

Endorsed by:



The Institute of Internal Auditors
United Kingdom

Construction Industry Board



The Financial Management and Audit of Construction Contracts

A Practical Guide



CIPFA

*CIPFA is the leading professional accountancy body
for public services, whether in the public or
private sectors.*

*We provide education and training in accountancy
and financial management, and set and monitor
professional standards.*

*Our professional qualification is high-quality,
relevant and practical, and is supported by a range
of other products and services.*

CIPFA is a major publisher of guidance
for practitioners and others with an interest in
the public services. A comprehensive catalogue
of titles is available free.

Phone 020 7543 5602 or fax 020 7543 5607
for your copy.

Why not visit our website?

www.cipfa.org.uk/publications

Endorsed by:



The Institute of Internal Auditors
United Kingdom

Construction Industry Board



The Financial Management and Audit of Construction Contracts

A Practical Guide



Published by:
CIPFA, THE CHARTERED INSTITUTE OF PUBLIC FINANCE AND ACCOUNTANCY
3 Robert Street, London WC2N 6BH. Tel: 020 7543 5600 Fax: 020 7543 5700

© 1999, CIPFA

ISBN 0 85299 888 0

Designed and Typeset by Ministry of Design, Bath.

Editorial consultants: Blomfield Gunn Associates.

No responsibility for loss occasioned to any person acting or refraining from action as a result of any material in this publication can be accepted by the authors or publisher.

While every care has been taken in the preparation of this publication, it may contain errors for which the publisher and authors cannot be held responsible.

Apart from any fair dealing for the purposes of research or private study, or criticism or review, as permitted under the *Copyright, Designs and Patents Act, 1988*, this publication may be reproduced, stored or transmitted, in any form or by any means, only with the prior permission in writing of the publishers, or in the case of reprographic reproduction in accordance with the terms of licences issued by the Copyright Licensing Agency. Inquiries concerning reproduction outside those terms should be sent to the publishers at the above mentioned address.

Foreword

In 1979 CIPFA's *Financial Examination and Audit of Capital Contracts* (FEACC) was published. This was the first comprehensive publication that tried to meet the needs of the public sector in the audit of capital expenditure. It attempted to develop a realistic approach to the audit review of capital expenditure, and to provide the factual knowledge necessary to enable auditors to undertake such reviews effectively.

FEACC stimulated discussion and, in turn, generated considerable developments in the field of contract audit. Through the work of the CIPFA Contract Audit Group, a new approach evolved from these developments, with the emphasis on efficient contract management and a simplified contract audit process. Although many of the principles embodied in FEACC remained relevant, a new guide was issued in 1989 to explain this new approach entitled *A Guide to the Financial Management and Audit of Contracts* (FMAC).

The 1990s have seen considerable changes promulgated for the UK construction industry, many of which have a significant impact on the methods by which projects are to be managed and reviewed. The drive for change emanated from the final report in July 1994 of the joint government and industry review of procurement and contractual arrangements in the UK construction industry, under the chairmanship of Sir Michael Latham, entitled *Constructing the Team*. Action taken in response to this report are extensive and CIPFA feel it is now necessary to reconsider guidance on the subject of the financial management, control, and audit review of construction contracts.

Sir Michael Latham highlighted the scale of the change that was necessary, and the urgent need to improve value for money, in his opening address to the joint CIB/CIPFA seminar in June 1997. He stated that the construction industry currently spend more on litigation than it does on research and development and stressed that his report basically meant scrapping current procurement procedures and starting again from scratch.

The Construction Industry Board (CIB) was established in 1995 to aid the implementation of the recommendations contained within *Constructing the Team*. During 1996 and 1997 a number of guides were issued by the CIB describing best practice for the various stages of the procurement process. These included:

- *Constructing Success: the construction strategy code of practice for clients*
- *Briefing the Team*
- *Selecting Consultants for the Team: balancing quality and price*
- *Code of Practice for the Selection of Main Contractors*
- *Code of Practice for the Selection of Subcontractors*
- *Partnering in the Team.*

The processes within these guides, which have been accepted throughout the construction industry, are fully supported by CIPFA. Those who audit the public services, or are responsible for the financial management of public sector construction projects, should refer to them whenever necessary.

Among the recommendations of *Constructing the Team* was that the government, including public sector organisations such as local authorities and health authorities, should become a “best practice client”. Sir Michael Latham has stated that clients should be at the centre of the procurement process and be aware of what they need to do to achieve value for money from their projects. In producing this publication, CIPFA is attempting to help achieve these aims and aid the implementation of the report’s recommendations within the public sector.

While the CIB Guides were produced with technical professionals in mind, this publication is for people who are responsible for the financial management or audit of contracts. It has been structured around the five ‘key project activities’ identified by the CIB within *Constructing Success* as follows:

1. getting started
2. defining the project
3. assembling the team
4. designing and constructing
5. completion and evaluation.

Details of the key activities and client tasks, appropriate to each of the above, are repeated from *Construct Success* on page viii.

Except where it is unavoidable, this publication does not seek to repeat the sound practice advocated by the CIB. Rather, it attempts to build on their content by expanding on what has to be done to achieve good financial management and control of a construction project.

Auditors familiar with the content of the previous CIPFA publications FEACC and FMAC, and the CIPFA *Statement of Best Practice on Contract Audit* (1995), will note that the above ‘key project activities’ represent a departure from the pre-contract, currency, and post-contract stages long associated with contract audit. It is around these ‘key project activities’ that contract audit work should now be focused, drawing on the advice in the CIB Guides and the content of this publication.

For contract professionals, this publication describes the procedures that they, and their public sector clients, are expected to follow when procuring construction contracts. It also provides an insight into the role of audit, and the need for various controls associated with construction projects, in the public sector. Public sector organisations, and their auditors, should require adherence to the content of the CIB Guides and this publication. Contract professionals should be aware, therefore, of what is required of them and how they fit into the process.

For those relatively new to the subject of construction contracts, this publication includes appendices that explain the roles of the various parties associated with a contract and some of the terminology likely to be encountered when reviewing a project. These may also be of use to those more experienced as a ready reference document. Also included is an extensive chapter on consultants and an introduction to the subject of the Private Finance Initiative (PFI).

The procedures referred to relate mainly to construction contracts but the principles of specifying requirements, tendering, monitoring progress during the contract, and post contract assessment will apply to any form of contract for the provision of goods or services.

This publication is the latest addition to a series of valuable references for those engaged on the financial management or audit of contracts and the Institute gratefully acknowledges the time and effort of the following involved in its production.

Gary Jones – Independent Consultant
Ken Odgers – ContractauditLine; CIPFA Audit Panel

Chris Hurford – Chairman of CIPFA's Audit Panel

Foreword by the Construction Industry Board

The aim of any construction project is to achieve the best possible outcome for the client. It is now widely accepted within both the private and public sectors that better teamwork during construction projects leads to better results for both client and the whole supply chain. Thus the policies promoted by the CIB seek above all to deliver the values of teamwork, co-operation, trust and respect throughout construction projects. Our vision can be summed up as follows: “The industry fully meeting the needs and expectations of its clients, and in their turn, clients acting to make that possible.”

The Good Practice Panel of the Construction Industry Board under the chairmanship of Richard Saxon was pleased to endorse this guidance when the draft was available to them in spring 1999. It is an excellent and thorough guide, gathering in one document all the necessary advice for auditors and contract professionals. The guidance is fully consistent with the practices promoted by the CIB in the name of, and with the full support of, all its member bodies, ie the representative bodies of the construction industry, its clients (all parts of the private and public sector) and government. The standards of ‘good clientship’ promoted herein are fundamental to delivering the improvements in construction performance first sought by Sir Michael Latham in his 1994 report and more recently in Sir John Egan’s task force report *Rethinking Construction*.

CIPFA has always supported the CIB as the authoritative source of guidance in this area, and we are delighted to have supported the authors in the production of this guide. Its adoption by auditors will make a large contribution to improving value-for-money from all construction projects. Good practice is good business, for all parties, and we call upon the construction industry and its clients to work with you, the auditors, to realise the benefits.

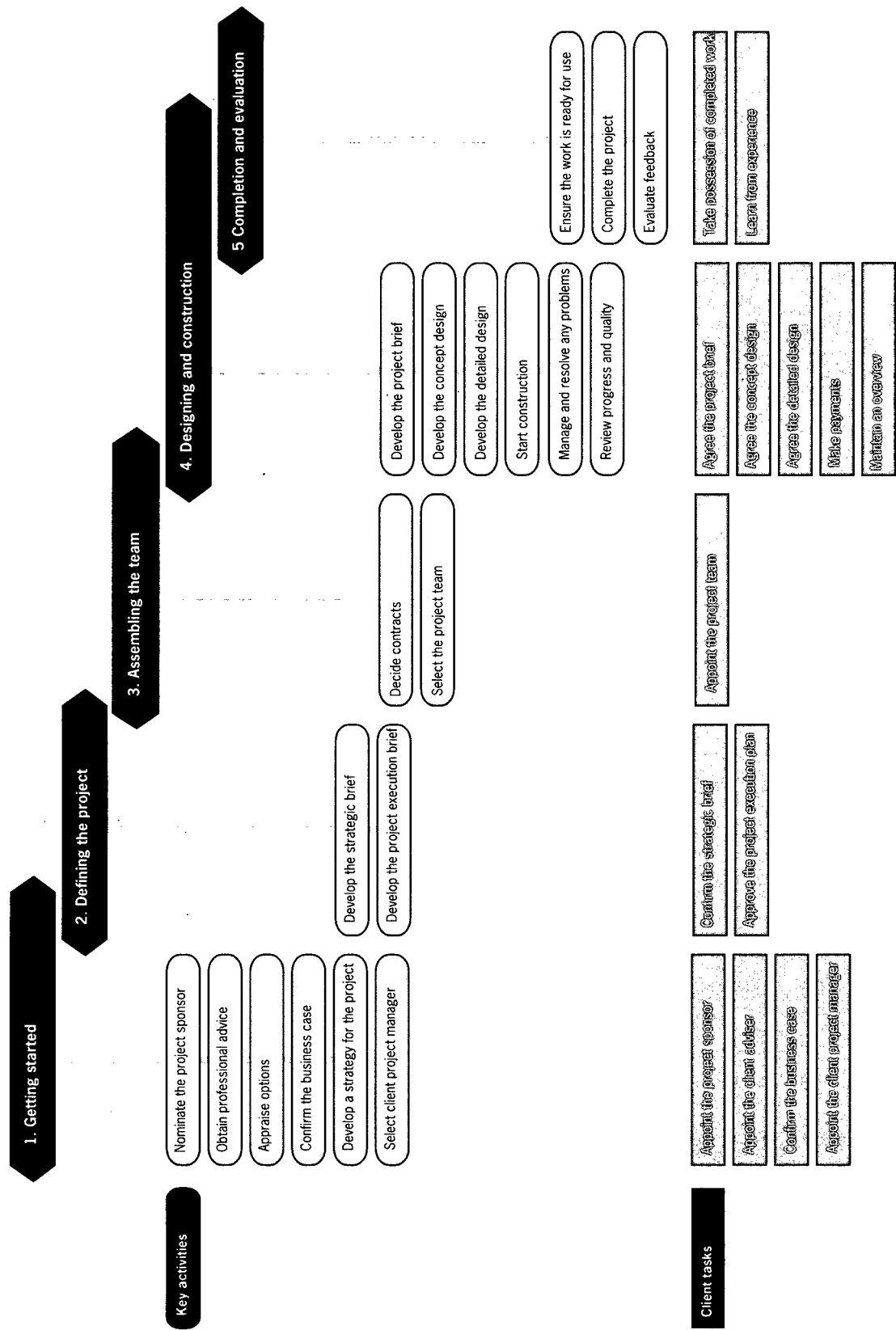
Don Ward

Chief Executive, Construction Industry Board

London, September 1999

Key project activities

This chart provides an overview of the activities fundamental to a successful project. In practice the sequence and overlap vary depending on the procurement arrangements chosen by the client.



Contents

	Foreword	(iii)
	CIB Foreword	(vii)
	Key activities and client tasks chart	(viii)
	Introduction	1
	Duties of the Auditor and Management in Contract Management	1
	The Systems Based Approach	4
	Appendix A: Terminology	5
	Appendix B: Parties associated with a contract	11
1.	Getting started	13
	(a) Appoint the Project Sponsor	13
	(b) Appoint the Client Adviser	14
	(c) Confirm the Business Case	16
	1.1 The Audit Approach	28
2.	Defining the project	29
	(a) Confirm the Strategic Brief	29
	(b) Approve the Project Execution Plan	30
	2.1 The Audit Approach	32
3.	Assembling the team	33
	(a) Decide Contracts	33
	(b) Select the Project Team	35
	Selecting Consultants	35
	Selecting Contractors	45
	3.1 The Audit Approach	61
	Appendix 3.1: Standard forms of contract	63
	Appendix 3.2: Financial vetting of consultants	68
	Appendix 3.3: Professional indemnity insurance	70
	Appendix 3.4: Financial vetting of contractors	76
	Appendix 3.5: Bonds and guarantees	77
4.	Designing and constructing	83
	(a) Agree the Project Brief	83
	(b) Agree the Concept Design	84
	(c) Agree the Detailed Design	85
	(d) Construction	86
	(e) Maintain an Overview	92

4.1	The Audit Approach	94
	Appendix 4.1: Insurance	95
	Appendix 4.2: Contractors' claims for overheads	96
5.	Completion and evaluation	103
	(a) Take Possession of Completed Work	103
	(b) Learn from Experience	109
	5.1 The Audit Approach	114
	Appendix 5.1: Contractor – post contract performance appraisal	115
	Appendix 5.2: Consultant – post contract performance appraisal	116
6.	Appointment of consultants	117
	The Need for Construction Consultants	117
	Appointment	118
	The Brief	123
	Monitoring	125
	6.1 The Audit Approach	126
	Appendix 6.1: Architects	127
	Appendix 6.2: Surveyors	132
	Appendix 6.3: Engineers	135
7.	The Private Finance Initiative	139
	Introduction	139
	The Private Finance Panel (PFP)	140
	The Public Private Partnerships Programme (The 4Ps)	140
	The Bates Review	140
	The Treasury Taskforce	141
	Legislation	142
	Types of PFI Agreements	142
	Advantages and Disadvantages	143
	Types of Risk	144
	Key Stages	146
	European Directives	149
	Insurance	150
	Contract Terms	151
	7.1 The Audit Approach	155
	Appendix 7.1: Outline business case – checklist	157
	Glossary	161
	Bibliography	165

Introduction

Duties of the Auditor and Management in Contract Management

Internal audit was defined in 1990 by the Auditing Practices Board's *Auditing Guideline* as being an independent appraisal function established as a service to the organisation by the management for the review of the internal control system. It objectively examines, evaluates and reports on the adequacy of internal control as a contribution to the proper, economic, efficient and effective use of resources.

Internal control comprises the whole system of controls and methods both financial and otherwise which are established by management to safeguard its assets, ensure reliability of records, promote operational efficiency and monitor adherence to policies and directives. Management has the responsibility to establish internal control so that its activities are conducted in an efficient and well-ordered manner. In relation to contracts, this means that it is management's duty to establish an adequate system to ensure that projects are controlled throughout, from their inception to post completion. Thus, in broad terms, it is management's responsibility to ensure that projects are properly controlled in all aspects.

Managers responsible for contractual expenditure must be in a position to deliver services cost effectively and with the level of propriety expected in the public services. To achieve this, management must ensure that it is in a position to control properly the contractual activities for which it is responsible by:

- having clear objectives of the levels and standards of service required from contractors and the costs to be paid
- establishing adequate internal control systems and procedures to control these costs and ensure that services are delivered to the standards set
- reviewing performance to identify both good practice and areas of weakness so that improvements can be achieved. This review should include an element of independent review of the systems of internal control by internal audit.

It is the responsibility of internal audit to review, appraise and report upon:

- the soundness, adequacy and application of internal controls
- the extent to which the organisation's assets and interests are accounted for and safeguarded from losses of all kinds arising from fraud and other offences, waste extravagance and inefficient administration, poor value for money or other cause
- the suitability and reliability of financial and other management information.

Thus the auditor should not be a part of the management system but should carry out an independent appraisal of it and report as necessary. Although the detailed audit approach to contracts in organisations will vary, the basic audit objectives, as a minimum, will comprise:

- recognising that control of contracting activities is the primary function of management and that it is the auditor's role to review such controls and evaluate the effectiveness of management
- understanding that value for money in public expenditure is a management objective and that the auditor should identify where contractual arrangements do not provide for the cost effective provision of services
- assessing and reporting on the adequacy of contract procedures including those necessary to:
 - i) develop policies, establish standards and monitor their implementation
 - ii) control the operation of contract works from initial planning stage to post completion assessment
 - iii) prevent and detect fraud and corruption
 - iv) identify losses due to waste, inefficiency, error and impropriety, and to seek recovery where appropriate
 - v) secure the assets of the organisation and recover any amounts chargeable
 - vi) review the use of consultancy services provided by others
 - vii) review the controls over the operations of specific contract activities
 - viii) ensure that management information is timely, complete, accurate, adequately designed for all users and communicated effectively.

To carry out the appraisal function effectively, it is vitally important that the auditor's role is understood by all concerned with the contract process. Similarly, auditors should appreciate the role and obligations of the various professional disciplines involved. With this in mind, a number of joint statements were issued in the 1980s by CIPFA with bodies such as the RICS, SCALA, ICE and the NJCC. While it is now felt, with the presence of the CIB, that there is no longer a need for separate statements to be issued, the following is a summary of the main principles contained in such statements that are still considered relevant today.

Chief financial officers are responsible for the financial affairs of their employing organisations, and for maintaining a current internal audit. This responsibility, which for parts of the public sector is embodied in statute, includes a requirements to review and test check all systems for management control including those involved in the contract expenditure process. In part, this responsibility is discharged by the organisation's auditors. Chief financial officers, and each member of the project team, seek to use their skills to promote value for money and to avoid unnecessary expenditure.

Finance officers must exercise care to avoid actions which might place their employing organisation in breach of contract, disrupt the progress of the works, create opportunities for contractual claims, or allow contractors to escape the consequences of their own performance. It is

understood that members of the project team are occasionally called upon to use their professional judgement in their contractual role and that results may not be capable of certification elsewhere. There will be instances where checks may have to be retrospective because time within the contract terms will not permit verification prior to payment.

Members of the project team should understand an auditor's right to scrutinise and check at any level. In return, they should expect an acceptance of their professional skill and judgement from the auditor. The similarity of their aims and outlook should lead them to see each other as colleagues (rather than adversaries) whose efforts should be complementary and of mutual assistance.

Each member of the project team must be prepared to illustrate how their systems and procedures function in a way that demonstrates the competence of the process to the satisfaction of the auditor, and that permits the auditor to become involved without contravening the contract conditions.

Auditors, when undertaking contract audits, must not affect the relationship between the contractor, the employing organisation and any member of the project team, as defined in the contract. Auditors need to maintain the confidence of all concerned when carrying out their duties. This confidence cannot be achieved by prescription but must be the objective of both the project team and the auditor if an effective working relationship between the disciplines is to be achieved. Nevertheless, auditors have a responsibility to report on any matters arising from their audits and it is a matter for the employing organisation to decide what action should be taken, if any, as a result of the auditor's report.

Infrequent minor errors should not be used to justify strengthening controls or amending administrative procedures. Any changes recommended by auditors should be cost effective.

Auditors need to be involved during the currency of construction works in order to verify that sound systems exist. They will need to perform detailed checks of these systems on selected contracts. Auditors will, therefore, need to visit construction sites. In doing so they should first seek the permission of the contractor and wherever possible be accompanied by a member of the project team.

Auditors also need to review the functions carried out on behalf of chief finance officers in connection with the control of contracts. These functions would, for example, include their involvement with project appraisal, the financial vetting of contractors, the production of financial reporting information, and the seeking of necessary financial approvals.

The Systems Based Approach

CIPFA recommends that audit resources should not be employed, as a matter of course, on the verification of contractors' final accounts, consultants' fee accounts, interim valuations, invoices or any function that is the responsibility of management. Instead, those responsible for the audit function should ensure that systems based approach is adopted for the audit of contract expenditure. Even within organisations that have few major contracts, audit resources should be concentrated on reviewing the associated management controls. However, in all cases, compliance testing may involve verifying a sample of interim valuations or sections of final accounts.

The systems approach to contract auditing is designed to exploit the skills of non-specialist auditors. By concentrating on systems testing an auditor has less need of detailed technical knowledge and there is less risk of technical officers ceding their responsibilities to audit and failing to manage the project effectively themselves. However, it will be necessary for the auditor to have knowledge of contract matters and to be familiar with the main terms and conditions of forms of contract most frequently used.

Having set out some of the areas requiring examination, a standard audit review could entail:

- examining and recording the objectives and procedures of the management system in any formal contract, including standing orders and financial and contract regulations
- ascertaining, recording, and agreeing with management and other relevant parties, the actual system in operation
- test checking sample projects for compliance with the formal contract management system
- comparing the system as recorded with the requirements of the contract conditions, the organisation's financial regulations, procedures and instructions, and ascertaining the reasons for apparent discrepancies
- reporting on the results of the audit and, where appropriate, making recommendations.

Where, because of limited resources or the relative infrequency of contracts work, management has chosen not to implement standard contract management procedures, the auditor may need to examine final accounts in detail. In such a circumstance, management should be advised that this procedure is not intended to replace the checking and authorisation role of the responsible technical officer.

For those new to the audit of contracts, Appendix A to this Introduction, provides explanations of the documents, terms and phrases that are most likely to be encountered. Further, Appendix B provides an overview of the roles and duties of each member of the project team, and the employing organisation.

Appendix A

Terminology

This appendix provides an explanation of the documents, terms and phrases that are most likely to be encountered when examining procedures associated with construction contracts.

Specification

A specification contains detailed information relating to the works. It details the materials that are intended by the design team to be used on a scheme, as well as explaining the character and standard of work required. It can be considered as being a narrative interpretation of the work that is indicated on the drawings.

It is the document where contractors state their price, including the cost of labour, materials, overheads, and profit, for each item of work. Items within the specification are generally priced as lump sums and no quantities are stated. For example, a specification will be used with the JCT ‘without quantities’ standard form of contract.

Figure 1: Example of an extract from a specification

Spec. Item no.	Work description	Amount
1/1	Carefully remove all board sheets fixed over defective glazing doors and surrounding framework and cart away.	360
1/2	Make up new moulded cornice plinth. Re-construct bearing timbers and supporting framework and fix cornice securely to background structure.	540
1/3	Supply and fit 25mm thick plywood decking to form flat roof section to the cornice canopy and securely fix using galvanised steel screws.	410
1/3	Allow the Provisional Sum for replastering work, as instructed.	500
1/4	Allow the Prime Cost Item of £1,500 for electrical work	1,500
Total		3,310

Figures inserted by contractor

Bills of Quantities (BoQ)

Bills of quantities are schedules of work that can run to many hundreds of pages. As with a specification, the bills will give brief descriptions of the work as indicated by the contract drawings but will also contain a quantity set against each description. Tenderers enter their rates against each item, which are then applied to the stated quantities in order to arrive at a price for each item. Bills of quantities will be used with the JCT80 ‘with quantities’ standard form as well as the ICE (6th edition) form of contract.

Figure 2: Example of an extract from a bill of quantities

B.Q. Item no.	Work description	Quantity	Rate	Amount
2/1	Excavate to depth not exceeding 100 mm	5,000 cu.metres.	10.00	50,000
2/2	Grub out the trees up to 300 mm circumference	12 No.	35.00	420
2/3	Allow the Provisional Sum for other work, as instructed.			500
2/4	Allow the Prime Cost Item of £5,000 for electrical work			5,000
Total				55,920

Figures inserted by contractor

Contract drawings

These may be used either with a specification alone or with full bills of quantities. In either case, the accuracy of the drawings is important. Any errors that go unnoticed may involve substantial claims by the contractor once the contract has commenced.

Preliminaries

Preliminaries are items usually contained within the first section of the specification or bills of quantities. The items are of a general nature and are not related to specific work items in the main schedule of works, eg general obligations, site services and facilities, temporary works, testing of materials and work, providing a foreman.

The section also includes a summary of the conditions of contract, providing contractors with an opportunity to price items that they consider to have cost implications, eg provision of site services and facilities, allowance for fixed price contract. It also contains information and details of any

constraints specific to the works to be undertaken, eg restricted site access, no works to be undertaken before 9am or after 6pm, etc.

Costs in respect of preliminary items are sometimes split into set up costs (fixed) and time related costs in order to assist ascertaining the contractor's costs for prolongation of the contract period.

Preambles Document

The preambles is a document that contains all the technical descriptions and definitions of the terminology used in the bills of quantities. It is intended to serve the purpose of a detailed specification on a 'with quantities' standard form of contract. By placing detailed descriptions, particularly those that are repetitive, in the preambles document it prevents the bills of quantities from becoming even longer documents.

Fixed Price Contracts

A fixed price contract is one in which the contract sum is not adjustable for any increase in the cost of labour and materials during the currency of the contract. Such contracts do, however, usually allow reimbursement for any extra costs incurred due to 'political risks' such as a levy or tax payable by an employer of labour.

Tenderers for such contracts are, therefore, required to estimate the value of any increased costs they will incur due to inflation during the construction period and include this within their tendered price. If their tender bid is successful, the amount they have allowed is at their risk. It will not be adjusted should inflation be higher or lower than they expected.

Government advice is that any contract of less than two years' duration should be fixed price. This is because, at the time of writing, the UK is enjoying relatively low rates of inflation (around 3% pa). If the level of inflation was to increase significantly, say to that which existed in the early 1980s, then understandably contractors would be unwilling to accept the risk of estimating inflation for up to two years in the future. In such circumstances it is expected that government advice would be amended in favour of a shorter period of, say, twelve months.

Variable or Fluctuating Price Contract

Construction contracts that exceed two years in duration will normally be subject to price fluctuation adjustment. A variable/fluctuating price contract is where the values of tenders are based on rates and prices that are current at the time of tender. Once the contract has been let, tendered prices are adjusted to reflect increases or decreases that have occurred since a specified base date. The base date is normally a short period (eg 30 days) prior to the date tenders were due to be submitted.

Preparation by the contractor of schedules of actual price fluctuations is both time consuming and costly and this applies equally to the project team who must check them. This has led to standard forms of

contract including index-based formulae for the application of contract price fluctuations. These determine adjustments to the value of the work as opposed to claims based on actual price fluctuations.

The concept of the variable price contract is that any increases/decreases in the costs of labour, plant or materials occurring after the preparation of the tender, shall be added to or subtracted from amounts due under the contract. The amounts of the adjustments are determined in accordance with monthly indices specifically published for this purpose. The formulae relating to the most widely used contracts are as follows:

- BAXTER – ICE Conditions of Contract and GC Works I Form of contract
- NEDO – JCT Conditions of Contract and GC Works I Form of contract.

Liquidated and Ascertained Damages

Tender invitation and contract documents normally state a rate in respect of liquidated and ascertained damages (LaDs). The aim of the LaDs provision is to predetermine the loss likely to be incurred by the employing organisation in the event of completion of the works being delayed by the contractor. This removes the necessity for action to be taken in the courts by the organisation to prove and recover actual loss.

Prime Cost Sums (PC Sums)

A PC Sum is an amount entered by the project team in a specification or in bills of quantities prior to tenders being invited. Such sums are to cover the cost of specific items to be supplied or work carried out by a nominated sub-contractor or nominated supplier, eg installation of a lift; supply of ironmongery. The amount specified is intended to reflect the estimated cost to the main contractor. There will usually be provision for a percentage addition to be made by the main contractor for profit and attendance. On completion of the works PC Sums are adjusted for the actual costs involved.

Nominated Suppliers and Nominated Sub-contractors

If any parts of the works are required to be executed or supplied by a firm named by the project team, or employing organisation, then such a firm is known as a nominated sub-contractor. Provision is made in the contract for payment of nominated sub-contractors by the inclusion of prime cost or provisional sums. The actual sum paid by the employing organisation is determined in accordance with the terms of the sub-contract between the nominated sub-contractor and the main contractor as adjusted by the provision of the contract agreement between the employing organisation and the main contractor.

Contract conditions usually provide the main contractor with a right to object to the appointment of a specific nominated sub-contractor. They also provide that, after appointment, the main contractor is held responsible for the conduct and work executed by the nominated sub-contractor.

Amounts payable in respect of nominated sub-contractors are separately listed, both in the contractor's application for payment, and in the engineer's or architect's certificates. Before issuing a certificate, the engineer or architect is entitled to ascertain that the contractor has in fact paid the nominated sub-contractor all amounts included in previous certificates. In the event of failure by the main contractor to make such payment, the employing organisation may, if authorised by the engineer or architect, pay the nominated sub-contractor direct (less any retention). It must be noted that in the event of the bankruptcy or liquidation of the main contractor, no monies should be paid direct to a nominated sub-contractor. They should be paid to the receiver or liquidator of the main contractor.

Domestic Sub-contractors

If the main contractor employs a firm to undertake any of the works, and the firm concerned has not been nominated by the project team or employing organisation, then that firm is classified as a domestic sub-contractor. Because the sub-contract agreement is made between the main contractor and the sub-contractor only, the employing organisation, generally, has no contractual relationship involving any rights or duties with the sub-contractor. This means that the main contractor is paid direct, in accordance with the tendered rates submitted by the contractor, as if they had done the work. It then rests with the sub-contractor to be paid by the main contractor, in accordance with the rates tendered by them to the main contractor.

Provisional Sums

A provisional sum is an amount, estimated and inserted in the tender and contract documents, by the project team, where it is not possible to specifically define the quantity of work involved, or where the items of work may not be necessary. Once the quantity of work required, if any, is known, and has been undertaken by the contractor, it is valued in accordance with the terms of the contract.

Contingency

A contingency figure is included within the tender and contract documents by the project team, in order that it may be included within the costs submitted by tenderers to cover for a certain amount of additional or varied work.

Value Added Tax

Unless otherwise stated, tender prices exclude VAT. However, if the tax is properly chargeable on the supply to the employing organisation, or on any goods or services provided by the contractor, then VAT is charged by the contractor and shown separately.

Where liquidated damages are deducted these are outside the scope of the application of VAT. This means that any reduction in payments to a contractor, due to the application of liquidated damages, is disregarded when calculating VAT which is to be applied to the gross amount.

Construction Industry Tax Scheme

The 'Construction Industry Tax Scheme' replaced the previous 'Construction Industry Tax Deduction Scheme' (the '714 system') on the 1 August 1999. It introduced three new tax statuses, called Construction Industry Schemes 4, 5, and 6.

As with the previous scheme, the parties to a contract, for work that is defined as a 'construction operation' (defined in s567 of the Income and Corporation Taxes Act 1988), are known as contractors and sub-contractors. In addition to construction contractors, all non-construction businesses whose annual construction expenditure exceeds £1m, and most public sector organisations are treated as contractors.

For any payment to be made in respect of a 'construction operation', one of three cards/certificates (CIS 4, CIS 5, or CIS 6) must have previously been seen by the employing organisation. If it is a registration card (CIS 4), then tax must be deducted from the payment. The penalty for not doing so is a fine of £3,000.

Claims

Claims are an essential and legitimate part of a construction contract. The three most common types of claim are:

- ***Contractual claims***
These are made in accordance with the conditions of contract. Contracts can be effected by circumstances which contractors would not have been expected to take into consideration when submitting their tenders. Such circumstances may arise, for example, by the contractor encountering unforeseen ground conditions, receiving late instructions, or variation orders for additional work. The effect is frequently to cause the contractor additional expense and/or to delay completion. Clauses in the contract conditions indicate the contractor's entitlement to claim, the way such claims should be submitted, and the actions that are required by the project team.
- ***Ex gratia claims***
These have no contractual status. A contractor incurring extra costs on a contract may not always have a contractual entitlement to reimbursement. In exceptional circumstances, the employing organisation might consider making a contribution towards these costs, but this would always be subject to criteria laid down by the government with regard to *ex gratia* payments.
- ***Common law damages claims***
These occur where a party to the contract is in breach of contract and the other party can sue under tort, eg if the contractor sued the employing organisation for influencing a member of the project team and, therefore, compromising their independence. Claims made under common law tend to arise when parties to the contract fail to agree to settle under the contract conditions.

Appendix B

Parties associated with a contract

The following is an overview of the roles and duties of the various parties normally associated with a construction contract.

Employer

One of the 'contracting parties'. The organisation that owns the site or building, or for whom the service is being provided. The organisation that is paying the bill.

Contractor

The other contracting party, is referred to as the 'main contractor'. It should be noted that it is not unusual for the majority of works on a construction site to be carried out by a range of sub-contractors rather than operatives directly employed by a main contractor.

Architect

In the broadest sense the architect's duties are to prepare the design and supervise the execution of the building works on behalf of the employing organisation and to ensure that they are completed in accordance with the contract. The architect will look after the administration and legalities of the contract and issue the necessary instructions and certificates. The architect co-ordinates the contribution of the other specialist members of the design team (engineers, quantity surveyor, etc.) in order to ensure that the design team functions strictly in accordance with the authority's procedures for design and construction.

Quantity Surveyor

A quantity surveyor (QS) is responsible for cost advice and cost control from inception to agreement of the contractor's final account. The quantity surveyor's duty is to ensure that the client receives value for money, whilst at the same time encouraging the architect's design concept to develop within an agreed cost budget. The QS will prepare the bills of quantities by translation of architect's plans into terms of work requirements which tendering contractors can price and evaluate in monetary terms.

Quantity surveyors measure and prepare valuations of the work completed by contractors, during the progress of construction, on which architects base their certificates of monies due. On completion, and after the receipt of all necessary information from the contractor, they will prepare an assessment of the final cost either by remeasuring the work or by compiling bills of variations.

Engineer

In an engineering contract the person who carries out the duties analogous to and occupies a position similar to that of an architect in a building contract is termed the engineer. Some engineers are specialists in their particular fields, eg in highways and/or bridges construction, structural, mechanical/electrical, sewerage or pipe laying, and are usually members of some professional body. However, the law does not require registration before a person can practise as an engineer. Specialist engineers must be involved early enough in the project for the design to reflect their specialist functions and to allow their contributions to develop with, and be fully integrated in, the design of the project as a whole.

Client (budget holder)

The budget holder is the section/department of the organisation who is responsible for funding the contract expenditure.

Client

A consultant (eg private architect, engineer etc.) will refer to the organisation that engaged them, and will be paying their fees, as their client.

User

The users are the group of people who will be using, or occupying, the completed works.

Auditor

Auditors are not party to a standard form of construction contract. As auditors are not mentioned in the contract document they have no jurisdiction over the design team (unless such people are employed 'in house') or of procedures on site. An auditor has no automatic right of access to a construction site.

Auditors examine the organisation's regulations and ensure that they are practical and in accordance with best practice. The auditor is responsible for providing management with independent appraisals of systems and procedures and, by examining samples of projects, reporting from time to time on the extent of compliance with the organisation's regulations.

1. Getting started

(a) Appoint the Project Sponsor

The CIB's *Constructing Success* suggests that a project sponsor be nominated within the organisation to take responsibility for the client's role, particularly in communication with the project team. The project sponsor is expected to manage the organisation's input to the project and to be able to deal vigorously and objectively with issues that are the responsibility of the organisation.

It is imperative that at the outset of the project, adequate arrangements are made for effective communication, timely decision making, and for proper and full co-ordination of the various activities that are necessary to achieve success. Such arrangements will be facilitated by the nomination of an officer as 'project sponsor' as advocated by the CIB.

The officer concerned should be nominated by the chief executive and should be solely responsible for ensuring that the tasks and activities that are to be completed by the client are undertaken efficiently and effectively. An organisation should ensure that every project is assigned a project sponsor at the earliest possible stage, and that such officers are provided with the appropriate authority to direct and instruct other officers within the various sections of the organisation as required.

The role of the project sponsor should include the following responsibilities:-

- **Co-ordination**
The project sponsor co-ordinates the actions and information required from the various sections of the organisation. For example, s/he ensures that estimated costs are produced for all items of expenditure for decision-making purposes, including construction, fees, fitting out, and operating costs, at project appraisal stage.
- **Communication**
The project sponsor acts as the single point of communication between the organisation and the project team. This will ensure that information and advice from the design team is passed on to the correct people within the organisation, and that instructions to the project team are properly authorised.
- **Monitoring Performance**
As the main conduit for all communications with each member of the project team, including the contractor, the project sponsor is in an ideal position to ensure their performance is adequately monitored. Monitoring procedures should, however, not involve the checking of work to such an extent that it dilutes the responsibility of the project team.

- ***Monitoring Budgets***

The project sponsor should be responsible for ensuring comprehensive budgets are produced and that they are regularly updated. Such budgets should include all expected costs, including construction, fees, fitting out etc.

- ***Reports***

The project sponsor should also be responsible for ensuring reports are produced and submitted to the appropriate committee or board, as required by the organisation's regulations or standing orders.

