is being arranged under Clause 4 of these Instructions;
- d the time by which Tenders are to be submitted in accordance with Clause 6 of these Instructions (the "Tender submission date"); and
- e the time when Tenders are to be opened as described in Clause 7 of these Instructions.

1.2 The Tender Dossier, as issued to each tenderer in accordance with the Invitation, comprise:

- a Volume I containing these Instructions, the Letter of Tender, the Bill of Quantities and other Schedules;
- b Volume II containing the Conditions of Contract, and the Specification;
- c Volume III containing the Drawings.

1.3 [The following documents have also been issued to each tenderer for information:

.....]

These [documents and the] Instructions to Tenderers shall not form part of the tenderer's offer, nor part of the defined words "Tender" or "Contract". These Instructions prescribe the procedures to be followed until the

Employer either enters into a Contract with the tenderer or advises him that the Employer does not intend to do so.

1.4 Words and expressions defined in Sub-Clause 1.1 of the Conditions of Contract shall have the same meanings where used in these Instructions.

1.5 The tenderer shall bear all costs incurred in the preparation and submission of the Tender, including visits and other actions mentioned or implied in these Instructions.

1.6 The Employer will not be responsible or liable for such costs, regardless of the conduct or outcome of the tendering process. The Employer reserves the right to accept or reject any Tender, or to annul the tendering process and reject all Tenders, without incurring liability to any tenderer and without being obliged to inform any tenderer of the reasons for the Employer's action.

2 Eligibility of the Tenderer

2.1 The Invitation (i) names the company or joint venture whom the Employer considered to be eligible to submit a Tender, (ii) states whether the tenderer was prequalified or selected, and (iii) may state any particular conditions or reservations of the prequalification or selection. Nothing in these Instructions entitles any other entity, company or joint venture to submit a Tender.

2.2 [Each prequalified tenderer shall notify the Employer, as soon as practicable, of any change in the data submitted for the purpose of the prequalification. Any significant change in such data shall be deemed to invalidate the tenderer's previous prequalification, but the company or joint venture may request the Employer's permission to reapply for prequalification. If (at his sole discretion) the Employer grants such permission, the tenderer's application

Appendix 11.1.3 - Obtaining Tenders: Construction Contracts

Example Form of Instructions to Tenderers

for prequalification must be received by the Employer not less than 28 days before the Tender submission date specified in Clause 6 of these Instructions.]

[Each tenderer shall, in order to be considered for eligibility, submit the information listed below with the Tender. In the case of a joint venture of two or more legal persons, the information shall be submitted in respect of each of these persons and in respect of the joint venture tenderer.

- a copies of original documents defining constitution and/or legal status, place of registration and principal place of business;
- b total annual turnover expressed as total volume of engineering work carried out in each of the last five years;
- c financial reports, including profit and loss statements, balance sheets and auditor's reports for each of the past five years, and an estimated financial projection for the subsequent year;
- d evidence of access to lines of credit, and availability of other financial resources;
- e name and address of banker(s) who will (and have been authorised to) provide references upon request by the Employer;
- f details of performance as prime/main contractor on works of a similar nature and volume over the last five years and on current works; and
- g a list of the major items of Contractor's Equipment proposed for carrying out the Contract including details of ownership.]

2.3 In these Instructions, the expression "joint venture" means any of the groupings described in Sub-Clause 1.14 of the Conditions of Contract. In order that such a joint venture of two or more legal persons is to be acceptable as eligible:

- a these persons shall have nominated a leader with authority to bind the joint venture and each of these persons; and this leader shall be authorised to incur liabilities and receive instructions for and on behalf of any and all these persons;
- b evidence of this authorisation shall be submitted with the Tender in the form of a power of attorney signed by legally authorised signatories of all these persons;
- c the Letter of Tender, and (if it is accepted) the Contract Agreement, shall be signed so as to be

legally binding on each of these persons; and

- d a copy of the agreement entered into by these persons shall be submitted with the Tender. This agreement shall state (i) each such person's percentage participation in the joint venture, and (ii) that these persons shall be jointly and severally liable to the Employer for the performance of the Contract.

2.4 No such person or sole tenderer shall participate in the preparation of another tenderer's Tender for the same Contract. If any entity is found to have participated in two or more Tenders, other than alternative Tenders from the same tenderer, all such Tenders will be rejected.

2.5 However, any entity may be proposed as a prospective subcontractor by more than one tenderer in addition to being either a sole tenderer or a participant in one joint venture tenderer.

3 The Tender Dossier

3.1 The Tender shall be responsive to the complete Tender Dossier which comprises the documents listed in Clause 1 above and any Addenda to Tender Dossier which may be issued as described in this Clause 3. The tenderer shall scrutinize each document immediately upon receiving it and shall promptly give notice, to the party who issued the document, of any pages which appear to be missing.

3.2 The tenderer must carefully examine the complete Tender Dossier. Failure to comply with these Instructions or with any other tendering requirements will be at the tenderer's risk.

3.3 If the tenderer requires any clarification of the Tender Dossier, he may give notice to the Engineer. The notice shall be written (which includes by facsimile transmission) in the language used in the Invitation, and shall be sent to the Engineer's address stated in the Invitation as soon as practicable.

3.4 The Engineer shall respond to the notice by issuing (i) the text of the question or request for clarification and (ii) the Employer's clarification. This response shall be in writing and shall give no indication of the identity of the tenderer who requested clarification.

Appendix 11.1.3 - Obtaining Tenders: Construction Contracts

Example Form of Instructions to Tenderers

These requests for clarification and responses shall be sent to all prospective tenderers who received the Tender Documents, but shall not constitute amendments to the Tender Documents. However, if a notice is received less than 28 days before the Tender submission date, there may be no response.

3.5 If amendments are to be made to the Tender Dossier, arising from a notice or otherwise, the Engineer shall issue an Addendum to Tender Dossier on behalf of the Employer. Each Addendum to Tender Dossier shall be sent to all prospective tenderers who received the Tender Dossier, and shall be binding upon them. The tenderer shall promptly acknowledge receipt of each Addendum to Tender Dossier by written notice to the Engineer, and shall also enter its reference number in the first sentence of the Letter of Tender.

3.6 At any time, the Engineer may similarly issue an Addendum to Tender Dossier which amends the Tender submission date. In this event, all rights and obligations of the Employer and the tenderers previously related to the original date shall thereafter be subject to the amended date.

4 Site Visit

4.1 The tenderer is advised to visit and examine the Site, its surroundings and other parts of the Country, and must obtain for himself on his own responsibility all information which may be necessary for preparing the Tender and entering into a Contract.

4.2 The tenderer and any of his personnel or agents will be granted conditional permission to enter upon the Site. The permission shall be deemed to have been based upon the tenderer, his personnel and agents indemnifying the Employer and his personnel and agents from and against all liability and upon the tenderer being responsible for personal injury (whether fatal or otherwise), loss of or damage to property and any other loss, damage, costs and expenses (however caused) which would not have arisen other than due to the exercise of such permission.

4.3 If a joint site visit is to be arranged for all tenderers, details are given in the Invitation.

4.4 Such a joint visit is intended to supplement, and not to replace, the individual inspections carried out by each tenderer. The Employer accepts no responsibility for providing any indication of relevant aspects, or access to

appropriate areas, which a competent tenderer may consider necessary for the preparation of a Tender.

4.5 The Employer shall not be bound by any oral representations which may be made during a joint site visit, whether by the Engineer's personnel or by others; and whether during a formal meeting or otherwise. In order to minimize the possibility of misunderstanding, tenderers should present any requests for clarification in writing. In accordance with Clause 3 of these Instructions, any record of the formal meeting, requests, clarifications and/or Addendum to Tender Dossier shall be sent to all prospective tenderers who received the Tender Dossier.

5 Preparation of the Tender

5.1 The Tender and all communications between the tenderer and the Employer or the Engineer shall be typed or written in indelible ink in the language used in the Invitation. Supporting documentation submitted by the tenderer may be in another language if he also submits an appropriate translation of all its relevant passages into this ruling language.

5.2 The Tender Dossier to be submitted by each tenderer shall comprise the Volume I described in Clause 1 of these Instructions.

5.3 The Tender Dossier issued to the tenderer, including any amendments instructed in an Addendum to Tender Dossier, shall be used without further amendment.

