MINOR BUILDING WORKS - COMMITMENT BY POSTULATION

VOLUME ONE

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This study is the result of personal concerns and an awareness of the difficulties often experienced by contractors undertaking to construct small building works.

The deliberations have related to many works of reference, to trade publications and to the Journals of associated professional bodies. Gratitude is extended to the authors of this material.

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DECLARATION

Major sections of this thesis have been incorporated within a Report, Procurement of Work by the Lump Sum Selective Tender Process (The Without Quantities Arrangement) - Assessment of Risk and Uncertainty dated March 1989. The Report was commissioned by the Chartered Institute of Building and fulfilled the requirements for a Queen Elizabeth II Silver Jubilee Scholarship award.[1]

[1] Appendix L, *post*, pp xxiv.

MINOR BUILDING WORKS - COMMITMENT BY POSTULATION

ABSTRACT

Procurement of small building works by the traditional 'lump sum without quantities' arrangement is often frought with difficulty. This unfavourable condition exists irrespective of the size of the project or the money value placed upon it. The building process constitutes an amalgam in the context of both design and construction and, in this respect, high quality co-ordinative management is an essential ingredient to the success of the enterprise. Established lines of procedure exist to assist management in the achievement of objectives however achievement is rare. The violation of these objectives points to inferior quality management, to faults within the procedural mechanism or to a combinement.

The building industry is aware of the manifestations created by the areas of difficulty and the findings of commissioned research have related these manifestations to faults within the procedural mechanisms. One major piece of research published in 1964 relates known problem areas to deficiencies in information and time. A further major piece published in 1987 refers to similar problem areas but focuses attention upon information and co-ordinative management. These significant pieces of research serve to show that information is fundamental to the problem areas associated with building works contracts. Furthermore they show the problems which existed in the early 1960's to remain and the initiatives generated since that time to be largely ineffective.

This study, in considering the letting and management of minor building work contracts by the lump sum selective tender process, has:

provided the work category with definition and has argued the case against segregation,

examined the particular needs of the contractor for quality information and time and has compared these needs with both

endemic practices and with procedures recommended by the industry,

deliberated upon the philosophical issues relating to the small building firm to relate objectives with work characteristics,

gained, by empirical survey, the opinion of contractors towards established recommended procedures,

identified areas of deficiency and has quantified the measure of risk and uncertainty created by those deficiencies,

related deficiency within practice and procedure to behaviour,

established prescriptive measures to wholly eliminate some of the problem areas and to substantially reduce others.

This study differs from earlier research and contributes to the knowledge of the subject treated on three accounts,

1. that credence is given to the significancy and the particular needs of small building works,

2. that, in terms of contractural obligations, subscription favours mutual recognition and dispels the wholly singular manner of approach offered by earlier commissioned research,

3. that the suggested remedial measures are directed towards proactive rather than reactive ideals.

DEFINITIONS

Ibid	the footnote referred to above in thesis.
Op. cit.	previously referenced in this chapter of the thesis.
Ante	references to page numbers in Roman numberals are those at the begining of the thesis.
Post	references to page numbers in Roman numerals are those towards the end of the thesis.
Infra	beyond and within the chapter of this thesis.
Supra	before and within the chapter of this thesis.

References within Chapter Ten - Conclusion

The use of references within the conclusion do not relate to additional material but have been included to assist the reader.

ABBREVIATIONS

ACA	Association of Consultant Architects
Action Report, The	(Action on The Banwell Report) a report prepared for the Economic Development Committee for building to test the effectiveness of The Banwell Report, HMSO. London, 1967.
BPF	British Property Federation.
BPF System	British Property Federation System for building design and construction.
BRE	Building Research Establishment.
CIRIA	Construction Industry Research and Information Association.
CCPI	Co-ordinating Committee for Project Information.
CPI	Co-ordinated Project Information.
CPSSST	Code of Procedure for Single Stage Selective Tendering.
IFC 84	The JCT Intermediate Form of Contract 1984.
JCT	Joint Contracts Tribunal.
JCT 80	The JCT Standard Form of Building Contract 1980 edition.
MW 80	The JCT form of agreement for minor building works 1980 edition.
NBS	National Building Specification.
NEDO	National Economic Development Office.
NFBTE	National Federation of Building Trades Employers.
NJCC	National Joint Consultative Committee.

RIBA	Royal Institute of British Architects.
SMM 6	Standard Method of Measurement of Building Works: Sixth edition.
SMM 7	Standard Method of Measurement of Building Works: Seventh edition.
Simon Report, The	Report of the Central Council for Works and Buildings to the Minister of Works on "The Placing and Management of Building Contracts", HMSO, London, 1944.

PREFACE

Defining the Area of Study

This study relates to procedures and practices common to minor building works where detailed measurement in the form of bills of quantities do not form part of the contract documentation.

Minor building works occupy a major sector of the total building industry output within the United Kingdom. A survey of building contracts in 1980 by the RIBA[1] established that 75 per cent of the work of 75 per cent of the architectural practices throughout the whole of the United Kingdom was related to contracts of less than £75,000. Minor however in this context is something of a colloquialism as the term is devoid of specific definition and to avoid ambiguity all future references will be to 'small' rather than 'minor' works.

Hillebrandt[2] in considering the constructing firm and its objectives offers statistics to indicate that in 1982 small firms of building contractors or subcontractors which operated with fewer than 25 employees represented 96% of the total number of building firms in the United Kingdom and that these firms were responsible for approximately 36% of the total work output. Seeley[3] commenting upon the importance of building and, in particular, small works states that "approximately one half of the value of fixed capital produced in this country each year emanates from the construction industry" and that "about twenty per cent relates to repair and maintenance works".[4] The small work type is often fraught with difficulty and is disposed to conditions similar in every respect to those conditions normally associated with a larger building project. Industry has shown an awareness of the symptoms which relate to this condition in the context of the larger project and an awareness of the problems created for the parties to the building contract. However a similar level of concern has not been directed towards small building projects. This awareness has resulted in substantive

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1 See *ante*, pp. (ii) and (iii) for abbreviation.

2 See References, *post*.

3 *Ibid*.

4 I H Seeley, The Concept of Cost Control, in Building Economics, The MacMillan Press Limited, London and Basingstoke, Third Edition, 1983, pp.4-5.

research being commissioned by the building industry since 1960 together with the publication of recommendations and conventions aimed at improving, amongst other issues, the procurement system. These recommendations and conventions have merit in principle but they have been proved to be largely ineffective in their application. This condition of incompatibility which exists between the engendered principles and the administration of those principles is influenced to a large extent by the level of flexibility afforded by the recommendations and conventions and the interpretation of directives. Furthermore the directives have been singularly inclined to favour those who commission building works and this attitude is portrayed with an almost total disregard for those who undertake to construct the works.

The small works classification of building work, whilst being devoid of specific definition, enhances a multiplicity of work types. As a consequence it attracts a large variety of contracting organisations with equally varied degrees of skill and expertise. For certain reasons small building works do not often enjoy the traditional codes of procedural discipline more commonly associated with the larger building project. The effects of this procedural characteristic is reflected by the inferior quality of financial control which is capable of being achieved and the incidence of dispute which often gives rise to litigation or arbitration. In more sever cases this lack of financial control can result in a state of insolvency being declared and insolvency imposes suffering upon all concerned with the building project and has far reaching implications.[5]

The Objectives of the Study

1. To establish definitive lines of association between the problem areas which are known to exist within the minor works sector of the building industry and the quality of communicative behaviour.

2. To examine procedural disciplines normally associated with minor building works from the viewpoints of the client, the professional adviser and the contractor. This unific approach

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[5] See Appendix J, *post*, pp. xxi.

will provide a more realistic perspective than currently exists. It will also facilitate a more balanced examination of the known problem areas.

3. To establish the significance of the problem areas by correlating empiric conspectus and published opinion. The results to be expressed in terms of risk and uncertainty.

4. To introduce into the procurement mechanism prescriptive equitable measures, whereby,

   a. the interests of both parties to the building contract are equally disposed and mutually served,

   b. the measure of risk and uncertainty to be borne by the contractor is significantly reduced.

PART 1

THE PHILOSOPHIC ISSUES

CHAPTER ONE - Introduction to Part 1

Interpreting the small building works category

Judgement upon small or minor works has been made by certain authorities. Upper and lower limits have been decided upon where, for financial reasons, it has been considered necessary to demarcate between small or minor works and large works.

The words 'minor' and 'small' have been used by different authorities to define the magnitude of the works in terms of physical size or financial value. In the etymological sense there appears to be no significant difference between the two words and for the purpose of this research they have been assumed to be terms of colloquidity and to have a similar meaning.

Two publications offered as a guide to pricing building works define small works as,

> "those of a total contract value not exceeding £50,000 and which may be all new work, entirely of repairs, renewals and renovations or a combination of new work and repairs, renewals and renovations".[1]

This definition has recently been changed to read,

> "The prices are based upon a contract of extensions and alterations to an existing building, two or three storeys high, having a tender price of about £50,000 requiring small quantities of materials and labour".[2]

Another building price book offers a slightly different interpretation for small works,

> ".... for contracts for works of repairs and alterations and small extensions. The type of contract envisaged would be in the range of £25,000 to £65,000 value involving either the conversion and repair of existing two or three storey dwelling homes with small extensions for additional

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[1] Introduction in Wessex Building Price Book, Wessex Electronic Publishing, Dorset, 3rd Edition, 1985. 6, code ref. AA - AB.

[2] Introduction in Building Minor Works, Wessex Database, Vol.2, Wessex Electronic Publishing, Dorset, 5th Edition, 1988, code ref. AA - AB.

> accommodation or the conversion alteration and repair of existing office factory or other type of building with a certain amount of internal reconstruction". [3]

Similarly the JCT[4] has offered an upper limit of £50,000 at 1981 prices in the case of MW80[5] and this upper limit remains unchanged at 1988. JCT80[6] and IFC84[7] possess neither upper nor lower limits but IFC 84 contains a recommendation which suggests an upper limit of £250,000. These three standard forms of contract are therefore flexible in respect of the financial value of the works. This degree of flexibility provides the professional adviser with an opportunity to select a particular standard form on the basis of appropriateness in relation to the measure of simplicity and complexity of the works.

The RIBA[8] relates a much higher financial value to small works;

> "This document is intended for use where the scope of the works and the architects services are such that extensive consultants' services are not required and where the total construction cost will not normally exceed £100,000. For more complex projects the full edition of the Architect's Appointment should be used". [9]

This problem of definition appears therefore to be one of viewpoint and relativity. For example, in the context of a contracting organisation, a contract of value £15,000 being carried out by an organisation operating a £100,000 turnover would probably be judged large whereas a similar contract undertaken by an organisation operating a £3,000,000 turnover would probably be judged small.

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[3] Small Works Section, in Laxton's National Building Price Book, Thomas Skinner Directories, West Sussex, 159th Edition 1987.

[4] See *ante*, pp. (ii) and (iii) for abbreviations.

[5] *Ibid.*

[6] *Ibid.*

[7] *Ibid.*

[8] *Ibid.*

[9] RIBA, Architects Appointment - Small Works, Part 1, RIBA Publications Limited, London, September 1982, amend. 6 July 1989.

The case study[10] serves to illustrate that in some instances neither the financial value nor the levels of simplicity and complexity associated with the works are reflected by the type of documentation used.

Considering the importance of the definition

The above examples outline the various recommendations and these examples together with the case study analysis, indicate the measure of disregard often shown to those recommendations. This poses the question of whether or not the definition is important and relevant to the issues being considered. Also whether or not there is a need to draw a specific line of demarcation between small and large building works. In responding to these questions it is necessary to deliberate upon the reasons for segregation and the particular benefits segregation provides to the parties to the contract.

Establishing the reasons for segregating small and large works

The guidelines proffered by building work price books may be disregarded in this context for such publications react to custom and practice. They are not concerned with the reasoning, design and application of systems or matters of procedure. Similarly the advisory pamphlet[11] may also be disregarded as this is concerned with the extent of consultant services involved in design and supervision, the architect's obligation to the client and fee scales none of which directly affect the placing and management of contracts.

Elimination of these extraneous issues focuses attention upon the conditions of contract. The detailed examination and evaluation of standard and alternative forms of contract conditions are beyond the scope of this study except insofar as the documents have a bearing on issues relating to communication and to risk and uncertainty. However the conditions of contract have contributed to the philosophy which has determined the need for segregating

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10 See Appendix B, *post*, pp. v-vi.

11 RIBA, *op. cit.*

major, intermediate and minor building works and it is necessary to consider the broader issues of this philosophy.

A need for one common form of contract for use with all building works was strongly recommended in The Banwell Report.[12] Notwithstanding this the JCT, having been augmented in 1966 by representation from two specialist sub-contract associations, realised the necessity for the then current nominated sub-contract provisions to be radically revised. It was also realised that such revisions would have to be designed to take account of other proposals which concerned the main body of the conditions of contract and that this would require the production of an entirely new form of contract. These deliberations resulted in the publication of JCT80. The new standard form was considered by many to encourage good practice in the administration of contracts. However it was considered unwieldy and complex in respect of procedural matters and suitable only for use with projects where the size and complexity of the works made demands for a commensurate degree of detailing.

During the period 1966 to 1980 the only other JCT standard form of contract available for use in the private sector was the Agreement for Minor Building Works. (1968 edition). This document, according to Jones and Bergman,[13] "was clearly unsuitable for other than simple contracts of low value".[14]

The redesign of the 1963 edition of the RIBA Standard Form with amendments resulted in the publication of JCT80 and this in a variety of formats to suit different needs. This publication created a need for a similar treatment to be administered to the Agreement for Minor Building Works (1968 edition). As a result MW80 was issued by the JCT in January 1980.

These two standard forms of contract were designed to provide independently for the needs of the large complex project and for the small project of simple character and low value. Precautionary

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12 See *ante*, pp. (ii) and (iii) for abbreviation.

13 See References, *post*.

14 Neil F Jones and David Bergman, Background to the Intermediate Form, in A Commentary on the JCT Intermediate Form of Building Contract, Collins Professional and Technical Books, 1985. p2.

measures were taken by the JCT in the drafting of MW80 against indiscriminate and inappropriate use. These constraints were deemed necessary due to the simplistic nature of the document.

Besides establishing an upper financial limit, above which MW80 should not be used, the document embraces other intended and implied constraints. Whilst these constraints are not expressed in the actual document they are engendered in associated publications. Practice Note M2[15] contributes to the definition in clause 2.

> "... Where the works are of a complex nature a bill of quantities would ordinarily be necessary".

Similarly the Manual for use with MW80 comments upon the suitablity of the agreement and, in this respect, raises the issues of time, value, complexity, skill and desruption.[16]

However the Manual suggests that the degree of complexity directly concerns the nature and type of work and is not related in any way to size, value or time period designated to the construction of the works. In this respect it could be argued that complexity can be equally pronounced in both small and large works.

The small works sector embraces a large variety of work types with significant areas of specialisation. Equally the sector attracts a variety of contracting organisations with widely differing aptitudes in respect of technical skill and commercial expertise.

The constraints contained within both the standard and the minor work forms of contract were jointly responsible for creating a void and for necessitating a further document to cater for works of simple character but of a higher value than envisaged by MW80. This demand resulted in the publication of IFC84.

The reasons for the segregation of minor and major building works are therefore known. Whilst price, which presumably means contract value, is referred to as a limiting factor only in MW80, the

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15 JCT, Practice Note M2, Agreement for Minor Building Works, 1980 Edition, RIBA Publications Limited, London, 1981.

16 Manual for use with the JCT form of agreement for minor building works, The Royal Institute of Chartered Surveyors, London, 1980, cl 4.2 and 4.2.1 to 4.2.6.

limitations common to all three standard forms are to do with the degree of simplicity or the degree of complexity of the works.

Considering the benefits of Segregation

Frequently it is difficult to decide upon an appropriate standard form of contract to suit the particular requirements of a project. The decision, which has to be made pre-tender and possibly prior to the design work being completed, relies totally on the opinion of the professional adviser who has to assess the degree of simplicity or the degree of complexity of the project. However there are two distinct aspects to be considered in this regard, the design and the construction.

Personal experience, gained over a period of twenty five years within both design and construction, has shown that the measure of complexity can vary appreciably between that experienced during the design process and that experienced during the construction process. An unbiased and balanced judgement is therefore required from the professional adviser when assessing the degree of simplicity or the degree of complexity of the project.

The aims of the JCT80, IFC84 and MW80 are similar. However the degree of variance which exists between the three, which were designed to achieve a level of suitability commensurate with the nature and size of the building works, permits flexibility. The measure of intensity and attention to detail which the documents afford will substantially influence the degree of flexibility and tolerance made available to the user. This may influence selection and may create an opportunity for indiscriminate usage by the professional adviser.

The larger property ownerships in both the public and private sectors are generally more aware of the shortcomings inherent in the shorter and simplified standard forms of building contract than the smaller property ownerships. This is because the larger element possesses experience in both interpretation and administration whereas, for the smaller counterpart, building is often a singular and unique experience.

This distinction suggests that in many instances the smaller property ownership is not usually as well versed in the placing of building contracts as the larger counterpart and, in this respect, is totally reliant upon the advice of the appointed architect or other professional adviser. There are differences also in objectives between the public and private sectors. The prime objective of the public sector client is to satisfy the interests of the community whereas the objective of the private client is mostly directed towards commercial gain. Whilst time and cost both feature prominently within each, there are differences in levels of responsibility and accountability between the two. These differences are often reflected in the manner by which building contracts are placed and managed.

The attitude of the private client to technical and legal issues and the importance and adequacy of communication are clearly stated in two publications. Willis and Ashworth[17] comment upon the importance of communication between the client and the professional adviser insofar that,

> "The surveyor must remember that the building owner often has no technical knowledge, and he must therefore be careful to explain his advice and recommendations in layman's language".[18]

Clamp[19] makes reference to the degree of adequacy required from standard forms of contract conditions and to the difficulties of interpretation,

> "It has been said that a contract that does not clearly express the intentions of the parties is worse than no contract at all. Equally if the terms, conditions and obligations of each are not consciously and intelligibly set out problems are inevitable.
>
> 'Words', said Lord Denning, 'are the lawyer's tools of trade. When you have to draw up a will or a contract you have to choose your words well. You have to look into the future -

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17 See References. *post.*

18 Christopher J Willis and Allan Ashworth, The Quantity Surveyor and the Law, in Practice and Procedure for the Quantity Surveyor, published by Collins Professional and Technical Books, London, ninth Edition, 1987, Chapter 6, p.92.

19 See References, *post.*

> envisage all the contingencies that come to pass - and then use words to provide them. On the words you use your client's future may depend'. (The Discipline of the Law, London 1979). The meaning of the words, however, depends not only on definitions given in a dictionary, but also on their context within the sentence in which they occur, any special meaning that has been established for them over the years by accepted usage and any meaning given to them by legal precedent arising from a judgement given as a result of a dispute in the courts".[20]

This extract refers specifically to the wording of contracts but the principles equally apply to other forms of tender and contract documentation for which the professional adviser is responsible.

This suggests that the smaller property ownership has no particular interest in the conditions of contract providing assurance has been given by the professional adviser as to the appropriateness of the document and providing their interests are being satisfied. The building contractor viewpoint may however be different. Whilst the shorter forms are more easily digestible there are greater benefits to be derived from the use of the main standard form of contract conditions. This is because the degree of flexibility afforded to the professional adviser is minimised and because the documentation is more complete and often more closely representative of the works.

The selection of a particular standard form of contract is decided upon prior to the works being offered for tender. Having due regard to the attitudes of the client and the professional adviser, then the benefits derived from the use of a particular form must, in the main, belong to the architect or other professional adviser.

The Characteristics of the firm

The 'business unit' is the economists definition of the work firm. Its application to the building construction industry comprises two main types. The private one-man businesses operating by using the entrepreneurs own capital with unlimited liability and limited liability companies where liability is limited to the money invested.

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[20] Hugh Clamp, The Shorter Forms of Building Contract, Granada Publishing Ltd, London, 1984, p.2.

The latter type includes private limited companies and subsidiaries of public limited companies and it is normally this type of organisation that undertakes small building works.

According to Hillebrandt[21] there existed in 1982, 24 large main building firms each employing directly 1200 persons or more and these firms carried out approximately 11% of the recorded output although as main contractors they were responsible for nearer 15%. Smaller firms having fewer than 25 employees are 96% of the total number of building firms in the United Kingdom. These firms carry out directly as contractors or indirectly as subcontractors about 36% of the work. These statistics indicate that firms employing between 25 and 1200 persons occupy around 51% of the total market in the United Kingdom.[22]

Seeley[23] commenting upon building in the context of the Gross National Product and, in particular, small works states that, "Approximately one-half of the value of fixed capital produced in this country each year emanates from the construction industry" and that "about twenty per cent relates to repair and maintenance work". In 1980 it was estimated that there were approximately 29,000 limited liability companies in the construction industry of which 93 had a capital employed in excess of £4.16 million. During the period 1977 to 1980 the number of companies fluctuated from 27,400 to 30,700 with the number of larger companies falling from 109 to 93.[24]

Identifying the areas of concern

The small works sector of the building industry is diverse in work classification and size. Also in the degree of associated difficulty and complexity. The range extends from alteration work, extensions and refurbishment to the construction of new buildings

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21 See References, *post*.

22 Patricia M Hillebrandt, The Firm and its objectives , in Economic Theory and the Construction Industry, published by The MacMillan Press Limited, London and Basingstoke, 1984 reprint, chapter 8, pp. 87 - 93.

23 See References, *post*.

24 I H Seeley, The concept of Cost Control, in Building Economics, The MacMillan Press Limited, London and Basingstoke, Third Edition, 1983, pp. 4 -6.

in the domestic, industrial, commercial and public service classifications.

Whilst the small building firm differs in many ways from the larger counterpart, both have similar objectives. The traditional objective of building contractors according to Hillebrandt is "the maximisation of money profits".[25] Arguably this objective applies irrespective of the size of the firm or the size and nature of the works.

Notwithstanding this, arguments exist against profit maximisation as the sole criterion. Behavioural theorists Cyert and March[26] see the objectives of the firm as being concerned with organisational structure and internal operations. Similarly many economists regard survival and growth as the main objectives with profits being a necessary pre-requisite. There are others who support the theory that contracting is a way of life and that many contractors would not wish to cease business even if they could obtain a higher return on their capital and labour by using it in some other way. Another theory is that the entrepreneurs may value leisure and other personal interests more than a selfish singular inclination directed towards the potentials of profit making.

These differences in opinion are contained within the abstract,

> "If a businessman heading a construction company were asked why he was in business on his own his answer might be:
>
> 'Because I like being my own boss'
>
> 'To make money'
>
> 'For the excitement'
>
> These are personal objectives and in order to achieve them the business which is the vehicle for realising them must exist and must continue to exist. This leads to the first and

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25 Hillebrandt, *op. cit*, p. 89.

26 R M Cyert and J G March, A Behavioural Theory of the Firm, (Eaglewood Cliffs N J; Prentice - Hall 1963).

> most vital of business objectives - to survive or to continue to exist".[27]

However valid these opinions may be the concept of profit maximisation is nontheless fundamental to the well-being, success and survival of the firm. Satisfaction in this respect permits the pursuit and enjoyment of secondary and more trivial matters.

There appears to be no data or information available to support the extent to which building contractors aim to maximise profits. However, personal experience has indicated the prominence of this objective insofar as knowledge of the dangers of obtaining work at too low a price is concerned.

There exists a relationship and dependency between turnover and profit. The inability to achieve turnover forecasts will directly influence the profit potential. In this context the achievement of a desired turnover target may be considered to be more important than making a profit. This line of thinking is supported by Sir Maurice Laing, speaking on "Ethics and Conduct of Designers and Constructors" at a meeting of the Joint Building Group on 21 February 1968, when he referred to the many responsibilities of a large contracting company. Reference was made to the obligation to secure a reasonable return on the investment in respect of shareholders and a moral obligation to employees in recognition of their vital hard work, loyalty and initiatives. He also expressed a further obligation to the employees to create a financially sound business, to pay adequate remuneration and to provide congenial, rewarding, safe, regular and secure work.

To achieve these objectives involves the consideration of turnover initially and from this the profit potential stems. Sir Maurice Laing concluded to the effect that,

> "the primary objective must be financial and that this is to make adequate profits .... The second objective for such a company must be to remain in business. The third, I suggest, is to progress and expand for the benefit of the shareholders".

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[27] J R Jones, Finance and the Control of Cost, in Construction Management in Principle and Practice, (EFL Brech Ed.), Longman Group Limited, London, 1971, p. 459.

Although the speech was directed at the large contracting company the philosophy and principles are equally consistent to the smaller organisation.

These objectives have merit but in order to achieve them the business which is the vehicle for realising them must exist and must continue to exist. This fundamental objective applies to any business enterprise and the case study analysis[28] illustrates this point.

The cost to build, when considered in relation to the maximisation of profits, also concerns time. In this respect time and money resources are both fundamental pre-requisites to the success of any enterprise and concern equally both parties to the building contract and others who possess an interest in it.

The level of importance attached to the money criterion probably accounts for the fact that procurement methods in respect of small building works rely mainly upon the competitive tender process.

To the private client who views building development works as a unique experience then price is usually of the essence. As a consequence the lowest 'lump sum' tender resulting from the competitive tender process is generally unequivocally viewed as being totally representative of the value of the proposed works.

This attitude is not well founded and entering into contract on the basis of the lowest unqualified bid may prove to be hazardous as the effects are not generally revealed until much later when the construction work is being progressed.

By implication, time is also of the essence of the contract. This is borne out by the inadequacy of tender documentation resulting from incomplete design elements,[29] restrictive time allowances for tender preparation,[30] the degree of importance attached to the

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28 See Appendix B, *post*, pp. v - vi.

29 See Chapter Five, pp. 71-80 and Chapter Ten generally.

30 See Chapter Three, pp. 25-27 and Chapter Ten generally.

contract period,[31] and the provision of liquidated and ascertained damages.[32] These elements will be the subject of detailed consideration under their separate heads.

Furthermore, due to the need for quantities, tender procurement methods based on drawings only or drawings and specification substantially increase the amount of work to be carried out by each contracting organisation invited to tender.

This attitude of false economy, which offers benefit to the client in the short term, provides for adversity in the long term.

Contracting organisations operating within this volatile and highly competitive selective tender market have accepted this encumbrance in the past probably because, if for no other reason, the procedure has evolved over a period of time into a generally acceptable practice.

Considerable emphasis has been directed during recent years towards the larger project and, in particular, to the needs of the larger project for alternative methods of tender procurement and contractual arrangement. The consideration of alternatives to the traditional system of placing and management of contracts is necessary when 'time is of the essence'. In this context any saving in time has to be made from the time normally allocated to the pre-tender design process.

Generally the probable benefits to be gained in earlier contract completion times in respect of the smaller project is outweighed by the demands of cost budget limitations.

The need to invest and the need to maximise upon that investment is the prime consideration of any business enterprise and concerns equally the client and the contractor. Both require the building project to be completed at the earliest possible time and within the cost limit established by the budget.

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31 *Ibid*, pp. 25.

32 See Chapter Four, p. 57.

For this reason the selective tender process remains the most satisfactory method of letting work from the client viewpoint where cost is of the essence of the contract. The process, which has been in use for many decades, has been accepted by industry as the norm even though the process at best has faults. Changes in the economy during recent years has had the effect of reducing the amount of work available to the construction industry and this has increased the element of competition. Money as a resource commodity has varied in its degree of stability over the past twenty five years. The cost of borrowing has been similarly affected and whilst favourable loan terms currently exist there is no guarantee that this will remain so.

Budgets are predictions and to be effective the predictions must be accurate within reasonable limits. Disregarding human error, the accuracy of a prediction relies totally on the fullness of the information provided and the medium for communicating the requirements of the client to the building contractor provided for by the contract documentation. Documentation which is incomplete, ambiguous or lacking in any manner or form is inadequate for the purpose intended and this inadequacy intensifies the element of risk placed upon the contractor.

The procurement system which envisages the 'lump sum' bid geared to the selective tender process distinctly isolates the two processes of design and construction, and there appears to be no valid reason why the two processes should not be distinct. There is nevertheless an obvious need for the detailed information arising from the processes to be jointly and severally known to both parties to the contract or their agents. A realistic and *bonafide* offer to provide goods or services must be based upon and supported by sufficient detailed information otherwise the precise requirements of the party making the offer cannot be fully known. Conversely, changes brought about during the construction period for which reimbursement of time and/or money is sought must be totally substantiated and presented in sufficient detail to facilitate accurate assessment.

Recommendations on matters of procedure in respect of the placing of contracts exists within the relevant codes of procedure for

selective tendering. Mandatory directives also exist within the standard forms of contract for the managing of building contracts. Both the recommendations and the mandatory directives are concerned with information and the transmission of that information between the parties to the building contract or their agents.

Communicative procedures to establish unification of the building project therefore exist and are of paramount importance in the placing and management of building contracts.

Establishing a datum for the research

The inadequacies of the procedures and systems used by industry for the placing and management of building contracts were scrutinised by a working party acting under the chairmanship of Sir Harold Banwell. This research was commissioned in 1962 by the Rt. Hon. Geoffrey Rippon, MP, Minister of Building and Public Works.

The terms of reference of the commission were,

> "To consider the practices adopted for the placing and management of contracts for building and civil engineering work; and to make recommendations with a view to promoting efficiency and economy".[33]

The Report issuing from this research (The Banwell Report) was Published in March 1964 and contained details of the investigation concerning tender procurement, conditions of contract, assignments and financial management and it made specific recommendations in respect of each.

In July 1965 the Economic Development Committee for Building appointed an independent working party with the following terms of reference,

> "To consider the progress and adequacy of the measures taken, or contemplated for the implementation of the Banwell Committee Report ....", and "to consider any other

[33] The Banwell Report, letter to the Minister of Public Building and Works dated 25th March 1964.

relevant aspects of the placing and management of contracts for building".[34]

The initiatives adopted by the working party in response to these terms of reference resulted in the publication of The Action on the Banwell Report.

Both The Banwell Report and The Action on the Banwell Report made recommendations to industry and these recommendations were incorporated to a large extent in the CPSSST[35]. Today industry still relies on the CPSSST and its directives in respect of both procedure and ethics.

The above terms of reference serve to illustrate that deficiencies inherent within the system relating to the placing and management of contracts were of similar dimension and character to those which currently exist.

Whilst valid recommendations on the placing and management of contracts resulted from these substantial pieces of research commissioned by the Minister of Building and Public Works and although the recommendations were implemented to a large extent, the problems remain. The research commissioned in 1962 is nonetheless relevant to the pertinent issues of this study and it provides a useful datum and viewing platform.

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[34] NEDO, Action on the Banwell Report, HMSO, London, 1967, preface p. vii.

[35] See *ante*, pp. (ii) and (iii) for abbreviations.

CHAPTER TWO

INFORMATION AND THE MEDIUM OF CONVEYANCE

The aims of communication

Research undertaken for The Banwell Report[36] and the CCPI[37], both consider the significance of information as it relates to both parties to the contract and each stresses the need for the information to be sufficient for the purpose intended. Established procedures are available in the form of recommendations to aid both communication and the selection process leading to the placing of contracts. Established procedures are also available in mandatory mode to aid management during the construction process.

Communication is to impart and confer upon another information to achieve understanding and common participation. For the communication to be effective it must be totally objective.

Communication in the context of the building contract initially relies upon the often lay client possessing the ability to convey precise requirements to the architect or other professional adviser. Upon this often basic information the architect has the task of designing a scheme which is functionally, aesthetically and structurally acceptable and to a price the client can afford.

The style of communication as a means of conveying interpreted directives in the traditional competitive method of tender procurement is defined within CPSSST.[38] Although CPSSST closely follows the recommendations of The Branwell Report it is mainly concerned with procedures up to tender acceptance even though the use of an unamended standard form of contract is strongly recommended whereas The Banwell Report views the project development overall.

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36 See *ante* pp. (ii) and (iii) for abbreviation.

37 *Ibid.*

38 *Ibid.*

The requirements and the need for a totally complete and adequate system of communication is contemplated by the JCT Standard Forms of Building Contract. JCT80[39] states,

> "The Contractor shall and subject to the Conditions carry out and complete the Works shown upon the Contract Drawings and described by or referenced to in the Contract Bills and in the Articles of Agreement, the Conditions and the Appendix ....".[40]

The conveyance of the requirements of one party to the contract to another is totally reliant upon these documents. The documents also establish the limit of commitment. Inadequacies arising as a result of misinterpretation, vagueness, lack of attention to detail and direct omission, are irritants the disruptive influence of which is invariably reflected in unfavourable financial implications.

In the context of a building contract the burden of responsibility in respect of effective communication lies heavily upon the architect or other professional adviser. The architect has to interpret the requirements of the client and, by employing skill and expertise, design to those requirements within aesthetic, structural and cost constraints. This information has then to be conveyed to the contractor in a manner which will ensure total understanding. Even assuming that the architect or other professional adviser possesses sufficient knowledge and understanding of the structure and requirements of the contracting organisation the objective remains extremely difficult to achieve unless adequate time and money resources are available to aid the process.

A further important feature concerning responsibility is that in the 'with quantities' arrangement the level of responsibility is shared between the architect and the quantity surveyor and the extent of the discretionary powers are limited as a result. The 'without quantities' arrangement places the onus of responsibility solely upon the single professional adviser with increased powers of discretion.

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39 *Ibid.*

40 JCT80, cl 2.1, Contractor's Obligations.

Building work by its composite nature is very complex and specialist intensified. These characteristics apply irrespective of the size, type and nature of the works or the money value placed upon them. The component parts are diverse and their integration to form the whole unit demands a high level of management resource and expertise. These criteria have to be applied also at pre-tender stage to achieve accuracy of prediction relative to the degree of competitiveness sought and to satisfy the basic need of survival.

Maintaining the management resource and expertise levels is difficult for the contractor even assuming a utopian situation where all information is available. The sole vehicle for conveying information and requirements from the client to the contractor at pre-tender stage is by use of 'standard' documentation. Any inadequacies appertaining to that documentation will have adverse effects upon the contract. The resultant disruption and delay will probably give rise to claims but whether or not the claim is featured the contractor will, through no fault of his own, suffer loss and expense which may be considerable.

There are five important aspects contained within The Banwell Report which serve to identify the faults and needs of the construction industry at that time. It is necessary to consider these aspects in order to establish the direction of thought applied by the Working Committee when deliberating upon the problem areas and deciding upon remedial measures. These considerations are important because the construction industry today still relies, albeit indirectly, on the recommendations of The Banwell Report in respect of the placing and management of contracts.

The five notable aspects are:

1 "We consider that the most urgent problem which confronts the building industry is the necessity of thinking and acting as a whole".[41]

2 "Most of the difficulties which arise in the placing and management of contracts relate to work of new construction; our recommendations are of particular importance in that kind of work, but many of them are

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41 The Banwell Report, Chapter 1, General Observations, cl. 1.2, p.1.

just as relevant to works of maintenance and repair and small jobs".[42]

3 "The importance of time..... those who find it necessary to spend money on construction work seldom spend enough time at the outset on making clear in their own minds exactly what they want...; nor is the importance of spending time in this way sufficiently emphasised by their professional advisers. It is the duty of those who advise him to make it clear that time spent beforehand in settling the details of the work required and in preparing a timetable of operations, from the availability of the site to the occupation of the completed building, is essential if value for money is to be assured and dispute leading to claims avoided. It is also necessary for the client to be told of the need to give the contractor time to make his own detailed arrangements after the contract has been let, and of the penalties of indecision and the cost of changes of mind once the final plans have been agreed, ... there is no doubt that inadequate programming and information are the cause of many claims which could and should have been avoided".[43]

4 "Minor works. There is a wide range of construction in which the client deals not with professional advisers but directly with the contractor; ..... It is particularly in this field that difficulties so often arise because of lack of forethought before work is commenced. It is unfortunate that there is no generally recognised standard of workmanship or competence which is known to the public at large and accepted by all builders".[44]

5 "..... bills of quantities are essential documents in the tendering process. Although some degree of simplification is desirable ..... simplification is only likely to be achieved through forethought on the part of the Architect ..... to ensure that really adequate supporting information in the form of drawings and specifications is provided to tenderers as a matter of course".[45]

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42 *Ibid*, cl. 1.4.

43 *Ibid*, Chapter 2, The Team in Design and Construction, cl. 2.2, p.3.

44 *Ibid, cl. 2.4.*

45 *Ibid*, Chapter 6, Bills of Quantities, cl. 6.3, p.20.

These areas of consideration emphasise the importance of sufficiency of time, adequacy of documentation and the obligations of the professional adviser to both the client and the contractor in relation to the type and size of project being undertaken. All these areas must be considered in detail and each must be compared with the recommendations of the CPSSST.

CHAPTER THREE

MAINLY PRE-TENDER CONSIDERATIONS - THE CONCERNMENT OF TIME

General

Chapter Two has dealt with the need for an effective method of communication to convey the precise requirements of the client to the contractor. Chapter Two has also dealt with the burden of responsibility placed upon the professional adviser by endeavouring to satisfy this objective.

Consideration has also been given to tendering arrangements 'with' and 'without' quantities. In both instances the objectives are precisely similar but there exists between each substantial differences in levels of responsibility placed upon the professional adviser.

The observations and recommendations submitted by The Banwell Report[46] have been compared with the critique provided by the Action on The Banwell Report and both have been related to the CPSSST. [47]

Examining the 'Code of Procedure for Single Stage Selective Tendering 1977'

The attributes of the CPSSST are formulised insofar that,

> "The general principles of the Code are fully supported by the Department of The Environment and take into account the relevant recommendations of the National Economic Development Office (NEDO) report 'The Public Client and the Construction Industries (1972)', the report 'The placing and Management of Contracts for Building and Civil Engineering Work' (The Banwell Report), and the Action on The Banwell Report". [48]

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46 See *ante*, pp. (ii) and (iii) for abbreviations.

47 *Ibid.*

48 CPSSST, Introduction, cl. 2.1.

Also the purpose and use of the CPSSST is established by the abstract,

> "This Code has been prepared for all who commission building work, whether they be private clients or public authorities, and envisages the use of traditional single stage tendering by a selected list of tenderers". [49]

Both clauses, by implication, indicate a strong bias in favour of the client and this bias is particularly evident in both the time and money related clauses.

Time related elements

Items to be considered under this head are:

i) period of time between preliminary enquiry and the despatch of tender documents; [50]

ii) the contract period; [51]

iii) the time allowed for the preparation of tenders; [52]

iv) the time allowed for the opening of tenders and the time allowed for the consideration of tenders; [53]

v) the time allowed to elapse between the appointment of the contractor and the commencement of work on site. [54]

Considering these time related elements

Item i) - **preliminary enquiry to despatch of tender documents**

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[49] *Ibid*, Forward, cl. 1.1.

[50] *Ibid*, Appendix E, *post*, p.xiii, Tendering procedure, cl. 4.1.2.

[51] *Ibid*, also Appendix A, *post*, p.xii Preliminary enquiry for invitation to tender, particular 'o'.

[52] *Ibid*, Appendix E, *post*, p.xiii, Tendering procedure, cl. 4.3.1 also Appendix A, *ibid*, particular 'q'.

[53] *Ibid*, *post*, p.xiv, Assessing Tenders and Notifying Results, clauses 5.1 - 5.4 also Appendix A, *Ibid*, particular 'n'.

[54] *Ibid*, *post*, p.xv, Post Tender Period, cl. 8 also Appendix A, *ibid*, particular 'r'.

The preliminary enquiry aims to justify two objectives.

1) It enables the contractors who are included on the 'select list' to decide whether or not to tender and to anticipate demands on their tendering staff notwithstanding the fact that circumstances can change during the interim period. The suggested period of between four and six weeks, with a provision for an extension if deemed necessary, seems reasonable.

2) It establishes, at an early stage, a formal list of contractors who are willing to tender. This action minimises the possibility of delay occurring after the tender documents have been despatched. The intention, whilst being valid, is not specifically referred to in the 'Code'.

A letter of standard format has been included in the CPSSST to assist the client and the professional adviser in satisfying this requirement.

Personal experience has shown that a preliminary enquiry for invitation to tender is not always used and in instances when the letter is used the presentation is in an abbreviated form and excludes many vital particulars. An invitation of this type which fails to provide all information to contractors is contravening the true intentions of the CPSSST. It is also jeopardising the main objective of the preliminary enquiry and that being to aid the contractor in the process of making a responsible decision.

Nonetheless the letter, albeit in an abbreviated format, satisfies the second of the two objectives as the responses provide the client with a formal list of willing tenderers.

The importance attached to the needs of a contractor in this respect is shown by the clause,

"It is essential that all the details listed in sub-paragraphs (a) to (u) Appendix A are stated in the preliminary

enquiry. The omission of relevant information may seriously impede contractors in deciding whether or not to tender". [55]

Item ii) - **The contract period**[56]

The CPSSST requires the contract period to be specified in the 'preliminary enquiry for invitation to tender'. This is a requirement of the client but no guidelines or indications are offered as to the method or procedure to be employed in formulating the time period. The agreement of the contractor to this time period is confirmed by the submission of the Form of Tender. The time period constitutes one of the three fundamental obligations placed upon the contractor by the conditions of contract. The other two being to "execute and complete the whole of the works as described" and "for the sum of £....".[57]

Deciding upon the adequacy of the contract period can be costly in respect of time and money. A prudent contractor will need to appraise the works in sufficient detail to determine cycle and element times both in respect of packages of work and relative resource levels.[58] This detailed appraisal is also required to enable realistic cost predictions to be established in respect of preliminary items and cash flow forecasting.

Item iii) - **The time allowed for the preparation of tenders** [59]

The Code of Procedure for Selective Tendering (1959) suggested that "except in special circumstances, four weeks should be allowed for the preparation of tenders".

At the time of The Banwell Report bills of quantities were used to a greater extent than present day. The agreement for minor building works (MW68) whilst not actually stipulating a figure was said to

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55 *Ibid, post*, xiii, Tendering procedure, cl. 4.1.1.

56 *Supra*, p.23.

57 CPSSST, Appendix C, Form of Tender.

58 See Chapter Eight, Table 34, p.151.

59 *Supra* p.23.

be suitable for contracts of a value of no more than £8,000. This was the sum above which the NFBTE[60] had agreed no member would tender without bills of quantities having been prepared by the employers. In present day terms £8,000 would read circa £60,000.

The reason for 'MW80' not stipulating the limit of finance above which no member would tender without using a form of contract employing bills of quantities was due to the legal case of re Birmingham Association of Building Trades Employer's Agreement (1965) (1WLR.484) where the practice was held to be contrary to public interest under the Restrictive Trade Practices Act 1956.

The Banwell Report emphasises the importance of time in this respect.

> "A tenderer who has insufficient time in which to prepare a realistic offer will tend to cover himself against possibly relevant but uncertain factors which he had felt unable to assess accurately in the time allowed. This cannot be in the client's interest. We do not wish to prescribe any set period for tendering, since the time allowed should be governed by the extent and complexity of the project; but we considered four weeks is a minimum for other than minor works and many projects will require longer. The proper allocation of time to tender is of advantage to all concerned, and to cut this must not be regarded as a useful means of reducing the total time required from inception to completion of a project".[61]

The CPSSST generally endorses the sentiments of The Banwell Report in this respect,

> "The time allowed for the preparation of tenders should be determined in relation to the size and complexity of the job. A minimum of four working weeks should normally be allowed; major projects, smaller works without quantities or other special circumstances may require a longer period. The tender period must be sufficient to enable the tenderer to obtain competitive quotations for

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60 See *ante*, pp. (ii) and (iii) for abbreviations.

61 The Banwell Report, Chapter 4, Some Notes on Procedures, cl. 4.9, p. 14.

the supply of materials and for the execution of works to be sub-let....". [62]

Item iv) - **The time allowed for the opening and the consideration of tenders** [63]

The CPSSST, although wanting in terms of expression, is precise in intent with respect to the time allowed for the opening and the consideration of tenders. [64]

A similar sense of urgency is claimed by The Banwell Report.

> "Once tenders have been received it is important that all tenderers should be notified as early as possible whether or not they have been successful. Unless this is done, it is liable to cause difficulty for a contractor tendering for other work, in assessing his resources". [65]

The attitude displayed by The Banwell Report in respect of the need for prompt acceptance or rejection of tenders is enforced by the Action on The Banwell Report.[66]

> "The results of competitors should be notified promptly. Once the contract has been let all tenderers should receive lists of the firms submitting tenders and of prices submitted".
>
> "There are three separate points in the recommendation. First, tenderers should be notified promptly whether or not they are successful. Second, tenderers should be given a list of the firms who have tendered. Third, tenderers should be notified of the prices submitted, but not necessarily with the names of the contractors who have submitted them". [67]

In principle, the considerations and recommendations of the CPSSST, The Banwell Report and the Action of The Banwell Report

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62 CPSSST, Appendix E, *post*, p.xiii, Tendering Procedure, Time for Tendering, cl. 4.3.1.

63 *Supra*, p.23.

64 CPSSST, Appendix E, *post*, p.xiv, cl. 5.

65 The Banwell Report, Chapter 4, Some Notes on Procedures, the need for prompt acceptance or rejection of tenders, cl. 4.11, p.15.

66 See *ante*, pp. (ii) and (iii) for abbreviations.

67 Action on the Banwell Report, Notification of results, Recommendation 4e, p.12.

are similar in their objectives. They all agree on matters of promptitude where this concerns the opening of the tender. The CPSSST however is the only document which is specific in its recommendations with regard to the notification of results.

> "Once the contract has been let every tenderer should be supplied with a list of tenders prices".[68]

This information is of immense value to the tenderer but the Scottish equivalent is of even greater value for this includes also "a list of the firms who tendered". [69]

Whilst the CPSSST provides for all those tendering to be made aware of the successful or unsuccessful nature of their submission the tenderers are nonetheless deprived of this valuable information until such time that the processing of the documentation provided by the lowest tenderer is complete and a contract entered into. The time lapse created by this process could be lengthy. This could frustrate and destroy any benefit which may be gained by the unsuccessful contractors in respect of resource utilisation and strategic tender planning. On the matter of promptness of notification, the Action on The Banwell Report commented on the recommendation made by The Banwell Report to the effect that,

> "Although their practices have all been supported by the NJCC they are not in common use..."

> "Despite the recommendation in The Banwell Report it is still unusual for results of competitors to be circulated, even where lists of prices and contractors are separate. It is frequently suggested that such information will encourage the formation of price rings and collusion. We believe that such fears are best allayed by publication of lists, not by secrecy.... Common practice is still far different from what the Banwell Report recommends, from what the NJCC endorses and from what leading national clients are now doing".[70]

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68 CPSSST, Appendix E, *post*, p.xiv, Assessing Tenders and Notifying Results, cl. 5.4.

69 *Ibid*, cl. *5.4.

70 Action on the Banwell Report, Notification of results, Recommendation 4e, clauses 4.12 and 4.13 p.12.

This statement is directed towards the public client but the comments apply equally to the private client. Prejudicial practices which were observed to prevail when the Action on The Banwell Report was published in 1967 remain in evidence today.

Other factors relating to the acceptance and rejection of tenders and, in particular, the benefits which would be derived by the revival of pre 1967 practices and customs are commented upon by Willis and Ashworth.[71]

> "At one time it used to be the regular custom for builders tendering to be invited to a formal opening, so that they could see that all was fair and above board and could take down the figures. This custom has fallen into disuse and is not often followed, though it might with advantage be revived. Though this suggestion has been criticised by a reviewer as 'outmoded', it nevertheless has the advantage of recommending a straight forward procedure, which makes it clear that from the employer's scale there is nothing 'under the counter'. There seems to be no valid reasons against, though its recommendations in the Code of Procedure for selective tendering has been dropped since the 1965 edition.
>
> The practice sometimes adopted of not giving builders the list of tenders, or giving the figures only without names, is to be discouraged. Publication of the result is the least that can be done in return for the time and trouble taken by tenderers without charge".[72]

Item v) - **The time allowed to elapse between the appointment of the contractor and the commencement of work on site.**[73]

There is no specified time allowed for the period between the appointment of the contractor and the commencement of work on site nor is any recommendation made. However, the importance attached to this period is acknowledged in the CPSSST and in the

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71 See references, *post*.

72 Christopher J Willis and Alan Ashworth, Receipt of Tenders in Practice and Procedure for the Quantity Surveyor, published by Collins Professional and Technical Books, London, ninth edition, 1987, chapter 14, p.191.

73 *Supra*, p.23.

Action on The Banwell Report and both acknowledgements are worthy of consideration.

The CPSSST, whilst drawing attention to the fact that the period between the appointment of a contractor and the commencement of work on site does not fall within the scope of tendering procedure, it does acknowledge the importance of this period.

> "The NJCC recommends that a due period be allowed for thorough project planning and for the contractor to organise his resources".

Furthermore, the commentary signifies the difficulties which may be placed upon the contractor and the problems which may be created by commencing to construct the works without adequate planning.

> "Undue haste to make a physical start on the site may result in extensive and costly variations which can lead to prolongation and not reduction of the total construction period. Regard also should be had, however, to the fact that unnecessary delay in achieving a start on site may involve the employer in extra costs whether or not the contract is based on variation of price conditions. These points should be borne in mind when determining the anticipated date for possession of the site".[74]

In this statement the CPSSST is drawing attention to the need for construction works to commence at the earliest possible time whilst paying credence to the requirements of the client and the contractor. The CPSSST does this without recommending a period of time. The decision for establishing this period therefore rests with the professional adviser. Similarly the Action on The Banwell Report realises the sensitive nature of this requirement and the careful consideration which is required of the professional adviser when deciding upon the time period. The 'Report' also realises that financial pressures experienced by the client may influence the judgement of the professional adviser.

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[74] CPSSST, Appendix E, *post*, p.xv, Post Tender Period, cl. 8.

> "However, local authorities who may be anxious to begin work before the end of the financial year.... do not always allow sufficient time for the contractor to plan his work".[75]

This statement is directed towards the public sector client but it applies equally to the private sector client.

[75] Action on the Banwell Report, Pre-planning, Recommendation 4f, cl. 4.17 p.13.

CHAPTER FOUR

MAINLY POST TENDER CONSIDERATIONS - INDUCING FINANCIAL REIMBURSEMENT

General

Time and money constraints have previously been identified[76] as the two main influences associated with the placing and management of building contracts.

The resource of time is prominent in the pre-tender period and although time remains an important consideration during the construction period the main characteristic is money and, from the contractor standpoint, securing reimbursement for work executed. These matters are catered for by the JCT standard forms of contract condition.

Money related matters

Items for consideration are:

i) the contract sum[77]

ii) certificates and payments[78]

iii) retention[79]

iv) variations[80]

v) extensions of time[81]

vi) damages for non-completion[82]

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76 See Chapter One, pp. 13-15 and Chapter Two, p.23.
77 JCT80, cl. 3; IFC84, article 2, p.3, and MW80, article 2, p.2.
78 *Ibid*, clauses 30; 4 and 4 respectively.
79 *Ibid*.
80 *Ibid*, clauses 13; 3.7 and 3.6 respectively.
81 *Ibid*, clauses 25; 2.3 and 2.2 respectively.
82 *Ibid*, clauses 24; 2.7 and 2.3 respectively.

vii) fixed or fluctuating price levels[83]

viii) prime cost and provisional sums[84]

Considering these money related elements.

The obligations and requirements of the client as they concern money related issues are stipulated in the standard forms of contract condition. The contractor is made aware of the type of conditions to be used in the letter of invitation to tender; specification/schedules of rates or the bills of quantities forming part of the tender documentation. Specific particulars in respect of (ii), (iii) and (vi) above are given in an appendix to the conditions of contract.[85] This information and other information in respect of time related elements, also included in the appendix to the conditions of contract, should provide the contractor with sufficient information to enable a reasonably accurate prediction to be made for cash flow assessment purposes. This pre-requisite is essential for establishing the capital required to finance the works. Cash flow is the life blood of any business enterprise and survival, to a large extent, is dependant upon cash flow requirements being adequately maintained and satisfied. Client and contractor viewpoints are very similar in this respect but during the construction works the contractor is intensely reliant upon an adequate cash flow being maintained.[86] If, for any reason, payments by the client in respect of work executed or materials on site do not measure up to the contractors calculated expectations then the effects of the shortfall will have far reaching implications.[87] Payments by the contractor to subcontractors and suppliers will at some time be seriously affected which will result in progress being decelerated and this with subsequent disruption and delay being experienced.[88] Seeley[89] comments upon the need for a sufficient cash flow and

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83 *Ibid*, clauses 38, 39 and 40; 4.9 and 4.10; and 4.5 respectively.

84 *Ibid*, clause 30.6; 3 and 5 respectively.

85 See appendix K, pp. xxii-xxiii.

86 See Chapter Seven, The Factorial Issues, pp. 104-114.

87 See Chapter Eight, late payment in respect of interim valuations, pp. 160-161 and particularly Table 38, p.156.

88 *Infra*, pp. 39-47, also Chapter Six pp. 87-90 and Chapter Ten pp. 173-174 and 180-186.

89 See references, *post*.

relates this need to the period of high inflation which existed during the late sixties and early seventies.

> "It was estimated that £700m was outstanding to the construction industry in 1971 as a result of the operation of periods for honouring of certificates, retention provisions and periods of final measurements".[90]

In this context the behavioural theorist McKown[91] views the small and medium sized contractor to be more vulnerable than the larger building firm as they have less resilience to adapt to the fluctuations of demand.

Slight upsets and differences as they concern cash flow requirements will affect all construction projects from time to time. They can arise as a result of the nature and type of work being undertaken. This is an inherent risk accepted by the construction industry and prudent contractors will provide for it. However major upsets resulting from more serious deficiencies in respect of the single project or from the cumulative effects of a series of smaller deficiencies cannot necessarily be readily accommodated. These concerns increase the burden of risk to be borne by the contractor and indirectly the risk will be passed to subcontractors and suppliers. Resultant effects of a particular deficiency or a series of deficiencies are rarely limited to the confines of the project responsible for the initial deficiency. As a general rule the deficiencies affect the company as a whole. The extent of the radiating influences can involve many innocent parties who, whilst not being directly associated with the particular project causing concern, are engaged in other construction work with the main contractor thus maintaining an indirect interest.

Assuming in the first place that the cash flow problem has arisen as a direct result of factors outside the control of the contractor. For example, errors may have been created by inadequacies within the project documentation which gives rise to miscalculation, omission or misinterpretation. In such instances the responsibility for the

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90 I H Seeley, The Concept of Cost Control, in Building Economics, The MacMillan Press Limited, London and Basingstoke, third edition, 1983, p.6.