In order to be able to accept the above responsibilities, the project sponsor should be provided with the following:

- ***Independence***

The project sponsor should be fully independent of all sections of the organisation. This will be vital to ensure that advice and information submitted to Members or the Board is not biased in favour of a particular option, eg that the need is not over emphasised.

- ***Power of Delegation***

While he or she is not expected to personally undertake all the various tasks, the project sponsor is responsible for ensuring that they are actually undertaken. To facilitate this, it is necessary for the project sponsor to have the authority to delegate work to other officers within the organisation.

- ***Power of Executive Action***

The project sponsor must have the power to authorise actions by the organisation, such as the approval to the incurring of expenditure, in the event of urgency or unforeseen events.

- ***Access***

Direct access to key decision makers within the organisation, including members of the Committee or Board if necessary, should be available on a day to day basis to the project sponsor.

It is not essential for a project sponsor to be an expert in construction matters and procedures. What is important is that he or she is an expert in project management and is fully knowledgeable of the various people and sections of the organisation.

(b) Appoint the Client Adviser

The CIB suggest that a consultant be appointed as 'client adviser', to provide professional advice to the project sponsor, until such time as a firm decision is made to commit to a construction project.

The project sponsor will not necessarily be an expert in construction matters. Therefore, throughout the duration of the project, he or she will need the support of a professional adviser. Until such time as all members of the project team have been appointed, the role of professional adviser could be delivered by the organisation's in-house construction professionals, presuming that the organisation has such professionals in direct employment.

In-house professionals would have the advantage of a working knowledge of the client's business and the part the project will play in that business. In practice, however, the capacity of technical departments vary widely and economic considerations demand that the establishment of the department is geared to normal workload levels with consultants being engaged to deal with any peaks. Appropriate in-house staff, therefore, may not be readily available.

It is important that the advice given to the project sponsor is independent and free from any vested interest in any of the options considered for the project. An in-house client adviser might have difficulties in conforming to these criteria. It must, however, not be assumed that a consultant would provide advice that is completely independent. If it is decided to appoint a consultant as client adviser then it must be clear that there is no guarantee that they would be appointed in respect of any resultant construction work.

If the subject matter is confidential, or politically sensitive, the organisation should attempt to avoid the appointment of consultants and keep all work associated with the project in-house. Otherwise, while acknowledging the reservations expressed above regarding independence, it is considered that as far as possible consultants should be appointed to fulfil the role of client adviser.

The functions of in-house technical departments extend beyond those of external consultants appointed for individual projects. By virtue of their intimate knowledge of the needs and policies of the organisation, in house staff are likely to act on behalf of the client in a number of areas, including an oversight in both technical and management terms of construction work with particular reference to future maintenance requirements. It would, therefore, appear advantageous for the project sponsor to consult in-house professional staff when preparing the brief for a client adviser.

While the client adviser will have knowledge of construction, it will be necessary for him or her to be advised of the client's business needs and objectives, including any special needs of the users. It is stressed that the client adviser must be appointed at the earliest possible stage in the project in order to give impartial guidance on the best way to proceed.

The consultant will be appointed in accordance with the prescribed procedures of the organisation which should recognise the need both to demonstrate public accountability and to ensure that only consultants of proven ability and experience are selected. At this stage, considerable benefits are available from a consultant's potential for innovation and freedom of thought. Quality and experience should therefore be given appropriate relevance and consideration during the selection process.

There should be mechanisms for assessing competence and financial standing and the appointment will be on the basis of written terms of engagement which state clearly and unambiguously the services that are to be provided and the terms of remuneration.

The selection and appointment of consultants is considered in detail in chapters three and six.

(c) Confirm the Business Case

(i) Appraise Options

The CIB's *Constructing Success* says that the project sponsor, with the client adviser, should define the objectives of the project, identify the options that will achieve the objectives, and evaluate them accordingly.

All projects concern satisfying a need of the organisation. Typically, there will be a number of solutions that could satisfy a need and it will be necessary for the organisation to identify the best one, in terms of time, cost, and quality.

The first step therefore will be the recognition and identification of the need for something to be done. This will involve the description and quantification of the problem, including reference to any social and environmental factors, statutory obligations and public health or safety aspects. There should be a detailed description of:

- the source of the problem, eg unsatisfactory conditions, new demands
- the factors affecting future aggravation/alleviation of the problem
- the adequacy of the relevant existing facilities and their relationships with the overall system
- the timing of requirements
- the consequences of doing something
- the consequences of doing nothing.

It is vital that the need is expressed in simple terms, such as the need for more office space, bed spaces, or child places, rather than a need for a new office, hospital, or school. It is also important that the organisation ensures that the justification for the need is valid and is not based on erroneous data or logic. The organisation's prescribed procedures should require the need to be fully explained and demonstrated to the Board or relevant committee before approval is given to the expenditure of resources on seeking an appropriate solution. The project sponsor should ensure this is done in each instance.

From the details of the need that have been identified, the project sponsor, with the client adviser and a representative of the user, should then compile the specific project objectives that will satisfy the client's requirements. This is a crucial stage. Yet, it is one that is often overlooked in the public sector with the result that resources are committed to a project without a clear understanding of why it is being commissioned, or confirmation that it is really necessary. As stated in the CIB's *Briefing the Team*, a decision to proceed with construction should be taken only if there is a sound business case.

The establishment of project objectives helps ensure that the client will be fully satisfied with the completed project, and they will be used to judge the success, or otherwise, of the scheme on completion. The project objectives should include the following aspects:

- quantification, eg the number of bed spaces that are required
- facts and history
- demand forecasts
- the design criteria
- the required geographical location
- any legal, financial, and environmental constraints
- the project timing and phasing, eg when is completion of the project required by?
- outline budget costs, both capital and revenue.

All solutions that could achieve the project objectives should be identified. This will involve, say, looking at existing buildings for potential (eg alteration, extension); buildings owned by others (for possible purchase or lease) or looking at clear sites where a new building could be built. It may also involve producing outline costs and examining the extent to which each possible solution meets the stipulated criteria, ie location, cost, time scale etc. This is where there is the greatest potential for an organisation to benefit from innovation and thought by those searching for potential solutions. Conversely this also means that this is where the most serious mistakes are made. Usually, by devoting an inadequate amount of time, an ideal solution is overlooked, or discarded, for one that provides poor value for money or does not meet the needs of the organisation.

It should be appreciated that typical fees on a capital project equate to around 15% of construction costs; and that 75% of such fees would be payable before construction work commences. It would, therefore, cost over £110,000 in fees to fully design a £1m construction scheme. It is, therefore, not practical to fully develop all the potential solutions to a need.

All solutions should be evaluated, therefore, in outline in order to identify any that clearly fail one or more criteria. For example, lack of available land on which to build, excessive cost etc. From what could be a dozen potential solutions, the process should reduce this to perhaps three or four which, on the face of it, appear to justify more time being expended on their evaluation. These remaining, more realistic, solutions should then be compared and appraised in more detail in order to identify the best one.

The scale of the appraisal will depend on the size of the project and cost implications. However, it should be detailed enough to identify and evaluate the costs and benefits of each option including any uncertainties. The project sponsor may need to commission feasibility studies of each of the realistic options before making a firm decision.

The project appraisal team may consist of representatives from finance, planning, appropriate technical departments and any other discipline relevant to the organisation's activities. The project appraisal team should be provided with a detailed brief advising of the client's objectives for the project and should be required to report on the extent to which each of the options achieve the stated objectives.

It may be necessary to appoint consultants. In which case, it is vital that no guarantee is provided or implied that the consultant may be commissioned for any resultant construction work. The subject of selecting and appointing consultants is considered in more detail in chapters three and six.

Feasibility studies should examine in detail and report on:

- the phasing of all expected expenditure, and any expected income or savings, throughout the entire life cycle of the project. Such expenditure and income should be discounted to present day values in order that they may be compared to those of other alternatives on a common financial basis
- the estimated dates on which the detailed design can be completed, and when construction works can be expected to start and be completed
- based on the estimated start and completion dates, the total expected out-turn cost of construction works, including fees
- the consequences of any delay in implementation and the effect on the estimated flow of income and expenditure
- the results of any soil investigations, surveys and searches
- revenue alternatives to capital expenditure
- the views, including desires, of potential users
- the design, operational and environmental aspects
- a sensitivity analysis of design criteria and financial/economic parameters on the option.
- availability of resources
- feedback from any reports available from post completion reviews on similar projects. There may also be relevant feedback from current projects
- consideration of the effect of the scheme on the organisation's overall programme and strategy;
- evaluate the risks, including that of the project failing to meet its objectives
- whether there is a need to appoint consultants, or whether there are adequate resources to administer the construction phase 'in house'
- the preferred construction method, and form of contract
- a statement of any relevant policy considerations
- a value for money analysis, to demonstrate the cost effectiveness of the option, including details of any comparative costing such as the cost per square metre, cost per bed space, increase in value

- conditions under which the project would become non-viable.

Full details concerning the project appraisal process are contained within *Making the Right Choices – a practical guide to project appraisal* produced by CIPFA in 1996. The aim of the guide is to help organisations develop and improve their approach to project appraisal. It deals with the systematic approach to evaluating significant expenditure decisions. The guide focuses on consideration of short and longer term expenditure profiles, tangible and intangible benefits, choices about the course of action to be followed, a comparison of outputs with corporate objectives, and the problems of prioritising and programming outlays. It explains the various financial techniques and terms that are associated with appraisals including net present values, accounting and internal rates of return, discounted payback periods, and also risk and sensitivity analyses.

CIPFA: Making the right choices

To stimulate thinking about options, it can be useful to have in place a bank of generic questions as a starting point. Such questions can include:

- is 'do nothing' an option?
- is there a 'do minimum' scheme?
- does the project have to be undertaken on the scale proposed?
- could it be scaled down or phased?
- what is the design life for the scheme and the effect of varying it?
- are different locations possible and/or available?
- are there different ways of meeting the required outcomes?
- are all elements of the proposal justified?
- by removing some elements could the cost/value ratio be improved?
- could the scheme be combined with another scheme to advantage?
- are there different ways of providing/funding the facility?
- how are other comparable organisations achieving the desired outcomes?
- how can the risks/exposures of the investment be minimised (as distinct from the risks/exposures inherent within the context/environment)?

What benefits do the individual elements of the scheme bring? Can those benefits be achieved by alternative means?

The approach to resolving the timing of a project depends very largely on the prime purpose of the scheme, and is related to the factors that justified it in the first place. When its purpose relates to meeting growth in demand, or new demands, the timing of the scheme will rest on the actual fulfilment of the planning assumption, and must have regard to aspects such as development agreement and requisitioning. Account should also be taken of other constraints relating to the timing and phasing of projects, such as:

- the availability and deployment of resources and the continuity of design and construction work
- the time needed to bring the project up to the start of construction, having regard to planning, administration, legal, financial and engineering design and tendering requirements
- any other pressures arising from special circumstances.

Most capital schemes will involve substantial running costs, including occupancy costs such as cleaning, maintenance, repair, replacement/renewal, energy, dismantling and disposal, which, over the lifetime of the completed works, will probably far exceed the construction cost. It would be useful, therefore, to examine available data on, for example, the expected failure rates of the major components of a building and the consequential revenue, maintenance, and replacement costs, when considering a construction project. Examples of the design decisions that could be made are:

- the use of hard wood or soft wood (the former is more expensive but has a much longer life)
- the installation of energy monitoring and control systems (these are expensive but should reduce fuel costs)

It is evident that the data necessary for full life costing exercises to be undertaken is far from complete. At the time of writing, the building professions are in the process of developing techniques that would enable life cycle costs to be more fully considered at the appraisal stage, but a number of problems have been encountered. In particular, the scale of the data collection exercise involved, the lack of universal methods for calculating costs, and a general lack of demand from client organisations.

While the current problems are acknowledged, it is considered that all costs should, as far as possible, be taken into account during the initial appraisal. Only by increasing demand for life cycle costing exercises to be undertaken, can the construction industry perhaps be encouraged to respond accordingly. It is acknowledged that the techniques are complex and time consuming and, consequently, should only be requested on large projects where the running costs and the expected life of the scheme is significant.

(ii) Approval of the Preferred Option

The appraisal process identifies the best, or preferred, solution. Before proceeding with a construction project there must be confirmation that there is a sound business case. The prescribed procedures within an organisation should therefore require a report to be submitted to the

committee or board, that seeks specific approval to the preferred solution before significant design resources are committed to that solution.

The report should also re-confirm the evidence of the need for the project, detail all options that have been considered together with the reasons for their rejection. This is a joint project sponsor, client adviser process and will provide the essential components of the strategic brief. It will also establish measures of time, cost and quality against which the project can be judged as it proceeds.

The management committee or board will then consider the suitability and acceptability of the project from this detailed report because it will provide the basis for the preparation of the contract specification and design.

An organisation has many demands from different activities of the organisation, for which the total amount of available finance is limited. The director of social services may need a new old people's home, while the director of education wants to extend one of the schools. Each director will argue his or her case and it is, therefore, necessary for the most senior level of authority within the organisation (eg board, full council) to decide independently which scheme is to be progressed.

For example, departments within a local authority may have identified needs under four headings that total £21m. The authority may, however, only have resources available totalling £14m. A decision will have to be made as to which two or three schemes are to be progressed and which are to be deferred to a later date.

Department	Project	Estimated Cost incl. Fees £000s
Education	A	5,000
Social Services	B	3,000
Highways	C	6,000
Education	D	7,000
		21,000

In the public sector, because of scarce financial resources, it is imperative that due regard is given to the proper determination of priorities, and the consideration of alternatives. There are three key considerations for the allocation of resources.

- Will land have to be acquired, or is it available?
- Are there sufficient human resources available to properly plan, design and control the project, or should external consultants be used for all or part of the stages?
- Will the project be financed internally or externally? If externally, what constraints are there?

Adequate strategic planning and capital programming systems are necessary in order to allocate these resources to the relevant projects.

Once a decision has been made, approved projects are subsequently included in the organisation's capital programme. When adding a project to the capital programme, costs should be stated at estimated actual (outturn) prices and be phased across the appropriate years. Including a project in a capital programme usually provides the necessary authority for detailed design work to be commenced and, if necessary, for consultants to be appointed.

The approved estimated costs for the preferred option should be continually reviewed as the design stage progresses in order to enable corrective action, or alternative options, to be exercised at an early stage if necessary. Any delays in the design process will have an impact on the expected construction commencement and completion dates, and hence, costs. Any such variations should be the subject of reports to the committee or board, providing explanations, and authority to vary the sums stated in the capital programme.

Example Capital Programme 1999/00 to 2003/04: as at 1st April 1999

Project	Appr'vd Cost £000s	Latest Estimate £000s	Expend pre 1.4.99 £000	1999/00 £000	2000/01 £000	2001/02 £000	2002/03 £000	2003/04 £000	Later Years £000
A	4000	4200	3500	700					
B	3500	3500	1600	1400	500				
C	5000	5500	2000	2500	1000				
D	4000	3900	1100	1900	900				
E	6000	6000	500	2000	2000	1500			
F	5000	5000		500	3800	700			
G	3000	3000		2200	800				
H	6000	6000			500	3100	2000	400	
I	7000	7000				500	3500	2200	800
Total			8700	11200	9500	5800	5500	2600	800

Projects that have been approved but, due to a lack of resources, have been deferred to a later date are usually included within a supplement to the capital programme. This supplement simply lists the projects, together with their respective estimated costs. Pre-contract expenditure is not authorised on these projects. It may be that a project in the capital programme may need to be postponed due to circumstances outside the control of the organisation, such as delay in obtaining planning permission. To prevent an underspend a project could be brought forward into the capital programme and/or one could be added from those included on the supplement.

A vital part of the capital programme is the monitoring and updating. This applies particularly in respect of larger organisations where the capital programme is extensive. In some organisations the capital programme may contain around 1,000 schemes at varying stages of implementation. In addition to generating information on financial forecasts it will be necessary to compile information on the stages of physical implementation of individual schemes (eg land purchase, site selection, design, tendering, construction and final account). Data relating to approvals, geographical location and payments are also required. The amount of data relating to the programme obviously reaches sizeable proportions.

Most organisations now have computer applications to collate and compare financial information. Such computer systems, however, may suffer from a combination of the following drawbacks:

- delays in processing the necessary input
- extensive manual intervention in information supply to the system to provide summary reports for management information and action
- lack of exception reporting facilities
- delays in recalculating financial implications (both capital and revenue) of changes in levels of capital programme due to policy decisions; also how variances might effect the programme during the actual implementation process
- conflicting and inconsistent sources of information
- lack of direct correlation between financial and time programme information.

Techniques for improving efficiency, designed to ensure that scarce resources are effectively utilised, are of concern to the auditor. The auditor should isolate those areas where the planning and control of capital expenditure need overhaul and recommend to management, as with any other system, the appropriate improvements necessary.

(iii) Develop a Strategy for the Project

The next priority is to choose the system for procuring the skills and resources that are needed for the design and construction of the preferred option. The project sponsor, with the client adviser, must consider the best way of carrying out the project but will first translate the client's needs into a strategic brief and eventually into a full project brief to the project team.

A properly ordered project brief is crucial to the successful completion of any project. From a high quality design will spring:

- a well ordered contract which is completed on time and within budget
- a completed project which meets the needs of the client
- the maximisation of the resources input, ie the achievement of value for money.

The project sponsor and client adviser should work closely together to avoid the necessity for subsequent expensive, and time consuming, variations. This will also facilitate all design work being fully completed prior to construction commencing.

The project brief must be clear and concise, whether the design team consists of in-house specialists or external consultants. The design should only commence after all the requirements are clear and the budget set. There should be a strict timetable, which is reviewed by the project sponsor on a regular basis.

If changes to requirements are requested during the design stage they should be monitored and the reasons clearly identified. Where changes have significant cost implications, including the cost of any abortive design work, full explanations should be submitted to the relevant committee or board for approval. The final design should meet the criteria of performance and cost laid down in the project appraisal report.

The decision as to which procurement system to use is a key strategic decision. Annex 1 of the CIB's *Constructing Success* outlines the common procurement systems such as traditional, design and build and management contracting. The client adviser is to choose the most suitable by identifying their relative advantages and disadvantages.

The main advantages and disadvantages of each of the common procurement methods identified by the CIB are as follows:

- ***Traditional***

The traditional method of procurement involves the seeking of bids from contractors after a 'design team', on behalf of the client, has completed a detailed design. The design team is then retained to oversee the construction work. This is the most popular procurement method, known well and used regularly by those in the construction industry. The client can direct the design process, through a directly engaged design team and, within reason, can make adjustments. Problems could, however, result from the absence of a single point of responsibility for the design and construction of the project. There may also be conflict between the contractor and members of the design team should any weaknesses be identified in the standard of completed work.

- ***Design and Build***

Contractors bid in competition on the basis of schemes prepared by their own design teams. The successful contractor takes possession of the site and undertakes responsibility for all matters including design, permissions, construction, and quality control. Although the contractor is responsible for the design, it is necessary for a detailed brief to be prepared by the client organisation that describes the desired result. Clients may build into the brief a monitoring procedure and safeguards, and can appoint consultants to act on their behalf in technical matters. However, the essence of this type of contract, is that contractors have a free hand to achieve the specified result, at least cost to themselves.

A design and build contract carried out by a responsible and competent contractor can save time by cutting down on formalities. However, only too frequently the initial design to win the tender is superficial, and in order to retrieve the situation later, the contractor is sometimes forced to cut corners on materials and quality. It is also difficult to negotiate with the contractor when changes in requirements become evident during the contract, especially when these are imposed by outside influences such as statutory authorities and planning permissions.

Design and Build contracts are highly suitable for some clearly defined projects, but should be avoided where there is a significant risk of amendment to design or specification.

- ***Management Contracting and Construction Management***

There are many variations to the concept of management contracting. The essence, however, is that the client briefs the design team who then design the project, for which management contractors (or construction managers in the case of construction management) submit tenders on a fee basis. The successful management contractor, or construction manager, then arranges for the work to be carried out by sub-contractors and is responsible for co-ordinating and supervising their work. The respective sub-contract agreements are entered into directly by the client in construction management and by the management contractor in management contracting. It should be noted that a management contractor might take over some areas of responsibility from the design team while on site.

The most popular variant on this form of procurement is the 'management fee' form of agreement. In this case as well as managing and co-ordinating the project the contractor also undertakes a substantial amount of the construction work directly. The cost of the project is based on the estimate of prime cost negotiated with the design team as the design develops. The actual fee paid, however, may vary in accordance with a formula related to construction performance.

This method generally offers the opportunity for involving the contractor in the later stages of the work of the design team and allows the early mobilisation of resources to get a quick, organised start on site. Subsequently, the application of proper management techniques should ensure that all parties work efficiently and, therefore, complete the work quickly. However, it should be appreciated that a good contractor, operating a traditional form of construction contract, should be able to do almost all that a management contractor offers, and without the additional fee.

- ***Specialist Services in Design and Construction***

The client obtains the services from specialist contractors for the design and construction of specialist work. The advantages and risks associated with this form of procurement are similar to those associated with the design and build method discussed above. Occasionally, however, a specialist contractor may be appointed to design and undertake works as part of a larger project. In such circumstances it is important that the extent of their responsibilities, particularly in respect of design, are clearly defined in order that they may be distinguished from those of the design team and main contractor.

When selecting a procurement method, it is also necessary for the project sponsor and client adviser to consider the basis on which payment is to be made to the contractor. It will be necessary at a later stage, to ensure that a form of contract is selected that provides for the desired method of payment.

Annex 1 of the CIB's *Constructing Success* mentions four payment methods. Each carries different advantages and disadvantages as follows:

- ***lump sum***

This method provides the organisation with a firm price for the construction works. The resources necessary to monitor and control the contract are less than those required by other payment methods. There is no need, for example, for works to be measured in order to calculate the amount of payment due to the firm concerned. However, there is a risk that a contractor may take advantage of any weaknesses in the organisation's quality control procedures.

- ***remeasurement***

This basis of payment will be used when it is not possible to specify, with any degree of confidence, the volume or quantity of work required. In such circumstances a schedule of work items will be prepared which state estimated quantities. Contractors will quote their rates to be applied against each item, which will ultimately be applied to the actual quantity of work carried out. This has flexibility in that work will be valued and paid for as it is completed, but it requires procedures to be established for checking and measuring the work carried out. Cost control procedures may also be weakened due to the absence of a firm 'contract sum', requiring the establishment of sound systems for authorising variations.

- ***cost reimbursable***

This method is where the contractor is paid the actual cost of carrying out the work with an agreed addition for overheads and profit. This requires strong control to be exercised by the organisation so that it can be confident that labour and materials costs are accurate and valid. It is not possible to establish a firm price for the work at the outset.

- ***target cost***

This is similar to cost reimbursable but any deviations, up or down, from a target cost are shared in an agreed ratio between the contractor and the client. This method provides a contractor with an incentive to achieve completion at the best possible price. However, if the work is not adequately monitored, this could be at the expense of quality. There is also a need for the client to ensure that the target cost is reasonably achievable.

The client adviser is required to prioritise the client's objectives. For example, is price more important than quality and speed of completion? In most instances in the public sector, price will be the priority provided completion is achieved to an acceptable standard within a reasonable time. In instances where price is not to be the main priority then this should be justified and evidenced accordingly.

It is also necessary to determine the extent to which changes in the client's requirements are likely during the project, the level of risk the client is willing to accept, and the extent to which the client

wishes to be involved. These issues, together with the technical complexity of the work, will affect the decision as to which procurement system is to be adopted and ultimately the final price to be paid.

The project sponsor must recognise the statutory obligations that the client must meet in undertaking the project. These obligations are outlined in Annex 2 of *Constructing Success* and include planning permissions, building regulations and compliance with health and safety legislation and EC procurement regulations.

Finally, a timetable should be prepared which highlights the key dates for implementing the project. This will include the programmed dates for selecting consultants, issuing tenders, start on site, and expected completion. It should also identify those functions which lie on the critical path and which will be crucial to the overall completion of the project.

(iv) Appoint the client project manager

Once a construction project has been confirmed and a strategy for its execution has been agreed the project sponsor, with the client adviser, must appoint a client project manager to manage the project on a day to day basis. The role of client project manager may be fulfilled by a member of the client's own technical department or by an external consultant.

It is stressed that a key criterion when selecting a client project manager is the potential to work closely and effectively with the client organisation, via the project sponsor. The project manager will be responsible for determining the skills and resources needed for the scheme and managing and controlling such resources through to completion and post-project evaluation.

The role of client adviser ceases when the project manager is appointed. However, there is no reason why the client adviser should not be retained in a limited capacity for the rest of the project. For example, his or her comments on the completed design would no doubt be of value.

It is possible to re-engage the client adviser as the project manager. However, in order to protect the independence of the client adviser role this should be avoided. In addition, in most instances the qualities of a project manager will be different to the more innovative role of a Client Adviser, and it may be necessary to appoint a project manager with a specific expertise related to the scheme/option that has been chosen.

The project manager should be required to liaise closely with the project sponsor on all issues, including agreement on:

- the scope of the project, including the quality of design, materials and construction
- the budget for the project
- a project plan which identifies key dates and actions.

Whilst every project, irrespective of size, should be assigned a project manager, it is only major and complex projects that will require such assignments to be full time.

1.1 The Audit Approach

When reviewing an organisation's arrangements for commencing construction projects, an auditor should focus on the following issues.

- (a) Are project sponsors nominated to every project at the earliest possible stage, to take sole responsibility for the client's role?
- (b) Are the project sponsors provided with
 - o adequate authority?
 - o clearly defined roles and responsibilities?
 - o the assistance of client advisers, at the earliest possible stage, to provide professional advice?
- (c) Are client advisers adequately advised of the client's business needs and objectives?
- (d) Are the objectives of each project clearly defined?
- (e) Are all solutions that could achieve the project objectives identified, and evaluated in outline?
- (f) Are feasibility studies carried out in sufficient detail, whenever necessary, and include consideration of life-cycle costs?
- (g) Are appraisal processes sufficient to identify the best solutions?
- (h) Before a commitment is given to proceed with a 'preferred option', is the need re-confirmed, and approval given to the business case by committee or the board?
- (i) Are estimated costs and projected completion dates continually reviewed as the design progresses?
- (j) Is a strategic brief prepared for each scheme that outlines the best way of carrying out the project, including the desired procurement method and the means by which the necessary skills and resources are to be obtained?
- (k) Is a complete and clear project brief, which includes the decision as to which procurement system to use, prepared for each construction project?
- (l) Once the project brief is agreed, are any subsequent changes closely monitored?
- (m) Are timetables prepared that highlight the key dates for implementing the project?
- (n) Are project managers appointed as soon as a construction project has been confirmed and a strategy for its execution agreed?

2. Defining the project

(a) Confirm the Strategic Brief

The CIB's *Constructing Success* states that the client project manager and project sponsor should, as soon as practical, agree the strategic brief for the project. The strategic brief is a statement of the broad scope and purpose of the project, and should include an output specification, which explains in clear terms what is expected of the project.

The strategic brief will include statements on the quality of design, materials and construction, targets and constraints on operating expenditure and other whole life costs, and environmental requirements both internally and externally. The brief should be developed from the details contained in the business case and project strategy that have been previously been prepared.

The CIB's *Briefing the Team* provides details of the information to be included in the strategic brief and suggests that the following questions are asked as it is developed.

- What are the main benefits that the project will provide to the client?
- What is the case for constructing?
- Why can the needs not be satisfied by the existing facilities?
- What increased efficiency will result from the construction?
- Has an appropriate site been identified/secured for construction which meets the necessary statutory consents?
- How does the proposed approach compare with other operations in the UK and abroad?
- When is the construction required and are the timescales realisable?
- How will the success of the project be judged?

It is essential that the strategic brief includes a detailed programme of when the various stages of the project are planned to be commenced and completed. In particular, planned dates for securing the necessary approvals, completion of design work, seeking tenders from contractors, commencement and completion of construction works, should all be clearly stated. This is necessary as it will enable the project sponsor, throughout the project, to regularly monitor progress against such planned dates and seek explanations for any slippages. The project sponsor should ensure that the strategic brief also provides outline details of what actions will be required from the client and when.

The programmed dates should be realistic and achievable. The attraction of stating a completion date for the construction, which is as early as possible, is acknowledged. However, the insertion of dates that clearly allow insufficient time for the project to be properly and fully considered, designed and

constructed, is not conducive to securing value for money. Therefore, the project sponsor should seek confirmation from the client project manager that the programmed dates included in the strategic brief are reasonable, and in fact include a small contingency to allow for a margin of slippage.

Further, the client project manager should be required to highlight key dates that are most at risk of delay, together with a prediction of the consequences of failing to meet them.

The compilation of the strategic brief is an ideal vehicle for confirming the client's initial budget for the project. The budget should be stated in sufficient detail so as to indicate not just the construction works budget, but also the budgets for professional fees and fitting out costs. The client's expected budget for annual operating and staffing costs should also be clarified at this stage.

The importance of preparing a clear and complete strategic brief at the earliest possible stage cannot be over emphasised. This will ensure that the client's project manager is made fully aware of the client's requirements, together with the resources that are available, and any constraints that are to apply. It will also reduce the risk of work being undertaken that subsequently has to be aborted due to matters that have not been notified by the client to the client project manager.

In order that the objectives of the project are not overlooked they should be restated in the strategic brief. These should include the needs of the client that the project is intended to satisfy and the expected benefits.

The terms and conditions of the client project manager's agreement should require a strategic brief to be compiled and agreed with the project sponsor at the earliest opportunity. The terms of the appointment should also specify the matters the client expects to be considered and detailed in such a document.

(b) Approve the Project Execution Plan

Having secured the agreement of the client to the strategic brief, the client project manager should then develop and agree with the project sponsor an explicit plan for implementing the project. This must be prior to major expenditure being incurred on design work.

The project execution plan is a statement of policies and procedures designed to ensure that every aspect of the design and construction of the project will be undertaken within the client's constraints, and will achieve the project's stated objectives. In particular, details of the procurement system, the number and type of appointments to be made to the project team, and how risk management and value management will be implemented.

The CIB's *Constructing Success* recommends that the project execution plan should include arrangements for decision making and communication, detailed budget and cash flow forecasts, the programme, and the quality, risk management and health and safety plans.

The CIB's *Briefing the Team* suggests that the following questions are asked when developing the project execution plan:

- what procurement route will best suit the client's needs and why?
- what roles are required in the project team and when should they be appointed?
- how and by whom are decisions on quality and timing made?
- what are the main risks of the proposed approach and how would they be managed?
- what are the most difficult technical issues to be resolved in the design and construction of the project?
- have value management and value engineering techniques been incorporated?
- what is the overall budget associated with the project and is it realisable?
- what milestones have been agreed within the project programme?
- what factors are crucial to the project's success and what are the risks associated with them?

At this stage, the detailed budget should contain an appropriate contingency, of say 5%, for additional costs that may be incurred due to unforeseen circumstances once construction work commences. The level of contingency should be clearly highlighted, and should be included on the strict understanding that specific approval from the client will be required before expenditure of such sums is incurred.

In order to provide a firm springboard from which the client project manager's work may commence, the project sponsor should be required, after obtaining the necessary authority, to formally 'sign off' the agreed strategic brief and project execution plan on behalf of the client. Any subsequent amendments should require the specific approval of the client, at board or committee level, who should be fully advised of the reasons for the amendments and the impact on the time, cost, and/or quality of the project.

Once the client's approval has been secured the process of selecting members of the project team can commence. Selection should be undertaken in accordance with the CIB codes of practice. Appropriate consideration should be given, when selecting the project team, to the specific nature of the project and the need to appoint those members who are most likely to add value to the completed project.

Best value in construction lies mainly in the quality of the design and its success in interpreting the requirements of the client. It lies too in the economy with which these objectives are attained. Organisational and system considerations have importance in construction contracts together with good teamwork and thoroughness by those carrying out projects. While these are matters to be

addressed by technical officers, auditors should ensure that there are sound systems of control in place to achieve the cost effectiveness of the completed project. Such systems should include the following:

- **Time**
a programme that is continually monitored and explanations sought, together with appropriate approvals, for any slippages
- **Cost**
a fully detailed budget that is regularly reviewed throughout the project and explanations sought for any variances
- **Quality**
design work that is continually assessed by reference to the client's requirements contained within the strategic brief and project execution plan.

2.1 The Audit Approach

Auditors should concentrate on the following issues when reviewing the extent to which organisations ensure that projects are adequately defined prior to commencement.

- (a) Do procedures ensure that a strategic brief is developed for each project, based on details contained in the relevant business case?
- (b) Are project sponsors required to agree the strategic brief with the respective project manager for each project as soon as possible?
- (c) Do agreed strategic briefs include relevant statements as to the quality, cost and timing of the works, adequate programmes, and details of the actions that are required from the client?
- (d) Are strategic briefs formally approved on behalf of the client?
- (e) Are project execution plans developed by the respective project managers before major expenditure is incurred?
- (f) Do detailed budgets include appropriate contingencies?
- (g) Do project sponsors formally 'sign off' agreed strategic briefs and project execution plans for each scheme? Are any subsequent amendments required to be approved by the board or committee?
- (h) Are the organisation's control systems sufficient to ensure the cost effectiveness of the completed project?

3. Assembling the team

(a) Decide Contracts

The project sponsor should be satisfied that the obligations and relationships between the client and each member of the project team are clearly expressed in contractual agreements.

The project sponsor should ensure that the contractor is to be appointed using one of the standard forms of contract that are available, eg JCT80, ICE (6th edition). He or she should also ensure that it is the most up-to-date version, and is applicable to the type of work being considered. Details of some of the popular standard forms that are available are provided in Appendix 3.1

The use of standard conditions of contract has a number of advantages. For example, through general usage they are readily understood by all users, and contractors are encouraged to price their tenders with a greater level of assurance than is possible on special contracts. The courts have laid down definitive interpretations of various clauses and there is a wide and varied selection of authoritative publications available to assist interested parties in gaining a deeper and better understanding of the relevant conditions.

Organisations should resist amending standard forms of contract, and should not produce their own bespoke forms. Organisations that amend standard forms of contract, or produce their own, incur unnecessary costs by way of staff time and will lose the benefits, described above, that are associated with standard forms. Such organisations will also pay more to their contractors, who will add a premium to their tenders to cover the additional risk they perceive to be associated with non-standard documents. In their view the documents have clearly not been amended for their benefit!

There are also a large number of standard forms of agreement available that can be used when appointing consultants. However, it must be remembered that these are produced by the professions for the professions and should, therefore, be used with caution. Full details concerning the appointment of consultants, including some of the standard forms that are available, are contained in Section 6 of this publication.

The Housing Grants, Construction and Regeneration Act 1996

Prompted by Sir Michael Latham's report *Constructing the Team* this Act legislates in respect of the terms and conditions of construction contracts. The DoE state that the Act provides a framework for fairer contracts and better working relationships within the construction industry. The legislation applies to the private and public sector, except where work is to be carried out to a client's own private residence.

Construction contracts are defined in the Act as including works of alteration, repair, maintenance, extension and demolition, as well as associated consultancy agreements such as for architects, engineers and quantity surveyors. The only notable exception from the definition is that of 'supply only' contracts.

The Act applies to construction contracts that are in writing and were entered into after the effective date of the legislation which was the 1st May 1998 in England, Scotland and Wales (1st October 1998 in Northern Ireland). It does not operate retrospectively to contracts already in existence at that time.

An outline of the four areas of legislation is provided in the table below.

If any contract, entered into after the effective date, does not include these provisions then the provisions of the government's *Scheme for Construction Contracts* will be automatically read into the appropriate terms and conditions. The scheme specifies such issues as a payment cycle of 28 days and payment due within 17 days.

It is noted that, in view of the short time periods applicable, for adjudication to work ideally an adjudicator will have to be named in the contract.

The Housing Grants, Construction and Regeneration Act 1996

'The Construction Act' outline of provisions

Payments

On any project lasting longer than 45 days a contractor has a statutory right to payment by instalments. The terms and conditions of any contract, irrespective of size or duration, is legally required to state how payments are to be calculated and when they become due.

Organisations have to inform contractors in writing of the reasons why any payment is to be withheld, including deductions in respect of liquidated and ascertained damages. Otherwise, if any payment is not made by the due date, a contractor may give seven days notice and, provided payment is not subsequently received, be able to cease work and leave the site, without being in breach of contract. In such instances, the due completion date is required to be adjusted to take account of any period during which the work is suspended. The adjustment to the completion date is limited to the period of suspension and work is required to start immediately payment is made.

Adjudication

All contracts have to allow for any dispute to be referred to an adjudicator within seven days. The adjudicator is required to make a decision within 28 days, or such longer period agreed between the parties. The decision of the adjudicator is to be binding until the dispute is finally determined by legal proceedings, by arbitration, or by agreement. The parties may agree to accept the decision of the adjudicator as finally binding.

