A study of New Building Contract take up and the risk management opportunities they offer – a case study of JCT 98 and JCT 2005

By

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Abstract

The modern day UK construction industry has had to increasingly adapt to the demands of the economy, technology, client expectation, ever changing building laws and new government legislation on the environment. In addition a 'compensation culture' not unlike our counterparts in America is fast becoming part of British society. To better manage the risk of litigation each new standard form of building contract is developed to address possible loopholes experienced in older versions of the building contract. For example the JCT 98 suite of building contracts published in 1998 and the newer JCT 05 suite of building contracts published in 2005 was an attempt to improve industry standards.

Despite the introduction of new contract forms to address deficiencies in former versions it is often the case that many of the industry stakeholders are slow to accept these newly introduced building contracts and hence are likely to miss out on the benefits of the newer versions. However some claim that it is not without reason that they have exercised caution in their approach to accepting any new contract form introduced into the market. Others on the other hand have wholeheartedly accepted the new versions and claim to be benefiting from them.

This report will attempt to find out why there is a gap in the theory of introducing new contract forms and the practice of accepting these forms by the industry stakeholders and make recommendations for closing this gap. In this respect, this report researches the rate of take up of newly introduced standard building contract forms using the JCT forms of contracts which are arguably the most prolific and popular amongst the existing plethora of UK standard building contracts.

This study is based on existing literature, project case studies and structured interviews with specific construction sector stakeholders (client, consultant and contractor).

Key words

Client, Contracts, Contractor, Consultant, Procurement, Standard Building Contract (SBC), Joint Contracts Tribunal (JCT)

Word count- 10,033 (excluding tables, figures and appendices)

List of Abbreviations

JCT: Joint Contracts Tribunal

SBC: Standard Building Contract

IFC: Intermediate Form of Building Contract

CDPS: Contractor's Designed Portion Supplement

WCD: Standard Form of Building Contract with Contractor's Design

DB: Design and Build Contract

IC: Intermediate Building Contract

ICD: Intermediate Building Contract with contractor's design

MP: Major Project Construction Contract

MW: Minor Works Building Contract

MWD: Minor Works Building Contract with contractor's design

SBC: Without CDP: Standard Building Contract without a contractor's designed portion

SBC: With CDP: Standard Building Contract with a contractor's designed portion

MC: Management Contract

C/CM: Client and Construction Manager agreement

PCC: Prime Cost Contract

MTC: Measured Term Contract

MPF: Major Project Form

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Chapter 1: Introduction

1.1 Background

This dissertation examines new building contract forms and factors that affect the rate of take up within the UK construction industry. This study also examines JCT 98 suite of contracts and the recently published JCT 2005 - as a test bed to prove or disprove the study hypothesis. JCT standard forms of building contract were selected for review for the purpose of this study - as evidence suggest that JCT suite of contract are the most widely used contract form within the UK construction industry (Speaight and Stone, 2004).

1.2 Scope

The analysis involved in this study is specific to JCT contracts. However, other contract forms will be mentioned in the course of the case studies and analysis. This study does not cover the Engineering Contract in full or indeed other non-standard forms of contract.

1.3 Aims

- Establish to what extent risk management opportunities offered by newly published building contract impact on its rate of take up within the UK construction industry
- identify the main drivers that necessitate the publication of a new contract form
- Identify the main determinant of the life cycle duration of a contract form
- identify and recommend considerations that might extend the shelf life of a contract form in terms of its life cycle

1.4 Objectives

- Analyse case study with the view to identify determinant of the use of a contract form on individual projects
- Identify on whose advice a contract form is selected and the reasons behind this from case study and questionnaires that form part of this study
- Identify risk management opportunities offered by individual contract taking into account specifics of individual projects
- Establish from primary source data if there is a positive correlation between the take up of new contract form and risk management form offered by the building contract
- Establish if the dynamics of supply chain management and building procurement pathway plays an important role in life span of a building contract using JCT 98 and JCT 2005 as a test bed
- What might be done to encourage the speedy take up of new building contract within the UK construction industry given the additional opportunities they might offer

1.5 Rationale

The rationale of this work is to identify from client organisations, consultants and contractors – what their comparative experience are with regards to the take up of new contract forms and the risk management factors that might influence their decision to accept or reject a new building contract.