5.4 The tenderer shall submit, with his Tender, a tender security in the form annexed to these Instructions. The tender security shall be issued by an entity acceptable to the Employer, and shall be valid for not less than 35 days after the date on which the validity of the Tender expires. The Employer will return the tender security upon the occurrence of the first of the following events:

- a the Employer receives the Performance Security from the successful tenderer;
- b the Employer abandons his intention to appoint a Contractor; or
- c the validity of all tender securities for the contract expires.

5.5 The tenderer shall price the whole of the Works, and submit a Tender, in accordance with the Tender Dossier. A Tender which excludes part of the Works may be rejected as unresponsive.

5.6 Each of the Schedules shall be completed as appropriate

Appendix 11.1.3 - Obtaining Tenders: Construction Contracts

Example Form of Instructions to Tenderers

to the particular Schedule. The Bill of Quantities shall be fully priced, with a rate entered for each item. Each amount shall be carried forward to the Summary, the total of which shall be carried forward to the Letter of Tender. All rates and prices shall be entered in the same currency as that which is named in the Letter of Tender. If any item is not priced, there shall be no payment for the work described in the item, which shall be deemed covered by other rates and/or prices.

- 5.7 The tenderer shall also submit the following supplementary information accompanying, but not forming part of, his Tender:
- a the information listed in Clause 2 of these Instructions, if applicable to the tenderer;
 - b name and address of the bank or other entity which will provide the Performance Security and the advance payment guarantee; and a letter from such entity acknowledging having received the Annexes to the Particular Conditions of Contract and undertaking to provide these security documents in accordance with the exact wording of these Annexes (if the entity prefers to make minor changes, they must be specified exactly);
 - c name and address of the insurers and their principal terms for the insurances required by Clause 18 of the Conditions of Contract, including proposed deductibles and exclusions;
 - d details of the arrangements and methods which the tenderer proposes to adopt for the execution of the Works, in sufficient detail to demonstrate their adequacy to achieve the requirements of the Contract including completion within the Time for Completion;
 - e any proposals for subcontracting the execution of parts of the Works, excluding each subcontract which will be less than ten percent of the Tender sum (this exclusion does not apply to the details required in the Schedules, which must be completed without exclusions);
 - f the names, qualifications and experience of key personnel proposed for the management of the Contract and the execution of the Works, both on and off site, including curriculum vitae of the senior personnel.

A Tender which is not accompanied by this

information may be rejected as unresponsive.

- 5.8 The completed Tender shall not have any alterations or erasures, except any which may be specified in an Addendum to Tender Dossier issued under Clause 3 of these Instructions. However, if alterations are necessary to correct errors made by the tenderer, these corrections shall be endorsed with the signature of the person signing the Letter of Tender.
- 5.9 Only one Tender may be submitted by each tenderer, except for any alternative offers. In addition to a compliant Tender, the tenderer may offer technical or other alternatives to the requirements of the Tender Dossier, which may include reasonable deviations or other proposals. Each alternative Tender shall include all information necessary for its complete evaluation by the Employer, including any relevant calculations, specifications, construction methods, timing implications, breakdowns of prices, and other relevant details. The Employer reserves the right to reject alternative offers.

6 Submission of the Tender

- 6.1 The Tenderer shall prepare one original set and three photocopy sets of the documents comprising the Tender and supplementary information, as described in Clause 5 of these Instructions. Each such set shall be submitted in an inner envelope within an outer envelope, with each document and each envelope being clearly marked "ORIGINAL" or "COPY" as appropriate. If there is any discrepancy between them, the ORIGINAL shall prevail.
- 6.2 The original and copies of the Tender shall be signed by a person or persons duly authorised to bind the tenderer. Proof of authorisation, in the form of a written power of attorney, shall be annexed to the Letter of Tender. All pages of the Appendix to Tender and Schedules where entries or amendments have been made shall be initialled by the person(s) signing the Letter of Tender.
- 6.3 The inner and outer envelopes shall be addressed to:
.....
and shall bear the following identification:
.....
- 6.4 The inner envelopes shall indicate the name and

Appendix 11.1.3 - Obtaining Tenders: Construction Contracts

Example Form of Instructions to Tenderers

address of the tenderer to enable the Tender to be returned unopened if it is declared "late". The outer envelopes shall give no indication of the tenderer.

- 6.5 If a Tender is misplaced or opened prematurely because an envelope was not sealed and marked as instructed above, the Employer shall not be responsible and the Tender may be rejected.
- 6.6 The original and copies of the Tender must be delivered to the address specified above no later than the time, on the Tender submission date, stated in the Invitation. Tenders received by the Employer thereafter will be returned unopened.
- 6.7 The tenderer may modify or withdraw his Tender after submitting it, if the modification or notice of withdrawal is received in writing before such prescribed time for submission of Tenders but not thereafter. The tenderer's modification or notice of withdrawal shall be prepared, sealed, marked and delivered in accordance with the provisions of this Clause 6, with the inner envelopes additionally marked "MODIFICATION" or "WITHDRAWAL", as appropriate. In particular, the modification or notice of withdrawal shall be signed by a person or persons duly authorised to bind the tenderer, and proof of authorisation shall be annexed.
- 6.8 A Tender submitted other than as described in this Clause 6 may be rejected by the Employer and returned to the tenderer.
- 6.9 The Tender shall remain valid and open for acceptance for the period of 140 days from the Tender submission date. The tenderer shall calculate the date on which validity expires and insert this expiry date in the Letter of Tender. Prior to this expiry date, the Employer may by written notice request the tenderer to extend the validity period. The tenderer may refuse the request, but shall not modify his Tender other than by extending its validity.

7 Tender Opening

- 7.1 Tenders and other submissions, which are in accordance with Clause 6 of these Instructions, will be opened at the date and time stated in the Invitation in the presence of tenderers' representatives who choose to attend at the address for delivery of Tenders specified in Clause 6.
- 7.2 Tenderers' representatives at this opening shall sign an attendance register.
- 7.3 Tenders for which the Employer has received a valid

notice of withdrawal in accordance with Clause 6 of these Instructions shall not be opened.

- 7.4 The Employer will examine Tenders to determine whether they appear to be complete, properly signed, and generally in order. For each Tender, the Employer or the Engineer will announce the name of the tenderer, the sum offered in the Letter of Tender, and such other details as the Employer may consider appropriate.
- 7.5 After this Tender opening, information relating to the processes of examination, clarification, evaluation and comparison of Tenders and the award of a contract shall not be disclosed, other than to those officially concerned with such processes. Any effort by a tenderer to influence the Employer or the Engineer in these processes may result in the rejection of the tenderer's Tender.

8 Tender Evaluation

- 8.1 Prior to the detailed evaluation of Tenders, the Employer will determine whether each Tender is substantially responsive to the requirements of the Tender Dossier. For the purpose of these processes, a substantially responsive Tender is one which conforms to all the terms, conditions and requirements of the Tender Dossier without material deviation or reservation.
- 8.2 A material deviation or reservation is one which affects in any substantial way the scope, quality, or performance of the Works, or which limits in any substantial way (inconsistent with the Tender Dossier) the Employer's rights or the Contractor's obligations under the Contract, and the rectification of which deviation or reservation would affect unfairly the competitive position of other tenderers presenting substantially responsive Tenders.
- 8.3 If a Tender is not substantially responsive to the requirements of the Tender Dossier, it will be rejected by the Employer. The Tender shall not be made responsive by the tenderer correcting or withdrawing the non-conforming deviation or reservation.
- 8.4 The Employer will only evaluate and compare the Tenders which have been determined to be substantially responsive to the requirements of the Tender Dossier. Responsive Tenders will first be checked by the Employer for any arithmetic errors in computation and summation, and any errors will be corrected as follows:
- a The amount entered in the Letter of Tender (as

Appendix 11.1.3 - Obtaining Tenders: Construction Contracts

Example Form of Instructions to Tenderers

announced when Tenders were opened) may be considered acceptable as the Contract Amount without any of the corrections and adjustments described in these sub-paragraphs. If there is any discrepancy between amounts in figures and in words, the amount in words will take precedence.