Restriction on the setting off of payments

Payments due under a contract may only be withheld if the employer gives the contractor an 'effective notice'. This includes instances where monies due from a contractor on one contract are intended to be offset against monies due to that contractor on another, such as when the contractor is in liquidation.

The 'effective notice' has to be provided to the contractor before the due payment dates; it must specify the amount involved, and the grounds for withholding the payment. When such a notice is provided, the contractor is able to require the matter to be referred to adjudication. If the adjudicator subsequently decides that the amount should be paid, then the employer has to make the payment within seven days of the award.

Prohibition of 'Pay when Paid' clauses

Any contract provision which has the effect of making payment dependent upon receipt of payment from a third party will be unenforceable, unless payment is delayed because the third party is insolvent.

(b) Select the Project Team

Constructing Success issued by the Construction Industry Board recommends that members of the project team, including contractors, be chosen by assessing price and quality of service. Selection can be based on competitive tendering, negotiation, or a combination of these approaches.

Selecting Consultants

Procedures for selecting consultants should be clearly stipulated within the internal regulations of the organisation, recognising the need both to demonstrate public accountability and to ensure that only consultants of proven ability and experience are selected for commissions. These regulations should be sufficiently flexible to permit the organisation to find the right balance in each situation between such considerations as:

- the respective advantages of mutual familiarity arising from consistent employment of a firm, and of introducing fresh impetus and ideas from different firms

- the need to ensure each appointment is appropriate in relation to the particular project, against the administrative time involved in carrying out technical and financial vetting.

Approved Lists of Consultants

The creation of standing approved lists of consultants is recommended for organisations with a steady programme of work to be commissioned to consultants. Such a list should be categorised according to the capacity and experience of the firm concerned as follows:

- *work category* – which determines the suitability of the consultant for the type of project, eg conversion, improvement, new build etc.
- *financial limit* – which determines the suitability of the consultant's resources for projects of particular estimated financial values
- *overall commitment level* – which determines the maximum total value of all commissions to be awarded to the consultant in order that the organisation does not over burden the consultant's resources.

Ideally public advertisement should be the prescribed method of compiling an approved list of consultants. The risk of receiving an unmanageably large number of responses could be minimised by advertising only in the relevant Institute's professional journal and/or requiring applicants to demonstrate prompt response times by having a location close to the proposed site.

If public advertisement is dispensed with such measures should be exceptional, and of temporary duration, with a commitment to public advertisement within two years. Alternative compilation methods must be demonstrably accountable and not unreasonably restrictive.

Approved lists of consultants should be constantly open to applicants and be fully reviewed at least every three years. Consultants should only be included on the approved list after they have been thoroughly and successfully vetted and admissions, suspensions and deletions from the list should be subject to control by members or by management boards as a safeguard against irregularity and corruption.

An approved list of consultants should be large enough to support three tenderers per project for a third of projects annually assigned to consultants. Each work category of an approved list should contain a minimum of six consultants.

If an approved list contains an insufficient number of consultants, a formal approach could be made to the appropriate professional institute requesting the names of all practices operating within, say, a 50 mile radius of the organisation. Alternatively, applicants may be solicited on the recommendation of other organisations.

Where an approved list of consultants is in operation, the regulations of an organisation should require consultants to be selected from that list. The list should be subdivided for each discipline

employed, eg architects, quantity surveyors, building surveyors, civil, mechanical and electrical engineers, landscape architects etc.

Unsatisfactory performance by a consultant should result in prompt suspension or deletion from the approved list.

The minimum information that is required of any practice seeking admission to an approved list should be contained in a standard application form. All consultants should be required to complete and be required to subsequently notify the organisation of any subsequent material change in this information. The application form should be supplemented by a minimum of two satisfactory references from public sector clients, whenever possible, or two satisfactory internal 'performance review reports' if the practice has undertaken commissions for the organisation within the last three years.

The financial vetting of consultants is discussed at Appendix 3.2.

An annual certificate of professional indemnity insurance cover and a current premium renewal receipt must be submitted. Verification of the adequacy of a consultant's professional indemnity insurance cover should be carried out before their inclusion on the list and annually thereafter because of the extended duration of risk inherent in consultants' commissions. The subject of professional indemnity insurance is discussed in more detail at Appendix 3.3.

Where organisations cannot sustain a steady programme of commissions to consultants, selection should be from *ad hoc* lists, completed at the conclusion of a thorough vetting exercise, similar to that advocated for the preparation of an approved list.

Clearly, irrespective of whether approved lists of contractors are being maintained, the cost to organisations of financially and technically vetting consultants can be substantial. Therefore, all public sector organisations should regularly review their pre-qualification systems and consider using the national qualification system *Constructionline*. Further details regarding *Constructionline* are provided later in this chapter.

Background

Until the early 1980s consultants were prohibited by their various professional codes of conduct to accept a commission for a fee that was below that stated in their respective profession's fee scales. Following recommendations of the Monopolies and Mergers Commission in 1977 the RIBA, RICS and ACE made the necessary rule changes in July 1982, April 1983 and April 1985 respectively to permit fee competition among their members.

As a result, organisations began to select consultants by the issue of competitive fee tenders and subsequently secured considerable reductions in fee levels. The Property Services Agency's director of contracts in August 1984 made the point that having established quality and suitability from the

outset, by the careful vetting of consultants prior to their inclusion on a list, there should be little objection to selection thereafter on the basis of price.

Organisations now seek competitive fee tenders for most of their commissions and generally appoint those consultants who have submitted the lowest bids. It is acknowledged that competition has resulted in fee levels being generally reduced to below the profession's fee scales. However, it is suspected that some organisations may now have gone too far at the expense of quality. It is now widely recognised that the lowest price may not necessarily represent best value for money. Fee bids that are submitted by consultants that are below an equitable level, just in order to win a bid, means that they are not encouraged to look for design solutions that can reduce costs during the construction stage. A £10,000 'saving' in fees can easily result in a potential saving of £50,000 in construction costs being overlooked.

While the view of the PSA's director of contracts in 1984 still holds firm for commissions of low and medium values, it is considered that there is a need to consider quality more closely, and the extent to which individual consultants can improve value for money, when making appointments on major schemes. Clearly, a balance has to be struck between the pursuit of quality of service and maximum economy in fee expenditure.

The CIB Guide

The CIB guide *Selecting Consultants for the Team: Balancing Quality and Price* sets out a quality and price assessment mechanism for the selection of consultants including architects, engineers, surveyors, and project managers. The National Audit Office and the Audit Commission endorsed the guide. It was also publicly welcomed and fully supported by CIPFA at its launch at the British Property Federation on the 15th July 1996.

The procedures advocated in the guide provide a mechanism by which those appointing consultants may indicate how quality has been taken into account during the tender process and justify any decision for accepting a bid other than the lowest. The quality and price assessment mechanism works for the wide variety of construction projects. Whatever the project, decisions on quality and price can be traced systematically. The mechanism provides good practice that is applicable and compatible with the Public Services Contracts Regulations 1993.

The principal features of the quality/price mechanism contained in the CIB guide are summarised as follows.

- A formally constituted, and fully accountable, 'tender board' establishes the quality/price mechanism before tenders are invited. All tender documentation should be designed to ensure that the mechanism could be applied to responses that are received.
- A quality/price ratio is agreed at the outset, representing the percentage weightings to be given to quality and price. The more complex the project, and hence the greater the degree of

innovation likely to be required from the consultants, the higher the ratio should be. Indicative ratios suggested for various types of projects are:

Type of Project	Indicative Ratio quality/price
Feasibility studies and investigations	85/15
Innovative projects	80/20
Complex projects	70/30
Straightforward projects	50/50
Repeat projects	20/80

- Quality criteria should be grouped under four main headings and weighted. Recommended headings and suggested weighting ranges are:

Quality Criteria	Suggested Weighting Range
Practice or company	20-30%
Project organisation	15-25%
Key project personnel	30-40%
Project execution	20-30%

- A quality threshold needs to be established (eg a minimum total ‘score’ of 65 points out of 100 in respect of the quality criteria stated above). Tenderers must achieve this minimum quality score before prices are considered.
- Submitted tenders are assessed for quality by marking each of the four quality criteria out of 100, multiplying each mark by the respective weighting percentage and then adding them together to give a total quality score out of 100.
- Consultants passing the quality threshold (ideally two to three) are interviewed, their quality scores reviewed and their prices examined. The lowest compliant bid scores 100 and others score 100 minus the percentage figure above the lowest price (eg a bid 25% above the lowest price scores 75).
- The final quality/price assessment is achieved by multiplying the quality and price scores by the respective weightings set by the quality/price ratio and adding them together to give a total score out of 100 (eg if the quality/price ratio is set at 70/30, the quality score is 80 and the price score is 75, the total score is $(80 \times 70\%) + (75 \times 30\%) = 78.5$). The highest scoring consultant should be awarded the contract.

Comment on the CIB Guide

The following comments provide additional guidance to the implementation of the practices advocated within the CIB guide.

- Some projects may not require such detailed assessment. So as not to make the procedure too administratively burdensome on relatively minor schemes, the procedures should be adopted

for projects that are expected to attract a total fee income for all commissions in excess of £50,000. It is however, acknowledged that a reduced version of the procedures could be installed for lesser-valued commissions.

- The guide suggests that the 'Quality/Tender Board' should comprise those "able to establish an informed view on the issues before them". In the interests of accountability it is recommended that the board consist of at least four people from the organisation.
- In the interest of probity an auditor would expect to see minutes produced for all meetings of the board for future reference purposes. In particular, it is vital that the board formally minutes the 'Quality/Price' ratio in order to demonstrate that it has been established prior to tenders being invited. It would be advisable for the minutes to record the decision making process and the criteria by which the ratio is derived.
- Similarly, the 'Quality Criteria' weightings, and the 'Quality Threshold' should be minuted by the board, including the appropriate decision making process. It is stressed again that it is extremely important that it can be demonstrated at a later stage that these figures were derived before tenders were invited.
- In assessing quality after tenders have been received, each member of the board should compile their own marks. An average should then be taken for assessment purposes. The documents, including each member's score sheet, should be signed and dated and retained for future reference. The signing and dating of the 'Tender Assessment Comparison Sheet', presumably by the chairman of the board will also be a key control in the process.
- The client's budget for the proposed project should be stressed as being a key component within the list of client's objectives and needs. Clearly, to prepare a scheme that meets the client's needs but at double the available budget would be far from satisfactory.
- Fee tenders may consist of several elements. For example, tendered percentages or coefficients, fee abatements, lump sums, percentages or lump sums to cover expenses, time charge rates for partners and subordinate staff in varying circumstances and time charge rates for site staff. It will be apparent that the fee tender evaluation process can become lengthy and relatively complex if these important elements are all to be taken into account and like for like comparisons made between all tenderers' submissions. To simplify fee tender submissions, without losing the competitiveness of the elements outlined above, organisations should consider the use of tender summaries. These would incorporate the above elements (albeit in some instances on a provisional basis) with an all-embracing final provisional lump sum fee to be carried to the tender form – as with many tenders for building works.

Fee Tendering Procedures

In adopting any system of fee competition it must be recognised that quality is dependent on the standard of initial documentation and the level of control monitoring adopted by an organisation following appointment. To ensure that the level of service provided to the client is protected it is essential that any system of fee competition comprises the following elements:

- prospective tenderers receive a complete and adequate brief of requirements, including standards of the service expected
- tender documentation includes a copy of the full terms and conditions on which the successful consultant will be appointed
- opportunity is provided for each tenderer to adequately price all possible elements of their commission, eg
 - time charge rates for principals, partners, technical staff etc.
 - offers of reductions for any elements of repetition
 - lump sum requirements to cover minor expenses and disbursements
- since tenders usually consist of a number of aspects such as percentage fees, time charges, and abatements, fee tender documents should contain estimated quantities so that tender submissions from each consultant state a tender total for comparison and evaluation purposes.
- sound appointment procedures
- a monitoring system that ensures consultants, once appointed, actually provide the levels and standard of service detailed in their respective tender offers.

Fee tendering procedures should also recognise the various rules of the professional institutes. For example, both the RIBA and the RICS have passed bylaws embodying three fundamental principles that should be observed in any fee tendering exercise.

- (i) Fee tenders/quotations must only be submitted in response to an invitation from the client that specifies the services required, ie quotations for hypothetical commissions cannot be sent to potential clients in an unsolicited or illustrative manner.
- (ii) Dutch auctions are expressly prohibited, ie once a fee is tendered or quoted it cannot be revised to under-cut that of a competitor.
- (iii) A fee cannot be tendered or quoted on the basis of an amount or percentage below that submitted by another competitor.

An organisation should ensure that there is an adequate division of responsibilities in the fee tendering process. For example, the officer responsible for selection should not also have responsibility for controlling an approved list of consultants or appointing, liaising with and reviewing the performance of the consultant.

The project sponsor should be responsible for compiling the short list of consultants, which may be based on the recommendations of the project manager. The project sponsor should be required to refer the proposed selection to a senior line manager for approval and confirmation that their respective standings on any approved list are satisfactory. This would also afford an opportunity for the senior line manager to monitor the spread of invitations to tender (or negotiate). Although rotational selection should ensure an equitable spread of invitations it is possible that some practices could be overlooked, particularly if commissions originate from three or four sections of the organisation.

The project sponsor should be responsible for ensuring compatibility between all the shortlisted consultants. Because it is desirable to restrict knowledge of the proposed list of tenderers among the various consultants initially, when first admitted to the approved list, they should be required to list any other consultants with whom they could not expect to work harmoniously and satisfactorily. This should always be done when shortlisted for a specific project.

The regulations of the organisation should require commissions that are expected to exceed a specified value, have been subjected to only limited competition, or are to be let by negotiation, to be subject to member or board approval in the same way as any parallel situation involving the placing of a construction contract.

In order to exercise and demonstrate effective control of the selection process the list of the selected practices should include a record of the reasons for each selection. In the case of commissions that are to be negotiated, the record should indicate the reason why it is not possible to seek competitive tenders, and why the particular consultant(s) have been chosen.

Having obtained approval of the list of short-listed practices, the project sponsor should be responsible for convening and chairing interviews of the practices concerned prior to issuing invitations to tender. The project sponsor, project manager and at least one senior officer should be present at the interviews to ensure they are conducted equitably and fairly. Well before the interview those selected must receive identical written statements of:

- the clearest possible brief (full details are provided in the CIB's *Briefing the Team*)
- the detailed services required
- the conditions of engagement to apply including any additions and amendments.

The interviews themselves should be carefully structured to preserve equality and fairness and should cover the following aspects of each practice:

- general approach to design and management
- experience of similar projects and performance
- available resources
- partner/principal and senior staff expected to run the project.

Additionally the opportunity should be taken to clarify ambiguities and obtain a thorough understanding of each other's requirements.

Invitation letters should require confirmation, within ten working days, of willingness to undertake the commission and submit a fee tender. The amount of time that is allowed to tenderers to prepare their bids should reflect the complexity of the commission, and be sufficient to allow tenderers to fully research and complete their submissions. The tender period must be in accordance with the EC Services Directive.

The responsibility for safeguarding tenders on receipt and the arrangements for their opening should be with an opening panel, preferably of three officers, two of whom should be independent of the contract procedure. The opening panel should open tenders as soon as possible after the time specified in the invitation letter. On opening, each tender should be date stamped and tender pages containing prices or fee calculations must be initialled by a senior panel member.

Tenders should be listed on a prescribed form, recording the consultant's name and details of the fees tendered. Invitees who have declined or failed to respond should be added to the list with an appropriate comment after which the record is required to be signed by all the opening panel.

The decision as to whether a late tender is admissible or to be rejected must be made before opening. Generally all late tenders should be rejected as should those bearing any identification marks on the outside of the tender envelope sufficient to identify the name of the tenderer. Where late tenders are rejected the envelope should be endorsed with the consultant's name and reason for rejection, signed and dated and retained in case of challenge.

Any discussion with consultants during the tender evaluation stage must be restricted to technical matters and no information about other tenders should be disclosed. The project manager should be responsible for arranging for discussion or correspondence with consultants to eliminate ambiguities or qualifications. Notes should be made of any discussions and fee tenders must not be amended at this stage.

During the tender evaluation process it is possible that an error in computation, or an obvious inconsistency in a tendered fee rate, may be discovered. When this occurs the consultant should be informed and asked to stand by their tender or withdraw from the process.

When a conclusion has been reached on the award the project sponsor should obtain the approval of a senior line manager or, in the case of major commissions, from members or the board prior to formal acceptance.

All tenderers should be notified of the results of the tender process immediately after an award has been made. Wherever possible the notification of results should be sufficiently informative to indicate where their fee tender lay in relation to the others received. However, this information should not be given if to do so would reveal any of the competitors' fee tendering strategy. Further, individual consultants may be averse to publication of the various elements of their fee offers and the justification by the client of any particular reasons (other than fee) why a particular consultant was chosen could be time consuming and unproductive.

Negotiated Fee Tenders

Although fee tendering is the preferred method of selecting consultants there will be occasions when negotiation is considered to be more appropriate. It will invariably be difficult to prove that the fee

negotiated is correct in the current market place but it should be compared with tendered fees obtained recently by the organisation for similar work whenever possible.

Fee negotiations should always be conducted by more than one person on behalf of the organisation. The negotiating team should collect as much information as possible regarding scale fees, comparable rates etc. as well as having a detailed understanding of the brief, conditions of engagement, etc.

Some of the following are the most common reasons for negotiating fees, rather than seeking competitive tenders.

- **Urgency.** There may be insufficient time to obtain competitive tenders. However, this would not justify the negotiation of fees, without further explanation, for a project contained in the organisation's capital or revenue programme. The urgency situation is more likely to have arisen due to an oversight or neglect. When such instances are justified, attention should also be paid to:
 - (i) the selected consultant's track record for prompt starts and timely completion of their commissions
 - (ii) the speed with which the current commission is put in hand and completed to ensure that the sense of urgency prevailed throughout.
- **Proprietary systems.** Certain systems or designs may be specific to a particular consultant. Such cases should only be recognised if the consultant's work is so specialised that its execution by others would breach a copyright or invalidate a warranty. Care should be taken not to accord such status to a commission merely on the strength of the consultant's past involvement since there is a risk that this could become self perpetuating for future commissions.
- **Continuity or familiarity.** Fees may be negotiated with a consultant due to their previous involvement in a project. As above, this justification should be used sparingly as it could lead to exclusive commissioning. There should be positive identifiable benefits to the organisation including very competitive fees.

It should be standard practice for consultants to be selected by competition and only in exceptional circumstances should selection by negotiation be contemplated. Those public sector organisations that decline to seek competitive fee tenders, and rely on negotiating fees for all their commissions, will undoubtedly pay more for professional services than their counterparts elsewhere. The auditors of such organisations should examine whether they are able to demonstrate a higher quality of service to justify the higher expenditure.

Public sector organisations should establish a project cost threshold above which fee competition is required. The threshold should be designed with the objective of putting a significant proportion of its commissions out to competitive tender. Public sector organisations will clearly need to determine their own threshold with this objective in mind and having regard to similar thresholds in their regulations for competitive tendering of works contracts.

The best approach would appear to involve estimating the total number of schemes for which consultants are to be appointed and setting a threshold that would capture at least two-thirds to three quarters of this number.

Selecting Contractors

There must be a fair system for ensuring that the most appropriate contractors are allowed to submit bids for work, and the successful one can meet the requirements of the project at terms most advantageous to the employer.

Methods

There are various methods by which organisations may obtain bids from contractors and a number of the more common procedures are listed below. It is important that the most appropriate method of competitive tendering is chosen to meet the organisation's specific requirements.

Open Tendering

Until the 1970s this was the most widely used method of placing contracts. The procedure is to advertise through the press, inviting any firm that so wishes to request tender documents from the organisation. Organisations using this method will not know, until the closing date for receipt of tenders, exactly how many tenders are going to be submitted. While this ensures absolute fairness, because no firm is excluded from the process, there is a significant risk that the number of responses received will be either insufficient or excessive. The organisation will also find it difficult to fully accommodate an adequate financial and technical vetting exercise within the time constraints of the process.

Selective Tendering

Selective tendering is where a 'short list' of a specific number of firms is compiled, who are each then sent an invitation to tender. The short list is normally compiled by selecting firms from an approved list of contractors who are known to be financially and technically capable of carrying out the work, although the short list could be compiled following a public advertisement. Clearly this method is much more controllable than the open tendering procedure as the organisation is assured of the number of tenders that are expected to be received and also that all tenderers are technically competent and financially stable.

Single Action Tendering

Single action tendering is where just one tender is invited for the project. This may be because the work is specialised and the chosen firm is the only one that is able to satisfy the criteria for selection. This method has the advantage of avoiding unsuitable contractors and, if the circumstances are valid, then the organisation has no other choice. However, this method is at high risk of abuse and stringent controls are required over the process. In particular, the choice of this method should be subject to member or board level authorisation and the approval process should require an explanation, together with suitable evidence, of why there is no other practical alternative.

Negotiated Tendering

A tender price can be negotiated with a selected contractor. This may be because it is considered economic to re-engage a firm who previously performed successfully on a similar project, or is carrying out an existing contract nearby. The negotiation of contracts encourages the development of good working relationships, and it enables the speedy, economic and efficient execution of contracts. In theory, a negotiated price should be better than that which could have been obtained by seeking competitive tenders. However, as with single action tenders, this method is at high risk of favouritism, lack of accountability and the danger of being unable to demonstrate that the negotiated price was economically favourable to the organisation. The choice of this method should be subject to board or member authorisation, who should expect to be fully advised of the reasons why the specific firm was chosen, and why it is considered that competitive tenders should not be obtained.

Regulations

The internal regulations, or standing orders, of the organisation should stipulate the procedures that are to be followed by officers when letting contracts. Such regulations should state the levels at which authorisations are required for the various types of tendering arrangements. For example, whether approval by members or the board is required to tender short lists, or before specific tenders are accepted.

Local authorities are in fact legally required, by virtue of the 1972 Local Government Act, to include provision within their standing orders for securing competition when letting contracts.

Local Government Act 1972

Whilst local authorities “may” make standing orders applying to any Committee concerning the quorum, proceedings and place of Committee meetings (s.106) they “shall” make standing orders with respect to “the making by them or on their behalf of contracts for the supply of goods or materials or for the execution of works” (s.135; sub section 2).

The Act states:

“Standing orders made by a local authority with respect to contracts for the supply of goods or materials or for the execution of works shall include provision for securing competition for such contracts and for regulating the manner in which tenders are invited, but may exempt from any such provision contracts for a price below that specified in standing orders and may authorise the authority to exempt any contract from any such provision when the authority are satisfied that the exemption is justified by special circumstances.” [Subsection 3].

“A person entering into a contract with a local authority shall not be bound to inquire whether the standing orders of the authority which apply to the contract have been complied with, and non-compliance with such orders shall not invalidate any contract entered into by or on behalf of the authority.” [Subsection 4]

Occasions will arise when the organisation will have to act urgently due to some emergency situation. A contractor may have to be contacted outside normal working hours, and work commenced immediately, with no time to follow normal procedures or secure the necessary approvals from a senior officer, a member, or from the board. The regulations of an organisation should contain provision for such emergencies.

Emergencies can be defined as instances where there is a danger to life or property or where something happens to place the organisation suddenly at risk of significant financial loss or adverse publicity. The regulations of the organisation should allow a responsible officer in such situations to do all that is necessary to remove the risk, appointing whatever contractors are required in the process. It is important, however, that the regulations limit the commitment of expenditure to those costs that are absolutely necessary to remove the risk. Officers should be required, at the earliest opportunity, to seek the necessary approval to their actions and any further work that may be required.

For example, following an accident one of the organisation’s buildings is unsafe, and in danger of collapse. Despite being the early hours of the morning, the responsible officer may instruct a contractor to make the building safe. However, any demolition or repair work would have to be approved in accordance with the organisation’s normal procedures.

The regulations of an organisation should refer to the legal requirement for procedures to adhere to the EC Procurement Directives.

The regulations should also stipulate the policy in respect of performance bonds and/or guarantees (see Appendix 3.5). These regulations will determine whether a guarantee is required from a specific firm for a particular contract.

The CIB Code of Practice

From 1954 the NJCC (National Joint Consultative Committee for Building) encouraged good practice for many processes associated with construction, including tendering procedures. The NJCC's codes of practice for single and two stage selective tendering, first issued in 1959, were widely accepted by public sector organisations. It was standard practice for such organisations to refer to their guides within their tender documentation.

Following the establishment of the CIB, the NJCC was wound up in June 1996. In 1997, the CIB published their *Code of Practice for the Selection of Main Contractors*. The code focuses on the procedures appropriate for competitive tendering and stresses that for competitive tendering to be effective in providing best value for money it must be seen to be fair; the processes by which decisions are reached must be as open as possible.

The code seeks to prevent malpractice by organisations in their selection of main contractors by targeting over-long tender lists, tender periods that are too short, and 'Dutch auctions'. The code seeks to achieve an environment where contractors submit timely, competitive, compliant tenders at the outset and, in return, are dealt with fairly and openly by clients. Therefore, with the demise of the NJCC, public sector organisations should now adopt the CIB Code and ensure that the key principles of good practice contained within the code are clearly reflected within their procedures for appointing contractors. Those who audit the public services should refer to the code when reviewing tendering procedures within public sector organisations.

The CIB Code is divided into four sections as follows:

- (i) qualification and the compilation of the tender list
- (ii) tender invitation and submission
- (iii) tender assessment
- (iv) tender acceptance

(i) Qualification and the Compilation of the Tender List

The CIB Code states that the key principles of good practice that apply to the qualification and selection of those to be included on the tender list are:

- clear procedures should be followed that ensure fair and transparent competition in a single round of tendering consisting of one or more stages
- the tender process should ensure receipt of compliant, competitive tenders
- tender lists should be compiled systematically from a number of qualified contractors

- tender lists should be as short as possible
- conditions should be the same for all tenderers.

In the public sector, accountability in the placing of contracts must be of paramount consideration. In the past the tendency has been for some public sector organisations to achieve this by selecting large numbers of firms to submit bids without any regard to the cost of the tendering process. Long tender lists may in fact have an adverse effect on value for money, due to firms having little incentive to submit their best prices as they have only a small chance of success. The expense of compiling large numbers of tenders also adds unnecessarily to contractors’ overhead costs, which have to be recovered from successful bids, and so generally increases prices within the industry.

Clearly there is a need to find a balance between inviting a sufficient number of bids to ensure adequate competition and accountability, yet not from so many as to cause excessive costs for both the organisation and the firms concerned. The CIB Code confirms that it is good practice to limit tender invitations to a realistic number of firms capable of carrying out the work to a recognisable standard and contains guidance on the number of firms to be invited to tender as lead contractor as follows

Type of Contract	Number Invited ideally (maximum)	
	Preliminary List	Tender List
Construct only	4-6 (10)	3-4 (6)
Design and construct	3-4 (6)	3 (3)
Construction manager, management contractor	4-6 (10)	3-4 (6)

The regulations of the organisation should specify the maximum and minimum number of tenders to be invited for particular contracts. The auditor should ensure that the numbers stated are compatible with those recommended in the CIB Code.

It is normal for the regulations of an organisation to have a minimum threshold of, say, £50,000 below which formal competitive tenders are not required. This will, however, be supplemented by a requirement for two or three quotations to be sought for any works estimated at less than £50,000 but above, say, £5,000. It is suggested that at least three formal tenders be sought for works not expected to exceed £500,000 with four tenders being required for any contract expected to exceed this figure.

The following are among the key controls that an auditor would expect to find in any system for selecting those contractors that are to be invited to submit competitive tenders:

- Only firms that are known to be financially and technically competent should be invited to tender. No matter how firms are selected the organisation should be satisfied as to the financial and technical capabilities before tenders are invited.

- All firms should be provided with an equal opportunity to submit tenders. For example, by spreading invitations fairly across all firms on an approved list (rotation), or by public advertisement.
- For every contract the organisation should retain appropriate documentation to support its decisions for the selection of contractors. Auditors should expect to be able to see evidence of why specific firms were chosen on selected contracts let up to at least six years ago.

Of the methods of tendering described earlier, the selective tendering method is the one normally used by public sector organisations. The CIB Code envisages a preliminary list of firms being compiled from an appropriate pool of qualified potential tenderers (eg from an approved list of contractors). Enquiries are then made to establish each firm's willingness to submit a tender and to appraise them against criteria specific to the project. Preliminary enquiries, and the production of a preliminary list are important because they help to ensure that documents are actually completed and returned as a result of each tender invitation, and that there are no 'no tenders'. Explanations should be sought from any firm who said they would submit a tender but subsequently fail to do so.

Following enquiries a draft tender list is compiled of a limited number of firms who are considered to be the best qualified to undertake the work. One or two firms are retained as reserves. It is noted that the earlier NJCC *Code of Procedure for Single Stage Selective Tendering* suggested that these one or two reserves were to be used to replace any firms that do not accept the preliminary invitation.

It is the practice of many public sector bodies to maintain 'pools of qualified potential tenderers' in the form of approved lists of contractors which satisfy pre-determined criteria regarding financial and technical soundness. The lists tend to define specialities, financial limits and localities. The auditor should assess whether the range of information sought from contractors wishing to be placed on an approved list is sufficient to ascertain both technical and financial capability. This information should ideally be continually updated or, at the very least, every two years. There should be a senior official responsible for compiling and maintaining the list. The subject of financially vetting contractors is discussed in detail at Appendix 3.4.

Clearly, irrespective of whether approved lists of contractors are being maintained, the cost to organisations of financially and technically vetting contractors can be substantial. Therefore, all public sector organisations should regularly review their pre-qualification systems and consider using "Constructionline", the national qualification system which was established in response to the 1994 report *Constructing the Team* by Sir Michael Latham. Those who audit the public services should ensure that the benefits of hooking up to Constructionline, particularly the potential financial savings, are brought to the attention of the appropriate officers, and that such benefits are fully explored and evaluated accordingly.

“Constructionline” – The National Qualification System

In 1996 the CIB adopted the recommendations of two CIB working groups on how the existing DETR registration systems ConReg (Consultants Register) and CMIS (Contractors Management Information System) should be developed. The DETR then established an Advisory Group comprising existing and potential users of the system and industry representatives.

Constructionline is the name of the government-sponsored service that was subsequently developed and made available to the whole public sector from April 1997. Users now include local authorities, health trusts, universities, and police authorities, in addition to the traditional central government clients.

Constructionline, the national qualification system, is a computer database that in February 1998 held details of 8,200 contractors and 2,500 consultants. Firms are financially assessed each year, checked for technical competence, and comprehensively reviewed at regular intervals. Information available on the database includes all that is normally held by public sector organisations. However, the database also holds comprehensive information concerning tender invitations contractors have received from other users of the system. Users are also provided with contact names and telephone numbers for other users who have engaged firms from the database in order that they may seek references direct. This is particularly useful, as users are not restricted to only those referees that are provided by applicants.

Users interrogate the database by on-line computer link to draw up lists of qualified firms offering the required service in the right geographical area. Users may assess firms in a particular field on the basis of their tendering record and performance for other public sector users.

Constructionline contains mechanisms to counter corruption and can actually assist in identifying potentially fraudulent patterns of tendering. A ‘feed back’ facility allows for checks against ‘tender rigging’, unusually high success rates or excessive patronage. The system also has the ability to check for associations between directors of different companies and the validity of VAT numbers issued. Data matching exercises assist in identifying any directors or secretaries who have previously been declared bankrupt

Constructionline can make a significant contribution towards real cost reduction by eliminating duplicative effort by both clients, who maintain information on the same firm, and contractors who complete applications for numerous organisations. So not only can every public sector organisation make a considerable saving by joining the system, but contractors will save considerable time and money as well by only having to complete one application form rather than dozens. Savings made by contractors will ultimately filter through and result in lower tender prices, again to the benefit of their public sector clients.

In June 1998 a concession to operate Constructionline was awarded in open competition to Capita; with the DETR retaining responsibility for policy, monitoring, performance and safeguarding the interests of clients. In order that the register should be self financing, registration fees were accordingly introduced in September 1998 for contractors wishing to be included on the database. The level of registration fee depended on the size of the firm registering (eg £195 for a contractor with an annual turnover of £250,000 to £1m, or a consultant with 6 to 10 professional staff). The system remains free to users.

In the last six months of 1998, the number of public sector clients registered to use the service increased by 25% to 250. In October 1998 the CIB's member bodies all reaffirmed their strong support for Constructionline and, in particular, for the vision of a single national qualification system.

When selecting contractors, an organisation may consider the question of whether a performance bond or guarantee will be required from the successful firm. While it is recommended that bonds should only be considered in exceptional circumstances, the subject is discussed in detail at Appendix 3.5.

Selection by Value

The previous NJCC Code of Procedure stated that “The object of selection is to make a list of firms, any one of which could be entrusted with the job. If this is achieved, then the final choice of contractor will be simple – the firm offering the lowest tender. Only the most exceptional cases justify departure from this general recommendation.”

However, a two stage selective tendering process is now recommended by the CIB for large or complex schemes where early involvement of the contracting team is required prior to the completion of the full design. The first stage is generally based on pricing documents relating to preliminary design information. These documents provide the level of prices on which to base a final price once the design has been completed.

An extensive study has been undertaken by the Construction Industry Research and Information Association (CIRIA) into how proper selection procedures can unlock the potential for contractors to add value to a project by involving them in the design process. Their final report was published in January 1999 entitled *Selection by Value: A Guide to Engaging the Best Contractors*.

It is acknowledged that the right contractor is not necessarily the one who submits the lowest tender. This was recognised in CIPFA’s *A Guide to the Financial Management and Audit of Contracts* published in 1989 which stated that “As well as the design, the specification, and control over the construction process, the success of a project is dependent upon the choice of the right contractor. It must, therefore, be acknowledged that to achieve value for money the selection process should recognise the importance of quality and value as well as price.”

Therefore, while the previous statements of the NJCC are still sound for small to medium sized projects, there is a need for major projects in excess of, say, £2m for organisations to consider whether the contractor should join the design team. The CIRIA guide provides details of how the process for selecting contractors, at either the beginning or at the end of the design stage, can be used to increase value for money, while still recognising the need for accountability. The procedures in the CIRIA guide are both practical and auditable and should be fully explored by those in the public sector.

Selection by Value: A Guide to Engaging the Best Contractors

Construction Industry Research and Information Association (CIRIA)

The key to getting good value for money is in ensuring that all the members of the construction team add the maximum value to the project. This guide is intended to help clients obtain the maximum that contractors can contribute to a project. Selection by value is a process of selecting the contractor who offers the best value to a project, measured by more than simply the lowest price. It involves:

- identifying what represents 'value' in a particular project
- defining what contractors must offer if they are to add to that value
- making the contractor's potential to add value the main selection criterion.

Selection by value needs a greater up-front commitment than straightforward tendering on price. It requires clients, with their advisers, to invest the time and money necessary to:

- thoroughly work through and prioritise what they are seeking to gain from a project
- set projects up to enable contractors to contribute the maximum value
- identify relevant criteria for their selection
- gather information to enable these criteria to be applied.

Broadly, the larger and more complex or specialised the project, the greater will be the return from a client's investment in the process. The key processes are as follows:

Define 'value'

The purpose of a construction project is to add value, and its success must be measured according to the client's scale of values. These values must inform and drive every aspect of the project if it is to deliver maximum benefit to the client. The first step is, therefore to articulate these values in specific project objectives and priorities. Thereafter the whole project team should be selected and appointed on the basis of contributing the best value to the project.

Identify opportunities for contractors to add value and develop the procurement strategy accordingly

The potential exists in a number of areas for contractors to contribute to a project – in better teamwork, programming, design and specification, care of the environment, estimating and management of risk and value. The next step, therefore, is to define how contractors can add value to the particular project and then create the opportunities within the procurement strategy for them to do so. When a contractor becomes involved, early at the beginning of design, or just before construction can then be decided.

Define the selection criteria

Contractors must be judged on the basis of possessing the attributes required to add value, according to the demands of the project and the client's objectives and priorities. A range of attributes might be

required, for example technical knowledge and skills; management skills; effective internal organisation; collaborative culture; supply chain management; financial resources; appropriate human resources.

Obtain information and make the choice

Obtain the information necessary to make objective decisions at each stage of the selection process. This can be by questionnaires, references, in-house records, presentations and interviews. Procedures for weighting the information obtained on competing contractors will vary according to procurement approach, but should incorporate the four key processes of setting thresholds for qualification; comparing ability to add value; assessing the commercial proposals, including prices; and balancing capability and price.

(ii) Tender Invitation and Submission

The CIB Code states the key principles of good practice that apply to the process of inviting tenders from contractors, and their subsequent submission, as follows:

- sufficient information should be provided to enable the preparation of tenders
- sufficient time should be given for the preparation of tenders
- practices that avoid or discourage collusion should be followed
- conditions for all tenderers should be the same
- all parties should respect confidentiality.

Formal 'instructions to tenderers' are included within the tender documents sent to the invited firms. These detail the information and actions that are necessary for tenderers to comply with the requirements of the organisation. They should be clear and concise and should include the method of returning the tender and the date and time it is due for return.