1.6 Methodology

The methodology will comprise of both secondary and primary source information. Secondary source information will be obtained through extensive library source literature, recent publication such as journals, conference papers, JCT publications. Relevant CPD magazines such as RICS, CIOB and RIBA publications will be examined. Internet source information will also be used for this study. Primary source information will be obtained from questionnaires and case study. A case study of recent

projects will be analysed to establish if there might be a correlation between risk management and up take of building contract. Personal interviews will also be carried out to supplement information obtained from case study and questionnaire.

1.7 Hypothesis

There is a positive correlation between the risk management potential of a new building contract with its rate of take up within the UK construction industry.

1.8 Chapter Structure

Chapter 1: gives a descriptive introduction of JCT building contract.
It also sets the framework for the comparative analysis of JCT 98 and JCT 2005 suite of building contracts. This chapter goes on to highlight the following:

- Scope of study
- Aims
- Objectives
- Rationale
- Methodology
- Hypothesis
- Dissertation chapter structure

Chapter 2: reviews the more widely used building procurement systems within the UK construction industry. This is intended to set the framework within which individual building contract are used. The following procurement systems are examined in this chapter:

- Traditional
- Design and Build
- Management

The chapter also reviews the appropriate use of the above procurement pathways and examines partnering agreements. It also highlights contractual as well as the communication link between all stakeholders.

The advantages and disadvantages of each procurement system are explored.

Chapter 3: carries out a comprehensive review of JCT 98 and JCT 2005 suite of contracts. This chapter commences by giving a historical review of contracts and how this has had to change within the dynamics of the construction industry starting from the 1800s to the present day. This chapter also offers advice to readers as to the appropriate uses and where each individual contract may not be suitable depending on the project specifics.

Chapter 4: a critical comparative analysis of JCT 98 and SBC 2005 is carried out. The advantages of each form of contract are highlighted. The differences between the two forms are highlighted. The difference in omissions and additions has also been identified. The unique benefits have also been examined. The outcome of this chapter formed the basis of the design of the question which was intended to further reinforce the justification of the amendments in new contract forms.

Chapter 5: contains a model of the life-cycle of a contract form.

Chapter 6: analyses the questionnaires. In this chapter the findings are discussed and interpreted.

Chapter 7: summarises the conclusion and recommendations of the findings of this research.

Chapter 2: Building Procurement Systems in the UK

2.1 Introduction

In the UK, there are a variety of procurement options available within the construction industry. Procurement systems define the contracted relationship as well as communication between the project/contract stakeholders. Employer/ clients have become increasingly more demanding and building projects are becoming more complex in nature and scope. Some clients desire single point responsibility while other clients/employers may wish to have greater involvement with a project procurement process. Building Procurement Methods have been classified into three main categories. An evaluation of their strengths, opportunities and weaknesses carried out and discussed below, partnering agreements will also be discussed. The major three procurement routes, within the scope of this study, are as follows:

- Traditional
- Design and Build
- Management

2.2 Traditional

In the Traditional approach the client is in direct contractual relationship with the consultants and contractor. *"Any contractual links for sub-contractors or sales contracts will be between the contractor and the firms in question. Only where the client makes nominations is it advisable to recommend collateral agreements to safeguard his interest in respect of any matters, which lie outside the building contract."* (Cox and Clamp, 2003).

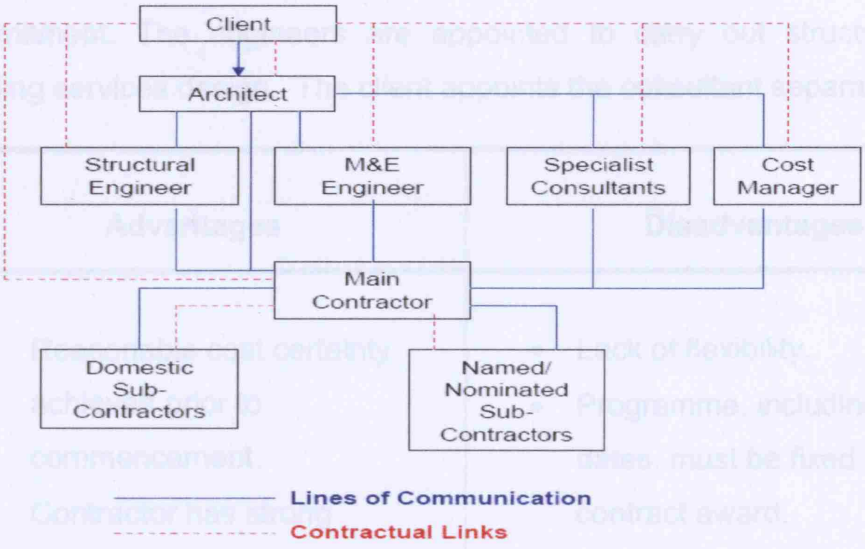

Figure 1: Contractual relationships: traditional procurement (Harrison and Richard, 2005)