91 McKown, Outlook grey - but not black, in The Guardian, 3rd July 1968.

dilemma may lie with the client requirements. Items (i) to (viii) above can now be considered.[92]

Item i) **The contract sum**

The contract sum, as inserted in the form of tender, constitutes an unqualified ' lump sum' bid.

> "The offer is made by a contractor who tenders to carry out specified construction works in return for a money payment and upon the acceptance of that offer, by the client promoting the project a binding contract comes into being".[93]

This abstract relates the money consideration of the offer to a limited obligation on the part of the contractor to carry out specified construction works.

Wallace,[94] in referring to lump sum contracts raises the issue of uncertainty as it relates to the client's ability to specify.

> "Lump sum contracts, in the legal sense, with or without quantities, are by far the most common in practical use, though it is to be regretted that where the work is in reality not precisely defined or planned projects are sometimes put out to tender by consulting engineers and architects using these forms, relying on their powers to vary the work and issue working drawings for the supply of the actual design during the currency of the work, when they would be far better advised to recognise the reality and use a schedule form of contract, thereby avoiding the probability of large claims of uncertain amount by the contractor".[95]

This opinion by a prominent member of the legal profession raises two issues.

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92 *Supra*, pp. 32-33.

93 Peter R HIbbard, Valuation of variations, in Variations in Construction Contracts. Colins Professional and Technical Books, London, 1986, chapter 5, p.95.

94 See References, *post*.

95 I N Duncan Wallace, Price and Damages, in Hudson's Building and Engineering Contracts, published by Sweet and Maxwell Limited, London, tenth edition, 1970, Chapter 9, p.567.

i) That at the time of publication of Hudson's Building and Engineering Contracts, the 'lump sum' contract was the most common contractual arrangement in practical use.

This implies that the cost of the works are of prime consideration to the client and that the lump sum contract offers certainty of price and establishes the limit of obligation.

ii) That the client and/or professional adviser is prepared to place at risk the probability of large claims for the sake of 'certainty of price' and for this reliance is placed solely on the use of executorial powers.

Wallace in considering the types of document used for tender procurement purposes refers to instances where "the employer wishes to obtain tenders before the full extent of the work is known, or his advisers have had time to design the work", and when for this purpose,

> "the contract is let with one of the current very detailed standard forms, but with only a vestigial bill of quantities or specifications. This is a situation in which the lack of precision in defining the work is an invitation to contractors to make claims based upon alleged variations or delay in supplying information notwithstanding that in tendering they could have been under no illusions as to the position and in which the apparent bulk and complications of the documents may conceal from the employer the facts not only that the work is virtually unplanned but also that the tender price bears little or no relation to the price he may ultimately have to pay, even if no special claims are made".[96]

These statements illustrate the damages which can arise by condoning malpractices particularly where those malpractices concern documentation. The statements relate to the hazards created for the client but arguably a greater proportion of risk and uncertainty is borne by the contractor in such a situation.

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[96] *Ibid*, Chapter 3, Tenders and Estimates, p.199.

A tendering contractor, in endeavouring to achieve a necessary level of competitiveness, will be constantly reminded of two fundamental requirements;

i) to carry out and complete the works within a predetermined time period and to the satisfaction of the professional adviser.

ii) to maximise upon the investment.

An implied undertaking to carry out and complete the works for the sum stated is onerous as shown by Williams v Fitzmaurice.[97] This leading case shows that an obligation to compete is absolute and that any omission to specify finite details of any necessary and obvious sections of the work by inadvertence does not relieve the contractor of his obligation. Nor does it necessarily facilitate additional payment for the extra work being secured.

The ruling on whether or not the reasoning in the Williams v Fitzmaurice case applies appears to rely on the degree of definitiveness shown by the drawings and the specifications. Wallace, in considering contractual arrangements where an employer uses a professional adviser interprets this fundamental obligation.

> "Contracts using drawings and a specification only where the terms of the contractor's express understanding to complete, as described elsewhere in the contract documents in general terms, were taken to prevail over the technical documents, and if there was, by inadvertence or otherwise, a failure to show all the necessary work in precise terms in the documents, the contractor was nevertheless bound to do the whole of the necessary work for the agreed contract price. In such a case the specification and drawings were regarded as a minimum, and not a final and definitive statement of the work undertaken for the contract price".[98]

If the security of both the client and the contractor can be affected by the degree of definitiveness shown by the drawings and the

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97 Williams v Fitzmaurice, 1858, 32 LT (05) 149; 3H & N 844; 157 ER 709.

98 Wallace, *op. cit.*, chapter 3, tenders and estimates, p.200.

specification then the indications are that the professional adviser, acting in the capacity of client's agent, is failing to fulfil his/her obligations. The consequences may be serious enough for the client in so far that the failure of the professional adviser to convey all necessary information to the contractor could result in the construction works being extended beyond the date of practical completion and/or additional costs being incurred. Remedies are available under the JCT standard forms of contract condition to compensate the client for financial losses due to unauthorised extensions of time beyond that specified.[99] Remedies may also be available, outside the contract, to enable the client to recover the cost of any additional works to those shown. The credit payment system common to contract work within the building industry also provides a very useful safety-net for the client. At any time between the commencement of works on site and to some date after practical completion the value of the work carried out invariably exceeds payments received, often by substantial amounts.

Conversely the contractor cannot enjoy a similar sense of security. The initial fundamental obligation 'to carry out and complete the works' is embossed with further obligations:

i) the works must be carried out to the reasonable satisfaction of the professional adviser;[100]

ii) except on very rare occasions the contractor cannot refuse to undertake variations;[101]

iii) any delay or disruption caused to the contractor by virtue of the issuing of a variation must be tempered and every effort made to mitigate the loss to the client;[102]

iv) the contractor must rely on a 'fair and reasonable' valuation by the professional adviser in respect of reimbursement for extra works executed and the

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99 JCT80, cl. 24; IFC84, cl. 2.7 and MW80, cl. 2.3, all relating to 'damages for non-completion'.

100 JCT80, IFC84, MW80; clauses 2.1, 1.1 and 1.1 respectively.

101 *Ibid*, clauses 13.2, 3.6 and 3.6 respectively.

102 JCT80, cl. 25.3.4 and IFC84, cl. 2.3 (no specific reference in MW80).

additional time taken to carry out these works; this relies on due credence being paid to the circumstances prevailing at the time when the additional or varied work was undertaken;[103]

v) the onus of responsibility rests with the contractor for notifying the professional adviser of discrepancies within contract documentation and for offering substantive particulars in respect of both money and time related claims under the contract.[104]

Remedies are also available to the contractor within the conditions of contract which can be actioned upon should circumstances necessitate. However, procedural requirements dictate the pace at which the actions can be pursued. This pace, to a large extent, is wholly flexible. The unscrupulous client can therefore take advantage of this flexibility and whilst a deceleration of the process is benefiting the client it is also creating additional stresses on the construction team.

It is not possible to accurately measure and quantify the effects of deceleration in this context. The effects are not generally isolated and contained within the boundaries of the contract concerned nor do they generate from one particular incident or variation. The effects are constituted by accumulation and increase in impetus by the acquirement of successive changes. However, by virtue of human nature, any loop-hole within a system will be exploited and personal experience has shown this to apply particularly in respect of contracts for small building works.

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[103] JCT80, cl. 13.5 in general and subclauses 13.5.1.1 to 13.5.1.3 in particular also cl.25 (extensions of time) and cl. 26 (loss and expense caused by matters materially affecting regular progress of the The Works; IFC84, cl. 3.7 in general and subclauses 3.7.3 to 3.7.6 in particular also cl. 2.3 (extensions of time) and cl. 4.11 (disturbance of regular progress); MW80, cl. 3.6 mainly also cl. 2.2 (extension of contract period).

[104] JCT80, clauses 2.3, 23.2.1.1, and 26, IFC84, implied obligation credited cl. 1.2 also clauses 2.3 and 4.11; MW80, implied obligation credited cl. 4.1.

Item ii) **Certificates and payments**

Matters relating to certificates and payments will be considered only insofar as they concern cash flow requirements and cash flow sufficiency.

The need for cash flow

Cash flow is the life blood of industry and JCT80; IFC84 and MW80[105] make provision for the contractor to be paid the value of work executed and materials on site at regular intervals during the construction of the works.

In this respect JCT80 establishes the obligation placed upon the client:

> "The Architect/Supervising Officer shall from time to time as provided in clause 30 issue Interim Certificates stating the amount due to the Contractor from the Employer and the Contractor shall be entitled to payment therefore within 14 days from the date of issue of each Interim Certificate".[106]

This obligation is specific insofar as it relates to the actual issue and the time periods between successive interim valuations.

The phrase ".... the contractor shall be entitled to payment...."[107] renders the clause to be less specific in respect of payment.

Etymologically the word 'entitled' means "to give a rightful claim to anything" or "to regard as having a title to something".[108] The phase is not definite in respect of time for honouring the obligation.

However MW80 is specific on the issue of payment:

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105 See *ante*, pp. (ii) and (iii) for abbreviations.

106 JCT80, certificates and payments, cl. 30.1.1.1.

107 *Ibid.*

108 Oxford Dictionary, copmbined with Brittanica World Language Dictionary, Clarendon Press, Oxford, volume one, 1962 edition.

> ".... and the Employer shall pay to the Contractor the amount so certified within 14 days of the date of the Certificate".[109]

Similarly IFC84 is equally specific in this respect:

> ".... at intervals of one month, unless a different interval is stated in the Appendix.... certify the amount of interim payments to be made by the Employer to the Contractor within 14 days of the date of the certificate. Interim valuations shall be made by the Quantity Surveyor whenever the Architect/Supervising Officer considers them to be necessary for the purpose of ascertaining the amount to be stated as due in an interim payment".[110]

The inherent properties of the various standard forms of contract lie outside the scope of this study. However, it is important to realise at this stage that IFC84 has been designed specifically for building works of simple content with no set upper or lower price limits[111] and yet the conditions provide for the services of a named Quantity Surveyor.[112]

Wallace in commenting upon interim certificates in the context of amount and not of principle relates the leading case of Farr v Ministry of Transport,

> "Once granted, an interim certificate at the very least creates a debt due, and the contractor is entitled to immediate payment, subject to any right of the employer to set off or counterclaim, for example, for liquidated damages or defective work".[113]

A course of action is available to the contractor under the express terms of the conditions of contract to provide support to this entitlement. The support mechanism enables the contractor to implement arbitration proceedings where there is a failure or a delay in the issue of a payment certificate.[114] The conditions of

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109 MW80, progress payments and retentions, cl. 4.2.

110 IFC84, interim payments, cl. 4.8,

111 IFC84, reverse cover of document and JCT practice note 20, RIBA Publication Limited, London, revised edition, July 1984.

112 IFC84, Articles of Agreement, Article 4, p.3.

113 Wallace, *op. cit.*, chapter 7, Approval and Certificates, p.496.

114 JCT80, Articles of Agreement, Article 5.1 and MW80, Article 4.

contract also provide for the contract to be determined.[115] However, the time lag associated with applying the procedural mechanism in either case is often impractical and unrealistic and can result in irreparable financial damage being caused to the countractor. At the same time the processes provide for and cushion the client to the extent that the margin of retention monies are increased whilst the construction works are in progress.

The contractor is reliant upon money received from interim payments to pay creditors also to provide working capital to finance the construction of the works.

The degree of accuracy sought

Certificates issued in respect of interim valuations of work executed and materials on site cannot be entirely accurate but they should be realistic and reflect the amount of work executed and the amount of the goods provided for the works. Wallace qualifies this fact:

> "As a rule, the payments contemplated by such provisions only represent the approximate value (or a proportion of it) of the work done, and possible also of materials delivered to the site, at the date of payment , and, in the absence of express provisions, they are not conclusive or binding on the employer as an expression of satisfaction with the quantity of the work or materials".

This point of value is emphasised in Tharsis Sulphur and Copper Co. v McElroy (1878) on which Lord Cairns LC described certificates as:

> "The certificates I look upon as simply a statement of a matter of fact, namely, what was the weight and what was the contract price of the materials actually delivered from time to time upon the ground, and the payments made under those certificates were altogether provisional, and subject to adjustment or to readjustment at the end of the contract".

Lord Blackburn relating to certificates in the same case said:

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[115] ICT80, cl. 28; IFC84, cl. 7.5 and MW80, cl. 7.2.

> "They were made out with a view to regulating advances, and showing how much should be paid on account; not at all at showing how much was to be paid ultimately upon the final account and reckoning".[116]

Tharsis Sulphur and Copper Co. v McElroy (1878) establishes the provisional nature of the interim certificate. The degree of accuracy to be sought between the interim certificate and the value of work executed including materials delivered on site and for use in the works is not specifically considered. However, in Lamprell v Billercay Union (1849) Pollock C B said:

> "When the payments were from time to time made on the certificates of the architect, the obvious meaning of both parties was that .... they were to be treated as sums paid on account of whatever the plaintiff might eventually be entitled to recover from the dependants, whether for the original or additional works".[117]

This statement by Pollock C B implies that the value of the works as shown on the certificate should be totally representative of the works executed and materials provided at the time of preparing the certificate.

Assessing the Value

Considerable problems arise when valuing building construction works for interim certificate purposes. The problems may not be openly displayed and distinctly evident but nevertheless they exist.

There are two main areas of concern in this respect;

i) the time taken to prepare the valuation;

ii) the accuracy of the valuation.

The time factor

Standard forms of contract do not stipulate a specific period for the evaluation process but, dependant upon the size and complexity of

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116 Wallace, *op. cit.*, p.493.
117 *Ibid.*

the works, two or three days is normally envisaged and any time in excess of seven days would be considered unacceptable.
The Banwell Report[118] comments upon the interim valuation process with emphasis upon regularity and promtitude.

> "The operation of this system is not always smooth. Payments to the main contractor by the client are often slow and uneven, with consequential delays in payments to suppliers and sub-contractors. This has an adverse effect on the efficiency and stability of the whole industry ..... What is needed is an agreed procedure to ensure that payment's are made regularly and promptly ..... Once a certificate has been issued, payment should take place within, as a rule, fourteen days, so that contractors should not normally have to wait more than twenty-one days in all from the completion of a period to payment".[119]

A lengthy processing period has the effect of delaying the subsequent payment to the contractor which benefits the client. Either interest on borrowed capital is reduced or interest on investment is advantaged.

The converse applies to the contractor. A delayed payment by the client will invariably result in an upset to the cash flow. This will cause additional strains to be placed upon the contract or upon the company as a whole if normal credit trading facilities are observed.[120] However business acumen generally dictates otherwise. The contractor will endeavour to mitigate any loss in this respect by applying rigid credit controls and tactical distribution methods in respect of payments to creditors. Cormican[121] demonstrates the extent of this additional and unnecessary strain by relating the income and expenditure budgets applicable to one project.[122] In this instance the illustration presumes the periods of delay, in respect of payments by the client, to be regular and capable of precise definition. The illustration does

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118 See *ante* pp (ii) and (iii) for abbreviations.

119 Wallace, *op. cit.*, Chapter 9, Payments, Retentions and Incentives, cl. 9.2, p.28.

120 See Chapter Eight, Tendering Procedure and Post Control Financial Control, Late payment in respect of interim valuations, pp. 156-157 and particularly Table 38, p.156.

121 David Cormican, The cost of borrowing, in Construction Management: planning and finance, published by Construction Press, an imprint of the Longman Group Limited, London and New York, 1985, Chapter 11, generally pp 201-225, particularly p.222-225.

122 See Appendix H, *post*, p.xxi.

not take account of irregularities which are characteristic of the breach or of actions which may be available in mitigation.[123] Nonetheless the example serves to indicate the increased level of negative cash flow created by delay and further shows how this alone is responsible for reducing the net profit potential of the example quoted from £50530 to £39948, a reduction of approximately 21%.

The need to improve the cash flow is further commented upon in The Banwell Report.

> "In practice, valuation, certification and the honouring of certificates are sometimes late, and in consequence contractors are obliged to use their own financial resources for longer than should be necessary. There is a tendancy among some main contractors to adopt the practice of not paying under subcontracts until they are themselves paid, with the result that the delays from which they suffer are repeated in their own dealings with their subcontractors".[124]

This abstract from The Banwell Report fails to consider the suppliers of goods. However statistics recently released by the Builders' Merchants Federation show that the average period of delay in payment by contractors during 1986/87 was over 61 days and since that time this period was increased by 15%.[125]

The Banwell Report continues by emphasising the relationship between prompt payments and cash flow.

> "There appears to be a failure in some cases to recognise the importance of prompt payment and the need to act accordingly, the remedy lies in the need to honour contract conditions .....
>
> Prompt payment for work done is of such importance and all concerned are so sensitive to delay that the industry generally must be willing to make use of procedures which will ensure that contractual obligations are met promptly

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123 *Supra*, pp. 42-45.

124 The Banwell Report, *op. cit.*, Chapter 9, cl. 9.4, p.28.

125 Building Engineer, Suppliers pay for construction debt - AN INDUSTRY IN THE RED, published by Building (Publishers) Limited, London, September 1, 1989.

and that there is no impediment to the proper flow of money".[126]

In the short term this inequitable attitude which temporarily relieves the contractor of his obligation to creditors can have the desired efect. Working capital, from the contractors viewpoint can be maintained at a safe level and the filtering process, if carefully administered, will enable subcontractors and suppliers to survive albeit unfavourably.

Personal experience has shown this state of affairs to exist and to be acepted by industry providing the payments are reasonable. Subcontractors and suppliers are aware of the dilema which confronts the contractor in respect of delayed payments by the client and are willing to share the burden in the interest of possible future work. The main problem arises when a contractor, for whatever reason, is unable to maintain reasonable payments to creditors and becomes insolvent. The effects of this are far reaching.

Incorrect estimating, poor quality quantity surveying and inferior quality management could all be contributory factors to a state of insolvency. However, a reputable firm is less likely to suffer from a singular direct result of inadequacies in these respects than from cash flow deficiencies.

The ability of the contractor to employ a system of proportional payments to creditors thereby enhancing his own position is a condonation of the late payment by the client.

For many reasons the credit system of payment can be abused by the contractor. Domestic subcontractors and suppliers can, through no fault of their making, be subjected to an increased burden of financial risk whilst the contractor continues to enjoy a reasonable degree of security. If the facility afforded by the conditions of contract, which enables the client to delay interim payments for short periods without concern, were removed then this would substantially increase the status and confidence levels of the building industry.

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126 The Banwell Report, *op. cit.*, pp. 28-29.

Item iii) - **Retention Monies**

The client is entitled under the terms of the contract to retain a specified percentage of amounts paid in interim valuations to the contractor as an insurance against defective works.[127] The client's interest in the amounts retained is fiduciary as trustee for the contractor and there is no obligation placed upon the client to invest.[128]

The percentages to be retained, the limit of the retention and the rules governing the release of the retained amounts are generally clearly stipulated within the conditions of contract. This requirement therefore, in principle, presents no problem to the contractor and any financial forecasts can be made with confidence.

Item iv) - **Variations**

The action of making some change or alteration to building works after the project has been let is provided for by most standard forms of contract conditions.

Whilst minor differences are apparent in the definitions offered by the standard forms of contract conditions the intention is similar in each. The standard forms of contract offer the facility to the client and the professional adviser to instigate changes to the work and to the conditions of contract. In a broad sense the variation creates changes to those matters stated and required by the tender and the contract documentation. Such changes will irritate the pattern of the construction works and, dependant upon the magnitude of the change or changes, the irritation could result in disruption with resulatant delay. A changing environment is not conducive to regular progress being maintained and satisfactory completion of the works being achieved. Psychologically, the morale of the management and the workforce will be affected. The incidence of risk and uncertainty will increase, additional financial implications will be incurred and the quality of workmanship will deteriorate.

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127 ICT80, cl. 30.2; IFC84 cl. 4.3 and MW80 cl. 4.2.

128 ICT80, cl. 30.5; IFC84, cl. 4.4.

A report published by NEDO[129] makes reference to quality and its relationship with the development of design,

> "in both industries (building and civil engineering) there was agreement that quality is produced when the designer is allowed the time to continue his search for the best solution until satisfied that he has the right answer".[130]

Hibberd responds to this argument,

> "It would be impractical to adopt this position and one might venture to suggest that the inordinate amount of time required would render it worthless ..... It is necessary for design to continue after the commencement of the construction process. Variations have therefore been viewed as a necessary evil and being necessary, provision must be made for them in all contracts".

Other points of interest are raised by Hibberd in respect of variations which tend to indicate that considerations concerning the completeness of design are influenced mainly by the attitude of the client and with less regard being paid to the contracting organisation.

> "In reality, the client's objectives are considered by the design team and a continuous process of design takes place until no further modifications can be incorporated, even when considered, because constraints of time and cost finally draw the line. The point at which this happens is extremely variable, being partly dependant upon the make up and nature of the design team and partly upon their relationships with the client body.
>
> The fundamental issue is not, however, whether the design is concluded before or after commencement of the works, but whether the contractual arrangement chosen is compatable with the extent and timing of such design"

To support this argument Hibberd makes reference to problems which may arise during the construction process as a direct result of the use of inappropriate tender and contract documentation.

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129 See *ante* pp (ii) and (iii) for abbreviation.

130 NEDO, The Professions in the Construction Industry, HMSO, London, 1978.

> "For instance, a design largely detailed but not complete may use the JCT Standard Form of Building Contract for use with Approximate Quantities. This is preferable to adopting the contract for use with firm quantities as though the design were complete. The latter creates a delusion which generally results in complications in post contract control and misrepresentation to the contracting parties and others, and is to be avoided".[131]

The issue of misrepresentation is emphasised and illustrated by reference to the Misrepresentation Act 1967 and two leading cases in litigation, 'Holland Hannen and Cubitt v Welsh Health Technical Services Organisation (1981)[132] and the earlier case of Howard Marine and Dredging Co Ltd v A Ogden and Sons (Excavators) Ltd (1977).[133]

> "These two cases show the care that is needed both in negotiations prior to the contract and in the preparation and presentation of the contract documentation itself ..... Such misrepresentation may simply create a management problem but it may also lead to a legal claim for damages under the Misrepresentation Act 1967".[134]

The viewpoint of Hibberd in the context of the nature of variations accepts that variations are evil and that time and money constraints imposed by the client influence the design process thus creating a need for a variation provision to be incorporated within the conditions of contract. Furthermore emphasis is given to the degree of care which must be exercised by the professional adviser in protecting the client against possible legal action being instigated by the contractor in connection with misinterpretation.

The protective attitude directed towards the interests apertaining to the client is not similarly shared by the contractor. In fact the phrase that misinterpretation "may simply create a management problem"[135] which presumably refers to the contractor's

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131 Peter R Hibberd, *op. cit.* The nature and occurance of variations, in Variations in Construction Contracts, pp 3-5.

132 See BLR, Holland Hannen and Cubits (Northern) Limited v Welsh Health Technical Services Organisation and Others, 18 BLR 89.

133 See BLR, Howard Marine and Dredging Co Limited v A Ogden and Sons (excavators) Limited, 1977, 9 BLR 100.

134 Peter R Hibberd, *op. cit*, The nature and occurance of variations, pp. 3-5.

135 *Ibid.*

management, shows a lack of awareness and understanding of the problems created for the contractor by the client exercising a right to change the works.

The need for documentation provided by the client to be appropriate and adequate for the purpose intended has been clearly stated but the instances quoted by Hibberd have been limited to contract documentation which includes bills of quantities and where appropriateness is more easily defined. Similar characteristics do not apply to the 'without quantities' arrangement. 'Firm' and 'Approximate' bills of quantities prepared in accordance with the Standard Method of Measurement indicate the nature of the work offered for tender. The documents further establish the limit of obligation at tender stage in respect of the amount of work involved thus providing a common basis. A common basis does not exist in the 'without quantities' arrangement. In the 'without quantities' arrangement the tendering contractors are totally reliant upon the drawings, specification and/or schedule of works provided by the client and these separate documents may not necessarily be in total harmony. Each part of the tender and contract documentation is important for the satisfactory placing and management of contracts but the drawings are particularly important. Metaphorically the drawings which embrace the design criterion, serve a similar function to the flywheel of a machine. The flywheel has the power and the ability to generate responses but the cogs gear and control the mechanism. Although a machine relies upon the power supplied by the flywheel, the machine is equally dependant upon the cogs which control it. In this respect, drawings provided by the architect or other professional adviser, albeit in isolation, will generate a response to a tender enquiry. However, unless adequate supportive documentation is available in the form of a specification, of bills of quantities, or of schedules of work and these together with suitable conditions of contract, then performance during the construction period will be impaired. Similarly if the drawings fail to illustrate the precise requirements of the client then changes will probably occur during the construction period.

The desirability and the need for a mechanism to accommodate a limited degree of change to work specified during the construction

period is acknowledged in The Banwell Report. The Report also stresses the importance of reducing the incidence of change to a minimum and it places the cause of many contractual claims upon inadequate programming and inadequate information. The Banwell Report commented upon this to the effect that "it would be to the benefit of the whole industry if the impact of claims was substantially reduced".[136]

A report prepared for the Economic Development Committee for Building[137] and published in May 1967 took to task the whole issue of variations as they concern construction projects and it is useful to relate the various issues considered.

The report explains the attitude of the working party towards variations and their considered opinion of "a means of reducing the incidence of variations, which we are convinced would be immensely beneficial to the productivity of the industry".

> "The problem as we see it is not the elimination of variations. Indeed, we regard variations as being endemic to the building process and it is foolish to condemn them out of hand. If a client, half way through the contract, decides that a building is no use to him in the original design form, then there is no point in continuing to build it in that form".[138]

The point made by the Report is appreciated but the example used is rather extreme. The example implies a variation of magnitude and one which could substantially change the scope of the works and, in so doing, extend the considerations beyond the sphere of variations normally associated with building works.

The main body of the Report however, concentrates attention upon variations as they are usually attributed to building works and the Report has approached the problem of variations from three main directions, educational, financial and contractual.

Educational

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136 The Banwell Report. Chapter 2, The Team in Design and Construction, cl 2.3, p.3.

137 NEDO, Action on the Banwell Report HMSO, London, 1967.

138 *Ibid*, cl. 2.15, p.5.

"There are many different causes of variations. Some arise from unforeseen changes in circumstances - unexpected site or ground conditions, labour difficulties, shortage or increased cost of materials, new building techniques or new materials available after completion of the design stage. Others are caused by lack of decision or late decision by the client or designer or by the client changing his mind about what he wants. Such variations are often the result of a lack of proper communication between the parties: contractors may not have asked for detailed information early enough; the client may not have briefed the architect properly about his requirements ..... "[139]

"Variations have different effects. Some result in greater efficiency, but the vast majority impede the progress of a job and reduce productivity ..... We consider that many variations are unnecessary and could be avoided if clients were more aware of the effects of their decisions, or lack of them on others. One common characteristic of almost all variations is that there has been insufficient forethought before starting work on site. Time spent on preparation before actual commencement of work on site is time well spent ..... The reduction of variations requires better pre-contract programming which will be carried out only if the parties themselves understand the full consequences of interrupting a programme".[140]

Financial

"Our second approach to variations was to ask whether the client pays enough for them. Some of us feel that a client who introduces a variation after a contract has been let should be made to pay a premium for the privalege of doing so. By 'premium' we mean something which is over and above the true cost of the variation, including the cost of any disturbance to the original programme. Most of us feel that there is no case for such a premium, and even if there were it would be extremely difficult to operate. Ideally the system should ensure that the client, no less than any other member of the community, should pay the true full cost of what he chooses to ask for. There seems to be no special reason in the particular context of variations

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139 *Ibid*, cl. 2.17, p.5.

140 *Ibid*, cl. 2.18, p.5.

in the construction industry to ask for more than the true full cost to be paid ....." [141]

Contractual

"A form of building contract could be drawn up to include two alternative clauses governing variations: one would cover the categories of work in which it is recognised that variations are likely; the other would stipulate that variations are not contemplated. Invitations to tender would make it clear which clause was to apply. If the 'no variations' clause was specified, the builder would probably submit two tenders. The lower would apply if there were no variations. The higher would apply if there were variations. The difference between the tender sums would represent the disturbance cost to the builder. Individual variations would be charged additionally".[142]

In support of the above abstracts from The Action on The Banwell Report the working party assumes that architects will in future, if they do not already do so, draw the attention of their clients to the RIBA pamphlet Working with your Architect.[143] This document among other things advises clients of the desirability of avoiding variations because of the dislocation they cause.

The detailed reproduction of abstracts from The Action on The Banwell Report indicate the direction and extent of the concerns shown by the construction industry towards variations during the mid 1960's. Since that time modifications, revisions and extensions to standard forms of contract have been implemented but these have failed to provide any form of antidote.

The NJCC[144] in their Procedure Note endorse the comments contaned within The Banwell Report and The Action on the Banwell Report. In addition the NJCC raise two other pertinent issues concerning planning and associated functions which have direct links with variations on building contracts. The first point which specifically relates to planning expresses the planning function as one of the main pre-requisites of efficient, prompt and economic

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141 *Ibid*, cl. 2.20, p.5.

142 *Ibid*, cl. 2.26, p.6.

143 RIBA, Working with your Architect RIBA Publications Limited, London, 1983.

144 See *ante* pp (ii) and (iii) for abbreviations.

building and it is further observed that inadequacies in planning are "frequently responsible for excessive variations on contracts in progress". The second point whilst making reference to higher building costs, delays and damaged industrial relations on site further states that variations "frustrate the proper working of incentive and bonus schemes geared to output".[145]

Assuming the second point to be fact then resultant frustration will introduce a measure of deceleration in regard to production and, as a consequence, losses may arise in respect of both time and money.

The problem, in the context of variations to the building contract, remains and concerns initially time and the influence time has upon the design and the communicative processes.

Item v) **Extensions of time**

Extension of time and the standard forms of contract

JCT 80 (clause 25.4) [146] sets out the issues which can be considered as possible grounds for raising a claim for an extension of time under the terms of the contract. Similarly (clause 25.2)[147] establishes the procedure to be adopted by the contractor when notifying the architect/supervising officer of the fact that a delay has occured or is likely to occur upon the work to which a 'Relevant Event'[148] applies.

Often the detailed work involved in satisfying the requirements of the conditions of contract in respect of claims resulting from delays is onerous upon the contractor. Maintaining adequate records, the gathering together of information, the collation and presentation of documentation is exacting, time consuming and costly. The exercise of presenting a claim is also heavily reliant upon documentation prepared for the compilation of the tender as well as documentation and records prepared for use during the construction period.

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145 NJCC Procedure Note No 1, variations on building contracts.

146 See Appendix F, *post*, p xvii.

147 *Ibid*, *post*, p xviii.

148 JCT 80, The Conditions Part I: General, 1 Interpretation, definitions etc, 'Relevant Event' (any one of the events set out in cl. 25.4), *op. cit*, Appendix F, *post*, p xvii.

Documentation provided by the client for tender preparation purposes which is inadequate, will adversely effect the presentation and substantiation of any delay claim. Two major concerns in this respect are inadequate time allowances both for processing the tender and for programming the construction works subsequent to the award.

The Obligation to Notify

All standard forms of contract require the contractor to notify the client of delays which are likely to occur to the construction works. JCT 80 states,

> "If and whenever it becomes reasonably apparent that the progress of the work is being or is likely to be delayed the Contractor shall forthwith give written notice to the Architect/Supervising Officer of the material circumstances including the cause or causes of the delay and identify in such notice which in his opinion is a Relevant Event".[149]

This requirement of JCT 80 appears to be reasonable. The contractor, being the one party to the contract responsible for the construction of the building project, is the only party who can be immediately aware of disruptive influences and the effects these disruptive influences may subsequently have upon the works. A singular disruptive influence, caused by whatever reason, can invariably be identified by the contractor and the process of calculating the overall effect upon the works can usually be carried out with relative ease. However the contract containing numerous disruptive influences, each being of a minor nature producing an almost insignificant effect in isolation, can result in a substantial delay to the construction works when viewed cumulatively. It is not difficult for a contractor to know that the progress of the work is being or is likely to be delayed nor is it difficult for the contractor to identify the cause or causes of the delay and to associate this delay with a Relevant Event. The difficulty arises from the requirements of clause 25.2 of JCT 80. This clause requires the contractor to substantiate the claim for an extension of time by presenting sufficient material evidence to enable the

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149 JCT 80, Extensions of Time, cl. 25.2.1.1.

Architect/Supervising Officer to conduct an appraisal. The granting of an award for an extension of time is totally reliant upon the contractor being able to satisfy the Architect/Supervising Officer beyond any doubt that the claim is both realistic and justifiable.

This requirement itself increases the burden of responsibility placed upon the contractor. Often this burden arises as a result of issues over which the contractor has no control and where the Architect/Supervising Officer issues instructions to change the quality or quantity of the works or the obligations and restrictions initially placed upon them.

In these circumstances there is a need for the contractor to implement and maintain an essemblage of supportive records on each and every project in compete disregard to whether or not changes are envisaged. To be effective the records need to be complete in respect of detailed information and to be clear and concise in definition. To this end the information must be regularly reviewed and updated.

This essemblage of records is demanding of resources often to an extent far in excess of those resources which would have been necessarily required had the construction works remained unchanged. Manpower resource of the calibre required is expensive to acquire. The turnover/overhead commitment ratio often provides the larger contractor with resource facilities within the establishment. The smaller contractor, however, may not be in a position to afford the necessary resource provision. This does not, in the normal course of events, reflect in any way upon the technical ability of the smaller contractor but it serves to illustrate two important points,

i) that identical levels of expertise are demanded by the client from the contractor whatever the work category and price range, and

ii) that, conversley, the completeness of tender and contract documentation provided by the client to the contractor

becomes inceasingly important as the contract value decreases.

Item vi) **Damages for non-completion**

The provision for liquidated and ascertained damages should always made known to the contractor prior to the signing of the contract. It is usual also for the details of the provision to be included in the formal invitation to tender and according to the recommendations of the CPSSST the provision should also be made known in the 'preliminary enquiry for invitation to tender'.[150]

Providing the contractor is prudent and providing due care and attention is applied to the preparation of the tender, then this indemnification provision should not prove to be a problem at tender stage. However the empiric survey has shown this not to be the case in many instances.[151]

Item vii) - **Fixed or fluctuating price levels**

In considering fixed and fluctuating price levels as they concern the 'without quantities' arrangement of the 'lump sum' contract it is necessary to examine the characteristics of the two measures in principle. The legal implications and matters relating to the machinery of application are outside the scope of this study.

The fixed price arrangement

The fixed or firm price is one which contains no provision for financial reimbursement in respect of changes in the prime cost of resources.

It is normal practice for building work contracts, where the contract period does not exceed twelve months, for the work to be carried out on a fixed price basis. The time limit presumes on the ability of the tendering contractors to predict financial changes which may occur during the period of the contract in respect of labour, plant, materials and consumables and to facilitate an appropriate

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150 See Appendix E, *post*, p xii.

151 See Appendix A, *post*, pp iv (1-47).

allowance within the tender to secure reimbursement of costs incurred. The length of time for which a prediction has to be made however, when relating to a project with a contract period of twelve months, is substantially in excess of twelve months. The total period under consideration must also take into account part of the period allowed for tender preparation, the time taken to assess the tenders and the time period between the appointment of a contractor and the commencement of work on site. Under normal circumstances this additional time period could be a minimum of three months and, in many instances, a greater length of time could be experienced.

An unstable financial market renders a calculated prediction impossible in this respect and any allowance made by a contractor to cover increased costs is tantamount to a guess. This poses the question of financial risk and whether or not this burden of risk should be borne solely by the contractor.

The Banwell Report offered its support to the general viewpoint of the construction industry at that time to the extent that "wherever possible, contracts should be let on a firm price basis". This support was offered in the full knowledge that firm price contracts, whilst offering the client 'certainty of price', can and do present difficulties to the contractor. According to the Report the difficulties "led to a reluctance on the part of contractors to quote firm prices" which were "too often ignored by clients and their professional advisers".[152]

Areas of particular contention to which the Report refers concern the design process and preplanning, the contract period, the time limit for acceptance of the tender and materials and labour constraints. These areas of consideration show the concern and reasoning attributed to firm price contracts.

Preplanning

> "The more that is known of what is involved in any project, the less will be the degree of uncertainty against which tenderers will be obliged to make provision ..... Only if the

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[152] The Banwell Report, Chapter 8, Firm Price Contracts, cl. 8.2, p.26.

work has been settled in all its critical details is it reasonable to expect a contractor to tender for a firm price and a fixed period".[153]

Contract period

"It is today common Government practice to invite tenders on a firm price basis where the contract period is not to exceed two years .... we certainly do not regard two years as excessive".[154]

Time limit for acceptance

"In quoting a firm price the contractor is entitled to know the limits of his responsibility ..... the period of time during which a tender will remain open for acceptance should be limited and clearly stated."[155]

In regard to fluctuations in the price of materials. On this issue the Report directed attention towards the supplier and "the inability or unwillingness of some merchants and suppliers to quote firm prices for their products. Because of this, contractors feel they are called upon to bear a disproportionate part of the burden imposed by rising prices for freight, fuel and materials"[156]

Other issues relating to materials concern the conditions of sale.

"Quotations at "prices ruling at date of delivery" contain uncertainties resulting in over insurance by the tenderers who depend upon them. All commercial transactions contain an element of risk, and we see no reason why producers of raw materials, the nationalised fuel and transport industries and others should not agree, when asked, to quote firm prices for delivery over a given period".[157]

Fluctuations in the price of labour are seen by The Report to present less of a problem than the other areas considered above

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153 *Ibid*, cl. 8.3, p.26.
154 *Ibid*, cl. 8.4, p.26.
155 *Ibid*, cl. 8.5, p.26.
156 *Ibid*, cl. 8.6, pp. 26-27.
157 *Ibid*, cl. 8.7, p.27.

mainly due to the long-term wages settlement negotiated for and agreed upon at that time.

The Report in summarising the issues raised above, in relation to firm price contracts, confirmed its opinion that firm prices are healthy. In so doing the report showed a critical awareness of the fact that this healthy state is totally reliant upon the participatory support of all who are directly or indirectly concerned with the building project. Without this support the total burden of responsibility rests with the contractor.

The Action on The Banwell Report considered the reasoning and the recommendations of The Banwell Report at great length. Whilst supporting the principle of firm price contracts the 'Action Report' also offered critical appraisal in the matter of alternative reasoning and argument.

The 'Action Report' is not convinced that firm price contracts are healthy but rather that they do offer certain benefits.

> ".... they encourage careful pre-planning, they impose a cost discipline on contractors and they cut out unproductive work in dealing with fluctuations".[158]

This statement poses certain questions. The cost discipline imposed upon contractors is undefined and difficult to orientate and the comment relating to unproductive work depends upon which party to the contract is deriving benefit from the firm price arrangement. From the client viewpoint this may be beneficial as additional administrative work by the professional adviser will incur cost which will be passed to the client. Conversely the contractor will invariably have the necessary resource facilities within the establishment to deal with the administration of fluctuations. Furthermore, a contractor preparing a tender in the knowledge that the recovery of possible future increases in costs are provided for under the conditions of contract will have the burden of risk reduced and this will be reflected in the tender sum.

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158 NEDO, Action on the Banwell Report, Chapter 8, Firm Price Contracts, cl. 8.1, p.19.

The 'Action Report' does however acknowledge the dilemma facing the contractor and the additional risk the contractor has to bear when preparing firm price tenders insofar that,

> "They require the contractor to gamble on future cost increases over which he has little or no control".[159]

The "Action Report" continues to the effect that,

> "There is some lack of clarity as to the date from which the firm price period is measured. We believe that it should run from the date the tender is accepted and not from the date on which work is started".[160]

A better approach would be to calculate the date of the firm price period from the 'Date of Tender'. This would then equate with the fluctuating price provisions established by the JCT standard form of contract conditions.[161] The amended provision would also have the desired effect of speeding up the entirely flexible time period between the tender submission date and the date work is to be commenced on site.

Recommendations and reasoning offered by The Banwell Report in respect of design and pre-planning are generally supported by the 'Action Report'. There is however one critical observation in the 'Action Report' which reflects a particular attitude displayed by the client and the professional adviser in respect of the importance of time and money.

> "Contractors are frequently invited to tender on incomplete documentation and more detailed documents may be available only several months later, because clients have not settled points of detail at tender stage. Contractors should insist that the carcase of a contract is fully detailed at tender stage".[162]

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159 *Ibid*, cl. 8.2, p.19.

160 *Ibid*.

161 JCT Standard Form of Building Contract Formula Rules, RIBA Publications Limited, London, 1980, Section 1, Definitions, cl. 3, p.1/2, "Date of Tender - the date ten days before the date fixed for the receipt of tenders by the Employers".

162 NEDO, Action on the Banwell Report, Chapter 8, Firm Price Contracts, cl. 8.5, p.19.

Regarding the contract period. The 'Action Report' again is prepared to accept the deliberations of The Banwell committee in principle. Nevertheless, concern is registered in respect of the possibility of disadvantages which may result from the setting of too rigid a time limit and the 'Action Report' suggests that a more appropriate method would be to encourage flexibility. The degree of flexibility being influenced by the incidence and duration of major wage agreements. This being the sole criterion.[163]

Both points indicate an awareness of the difficulties which confront the contractor and the ways in which each can affect the satisfactory carrying out and completion of the works. The supply of materials in the context of fluctuation in price level raises a number of imponderables. The "inability or unwillingness of some merchants or suppliers to quote firm prices" was taken up by the 'Action Report'.

> "While firm prices for materials are quoted in some circumstances, the materials producers believe that firm prices can result in higher prices being paid over the period of the contract. The National Council for Building Material Producers has said that it is not in a position to recommend its members to quote firm prices. There are a number of factors which work against quoting on a firm basis for forward delivery: the nationalised industries which are suppliers to the materials producers will not quote on a similar basis; ..... prices of certain key imported raw materials, such as copper, timber and asbestos fibre, have in the past fluctuated widely.... many manufacturers' organisations are not prepared to make recommendations on pricing practice to their members and run the risk of contravening the Restrictive Trade Practices Act".[164]

This statement raises an important point. If, for the reason stated, a materials supplier is unable to quote a firm price for forward delivery then it is unreasonable to expect a contractor to carry the total burden of probable increased costs in order to provide the client with security of tenure in the form of 'certainty of price'.

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163 *Ibid*, cl. 8.6, p.19.

164 *Ibid*, cl. 8.8, p.19.

The 'Action Report' realises the shortcomings which are evident both within The Banwell Report and in their own responses to The Banwell Report. They view the recommendations and procedures, in principle, to be reasonable and justifiable. However they appear unable to visualise the recommendations and procedures being implemented without further research and without promoting a change in philosophy which would require the support of high ranking authorities. These courses of action have not been pursued.

The fluctuating price arrangement

Fluctuation clauses are contained within most standard forms of building contract and according to Wallace the clauses".... are variously designed to obtain for the contractor the amount of any increases in his costs, usually of labour or materials or both, which may take place after his tender and before the work is completed".[165]

The detailed issues concerning the philosophy and attributes of the fluctuating price arrangement lie outside the scope of this study. This chapter therefore is concerned solely with the decision to apply a fluctuations provision and the factors which influence that decision.

Willis and Ashworth[166] in commenting upon the decision to use either a fixed or a fluctuating price arrangement state,

> "The choice usually depends upon the length of the contract period and the amount of inflation present in the economy. Where the inflation factor is in single figures and falling, it is usual to award fluctuating contracts for a project's duration not exceeding two years".[167]

This statement raises the two issues of time and money. Time in the context of the length of the contract period and money as it relates to variations in price levels which have arisen as a direct result of changes within the national economy.

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165 Wallace, *op. cit,* Chapter 9, Price and Damages, p.566.

166 See References, *post*.

167 Christopher J Willis and Alan Ashworth. Contract Procedures, in Practice and Procedure for the Quantity Surveyor, published by Collins Professional and Technical Books, London, Ninth Edition, 1987, Fixed Price Contracts, p.164.

The time factor

The criterion of time upon which a judgement is made, insofar as the implementation of a fixed or fluctuating price clause is concerned, is by reference to the time required to construct the project.

The length of time which is considered appropriate and worthy of consideration in respect of whether or not to administer a fluctuations clause is left entirely to the discretion of the professional adviser. There are no specific recommendations nor are there mandatory requirements. The Banwell Report comments upon the common practice observed by the Government when establishing time limits for fixed price contracts but was unable to reach any conclusion in this regard.

> "It is today common Government practice to invite tenders on a firm price basis where the contract period is not to exceed two years. Some of the evidence we have received has suggested that this period is too long, and that eighteen months or even a year should be regarded as a limit; and conversely, three years had been held out to us as not excessive. While we do not wish to specify any fixed period as suitable in any circumstances for work of any type, we certainly do not regard two years as excessive ...."[168]

The concern registered in this statement identifies and accentuates the fundamental requirement of the client as being 'certainty of price'.

This requirement is expressed with complete disregard to the effects any unreasonable time period may have upon the contractor, his subcontractors and his suppliers.

This attitude displayed by The Banwell Report is endorsed in principle by the Action on The Banwell Report to the extent that,

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168 The Banwell Report, *op. cit,* chapter 8, Fixed Price Contracts, cl. 8.4. p.26.

> "The present two year limit for public sector contracts seems to us to work reasonably well and is operated with some flexibility".[169]

The meaning of flexibility in this context is unknown. Furthermore there are areas of concern contained within the Action on The Banwell Report,

> "There could however be disadvantages in setting too rigid a limit. Periods longer or shorter than two years may be appropriate in the light of the incidence and duration of major wage agreements".[170]

This statement implies that wages to the workforce control changes in price level and it further implies the existence of 'safe periods' between major wage agreements. Variations in price levels react to changes in Government policy, resulting in additional or changed levies and taxes and to changes in the foreign markets both of which operate independently to the major wage agreements and both of which have a serious impact upon the building industry.

None of these statements contained within the Action Report take into account part of the time required for the preparation of tenders; the time required for the opening and consideration of tenders or the time allowed to elapse between the appointment of the contractor and the commencement of work on site.

If the time required to satisfy those processes, which pre-exist the commencement of work on site, were accountable then this would provide certain benefits to the contractor. The contractor would be aware of the limit of responsibility and commitment. Furthermore this extended time period could result in changes in attitude by both the client and professional adviser when deciding upon fixed or fluctuating price arrangements for a building contract.

Although the CPSSST[171] makes no specific recommendations in respect of fixed and fluctuating price arrangements it does comment on the desirability for work to commence on site as

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169 NEDO, Action on the Banwell Report, *op. cit*, Fixed Price Contracts, cl. 8.6, p.19.

170 *Ibid.*

171 See *ante*, pp (ii) and (iii) for abbreviations.

quickly as possible after the contract has been awarded. The CPSSST also acknowledges the need for a due period to be allowed for the contractor to organise his resources and to facilitate thorough project planning.

> ".... Regard also should be had, however, to the fact that unnecessary delay in achieving a start on site may involve the employer in extra costs whether or not the contract is based on variation of price conditions. These points should be borne in mind when determining the anticipated date for possession of the site".[172]

Having due regard to the consensus displayed by the CPSSST in respect of unnecessary delays in achieving a start on site. Such delays can involve the contractor in unnecessary and avoidable costs in the fixed price arrangement and can increase the incidence of risk and uncertainty.[173]

The need for a contractor "to know the limits of his responsibility" is remarked upon in The Banwell Report and in this sense the Report states that " ... the period of time during which a tender will remain open for acceptance should be limited and clearly stated".[174] The Action on The Banwell Report responds to this remark contained within The Banwell Report albeit in the context of the public sector client.

> "This recommendation is particularly important where the tender is being invited on a firm price basis. Tender documents do not in general specify a particular time limit for accepting tenders. Government departments have standing orders to ensure prompt acceptance but local authorities are sometimes slow in accepting tenders".[175]

Two specific recommendations resulted from this observation by the Action on The Banwell Report,

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172 CPSSST, cl. 8, Post Tender Period.

173 See Chapter Seven, The Factorial Issues, generally pp. 104-114, particularly figure C, p.114A.

174 The Banwell Report, *op. cit*,

175 NEDO, Action on the Banwell Report, *op. cit*, Chapter 8, Firm Price Contracts, cl. 8.7, p.19.

i) "that unsuccessful tenderers should be notified promptly", and

ii) "that the lowest tenderer should submit priced bills quickly.[176]

Both recommendations were accepted by the NJCC and incorporated into the CPSSST but with slight amendments. In (i) above the word 'promptly' was changed to 'immediately'[177] and in (ii) the phrase "submit priced bills quickly" was changed to "submit his priced bill(s) of quantities as soon as possible and in any case within four working days".[178]

The client's interests are best served by complying with these recommendations,

i) when a full fluctuations clause is being operated, and

ii) when an optimum date for completing the works is a prime consideration.

In instances where there is a fixed price arrangement proposed and where time is not such a critical factor then these recommendations could be disregarded. Such an omission would benefit the client and would disadvantage the contractor.

Notwithstanding this, however genuine the attitude of the client or the professional adviser is towards the administration of the contract and the observance of the recommendations of the CPSSST, in respect of the notification of results, there exists an amount of time which is not provided for by the CPSSST. This time relates to part of the overall time allowed for the preparation of the tender. Considered in isolation this particular time period may appear insignificant but, nevertheless, it forms part of the overall processing time and, as such, must be taken into account.

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176 *Ibid*, cl. 8.7, "Time limit for acceptance", p.19 and reference to "Some notes on procedures", cl. 4.12 and 4.16, p.12.

177 CPSSST, *op. cit*, Assessing Tenders and notifying Results, cl. 5.3.

178 *Ibid*, cl. 5.2.

The money factor

Most standard forms of building contract provide for changes in price which may occur between the 'Date of Tender'[179] and the date of 'Practical Completion'.[180]

The 'Date of Tender' establishes the 'basic market prices' of materials, goods and consumables current at that time. This fixes the date from which any changes in price level may be assessed on contracts where a labour and materials cost and a tax fluctuations clause is being operated.

An alternative method for dealing with adjustments to take account of variations in price level is by use of price adjustment formulae. This system differs from the labour and materials cost and tax fluctuations method in both philosophy and application. The statistical indices, which are used to adjust the price levels, reflect changes in cost over the period of one month and the implementation of the system requires that a firm 'base date' be determined from which all future assessments will be made. This 'base date', unless tenderers are otherwise informed, will normally be the calendar month prior to that in which the tender is due to be returned.[181]

Detailed issues appertaining to the formula method of price adjustment are outside the scope of this study. However it is important to realise that where provision is made for building contracts to be let on a fluctuating price basis then firm dates need to be established to enable the system to work and to enable realistic assessments to be made. Similar criteria should also apply to the fixed price arrangement.

Item viii) - **The level of Prime Cost and Provisional Sums**

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179 JCT80, Formula Rules, *op. cit*, Definitions, p.1/2.

180 JCT80, cl. 17.1.

181 JCT80, Formula Rules, *op. cit*, Definitions, p.1/2.

Prime Cost Sums

Details of client requirements relating to work of a specialist nature for which a prime cost sum has been allocated, is made known to all contractors tendering for the works by the allocation of sums of money within the tender documents. Facilities are also normally provided within the tender documents for the contractor to make allowances for costs which may be incurred in providing for and attending upon those specialist subcontractors. Similarly provision is also made for the tendering contractor to make allowances against prime cost sums for reimbursement of costs in respect of overhead recovery and for profit.

This system brings together and summarises all the required elements of the construction package. In so doing the system provides the client with an all-embracing 'lump sum' offer for the construction of the works and this, to a large extent, guarantees the client 'certainty of price'.

The level of prime cost sums included in tender documentation has substantially increased in many instances during recent years.[182] This increase, in conjunction with other issues, has been recognised and actioned upon by the JCT,[183] the ACA[184] and the BPF.[185] These actions have culminated in either the production of new standard forms of contract conditions or the modification of existing standard forms of contract conditions. The recently published Co-ordinated Project Information (CPI)[186] has introduced changes to the procedures formerly practised in respect of Prime Cost Sums and it is now necessary to provide the contractor with specific details similar in every respect to those details required in respect of Provisional Sums.[187] This is mandatory only in the 'with quantities' arrangements. It is not clear how effective this directive will be in respect of the 'without quantities' arrangement and clarification will need to be sought in respect of this issue.

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182 See Appendix B, *post*, pp. v-vi.

183 See *ante*. pp (ii) and (iii) for abbreviation.

184 *Ibid.*

185 *Ibid.*

186 *Ibid.*

187 CPI, Standard Method of Measurement of Building Works: Seventh Edition. Published by the Building Project Information Committee, London, 1988, Preliminaries/General Conditions, cl. A.51, p.22, and General Rule 10.3.

Provisional Sums

Provisional sums are defined by SMM6[188] as, "a sum provided for work or for costs which cannot be entirely foreseen, defined or detailed at the time tendering documents are issued".[189]

However SMM7[190] improves upon this definition insofar as it differentiates between "defined" and "undefined" work. Defined work relates to work "which is not completely designed" but where quantities can be issued to "indicate the scope and extent of the work" and a statement can be issued "of how and where the work is fixed to the building and what other work is to be fixed thereto".[191] In addition any specific employer requirements in respect of "limitations on method/sequence/timing"[192] together with "the nature and construction of the work"[193] must be included. In the case of defined work the "contractor will be deemed to have made due allowance in programming, planning and pricing preliminaries".[194]

Where work cannot be described and where the above information cannot be provided then this will be classed as "undefined" work and the "contractor will be deemed not to have made any allowance in programming, planning and pricing preliminaries".[195]

These rules apply to the 'with quantities' arrangements but CPI is less specific for the 'without quantities' arrangement.

The nature of building works necessitates a provision such as this. It is probably a satisfactory method of dealing with a difficult circumstance and must be accepted providing the facility is controlled and used in the spirit for which it was intended.

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188 See *ante*, pp (ii) and (iii) for abbreviations.
189 SMM6, cl. a8, p.16.
190 See *ante*, pp (ii) and (iii) for abbreviations.
191 SMM7, General Rules, rule 10.3, p.14.
192 *Ibid*, Preliminaries/General conditions, cl. A.35, p.20.
193 *Ibid*, General Rules, rule 10.3, p.14.
194 *Ibid*, rule 10.4, p.14.
195 *Ibid*, rule 10.6, p.14.