The CIB Code contains an appendix that lists the minimum information that should be included in tender enquiry documents. It includes information such as how any queries on the tender documents will be handled by the organisation, the tender assessment criteria, and how any errors in computation by tenderers will be dealt with. It is strongly recommended that auditors use the CIB's list when evaluating the comprehensiveness of information provided to tenderers by organisations under their review.

There is normally a stipulation that tenders will be submitted strictly in accordance with the tender documents, ie without any qualifications or amendments. Some organisations, particularly for engineering contracts, however, include an option whereby firms may also submit a tender based on modifications to the tender documents if it is considered to be of advantage to the organisation.

However, as suggested in the CIB Code, this must be an additional tender and it must be included in the same tender envelope.

The NJCC Code of Procedure recommended, that in order that all tenders are submitted on the same basis, tenderers should be required to make offers based on the same period of construction in order to limit competition to price only. As with qualified tenders if firms are required to price for alternative construction periods then this must be additional to the construction period stated in the tender invitation.

The success of any project is dependent on contractors being provided with sufficient time to adequately research and compile their bids. This includes being provided with enough time to seek prices from any subcontractors. There is a tendency for public sector organisations to shorten tender periods in their haste to achieve a start on site as soon as possible. However, this carries the risk of contractors placing high prices on the elements of the work to cover the risk that they have not had time to fully research. The CIB Code contains very useful guidance on the minimum amount of time that should allowed for lead contractors to compile their bids.

	Minimum Time to Return Tender	
	Time to Return Preliminary Enquiry weeks	Time to Return Tender weeks
Construct only	3	8*
Design and Construct	3	12*
Construction manager, management contractor	2	4

** may be shorter for smaller or less complex projects, but contractors must have time to get tenders from subcontractors.*

Tender documents will include a ‘Form of Tender’ consisting of one or two pages. This varies according to the conditions of contract being used but should describe the works, the contract period (unless stated elsewhere), the tender amount in words and figures, the acceptance period and a number of undertakings. It will be addressed to the employer and is to be signed and dated by the contractor. Some forms show the name of the architect, engineer, or contract administrator and also give details of the parent company or bankers of the tenderer.

Under English law a tender, once submitted, remains open for acceptance by an organisation unless, prior to acceptance, it is withdrawn by the contractor. In Scotland, however, a tenderer is legally prohibited from withdrawing a bid after it has been submitted. To prevent bids from contractors remaining open for acceptance indefinitely, placing contractors at risk of incurring increased costs due to inflation should acceptance of such bids be delayed, it is usual for ‘Forms of Tender’ to stipulate that bids will remain open for acceptance for a stipulated period of time, which is normally three months.

In 1995 the Office of Fair Trading (OFT) launched an initiative to bring the issue of cartels to the attention of businesses in Britain. Typically, a cartel is an agreement, informal or otherwise, between businesses to fix prices or to share markets. Its purpose is to raise prices by removing or reducing competition. Such agreements, almost inevitably, are made secretly, and under UK and EC competition law will invariably be unlawful. To reduce the success or likelihood of bid-rigging or collusive tendering the OFT recommends that organisations:

- ensure tender bids are broken down in as much detail as possible
- require declarations of non-collusion to be completed by bidders and included within their tender submissions
- insert clear statements in tender documents that while returned tenders will be treated in the strictest confidence they will be made available to Trading Standards Departments, the Office of Fair Trading and other appropriate regulators.

The above issues should be considered by organisations when inviting contractors to submit tenders. An example of the clauses that could be included within a 'Form of Tender' is provided in the box below. The OFT has established a 'Cartels Information Line' (0171-269-8888) and will supply a free information pack giving details of types of cartel, how to detect them and the remedies open to victims on request. This number may also be used to contact the 'Cartels Task Force' by anyone who is suspicious of collusion between companies when their organisation has put contracts out to tender.

Anti-Collusion Certificate

I/we certify that this tender is made in good faith, and that we have not fixed or adjusted the amount of the tender by or under or in accordance with any agreement or arrangement with any other person. I/we also certify that we have not and I/we undertake that we will not before the award of any contract for the work:

- (i) disclose the tender price or any other figures or other information in connection with the tender to any other party (including any other company or part of a company forming part of a group of companies of which I am/we are a part) nor to any sub-contractor (whether nominated or domestic) nor supplier (whether nominated or domestic) or any other person to whom such disclosure could have the effect of preventing or restricting full competition in this tendering exercise
- (ii) enter into any agreement or arrangement with any person that they shall refrain from tendering, that they shall withdraw any tender once offered or vary the amount of any tender to be submitted
- (iii) otherwise collude with any person with the intent of preventing or restricting full competition
- (iv) pay, give or offer to pay or give any sum of money or other valuable consideration directly or indirectly to any person for doing or having done or causing or having caused to be done in relation to any other tender or proposed tender for the work any act or thing of the sort described at (i), (ii) or (iii) above.

I/we further declare that I/we have no knowledge either of the sum quoted or of any other particulars of any other tender for this contract by any other party.

We further certify that the principles described above have been, or will be, brought to the attention of all sub-contractors, suppliers and associated companies providing services or materials connected with the tender and any contract entered into with such sub-contractors, suppliers or associated companies will be made on the basis of compliance with the above principles by all parties.

I/we acknowledge that any breach of the foregoing provisions shall lead automatically to this tender being disqualified and may lead to criminal or civil proceedings.

The [name of employing organisation] shall treat any tender received in confidence but reserves the right to make the same available to Trading Standards Departments, the Office of Fair Trading, and/or any other statutory regulatory authority either having jurisdiction over the works or who may now or at any time in the future have statutory power to require disclosure of this tender.

In this certificate, the word 'person' includes any persons and any body or association, incorporated or unincorporated; any agreement or arrangement includes any transactions, formal or informal and whether legally binding or not; and 'the work' means the work in relation to which this tender is made.

Signature In capacity of Date

Duly authorised to sign tenders and acknowledge the contents of the anti-collusion certificate for and on behalf of:

Name of Firm Full postal address.....

.....

Telephone No. Fax. No.

Some of the key controls that should be included within the tender invitation and submission process are outlined below.

- o Tender documents should contain standard statements governing rules regarding bribery and corruption and penalties to be imposed should corrupt practices arise.
- o Any extensions of the time for return of tenders or changes in information should be notified to all tenderers. (It often happens that a tenderer raises queries and receives additional or modified information in reply, this information should be circulated to all tenderers). It is noted that the CIB Code suggests that tender documents include a deadline after which requests for additional information will not be considered, that contractors should ensure that any queries are raised no less than 10 days before the date tenders are due to be submitted, and that no request for an extension of the tender period should be allowed if received later than four working days before tenders are due to be returned.

- Tenderers should be required to confirm receipt of tender documents and their intention to submit a bid. This provides evidence that tender documents have not been deliberately withheld.
- The time and date set for tenders to be returned should be set as close as possible to the time and date tenders are due to be opened. This is in order to minimise the amount of time the tender documents remain within the organisation and at risk of loss.
- The recipient of tender documents within the organisation should immediately endorse the envelope with the time and date of receipt and pass it unopened to a designated custodian, who should not otherwise be involved in the tendering system, to await the tender opening stage. He or she should record all tenders received by the closing date, and identify separately all those received late or opened in error.
- All tenders should be opened at the same time, after the time prescribed for their receipt, in the presence of at least two authorised persons not otherwise involved in the tender process. At the time of opening, a formal record of the tenders opened should be compiled which should be signed by each of the tender openers. As well as recording the amounts tendered by each contractor, the register should clearly indicate any contractor who did not submit a tender by the due date and time.
- As suggested by the CIB, any tenders received after the due date and time should be rejected and not considered any further.

(iii) Tender Assessment

The next stage in the process is the evaluation of the tenders that have been received. The purpose of the evaluation process is to ensure that the most appropriate tender is identified and recommended for acceptance. As stated previously, the most appropriate tender may not necessarily be that which contains the lowest price. The CIB Code states the key principles of good practice that apply to the tender assessment process as follows:

- sufficient time should be allowed for the evaluation of tenders
- tenders should be assessed and accepted on quality as well as price
- tender prices should not change on an unaltered scope of works
- practices that avoid or discourage collusion should be followed
- conditions should be the same for all tenderers
- confidentiality should be respected by all parties.

The evaluating officer should be required to observe the same degree of security and confidentiality as others involved in the tendering process. Since it may be necessary for an evaluating officer to contact a tenderer with regard to errors and ambiguities, the organisation must have a prescribed procedure as to how such contact may be made. It is the responsibility of the auditor to ensure that the prescribed procedure is adequate and s/he must be satisfied that it is followed in practice.

All tenders should be evaluated, not just the lowest one or two. The tenders should be evaluated on the same criteria, particular attention should be given to rates and prices, percentage adjustments, balancing items, ambiguities, qualifications and any alternative offers. For some contracts (eg mechanical and electrical) running costs form part of the evaluation.

A report upon the evaluations should be compiled, contrasting the amount tendered with the pre-tender estimate. Having satisfied themselves as to the accuracy of the tender, and the ability and capacity of the tenderers, evaluating officers should be required to obtain the necessary authorisation to accept the most suitable tender.

The CIB Code suggests that any non-compliant tenders, not received in conjunction with a compliant tender, should be rejected. If insufficient compliant tenders are received the CIB suggest that the client seek tenders from the reserve list or, alternatively, ask tenderers whose non-compliant tenders have been rejected to make them compliant without amending their price. It is strongly suggested that, in order to avoid delay and protect the integrity of the process, the latter option is chosen. Even if only one compliant tender has been received, it has been submitted in competition (the firm concerned would presumably be unaware the other tenders would be non-compliant) and provided the tender is otherwise satisfactory there is no reason why it should not be accepted. The regulations of organisations normally stipulate the number of tenders to be invited not the number to be received. Therefore, the fact that a tender may be the only one received is not in itself a reason for not accepting it. If the number is insufficient and the organisation wishes to seek additional bids then the organisation should consider a fresh retendering exercise with firms from the reserve list.

The CIB guide advises how errors in tenders are to be dealt with. The tender invitation should state whether the overall price or the pricing document is dominant. If the tender invitation states that the pricing document is to be dominant then, in the event of an error having been made, the error is corrected and the tender total amended accordingly. If, however, it states that the overall price is to be dominant, then the firm that made the error should be asked to stand by their tender sum or withdraw.

Tenderers should be advised of any errors and if, when the overall price is dominant, they subsequently withdraw the second best tenderer should be approached. If the second best tender is unsuitable, perhaps because the tender price exceeds the budget, then the organisation should undertake another tender exercise using the best two firms, including the one who withdrew, with one or two additional tenderers.

In instances where the overall price is dominant and a firm, having made an error, decides to stand by their tender sum then the respective pricing document should be amended. The process by which it is amended is described in the previous NJCC Code. All rates and prices, excluding contingencies, prime cost (PC), and provisional sums should be amended by the same proportion as the corrected total of priced items exceeds or falls short of the original total of such items.

Example of how a tender should be amended in the event of an error

Consider a tender that is submitted in the sum of £5,250,000. An error is discovered within the pricing document whereby a work item stating 100m² @ £15 has been extended incorrectly as £150 rather than £1500. The tender invitation states that the overall price is to be dominant in the event of an error.

The tenderer is contacted who confirms that they wish to stand by their tender sum of £5,250,000 even though the corrected total of the pricing document is now £5,251,350. As the contractor has agreed to stand by the tender total, a deduction of £1,350 (£1,500 less £150) has to be made in the pricing document to return it to £5,250,000.

If the value of contingencies and PC sums total £750,000 the total of the priced items, as originally submitted, is £4,501,350. To reduce this figure by £1,350 means reducing all priced items by 0.02999% ($\frac{£1,350}{£4,501,350}$).

In practice, this is usually achieved by a single lump sum adjustment to the tender, each valuation and the contractor's final account, rather than amending every item in the pricing document.

The CIB Code encourages the principle that tender prices should not be amended unless there has been an alteration in the scope of the works. This prohibits post tender negotiations, whereby reductions in prices are sought unilaterally, purely to keep within an approved budget. This principle should be adopted by all organisations. Post tender negotiations, solely to reduce price with no corresponding reduction in the scope of the works, may be successful once or twice, but this will be at the expense of probity and accountability. If undertaken regularly, it will also be at the expense of value for money, as firms will soon add 'negotiating margins' to their tender sums in order that they can offer reductions during subsequent negotiations. In such situations, organisations will not be able to demonstrate that post-tender negotiations achieve better value for money.

Where a weighting system has been used to determine the relationship between quality and price, this should have been determined at the outset and applied consistently throughout the tender assessment process. It is suggested that this should normally only apply on major projects in excess of, say, £2m, as, provided the normal pre-qualification process has been adhered to, the principle will be that all tenderers should be capable of undertaking the work.

As stated previously, tenders are only open for acceptance for a limited period of time which is normally three months. It is important that tender evaluations are completed within the acceptance periods stated in the tender documentation.

The organisation should have a prescribed procedure for, exceptionally, seeking approval to the acceptance of a tender that is not the lowest. The evaluation report should be available to the person or group authorising acceptance of the tender.

(iv) Tender Acceptance

Once the tender assessment stage has been completed, and the preferred tender identified, the next step is to formally accept the tender. The CIB Code states that the key principles of good practice that apply to tender acceptance are as follows:

- the successful tenderer should be notified promptly
- unsuccessful tenderers should be notified promptly
- all unsuccessful tenderers should be offered the same degree of debriefing
- confidentiality should be respected by all parties.

It is noted that the CIB Code suggests that all unsuccessful tenderers should be supplied with a list of compliant tender prices and tenderers. However, the names of the tenderers should not be matched to the prices. Best practice is to list the names of the contractors in alphabetical order and provide a separate list of amounts in ascending or descending order

While the code also suggests that tender documents submitted by unsuccessful tenderers should be destroyed or returned, it is recommended that they be retained temporarily (say 3 years) pending audit review. In any event, in the interests of probity the 'Tender Form' should be retained indefinitely and only priced specifications and bills of quantities should be ultimately destroyed or returned.

Auditors, when reviewing tendering procedures, should ensure that appropriate authorisations are secured prior to tenders being formally accepted; also, that formal sealed contracts are exchanged, in accordance with the regulations of the organisation, for major contracts in excess of, say, £100,000.

3.1 The Audit Approach

The auditor should review the roles of technical officers and consultants in the selection process, and confirm that they are aware of their responsibilities and of the content of the organisation's regulations. When reviewing selection procedures the auditor should be satisfied that decisions are made by, or on behalf of, the organisation in the light of adequate knowledge. This will include the nature and objectives of the particular scheme, the past performance of the contractors and consultants involved, and the information available at the time the decisions were taken.

Full details concerning the audit review of tendering procedures, including system objectives and key controls, can be found within *Contract Audit Guidance Notes* and *A Practical Guide to the Audit of Major Construction Contracts* published by CIPFA in 1992 and 1994 respectively.

When reviewing methods by which organisations assemble teams for construction contracts, auditors should focus their attention on the following issues.

- (a) Are recognised standard forms of contract used, without amendment, whenever possible?
- (b) Do systems of pre-qualification:
 - provide for maximum efficiency, by including use of the 'Constructionline' database? or otherwise
 - ensure that consultants and contractors are adequately vetted prior to appointment?
- (c) If the organisation maintains approved lists of consultants and contractors, are they properly administered, and has consideration been given to using 'Constructionline'?
- (d) Are consultants selected on the basis of quality as well as price? Do procedures follow those advocated in the CIB's *Selecting Consultants for the Team: Balancing Quality and Price*?
- (e) Do selection procedures unlock the potential for contractors to add value to a project? Do procedures follow that advocated within CIRIA's *Selection by Value: A Guide to Engaging the Best Contractors*.
- (f) To what extent are appointments of contractors and consultants subjected to competition?
- (g) Are selection procedures sound, fair, and provide for accountability, probity, and value for money?
- (h) Do selection procedures comply with EC Directives?
- (i) Are contractors selected fully in accordance with the CIB's *Code of Practice for the Selection of Main Contractors*? In particular, do procedures ensure:
 - fair and transparent competition
 - the receipt of compliant competitive tenders
 - that tender lists are as short as possible and are compiled systematically from a number of qualified contractors
 - that sufficient time is given to contractors for the preparation of tenders
 - that sufficient time is allowed for the evaluation of tenders
 - that practices are followed that avoid or discourage collusion
 - that tender prices do not change on an unaltered scope of works
 - that conditions are the same for all tenderers?
- (j) Do tendering procedures incorporate the suggestions of the Office of Fair Trading (OFT) to reduce bid-rigging or collusive tendering?
- (k) To what extent do tender evaluation procedures ensure the identification, and acceptance, of the best bids from contractors and consultants?

Appendix 3.1

Standard forms of contract

‘Conditions of Contract’ or ‘Articles of Agreement’ contain the legal terms and conditions under which construction works are undertaken. There are several standard forms of contract terms and conditions available.

Noted in this section are brief details of the common standard forms of contract for building, civil engineering, mechanical and electrical engineering works undertaken within the UK for public sector organisations. Where possible amendments current at the time of writing have been noted. However, it is stressed that the list is not intended to be either definitive or comprehensive, but aims to provide general guidance. Amendments and updates are progressively applied to all forms of contract, therefore clarification should be sought as to the prevailing versions from the appropriate issuing organisation when undertaking specific audit reviews.

JCT

There is a range of standard forms of building contract that has been issued by the JCT (Joint Contracts Tribunal). Representatives of the JCT include the RICS, RIBA, BEC, ACC, AMA, and the ADC. The standard forms are accompanied by some very comprehensive sub-contract documentation for nominated sub-contractors, together with a form of tender for use by nominated suppliers.

It should be noted that some organisations are reluctant to use the JCT80 standard forms of contract due to the complexity of the provisions for engaging nominated sub-contractors. There are numerous versions of JCT80 available from the publisher, RIBA Publications Ltd, dependant on the type of work involved. At the time of publication the versions available included:-

- JCT80
 - Three versions, dependent of the type of specification/bills of quantities used, were last printed in October 1995 as follows:
 - with quantities (incorporating amendments 1, 2, 4-13, and 15.
NB amendment 3 does not apply). Latest amendment 18.
 - without quantities (incorporating amendments 1-6, 8-13, and 15.
NB amendment 7 does not apply). Latest amendment 18.
 - with approximate quantities (incorporating amendments 1, 2, 4-13, and 15.
NB amendment 3 does not apply). Latest amendment 18.

With each of the above versions, a ‘Contractor’s Designed Portion Supplement’ is available for where the contractor is to be responsible for the design of part of the works. Other supplements include:

- fluctuations supplement (local authorities) [September 1987 – reprinted with minor corrections August 1996]
- sectional completion supplement [Revised 1994]
- Scottish supplement: which adapts the standard forms for use under Scottish law [January 1992].
- JCT81 With Contractor's Design
For use where the contractor is to be responsible for the design, as well as the construction, of the works. Latest version was printed in October 1995, incorporating amendments 1-7, and 9. (Latest amendment 12).
- JCT MBW80
The JCT Agreement for 'Minor Building Works' is for projects valued below £70,000 at 1987 prices. Last published 1995 incorporating amendments up to 8. (Latest amendment 11).
- JCT IFC84
The 'Intermediate Form of Contract' is for building works of simple content. It is intended for projects that are valued above that which is appropriate for using the JCT MBW80 form, yet are not so high as to require the full and more complex provisions of the main JCT80 standard form. Two versions are available for use 'with quantities' and 'without quantities', the latest versions being printed in 1995 incorporating amendments 1-9. (Latest amendment 12).
- JCT87
This is a standard management form of contract and is used when the contractor is required to manage the whole of the project including the appointment of sub-contractors. (Latest amendment 2).
- JCT89
This is a standard form of measured term contract. It is used to employ a contractor to undertake regular maintenance works for a number of separate jobs for a specified period of time. Last published 1997 incorporating amendments 1-3. (Last amendment 4).
- JCT92
The standard form of prime cost contract is for use where the contractor manages the various sub-contractors and is reimbursed the actual costs plus a fixed or variable fee by the employing organisation. (Latest amendment 6):
- JCT76
The fixed fee form of prime cost contract is intended for situations where firm indications of price cannot be accurately assessed in advance.

ICE

Four standard forms for civil engineering works are available from the ICE (Institution of Civil Engineers). These are:

- the ICE (7th Edition) [1999],
for use in association with major civil engineering schemes.

- the ICE Agreement for Minor Engineering Works 2nd edition [1995]
a simplified version of the main ICE standard form aimed at schemes valued at below £100,000
- the ICE Design and Construct Conditions of Contract [1992]
also developed from the main ICE form specifically targeted at design and construct projects
(Latest amendment March 1998)
- The ICE Conditions of Contract for Ground Investigations [1983]
specifically developed for ground investigation work.

These standard forms were produced by the Conditions of Contract Standing Joint Committee (CCSJC) and are issued under the joint sponsorship of the ICE, the ACE (Association of Consulting Engineers) and the FCEC (Federation of Civil Engineering Contractors).

These conditions try to strike an equitable balance between the employing organisation and the contractor and are well regarded by all parties to the contract.

GC/Works Contracts

The government is by far the biggest single customer of the UK construction industry and publishes and uses its own conditions that apply to both building and civil engineering works. Although the government with the major employers' federations discussed these conditions, they were prepared without any formal participation by representatives of the construction industry. As a result, the obligations between the parties are not as evenly balanced as under the JCT and ICE forms of contract.

The current forms available are GC/Works/1 and GC/Works/2 for major and minor works respectively. Fully updated versions were published in March 1998 taking account of the *Constructing the Team* and the Construction Act.

GC/Works Conditions of Contracts 1998

GC/Works 1: Building and civil engineering major works:

With quantities general conditions [ISBN 0 11 702184 9]

Without quantities general conditions [ISBN 0 11 702185 7]

Single stage design and build general conditions [ISBN 0 11 702186 5]

GC/Works 2: Building and civil engineering minor works [ISBN 0 11 702152 0]

GC/Works 3: Mechanical and electrical engineering works [ISBN 0 11 702153 9]

GC/Works 4: Building, civil engineering, mechanical and electrical small works

[ISBN 0 11 702154 7]

The above documents are available from The Stationery Office Bookshops and Agents or by mail order to the Stationery Office Publications Centre.

ACA3

This standard form of building agreement was developed by the Association of Consulting Architects (ACA) in 1982 and published as a third edition in June 1998. There is also an ACA standard form of sub-contract (last published June 1998). Both documents are available from the RIBA and the RICS.

FCEC

The Federation of Civil Engineering Contractors (FCEC) produced this standard form of sub-contract in 1991 for use with the ICE (6th edition) standard form. It can be obtained from the ICE, ACE, as well as the FCEC themselves.

FIDIC

This is a range of international forms of contract based upon the ICE standard form. The range was produced as a result of a collaborative effort between the International Federation of Consulting Engineers (FIDIC) and the European International Federation of Construction (FEIC). The range of forms, which can be obtained from the ICE and the ACE, include:

- o FIDIC conditions of contract (International) for works of civil engineering construction, with forms of tender and agreement. (Also known as the 'Red Book') 4th edition 1992;

- FIDIC conditions of Contract (International) for electrical and mechanical works, including erection on site, with forms of tender and agreement. (Also known as the 'Yellow Book') 3rd edition 1988
- FIDIC International Model Forms of Agreement between client and consulting engineer (three versions) 3rd edition October 1998.

Electrical and Mechanical Works

For mechanical and electrical contracts model forms have been published by the Institution of Electrical Engineers (IEE), the Institution of Mechanical Engineers (IMechE), and the Association of Consulting Engineers (ACE) as follows:

- MF/1 general conditions of contract, including form of sub-contract, for electrical or mechanical related work. Revision 3 1995
- MF/2 general conditions, including form of sub-contract for the supply of electrical or mechanical plant. Latest version 1991.

The Engineering and Construction Contract (2nd Edition) 1995

First published in 1993 as the New Engineering Contract (NEC), it was amended in July 1995 to incorporate the recommendations of Sir Michael Latham's report *Constructing the Team*. It is intended for both building and civil engineering works. It consists of a suite of ten interlocking documents including sub-contracts and consultancy agreements.

Appendix 3.2

Financial vetting of consultants

With the trend towards open competition, the vetting of consultant practices both in terms of financial standing and technical competency, is assuming increasing importance. In the past organisations have vetted contracting companies and in many ways the basic principles of assessment will be similar. However, information about professional consultants will generally be less public, and great care will have to be taken in the vetting process.

In considering the financial standing of a company, an organisation may set its own criteria for assessment purposes, provided the necessary evidence is obtained from one of the following sources:

- bankers' statements
- business accounts
- statement of annual gross fee income
- evidence of professional indemnity cover and public liability insurance.

Obtaining this information may for one of the following reasons present difficulties.

- Many professional consultants trade as partnerships or as part of consortia. Accounts may not be audited and, therefore, less reliance can be placed on them.
- Due to the inherent size of some professional consultants (compared with large contracting companies), management accounts may not be readily available, or may be out of date.
- Many professional consultants draw most of their profits out of the business. The financial stability of the organisation, therefore, can only be assessed by reference to the individual financial position of partners, as well as the company's balance sheet.
- Generally, the accounts of unincorporated bodies contain less information than those of incorporated companies, eg contingent liabilities, post balance sheet events, business review, management philosophy etc. as their accounts are not subject to the Companies' Act.

For the above reasons, it is important that confidential information received as part of the vetting process is certified by qualified accountants, as being a fair assessment of the financial viability of the company, their ability to finance the commissions awarded, and any claims sustained during the period of the contract.

In consideration of the technical competence of consultants, information regarding skills, efficiency and reliability etc. may be obtained by seeking the following evidence:

- qualifications of the partners and those of the personnel who will do the work

- a list of the principal contracts carried out over a given period of years, together with the value of these contracts
- the organisational structure of the company and their contractual relationship with other organisations, consortia or holding companies
- study and research facilities
- evidence of quality standards practised by the company, eg ISO 9002 Quality Assurance
- extent and nature of the work that applicants intend to sub contract.

In summary the financial and technical vetting of consultants is just as important for professional consultants as it is for contracting organisations. It is therefore necessary to ensure that personnel who carry the assessments themselves possess the necessary skills and qualifications to undertake this vitally important task.

Appendix 3.3

Professional indemnity insurance

Public sector organisations should ensure that the consultants they employ for architectural, engineering and surveying services in construction works are adequately insured to meet their professional obligations in the event of the negligent discharge of their duties. This means checking insurances at the time of selection.

Errors by design teams on building projects can have serious financial repercussions for public sector organisations and could lead to heavy financial losses, which they will seek to claim from the consultant(s) at fault. In such instances the values of claims submitted against consultants may exceed the sums that could be met by even a large consultancy firm and may, if successful, result in liquidation or bankruptcy.

Professional consultants will, therefore, seek to reduce the risk of such losses by obtaining professional indemnity insurance. Similarly, any organisation when appointing a consultant would wish to be assured that resources are available to meet a claim should the need arise.

Professional indemnity insurance is an annual policy that indemnifies the insured against claims due to negligence or breach of duty during the year of cover. Policies are written on a 'claims made' basis, which means that cover is provided for claims lodged during the currency of the policy, irrespective of when the error or loss was suffered. This can be contrasted with 'losses occurring' policies such as motor insurance, where claims are recovered from the policy that was in place at the time the loss occurred.

Cover is limited to claims for failure to exercise the reasonable care and skill expected of a competent professional exercising that particular skill (*Wimpey v Poole* 1985). Therefore, any guarantee provided by a consultant as to the success of a design will not be covered unless their insurers have specifically agreed this extension of liability.

The need for professional indemnity insurance cover in the public sector was emphasised back in February 1984 with the issue of CPF Paper 84(4) which was endorsed by the Public Accounts Committee (PAC), the Treasury and other government departments. The guidance contained within the paper, which is mandatory on all government departments, is outlined below:-

- *"Departments should require consultants to carry PI insurance, generally at a level which the competent professional would be expected to carry, and pay for, from the income from the existing fee scales recommended by the professional institutes and associations.*
- *Generally, a level of insurance to meet any one claim, equivalent to the value of twice fee income, would be a reasonable requirement subject to minimum and maximum levels. Exceptional cases, which justify special provisions outside these general provisions, should be considered on their merits. The consultant should be*

required to maintain such insurance during the period of any commission and for 6 years beyond. Departments who maintain approved lists should make it a condition of admission to the list that adequate PI insurance is held.

- **(i) Architects, Engineers and other Consultants for Building Construction and Civil Engineering Work** (but see (ii) below). The minimum PI insurance cover should be sufficient to meet each and every claim, up to a value of not less than twice the annual gross fee income earned on UK commissions. In addition, the insurance must provide for a minimum cover of £250,000 for each claim. An upper limit of £5,000,000 for each claim would normally be acceptable (but see (iii) below). In the case of large commissions, which will form a disproportionately large part of a consultant's workload, it may take some time for the increased fees to be reflected in the practice's income. In those circumstances, the consultant should be required to insure at a level based on anticipated income.
- **(ii) Quantity Surveyors and other R.I.C.S. Members.** PI insurance cover should be sufficient to meet a single claim of not less than £250,000 where gross fee income of a practice exceeds £100,000pa. Where the gross annual fee income of a practice is less than £100,000, the consultant shall carry PI insurance cover to meet a claim of not less than £100,000 on each and every occasion.
- **(iii) Additional Insurance Cover.** In exceptional circumstances, where it is considered that the above provisions would not provide sufficient cover, consultants should be required to increase their insurance at no additional cost to the client. However, if the extra premium would be disproportionately high, so that it would be unreasonable to expect the consultant to meet it from their fees, such additional cover should not be sought, and the Department should accept the extra risk.
- If, in the case of a large construction project, it is solely the size that creates a higher monetary risk, the commensurate fee derived from the commission should be sufficient to allow for any necessary additional PI insurance cover. This should be insisted upon, regardless of any maximum that is suggested above.
- There will be cases where the work is such that professional negligence may cause the employer little or no damage. For instance, where small one or two-man practices are engaged on low value schemes where the risk of damage or loss is small; or where a consultant is engaged to review codes of procedures, standards etc. In such cases, if the consultant does not, or because of the nature of his work, cannot reasonably be expected to carry the level of insurance Departments would normally require, the client must decide whether the level of insurance carried is sufficient to cover the risk.
- Evidence that consultants are adequately insured should be obtained by a certificate provided by the insurers. The certificate should indicate the excess to be carried by the consultants themselves."

Organisations usually only require audited profit and loss accounts and balance sheets from consultants practising as limited liability companies. Such firms should only be considered if their partners/directors are willing to provide joint and several guarantees of performance, at no cost to the organisation. This would provide the same protection as with partnerships who constitute the majority of professional practices.

Professional indemnity insurance would lapse with a consultant's liquidation, leaving an organisation otherwise unprotected against latent design/supervision defects which were not notified to the consultant's insurers prior to their liquidation. It is recognised, however, that there is a trend for consultants to form limited liability companies and it may be difficult for an organisation to obtain this undertaking.

Joint Liability

A person who suffers losses due to the negligence of another, such as a design team and/or a contractor, may seek to recover losses from all the parties involved. In practice, action will be taken against all the parties concerned and the courts will decide to what extent, if any, each party was responsible for the losses and, hence, what proportion of the costs they will pay.

However, if one of the defendants is no longer in existence, say because they have gone out of business, the law concerning joint liability will require the remaining defendants to pay a greater proportion of the loss. In other words, the losses are reimbursed by those defendants who are still trading. The result is that one party may end up paying a large share of the costs, because the party that was most to blame has ceased to exist.

Alternatively, if a number of consultants are jointly held to blame for a defect in a building, the employer can sue any one of them for the full loss. In such a situation, the party that is sued can attempt to seek appropriate contributions from the other consultants involved under the Civil Liability (Contribution) Act 1978. The success of the outcome would be dependent on how the court attributed liability, whether the other parties are in business, and the extent to which they have sufficient assets to cover the cost involved.

Background

The rising cost of professional indemnity insurance premiums, the difficulty in securing such protection, and the desire to examine the possibility of limiting liability for negligence, led to a review by the RIBA Policy and Finance Committee in December 1971, and by the RICS Professional Practice Committee in October 1973. More than a decade later the same issues were still occupying attention, by which time premiums were generally reckoned to have risen by as much as 400%.

In 1981 architects, then very vulnerable to personal financial disaster from unsuccessfully defended legal claims, were allowed to practice as limited liability firms. Whilst protecting the personal assets of principals and partners, this increased client uncertainty as to whether a practice would still be in existence to meet a damages award should the need arise.

The situation was galvanised in 1984/85, when the Property Services Agency (PS(a) insisted that professional consultants should have a minimum indemnity cover of £250,000. As a result, a number of firms were reported to have lost contracts following their refusal to abide by the PSA's conditions. Consultants found it increasingly difficult and expensive to obtain PI insurance. Some insurance firms

stopped writing PI policies for construction professionals or deliberately priced themselves out of the market. Even so, in 1985 it was reported that professional indemnity underwriters were paying out more in claims for most professions than they were receiving in premiums.

In 1986, the RICS introduced compulsory indemnity insurance for all members. The RIBA drew back from such a compulsory stance, but strongly advised its members to take out adequate insurance. By 1987 it was reported that architects had seen PII premiums rise 200% to 500% in the previous 5 years and were now, typically, 15% of gross annual fee income. In 1987, chartered engineers were reported to have suffered from an increase of 150% in 3 years. Whereas once the chartered engineer would pay 3% of their fee income on PII it was now at least 8%.

A report by the Department of Trade and Industry (DTI), published by HMSO in October 1989, entitled *Professional Liability*, sought to establish the facts about the cost and availability of PII and the extent of professional civil liability of negligence. The conclusions of the report included the following points:

- PI insurance was the most costly overhead for half of those who responded to the survey, and the second most expensive for a further 30%.
- Consultants felt that although their premiums were unacceptably high, the risk of litigation meant that they could not afford to be without cover.
- Each member of the design team depended on each other, but attempted to blame the others when things went wrong.

The recommendations of the report included:

- amending the Limitations Act 1980, and Latent Damage Act of 1986 (which stipulated a 15 year long stop on all claims in tort), in order to introduce a limitation period of 10 years from the date of practical completion, for commencing negligent actions in tort, or breach of contract, whether or not the contract is under seal
- amending the law concerning joint liability in commercial transactions. Damages awarded against a defendant should be equivalent to the part of the plaintiff's loss which could fairly be attributable to the defendant's default
- considering the feasibility of imposing mandatory PI insurance on sole practitioners and all practices.

Because of intense competition between insurance companies, by 1989/90 PI premiums had fallen drastically, and were reported as being at uneconomic levels, with many firms paying less than they were 10 years previously.

In 1992, a type of latent defects insurance was launched, which was claimed to be the first no fault compensation policy to automatically waive all claims against the building team. Christened BILD, 'Building Insurance against Latent Defects' is claimed to be the first to fulfil all the recommendations of the Building Users Insurance against Latent Defects (BUILD) report, promoted by the National

Economic Development Office. At this time, due to the recession, architects were not renewing PII policies, which increased pressure on contractors to provide bonded warranties, and pressurised clients to take out 'BILD' latent defects insurances.

In March 1993, mandatory PI insurance was proposed within the RIBA. The proposals would require firms with a gross fee income (GFI) of less than £20,000pa to have PII of £100,000. All other firms would be required to have cover equivalent to twice their gross fee income or £250,000, whichever is the greater, to a maximum of £5m.

Amount of Cover

Paragraph 6 of the Committee on Professional Fees (CPF) paper, advocates a level of cover of twice gross annual fee income, with a minimum cover of £250,000 (or £100,000 for QS practices with gross annual fee income of less than £100,000). Maximum cover of £5m, or twice gross annual fee income is also suggested, but this is probably in the nature of an upper limit *requirement*, leaving a practice with the choice to take out greater cover if it sees fit. The cover recommended is on an each and every claim basis.

Where a large commission consumes a disproportionately large part of a consultant's workload, cover is required to be based on the higher anticipated level of gross annual fee income, even though the increased fees would take some time to generate the higher premium contribution.

For exceptional instances, where prescribed levels of cover are inadequate, higher levels should be required without an increase in fees, unless the additional premium is too high to be reasonably met from fees. In such cases, additional cover should be dispensed with and the extra risk borne by the organisation.

Certain types of low risk commissions, of minimal potential negligent damage, are to be considered on their merits where the consultant does not or cannot reasonably carry the prescribed level of cover. Examples cited are one or two-man practices engaged in low value schemes, or on commissions to review procedural codes or standards.

Conclusions

In conclusion, public sector organisations should ensure that all consultants considered for appointments carry adequate professional indemnity insurance. The exception being in respect of commissions where the potential risks of financial loss are considered to be insignificant and, if necessary, could be borne by the organisation concerned.