"The Traditional procurement pathway is the most extensively used procurement route in the UK" (Franks, 1998). It is most suited to small projects and has been in use for over a century. In this system consultants are appointed to prepare design, specifications and also to administer the contract while the contractor is employed to execute the works in accordance with the terms and provisions of the contract. Ideally this method is suited for lump sum contracts when full drawings and specifications have been prepared before going out to tender. In the traditional procurement pathway, the client employs the architect to carry out the design. For Traditional procurement there are three main types of contract: Lump sum contracts, Measurement contracts and Cost reimbursement contracts (see Appendix B).

Essentially, this system is designed to enable the Quantity Surveyor to produce an unpriced bill of quantities or schedule of works or specification, which is required. The complete tender documents, together with the full designs, are sent out to tender. The contractors price the bill and submit a lump sum tender for the works. Therefore, prior to entering into any agreement with the contractor, the client knows his full financial

commitment. The engineers are appointed to carry out structural and building services design. The client appoints the consultant separately.

Advantages	Disadvantages
• Reasonable cost certainty achieved prior to commencement. • Contractor has strong commitment to completing on time. • Contractor owns financial risk of building works unless there are changes. • Single point of contractual contact. • Well-known procedure. • BQ's good for variations: change is easy to arrange and value. • Quantities by QS mean less risk for Contractor's better prices. • Information for tendering needed early, requiring discipline in design team.	• Lack of flexibility. • Programme, including access dates, must be fixed before contract award. • Nature of access must be fixed before contract award. • Design must be complete before tendering • Overall programme extended. • BQ preparation adds to procurement time. • Any alteration to traditional process increases risk. • No build ability input. • Often-adversarial relationships. • No influence on choice of Sub-Contractors (assuming nomination avoided) • Lines of communication tenuous. • Has proved to be unsatisfactory for large/complex projects. • Poor team work potential. • Impact of main contractor's insolvency.

Table 1: Advantages and disadvantages of Traditional contracting
Source: (Davis Langdon, 2005)

Key Features: -

- Contract awarded on a two stage basis:
- Stage One tenders are invited on outline information, with (Stage Two) firm prices negotiated with selected tenders'.
- Detailed design is therefore delayed until after Stage One Award (through incorporation of high proportion of provisional sums)

2.3 Design and Build

In this system the client may appoint outside consultants to advise on the preparation of Employers Requirements and to evaluate and select tenders.

The tendering contractor then responds by preparing a Contractors Proposal.

"The main contractual link is between the client and the contractor and the client's agent or representative has only a limited role. The contractor might also have a contractual link with his own design consultants and with sub-contractors and suppliers" (Cox and Clamp, 2003). Variants of design and build include *novated design and build*, *package deals*, *the turnkey method* and *develop and construct* (Masterman, 2002). Design and build was originally used to build large warehouses and industrial buildings, which required limited design input due to their simple content. Over recent years, it has been tailored for use on more complex buildings because of its main attraction; that is the single point responsibility.

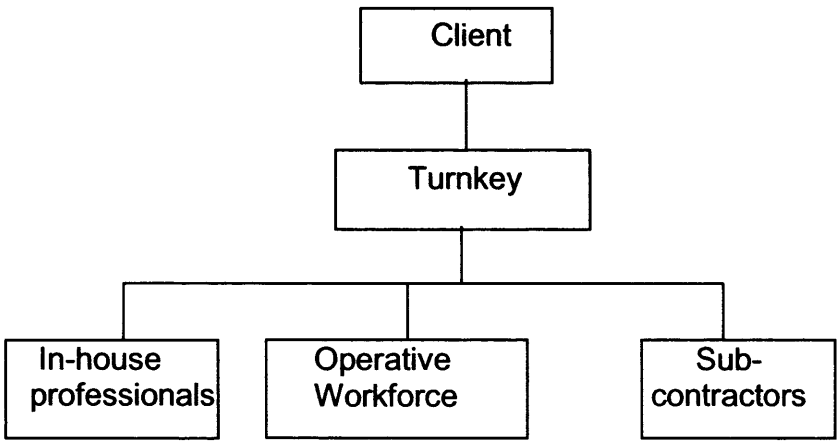

Figure 2 Contractual relationships: 'Turnkey' design and build procurement
Source: (Winch, 2002).