CHAPTER FIVE

DOCUMENTATION - THE VEHICLE FOR COMMUNICATING INFORMATION

The requirements of documentation

The fundamental demand made upon the documentation is to convey the requirements of one party to the building contract to the other and to establish conditions of procedure. For the documentation to be wholly effective it must be complete and the consequence of this is portrayed by Alex Gordon, Chairman of the Co-ordinating Committee for Project Information in expressing the initiative relating to CPI,[196]

> "It has long been appreciated that when the information provided to contractors is insufficient, conflicting or incorrect, this leads to problems on site with a consequent reduction in the quality of the work, delays and increased costs".[197]

The CAWS[198] which aims to "define an efficient and generally acceptable arrangement for specifications and bills of quantities for building projects" [199] comments upon the incidence of disruption and the consequential time and money factors which have adversely influenced the building industry since the second world war. This comment by CAWS is supported by research undertaken by the BRE[200] which indicates that "the biggest single cause of quality problems on site is unclear or missing project information" and that another significant cause "is lack of co-ordination of design".[201] Although the definitions provided by the CAWS within the framework of CPI, are confined to specifications and bills of quantities it is suggested that the quality and level of completeness of drawings is of equal importance. For, in this respect, any inadequacy within the drawn material will, almost without

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196 See *ante*, pp (ii) and (iii) for abbreviation.

197 CPI, Common arrangement of work sections for building works, Forward, p.1.

198 See *ante*, pp (ii) and (iii) for abbreviation.

199 Common arrangement of work sections for building works, general, p.4.

200 See *ante*, pp (ii) and (iii) for abbreviation.

201 BRE, Quality Control on building sites, in Current Paper 7/81.

exception, be reflected in the specification and in the bills of quantities.

Inadequacies within project documentation may produce repercussive properties which effect all concerned with both the commissioning and the construction of the building project. However the attention of the CCPI[202] has been singularly directed towards safeguarding the interests of the client. This is particularly in evidence where CPI relate to claims for extension of time and claims for additional loss and expense arising therefrom. In these respects it would appear that the contractor has either been disregarded by the CCPI or alternatively an assumption has been made that the contractor invariably recovers the total financial losses accruing from the disruption of works on site which had given rise to the claim.

Interference concerned with sequenced work patterns caused by the introduction of variations during the construction period, the late issue of detailed information to which a provisional sum refers, or late instructions in respect of information for which application has been made sufficiently early, are all 'relevant events'[203] within the meaning contained within the JCT[204] standard forms of contract conditions.

These 'relevant events' entitle the contractor to claim an extension of time with reimbursement of costs.

However fair and just the principle of entitlement appears to be in respect of 'relevant events' the demands made upon the contractor in formulating the claim remain extremely onerous. These issues, even when considered in isolation, create an additional burden upon the contractor. This additional burden is both unfair and unjust when considering that the need to perpetrate the claim has its origin in the client or the professional adviser.

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202 See *ante*, pp (ii) and (iii) for abbreviations.

203 JCT80, The Conditions, Part 1: General, 1 Interpretation, definitions etc, 'Relevant Event' (any one of the events set out in cl. 25.4), RIBA Publications Limited, London, 1980, p.10.

204 See *ante*, pp (ii) and (iii) for abbreviations.

Difficulties are created for a contractor confronted with the need to formulate a claim to achieve an extension to the contract period with reimbursement of costs. These difficulties concern both direct and indirect factors. Direct factors are generally quantifiable but nonetheless troublesome to the contractor and the degree of difficulty presented often equates with the measure and the quality of maintained site records. The onus for achieving adequate reimbursement of the losses incurred is therefore placed directly with the contractor. Areas of greater concern to the building contractor are those attributed to the indirect effects of the 'relevant event'. Such areas relate to the identification and evaluation of consequential matters. Also to resource availability in respect of time, money and expertise required to prepare the substantiating documentation in support of the claim.

The early stages of preparation and the processing of a claim for submission to the professional adviser may, depending upon the degree of associated complexity, give rise to substantive demands upon the contractor's management and staffing resources. In more extreme cases subsequent and continuing demands for 'further and better particulars' by the legal profession, when preparing documents to be heard in litigation or arbitration, will aggravate the position and will be responsible for creating additional physical and financial stresses. These additional stresses, on occasions, reach almost intolerable levels. Main and sub-contractors alike have no alternative other than to accommodate this additional burden if financial stability is to be maintained. Furthermore the burden must be accommodated whilst observing the fundamental obligations of the contract to progress the works on site regularly and diligently,[205] to maintain quality control[206] and to take all steps necessary to mitigate the loss of the client.[207] A similar charge of responsibility and stress is not imposed upon the client.

Inadequate project information, although capable of attracting a bid from a building contractor, will invite problems and necessitate

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205 ICT80. Date of Possession - progress to Completion Date, cl. 23.1, p.26; IFC84. RIBA Publications Limited, London, 1984, Possession and Completion Dates, cl. 2.1, p.7.

206 *Ibid*, Contractor's Obligations, cl. 2.1, p.12; *Ibid*, Quality and Quantity of work, cl. 1.2, p.6; MW80 RIBA Publications Limited, London, 1980, Contractor's Obligations, cl. 1.1, p.4.

207 *Ibid*, Extension of Time, cl. 25.3.4.1, p.27; *Ibid*, Extension of Time, cl. 2.3, p.7.

changes being implemented during the construction period. Such changes will invariably interfere with the logical sequence of work patterns. Changes are not conducive to quality control nor are changes conducive to satisfactory progress being maintained on site or to cost effective construction.

The CCPI has classified the areas of deficiency within project information and the Committee believes that these deficiencies "contribute significantly to major problems within industry".[208] The major problems refered to embrace technical defects, quality control, maintenance costs, frequency of variations, uncertainty of final cost, late completion of contracts and the high level of contractual claims.

An empirical survey undertaken by the BRE between 1978 and 1983 examined the quality criterion on 38 building sites and co-related the quality of finished work with the general quality of information provided. Having regard to the differences in policies and procedures which must inevitably exist between professional practitioners there was nonetheless, a general consensus that "virtually half the sites had generally poor or very poor information, and had a high incidence of poor quality work".[209]

This deficiency was attributed to inadequacies within the project information. This notable deficiency and the resultant effect enforces an earlier research concerning documentation also undertaken by the BRE which indicated "that over 700 conflicts between drawings occurred on a sample of 85 building projects, and that most of these caused abortive or additional work".[210]

Whilst acknowledging that both pieces of research carried out by the BRE are directly concerned with the sustained achievement of quality control on building sites it is notable also that project information is considered to be closely related to quality control. Other areas of prominence which had an adverse influence upon the

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208 CPI, *op. cit*, a guide with examples, p.2.

209 BRE, Quality Control on building sites, *op. cit.*

210 *Ibid*, Co-ordinating working drawings, Current paper 60/76.

achievement of quality control were "poor design" and "poor organisation by the building contractor".[211]

A relationship exists therefore between the design, project information and the management of the construction works:

CPI has unequivocally accepted the reasoning put forward by the BRE for causes of quality problems on site and in their endeavour to contrive a remedy, the CCPI have identified project information as the single major influencing factor. This decision was probably reached on the basis that the focal point for the BRE deliberations was quality control and that "the effects of project information on construction cost and progress were not measured". Furthermore the empirical research has revealed that "excellent project information is highly likely to result in good quality work" and that the converse equally applies.[212] There are exceptions to this general ruling where extremes in quality of the contractor's site management can influence the degree of attainment. Excellent quality project information will only achieve similar final results if the contractor's construction management team and operatives are equal to the task. Conversely poor quality project information can be enhanced by "The competence and diligence of the site agent and general foreman in controlling the work, identifying information problems and contributing to their solution.....".[213]

The need for adequate project documentation is accepted as being an essential ingredient to the successful placing and management of contracts. CPI offers a possible solution in part to this problem but the proposed conventions are limited to their range of activity and application and remote from endemic priorities. Quality is the main criterion engendered. Although the quality requirement is immensely important it is not automonous and, to be truly effective, the quality criterion must be geared to the parameters set by the availability of time and money resources. CPI is seen as a major break through to improving the procedures for the placing and management of building contracts. However CPI focuses attention mainly on the larger project and envisages the use of bills

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211 CPI, guide with examples, p.3.

212 *Ibid*, Implications for designers, p.4.

213 *Ibid*, Site management, p.4.

of quantities. Nonetheless the Code of Conventions are considered by the CCPI to be equally applicable to the smaller project where bills of quantities are not used.[214] Unfortunately the CPI proposals exclude any mention of schedules of rates and schedules of work elements both of which provide a similar complimentary function to the drawings and specification as do bills of quantities. This is an important issue but the consideration of the finer points relating to documentation lie outside the scope of this study.

Considering the broader issues of documents in common use

The documentation applicable to building works comprises one or more of the following:

drawings,
specification,
bills of quantities,
schedules of work,
conditions of contract and articles of agreement.

Drawings are required for all projects irrespective of size or value but the use of a specification, of bills of quantities or schedules or work varies. The arrangement decision is influenced by the size and the value of the project, the degree of simplicity or complexity, the time and suitable resource availability to produce the document(s) and the attitudes of the client and the professional adviser. Conditions of contract and articles of agreement are not essential for the satisfactory carrying out and completion of the works but, except for works of a very minor nature, use is often made of one of the standard forms of contract conditions available to the industry.[215]

The building industry is aware that problems currently exist which prevent satisfactory performance. These problems have been identified by CCPI as being the result of substantial changes which

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214 CPI, a guide with examples, small works - the need for brevity, pp. 21 and 22, and Project Specification, cl. 3-6, specificaiton needs to be brief, pp 27 and 28.

215 I N Duncan Wallace, in Hudson's Building and Engineering Contracts, published by Sweet and Maxwell Limited, London, Tenth Edition, 1970, Chapter 3, Tenders and Estimates, pp. 198-213.

have taken place within the industry during recent years. The particular changes relate to the range of materials, methods of construction and varied performance requirements. The greater range of materials available and, to a lesser degree, changes to methods of construction have been responsible for increasing the element of specilisation both in design and construction. Currently there exists an increasing tendentious attitude towards the multi-mode professional practise. Similarly, in contracting, there is a distinct move away from the organisation employing the majority of trades to organisations which manage work carried out by others.[216]

This evolutionary change in policy involves more parts to the whole and for such an arrangement to function efficiently requires sound management expertise in the sense of co-ordination. Segregation of the whole into categories of specialisation renders a greater need for realistic planning, for the collecting of relevant information and for the effective distribution of that information. To be effective the information must be totally relevant and communicated within the time scales stipulated in the overall plan. If these criteria are not observed and strictly adhered to then inevitably the design or the construction processes will become dissolute and fragmented and this resultant deficiency will be reflected in the progress and the quality of the product.

The establishment of the CCPI[217] in 1979 by the RIBA, RICS, BEC and ACE[218] was seen as a major step forward to bringing about a general improvement in the documentation used for the procurement and construction of buildings.

Co-ordinated Project Information

CPI acknowledges that the main documents "are, of course, drawings, specifications and bills of quantities" and disregards schedules and schedules of work. The main objectives of the

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216 See, for greater details, CPI, a guide with examples pp. 2-6.

217 See *ante*, pp (ii) and (iii) for abbreviations.

218 *Ibid.*

Conventions is to improve "the technical content" also to improve "the effectiveness of the co-ordination between them".[219]

In this respect CPI has substance, but this substance is limited in extent. It is logical to presume that where fragmentation exists then there must also exist a mechanism of assembly if the composite unit is to operate effectively. Characteristically a state of autonomy generally exists within the design team and to a lesser extent this also applies to the construction team. This prevailing attitude gives rise to a fragmented liaison between design and construction.

The need for co-ordination may be required and appreciated by both consultant practitioners and building contractors alike but the Conventions which provide for this co-ordination are not mandatory. Furthermore the implementation of the Conventions, as designed, can only be achieved with a radical change in attitude on behalf of the client and the professional adviser and at a substantial additional cost. These factors suggest that a very convincing argument will have to be raised if absolute implementation is to be achieved. A less convincing argument will maintain the *status quo* and the maxim 'any minimum criteria set will equate with the maximum value used' will continue to prevail.

Areas of similarity exist between the thinking and reasoning of Banwell[220] and the CCPI insofar that both place emphasis upon the need for the various participants to the building project to think and act as a whole. However in this context Banwell is referring to the two separate phases of design and construction being moved towards a greater measure of unification whereas CCPI is relating mainly to the design team thinking and acting as a whole. The logistics being that the benefits occurring from such a homogenius strategum would automatically pass from the design team and be of advantage to the construction team. This point is clarified by CCPI.

> "That the availability, reliability and ease of assimilation of project information are known to be critical to the effective pricing planning, execution and control of building work".

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219 CPI. a guide with examples. quoted within the underfined preface.

220 See *ante*, pp (ii) and (iii) for abbreviation.

This statement is made in the knowledge that characteristically "structuring and timing of drawings is highly variable from office to office and job to job" and that "the quality of project specifications is also variable but generally low".[221]

Similarly, bills of quantities have been criticised from the viewpoint of the degree of complexity associated with the SMM.[222] The need for accurate and firm bills of quantities are considered by the CCPI to be an essential ingredient to project documentation but doubts exists as to "whether bills are sufficiently simple to meet present day needs and sufficiently representative of the pattern of sub-contracting".[223] The recently published SMM7[224] may prove to be of benefit in this respect. However the adoption of SMM7 for use with small building projects requires a change in attitude, from that which currently exists, on the part of both the client and the professional adviser. A recognition of the need for bills of quantities by the professional adviser may not, in itself, generate sufficient enthusiasm to bring about the change. It may be necessary to introduce measures which will enforce the use. Detailed consideration of bills of quantities and the SMM7 lie outside the scope of this study.

However it is important to realise that,

(a) by inference, bills of quantities are considered by CCPI to be a useful ingredient of project documentation[225] whereas Banwell views bills of quantities as essential ingredients to all but minor works,[226]

(b) a more extensive use of bills of quantities is envisaged by CCPI insofar "that measurement can be carried out more quickly" by virtue of "the number of items in bills of

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221 CPI, a guide with examples, The problem, p.2.

222 See *ante*, pp (ii) and (iii) for abbreviations.

223 CPI, *op. cit.*

224 See *ante*, pp (ii) and (iii) for abbreviations.

225 CPI, *op. cit*, matters relating to SMM7, p.26.

226 The Banwell Report, *op. cit*, Chapter 6, Bills fo Quantities, Function in the Tendering Process, cl. 6.3, p.20.

quantities being reduced significantly[227] which implies that the future use of bills of quantities could be more cost effective,

(c) bills of quantities co-ordinate information which if correctly prepared assists, to a large extent, in the elimination of inconsistency and ambiguity,

(d) the 'with quantities' tendering arrangement is less demanding upon the time and money resources required by the contractor for estimate preparation purposes,[228]

(e) the 'with quantities' tendering arrangement substantially reduces the elements of risk and uncertainty placed upon the contractor during the preparation of the tender and during the construction period.[229]

Areas of similarity exist between Banwell, CPI and this study insofar as the identification of factors responsible for the problems relating to building construction are concerned. Furthermore, whilst this study is confined to small building construction works, both Banwell and the CCPI recognise that the problems affect all works whether they be large or small. For this reason it is necessary to consider documentation and its inherent deficiencies in the light of the findings published by Banwell and the CCPI and to make appropriate comparisons.[230]

Prioritising the objectives of documentation

CCPI believe "that deficiencies in project information contribute significantly to major problems within the industry" and that "they indicate that an excessive proportion of skilled time is devoted to sorting out problems retrospectively rather than avoiding them in the first place".[231] These problems have been categorised by the CCPI.

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227 CPI, *op. cit*, the complexity of bills of quantities, p.26.

228 See Chapter Eight, Tables 12 and 13, p.130-131.

229 *Ibid*, Tables 10 and 11, p. 128.

230 The Banwell Report, *op. cit*, Chapter 1, General Observations, cl. 1.4, p.1 and CPI, *op. cit*, The Problem pp 2-6 and Project Specification Code, pp 20-11.

231 CPI, *op. cit*, The Problem, p.2.

Banwell identifies similar areas of fault within the system but places emphasis upon the completion of design and time factors. Moreover Banwell presumes that by allowing adequate time for the processing of the various ingredients allied to tender procurement then adequate documentation will be produced as a matter of course.

This belief is reiterated within The Banwell Report,

> "those who find it necessary to spend money on construction works seldom spend enough time at the outset on making clear in their own minds exactly what they want" and that "time spent beforehand in settling details of the work required ..... is essential if value for money is to be assured and disputes leading to claims avoided".[232]

Both attitudes have been conceived from totally similar objectives but the two different lines of approach have resulted in entirely different forms of emphasis and recommendation. Both, although distinct, are nonetheless in parallel and similar implications are evident in each.

The main difference between the two areas of consideration, concern the separate parts of the design and construction processes being considered by each. Banwell takes into account the whole process from inception to completion of the construction works whereas the CCPI confine their attention to problems manifested during the period of construction and resulting from deficiencies in information. Having regard to these differences in approach the deliberations nonetheless possess important common features. Both acknowledge the need to minimise the frequency of variations and contractual claims; both place an emphasis upon quality assurance and control; both share the viewpoint that problems which arise during the construction period emanate from pre-tender deficiencies and both show considerable concern towards the design process.

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232 The Banwell Report, *op. cit*, Chapter 2, The team in Design and construction, The Important of Time, cl. 2.2, p.3.

The main areas of divergence between the two concern on the one hand time and on the other the adequacy of the documentation. This suggests that both concerns are closely related. Time and the ability to programme construction procedures and activities are, according to Banwell, pre-requisites to a successful project.[233] The programming function is impossible to achieve without sufficient design information and adequate documentation. The onus of responsibility for satisfying these pre-requisites therefore rests firmly upon the professional adviser. CCPI, in suggesting that inadequate project information is the main cause of serious quality problems on site is also being critical of design information. The adequacy of project information is totally dependant upon the level of completeness of design and the level of completeness achieved is geared to time availability. The responsibility to provide for sufficient time allowances in respect of the design process also lies with the professional adviser.

Two distinct areas of concern stem from this appraisal,

1) the management of the design process
2) the acceptance of time as a fundamental resource.

A responsible attitude by the professional adviser towards the use of CPI and towards the use of CPSSST[234] may react favourably with the two concerns and may provide a partial solution to the problem providing the documents are used in the spirit for which they were intended. However the measure of attention given to CPI since the date of its publication and the continual inappropriate use of the recommendations contained within CPSSST suggest that the system is unlikely to be improved by voluntary subscription. The requirements would need to be enforced.

Alternatively a more radical approach to the traditional system may be necessary probably on similar lines to the system published in 1983 by the BPF.[235] The British Property Federation System for building design and construction is a totally novel approach designed to provide "a more efficient and co-operative method of

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233 *Ibid*, cl. 2.3, p.3.
234 See *ante*, pp (ii) and (iii) for abbreviations.
235 *Ibid*.

organising the whole business process".[236] This new system was deemed necessary to respond to concerns "about problems in buildings which occur far too frequently, particularly those of poor design, inadequate supervision and insufficient choice of materials". For this purpose the BPF concentrated their efforts upon work obtained by the competitive tender process. This being "the most commonly used system for commissioning design and construction".[237]

There are areas of notable significance within these abstracts. "Inadequate supervision" and "insufficient choice of materials" are additional concerns to those registered by Banwell and the CCPI whilst concern in respect of "poor design" is common to all. These additional concerns also increase the overall burden to be borne by the professional adviser.

There is a further common and notable characteristic. According to Banwell "the most urgent problem which confronts the construction industry is the necessity of thinking and acting as a whole".[238] This sentiment is supported by the BPF when they state that "the twentieth century has seen the separation of the design and building processes" and that "designers and contractors have drifted apart, the gulf widened by an outdated contract system.[239] To formulate and compile documentation which is sufficient for the purpose intended is time consuming. The Project Specification[240] acknowledges this fact in stating that "researching and writing clear, succinct specification clauses from scratch is a very time consuming process"[241] and 'time = money' but Banwell maintains that "time well spent can mean time and money saved".[242] The opposing viewpoint was offered by The "Simon" Report[243] when commenting upon the merits and demerits of open and selective

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236 BPF, Property Journal. Published by the British Property Federation, London, The President's introduction, Vol. IX, no. 6, December 1983.

237 *Ibid*, Manual of the BPF System Preface p.1.

238 The Banwell Report, *op. cit*, Chapter 1, General Observations, p.1.

239 BPF, Manual of the BPF System, Preface, p.1.

240 CPI, Project Specification, a code of procedure for building works. Published by the Co-ordinating Committee for Project Information, London, 1987.

241 *Ibid*, Libraries of clauses cl. 7.3, p.34.

242 The Banwell Report, *op. cit*, The Team in Design and Construction, The Importance of Time, cl. 2.2, p.3.

243 See *ante*, pp (ii) and (iii) for abbreviation.

tendering. The Committee maintained "that it was in the best interests of neither the client nor the industry that the only test should be that of price" and that it is "a fundamental condition of good building that every contract shall be placed at a fair price with a responsible builder".[244]

This statement although slightly out of context, does serve to illustrate the importance of quality assurance and that quality can only be achieved at a cost.

A dilemma is therefore created within the minor works sector of the building industry which is largely concerned with work obtained by the competitive tender process. In this sector the client's knowledge of the cost of the building works prior to construction commencing is usually a fundamental pre-requisite to work being started on site. There may be a permitted tolerance on occasions depending upon the type of work to be constructed or the attitude of the client but normally certainty of price within the boundaries of the permitted tolerance is expected.[245] As a general rule the client also expects early results and as stated within The Banwell Report "It is natural that a client, having taken the decision to build, should wish to see work stated on site at the earliest possible moment".[246]

Certainty of price and quality assurance rely upon adequate documentation being provided in the first place. Similarly time and money resources are demanded to satisfy those requirements. Whilst recommendations contained within both The Banwell Report and the Code of Conventions published by the CCPI independently offer logical reasoning and possible solutions to the problems, there is little credence given to the appropriateness in application. The problems therefore remain.

There is a great need to appraise and integrate these possible solutions with a view to achieving a single practical set of procedures for work obtained by the competitive tender process.

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244 The Placing and Management of Building Contracts (1944): Report of the Central Council for Works and Buildings to the Minister for Works HMSO, London, 1944, p.7.

245 See Appendix B, items 1, 2 and 8, *post*, pp v-vi.

246 The Banwell Report, *op. cit*, cl. 2.3, p.3.

Even assuming a set of workable procedures the implementation would be difficult to achieve unless the procedures were made the subject of a mandate or the client made aware of the potential hazards of non-compliance with the procedures. Knowledge of the course of treatment to be adopted by the client would be of equal importance to the building contractor and this knowledge would, almost certainly, be reflected in the price submitted by the builder for carrying out the works. This problem is therefore, to a large extent, educative.

CHAPTER SIX

SUMMARY TO PART 1

General

Chapter Two has considered information, as it applies to the 'lump sum' building contract, and the objectives to be achieved by the use of that information. Also Chapter Two has considered the part of the role of the professional adviser which is designated to interpreting the requirements of the client and the conveyance of those requirements to the contractor.

Substantially complete information at the tender stage is essential if both the client and the contractor are to enjoy common participation and understanding. If, the necessary information cannot be made available at this time than an alternative tendering arrangement should be used. The responsibility for this rests with the advisers to the client.

Chapter Three is mainly concerned with time allowances for various activities which form part of the whole pre-tender process and beyond to a limited extent. In this regard, the reasoning of the Banwell Committee and the critique offered by the Action on The Banwell Report have been set against the recommendations of the CPSSST.[247] This examination has revealed three important issues,

1. that, whilst the recommendations of CPSSST are similar to the recommendations contained within The Banwell Report the CPSSST does not benefit in its application from the philosophy of the The Banwell Report,

2. that the CPSSST comprises a conglomerate of recommendations and these are totally flexible and open to misinterpretation and abuse by the indiscriminate user,

3. that the time allowances made available to the professional adviser in respect of processes which have to be completed prior to work commencing on site are totally

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247 See *ante* pp (ii) and (iii) for abbreviations.

flexible whereas time allowances for work after the contractor has been awarded possession of the site are rigid.

Chapter Four has deliberated upon financial reimbursement for work executed. The CPSSST is not concerned with these matters. However, this characteristic segregates the pre and post contract elements and isolates the recommendations applicable to the pre-contract period from the mandatory provisions which exist subsequent to the award.

It is believed that a firm relationship does exist between the two stages. Proof of this is found by relating the recommendations offered by the CPSSST to the money related mandatory provisions contained within JCT80.

Of the eight money related clauses within JCT 80 only two, retention and damages for non-completion, can be considered justifiable. This is so because the extent of both, in terms of obligation, are known by the contractor prior to tender submission and neither obligation will change during the period of the contract. Five of the remaining six clauses, either provide for changes to the work patterns during the construction period or they are affected by such changes.

These money related clauses are, almost without exception, influenced by the time allocations applicable to the pre-tender process. To summarise,

i) the contract sum:- this constitutes a total commitment by the contractor and the commitment envisages the design as being substantially complete prior to tenders being invited. (DESIGN TIME AND COMMUNICATION SKILLS)[248]

ii) certificates and payments:- the interim certificate provides a cash flow facility for the contractor. Undervaluation of the works or a late payment by the client will disadvantage the contractor and possibly others associated with the construction works. Depending upon

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248 See Appendix D, *post*, pp ix-xi.

the financial resilience of the contractor a deficiency in cash flow entitlement could delay production and, in more severe cases, the deficiency could result in financial embarrassment and ultimately insolvency. (TIME AND MONEY)

iii) variations:- The variation facility is invariably used to cater for changes in the specification or in the design of the project. The need to modify would not have occurred if the design had been substantially completed prior to the project being offered for tender. Variations disrupt work patterns, extend programmed timings, create unnecessary pressures upon the contractor's administration and cash flow provision and add to the costs. (DESIGN TIME, COMMUNICATION SKILLS, PRODUCTION TIME AND MONEY)

iv) extensions of time:- extensions of time are awarded as a result of a delay to which a 'Relevant Event'[249] applies. Some 'Relevant Events' within JCT 80 are outside the control of either the client or the contractor. There are however many 'Relevant Events' which are under the direct control of the client.[250] These concern,

a) compliance with the Architect/Supervising Officer's instructions; [251]

b) the contractor not having received in due time necessary instructions, drawings, details or levels;[252]

c) delays caused by nominated subcontractors or suppliers;[253]

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249 JCT 80, The Conditions, Part 1: General, 1 Interpretation, definitions etc, 'Relevant Event' (any one of the events set out in cl. 25.4) RIBA Publications Limited, London, 1980, p.10.

250 See Appendix F, *post*, p. xviii.

251 JCT 80, *op. cit*, cl. 25.4.5.

252 *Ibid*, cl. 25.4.6.

253 *Ibid*, cl. 25.4.7.

d) work outside the contract to be carried out by others employed by the client direct;[254]

e) failure by the client to provide materials and goods which the client had agreed to provide;[255]

f) failure of the client to give in due time ingress to or egress from the site of the works.[256]

Extensions of time create similar problems for the contractor as those stated under variations. (DESIGN TIME, COMMUNICATION SKILLS, PRODUCTION TIME AND MONEY)

v) fixed or fluctuating price levels:- the choice of arrangement is totally at the discretion of the professional advisor. Whilst the fluctuating price arrangement does not create major difficulties for the contractor, however, the fixed price arrangement does and these difficulties are both time and money related. There are two areas of concern in this regard,

a) the point in time which establishes the start date for the period of entitlement,

b) the unwillingness of the material suppliers to comply with the terms of the fixed price arrangement. (TIME AND MONEY)

vi) the level of prime cost and provisional sums:- the concerns of the main contractor in this regard are,

a) the aggregate amount of prime cost and provisional sums in relation to the contract sum;

b) the lack of facility to prepare an adequate programme for the works;

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254 *Ibid*, cl. 25.4.8.1.
255 *Ibid*, cl. 25.4.8.2
256 *Ibid*, cl. 25.4.12.

c) the indiscriminate use of the prime cost and provisional sum facility by the professional adviser aimed at reducing the time required for the design process and at accelerating the project completion time. (DESIGN TIME AND MONEY)

Assessing the recommendations of the CPSSST

The 'lump sum' tender arrangement is used in contravention of the true intent and for this to occur indicates a fault within the system as designed and as envisaged. The fault clearly relates to semantics and the damaging effects are augmented by the degree of flexibility afforded by the CPSSST.

There is a pressing need for the CPSSST to be reviewed and modified to eliminate areas of imbalance and flexibility.

Such action would,

i) remove the onus of decision, to a large extent, from the professional adviser,

ii) generate a more disciplined attitude from the professional adviser,

iii) reduce the incidence of variation,

iv) reduce the quantity of unknown element,

v) increase the accuracy of the tender sum,

vi) reduce the burden of risk borne by the contractor.

The prescriptive measures which respond to these needs are considered later.[257]

257 See Chapter Ten, pp. 166-189.

PART 2

EMPIRICAL ISSUES

CHAPTER SEVEN

RISK AND UNCERTAINTY

A pragmatic perspective

The term risk and uncertainty is defined by Hillebrandt,[258] as,

> "Risk arises when the assessment of the probability of a certain event is statistically possible. Risk is insurable. Uncertainty arises when the probability of the occurrence or non-occurrence of an event is indeterminate. Uncertainty is not insurable."[259]

According to Perry,[260]

> "Risk and uncertainty are inherent in construction work. It would be a delusion to think that risk can be eliminated through the setting up and drafting of contracts. Nevertheless, contractual arrangements and conditions have a significant influence on the risk carried by each party on the clarity with which they are perceived".[261]

This suggestion is supported to some extent by Tables 39 and 40.[262]

In this respect, Contractual Arrangements, Construction Industry Cost Effectiveness Report A-7, New York, October 1982 suggests that the choice of contractual arrangement can vary the overall cost of the project by as much as 5%.

Perry maintains also that a relationship exists between the policies adopted for managing and controlling risk from the client viewpoint

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258 See References, *post*.

259 Patricia M Hillebrandt, relating to The School of Economics and Political Science Reprint No. 16 (F H Knight, Risk Uncertaintly and Profit, Boston; Houghton Griffin 1921) quoted in Economic Theory and the Construction Industry, published by the MacMillan Press Limited, London and Basingstoke, 1984 reprint, Chapter 13, Price Determination for a single project, p. 163.

260 See References, *post*.

261 John G Perry, Dealing with risk in contracts, Building Technology and Management (BT & M), (Journal of the Chartered Institute of Building, Ascot, Berkshire), April 1986, vol. 24, No.4.

262 See Chapter Eight, pp 157 and 158.

and the ultimate final objectives of the building contract in terms of cost, quality and time.

Research has failed to identify a specific line of demarcation between risk and uncertainty in the context of the unknown element. Indemnification and associated legal issues may have a bearing on this but are outside the scope of this study. For this reason the two separate elements will be considered under the single classification of risk.

The relativity of concerns

Published opinion has been offered to identify lines of demarcation between the known areas of risk characteristic of the building contract and the fundamental objectives held by the parties to the building contract. These areas of relationship are shown to concern time and money constraints, the conditions imposed by the form of contract and the choice of contractual arrangement.

The detailed consideration of the various conditions offered for use with the lump sum contract and the alternative arrangements available to the client are beyond the scope of this study. Nonetheless the published opinions do present viewpoints of notable significance and these viewpoints are pertinent to many of the issues raised by this study.

According to Perry, "if types of contract are defined in terms of their payment mechanism then a significant difference is found in the way risks are handled between those contracts which are 'price-based' and those which are 'cost-based'". This difference is to do with accountability and the policies adopted for reimbursement. In this respect Perry considers 'price-base' contracts to be more onerous upon the contracting organisation.

However Perry argues that "The contractor will estimate the costs of the risks he is to carry and include them in his price or rates, in the form of a hidden risk contingency". This seemingly logical attitude disposed to dealing with risk and the financial problems risk creates for the building contractor, must be related however to the fundamental criteria concerning survival. The need to obtain

work and the need to retain a competitive edge conflicts with the need to make allowances for all possible eventualities. Even considering the more common and obvious uncertainties created by variations and unforeseen ground conditions Perry comments to the effect that, whilst "the contractor will usually be entitled to additional payment" through the claims' process, "The nature of risk and claims, coupled with the confidentiality of the contractor's costs, introduce an element of chance into the adequacy of the payment ....clients may pay excessive amounts for their contracts, but the more likely outcome is that contractors will be seriously underpaid - even to the extent of bankruptcy".

The suggestion that risk and uncertainty has an influence upon the bid made by tendering contractors and that this will be reflected by the "wide spread of bid prices" and "fewer bidders" and that "This enhances the gambling aspect of price-based bidding" is accepted.[263]

However the spread of bid prices and the extent of those tendering contractors who decline from submitting a bona fide tender are not necessarily the sole indicators of the measure of anticipated risk and uncertainty. Similar characteristics are portrayed during periods when the construction market is particularly buoyant and in some cases where an element of collusion is suspected.

Nonetheless this opinion by Perry serves to indicate that a distinct relationship does exist between the pre-tender and the post tender commitments undertaken by the parties to the contract.

Hayes[264] is largely supportive of the opinion offered by Perry and considers certain requirements of the client in relation to the characteristics of the project. This support is particularly in evidence where the need for unification of the design and construction processes is an important feature.

Hayes, in defining "who carries the risk" reflects on the fact that "there has been a growing understanding among clients that the practice of using traditional forms of contract leads to 'contracts of

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263 Perry, *op. cit.*

264 See References, *post.*

conflict' and that this disillusionment is directly related to the poor record sustained by the construction industry for completing works on time".[265]

In this context NEDO[266] claim that "on average non-traditional techniques of management tend to be quicker" and that improvements to the time element can be made by employing a system such as management contracting which permits the overlap of the design and construction phases.[267]

Whilst the consideration of the principles of management contracting in its various forms lies outside the scope of this study there is benefit to be derived from identifying differences in client requirements which necessitate an alternative method of approach. CIRIA[268] provides for this and identifies the circumstances where management contracting could be used with benefit,

"a) there is a need for an early start,

b) there is a need for an early finish,

c) there is a need to consider particular construction methods,

d) there is a need for flexibility,

e) the organisation is organisationally complex,

f) the client and his advisers have insufficient management resources,

g) there are special labour requirements".[269]

Initially the client investing in management contracting was prepared to accept a higher degree of responsibility for risk than

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265 Ross W Hayes, Commenting on Management Contracting - yesterday, today and tomorrow, in BT & M, *op. cit*, June 1986.

266 See *ante*, pp (ii) and (iii) for abbreviations.

267 NEDO, Faster Building for Industry, HMSO, London, 1983.

268 See *ante*, pp (ii) and (iii) for abbreviations.

269 CIRA, Management Contracting, Report 100, London, 1983.

was normally the case with the traditional system. This in return for a greater degree of flexibility and co-operation between the parties and a seemingly overall reduction in risk generated by the higher level of management expertise. A survey undertaken in 1984[270] revealed that Management Contracting was gaining in popularity and this was particularly in evidence in the south-east of England.

However where the initial "attitudes within the industry was one of low or no risk for the management contractor" this has now changed to an attitude in which the management contractor is "being forced to accept the risk of construction, rather than just the management". As a consequence the management contractor needs to have a responsibility for the contractors involved in the construction, the excesses of time, defects maintenance, preliminary apportionment and design. This points to the fact that the responsibilities and risks identified with the non-traditional form of arrangement are similar in most respects to those issues normally associated with the traditional arrangement. Hayes comments to the effect that "The management contract, if written in this way, effectively becomes a conventional contract with 100% subcontracting".[271]

A further comment by Hayes relates to specific areas of difficulty experienced by the building contractor and related package contractors. These difficulties are categorised under the heads of contract conditions, programme of work, packaging of work, calibre of staff and increase in design. Whilst this area of consideration lies mainly outside the scope of this study there are however certain points of reference which have a common significance. These points, in general terms, relate the size of the "package" organisations to their resources and from this information relate their ability to recognise "the commercial risks they are accepting". The facility to allow design and construction to overlap and to let packages as and when necessary means, in effect, that "package contractors are receiving less notice of tender, less time to tender, less time between tender and construction to plan the work-load

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270 Management Contracting Centre for Construction and Market Information, February, 1985.

271 Hayes, *op. cit.*

and frequently an accelerated programme of work when they do arrive on site".[272]

Whilst these comments by Hayes are directed at package contractors it is suggested that lines of parallel exist between the package contractor and the small building works contractor and that both suffer as a result of inadequacies within the system. Similarly both methods of management require an elevated level of expertise to successfully administer the works. This requirement often exceeds the level of expertise which can be afforded by the package contractor or the small building works contractor. Hayes, in predicting the future for package contractors operating within a depressed market, sees a trend of "increasing bankruptcies .... or an increase in claims and litigation as they try to protect themselves and become more commercially aware of the risks they are being asked to accept".[273] This prediction could apply equally to the smaller building contractor.

The need for an early start, the need for an early finish and the need for flexibility are offered as the viewpoint of an architect by Newlove.[274]

This viewpoint of an architect reflects the procedural changes which have taken place during recent years within the design office in respect of variations to the contract. Newlove comments to the effect that earlier years displayed a drawing office discipline which aimed to avoid unnecessary variations to the contract works but this practice "does not seem to be followed today". Furthermore architects observed the two distinct functions provided for by 'architect's instructions' and 'variation orders' which, apart from being good practice, "helped to minimise uncertainty for the contractor". This practice according to Newlove "no longer seems to be followed".

Commenting upon these changes and the resultant malpractices Newlove relates the inefficiency of the construction industry "to faulty administrative procedures". In this context the contractor is

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272 *Ibid.*
273 *Ibid.*
274 See References, *post.*

seen to be responsible to some extent but "frequently it is building clients and their agents who add to the costs of construction by placing unnecessary and avoidable burdens upon contractors".

Further commentary identifies areas of additional work created for the contractor by this misappropriation of documentation and in the opinion of Newlove "when a contractor is obliged to do administrative work which was not originally in his contract (because it related to variations) he should be paid for it". Also variation orders should be fully detailed and referenced to show the intent of the architect otherwise "How is the contractor to know?".

Newlove "can see no good reason why a relatively small saving of time and cost in the designer's drawing office should be subsidised by a greater unpaid additional effort on the part of the contractor".

The provision for variations within a contract are according to Newlove "intended to be used to deal with situations arising or discovered after the contractor and the building owner have committed themselves to a contract. They are not intended to deal with matters which could have been and should have been foreseen". If variations are necessary then there is an obligation on the architect "to know, or find out, whether variations are significant" in contract terms, "what they will cost, and whether they will cause delays or disturbance of progress".[275]

A similar measure of concern reflecting the attitude of the client towards the effects of variations is observed by Trickey.[276]

In assessing the relative merits of JCT63 and JCT80[277] Trickey observes "that little emphasis appears to have been given to the extent to which the employers' interests are better safeguard than under the previous form" particularly in instances where certainty of price and certainty of time are essential ingredients. The three main changes according to Trickey relate to variations and their evaluation, liquidated damages and extensions of time, and

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275 John Newlove, Variations by drawing issue - a missuse of contract provisions, BT & M. *op. cit*, September 1982, Vol. 20, No.8.

276 See References, *post*.

277 See *ante*, pp (ii) and (iii) for abbreviations.

nominated subcontractors. In commenting upon variations and their evaluation Trickey states that the rules have "been strengthened to the employer's advantage in JCT80" and that the contractor occupies a less commanding position than under JCT63. Similarly "much of the scope of 'claims' arising from variations in JCT63", that concern the effect a variation has upon the manner in which other works are being carried out "has now been moved into the quantity surveyor's province for valuation at contract bill rates".[278]

This statement appears to ignore the provisions contained within JCT80 which offer alternative methods of evaluation, other than a valuation using bill rates, to secure a fair and reasonable assessment.[279] Nonetheless the issue raised by Trickey in respect of delay and disturbance to the regular progress of the works and which includes variations is supportive of the opinion offered by Newlove.

There is a need for the professional adviser to possess an acute awareness of all factors which affect the construction works and this is particularly so where a claim for disruption and delay is concerned. In such instances the contractor possesses sole knowledge of the facts leading to the disruption and delay and it is only equitable that this knowledge should be made available to the adviser to the client so that, according to Trickey, "the design team can take remedial action in good time in order to minimise, or even eliminate, the extra cost to the employer". However Trickey, in considering this express obligation placed upon the contractor by the conditions of contract stresses that notice of claim is required "as soon as it is reasonably apparent that such disturbance will occur" and emphasis is placed upon the word 'will'[280] JCT80 does not use this terminology. JCT80 states that "If and whenever it becomes reasonably apparent that the progress of the works is being or is likely to be delayed ....."[281] It is both unreasonable and impractical to expect a contractor always to be in a position to accurately predict the possible effects of a variation and to

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278 Geoffrey Trickey, Employers' interest safeguarded, Chartered Quantity Surveyor, December, 1982, Vol. 15, No. 5.

279 JCT 80, clauses 13.5.1.1.2 and 13.5.1.1.3.

280 Trickey, *op. cit.*

281 JCT 80, cl. 25.2.1.1.

immediately provide the professional adviser with details unless the variation is of a singular nature. In the majority of instances however the single variation, when viewed in isolation, does not create a major problem. The major problems are created generally by the cumulative effects resulting from the issue of a number of variations. Furthermore, as shown by Newlove,[282] changes create a substantive amount of additional work for the contractor and the administrative process which has to be adopted to provide the necessary information is time consuming and costly. The professional adviser does not always recognise this fact.

The information provided by the contractor in substantiation of a claim for an extension of time is very rarely looked upon by the design team as a true reflection of the effects of the change or changes. The claim is often considered to be a means by which the contractor can eventually realise additional financial benefits. Gray[283] supports this opinion, "A design team ... will commmonly assume that the contractor is preparing the ground for the future claim when he submits a schedule of his information requirements. However, this should be regarded as a positive rather than a negative action because the process of supplying information is complex and imperfectly understood".[284]

There are other peripheral issues raised by Trickey[285] which serve to indicate the attitude adopted by at least some quantity surveyors and the part played by interpretation or misinterpretation of the rules to achieve a required objective. These peripheral factors whilst being of interest have been disregarded on the grounds that they are not strictly relevant to the pertinent issues of this study.

Anderson[286] does not share the same viewpoint as Trickey and does not "subscribe to the view that JCT80 is a better document than JCT63". In fact Anderson considers JCT80 to be "contractor orientated" and this, according to Anderson is a viewpoint shared by lawyers who have participation in building disputes. The change

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282 Newlove, *op. cit.*

283 See References, *post.*

284 C. Gray, Management and the Construction Process, BT & M, *op. cit*, March 1981, Vol. 19, No. 3.

285 Trickey, *op. cit.*

286 See References, *post.*

in emphasis created by the introduction of JCT80 has placed contractors on a "gambler's winning streak" although reservedly Anderson remains "aware that being a building contractor involves financial risk and that, in many cases, whether or not a profit is made has much in common with selecting the winner of the Grand National".[287] This supports to a large extent the opinion offered by Perry.

Perry and Hayes in a joint publication consider the need for risk management and the ways risk management can be implemented during the various stages of the project. Whilst this article is directed primarily at project management there are certain areas of consideration which could apply equally to the traditional method of tender procurement.

Perry and Hayes suggest that a pre-requisite to effective project management is to ensure that "an in-depth study of risk and uncertainty is undertaken for all projects" and that "a constructive attitude of mind is important". The publication further suggests that "the major decisions are made early in the project life - at appraisal and sanction" and whilst "risk management does not remove all risk from the project" there should be a systematic approach maintained to control the identified risks. Great importance is attached to the ability to distinguish between the sources of risk and their effects and they suggest three stages of approach.

> "Firstly, the risk resources must be identified. Secondly, their effects must be assessed or analysed. Thirdly, responses and policies should be developed which lead to risk reduction and control".[288]

In this context the professional adviser engaged with the traditional procurement system, fulfils a similar role to the project manager and shares similar obligations in respect of risk and uncertainty.

Perry and Hayes in referring to the lump-sum contract, stress that "Decisions taken during the appraisal stage can have a very large

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287 A J Anderson, Winning Streak, BT & M, *op. cit*, February/March 1987, Vol. 25, No.1.

288 John G Perry and Ross W Hayes, Risk Management for Project Managers, BT & M, *op. cit*, February/March 1987, Vol. 25, No. 1.

impact on final cost and duration". They emphasise that "tender sums and the final contract value are at risk" through possible physical changes which may happen but are unknown at the tender stage.[289] These physical changes relate to unreasonable time constraints in respect of tender preparation, error by omission and by the use of devious commercial tendering techniques. Such factors are apparent in all building contract works irrespective of the size.

Cole and Hutton[290] relate to refurbishment and to the heavy demands which refurbishment makes upon all members of the design team irrespective of the project type. They emphasise the need for a positive and co-operative attitude to exist between all members of the building team. According to Cole and Hutton "Architects want to see from contractors evidence that they are positive-thinking and possess the necessary refurbishment expertise" and in this respect they consider that interviewing "contract managers and site agents - the individuals the contractor expects to put in as responsible for site development" rather more important than the directors of the building company. Personal experience has shown this interview policy to be very popular with architects over many years and particularly so in the public sector. Cole and Hutton also state that "Contractors sometimes tell us they would have preferred a much earlier involvement in projects and look for reassurance that we are a competent outfit in design and management terms with a firm grasp of practical realities".[291] Whilst this reassurance of ability is to be commended it is doubtful whether the majority of architects or other members of the design team would see the need for such a policy or be willing to subscribe to it.

Relating to competitive tendering Cole and Hutton state that "value for money is not synonymous with competitive tendering" for it "does not take account of a contractor's interest, attitude and skills".[292] Arguably, if the CPSSST were used correctly and strictly in accordance with the recommendations contained therein then

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289 *Ibid*, BT & M, August/September 1986, Vol. 24, No. 6.

290 See References, *post*.

291 Code and Hutton, Its all a question of attitude, BT & M, December 1987/January 1988, Vol. 25, No. 6.

292 *Ibid*.

these issues would be satisfied at the time of deciding upon the select list.

The published opinion offered by Perry, Newlove, Trickey and Anderson[293] relate to various aspects of risk. Whilst the deliberations do not necessarily reflect the viewpoint of the professions and the building industry as a whole they do alert an awareness to the fact that procedural deficiencies do exist within the placing and management of building contracts. Moreover the opinions indicate that the identified deficiencies have an adverse effect upon the well-being of the contract.

Newlove and Trickey are both concerned with variations, the deficiencies in administrative procedures in respect of variations and the measures of additional work imposed upon the contractor as a consequence of variations. Gray is also concerned with the deficiencies in administrative procedure and being corroborative of the thinking of Anderson, Perry and Newlove emphasise that variations are responsible for creating an additional burden for the contractor as far as financial reimbursement is concerned. In this respect financial reimbursement is seen to rely more on chance than on calculated assessment.

Many areas of deficiency are symptomatic with the design stage and these areas of deficiency have been identified by the CCPI.[294] The deficiencies have been acknowledged as being responsible, to a major extent, for many of the problems encountered during the construction stage.

In synthesis therefore, any remedial treatment must be directed towards design and addressed by both the client and the professional adviser. Information and the procedures adopted for conveying that information are crucial in this respect. This fact has been recognised by the CCPI and action taken by them has resulted in the publication of Co-ordinated Project Information. However, for CPI to work effectively in the realisation of the objectives, requires initially conviction and dedication on the part of the client

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293 *Supra*, pp. 92-101.

294 See *ante*, pp (ii) and (iii) for abbreviations.

and the design team. With the exception of SMM7[295] which is mandatory the Codes of Convention comprise a series of recommendations. This fact alone will hinder genuine efforts directed towards implementation of the recommendations. The CCPI are relying solely upon the better judgement of the professional adviser and state that "Once again, the implication is that designers should, whenever they can, produce complete and timely information".[296]

In instances therefore where "complete and timely information" cannot be produced, for whatever reason, then an alternative to the lump sum contract realised by the selective tender process should be sought and administered. This should be capable of being offered without fear or reprisal.

CPI[297] has merit and there is little doubt that benefit would be derived from its use by all concerned with both design and construction. However the recommended procedures, according to CCPI, may require additional time and staffing resources to implement and associated additional cost for document preparation. Such an action would demand a change in the attitude currently held by many professional advisers and their clients. The public sector may unequivocally accept the recommended procedures or some adaptation of them. There may also be a positive response from the large private practice but it would appear inconceivable to expect the small private practice to be similarly disposed. This is particularly so in instances where the private practitioner is operating within a competitive environment.

The size of the project may also create a dilemma. Reference has been made in CPI to small works under the heading of "General principles of specification writing" but the reference is brief and open to misinterpretation. The reference stresses "the need for brevity" but further stresses that "there is a strong case for increasing the technical content" above the level often experienced currently and that "this increase should be concentrated on those sections of the project which have a particular cost and/or quality

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295 *Ibid.*

296 CPI, a guide with examples, Implications for designers, p.4.

297 See *ante*, pp (ii) and (iii) for abbreviations.

significance".[298] Furthermore small, in the context of small works, is offered without definition.

The tolerance factor is extreme, the definitions are vague and in the context of small building works CPI offers little guidance and assistance to the professional adviser.

The Factorial Issues

The success and indeed the survival of a contracting organisation is totally dependant upon three criteria being satisfied;

i) to obtain work of suitable dimension and type within an appropriate finance category to which the organisation is geared,

ii) to carry out and complete the works within the time period allocated and within the constraints of quality assurance,

iii) to gain adequate financial reimbursement on a regular and pre-determined basis for the work executed.

The management of business affairs to achieve these objectives demands a high level of expertise and predictive skills. Moreover the establishment must be sufficient for the purpose and able to provide the necessary staffing, manpower, financial and other resources to enable the business organisation to function correctly.

In this context the management function is an onerous one particularly when considering the often totally unique nature of building work. A contractor must possess the ability to realistically predict the cost of managing and constructing a building project on a site for which there is often limited information available and with materials, labour, plant and subcontract resources to be established and organised.

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298 CPI. a guide with examples, small works - the need for brevity, pp. 21 and 22.

This onerous responsibility is further aggravated by endemic issues. Hillebrandt, relating to efficiency and growth in the building industry and in particular to work obtained by the competitive tender process observes that it is impossible to predict a tender success rate but nonetheless the success rate does have a significant influence upon the cost of maintaining an effective establishment.[299]

The risk factor, in the context of the tender success rate, is synonymous to the unknown with the degree of risk increasing as the level of the unknown increases. A measure of risk is expected and accepted by industry as being an inherent part of the traditional method of tender procurement but there are areas of risk which are imposed.

It is therefore necessary to distinguish between those risks which occur naturally and which are generally accepted by industry and those risks which are imposed by the client and the professional adviser. It is also necessary to independently consider risk as it is seen to concern the client, the professional adviser and the contractor and to relate the findings of each to their respective business objectives.

The Viewpoint of the Client

Figure A[300] suggests the level of risk which is deemed to confront a client proposing a unique and possibly singular commercial building undertaking. The minor areas of risk appear to warrant a similar measure of concern to the major areas of risk. However there are courses of action available, with provision for indemnification, in respect of the minor areas to counteract the worst of the effects. The measure of compensation which may be realised from indemnification will rarely be sufficient to offset the intangible elements of inconvenience and frustration which could be experienced in the event of a risk probability becoming fact. Nonetheless the standard conditions of contract do make a substantial contribution towards safeguarding the interests of the client.

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299 Hillebrandt, *op. cit.*

300 *Infra*, p. 107.

The viewpoint of the professional adviser

Figure B[301] suggests the objectives which a consultant practitioner engaged in the private sector may observe. Also the diagram indicates the main areas of risk and uncertainty normally associated with the unique building project. These areas of concern have been classified to isolate the generally accepted areas of risk from those risks which are often imposed.

There are elements of risk and uncertainty common to both areas of classification where the distinction between the two is judged by the level of intensity of the risk. These concerns have been marked with an asterisk.

The diagram, by illustrating the concerns of the professional adviser, also serves to identify those areas of risk and uncertainty which are in conflict with the objectives of the firm. This is particularly so in instances where a competitive environment exists and where severe and inflexible limitations in respect of time and money are significant issues.

The conflict therefore, which exists between the need to satisfy the objectives of the firm and the restrictive measures created by the competitive fee, is largely responsible for the inferior quality of service being offered by some consultants.

This is evidenced by instances where sufficiency of information and the adequacy of design attract adverse criticism. Furthermore the limitation imposed by the competitive fee may also have a bearing on the extent to which main contractors and specialist subcontractors are used to provide design and cost information without a resultant direct charge.

In this context the area concerned with designing to a budget cost is of notable significance. Personal experience has shown an emphatic reluctance on the part of the client to make known the extent of the financial resources available and intended for the design and construction of a building project. This reluctance is, of necessity,

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301 *Infra*, p. 107.

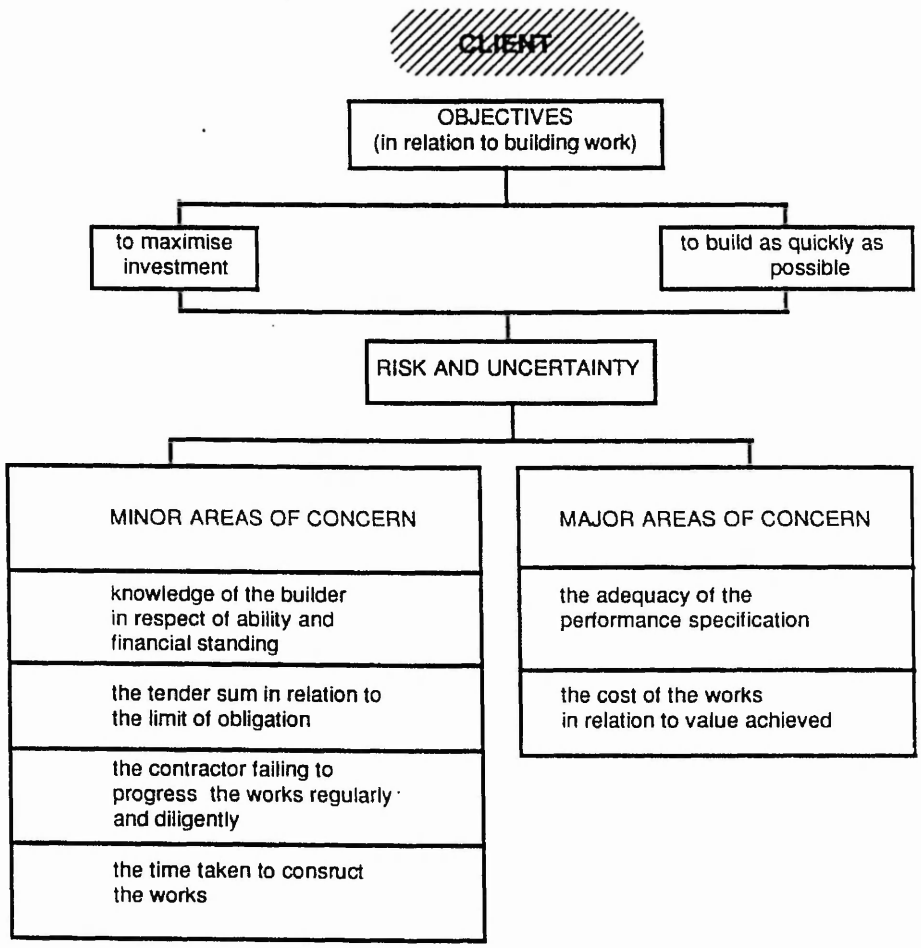
CLIENT
OBJECTIVES
(in relation to building work)
to maximise investment
to build as quickly as possible
RISK AND UNCERTAINTY
MINOR AREAS OF CONCERN
knowledge of the builder in respect of ability and financial standing
the tender sum in relation to the limit of obligation
the contractor failing to progress the works regularly and diligently
the time taken to consruct the works
MAJOR AREAS OF CONCERN
the adequacy of the performance specification
the cost of the works in relation to value achieved

Figure A

often overcome by the early involvement of a quantity surveyor but as a general rule only the larger building project engages the services of a quantity surveyor. In the case of the smaller building project operating a without quantities arrangement then this reluctant attitude will remain. Excluding instances where the professional adviser is prepared to consult a quantity surveyor or alternatively is prepared to personally predict the cost of the works then the client has no further options available other than to rely on the tender submission to provide the necessary cost information.