The minimum level of cover needed seems adequate at the levels proposed in the CPF paper (generally £/m), provided it applies on an each and every claim basis. However, organisations need to review potential damages levels on exceptionally complex or expensive projects.

A minimum level of cover of £100,000 is acceptable for small to medium sized commissions, although higher cover of £250,000 should be expected in respect of larger projects. Organisations should seek to require similar levels of cover from members of the other professions.

Appendix 3.4

Financial vetting of contractors

Organisations should develop financial vetting procedures designed to assess the financial stability of contractors. This assessment should be carried out on inclusion in an approved list and, thereafter, annually and in the case of major contracts, prior to issue of the invitation to tender. Where an approved list is not maintained, the assessment should be carried out immediately prior to inclusion on a tender 'long list'.

Where there are reservations as a result of financial vetting then it would be normal practice to proceed no further with the contractor concerned.

Bankers references cannot be regarded as a substitute for sound financial vetting and experience suggests that they should be obtained for confirmation purposes only.

Where a general financial assessment is undertaken by way of examination of the contractor's accounts, a financial limit related to turnover should be determined for any one contract, eg one quarter of the average annual turnover over the last three years. When calculating this figure, however, notice should be taken of the financial values of contracts previously undertaken in order not to risk awarding the firm a contract that far exceeds the maximum value of that completed in the past.

As well as restricting the value of individual contracts, an organisation should also place a limit on the total value of work let to a firm at any one point in time, eg three times the individual contract value, provided it does not exceed the firm's 'total net assets'.

The information used in the financial vetting process must be sound and reliable in order to support a conclusion. The availability and supply of all information necessary to evaluate a contractor's current financial position should be made a condition of tender and/or acceptance to the organisation's standing approved list. Such information should include:

- three consecutive sets of complete trading accounts, the last being for a period ending within the last nine months
- additional information regarding work experience, previous contracts etc.
- details of directors, parent companies etc.

The chief financial officer of an organisation should be responsible for the financial vetting procedures and should give the final recommendation as to the financial standing of a contractor. Financial vetting must be independent of technical evaluation in order to minimise conflict between technical and financial criteria and ensure unbiased assessment.

The financial standing of a holding company, where it is proposed to let a contract to one of its subsidiaries, should also be assessed. A guarantee under seal should be obtained from the holding company whenever possible if financial appraisal is not sufficient.

Appendix 3.5

Performance bonds and guarantees

Bonds and Guarantees

A performance bond or guarantee is a written undertaking to an organisation by a third party (the guarantor) to accept responsibility for the performance of a contractual obligation to that organisation by a contractor. The main sources of bonds and guarantees in the UK are specialist surety companies, insurance companies and banks.

The obvious advantage of a bond, or guarantee, is that an organisation has something concrete to fall back on should a contractor fail part way through the construction period. An organisation is able to obtain reimbursement from the guarantor of any extra cost that it has incurred in completing the works after the contractor's failure up to, normally, 10% of the contract sum. There is, however, a technical difference between a bond and a guarantee.

A 'bond' in its strictest sense, is an undertaking to pay a fixed sum of money 'on demand' in the event of default under a contract. Such sums are immediately payable, in good faith, and without any reference to costs, losses, counterclaims, or even formal proof by the employing organisation that a default under the contract has actually occurred. A 'conditional bond' is a bond which requires certain documentary evidence to be provided showing the nature of the default (eg an arbitration award, appointment of receiver, court judgement etc.) before the fixed sum is payable to the employer.

'Guarantees' are similar except in one fundamental and crucial area. Liability under a guarantee arises, and is conditional upon, an established default on the part of the contractor. Thus under a guarantee the organisation has to quantify the loss, up to the value of the guarantee, and cannot simply call for a lump sum on demand.

Background

Up to the mid 1960s the use of performance bonds and guarantees in the public sector was widespread when open tendering following advertisement was normal practice for construction contracts. The Banwell Report in 1964, however, considered that the general adoption and proper operation of selective tendering procedures should render performance bonds unnecessary. The government accepted the report's recommendations. However, even after the introduction of selective tendering systems and extensive financial vetting procedures, the use of bonds in the public sector has continued with some organisations continuing to adopt a blanket policy of requiring bonds on all their contracts.

Performance bonds add to the cost of construction and, although initially paid for by contractors, the expense is added to their tender figures, and ultimately paid for by the client. Very few of those public sector organisations who require bonds from contractors have reviewed whether the risk that they would otherwise be exposed to justifies the cost.

Problems experienced in the use of bonds have included long delays in receiving reimbursement for losses incurred following the failure of a contractor. Delays exceeding ten years are not uncommon with a consequence that the real value of the claims has been significantly reduced by inflation.

Government Report of 1996

In 1993, strong representations were made by the construction industry about the growing use of on-demand bonds. Concerns included the abuses that can be made by employers making unfair calls against such bonds and the practice of banks and insurers requiring blocked funds or other sureties as collateral. These practices caused adverse financial effects on contractors' loan facilities, working capital and ability to trade and develop business operations.

As a result, the Secretary of State for the Environment announced that his department would take the lead in the preparation of guidelines on the use of performance bonds in government construction contracts. Subsequently, a report prepared by an inter-departmental work group for the Construction Sponsorship Directorate of the DoE was published in November 1996 called *The Use of Performance Bonds in Government Construction Contracts*. The report included the following recommendations.

- On demand bonds should never form part of government construction contracts other than in very specific and limited circumstances, eg advance payment bonds or retention bonds.
- Departments should not normally employ bonds but should, instead, rely on effective pre-qualification and vetting procedures. This process can be assisted by the use of systems such as the Contractor Management Information System (CMIS) (NB. Now *Constructionline*).
- Where departments decide to use bonds they should be conditional and only employed on the basis of a case by case assessment of the risks associated with each contract.
- The use of parent company guarantees should be considered where security is judged to be necessary not only against failure by a contractor to complete the contract but also against their post-completion liabilities.
- Departments intending to use bonds or employ parent company guarantees should base them on the model forms appended to the report.

Although targeted at government departments, the above recommendations are applicable to all parts of the public sector and should be referred to by auditors when reviewing this subject.

Considerations as to whether bonds are appropriate

In addition to the recommendations in the government's report, the following factors should be taken into account when considering whether the provision of a performance bond is appropriate:

- *The potential risk in the absence of bonding, having regard to past claims experience and the estimated premium costs*

Typically, public sector organisations do not consider the losses that have been incurred in the past as an indication towards the risk on future contracts. Therefore, auditors should review the extent to which bonds are required by an organisation, together with the respective costs, compared to losses that have been incurred in the past.

- *Whether there is any exceptional technical difficulty associated with the project*

For a simple type of scheme involving few trades completion by another contractor may be relatively straightforward. On the other hand, highly specialised contracts, even those of comparatively low value, may be very difficult to complete in the event of failure by the original contractor, involving substantial extra costs. Organisations may, therefore, feel justified in obtaining some form of protection against such failure.

- *The extent to which selective tendering procedures are used and enquiries have been made as to the technical and financial status of contractors.*

A bond should not be required from a contractor which has a strong financial standing, or which can offer a parent company guarantee.

- *The value of the contract in relation to the size and resources of the organisation*

Bonds should only be required for contracts which, to the organisation, are of exceptionally high value (ie much higher than that normally let by the organisation).

- *The period of the contract*

Longer contracts may present a greater risk than short contracts.

Bonding arrangements

On the rare occasions that it is decided that a performance bond is necessary the following arrangements represent best practice.

- The level of bonding for any one contract should be carefully considered. 10% of the tender total may be adequate in most circumstances but this may need to be increased for specialist contracts.
- The bond requirements should be clearly stated at the time of tender. The provision of a bond in a tender should be competitive and not specified as a PC item.

- The contractor should not be allowed to commence operations under the contract until the organisation is satisfied with the terms of the bond and the financial standing of the surety.
- The bond should be released in accordance with the recommendations published by the appropriate body responsible for the issue of the type of contract conditions in use (eg JCT, ICE).
- The organisation should maintain long-term records to show the cost of bonding and details of any recoveries to assist in the periodic review of policy.

In addition, if it is decided to obtain a performance bond careful consideration needs to be given to the wording of the document. In the 1990s there were two legal decisions which cast doubts over the reliability of guarantee bonds in the case of insolvency which have led to proposals for changing the way such guarantees are written.

Perar PV v General Surety and Guarantee Co. Ltd (1994).

In this case it was held that the insolvency of the contractor was not a breach of contract and did not entitle the employer to seek payment under the conditional bond that was in existence. The form of contract in this instance was JCT81 which meant that the contractor's employment under the contract was automatically terminated in the event of insolvency. Default under the contract would not occur until such time as the additional costs incurred by the employer had been assessed, been claimed from the insolvent contractor, and not paid. This means that a claim under the bond cannot be made until the breach in the contract actually occurs, ie failure to pay the debt. Quite apart from the delay that this involves, it is likely that the sum to be demanded from the bondsman will not be known until the time of the final certificate by which time the performance bond may have expired.

Trafalgar House Construction (Regions) Ltd v General Surety and Guarantee Co. Ltd (1995).

In this case it was held that the security provided by the bond was by way of guarantee. Therefore any monies owing to the insolvent contractor for completed works had to be set off against the value of the employer's claim. The monies owing could only be ascertained at final account stage. In this case the contractor going into receivership did not automatically give rise to a claim under the guarantee and that any claim under the guarantee must take into account any accounting adjustments arising from measured works. The claim was effectively delayed until such time as the final account could be agreed. This procedure therefore considerably extends the period of time before which any payment is required to be made under the guarantee.

As a result of these legal decisions, revised model forms of guarantee bonds were put forward. The first was developed in September 1995 by the Association of British Insurers (ABI) which represents the guarantor side and, as would be expected, tends to strengthen the position of guarantors. The ABI

bond does not specifically provide for insolvency to be treated as a breach of the building contract. An organisation using the ABI form of bond will, therefore, have to rely on the relevant conditions of contract to recover any additional costs in completing the works. Since such costs may not be ascertained until final account stage it is essential that the organisation ensures that the bond remains valid long enough for all claims to be satisfied.

The DoE Report *The Use of Performance Bonds in Government Construction Contracts* in November 1996 contains a model 'Conditional Performance Bond'. The model form is very clearly worded and has been reported as providing "benchmarks in terms of the clarity and consistency of the language used in such instruments". However, while this form provides for the bond to be activated on the insolvency of the contractor it still has the problem that a claim for payment cannot be quantified and proved until final account stage and is, therefore, still at risk of considerable delay. This is recognised in the report in which the DoE called for the development of an 'Insolvency Protection Bond' which would offer quick release of a useful sum in the event of a contractor's insolvency. The report noted that proposals had been submitted to the ABI for a new form of bond which would allow rapid access to funds (equivalent to 90% of the estimated cost of completing the works) in the event of contractor failure without the need to prove loss immediately. At the time of publication, such a new form of bond had not been produced.

The 1994 report *Constructing the Team* suggested that if the circumstances/conditions provided for in a bond are fulfilled the beneficiary should be able to obtain "prompt payment" without recourse to litigation. Clearly, neither the ABI or DoE model forms achieve this.

At the time of publication, the Institution of Civil Engineers (ICE) were in the process of preparing a form of bond for use in association with the new ICE 7th edition standard form of contract. The terms of the new 7th edition, when actioned by the engineer, enable the employer to claim an immediate payment, through the bond, following default by the contractor.

If any payment to the employer subsequently proves to be excessive or insufficient, then provision exists for a balancing payment to be made. Either party can require an adjudication according to a prescribed timetable in those cases where agreement on the sum involved cannot be reached between the employer and the surety/contractor. The surety's rights to raise counter claims that the contractor may have had against the employer are restricted to those that have been previously certified by the engineer. This prevents the surety from challenging the claim by raising new counterclaims. The bond does not expire until all agreed monies have been paid.

The draft ICE bond, in conjunction with the new 7th edition, promises to reflect more accurately the practical concerns raised by recent case law, and appears to also set a fair and equitable balance between the interests of employer and the surety. In particular, the in-built adjudication procedure provides a low cost method of speedily resolving disagreements that should avoid litigation. The ICE documents also promise to achieve what was stated in the *Perar* case as being one of the main purposes of performance bonds, ie "...to provide a security against a contractor's insolvency which can be readily promptly and reliably realised."

4. Designing and constructing

It is vital that the scheme is designed and constructed fully in accordance with the requirements of the client. To achieve this, the first requirement of the project team should be to validate the existing strategic brief. This will remove any incorrect assumptions at an early stage and make clear the wishes and intentions of the client. It will also enable the project team to compile a project brief, concept design and, finally, a detailed design for the project which will fully satisfy the client's needs.

During the validation process the project team should explore the opportunities, constraints and costs arising from the strategic brief, and develop and test all options accordingly. The client project sponsor should ensure that any proposed variations to the strategic brief are brought to the attention of the client for consideration and, if necessary, are properly approved and authorised before the project team continues with its work.

Full details regarding the preparation and agreement of project briefs, concept designs and detailed designs are contained in the CIB's *Briefing the Team*.

(a) Agree the Project Brief

The objective of the project brief is to convert the strategic brief into construction terms, by putting initial measurements and quantities to the various elements of the project, and preparing outline estimated costs for budget purposes. The project sponsor should ensure that the client project manager, with the project team, prepares a project brief in a suitable format that allows for alterations and updating to be readily made if required.

The project brief will examine the performance standards and flexibility of use required from the project, the quality standards to be provided, and the degree of safety provisions that need to be incorporated in the scheme. The brief should confirm the client's priorities regarding quality, time and costs, and highlight the risks which could cause the client's programme and/or budget to be exceeded, together with suggested courses of action for minimising such risks. In particular, as delay is a major cause of increases in cost, the project brief should include the current programme and highlight the dates on which actions are required by the various parties concerned.

The project team should consider potential construction problems, safety risks, obligations, and the best procurement route to meet the needs of the project. Finally, the team should decide the criteria against which the project will be judged, detailing the factors considered most likely to affect the success of the project.

If additional information is required to proceed to the concept design the project team should be required to request such information at the earliest possible stage. The project sponsor should ensure that any additional information required from the client is provided immediately.

Although the client project manager, with the project team, is responsible for preparing the project brief the project sponsor should ensure that the client and all key stakeholders are involved in the process. Each should be required to accept formally the completed brief and endorse any design solutions. It is important to stress, however, that acceptance does not constitute approval in a technical sense as the project manager and project team must retain full responsibility for the technical success of the design.

As the project brief is defined and agreed it should be signed off and accepted progressively by the project sponsor, on behalf of the client. It is paramount that the client ensures the project sponsor is provided with the appropriate authority, or that an efficient decision-making process is established, to enable the project sponsor to confirm acceptance without causing delay to the progress of the project design. In addition, the project sponsor should ensure that late requests for variations to the strategic brief from the client are avoided, in order to avoid increasing the risk of the project budget and programme being exceeded.

(b) Agree the Concept Design

A concept design is defined by the CIB in *Constructing Success* as being the outline architectural and engineering design for the project. The CIB state that the time and effort invested at an early stage in developing the concept design will earn a good return in client satisfaction and best value in the completed project.

The design options which will contribute towards the concept design can be tested by the project team as soon as the project sponsor has agreed the project brief. This will entail developing the concept, the design strategies and the requirements of the scheme. The team will decide which elements are of limited risk and which are innovative and high risk. Elemental costs will also be prepared.

As part of the development of the concept design, the project team will examine the progress made towards meeting the success criteria, and will consider how the design will help achieve the stated objectives, ease the construction process, and support the function and work of the client. The team will also judge how the new facility will work for users and staff, and how much flexibility in use will be offered.

The standards of quality and the safety requirements incorporated in the scheme will again be examined as will all elements of additional costs, delays and any other risks identified. The likelihood of defects will be considered together with proposed remedial actions. As with the project brief, a

major issue is to identify any additional information that is required to prepare the detailed design and prioritise any necessary activities.

(c) Agree the Detailed Design

The detailed design is the design which defines and describes every component of the proposed construction in sufficient detail to enable a building contractor to submit a firm price for undertaking the work. The project team should begin the development of the detailed design as soon as the concept design has been signed off by the client project manager.

The CIB recommend that the detailed design should include:

- a statement of scheme design
- the location of the site and the details of planning approvals and other agreed permissions
- dimensions of spaces and the elements to be provided
- performance specification for environmental systems and services
- the cost plan
- proposals for the maintenance and management of the completed facility
- the project execution plan
- key milestones and targets
- performance measures.

A design is more likely to be successful if sufficient time is allowed for the process. Design times may be shortened in an attempt to achieve an early commencement in construction work. However, this considerably increases the risk of extra costs being incurred during the construction phase as errors or incomplete design work are discovered.

As it progresses, each part of the design should be frozen as it is completed and signed off on behalf of the project team accordingly. When fully completed, the client project manager should be required to certify that the design has been completed and that the documentation is of a sufficient standard to enable a building contractor to compile a price for the work. The project sponsor should be required to formally accept the detailed design on behalf of the client before construction is commenced.

As the detailed design develops the project sponsor should receive regular reports from the project manager detailing progress. In particular, the project manager should be required to confirm to the project sponsor regularly that the detailed design will be completed by the date stated in the project programme. The project manager should be required to advise the project sponsor immediately of any slippage, including full explanations, and the impact on the remaining programme for the project. The project sponsor should inform the client accordingly if there is likely to be any delay in the expected completion date for the construction.

The project manager should also be required immediately to seek the approval of the project sponsor to any likely variations in the estimated cost of the project during the detailed design stage. The reasons for the variations should be fully explained, together with suggestions for securing savings of an equivalent value elsewhere within the project. The project sponsor should be required to seek the necessary authority and approval from the client to any significant variations (eg + or –5%) before confirming that the design work should proceed.

(d) Construction

Once the detailed design is complete, and the building contractor has been selected, the project sponsor can authorise the project manager to instruct the construction works to commence. Before doing so, however, it will be necessary to examine the contractor's insurances. Details concerning insurance arrangements on building contracts are provided at Appendix 4.1.

In most forms of contract it will be the contractor's responsibility to draw up a programme showing the anticipated duration of the work. The duration is usually shorter than the formal contract period as contractors typically include a contingency to cover for delays. The contractor's objectives are to maximise profits by keeping costs as low as possible, obtaining payment for work done as soon as possible in order to minimise borrowing costs, and to complete the work as efficiently, economically and effectively as possible.

Representatives of the project team will attend site meetings to discuss progress with contractors. All meetings should be minuted and include reference to authorised variations and to any particular difficulties being experienced which might affect the progress and final cost.

Difficulties that occur are often attributed to poor or confused communications. The one essential control without which most others will be ineffective is a proper system for the rapid transmission of information to and from the appropriate section of the client authority. The project sponsor's role in this area is vital and it should be through that officer that all information flows are co-ordinated. By the time the contract is let the communications system should already be well established and it is during the construction phase that its ability to respond will be most severely tested. Each member of the project team has a specific role to play in the contract process. The test of the communication system is that the client remains aware of all matters that are likely to concern it, and is able to respond appropriately and input fresh information with the minimum of delay or disruption.

During the construction phase of a project the role of the auditor will include reviewing and reporting upon the adequacy and application of internal controls, the extent to which the client's interests are safeguarded, and the suitability and reliability of financial and management information. Auditors should ensure that there are adequate systems and documentation for providing financial information to enable costs to be controlled, including reporting procedures, and that there are effective controls for interim valuations, variations and claims. Full details, and guidance, are contained in CIPFA's publications on contract audit.

The role of auditors will require them to visit construction sites. The two principal audit objectives of visiting construction sites are to examine the financial control and management information systems that exist at site level, and determine whether the information and advice produced by such systems is both timely and accurate. The occurrence of the visits will depend on the nature and size of the project; on all but the smallest projects most of the prime documents of the construction process will be created, used and held at site level. The CIPFA contract audit publications are invaluable as aide memoires for the auditor.

Quality control during construction is achieved by ensuring that the work is carried out in accordance with the specification and drawings, and to the required standards. This will also involve issuing variation orders to correct any errors made in the design stage and any unforeseen problems. This will involve amendments to construction drawings, measurements, progress charts and contract programmes.

Controls during the construction phase should ensure that each member of the project team is fulfilling their allocated role in a proper and effective manner. Areas where specific control should be exercised would include:

- ***Programming***
Regardless of the contractual status of the contractor's programme, the project manager should ensure that a master programme for the works is produced, and that it is updated as work progresses. A copy, as well as copies of any revisions, should be provided to the project sponsor who should check that the programme is kept up to date.
- ***Co-ordination***
Responsibility for co-ordination of operations, as well as information, should rest with the project manager. Any deficiencies in co-ordination will manifest themselves in the form of delays and discontent amongst the parties concerned. Regular attendance at site meetings should enable the project sponsor to spot any such problems which should be fully investigated immediately to ensure the project manager acts promptly to prevent any recurrence or deterioration.

The objectives of controlling the construction process on a building contract is to ensure it is completed on time, within budget and to the specified quality. To ensure these objectives are achieved there has to be adequate systems for:

- compiling valuations of work done and making payments
- controlling changes in design and specifications during construction
- dealing with variations and contractor's claims.

(i) Compiling Valuations of Work Done and Making Payments

Payments will be made to the contractor on the basis of valuations of the work compiled by the project team. Each valuation must be supported by adequate documentation, including dimension

records, which should be available for inspection, if necessary, by the project sponsor or auditor. Valuations will normally consist of:

- certificate
- bills of quantity and summary
- variations
- dayworks (summaries)
- claims
- nominated sub-contractor's and supplier's invoices
- contract price fluctuations (if appropriate)
- schedule of materials on site.

Payments are normally made to contractors on a monthly basis and in accordance with the specific conditions detailed in the contract document. Each payment will be certified by a designated officer and will show the total valuation to date, less retentions and previous payments, with adjustments for materials on site and, if appropriate, contract price fluctuations. The relevant valuations will also detail payments to sub-contractors and statutory authorities. There may also be on account payments in respect of claims or deductions in respect of liquidated and ascertained damages.

It is vital that payments are made to contractors on time, and in accordance with the period stated in the relevant contract document. A survey by the National Westminster Bank PLC, which was published in *The Times* in December 1997, stated that late payment was a particular problem in the construction industry. It indicated a very sorry state of affairs in that late payment was so common that it was widely accepted as a fact of life. Around the same time it was also claimed that construction firms could reduce their prices to clients by 3% if all public sector organisations paid their bills on time.

Auditors, therefore, should examine procedures within their organisations in order to determine the extent to which the payment periods stated in contract documents are achieved. In this respect, reference could be made to BS 7890 – method for achieving good payment performance in commercial transactions – which was developed in September 1996. The aim of BS 7890 is to encourage greater transparency in payment procedures, and improve commercial payment practice, by setting out procedures which are considered essential to good payment practice. BS 7890 has been adopted by all government departments and is relevant across the public services.

When examining payment procedures, there is a need to be aware of the Late Payments of Commercial Debts Act which became law in 1998, and provides creditors with a right to claim interest on late payments. The legislation does not specifically deal with the peculiarities of construction contracts. Therefore, certain areas are unclear, such as whether it is necessary for a certificate to be issued before a contractor can pursue a claim for interest. The legislation is also silent

on whether claims can be submitted in respect of delays in agreeing contractor's final accounts. An outline of the legislation is provided below.

The Late Payments of Commercial Debts (Interest) Act 1998

This act came into force on the 1st November 1998 and complements the Construction Act. It provides creditors with a statutory right to claim interest from customers on commercial debt that is paid late. It applies to contracts for the supply of goods and services where each party is acting in the course of a business.

The statutory right to claim interest is introduced over a period of four years. Initially, it applies only to small businesses against large companies and public sector organisations. It will be extended later to small businesses against other small businesses. Finally, in the year 2000, it will apply to all enterprises including the public sector, for use against all parties. No contracting out is allowed

Small businesses are classed as those who satisfy at least two of three criteria. (50 or fewer employees, turnover of less than £2.8m, balance sheet total of less than £1.4m.)

Interest can be charged at 8% above the base rate, unless the parties to the contract agree otherwise. However, in reaching an agreement they must still provide a "substantial contractual remedy" for late payment that has due regard to all the relevant circumstances at the time the agreement is made. It is not yet clear what is considered as being a "substantial contractual remedy", particularly as the Construction Act already provides for contractors to cease work if payment is not received by the due date. In this respect, however, it is noted that amendment 18 to the JCT80 standard form of contract provides for simple interest at a rate of 5% over base rate.

Where no credit period is defined in a contract, the credit period will be 30 days from date of invoice, or delivery of goods or services, whichever is the latter.

Further details, including a free 'User Guide' to the legislation is available from the Department of Trade and Industry [Tel: 020 7215 5000]; and also from the Better Payment Practice Group's web site on the Internet at www.payontime.co.uk.

NB. The Statutory Right to Interest Bill (SRI) in August 1997 called for public sector bodies to publish league tables of their payment performance. In June 1998 the Audit Commission asked local authorities to complete a new performance indicator showing the percentage of invoices settled on time. Individual local authorities published their score locally in 1998 and the Commission will produce comparative figures, as part of the national performance indicators, from March 1999.

Liquidated and ascertained damages should be deducted from payments if the contractor has failed to complete the project by the due or extended completion date. This is provided, however, that the appropriate certifications have been issued by the architect or engineer, as required by the form of contract employed. It is stressed that it is the client, as employer, who makes the deduction and not the project team.

In certain situations, clients may not deduct damages on the understanding that no contractual claim has been submitted by the contractor. In such instances it is important to ensure that an estimate of the claim is compiled by the project team so that a comparison may be made with the amount of liquidated damages recoverable, in order to ensure that such an agreement is in the best interests of the client.

(ii) Controlling Changes in Design and Specifications during Construction

It is unrealistic to expect a detailed design to be absolutely perfect. Therefore, it can be argued that it is inevitable that during construction some amendments will be required to the design and specification of the project. It is very important, in the interests of proper financial management, that such amendments are adequately controlled.

It is impractical to expect the project team to seek the formal approval of the client to every proposed change. Any delays, even of just a few days, while approval is being sought could easily cause additional extra costs that far outweigh the value of the original changes. The project team should, therefore, be provided with authority to implement changes that collectively are not expected to exceed a certain financial value, without the need to seek the specific approval of the client. The financial value is normally consistent with that contained in the client's financial regulations in respect of increased costs on capital schemes, and would typically be in the order of £5,000 or 5% of the contract sum, whichever is the lower.

It is stressed that the financial value is the total of all variations that may be implemented by the project team. Clearly, numerous variations although individually of a low value could soon cumulatively exceed this sum. It will, therefore, be necessary for the project team to monitor variations closely to ensure that, if necessary, approval is sought from the client at an early stage so as not to delay the project.

The project team should be required to advise the project sponsor immediately it becomes apparent that changes to the scheme are required. Full explanations should be provided and options available for avoiding such changes considered. The project sponsor should ensure that the reasons provided by the project team for any changes are thoroughly investigated and verified. It is possible that there may have been significant inefficiencies or errors in the original design which the project team understandably would be unwilling to disclose.

Failure by the project sponsor to actively monitor and seek explanations from the project team may result in the client being unaware of changes until the scheme is complete and the extra cost not identified until such time as the contractor's final account is received.

Not all design changes originate from the project team. Occasionally, the client may request additions or amendments to be made. The client should, however, be aware that any variations requested once construction has commenced are likely to have a significant impact on time and cost. It is not impossible for the cost of any additional work requested by the client to be more than

doubled by the submission of claims from the contractor for extra costs due to any resultant delays caused to the progress of the construction. Changes should be requested by the client only in very extreme and exceptional circumstances. The project sponsor should ensure that the client is aware of this requirement.

(iii) Variations and Claims

Construction contracts expressly provide for the work specified to be undertaken in the initial agreement to be varied as construction progresses. This provides flexibility for the client, and the project team, who are able to alter the works after the formal contract document has been signed and exchanged.

In construction contracts a variation order is contractually required where there are additions, omissions, substitutions, alterations or other changes to any part of the works, that are necessary for the completion of the works. Variation orders are the means by which the project team instructs the contractor to carry out work either differently or in addition to the work specified in the contract document. In some forms of contract, variation orders are referred to as 'architect's instructions' or 'contract administrator's instructions'.

Variation orders should be in the form of written instructions to the contractor by the project team and, if there are financial implications, should be costed as soon as possible and not left until after the work has been completed. All standard forms of contract explain how variations are to be valued. Basically, if the work is of similar character then the rates in the bill of quantities will be used. If not, a rate is fixed by the appropriate member of the project team. Alternatively, the contractor may be ordered to carry out the work on a daywork basis.

For the financial management of a construction contract to be successful, it is vital that the issue of variations are closely monitored and controlled. As with changes to the design, the project team should be required to seek the approval of the client, who will consider amending the budget accordingly, before issuing any variation that would have a significant impact on the cost of the project. When such approval is sought the client should be advised of suggestions where corresponding savings could be achieved in order that the estimated final cost of the project may remain within the initial budget. When seeking approval to significant variations the project sponsor should ensure that there has been a full evaluation of the consequences, both technical and financial, and of the impact on the expected completion date for the construction work.

Circumstances may occur where contractors, through no fault of their own, incur additional costs which are not recoverable through the normal methods of pricing and adjustment. Contractors seek reimbursement of such costs by submitting loss and/or expense claims which are then ascertained in accordance with the appropriate clauses in the contract document.

The circumstances will vary for each claim and it is impossible to compile rules to meet all eventualities, although there are various publications available which deal with the settlement of

claims in great detail. There are also courses run by major law firms which cover all aspects of contractual claims. The general principle is that contractors are entitled to any additional costs they have actually incurred due to the actions, or inactions, of the client or the project team. Examples include additional work ordered by the client, and late instructions issued by the project team.

Under the terms of the contract it is the duty of the project team to fully assess and evaluate claims from contractors. It must be appreciated that the assessment and evaluation of claims is not an exact science, and involves a certain degree of professional judgment and estimation. In some instances two independent technical officers may assess a claim differently.

One area that has been the subject of interest by auditors is the issue of claims from contractors for additional overheads. This subject is considered in more detail at Appendix 4.2.

Many claims emanate from prolongation of the construction period. However, the fact that a formal extension of the contract completion date is granted does not necessarily attract additional payments.

It is not unusual for claims by contractors to be exaggerated. It is, therefore, incumbent upon the project team to establish the accuracy of any claim and to be satisfied that the principles on which the claim is based are reasonable. A particular problem is that a contractor may have submitted a very low tender, perhaps below cost, in order to win a competitive tendering exercise and secure the contract. In order to achieve a reasonable profit margin the firm then, as soon as work commences, seeks every opportunity to submit claims to the client. In some extreme instances they will employ specific claims experts.

It is essential that all claims for extensions of time and additional costs are well documented. The following records should be kept as a minimum:

- notice in writing from the contractor stating reasons for the claim and the contractual clause under which the claim is submitted
- acknowledgment of the receipt of the claim by the project team, including any reference about records to be kept by the contractor
- the 'supervising officer's' written acceptance or rejection of the principle of the claim in full or in part
- the basis of evaluation to be adopted
- the contractor's full submission together with supporting documentation
- details of payments on account and the final claim payment.

(e) Maintain an Overview

The project sponsor should be pro-active and seek confirmation regularly from the project team that the construction work is progressing smoothly towards completion, is on time and within budget. To

achieve this there has to be adequate systems for reporting and monitoring progress during the construction phase.

Physical and financial progress on contracts should be recorded on a regular basis and compared with the appropriate programme. This is to ensure that timely and accurate information on progress is available, and that regular reports are submitted to the client. The frequency and content of the reports will depend on the nature of the project but will normally be on a monthly basis.

Throughout the construction phase of the project, the client will require regular reports of progress against physical and financial targets and may also require specific reports where abnormal problems are encountered or additional approvals are needed. Guidelines on reporting requirements should have been written into the terms of engagement for each member of the project team. The project sponsor's duties should include the monitoring of the production of these reports and their co-ordination (where necessary) with the client's business timetable.

The project team should be required to submit regular reports to the project sponsor, ideally at the time each interim valuation is prepared, to show progress and expenditure to date and a projected value compared with the original contract sum. There should be a detailed breakdown with any significant differences being subject to detailed explanation. The report should highlight if the authorised budget is likely to be exceeded. An example of the format of such a financial statement is provided below.

Financial Statement		
PROJECT : Oldbury Town Centre Car Park		PROJECT No. : 9111
REPORT : No.9 Week 40		DATE : 22nd January 1998
Estimated Final Cost		
Contract sum		418,495.00
Contingencies	25,000.00	
PC Sums	53,900.00	39,962.30
Provisional Sums	35,000.00	17,362.85
Variations	14,050.00	67,855.67
Anticipated Variations		5,000.00
	127,950.00	548,675.82
		127,950.00
Estimated Final Cost		420,725.82
Progress		
Date For Possession	17th April 1997	
Date For Completion	5th February 1998 (42 wks)	
Extended Date For completion	12th March 1998 (5 wks)	
Percentage of Revised Contract Period Complete	85.11%	
Valuations		
Gross Valuation No.9 22.1.98	£340,000	
Percentage of Anticipated Final Cost	80.81%	

4.1 The Audit Approach

When reviewing arrangements made by organisations for controlling the design and construction phases of projects, the auditor should concentrate on the following issues.

- (a) Do project sponsors ensure that each project team compiles a project brief, concept design and a detailed design that fully satisfies the client's needs?
- (b) Do project teams decide, and record, the criteria against which the success of projects will be judged?
- (c) Are potential risks to the success of projects identified, evaluated, and minimised as far as possible?
- (d) Is sufficient time allowed for detailed design work?
- (e) Is each stage of the design process 'signed off' on behalf of the project team as it is completed, and then 'frozen'?
- (f) Are effective and rapid systems of communication within the organisation established at the outset of the construction stage?
- (g) During the construction phase, do project sponsors monitor how project teams are controlling the programming and co-ordination of the works?
- (h) Once construction has commenced, how does the organisation ensure that projects are completed on time, within budget, and to the specified quality?
- (i) Are there adequate systems for:
 - o compiling valuations of work done, and processing payments on time, in accordance with the terms of the respective contract?
 - o controlling changes in design and specifications during the course of the works?
 - o controlling extensions to the construction period?
 - o dealing with variations and contractors' claims?
- (j) Are regular (monthly) reports received promptly from the project team that adequately advise project sponsors as to progress towards completion, and updated expected outturn costs? Are explanations sought for any significant deviations to the original or previous plan?
- (k) Is the financial and management information produced both timely and accurate?
- (l) Are budgetary control procedures sound?

Appendix 4.1

Insurance

Under normal building and civil engineering contracts the contractor has an obligation to provide:

- insurance of the works
- insurance of persons and property other than the works.

Some public sector organisations may take responsibility for the insurance themselves; they consider that the client should control the insurance programme on all projects to ensure getting the most competitive costs by avoiding any contingency mark up by contractors within the insurance element of the contract price. However, this practice involves considerable administrative involvement in the contract insurance process.

The contractor must insure the works against damage by fire and other accidents. The insurance is normally in the joint names of the employer and the contractor. Under certain contract conditions the contractor also has to ensure that the temporary works and construction plant is adequately insured.

The insurance must be effective during the maintenance period on engineering contracts.

The employer must approve the choice of the insurance company when the insurance of the works is required.

It is the contractor's responsibility to insure against injury to persons and property and the contract will normally stipulate the minimum cover required for any one occurrence.

An essential of both these forms of insurance is that the employer has the right to request adequate proof that the relevant policies are in force by production of policies and renewal receipts. In the event of a contractor failing to insure, the employer may do so and recover the cost from the contractor.

It is essential that adequate systems are set up within the organisations to check insurance details and to ensure that policies are renewed on the due dates.

For certain contracts where specialist activities are carried out extra cover will be required, eg use of explosives.

The auditor should ensure that there is a system for the examination and reviewing of the contractor's insurance details. He or she should also examine contract documents to see that the correct insurance clauses are inserted and that any deletions, additions or exclusions in the insurance particulars have been cleared. Compliance with the insurance requirements of the financial and contract regulations will also be verified.

Appendix 4.2

Contractors' claims for overheads

What are overheads?

When contractors compile tender bids they will allow for all expenses that they would expect to incur while carrying out the proposed construction works. This will mainly consist of labour and material costs but will also include direct costs such as the hire of plant and machinery, payments to subcontractors and payments for the supply of electricity, water etc. Presuming the contractor wishes to remain in business, a small addition will then be made for profit.

However, the contractor incurs other costs on a day-to-day basis, that are not attributable to specific contracts. Such costs are those that are incurred for the business as a whole, and will include such things as administration, rent, heating and lighting for the contractor's head offices, staff involved in estimating and preparing tenders, running the accounts section, advertising etc. These costs are generally termed 'head office costs' and can usually be identified on the contractor's trading accounts.

These 'head office costs' can be substantial and need to be recovered from the bills raised by the contractor for work that is undertaken. Therefore, contractors will make appropriate additions to their tenders. The amount of the addition will be based on an estimate of the contribution required to be made by each contract so that by the end of the year the total of the contributions at least equals the firm's total overheads for the period.