Advantages	Disadvantages
• Single point responsibility. • Inherent build ability achieved. • Price certainty obtained prior to commencement. • Design and construction overlapped: overall project time reduced. • Client can demand performance specified work. • Design development and construction risk with Contractor.	• Client changes can be expensive. • Quality clarity of Client brief is crucial: difficulties can be experienced in preparing an adequate brief. All Client requirements must be precisely specified prior to signing contract. • Client cannot influence design development (no contractual link with design team). • Technical quality tends to be lower than in other forms of procurement. • Blandness of design often a major criticism (though less true now than in early days).

Table 2: Advantages and disadvantages of Design and Build contracting
Source: (Davis Langdon, 2005)

Key Features: -

- Contractor assumes risk for designing and building a project, submitting detailed proposals to the Client to establish they are in accordance with the Client's requirements.
- Extent of Client's control over design can be adjusted.

2.4 Management System Management procurement

The contractual relationship with the management contractor is such that all works contractors are in direct relationship with the management contractor. It may also be desirable to establish a contractual relationship between the client and each works contractor by means of collateral agreement. In Construction Management the contractual relationship is between the client and the construction manager, with all trades contractors in direct relationship with the former.

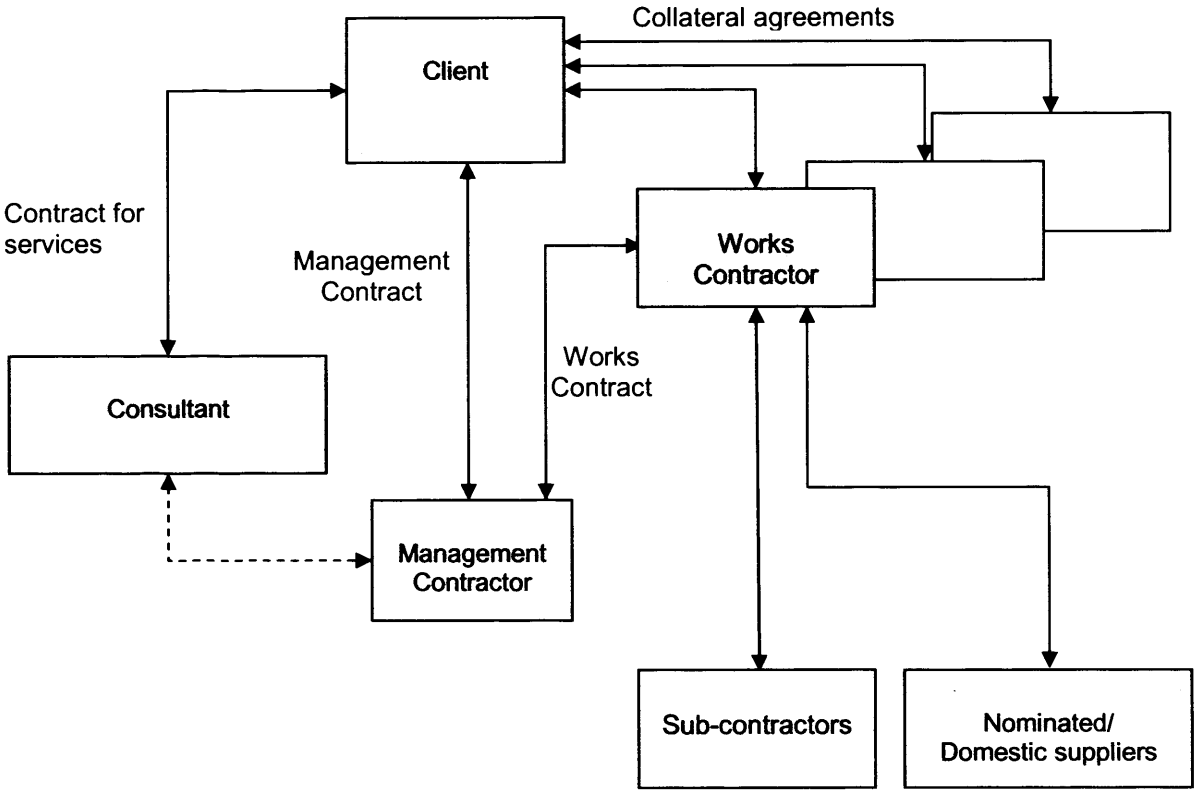

Figure 3: Contractual relationships: management procurement (Cox and Clamp, 2003)

Management Contracting:

The management form of contract has developed primarily to overcome the adversarial attitudes generated by the more traditional procurement routes and thus to promote the interests of the client, who was ultimately the victim of this conflict. The key change of emphasis has been to raise the status of

the contractor, who joins the client's team as the "construction consultant" alongside the design consultants and cost advisors.