- b If there is any discrepancy between this amount and the equivalent sum computed on the basis of the Bill of Quantities or other Schedules, the Employer may make corrections and/or adjustments (applying the principles described in these sub-paragraphs) and give notice to the tenderer, specifying each error, correction and adjustment. If the tenderer does not accept these notified corrections and adjustments, his Tender may be rejected.
 - c If there is a substantial discrepancy between a stated amount and the correct amount calculated by multiplying the stated unit rate by the quantity, and the rate seems to have been stated in error (inconsistent with the tenderer's likely intentions), the stated unit rate shall be amended and the stated amount will be binding.
 - d If there is any discrepancy between a stated amount and the correct amount calculated by multiplying the stated unit rate by the quantity, and either the discrepancy is not substantial or it is reasonable to assume that the stated rate is consistent with the tenderer's intentions, the stated unit rate will be binding and the stated amount shall be amended.
- 8.5 For the purpose of evaluating Tenders, the Employer will determine for each Tender the Evaluated Tender Amount as follows:
- a making any correction for errors as described above;
 - b making an appropriate adjustment for any acceptable variations, deviations, discounts or other alternative offers not reflected in the submitted amount or these corrections; and
 - c making an allowance for any acceptable varied times for completion offered in alternative Tenders, the allowance being calculated at the same rate as the rate for delay damages for the Works which is stated in the Appendix to Tender.]
- 8.6 To assist in the examination, evaluation and comparison of Tenders, the Employer may ask any tenderer for clarification of his Tender, including

break-downs of unit rates and lump sum prices. The request for clarification and the response shall be in writing. No change in the price or substance of the Tender shall be sought, offered or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer during the evaluation of the Tenders.

9 Award of the Contract

- 9.1 The Employer intends (i) to award the Contract to the tenderer who appears to have the capability and resources to carry out the Contract effectively, whose Tender has been determined to be responsive to the Tender Dossier and who has offered (all taken into consideration) the most favourable Tender; or (ii) to reject compliant Tenders and accept an alternative Tender. The Employer reserves the right to reject any or all Tenders.
- 9.2 [During the evaluation of Tenders, the Employer may give the preferred tenderer(s) a list of the names of suitable professionals who are acceptable to the Employer to act as DAB (sole adjudicator) under Clause 20 of the Conditions of Contract. The Employer does not intend to contact such persons, and they should not be contacted by tenderers. If, in very special circumstances, the Employer exchanged correspondence with any of these listed persons, copies of such correspondence will be forwarded to the tenderer.] [OR: During the evaluation of Tenders, the Employer may give the preferred tenderer the name of the person whom the Employer nominates as a member of the DAB under Clause 20 of the Conditions of Contract; and the tenderer may likewise give the Employer the name of the person whom the tenderer nominates.]
- 9.3 After receiving the Employer's Letter of Acceptance, the successful tenderer shall submit a Performance Security in accordance with Sub-Clause 4.2, and an advance payment guarantee in accordance with Sub-Clause 14.2, of the Conditions of Contract.
- 9.4 After receiving the Performance Security from the successful tenderer, the Employer will notify the other tenderers that their Tenders have been unsuccessful.

Appendix 12.1.1 - Obtaining Tenders: Plant and Design-Build Contracts

Example Letter of Invitation to Tender

See Appendix 11.1.1.

Appendix 12.1.2 - Obtaining Tenders: Plant and Design-Build Contracts

Example Form of Tender Security

See Appendix 11.1.2.

Appendix 12.1.3 - Obtaining Tenders: Plant and Design-Build Contracts

Example Form of Instructions to Tenderers

This example form has been drafted as a suggested model from which users may prepare their own Instructions, copying text as they consider appropriate. However, many employers, International Financial Institutions and other entities have standard forms, which may be equally suitable for use with FIDIC's general conditions, and may incorporate requirements which are specific to the entity promulgating its standard form. The following example clauses are offered as suggestions for those who do not have such standard forms, and for those who may wish to review and develop their own standard forms whilst incorporating their specific requirements.

The instructions to tenderers should not form part of the eventual contract, and should not contain any text which remains relevant after award of the contract.

The instructions to tenderers specify the procedures to be followed until the employer either enters into a contract or advises tenderers that the employer does not intend to do so. In order to facilitate the preparation of the instructions, any data which typically is unknown at this stage is referred to as being contained in a letter of invitation.

For some types of contractor-designed works, a two-stage tendering procedure may be adopted. Under the first stage, tenderers submit unpriced technical proposals, on which the employer may comment when he invites some or all of them to submit final priced offers under the second stage. Before amending these model instructions, the employer should consider carefully what he expects to achieve by the division into two stages, and how tenderers will respond thereto.

1 Introduction

1.1 These Instructions to Tenderers ("these Instructions") relate to a Letter of Invitation ("the Invitation"), in which a prospective tenderer is invited to submit a Tender. The Invitation, which (in the case of any discrepancy) takes precedence over these Instructions, specifies:

- a the company or joint venture, who is considered to be eligible as described in Clause 2 of these Instructions and who is thus invited to submit a Tender;
- b the Engineer, to whom requests for clarification may be sent as described in Clause 3 of these Instructions;
- c details of how to participate in the site visit by tenderers (or how to obtain such details), if such a visit is being arranged under Clause 4 of these Instructions;
- d the time by which Tenders are to be submitted in accordance with Clause 6 of these Instructions (the "Tender submission date"); and
- e the time when Tenders are to be opened as described in Clause 7 of these Instructions.

1.2 The Tender Dossier, as issued to each tenderer in accordance with the Invitation, comprise:

- a Volume I containing these Instructions, the Letter of Tender, and the Schedules;
- b Volume II containing the Conditions of Contract, and the Employer's Requirements.

1.3 [The following documents have also been issued to each tenderer for information:

.....]

These [documents and the] Instructions to Tenderers shall not form part of the tenderer's offer, nor part of the defined words "Tender" or "Contract". These Instructions prescribe the procedures to be followed until the Employer either enters into a Contract with the tenderer or advises him that the Employer does not intend to do so.

1.4 Words and expressions defined in Sub-Clause 1.1 of the Conditions of Contract shall have the same meanings where used in these Instructions.

1.5 The tenderer shall bear all costs incurred in the preparation and submission of the Tender, including visits and other actions mentioned or implied in these Instructions.

1.6 The Employer will not be responsible or liable for such costs, regardless of the conduct or outcome of the tendering process. The Employer reserves the right to accept or reject any Tender, or to annul the tendering process and reject all Tenders, without incurring liability to any tenderer and without being obliged to inform any tenderer of the reasons for the Employer's action.

2 Eligibility of the Tenderer

2.1 The Invitation (i) names the company or joint venture whom the Employer considered to be eligible to submit a Tender, (ii) states whether the tenderer was prequalified or selected, and (iii) may state any particular conditions or

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Example Form of Instructions to Tenderers

reservations of the prequalification or selection. Nothing in these Instructions entitles any other entity, company or joint venture to submit a Tender.

- 2.2 [Each prequalified tenderer shall notify the Employer, as soon as practicable, of any change in the data submitted for the purpose of the prequalification. Any significant change in such data shall be deemed to invalidate the tenderer's previous prequalification, but the company or joint venture may request the Employer's permission to reapply for prequalification. If (at his sole discretion) the Employer grants such permission, the tenderer's application for prequalification must be received by the Employer not less than 28 days before the Tender submission date specified in Clause 6 of these Instructions.]

[Each tenderer shall, in order to be considered for eligibility, submit the information listed below with the Tender. In the case of a joint venture of two or more legal persons, the information shall be submitted in respect of each of these persons and in respect of the joint venture tenderer.

- a copies of original documents defining constitution and/or legal status, place of registration and principal place of business;
- b total annual turnover expressed as total volume of engineering work carried out in each of the last five years;
- c financial reports, including profit and loss statements, balance sheets and auditor's reports for each of the past five years, and an estimated financial projection for the subsequent year;
- d evidence of access to lines of credit, and availability of other financial resources;
- e name and address of banker(s) who will (and have been authorised to) provide references upon request by the Employer;
- f details of performance as prime/main contractor on works of a similar nature and volume over the last five years and on current works; and
- g a list of the major items of Contractor's Equipment proposed for carrying out the Contract including details of ownership.]