For example, supposing the latest information available to a firm indicates that for their financial year ending 31st March 1997 that their turnover was £10m and that the total overhead costs during the period was £1.2m. The contractor would then add an allowance of 13.64% [$£1.2m / (£10m \text{ less } £1.2m)$] to all their tenders submitted during 1997/98 or until such time as more up to date information became available. An adjustment may, however, be made to this percentage for expected fluctuations, such as a significant variation in the contractor's workload over the coming months.

The contractor may plan to secure work to the value of £12m during 1997/98. If successful they will achieve a contribution of £1.44m towards their overhead costs for 1997/98 and it is the contractor's risk as to whether or not this will be sufficient.

It would be unusual for a contractor to make a specific entry for overheads in their tender submission. Therefore, do not expect to be able to identify how much a contractor has allowed for a specific contract by looking at the priced specification or bills of quantities. In fact, the allowance will probably be spread across all the schedule of work items in the tender. So all individual items will include an allowance and will, therefore, be slightly higher than would otherwise have been the case.

Also, it should be noted that the percentage addition for overheads will be applied to the total value of the 'net builders work' included in the tender. That is, the value of the tender less any contingencies, PC and provisional sums. In the above example, the value once added represents 12% of the total value of the builders work items.

Why do claims for overheads arise?

A contractor becomes entitled to submit a claim for overheads when delays and disruption on a construction project, which are the fault of the employer (eg additional work, late instructions), causes the project to provide the contractor with less than the expected contribution to their overhead costs.

For example, consider our hypothetical contractor who submitted a tender which includes an allowance of 12% for their contribution to overheads. The total value of the tender is £475,000 which includes £75,000 in respect of contingencies, PC and provisional sums. Work is to take six months. If all went according to plan, when the work is finished a contribution of £48,000 (12% x £400,000) would be made towards the firm's costs. The contractor's labour force would then move on to the next job where they would earn a further contribution based on their tender for that project.

If the project is delayed, however, beyond the original period of six months then although the project may still achieve a contribution of £48,000 the firm would be prevented from starting the next contract on time. The contribution from the next project would be delayed, and the total amount contributed by all projects within the financial year would fall below that planned.

It is this shortfall or 'under recovery' that the firm will seek to be reimbursed from the employer. The claim is for a 'loss' rather than an 'expense' as defined in the clauses of the major standard forms of contract.

Preliminary Assessment

Perhaps not surprisingly, the calculations for overhead claims can be complex. However, when in receipt of a claim from a contractor, before considering whether the detailed calculations are correct, the first issue that the quantity surveyor or engineer should consider is whether the delay actually prevented the firm from recovering overheads on another contract.

Firms should be required to demonstrate that they actually had other contracts available which they were prevented from commencing, and hence prevented from continuing to recover their overhead costs, due to the delays on the contract in question.

During a recession, the contractor's order book may be empty. The firm may have had no work to move on to and, therefore, had the contract been finished on time their labour force would have become idle. Hence, in this situation, the contractor would not have been prevented from recovering

overheads on another contract and any such claim would be invalid and could be dismissed immediately.

But what proof can an engineer or quantity surveyor request from a contractor to prove that they had work available? Items that could be requested, include:

- details of tender enquiries received from prospective clients
- evidence that the firm turned down tender enquiries because they were tied up with the job in question
- evidence that the commencement date on a contract was delayed because of the overrun on this project
- audited trading accounts which show annual turnover figures that have increased in real terms (accounting for inflation) or at least remained stable.

It must be appreciated that a typical firm will have dozens of contracts that are current at any one point in time. It will, therefore, be very difficult and hence unlikely that a contractor could identify a clear cause and effect, ie that the delay in completion of contract A caused a delay in commencing contract B. However, a contractor should still be expected to demonstrate that they, generally, had a full and increasing workload.

Ascertainment

It is not possible for a firm to produce a statement of indirect overhead costs that can be directly related to a project. As stated above, claims for overheads are deemed to be in respect of the 'loss' or 'under-recovery' of the contribution expected from the contract. Overhead claims are, therefore, normally based on formulae. There are essentially three formulae available, as follows:-

Hudson formula

The Hudson formula can be expressed as follows:-

$$\text{Value of overheads \& profit allowed in tender} \quad \times \quad \frac{\text{Delay period (weeks)}}{\text{Original contract period (weeks)}}$$

The Hudson formula was very popular in the 1970s and may still be used by some today. It is generally, however, now considered to be incorrect because:

- the figures extracted from the tender include profit
- allowance is not made for the fact that the addition is only applied to the 'net builders work', ie net of contingencies and PC sums
- no allowance is made for the final value of the work

- the formula is based on the contractor's allowance for overheads and profit in their tender, rather than the percentage that actually applied during the period of the contract. Conditions of contract require firms to be reimbursed 'actual' loss and/or expense. Therefore, even if the firm can demonstrate that they made an allowance of 25% in their tender, if their trading accounts show a lower percentage then that is the one that should be applied.

Emden formula

The Emden formula specifically addresses some of the problems with the Hudson formula and can be expressed as follows:-

$$\text{Actual overhead and profit percentage} \times \text{contract sum} \times \frac{\text{delay period (weeks)}}{\text{contract period (weeks)}}$$

The actual overhead and profit percentage is obtained by taking details from a firm's trading accounts for the financial years that cover the full period of the contract. This ensures that the rate that should have been applied by the firm is used and, therefore, correctly discounts any loss or surplus that may have been made due to an inaccurate estimate.

However, as with the Hudson formula, the calculation includes profit and is based only on the contract sum rather than the final cost of the builders work excluding provisional and PC sums.

Eichlay formula

The Eichlay formula was imported from the United States and is also based on the Hudson formula as follows:-

$$\text{Actual overhead percentage} \times \text{final account value} \times \frac{\text{delay period (weeks)}}{\text{contract period (weeks)}}$$

Unlike the Hudson and Emden formulae the above correctly covers overheads only. However, although it is based on the final cost, it still uses the full value of the final account rather than the lower value of the builders work. Also, as with the other two formulae, no allowance is made for any additional overheads that may have been recovered by the contractor through the payment of valuations following an increase in the value of the works.

Suggested Formula

In order to overcome the weaknesses in each of the above formulae, the following approach is suggested for assessing claims for overheads.

First, assess the rate of contribution that would have been obtained from the contract had the correct percentage allowance been included in the tender (as indicated in later trading accounts) and had the work been completed on the due date with no variations. Thus:

$$\frac{\text{Actual overhead percentage} \times \text{builders work value in tender}}{\text{Original contract period}} = \text{£x per week}$$

Next, calculate the amount that was actually recovered based on the final account value and any extended contract period as follows:-

$$\frac{\text{Actual overhead percentage} \times \text{builders work value in final account}}{\text{Actual authorised contract period (Original contract period plus extensions of time that entitle contractor to claim loss and/or expense)}} = \text{£y per week}$$

Finally, assess the under recovery (£x less £y) made by the firm for every week of the contract and apply this to the authorised contract period.

Worked Example

The following is a worked example of how the above suggested formula may be applied.

Tender value	: £475,000 (including £85,000 in contingencies, PC and provisional sums).
Original contract period	: 26 weeks.
Overhead percentage in tender	: unknown
Value of final account	: £515,000 (including £67,000 for PC and provisional sums).
Total extensions of time (with costs)	: 6 weeks
Total other extensions of time	: 5 weeks
Actual construction period	: 41 weeks (including 4 weeks unauthorised delay).
Actual overhead percentage	: 10%

Rate of contribution that would have been obtained had the work been completed on the due date with no variations:

$$\frac{10\% \times \text{£}390,000}{26} = \text{£}1,500 \text{ per week}$$

Actual contribution based on the final account and extended contract period.

$$\frac{10\% \times £448,000}{32} = £1,400 \text{ per week}$$

Under recovery is, therefore, £100 (£1,500 less £1,400) for 32 weeks (26 weeks plus 6 weeks) which is £3,200.

Conclusion

Remember, that it is irrelevant how much contractors allow in their tenders for overheads. Rather it is the actual percentage rates indicated by their annual trading accounts which are important. Also, do not forget that it is imperative contractors prove, in principle, that they are entitled to such claims in the first place.

5. Completion and evaluation

(a) Take Possession of Completed Work

The client's requirements for taking over and maintaining the completed work should be detailed in the project brief and taken into account in the design. Procedures for testing, commissioning and handing over the work, together with details of any sectional completion, must be explicit in the tender and contract documents.

The client organisation should have arrangements in place to manage and maintain the facility, when it is handed over, and should be aware that although the work, when it is handed over, may be substantially free of defects, time may reveal latent defects that will need to be rectified.

In the run-up to practical completion, the emphasis will be on functional testing, inspection and commissioning of the various features of the project. Before this stage is reached, the project sponsor should ensure that suitable arrangements are made for testing and handover. During this phase his or her attention should be on monitoring the results of these operations and on identifying any aspects that may impede a trouble free handover. This may call for a certain degree of diplomacy since there are often sharp differences of opinion between client representatives and the project team as to what constitutes a mere 'snagging' defect and what state represents practical completion. In these circumstances the project sponsor will need to impress upon the project team the need for unacceptable defects to be dealt with before practical completion while being careful not to interfere with their contractual duties in determining when a state of practical completion can be certified.

After construction is completed the contractor is responsible for making good any defects that become apparent during the defects liability period (sometimes termed 'maintenance period' depending on the form of contract used). The period runs from the date of practical completion (substantial completion on engineering contracts), shown on the completion certificate issued by the project team. The duration of the period is that stated in the respective contract document which is normally six or twelve months, depending on the standard form of contract used.

At the time the practical completion certificate is issued a list of outstanding works is provided to the contractor which are to be completed as soon as possible during the maintenance period by the contractor.

All remedial work must be carried out within the defects maintenance period specified in the contract document, or within other specified periods after its expiration. All work must be carried out at the contractor's expense if, in the opinion of the project team, it is due to the use of materials or workmanship that are not in accordance with the contract or is due to the neglect or failure of the

contractor to comply with any other obligations under the contract. Otherwise, the value of the work is paid for as additional work.

If at the end of the period of maintenance, any such works remain to be executed, then the client organisation is entitled to withhold payment to cover the cost of the work. If contractors fail to complete any defects notified to them, within the stipulated periods of time, it should be the responsibility of the project manager to arrange completion by other means, in accordance with the terms of the appropriate contract, and to ensure recovery of costs from the defaulting contractor concerned.

Following the issue of a certificate of practical completion the priorities must be to complete the following within the shortest practicable time, allowing for any time period stated within the relevant contract document:

- arrange inspection before the end of the defects liability period stated in the contract. Rectification of any defects discovered and certification accordingly
- preparation and agreement of contractor's final account(s), final negotiation and settlement of claims
- agreement of final costs and submission to the client organisation's members or board for final approvals
- post completion project assessment.

Standard forms of contract generally in use require contractors to rectify defects in construction for which they are clearly liable and have appeared during the specified maintenance or defects liability period. The CIB's *Constructing Success* states that the project sponsor should remain involved during this time to co-ordinate the reporting of defects to the client project manager, and to arrange access for the remedial work to be undertaken.

In order to safeguard the client organisation against default by the contractor, either in completing the works or carrying out the remedial measures, sums are retained from interim payments processed to the contractor. The normal procedure is as follows:

- a fixed percentage (eg 10%) is deducted from each valuation until a maximum limit is reached (eg 5% of the contract sum)
- retention remains at this maximum limit until substantial completion of the works is achieved
- upon substantial completion of the works, half of the retention money is released
- upon issue of the maintenance certificate, the balance is contractually due for release.

The final retention sum should only be released when the defects have been cleared, the contractor's final account agreed, and the final certificate issued.

Defects Liability Inspection

It is essential that inspections at the end of defects liability periods take place within the periods stated in the relevant contract documents. Otherwise, the client organisation will risk being unable to hold the contractor as being responsible for rectifying any defects for which they are liable. Details regarding contacts within the organisation, for arranging access to premises for inspections at the end of the defects liability period, should have been included within the documentation supplied to the client project manager at the time of his or her appointment. There should be an adequate procedure to ensure that the project manager refers any problems of access direct to the project sponsor for action.

Following the end of the defects liability inspection, the list of any defects discovered should be submitted to the contractor for rectification within a stipulated period of time. A copy of such a list should also be provided to the project sponsor for information, and as an indication that the project manager is adhering to the terms of his or her agreement.

Adequate controls should exist to ensure that at the expiry of the defects liability period, either a certificate, or a report of the current situation, is submitted by the project manager to the project sponsor. Project managers found to be in default of such procedures, should be held responsible for the arrangements and costs of rectifying defects in instances where recourse to the relevant contractor has been lost due to non-adherence to the conditions of contract.

At the expiry of the defects liability period, irrespective of whether outstanding defects have been rectified, the project sponsor should ensure that all documents required from the project team are received, eg as built drawings, maintenance schedules etc. Such documents should be immediately forwarded to the section of the organisation that is responsible for maintaining the respective premises. The system should provide for reports of any subsequent maintenance or operating problems to be submitted immediately to the project sponsor.

Penultimate Fee Accounts

Following completion of a scheme members of the project team may be entitled to submit further interim fee accounts dependant on the terms of their initial appointment. The system should require consultants to supply copies of the relevant certificate of completion, and the latest valuation, with their respective fee submissions to ease reference by the checking officers within the organisation and assist prompt payment.

Before such fee submissions are processed for payment by the checking officers the scheme should be examined to ensure that the respective consultants have completed all that is required of them at this stage, eg the architect has issued adequate extensions of time or certified the deduction of liquidated damages, engineers have issued any required test certificates. Reference should also be made to the respective consultants file to ensure that there are no outstanding problems on the scheme for which the client may wish to withhold payment.

Contractor's Final Accounts

At the end of, or during, the maintenance/defects liability period the contractor's final account is produced. Depending on the form of contract used it is either submitted by the contractor or compiled by the quantity surveyor at the request of the architect or contract administrator.

The checking and agreement of the contractor's final account tends to be a very time consuming task. It is rarely completed until well after the end of the maintenance/defects liability period. In fact, there are occasions when a final account is not produced at all and alternative arrangements have to be initiated in order to reach a financial settlement with the contractor concerned.

The preparation of the final account should not be regarded as a separate and self-contained operation. Progressive measurement and evaluation are essential for the efficient management of any construction project. The preparation of the final account should be continuous from the outset, with proper and precise measurement at the time of the events, and in consequence, the time limit set by the form of contract used should be achievable subject to the proper co-operation of the contractor.

Ideally, there should be proper controls in place during the contract period to ensure that when the final account is produced it is complete and accurate. Such controls will ensure that full documentation is available for examination at final account stage and will make the agreement and clearance of the account no more than a formality, since the majority of items will have been checked during the contract period. Traditional problem areas, such as claims, will also have been considered and settled.

Organisations tend not to expend scarce resources on continuous monitoring and controls, consequently the production and agreement of the final account can become a major issue.

The project manager should submit regular reports indicating the current position regarding settlement of the final account and claims, together with details of the estimated final costs. The project manager should be required to advise the project sponsor of any problems regarding settlement as soon as possible, with proposals for dealing with any problems that may have arisen. The project sponsor should ensure that every effort is made to satisfactorily conclude settlement within the period stipulated in the relevant contract or otherwise within a prescribed or reasonable period. Although pressure should not be applied to settle at any price neither should settlement be allowed to drift on for years as has often happened in the past.

Despite CIPFA's encouragement to adopt a systems-based approach to contract audit work, many organisations still require contractor's final accounts to be audited in detail prior to the release of the respective final payments. For many years the construction industry has raised concerns about the delays caused by the audit process in the issue and/or honouring of final certificates.

In some instances either the contractors, or the professional officers or consultants, have failed to process final accounts with appropriate speed. The involvement of audit in the system, apart from detracting from the auditor's independence, can only further delay the final account process.

The importance, in the interests of public accountability, of properly conducted audit processes is recognised. However, whilst public sector organisations have statutory obligations to operate internal audits, these processes should not entail the withholding of money, especially for long periods. This is bad practice and should be firmly discouraged. Delay in payments, for whatever reason, can only increase the cost of building.

The standard forms of contract set out clear timetables and other provisions governing the arrangements for the payment of final certificates. To enable auditors to play their part it is incumbent upon contractors, architects, consulting engineers, quantity surveyors, and others to ensure that they adhere to those arrangements and submit completed final accounts in good time. It is clearly desirable that neither standing orders nor financial regulations (standing financial instructions) should have the effect of impeding this.

Final Fees

Throughout the duration of the post contract period any claims from members of the design team for additional fees for additional services for which prior approval was not obtained in writing must be strictly refused as not being in accordance with the terms of the original agreement.

Irrespective of whether the main contractors final account is unsettled, provision should be made for final settlement of any consultant engineers fees in instances where the reason for non-settlement of the main final account is outside the control of the respective engineer. In such instances, the project manager should be requested to confirm to the project sponsor that the engineering consultancy fees may be settled without detriment to the main contract.

Once final client approval has been obtained the final certificate to the contractor may be issued, and final fee accounts submitted and paid in respect of any consultants that have not already been fully paid.

Final Costs Report

Once the contractor's final accounts and any claims have been settled, all details should be submitted to the project sponsor, together with a cost appraisal of final expenditure, and explanations for any increases over the original sum approved. Specific approval for such increases should have already been obtained.

Latent Defects

While standard forms of contracts provide for dealing with defects that arise during the respective defects maintenance periods, for many years there has been substantial discussion on how to satisfactorily deal with the problem of latent defects. Latent defects are defects that are not apparent at the end of the defects maintenance period, but arise several years later. As a general rule designers and contractors remain liable for defects that arise as a result of a breach of contract. The discussion has centred on how long, after completion of the works, can they continue to be held liable.

One answer has been for employing organisations to obtain latent defects insurance policies in respect of the building projects concerned. Latent defects insurance is a form of first party professional indemnity insurance taken out by a building owner that covers individual projects against specified kinds of damage.

Coverage is provided for a fixed term after practical completion, which is generally ten years from the date of practical completion although reduced periods are normally applied to certain elements such as mechanical and electrical services. Policies offer protection against losses caused by defects in design and poor workmanship or materials used in construction. Policies can be extended, by payment of additional premiums, to cover rent loss (if because of the damage, the building cannot be occupied) and consequential loss.

A single premium is paid at the commencement of the project. The distinct advantage, compared with normal professional indemnity policies, is that it removes the need for clients to check whether consultants continue to renew their policies long after commissions have been completed. It also removes the uncertainty for the consultants themselves.

In 1997 research by the CIB showed a consensus in the construction industry in favour of a change in out-dated and clumsy legislation governing liability for latent defects in construction work. A working group on behalf of the CIB proposed the fixing of a single ten year period of limitation. The group concluded that insurance was a better mechanism for dealing with latent defects than the existing system of fault based restitution. Following a detailed review of the current cover offered by the market it specified the type of product and scope of cover it felt was required.

Progress has been achieved through bilateral discussions between the Association of British Insurers and the British Property Federation, from whom a final report is expected by the end of 1999. The report is not expected to repeat earlier suggestions for mandatory latent defects insurance, as there is little enthusiasm for such compulsion in any parts of the construction industry.

The market for latent defects insurance has been developing in an encouraging direction and there is evidence of new policies being launched which appear to better meet the needs of clients and the industry.

(b) Learn from Experience

The project sponsor should have systematically evaluated feedback from the project during its development. He or she should have evaluated the project at set significant project milestones. The evaluation should monitor the effectiveness of procedures, review the scheme performance and the performance of all the parties concerned in the contract. This will result in prompt decisions being taken to achieve improvements where necessary. The auditor should ensure that there is a system to collect all relevant information on all stages of the project, and that it is evaluated and used to improve performance and help to obtain value for money.

Following completion of a project it is necessary to undertake a thorough, and formal, post completion review. The post completion review of a project is frequently neglected by project teams, who will often see their priorities lying elsewhere. The teams tend to be split up or moved on to the next scheme as soon as possible after completion of the project.

The success of future projects could be improved by the results of constructive analysis of performance on completed projects. The importance of carrying out a full and effective post completion review cannot be overstressed. It is an essential component of an organisation's strategy for achieving good value for money from the contract process. It is vital, therefore, that the client project sponsor is required to ensure that a review is undertaken, with the assistance of the client project manager, as soon as practically possible following completion of a project. There should be four distinct elements in this process. They are:

- the provision of information to the user to ensure that the optimum use of the facilities provided is achieved
- the evaluation of information obtained during the previous stages of the contract to ensure that lessons may be learnt for future projects (the object of such lessons must be the attainment of economy, effectiveness and efficiency)
- the operational review of the project
- the review of the control procedures.

Provision of Information

It is essential that all information necessary for the operation and maintenance of plant is provided to the user. This information will include recommendations regarding servicing, maintenance and operating instructions to ensure that optimum use is made of energy and that the life of the equipment is maximised.

Consideration should be given to examining any design or other changes found necessary during the execution of the contract, which could help on future and possibly current contracts. The underlying reasons for any changes should be determined.

A detailed analysis of the financial outturn of each contract should be prepared giving information on variations, claims and price fluctuations. It is inevitable that during the course of any construction contract there will be variations, but the causes should be examined and analysed and corrective action taken to avoid similar problems on future schemes. Claims should also be investigated in depth, and the reasons for any delays caused by purely administrative problems reported in detail so that they can be improved in the future.

A building or civil engineering scheme will have been introduced into the organisation's capital programme to meet a given requirement; this could be a new school to meet future education needs, a new sewerage treatment works to cater for increased population, or a new road scheme to reduce traffic congestion.

The aim of the project review should be able to determine:

- whether the project has or is likely to succeed in achieving the expected benefits (taking into account the final cost)
- whether the criteria adopted for justifying the adoption of the scheme at feasibility stage were reasonable (taking into account up-to-date information).

This should provide, as a minimum, for the following investigations to be undertaken:

- compare the original proposals to the completed scheme
- determine whether the scheme has met the design proposals
- compare final cost with the original estimate
- explain reasons for any discrepancies
- compare timings of the scheme to the original proposals
- investigate causes of delay, late starts, and extensions of time
- examine feasibility study of the scheme and determine whether circumstances have changed to the extent that the scheme cannot now be justified
- examine revenue forecasts, if applicable to the scheme
- determine whether running costs are within criteria set in the estimates
- consider the impact on further projects of any findings in this project review.

Performance of the Contractor

A review should be undertaken of the performance of the contractor to assist in the future selection of tenderers. Many organisations have approved lists of contractors. Before admittance to the list contractors are subjected to rigorous financial and technical vetting which includes, as an integral part, the post completion review of a contractor's performance on previous contracts.

The performance review will generally address the following questions.

- Was the scheme completed on time?
- Was the cost within the initial contract sum, discounting contract price fluctuations?
- Was the scale of variations, and the contractor's attitude to them reasonable? Were the claims made reasonable and was the contractor 'claims conscious'?
- Was there a good working relationship between the contractor, the supervisory officer and the employer?
- Was the standard of workmanship good?
- Was there an adequate level of supervision?
- Were there any delays in obtaining the right plant, machinery and materials at the appropriate time?

This can be assisted by the completion of a standard appraisal form on completion of each scheme. An example of such a form is provided at Appendix 5.1.

Performance of the Project Team

The success of a project is probably more dependent upon the performance of each member of the project team than upon any other party. It is essential, therefore, that their performance should be assessed. The criteria for this assessment should be the same as for the contractor, but the following matters should also be considered:

- adequacy and economy of design
- ability to meet the project's programme requirements
- willingness and ability to liaise
- flexibility of approach
- ease of communication
- scale fees and time charges
- competence of staff, their number and turnover
- internal staff relations
- professional competence
- standard of supervision of contract (if applicable)
- extra costs incurred through delays in providing drawings and information etc.
- relationships with the contractor
- relationships with employer's representatives
- attitude towards disputes and queries – did they tend to side with the contractor?

This can be assisted by the completion of a standard appraisal form on completion of each scheme. An example of such a form is provided at Appendix 5.2.

Running Costs

Most capital schemes will involve substantial running costs. In particular, expenditure on salaries, energy, maintenance and rates, should be compared with projected costs in the feasibility studies and any major discrepancies identified. When appropriate, if budgeting system faults have resulted in incorrect estimating, system improvements should be recommended. The auditor should ensure that the system caters for the following major areas:

- the technical performance capability of items of plant and equipment
- the adequate monitoring of plant and equipment; this is essential so that decisions on future selection of similar items for new projects can be made on an informed basis (Practical experience is of greater value than manufacturers' promises)
- the technical performance reliability of plant and equipment.

At the feasibility stage, important elements in the decision to proceed with the project would have been the predicted revenue, and the running costs. Any large variances in either income or expenditure should be subjected to detailed examination. It must be established whether:

- the demand for the service has fallen short of that anticipated
- the energy costs are higher than forecast
- maintenance is required more frequently than expected.

Key Performance Indicators for Construction

In response to a recommendation of the Construction Task Force led by Sir John Egan, key performance indicators for the construction industry were launched in 1999. Published by the Construction Best Practice Programme, the indicators reflect the range of performance achieved on all construction activity in 1998.

The purpose of the indicators is to benchmark a project or company against the range of performance achieved across the industry. It is suggested that clients ask potential suppliers to provide information about how they perform against some or all of these indicators as an aid to assessing their suitability for a project. There are ten headline performance indicators, seven concerning project performance and three concerning company performance, as follows:

Project Performance

Indicator	Definition
Client satisfaction – product	On a scale of 1 to 10, how satisfied the client was with the finished product/facility.
Client satisfaction – service	On a scale of 1 to 10, how satisfied the client was with the service of the consultants and main contractor.
Predictability – cost	<ol style="list-style-type: none"> 1. Design cost – Difference between the estimated and actual cost of design. 2. Construction cost – Difference between the estimated and actual cost of construction.
Predictability – time	<ol style="list-style-type: none"> 1. Design time – change between the estimated and actual duration of design. 2. Construction time – change between the estimated and actual time required for construction.
Defects	On a scale of 1 to 4, the degree to which handover of facility was affected by defects.
Construction cost	Percentage change in the construction cost, excluding inflation, of a 'standard project' [Note 1] from 1997 to 1998.
Construction time	Percentage change in the time to construct a 'standard project' [Note 1] from 1997 to 1998.

Note 1. A 'standard project' is a method of comparing projects on a like for like basis, eliminating differences due to location, inflation, function, and size.

Company Performance

Indicator	Definition
Safety	Reportable accidents per 100,000 employees per year.
Profitability	Pre-tax profit as a percentage of sales.
Productivity	Turnover per full-time equivalent employee.

The Construction Best Practice Programme intend to produce the performance indicators annually.

The indicators can be used by organisations within the public sector for measuring the performance obtained on their contracts. For example, by comparing the average change in the cost of their construction contracts from pre-tender stage to completion, with that achieved nationally as stated by the appropriate indicator.

In addition, by asking project sponsors to score on a scale of 1 to 10 their “overall satisfaction with the product of a project” and “overall satisfaction with the service provided”; levels of satisfaction within the organisation may be compared with that experienced nationally.

5.1 The Audit Approach

An audit review of completion and post contract evaluation procedures should focus on the following issues.

- (a) Do project briefs include details of the client’s requirements for taking over completed work?
- (b) Are the client’s arrangements for taking responsibility for completed facilities, including commissioning procedures, and maintenance and security arrangements, satisfactory?
- (c) Are defects liability inspections properly administered to ensure that any defects that are the responsibility of the contractor are corrected at no additional cost?
- (d) Do procedures ensure that all documents, such as ‘as-built drawings’ and maintenance schedules are received by the client from the project team?
- (e) Is positive confirmation that consultants have satisfactorily completed their commissions, required before final fee payments are processed?
- (f) Are contractors’ final accounts produced, and agreed, as soon as possible after the completion of the respective works?
- (g) Do procedures ensure that final cost reports are produced promptly, and that they sufficiently explain any variances in cost from that originally approved?
- (h) Does the organisation have an effective system to collect, evaluate, and use information from all stages of each project, to improve future performance?
- (i) Are project teams required to undertake thorough post completion reviews?
- (j) Does the organisation examine whether each completed project has succeeded in achieving the benefits that were expected at the initial design stage?
- (k) Is the success of each project measured by comparing the outcome with the success criteria established at pre-contract stage?
- (l) Are there adequate procedures for reviewing the performance of the contractor and each member of the project team?
- (m) Have actual running costs been compared with those projected at the feasibility stage, and explanations sought for any significant variations?
- (n) Is the performance achieved on the organisation’s contracts, compared to that achieved nationally as stated within the Construction Key Performance Indicators?

Appendix 5.1

Contractor: Post Contract Performance Appraisal

Contractor _____

Project _____

Type of Project _____
(e.g. refurbishment)

Date of issue of practical completion _____

	Good	Satisfactory	Poor
1. Site organisation			
2. Head Office organisation			
3. Relationship between site management and supervising officer/contract administrator.			
4. Quality of workmanship			
5. Contractor's observance of health and safety at work requirements			
6. Control of sub-contractors			

	Delete as appropriate	Comment
7. Did contractor have any difficulty in providing adequate labour and/or plant?	YES	NO
8. Did the contractor sub-contract a large proportion of the work?	YES	NO
9. Were the works completed on time taking into account extensions granted?	YES	NO
10. Did the contractor complete any remedial works without being unduly pressed?	YES	NO
11. Did the contractor make unreasonable claims?	YES	NO
12. Were contractual claims settled satisfactorily?	YES	NO
13. Were final accounts settled satisfactorily?	YES	NO
14. Did the contractor reprogramme or reschedule works efficiently where problems were encountered or where extensions of time were granted?	YES	NO
15. Would you employ this contractor again?	YES	NO
16. Any further comments		

Signature _____ (Project Manager)

Date _____

Appendix 5.2

Consultant: Post Contract Performance Appraisal

Consultant _____

Project _____

Type of Consultancy
(e.g. building surveying) _____

Date of practical completion _____

	Good	Satisfactory	Poor
1. Organisation.			
2. Quality of pre-contract service.			
3. Quality of post-contract service.			
4. Financial control.			
5. Cooperation with client / project sponsor.			
6. Cooperation with other consultants, relevant persons and bodies.			
	Delete as appropriate		Comment
7. Were services generally completed on programme in both pre-contract and post-contract stages?	YES	NO	
8. If no, were the circumstances outside the consultant's control?	YES	NO	
9. Were any parts of the commission sub-let?	YES	NO	
10. Did the consultant employ adequate staff of the required quality?	YES	NO	
11. Did the partners supervise the project adequately?	YES	NO	
12. Were any unreasonable claims for additional fees, or requests for extensions to the programme, submitted?	YES	NO	
13. Would you engage this consultant again?	YES	NO	
16. Any further comments			

Signature _____ (Project Manager)

Date _____

Signature _____ (Project Sponsor)

Date _____

6. Appointment of consultants

Procedures for the selection and monitoring of consultants are considered within chapters three, four and five. This chapter looks specifically at the terms and conditions of their appointment, and at the means by which they are briefed by clients.

The Need for Construction Consultants

An organisation may need to engage consultants for a variety of reasons. It may be that the organisation has no directly employed staff and will, therefore, have to commission consultants for all professional work. Other organisations, that have at least a minimum complement of in-house professional staff, may still need to engage consultants for the following reasons:

- a temporary shortage of internal professional staff, or for certain specialised work
- fluctuations of building programme and the necessity to meet 'target dates' for tenders
- to deal with the expected surpluses that exceed the long term minimum levels of work, ie to avoid staff redundancies on a contraction of work.

Temporary Shortage of Internal Professional Staff

Often an organisation needs to obtain advice regarding the feasibility of carrying out certain work of a specialised nature but does not employ staff with the requisite expertise for the particular function. In such cases, as an initial step, specialist firms may be brought in to undertake feasibility studies. If this is done, it should be without any guarantee of extending the appointment to cover any consequentially approved project.

On the other hand, an organisation may have insufficient numbers of technical staff to cope with the level of programmed work due to temporary staff vacancies. Alternatively, for a variety of reasons an organisation may incur an unexpected short term increase in construction work, or may suffer from unexpected further staff vacancies which cannot be filled immediately. It may then be necessary for the organisation to seek additional professional assistance from outside.

Fluctuations of Building Programme

The implementation of a capital programme may not rest solely on the organisation itself. Apart from the normal constraints imposed by government departments through the capital expenditure control system, levels of construction activity are directly influenced by the government in an attempt to regulate public expenditure. Awareness of the possibility of a sudden reduction or temporary freeze on developments encourages an organisation to be prudent as to the number of technical staff it employs direct.

The government has often attempted to stimulate the construction industry by releasing funds to the public sector at short notice, for example during a recession, and as a result has generated a sudden upsurge in work. In such instances, organisations have had to engage outside firms to supplement their own technical staff.

Technical sections within many organisations, prompted by previous government legislation, have now been downsized or outsourced. Therefore, it is expected that any future rise in construction activity within the public sector, due perhaps to exploring such approaches as partnering and the private finance initiative, would increase the need for consultants by these organisations.

Expected Surpluses

The size of any organisation's capital programme will fluctuate from year to year. Clearly, any attempt by an organisation to fully staff a capital programme from direct resources will create a surplus of professional staff during periods of low activity. An organisation may, therefore, decide to directly employ only the required number of staff that is adequate to meet the minimum expected long term level of programmed work in order to avoid the cost of redundancies during periods of relatively low activity. It is, therefore, desirable for any organisation to appoint consultants to deal with the peaks in workload, and so achieve managerial flexibility for the economic use of internal staff.

Organisations with a large programme of works, and a complement of in-house technical staff, will probably find it beneficial, when selecting projects to be commissioned to consultants, to retain the more major schemes in house. Generally, more professional work is required, per £ of fee income, in projects of small magnitude or which involve alterations or improvements to existing structures. The reason is that in all large works there is a certain element of repetition of construction design and therefore the hours expended are proportionately less. There is also a 'nuisance value' inherent in smaller jobs, especially those that are predominantly alterations and repairs. Economies of scale, in terms of hours on major schemes, are only reflected by a reduction in the relevant consultants' fees scales up to a certain point which varies according to the type of consultants concerned.

Appointment

Methods

The methods by which consultants can be appointed usually fall into one of the following categories:-

- a letter of appointment
- an official order
- a 'Memorandum of Agreement', as published by one of the professional institutions
- exchange of formal agreements / under seal.

Provided all the relevant documentation is complete and free from ambiguity, there is little difference between the above four methods of appointment. A formal agreement does, however, provide the advantage of a period of twelve years, rather than six, during which action can be commenced against a consultant in the event of default. The Limitation Acts would preclude proceedings in contract against a consultant for a design fault where a writ has not been issued within these periods. In order to provide at least two years of user service, following completion, it is suggested that any project that is not expected to be completed within, say, four years of final sketch plan stage should be the subject of a formal contract.

It would be prudent for organisations to obtain formal agreements for projects where the construction contract will be executed under seal. This would ensure that the statutory limitation period is the same for both the consultant and the contractor since any legal action will probably be commenced against both, eg against the contractor for defective workmanship and against the consultant for defective supervision.

When considering whether a formal agreement is necessary, it will be necessary for the organisation to consider other potential legal liabilities; in particular, where an action could be brought by third parties beyond the six year limitation period. For example, under the Right to Buy provisions of the Housing Act 1980 local authorities have a ten year liability for undisclosed defects. If the surveys were carried out by consultants under an agreement under hand the organisation could be liable to the purchaser but without redress against the consultant.

There is a danger that if an appointment is confirmed by letter, which would be the case in respect of relatively minor appointments, that the letter does not conclusively cover all aspects of the commission. Any uncertainty associated with a vague letter of appointment is clearly unsatisfactory if the client organisation and the consultant are to achieve a harmonious and successful working relationship including submission of correct fee accounts and, in return, prompt payment. It is essential that if a letter of appointment is to be issued, that it adequately covers the following issues:

- the identification, by date and description, of the relevant conditions of engagement and fee scales that are to be applied
- the scope of the commission
- the extent of technical and other responsibilities
- compliance with the organisation's regulations, eg standing orders
- the requirements for supervision and liaison
- procedures for authorising and monitoring of variations
- cost limits and controls
- the appointment and collaboration with other consultants
- requirements as to insurance cover
- access by officers of the authority to contract records and the handing over of these records on completion.

Terms and Conditions

Irrespective of the methods of confirming the appointment, the need for the respective terms and conditions to be clear cannot be over emphasised. The terms on which consultants are engaged should be made clear from the outset so as to avoid difficulties of interpretation as to the extent of services to be delivered, and exactly how much and when payment will be made. In this respect the District Audit/ National Building Agency's 1983 publication entitled *Control of Capital Projects* provided sound opening advice which is still relevant today:-

“External consultants should be appointed on the basis of written terms of engagement which state clearly and unambiguously the services that are to be provided, and their remuneration for them; if this is not done, the scope for misunderstanding and disputes will be considerable”.