Construction Management:

Construction management is almost identical to that of Management Contracting, the intent perhaps being to consolidate further the role of the contractor as a member of the client's consultant team. This is effectively achieved by a change in the contractual arrangements, whereby the works or trade contractors enter into direct contract with the employer (See Appendix F).

Key Features: -

- In both cases a contractor (CM or MC) is appointed early to manage the building process; this allows an early start on site with a considerable overlap between design and construction (trade/works packages are tendered progressively).

- The key difference between CM and MC relates to the contractual link with trade/works contractors.

- Recent years have seen constructors willing to provide a guaranteed maximum price for the entire project at an appropriate stage (typically when not less than 70% of the works - by value - have been tendered).

Advantages	Disadvantages
• Time saving potential by overlapping design and construction. • Build ability and programming advice and early site organisation advice. • Parallel working an inherent feature. • Greater flexibility: design and programme changes can be accommodated later without necessarily paying a premium; certain packages can be specified fairly late. • Breakdown of traditional adversarial barriers. • Work packages let competitively and transparently. • Construction knowledge and management expertise bought. • CM/MC identifies with Client's needs and shares common objectives. • Decisions on appointment of contractors made jointly by designers and CM/MC, making use of wider experience. • More involvement with trade contractors. • Contracts entered into near time of works firm price/competitive.	• No price certainty until last package let (can be overcome by achieving 100% procurement before start on site). • Interfaces between work packages (responsibility; cost; repairs). • CM/MC's preference for "blue chip" contractors. • Need for amendments to earlier design become apparent later. • Number of bonds, guarantees and insurances put up cost.

Table 4: Management route generic advantages and disadvantages

Source: (Davis Langdon, 2005)

2.5 Partnering Agreement in construction projects

The Construction Industry Board defines partnering as *"a structured management approach to facilitate team working across contractual boundaries. Its fundamental components are mutual objectives, agreed problem resolution methods and an active search for continuous measurable improvements"* (CCIB, 1998). The Latham Report (1994) played a key part in promoting partnering in the UK construction industry. Project partnering and Strategic partnering are two main types of partnering. In the Project partnering the relationship is established on a specific project and on completion of the project the relationship is terminated. On the other hand, Strategic partnering involves a long-term relationship relating to a series of future projects (Masterman, 2002). Agreements between parties in partnering may be binding or non-binding and its principles may be applied within other forms of procurement.

One of the advantages of partnering is that conflict is reduced among all the members of the project team but a disadvantage may be the additional costs incurred by all partners as a result of the expenditure on extra management time spent on workshops, training and implementing partnering practices (Masterman, 2002).

2.6 Summary

In reviewing the major procurement routes in this chapter the importance of choosing the correct procurement route has been clarified. A wrong choice may spell potential disaster for a construction project. Also, it may not be possible to get a desired result of flexibility or other client requirements from the contractor within a particular system of procurement. The following chapter will discuss the JCT contracts and how they operate within the procurement systems.

Chapter 3: Contracts

3.1 Introduction

This chapter reviews JCT Building contracts within the UK construction industry.

This Chapter is intended to provide a historical background and set the context for which a comparative analysis would be carried out between the deliverables of the SBC 2005 over JCT98.

3.2 Brief history of UK building contracts

The history of Building Contracts within the UK construction industry dates back to the 1800s. *"The RIBA in association with the London Builders' Society produced a document in 1870 called 'Heads of Conditions of Builders' Contract. This was followed in 1895 by the RIBA issuing its own Conditions of Contract and later in 1902 provision was made for contracts with or without quantities. The document was reviewed in 1909 and revised by the London Builders Society and the RIBA"* (Cox and Clamp, 2003).

The Joint Contracts Tribunal (JCT) was founded in 1931. The tribunal consisted of the Royal Institute of British Architects (RIBA) and the National Federation of Building Trades Employers (NFBTE). The primary purpose was to publish and where necessary to amend Standard form of building contracts. The JCT published important new editions of the Form in 1939, 1963, 1980, 1998 and 2005. JCT has expanded the number of contributing organisations. In 1998 JCT became a limited company (Joint Contracts Tribunal, 2006)

3.3 A review of JCT98 form of building contract

Despite the plethora of contract forms produced by various bodies, the Joint Contracts Tribunal Ltd has become the most accepted publisher of building contracts and sub-contracts in the UK. It has a wide variety of documents covering construction contract types. Its uniqueness may stem from the fact that they have been produced by a tribunal represented by the construction industry and client bodies. As a consequence of which it they are unlikely to be interpreted as contra proferentem (against the proffering person) by our legal system (Cox and Clamp, 2003).