If the client elects to rely on the tender submission then tenders need to be invited at the earliest possible date and to be prepared at a minimum cost. In such instances the lowest bid submitted will provide the client with a budget cost for the works and, in addition, test the viability of the project.

No tangible evidence can be offered to support this claim but case studies 1, 2, 5 and 8[302] and Table 14[303] indicate a strong possibility that the impropriety does exist. Construction work in connection with case studies 1, 2 and 5 has not been commenced and while construction work in respect of case study 8 has been carried out, the extent of the work is shown to be considerably less than that originally offered to tender. Furthermore three separate schemes were priced prior to a sum being agreed and a contract being entered into.

Case studies 1, 2, 5 and 8 offer further support to this suggestion. The time allowed for tender preparation is in all cases less than the minimum period recommended by CPSSST and in some instances excessively so. The date of possession of the site has not been stated nor has the contract period been stated and all tenders were invited on a fixed price basis.

Divergence away from the recommended procedures and good practice points to either a lack of understanding or to a reaction to commercial pressures or to a combination of the two by the professional adviser. This suggests that the structure of a contracting organisation and the procedural mechanism involved in

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302 See Appendix B, *post*, pp v and vi.

303 See Chapter Eight, Table 14, p. 132.

tender preparation is rarely fully understood by the professional adviser. Similarly that the designer/professional adviser is equally unaware of the recommendations of the CPSSST and the reasoning and thinking underlying the recommendations. The CPSSST provides for flexibility and for the exercising of discretion but neither facility can be considered justifiable unless the user is both knowledgeable and skilled in its administration.

The Contractor's Estimating Procedure Flowchart reference A[304] details the procedure a contractor needs to adopt for tender preparation purposes . Also the flowchart identifies the staffing and subcontract resource requirements. The arrangement envisages the provision of bills of quantities as part of the tender documentation. This is a typical example and whilst certain details will change in response to differences in work type and size of project the principle and general format will remain unchanged.

The Contractor's Estimating Procedure Flowchart reference B[305] is similar to the flowchart reference A and differs only insofar as the procedural mechanism has been modified to suit the without quantities arrangement. The flowchart shows the stage at which quantities will need to be prepared and has dotted lines superimposed to differentiate between those activities which may precede quantification and those activities which rely upon quantification. There may be occasions when overlap can occur, without detriment, between dimension preparation leading to the formulation of draft bills of quantities and analytical pricing. This permitted overlap facility will depend upon the technique adopted for dimension preparation and upon the type of work being processed. For example, personal experience has shown new work and work involving alteration and extension of simple character to have the two processes of draft bill preparation and cost estimating capable of being carried out in parallel with a minimal time lag between the two. Conversely, works of a more complex nature cannot enjoy similar lines of parallel working and the draft bills of quantities must be substantially complete prior to the estimating process being commenced. Thus to establish the total quantity of work entailed within any particular trade or within any subcontract

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304 See Appendix C, *post*, p. vii.
305 *Ibid.*

areas of specialisation, then the resource allocations and the sequence of works cannot be established without a full knowledge of the total commitment. Flowchart (reference B) also indicates that quantities are often required by subcontractors particularly where finishing trades are concerned. This can also apply with the structure and cladding and case study 10[306] shows such a requirement in respect of roof coverings. The request for quantities to be provided in this instance is not indicative of the ability of the tenderer to prepare quantities. The need reflects the inadequacy of the drawn material. An example of poor quality drawn information is portrayed in Appendix G to this thesis.

Whilst acknowledging the time which may possibly be saved by employing an overlap between the two processes of dimension preparation and estimating there is, nonetheless, more time required for preparing tenders in the 'without quantities' arrangement than in the 'with quantities' arrangement.[307]

Earlier commentary has referred to the particular need of the client to obtain speedy and reliable cost information from tender submissions.[308]

The Tendering Procedure flowcharts[309] show typical design procedures from inception to tender submission and these flowcharts relate three optional forms of arrangement. The 'with quantities' and the 'without quantities' arrangements both with and without a specification. The differences between the procedural options reflect the measure of variance in the time required to prepare the tender, the level of financial commitment and the degree of control which can be exercised in respect of each. The unique nature of building work will also vary the extent of the time requirements and the financial commitment in respect of design. For this reason no attempt has been made to place a value against either resource. Nonetheless the flowcharts are indicative and they do react to a principle.

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306 See Appendix B, *post*, pp v and vi.

307 See Chapter Eight, Tables 8 - 13, pp. 126-132.

308 *Supra*, p. 105.

309 See Appendix D, *post*, pp. ix-xi.

The 'with quantities' arrangement flowchart[310] shows a high level of financial control in relation to the feasibility assessment and an equally high level of financial commitment in respect of fees and other associated costs. For this financial commitment to be justified then bills of quantities must be prepared correctly and used in the spirit for which they were intended. The design must be wholly complete in respect of general building work and substantially complete in respect of specialist installations prior to the bills of quantities being finalised.

The without quantities arrangement flowchart[311] which does not incorporate a properly prepared specification shows a radically diminished level of financial control in relation to the feasibility assessment. The without quantities arrangement does not envisage the services of a quantity surveyor to manage the finance, nonetheless a quantity surveyor is employed in some instances to write the specification. This is contrary to good practice and in essence offers little benefit to either the client or the contractor in respect of financial control.[312] Where the services of a quantity surveyor are dispensed with then the responsibility for predicting a cost for the works, in line with an established client budget, rests with the professional adviser. In such instances the professional adviser may provide a budget cost for the works but such occasions are rare and other methods have to be sought to satisfy the need. In this respect personal experience has revealed many instances where the professional adviser has consulted a particular contractor and obtained budget cost information with the proviso that the contractor will be included in the tender list.[313]

Therefore if a professional adviser fails, by whatever means, to provide the client with information concerning the probable cost of the works then the client must rely on the tender submissions to fulfil this requirement. Moreover, where the cost of the building works is a prime consideration then the client will require the pre-tender design fees to be minimal.[314] It is an acknowledge fact that most contractors are prepared to tender on sparse and inadequate

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310 *Ibid*, p.ix.

311 *Ibid*, p.x.

312 CPI, a guide with examples, Producing the Specification, p.22.

313 See Chapter Eight, p.131-132 and particularly Table 14.

314 *Supra*, p.105.

information with seemingly little regard being given to the probable consequences of such an action.[315] This attitude provides an opportunity for the professional adviser to obtain lump sum tenders by the sole use of drawings prepared for the purpose of obtaining statutory approvals. Furthermore this incorrect procedure enables the detailing of the basic design work to be suspended until such time that the feasibility has been confirmed and assurance gained from the client that the construction work will be progressed. This avenue of approval provides the client with substantial initial benefits in both time and money but these are benefits in the short term only.

The without quantities arrangement flowchart[316] with a specification incorporated relates very closely to the without quantities and without specification arrangement with regard to financial control and feasibility assessment. Also to the with quantities arrangement in respect of detailed design requirements and time. The extent to which the inter-relationship applies depends largely upon the completeness of the specification. A specification prepared in accordance with the recommendations of the CCPI and fashioned to the NBS [317] will fully support and expand upon the information contained on the drawings. Furthermore the specification will provide sufficient information to enable a realistic tender to be formulated. However a specification prepared to this level of sufficiency is rare in the small works sector. The reason for this, according to CCPI, is that "Researching and writing clear, succinct specification clauses, from scratch is a very time consuming process" and "...they can be rather heavy reading".[318]

The detailed consideration of specifications and bills of quantities lie outside the scope of this study. However the consideration of the broader issues relating to the specification raises the matter of comparative costs in relation to the benefits which may be derived by both the client and the contractor in the longer term. This poses the question of whether or not it would be more cost effective to

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315 See Chapter One, Identifying the areas of concern, pp. 9-15.

316 See Appendix D, *post*, p. xi.

317 See *ante*, pp (ii) and (iii) for abbreviations.

318 CPI, The Project Specification, cl. 7.3, p. 34.

prepare shorter form bills of quantities incorporating an abbreviated style of specification rather than a fully detailed specification without a provision for quantities. The fully detailed specification in isolation is mainly concerned with quality control and offers little assistance towards financial control whereas both criteria could be satisfied by the 'with quantities' arrangement.

The cost implications of providing either a fully detailed specification or 'shorter form' bills of quantities incorporating an adequate specification is beyond the scope of this study. However Tables 12 and 13[319] show that the client would achieve financial benefit from the with quantities arrangement in the longer term as a result of lower tender sums emanating from a reduction in contractor overhead recovery levels.

The viewpoint of the contractor

Figure C[320] suggests the objectives which a building contractor engaged with small works within the private sector may observe. The diagram further indicates the main areas of risk and uncertainty normally associated with the unique building project.

The areas of risk and uncertainty have been classified to distinguish between those areas of risk which are normally accepted as being inherent within the system and those areas of risk which are considered to be imposed.

With the exception of fixed and fluctuating price levels[321] and performance bonds the remainder of the suggested imposed risks are considered elsewhere within this study[322] The purpose served by Figure C at this point is one of establishing objectives and identifying particular areas of risk and uncertainty. It does so without considering the weighting and the inter-relationship which may exist between the various areas of imposed risk.

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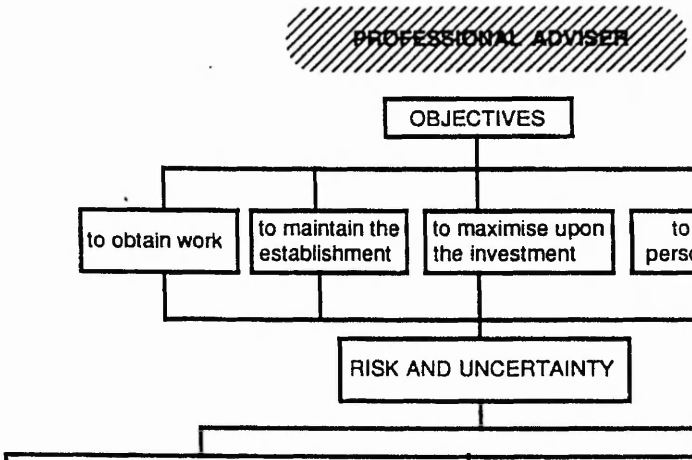
319 See Chapter Eight, p. 130-131.

320 *Infra*, p. 114.

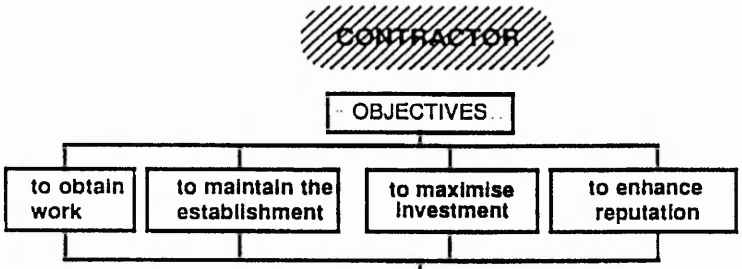
321 See Chapter Four, pp. 63-69 and Chapter Six, p. 89.

322 See Chapter Eight, pp. 118-158.



characteristics which are NATURALLY ACCEPTED AS PART OF THE SYSTEM	characteristics which are IMPOSED BY THE CLIENT
planning contraints	client unable to visualise scheme until work in progress
☆ client constraints in respect of time and money	☆ client constraints in respect of time and money
compliance with the building regulations	limit on extent of service to be provided
interpretation of client requirements	adequacy of the fee
☆ the measure of quality control	the facility to use specialists/consultants
☆ advising upon the 'select' list of contractors	☆ deciding upon the specification in respect of quality,maintenance and flexibility factors
☆ deciding upon the specification in respect of- quality maintenance and flexibility factors	☆ The measure of quality control

Figure B



characteristics which are NATURALLY ACCEPTED AS PART OF THE SYSTEM	charateristics which are IMPOSED BY THE CLIENT OR THE PROFESSIONAL ADVISER
quality control	adequacy of tender documentation
reality of the contract sum	fixed and fluctuating price levels
ability to resouce the works	ability to programme the works
difficulties created by unknown elements	the obtaining of performance bonds
fluctuating economy	measure of completeness of design
cost to finance the works	adequacy of stage or interim payments
maintenance of cash flow	promtitude of payments
difficulties created by changing circumstances from date of tender enquiry to start on site date	adequacy of the contract period
	variations - extent of and the disruption factor
	variations - adequacy of reimbursment in respect of time and money
	level of Prime Cost and Provisional Sums
	level of Liquidated and Ascertained Damages
	constraints levied by professional advisers
	time allowed for tender preparation

Figure C

CHAPTER EIGHT

TENDERING PROCEDURES AND POST CONTRACT FINANCIAL CONTROL

General

Previous chapters have examined the procedures relating to the procurement of 'lump sum' tenders by the selective and competitive process. This examination has related the CPSSST[323] to the recommendations issuing from The Banwell Report,[324] the Action on the Banwell Report[325] and the code of conventions emanating from the recently published CPI.[326]

The objectives of the Banwell research and the research undertaken by the CCPI[327] are similar in their prime objectives insofar as they both aim to improve the process concerned with the placing and management of building contracts.

Moreover the research undertakings are closely related in many respects. They are both concerned with safeguarding the interests of the client, both identify similar areas of concern and both agree on the need for adequacy of documentation. The main difference between Banwell and the CCPI is that Banwell emphasises the importance of time during the pre-tender period and the influence time can have upon the financial success of an enterprise whereas CCPI is mainly concerned with the style and the co-ordination of documentation.

A notable characteristic of both research undertakings is the lack of attention given to small works. Banwell commenting upon minor works states "there is a wide range of construction in which the client deals not with professional advisers but directly with the contractor;..... private house building and work ... carried out by jobbing builders".[328] For larger works Banwell maintains that "bills

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323 See *ante* pp (ii) and (iii) for abbreviations.
324 *Ibid.*
325 NEDO, Action on the Banwell Report, HMSO, London, 1967.
326 See *ante*, pp (ii) and (iii) for abbreviations.
327 *Ibid.*
328 The Banwell Report, Chapter 2, The Team in Design and Construction, p.3.

of quantities are essential documents in the tendering process" and that this condition should be maintained until the design team can "ensure that really adequate supporting information in the form of drawings and specifications is provided to tenderers as a matter of course".[329]

These statements clearly show that Banwell did not envisage a situation arising where the 'without quantities' arrangement would be exploited to the extent which currently exists without industry first devising a suitable alternative to bills of quantities. Notwithstanding this Banwell, whilst advocating for the continued use of bills of quantities, did see "the need for and the possibility of simplification..." of the standard method of measurement.[330]

The CCPI recognise that small building works require adequate information, but "the need for brevity" is emphasised and the Committe suggest that the measure of fulfilment should be geared to areas of "particular cost and/or quality significance". Furthermore the Committee recommends that brevity can be achieved in four ways,

1. by "excluding minor types of work from the specification, covering then by brief notes on the drawings or in the schedule of work",

2. by "specifying standard rather than purpose-made components and assemblies....",

3. by "specifying in a more general, less specifically detailed way....",

4. by defining the "quality of work in a less precise and comprehensive way...." [331]

In this context the argument ensures that the need to observe brevity increases the need for discretion. Furthermore, demands are made for a greater degree of forethought and a greater level of

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329 *Ibid*, Chapter 6, Bills of Quantities, p.20.
330 *Ibid*.
331 CPI, a guide with examples, pp 21-22.

expertise from the professional adviser in the control of the administrative processes.

The discriminative requirement in relation to the size of the project further suggests that the CCPI are unaware of the extent and the magnitude of the small works sector both in terms of project size and value. This is considered elsewhere[332] and is supported by case study analysis.[333]

The building contractor viewpoint

The research undertaken by Banwell, the BRE[334] and the CCPI show a common agreement insofar that the deficiencies which exist in the system of procurement by the lump sum competitive tender process are deficiencies in practice and procedure. These deficiencies have been considered by those undertaking the commissioned research from the viewpoint of the client and the design team and little credence has been given to the viewpoint of the contractor.

The chapter has considered the opinions of contractors who undertake small building works. These opinions relate to the responses gained from building contractors by means of an empirical survey.[335] The survey questionnaire correlates with the areas of concern issuing from the commissioned research and takes into account aspects of communication, time and money constraints and known problem areas under the separate heads of Tendering Procedures and Post Contract Financial Control.

The results of the questionnaire have been subjected to statistical analysis to establish areas of notable significance. The analyses have established the properties responsible for the substance of the problems and have measured these in terms of risk and uncertainty.

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332 See Chapter One, pp 1-8.

333 See Appendix B, *post*, pp v-vi.

334 See *ante*, pp (ii) and (iii) for abbreviations.

335 See Appendix A, *post*, pp i-iii (1-8).

The responses to the questionnaire cannot be considered as being totally representative of building contractors operating throughout the whole of the United Kingdom. Nonetheless the responses serve to illustrate the opinions of those operating within selected regions of the United Kingdom which, at the time of the survey, were not considered to be greatly influenced by extremes in terms of national economic pressures.[336]

Progressive consideration of the questionnaire

Tendering Procedures

3.1(*) How do you generally rate the adequacy of tender documentation supplied by the client?

Objective : to establish ratings for tender documentation in both the private and the public sectors; to establish the differences in attitude between the two sectors and to assess whether or not the characteristics of the ratings are influenced by changes in level of turnover.

Table 1

Level of adequacy of tender documentation supplied by the client	Turnover Categories					
	A	B	C	D	E	ALL
PRIVATE SECTOR						
* *	(1)	(8)	(11)	(15)	(22)	(57)
Adequate (%)	16.67	57.14	39.29	23.44	33.33	32.02
* *	(5)	(6)	(16)	(49)	(44)	(120)
Less than adequate/ inadequate (%)	83.33	28.57	53.57	60.94	62.12	58.43

* * number of respondents

* The references relate to the references within the questionnaire

336 *Ibid*, pp i-ii.

Tables 1 and 2 indicate documentation adequacy ratings of 32% for the private sector and 55% for the public sector.

Neither Table shows a relationship between the measure of adequacy of documentation and levels of turnover. However there is a marked difference between the two sets of analyses in favour of the public sector. This suggests that the margin of difference between the two sectors is due to differences in manpower resources, the management of those manpower resources or to differences in environmental constraints.

Table 2

Level of adequacy of tender documentation supplied by the client		Turnover Categories					
		A	B	C	D	E	ALL
PUBLIC SECTOR							
	* *	(1)	(7)	(13)	(32)	(41)	(94)
Adequate	(%)	20.00	53.58	52.00	52.46	62.12	55.29
	* *	(2)	(2)	(7)	(27)	(25)	(63)
Less than adequate/inadequate	(%)	40.00	15.38	28.00	44.26	37.88	37.06

* * number of respondents

Irrespective of the reason, there is a distinct and urgent need to substantially improve tender documents both in the private and in the public sectors. This is imperative for inadequacies within pre-tender documentation will undoubtedly be revealed during the construction period to the detriment of the building contract.

*The references relate to the references within the questionnaire.

3.2(*) To what extent does the inadequacy of tender documentation affect the accuracy of the tender?

Table 3 indicates that the adequacy of tender documentation has a strong influence upon the accuracy of the tender. There is however a notable difference in attitude in the turnover category £50,000 to £100,000 where the need for adequate documentation reduces considerably.

Table 3

To what extent does the adequacy of tender documentation affect the accuracy of the tender		Turnover Categories					
		A·	B	C	D	E	ALL
Very little	* *	(0)	(7)	(4)	(13)	(13)	(37)
	(%)	0.00	53.85	14.29	20.00	19.40	20.67
Substantially	* *	(6)	(6)	(24)	(52)	(54)	(142)
	(%)	100.00	46.15	85.71	80.00	80.60	79.33

* * number of respondents

3.3(*) Do inadequacies within tender documentation have any bearing on the financial reimbursement to the contractor?

Table 4 indicates very positively the relationship which exists between tender documentation and the financial reimbursement of the contractor. These results which bear similar tendencies to the results shown in Table 3 are also similarly less emphatic in the turnover category £50,000 to £100,000.

A reason cannot be offered for this divergence.

* The references relate to the references within the questionnaire.

Table 4

Do inadequacies within the tender documentation have any bearing on the financial reimbursement to the contractor		Turnover Categories					
		A	B	C	D	E	ALL
Yes	* *	(5)	(8)	(22)	(54)	(60)	(149)
	(%)	83.33	66.67	78.57	83.08	89.55	83.71
No	* *	(1)	(4)	(6)	(11)	(7)	(29)
	* *	16.67	33.33	21.43	16.92	10.45	16.29

* * number of respondents

3.4(*) How often is design work complete at tender stage?

Table 5 shows a low incidence of design work being either always or often complete at tender stage particularly in the turnover category ranges above £100,000. The Table also indicates that as turnover increases then generally the level of completeness of design diminishes.

This suggests that a distinct relationship exists between the level of completeness of design, the adequacy of tender documentation and the financial reimbursement to the contractor. Whilst distinct lines of parallel cannot be drawn between the three issues there is evidence to support the reasoning that the element of risk and uncertainty to be borne by the contractor increases as turnover increases.

* The references relate to the references within the questionnaire.

Table 5

How often is design work complete at tender stage?		Turnover Categories					
		A	B	C	D	E	ALL
	* *	(0)	(3)	(4)	(2)	(1)	(10)
Always	(%)	0.00	23.08	14.81	3.03	1.49	5.59
	* *	(4)	(5)	(10)	(25)	(21)	(65)
Often	(%)	66.67	38.46	37.04	37.88	31.34	36.31
	* *	(2)	(2)	(12)	(33)	(37)	(86)
Occasionally	(%)	33.33	15.38	44.44	50.00	55.22	48.04
	* *	(0)	(3)	(1)	(6)	(8)	(18)
Never	(%)	0.00	23.08	3.70	9.09	11.94	10.06

* * number of respondents

Furthermore, by relating the quality of tender documentation and the effects this has upon financial reimbursement, to work type and to functional classification then two areas of notable significance are raised. One area concerns the commercial function classification and the other concerns the industrial function classification. Both areas relate to the refurbishment of buildings within the private sector.

This characteristic is the direct result of commercial pressures. The time which can be allowed to design and construct the works may be critical to the client. Moreover any delay in achieving the desired timetable of events could adversely affect the financial viability of the enterprise.

* The references relate to the references within the questionnaire

3.5(*) Is the time allowed for tender preparation generally sufficient?

Responses to this question were divided in their opinion into two sectors, those with a turnover of less than £100,000 and those with a turnover in excess of £100,000 as shown in Table 6.

Analysis of the first category revealed that 68% of the respondents were satisfied with the time allowance for tender preparation whereas this percentage was reduced to 45% for those with turnovers in excess of £100,000.

When relating the question to work classifications and to work types within those classifications the responses were varied and without pattern except that the work type involving alterations and extensions was shown to have the highest rate of satisfaction. Nonetheless all the results signified that the time allowed for tender preparation was generally insufficient.

Table 6

Is the time allowed for tender preparation generally sufficient		Turnover Categories					
		A	B	C	D	E	ALL
Yes	* *	(4)	(9)	(13)	(29)	(31)	(86)
	(%)	66.67	69.23	46.43	43.94	46.27	47.78
No	* *	(2)	(4)	(15)	(37)	(36)	(94)
	(%)	33.33	30.77	53.57	56.06	53.73	52.22

* * number of respondents

* The references relate to the references within the questionnaire

3.6(*) Does the time allowed for tender preparation comply with the recommendations laid down by the Code of Procedure for Single Stage Selective Tendering 1977 published by the National Joint Consultative Committee?

The objective of this question was to test the awareness of building contractors to clause 4.3.1 of the CPSSST[337] and particularly those contractors operating within the lower turnover levels.

Table 7 shows that 32% of the overall response is generally satisfied that clause 4.3.1 of the CPSSST is being complied with by the client and the professional adviser and that this condition applies irrespective of the level of turnover. However 43% of the overall response was not satisfied that this particular clause was being administered correctly. Whilst this opinion is consistent across four classifications of turnover the percentage increases substantially in respect of turnover levels of £1,000,000 and above. Moreover 25% of those firms responding to the questionnaire abstained and this incidence of negative response is shown to decrease as the level of turnover increases. The inference that awareness and knowledge of the CPSSST increases with turnover suggests also that the measure of expertise increases as turnover increases. Assuming this to be the case then the substantial increase which relates to firms operating turnover levels in excess of £1,000,000 and who claim that clause 4.3.1 of the CPSSST is not being administered correctly is probably much higher than the figures denote.

337 See Appendix E, *post*, pp. xii-xvi.

Table 7

Does the time allowed for tender preparation comply with the Code of Procedure for Single Stage Selective Tendering		Turnover Categories					
		A	B	C	D	E	ALL
Always	* *	(1)	(1)	(1)	(2)	(0)	(5)
	(%)	**16.67**	**7.69**	**3.57**	**3.08**	**0.00**	**2.81**
Often	* *	(0)	(4)	(9)	(18)	(21)	(52)
	(%)	**0.00**	**30.77**	**32.14**	**27.69**	**31.82**	**29.21**
Occasionally	* *	(2)	(3)	(8)	(25)	(37)	(75)
	(%)	**33.33**	**23.08**	**28.57**	**38.46**	**56.06**	**42.13**
Never	* *	(0)	(0)	(0)	(1)	(0)	(1)
	(%)	**0.00**	**0.00**	**0.00**	**1.54**	**0.00**	**0.56**
Not Known	* *	(3)	(5)	(10)	(19)	(8)	(45)
	(%)	**50.00**	**38.46**	**35.71**	**29.23**	**12.12**	**25.28**

* * number of respondents

* The references relate to the references within the questionnaire.

3.7(*) Is tender documentation incorporating quantities preferred to drawings/drawings and specification only types of enquiry?

The responses shown by Table 8 indicate a positive preference for quantities to form part of the tender documentation. This applies to all five categories of turnover. However a notable characteristic of Table 8 is that the need for quantities becomes greater as turnover increases.

Table 8

Are quantities preferred to drawings/drawings and specification types of contract		Turnover categories					
		A	B	C	D	E	ALL
Yes	* *	(3)	(6)	(19)	(56)	(59)	(143)
	(%)	50.00	54.55	67.86	84.85	88.06	80.34
No	* *	(3)	(5)	(9)	(10)	(8)	(35)
	(%)	50.00	45.45	32.14	15.15	11.94	19.66

* * number of respondents

This significant relationship which exists between the need for quantities and the turnover of individual firms is not affected by the work type. Further relating work types within their specific turnover classifications has produced the results shown in Table 9. These results clearly show that there is an emphatic need for quantities to be provided as part of the tender documentation and the Table further shows that this need is not conditional upon the type of work being offered for tender.

* The references relate to the references within the questionnaire.

Table 9

Work Type	Classification of Work (in percentage terms)			
	industrial	commercial	domestic	others
New	88	87	84	82
Alterations & Extensions	89	85	81	89
Repairs & Maintenance	85	83	78	88
Refurbishment	93	89	79	88
Specialist Work	77	78	82	88

Table showing the percentage preference to quantities by work type

3.8(*) To what extent does tender documentation without quantities effect the overall risk factor borne by the contractor?

The results shown in Table 10 are highly significant. The figures serve to illustrate that the measure of risk to be borne by the contractor in the without quantities arrangement increases substantially with turnover. This is particularly evident where the level of turnover exceeds £1,000,000. Below the £250,000 turnover level the element of risk is seen to be appreciably less. This suggests that the size of the building project, in terms of money, has a bearing on the risk factor. However the variable responses gained from the lower two turnover categories when compared with the empirical survey[338] tend to indicate that factors other than money may be involved and that the degree of complexity of the project may be an influencing factor.

* The references relate to the references within the questionnaire

338 *Supra*, reference 3.7, pp 126-127.

Table 10

To what extent does tender documentation 'without quantities' affect the overall risk factor borne by the contractor		Turnover category					
		A	B	C	D	E	ALL
Not at all	* *	(0)	3)	(4)	(1)	(1)	(9)
	(%)	0.00	23.08	14.81	1.52	1.49	5.03
Very Little	* *	(4)	(5)	(10)	(20)	(14)	(53)
	(%)	66.67	38.46	37.04	30.30	20.90	29.61
Substantially	* *	(2)	(5)	(13)	(45)	(52)	(117)
	(%)	33.33	38.46	48.15	68.18	77.61	65.36

* * number of respondents

3.9(*) To what extent does tender documentation without quantities afect the financial burden upon the contractor?

Table 11

To what extent does tender documentation 'without quantities' affect the financial burden upon the contractor		Turnover category					
		A	B	C	D	E	ALL
Not at all	* *	(0)	(2)	(2)	(1)	(4)	(9)
	(%)	0.00	16.67	7.41	1.56	5.97	5.11
Very little	* *	(3)	(4)	(13)	(20)	(23)	(63)
	(%)	50.00	33.33	48.15	31.25	34.33	35.80
Substantially	* *	(3)	(6)	(12)	(43)	(40)	(104)
	(%)	50.00	50.00	44.44	67.19	59.90	59.09

* * number of respondent

* The references relate to the references within the questionnaire

It is reasonable to expect a measure of similarity to exist between the burden of risk and financial implications. Whilst Tables 10 and 11 generally indicate this to be the case there are notable differences between the two. The comparison reveals that the without quantities arrangement presents a greater amount of financial burden upon contractors operating below the turnover range of £100,000 than risk in tender preparation and the converse applies in turnover levels over £100,000.

In considering these differences it would seem that risk has been interpreted as relating to the pre-tender stage whereas the financial implications have been interpreted to relate to the construction stage. The fact that small building firms often experience difficulty in obtaining full reimbursement for works executed is well known. This difficulty, to a large extent, stems from either an inability on the part of the contractor to adequately present and substantiate the claim or an inability on the part of the professional adviser to realise and understand the merits of the claim. Personal experience has shown that in the case of the small building project the estimate, upon which the tender is based, is almost invariably prepared with the singular objective of predicting the cost of the works as depicted by the documentation. Similarly the lump sum bid without quantities offers little assistance to the professional adviser in the assessment and evaluation of changes made to the works during the construction period. Unless the professional adviser is fully conversant with the management of the construction process and has been actively involved on a regular basis at site level then the chance for an equitable agreement being reached is remote.

Conversely, personal experience has also shown that contractors operating turnover levels in excess of £100,000 tend to observe different perspectives. They are more aware of the major risks normally associated with the lump sum bid without quantities and cognisant of the main financial implications which may result from changes during the construction period. The increased level of turnover both permits and demands the employment of resource expertise. The characteristic differences between the two levels of

turnover reflect the attitudes of the contractors and offer one reason for the variances which are apparent in Tables 10 and 11.[339]

3.10(*) If quantities prepared by the client formed part of all tender documentation would this result in (a) lower overhead recovery charges and (b) lower tender sums?

Tables 12 and 13 respond positively to both these questions with an average 74% claiming that quantities provided as part of the tender agreement would result in lower overhead recovery charges and, as a consequence, lower tender sums.

Table 12

If quantities formed part of all tender documentation would this result in lower overhead recovery charges		Turnover category					
		A	B	C	D	E	ALL
Yes	* *	(2)	(11)	(17)	(51)	(43)	(124)
	(%)	**50.00**	**86.62**	**68.00**	**80.95**	**67.19**	**73.37**
No	* *	(2)	(2)	(8)	(12)	(21)	(45)
	(%)	**50.00**	**15.58**	**32.00**	**19.05**	**32.81**	**26.63**
* * number of respondents							

* The references relate to the references within the questionnaire.

339 *Supra*, pp 128.

Table 13

If quantities formed part of all tender documentation would this result in lower tender sums		Turnover Category					
		A	B	C	D	E	ALL
	* *	(3)	(7)	(18)	(51)	(49)	(128)
Yes	(%)	60.00	63.64	69.23	79.69	74.24	74.42
	* *	(2)	(4)	(8)	(13)	(17)	(44)
No	(%)	40.00	36.36	30.77	20.31	25.76	25.58

* * number of respondents

3.11(*) Have there been instances, in your opinion, where the tender enquiry has also provided the client with an initial budget costing which has resulted in substantial variation involving additional pricing exercises prior to an acceptable tender sum being achieved

In presenting the findings, the analysis in Table 14 has grouped together the two categories of "occasionally" and "often". Whilst the turnover category of £51,000 to £100,000 shows a comparatively lower incidence rate than the remaining turnover category levels the percentage who state that this facility is afforded to the client remains high at an average of 61%.

This suggests that contractors are being used to provide a 'free' service to both the client and the professional adviser. This service, which provides a budget costing to a fine level of accuracy may also

* The references relate to the references within the questionnaire

provide the basis for the feasibility study. The case study[340] offers support to this suggestion particularly in instances where tenders have been invited and received but where building work has not been commenced. Similarly in other cases where tender sums have been substantially reduced prior to a contract being entered into and the construction works being commenced.

Table 14

Level of service provided by contractor in respect of budget costings		Turnover Category					
		A	B	C	D	E	ALL
Never	* *	(1)	(5)	(3)	(2)	(2)	(13)
	(%)	**16.67**	**38.46**	**11.11**	**3.08**	**2.99**	**7.30**
Occasionally/Often	* *	(4)	(5)	(17)	(40)	(43)	(109)
	(%)	**66.67**	**38.46**	**62.96**	**61.54**	**64.18**	**61.24**
* * number of respondents							

3.12(*) How do you check the adequacy of contract periods specified by the client?

Table 15 shows the percentage of contractors who check the adequacy of the contract period by detailed programming and that generally the percentage increases in relation to turnover from 33% in the lowest category to 61% in the turnover range over £1,000,000. No explanation can be offered for the divergence in the range of £251,000 to £1,000,000 where the percentage is substantially lower than those recorded either side.

* The references relate to the references within the questionnaire.

340 See Appendix B, *post*, pp v-vi.

Table 15

Is the adequacy of contract periods checked by detailed programming		Turnover Category					
		A	B	C	D	E	ALL
Yes	* *	(2)	(5)	(16)	(25)	(40)	(88)
	(%)	33.33	38.46	59.26	38.46	60.61	49.72
No	* *	(4)	(8)	(11)	(40)	(26)	(89)
	(%)	66.67	61.54	40.74	61.54	39.39	50.28

* * number of respondents

These figures support the need for detailed information to be provided by the client. Detailed programming is totally dependant upon the sufficiency of information, irrespective of the format. Detailed programming also requires adequate time allowances to provide for the preparation.

The figures contained in Table 16 show the trend of those contractors who check the adequacy of contract periods by relating the project value to the unit of specified time. This method is valuable for assessing works of a repetitive nature and for which historical data is available. Also the method may be used in a secondary capacity to support a more detailed application. The method is not recommended for works of a unique nature and this is reflected in Table 16.

* The references relate to the references within the questionnaire.

Table 16

Is the adequacy of the contract period checked by value of turnover relative to unit of time		Turnover category					
		A	B	C	D	E	ALL
Yes	* *	(1)	(3)	(7)	(36)	(26)	(73)
	(%)	**16.67**	**23.08**	**25.93**	**55.38**	**39.39**	**41.24**
No	* *	(5)	(10)	(20)	(29)	(40)	(104)
	(%)	**83.33**	**76.92**	**74.07**	**44.62**	**60.61**	**58.76**
* * number of respondents							

Table 17 refers to instances where specified contract periods, for whatever reason, are not usually checked. The tendency reduces as turnover increases and ranges from 50% in the lowest turnover category to 9% for turnover levels in excess of £1,000,000. This supports the claim that the pre-tender programme is an essential ingredient to estimate and tender preparation.

Table 17

Is the specified contract period checked for adequacy		Turnover category					
		A	B	C	D	E	ALL
Not normally checked	* *	(3)	(6)	(6)	(8)	(6)	(29)
	(%)	**50.00**	**46.15**	**22.22**	**12.31**	**9.09**	**16.38**
Normally checked	* *	(3)	(7)	(21)	(57)	(60)	(148)
	(%)	**50.00**	**53.85**	**77.78**	**87.69**	**90.91**	**83.62**
* * number of respondents							

* The references relate to the references within the questionnaire

Tables 15, 16 and 17 reflect upon the attitude of those contracting organisations who check the adequacy of the specified period allowed for the construction of the works.

If this attitude is typical within the small works sector then this suggests that the reason for so many contracts exceeding the specified contract period must be due to extraneous issues.

Table 18 relates the responses shown in Tables 15, 16 and 17 to work types. Excluding specialist work for which different criteria exist, Table 18 shows that a high percentage of contractors check the adequacy of contract periods specified by the client by the use of detailed programming and by relating the value of turnover to the unit of time allowed. Moreover the Table shows that there is an equally high percentage of contractors who normally refrain from checking the adequacy of the specified time period. The notable exceptions to this general trend is that 'repairs and maintenance' show a lower response to detailed programming and 'new' show a lower response to the specified period not being checked.

Table 18

Attitude towards checking

Work type	detailed programming	value of turnover defective to unit of time	not normally checked
	(%)	(%)	(%)
New	78	75	66
Alterations & Extensions	91	90	90
Repairs & Maintenance	69	81	83
Refurbishment	80	86	76
Specialist work	28	29	21

Table indicates the attitude displayed by respondents to the questionnaire towards the checking of specified contract periods in relation to work type

* The references relate to the references within the questionnaire

Work Type	Industrial		Commercial		Domestic		Others		
	<50	>50	<50	>50	<50	>50	<50	>50	
New		60		58		57	36		specified contract
Alterations & Extentions		67		75		64	36		period normally
Repairs & Maintenance	49			59		55	32		checked by detailed
Refurbishment	49			69		50	33		programming
Specialist	10		16		15		8		
New		56	48			63	29		specified contract
Alterations & Extentions		70		71		71	36		period normally
Repairs & Maintenance		63		63		56	32		checked by relating
Refurbishment		53		67		51	32		value of turnover to
Specialist	13		15		12		12		unit of time
New	24		38			55	10		specified contract
Alterations & Extentions	45			59		72	21		period not normally
Repairs & Maintenance	48			59		66	10		checked
Refurbishment	28		45			59	14		
Specialist	14		14		10		7		

Table indicates the level of positive attitude displayed by repondents to the questionaire towards the checking of specified contract periods by relating work types to work classifications

Table 19 extends the lines of definition provided by Table 18 and uses a datum of not exceeding and exceeding 50% to distinguish areas of potential significance.

The percentages contained within Table 19 denote a need for checking specified contract periods by means of detailed programming in all classifications but the emphasis is less in respect of 'repairs and maintenance' and 'refurbishment' than it is to domestic and industrial buildings.

Attitudes change however when specified contract periods are checked by relating the value of turnover to the specified unit of time. A similar high level of response is noted in all classifications with the exception of new works in the commercial classification and to a lesser extent refurbishment in the domestic classification.

Considering those respondents who do not normally check the adequacy of the specified contract period. The indication is that, with the exception of all work types in the domestic classification and 'alterations and extensions' and 'repairs and maintenance' in the commercial classification, all other specified contract periods are checked. There is evidence to show that this check is carried out by either detailed programming or by value of turnover relative to the unit of time allowed or by a composition of the two.

In summarising the analyses shown in Tables 15 to 19[341] inclusive and disregarding 'specialist work' and the 'other' classification then certain factors emerge. The need to test specified contract periods appears to be less significant with 'repairs and maintenance' and 'refurbishment' in both the domestic and the industrial classifications than in other work types and classifications. There exists also a link between the classifications not normally tested and those classifications which are tested by the use of one or both of the alternative methods specified within the questionnaire. The domestic classification shows a relatively high incidence of specified contract periods not being checked. This classification also indicates that specified contract periods for projects involving 'repairs and maintenance' and 'refurbishment' possess a comparatively low

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[341] *Supra*, pp 133-137.

response to checks by the method of detailed programming and this also applies to 'refurbishment' and assessment using value of turnover related to unit of time.

The theme passing between the three alternatives dealing with the assessment of time, whilst not totally in common, does serve to illustrate that works to existing buildings receive less attention than the construction of new buildings.

There are many issues which could be partly or wholly responsible for this reaction;

i) the relative levels of difficulty in terms of simplicity and complexity,

ii) the normally fragmented nature of works to existing buildings which tends to make detailed programming both inordinately complex and time consuming to a prohibitive extent,

iii) the level of unknown element normally provided for by the liberal use of prime cost and provisional sums,

iv) the level of completeness of the design,

v) the degree of domestic subcontract involvement,

vi) the time allowed for the preparation of the tender,

vii) the style and adequacy of the tender documentation.

The industrial work classification differs only slightly from the domestic scene. 'Repairs and maintenance' and 'refurbishment' are shown to be similarly receiving less attention with regard to detailed programming than other work classifications. There are however compensating elements contained within the section of Table 19[342] which relates the value of turnover to the unit of specified time.

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[342] *Supra*, p.135A.

This suggests that the apparent differences between the domestic and industrial classifications may be due to differences in the level of complexity. Industrial building projects in the small works category are often of simple construction in comparison to other work classifications and an experienced visual appraisal will often prove to be adequate in assessing the time required to carry out the works. Sometimes this is not the case and the degree of complexity is intensified. This would account for the level of response attributed to detailed planning requirements.

Commercial building projects show a definite need for detailed planning to test the adequacy of specified contract periods. This requirements applies to all categories of work type.

In addition to detailed planning there is a substantial measure of opinion in favour of testing by means of value of turnover relative to the unit of time in instances where the work concerns an existing building. Paying credence to the high level of response in support of detailed programming then this equally high level response for the alternative method may offer justification to the thinking that the alternative method is secondary and supportive in its objective.

A relatively high level of response is also recorded where the adequacy of specified contract periods is not normally checked and this is of particular significance in respect of 'alterations and extensions' and 'repairs and maintenance'.

The reasons for this high proportion of abstention may correlate with the reasons offered for the domestic scene.[343]

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[343] *Supra*, p. 136-138.

Post Contract Financial Control

4.1(*) To what extent do variations influence contracts generally?

Table 20

To what extent do variations influence contracts generally		Turnover category					
		A	B	C	D	E	ALL
	* *	(5)	(7)	(18)	(18)	(25)	(73)
Very little	(%)	**83.33**	**63.64**	**66.67**	**27.69**	**38.46**	**41.95**
	* *	(1)	(4)	(9)	(47)	(40)	(101)
Substantially	(%)	**16.67**	**36.36**	**33.33**	**72.31**	**61.54**	**58.05**

* * number of respondents

The responses in respect of variations are of notable significance. In general terms the effects variations have upon contract work increase in intensity as turnovers increase. There exists a wide divergence in influence ranging from 17% in the lowest turnover category to 62% in respect of turnover levels exceeding £1,000,000 and 72% for the turnover level £250,000 to £1,000,000.

The pattern created by these results show distinct lines of demarcation between various areas of turnover change. These areas correlate with the recommended finance limits offered by the JCT[344] to assist the professional adviser in the choice of suitable conditions of contracts. MW80,[345] for works not exceeding £50,000, IFC 84[346] for works not exceeding £250,000, and JCT80[347] for works in excess of £250,000.

* The references relate to the references within the questionnaire

344 See *ante*, pp (ii) and (iii) for abbreviations.
345 *Ibid.*
346 *Ibid.*
347 *Ibid.*

When relating these responses to the need for adequate information and documentation and, in particular, the need for bills of quantities then certain factors emerge. MW 80 does not envisage the services of a quantity surveyor nor the use of bills of quantities except in instances where the work is considered to be of a complex nature. Table 20[348] shows variations within this category to be of minor concern when compared with other categories.

Conversely IFC84 and JCT80 both provide for the services of a quantity surveyor and both provide for bills of quantities. The difference between the two documents in this respect is that IFC 84 provides alternatives to bills of quantities in the form of a specification or a schedule of work. The degree of simplicity or complexity of the project being the factor which should control selection.

The responses to the empiric survey which relate to documentation,[349] bills of quantities,[350] without quantities work[351] and variations[352] indicate that MW80 and IFC 84 are probably being used for projects of greater size and value than originally envisaged by the JCT.

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348 *Supra*, p.139.

349 See Tables 1, 3, 4 and 26 on pp 118, 120, 121 and 146.

350 See Table 8, p.126.

351 See Tables 10 and 11 on p 128.

352 See Tables 20, p.139.

Table 21

To what extent do variations influence contracts generally(Table 20)		To what extent does the adequacy of the tender documentation affect the accuracy of the tender (Table 3)		
		Very little (%)	Substantially (%)	ALL
Very little	* *	(17)	(56)	(73)
	(%)	47.22	40.88	42.20
Substantially	* *	(19)	(81)	(100)
	(%)	52.78	59.12	57.80
	ALL	(36)	(137)	(173)
		20.81	79.19	100.00

* * number of respondents

Further analysis which relates the influence variations may have upon the contract works to the adequacy of tender documentation and to financial reimbursement is shown in Tables 21 and 22.[353] Table 21 indicates that of the 79% who intimated that inadequacies within tender documentation substantially affected the accuracy of the tender 59% claimed that this also had a direct relationship with variations.

* The references relate to the references within the questionnaire.

353 Refer also to pp 120-121 and particularly to Tables 3 and 4.

Table 22

To what extent do variations influence contracts generally (Table 20)		Do inadequacies within tender documentation have any bearing on the financial reimbursement to the contractor (Table 4)		
		Yes (%)	No (%)	All (%)
Very little	* *	(54)	(19)	(73)
	(%)	**36.73**	**70.37**	**44.95**
Substantially	* *	(93)	(8)	(101)
	(%)	**63.27**	**29.63**	**58.05**
6	ALL	(147)	(27)	(174)
		84.48	**15.52**	**100.00**
* * number of respondents				

Similarly Table 22 indicates that of the 84% who intimated that inadequacies within tender documentation have a substantial bearing on financial reimbursement, 63% claim that these inadequacies also have a direct relationship with variations.

4.2(*) Is full financial reimbursement gained in respect of variations?

Tables 23 and 24[354] show a significant difference between the 'with' and the 'without' quantities arrangements insofar that full financial reimbursement in respect of variations to the contract is infinitely more likely to occur when quantities form part of the tender and contract documentation. Also both Tables indicate that as turnover increases then the likelihood of full reimbursement being achieved is minimised.

* The references relate to the references within the questionnaire.

354 *Infra*, pp 143-144.

Further analysis has examined the possibility for a relationship to exist between the extent of financial reimbursement for variations and the different work types. The results show that no such relationship exists and that all work types are similarly disposed.

However the specialist work type shows a reverse attitude to the opinion gained in respect of other work types both in the 'with' and the 'without' quantities arrangements and this is to be expected.

The responses to the questionnaire do not in every case state the nature of the specialist work although in the few instances where the type of work is made known the emphasis is upon damp-proofing, underpinning and insulation. This type of specialist work is not usually subjected to variation.

Table 23

Level of financial reimbursement gained in respect of variations (WITH QUANTITIES)		Turnover categories					
		A	B	C	D	E	ALL
	* *	(0)	(5)	(8)	(18)	(18)	(49)
Always	(%)	**0.00**	**45.45**	**32.00**	**28.12**	**26.87**	**28.65**
	* *	(3)	(4)	(10)	(38)	(37)	(92)
Often	(%)	**75.00**	**36.36**	**40.00**	**59.38**	**55.22**	**53.80**
	* *	(1)	(1)	(7)	(6)	(9)	(24)
Occasionally	(%)	**25.00**	**9.09**	**28.00**	**9.38**	**13.43**	**14.04**
	* *	(0)	(1)	(0)	(2)	(3)	(6)
Never	(%)	**0.00**	**9.09**	**0.00**	**3.13**	**4.48**	**3.51**
	ALL	(4)	(11)	(25)	(64)	(67)	(171)

* * number of respondents

Table 24

Level of financial reimbursement gained in respect of variations (WITHOUT QUANTITIES)		Turnover category					
		A	B	C	D	E	ALL
Always	* *	(0)	(3)	(6)	(3)	(8)	(20)
	(%)	**0.00**	**27.27**	**21.43**	**4.62**	**12.12**	**11.36**
Often	* *	(2)	(3)	(12)	(26)	(28)	(71)
	(%)	**33.33**	**27.27**	**42.86**	**40.00**	**42.42**	**40.34**
Occasionally	* *	(3)	(4)	(9)	(30)	(27)	(73)
	(%)	**50.00**	**36.36**	**32.14**	**46.15**	**40.91**	**41.48**
Never	* *	(1)	(1)	(1)	(6)	(3)	(16)
	(%)	**16.67**	**9.09**	**3.57**	**9.23**	**4.55**	**6.82**
	ALL	(6)	(11)	(28)	(65)	(66)	(176)

* * number of respondents

4.3(*) Do quantities, forming part of the contract documentation, assist in the valuation of variations?

The benefits afforded by quantities in the context of the valuation of variations is evidenced by Table 25[355] which relates the preference to values of turnover and these results show an average 93% positive response. This particularly high level of response in favour of quantities is not affected by the level of turnover nor by the work type classifications except in the case of specialist work elements where the converse applies.

* The references relate to the references within the questionnaire.

355 *Ibid*, p.145.

Table 25

Do quantities, forming part of the contract documentation, assist the valuation of variation		Turnover categories					
		A	B	C	D	E	ALL
Yes	* *	(6)	(11)	(22)	(63)	(62)	(164)
	(%)	100.00	91.67	81.48	96.92	92.54	92.66
No	* *	(0)	(1)	(5)	(2)	(5)	(13)
	(%)	0.00	8.33	18.52	3.08	7.46	7.34

* * number of respondents

4.4(*) What, in your opinion, are the reasons for the problem areas normally associated with small and medium size building work contracts "without quantities".

Inadequate methods of communication between the client/professional advisers and the contractor

Concerning inadequate methods of communication between the client/professional adviser and the contractor. An average 53% of the total response registered concern in this respect and showed the level of inadequacy to be of particular significance in the turnover category £251,000 to £1,000,000 whereas the concern appears to be appreciably less significant in the turnover category not exceeding £50,000 as shown in Table 26. When relating the measure of concern to specific work types and excluding specialist work then the level is high over all work classifications. This is particularly evident with works involving alterations and extensions and the refurbishment of existing buildings.

* The references relate to the references within the questionnaire.

Table 26

Inadequate Methods Of Communication		Turnover categories					
		A	B	C	D	E	ALL
Yes	* *	(1)	(6)	(10)	(40)	(35)	(92)
	(%)	**20.00**	**50.00**	**35.71**	**61.54**	**53.85**	**52.57**
No	* *	(4)	(6)	(18)	(25)	(30)	(83)
	(%)	**80.00**	**50.00**	**64.29**	**38.46**	**46.15**	**47.43**

* * number of respondents

Inadequacy of the drawings

Table 27[356] shows the measure of inadequacy to be generally high throughout all turnover categories with the exception of the classification £51,000 to £100,000 in which there is a reversal of opinion. Similar results are seen to exist when relating the measure of inadequacy of drawings to a particular work type. This is shown in Table 41.[357]

* The references relate to the references within the questionnaire.

356 *Ibid*, p.147.
357 *Ibid*, p.159.

Table 27

Inadequacy of Drawings		Turnover categories					
		A	B	C	D	E	ALL
Yes	* *	(3)	(3)	(20)	(50)	(55)	(131)
	(%)	**60.00**	**25.00**	**71.43**	**76.92**	**84.62**	**74.86**
No	* *	(2)	(9)	(8)	(15)	(10)	(44)
	(%)	**40.00**	**75.00**	**28.57**	**23.08**	**15.38**	**25.14**
* * number of respondents							

Inadequacy of the specification

Table 28 shows the measure of inadequacy to be particularly high throughout all turnover categories and throughout all work type classifications, with the exception of specialist works, as shown in Table 41.[358]

Table 28

Inadequacy of Specification		Turnover categories					
		A	B	C	D	E	ALL
Yes	* *	(4)	(11)	(21)	(59)	(55)	(150)
	(%)	**80.00**	**91.67**	**75.00**	**90.77**	**84.62**	**85.71**
No	* *	(1)	(1)	(7)	(6)	(10)	(25)
	(%)	**20.00**	**8.33**	**25.00**	**9.23**	**15.38**	**14.29**
* * number of respondents							

* The references relate to the references within the questionnaire.

358 *Ibid*, p.159.

Quantities not forming part of the contract documentation

Table 29 clearly indicates that there is a need for quantities to form part of the tender and contract documentation and that the need increases as turnover increases. The need is highly significant in all work type classifications, with the exception of specialist works, as shown in Table 41.[359]

Table 29

Quantities not forming part of the Contract Documentation		Turnover categories					
		A	B	C	D	E	ALL
	* *	(1)	(3)	(12)	(33)	(39)	(88)
Yes	(%)	**20.00**	**25.00**	**42.86**	**50.77**	**60.00**	**50.29**
	* *	(4)	(9)	(16)	(32)	(26)	(87)
No	(%)	**80.00**	**75.00**	**57.14**	**49.23**	**40.00**	**49.71**

* * number of respondents

The level of completeness of design

Table 30[360] signifies that the level of completeness of design can create problems for the contractor and that generally the concern increases in line with the turnover. The single exception to this generalisation being turnover category £51,000 to £100,000 where the concern is shown to be less significant. The reason for this difference of opinion may be due to the low level of response received in respect of turnover classifications below £100,000. With the exception of specialist works the concern for the level of completeness of design is high in all work type categories as shown in Table 41.[361]

* The references relate to the references within the questionnaire.

359 *Ibid*, p.159.
360 *Ibid*, p.149.
361 *Ibid*, p.159.

Table 30

The Level of Completeness of Design		Turnover categories					
		A	B	C	D	E	ALL
	* *	(1)	(1)	(10)	(36)	(46)	(94)
Yes	(%)	**20.00**	**8.33**	**35.71**	**55.38**	**70.77**	**53.71**
	* *	(4)	(11)	(18)	(29)	(19)	(81)
No	(%)	**80.00**	**91.67**	**64.29**	**44.62**	**29.23**	**46.29**
* * number of respondents							

The level of Prime Cost and Provisional Sums

Whilst the opinion of many contractors indicate that the level of prime cost and provisional sums are not responsible for creating major problem areas there is a measure of opposing viewpoint which suggests a degree of concern. There are no areas of notable difference when related to a turnover classification and similarly there is nothing to suggest that one work type is more vulnerable than another.