- 2.3 In these Instructions, the expression "joint venture" means any of the groupings described in Sub-Clause 1.14 of the Conditions of Contract. In order that such a joint venture of two or more legal

persons is to be acceptable as eligible:

- a these persons shall have nominated a leader with authority to bind the joint venture and each of these persons; and this leader shall be authorised to incur liabilities and receive instructions for and on behalf of any and all these persons;
- b evidence of this authorisation shall be submitted with the Tender in the form of a power of attorney signed by legally authorised signatories of all these persons;
- c the Letter of Tender, and (if it is accepted) the Contract Agreement, shall be signed so as to be legally binding on each of these persons; and
- d a copy of the agreement entered into by these persons shall be submitted with the Tender. This agreement shall state (i) each such person's percentage participation in the joint venture, and (ii) that these persons shall be jointly and severally liable to the Employer for the performance of the Contract.

- 2.4 No such person or sole tenderer shall participate in the preparation of another tenderer's Tender for the same Contract. If any entity is found to have participated in two or more Tenders, other than alternative Tenders from the same tenderer, all such Tenders will be rejected.

- 2.5 However, any entity may be proposed as a prospective subcontractor by more than one tenderer in addition to being either a sole tenderer or a participant in one joint venture tenderer.

3 The Tender Dossier

- 3.1 The Tender shall be responsive to the complete Tender Dossier which comprises the documents listed in Clause 1 above and any Addenda to Tender Dossier which may be issued as described in this Clause 3. The tenderer shall scrutinize each document immediately upon receiving it and shall promptly give notice, to the party who issued the document, of any pages which appear to be missing.

- 3.2 The tenderer must carefully examine the complete Tender Dossier. Failure to comply with these Instructions or with any other tendering requirements will be at the tenderer's risk.

- 3.3 If the tenderer requires any clarification of the Tender

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Dossier, he may give notice to the Engineer. The notice shall be written (which includes by facsimile transmission) in the language used in the Invitation, and shall be sent to the Engineer's address stated in the Invitation as soon as practicable.

3.4 The Engineer shall respond to the notice by issuing (i) the text of the question or request for clarification and (ii) the Employer's clarification. This response shall be in writing and shall give no indication of the identity of the tenderer who requested clarification. These requests for clarification and responses shall be sent to all prospective tenderers who received the Tender Dossier, but shall not constitute amendments to the Tender Dossier. However, if a notice is received less than 28 days before the Tender submission date, there may be no response.

3.5 If amendments are to be made to the Tender Dossier, arising from a notice or otherwise, the Engineer shall issue an Addendum to Tender Dossier on behalf of the Employer. Each Addendum to Tender Dossier shall be sent to all prospective tenderers who received the Tender Dossier, and shall be binding upon them. The tenderer shall promptly acknowledge receipt of each Addendum to Tender Dossier by written notice to the Engineer, and shall also enter its reference number in the first sentence of the Letter of Tender.

3.6 At any time, the Engineer may similarly issue an Addendum to Tender Dossier which amends the Tender submission date. In this event, all rights and obligations of the Employer and the tenderers previously related to the original date shall thereafter be subject to the amended date.

4 Site Visit

4.1 The tenderer is advised to visit and examine the Site, its surroundings and other parts of the Country, and must obtain for himself on his own responsibility all information which may be necessary for preparing the Tender and entering into a Contract.

4.2 The tenderer and any of his personnel or agents will be granted conditional permission to enter upon the Site. The permission shall be deemed to have been based upon the tenderer, his personnel and agents indemnifying the Employer and his personnel and agents from and against all liability and upon the tenderer being responsible for personal injury (whether fatal or otherwise), loss of or

damage to property and any other loss, damage, costs and expenses (however caused) which would not have arisen other than due to the exercise of such permission.

4.3 If a joint site visit is to be arranged for all tenderers, details are given in the Invitation.

4.4 Such a joint visit is intended to supplement, and not to replace, the individual inspections carried out by each tenderer. The Employer accepts no responsibility for providing any indication of relevant aspects, or access to appropriate areas, which a competent tenderer may consider necessary for the preparation of a Tender.

4.5 The Employer shall not be bound by any oral representations which may be made during a joint site visit, whether by the Engineer's personnel or by others; and whether during a formal meeting or otherwise. In order to minimize the possibility of misunderstanding, tenderers should present any requests for clarification in writing. In accordance with Clause 3 of these Instructions, any record of the formal meeting, requests, clarifications and/or Addendum to Tender Documents shall be sent to all prospective tenderers who received the Tender Documents.

5 Preparation of the Tender

5.1 The Tender and all communications between the tenderer and the Employer or the Engineer shall be typed or written in indelible ink in the language used in the Invitation. Supporting documentation submitted by the tenderer may be in another language if he also submits an appropriate translation of all its relevant passages into this ruling language.

5.2 The Tender Dossier to be submitted by each tenderer shall comprise the Volume I described in Clause 1 of these Instructions, and a Proposal prepared in accordance with this Clause 5.

5.3 The Tender Dossier issued to the tenderer, including any amendments instructed in an Addendum to Tender Dossier, shall be used without further amendment.

5.4 The tenderer shall submit, with his Tender, a tender security in the form annexed to these Instructions. The tender security shall be issued by an entity acceptable to the Employer, and shall be valid for not less than 35 days after the date on which the validity of the Tender expires.

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Example Form of Instructions to Tenderers

The Employer will return the tender security upon the occurrence of the first of the following events:

- a the Employer receives the Performance Security from the successful tenderer;
- b the Employer abandons his intention to appoint a Contractor; or
- c the validity of all tender securities for the contract expires.

5.5 The tenderer shall complete each Schedule as appropriate to the particular Schedule, and submit a Tender for the whole of the Works in accordance with the Tender Dossier. A Tender which excludes part of the Works may be rejected as unresponsive.

5.6 The tenderer's Proposal, which must form part of the Tender, shall include:

- a a detailed description of the proposed Works;
- b drawings, including plans, elevations and typical cross-sections; these may be A1 size and/or bound A3 volumes, at 1:1000 to 1:100 scales;
- c commentary on the Employer's Requirements, detailing how the layout and other critical requirements will be achieved;
- d manufacturers' brochures and/or other details of the main items of Plant including spares;
- e details of any exceptions to the statements in the Letter of Tender which otherwise state that the Employer's Requirements contain no errors and that the Works will conform therewith.

5.7 The tenderer shall also submit the following supplementary information accompanying, but not forming part of, his Tender:

- a the information listed in Clause 2 of these Instructions, if applicable to the tenderer;
- b name and address of the bank or other entity which will provide the Performance Security and the advance payment guarantee; and a letter from such entity acknowledging having received the Annexes to the Particular Conditions of Contract and undertaking to provide these security documents in accordance with the exact wording of these Annexes (if the entity prefers to make minor changes, they must be specified exactly);
- c name and address of the insurers and their principal terms for the insurances required by

Clause 18 of the Conditions of Contract,

including proposed deductibles and exclusions;

- d details of the arrangements and methods which the tenderer proposes to adopt for the execution of the Works, in sufficient detail to demonstrate their adequacy to achieve the requirements of the Contract including completion within the Time for Completion;
- e any proposals for subcontracting the execution of parts of the Works on the Site, excluding each subcontractor named in the Schedules;
- f the names, qualifications and experience of key personnel proposed for the management of the Contract and the execution of the Works, both on and off site, including curriculum vitae of the senior personnel;
- g names and particulars of each proposed designer and design subcontractor.

A Tender which is not accompanied by this information may be rejected as unresponsive.

5.8 The completed Tender shall not have any alterations or erasures, except any which may be specified in an Addendum to Tender Dossier issued under Clause 3 of these Instructions. However, if alterations are necessary to correct errors made by the tenderer, these corrections shall be endorsed with the signature of the person signing the Letter of Tender.

5.9 Only one Tender may be submitted by each tenderer, except for any alternative offers. In addition to a compliant Tender, the tenderer may offer technical or other alternatives to the requirements of the Tender Dossier, which may include reasonable deviations or other proposals. Each alternative Tender shall include all information necessary for its complete evaluation by the Employer, including any relevant calculations, specifications, construction methods, timing implications, breakdowns of prices, and other relevant details. The Employer reserves the right to reject alternative offers.

6 Submission of the Tender

6.1 The Tenderer shall prepare one original set and three photocopy sets of the documents comprising the Tender and supplementary information, as described in Clause 5 of these Instructions. Each such set shall

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Example Form of Instructions to Tenderers

be submitted in an inner envelope within an outer envelope, with each document and each envelope being clearly marked "ORIGINAL" or "COPY" as appropriate. If there is any discrepancy between them, the ORIGINAL shall prevail.