JCT contracts are subject to the following:

- *Unfair Contract Terms Act 1977*
- *Sale and Supply of Goods Act 1994*
- *The unfair Terms in consumer Contracts Regulations 1994*
- *Housing Grants, Construction and Regeneration Act 1996 (Part II in particular)*
- *Late Payment of Commercial Debts (Interest) Act 1988*

According to Denis Bower '*the three main functions of contracts are work transfer (to define the work that one party will do for the other), risk transfer (to define how the risks inherent in doing the work will be allocated between the parties) and motive transfer (to implant motives in the contractor to match those of the client)"* (Bower, 2002)
In summary the main functions of JCT Building Contracts is to define the obligation of the contracting parties and to apportion risk between the parties.

Bartlett (2000) summarises the JCT main contracts as follows;

Main contracts

1. *The Standard Form of Building Contract (JCT 98) in the following variation:*
    - *Local authorities' edition with or without quantities*
    - *Private edition with or without quantities*
2. *Contractor's Designed Portion Supplement (CDPS):*
    - *CDPS 'With Quantities' 98*
    - *CDPS 'Without Quantities' 98*
3. *Intermediate Form of Building Contract (IFC 98)*
4. *Minor Works Agreement (MW 98)*
5. *Standard Form of Building Contract with Contractor's Design (CD 98) for Design and Build Contract (WCD98) JCT.*
6. *Management Contract (MC 98).*
7. *Client and Construction Manager Agreement (C/CM)*
8. *Prime Cost Contract (PCC 98)*
9. *Measured Term Contract (MTC 98)*
10. *Major Project Form (MPF)*

Other contracts forms not reviewed in this study but worth noting for information purposes are as follows:

- *Jobbing Agreement (JA 90). This consists of the tender JA/T and the agreement conditions JA/C*
- *Agreement for Housing grant Works (HG (A))*
- *Building Contract for Home Owner/Occupier (where client deals directly with the builder)(HO/C)*
- *Building Contract for Home Owner/Occupier (who has appointed a consultant)(HO/RM)*
- *Contract for Home Repairs and Maintenance (HO/RM)*
- *Construction Management Documentation*

The focus of this study will be confined to Main Contract forms. Sub-contracts forms will not be reviewed. The following main Contract forms will be discussed in this chapter.

(i) JCT 98 (Traditional Lump Sum)
(ii) IFC 98 Intermediate Form of Building Contract (Traditional Lump Sum)
(iii) MW 98 Agreement for Minor Building Works (Traditional Lump Sum)
(iv) WCD 98 Standard Form of Building Contract
(v) MC 98 Standard Form of Management Contract
(vi) Agreement (C/CM) - Client and Construction Manager
(vii) MTC 98 Standard Form of Measured Term Contract
(viii) PCC 98 Standard Form of Prime Cost Contract
(ix) MPF Major Project Form

(I) JCT 98 (Traditional Lump Sum)

In April 1998 all the JCT forms were amended as a result of the Housing Grants, Construction and Regeneration Act 1996 and the Latham Report (1994). JCT98 effectively replaced JCT 80.
This form of contract has three alternatives suitable for varying project circumstances.

- With quantities
- Without quantities
- Approximate quantities

Appropriate Use

For major works where detailed contract provisions are likely to prove necessary, and where certain work can be reserved for specialists nominated by the Contract Administrator. (The Joint Contracts Tribunal, 2001)

JCT 98 Private Without Quantities: Appropriate for larger works where the degree of complexity is not such as to require full bills of quantities and where either a Specification or Schedules of Work can adequately convey the quality required. The price of the Works will not of itself determine whether bills of quantities should be used. (The Joint Contracts Tribunal, 2001)

JCT 98 Private with Approximate Quantities: Appropriate for larger works where full contract provisions are likely to prove necessary, but where the Employer wants an early start and there is insufficient time to prepare contract documents with quantities detailed enough for a lump sum to be quoted. The works must have been substantially designed even if not in complete detail, so that although quantities will be shown in the Bills they will be approximate and subject to re-measurement. (The Joint Contracts Tribunal, 2001)

(II) IFC 98 Intermediate Form of Building Contract (Traditional Lump Sum)

In October 1981 a working party was set up by the JCT to prepare an 'intermediate' form. A direct result of the concern expressed by the RIBA that the then new Standard Form of Building Contract (JCT80) was not suited to middle range jobs. In September 1984 the intermediate Form was published. IFC84 was amended several times; the twelfth amendment was to meet the recommendations made in the Latham report of 1994. Amendment 12 ensured compliance with Part II of the Housing Grants, Construction and Regeneration Act 1996 in respect of Adjucation and payment provisions. The 1998 Edition of the Intermediate Forms is basically a consolidated version of IFC84 (Cox and Clamp, 2003).