Table 31

The Level of Prime Cost and Provisional Sums		Turnover categories					
		A	B	C	D	E	ALL
	*	(1)	(4)	(4)	(17)	(13)	(39)
Yes	(%)	**20.00**	**33.33**	**14.29**	**26.15**	**20.00**	**22.29**
	*	(4)	(8)	(24)	(48)	(52)	(136)
No	(%)	**80.00**	**66.67**	**85.71**	**73.85**	**80.00**	**77.71**
* * number of respondents							

* The references relate to the references within the questionnaire.

The level of variations

Table 32 shows that variations are responsible for creating problems for the Contractor during the construction period. The Table further shows that the concern increases as turnover increases from 20% in the lowest turnover category to 49% in respect of turnover levels exceeding £1,000,000. Further analysis has indicated that the concern is significant in all work types except works of a specialist nature as shown in Table 41.[362]

Table 32

The Level of Variation		Turnover categories					
		A	B	C	D	E	ALL
Yes	* *	(1)	(2)	(9)	(30)	(32)	(74)
	(%)	20.00	16.67	32.14	46.15	49.23	42.29
No	* *	(4)	(10)	(19)	(35)	(33)	(101)
	(%)	80.00	83.33	67.86	53.85	50.77	57.71

* * number of respondents

The valuation of variations

Table 33[363] shows that the financial concerns created by the valuation of variations fall into two distinct categories. Turnover categories below £250,000 indicate a comparatively low level of concern when related to those turnover levels in excess of £250,000. These two levels of concern however remain unaffected by changes in work type.

* The references relate to the references within the questionnaire.

362 *Ibid*, p.159.
363 *Ibid*, p.151.

Table 33

The Valuation of Variations		Turnover categories					
		A	B	C	D	E	ALL
	* *	(1)	(3)	(6)	(39)	(37)	(86)
Yes	(%)	20.00	25.00	21.43	60.00	56.92	49.14
	* *	(4)	(9)	(22)	(26)	(28)	(89)
No	(%)	80.00	75.00	78.57	40.00	43.08	50.86
* * number of respondents							

The inability to realistically programme the works

Table 34 reflects the concern attributed to the need to formulate a pre-tender programme. This concern increases as turnover increases in the range of 20% in the lowest turnover category to 40% where turnover levels exceed £1,000,000. All work types are similarly disposed to the concerns.

Table 34

The Inability to Realistically Programme the Works		Turnover categories					
		A	B	C	D	E	ALL
	* *	(1)	(4)	(11)	(25)	(26)	(67)
Yes	(%)	20.00	33.33	39.29	38.46	40.00	38.29
	* *	(4)	(8)	(17)	(40)	(39)	(108)
No	(%)	80.00	66.67	60.71	61.54	60.00	61.71
* * number of respondents							

Inadequate site feed back and records

Table 35 portrays a general consensus of opinion to indicate that the problem areas normally associated with small and medium size building work contracts 'without quantities' have little bearing on the degree of adequacy afforded by site feed back and records. This attitude exists in all work types and in all turnover classifications. Whilst a change in attitude is seen to exist between the lower and the higher levels of turnover the difference is comparatively small and the overall level of opinion is devoid of conviction.

Table 35

Inadequate Site Feedback and Records		Turnover categories					
		A	B	C	D	E	ALL
Yes	* *	(0)	(1)	(4)	(18)	(16)	(39)
	(%)	**0.00**	**8 .33**	**14.29**	**27.69**	**24.62**	**22.29**
No	* *	(5)	(11)	(24)	(47)	(49)	(136)
	(%)	**100.00**	**91.67**	**85.71**	**72.31**	**75.38**	**77.71**

* * number of respondents

* The references relate to the references within the questionnaire.

This reaction which denies the existence of a substantial measure of correlation between the identified problem areas and the adequacy of site feed back and records raises three points of issue;

1 that contractors, in general, consider their personalised systems relating to site feed back and records to be adequate for the purpose intended,

2 that contractors, in general, consider that site feed back and records have little bearing on the cause of the known problem areas,

3 that contractors, in general, consider that site feed back and records offer the minimum of counteractive or substantive support which may have the effect of reducing the known problem areas.

This reasoning suggests that site feed back and records occupy a supportive function and in this sense are reactive rather than pro-active. If this assumption is correct then points (2) and (3) above are eliminated. Whilst acknowledging that point (1) above is a likely solution it is suggested that the personalised systems may not be without fault and could possibly be improved upon.

Out of sequence working

Table 36 reveals a mixed opinion insofar that out of sequence working is shown to have no relationship with turnover or to work type classifications. There are however areas of notable significance.

Turnover levels not exceeding £50,000 indicate that the problems created by out of sequence working are substantial. When comparing this attitude with the low level of reaction to variations as shown in Table 30[364] then this suggests that the problems may be self imposed.

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364 *Supra*, p.149.

Table 36

Out of Sequence Working		Turnover categories					
		A	B	C	D	E	ALL
Yes	* *	(3)	(3)	(6)	(27)	(25)	(64)
	(%)	**60.00**	**25.00**	**21.43**	**41.54**	**38.46**	**36.57**
No	* *	(2)	(9)	(22)	(38)	(40)	(111)
	(%)	**40.00**	**75.00**	**78.57**	**58.46**	**61.54**	**63.43**

* * number of respondents

The remaining turnover classifications in excess of £50,000 are segregated into two categories which isolate turnover levels above and below £250,000. Whilst neither category presents dramatically high levels of concern there is evidence to show that out of sequence working is a problem. Furthermore Table 36 reflects a greater measure of concern for the problem above £250,000 turnover and this degree of concern closely relates to the responses shown in Table 32,[365] in respect of variations. The difference between the lower and the higher levels of turnover classification reflects an attitude to be expected, for as the turnover level of the firm increases then so will the potential to construct the larger project increase. As a consequence the time allowed for the construction of the works will be extended and this will offer greater scope for changes to be made and for disruption to occur.

The setting of unrealistic completion dates

Table 37 indicates that the setting of unrealistic completion dates has created problems for approximately 50% of those responding to the questionnaire. The Table also shows the magnitude of the problem to be unaffected by the level of turnover and further analysis has revealed a similar disposition in respect of work type.

365 *Supra*, p.150.

Table 37

The Setting of Unrealistic Completion Dates		Turnover categories					
		A	B	C	D	E	ALL
Yes	* *	(2)	(6)	(13)	(38)	(31)	(90)
	(%)	**40.00**	**50.00**	**46.43**	**58.46**	**47.69**	**51.43**
No	* *	(3)	(6)	(15)	(27)	(34)	(85)
	(%)	**60.00**	**50.00**	**53.57**	**41.54**	**52.31**	**48.57**
* * number of respondents							

This problem correlates with Tables 5, 6, 15, 16 and 17.[366]

Reviewing these related commentaries. A high proportion of contractors are shown in Table 15[367] to check the adequacy of the specified contract period by detailed programming and that this preference to detailed programming increases from 33% in the lowest turnover category to 61% in the turnover range exceeding £1,000,000. The level of completion of design which is a pre-requisite to detailed programming is shown in Table 5[368] as being low in comparison. Furthermore Table 5 also indicates that as turnover increases the level of completeness of design diminishes. These two issues are not complimentary as the satisfactory realisation of the one is totally dependant upon the sufficiency of the other.

Similarly the time allowed for tender preparation is viewed as being inadequate by those contractors with turnover levels in excess of £100,000. These three issues alone serve to link the two processes of design and construction. Also the three issues serve to illustrate the measure of parallelism which exists between the known problem areas and the time resource.

366 *Ibid*, pp. 122, 123, 133 and 134.
367 *Ibid*, p. 133.
368 *Ibid*, p. 122.

Late payment in respect of interim valuations

Table 38 reflects a generally high incidence of late payments in respect of interim valuations. This characteristic, which is not affected by the level of turnover or by differences in work type, reverts to the professional adviser responsible for valuing the works in progress and to the client.

Table 38

Late Payments in Respect of Interim Valuations		Turnover categories					
		A	B	C	D	E	ALL
Yes	* *	(3)	(5)	(13)	(41)	(22)	(84)
	(%)	60.00	41.67	46.43	63.08	33.85	48.00
No	* *	(2)	(7)	(15)	(24)	(43)	(91)
	(%)	40.00	58.33	53.57	36.92	66.15	52.00
* * number of respondents							

This suggests that late payments in respect of interim valuations may be the result of,

i) a dilatory attitude on behalf of the professional adviser responsible to the client for the financial control of the works,

ii) inadequate tender and contract documentation which fails to provide a reliable basis for the valuation of works in progress,

iii) pressures being exerted by the client upon the professional adviser to satisfy commercial interests.

Any delay in payment by the client for work executed will invariably affect the cash flow of the main contractor, the domestic

subcontractors and the material suppliers. As the singular or cumulative effects of this breach of contract increase in severity so will the boundaries be extended to include others who, whilst enjoying a relationship with the main contractor, do not share an interest in the particular project to which the breach applies.

This delay in payment inhibits the provision of working capital and is responsible for creating unnecessary financial pressures upon the contractor. Moreover, it is well known that deficiencies in cash flow feature prominently in cases of insolvency.

The choice of conditions of contract

Table 39 displays a pronounced negative attitude towards the choice of conditions of contract. In general terms the response infers that either the conditions of contract have no direct relationship with the known problem areas or alternatively that the differences between the various conditions of contract and the effects those differences may have upon the contractor are not understood.

Table 39

The Choice of Conditions of Contract		Turnover categories					
		A	B	C	D	E	ALL
Yes	* *	(0)	(0)	(1)	(6)	(14)	(21)
	(%)	0.00	0.00	3.57	9.23	21.54	12.00
No	* *	(5)	(12)	(27)	(59)	(51)	(154)
	(%)	100.00	100.00	96.43	90.77	78.46	88.00

* * number of respondents

Questionnaire reference 4.5[369] which relates the choice of conditions of contract with the finance level of tender submissions, received a mixed response. The levels of positive response ranged from 25% to 62% across the turnover classifications but the results were fragmented and without pattern. Similarly the responses showed no relationship with the recommended levels of financial value contained within the JCT standard forms of contract for use with minor, intermediate and major works. However it would appear from Table 40 that the choice of conditions of contract does have a substantial influence upon the financial level of the tender submission in turnover categories £51,000 to £100,000 and over £1,000,000.

Table 40

Does the choice of conditions of contract in anway influence the financial level of the tender submission		Turnover categories					
		A	B	C	D	E	ALL
	* *	(1)	(8)	(11)	(26)	(41)	(87)
Yes	(%)	**25.00**	**61.54**	**39.29**	**40.63**	**61.19**	**49.43**
	* *	(3)	(5)	(17)	(38)	(26)	(89)
No	(%)	**75.00**	**38.46**	**60.71**	**59.38**	**38.81**	**50.57**
* * number of respondents							

Clause 4.6 of the questionnaire[370] invited comments in respect of the choice of the conditions of contract. Some responded to this question and the responses are included in the Appendix.[371] The responses, whilst fragmented, do offer interesting and objective comment and do emphasise specific areas of concern.

369 See Appendix A, *post*, p. i-iii (1-8).
370 See Appendix A, *post*, p. i-iii (1-8).
371 See Appendix A, *post*, pp. iv (1-47).

Table 41

Level of significance of the problem areas related to type of work (% terms)					
	New Building	Alterations & Extentions	Repairs& Maintenance	Refurbishment	Specialist
Inadequate methods of communication	75	93	76	87	30
Inadequacy of drawings	82	94	76	86	35
Inadequancy of specification	76	91	78	81	24
Quantities not forming part of the contract documentation	81	92	80	84	33
The level of completeness of design	83	94	77	83	29
The level of prime cost and provisional sums	74	95	72	82	38
The level of variations	81	91	78	84	30
The valuation of variations	83	88	76	80	29
The inability to realistically programme the works	81	94	82	82	24
Inadequate site feed back and records	82	92	77	90	26
Out of sequence working	75	95	80	88	31
The setting of unrealistic completion dates	77	96	88	89	30
Late payments in respect of interim valuations	77	92	75	77	27
The choice of conditions of contract	90	86	71	86	10

CHAPTER NINE

SUMMARY TO PART 2

Chapter seven in dealing with 'risk and uncertainty' has considered the definition of the term, has examined the 'relativity of concerns' as portrayed by published material and, under the head of 'factorial issues', has related known areas of risk and uncertainty to specific objectives.

The 'relativity of concerns'[372]

When considered in isolation the publications to which reference has been made are directed towards particular areas of concern within the procurement system. The references do not take account of all material published which relate to risk and uncertainty but the selected material does provide for a meaningful and varied range of debate and for cross fertilisation of opinion.

The level of overlap which occurs between the various viewpoints offered by the publications serve to illustrate the large and diversified extent to which risk and uncertainty applies in relation to the building contract. Nonetheless a pattern has emerged which identifies areas of notable significance from which the more peripheral issues stem. In broad terms these areas concern,

i) the degree of interaction which should prevail between the two phases of design and construction and the importance of information and documentation in providing the necessary linkage for this interaction, (Gray, Trickey, Perry and Hayes).

ii) the importance of design prior to construction work commencing levied against client requirements and constraints, (Hayes, Newlove).

iii) the conditions of contract and contractual arrangements, (Trickey, Anderson, Perry, Hayes, Cole and Hutton).

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372 See Chapter Seven. pp. 92-104.

iv) the effects of changes introduced during the construction stage, which vary the initial design and specification requirements and may, in certain instances, vary the extent and emphasis of the works (Newlove, Perry and Hayes).

v) the securing of realistic financial reimbursement in respect of variations to the contract (Perry, Newlove, Anderson, Gray, Perry and Hayes).

vi) the need to identify and eliminate as far as possible avoidable elements of risk and to control and manage the remaining unavoidable elements (Newlove, Perry and Hayes).

The authors of the publications have been named to illustrate the extent to which the consideration of one particular issue touches upon and concerns other seemingly separate issues.

The areas of concern relate to 'price-based' contracts,[373] to the importance attached to information, administrative procedures and pre-tender decisions[374] and to the inter-relationship which exists between time and variations to the contract.[375] All such considerations point to deficiencies within the procedural mechanism. Furthermore, many of the concerns which are identified with the construction stage have their origin at the design stage and are to do with the sufficiency of information and the adequacy of documentation. The documentation cannot be complete unless,

i) the design is substantially complete,

ii) sufficient time is allocated to data preparation,

iii) data processing is managed efficiently.

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373 *Ibid*, pp. 91-92.
374 *Ibid*, pp. 91-96.
375 *Ibid*, pp. 96-98.

Any deficiency in these respects will give rise to variation and difficulty during the construction stage.

The responsibility therefore for improving the procedural mechanism rests to a great extent upon the professional adviser.

The factorial issues[376]

The purpose served by considering the factorial issues stems from the need to relate known areas of risk and uncertainty to the objectives which are seen to apply to individuals and firms.

Figures B and C[377] show the objectives of the professional adviser and the building contractor to be precisely similar but the areas of risk and uncertainty to be entirely different.

The objectives of the private client as shown in Figure A[378] relate with the professional adviser and the contractor insofar as the maximisation of investment is concerned. However the requirement to build as quickly as possible and at a minimum cost reacts in conflict. The 'master and servant' syndrome determines the priorities and establishes the *modus operandi*. This, in turn, constitutes pressure and, in striving to achieve enhancement of reputation within the fee provision, the professional adviser is faced with a dilemma. Either the commission must be forfeited on the basis that the severity of the constraints will not permit the observance of good practice or steps must be taken to reduce the workload and short-cut the recommended procedures. The contractor is vulnerable in this respect, since the production of minimal and less than adequate documentation provides the obvious way for savings in both time and money.

The contractor will almost invariably accept the additional burden of delegated responsibility and the problems created by the provision of inadequate documentation in an endeavour to satisfy other objectives concerned with the need to obtain work and the need to maintain the establishment.

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376 *Ibid*, pp. 104-114.
377 *Ibid*, pp. 104 and 114A.
378 *Ibid*, p. 107A.

For this reason these additional burdens and increases in risk have been tolerated in the past and allowed to continue mainly due to the fact that the main contractor is not the last in the chain sequence. Domestic subcontractors and to a lesser degree material suppliers will also be engaged in additional work and will also share to some extent the burden of imposed risk.

Chapter Eight by empirically testing the issues relating to imposed risk and uncertainty has revealed a high level of concern generally towards the often personalised procedures adopted by professional advisers. With the exception of 'the level of prime cost and provisional sums'[379] and 'inadequate site feed back and records'[380] all the remaining issues of contention depict a high and unacceptable degree of concern to the contractor. The issues causing the most concern directly relate to information and documentation and, in particular to the quality of the specification. In this regard the specification must be considered a prime document since it provides the sole means by which the precise requirements of one party to the contract can be conveyed to the other party. With contracts gained by the selective tender process where design and construction are, by necessity separate entities, the specification links the two more effectively than the drawings or any other single document. There are however disadvantages to be considered in relation to the specification. The time required to write the specification, the cost of preparation and the need for the design to be substantially complete before the writing.

Despite the recommendations of Banwell and the CCPI and the benefits which would undoubtedly be derived in the longer term by the team in both design and construction, there exists a reluctance on the part of many designers to prepare adequate specifications.

This reluctance may be due to,

i) a lack of awareness and understanding on the part of the designer to fully realise the requirements of the contractor;

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379 *Ibid*, p. 149.
380 *Ibid*, p. 152.

ii) a reaction on the part of the designer in response to commercial constraints.

Inadequate information resulting from incomplete specification detail or the inappropriate use of provisional sums will promote a sense of uncertainty and, as a consequence, the risk factor will be increased.

SMM7[381] has introduced measures to counteract the problems created by the abuse of provisional sums but these relate to the 'with quantities' arrangement only.

The 'without quantities' arrangement is devoid of a satisfactory basis for evaluating change introduced during the construction stage. Such an arrangement greatly increases the level of risk and uncertainty which can affect either or both parties to the contract but generally, due to the procedural mechanisms which govern valuation and payments, causes the contractor to suffer most.

Late payments are further issues which attract a high rating.[382] Whilst the standard forms of contract clearly state the time periods allocated to the client for honouring payment obligations, payments are nonetheless often delayed and in many instances the delay is excessive.[383] This is a breach of the conditions of contract. Whilst the obligation to pay the amount due is vested in the client the professional adviser also bears a measure of responsibility to ensure that payment is made within the stipulated period. Even a short period of delay can have a dramatic effect upon cash flow and this is a fact which is not always appreciated by the professional adviser. The extent of the investment required to finance a project features prominently in the process of tender preparation. Paying credence to the fact that the prudent contractor will inflate the net amount required to allow for unforeseen happenings the allowance must be minimal in order to maintain the required degree of competiveness. This focuses attention upon his programming needs

381 See *ante*, pp (ii) and (iii) for abbreviations.

382 See Chapter Eight p 156 and Appendix A *Post*, pp 18(1-47).

383 See Chapter Four, pp 39-46.

also upon the preferred need for bills of quantities to be prepared by the client as part of the tender and contract documentation.[384]

Quantities provided by the client and prepared in accordance with SMM6[385] were in the most part considered to be unwieldy, time consuming, costly and totally unsuitable for the smaller project. However the recently published SMM7 is less complex than its predecessor and should prove to be more adaptable, speedier and less costly in application. These factors may assist in promoting a change in attitude by the professional adviser.

Recent years have shown a marked inclination towards the 'without quantities' arrangement for all but the larger building project and this with a substantial increase in the 'defined value' of small building works.

Townsend[386] in relating to the BPF System[387] comments to the effect that "The world can go round without Bills of Quantities" but further observes that "Without a QS we need A N Other to carry out cost control duties". In predicting the future of the Quantity Surveyor Townsend sees a need for "fewer Bills for clients, more simple Bills for all Tendering Contractors and increased Consultancy for both Client and successful Contractor".[388]

This reversal of the traditional need creates other cost implications but these lie beyond the scope of this study.

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384 See Chapter Eight, pp 126-130.

385 See *ante*, pp (ii) and (iii) for abbreviations.

386 See References, *post*.

387 See *ante* pp (ii) and (iii) for abbreviations.

388 Townsend, The Quantity Surveyor's Response, paper relating to the BPF System (undated), presented to The Chartered Institute of Building.

CHAPTER TEN

CONCLUSION

General

This study has revealed areas of inadequacy within the traditional system of procurement. These inadequacies are shown to be responsible for increasing the level of risk and uncertainty to be borne by the small building works contractor.

A notable feature of this finding is that previous considerations have been mainly concerned with the construction of larger building projects and the extent to which the small works sector has dilated during recent times has received less than adequate attention. The image portrayed by the CCPI, that small building works are insufficiently significant to warrant particular attention, is wrong. This study has shown the requirements of both small and large classifications to be similar in most respects. This study has further shown the deficiencies peculiar to the small works sector to be deficiencies in principle and these are amplified by the presumed lower level of significance. The factors which demarcate the two classifications are vague in their interpretation and whilst segregation provides benefit to the client in the short term, the objective set by the short term benefit is unsatisfactory and detrimental to the building contract as a whole. This raises the question of whether or not there is a need or a justification to segregate the two work classifications.

Relating the needs to the deficiencies

The pre-tender requirements of the contractor concern the two issues of information and time. Both are fundamental to successful tendering and neither can be considered in isolation. Similarly the pre and post tender activities cannot be considered in isolation. All aspects which concern the placing and management of building contracts are inter-linked and possess varying levels of joint influence.

Recommendations have been published which offer direction to the professional adviser in respect of the supply of information and the time required to process that information but many fail to satisfy the purpose for which they were designed.

The CPSSST[389] contains many of the ingredients necessary for the provision of non-technical information required by tendering contractors, and for time allowances to provide for the procedural mechanism. However the CPSSST is biased in favour of the client and totally flexible in its directive. As a result the recommendations are rarely implemented to the full and in the spirit for which they were intended. The CPSSST is often applied in part and the selected areas are invariably confined to those areas which benefit the client. This misuse of the system may either be intentional or result from the professional adviser being unaware of the requirements of the CPSSST.

CPI[390] offers recommendation and provides codes of convention for the administration and the processing of technical information. However, CPI, with the exception of SMM7,[391] is also flexible and the decision of whether or not to implement the recommendations relies mainly upon the attitude of the professional adviser. The additional time and cost implications which appear to confront the professional adviser in the application of CPI points to a less than favourable response being achieved particularly in respect of the small works contract. Notwithstanding this inhibiting characteristic, the codes of convention are based upon the findings of extensive research and some aspects of the philosophy have merit.

In acknowledging that both the CPSSST and the CPI possess some merit and that independently they both go some distance towards providing a means of dealing with the complexities of placing and managing building contracts then applicatory problems must relate to interpretation, to attitude of conviction or to commercial and economic pressures.

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389 See *ante*, pp (ii) and (iii) for abbreviation.
390 *Ibid.*
391 *Ibid.*

The issues of interpretation and attitude of conviction relate with the low level of understanding which often exists in the design and construction processes. Also the issues relate with misappropriation of procedures which evolve from the observance of client requirements and objectives.

Commercial and economic pressures usually exist where tender procurement by the lump sum selective process is used. In such circumstances it is necessary for the professional adviser to fully understand that the objectives set by these criteria must be considered in total context. The criteria must not be allowed to adversely affect the position of others who are also associated with the tender. There is a need for the professional adviser to manage the design process, to identify and control known areas of risk and to extend this ability to managing the client.

Two issues of notable significance stem from the reasoning concerned with the level of understanding and the management expertise demanded of the professional adviser.

1) It is unreasonable to expect the professional adviser, always and as a matter of course, to possess a detailed understanding of the machinery applicable to a contracting organisation and the methods adopted to fuel that machinery. There must be an awareness of the principles entailed but to expect more than an awareness would be impractical. A contracting organisation does not, as a general rule, possess a detailed understanding of the processes and procedures affecting design and does not suffer, as a consequence, from a lack of knowledge in this respect. Arguably the converse should also apply.

   If this need for a detailed understanding by the professional adviser was alienated then the requirement for specific terms of reference would, as a result, be amplified. Recommendations rely on the discretion of the user whereas specific terms of reference remove this onus of responsibility. This points to the main reason why the CPSSST fails to achieve the desired results whilst

appearing to display a satisfactory method of tendering procedure.

2) The need to identify and control known areas of risk demands that the professional adviser be fully knowledgeable of the processes and the procedures adopted by main contractors, their subcontractors and their suppliers. This knowledge is of particular importance in areas where risk and uncertainty are known to be manifested. If this extent of knowledge does not exist then, however efficiently the design process is managed, the risks will remain.

The CCPI by reference has acknowledged and emphasised the difficulties which face the professional adviser in managing the design process.

These encumbrances are not confined to the design office. They also relate to the contracting organisation in both the pre and post tender environments. Furthermore the encumbrances are issues which have a direct relationship with the management of domestic affairs. This management demands an ability to work to targets established by budgets and an ability to operate within time and money resource constraints.

The building contractor engaged in pre and post tender activities has no alternative other than to observe the time and money constraints levied against the project. The building contractor expects these constraints to prevail to a limited and controlled extent and in this respect the constraints are viewed upon as being an inherent part of the system. The professional adviser must also share in this responsibility. To this end the recommended procedures and disciplines provided by industry and which relate to the placing and management of contracts must be reviewed and tightened to promote a more formal approach.

There is a distinct need,

a) for precise information and adequate documentation to be provided by the client;

b) for realistic time allowances to be allocated to the pre and post tender stages;

c) to reduce the incidence of variation introduced to contracts during the construction stage and, in instances where reduction is not a practical possibility, then a more realistic method of evaluation must be determined;

d) to effect realistic and prompt financial reimbursement for work properly executed;

e) to reduce the level of flexibility afforded by the recommended procedures thereby limiting the extent to which the professional adviser can be influenced more in favour of satisfying the commercial inclinations of the client than in satisfying the interests of the project as a whole;

f) to educate the professional adviser in matters concerning the structure, objectives and requirements of a contracting organisation.

None of these issues can be judged to be autonomous. However information is common to most issues in both pre and post tender environments.

Information, in support of drawn material, can be offered in various styles. A standard format of documentation does not exist within the small works sector. The styles of presentation range from the specification format to schedules of work and, to a diminishing extent, the bills of quantities format. Whilst each format is designed to provide for the particular needs of an individual contract this criterion is rarely observed. More often the commercial interests of the client take precedence. In such instances the documentation is tailored to suit the interests of the client without due regard being paid to the requirements of the project as a whole and those concerned with it.

Some methods used for the conveyance of information also provide a means for maintaining financial control during the construction of the works. Other methods do not provide a similar facility.

Research has shown contractors to be undeterred by either the issue of inadequate information or by the inappropriate use of a particular style of documentation at the tender stage. The reason for this is that contractors have become accustomed to accepting the additional burden of risk created by deficiencies in this respect in order to maintain the required turnover of the firm.

Research has shown also that disputes arising during the construction period, which result from the inability of the contractor to gain satisfactory reimbursement for work executed, have become the norm rather than the exception in recent years. This creates a further major area of risk to be borne by the contractor.

These additional areas of risk and uncertainty are imposed upon the contractor by the indiscriminate actions of others. They could be avoided. Whilst there is a need for the professional adviser to be sympathetic towards the commercial interest of the client this need should not be achieved by actions which are detrimental to those engaged with the construction of the works. A contractor should not be placed in a compromising and inequitable position by virtue of these impositions nor should the contractor be criticised for the results of the failures stemming from the imposed risks.

Reviewing the impedient issues

General

The deficiencies inherent within the procedural mechanisms embrace an amalgam of issues which concern the whole process of procurement. They involve the design, the letting and the construction of the works.

If the traditional method of work procurement by the selective tender process is to be improved upon then prescriptive measures must be considered in the context of the entirety. The policy of the

building industry however, whilst acknowledging the need for entirety has failed to extend pieces of commissioned research to fulfil this need. For this reason the recommendations have proved to be largely ineffective.

Deficiencies inherent within the CPSSST

Subsequent to the completion of parts I and II of this study the 1977 edition of the CPSSST was re-issued. Whist remaining basically similar in most respects the new edition dated April 1989 introduced revisions in respect of matters relating to the standard conditions of contract and now provides independently for the particular needs of JCT80,[392] IFC84[393] and MW80.[394] The changes do not affect the pertinent issues of this study therefore reference to the 1977 edition has been maintained.

The recommendations within the CPSSST possess some measure of merit to the extent that if they were administered in the spirit intended then the level of effectiveness would be enhanced. They also contain faults in both principle and in application. There is a need therefore to modify the procedures with the aim of eliminating or significantly reducing the discretionary influences thereby assisting in the maintenance of the intentions.

Faults in principle. There are three areas of concern under this head.

1. The 'Code'[395] has been prepared to provide for those who commission building works. The 'Code' has not been prepared to cater equally for the requirements of those who commission the building works and those who undertake to carry them out.

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392 See *ante*, pp (ii) and (iii) for abbreviation.
393 *Ibid.*
394 *Ibid.*
395 'Code', the abbreviation used within the CPSSST to denote itself.

2. The 'Code' envisages the use of bills of quantities as a general rule and does not adequately cater for the without quantities arrangement.

3. The 'Code' is totally flexible in its directives and, as a result, the measure of satisfaction and effectiveness relies wholly on the discretion of the professional adviser.

Faults in application. These faults may be considered under two heads.

1. The "Preliminary Enquiry".

2. The "Tendering Procedure".

Faults within the "Preliminary Enquiry".

Some elements of information required by the "preliminary Enquiry" and included in Appendix A to the CPSSST (items a - u)[396] are of a general nature and can be readily satisfied. Other items of requirement are specific and many involve calculated assessment and prediction. These items are of particular importance to the tendering contractor and include,

item (g) "general description of work"

item (h) "approximate cost range £... to £...

item (i) "nominated sub-contractors for major items"

item (n) "anticipated date for possession"

item (o) "period for completion of the works"

item (p) "approximate date for despatch of all tender documents"

item (q) "tender period..... weeks"

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396 See Appendix E, *post*, p.xii.

item (r) "tender to remain open for ..... weeks"

item (s) "liquidated damages (if any), anticipated value £..... per ....

item (t) "details of Bond requirement"

item (u) "particular conditions applying to the contract"

The completion of these items by the professional adviser to the client prior to tenders being invited serves to indicate that,

a) the enquiry is *bona fide*,

b) the design has been approved,

c) the project has been well thought through and planned,

d) the client is aware of the likely overall financial commitment and is prepared to proceed on that basis.

An enquiry which satisfies these criteria indicates a responsible attitude by the professional adviser towards the letting of building contracts and this increases the confidence of the tendering contractors. Tendering for building work is, at best, a serious, time consuming and costly exercise and this must be recognised by the professional adviser.

There is a need for a ruling to be issued by industry which demands the full and proper use of this facility as a matter of course whenever the traditional method of tender procurement is being engaged.

Faults within the "Tendering Procedure"

The CPSSST infers that the design work has reached a stage of substantial completion and presumes that sufficient information is being provided in a suitable format to enable a realistic estimate of cost to be formulated.

A tender for the construction of a building contract is a major commitment[397] and it is unjust to expect a contractor to enter into a commitment to carry out works for a specified sum when,

a) the information provided by the client is incomplete [398]

b) the time allowed for processing the information is insufficient.[399]

c) the time allowed for planning the works is inadequate [400]

This condition is further exacerbated during the period of construction by,

d) variations being introduced as a result of the design work being incomplete prior to tenders being invited [401]

e) interim valuations often not reflecting the true extent of the work executed and the cost of materials on site

f) lengthy periods of time being allowed to elapse between the date of the site visit and the date when the valuation certificate is issued [402]

g) delayed payments in respect of interim certificates [403]

h) delay in the preparation and settlement of the final account.

The client is privileged by the standard conditions of contract to vary the works almost at will during the period of construction and this without surcharge. Conversely the contractor as recipient is burdened, often excessively so, with the task of substantiating

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397 See Figure C, p.114A.
398 See, pp. 17-21, 106-114, 117-123.
399 See, pp. 23, 25-29, 123-124.
400 See, pp. 23,29-31, 132-138.
401 See, pp. 47-54, 139-144 and Appendix A, *post*, p.iv (1-47).
402 See pp. 40-42, 43-46, 58 and Appendix A, *Ibid.*
403 See pp. 40-42, 156-157, *Ibid.*

requests for extensions of time and in endeavouring to gain proper reimbursement for costs incurred by variations. [404]

Liquidated and ascertained damages provide the client with an immediate remedy in the event of the contract period, and any agreed extensions to it, being exceeded. A similar remedy is not available to the contractor who has suffered losses as a result of inadequate or belated payments.

There is a need therefore for a greater measure of parity to exist between the obligations and restrictions of the two parties to the contract. There is a distinct need also for the pre-construction requirements of the contractor to be clearly related in specific terms and adhered to.

The problem areas therefore which confront the small works building contractor can be summarised under two heads,

1. problems created by poor quality information at the tender stage, inadequate time allowances for the processing of that information and inadequate time allowances for the planning of resources.

2. the inability to secure realistic and prompt payments during the construction period for work executed.

Responding to these problem areas

Problems relating to information

Information based upon incomplete design will promote the need for variations and the liberal use of provisional sums.

Variations will continue to occur but they should be confined to matters which could not have been reasonably foreseen by the designer prior to the works being offered to tender. Conversely where there is a desire to vary the works and this variation could have been foreseen, then this must be looked upon as a privilege afforded to the client and not a right. Such a a change in attitude

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404 See pp. 47-54, 139-144 and particularly figure C, p. 114A.

would, by virtue of the potential consequences, reduce the level of variations and would ensure that the works had been thoroughly thought through.

None of the methods currently provided for the valuing of variations are wholly acceptable. Valuation based on tender rates, whilst better than having no basis at all, does not necessarily correspond with the intention. Reimbursement on a daywork basis does not take account of disruption. The submission of a price estimate prior to the works being carried out is often impractical to implement.

The major proportion of variations introduced during the construction period arise as a result of deficiencies within the design process and the contractor should not be expected to suffer as a result of this.

Problems relating to time

There are two main issues of concern under this head,

1) the time allowed for the preparation of tenders,[405]

2) the time allowed for the opening and consideration of tenders,[406]

The time allowed for the preparation of tenders.

The CPSSST recommends a minimum period of four weeks for the preparation of tenders and, in more precise terms this recommendation is reiterated in the 1989 edition. This minimum period is often not observed by the professional adviser and the time allowance is sometimes limited to a few working days.[407]

Moreover, the 'without quantities' arrangement has gained in popularity since the publication of the CPSSST in 1977 when at that time the use of bills of quantities was considered to be the norm

405 See pp. 25-27 and Appendix E, *post*, p.xii-xvi.
406 See pp. 27-29, *Ibid.*
407 See Appendix B, *Post*, pp. v-vi.

except for works of a minor or jobbing nature. Currently it is not unusual for projects of a value in excess of £1.50 million to be let on a without quantities arrangement. This probably accounts for the reason why clause 4.3 (Time for Tendering) in the 1989 edition of the CPSSST has been changed to remove the phrase "smaller works without quantities" and the phrase "plan and specification tenders" substituted. This change points to an awareness by the NJCC that the 'without quantities' arrangement extends beyond any reasonable definition of the word 'small'.

The main benefits to the client using a 'without quantities' arrangement are considered to be savings in time and savings in fees. However, it is believed that the benefits derived from a saving in time are not so much to do with the time required to prepare bills of quantities as they are to do with the saving in time which results from a more relaxed approach towards design detail. In this respect the 'without quantities' arrangement not only reduces the design workload prior to the time the contract is awarded but the arrangement also provides a greater measure of security to the professional adviser. Conversely, all contractors engaged in tender preparation are burdened with the additional time required to produce quantities, the associated costs and the additional increases in risk which dimension preparation entails. Contractors prefer the 'with quantities' procurement arrangement and this preference should be observed.[408]

The use of 'Shorter Bills of Quantities'[409] or quantities prepared in accordance with the recently published SMM7, which is less complex than its predecessor, could provide for the needs of the small works sector. However the current trend of the building industry is to move away from the use of bills of quantities except for projects of a large and complex nature. If this trend continues then the burden to be borne by the contractor will intensify. Over the years contractors have been prepared to accept this additional burden as a condition precedent to obtaining work and as a means of fulfilling the need for survival. However the demands have

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408 See Appendices C and D, *post*, pp vii-xi also pp. 18-20, 129-133.

409 Leonard Fletcher & Partners, Mark Dunstone & Partners, Shorter Bills of Quantities, published by The Builder Group Limited, London, 1986.

escalated during recent years and have now reached almost intolerable levels.

At the tender preparation stage the difficulties created for the contractor by inadequate information appear less onerous than they really are and the full impact of the deficiencies are not revealed until the construction works are being progressed.

The time allowed for the opening and the consideration of Tenders[410]

The CPSSST although not specific in respect of time allocations for the opening of tenders, the consideration of submissions and the notification of results is nonetheless precise in intent.[411] However this recommendation is rarely observed by the client.

Research and personal experience has shown that tender submissions are seldom opened on the day of submission, that the consideration can take many weeks and that the notification of results in the manner prescribed by the CPSSST is remote.

The failure to notify results points to a lack of interest, in all but the successful submission, once tenders have been received.

The unsuccessful tenderers require the information provided by the notification of results to facilitate a re-appraisal of their future requirements in both the short and medium terms and to plan their resources. This requirement extends also to subcontractors and in some instances, to material suppliers.

There is a need for tenders to be opened immediately following receipt. There is also a need for defined periods of time to be allocated to provide for both the consideration of tenders and the notification of results. Such directives would add to the confidence and would aid the management processes within the contracting organisations.

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410 See pp. 27-29.

411 See Appendix E, *post*, p.xiv.

The time allowed to elapse between the appointment of the contractor and the commencement of work on site.[412]

This period provides the contractor with time to plan the works and to organise the resources [413]

Whilst the 1977 addition of the CPSSST emphasises the importance of this period it does so without allocating a specific period of time.

However the 1989 edition goes some way towards rectifying this deficiency by recommending a maximum period of time which pays independant credence to the interests of the client.

There is also a need for a minimum period of time to be established to provide for the combined interests of the client and the contractor.

Issues relating to practice and procedure subsequent to the letting of the works.[414]

The prime and essential requirements of the contractor during the period of construction are,

a) the possession of sufficient information to enable the works to be adequately resourced and capable of being progressed in a balanced and structured manner without delay and disruption,

b) the provision of sufficient time for the satisfactory completion of the works,

c) the maintenance of an adequate cash flow provided by regular and prompt payments in respect of work executed and materials on site.

These requirements are equally applicable to the subcontract element of the industry.

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412 See pp. 29-31.

413 CPSSST, *op. cit*, cl. 8, Post Tender Period.

414 See pp. 32-70, 96-104, 139-159.

In considering this aspect it is necessary to distinguish between those financial implications which arise as a result of naturally occurring hazards and those additional burdens which are imposed by the actions of the client or the professional adviser.[415] The latter concern this study and the issues which require consideration are,

a) the contract sum,
b) certificates and payments,
c) provision for retention monies,
d) variations,
e) extensions of time,
f) damages for non-completion,
g) fixed and fluctuating price levels,
h) the level of prime cost and provisional sums.

Relating to the broader issues under these heads.

The contract sum[416]

The contract sum, as inserted in the Form of Tender, constitutes an unqualified 'lump sum' bid to "execute and complete.....the whole of the works specified within Contract Documents" [417]

This express undertaking suggests that, to a large extent, the limit of obligation to be placed upon the contractor has been established. However, in the small works sector, this is rarely the case and often many areas of vagueness exist which results in variations to the work specified.

Standard forms of conditions of contract offer immediate remedies to the client to compensate for financial losses brought about by unauthorised extensions of time beyond that specified. Moreover the client is privileged by the 'safety-net' element of financial security afforded by the system of credit payment in which the value of work executed and materials on site is always substantially in excess of payments received. Conversely the contractor is obligated to carry out the additional works relating to variations, to

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415 See generally pp. 32-70 and particularly figure C, p. 114A.
416 See pp. 35-39.
417 CPSSST, Appendix C, Form of Tender.

maintain quality control, to mitigate loss to the client and to provide all necessary information in support of a claim or claims for extensions of time and financial reimbursement. These additional burdens would be unnecessary if the design work had been progressed to a stage of substantial completion prior to tenders being invited. Furthermore the measure of variation would be reduced and the additional burden of responsibility placed upon the contractor would also be reduced.

The information provided at the tender stage and to which the contract sum relates must genuinely reflect the total quantity and type of work to be undertaken. The contract sum must not be looked upon by the professional adviser as a budget to be designed to. Nor should the conditions of contract be interpreted as a means by which variations can be introduced at will.

Difficulties associated with this area of consideration cannot be viewed in isolation and any improvement sought will be conditioned by directives related to other issues concerned with practice and procedure.

Certificates and payments[418]

The cash flow facility provided by interim valuations and payments in respect of work executed and materials on site is affected by three criteria,

1) the accuracy of the valuation,
2) the prompt issue of the payment certificate,
3) payment within the period stipulated by the conditions of contract.

A valuation which fails to reflect the true value of the works in progress to a reasonable degree of accuracy is placing unnecessary financial pressures upon the contractor. In the context of a single contract the effects may not be serious but when considered in relation to a number of contracts then the effect can be substantial. This is particularly in evidence in the small works sector where a

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418 See pp. 40-47, 155 and Appendix A, *post*, p.iv (1-47).

sound basis for valuing works in progress under a 'without quantities' arrangement does not generally exist.

Similarly the belated issue of a payment certificate will create further pressures upon the contractor's working capital. Standard conditions of contract, whilst specifying the limit of time for payment, do not specify a limit of time for the processing of the interim valuation from the date when particulars are taken on site to the date when the certificate is issued. A contractor, in arranging the finances of the company, requires to know the maximum period of time allocated to the preparation and the payment of interim accounts. Delays in these respects add a further dimension to the drain on the financial resources of the company.

Remedies exist within the standard forms of contract to safeguard the interests of the contractor in respect of (2) and (3)[419] but the remedies are severe and would be considered only in the last resort. This points to the need for measures to be introduced which would,

a) provide a greater degree of control over the process of valuation and certification than currently exist,

b) provide for the contractor to be adequately reimbursed for losses sustained as a result of delays in certification or in payment as an immediate right similar to the way in which liquidated and ascertained damages provides for the interest of the client.

Variations[420]

The facility to vary should be applied in the spirit for which it was intended. The facility should not be used to provide the professional adviser with a means of delaying substantial proportions of the design work until sometime during the construction period.

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419 *Supra*, p. 182.

420 See pp. 47-54, 87-88, 139-144 and Appendix A, *post*, p.iv (1-47).

There is evidence to show that in many instances the tender submission provides the first indication to the client of the likely cost of the works and, as a consequence, tests the viability of the project. This is a further area where the procedures are abused and where the services provided by the contractor are exploited.[421]

The contractor should not be penalised for matters which have failed to receive proper attention prior to tenders being invited. Moreover, such elements of varied work should not be incorporated under the contract except with the express agreement of the contractor. As a general rule a client should not be permitted to enter into a lump sum agreement unless the design is substantially complete and adequately documented prior to tenders being invited. If time and other constraints prohibit such an action then an alternative arrangement should be sought as a matter of course.

Extensions of time[422]

There are some 'Relevant Events'[423] quoted in the standard forms of contract condition which are outside the control of either the client or the contractor. However there are some over which the client and the professional adviser should have a measure of control. These areas relate to the issue of instructions and to information requirements. Both feature prominently in claims for extension of time.

The issues which concern extensions of time cannot be viewed in isolation. They are directly related to the quality of information and to those problems which concern variations. This suggests that any action taken to improve the quality of information and to reduce the incidence of variations would have corresponding effects on the need for extensions of time.

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421 See pp. 131-132 and particularly, Table 14, p. 132.

422 See pp 54-57.

423 *Ibid*, cl. 25.4.6, *Ibid*.

Fixed Price Arrangements[424]

The fixed price arrangement is onerous enough upon the contractor when all information regarding time is made available at the pre-tender stage. Also when it can be assumed that the total measure of responsibility for the fixed price arrangement is to be shared by all concerned with the building project. These criteria rarely apply for two reasons,

1) the date of possession of the site is often not stated within the tender documents and, as a result, the period of time to which the fixed price arrangement applies is unknown,

2) material suppliers will not, as a general rule, observe and abide by the terms of a fixed price arrangement.

This raises the question of the fairness of such an arrangement particularly during times of variable levels of inflation and high interest charges, both of which currently exist. Areas of improvement could be introduced to the system by defining the date from which the firm price arrangement should commence and by establishing a maximum limit for the firm price arrangement. The likely benefits to be realised are these,

a) the contractor would know the limit of obligation in respect of time and would experience a greater level of confidence in predicting the changes which are likely to occur within the national economy in the shorter term,

b) a precise time stipulation would promote a more expedient level of processing between submission date and the date when the contract is awarded.

Prime Cost and Provisional Sums[425]

From the viewpoint of the contractor there are three main areas of concern in respect of prime cost and provisional sums;

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424 See pp. 57-63.

425 See pp. 68-70, 91, 149.

1) the often substantial aggregate level of prime cost and provisional sums in relation to the total contract sum,

2) the inability to prepare an adequate programme for the works when a large proportion of the design material is either incomplete or unavailable,

3) the indiscriminate usage of prime cost and provisional sums as a means of reducing the time required for the design process.

Whilst the need for prime cost and provisional sums is acknowledged the fact remains that the contractor requires to know the total extent of the works which are to be carried out during the period of time specified in the form of tender.

In this respect the recommendations offered by the CCPI and which are contained within SMM7[426] should apply equally to the 'with quantities' and the 'without quantities' arrangements. In this regard the tender documents should distinguish between 'defined' and 'undefined' elements of work.[427]

Summarising the Pre-Tender Needs

The needs in relation to the CPSSST 1977 as amended and re-issued April 1989.

1. The information required by the "Preliminary Enquiry" should be completed in every respect prior to a preliminary invitation to tender being instigated.

2. The time period between the preliminary enquiry and the despatch of the tender documents should be limited to four weeks.[428]

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426 See *ante* pp (ii) and (iii) for abbreviation.

427 SMM7, General rules, p.4, rules 120.2-10.6 and Preliminaries General conditions, p.22, cl. A54.

428 See pp. 23-25, 173-174, 180.

3. The use of CPSSST should be restricted to projects for which the detailed design work is substantially complete at the date when the tender documents are despatched.[429]

4. A minimum time allowance should be stipulated for the preparation of the estimate in both the 'with quantities' and the 'without quantities' arrangements.[430]

5. Tenders should be opened on the date of submission.[431]

6. A maximum period should be stipulated for the consideration of tender submissions and the notification of results.[432]

7. The results of the tender submissions should be notified in the manner prescribed within the CPSSST.

Summarising the post-tender needs

The needs as they concern the construction of the works and, in particular, the functions of production and financial management.

1. Planning: A minimum time to allow for planning and resourcing should be stipulated between the appointment of a contractor and the commencement of work on site.[433]

2. Certification: Specified maximum periods of time should be allocated for the taking of details on site, for the compilation of the valuation and for the issue of the certificate.[434]

3. Financial reimbursement: The conditions of contract need to indemnify the contractor against the effects of late payment by the client and this pre-determined indemnification provision should operate in a similar

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429 See pp. 71-76, 86, 105, 160-162, 174-176.
430 See pp. 23, 25-27, 136-137, 169-170, 177-179.
431 See pp. 23, 27-29.
432 *Ibid.* 23, 27-29, 179-180.
433 See pp. 23, 29-31, 169-170.
434 See pp. 39-46, 88, 156-157, 164, 175, 181, 182-183.

manner to the Liquidated and Ascertained Damages facility.

4. Variations: [435] There is a need to introduce deterents into the conditions of contract which would limit the scope to vary and provide for a more appropriate level of financial reimbursement.

5. Extensions of time:[436] This area of contention relates with information and variations and measures introduced aimed at improving communication will, as a consequence, reduce the level of claim for extensions of time.

6. Fixed price levels.[437] There is a need for the commencing date for the fixed price arrangement to be changed from the date of possession of the site to the 'Date of Tender'. There is a further need for an agreed limit of time to be set against the firm price arrangement.

7. Prime cost and provisional sums:[438] These concerns also relate to information, variations and extensions of time and emphasise the need to distinguish between 'defined' and 'undefined' elements of work.

Analysis of the fourteen points at issue indicate that, excluding matters relating to 'promptness of payment' and the 'fixed price arrangement' all remaining areas of deficiency relate to behaviour.

The deficiencies will not be rectified, solely by the introduction of measures requiring voluntary contribution. A more formal approach mechanism is needed which will control and gear those measures to satisfactory levels of atonement.

Towards a more effective strategem

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435 See pp. 47-54, 87-90, 96-97, 98-99, 139-145, 150, 160, 174-176, 181-182.
436 See pp. 47-57, 72-74, 87-91, 99, 182.
437 See pp. 57-68, 87, 89-90, 185.
438 See pp. 68-70, 88, 90, 149, 163-165, 185-186

The findings of this thesis calls for further investigation into the bilateral requirements of data preparation and transmission. This is fundamental to the management of small building works on two accounts.

1. the likely impedient effects which deficiencies may impart upon the effective use of the procedural mechanisms,

2. the assessment of determents within the traditional procurement system which may inhibit the achievement of parity of responsibility between the client and the contractor.

Areas for further investigation

The following areas of further investigation are believed to be vital prerequisites to the consideration of data preparation and data transmission. To achieve maximum benefits, each area must be considered laterally and corporately in terms of quality effectiveness and in terms of time and money resourcefulness to take account of,

1. the current and likely forseeable future needs of society within an environment of changing circumstances and coevally similar objectives,

2. the policy changes in design and construction resulting from a monopolising strategy which favours specialisation,

3. other ways by which cost prediction may be administered,

4. the probable deficiencies within the building industry due to inadequacies in education,

5. the potentials offered by data base systems.

The results eminating from these areas of further research will generate a positive means of approach towards improving the quality of communion.

MINOR BUILDING WORKS - COMMITMENT BY POSTULATION

VOLUME TWO

APPENDICES

GEOFFREY SENIOR

A thesis submitted in partial fulfilment of the requirements for the Council for National Academic Awards for the degree of Master of Philosophy

October 1990

Nottingham Polytechnic in collaboration with the Chartered Institute of Building
and
Nottinghamshire County Council

MPhil /90
SGN

SIC
Ref.

CONTENTS

APPENDIX A

THE QUESTIONNAIRE

THE QUESTIONNAIRE

The Design

The questionnaire adopts a conceptual approach. It is based upon those issues identified by The Banwell Report as being known areas of concern associated with the placing and management of building contracts on a lump sum basis. These issues largely relate with time, resource requirements and constraints. However, The Banwell Report assumes a universal application for its recommendations insofar that it fails to take account of differences in requirement between the size of the building firm, the value of the contract or the nature of the work to be undertaken.

The Objective

The aim of this questionnaire is to test the level of importance attributed to these known areas of concern.

The Methodology

The circulation of the questionnaire is based on the index classification of the Membership Lists issued by the Building Employers Confederation.

Regional distribution

Nottingham Association	67
Yorkshire Region	358
Leicestershire Association	197
North West Region	187
Total membership circulated	809

Geographic coverage

Nottingham Association

Nottingham, Lincolnshire, Mansfield, Worksop and Retford.

Yorkshire Region

Barnsley and District, Bradford, Bridlington and District, Calderdale, Craven, Doncaster and District, Goole, Selby and District, Harrogate and District, Heavy Woollen and District, Huddersfield, Hull and District, Keithley, Bingley and District, Leeds, Rotherham and District, Scarborough, Scunthorpe and South Humberside District, Sheffield, Wakefield and District, Whitby and District, York.

Leicestershire Association

Leicester and District.

North-west Region

Solway, Kendal and Lakeland, Lancaster, Morecambe and Heysham, Chorley and Leyland, Fylde Coast, Southport and Ormskirk, Wigan, Chester, Clwyd, Colwyn Bay, Gwynedd, Montgomeryshire, Accrington, Blackburn, Burnley, Clitheroe, Preston, Rossendale, Bolton, Bury, Leigh, St Helens, Oldham, Rochdale and District, Manchester and Salford, Crewe and Northwhich, Macclesfield, Alderley Edge and Wilmslow, Stockport, Warrington.

Level of Reponse

Total Number of documents returned	247 (30.53%)
Total Number of documents returned containing a positive response	182 (22.50%)

Classification of Response

The classification of responses in terms of gross average turnover expressed in £,000

	Respondents
Less than 50	6
51-100	13
101-250	28
251-1000	62
over 1000	73

This level of response indicates that as turnover increases so does the concern for risk and uncertainty increase.

The raw results of the responses have been subjected to the minitab system of data analysis and manipulation. This has provided for a clarity of definition beyond that offered by previous areas of research. This provision measures the degree of interaction which exists between the individual areas of concern. Also it indicates how these concerns are affected by differences in attitude characteristic of construction firms engaged with work within this sector.

Trent Polytechnic Nottingham

School of Environmental Studies
Director Professor J O'Neill BSc(Eng) CEng

Department of Surveying
Head J A John Moohan BA MA

Burton Street Nottingham NG1 4BU
Telephone (0602) 418248 Telex 377534

GS/SL

25th February 1988

2507

Dear Sir,

Problems are known to exist within SMALL AND MEDIUM SIZED BUILDING WORKS and these problems have the effect of substantially increasing the RISK FACTOR and FINANCIAL BURDEN to be borne by contractors operating within the competitive tender market.

Concern for these problems has been muted by contracting organisations over a long period of time but without conviction. Consequently the cause has not been fully investigated and identified. Experience shows these problems to be increasing in magnitude and to have reached almost intolerable proportions in certain instances.

The writer has been commissioned by the Chartered Institute of Building, to investigate these problem areas with the initial aim of identifying the reasons for the high risk factor and the unacceptable level of financial commitment placed upon the contracting organisation.

To satisfactorily achieve this objective requires the full co-operation of contractors operating within these category ranges and your support in responding to the questionnaire is an extremely necessary and vital ingredient to the research.

Time is a very valuable commodity. For this reason the pilot questionnaire enclosed has been limited in extent and designed to obtain responses in respect of fundamental issues only;

(i) to test the magnitude of the problems,

(ii) to gain opinion as to the adequacy of procurement systems and processes in common use.

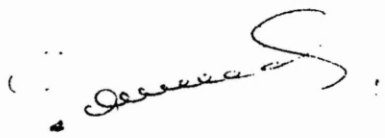
continued

The analysis of the survey will be made available for publication and a free copy issued to all subscribers to the questionnaire.