- 6.2 The original and copies of the Tender shall be signed by a person or persons duly authorised to bind the tenderer. Proof of authorisation, in the form of a written power of attorney, shall be annexed to the Letter of Tender. All pages of the Appendix to Tender and Schedules where entries or amendments have been made shall be initialled by the person(s) signing the Letter of Tender.
- 6.3 The inner and outer envelopes shall be addressed to:
.....
and shall bear the following identification:
.....
- 6.4 The inner envelopes shall indicate the name and address of the tenderer to enable the Tender to be returned unopened if it is declared "late". The outer envelopes shall give no indication of the tenderer.
- 6.5 If a Tender is misplaced or opened prematurely because an envelope was not sealed and marked as instructed above, the Employer shall not be responsible and the Tender may be rejected.
- 6.6 The original and copies of the Tender must be delivered to the address specified above no later than the time, on the Tender submission date, stated in the Invitation. Tenders received by the Employer thereafter will be returned unopened.
- 6.7 The tenderer may modify or withdraw his Tender after submitting it, if the modification or notice of withdrawal is received in writing before such prescribed time for submission of Tenders but not thereafter. The tenderer's modification or notice of withdrawal shall be prepared, sealed, marked and delivered in accordance with the provisions of this Clause 6, with the inner envelopes additionally marked "MODIFICATION" or "WITHDRAWAL", as appropriate. In particular, the modification or notice of withdrawal shall be signed by a person or persons duly authorised to bind the tenderer, and proof of authorisation shall be annexed.
- 6.8 A Tender submitted other than as described in this Clause 6 may be rejected by the Employer and returned to the

tenderer.

- 6.9 The Tender shall remain valid and open for acceptance for the period of 140 days from the Tender submission date. The tenderer shall calculate the date on which validity expires and insert this expiry date in the Letter of Tender. Prior to this expiry date, the Employer may by written notice request the tenderer to extend the validity period. The tenderer may refuse the request, but shall not modify his Tender other than by extending its validity.

7 Tender Opening

- 7.1 Tenders and other submissions, which are in accordance with Clause 6 of these Instructions, will be opened at the date and time stated in the Invitation in the presence of tenderers' representatives who choose to attend at the address for delivery of Tenders specified in Clause 6.
- 7.2 Tenderers' representatives at this opening shall sign an attendance register.
- 7.3 Tenders for which the Employer has received a valid notice of withdrawal in accordance with Clause 6 of these Instructions shall not be opened.
- 7.4 The Employer will examine Tenders to determine whether they appear to be complete, properly signed, and generally in order. For each Tender, the Employer or the Engineer will announce the name of the tenderer, the sum offered in the Letter of Tender, and such other details as the Employer may consider appropriate.
- 7.5 After this Tender opening, information relating to the processes of examination, clarification, evaluation and comparison of Tenders and the award of a contract shall not be disclosed, other than to those officially concerned with such processes. Any effort by a tenderer to influence the Employer or the Engineer in these processes may result in the rejection of the tenderer's Tender.

8 Tender Evaluation

- 8.1 Prior to the detailed evaluation of Tenders, the Employer will determine whether each Tender is substantially responsive to the requirements of the Tender Dossier. For the purpose of these processes, a substantially responsive Tender is one which conforms to all the terms, conditions and requirements of the Tender Dossier

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Example Form of Instructions to Tenderers

without material deviation or reservation.

- 8.2 A material deviation or reservation is one which affects in any substantial way the scope, quality, or performance of the Works, or which limits in any substantial way (inconsistent with the Tender Dossier) the Employer's rights or the Contractor's obligations under the Contract, and the rectification of which deviation or reservation would affect unfairly the competitive position of other tenderers presenting substantially responsive Tenders.
- 8.3 If a Tender is not substantially responsive to the requirements of the Tender Dossier, it will be rejected by the Employer. The Tender shall not be made responsive by the tenderer correcting or withdrawing the non-conforming deviation or reservation.
- 8.4 The Employer will only evaluate and compare the Tenders which have been determined to be substantially responsive to the requirements of the Tender Dossier. Responsive Tenders will first be checked by the Employer for any arithmetic errors in computation and summation, and any errors will be corrected as follows:
- a The amount entered in the Letter of Tender (as announced when Tenders were opened) may be considered acceptable as the Contract Amount without any of the corrections and adjustments described in these sub-paragraphs. If there is any discrepancy between amounts in figures and in words, the amount in words will take precedence.
 - b If there is any discrepancy between this amount and the equivalent sum computed on the basis of the Schedules, the Employer may make corrections and/or adjustments (applying the principles described in these sub-paragraphs) and give notice to the tenderer, specifying each error, correction and adjustment. If the tenderer does not accept these notified corrections and adjustments, his Tender may be rejected.
 - c If there is a substantial discrepancy between a stated amount and the correct amount calculated by multiplying the stated unit rate by the quantity, and the rate seems to have been stated in error (inconsistent with the tenderer's likely intentions), the stated unit rate shall be amended and the stated amount will be binding.
 - d If there is any discrepancy between a stated amount and the correct amount calculated by multiplying the stated unit rate by the quantity, and either the discrepancy is not substantial or it is reasonable to assume that the stated rate is consistent with the tenderer's intentions, the stated unit rate will be binding and the stated amount shall be amended.
- 8.5 For the purpose of evaluating Tenders, the Employer will determine for each Tender the Evaluated Tender Amount as follows:
- a making any correction for errors as described above;
 - b making an appropriate adjustment for any acceptable variations, deviations, discounts or other alternative offers not reflected in the submitted amount or these corrections; [and
 - c making an allowance for any acceptable varied times for completion offered in alternative Tenders, the allowance being calculated at the same rate as the rate for delay damages for the Works which is stated in the Appendix to Tender.]
- 8.6 The evaluation of the Tenders shall be based upon the principles outlined in the performance evaluation criteria annexed to these Instructions. Unless specifically stated, no criterion will take precedence over any other criteria, and Tender evaluation shall be based on an overall consideration.
- ## 9 Award of the Contract
- 9.1 The Employer intends (i) to award the Contract to the tenderer who appears to have the capability and resources to carry out the Contract effectively, whose Tender has been determined to be responsive to the Tender Dossier and who has offered (all taken into consideration) the most favourable Tender; or (ii) to reject compliant Tenders and accept an alternative Tender. The Employer reserves the right to reject any or all Tenders.
- 9.2 The preferred tenderer(s) may be invited to participate in negotiation meeting(s) with the Employer, who may then issue a Memorandum of Understanding recording the outcome of their joint discussions of the Tender, which may include proposed arrangements for the appointment of the

Appendix 12.1.3 - Obtaining Tenders: Plant and Design-Build Contracts

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DAB under Clause 20 of the Conditions of Contract. This Memorandum of Understanding will constitute the agreed basis upon which a contract could be concluded, and/or may include clarification of any alternative proposals which the tenderer may have submitted. The Memorandum of Understanding (i) shall be binding on the tenderer as an acceptable clarification or amendment of his Tender until its validity expires, (ii) shall be wholly subject to a subsequent contract agreement, and (iii) shall not bind the Employer nor commit him to entering into any contract under any terms.

9.3 After receiving the Employer's Letter of Acceptance, the successful tenderer shall submit a Performance Security in accordance with Sub-Clause 4.2, and an advance payment guarantee in accordance with Sub-Clause 14.2, of the Conditions of Contract.

9.4 After receiving the Performance Security from the successful tenderer, the Employer will notify the other tenderers that their Tenders have been unsuccessful.

Appendix 12.1.4 - Obtaining Tenders: Plant and Design-Build Contracts

Typical Schedules

'Schedules' means the document(s) entitled schedules, completed by the contractor and submitted with the letter of tender, as included in the contract. Such document(s) may include data, lists and schedules of payments and/or prices.

Further schedules may be issued by the employer as part of the tender dossier, to define his requirements, and for subsequent inclusion in the contract.