The recognised duties and responsibilities against various levels of service are set out in the standard terms of engagement published by the various professional institutions. However, it must be borne in mind that these standard conditions of engagement are produced by the professions and are indicated as being 'recommended' or 'as a guide'. They are not compulsory and can be amended by the client organisation prior to appointment provided the consultant's agreement is obtained.

Examples of where amendments could be considered are as follows:

- *Access to Consultants Records*
It is wise for the official terms of engagement to include provision for the consultant's records to be available for inspection by the client. This is in the organisation's best interest and strengthens their position, particularly in instances when charges are submitted on a time basis.
- *Copyright*
Provision should be made for the organisation to have full right to the consultant, without payment, to reproduce and use any of the reports, drawings, designs, specifications, or models prepared by the consultant.
- *Non-Assignment*
Consultants should be required to obtain the written agreement of the client before assigning or transferring the benefits and/or obligations of the agreement to a third party.
- *Disbursements.*
To avoid the time expended by the consultant, and the organisation, in producing and checking expense claims, a lump sum or percentage fee should be agreed at the time of the initial appointment.
- *Timescales*
Agreements should contain timescales, or target dates, for completion of each work stage creating provisions for both parties to claim damages for any breaches of contract.
- *Abandonment and Postponement*
Adequate provision should be made concerning abandonment and postponement. For example, describe exactly how fees will be calculated for services provided if the scheme is

abandoned or postponed, and also the extent of any abatement if the scheme is subsequently re-commenced.

- *Prior Authority for Additional Services*

Consultants should be required to obtain prior authority in writing from the client before commencing any additional services. The agreement should also confirm that, in the absence of such prior authorisation, no additional fee will be paid.

- *Specialist Consultants*

Conditions of engagement for specialist consultants should be clear as to lines of responsibility and communication with contractors and other consultants engaged on the project. The specialist consultant, while not necessarily being responsible for the issue of variations or valuations, should be required to advise a named consultant, the quantity surveyor, and/or the client on variations with regard to design and methods of construction and on the valuation of such variations. Clear lines of responsibility for the design should be laid down so that there is no overlap with the contractor's responsibilities, and no argument that extra duties are involved as the contract progresses. This is in order that an organisation does not pay fees for design work twice, once to the consultant and again to the contractor or sub-contractor.

When appointing consultants there is a need to consider a variety of issues that may arise later. Several standard conditions of engagement provide for additional fees to be charged for services that are over and above those contained within the normal service. However, the conditions are silent on how such additional fees are to be calculated leaving the matter open for agreement as a percentage lump sum or time basis. The following issues, therefore, need to be considered at the time of appointment in order that they may be adequately accounted for in the terms and conditions to prevent any disputes at a later stage. Among the issues to be considered are:

- *Delays in Building Operations*

Normally, consultants will be entitled to extra fees in the event of delays in completion of the construction works. Such extra fees should be restricted to additional work, such as site visits, valuations, undertaken during the period of 'unauthorised delay', ie from the expiration of the authorised contract period (including extensions of time) to the time of practical completion. [Any extra fee paid to the consultant should have been provided for, as an estimate, within the rate of liquidated and ascertained damages previously calculated and inserted in the construction contract].

- *Dealing with Contractual Claims*

Terms and conditions should stipulate that any additional fee charged for dealing with a contractor's claim should be on a time basis. This will avoid an excessive fee being paid by way of a percentage on the value of a claim which involved only a small amount of work by the consultant. To avoid duplication in such instances, the organisation should ensure that the basic percentage fee is to be levied on the net value of the contractor's final account, excluding the claim.

◦ *Bankruptcy or Liquidation of Contractor*

Additional fees, in the event of liquidation or bankruptcy of the contractor, should be required to be submitted on a time basis and be restricted to the following:-

- (a) preparing a specification of outstanding work
- (b) negotiating with replacement contractor, or re-tendering
- (c) advising on possible courses of action and arranging possession by the new contractor
- d) preparing a notional final account in order that any extra costs incurred by the client due to the liquidation can be identified.

Fees in respect of the original and completion contracts should be required to be submitted on a percentage 'partial services' basis. [NB. Any extra fees paid under this heading should be included within the claim against the original contractor].

◦ *Time Charges*

Hourly time charge rates should be stated in the agreement and should only be used as the basis of fee calculations when it is not possible to apply a percentage in accordance with any other conditions of the engagement. Any approval provided by the client for work to be undertaken on a time basis, should state an estimated financial fee limit above which further approval should be required to be sought by the consultant prior to the service being continued. Provision should be made for the submission of adequate records as a matter of course to support each fee application. The time charge rates should be specified for each level of staff, and the following is a suggested analysis of the types of activity at which specific levels of personnel might be appropriate:

<i>Senior Partner</i>	Representing the organisation externally
<i>Partner</i>	Presentations of reports to board, committee etc.
<i>Senior Professional</i>	Non-standard negotiations with third parties.
<i>Professional</i>	Additional professional work of a day to day nature.
<i>Technician</i>	Additional technical work of a day to day nature.

◦ *Partial Services*

Agreements should be very specific as to how fees are to be calculated for partial services. Fees should be charged for completed work stages, using the percentages stated in respect of payments on account, and based on the lower of the previous estimated cost supplied by the consultant or agreed cost limit. Fees for partial completion of the current work stage should then be on a time basis. For example, if consultants are appointed to prepare a scheme within a financial limit of say £100,000, it is of no use to their client to provide a scheme that would attract a higher cost of say £150,000. In such a case, the client should pay a fee based on the budget of £100,000 and not on the higher tender sum. In exceptional circumstances, for example where the scheme does not progress any further, the client may refuse to pay any fee at all. The emphasis must be on the consultant to keep the client fully informed of current estimated costs, including allowances for any additional instructions received from the client, and how they compare to the agreed cost limits throughout the duration of the commission.

o *Recommencement of previously abandoned schemes*

Any previous documentation or service of use to a consultant, when a scheme is resumed should result in a reduction of the fees charged. The client should ensure, when abandoned schemes are recommenced, that the original consultant is approached first in order that any possible fee reductions are obtained.

The Brief

Objectives

The importance of a clear, well thought-out brief cannot be overemphasised. Failure to prepare a proper brief is one of the major causes of delay and additional expenditure. The fundamental purpose of the brief is to convey to the members of the design team the wishes and intentions of the client, to enable them to grasp the specific objectives of the project, together with any constraints upon the design, and to proceed with the design without making any unnecessary independent assumptions. Some assumptions may be inevitable; they should be clearly agreed and specifically recorded.

Conscientious attention to the brief not only provides the design team with a clear statement of its objectives, but also obliges the client body to clarify its own requirements as far as possible before the commencement of work on detailed design.

Development

For a simple or straightforward project an adequate brief could be given to the design team in a single step. However, for a project of any size or complexity the brief, as finally agreed, is likely to be the product of an evolutionary process.

Although the inclusion of the scheme within the capital programme implies that the justification for it has been established, the initial step would be consideration of the need for further feasibility or other studies. Given a positive outcome from any such studies, an initial brief can be given to the design team, on the basis of which it can begin to explore the various ways in which the client's needs can be satisfied within the proposed budget. This exploratory work might indicate that the original objectives are not feasible in relation to the finance available, or reveal other constraints not previously identified, in response to which the client's requirements may be modified or expressed more precisely.

Eventually a preferred outline scheme will emerge, which satisfies quantifiable requirements and is likely to be approved by the relevant authorities. The final brief is compiled and agreed on the basis of this preferred outline.

The development of the brief is likely to be an expensive procedure in terms of in-house staff time and/or consultants' fees, particularly if it entails the valuation of alternative approaches. However, this will be repaid amply if it enables the client to make firm decisions that do not subsequently need to be changed. In this connection, the client must avoid wholesale changes of mind at any stage; any such decision should be taken in full view of the likely penalty in terms of cost, delay or inherently unsatisfactory compromises in the design.

Essential Information

The organisation must ensure that the design team is provided with all the necessary information. In particular, the initial brief should include the following essential items:

- the purpose of the project, together with any necessary background information
- the scope and content of the project
- the required timing of the project, and an assessment of the consequences of failure to meet time targets
- the expected budget constraints.
- town planning considerations.

For a building development the client should also provide:

- a social brief indicating how and by whom the project is to be used
- a schedule of accommodation required
- a statement of the activities and functions to take place in the development.

An organisation with a regular programme of particular types of construction should consider the use of check lists to ensure that all relevant areas have been covered in the brief.

Although clients' objectives must be as firm as possible at the point when the brief is finalised, it is almost inevitable that changing fashions will eventually modify their requirements. Therefore, flexibility in use should be a primary objective written into the brief. In particular, the opportunity for changes within the external envelope should be a priority requirement for large buildings such as schools, sports centres or office accommodation.

Standard Briefs

For an essentially repetitive programme consideration should be given to the preparation of standard briefs dealing with the common features, such as heating and hot water systems in housing developments. Although these would have to be adapted and supplemented as necessary for individual projects, they would simplify the compilation of the brief, and should facilitate standardisation of key elements, with potential benefits in subsequent maintenance and repair.

Monitoring

Once a consultant has been appointed it is essential that an organisation exercises general oversight of the consultant's work as part of the wider system of overall financial control. Throughout a commission, the performance of consultants should be closely monitored to ensure that each stage is completed satisfactorily and in accordance with pre-defined time targets.

All consultants should report to a named officer within the organisation, such as the project sponsor suggested by the CIB, who will be the authority's liaison officer. Such an officer would be responsible for ensuring that all consultants progress satisfactorily with their commissions. The officer's task will be to ensure that the client has supplied a full and adequate brief and that all relevant information has been produced to enable consultants to execute their work without confusion and delay.

The named officer will transmit cost information between the client and the consultant and will ensure that ultimately the commission is completed in accordance with terms, conditions and most importantly, the standards, specified in the documents of appointment.

It is stressed, however, that the organisation's role is to monitor the work and progress of consultants and not become so far involved in detailed checking, or second guessing, their work so as to dilute their responsibilities. If something goes wrong, or work is not satisfactory, it is important that the consultant is held fully responsible and is unable to point to actions of the organisation.

General oversight should include ensuring that:

- the terms and conditions of each consultant's appointment are sound and are agreed in writing
- the scope of the work required is adequately defined and explained
- the fees to be paid are reasonable, eg by seeking competitive fee tenders, and ensuring that abatement is obtained whenever necessary, eg where some work has been done earlier which merits a reduction in fees, where repetition of work will occur during the commission, or only partial services are being performed, etc.
- fee expenditure is contained within sums approved by the client
- the consultant complies with the organisation's requirements, eg standing orders, financial regulations etc. particularly in respect of tendering procedures
- each consultant complies with their obligations under the terms of their appointment, and the relevant form of building contract
- interim and final fee claims are adequately checked prior to payment, including making sure that they are in accordance with the relevant terms of the appointment and that evidence exists to indicate that the appropriate work stage has been completed and/or progress reached by the building contract, eg valuation of work.
- reasonable evidence has been submitted to support any additional items, eg detailed cost estimates, negotiation of claims, etc.

- any fees already paid in respect of feasibility studies, preparatory reports etc. are treated as payments on account where appropriate and any possible reductions in the scale fee have been negotiated and allowed, ie repetitive work, partial services, re-activation of an abandoned scheme, etc.

6.1 The Audit Approach

When reviewing the terms and conditions of a consultant's appointment, the auditor should concentrate on the following issues:

- (a) Has the need to appoint an external consultant been demonstrated and is it justified?
- (b) Has the appointment been confirmed in writing? Is it appropriate to the type of commission and in accordance with the regulations of the organisation, eg official order, formal agreement under seal?
- (c) Do the terms and conditions of the appointment clearly state the services that are to be provided by the consultant and the respective fees that are to be paid in return by the organisation?
- (d) Are the terms and conditions based on standard terms published by the relevant professional institute?
- (e) Are the terms and conditions complete and provide for every eventuality, eg delay in construction operations, abandonment, termination etc.?
- (f) Has the consultant been provided with a clear and complete brief and all necessary information by the organisation?
- (g) What information and progress reports are expected from the consultant?
- (h) How is the work of the consultant to be monitored by the organisation, and how are fee invoices to be checked?

Appendix 6.1

Architects

An architect was defined in 1945 by the Architects' Registration Tribunal as being someone who possesses with due regard to aesthetic as well as practical considerations, adequate skill and knowledge to enable him or her to originate; to design and plan; to arrange for and supervise the erection of such buildings or other works calling for skill in design and planning as he might in the course of his business reasonably be asked to carry out or in respect of which he offers his services as specialist.

The role of an architect in a building contract can be briefly described as follows:

- to prepare a scheme in accordance with their client's proposals, to suit not only their general requirements, but also to be within their cost guidelines or budget
- to effect the legalities of the building contract from the preparation of contract documents to certifying final payments
- to obtain all relevant building and planning approvals to the scheme and ensure that all works are completed satisfactorily in accordance with his original design
- to co-ordinate the services of any other consultants employed for the scheme and to act as 'project leader'.

In accordance with the Architects (Registration) Act 1931, and the amending Acts of 1938 and 1969, it is an offence for anyone to use the title 'architect' unless their name is contained on the Register of Architects administered, and published annually, by the Architects Registration Council of the United Kingdom (ARCUK). Architects contained on the register are required to comply with *ARCUK's Standard of Professional Conduct for Architects* which is supported by their *Explanatory Memorandum*.

ARCUK Standard of Professional Conduct for Architects

The standard is a guide to good conduct and requires persons who are registered to:

- ensure that information given in connection with his services is in substance and presentation factual and relevant and neither misleading nor unfair to others
- define beyond reasonable doubt, before making an engagement for professional services, the terms of the engagement including the scope of the services, the allocation of responsibilities and any limitation of liability, the method of calculation of remuneration, and the provision for termination
- declare any business interest which might be, or appear to be, prejudicial to the proper performance of the engagement
- carry out the engagement faithfully and conscientiously with proper regard for the interest of those who may be expected to use, or enjoy, the product of his work; with fairness in administering the conditions of a building contract; and without inducements to show favour
- inform those who may be concerned, without delay, if at any time he finds that his interests, whether professional or personal, conflict so as to put his integrity in question and, if agreement is not reached as to continuance of any engagement, will withdraw from it.

The second code applicable to the architectural profession is the *Code of Conduct* issued by the Royal Institute of British Architects (RIBA) which applies to its members alone. Examples of matters contained within the RIBA Code of Conduct are as follow overleaf.

RIBA Code of Conduct

- A member shall define beyond reasonable doubt, before making an engagement for professional services, and record the terms of the engagement including the scope of the services, the allocation of responsibilities and any limitation of liability, the method of calculation of remuneration, and the provision for termination (Rule 1.1)
- A member shall carry out the engagement faithfully with proper regard for the interest of both those who commission and those who may be expected to use or enjoy the product of his work (Principle 1.0)
- A member shall not sub-let work, without the prior agreement of his client, without defining the changes in the responsibilities of those concerned (Rule 1.3)
- Where a member has responsibilities as architect under a building contract, or is similarly acting between the parties, he shall interpret the conditions of such contract with fairness and impartiality (Rule 1.4)
- A member shall avoid actions and situations inconsistent with his professional obligations or likely to raise doubts about his integrity (Principle 2.0)
- A member shall not give discounts, commissions, gifts, or other inducements for the introduction of clients or of work (Rule 3.1)

Conditions of Engagement

The conditions of engagement applicable to architectural commissions are as follow:

RIBA *Conditions of engagement for the appointment of an architect* 1995.

RIBA *Standard form of agreement for the appointment of an architect* 1992. Revised January 1996.

RIBA *Engaging an architect – small works* 1996

RIBA *Standard form of agreement for the appointment of an architect. Design and build – contractor/client version* 1992. Revised January 1996.

General Issues

It is considered that the action of seeking and receiving tenders from contractors should be included within the pre-contract work stages for fee calculation purposes. The accuracy and suitability of a designed scheme is 'tested' by the submission of a suitably acceptable tender from a contractor. Payment of pre-contract fees should, therefore, not be payable until the client has been provided with

a ‘complete’ scheme from which the construction phases can immediately progress. The client may then be able to act on receipt of an unsuitable tender. The conditions of engagement should require the architect to refund all monies paid in instances where a scheme does not progress due to a lowest tender being received that exceeds the clients cost limit, unless the architect had previously advised that the brief could not be met within the cost limit.

It should be a condition of the appointment that the scheme is to be prepared in accordance with the clients requirements and within the appropriate cost limits. It is suggested that an architect should be required to submit an approximate cost estimate on completion of each work stage for a direct comparison to the client’s cost limits.

Any amendments requested by the client should be required to be costed separately by the architect who should inform the client immediately. This is in order that cost increases due to client amendments are not allowed to be ‘confused’ with cost increases due to ‘other reasons’, which will require separate specific approval. The architect should be required to submit a comparison of the cost estimate to the client’s cost limit, with explanation of any variances.

It is recommended that the architect should be required to submit estimated final costs with every payment certification under the building contract, to the client. The estimated final costs should be compared to the client’s cost limit and explanations submitted for any variances.

It is recommended that the architect should be given responsibility for ensuring that the contractor’s final account is prepared in a reasonable period of time after completion and submitted to the client for approval. The architect should also be responsible for submitting final cost reports, comparing the final total cost of the scheme (including fees) to the original tender sum and explaining any variances.

It is considered that agreements with consultants should contain stipulated time scales and/or target dates for completion of each work stage creating provision for *both* parties to claim damages for any breaches of contract.

The RIBA Conditions of Engagement provide for interim payments on the completion of each work stage. It is recommended that the levels of stage payments be adjusted in order to reduce the percentage at pre-contract stage. This will ensure that an incentive remains to complete the remaining stages of the commission right up to submission of the contractor’s final account. A method of achieving this is to adopt the following proportionate payment procedure:-

Work stage	Proportion	Cumulative	Based on
C	12%	12%	Estimated Cost
D	16%	28%	Lower of Cost Limit/Estimated Cost
E	16%	44%	Lower of Cost Limit/Estimated Cost
FGH (Tender Action)	16%	60%	Lower of Cost Limit/Estimated Cost
JKL	40%	100%	See Below

For fees levied during the post contract period the following system is recommended in respect of fees payable:

- Acceptance of tender
 $60\% \times \text{fee} \times \text{value of accepted tender}$
- To completion of building work
 $60\% \times \text{fee} \times \text{value of accepted tender} \text{ plus } 25\% \times \text{fee} \times \text{gross sum certified}$
- To submission of agreed contractor's final account
 $95\% \times \text{fee} \times \text{total cost/final account}$
- On issue of final certificate
 $100\% \times \text{fee} \times \text{total cost/final account.}$

Appendix 6.2

Surveyors

Eight fee scales for different types or bases of quantity surveying services are available from the RICS as follows:

- Scale 36 : inclusive fee for building works
- Scale 37 : itemised fee for building works
- Scale 38 : itemised fee for civil engineering works
- Scale 39 : term contracts
- Scale 40 : housing schemes for local authorities
- Scale 44 : improvements to existing housing and environmental improvements
- Scale 46 : loss assessment of damage to buildings
- Scale 47 : replacement cost assessments

The above fee scales were issued in 1988. In each case, the nature and scope of the services to be provided, is discussed within the documents. A guide to the above scales of professional charges was published by the RICS in 1987. The guide sets out the historical evolution of each scale and lists relevant journal articles in *Chartered Surveyor* or *Chartered Quantity Surveyor*.

Conditions of Engagement for Building Surveying Services (1989) is available from the RICS. The document advises on the basis of agreement between client and building surveyor and comprises:

- model form of agreement for the appointment of chartered building surveyors
- model conditions of engagement
- seven model scopes of service for different types of building work
- recommended scales of professional charges linked to each scope of service.

The seven scopes of service are:

- building works (to be used with other scopes of service where applicable)
- building and measured surveys
- project management: construction monitoring
- maintenance
- insurance assessment and claims
- feasibility studies
- miscellaneous services

Each sets out a typical description of services offered by the building surveyor and is meant to be used in conjunction with the model form of agreement and conditions of engagement, together with a detailed project brief. The latter is case specific and should cover a detailed description of the client's requirements, an outline programme of work, and the inter-relationship between the parties to the project. The conditions of engagement include coverage of the surveyor's obligations, communications with the client, control of costs, payment of fees, and suspension or termination of the contract.

The regularity of 'periodic assessments of anticipated final cost' expected from the quantity surveyor should be clarified in the terms of the appointment to avoid disputes or extra fee claims at later stages. In this respect, it is recommended that, in normal circumstances, monthly submissions should be requested, with any variances adequately explained.

The exact details and submissions expected from the quantity surveyor should be clearly defined within the terms and conditions of the initial appointment. If a full 'cost monitoring service' is required, then an appropriate percentage should be agreed for fee remuneration purposes. Subject to the size and nature of the scheme involved, additional charges in the region of 0.25% – 0.50% should be obtainable for such a service.

If extra payment is made for the provision of a cost planning service then it is expected that this should result in an increased accuracy. In such instances, it is not considered unreasonable to expect a tender to be achieved to within 1% of the surveyor's previous estimate. Failure to achieve such accuracy should result in reduced fees being levied by the consultant and, in extreme cases, where the scheme does not progress due to excessive costs, it is considered that all fees should be waived.

In instances when a cost planning service is not required, the quantity surveyor should still be required to submit budget estimates at the initial design stage and periodically as the pre-contract stages progress. Comparison can then be made of eventual tenders with such estimates in the quantity surveyor's tender reports. It should be noted that the accuracy of such 'budget estimates' would only be expected to result in a tender within plus or minus of, say, 10% of the earlier estimate.

When submitting reports on tenders received or negotiated, the quantity surveyor should be required to compare the value of such tenders with the latest estimate or 'budget estimate' provided, with explanations of any discrepancies.

The expected number of bills of quantities and other documents plus what is considered to be 'normal' travelling and other expenses, must be clarified and agreed with the quantity surveyor before work commences. Any extra charges should be the subject of separate consideration before such additional costs are incurred.

When a project incorporates separate contracts, the detail of such contracts should be examined to determine whether there is sufficient reason to negotiate a reduction in fees, at the time of the initial appointment.

A quantity surveyor may submit an additional fee claim for preparing 'bills of reductions'. The terms of the appointment should, however, clarify that such additional fees are subject to the receipt of an otherwise acceptable tender. For example, if a tender is received that exceeds the previous cost estimate/limit, and *then* amended instructions are submitted by the client to reduce costs, then the preparation of bills of reduction should still be contained within the basic service and fee.

The payment of extra fees for the valuation of off-site materials should be subject to prior agreement, following consideration of the reasons. A lump sum should be agreed in preference to a percentage or time-based fee.

It is recommended that interim fee claims be required to be submitted quarterly, calculated as a percentage of the full fee based on the latest gross valuation available (in addition to any pre-contract fee), during the currency of the building contract. Such 'percentage' is recommended as being between 15% and 25% dependent on the type of work involved. Provision for a penultimate fee of 90% is recommended on submission of an agreed final account to the client, based on the value of such final accounts.

Provision should be made for the waiving of fees in the event of a scheme not progressing due to the receipt of an unacceptably high tender. In instances where no tenders are received, it is suggested that the fee be based on the cost limit previously agreed with the client. The exact details of the proportionate fee payable in the event of a scheme being abandoned at 'any other stage' should be agreed at the time of the initial appointment.

The terms and conditions of engagement should provide for an abatement of up to 20% for the use of previous tender documents. The actual percentage reduction being dependent on the amount of adjustments and alterations (if any) required to be made to the documents.

It is noted that two methods of calculating time charges are currently recommended by the RICS. The computations within scales 36 and 37 differ from those in scales 40 and 45. It is, therefore, recommended that the clauses relating to the calculation of time charges be deleted and that the consultant be requested to submit fixed, all inclusive rates, as part of a competitive fee tender.

Appendix 6.3

Engineers

An engineer is concerned with the practical application of scientific knowledge in the areas of civil engineering construction, engineering services in their own right and ancillary to building works, and the structural design of certain buildings and other works. An engineer's role would usually include:

- investigation and advice on all technical aspects of a project, consideration of alternative solutions, provision of comparative costings and recommendations for appropriate action
- detailed design of the works, supervision of the erection of the structure and/or the installation and commissioning of mechanical or electrical plant and services
- advice to the client on the performance capabilities of installations and recommendations as to upkeep and future maintenance requirements.

The principals of a firm of consulting engineers will normally be Chartered Engineers and members of one or more of the senior engineering institutions.

Conditions of engagement

The conditions of engagement available in respect of engineering commissions are:

- The ACE 1981 conditions of engagement consisting of five different forms.

Agreement 1 Report and advisory work

Agreement 2 Civil, mechanical and electrical and structural work where an architect is not appointed by the client

Agreement 3 Structural engineering work where an architect is appointed by the client;
[Re-issued in 1984, harmonising the duties and delegations of the engineer with those of the architect within 'Architects Appointment']

Agreement 4A Engineering services in relation to sub-contract works

Agreement 4B Engineering services in relation to direct contract works.

Although the terms and conditions contained within the ACE 1981 conditions of engagement have generally been accepted by the government, the relevant fee scales have not been accepted. The previous conditions of engagement were those issued by the ACE in 1970, but neither the conditions

or fee scales in these conditions were acceptable. As a result, the fee scale contained within the previous ACE conditions in 1963 as revised in July 1979 has continued in use. When appointing engineers, therefore, the general approach has been to use the 1981 conditions with the 1963 fee scale as revised in 1979.

- The ACE 1963 conditions consisting of four different forms of agreement dependant on the type and nature of work involved.

Form A	Civil engineering work.
Form B	Work principally of an electrical or mechanical nature.
Form C	Structural engineering work, where an architect has been appointed by the client.
Form D	Engineering services for building and other structures.

Forms A and B provide that payment for normal engineering services should be on the basis of a lump sum plus a percentage fee based on the cost of the works. An additional fee is payable on the value of reinforced concrete work and structural steelwork. Under Form C the fee payable is a lump sum of £200 plus a percentage of between 5% and 7% based on the value of the work, plus a further 3% on the value of reinforced or pre-stressed concrete, and a further 3% on the value of load bearing brickwork. Under Form D the fee is a simple percentage of between 6% and 8% on the cost of the work.

Where site supervision of the works involving additional staff is required, any costs incurred are the responsibility of the client who either pays them directly or reimburses the consulting engineer. For additional services as described in the agreements, payment is based on the time, including travelling time, spent on the work by partners or technical staff. A rate for partners is agreed in advance, while that for other technical staff is related to their annual salary. Clerical time is deemed to be included.

For work of above average complexity, or where the effort involved is out of proportion to the estimated or actual cost of the works, higher percentage rates, time based fees, or some other agreed basis of charge may be used. There is no mention of reduced charges for repetitive or otherwise uncomplicated work.

The forms of agreement include provisions for stage payments based on the proportion of the duties completed. With the exception of Form B, under which the involvement of the engineer during the construction phase is greater, all the agreements provide for the majority of fees (up to 85%) to be paid before work starts on site. The balance of fees is to be paid as the construction work proceeds by monthly instalments in proportion to the value of work carried out. It is noted that Form D goes further in that it allows for submission of a final fee account on completion of the works but before settlement of contractors' final accounts. In view of the potential difficulties that could be experienced at this stage it is recommended that the provision be amended to retain a percentage of the total fee until all such work has been finalised.

Generally, the provisions for stage payments should be reviewed to ensure that they are appropriate to the project concerned. It is worthwhile to consider the actual duties involved with each particular scheme. Payment provision can then be tailored to specific circumstances where the standard provisions are not deemed appropriate.

The cost of the works on which the scale fees are based is defined in each of the forms. The principle is that the fee should be related to the value of the work designed, specified or supervised by the engineer and the main elements are common to the four forms. Generally, the cost of the works is deemed to be the cost to the client, including claims, before deduction of liquidated damages, and excluding fees.

Form C also specifically includes the cost of works necessary to enable the works to be carried out, together with an appropriate proportion of the preliminary and general items of the main contractor. A problem sometimes encountered is the attempt to include such items in the cost of the works under Form D. Whilst these items are included under Form C, Form D does not refer to them at all.

All conditions of engagement provide for the inclusion of contractors claims in the 'cost of the Works'. Public Works Circular 10/83 states that claims are to be excluded from the sum on which percentage fees are based and should be treated in the same way as measured variations which are also excluded from the 'cost of the Works'.

7. The Private Finance Initiative

Introduction

The Private Finance Initiative (PFI) was launched as a treasury initiative in 1992. Its prime objective is to increase the involvement of the private sector in the provision of public services, and so increase the flow of capital projects without creating a burden to the public purse. Other objectives of the initiative include the harnessing of private sector management skills, the transfer of risks from the public to the private sector and increasing value for money.

The PFI, however, is not simply about the financing of capital investment in a building. The fundamental principle of PFI is that instead of purchasing capital assets and operating them itself, the public sector purchases services from private sector businesses who then acquire the capital assets needed to provide them. The essence of a PFI agreement is, therefore, that it is a contract to procure services and not the underlying assets that will be used to provide them. Ownership and control of the assets, together with responsibility for repairs, maintenance and operating costs, remains with the private sector. Meanwhile, the public sector organisation retains the role of enabler of the relevant service.

Fig.1 Traditional Financing Method

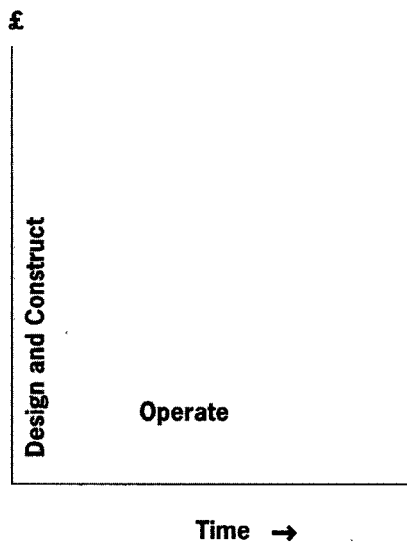
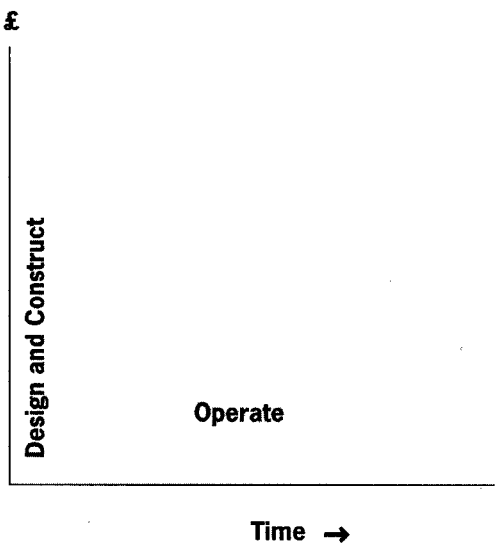


Fig.2 PFI Method



Figures 1 and 2 above illustrate the financial costs of a PFI scheme, ignoring inflation, compared with the traditional procurement route. Figure 1 shows the cost of designing and constructing the asset, followed by the annual cost of operation. Figure 2 indicates that no costs are incurred during the design and construction stages of a PFI project. However, payments during the subsequent period of operation are higher.

Usually, the public sector organisation enters into an agreement with a 'special purpose vehicle' (SPV) which is the private sector company set up to act as the supplier specifically for the PFI contract in question. The SPV, typically, enters into sub-contracts with the designers, building contractor and service provider(s) who provide the actual performance to the public sector organisation on its behalf.

The most well known examples of PFI projects are the Channel Tunnel Rail Link, the Skye Bridge, the Royal Armouries at Leeds, the Second River Severn Crossing, the Dartford QE2 Bridge, and the supply of new trains for London Underground's Northern Line.

The Private Finance Panel (PFP)

The Private Finance Panel (PFP) was set up by the Chancellor of the Exchequer in 1993 with the objective of promoting the introduction of private management and finance into all areas of the public sector. This included the promoting of a wider understanding of the principles of PFI. The role of the PFP included the identification and resolving of particular problem areas. As part of this role the PFP issued a series of guidance notes which included the following:

- *Private Opportunity, Public Benefit [Nov 1995]* – a comprehensive document setting out the basic principles of PFI, and the role and responsibilities of management in the process.
- *Risk and Reward in PFI Contracts – practical guidance on the sharing of risks and structuring of PFI contracts [May 1996]*
- *Writing an Output Specification – guidance on how to frame the requirements from a PFI contract in terms of outputs rather than inputs [Oct 1996]*
- *Basic Contractual Terms – a set of model terms for PFI contracts, based on good precedent [Oct 1996]*
- *Further contractual Issues [Jan 1997]* – covers a variety of areas including monitoring performance, termination and dealing with assets at the end of contract

The Public Private Partnerships Programme (The 4Ps)

In April 1996, the local authority associations set up the Public Private Partnerships Programme (The 4Ps). The 4Ps is a limited company that was established with the objective of helping local authorities increase investment in local authority services through the PFI and other public private partnerships.

The Bates Review

The early years of the PFI were dogged by reports of delays, complexities, bureaucracy and high costs. Private sector firms, in particular, expressed strong concerns at the considerable costs they were incurring in negotiating potential PFI deals with public sector organisations and the small number of deals that were being secured.

It was reported that contractors had spent over £100m bidding for 30 major PFI schemes. Of these 25 had reached preferred bidder stage but no contracts had been signed. Among the problems identified were:

- public sector managers floundering in negotiations with contractors and banks
- over ambitious demands for requirements and specifications that were not affordable
- attempts to pass excessive and ill-defined risks to the private sector.

As a result, after the general election of 1997, a speedy review of the PFI programme was undertaken under the direction of Sir Malcolm Bates, on behalf of the new government, to relaunch and reinvigorate the PFI. The review submitted 29 recommendations to the Treasury in June 1997, to streamline and improve delivery of PFI projects, which were all accepted by the government.

The Treasury Taskforce

As recommended by the Bates Review the Private Finance Panel was stood down and a 'Treasury Taskforce' was established in July 1997 to be the focal point for all PFI activities across government. To address specific recommendations of the review, and other PFI issues, the Treasury Taskforce subsequently published guidance in a definitive collection of central documents in four series as follows:

Series 1 : Generic guidance – introductory guides to the PFI

- *A Step by Step Guide to the PFI Procurement Process* (April 1998);
- *Private Finance and IT : A Practical Guide* (March 1998);
- *Partnerships for Prosperity* (November 1997).

Series 2 : Policy statements – 'what to do' documents

- *No.1 PFI and Public Expenditure Allocations* (Oct 1997);
- *No.2 Public Sector Comparators and Value for Money* (March 1998).

Series 3 : Technical notes – 'how to do' documents

- *No.1 How to Account for PFI Transactions* (September 1997);
- *No.2 How to Follow EC Procurement Procedures* (June 1998).

Series 4 : Case study Material.

- *Colfox School, Dorset* (March 1998)
a case study on the first DBFO school project (Taskforce/DfEE/4Ps)
- *Private Finance and IS/IT* (March 1998)
a case study – TAFMIS...and after (Taskforce/CITU/MoD)
- *Bridgend and Fazakerley Prisons* (April 1996)
report on the procurement of custodial services for the DCMF (HM Prison Service/Private Finance Panel)

Details concerning the work of the Treasury Taskforce can be found on their web site on the Internet at <http://www.hm-treasury.gov.uk>.

During 1998 the taskforce issued their proposals on how to achieve a balanced approach when dealing with the key issues likely to arise in a wide range of PFI agreements. The proposals address how such issues should be dealt with in the project agreement in a manner that enables procurers to meet their requirements most effectively. As at October 1998, the intention is for final guidance to be issued, after canvassing views, together with drafting of standard provisions where appropriate. The objective of the proposed guidance is to promote a common understanding as to what risks are included in a standard PFI project, to achieve a consistency of approach and of pricing across a range of similar projects, and to reduce the time and cost of negotiations.

As at October 1998 specific guidance on local authority issues is expected to be produced by the taskforce in conjunction with the 4Ps. The NHS and MoD will also be preparing sector specific guidelines in consultation with the Taskforce.

Legislation

A major concern of private financiers in the early years, was whether local authorities had the legal powers to enter into PFI deals, and the implications for the private sector of a contract being ruled ultra vires by the courts. The new government introduced a bill that became law on the 1st December 1997. The Local Government (Contracts) Act 1997 [ISBN 0105465984] gives legal certainty to local authority involvement in PFI deals. Full details of the provision of the Act, together with explanations of the practical implications, are contained in a guide published in 1998 by the 4Ps and which is available from the Local Government Management Board.

The *Local Authorities (Contracts) Regulations 1997* [SI No. 2862] were made under the Local Government (Contracts) Act 1997, and deal specifically with the issue of certificates by a local authority, confirming that it has satisfied the certification requirements in relation to a contract. In particular, the certificate is required to state the legal powers for the authority to enter such a contract, and is to be signed by the chief financial officer, or a statutory chief officer. Copies of the certificate are to be provided to all parties to the contract, and to the organisation's external auditor.