An early response would be appreciated.

Thanking you for your cooperation.

Yours sincerely,



G Senior FRICS MCIOB AClArb

QUESTIONNAIRE

1.0 Direction of questionnaire:-

towards contracting organisations engaged in small and medium size building works obtained by the competitive tender process.

1.1 Objective of questionnaire:-

to obtain information and opinion as a basis for analysis to determine the magnitude of the problems of EXCESSIVE RISK and FINANCIAL COMMITMENT placed upon contracting organisations.

1.2 Confidentiality:

All specific information in respect of Company Details (section 2.0) gained from this questionnaire will be treated as strictly confidential and will not be divulged in any form. Should any respondent wish to remain anonymous then please leave clause 2.1 blank.

2.0 COMPANY DETAILS

Please state:

2.1 Company name and address

2.2 Gross average turnover of Company:

	000's		000's	
less than	-		50	☐
between	50	and	100	☐
"	100	and	250	☐
"	250	and	1000	☐
	over		1000	☐

2.4 Identify the type of contract work normally undertaken.

	Industrial	Commercial	Domestic	Others
New buildings	☐	☐	☐	☐
Alterations and extensions	☐	☐	☐	☐
Repairs and maintenance	☐	☐	☐	☐
Refurbishment	☐	☐	☐	☐
Specialist work	☐	☐	☐	☐
(state trade or specialisation).	☐			

2.6 Identify the extent to which your company engages the services of external agencies for estimate preparation and/or quantity surveying.

	pre-tender		post contract
	preparation of bills of quantities	estimating	interim valuations and final accounts
totally	☐	☐	☐
some	☐	☐	☐
not at all	☐	☐	☐

3.0 TENDERING PROCEDURES

3.1 How do you generally rate the adequacy of tender documentation supplied by the client?

	private sector work	public sector work
adequate		
less than adequate		
totally inadequate		

3.2 To what extent does the adequacy of tender documentation affect the accuracy of the tender?

very little	
substantially	

3.3 Do inadequacies within tender documentation have any bearing on the financial reimbursement to the contractor?

Yes		No	

3.4 How often is design work complete at tender stage?

always	
often	
occasionally	
never	

3.5 Is the time allowed for tender preparation generally sufficient?

Yes		No	

3.6 Does the time allowed for tender preparation comply with the recommendations laid down by the Code of Procedure for Single Stage Selective Tendering 1977 published for the National Joint Consultative Committee?

always	
often	
occasionally	
never	
not known	

3.7 Is tender documentation incorporating quantities preferred to drawings/drawings and specification only types of enquiry?

Yes	No

3.8 To what extent does tender documentation 'without quantities' affect the overall risk factor borne by the contractor?

not at all	
very little	
substantially	

3.9 To what extent does tender documentation 'without quantities', affect the financial burden upon the contractor?

not at all	
very little	
substantially	

3.10 If quantities prepared by the client formed part of all tender documentation would this result in:-

a) lower overhead recovery charges

Yes	No

b) lower tender sums

Yes	No

3.11 Have there been instances, in your opinion, where the tender enquiry has also provided the client with an initial budget costing which has resulted in substantial variations involving additional pricing exercises prior to an acceptable tender sum being achieved?

never	
occassionally	
often	

3.12 How do you check the adequacy of contract periods specified by the client.

by detailed programming	
by value of turnover relative to unit of time	
not normally checked	

4.0 POST CONTRACT FINANCIAL CONTROL

4.1 To what extent do variations influence contracts generally?

very little	
substantially	

4.2 Is full financial reimbursement gained in respect of variations?

	Contracts 'with quantities'	Contracts 'without quantities'
always		
often		
occasionally		
never		

4.3 Do quantities, forming part of the contract documentation, assist in the valuation of variations?

Yes	No

4.4 What, in your opinion, are the reasons for the problem areas normally associated with small and medium size building work contracts "without quantities".

inadequate methods of communication between the client/professional advisers and the contractor	
inadequacy of drawings	
inadequacy of the specification	
quantities not forming part of the contract documentation	
the level of completeness of design	
the level of Prime Cost and Provisional Sums	

the level of variations	☐
the valuation of variations	☐
the inability to realistically programme the works	☐
inadequate site feed back and records	☐
out of sequence working	☐
the setting of unrealistic completion dates	☐
late payments in respect of interim valuations	☐
the choice of conditions of contract	☐

Any other reasons (please state)

.....

.....

.....

.....

.....

.....

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes		No	

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

.....

.....

.....

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

RESPONSES TO QUESTION REFERENCE 4.6

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	✓	No	

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

CONTRACT PERIOD / LEVEL OF DAMAGES CLAUSE
SEQUENCE OF OPERATIONS
INSURANCE(S) SPECIAL RISKS

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	No
✓	

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

1. Some forms are more onerous for contractor
2. Use of "outdated" forms increases workload and risks.

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	✓	No	

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

unsatisfactory Contract conditions to Contractor result in higher price Contractor "Hedging bet" !

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	✓	No	

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

We will not tender if we think some additional conditions undesirable

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	✓	No	

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

Level of insurances required.....
Liquidated Damages coupled with contract.....
period.....

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

10th March 1989

Your Ref: GB/SL

Our Ref: LWC/BT

Trent Polytechnic
Burton Street
Nottingham
NG1 4BU

Dear Sir

We are in receipt of your letter dated 25th February together with questionnaire which however we do not feel we can complete due to the fact that as a small company we do very little contracting as most of our work has so far been self-funded or done for private customers with no other builders involved.

We do, however, feel this questionnaire to be of value and the underlaying problem to be self afflicted with builders under-cutting one another to get work, agreeing to conditions they then find hard to accept in order to keep turnover levels on an even keel, this in turn lowers the whole standard of the industry for the customer is not be blame if companies are prepared to accept between 5 and 10% profit.

In our opinion there are those individuals who are prepared not to accept the lowest price in order to have a better standard of work, so what the industry really needs to do is to educate the customer to paying a more realistic price for work to be done and the companies in turn putting more monies into training and recruitment and therefore holding on to its labour force.

Yours sincerely

L W Coverdale
County Builders Ltd

4.5 Does the choice of conditions of contract or amendments to in any way influence the financial level of the tender submission?

Yes	✓	No	

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

Onerous conditions by addition to or omission of standard clauses in favour of the employer... increase, in certain cases, the contractors financial risk via extension to payment periods, on demand bonds, penalties etc etc.

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	✓	No	

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

ITEMS IN THE TENDER WILL BE OVERPRICED TO COVER "CONDITIONS" AS AN INSURANCE POLICY

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes		No	
✓			

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

Liquidated Damages, Payment Terms, Defects Period. Nominated Sub Contractors / Suppliers, Design, Materials, Placed in Contractors Cont.

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	✓	No	

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

INCREASED LEVELS OF PENALTY MONEY BEING CHARGED WHICH DO NOT TAKE INTO ACCOUNT UNKNOWN ?PROBLEMS ON VARIATIONS.....

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	No
✓	

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

Any imposed conditions are bound to affect the contract in one way or another usually by communicating the contract and involving more man hours.

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	No
✓	

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

1) EXTENDED PAYMENT CONDITIONS

2) RETENTION PERCENTAGE.

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes		No	
✓			

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

Programme period

liquidated & ascertained damages

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	✓	No	

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

LEVEL OF RETENTION

TIME FOR HONOURING CERTIFICATES

~~LENGTH~~ OF MAINTENANCE PERIOD

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	✓	No	

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

...Owing to the increase financial risk due to inadequate information.

.....

.....

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

the level of variations	
the valuation of variations	
the inability to realistically programme the works	
inadequate site feed back and records	
out of sequence working	✓
the setting of unrealistic completion dates	
late payments in respect of interim valuations	
the choice of conditions of contract	

Any other reasons (please state)

The unfair burden of costs to be borne by the builder, with unsuccessful tenders. These costs based on the size of the job and the accuracy of the tender ought to be borne by the architect when he selects the tender list.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	No:
✓	

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

..The..risk..element...is..greatly..reduced..as..each..element ..is...clearly...described...and...often..broken..down...into..severa[l] .parts...ie...brickwork...+..form..cavities..+..raking..cutting to extra for recess, closing cavities etc. it can : be possible to 'overdo' the pricing of the works – it does however give the contractor increased room for manoeuv[re] on his profit margins

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	No
✓	

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

The Risk to a Contractor will vary depending upon how ('onerous') upon the Contractor the Conditions of Contract are judged to be. Typical - 'All Risk Clauses' - e.g. Contractor deemed to include everything whether specifically shown or not'.

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	No
✓	

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

1. The Risk factors are more detailed in some contracts & contractors tend to be more cautious in pricing.
2. liquidated damages tend to be-come an item for pricing.

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

the level of variations	
the valuation of variations	✓
the inability to realistically programme the works	
inadequate site feed back and records	
out of sequence working	
the setting of unrealistic completion dates	
late payments in respect of interim valuations	
the choice of conditions of contract	

Any other reasons (please state)

Time available in Tender Period to produce Own Accurate P.Q.'s usually from insufficient Drawings/Spec. Quantities, therefore, never as accurate as they should be. Only when Quantities are calculated can the Supply and Subcontractor enquiries be sent out. Therefore, always insufficient time for all concerned (including Subs & Suppliers) to price the Work. Inevitable phone calls chasing prices - firms rushing to produce their prices with inevitable inaccuracies. The result is always a rushed inadequate and unsatisfactory Tender Price.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	✓	No

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

INCLUSION OF PENALTY CLAUSES

INCREASING CONDITIONS OF CONTRACT INCREASES

DIRECT COSTS.

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	✓	No	

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

LIQUIDATED DAMAGES FOR NON COMPLETION IN A TIGHT SCHEDULE.....

.....

.....

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	✓	No	

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

LIQUIDATED DAMAGES .....

SURETY BOND .....

COMPLETION DATE .....

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	✓	No.

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

METHODS & PERIODS OF PAYMENT

LEVELS OF PRELIMINARY REQUIREMENTS

" " INSURANCES / DAMAGES ETC.

" " SUPERVISION ETC.

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	No
✓	

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

(a) Amount of Retention .....

(b) Amount of Liquidated Damages. .....

.....

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

C M Ryan
Managing Director
Johnson Farrell (Builders) Ltd
24 East Parade
Harrogate HG1 5LT.

7/3/88.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	✓	No	

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

HEAVY CONTRACT CONDITIONS MEAN THAT ADDITIONAL COSTS MUST BE INTRODUCED AT TENDER STAGE TO COVER ANY RISK. THEREFOR A REALISTIC TENDER SUM COVERING ALL REASONABLE RISK IS USUALLY NOT COMPETETIVE

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes ✓	No

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

Defects liability periods & retention, due to financing costs ....

Types of contract, and the level of onus transferred to the contractor eg. IFC 84

....

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	✓	No	

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

1) AMENDMENT TO CONTRACT CONDITIONS

2) SOME CONDITIONS OF CONTRACT ARE MORE FAVOURED TOWARDS THE CLIENT THEREFORE INCREASE CONTRACTORS RISK.

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	✓	No	

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

1) AMENDMENTS TO CONTRACT CONDITIONS

2) SOME CONDITIONS OF CONTRACT ARE MORE FAVOURED TOWARDS THE CLIENT THEREFORE INCURRING CONTRACTORS RISK.

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

Directors:
H. W. JACKSON
A. W. JACKSON, F.C.I.O.B.
H. JACKSON

Thompson & Jackson Ltd.

General Contractors, Ecclesiastical Woodworkers
Joiners, Builders and Undertakers

Registered Office:
ST. ANNE'S PLACE
MOOR LANE, LANCASTER
LA1 1QA

Contracts Nett, due on completion

Telephone:
STD 0524
LANCASTER 65308

Our Reference 6778

4th March, 1988.

J. Senior Esq. FRICS. MCIOB. ACIArb..
Department of Surveying.
School of Environmental Studies.
Trent Polytechnic.
Burton Street.
Nottingham NG1 4BU.

Dear Mr. Senior.

I am pleased to return your questionnaire and trust it helps with your survey.

In my opinion the biggest problem that the "family" business has is in obtaining payment for work done within a reasonable time. Workers are paid weekly, suppliers monthly, but except for a few very valued clients, most of our customers take three months credit on small contracts and daywork accounts. Architects and Quantity Surveyors "sit" on applications for payments on account, and when the customers eventually receive Certificates they consider that it is easier to take more time than allowed for in the Contract than increase borrowing from their Bankers. Our legal remedies take too long to be effective - even going off site in accordance with Contract Conditions calls for an exchange of correspondence with all parties whilst work (and expenditure) continues.

We do work for a few "gems" who give clear and concise instructions, deal pleasantly with us and our workforce, and pay promptly on receipt of our account. These good people get priority and make continuing to trade worth while.

Hoping that your survey will help to influence more people to understand that how they treat Builders can bring down the cost of Construction work.

Yours sincerely,

Tony Jackson

the level of variations	
the valuation of variations	
the inability to realistically programme the works	√
inadequate site feed back and records	
out of sequence working	√
the setting of unrealistic completion dates	√
late payments in respect of interim valuations	√
the choice of conditions of contract	

Any other reasons (please state)

Dear Sir, I thought it was the only builder worrying [illegible] competitive tender, forget all your little boxes. All the builder needs is cost effective programme for all works, builder certification, guarantee payments at the correct stages. To many builders of good quality work have gone under thanks to competitive tender. I afraid generally the builders have been counting out the deterioration in standards will get worse.

4/4/95

[illegible]

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	No
✓	

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

Once in competitive tender cycle builders will [illegible] any [illegible] [illegible] trick to keep going [illegible] going finally hurt, and to put in lower and lower prices

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	No
✓	

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

Penalty clauses & damages
reputation to client & supervising officer
retention

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	✓	No

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

INCREASED RISK AND AN ASSESMENT OF THE AWARENESS OF CLIENT / PROFESSIONAL TEAM.

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	✓	No	

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

.....Depending on the amount of Insurance.....

.....

.....

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	No
✓	

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

Because some clauses inserted are to further financially penalise the contractor

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	✓ No

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

...[illegible]...

...[illegible]...

...[illegible]...

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	✓	No	

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

1) 14 day period for honouring certificates being extended to 21 d
2) Retention being held at 5% until end of maintenance peri
3) Liquidating damages
4) The client and his professional advisors are only interested in the contract as long as it is too late advantag ie. F/A taking ages to finalise. Petty faults holding up release of retention money

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

5) Fixed price

Thank you.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	✓	No

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

SHORT CONTRACT PERIOD WITH HIGH LIQUIDATED DAMAGES (HIGH RISK - THEREFORE HIGHER RETURN REQUIRED

LENGTH OF MAINTENANCE PERIOD; AMOUNT OF INSURANCE COVER REQUIRED. LENGTH OF FIXED PRICE DURATION.

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

the level of variations	
the valuation of variations	✓
the inability to realistically programme the works	✓
inadequate site feed back and records	✓
out of sequence working	✓
the setting of unrealistic completion dates	✓
late payments in respect of interim valuations	✓
the choice of conditions of contract	

Any other reasons (please state)

The client and/or Architect to an extent believe that the Contractor will price the job without bills of quantities thereby saving the Client Q.S. fees. They have probably been right up to now, but it is possible that this situation may no longer apply.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	No
✓	

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

1) High insurance.....
2) High damages.....
3) Contract periods.....

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	✓	No	

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

Unrealistic Tender time.....

Unrealistic Contract time.....

Uncertainty. A total work content.....

Because of the very large increase in plan repair jobs we have to selectively reform the price some.

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

J.P. BIRD
DIRECTOR

Thank you.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	No
✓	

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

Certain conditions of Contract such as F.A.S. can be a problem to Main Contractor when considering extensions of time or variations, plusage required to tender to cover losses

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	✓	No

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

liquidated damages

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

the level of variations	✓
the valuation of variations	✓
the inability to realistically programme the works	
inadequate site feed back and records	
out of sequence working	
the setting of unrealistic completion dates	
late payments in respect of interim valuations	✓
the choice of conditions of contract	

Any other reasons (please state)

The Unwillingness of Clients/Owners To Accept That Variations/Lack of Information/ With Payments Cost The Contractor Time & Money.....

.....

.....

4.5 Does the choice of conditions of contract in any way influence the financial level of the tender submission?

Yes	✓	No	

(exclude considerations to 'fixed' or 'fluctuating' price allowances).

4.6 If the answers to 4.5 is 'Yes' then state reasons why this is so.

.IT CAN AFFECT THE PAYMENTS PERIODS DUE TO.....

..INTEREST CHARGES.....

.....

If your company is not prepared to respond to this questionnaire please leave blank and return in envelope provided.

Thank you.

Tomlinson Brothers (Hucknall) Limited,
Allen Street, Hucknall, Nottingham, NG15 7DS.
Telephone Nottingham (0602) 632340/639358

28th April, 1988

Dear Mr. Senior,

May we offer our sincere congratulations on the range and content of your questionaire.

Many contractors are painfully aware of the casual manner 'Minor Works' are treated.

It is difficult for us to protest, the results being withdrawal of our companies from the tender lists, because we are far too pedantic.

We loose a great deal of money every year, from the cavalier editing of draft final accounts, we are expected to meekly submit to sub-tractions from our figures without protest, dispite the care with which they are produced.

We are used as unpaid estimators, tenders submitted from sparse drawings sometimes receive no reply from the client or we are told, "sorry, all the prices are too high the work will not be undertaken". The client has found another contractor who will do it cheaper.

Below are examples of what we are expected to produce an accurate price for:

1 Price please for remedial work to fire damage.
2 Price please for single storey extension, with flat roof.
3 Point gable and replace damaged bricks as necessary.
4 Replace windows as necessary.
5 Make good to decorations.
6 Make good to cracks in plaster (all walls papered no inclusion for decoration).
7 Repair fault in drainage system.
etc....

We wish you all success with your project.

Yours sincerely,

P. Tomlinson

Directors: P. Tomlinson, D. N. Tomlinson. Registered in England No. 420488 V.A.T. Reg. No. 116 9694

APPENDIX B

CASE STUDY ANALYSIS

THE CASE STUDY

The details provided within the case study relate to ten projects offered to tender by different clients to one building contractor during a period of nine months in 1988/89. The tenders are not selective and the reason for their inclusion is that they contain data relevant to this thesis which embraces a wide variety of small building works. In money terms, such works occupy a range between £34,000 and £440,000 of contract value within both the public and private sectors.

The main purpose of the case study is to illustrate the variety of methods used by the client to achieve a common objective both in terms of tender procurement and in the management of the construction process.

The differences between the styles of approach to the placing and management of small building works on a lump sum tender basis may be the result of,

a) a personal preference by the professional adviser,
b) a gearing to time and money resource availability,
c) an assessment of appropriateness.

A detailed analysis of each case to establish the reasoning for a particular choice of arrangement lies outside the scope of this study. Nonetheless, the information contained within the analysis offers conclusive evidence of indiscretions. This is particularly apparent where the use of the CPSSST and the use of standard conditions of contract are concerned. Moreover the remarks applied to each case serve to co-relate the difficulties encountered during the post-tender stage with the level of judiciousness applied pre-tender.

Case Study Analysis: All "fixed price" basis

Project	Type of Client	Tender Sum	Date of despatch required from client	Tender documents submission date	Net period of working days	Bill/ Spec/ Schedule	Value of PC and Prov	Conditions of contracts	Date of Possession of site	Date of Practical Completion	Approx amount of work to be completed per week	Liquidated and ascertained damages per week	Remarks
Alterations and extensions to existing nursing home to form medical nursing home with 22 extra bedrooms (property unoccupied).	Private	336838	24 April	20 May	19	Bills of quantities	123405	JCT 80	1 July	Not stated			Contract period negotiated due to importance of time. Work completed.
Renovation and extension to two cottages and out building (occupied property).	Private	64402	11 December	22 December	6	Nil	Nil	MW80	Not stated	Not stated			These separate schemes priced for - contract amended in Sum of 19876. Extreme difficulties experienced by contractor in respect of obtaining necessary design-information. The level of variation very high and the settlement of the final account delayed by almost two years.
Modernisation of forty four local authority houses (properties unoccupied).	Public	441031	30 April	28 May	29	Schedule with quantities	122000 (27.66%)	IFC 84	Not stated	50 weeks from date of possession	8800	30/dwellings	Work completed to satisfaction - final account agreed at approximately 20% increase over tender sum due to variations.
Conversation of three storey house into six flats	Private	138764	5 August	3 September	17	Brief Specification	25600 (18.45%)	JCT 80 without quantities	Not stated	26 weeks from date of possession	5500	200	Three roofing subcontractors refused to tender without quantities due to the complexity of the work - quantities provided subsequently by main contractor tendering. Five tenders received - lowest 139000) difference between) lowest and second lowest 180000) highest tender) 40.29% highest 195000) No evidence to date of construction work being commenced.

Case Study Analysis: All "fixed price" basis

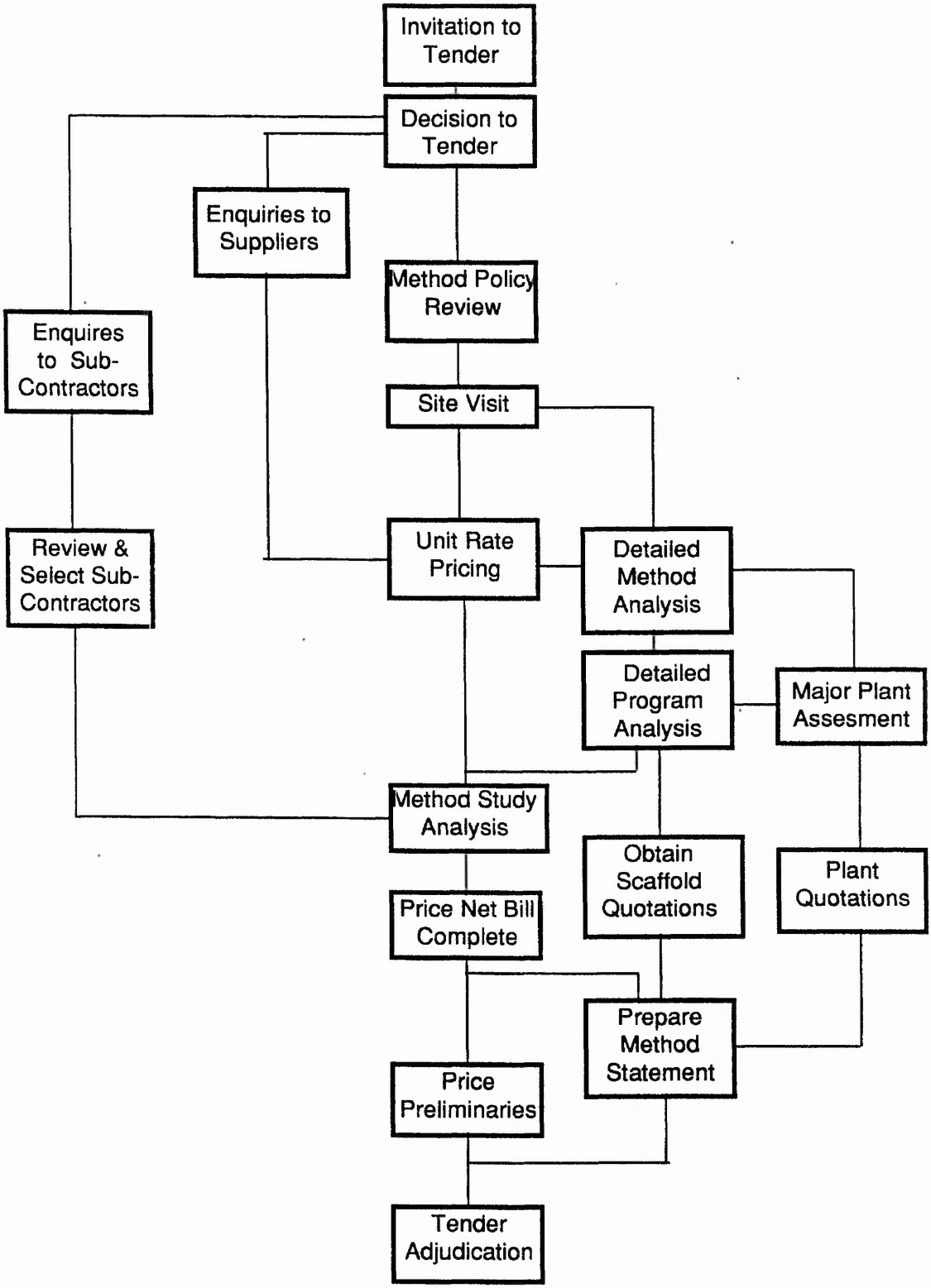
Project	Type of Client	Tender Sum	Date of despatch required from client	Tender documents submisson date	Net period of working days	Bill/ Spec/ Schedule	Value of P.C. and Prov	Conditions of Contracts	Date of Possession of site	Date of Practical Completion	Approx amount of work to be completed per week	Liquidated and ascertained damages per week	Remarks
Operation "clean up" to existing nursing home (two seperate contracts to be carried out simultaneously). (properties occupied).	Private	103098	12 June	8 July	17	Spec	14265 (13.84%)	MWBO	not stated	not stated		700	16 items of revision issued 10 July - submission date r No evidence yet of construct progressed.
Alterations and refurbishment to office block. (properties occupied).	Private	42000	15 July	4 August	14	Sched.	4700 (11.19%)	MWBO	not stated	not stated		Nil	Prices required to two inde Final details of structural 1 Aug. Final details of ge issued 30 July. Extension tender preparation - refuse date of construction work b
Alterations and extensions to existing nursing home to form medical nursing home. (properties occupied).	Private	290709	22 June	3 July	8	Bill of approx. quantities	145306 (49.98%)	JCT 80 with Approximate Quantities	within one week of acceptance	30 November	assuming start 12/7 14500	5000	Full tender information rec 1 July. Extension of time preparation - refused. Wor
Alterations and extensions to form hotel (property occupied).	Private	142462	24 September	31 October	26	Specification and Schedule	Nil	JCT 80	17 November	6 March	9500	1000	Construction work completed extended period required.
Renovation and extension to cottage (property occupied).	Private	34513	31 July	10 August	6	Specification and Schedule	7000 (20.28%)	MWBO	not stated	Contractor to specify		100	Time considered to be impor to date of construction wor
Modernisation of twenty local authority houses (properties occupied).	Public	207588	21 May	2 July	30	Specification and Schedule	16800 (8.09%)	MWBO	8 December	22 June	7400	75 per dwelling	Work completed

APPENDIX C

CONTRACTOR'S ESTIMATING PROCEDURE FLOW CHARTS

Contractor's Estimating Procedure

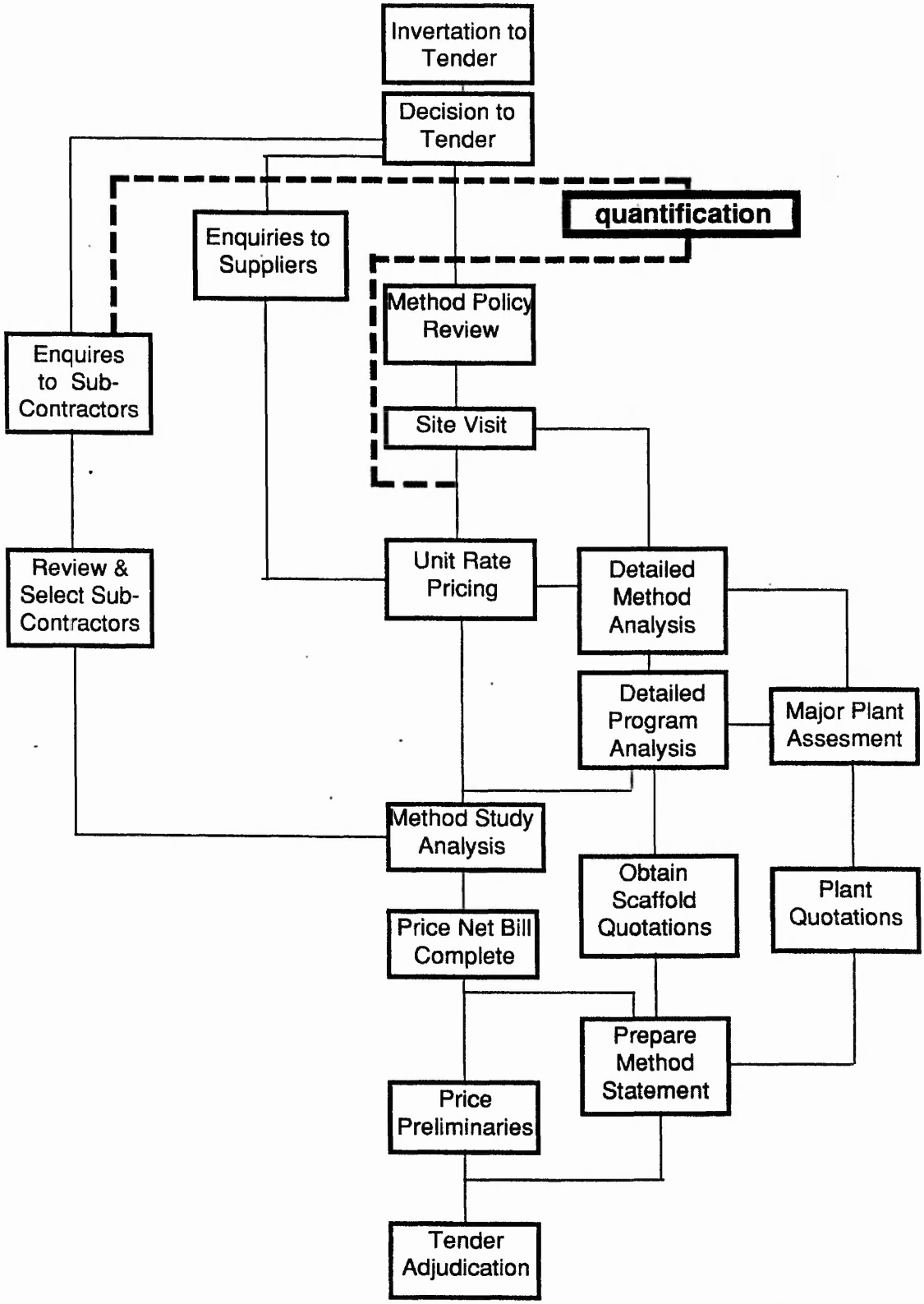
The conditions which exist when bill of quantities **are** provided by the client



The flowchart shows that where bills of quanities form apart of the tender documentation then the processes involved in the preparation of the estimate are unhindered.

Contractor's Estimating Procedure

The condition which exists when bill of quantities **are not** provided by the client.



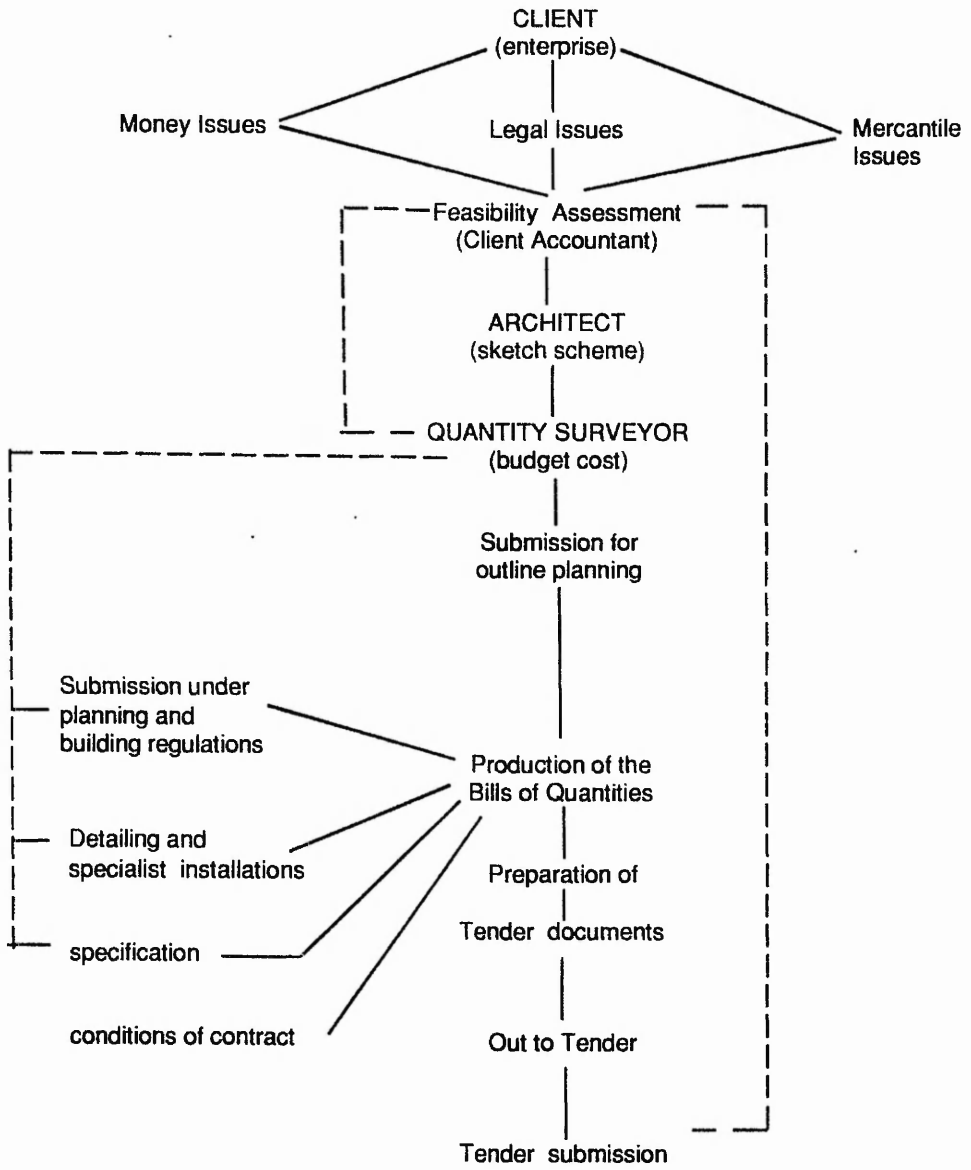
The flowchart shows the processes involved in the preparation of the estimate and how this process is impeded and the time period extended by the need for quantities.The time period will vary according to the characteristics of the project.

APPENDIX D

TENDERING PROCEDURE FLOW CHARTS

TENDERING PROCEDURE FLOW CHART

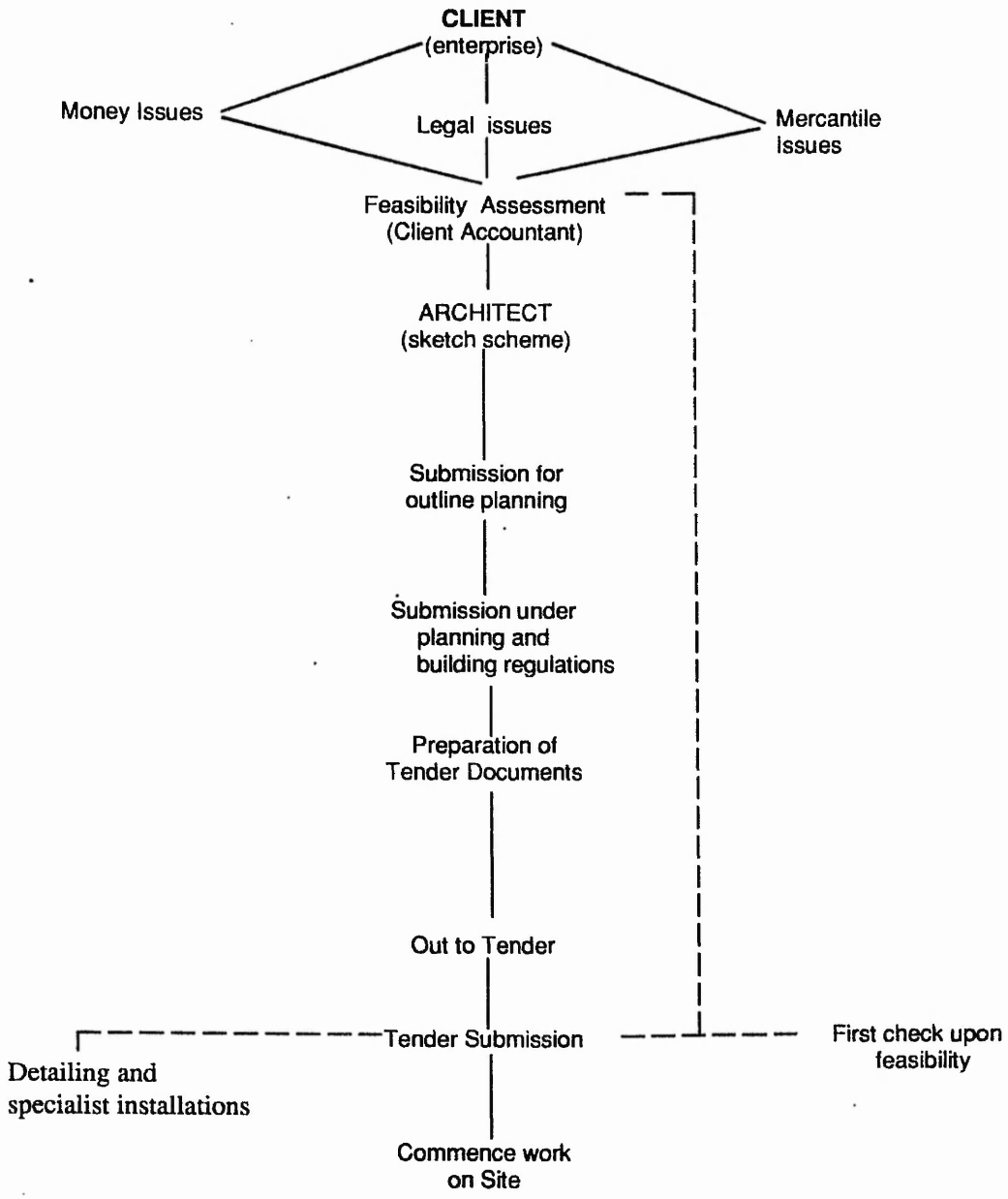
WITH QUANTITIES



The flowchart shows the relationship and the measure of financial control which exists between the initial feasiblity assessment, the budget costings provided by the quantity surveyor and the tender submissions. Also the design work is substancially complete prior to tenders being invited.

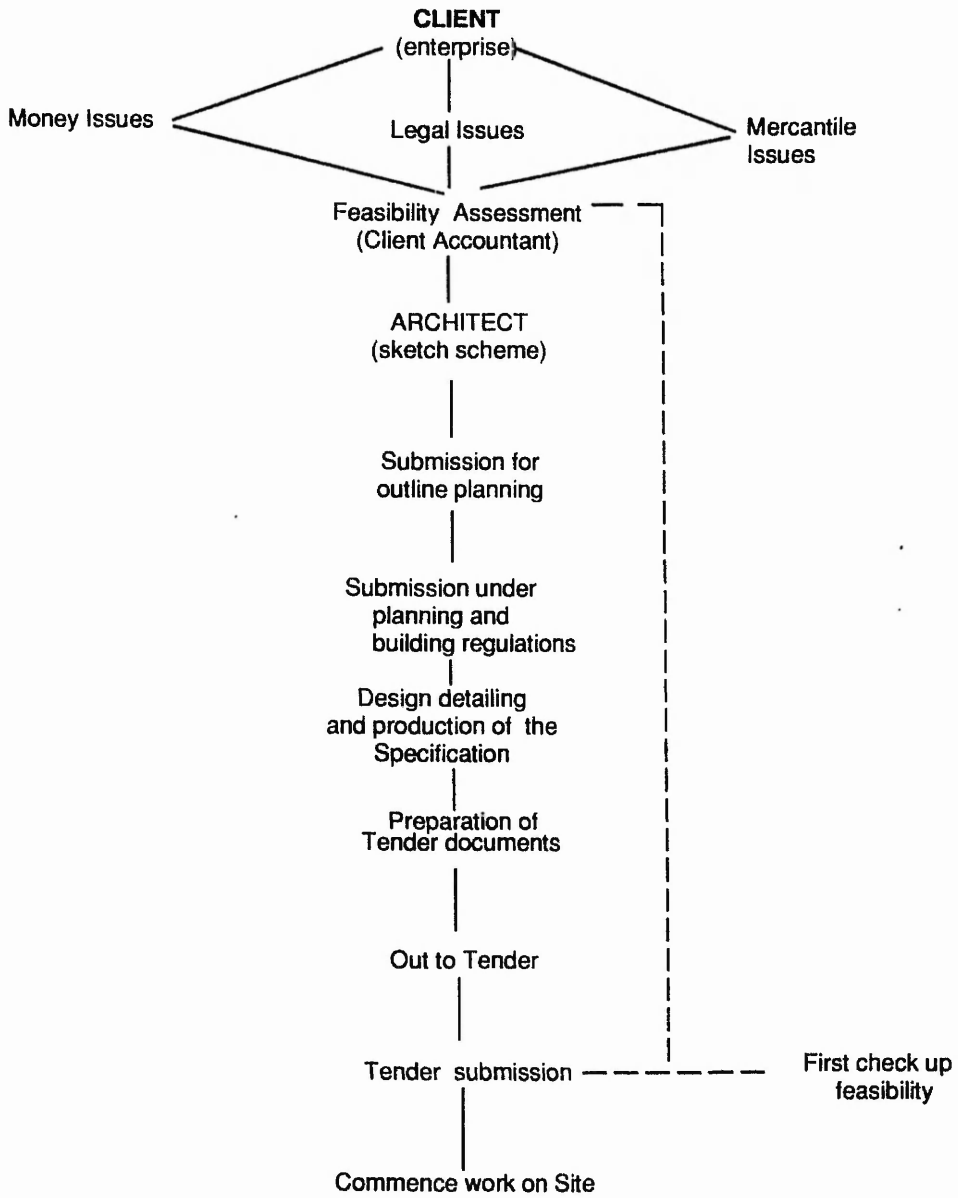
TENDERING PROCEDURE FLOW CHART

WITHOUT QUANTITIES AND WITHOUT SPECIFICATION



The flowchart shows the inferior measure of financial control offered by this arrangement when compared with the ' ***with quanities*** *' arrangement. Also the flowchart indicates the facility to allow the design detailing to extend into the construction period.*

TENDERING PROCEDURE FLOWCHART
WITHOUT QUANTITIES AND WITH SPECIFICATION



The flowchart shows that where a specification is included then additional time is required within the design period to provide for the preparation. This time requirement will vary according to the extent of the design detail completed at that time.

APPENDIX E

CPSSST ABSTRACTS

Appendix A

Preliminary enquiry for invitation to tender

Dear Sirs,

Heading

I am/We are authorised to prepare a preliminary list of tenderers for construction of the works described below.

Your attention is drawn to the fact that apart from the alternative clauses to the Standard Form of Building Contract as detailed below under item j, further amendmen to the Standard Form of Building Contract as detailed hereinafter will be incorporated in the tender documents.

Will you please indicate wnether you wish to be invited to submit a tender for these works on this basis. Your acceptance will imply your agreement to submit a wholly bona fide tender in accordance with the principles laid down in the 'Code of Procedur for Single Stage Selective Tendering 1977', and not to divulge your tender price to any person or body before the time for submission of tenders. Once the contract has been let, I/we undertake to supply all tenderers with a list of the tender prices.

Please state whether you would require any additional unbound copies of the bill(s) in addition to the two copies you would receive; a charge may be made for extra copies.

You are requested to reply by . . . Your inability to accept will in no way prejudice your opportunities for tendering for further work under my/our direction; neither will your inclusion in the preliminary list at this stage guarantee that you will subsequently receive a formal invitation to tender for these works.

Yours faithfully . . .

a Job . . .
b Employer . . .
c Architect . . .
d Quantity Surveyor . . .
e Consultants with supervisory duties . . .
f Location of site . . . (Site plan enclosed)
g General description of work . . .
h Approximate cost range £ . . . to £ . . .
i Nominated sub-contractors for major items . . .
j Form of Contract . . .
Clause 23(j)(i) of the Standard Form of Building Contract will/will not (1) apply.
Clause 23(j)(ii) will/will not (1) apply.
Clause 31 Part(s) . . . (2) will apply.
k Percentage to be included under Clause 31E if applicable . . .
l Examination and correction of priced bill(s) (Section 6 of the Code)
Alternative 1/Alternative 2 (1) will apply.
m The contract is to be under seal/under hand. (1)
n Anticipated date for possession . . .
o Period for completio n of works . . .
p Approximate date for despatch of all tender documents . . .
q Tender period . . . weeks.
r Tender to remain open for . . . weeks (3)
s Liquidated damages (if any), anticipated value £ . . . per . . .
t Details of Bond requirement if any.
u Particular conditions applying to the contract are . . .

References

(1) Delete as appropriate, before issuing.
(2) Complete by inserting Parts A, C, D & E, or Parts B, C, D & E, or Part F.
(3) This period should be as short as possible.

3.2 When selecting the short list the following are among the points which should be considered:

3.2.1 the firm's financial standing and record;

3.2.2 whether the firm has had recent experience of building at the required rate of completion over a comparable contract period;

3.2.3 the firm's general experience and reputation in the area in question;

3.2.4 whether the management structure of the firm is adequate for the type of contract envisaged; and

3.2.5 whether the firm will have adequate capacity at the relevant time.

3.3 Approved lists should be reviewed periodically to exclude firms whose performance has been unsatisfactory, and to allow the introduction of suitable additional firms.

3.4 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.

4 Tendering procedure

4.1 Preliminary Enquiry

4.1.1 In order that contractors may be able to decide whether they will tender, and to anticipate demands on their tendering staff, each firm should be sent, and should reply promptly to, a preliminary invitation to tender as illustrated in Appendix A – 'Preliminary Enquiry for Invitation to Tender'.

It is essential that all the details listed in sub-paragraphs (a) to (u) Appendix A are stated in the preliminary enquiry. The omission of relevant information may seriously impede contractors in deciding whether or not to tender.

4.1.2 It is suggested that an appropriate period of time between the preliminary enquiry and the despatch of tender documents is 4 to 6 weeks, although in some instances a period of 3 months would not be unreasonable. In cases beyond 3 months the preliminary invitation should be confirmed a month before tenders are invited.

4.1.3 Once a contractor has signified initial agreement to tender it is in the best interests of all parties that such acceptance should be honoured. If in exceptional circumstances a contractor has to withdraw his acceptance he should give notice of this intention before the issue of tender documents. If for any reason this is not possible, notice should be given not later than two working days after receipt of the tender documents.

4.1.4 After the latest date for the acceptance of the preliminary invitation the final short list of tenders will be selected, and firms which notified their willingness to tender, but are not included in the tender list should be promptly informed.

4.2 The Tender Documents

4.2.1 On the day stated in the preliminary invitation all tender documents should be despatched to the tenderers. See Appendix B for suggested 'Formal Invitation to Tender' and Appendix C for suggested 'Form of Tender'.

4.2.2 The conditions of tendering should be absolutely clear so that all tenders are submitted on the same basis. The contract period should be specified in the tender documents and tenderers should be required to make offers based on the same period of completion in order to limit competition to price only. Tenders for alternative periods of completion should only be admitted by invitation at the time of receipt by tenderer of the tender documents and in the event of alternative tenders being sanctioned they must all be submitted at the same time.

4.2.3 The NJCC strongly recommends the use of the standard forms of building contract in unamended form.

Although it is recognised that the terms of the standard forms are not mandatory and that the employer and his professional advisers may alter them at their discretion, the NJCC believes that alterations to the standard forms impede the efforts being made towards achieving greater standardisation of building procedures. The NJCC is firmly of the opinion that if alterations to the standard forms have to be made it is essential in the interests of good practice and of economic building that they be kept to an absolute minimum. They should not be undertaken without serious prior consideration and should then be drafted by a person competent to ensure that all consequential alterations to other clauses are made.

The tenderer's attention should be specifically drawn in the Preliminary Invitation to Tender (see Appendix A) to any alterations to be made to the standard form of contract and, where appropriate, reasons should be given, so that the implications of such amendments may be considered by the tenderers prior to acceptance of the invitation to tender, and so minimise the risk of subsequent queries at tender stage which may result in an extension of the tender period (see clause 4.4).

4.3 Time for Tendering

4.3.1 The time allowed for the preparation of tenders should be determined in relation to the size and complexity of the job. A minimum of four working weeks should normally be allowed; major projects, smaller works without quantities or other special circumstances may require a longer period. The tender period must be sufficient to enable the tenderer to obtain competitive quotations for the supply of materials and for the execution of works to be sub-let. The latest time for submission should be specified as an hour of a day and should be chosen to allow as short a time as possible to elapse before opening the tenders. Tenders received after time should be promptly returned unopened to the sender and should not be admitted to the competition.

4.3.2 If bills of quantities are issued to tenderers in sections,

It is important that the time for tendering should be calculated from the date of issue of the last section.

4.4 Qualified Tenders

4.4.1 For fair competitive tendering it is essential that the tenders submitted by each tenderer be based on identical tender documents and that the tenderers should not attempt to vary that basis by qualifying their tenders (see clause 4.2.2).

4.4.2 If a tenderer considers that any of the tender documents are deficient in any respect and require clarification, or contain unacceptable alterations to the standard form of building contract not previously set out in the Preliminary Invitation to Tender (see Appendix A) he should inform the issuing authority or the architect (with a copy to the quantity surveyor) as soon as possible and preferably not less than seven days before the tenders are due. If it is decided to amend the documents the issuing authority or architect should inform all tenderers and extend the time for tendering if necessary.

4.4.3 A tenderer who otherwise submits a qualified tender should be given the opportunity to withdraw the qualifications without amendment to his tender; if he fails to do so his whole tender should be rejected if it is considered that such qualifications afford the tenderer an unfair advantage over other tenderers.

4.5 Withdrawal of Tender before Acceptance

4.5.1 Under English law a tender may be withdrawn at any time before its acceptance.

* 4.5.1 *Under Scots law, if the provision for the tender to be withdrawn at any time before its acceptance is to be available, the words 'unless previously withdrawn' should be inserted in the tender after the words 'this tender remains open for consideration . . .' (Note: this clause is not, however, contained in tenders issued in Scotland by the Department of the Environment). (See Appendix C for suggested 'Form of Tender').*

5 Assessing Tenders and Notifying Results

5.1 Tenders should be opened as soon as possible after the time for receipt of tenders.

5.2 The lowest tenderer should be asked to submit his priced bill(s) of quantities as soon as possible and in any case within four working days.

* 5.2 *The priced bill(s) of quantities, contained in a separate envelope, endorsed with the tenderer's name, should be submitted at the same time as the tender.*

5.3 It is important that all but the three lowest tenderers should be informed immediately that their tenders have been unsuccessful, as this information is critical in relation to a contractor's strategic tender planning: In order to serve the employer's interests in the event of the lowest tenderer withdrawing his offer, the second and third lowest tenderers should be informed that their tenders were not the most favourable received but that they will be approached again if it is decided to give further consideration to their offers. They should subsequently be notified at once when a decision to accept a tender has been taken.

* 5.3 *The envelope containing the bill(s) of the lowest tenderer should be opened and the bill(s) examined. Alternatively the three lowest tenderers should be advised that their offers are under consideration and the envelopes containing the bill(s) of the three lowest tenderers should be opened and the bill(s) examined. Tenderers whose offers are being rejected should be informed immediately or as early as possible.*

5.4 Once the contract has been let every tenderer should be promptly supplied with a list of tender prices.

* 5.4 *Once the contract has been let every tenderer should be supplied with a list of the firms who tendered (in alphabetical order) and list of the tender prices (in ascending order of value).*

6 Examination and Adjustment of the Priced Bill(s)

6.1 The examination of the priced bill(s) of quantities supporting the tender under consideration should be made by the quantity surveyor who should treat the document as confidential: on no account should any details of the tenderer's pricing be disclosed to any person, other than the architect or other appropriate consultant, except with the expressed permission of the tenderer.

6.2 The object of examining priced bills is to detect errors in computation of the tender. If the quantity surveyor finds such errors, he should report them to the architect who, in conjunction with the employer, will determine the action to be taken under whichever is appropriate of the alternatives set out below and referred to in the Formal Invitation to Tender and the Form of Tender. (See Appendices B & C.)

6.3 Alternative 1

6.3.1 The tenderer should be given details of such errors and afforded an opportunity of confirming or withdrawing his offer. If the tenderer withdraws, the priced bill(s) of the second lowest should be examined, and if necessary this tenderer be given a similar opportunity.

6.3.2. An endorsement should be added to the priced bill(s) indicating that all rates or prices (excluding preliminary items, contingencies, prime cost and provisional sums) inserted therein by the tenderer are to be considered as reduced or increased in the same proportion as the corrected total of priced items exceeds or falls short of such items. This endorsement should be signed by both parties to the contract.

6.4 Alternative 2

6.4.1 The tenderer should be given an opportunity of confirming his offer or of amending it to correct genuine errors. Should he elect to amend his offer and the revised tender is no longer the lowest, the offer of the firm now lowest in the competition should be examined.

6.4.2 If the tenderer elects not to amend his offer, an endorsement will be required as in 6.3.2. If the tenderer does

* Applicable in Scotland only.

amend his tender figure, and possibly certain of the rates in his bill(s), he should either be allowed access to his original tender to insert the correct details and to initial them or be required to confirm all the alterations in a letter. If in the latter case his revised tender is eventually accepted, the letter should be conjoined with the acceptance and the amended tender figure and the rates in it substituted for those in the original tender.

* 6.4 Alternative 2

6.4.1 *The lowest tenderer or each of the three lowest tenderers should be given an opportunity of confirming his offer or amending it to correct genuine error.*

6.5 When a tender is found to be free of error, or the tenderer is prepared to stand by his tender in spite of an error, or a tender on amendment is still the lowest, this should be recommended to the employer for acceptance.

7 Negotiated Reduction of Tender

7.1 Should the tender under consideration exceed the employer's budget the recommended procedure is for a price to be negotiated with this tenderer. The basis of negotiations and any agreements made should be fully documented.

7.2 Only when these negotiations fail should negotiations proceed with the next lowest tenderer. If these negotiations also fail, similar action may be taken with the third lowest tenderer.

7.3 If all these negotiations fail, new tenders may be called for.

8 Post Tender Period

Although the period between the appointment of a contractor and the commencement of work on site does not strictly fall within the scope of tendering procedure, action taken within this period is so critical to the successful outcome of any project as to justify comment in this Code. The NJCC recommends that a due period be allowed for thorough project planning and for the contractor to organise his resources. Undue haste to make a physical start on site may result in extensive and costly variations which can lead to prolongation and not reduction of the total construction period. Regard also should be had, however, to the fact that unnecessary delay in achieving a start on site may involve the employer in extra costs whether or not the contract is based on variation of price conditions. These points should be borne in mind when determining the anticipated date for possession of the site. (See Appendix A.)