Examples of the subject matter of schedules include the following, which are not intended to be exhaustive, but illustrative only:

- Drawings
- Furniture
- Fixtures, Fittings and Equipment (FF&E)
- Plant and machinery by the contractor
- Plant and machinery by the employer
- Spare parts
- Operational requirements during construction and installation
- Performance monitoring
- Tests on completion
- Taking-over procedure
- Tests after completion
- Performance requirements
- Payment plan including price lists
- Payment procedure
- Indexation formulae and application
- Employer's obligations
- Engineer's duties and authority
- Document management and control procedures
- Approved subcontractors and suppliers
- Insurance policies
- Bank guarantees
- Quality plan
- Health, safety, welfare and environmental policies
- Dispute Adjudication Board members' details

Appendix 12.1.5 - Obtaining Tenders: Plant and Design-Build Contracts

Typical Contents of a Contractor's Proposal

The contractor's proposal should include, but not necessarily be limited to:

- Preliminary design
- Description of the technology
- Description of construction method.
- Procedure for carrying out tests on completion, including commissioning and trial operation.
- Procedure for carrying out tests after completion.
- Training programme for operating staff.
- All other information, specifications and data called for in the instructions to tenderers.

It is to be expected that the submission will be fully supported by all relevant documents such as layout plans, general arrangement drawings, and schematic diagrams.

Appendix 13.1.1 - Obtaining Tenders: EPC/Turnkey Contracts

Example Letter of Invitation to Tender

Contract: _____

Project: _____

We confirm having advised you that

[OR: We are pleased to notify you that] you have been prequalified

OR: you have been selected as a prospective tenderer]

for the above Contract.

The Government of _____ has received

[OR: has applied for]

a loan from the _____ towards the cost of the above Project. Part of the proceeds of this loan shall be used for the payments to the Contractor under this Contract, the other parts being used to finance other contracts included in the Project.

We have appointed as the Employer's Representative: _____

They will soon be issuing, on our behalf, the Tender Dossier listed in Clause 1 of the Instructions to Tenderers.

We now invite you to submit a Tender in accordance with the Instructions to Tenderers which form the first part of the Tender Dossier. In the Instructions, the following details are stated to be included in this Letter of Invitation:

- a. Clause 2 refers to the eligibility of the above-named entity, to whom this letter is addressed;
- b. Clause 3 refers to requests for clarification being sent to the Employer's Representative who is named above;
- c. Clause 4 refers to a joint site visit by representatives of the tenderers, and we recommend that you send either one or two representatives to the site for this visit. It will commence at _____
- d. Clause 6 refers to the submission of your Tender, which must be received at the address stated in the Clause not later than 10:00 local time on the Tender submission date of _____
- e. Clause 7 refers to the opening of Tenders in the presence of representatives of the tenderers, which will commence at 10:05 on the Tender submission date stated above.

Please confirm, within a week of receiving this letter, that you have received the complete Tender Dossier, and also advise us whether you will submit a Tender in accordance with the Instructions to Tenderers.

Appendix 13.1.2 - Obtaining Tenders: EPC/Turnkey Contracts

Example Form of Tender Security

Brief description of Contract: _____

Name and address of Beneficiary: _____

(whom the Tender Dossier define as the Employer).

We have been informed that _____ (hereinafter called the "Principal") is submitting an offer for such Contract in response to your invitation, and that the conditions of your invitation (the "conditions of invitation", which are set out in a document entitled Instructions to Tenderers) require his offer to be supported by a tender security.

At the request of the Principal, we (name of bank) _____ hereby irrevocably undertake to pay you, the Beneficiary/Employer, any sum or sums not exceeding in total the amount of _____ (say: _____) upon receipt by us of your demand in writing and your written statement (in the demand) stating that:

- (a) the Principal has, without your agreement, withdrawn his offer after the latest time specified for its submission and before the expiry of its period of validity, or
- (b) the Principal has refused to accept the correction of errors in his offer in accordance with such conditions of invitation, or
- (c) you entered into the Contract with the Principal and he has failed to deliver a performance security complying with Sub-Clause 4.2 of the conditions of the Contract.

Any demand for payment must contain your signature(s) which must be authenticated by your bankers or by a notary public. The authenticated demand and statement must be received by us at this office on or before (the date 35 days after the expiry of the validity of the Tender) _____, when this guarantee shall expire and shall be returned to us.

This guarantee is subject to the Uniform Rules for Demand Guarantees, published as number 458 by the International Chamber of Commerce, except as stated above.

Date: _____

Signature(s): _____

Appendix 13.1.3 - Obtaining Tenders: EPC/Turnkey Contracts

Example Form of Instructions to Tenderers

This example form has been drafted as a suggested model from which users may prepare their own Instructions, copying text as they consider appropriate. However, many employers, International Financial Institutions and other entities have standard forms, which may be equally suitable for use with FIDIC's general conditions, and may incorporate requirements which are specific to the entity promulgating its standard form. The following example clauses are offered as suggestions for those who do not have such standard forms, and for those who may wish to review and develop their own standard forms whilst incorporating their specific requirements.

The instructions to tenderers should not form part of the eventual contract, and should not contain any text which remains relevant after award of the contract.

The instructions to tenderers specify the procedures to be followed until the employer either enters into a contract or advises tenderers that the employer does not intend to do so. In order to facilitate the preparation of the instructions, any data which typically is unknown at this stage is referred to as being contained in a letter of invitation.

For some types of contractor-designed works, a two-stage tendering procedure may be adopted. Under the first stage, tenderers submit unpriced technical proposals, on which the employer may comment when he invites some or all of them to submit final priced offers under the second stage. Before amending these model instructions, the employer should consider carefully what he expects to achieve by the division into two stages, and how tenderers will respond thereto.

1 Introduction

1.1 These Instructions to Tenderers ("these Instructions") relate to a Letter of Invitation ("the Invitation"), in which a prospective tenderer is invited to submit a Tender. The Invitation, which (in the case of any discrepancy) takes precedence over these Instructions, specifies:

- a the company or joint venture, who is considered to be eligible as described in Clause 2 of these Instructions and who is thus invited to submit a Tender;
- b the Employer's Representative, to whom requests for clarification may be sent as described in Clause 3 of these Instructions;
- c details of how to participate in the site visit by tenderers (or how to obtain such details), if such a visit is being arranged under Clause 4 of these Instructions;
- d the time by which Tenders are to be submitted in accordance with Clause 6 of these Instructions (the "Tender submission date"); and
- e the time when Tenders are to be opened as described in Clause 7 of these Instructions.

1.2 The Tender Dossier, as issued to each tenderer in accordance with the Invitation, comprise volumes containing:

- a these Instructions,

- b the form of Letter of Tender,
- c the Conditions of Contract, and
- d the Employer's Requirements.

1.3 [The following documents have also been issued to each tenderer for information: ...]

These [documents and the] Instructions to Tenderers shall not form part of the tenderer's offer, nor part of the defined words "Tender" or "Contract". These Instructions prescribe the procedures to be followed until the Employer either enters into a Contract with the tenderer or advises him that the Employer does not intend to do so.

1.4 Words and expressions defined in Sub-Clause 1.1 of the Conditions of Contract shall have the same meanings where used in these Instructions.

1.5 The tenderer shall bear all costs incurred in the preparation and submission of the Tender, including visits and other actions mentioned or implied in these Instructions.

1.6 The Employer will not be responsible or liable for such costs, regardless of the conduct or outcome of the tendering process. The Employer reserves the right to accept or reject any Tender, or to annul the tendering process and reject all Tenders, without incurring liability to any tenderer and without being

Appendix 13.1.3 - Obtaining Tenders: EPC/Turnkey Contracts

Example Form of Instructions to Tenderers

obliged to inform any tenderer of the reasons for the Employer's action.

2 Eligibility of the Tenderer

2.1 The Invitation (i) names the company or joint venture whom the Employer considered to be eligible to submit a Tender, (ii) states whether the tenderer was prequalified or selected, and (iii) may state any particular conditions or reservations of the prequalification or selection. Nothing in these Instructions entitles any other entity, company or joint venture to submit a Tender.

2.2 [Each prequalified tenderer shall notify the Employer, as soon as practicable, of any change in the data submitted for the purpose of the prequalification. Any significant change in such data shall be deemed to invalidate the tenderer's previous prequalification, but the company or joint venture may request the Employer's permission to reapply for prequalification. If (at his sole discretion) the Employer grants such permission, the tenderer's application for prequalification must be received by the Employer not less than 28 days before the Tender submission date specified in Clause 6 of these Instructions.]