Appropriate use

- *Where the proposed works are to be carried out for an agreed lump sum;*

- *Where an Architect or Contract Administrator has been appointed to advise on and to administer its terms;*
- *Where the proposed building works are of simple content involving the normal, recognised basic trades and skills of the industry, without building service installations of a complex nature or other complex specialist work; and*
- *Where the works are adequately specified or specified and bills of quantities prepared prior to the invitation to tender.*

This form provides more detailed provisions and more extensive control procedures than the Agreement for Minor Building Works. A sectional completion supplement allows its use where the project is divided into sections (The Joint Contracts Tribunal, 2001).

(III) MW 98 Agreement for Minor Building Works (Traditional Lump Sum)

"The Agreement for Minor Building Works first appeared in 1968, and was intended for minor building operations and maintenance work for which the JCT Standard Form of Building Contract (then JCT63) was clearly inappropriate. It was five pages long compared with nearly 40 pages of the full Standard Form. It was not for use with bills of quantities, and was stated as being suitable where the contract form did not exceed £8,000" (Cox and Clamp, 2003).

The RIBA in the 1970s made efforts to address the deficiencies in both the 1963 Standard Form and the Minor Works Agreement, with proposals for a new, simpler 'short form' of building contract. The RIBA Council approved this proposal in June 1978. In principle the JCT working group accepted the proposal and took further action by responding with a new draft 1980 version of the Minor Works form-the first time that the conditions in JCT forms were arranged under section headings (short form concept). The 'short form' concept resurfaced in the drafting of IFC84. MW80 underwent

11 Amendments, the last of which was to take account of the Housing Grants, Construction and Regeneration Act 1996 (Part II). The 1998 Edition of the Agreement for Minor Building Works was a consolidated version of MW80 (Cox and Clamp, 2003).

Appropriate Use

For new works, alterations and extensions to all types of building:

- *Where the proposed works are to be carried out for an agreed lump sum;*
- *Where the work involved is simple in character; and*
- *Where an Architect or Contract Administrator* has been appointed to advise on and to administer its terms.

  Source: (The Joint Contracts Tribunal, 2001)

May not be used

Where bills of quantities would normally be required or where detailed control procedures are needed. (The Joint Contracts Tribunal, 2001)

(IV) WCD 98 Standard Form of Building Contract

With Contractor's Design (WCD), is available in one version for Local Authorities and private Clients (Joint Contracts Tribunal, 2001).
It should be noted, however, that no architect is specified in WCD 98 (Chappell, 2003).

Appropriate Use

On projects where the Employer wishes the Contractor not only to carry out and complete Works, but also to undertake design responsibility.

(V) MC 98 Standard Form of Management Contract

"For 'fast-track' projects where the Employer still wants the overall design, Specification and contract administration left in the hands of an independent professional team, management contracts are one solution. Their use in the United Kingdom became popular during the 1980s, but in recent years they seem to have lost ground to construction management" (Cox and Clamp, 2003). In the 1970s the only management contract forms available were those devised by contracting organisations that pioneered this manner of working. These were often geared to suit the preferred working procedures of the companies, and drafted with their particular interests. On advise from their Contracts committee in 1979 the RIBA council asked the JCT to produce a standard form of management contract. The JCT in 1987 issued the Standard Form of Management Contract (MC87) and related documents for management contracting. The documents were the head contract between the Employer and the Management Contractor, and Works Contracts between the Employer and the Management Contractor and each 'Works Contractor' carrying out a package of the work. The 1998 Editions were published in the same format (Cox and Clamp, 2003).

Appropriate Use

Used with large-scale projects where an early start and the earliest possible completion are required. In such situations it is not always possible to prepare full design information before work commences, and much of the detail design may be of a sophisticated or innovative nature requiring proprietary systems or components designed by specialists (The Joint Contracts Tribunal, 2001).

(VI) Agreement (C/CM) - Client and Construction Manager

C/CM is a form of agreement between the Client and the Construction Manager where the Client enters into a direct separate trade contract using the TC/C Trade Contract or a special Trade Contract. Amendment 1: Construction Skills Certification Scheme (July, 2003).