* Applicable in Scotland only.

this is not possible, notice should be given not later than two working days after receipt of the tender documents.

.4 After the latest date for the acceptance of the preliminary invitation the final short list of tenders will be selected, and firms which notified their willingness to tender, but are not included in the tender list, should be promptly informed.

4.2 **The Tender Documents**

.1 On the day stated in the preliminary invitation all tender documents should be available for collection or despatched to the tenderers by first class post. See Appendix B for suggested 'Formal Invitation to Tender' and Appendix C for suggested 'Form of Tender'.

.2 The conditions of tendering should be absolutely clear so that all tenders are submitted on the same basis. The contract period should be specified in the tender documents and tenderers should be required to make offers based on the same period of completion in order to limit competition to price only. Tenders for alternative periods of completion should only be admitted by invitation at the time of receipt by tenderer of the tender documents and in the event of alternative tenders being sanctioned they must all be submitted at the same time.

.3 The NJCC strongly recommends the use of the standard forms of building contract in unamended form.

Although it is recognised that the terms of the standard forms are not mandatory and that the employer and his professional advisers may alter them at their discretion, the NJCC believes that alterations to the standard forms impede the efforts being made towards achieving greater standardisation of building procedures. The NJCC is firmly of the opinion that if alterations to the standard forms have to be made it is essential in the interests of good practice and of economic building that they be kept to an absolute minimum. They should not be undertaken without serious prior consideration and should then be drafted by a person competent to ensure that all consequential alterations to other clauses are made (see NJCC Procedure Note 2).

The tenderer's attention should be specifically drawn in the Preliminary Invitation to Tender (see Appendix A) to any alterations to be made to the standard form of contract and, where appropriate, reasons should be given, so that the implications of such amendments may be considered by the tenderers prior to acceptance of the invitiation to tender, and so minimise the risk of subsequent queries at tender stage which may result in an extension of the tender period (see clause 4.4).

4.3 **Time for Tendering**

.1 The time allowed for the preparation of tenders should be determined in relation to the size and complexity of the job. Inadequate tendering time can lead to mistakes and the client may not obtain the most competitive prices. A minimum of four working weeks (20 working days) should normally be allowed. Major projects, plan and specification tenders, works having a significant non-nominated specialist content or other special circumstances may well require a longer period. The tender period must be sufficient to enable the tenderer to obtain competitive quotations for the supply of materials and for the execution of works to be sub-let. The latest time for submission should be specified as an hour of a day and should be chosen to allow as short a time as possible to elapse before opening the tenders. Tenders received after time should not be admitted to the competition.

.2 If bills of quantities are issued to tenderers in sections, it is important that the time for tendering should be calculated from the date of issue of the last section.

4.4 **Qualified Tenders**

.1 For fair competitive tendering it is essential that the tenders submitted by each tenderer be based on identical tender documents and that the tenderers should not attempt to vary that basis by qualifying their tenders (see clause 4.4.2).

.2 If a tenderer considers that any of the tender documents are deficient in any respect and require clarification, or contain unacceptable alterations to the standard form of building contract not previously set out in the Preliminary Invitation to Tender (see Appendix A) he should inform the issuing authority or the architect (with a copy to the quantity surveyor) as soon as possible and preferably not less than ten days before the tenders are due. If it is decided to amend the documents the issuing authority or architect should inform all tenderers and extend the time for tendering if necessary.

.3 A tenderer who otherwise submits a qualified tender should be given the opportunity to withdraw the qualifications without amendment to his tender; if he fails to do so his whole tender should be rejected if it is considered that such qualifications afford the tenderer an unfair advantage over other tenderers.

APPENDIX F

JCT 80 ABSTRACTS

Relevant Events

25·4 The following are the Relevant Events referred to in clause 25:

25·4 ·1 force majeure;

25·4 ·2 exceptionally adverse weather conditions;

25·4 ·3 loss or damage occasioned by any one or more of the Specified Perils;

25·4 ·4 civil commotion, local combination of workmen, strike or lock-out affecting any of the trades employed upon the Works or any of the trades engaged in the preparation, manufacture or transportation of any of the goods or materials required for the Works;

25·4 ·5 compliance with the Architect's instructions

·5 ·1 under clauses 2·3, 13·2, 13·3, 23·2, 34, 35 or 36; or

·5 ·2 in regard to the opening up for inspection of any work covered up or the testing of any of the work, materials or goods in accordance with clause 8·3 (including making good in consequence of such opening up or testing) unless the inspection or test showed that the work, materials or goods were not in accordance with this Contract;

25·4 ·6 the Contractor not having received in due time necessary instructions, drawings, details or levels from the Architect for which he specifically applied in writing provided that such application was made on a date which having regard to the Completion Date was neither unreasonably distant from nor unreasonably close to the date on which it was necessary for him to receive the same;

25·4 ·7 delay on the part of Nominated Sub-Contractors or Nominated Suppliers which the Contractor has taken all practicable steps to avoid or reduce;

25·4 ·8 ·1 the execution of work not forming part of this Contract by the Employer himself or by persons employed or otherwise engaged by the Employer as referred to in clause 29 or the failure to execute such work;

·8 ·2 the supply by the Employer of materials and goods which the Employer has agreed to provide for the Works or the failure so to supply;

25·4 ·9 the exercise after the Date of Tender by the United Kingdom Government of any statutory power which directly affects the execution of the Works by restricting the availability or use of labour which is essential to the proper carrying out of the Works or preventing the Contractor from, or delaying the Contractor in, securing such goods or materials or such fuel or energy as are essential to the proper carrying out of the Works;

25·4 ·10 ·1 the Contractor's inability for reasons beyond his control and which he could not reasonably have foreseen at the Date of Tender to secure such labour as is essential to the proper carrying out of the Works; or

·10 ·2 the Contractor's inability for reasons beyond his control and which he could not reasonably have foreseen at the Date of Tender to secure such goods or materials as are essential to the proper carrying out of the Works;

25·4 ·11 the carrying out by a local authority or statutory undertaker of work in pursuance of its statutory obligations in relation to the Works, or the failure to carry out such work;

25·4 ·12 failure of the Employer to give in due time ingress to or egress from the site of the Works or any part thereof through or over any land, buildings, way or passage adjoining or connected with the site and in the possession and control of the Employer, in accordance with the Contract Bills and/or the Contract Drawings, after receipt by the Architect of such notice, if any, as the Contractor is required to give, or failure of the Employer to give such ingress or egress as otherwise agreed between the Architect and the Contractor.

24 Damages for non-completion

Certificate of Architect

24·1 If the Contractor fails to complete the Works by the Completion Date then the Architect shall issue a certificate to that effect.

Payment or allowance of liquidated damages

24·2 ·1 Subject to the issue of a certificate under clause 24·1 the Contractor shall, as the Employer may require in writing not later than the date of the Final Certificate, pay or allow to the Employer the whole or such part as may be specified in writing by the Employer of a sum calculated at the rate stated in the Appendix as liquidated and ascertained damages for the period between the Completion Date and the date of Practical Completion and the Employer may deduct the same from any monies due or to become due to the Contractor under this Contract (including any balance stated as due to the Contractor in the Final Certificate) or the Employer may recover the same from the Contractor as a debt.

24·2 ·2 If, under clause 25·3·3, the Architect fixes a later Completion Date the Employer shall pay or repay to the Contractor any amounts recovered allowed or paid under clause 24·2·1 for the period up to such later Completion Date.

25 Extension of time [p]

Interpretation of delay

25·1 In clause 25 any reference to delay, notice or extension of time includes further delay, further notice or further extension of time.

Notice by Contractor of delay to progress

25·2 ·1 ·1 If and whenever it becomes reasonably apparent that the progress of the Works is being or is likely to be delayed the Contractor shall forthwith give written notice to the Architect of the material circumstances including the cause or causes of the delay and identify in such notice any event which in his opinion is a Relevant Event.

·1 ·2 Where the material circumstances of which written notice has been given under clause 25·2·1·1 include reference to a Nominated Sub-Contractor, the Contractor shall forthwith send a copy of such written notice to the Nominated Sub-Contractor concerned.

25·2 ·2 In respect of each and every Relevant Event identified in the notice given in accordance with clause 25·2·1·1 the Contractor shall, if practicable in such notice, or otherwise in writing as soon as possible after such notice:

·2 ·1 give particulars of the expected effects thereof; and

25·2 ·2 ·2 estimate the extent, if any, of the expected delay in the completion of the Works beyond the Completion Date resulting therefrom whether or not concurrently with delay resulting from any other Relevant Event and shall give such particulars and estimate to any Nominated Sub-Contractor to whom a copy of any written notice has been given under clause 25·2·1·2.

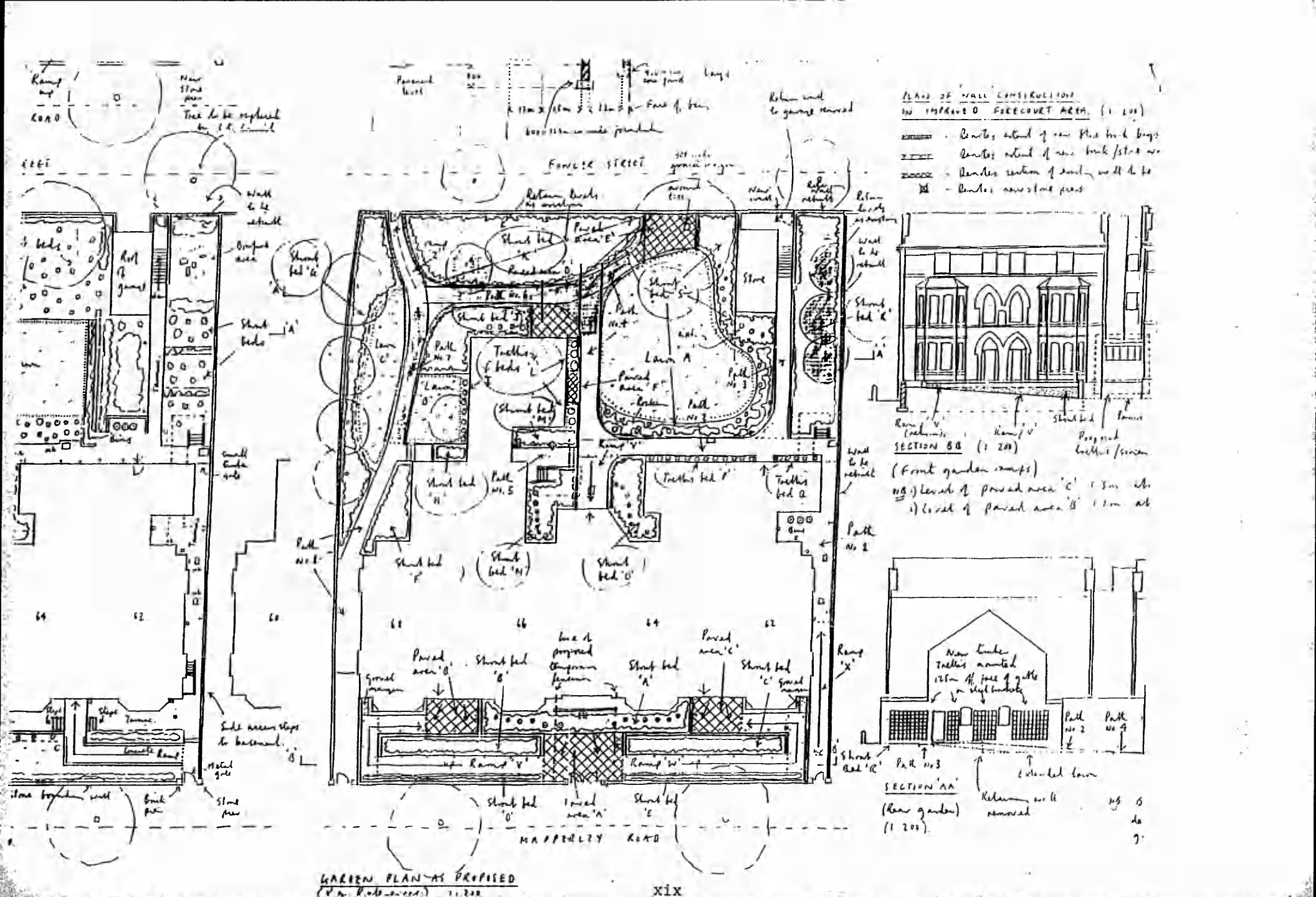
·3 The Contractor shall give such further written notices to the Architect, and send a copy to any Nominated Sub-Contractor to whom a copy of any written notice has been given under clause 25·2·1·2, as may be reasonably necessary or as the Architect may reasonably require for keeping up-to-date the particulars and estimate referred to in clauses 25·2·2·1 and 25·2·2·2 including any material change in such particulars or estimate.

Footnote

[p] See clauses 38·4·7, 39·5·7 and 40·7 (restriction of fluctuations or price adjustment during period where Contractor is in default over completion).

APPENDIX G

DRAWING SAMPLE



GARDEN PLANS AS PROPOSED

APPENDIX H

CASH FLOW SIMULATION

CALCULATION OF COST OF BORROWING (INTEREST CHARGES)

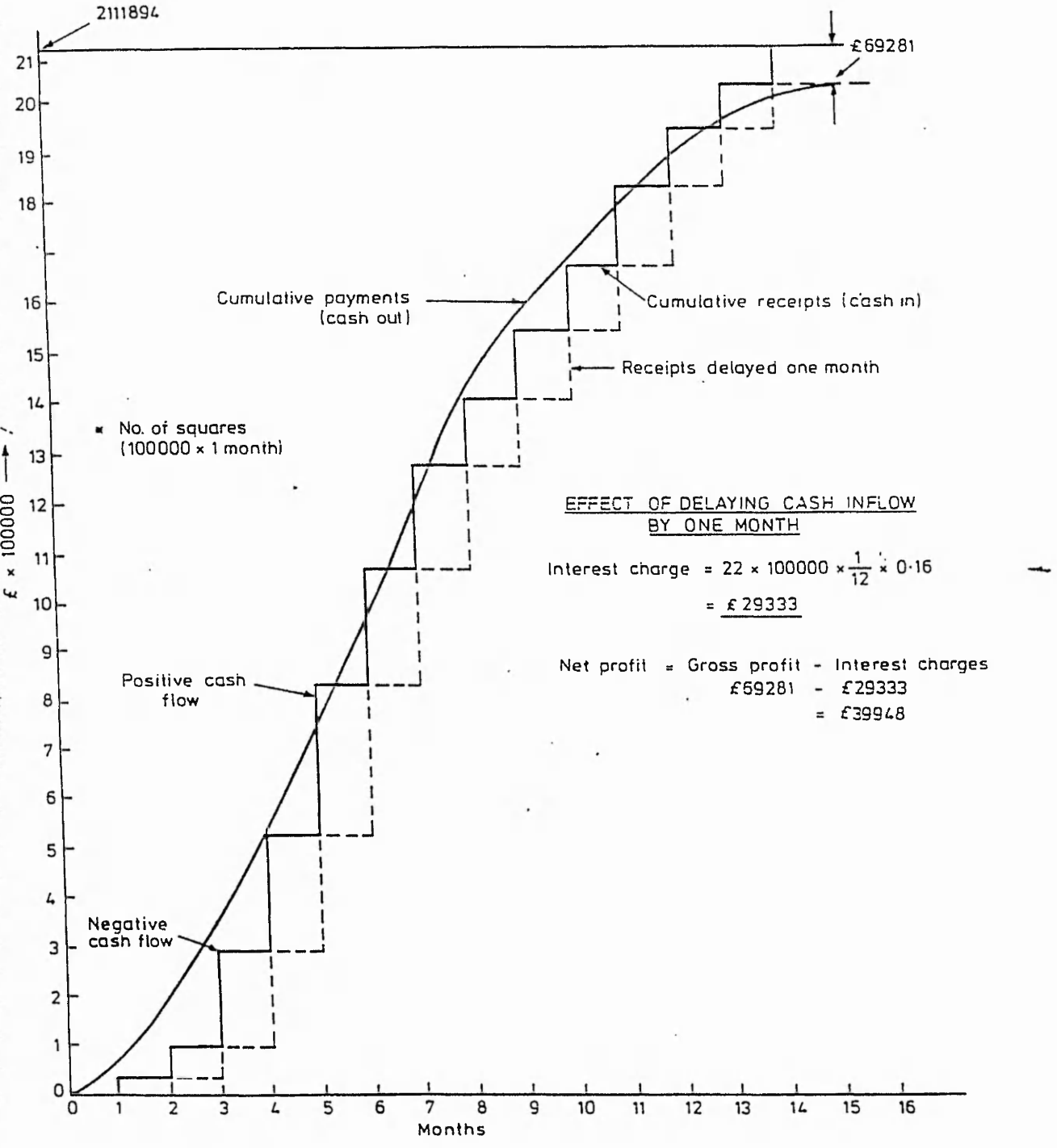
Finance area between payments and receipts curves = No. of squares × £100,000 month

Assume 16% interest rate

Interest charge = 9 × 100,000 × $\frac{1}{12}$ × 0·16 = 12000 (Negative captim)

Positive captim (at 13% interest) = 3 × 100000 × $\frac{1}{12}$ × 0·13 = £3250

Net Profit = Gross profit − Interest charges = £69280 − (12000 − 3250)
= £60530



EFFECT OF DELAYING CASH INFLOW BY ONE MONTH

Interest charge = 22 × 100000 × $\frac{1}{12}$ × 0·16

= £29333

Net profit = Gross profit − Interest charges
£69281 − £29333
= £39948

Reproduced from,
(Construction Management: planning and finance, David Cormican, published by Construction Press, London, 1985)

Schedule of Receiving Orders and Orders under Section 130, Bankruptcy Act 1914

Year	No of Receiving Orders Recorded		Relative Value	
	in all trades	in the construction trade	to the whole %	to others trades %
1970	4656	1027	22.06	28.30
1971	4367	1162	26.61	36.27
1972	3884	1075	27.68	38.27
1973	3380	722	21.36	27.16
1974	5208	1017	19.53	24.27
1975	6698	1522	22.72	29.40
1976	6700	1554	23.19	30.02
1977	4095	972	23.74	31.12
1978	3540	890	25.14	33.58
1979	3170	823	25.96	35.07
1980	3652	780	21.36	27.16
1981	4744	918	19.35	23.99
1982	5319	983	18.48	22.67
1983	6576	1175	17.87	21.76
1984	7726	900	11.65	13.18
1985	6358	788	12.39	14.15
1986	6700	800	11.94	13.56

These statistics have been abstracted from the Bankruptcy - General Annual Report For The Year, issued by the Department of Trade and Industry, published by HMSO, London, Table 4, Failures, Liabilities and Assets - Classification by Trades.

The purpose served by these statistics is solely to create an awareness of the measure of significance attached to dissolutions within the construction industry in comparison to failures within other traders.

APPENDIX J

INSOLVENCY STATISTICS

Table 8b Liquidations notified (excluding Members') – Industrial analysis

	Compulsory liquidations		*Creditors' voluntary liquidations*		*Total*	
	1975	*1976*	*1975*	*1976*	*1975*	*1976*
England and Wales						
Farming etc	12	10	36	15	48	25
Total Manufacturing	356	289	919	1,030	1,275	1,319
Food, drink, tobacco	13	26	49	28	62	54
Chemicals	4	6	49	42	53	48
Metals and Engineering	80	36	320	383	400	419
Textiles and Clothing	51	54	179	203	230	257
Timber, furniture etc	28	31	86	90	114	121
Paper, printing and publishing	71	40	136	123	207	163
Other manufacturing	109	96	100	161	209	257
Construction	545	486	411	491	956	977
Road haulage, taxis and hire cars	108	155	196	118	304	273
Wholesaling						
Industrial and builders' materials, coal, grain etc	77	28	241	209	318	237
Consumer goods	63	62	80	129	143	191
Food retailers	36	36	83	77	119	113
Non-food retailers	180	273	261	353	441	626
Financial, business and professional services	365	354	543	550	908	904
Hotels, restaurants etc	60	68	97	93	157	161
Garages	67	49	56	69	123	118
Other consumer services	134	431	50	58	184	489
All other businesses	284	270	138	236	422	506
Total	2,287	2,511	3,111	3,428	5,398	5,939
Scotland						
Farming etc	1	3	3	2	4	5
Total Manufacturing	22	18	64	41	86	59
Food, drink, tobacco	5	–	10	2	15	2
Chemicals	–	–	3	1	3	1
Metals and Engineering	6	10	28	22	34	32
Textiles and Clothing	4	1	10	5	14	6
Timber, furniture etc	3	3	7	9	10	12
Paper, printing and publishing	4	–	5	–	9	–
Other manufacturing	–	4	1	2	1	6
Construction	12	31	27	34	39	65
Road haulage, taxis and hire cars	3	3	6	5	9	8
Wholesaling						
Industrial and builders' materials, coal, grain etc	1	1	3	1	4	2
Consumer goods	–	2	5	8	5	10
Food retailers	1	1	3	3	4	4
Non-food retailers	–	1	–	14	–	15
Financial, business and professional services	3	9	12	20	15	29
Hotels, restaurants etc	3	6	7	2	10	8
Garages	2	3	6	5	8	8
Other consumer services	–	3	1	4	1	7
All other businesses	5	3	14	6	19	9
Total	53	84	151	145	204	229

Table 8b Liquidations notified (excluding Members') – Industrial analysis

	Compulsory liquidations		*Creditors' voluntary liquidations*		*Total*	
	1977	*1978*	*1977*	*1978*	*1977*	*1978*
England and Wales						
Farming etc	10	10	15	19	25	29
Total Manufacturing	211	250	968	826	1,179	1,076
Food, drink, tobacco	12	8	26	32	38	40
Chemicals	9	8	22	14	31	22
Metals and Engineering	35	23	308	287	343	310
Textiles and Clothing	35	51	204	174	239	225
Timber, furniture etc	19	18	109	110	128	128
Paper, printing and publishing	30	24	106	79	136	103
Other manufacturing	71	118	193	130	264	248
Construction	441	408	563	521	1,004	929
Road haulage, taxis and hire cars	150	150	106	79	256	229
Wholesaling						
Industrial and builders' materials, coal, grain etc	14	14	171	74	185	88
Consumer goods	168	87	123	145	291	232
Food retailers	18	28	78	73	96	101
Non-food retailers	380	387	312	294	692	681
Financial, business and professional services	381	312	342	453	723	765
Hotels, restaurants etc	69	79	75	82	144	161
Garages	23	49	85	70	108	119
Other consumer services	394	279	112	78	506	357
All other businesses	166	212	456	107	622	319
Total	2,425	2,265	3,406	2,821	5,831	5,086
Scotland						
Farming etc	–	–	–	2	–	2
Total Manufacturing	14	20	83	60	97	80
Food, drink, tobacco	1	2	9	5	10	7
Chemicals	–	–	3	4	3	4
Metals and Engineering	8	7	29	11	37	18
Textiles and Clothing	2	5	22	15	24	20
Timber, furniture etc	1	2	3	6	4	8
Paper, printing and publishing	–	3	7	8	7	11
Other manufacturing	2	1	10	11	12	12
Construction	27	26	48	34	75	60
Road haulage, taxis and hire cars	1	7	6	5	7	12
Wholesaling						
Industrial and builders' materials, coal, grain etc	–	1	7	8	7	9
Consumer goods	3	–	3	1	6	1
Food retailers	2	3	3	15	5	18
Non-food retailers	2	7	14	14	16	21
Financial, business and professional services	6	8	19	23	25	31
Hotels, restaurants etc	6	–	5	6	11	6
Garages	–	1	4	9	4	10
Other consumer services	–	2	1	10	1	12
All other businesses	6	3	11	9	17	12
Total	67	78	204	196	271	274

Table 8a Liquidations notified (excluding Members') — Industrial analysis

	Compulsory liquidations		*Creditors' voluntary liquidations*		*Total*	
	1978	*1979*	*1978*	*1979*	*1978*	*1979*
England and Wales						
Farming etc	10	11	19	19	29	30
Total Manufacturing	250	298	826	741	1,076	1,039
Food, drink, tobacco	8	5	32	29	40	34
Chemicals	8	17	14	21	22	38
Metals and Engineering	23	101	287	213	310	314
Textiles and Clothing	51	68	174	163	225	231
Timber, furniture etc	18	20	110	96	128	116
Paper, printing and publishing	24	25	79	65	103	90
Other manufacturing	118	62	130	154	248	216
Construction	408	341	521	448	929	789
Road haulage, taxis and hire cars	150	103	79	90	229	193
Wholesaling						
Industrial and builders' materials, coal, grain etc	14	28	74	59	88	87
Consumer goods	87	101	145	138	232	239
Food retailers	28	36	73	63	101	99
Non-food retailers	387	159	294	243	681	402
Financial, business and professional services	312	252	453	353	765	605
Hotels, restaurants etc	79	73	82	63	161	136
Garages	49	73	70	80	119	153
Other consumer services	279	153	78	103	357	256
All other businesses	212	436	107	73	319	509
Total	2,265	2,064	2,821	2,473	5,086	4,537
Scotland						
Farming etc	–	–	2	1	2	1
Total Manufacturing	20	19	60	45	80	64
Food, drink, tobacco	2	2	5	2	7	4
Chemicals	–	–	4	–	4	–
Metals and Engineering	7	10	11	14	18	24
Textiles and Clothing	5	2	15	16	20	18
Timber, furniture etc	2	2	6	6	8	8
Paper, printing and publishing	3	1	8	2	11	3
Other manufacturing	1	2	11	5	12	7
Construction	26	11	34	39	60	50
Road haulage, taxis and hire cars	7	–	5	5	12	5
Wholesaling						
Industrial and builders' materials, coal, grain etc	1	1	8	5	9	6
Consumer goods	–	1	1	–	1	1
Food retailers	3	–	15	9	18	9
Non-food retailers	7	4	14	27	21	31
Financial, business and professional services	8	11	23	20	31	31
Hotels, restaurants etc	–	6	6	6	6	12
Garages	1	1	9	4	10	5
Other consumer services	2	–	10	5	12	5
All other businesses	3	2	9	16	12	18
Total	78	56	196	182	274	238

Table 7a Liquidations notified (excluding Members') — Industrial analysis

	Compulsory liquidations		*Creditors' voluntary liquidations*		*Total*	
	1979	*1980*	*1979*	*1980*	*1979*	*1980*
England and Wales						
Farming etc	11	7	19	27	30	34
Total Manufacturing	298	594	741	1,501	1,039	2,095
Food, drink, tobacco	5	10	29	30	34	40
Chemicals	17	16	21	33	38	49
Metals and Engineering	101	248	213	472	314	720
Textiles and Clothing	68	100	163	434	231	534
Timber, furniture etc	20	32	96	179	116	211
Paper, printing and publishing	25	50	65	112	90	162
Other manufacturing	62	138	154	241	216	379
Construction	341	446	448	503	789	949
Road haulage, taxis and hire cars	103	173	90	207	193	380
Wholesaling						
Industrial and builders' materials, coal, grain etc	28	46	59	133	87	179
Consumer goods	101	100	138	238	239	338
Food retailers	36	49	63	88	99	137
Non-food retailers	159	221	243	317	402	538
Financial, business and professional services	252	320	353	459	605	779
Hotels, restaurants etc	73	110	63	82	136	192
Garages	73	97	80	112	153	209
Other consumer services	153	224	103	123	256	347
All other businesses	436	548	73	165	509	713
Total	2,064	2,935	2,473	3,955	4,537	6,890
Scotland						
Farming etc	–	2	1	1	1	3
Total Manufacturing	19	36	45	59	64	95
Food, drink, tobacco	2	–	2	–	4	–
Chemicals	–	–	–	2	–	2
Metals and Engineering	10	15	14	20	24	35
Textiles and Clothing	2	6	16	18	18	24
Timber, furniture etc	2	7	6	7	8	14
Paper, printing and publishing	1	3	2	2	3	5
Other manufacturing	2	5	5	10	7	15
Construction	11	31	39	50	50	81
Road haulage, taxis and hire cars	–	10	5	5	5	15
Wholesaling						
Industrial and builders' materials, coal, grain etc	1	5	5	4	6	9
Consumer goods	1	2	–	2	1	4
Food retailers	–	6	9	10	9	16
Non-food retailers	4	4	27	34	31	38
Financial, business and professional services	11	9	20	16	31	25
Hotels, restaurants etc	6	6	6	10	12	16
Garages	1	4	4	20	5	24
Other consumer services	–	3	5	7	5	10
All other businesses	2	17	16	26	18	43
Total	56	135	182	244	238	379

Table 7a Liquidations notified (excluding Members') — Industrial analysis

	Compulsory liquidations		*Creditors' voluntary liquidations*		*Total*	
	1980	*1981*	*1980*	*1981*	*1980*	*1981*
England and Wales						
Farming etc	7	17	27	39	34	56
Total Manufacturing	594	550	1,501	2,126	2,095	2 676
Food, drink, tobacco	10	20	30	47	40	67
Chemicals	16	8	33	60	49	68
Metals and Engineering	248	200	472	683	720	883
Textiles and Clothing	100	81	434	598	534	679
Timber, furniture etc	32	23	179	180	211	203
Paper, printing and publishing	50	54	112	213	162	267
Other manufacturing	138	164	241	345	379	509
Construction	446	396	503	594	949	990
Road haulage, taxis and hire cars	173	178	207	288	380	458
Wholesaling						
Industrial and builders' materials, coal, grain etc	46	25	133	165	179	190
Consumer goods	100	88	238	320	338	408
Food retailers	49	62	88	99	137	161
Non-food retailers	221	199	317	568	538	767
Financial, business and professional services	320	269	459	794	779	1,063
Hotels, restaurants etc	110	66	82	129	192	195
Garages	97	90	112	249	209	339
Other consumer services	224	172	123	203	347	375
All other businesses	548	667	165	251	713	918
Total	2,935	2,771	3,955	5,825	6,890	8,596
Scotland						
Farming etc	2	4	1	4	3	8
Total Manufacturing	36	46	59	84	95	130
Food, drink, tobacco	–	3	–	6	–	9
Chemicals	–	2	2	3	2	5
Metals and Engineering	15	26	20	35	35	61
Textiles and Clothing	6	6	18	10	24	16
Timber, furniture etc	7	2	7	12	14	14
Paper, printing and publishing	3	5	2	8	5	13
Other manufacturing	5	2	10	10	15	12
Construction	31	35	50	44	81	79
Road haulage, taxis and hire cars	10	6	5	14	15	20
Wholesaling						
Industrial and builders' materials, coal, grain etc	5	5	4	7	9	12
Consumer goods	2	1	2	11	4	12
Food retailers	6	5	10	8	16	13
Non-food retailers	4	14	34	23	38	37
Financial, business and professional services	9	13	16	26	25	39
Hotels, restaurants etc	6	11	10	7	16	18
Garages	4	3	20	16	24	19
Other consumer services	3	–	7	15	10	15
All other businesses	17	15	26	21	43	36
Total	135	158	244	280	379	438

Table 6a Liquidations notified (excluding Members') – Industrial analysis

	Compulsory liquidations		*Creditors' voluntary liquidations*		*Total*	
	1981	*1982*	*1981*	*1982*	*1981*	*1982*
England and Wales						
Farming etc	17	22	39	33	56	55
Total Manufacturing	550	891	2,126	3,167	2,676	4,058
Food, drink, tobacco	20	18	47	57	67	75
Chemicals	8	15	60	49	68	64
Metals and Engineering	200	355	683	976	883	1,331
Textiles and Clothing	81	157	598	953	679	1,110
Timber, furniture etc	23	44	180	306	203	350
Paper, printing and publishing	54	99	213	287	267	386
Other manufacturing	164	203	345	539	509	742
Construction	396	578	594	844	990	1,422
Road haulage, taxis and hire cars	178	234	288	420	458	654
Wholesaling						
Industrial and builders' materials, coal, grain etc	25	45	165	253	190	298
Consumer goods	88	160	320	470	408	630
Food retailers	62	40	99	154	161	194
Non-food retailers	199	307	568	884	767	1,191
Financial, business and professional services	269	356	794	859	1,063	1,215
Hotels, restaurants etc	66	104	129	226	195	330
Garages	90	141	249	320	339	461
Other consumer services	172	248	203	321	375	569
All other businesses	667	619	251	371	918	990
Total	2,771	3,745	5,825	8,322	8,596	12,067
Scotland						
Farming etc	4	2	4	6	8	8
Total Manufacturing	46	62	84	97	130	159
Food, drink, tobacco	3	1	6	6	9	7
Chemicals	2	3	3	3	5	6
Metals and Engineering	26	31	35	49	61	80
Textiles and Clothing	6	13	10	14	16	27
Timber, furniture etc	2	7	12	9	14	16
Paper, printing and publishing	5	4	8	6	13	10
Other manufacturing	2	3	10	10	12	13
Construction	35	23	44	45	79	68
Road haulage, taxis and hire cars	6	9	14	17	20	26
Wholesaling						
Industrial and builders' materials, coal, grain etc	5	1	7	1	12	2
Consumer goods	1	21	11	22	12	43
Food retailers	5	1	8	4	13	5
Non-food retailers	14	7	23	39	37	46
Financial, business and professional services	13	13	26	19	39	32
Hotels, restaurants etc	11	3	7	12	18	15
Garages	3	8	16	6	19	14
Other consumer services	–	7	15	17	15	24
All other businesses	15	20	21	41	36	61
Total	158	177	280	326	438	503

Table 6a Liquidations notified during 1983 (excluding Members') – Industrial analysis*

	England and Wales			Scotland		
	Compulsory liquidations	*Creditors' voluntary liquidations*	*Total*	*Compulsory liquidations*	*Creditors' voluntary liquidations*	*To*
Agriculture & horticulture	19	55	74	2	3	
Total manufacturing:	1,020	3,151	4,171	63	64	12
Food, Drink and Tobacco	26	58	84	5	1	
Chemicals	41	76	117	1	1	
Metals and Engineering	408	1,111	1,519	33	37	7
Textiles and Clothing	179	987	1,166	10	11	2
Timber and Furniture	55	239	294	6	3	
Paper, printing and publishing	142	308	450	3	7	1
Other manufacturing	169	372	541	5	4	
Construction	891	885	1,776	31	37	6
Transport and Communication	366	489	855	13	16	2
Wholesaling:						
Food, Drink and Tobacco	78	169	247	3	4	
Motor Vehicles	9	88	97	–	1	
Other	375	604	979	13	12	2
Retailing and Food	44	142	186	10	10	2
Motor Vehicles and Garages	179	280	459	12	12	2
Other retailing	536	1,033	1,569	19	34	5
Financial Institutions	43	129	172	1	1	
Business Services	665	812	1,477	21	12	3
Hotels and Catering	176	225	401	22	10	3
All other industries/businesses	406	537	943	53	42	9
Totals	4,807	8,599	13,406	263	258	52

* 1983 figures are based on the Standard Industrial Classification (SIC) revised 1980, (published by HMSO 1979), instead of the 1968 SIC used earlier years. It is not therefore possible to show comparative figures for 1982.

Table 6a Liquidations notified during 1983 and 1984 (excluding Members') — Industrial analysis*

	Compulsory liquidations		*Creditors' voluntary liquidations*		*Totals*	
	1983	*1984*	*1983*	*1984*	*1983*	*1984*
England and Wales						
Agricultural & horticulture	19	21	55	56	74	77
Total manufacturing:	1,020	1,183	3,151	3,274	4,171	4,457
Food, drink and tobacco	26	32	58	100	84	132
Chemicals	41	31	76	84	117	115
Metals and engineering	408	376	1,111	962	1,519	1,338
Textiles and clothing	179	222	987	1,108	1,166	1,330
Timber and furniture	55	101	239	281	294	382
Paper, printing and publishing	142	153	308	326	450	479
Other manufacturing	169	268	372	413	541	681
Construction	891	867	885	964	1,776	1,831
Transport and communication	366	336	489	394	855	730
Wholesaling:						
Food, drink and tobacco	78	97	169	152	247	249
Motor vehicles	9	26	88	103	97	129
Other	375	266	604	572	979	838
Retailing and food	44	77	142	129	186	206
Motor vehicles and garages	179	155	280	197	459	352
Other retailing	536	598	1,033	940	1,569	1,538
Financial institutions	43	76	129	110	172	186
Business services	665	359	812	571	1,477	930
Hotels and catering	176	152	225	230	401	382
All other industries/businesses	406	1,047	537	769	943	1,816
Totals	4,807	5,260	8,599	8,461	13,406	13,721
Scotland						
Agricultural & horticultural	2	4	3	3	5	7
Total manufacturing:	63	72	64	70	127	142
Food, drink and tobacco	5	2	1	2	6	4
Chemicals	1	1	1	–	2	1
Metals and engineering	33	42	37	40	70	82
Textiles and clothing	10	7	11	11	21	18
Timber and furniture	6	6	3	5	9	11
Paper, printing and publishing	3	8	7	5	10	13
Other manufacturing	5	6	4	7	9	13
Construction	31	44	37	38	68	82
Transport and communication	13	12	16	12	29	24
Wholesaling:						
Food, drink and tobacco	3	2	4	2	7	4
Motor vehicles	–	1	1	2	1	3
Other	13	13	12	16	25	29
Retailing and food	10	4	10	8	20	12
Motor vehicles and garages	12	14	12	12	24	26
Other retailing	19	23	34	26	53	49
Financial institutions	1	6	1	4	2	10
Business services	21	23	12	17	33	40
Hotels and catering	22	4	10	11	32	15
All other industries/businesses	53	50	42	30	95	80
Totals	263	272	258	251	521	523

* Figures are based on the Standard Industrial Classification (SIC) revised 1980 (published by HMSO 1979), instead of the 1968 SIC used for earlier years.

Table 6a Liquidations notified during 1984 and 1985 (excluding Members') — Industrial analysis*

	Compulsory liquidations		*Creditors' voluntary liquidations*		*Totals*	
	1984	*1985*	*1984*	*1985*	*1984*	*1985*
England and Wales						
Agricultural & horticultural	21	32	56	70	77	102
Total manufacturing:	1,183	1,334	3,274	3,503	4,457	4,837
Food, drink and tobacco	32	29	100	100	132	129
Chemicals	31	28	84	110	115	138
Metals and engineering	376	460	962	916	1,338	1,376
Textiles and clothing	222	269	1,108	1,139	1,330	1,408
Timber and furniture	101	113	281	382	382	495
Paper, printing and publishing	153	174	326	320	479	494
Other manufacturing	268	261	413	536	681	797
Construction	867	838	964	1,137	1,831	1,975
Transport and communication	336	342	394	415	730	757
Wholesaling:						
Food, drink and tobacco	97	110	152	193	249	303
Motor vehicles	26	32	103	99	129	131
Other	266	283	572	530	838	813
Retailing and food	77	101	129	137	206	238
Motor vehicles and garages	155	157	197	212	352	369
Other retailing	598	552	940	1,000	1,538	1,552
Financial institutions	76	85	110	137	186	222
Business services	359	336	571	533	930	869
Hotels and catering	152	169	230	209	382	378
All other industries/businesses	1,047	1,390	769	962	1,816	2,352
Totals	5,260	5,761	8,461	9,137	13,721	14,898
Scotland						
Agricultural & horticultural	4	2	3	2	7	4
Total manufacturing:	72	75	70	69	142	144
Food, drink and tobacco	2	3	2	4	4	7
Chemicals	1	4	–	–	1	4
Metals and engineering	42	36	40	41	82	77
Textiles and clothing	7	14	11	9	18	23
Timber and furniture	6	8	5	10	11	18
Paper, printing and publishing	8	6	5	1	13	7
Other manufacturing	6	4	7	4	13	8
Construction	44	53	38	41	82	94
Transport and communication	12	19	12	8	24	27
Wholesaling:						
Food, drink and tobacco	2	1	2	–	4	1
Motor vehicles	1	1	2	–	3	1
Other	13	2	16	2	29	4
Retailing and food	4	5	8	6	12	11
Motor vehicles and garages	14	12	12	6	26	18
Other retailing	23	31	26	39	49	70
Financial institutions	6	5	4	4	10	9
Business services	23	29	17	22	40	51
Hotels and catering	4	8	11	5	15	13
All other industries/business	50	63	30	27	80	90
Totals	272	306	251	231	523	537

*Figures are based on the Standard Classification (SIC) revised 1980 (published by HMSO 1979), instead of the 1968 SIC used for earlier years.

Table 6a Liquidations notified during 1985, 1986 and 1986–87 (excluding Members') — Industrial analysis*

	Compulsory liquidations			*Creditors voluntary liquidations*			*Totals*		
	1985	*1986*	*1986–87*	*1985*	*1986*	*1986–87*	*1985*	*1986*	*1986–87*
England and Wales									
Agricultural & horticultural	32	39	37	70	89	100	102	128	137
Total manufacturing:	1,334	1,218	1,160	3,503	3,558	3,654	4,837	4,776	4,814
Food, drink and tobacco	29	34	32	100	99	112	129	133	144
Chemicals	28	26	17	110	86	90	138	112	107
Metals and engineering	460	447	420	916	924	997	1,376	1,371	1,417
Textiles and clothing	269	196	176	1,139	1,306	1,348	1,408	1,502	1,524
Timber and furniture	113	119	117	382	308	328	495	427	445
Paper, printing and publishing	174	162	153	320	335	333	494	497	486
Other manufacturing	261	234	245	536	500	446	797	734	691
Construction	838	809	742	1,137	1,105	1,075	1,975	1,914	1,817
Transport and communication	342	300	286	415	465	468	757	765	754
Wholesaling:									
Food, drink and tobacco	110	88	82	193	173	182	303	261	264
Motor vehicles	32	36	39	99	129	113	131	165	152
Other	283	213	210	530	411	418	813	624	628
Retailing and food	101	99	78	137	163	150	238	262	228
Motor vehicles and garages	157	145	110	212	180	157	369	325	267
Other retailing	552	490	510	1,000	893	852	1,552	1,383	1,362
Financial institutions	85	103	101	137	148	142	222	251	243
Business services	336	275	277	533	660	627	869	935	904
Hotels and catering	169	147	140	209	227	222	378	374	362
All other industries/businesses	1,390	1,242	1,110	962	1,000	1,038	2,352	2,242	2,148
Totals	5,761	5,204	4,882	9,137	9,201	9,198	14,898	14,405	14,080
Scotland									
Agricultural & horticultural	2	2	1	2	4	5	4	6	6
Total manufacturing:	75	63	58	69	45	49	144	108	107
Food, drink and tobacco	3	3	3	4	3	3	7	6	6
Chemicals	4	2	2	–	–	–	4	2	2
Metals and engineering	36	39	36	41	25	28	77	64	64
Textiles and clothing	14	3	4	9	6	6	23	9	10
Timber and furniture	8	5	4	10	8	8	18	13	12
Paper, printing and publishing	6	7	6	1	3	4	7	10	10
Other manufacturing	4	4	3	4	–	–	8	4	3
Construction	53	64	58	41	40	36	94	104	94
Transport and communication	19	13	9	8	6	5	27	19	14
Wholesaling:									
Food, drink and tobacco	1	4	2	–	6	5	1	10	7
Motor vehicles	1	5	1	–	3	–	1	8	1
Other	2	2	5	2	1	3	4	3	8
Retailing and food	5	10	10	6	3	2	11	13	12
Motor vehicles and garages	12	14	11	6	8	12	18	22	23
Other retailing	31	37	35	39	24	26	70	61	61
Financial institutions	5	4	5	4	3	3	9	7	8
Business services	29	16	17	22	26	25	51	42	42
Hotels and catering	8	9	9	5	7	7	13	16	16
All other industries/businesses	63	56	60	27	36	36	90	92	96
Totals	306	299	281	231	212	214	537	511	495

*Figures are based on the Standard Classification (SIC) revised 1980 (published by HMSO 1979), instead of the 1968 SIC used for earlier years.

APPENDIX K

APPENDIX TO THE CONDITIONS OF CONTRACT

Preliminar
£

Conditions: Part 3: Fluctuations

Clause

A 37 Choice of fluctuation provisions - entry in Appendix.

Note: No fluctuations will be allowed Clauses 38, 39 and 40 will not apply.

(end of schedule of clause headings)

Appendix to the Conditions of Contract

		Clause	
B	Statutory tax deduction scheme - Finance (No. 2) Act 1975	Fourth recital and 31	Employer at Date of Tender is a "contractor" for the purposes of the Act and the Regulations.
C	Settlement of disputes - Arbitration	5.1	Articles 5.1.4 and 5.1.5 will apply (See Article 5.1.6).
D	Date for Completion	1.3	26th August 1983
E	Defects Liability Period	17.2	Six Months

Note: The Mechanical Engineering Sub-contract will be subject to a 12 months Defects Liability Period: for the final six months the Contractor shall indemnify the Employer against the cost of rectifying any defects in such installation and of repairing any consequential damage. The Nominated Sub-contractor for the installation will be similarly required to indemnify the Employer and the Contractor.

F	Insurance cover for any one occurrence or series of occurrences arising out of one event.	21.1.1	£1,000,000.00
G	Percentage to cover professional fees	22A	Not applicable
H	Date of Possession	23.1	24th January 1983

Carried to collection £

				Preliminar £
A	Liquidated and ascertained damages	24.2	at the rate of £ 300 per week	
B	Period of delay:	28.1.3		
	(i) by reason of loss or damage caused by any one of the Clause 22 Perils	28.1.3.2	Three months	
	(ii) for any other reason	28.1.3.1, 28.1.3.3 to .3.7	One month	
C	Period of Interim Certificates	30.1.3	One month	
D	Retention Percentage	30.4.1.1	5%	
E	Period of Final Measurement and Valuation	30.6.1.2	Six months	
F	Work reserved for Nominated Sub-Contractors for which the Contractor desires to tender	35.2	The Contractor will not be permitted to tender for any work reserved for Nominated Sub-Contractors	
G	Fluctuations	37	Not applicable	

(end of Appendix to the Conditions of Contract)

(abstracted from the Bills of Quantities prepared by Gleeds, Chartered Quantity Surveyors, Nottingham for the Trustee Savings Bank, Leicester branch).

Carried to collection £

PUBLICATIONS
AND
OCCASIONAL PAPERS

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Publications

Risk and uncertainty in lump sum contacts, in Technical Information Service, published by the Chartered Institute of Building.

Minor Building Works - The Tendering Syllogism, in The Chartered Builder, published by the Chartered Institute of Building, 21, 1987.

Tenders for Small Works - An Empirical Study, a chapter for a forthcoming book to be published by E & F N Spon, Chapman and Hall.

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TECHNICAL INFORMATION SERVICE

Risk and uncertainty in lump sum contracts

by G. Senior, FRICS, MCIOB, ACIArb

INTRODUCTION

This paper is based on a more comprehensive report[1] submitted to the Chartered Institute of Building in satisfying the requirements of a Queen Elizabeth II Silver Jubilee Scholarship. It focusses upon those areas where deficiencies exist within the procurement process and suggests courses of action aimed at improving the system.

DEFINITIONS

Throughout this paper the term 'professional adviser' has been used in preference to the terms 'architect', 'supervising officer' or 'design team'. The reasons for this are that:

(a) the 'without quantities' arrangement normally relates to small building works with the responsibility for design and supervision being vested with a sole practitioner;
(b) 'supervising officer' normally relates to public sector works whereas this paper is concerned mainly with the private sector;
(c) the practitioner may be an engineer, a surveyor or a member of some other body associated with the building industry.

BACKGROUND

Over many years the building industry has been aware of the difficulties related to the placing and management of contracts. In an attempt to overcome these difficulties modifications to the established procedures have been introduced from time to time since the Banwell Report[2] identified where limitations in procurement existed. These include a new code of conventions issued by the Co-ordinating Committee for Project Information (CPPI), substantial changes to existing standard forms of contract, the introduction of new standard forms by both the Joint Contracts Tribunal (JCT) and the Association of Consultant Architects (ACA); and revolutionary approach offered by the British Property Federation (BPF) in 1983, which was directed towards the promotion of a more efficient and co-operative method of organising the whole building process.

The objective of the BPF is similar in many respects to that set by Banwell, in promoting 'efficiency and economy', by increasing the measure of integration between design and construction. To this end Banwell saw the need to improve the quality of information passing between design and construction and the need for adequate time allowances to provide for the processing of that information.

The initiatives of the CCPI have also been directed at improving the quality of information and documentation at the

Series Editor: Peter Harlow

pre-tender stage. In this respect the CCPI acknowledge the need for the professional adviser to think and act as a whole and envisage that the benefits accruing from this integrated approach would naturally extend into the construction stage, thereby providing benefits to the contractor.

Both Banwell and the CCPI concentrated their efforts on improving the practices and procedures concerned with the pre-tender processes. Neither considered the conditions of contract, although Banwell did recommend that consideration be given to the use of a single standard form of contract for all building works. The inference was that the main problems concerned with the placing and management of building contracts emanated during the period prior to works being commenced on site. In this respect the problem areas were not viewed as being affected, to any great extent, by the style of the conditions of contract. Moreover, Banwell and the CCPI directed their attentions to the larger building project and almost totally disregarded the needs of smaller works. This is surprising when considering that the major proportion of work undertaken by architectural practices throughout the UK lies in this area. However, this apparent disregard applies only to the pre-tender stage and a different attitude is taken in respect of the post-tender needs. The Agreement for Minor Building Works, JCT intermediate form and the conditions of contract published by the ACA serve to indicate the awareness of industry to problem areas within the small works sector and an awareness of the need to protect those who commission the works.

Considerable attention has been given to the traditional method of procurement during the past twenty-five years. The changes introduced and the innovations promoted have all been concerned with the common aims of simplication and efficiency. These initiatives have failed.

A re-examination of factors concerned with practices and procedures has shown that this failure can be directly related to matters concerning disposition and attitude and for these to have been determined by the indiscriminate observance of initial objectives and, in particular, the areas of priority established by the client.

ISSUES RELATING TO ATTITUDES

Over the past twenty-five years research into the traditional method of procurement has examined problems from the viewpoint of satisfying the requirements of the client. In this respect it has disregarded the needs of the contractors. Studies have focused upon the larger building project with smaller works receiving little consideration.

It is believed that the success of any agreement is wholly reliant upon the needs of both parties being satisfied. In this respect the known problem areas within the small works sector, have been re-examined with the aim of revealing the areas of contention which are most likely to affect the interests of the contractor. This has been done whilst continuing to pay regard to the interests of the client.

Information and documentation are fundamental to the success of the procurement process and to that of the project. However, prior to considering particular areas of concern it is necessary to consider the broader issues associated with the use of bills of quantities. The reason for this is that the need for bills of quantitites feature prominently within previous research. Also, the provision of quantitites by the client is implied by the recommended procedures and is assumed to apply as a matter of course for all building works of significance, with the measure of significance being determined by the size and the complexity of the project. The measure of significance and the level of complexity are matters of opinion to be adjudged by the professional adviser in the exercise of his discretionary powers.

Bills of quantitites are not provided by the client for all works of a significant nature. Recently, there has been a positive move to a 'without quantities' arrangement, which is more pronounced in the private sector and constitutes a distinct change in attitude by those who commission building works.

THE PROBLEM AREAS

The problems which confront the small works sector are numerous and diverse and occur mainly as a result of particular needs not being satisfied. They are symptomatic of the methods of communication, of time and of money. From the client's viewpoint the problem areas are associated with quality, time and money; quality as it concerns the finished product; time as it concerns the late completion of many projects and money as it relates to the frequency of variations, high level of claims and uncertainty as to final cost. Almost without exception the problems are conceived at the design stage and are not revealed until sometime during or after the construction period.

For the contractor the areas of concern are similar but with a different emphasis. Quality remains an important issue, for a contractor needs to produce work of a good quality to attract future commissions. Time, in the context of speed of construction, is of equal importance to both the client and contractor. A contractor who allows construction works to extend beyond the specified date for completion is creating administrative, technical and financial problems for the firm. Money is also of equal importance and variations feature prominently in this respect. Changes to the work as specified will disrupt the works in progress and to various degrees. This disruption places a strain on production management and introduces additional stresses in respect of the maintenance of cash flow and working capital. Contractual cliams will often be associated with delays in financial reimbursement and can attract substantial additional costs where litigation or arbitration is invoked. Uncertainty as to the final cost and to the final value of the works is closely related to both the level of variations and to claims and, in particular, to the manner in which their valuation has been conducted. These issues are of particular relevance to the 'without quantities' arrangement, where the level of financial control is minimal and where a sound and recognised basis for the valuation of variations does not exist.

It is highly unlikely that a reputable contractor will add to the difficulties normally associated with building contracts by subjecting the firm to unnecessary additional work or to increasing the burden of risk unless a valid reason exists. A more likely reason is that the difficulties are created for the contractor by the actions of others associated with the building contract.

ORIGINS OF PROBLEM AREAS

According to the Building Research Establishment (BRE) 'the majority of serious problems' on building sites 'were caused by either poor design, inadequate project information, or poor organisation by the building contract'[3]. Banwell

identified similar areas of concern but related the causes to inadequate methods of communication, inadequate planning and inadequate time allowances to provide for the planning.

The importance attached to poor organisation by the building contractor is less of a problem for industry — for the reasons stated — than those areas which relate to poor design and inadequate information. If the recommendations given by the Code of procedure for single stage selective tendering (CPSSST) are followed by the professional adviser and applied in the spirit for which they were intended, then the problems which infer inferior quality management on the part of the contractor would be greatly reduced.

Information is fundamental to the whole process of placing and managing building contracts. If design work is incomplete at tender stage then all the necessary information cannot be made available and the tender documents will be inadequate for the purpose intended. However, this inadequacy may not be obvious to the contractor at the time of preparing the tender.

The contractor bases his estimate on the accuracy and sufficiency of the information provided by the drawings and the specification/schedule of works. If this information does not reflect the total amount of work to be carried out, then the risk borne by the contractor will be increased significantly.

Ideally, building work should not be let using the 'lump sum' arrangement:

- unless the design work is substantially complete prior to the works being offered to tender;
- unless all information can be made available at tender stage;
- unless the tender documentation is adequate for the purpose intended.

The fulfilment of these requirements necessitates the project being thoroughly evaluated prior to the works being offered to tender. However, the incidence and level of variations which beset many projects indicates that this situation is commonplace.

There are two possible reasons for this:

(a) the professional adviser is unaware of the requirements of the tendering contractor or is unaware of the difficulties created by the provision of inadequate information;

(b) the professional adviser is aiming to satisfy the requirements of the client without considering the overall effect of such an action.

This raises the question of how to eliminate this element of inefficiency. In doing so it is necessary to consider the lines of communication which exist between the client/professional adviser and the contractor.