[Each tenderer shall, in order to be considered for eligibility, submit the information listed below with the Tender. In the case of a joint venture of two or more legal persons, the information shall be submitted in respect of each of these persons and in respect of the joint venture tenderer.

- a copies of original documents defining constitution and/or legal status, place of registration and principal place of business;
- b total annual turnover expressed as total volume of engineering work carried out in each of the last five years;
- c financial reports, including profit and loss statements, balance sheets and auditor's reports for each of the past five years, and an estimated financial projection for the subsequent year;
- d evidence of access to lines of credit, and availability of other financial resources;
- e name and address of banker(s) who will (and have been authorised to) provide references upon request by the Employer;
- f details of performance as prime/main contractor on works of a similar nature and volume over the last five years and on current works; and
- g a list of the major items of Contractor's Equipment

proposed for carrying out the Contract including details of ownership.]

2.3 In these Instructions, the expression "joint venture" means any of the groupings described in Sub-Clause 1.14 of the Conditions of Contract. In order that such a joint venture of two or more legal persons is to be acceptable as eligible:

- a these persons shall have nominated a leader with authority to bind the joint venture and each of these persons; and this leader shall be authorised to incur liabilities and receive instructions for and on behalf of any and all these persons;
- b evidence of this authorisation shall be submitted with the Tender in the form of a power of attorney signed by legally authorised signatories of all these persons;
- c the Contract Agreement shall be signed so as to be legally binding on each of these persons; and
- d a copy of the agreement entered into by these persons shall be submitted with the Tender. This agreement shall state (i) each such person's percentage participation in the joint venture, and (ii) that these persons shall be jointly and severally liable to the Employer for the performance of the Contract

2.4 No such person or sole tenderer shall participate in the preparation of another tenderer's Tender for the same Contract. If any entity is found to have participated in two or more Tenders, other than alternative Tenders from the same tenderer, all such Tenders will be rejected.

2.5 However, any entity may be proposed as a prospective subcontractor by more than one tenderer in addition to being either a sole tenderer or a participant in one joint venture tenderer.

3 The Tender Dossier

3.1 The Tender shall be responsive to the complete Tender Dossier which comprises the documents listed in Clause 1 above and any Addenda to Tender Dossier which may be issued as described in this Clause 3. The tenderer shall scrutinize each document immediately upon receiving it and shall promptly give notice, to the party who issued the document, of any pages which appear to be missing.

3.2 The tenderer must carefully examine the complete Tender Dossier. Failure to comply with these Instructions or with any other tendering requirements will be at the tenderer's risk.

Appendix 13.1.3 - Obtaining tenders: EPC/Turnkey Contracts

Example Form of Instructions to Tenderers

- 3.3 If the tenderer requires any clarification of the Tender Dossier, he may give notice to the Employer's Representative. The notice shall be written (which includes by facsimile transmission) in the language used in the Invitation, and shall be sent to the address stated in the Invitation as soon as practicable.
- 3.4 The Employer shall respond to the notice by issuing (i) the text of the question or request for clarification and (ii) the Employer's clarification. This response shall be in writing and shall give no indication of the identity of the tenderer who requested clarification. These requests for clarification and responses shall be sent to all prospective tenderers who received the Tender Dossier, but shall not constitute amendments to the Tender Dossier. However, if a notice is received less than 28 days before the Tender submission date, there may be no response.
- 3.5 If amendments are to be made to the Tender Dossier, arising from a notice or otherwise, the Employer shall issue an Addendum to Tender Dossier. Each Addendum to Tender Dossier shall be sent to all prospective tenderers who received the Tender Dossier, and shall be binding upon them. The tenderer shall promptly acknowledge receipt of each Addendum to Tender Dossier by written notice to the Employer's Representative, and shall also enter its reference number in the first sentence of the Letter of Tender.
- 3.6 At any time, the Employer may similarly issue an Addendum to Tender Dossier which amends the Tender submission date. In this event, all rights and obligations of the Employer and the tenderers previously related to the original date shall thereafter be subject to the amended date.
- #### 4 Site Visit
- 4.1 The tenderer is advised to visit and examine the Site, its surroundings and other parts of the Country, and must obtain for himself on his own responsibility all information which may be necessary for preparing the Tender and entering into a Contract.
- 4.2 The tenderer and any of his personnel or agents will be granted conditional permission to enter upon the Site. The permission shall be deemed to have been based upon the tenderer, his personnel and agents indemnifying the Employer and his personnel and agents from and against all liability and upon the tenderer being responsible for personal injury (whether fatal or otherwise), loss of or damage to property and any other loss, damage, costs and expenses (however caused) which would not have arisen other than due to the exercise of such permission.
- 4.3 If a joint site visit is to be arranged for all tenderers, details are given in the Invitation.
- 4.4 Such a joint visit is intended to supplement, and not to replace, the individual inspections carried out by each tenderer. The Employer accepts no responsibility for providing any indication of relevant aspects, or access to appropriate areas, which a competent tenderer may consider necessary for the preparation of a Tender.
- 4.5 The Employer shall not be bound by any oral representations which may be made during a joint site visit, whether by the Employer's personnel or by others; and whether during a formal meeting or otherwise. In order to minimize the possibility of misunderstanding, tenderers should present any requests for clarification in writing. In accordance with Clause 3 of these Instructions, any record of the formal meeting, requests, clarifications and/or Addendum to Tender Dossier shall be sent to all prospective tenderers who received the Tender Dossier.
- #### 5 Preparation of the Tender
- 5.1 The Tender and all communications between the tenderer and the Employer shall be typed or written in indelible ink in the language used in the Invitation. Supporting documentation submitted by the tenderer may be in another language if he also submits an appropriate translation of all its relevant passages into this ruling language.
- 5.2 The Tender to be submitted by each tenderer shall include the documents in accordance with this Clause 5 and the Tender Dossier described in Clause 1 of these Instructions.
- 5.3 The Tender Dossier issued to the tenderer, including any amendments instructed in an Addendum to Tender Dossier, shall be used without further amendment.

Appendix 13.1.3 - Obtaining Tenders: EPC/Turnkey Contracts

Example Form of Instructions to Tenderers

5.4 The tenderer shall submit, with his Tender, a tender security in the form annexed to these Instructions. The tender security shall be issued by an entity acceptable to the Employer, and shall be valid for not less than 35 days after the date on which the validity of the Tender expires. The Employer will return the tender security upon the occurrence of the first of the following events:

- a the Employer receives the Performance Security from the successful tenderer;
- b the Employer abandons his intention to appoint a Contractor; or
- c the validity of all tender securities for the contract expires.

5.5 The tenderer shall submit a Tender for the whole of the Works in accordance with the Tender Dossier. A Tender which excludes part of the Works may be rejected as unresponsive.

5.6 The Tender shall include:

- a a detailed description of the proposed Works;
- b drawings, including plans, elevations and typical cross-sections; these may be A1 size and/or bound A3 volumes, at 1:1000 to 1:100 scales;
- c commentary on the Employer's Requirements, detailing how the layout and other critical requirements will be achieved;
- d manufacturers' brochures and/or other details of the main items of Plant including spares;
- e proposals for training; and
- f proposals for post-contract technical support and supply of spare parts.

5.7 The tenderer shall also submit the following supplementary information accompanying, but not forming part of, his Tender:

- a the information listed in Clause 2 of these Instructions, if applicable to the tenderer;
- b name and address of the bank or other entity which will provide the Performance Security and the advance payment guarantee; and a letter from such entity acknowledging having received the Annexes to the Particular Conditions of Contract and undertaking to provide these security documents in accordance with the exact wording of these Annexes (if the entity prefers to make minor changes, they must be specified exactly);
- c name and address of the insurers and their principal terms for the insurances required by Clause 18 of the

Conditions of Contract, including proposed deductibles and exclusions;

- d details of the arrangements and methods which the tenderer proposes to adopt for the execution of the Works, in sufficient detail to demonstrate their adequacy to achieve the requirements of the Contract including completion within the Time for Completion;
- e any proposals for subcontracting the execution of parts of the Works on the Site, excluding each subcontract which will be less than ten percent of the Tender sum;
- f the names, qualifications and experience of key personnel proposed for the management of the Contract and the execution of the Works, both on and off site, including curriculum vitae of the senior personnel;
- g names and particulars of design subcontractors.