Types of PFI Agreements

PFI projects generally fall into one of the following categories:

- DBFO (Design Build Finance Operate).
Financially free standing with limited public sector involvement, eg Dartford toll bridge.
The cost of the project is met wholly or mainly by annual charges from the private sector body which let the contract. For example, in the case of a school, the PFI contract would specify the kind of educational service a local authority wished to provide. The private sector firm would

then design and construct an appropriate building, financing those operations without any guarantee from the local authority. The firm then undertakes the facilities management of the completed school, leaving the local authority to employ the teaching staff and run the educational service in the normal way.

- Joint ventures

The cost of the project is met partly from public funds and partly from other sources of income, with overall control of the project resting with the private sector. (The public sector contribution is often made to secure wider social benefits, that cannot be captured in commercial revenue, such as reduced road congestion). An example is the proposed channel tunnel rail link.

Advantages and Disadvantages

The main advantage claimed for PFI projects is that they provide an additional form of funding for public sector organisations. If an organisation has less capital resources than it needs, using the PFI approach wherever possible will leave scarce capital resources available for other front line services, essential repairs and infrastructure. In theory, such access to additional funds will ensure that backlogs of capital maintenance do not build up, and also ensure that equipment is replaced regularly.

While the above is certainly an advantage, it must be remembered that PFI is just one of a number of options that are available to an organisation. Sound financial management practice requires the PFI option to be evaluated and compared with other options to ensure that, if selected, the PFI approach is the best available option in the circumstances. Certainly it should not be selected, irrespective of the cost, purely because it is the only option available. As an example of the scale of the costs involved in a PFI deal, an NHS trust recently concluded negotiations for a large 800 bed hospital which will cost £31m per annum (excluding staff) for 30 years, with the option to extend to 60 years, ie a total potential commitment of £1,860m at present day costs. Even a serviced medium size secondary school will be in the order of £60m (£2m pa over 30 years).

In this respect guidance issued by the PFP states that, in addition to selecting the supplier, there should be the following separate value for money decisions:

- whether to proceed with the project at all (to compare its likely costs and benefits with alternative options, including doing nothing)
- whether to proceed using PFI or a traditional procurement route.

By their nature, PFI projects require little or no expenditure in the early years of the agreement. However, each agreement will represent a commitment to the payment at a later stage of significant annual charges to the private sector provider. There is a risk, therefore, that organisations could be attracted to a PFI deal simply because of the minimal initial costs without adequately considering the affordability of the later charges.

The cost of providing the finance for a project is likely to be more expensive in the private sector, as public sector organisations can, generally, obtain funds more cheaply than private firms. Therefore, all things being equal, it can be said that a PFI deal is going to be more expensive in the long term, than that which could be achieved using traditional approaches.

However, the private sector service provider will be responsible for the tasks of designing, constructing and operating a scheme. This could provide them with an incentive to adopt practices and techniques that reduce total overall costs, for example, by allocating sufficient resources to the designing of an asset, in order to ensure that maximum value for money is obtained from the construction work. Similarly, by considering the complete life cycle of the scheme, annual operating costs could be reduced by changes to the specification of the asset. Therefore, it can be argued that a PFI scheme provides better value for money by promoting more efficient design, construction, and operation.

Types of Risk

When negotiating any PFI agreement, the approach to the allocation of risk must be realistic. In principle, risks should be allocated to the party who is best placed to manage and control them most effectively. For any risks that neither party can control effectively, the issue of insurance should be considered.

As a guide the PFP has identified some of the risks which should, in principle, be transferred to the private sector under a PFI contract. These include the following:

- *The design of the asset*
Responsibility for ensuring that the design of the asset fully satisfies the requirements of the service, includes all aspects to the necessary standards and is completed prior to commencement of construction works .

There is a risk of the designed facilities subsequently proving to be too big or too small for the needs of the service, or otherwise inefficient in use.

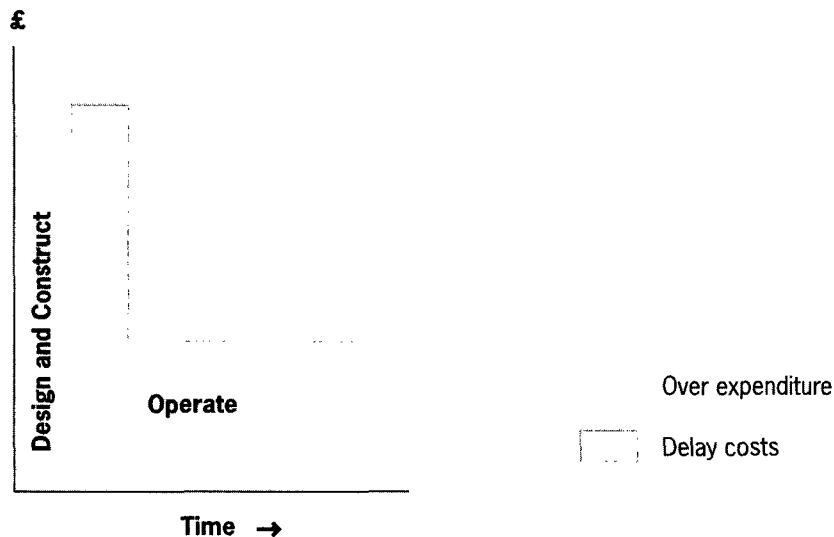
The cost of the design work exceeds the budget. Design is completed late, together with the knock on effect to the construction programme. [It is noted, however, that the public sector organisation will be responsible for any overruns in time and cost that occur as a result of its actions or inaction, eg variations in requirements.]

- *Construction of the asset*
Time and cost overruns, together with any knock on effect to the commencement of service provision. The risk of losing income, or incurring additional costs, should the facilities not be available at the required time, for example the additional cost of operating from alternative premises.
 - any variations necessary due to shortcomings in the standard of design information.

- standards of construction.
- compliance with legislation, eg health and safety.

The risks associated with cost and time overruns on design and construction, can be illustrated by the following:

Fig.3 Risks Associated with Traditional Financing Method



- *Loss due to unavailability of any aspect of facilities*
The risk of losing income, or incurring additional costs, should the facilities become unavailable during the term of the agreement.
- *Excessive maintenance repair and/or operating costs*
Maintenance, repair and/or operating costs subsequently prove to be higher than originally estimated or expected, eg windows requiring renewal earlier than expected
The risk of plant and equipment failure, eg failure of heating systems, electrical supplies/appliances. Poor performance, failure to meet energy efficiency targets etc.
- *Demand (or volume usage) risks*
A fall in demand reduces payments under the contract. Payment to the contractor/service provider should be in the form of unitary payments. The public sector should be paying for the quality and quantity of service delivered. Payments could be linked to such factors as volume of service, capacity of available service, performance and levels of demand or usage.
- *Technology or obsolescence risk*
There is a risk that the asset may cease to be technically the best way of delivering the service during the lifetime of the agreement

- *Project financing risk*
The cost of financing the project may vary from that originally planned, due to fluctuations in interest rates.
- *Latent defects*
Defects in the original design of the asset and/or standard of construction work may come to light several years after service delivery has commenced.
- *Low residual asset value*
The value of the asset, at the end of the period of the agreement, may be lower than initially expected. In principle, the asset should not expressly revert to the public sector at the end of the contract, even if it is at nil or below market value. The asset should be offered on the open market, or transferred, at market value.

Key Stages

The key stages in a PFI procurement process are outlined in the Treasury's *Step by Step Guide to the PFI Procurement Process* which was fully revised in April 1998. The following is an overview of these key stages, together with additional comments wherever relevant.

Stages 1 and 2: Establish Business Need and Appraise Options

These stages should be no different from any other process in which a decision is taken to commit expenditure to a long-term contractual commitment. Reference is made elsewhere in this publication to the subject of pre-contract project appraisal and the process of option appraisal. The organisation should be sure that there is a definite need for the expenditure, and that the best option is being selected in the circumstances. The PFI procurement route should be just one of a number of options considered.

Stage 3: Preparation of an Outline Business Case Incorporating a Reference Project

Whether the PFI procurement route is selected or not the next stage is to prepare a business case, as described in Section 1c (page 16) of this publication. However, whereas for the construction of a capital asset, the outline business case would describe the nature and facilities required of a building, for a potential PFI scheme, it would contain a clear definition of what is being sought in terms of service delivery. An outline business case, based on the draft guidance issued by the NHS Executive in April 1998, is provided at Appendix 7.1. The Treasury document suggests that the outline business case should incorporate a 'Reference Project', as a particular possible solution, which should be a combination of capital investment, operations, maintenance and ancillary services which is worked up in sufficient detail to provide a full and adequate costing. At this stage the organisation should produce a public sector comparator (PSC), which is an estimate of what it would cost them to provide the service themselves. The main elements of a public sector comparator are:-

- capital cost

- cost of providing the services
- cost of retaining the risks that would be transferred to the private sector (cost is assessed by taking the financial impact and the probability of the risk occurring)

The total estimated cost of a scheme should be converted to the present day value, or 'net present value' (NPV) by using an appropriate discount rate. The evaluation of all income and expenditure figures is very sensitive to the discount rate used, and it is important that it is formally decided by the client and can be justified. While the statistical techniques involved in the process are explained in other documents, reference can be made to CIPFA's *Making the Right Choices* for more detailed guidance on project appraisal.

Stage 4: Developing The Team

At this stage a project leader will be appointed, who will normally be a senior officer of the organisation. It will be necessary to decide the skills that are required for the success of the project, and to determine whether those skills are available from within the organisation, or whether it will be necessary to appoint external assistance. It will probably be necessary to appoint external advisers to provide advice on financial, legal, technical, and project management matters. In which case, it should be noted that the Bates Review reported that the quality of advisers was patchy, with many learning at the public's expense. As a result, the Treasury Taskforce has sought to improve the quality of advisers by issuing guidance on the terms and conditions of their agreements, the content of client briefs (including a check list), and selection evaluation criteria. The guidance seeks to clarify the role of advisers and attempts to achieve consistency throughout all PFI projects. The Treasury Taskforce Private Finance Technical Note No.3 *How to Appoint and Manage Advisers* is intended to be read in conjunction with the HM Treasury Procurement Group Publication *Appointment of Contractors and Consultants* (Procurement Guidance No.3) [1997]. Included within the criteria for the selection of advisers is the need to consider the following:

- each adviser's ability to contribute to the delivery of the project and provide value for money
- their experience and expertise in relevant areas
- their ability to supply the full resources necessary at peak periods of work.

Stage 5: Deciding Tactics

The client should decide the procedure for seeking bids, and make sure all bidders are made aware of what is required of them. For example, how much information is to be submitted at the pre-qualification stage, when will fully costed proposals be requested, and when will a preferred bidder be selected.

Stage 6: Invite Expressions of Interest and Publish OJEC Notice

The OJEC Notice should include sufficient explanation of the project, including the fact that a PFI solution is being sought. There should be an indication of the criteria that will be used to assess expressions that are received.

Stages 7 and 8: Pre-qualification of Bidders and Selection of the Shortlist

An evaluation process will need to be devised in order that a 'long list' of potential firms is selected fairly from those who submit expressions of interest. The selection of a final 'short list' should be based on the firms' ability to add value to the scheme, and their particular knowledge and experience relevant to the nature of the service concerned.

Stages 9 and 10: Refine the Appraisal and Issue Invitations to Negotiate

The Treasury suggests that the original appraisal should be revisited, drawing on the knowledge gained during the procurement to date. It should be stressed that this does not mean that the objectives of the scheme should be revised, as these should remain constant throughout. The Treasury expects the terms and conditions of potential agreements to be negotiated, prior to any firm price being submitted. This should keep the time spent negotiating to a minimum, although it is still likely to take some three or four months, and also ensures that terms are agreed while there remains competition. It is unlikely, however, that firms will devote the necessary resources to negotiate terms for relatively small deals without agreement to reimburse them for their costs incurred.

Stage 11: Receipt and Evaluation of Bids

At this stage, the project team will evaluate the bids received in accordance with the criteria set out in the invitation documents. While some further negotiation may be necessary, this must not be in respect of key terms of the contract. The Treasury suggest making the best use of competition, and agree as much as possible of the drafting, whilst there is more than one bidder. At the end of this stage firms may be asked to submit their 'best and final offers'.

Stage 12: Selection of the Preferred Bidder and the Final Evaluation

The Treasury suggest that as the preferred bidder is selected, the PFI proposition should be re-tested against the key value for money and affordability criteria. The final negotiation should be limited to fixing the final detail of the transaction documentation, and before contract signature the client may need to obtain final approval of the contract by the relevant approving authority.

To the above stages identified by the Treasury Taskforce can be added the following:

Award Contract

Once the contract has been awarded, it will be necessary for the organisation to monitor progress by the supplier. It is stressed that during the pre-service period, such monitoring should not interfere with the operations and activities of the supplier. The organisation should not formally accept practical completion of the construction of any asset, but should be satisfied that the service will be delivered from the expected commencement date. The supplier should also be required to demonstrate to the organisation that arrangements have been put in place that will meet the output specification.

Manage Contract and Make Payments

Management arrangements must include suitable monitoring procedures to ensure performance standards are achieved. To achieve this, the performance standards should have been clarified in the agreement, together with details of the monitoring arrangements, so that suppliers are provided with an opportunity to allow for any associated costs within their bid. Wherever possible, monitoring arrangements should make use of reports that are to be prepared as a matter of course, eg for the benefit of financiers. In this respect, the key issues to be considered are:

- what reports are required, by whom, and how frequently? Are different reports required according to the recipients within the organisation, eg project manager, chief executive?
- is there a standard monitoring form, or an IT compatible format, that can be utilised?
- how soon after a monitoring period is the monitoring form to be received?
- how often are regular meetings required between client and supplier? Who is required to attend from the supplier?

The organisation will have to ensure that contingency arrangements are in place so that, should the contract break down, the contracted services are continued.

European Directives

When appointing contractors for PFI projects, public sector organisations must adhere to the European procurement procedures. Such organisations need to consider the EC Directives that apply to works, services, and supply contracts. The Directives apply wherever a public sector organisation contributes more than 50% towards the cost of service contracts, and/or certain types of works contracts, even when they are let indirectly via a private sector firm, such as with a PFI agreement. A typical PFI contract will be a mix of functions that fall into a services classification, together with that of works or supply. It is necessary, therefore, when letting a PFI contract to determine which category it falls into.

Generally, which Directive will apply will depend upon what is required under the contract. Just because a PFI contract could be considered as being a 'service provision' does not imply that the contract will automatically be classified as a service contract under EC rules. It is possible for a long term service contract to be classed as a works or supply contract.

The Treasury Taskforce Private Finance Technical Note No. 2 *How to follow EC Procurement Procedure and Advertise in the OJEC* (the Official Journal of the European communities) is designed to assist public sector bodies in deciding how the EC procurement regime should be applied to PFI contracts. (The full text is available on the Internet at <http://hm-treasury.gov.uk>). The Technical Note includes detailed guidance of how to work out which of the works, services, or supply directives apply to any particular PFI contract.

Having established which of the EC Directives applies, it is then necessary to select the appropriate tendering procedure, ie open, restricted or negotiated. The Treasury Taskforce Guidance contains advice to help decide which procedure is applicable in a particular instance. It is noted that procedures involving extensive negotiations are only allowed in the case of a works or services concession, or in certain prescribed circumstances.

The specification for a PFI contract that is provided to tenderers can only be an indication of the final specification. The final specification is developed during the course of negotiation. Typically, only after detailed discussions between tenderers and the public sector organisation are the allocation of risk, service requirements and performance levels agreed. Although there is limited scope for negotiation under the open and restricted procedure, the EC Directives provide for a “competitive negotiated procedure” following advertisement in the OJEC and this is, therefore, normally the most appropriate for a PFI scheme.

In order to comply with EC Procurement Directives, the number of bidders must be sufficient to ensure genuine competition. This requires at least three firms to be invited to participate in the initial negotiations. Typically, once initial proposals have been submitted, discussions follow on the development of various solutions, followed by formal bids and then further discussions. It is vital that the procedure is as transparent as possible. In this respect, guidance issued by the Treasury stresses the need for organisations to establish a framework of procedural rules at the outset, in order to minimise the scope for challenge to the use of the negotiated procedure from a dissatisfied bidder.

An introduction to the EC procurement rules is available in CUP Guidance No.51, which can be found on the Internet at <http://hm-treasury.gov.uk>. Full details regarding EC procurement rules are contained in CIPFA’s *A Short Guide to European Procurement Legislation – for public sector purchasers* 1997.

Insurance

Public sector organisations traditionally self insure certain commercial risks. When considering a PFI option, independent insurance advice should be sought on what requirements should be imposed on the supplier.

The insurance requirements of a PFI project may be extensive and it is important that the allocation of risk is clarified at an early stage. In this respect, it is suggested that the first stage of any negotiation should include the preparation of a ‘risk allocation schedule’, an example of which is provided below.

This schedule can then be used, as a ready reference, for submitting to financiers and insurance companies during the latter stages of the project.

Risk	Organisation	Provider	Insurance
xxxxxxx	✓		
Xxxxxx		✓	
Xxxxx			✓
Xxxxx	✓		

Clients should protect their position by being jointly insured and require their interests to be noted in insurance agreements.

Contract Terms

The following terms and conditions can be included in a PFI contract.

Duration of Contract

The terms and conditions of any contract must include the duration of the agreement. This is typically 25 to 30 years, with review, early termination or extension provisions. However, it is important that there are no unilateral break clauses that enable the client, in the absence of any default by the service provider, to pull out of the agreement after, say, five years. Ideally, the duration of the agreement should be based on the period over which it is possible to make robust forecasts of demand for the service, and the economic life of the asset. The agreement should also specify a service commencement date in order to distinguish between the pre-service period and the service period.

Target dates

Target dates should be stated in the agreement for completion of the key stages, with provision for the payment of liquidated and ascertained damages, in the event of any delay, and/or bonus payments to the service provider, to reward exceptional performance.

Basis of payment

The ultimate responsibility for the service remains with the public sector organisation who should monitor service delivery and ensure that there is a link between the quality of service and the level of payments. Payments should, therefore, be performance related and calculated according to usage or availability. Preferably, where the service provider has no control over usage (eg schools and

hospitals where it is not possible to control the numbers of pupils or patients) payments should be based on availability. This, however, requires a definition of 'available' and in this respect an extract from the Treasury Taskforce Consultation Paper is provided below. Alternatively, a unitary payment may be fixed throughout the service period, with provision for adjustment in line with the retail price index to cover inflation. The agreement may include provision for adjustment in price (up or down) following a benchmarking exercise or market testing. It should be noted that current capital finance regulations require a local authority PFI scheme to have at least 20% of the annual PFI payment to be variable according to performance.

Conditions under which a unit of services provision is to be treated as unavailable

The terms and conditions of the agreement should consist of objective criteria for assessing availability. Unavailability will then occur if the relevant objective criteria are not satisfied. Such criteria may include:

An inadequate means of access;

An inadequate state of hygiene and cleanliness;

Unsuitable physical and environmental conditions;

A failure in supply of power, gas, electricity, water or other utilities and services;

A material divergence in ambient temperature from specified levels;

A material failure in provision of fully functioning communications or information services infrastructure;

Non compliance with a law which applies, affects or relates to the relevant area;

Threats to the safety or health of persons using or having access including failure to provide fire detection and alarm systems; and

Factors likely to jeopardise continuing activities/operations including failure to provide adequate level of certain services such as a telecommunications service.

Extract from *Taskforce Guidance on Project Agreements Consultation draft* (1998)

Default Clauses

Appropriate clauses should be included in the agreement to protect an organisation's financial position, and also to ensure continuity of service, in the event of default by the service provider. Typically, this will involve deductions from payments if the provider does not achieve the required standard. However, it is important that the provisions are reasonable, and require the client to provide an opportunity to the service provider to take corrective action before deductions are applied. The level of deductions must also be reasonable, and relate to the client's estimate of loss, and not be so high that they may be considered as being punitive, and hence legally unenforceable. There should be provision, in the event of complete failure by a service provider, for the client to

terminate the agreement, although financiers may have a first option to exercise their rights of 'step in' to take over the role of the service provider and carry on with the contract agreement. If a financier 'steps in' the client should have the right to continue to enjoy the benefits of the agreement, and to be protected from any increased costs as a result of the step in. If the financier does not step in the client should have the right to immediately terminate the contract.

Default by Client

The SPV (special purpose vehicle) should be allowed to terminate the contract in the event of non payment of a material amount for a length of time (eg three months) or in the event of any material breach of the conditions of the agreement by the client.

Variations

Clauses should be included in the agreement to provide for variations during the duration of the agreement. It should be stressed that the client should expect an increase in price following client generated variations in service, for example changes in service requirements or alterations to the specified constraints on inputs. The agreement should, therefore, also provide for consequential price adjustments.

Further, future legislation could affect the way a service is to be delivered. The service provider will have allowed for complying with legislation, current at the time the bid was submitted, within the contract price. However, what if price fluctuations arise from changes in legislation, or new legislation, that were not foreseeable prior to exchange of contracts? Although service providers cannot control this risk, the more often a contract provides for benchmarking and market testing to occur, allowing prices to be reviewed, then the more likely the insertion by the client of a tough change of law provision will be accepted. (eg if a change in law would cause a 10% increase in cost, then the service provider will know that through benchmarking the actual increase in cost will be reimbursed.) If there are limited provisions for benchmarking and market testing then the provider will place a high risk on such a risk.

Responsibilities

The agreement should describe clearly how the operational functions and responsibilities are to be spilt between the client and the service provider(s).

Late Commencement

In the event of late commencement of the service, perhaps due to late completion of an asset, the service provider will not receive income from client. If the constructor is late, they will probably pay liquidated and ascertained damages to the service provider who will pay such sums to their financier by way of increased debt service charges. Therefore, the inclusion of a clause by the client that requires a payment from the service provider in the event of late commencement of the service must

be justified and will only be valid if they will suffer direct additional cost, eg hire of temporary classrooms if a new school is not available. Any additional sums could be a disincentive to the service provider who may look for a longer construction period being stipulated in the initial agreement.

Performance Bond

A performance bond should be unnecessary as the special purpose vehicle (SPV) will not be paid any monies until completion of any assets and the commencement of the service. In the event of failure by the SPV, the financiers usually have the right to 'step in' and complete the obligations under the agreement. Clients usually sign a separate contract with the bank which funds the project. This will ensure that if the existing contractor defaults, the lender can step in and appoint another SPV.

Information Warranties

If the client has confidence in the accuracy of information, or it can be obtained at a reasonable cost, the client should give certain warranties to the supplier accordingly, eg information regarding condition of existing assets, employees being transferred etc. The giving of such warranties will be associated with the risk of making payments to the SPV if such information subsequently proves to be incorrect.

Method of Dispute Resolution

The method by which any disputes or disagreements are to be resolved should be stated in the agreement.

Corrupt Gifts

Clauses that relate to corrupt gifts, while popular in normal construction contracts, are usually rejected by banks and financiers. Their concern is that having financed the early stages of a scheme their security, the income generated by service delivery, could be lost due to events that are outside their control. Most banks would, therefore, not provide finance for an agreement that includes such a clause. The suggested clause in the PFP set of model contract terms of October 1996 suggests that if a contract is terminated due to the offering or acceptance of a corrupt gift then the banks should have the right to 'step into the shoes' of the service provider and carry on with the agreement.

Capital Asset

The agreement should describe what is to happen to any capital assets at the end of the contract period. The asset should, in principle, not expressly revert to the public sector at the end of the contract even if it is at nil or below market value. At the expiry of the contract period the client should have the option to 'walk away' from the agreement, retender existing services, carry on for a secondary period, buy back any assets at market value, or retender the entire concession and transfer any assets at nil cost (provided the balance sheet treatment is not jeopardised).

7.1 The Audit Approach

An introduction to the accounting and audit issues relating to the PFI, is contained in CIPFA's *The Private Finance Initiative – accounting and audit issues* 1997. This document sets down the contribution that auditors can make at each of the key stages in the development of a PFI project. It identifies the clear similarities between the audit approach to a PFI project and any other capital scheme. It suggests that internal auditors might review:

- the choice of a PFI contract as the best available option
- the project appraisal, and the criteria and assumptions used, using appropriate techniques
- the evaluation of risks to be passed to the contractor
- the assessment of contractors
- tendering procedures
- contract conditions, especially monitoring arrangements.

The role of external auditors:

The pre-contract stage

External auditors need to review actions taken by management to ensure that the progress towards signing a contract has been handled in accordance with internal rules, principles of value for money, legality and other external requirements.

Implementation of the contract

They should establish controls to monitor performance under the contract and in the proper accounting for the revenue and capital consequences of implementation.

Post contract

They must be satisfied that payments are made in accordance with the contract terms.

It is apparent that when reviewing a PFI scheme, the auditor should draw on the extensive guidance contained in the range of CIPFA publications on the subject of contract audit. It is clear that no special skills or experience is required to be able to review a PFI scheme, other than those associated with a normal contract audit.

It is vital that the auditor is involved early, at the pre-contract stage, when the scheme is being considered. At this stage, the auditor can make a positive contribution by advising on specific control issues. A PFI scheme represents a major financial commitment over a very long period of time. If the auditor is not involved at the beginning it will be very unlikely that any recommendations made at a later stage, after the contract has been signed, can be implemented.

The auditor can submit independent advice and comment and, if possible, support the views and proposals of other experts. Any concerns of the auditor can be heard and explained at an early stage while the option for rectification is still available. Above all else, by being involved early, the auditor will be in a position to provide the chief financial officer with confirmation that value for money will be achieved from the proposals, and that PFI is the best procurement route.

This can be achieved by the auditor attending the project steering group. In order that the auditor is not at risk of losing his or her independence, the auditor should stress that his or her attendance is to observe and submit comments.

These are some of the key issues to be addressed by the auditor.

- (a) Have all options been properly considered? Is the PFI option the best?
- (b) Is the scheme affordable in the long term?
- (c) Have all significant risks been identified and assessed? How have they been allocated between the public and private sector?
- (d) How is the partner/service provider(s) to be selected? What is the extent of competition? How are potential provider(s) to be technically and financially appraised? Does the approach provide for transparency, accountability and compliance with EC Directives?
- (e) Are the draft terms and conditions of the agreement sound and do they adequately protect the organisation's interest? How are payments to be determined and are they based on performance or availability?
- (f) Has the preferred bid, or the allocation of risk, changed during the negotiation process?
- (g) How is the organisation planning to ensure that the service will be delivered in accordance with that specified? Is responsibility for monitoring service delivery allocated to a specific contract manager? How are payments to be verified?

The Audit Commission has issued the following Technical Releases on the subject of the PFI:

TR 24/96	Audit approach to PFI schemes in the NHS
TR36/96	Local government PFI
TR2/97	PFI: Provision of Accounting View
TR15/97	Audit approach to PFI in local government
TR40/97	HMT Interim guidance on the application of FRS5 to accounting for PFI transactions.

Appendix 7.1

Outline business case: checklist

1. Executive Summary

A brief self-standing statement giving:

- The service objectives of the scheme.
- A summary of the shortlisted options.
- The results of the economic and financial appraisals.
- A statement of the preferred option (including reasons for its superiority).
- A statement of support for the scheme.

2. Strategic Context

- Description of the organisation, catchment area, and population for its services.
- Description of the organisation's strategic direction, and business objectives.
- The current activities of the organisation and the range and quantity of services it provides.
- Assessment of the organisation's current financial position and cost structure.
- Assessment of the organisation's resources (assets and manpower) and their current utilisation in service provision (including their functional suitability).
- Assessment of current service performance relative to the requirements of the scheme.
- Assessment of the case for change in the pattern of services needed to meet the organisation's requirements and future demand.
- Justification of the assessment of future services and functions required by reference to projected catchment population, changes in technology, and other factors that may influence the demand for services or the organisation's ability to meet demand.
- Explanations of the key assumptions which underlie the assessment of future services and functions.

3. Project Objectives and Scope

- Description of project objectives and their link to the organisation's strategy and overall business objectives.
- Description of the desired benefits and why these cannot be delivered under the current circumstances.
- Identification of any constraints on the means of achieving the objectives.

- A brief summary of the output specification for the project (including desired outputs for the building quality design, facilities and services, desired quality and performance standards).

4. Formulation of Options

- Description of the longlist of options (both capital and non-capital, including do nothing or do minimum) for meeting the project objectives.
- Reasons for early rejection of options.
- Description of the shortlisted options.
- Identification, timing and assessment of quantifiable, and non-quantifiable, benefits associated with shortlisted options.
- Identification and assessment of capital and revenue costs associated with shortlisted options over the life span of the scheme.
- Identification and high level assessment of risks and uncertainties associated with shortlisted options (a formal risk quantification is only required for the preferred option or options which are close [less than 10%] in NPV terms).
- Details of key assumptions underlying the assessment of costs, benefits and risks, and the results of sensitivity analysis on these.
- Results of the economic appraisal of the shortlisted options (NPV and/or EAC comparisons).

5. The Preferred Option

- Detailed description of the preferred option.
- Key factors responsible for its superiority (and why other options are inferior).
- Precise nature of any benefits obtained at higher costs than other options.
- Sensitivity of costs to variations in assumptions.

6. Risk Analysis

- A full description of the risks associated with the preferred option, indicating their nature, timing and potential impact.
- A risk allocation matrix indicating the likely risk allocation and contractual arrangements between the organisation and private sector. (It is recognised that this may be subject to change during the course of negotiations and bidding. However, this issue should be considered before finalising tender documents and entering negotiations.)
- Estimate of the cost of the risks associated with the preferred option (both risks likely to be retained by the public sector and those likely to be transferred).
- Description of the methodology used to quantify and value risks.
- Results of sensitivity analysis on the key assumptions underlying the risk evaluation.
- Description of how risks which are likely to be retained by the public sector and how they will be managed.

7. Affordability

- A statement of what the organisation is prepared to spend on the services to be covered by the proposed scheme.
- Results of the financial appraisal showing the revenue implications of the preferred option (including capital charges and net effect on prices). The estimate should make allowances for the cost of risk and the full whole-life costs of the scheme over a minimum of 30 years. It should also take account of the provision of equipment and IT for the scheme.
- Analysis of the impact on the organisation's balance sheet, cash flow position and income and expenditure account.
- Descriptions of key assumptions made for the financial appraisal and explanation of the methodology used to project income and expenditure.
- Details of the key assumptions underlying the financial appraisal, and the results and sensitivity analysis on these.
- Explanation of how the cost of risk has been factored into the financial appraisal.
- Assessment of whether there is flexibility to fund any additional revenue requirements and likely source of funding (for example, the disposal of surplus land).
- Evidence that the scheme is affordable, fits the organisation's commissioning strategy, and will be properly managed.

8. Project Timetable and Management Arrangements

- Summary of the project plan from development of the outline business plan to completion of the new facility, including key milestones.
- Description of how the organisation intends to manage various phases of the project, including any updates since the strategic outline case. This should cover the composition and responsibilities of the project team and evidence of their capacity to achieve the various project milestones, evidence of purchaser and other local stakeholder involvement, specific role of external advisers, and estimate of costs which will be incurred during the procurement process.

Based on draft guidance issued by the NHS Executive in April 1998

Glossary

Approved List	A list of contractors who have qualified to carry out construction work for an organisation. The list is normally categorised according to the type and value that the contractor is competent to undertake.
Client	The customer for construction.
Competitive Tendering	The process of inviting tenders from more than one tenderer to undertake work or provide services, preparation of tenders by the tenderers, and their receipt by the client.
Compliant Tender	A tender that complies in every respect with the requirements set out in the tender enquiry document.
Construction Manager	An individual or organisation engaged by the client under the construction management system of procurement to secure and manage the services of trade contractors, each of whom has a direct contract with the client. The construction manager's contract does not include undertaking any work on site or the supply of any goods.
Construction Project	A series of activities to define, design, construct and put to use construction work.
Design and Construct	A system of procurement in which the main contractor is responsible for the final design as well as the construction of the project. The design might be developed in part by the client prior to tender and incorporated in the 'employer's requirements' on which the tender is based. In this case, the designers engaged by the client for the initial design work may be transferred to the employ of the contractor. Alternatively, design might be undertaken by consultants engaged by the contractor, by the contractor's own staff, or by subcontractors.
Lead Contractor	The organisation that contracts with the client to construct (and sometimes design) the project. The lead contractor will usually engage subcontractors to construct (and sometimes design) specific parts of the projects.

Main Contractor	The lead contractor in 'design and build' and in 'traditional', designer-led procurement.
Management Contractor	An organisation engaged by the client, under the management contracting form of procurement, to secure and manage the services of works contractors, all of whom are sub-contracted to the management contractor and who undertake all of the work on the site. The management contractor's contract does not include the supply of any items or any work other than providing site establishment and welfare facilities.
Partnering	A relationship between parties to a project in which they work openly and jointly to achieve common objectives, with defined performance targets. Partnering may be entered into for a single project or a series of projects.
Planning Supervisor	A competent individual or organisation, appointed by the client under the Construction (Design and Management) Regulations 1994 (CDM Regulations), to co-ordinate health and safety issues during the planning and design phases of a project and to co-ordinate the production of the health and safety file.
Principal Contractor	A competent contractor (usually the lead contractor) appointed by the client under the CDM Regulations to co-ordinate health and safety issues during the construction phase of the project.
Project Brief	The full statement of the client's functional and operational requirements for the completed project.
Qualification	The process of assessing potential contractors as suitable and competent to undertake certain types and values of construction work against general, rather than project specific, criteria.
Risk Management	A systematic procedure to identify, assess, control and manage risk on a project in order to minimise potential damage or loss.
Single Stage Tendering	A tendering process intended to lead directly to the award of a contract to the successful tenderer for the works described in the tender enquiry documents.
Standard Forms of Contract	Printed forms of contract published by industry organisations and intended for general use in defining the obligations of the

parties to a contract to carry out construction work. Different forms are intended for different types of project. Suites of contracts are becoming available that cover the obligations between all parties in a construction project (including client, lead contractor, subcontractors, consultants and others).

Two Stage Tendering

A tendering process in which the first stage is to select a preferred tenderer before the design is fully developed on the basis of indicative pricing documents. In the second stage the preferred tenderer collaborates with the designers to complete the design, and might be preceded by open advertising and/or drawing from an approved list.

Bibliography

CIPFA Publications:

A Short Guide to European Procurement Legislation – for public sector purchasers 1997

Making the Right Choices 1996

A Practical Guide to the Audit of Major Construction Contracts 1994

Contract Audit (JCT) Guidance Notes 1992

CIPFA documents are available from Publications Dept. CIPFA, 3 Robert St. London WC2N 6BH.
Tel: 020 7543 5600, Fax: 020 7543 5700 www.cipfa.org.uk/publications.

CIB Guides:

Constructing Success 1997

Code of Practice for the Selection of Main Contractors 1997

Partnering in the Team 1997

Briefing the Team 1997

Selecting Consultants for the Team : Balancing quality and price 1996

CIB documents are available from The Book Sales Department, Thomas Telford Publishing, Thomas Telford Services Ltd, 1 Heron Quay, London E14 4JD. Tel: 020 7665 2464. Fax: 020 7537 3631, Internet <http://www.t-telford.co.uk>

Constructing the Team, Sir Michael Latham, 1994. Final report of the Government/industry review of procurement and contractual arrangements in the UK construction industry.

Available from The Stationery Office, Publications Centre, PO Box 276, London SW8 5DT.
Tel: 020 7873 9090. Fax: 020 7873 8200. General Enquiries Tel: 020 7873 0011

Control of Risk – A guide to the systematic management of risk from construction 1996

Value Management in Construction – a client's guide 1996

CDM Regulations – work sector guidance for designers 1997

Selection by Value: A Guide to Engaging the Best Contractors 1998

Construction contract incentive schemes – lessons from experience 1998

The above documents are available from the Construction Industry Research and Information Association, 6 Storey's Gate, Westminster, London SW1P 3AU. Tel: 020 7222 8891. Fax: 020 7222 1708. e-mail switchboard@ciria.org.uk

Cartels: Detection and Remedies – A guide for Purchasers 1995

Restrictive Trade Practices 1995

An Outline of UK Competition Policy 1995

Anti-Competitive Practices 1995

Restrictive Agreements 1995

The above publications are available free of charge from the Office of Fair Trading, PO Box 2, Central Way, Feltham, Middlesex, TW14 0TG. Tel: 020 8398 3405. Fax: 020 8893 2558

Audit Commission Management Paper *Taking the Initiative: A Framework for Purchasing Under the Private Finance Initiative* 1998

Audit Commission www.audit-commission.gov.uk.

Architect's Legal Handbook – The Law for Architects 6th edition 1996 Butterworth Heinemann

Constructionline, to arrange a personal demonstration, obtain a free brochure, demonstration disk or CD-ROM, or details of how to join contact Constructionline London, Zone 1/H31, Ashdown House, 123 Victoria Street, London SW1E 6DE. Tel: 0171-890-5924; Internet : <http://www.constructionline.com>



The Chartered Institute of Public Finance and Accountancy
Registered with the Charity Commissioners of England and Wales Number 231060