During the construction stage the contractor has to observe the rigid controls set down by the conditions of contract; there is no similar controlling mechanism for the design stage. Recommendations have been issued by the building industry which provide directives for managing the design process and procedures for the administration of tender procurement. Whilst management of the design process does not directly concern the contractor, the procedures to be adopted by the professional adviser at tender stage are, nonetheless, highly significant.

Issues relating to practice and procedure concerned with the letting of works

The recommended procedures for the letting of work by the 'lump sum' competitive tender basis are clearly stipulated in the *Code of procedure for single stage selective tendering 1989* (CPSSST). It is not mandatory but it is flexible and allows the professional adviser to use his discretion in its application. However, discretion is rarely used in the spirit for which it was intended and, as a result, reference to the CPSSST becomes worthless. The improper use of the recommended procedures is a major contributor to the problems which confront the contractor during construction.

Consideration of the issues relating to practice and procedure raises two questions;

(a) Is procurement by the lump sum selective and competitive tendering process outmoded and unsuitable for the current and the immediate future requirements of industry?

(b) Are the recommended procedures as detailed within the CPSSST adequate or is there a need for modifications?

In regard to suitability recent changes in the economy have created a situation which is responsible to rigorous commercial considerations on the one hand and to critical consumer awareness on the other. The buoyancy of the economy has resulted in a substantial increase in the building workload. This has served to emphasise the importance of time for both design and construction and has stressed the need for the speedy completion of building projects. This is particularly true where longer term financial gain is more important than initial capital outlay. Conversely, where the cost of the development is the main criterion then there is a need for this overall cost to be both competitive and known prior to the construction work being commenced. The traditional lump sum arrangement has been designed to fulfil this requirement but often fails in the realisation of its objectives.

A high proportion of clients opting for the traditional system of procurement are not only operating within the constraints of a tight budget but are also seeking an early completion of the works. In such instances the professional adviser is unlikely to advocate the use of an alternative contractual arrangement. A more likely response would be for the professional adviser to endeavour to satisfy, by some method, both the time and financial requirements of the client. The result is that the design process suffers as a consequence of the time constraint and the tendering contractors are expected to bid on inadequate information. The traditional arrangement requires the design to be substantially complete and fully documented prior to tenders being invited. This cannot apply when design is allowed to overlap with construction.

Although problems stem from the use of the traditional arrangement within the small works sector it is, nonetheless,

the arrangement most commonly used. For most clients the adoption of an alternative arrangement requires a measure of trust far greater than that which currently exists between employer and contractor.

The recommended procedures contained within CPSSST are in essence, adequate for the purpose intended. Whilst not without fault, it nonetheless offers facilities for each tendering contractor to be provided with detailed information at appropriate intervals and time allowances are suggested for the processing of that information. If the recommendations were applied across the board the problems would largely disappear. In this respect there is a need to modify the procedures to eliminate or significantly reduce the discretionary influences and thereby assist in the maintenance of the objectives.

DEFICIENCIES WITHIN THE PROCEDURAL MECHANISMS WHICH GIVE RISE TO PROBLEMS

The deficiencies encapsulate a number of issues which concern the whole process of procurement and involve the design, letting and construction of the works.

In this respect it is necessary to examine CPSSST in relation to the letting of the works and the conditions of the JCT standard forms of contract which concern production and financial management.

Deficiencies inherent within the Code

Since this study was completed a new edition of the Code has been issued (April 1989). It introduces revisions in respect of matters relating to the standard conditions of contract and also provides for the specific needs of JCT80, IFC84 and MW80.

The procedures contained within the Code, whilst seeming to be adequate for both professional adviser and contractor, continue to contain faults in both principle and in application.

(a) Faults in principle.

(i) The Code is written for those who commission building works. It does not cater equally for those who carry them out.

(ii) The Code anticipates the use of bills of quantities and does not cater adequately for the 'without quantities' arrangement.

(iii) The Code is totally flexible in its directives and, as a result, the measure of satisfaction and effectiveness relies wholly on the discretion of the professional adviser.

(b) Faults in application.

(i) Faults within the 'preliminary enquiry'

Appendix A to the Code is advisory and provides for each contractor on the select list to be supplied with information concerning the project. The aim of the 'Preliminary Enquiry' is to reveal the scope of the works in 'order that contractors may be able to decide whether they will tender and to anticipate demands on their tendering staff. In the small works sector this formal approach is rarely used. Occasionally, the enquiry is conducted by telephone but often the receipt of the tender documents is the first knowledge a contractor has of the enquiry.

The level and frequency of enquiries to tender are generally without any defined pattern. This is of particular relevance to the small works sector. A contract needs all the information provided by the 'Preliminary Enquiry' to plan and organise the physical resources of the firm, to harmonise the current and known future workloads and to determine future requirements in the short and medium terms.

Some elements of information required by the 'Preliminary Enquiry' and included in Appendix A to the 'Code' (items a - u) are of a general nature and can be readily satisfied. Other items are specific and many involve calculated assessment and prediction. They include:

item (g) 'general description of work'

item (h) 'approximate cost range £... to £... .'

item (i) 'nominated sub-contractors for major items'

item (n) 'anticipated date for possession'

item (o) 'period for completion of the works'

item (p) 'approximate date for despatch of all tender documents'

item (q) 'tender period .....weeks'

item (r) 'tender to remain open for .....weeks'

item (s) 'liquidated damages (if any), anticipated value £ per ...'

item (t) 'details of bond requirement'

item (u) 'particular conditions applying to the contract'

The completion of these items by the client and his professional adviser prior to tenders being invited serves to indicate to the tenderer that:

— the enquiry is bona fide;

— the design has been approved;

— the project has been well thought through and planned;

— the client is aware of the likely overall financial commitment and is prepared to proceed on that basis.

An enquiry which satisfies these criteria indicates a responsible attitude by the professional adviser and this increases the confidence of the tenderers.

The facility to provide for this information is offered by the 'Code' but is not always used correctly. Its proper use is essential whenever the traditional method of tender procurement is being engaged.

(ii) Faults within the tendering procedure
The Tendering Procedure specifies the procedures to be adopted and the time scales to be observed for the various aspects of the tendering process. These procedures extend from the time of the 'Preliminary Enquiry' to the period immediately following the submission of tenders and prior to work commencing on site.

In recommending the procedures and in establishing the time allowances the Code infers that the design work has reached a stage of substantial completion. Also, the Code assumes that sufficient information is being provided in a suitable format to enable a realistic estimate of cost to be formulated.

From the contractor's viewpoint there are two issues which are fundamental to the success of a building contract, namely time and money. Both are concerned with procedural mechanisms, with the quality of information and the manner in which the information is administered.

It is unreasonable to expect a tenderer to enter into a commitment to carry out works for a specified sum when:

— the information provided by the client is incomplete;

— the time allowed for processing the information is insufficient;

— the time allowed for planning the works is inadequate.

This condition is further exacerbated during construction by:

— variations being introduced as a result of the design work being incomplete prior to tenders being invited;

— interim valuations not reflecting the true extent of the work executed and the cost of materials on site;

— lengthy periods of time being allowed to elapse between the date of the site visit and the date when the valuation certificate is issued;

— delayed payments in respect of interim certificates.

— delay in the preparation and settlement of the final account.

The role of the builder in the small works sector is subservient to that of the client insofar as the measure of obligation is concerned. The client is privileged by the standard conditions of contract to vary the works almost at will during the period of construction and this without surcharge. Conversely, the contractor is burdened, often excessively so, with the task of substantiating requests for extensions of time and in endeavouring to gain proper reimbursement for costs incurred by variations.

Liquidated and ascertained damages provide the client with an immediate remedy in the event of the contract periods, and any agreed extensions to it, being exceeded. A similar remedy is not available to the contractor who has suffered losses as a result of inadequate or belated payments.

Therefore, there is a need for a greater measure of equity to exist between the obligations and restrictions of the two parties. There is also a distinct need for the preconstruction requirements of the contractor to be fully acknowledged and understood insofar as the importance of quality of information and time allowance are concerned. The facility for discretion offered by the Code is not enough. The requirements of the contractor must be related in specific terms and adhered to.

The problem areas which confront the small works contractor can be summarized as:

- those created by poor quality information at tender stage;
- inadequate time allowances for the processing of that information and inadequate time allowances for the planning of resources;
- the inability to secure realistic and prompt payments for work executed.

MINIMISATION OF PROBLEMS

Problems relating to information

One of the fundamental obligations of the client is to provide each tenderer with the precise requirements of the works to be undertaken. This undertaking is both time consuming and costly. Nonetheless it is essential. The level of completeness of design establishes the measure of detail which can be provided and the degree of precision to be achieved. Information based upon incomplete design will promote the need for variations and the liberal use of provisional sums.

Variations will, without doubt, continue to occur but they should be confined to matters which could not have been reasonably foreseen by the professional adviser prior to the works being offered to tender. Conversely, where there is a desire to vary the works and this variation could have been foreseen — whether in the form of omissions or additions — then this must be looked upon as a privilege afforded to the client and not a right. Such a change in attitude would, by virtue of the potential consequences, reduce the level of variations and would ensure that the works had been thoroughly thought through.

None of the methods currently provided for the valuing of variations is wholly acceptable. Valuation based on tendered rates, whilst better than having no basis at all, does not necessarily correspond with the intention. Reimbursement on a daywork basis does not take account of disruption. The submission of a priced estimate prior to the works being carried out is often impractical to implement.

The major proportion of variations introduced during the construction period arise as a result of deficiencies within the design process and the contractor should not be ex-

pected to suffer as a result.

There is an urgent need for the issuing of variations and the valuation of those variations, to be fully investigated within the small works sector with a view to minimising the disruptive influences. to reducing the level of risk and uncertainty and to reducing the indirect administrative pressures which variations create for the contractor.

PROBLEMS RELATING TO TIME

Time allowed for the preparation of tenders

The Code recommends a minimum period of four weeks for the preparation of tenders but suggests, having regard to the size and complexity of the works, that many projects will require longer. This is particularly relevant where bills of quantities are not provided by the client. This minimum period is often not observed by the professional adviser and the time allowance is sometimes limited to a few working days.

The April 1989 edition of the Code retains this minimum period, but, in addition, specifies that the four working weeks represents '20 working days'. This definition suggests that the National Joint Consultative Committee (NJCC) is aware that contractors are often expected to observe a working week in excess of five days where tender preparation is concerned. The need for an adequate period of time to be allowed for tender preparation in this edition can be gathered from the statement 'inadequate tendering time can lead to mistakes and the client may not obtain the most competitive prices'. This is another example of favouring the interests of the client.

The 'without quantitites' arrangement has gained in popularity since the publication of the 1977 edition of the CPSSST and it is now not unusual for projects in excess of £1 million to be let on this basis. This probably accounts for the removal from clause 4.3 (Time for Tendering) in the 1989 edition has of the phrase 'smaller works without quantitites' and the substitution of 'plan and specification tenders'. This change points to an awareness by the NJCC that the 'without quantities' arrangement is no longer confined to small works. Most building projects are unique and quantities need to be drawn up as part of the estimate's preparation. This is a costly and time consuming process which, in the case of the smaller building company, may demand the use of an external agency.

As quantities prepared by the contractor contain less detail than those prepared for the client they probably require less time to prepared. Nonetheless, a time factor is involved and must be provided for.

The main benefits to the client using a 'without quantities' arrangement are savings in time and fees. There are also other benefits to be derived by the client which do not receive a similar degree of consideration. From the contractor's viewpoint the limit of obligation is less precisely defined in the 'without quantities' arrangement and similarly, the demand for good quality information is less stringent. An examination of documents to compare the characteristics of the two arrangements provide evidence to support this view. Nonetheless, it can be argued that the benefit derived from savings in time is not so much to do with the time required to prepare bills of quantitites as it is to do with the savings in time resulting from a more relaxed approach towards design detail. In this respect the 'without quantities' arrangement not only reduces the design workload prior to the time the contract is awarded but it also provides a greater measure of security to the professional adviser. Conversely, all contractors engaged in tender preparation are burdened with the additional time required to produce quantities, the associated costs and the additional increases in risk which this entails. Contracts, by and large, require bills of quantities to be provided by the client and this requirement should be observed.

The use of shorter bills of quantities or quantities prepared in accordance with SMM7 — which is less complex than its predecessor — could satisfy the needs of the small works sector. However, the current trend within certain areas of the building industry is to move away from the use of bills of quantities except for projects of a large and complex nature. If this trend continues then the burden to be borne by the contractor will intensify. Over the years contractors have been prepared to accept this additional burden as a condition precedent to obtaining work and survival. However, the demands have escalated during recent years and have now reached an almost intolerable level.

At the tender preparation stage the difficulties created for the contractor by inadequate information are more apparent than real and the full impact is not revealed until construction is under way.

Time allowed for the opening and consideration of tenders

CPSSST, although not specific in respect of time allocations for the opening of tenders, the consideration of submission and the notification of results, is nonetheless precise in intent. However, this is rarely observed by either the client or professional adviser.

Experience shows that tender submissions are seldom opened on the day of submission, that evaluation can take many weeks and that the notification of results as prescribed by the Code is infrequent.

There appears to be no valid reason why this recommendation should not be adopted by the client and the professional adviser. The failure to respond points to a lack of interest, in all but the successful submission, once tenders have been received.

Unsuccessful tenderers require the information provided by the notification of results to facilitate re-appraisal of future requirements in both the short and medium terms and to plan their resources. This requirement extends also to subcontractors and in some instances to material suppliers.

There is a need for tenders to be opened immediately following receipt and in this respect there may be grounds for reviving the formal opening custom to which all tenderers may attend. There is also a need for defined periods of time to be allocated to provide for both the consideration of tenderers and the notification of results. Such directives would add to the confidence and would aid the management processes within the contracting organisations.

Time between the appointment of the contractor and commencement of work on site

This period provides the contractor with time to plan the works and to organise his resources. Whilst the 1977 edition of the Code emphasises the importance of this period

it does so without allocating a specific period of time. As a consequence the successful contractor is often confronted with the date of possession of the site being unrealistically close to the date of acceptance of the tender.

However, the 1989 edition recommends a maximum period 'not exceeding two months'. This maximum period pays credence to the interests of the client insofar that 'unnecessary delay in achieving a start on site may involve the employer in extra costs'. Conversely, the stipulation of a maxium period fails to observe the need for a minimum time period insofar that 'undue haste to make a physical start on site may result in extensive and costly variations which can lead to prolongation and not reduction of the total contract period'.

There is a need for a minimum period of time to be established to provide for the planning process and for this to be incorporated in the Code.

There may be instances, depending upon the type and nature of the works, where a contractor requires less time than the minimum stipulated and in such instances an earlier start should be permitted. However, this is a decision which must rest with the contractor. The earlier start time should not be a condition precedent to being awarded the contract nor should it jeopardise the management function and the smooth running of the works.

Practice and procedure concerned with financial management subsequent to the letting of the works.

The prime duty and essential requirements of the contractor during the period of construction are:

- the possession of sufficient information to enable the works to be adequately resourced and capable of being progresses in a balanced and structured manner without delay and disruption;
- the provision of sufficient time for the satisfactory completion of the works;
- the maintenance of an adequate cash flow provided by regular and prompt payments in respect of work executed and materials on site.

These requirements are equally applicable to subcontractors.

The quality of information and the provision of time also feature prominently during construction. Unlike the time requirements during the design stage those during construction have direct financial implications. In considering this it is necessary to distinguish between those financial implications which arise as a result of naturally occurring hazards and those additional burdens which are imposed by the actions of the client or the professional adviser. It is the latter which are considered here involving:

— the contract sum;

— certificates and payments;

— provision for retention monies;

— variations;

— extensions of time;

— damages for non-completion;

— fixed and fluctuating price levels;

— the level of prime cost and provisional sums.

(a) the contract sum

The contract sum, constitutes an unqualified 'lump sum' bid to 'execute and complete .....the whole of the works specified within contract documents'.

This extract from JCT80 suggests that, to a large extent, the limit of obligation to be placed upon the contractor has been established. However, in the small works sector, this is rarely the case and often many areas of uncertainty exist. Variations to the work specified are introduced during the construction period and these changes inconvenience the contractor. They invariably disrupt and delay the works. Similar characteristics are experienced with work to be set against provisional sums.

Standard forms of contract offer immediate remedies to the client to compensate for financial losses brought about by unauthorised extensions of time beyond that specified. Moreover the client is privileged by the 'safety-net' element of financial security afforded by the system fo credit payment in which the value of work executed and materials on site is always substantially in excess of payments received. Conversely, the contractor is obligated to carry out the additional works relating to variations, to maintan quality control,to mitigate loss to the client and to provide all necessary information in support of a claim or claims for extensions of time and financial reimbursement. These requirements are responsible for creating additional stresses upon both the technical and financial resources of the contracting organisations. On the other hand, if the design work had reached a stage of substantial completion prior to tenders being invited then the measure of variation would be reduced and the additional burden of responsibility placed upon the contractor would also be reduced.

The information provided at tender stage and to which the contract sum relates must genuinely reflect the total quantity and type of work to be undertaken. The contract sum must not be looked upon by the professional adviser as a budget to be designed to. Nor should the conditions of contract be interpreted as a means by which variations can be introduced at will.

Difficulties associated with this area of consideration cannot be viewed in isolation and any improvement sought will be conditioned by directives related to other issues concerned with practice and procedure.

(b) Certificates and payments

Cash flow facilities provided by interim valuations and payments in respect of work executed and materials on site are the life blood of industry. The smooth running of a building contract and, to a large extent, the survival of the building company is affected by:

— the accuracy of the valuation;

— the prompt issue of the payment certificate;

— payment within the period stipulated by the conditions of contract.

A valuation which fails to reflect the true value of the works in progress is placing unnecessary financial pressures upon the contractor. In the context of a single contract the effects may not be serious but when considered in relation to a number of contracts then the effects can be substantial. This is particularly true for the small works sector where a sound basis for valuing works in progress under a 'without quantities' arrangement does not generally exist.

Similarly, the belated issue of a certificate will create further pressures upon the contractor's working capital. Standard conditions of contract, whilst specifying the limit of time for payment, do not specify a limit of time for the processing of the interim valuation from the date when particulars are taken on site to the date when the certificate is issued. A contractor, in arranging the finances of the company, requires to know the maximum period of time allocated to the preparation and the payment of interim accounts. Delays in these respects add a further dimension to the drain on the financial resources of the company.

Remedies exist within the standard forms of contract to safeguard the interests of the contractor in respect of payments but the remedies are severe and would be considered only in the last resort. This points to the need for measures to be introduced which would provide:

- greater degree of control over the process of valuation and certification than currently exists;

- for the contractor to be adequately reimbursed for losses sustained as a result of delays in certification or in payment as an immediate right, similar to the way in which liquidated and ascertained damages provides for the interest of the client.

(c) Variations

A provision for variations appears to be necessary to satisfy the interests of the client. Such a provision should not, however, conflict with the interests of the contractor. Variations irritate and disrupt the pattern of works, they cause delays, they create additional administrative work and they are often responsible for inflicting losses upon the contractor both in terms of cash flow and in the measure of financial reimbursement.

The facility to vary afforded by the standard conditions of contract should be applied in the spirit for which it was intended. It should not be used to provide the professional adviser with a means of delaying substantial proportions of the design work until sometime during the construction period.

There is evidence to show that in many instances the tender submission provides the first indication to the client of the likely cost of the works and, as a consequence, tests the viability of the project. This is a further area where the procedures are abused and where the services provided by the contractor are exploited.

The most obvious way to minimise the effects of variations is to introduce controls which limit the scope to vary.

In considering how this can be best achieved it is first necessary to distinguish between those variations which could not have been reasonably envisaged at the pre-tender design stage and those which arise as a result of the design work being incomplete at the time tenders are invited.

It is argued that the contractor should not be penalised for matters which have not received proper attention prior to tenders being invited. It is further argued that such elements of varied work should not be incorporated under the contract except with the express agreement of the contractor. Furthermore a client should not be permitted to enter into a lump sum agreement unless the design is substantially complete and adequately documented prior to tenders being invited. If time and other constraints prohibit such an action then an alternative arrangement should be sought as a matter of course.

The problems related to the valuation of variations, where such have been properly applied, remains and there is a need to re-think the processes available in relation to present day requirements.

There are some relevant events quoted in the standard forms of contract condition which are outside the control of either the client or the contractor. Hoeever, those which are include 'compliance with the architect/Supervising Officer's instruction' and 'the contractor not having received in due time necessary instruction, drawings, details or levels'. Both feature prominently in claims for extensions of time.

(d) Fixed price levels

The normal practice for the letting of building work contracts, where the contract period does not exceed twelve months, is by the fixed price arrangement. However, longer periods can be observed at the discretion of the professional adviser.

This arrangement is onerous for the contractor even when all information regarding time is made available at the tendering stage and when it can be assumed that the total measure of responsibility for the fixed price arrangement is to be shared by all concerned with the building project. These criteria do not apply because:

— the date of possession of the site is often not stated within the tender documents and, as a result, the period of time to which the fixed price arrangement applies is unknown;

— material suppliers will not, as a general rule, observe and abide by the terms of a fixed price arrangement.

This raises the question of the fairness of such an arrangement, particularly during times of high levels of inflation and interest charges. One means of improvement is for the date from which the firm price arrangement should commence to be the 'Date of Tender', being ten days prior to the submission of tenders. Such a change would be consistent with the fluctuating price arrangements and would take account of the variable periods of time between the submission of the tender and the date the works are schedule to commence on site.

There is also a need for a limit of time to be set against the firm price arrangement. By establishing a maximum limit to which the firm price arrangement can be applied and by relating the commencing date to the 'Date of Tender' cer-

tain benefits will result:

— the contractor would know the limit of obligation in respect of time and would experience a greater level of confidence in predicting the change which are likely to occur within the national economy in the short term;

— a precise time stipulation would promote a more expedient level of processing between the submission date and the date when the contract is awarded.

(e) Prime Cost and Provisional Sums
From the viewpoint of the contractor there are three main areas of concern in respect of prime cost and provisional sums:

(i) the often substantial aggregate level of prime cost and provisional sums in relation to the total contract sum;

(ii) the inability to prepare an adequate programme for the works when a large proportion of the design material is either incomplete or unavailable;

(iii) the indiscriminate usage of prime cost and provisional sums as a means of reducing the time required for the design process.

Whilst the need for prime cost and provisional sums is acknowledged, the fact remains that the contractor requires to know the total extent of the works which are to be carried out during the period of time specified in the form of tender.

In this context it is suggested that the recommendations offered by the CCPI and which are contained within SMM7 should apply equally to the 'with quantities' and the 'without quantitites' arrangements. The tender documents should distinguish between 'defined' and 'undefined' elements of work. Where the extent of the work, which is intended to be included under the head of prime cost and provisional sums, can be defined and made fully known to the tenderer then it seems reasonable to expect this work to be contained within the specified contract period. Conversely, where full details cannot be supplied at tender stage and where the works are incapable of being precisely defined then it would seem unjust to expect such work elements to be incorporated into the contract period.

This suggests that attempts should be made to:

(i) improve the quality of information to be provided at the tender stage;

(ii) promote the need to thoroughly plan and substantially complete the design work prior to tenders being invited;

(iii) assist the contractor in the preparation of a realistic programme for the works.

Some of the suggestions which are offered in this report and which concern the practices and procedures currently observed by the small works sector of the building industry do not involve major changes. Nonetheless, they are of fundamental importance.

SUMMARY OF THE DEFICIENCIES AND THE NEEDS

This summary relates specifically to small building works which are let by the traditional lump sum, without quantities and fixed price arrangement secured by the use of the selective and competitive tender process. It is based on the assumption that for the foreseeable future the CPSSST Code and the JCT standard forms of contract will continued to be used by the private works sector of the industry.

In deliberating upon the issues contained within this summary it is necessary to demarcate between the deficiencies which currently exist within the system and the proposals offered for their rectification. the deficiencies have been proved by examination and analysis, whereas the proposals represent principles.

Whilst attention to the problem areas has been directed primarily towards satisfying the interests of the contractor it is accepted that the professional adviser holds similar concerns. Consequently, improvements which are introduced to the traditional system to benefit the contractor would, offer equal benefits to the client and professional adviser.

PRE-TENDER CONSIDERATIONS

General considerations

1. The information requested within the 'Preliminary Enquiry' to CPSSST should be completed in detail prior to a preliminary invitation to tender being made. This would satisfy the first of the two objectives stated in the Code.

2. The time period between the preliminary enquiry and the despatch of the tender documents should be limited to four weeks. This is considered necessary in the small works sector where planning in the short term is of vital importance.

3. The use of the 'Code' should be restricted to projects for which the detailed design work is substantially complete at the date when the tender documents are despatched. The objectives of this are to eliminate the non bona fide enquiry, to control the level of probable variation during the construction period, to provide the contractor with realistic information for the preparation of the estimate, to assist in reducing the measure of abortive work and to minimise the level of risk and uncertainty which often confronts the tenderer.

4. Minimum time allowances should be stipulated for estimate and tender preparation in respect of both the 'with' and the 'without' quantities arrangement. This is necessary to safeguard the interests of the contractor in instances where time for the completion of the building project is of fundamental importance to the client.

5. Tenders should be opened on the date of submission. Consideration should also be given to reviving the custom of a formal opening.

6. A maximum period should be stipulated for the consideration of tender submissions and the notification of results.

7. The results of tender submissions must be notified in the manner prescribed within the Code. This information is of vital importance to tenderers it provides a means for effective planning in the short term.

POST-TENDER CONSIDERATIONS

1. A minimum time allowance should be stipulated for the period between the appointment of a contractor and the commencement of work on site. The objective of this constraint is not only to provide adequately for the planning of the construction works but also to protect the contractor from the pitfalls of a hurried start on site.

2. A contractor needs to know this time period for the issue of certificates at the tender preparation stage in order to plan the finance resource requirements. A maximum period of time should be allocated for the taking of details on site, for the compilation of the valuation and for the issue of the certificate. This time period, which may vary from project to project, should be specified within the tender documentation.

3. There is a need to introduce into the conditions of contract a facility which provides for the contracto to be compensated is the event of a late payment by the client. This figure should be determined by the contractor and inlcuded as part of the tender submission. The conditions of contract should also provide for this facility to be implemented with immediate effect upon the occurrence of the breach.

4. There is a need to introduce a measure of control into the conditions of contract which would both deter and limit the scope to vary. In this respect there is a need to distinguish between those changes which could have been foreseen by the professional adviser at the pre-tender stage and those changes which could not. A different payment structure should then be provided for each.

5. This area of contention closely relates with the quality of information and the facility to vary the works. Measures introduced to the procurement system aimed at improving the manner of communication between the parties to the contract will reduce the need to claim for extensions of time.

6. There is a need for a commencing date for the fixed price arrangement to be changed from the date of possession of the site to the 'Date of Tender' being ten days prior to the submission of tenders. There is also a need for a limit of time to be set against the firm price arrangement. This is necessary to take account of the attitude displayed by material suppliers towards the fixed price arrangement. Also to reduce the measure of risk and uncertainty created for the contractor by a fluctuating and unpredictable economy.

7. There is a need to distinguish between 'defined' and 'undefined' elements of work. The purpose of this is to limit the contractor commitment, in respect of time and other resource, to those elements which are known and which can be precisely described within the tender documentation.

INFORMATION AND DOCUMENTATION

Many areas of concern, both pre and post contract have been categorised and identified, with the recommendations contained within the current procedures for the letting and the control of the construction works. The benefits to be dervied from the introduction of changes to the procedural mechanism could be considerable in their own right. However, for the changes to be wholly effective, it is necessary to direct attention towards the broader issues of the supporting functions provided by information and documentation.

There are many options available to the professional adviser for conveying information to the contractor at the pre-tender stage. Information, in support of the drawn material, can be offered in various styles of presentation. A standard format does not exist for the construction of buildings within the small works sector. The styles of presentation range from the specification format to schedules of work and, to a diminishing extent, the bills of quantities format. Whilst each style of format is designed to provide for the particular needs of an individual contract this criterion is rarely observed. More often the commercial interests of the client take precedence. In such instances the style of the documentation is tailored to suit the interests of the client without due regard being paid to the requirements of the project as a whole and those concerned with it.

Some of the methods used for the conveyance of information also provide a means for maintaining financial control during the construction of the works. Other methods do not.

Research has shown contractors to be undeterred by either the issue of inadequate information or by the inappropriate use of a particular style of documentation at the tender preparation stage. The reason for this is that contractors have become accustomed to accepting the additional burden of risk created by deficiencies in this respect in order to maintain the required turnover of the firm. Research has shown also that disputes arising during the construction period, which result from the inability of the contractor to gain satisfactory reimbursement for work executed, have become the norm rather than the exception in recent years. This creates a further major area of risk to be borne by the contractor.

These additional areas of risk and uncertainty are imposed upon the contractor by the indiscriminate actions of others. They could be avoided. Whilst there is a need for the professional adviser to be sympathetic towards the commercial interest of the client this need should not be achieved by actions which are detrimental to those engaged with the construction of the works. A contractor should not be placed in a comprising and unequitable position by virtue of these impositions nor should the contractor be criticised for the results of the failures stemming from the imposed risks.

In recent years attention has been directed towards catering for the needs of the larger building project. As a consequence the needs of the small works sector have been overshadowed and disregarded. It is hoped that this paper makes a useful contribution to redressing the balance.

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...winner of £1,000 National ... received a £150 award to pur- ... lege of Building. ... contractor firms.

...eceiving his Site Management Diploma from Peter ...took over as course leader from Walter Slater last year

...diploma at Newcastle

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Also awarded was the 3,000th Certificate of Competence in Computing issued by the Institute which was received by

Lucy Furmidge

...Y TOUR TO NORMANDY

...study tour will be to Normandy, France from 22-27 ...e provisional itinerary is:

...2 October — 12 noon Coach from Englemere. Portsmouth — Caen ferry. Departure 3.00 pm. Arrive Hotel Mercure in the centre of Caen during the evening.

...October — Full day of technical visits. Lunch and dinner provided.

...October — Organised sightseeing, probably Rouen. Both lunch and dinner under own arrangements.

...October — Organised sightseeing visit (optional). Lunch under own arrangements but dinner included.

...October — Full day of technical visits. Lunch and dinner included.

...October — Free day — Lunch under own arrangements until departure Caen 16.30, arriving Portsmouth 21.00 hours. Coach to Englemere to arrive approximately midnight.

...ost of the tour, which will include transport (as ...coach, meals, technical and sightseeing visits in... ...rpreters, ferry charges and accommodation at the ...d and breakfast basis in a twin-bedded room, will ...ately £275 per person. A single room supplement ...ged,

...e ninth centenary of the death of William the Con... ...of Normandy and King of England and, arguably, ...reatest rulers of the Middle Ages. Normandy and ...ecially, are celebrating the anniversary of his death ...any events during the whole of the year.

...shing to join the party are asked to complete and ...oking form below, enclosing a remittance of £100 ...s a deposit. Please make cheque payable to 'The ...stitute of Building'.

...n O'Neil
...rtered Institute of Building
...re, Kings Ride
...rkshire SL5 8BJ

...k .... place(s) on the Study Tour to Normandy
...a deposit of £ .... (£100 per person).

PERSONAL VIEWS

Minor building works — The tendering syllogism

G. Senior, MCIOB, FRICS, presents a personal viewpoint of a major segment of building construction works within the UK which is generally classified as 'minor works' and for which bills of quantities are not generally employed.

INDUSTRY AND COMMERCE alike have experienced difficulties over the years with 'minor works'; both are very aware of the fact that procedural inadequacies exist which substantially increase the risk element to the client and/or the contractor in what has always been a hazardous and risk-intensified area of the industry.

This is borne out by Dennis Marler, president of the British Property Federation, in an article in the December 1983 issue of the *Property Journal* when introducing the manual for the BPF system for building design and construction in which he states: 'It is the mark of the good designer that he reminds his client of all the potential requirements during the development of the design and that he makes sure that these requirements are met before tender. Designers should not take the line that variations can be accommodated later, but rather should work against the high cost of late decisions'.

Geoffrey M. Townsend, FRICS, FCIOB, FCIArb, welcomed the publication of the manual but with certain reservations. He emphasised that the 'system' could only work in certain situations and that it completely lacked the necessary ingredients for cost control and maintenance of adequate cashflow facilities.

In his paper entitled 'The quantity surveyor's response' for the CIOB, he commented: 'One cannot remove the need for cost control ... but I do press for tenderers to bid for like against like'.

Both statements indicate an awareness of the problem and of the inadequacies which exist in the methods generally employed in tender procurement for this particular work category and although the symptoms have been identified the root cause and the necessary remedial treatment still remain a problem.

THE PROBLEM

Pre-tender

Minor, in the context of building construction, is largely a matter of opinion rather than universally accepted fact, even though the JCT have shown their awareness to this by the production of independent Standard Forms for minor, intermediate and major works based upon distinctive monetary values. In practical terms, however, the fact remains that the definition of category range is primarily related to a number of issues which concern mainly the size of organisation; work type and style; degree of complexity and the opinion of the building owner, employing authority and professional advisers. When taking these factors into account the actual range can be very substantial, from a few thousand pounds to well in excess of a million pounds.

The obtaining of work in a competitive situation without bills of quantities relies solely on the completeness and adequacy of the drawings or, in certain cases, drawings, specification/schedule of works. Drawings, in this context, tend to be complete only in so far as they affect the obtaining of approvals in respect of planning and building regulations, and details relating to finer points of specification requirements that are left to the contractor's ingenuity and judgement until the work is, in fact, due to be carried out on site.

The period allocated for tender preparation in the majority of instances has no bearing on the size of project or its complexity, the size of firm tendering, or the degree of specialist subcontract involvement. Consideration is not given to the fact that, in this type of work, dimension preparation is also necessary (often by use of external resources) before pricing can commence and yet the time period allowed for tender preparation is normally far less than the minimum period recommended in the *Code of Procedure for Selective Tendering* where quantities form part of the tender documentation.

This time constraint is a major hazard which precludes the contractors from raising all but fundamental issues with the architect. This in itself creates a situation which allows error by omission or incorrect interpretation. Measurements taken from the drawings for use in the preparation of the estimate will vary from contractor to contractor, as will interpretation of requirements, thus increasing the risk element and eliminating one fundamental requirement — the common basis for tender. It is prudent to note that common law will assume, in the case of a dispute arising, that the contractor has included all things necessary to complete the works (*Williams v Fitzmaurice* 1858).

The tendering contractor is invariably in the invidious position of endeavouring to satisfy certain fundamental criteria which have a direct bearing on the success of the organisation:

i) the enhancement of his reputation with the aim of securing future work;
ii) obtaining the best price for the work and to maximise on the investment;
iii) reducing the tender to an absolute minimum to maintain the necessary degree of competitiveness.

Post-contract

The lump sum in respect of a drawing and specification contract is adequate only in so far that it makes the building owner aware of the total financial obligation for the construction of the project as the contractor has interpreted it and providing no changes are made. Immediately instructions are issued varying the quantity, quality or sequence of works, then problems are being created.

Methods for compiling estimates and tender adjudication vary considerably dependent upon the policy of each individual company and the documentation supplied. Common to every estimate, however, will be allowances for preliminary charges; measured work (main and subcontract); nominated subcontractors and suppliers; and provisional sums; and even these block elements in the majority of instances cannot be isolated with any degree of accuracy in the 'lump sum' situation.

Industry has voiced its awareness from time to time that a problem does exist within this category and this has been seriously considered in recent years by the Building Employers Confederation (BEC); British Property Federation (BPF) and the Association of Consultant Architects (ACA) all of whom appear to agree that the problem has been caused by certain inadequacies and deficiencies in procedures and practice. The emphasis in the case of architects and the BEC has been directed towards the conditions of contract which set out the terms of reference and the rights and obligations of the parties to the contract, whereas the BPF have concentrated their efforts on the design criteria with particular emphasis on the adequacy of the pre-tender design element. In each case, however, little or no credence has been given to any form of quantification mechanism to facilitate a common basis for tendering and an aid to financial control.

The prime consideration of any business enterprise is profit and the maximisation of investment. This consideration is equally valid whether viewed from the building owner's or contractor's standpoint. The awareness of this and the importance attached to it are illustrated in clause 13 of the *JCT Standard Form of Building Contract 1980 Edition* where certain discretionary powers are afforded to the quantity surveyor in respect of the valuation of variations.

Finance is a fundamental resource in the construction industry and equally a very expensive commodity. The awareness of this by the construction industry and the problems which it can create are portrayed by the changing role of the quantity surveyor where greater emphasis is being displayed towards financial management.

When considering the foregoing, relative to the prime objective of any business enterprise, then it would appear that to concentrate attention towards the conditions of contract is misguided. It has no remedial benefits whatsoever and only serves to treat the *effect* and not the underlying *cause*.

Until industry can produce a standard procedural method of tender procurement, which provides a common basis for tender and allows tenderers to price for like against like, and, furthermore, provides a mechanism to deal more accurately with the valuation of variations and other changes which almost inevitably occur during the construction period, then the gross risk element borne by both parties to the contract, and indeed the associated problem area, will still remain.

ROBOTICS

Any members with an interest in the development or application of robotics for construction are invited to contact Peter Harlow at the Institute's headquarters. Tel: Ascot (0990) 23355.

TENDERS FOR SMALL WORKS - AN EMPIRICAL STUDY

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Abstract
The largest number of tenders within the construction industry is for small works. The most popular method of procurement is by the traditional lump sum arrangement. This is because the method permits an assumed certainty of financial commitment which provides short term commercial benefits to the client. Tenders for the lump sum without quantities arrangement depend upon a full observance of the Code of Procedure for Single Stage Selective Tendering (CPSSST). The paper accepts the appropriateness of this, but argues that the Code is often administered incorrectly.

Based upon empirical research, the paper relates the aggravation factors and by implication the financial losses that are experienced by the successful, and the unsuccessful tenderers alike as a result of this. Measures whereby improvements to the Code may be effected are then set down.
Keywords: Procurement, Tendering, Risk.

1 Introduction

Over many years the building industry has been aware of the problems associated with the placing and management of building contracts. The problems are numerous and diverse and concern all facets of the building process from inception to completion. They relate to methods of communication, to quality assurance and to time and to money constraints. From the client perspective, late completion of the building project, excesses to the contract sum and poor quality workmanship cause the most concern whereas the contractor is incensed with difficulties created by incomplete design, poor quality and untimely information, inadequate time allowances for the processing of that information and unrealistic and delayed payments for work carried out. The diagnosis of the industry has resulted in modifications being introduced to the established procedures since the publication of The Banwell Report in 1964. More recently Codes of Convention have been formulated by the Co-ordinating Committee for Project Information (CCPI). Substantial changes have been made to standard forms of contract conditions and new forms have been issued by the Joint Contracts Tribunal, the

Association of Consultant Architects, the Office of Fair Trading and the Building Employers Confederation.

Moreover a revolutionary approach to procurement was offered by the British Property Federation in 1983 but this failed to gain the necessary level of support. There are various reasons for this negative reaction by the industry. The main reasons however relate to the wholly radical nature of the approach mechanisms both in principle and in practice.

Letting building works by the traditional process remains the most popular method of procurement within the United Kingdom for the method offers an assumed 'certainty of price' and an assumed measure of 'accountability' to the client. These likely benefits however are invariably lost when contract periods and contract sums are exceeded. This creates major problems for all concerned with the building project, and for the industry as a whole because the problems are rarely confined to their source of origin.

One major disadvantage with the traditional method of procurement is that the two stages of design and construction are distinct. This encumbrance has been acknowledged and the recommendations introduced have been directed towards this need for a more effective and harmonious relationship. However the achievement of this objective relies upon factors other than those relating to procedural mechanisms. Sufficiency of information and suitable methods of communication are also fundamental issues. Banwell, in aiming to achieve greater "efficiency and economy" emphasised these needs, particularly the need for adequate time allowances to enable the information to be properly processed. Moreover Banwell further observed the need for bills of quantities albeit of a simpler format than existed at that time together with a single unsophisticated standard form of contract conditions. Similarly the CCPI realised the importance of good quality information and documentation and in this regard were adversely critical of the design team. The CCPI saw the need for the design team to think and act as a whole in the belief that benefits accruing from integration in this respect would extend naturally to the construction stage thereby providing benefits to the contractor also. However CCPI is mainly concerned with the larger building project and its use, in the context of the smaller building project, could prove to be administratively impractical and prohibitive.

Obtaining tenders using the 'without quantities' arrangement has substantially increased in both volume and price range during recent times. The reason for this is that recent changes in the national economy have resulted in a substantial increase in the building workload as a consequence of increased opportunity and provision demands. Furthermore this buoyancy factor has created an environment which is more responsive to the rigours of commercial enterprise and to critical consumer awareness. The resultant effects of this are that:

(a) Time allocations for design and construction need to be reduced to provide for speedier completion dates.

(b) The client and the contractor are more conscious of their rights in respect of contract and tortuous liability and will seek to gain financial reimbursement for losses incurred.

These factors question the suitability of the traditional system for current needs. Notwithstanding this the continued level of popularity indicates that the system will continue to be used in instances where money is the prime consideration. A condition which prioritises both resources of price and time creates demands upon the design team which are incapable of being achieved unless the procedural disciplines are relaxed. Recent research has clearly revealed a change in attitude by those involved with the placing and management of building contracts and malpractice has been used at times as a means of achieving desired client objectives. This malpractice applies particularly to issues concerning time. Disregarding abnormal circumstances then the time for constructing a project will not usually contain a sufficient degree of tolerance to enable significant time related benefits to be achieved by the client. Therefore substantial savings in time must be derived from the period normally allocated to pre-tender design also from the period which should be allocated to planning immediately subsequent to the award. The fact that remedial measures have largely failed suggests that the faults may, to some extent, lie in the administration of the procedures rather than in the procedures themselves. Publications support this viewpoint.

2 Issues relating to behaviour

Assuming that the objectives of the client, the design team and the building contractor are similar in principle and that they differ only in degrees of emphasis and intensity, all require the whole or individual elements of the construction work to be completed as speedily as possible, all require good quality work to enhance reputation and all require to maximise the value of the investment. In the 'lump sum' competitive environment these time and money constraints act in conflict with the need for adequate information and with the need to maintain quality control. Selfish endeavours aimed at satisfying commercial interests have the effect of increasing risk and uncertainty. In the context of the client and the design team the additional measure of risk and uncertainty is minimal when compared to that borne by those concerned with the construction process. This differential is due to the indemnification provisions contained within all standard forms of contract conditions which are more effectively protective of the interests of the client than they are of the contractor. The particularly high levels of both naturally occurring and imposed risk and uncertainty are a major concern to building contractors and have been for many years. This adverse characteristic raises the question of viability and the reason why inadequate tender enquiries continue to generate a response. One reason is that the degree of inadequacy

may not necessarily be apparent at the tender preparation stage. The main reason however is that a building construction firm needs to obtain work to satisfy predicted levels of turnover and to survive. Moreover that a competitive environment prohibits the use of money allowances being incorporated within the tender submissions as a safeguard against probable issues of uncertainty. These objectives and constraints are largely responsible for the high level of recorded insolvencies which afflict the building industry. When considering the style of credit control used by many contractors, which provides for tactical distribution methods of payment to creditors, then it would seem that without this safeguard the level of insolvency would escalate.

A high proportion of clients opting for the traditional system of procurement are not only operating within the constraints of a tight budget but are also seeking an early completion of the works. Even assuming that the design team is aware of this criterion it is unlikely to advocate the use of an alternative arrangement which will probably result in the commission being forfeited. A more likely response would be for these client requirements to be satisfied by allowing the design to extend into the construction period. This approach gives rise to variations and promotes the need for extensions of time. The resultant manifestations being delayed completions and excesses to the contract sum.

In the competitive environment the contractor has no alternative other than to prepare a tender submission on the information provided by the drawings and the support documents. If this information does not reflect the precise requirements of the client then difficulties are created for the contractor and others engaged with the construction process. The commissioning of building work within the small works sector is often a unique experience and for a client to accept a system of procurement which does not necessarily provide *prima facie* security, demands a measure of understanding and trust far in excess of that which currently exists. Notwithstanding this, building work should not be let using the lump sum arrangement unless the design work is substantially complete, unless all pertinent information can be made available at the time tenders are invited and unless sufficient time can be allowed for the processing of that information.

These issues focus attention upon the CPSSST and the conditions of contract. The CPSSST, which is wholly flexible in its directives, comprises a series of recommendations to facilitate the conveyance of essential knowledge from the client to the contractor. Conversely the conditions of contract are mandatory in their directives and almost totally alienated from the CPSSST. They are characteristically rigid, reactive in disposition and only take account of those matters which were seen to exist when the contract was entered into. This area of incompatibility which exists between the pre and post tender procedures could be stabilised by reducing the measure of flexibility afforded by the CPSSST. However extreme care would be required in the introduction of change for the procedures need to remain sensitive to the requirements of the design team. Also care would be needed to avoid an unequitable transfer of risk and uncertainty.

3 Deliberation of the CPSSST

Codes of procedure for the letting of building works have been in existence for many decades. A modified version published in 1977 took account of many of the recommendations emanating from The Banwell Committee research. The most recent version published in 1989 remains basically unchanged but additional measures have been introduced to provide specifically for JCT80, IFC84 and MW80. Whilst the CPSSST appears adequate for the needs of the client, the design team and the contractor there are faults in principle which limit its effectiveness. These relate to:

(a) The bias which distinctly favours those who commission building works.
(b) The envisaged use of bills of quantities.
(c) The flexibility factor and its relationship with discretionary influences.

The procedures which provide for these are contained within the clauses relating to the "Preliminary Enquiry" and to the "Tendering Process".

3.1 Faults within the "Preliminary Enquiry".

Appendix A within the CPSSST advises that all tenderers be provided with certain information concerning the project being offered to tender. The objective being to reveal the total scope of the works thereby enabling contractors to decide whether or not to tender also to anticipate the demands on their staff. In the small work sector this formal approach is rarely used. Occasionally the enquiry is conducted by telephone but often receipt of the tender documents is the first knowledge a contractor has of the enquiry. The level and frequency of enquiries to tender are fragmented and without pattern. A contractor needs all the information provided by the "Preliminary Enquiry" to plan and organise the physical resources of the firm, to harmonise the current and known future commitments and to determine future requirements in both the short and medium terms. The fulfilment of this obligation by the design team indicates to the tenderer that the enquiry is *bona fide*, that the design has been approved, that the project has been thoroughly thought through and planned and that the client is aware of the likely financial commitment. The majority of these items concern time and money constraints:

item (h) "approximate cost range £.... to £.... .",
item (n) "anticipated date for possession",
item (o) "period for completion of the works",
item (p) "approximate date for despatch of all tender documents",
item (q) "tender period ..... weeks",
item (r) "tender to remain open for ..... weeks",
item (s) "liquidated damages (if any), anticipated value £..... per .....",
item (t) "details of Bond requirement",
item (u) "particular conditions applying to the contract".

An enquiry which satisfies these requirements of the CPSSST also indicates a responsible attitude by the design team to the letting of building contracts and this adds to the confidence of tenderers. Tendering for building work is a time consuming, costly and risk intensive exercise and the full and proper use of this administrative procedure is an essential ingredient to strategic planning and should be implemented as a matter of course. Excepting item (h) none of the remaining items are onerous upon the design team in regard to their time and money resources. The items purely relate to management. Item (h) may make demands upon the design team in terms of added responsibility and in terms of time and money resources. However this does not constitute a valid reason for permitting malpractice.

3.2 Faults within the tendering process

The CPSSST recommends the procedures to be adopted and the time periods to be observed for the various aspects of the tendering process. These recommendations extend from the time of the "Preliminary Enquiry" to the commencement of works on site. In recommending the procedures and in establishing the time allowances the CPSSST presumes that the design work has reached a stage of substantial completion. Moreover that sufficient suitably documented information will be provided to enable a realistic estimate of cost to be formulated. A failure to satisfy these inferences is unjust. A contractor should not be expected to enter into a rigid contractural commitment to carry out and satisfactorily complete works within strict time and money constraints when:

(a) The information provided by the design team is incomplete.
(b) The documentation is unsuitable for the purpose intended.
(c) The time allowed for processing the information is insufficient.
(d) The time allowed for planning the works is inadequate.
(e) The amounts set against prime cost and provisional sums are arbitrary and inordinately excessive.
(f) The period, to which a fixed price arrangement applies, is indeterminate.

However tenders are often obtained for small building work contracts which contravene these issues. The difficulties which are created for the tenderers as a result of this are further exacerbated during the construction of the works by:

(a) Variations being introduced as a result of the design work being incomplete prior to tenders being invited which often causes disruption and delay.
(b) The need to collate substantiating information and to formulate claims requesting an extension to the contract period.
(c) Interim valuations often not reflecting the true extent of the work executed.
(d) Lengthy periods of time being allowed to elapse between the date when particulars are taken on site and the date when the certificate of payment is issued.

(e) Delayed payments in respect of interim certificates.
(f) Delay in the release of retention monies and the settlement of the final account.

The issues relating to variations, to extensions of time and to the adequacy of financial reimbursement resulting from interim valuations relate with the quality of information available at the tender stage. These can only be rectified by improving the quality of information and by imposing stricter disciplines which would effectively reduce the measure of flexibility afforded by the CPSSST. The remaining issues relate with patterns of behaviour and concern the contravention of intentions. Remedial treatment in these respects rests with the need to create a condition which would secure a greater measure of parity insofar as obligations and restrictions are concerned. The most appropriate way of achieving this would be by the use of compensatory deterrents.

The role of the builder in the small works sector is subservient to that of the client insofar as obligations and restrictions are concerned. The client is privileged by standard conditions of contract to vary the works almost at will during the period of construction and this without surcharge. As a result the contractor is burdened with additional tasks, with increased responsibilities and with excesses in risk and uncertainty. Liquidated and ascertained damages provide the client with an immediate remedy in the event of a contract period, and any agreed extensions to it, being exceeded. A similar remedy is not available to the contractor who has suffered losses in terms of inadequate or belated payments arising from the effects of variations. These issues correlate, for the losses attributed to the contractor often have their origin in the very same issues which invoke the damages clause.

Further deficiencies, which also relate to the mental adroitness of communication and to time and money constraints are mainly concerned with the mis-appropriation of intentions. Small, in the context of small building works, is a colloquialism and devoid of precise definition which provides for a wide variety of interpretation. This factor is significant for the definition will influence the client and the design team in the choice of contract conditions. The physical size and the predicted cost of the project are often the sole determinants of the decision whereas frequently, issues relating to the inherent properties of simplicity and complexity, are seemingly disregarded. This constitutes the first of two reasons for the marked increase in procurement using the without quantities arrangement. The other reason concerns the benefits which may be derived by the client from a saving in design time and a saving in fees. These benefits are however limited to the short term, and if viewed in isolation can provide for adversity in the longer term. The remaining deficiencies are time related. All are of particular relevance to the construction team and all relate directly to tender preparation, to planning and to the quality of information. These concern:

(a) Inadequate time allowances for tender preparation.
(b) Inadequate time allowances for planning the works subsequent to the award.

The recommended time allowance for tender preparation is twenty working days and this is usually sufficient. However, at the discretion of the design team this allowance may be increased where the project is particularly complex or where quantities are not provided by the client. In practice this recommendation is rarely observed and the time allowance is often considerably less than that recommended.

Similarly the recommended time allowance for planning the works subsequent to the award is four working weeks. This period also is rarely observed and contractors are often expected to commence construction work almost immediately after the signing of the contract.

The analysis of a recent empirical survey has revealed that inadequate information and the use of inappropriate documentation have contributed significantly to increasing the burden of risk and uncertainty to be borne by the building contractor. In respect of inadequate forms of communication the areas of contention refer to drawings, to specifications, to the diminishing use of bills of quantities, to the levels of completion of design and, to a lesser extent, the levels of prime cost and provisional sums. The effects of these reflect in the formulation of the estimate, in the measure of effective planning and in the level of disruption which invariably results from variations. Time related issues are concerned with the setting of unrealistic contract completion dates, with unrealistic allowances for the preparation of the tender and with the often totally inadequate period required for planning subsequent to the award and prior to works commencing on site. The concerns with regard to money related issues revolve around the incidence level of variations, the reimbursement for varied works and late payments. The conditions of contract, whilst appearing to be less of a problem, direct concerns upon the suitability of choice, upon the insertion of onerous clauses and upon the level of liquidated and ascertained damages. The majority of these concerns correlate one with another and all relate to the quality of information and documentation or to patterns of behaviour.

4 Summarising the needs

(a) The information required by the "Preliminary Enquiry" to the CPSSST must be completed in total prior to an invitation to tender being made.

(b) The time period between the preliminary enquiry and the despatch of tender documents should be limited to four weeks.

(c) The use of the CPSSST should be restricted to projects where the design work is substantially complete at the time of issuing the tender documents.

(d) Minimum time allowances should be stipulated for tender preparation in both the 'with quantities' and the 'without quantities' arrangements.

(e) Tenders should be opened on the date of submission.

(f) A maximum period should be stipulated for the consideration of tender submissions and for the notification of results.

(g) The results of tender submissions should be notified in the manner currently prescribed by the CPSSST.

(h) A minimum time period should be stipulated for the planning period between the date of the award and the date when work is due to commence on site.

(i) Payment certificates need to be issued promptly. In this respect a maximum period, which may vary from project to project, should be allocated for the taking of details on site, for the office computations and for the issue of the certificate.

(j) Interim payments need to be prompt. There is a need to introduce into the conditions of contract a facility which provides for the contractor to be compensated in the event of a late payment in a similar manner to that by which the client is indemnified by the liquidated and ascertained damages clause.

(k) There is a need for a control mechanism which would both deter and limit the scope to vary once the contract has been let. There is a need also to distinguish between those changes which could have been foreseen at the pre-tender stage and those which could not. A different payment structure should be envisages for each. A deterrent of this nature would have the effect of improving the quality of information and reducing the need for extensions of time.

(l) Fixed price arrangements require the commencing date to be changed from the date of possession of the site to the "Date of Tender". This provision would promote an early award, would assist in obtaining firm prices for material supplies and would reduce the measure of risk and uncertainty created for the contractor by a fluctuating and unpredictable economy.

(m) Prime cost and provisional sums require similar directives to apply to both the 'with quantities' and the 'without quantities' arrangements whereby "defined" and "undefined" elements of work may be distinguished.

In considering the affects of these provisions upon the client and the design team then it would seem, from the client perspective, that items (a), (b), (d), (e) and (g) should not prove to be onerous. However the remaining items may have additional time and money implications, the extent of which rests solely with the client. From the viewpoint of the design team the added concern should be confined to the issues contained within items (a), (c), and (i). The realisation of this limitation is a matter of prudence.

Irrespective of the potential benefits which may be derived from the implementation of these recommendations, the matters relating to the broader issues of quality of information and styles of documentation remain unanswered. This is a fundamental matter and one which requires urgent attention.

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