A Tender which is not accompanied by this information may be rejected as unresponsive.

5.8 The completed Tender shall not have any alterations or erasures, except any which may be specified in an Addendum to Tender Dossier issued under Clause 3 of these Instructions. However, if alterations are necessary to correct errors made by the tenderer, these corrections shall be endorsed with the signature of the person signing the Letter of Tender.

5.9 Only one Tender may be submitted by each tenderer, except for any alternative offers. In addition to a compliant Tender, the tenderer may offer technical or other alternatives to the requirements of the Tender Dossier, which may include reasonable deviations or other proposals. Each alternative Tender shall include all information necessary for its complete evaluation by the Employer, including any relevant calculations, specifications, construction methods, timing implications, breakdowns of prices, and other relevant details. The Employer reserves the right to reject alternative offers.

6 Submission of the Tender

6.1 The Tenderer shall prepare one original set and three photocopy sets of the documents comprising the Tender and supplementary information, as described in Clause 5 of these Instructions. Each such set shall be submitted in an inner envelope within an outer envelope, with each document and each envelope being clearly marked "ORIGINAL" or "COPY" as appropriate. If there is any discrepancy between them, the ORIGINAL shall prevail.

Appendix 13.1.3 - Obtaining tenders: EPC/Turnkey Contracts

Example Form of Instructions to Tenderers

6.2 The original and copies of the Tender shall be signed by a person or persons duly authorised to bind the tenderer. Proof of authorisation, in the form of a written power of attorney, shall be annexed to the Letter of Tender.

6.3 The inner and outer envelopes shall be addressed to:

....

and shall bear the following identification:

....

6.4 The inner envelopes shall indicate the name and address of the tenderer to enable the Tender to be returned unopened if it is declared "late". The outer envelopes shall give no indication of the tenderer.

6.5 If a Tender is misplaced or opened prematurely because an envelope was not sealed and marked as instructed above, the Employer shall not be responsible and the Tender may be rejected.

6.6 The original and copies of the Tender must be delivered to the address specified above no later than the time, on the Tender submission date, stated in the Invitation. Tenders received by the Employer thereafter will be returned unopened.

6.7 The tenderer may modify or withdraw his Tender after submitting it, if the modification or notice of withdrawal is received in writing before such prescribed time for submission of Tenders but not thereafter. The tenderer's modification or notice of withdrawal shall be prepared, sealed, marked and delivered in accordance with the provisions of this Clause 6, with the inner envelopes additionally marked "MODIFICATION" or "WITHDRAWAL", as appropriate. In particular, the modification or notice of withdrawal shall be signed by a person or persons duly authorised to bind the tenderer, and proof of authorisation shall be annexed.

6.8 A Tender submitted other than as described in this Clause 6 may be rejected by the Employer and returned to the tenderer.

6.9 The Tender shall remain valid and open for acceptance for the period of 140 days from the Tender submission date. The tenderer shall calculate the date on which validity expires and insert this

expiry date in the Letter of Tender. Prior to this expiry date, the Employer may by written notice request the tenderer to extend the validity period. The tenderer may refuse the request, but shall not modify his Tender other than by extending its validity.

7 Tender Opening

7.1 Tenders and other submissions, which are in accordance with Clause 6 of these Instructions, will be opened at the date and time stated in the Invitation in the presence of tenderers' representatives who choose to attend at the address for delivery of Tenders specified in Clause 6.

7.2 Tenderers' representatives at this opening shall sign an attendance register.

7.3 Tenders for which the Employer has received a valid notice of withdrawal in accordance with Clause 6 of these Instructions shall not be opened.

7.4 The Employer will briefly examine Tenders to determine whether they appear to be complete, properly signed, and generally in order. For each Tender, the Employer will announce the name of the tenderer, the sum offered in the Letter of Tender, and such other details as the Employer may consider appropriate.

7.5 After this Tender opening, information relating to the processes of examination, clarification, evaluation and comparison of Tenders and the award of a contract shall not be disclosed, other than to those officially concerned with such processes. Any effort by a tenderer to influence the Employer in these processes may result in the rejection of the tenderer's Tender.

8 Tender Evaluation

8.1 Prior to the detailed evaluation of Tenders, the Employer will determine whether each Tender is substantially responsive to the requirements of the Tender Dossier.

For the purpose of these processes, a substantially responsive Tender is one which conforms to all the terms, conditions and requirements of the Tender Dossier without material deviation or reservation.

Appendix 13.1.3 - Obtaining Tenders: EPC/Turnkey Contracts

Example Form of Instructions to Tenderers

8.2 A material deviation or reservation is one which affects in any substantial way the scope, quality, or performance of the Works, or which limits in any substantial way (inconsistent with the Tender Dossier) the Employer's rights or the Contractor's obligations under the Contract, and the rectification of which deviation or reservation would affect unfairly the competitive position of other tenderers presenting substantially responsive Tenders.

8.3 If a Tender is not substantially responsive to the requirements of the Tender Dossier, it will be rejected by the Employer. The Tender shall not be made responsive by the tenderer correcting or withdrawing the non-conforming deviation or reservation.

8.4 The Employer will only evaluate and compare the Tenders which have been determined to be substantially responsive to the requirements of the Tender Dossier. Responsive Tenders will first be checked by the Employer for any arithmetic errors in computation and summation, and any errors will be corrected as follows:

- a The amount entered in the Letter of Tender (as announced when Tenders were opened) may be considered acceptable as the Contract Price without any of the corrections and adjustments described in these sub-paragraphs.
- b If there is any discrepancy between amounts in figures and in words, the amount in words will take precedence.
- c If there is any discrepancy between an amount in the Letter of Tender and the equivalent sum computed on the basis of the details in the Tender, the Employer may make corrections and/or adjustments (applying the principles described in these sub-paragraphs) and give notice to the tenderer, specifying each error, correction and adjustment.

8.5 For the purpose of evaluating Tenders, the Employer will determine for each Tender the Evaluated Tender Amount as follows:

- a making any correction for errors as described above;
- b making an appropriate adjustment for any acceptable variations, deviations, discounts or other alternative offers not reflected in the submitted amount or these corrections; [and
- c making an allowance for any acceptable varied times for completion offered in alternative Tenders, the allowance being calculated at the same rate as the rate

for delay damages for the Works which is stated in the Particular Conditions of Contract.]

8.6 The evaluation of the Tenders shall be based upon the principles outlined in the performance evaluation criteria annexed to these Instructions. Unless specifically stated, no criterion will take precedence over any other criteria, and Tender evaluation shall be based on an overall consideration.

9 Award of the Contract

9.1 The Employer intends (i) to award the Contract to the tenderer who appears to have the capability and resources to carry out the Contract effectively, whose Tender has been determined to be responsive to the Tender Dossier and who has offered (all taken into consideration) the most favourable Tender; or (ii) to reject compliant Tenders and accept an alternative Tender. The Employer reserves the right to reject any or all Tenders.

9.2 The preferred tenderer(s) may be invited to participate in negotiation meeting(s) with the Employer, who may then issue a Memorandum of Understanding recording the outcome of their joint discussions of the Tender, which may include proposed arrangements for the appointment of the DAB under Clause 20 of the Conditions of Contract. This Memorandum of Understanding will constitute the agreed basis upon which a contract could be concluded, and/or may include clarification of any alternative proposals which the tenderer may have submitted. The Memorandum of Understanding (i) shall be binding on the tenderer as an acceptable clarification or amendment of his Tender until its validity expires, (ii) shall be wholly subject to a subsequent contract agreement, and (iii) shall not bind the Employer nor commit him to entering into any contract under any terms.

9.3 After the Employer and the successful tenderer have entered into the Contract Agreement in accordance with Sub-Clause 1.6 of the Conditions of Contract, the Contractor shall submit a Performance Security in accordance with Sub-Clause 4.2, and an advance payment guarantee in accordance with Sub-Clause 14.2, of the Conditions of Contract.

9.4 After receiving the Performance Security from the successful tenderer, the Employer will notify the other tenderers that their Tenders have been unsuccessful.

Appendix 14.1.1 - Obtaining Tenders: Dredging and Reclamation Works

Example Letter of Invitation to Tender

See Appendix 11.1.1.

Appendix 14.1.2 - Obtaining Tenders: Dredging and Reclamation Works

Example Form of Tender Security

See Appendix 11.1.2.

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