(VII) MTC 98 Standard Form of Measured Term Contract

The introduction of the Standard Measured Term Contract in 1989 was as a result of the need of employers in both public and private sectors requiring regular maintenance and minor improvement work for their building stock. This form of contract has long been in existence and was widely used by Corporate and commercial client bodies with building stock, but the JCT contract was the first standard form specifically for such work. On a rates basis competitive tenders may be invited taking into account the nature of the intended works, the geographical area to be covered, and the time requirements of the contract (Cox and Clamp, 2003).

Appropriate Use

In use by employers with a regular flow of maintenance and minor works, including improvements, to be carried out by a single contractor over a specified period of time and all under a single contract (The Joint Contracts Tribunal, 2001).

(VIII) PCC 98 Standard Form of Prime Cost Contract

Construction contractors in the UK during and shortly after in the Second World War fixed profits as a percentage of the cost of works to gain profits and cover overheads in the shortest time possible. However, the Simon Report (1964) criticised their methods by saying *"fixing Contractor's profits as a percentage of the cost of the work was not in the public interest and unlikely to be acceptable to building owners in the future"*. (Cox and Clamp, 2003). The report led to the JCT in 1967 publishing a Prime Cost Form

incorporating a fixed fee', *thus introducing an element of competition whilst still ensuring that Contractors should be able to recover the whole of their loss for labour and materials. Fixed fees would only be sustainable if the architect was precluded from issuing instructions which altered the 'nature or the scope of the Works'* (Cox and Clamp, 2003).

The JCT set up a working party in 1981to revise the form as a Prime Cost document with the choice of a fixed contract fee or a percentage. In 1983 a draft document was produced with a section headed format. Attempts were made to *resolve* problems, arising from changes to the scope of Works. *"In such cases the Contractor was required not to increase labour and materials more than was reasonably necessary to carry out the Works"* (Cox and Clamp 2003). This revised Prime Cost Contract was eventually published in 1992, and reproduced in the 1998 edition.

Appropriate Use

In instances where the employer wishes to commence works as soon as possible. *"There may be insufficient time to prepare detailed tender documents, or circumstances such as an inability accurately to define the work may make their use inappropriate, necessitating the appointment of a contractor simply on the basis of an estimate of the total cost"* (The Joint Contracts Tribunal, 2001).

(IX) MPF Major Project Form

The Major Project Form evolved from a general dissatisfaction of the JCT98 by some employers undertaking major commercial developments. Applicable where the employer wishes the contractor to take responsibility for some detailed design. Extended timescale of major projects has often led to working in phases, in parallel with design and construction in addition to payments related to progress and performance, and with incentives for savings in time and cost. This often resulted in employers making extensive

modifications to the conditions in otherwise standard forms of contract. (Cox and Clamp, 2003).
The Major Project Form (MPF) was updated in 2003 and is referred to as MPF03.

Appropriate Use

Employers who have in-house contractual procedures and regularly undertake major projects and wishes the Contractor to have design responsibility for the works. Under this form of contract the Contractor assumes more risks and responsibilities than under any other JCT standard form. It is often more effective where both the employer and contractor are experienced in risk management and undertaking large commercial projects (The Joint Contracts Tribunal, 2006).

Summary:

The Major Project Form was developed to meet the specific needs of experienced clients who regularly procure major buildings, and reflect those amendments frequently made to SFBC JCT 98 and WCD 98 by developers and other large commercial organisations (The Joint Contracts Tribunal, 2006).

May be used:

- *By experienced users who require limited procedural provisions in the contract form and have their own in-house procedures,*
- *Experienced knowledgeable contractors who can put in place a proper system of risk management,*
- *Significant projects in terms of size and complexity.*
  Source: (The Joint Contracts Tribunal, 2006).

The first JCT form used specifically to provide for Third Party Rights is the Major Project Form. It covers various levels of design input on the part of the Client and the Contractor and incorporates a design submission procedure.

The MPF does not require supplements unlike other JCT forms. It provides for projects carried out in sections and requires the parties to establish their own insurance requirements. In MPF, the contractor is required to carry more risk, for example, ground conditions, and there is no fluctuations provision; however, retention provisions has been removed (The Joint Contracts Tribunal, 2006).

Other key provisions are those dealing with:

- *Acceleration of project,*
- *Bonus for early completion,*
- *Cost savings and value improvements,*
- *The Client's pre-appointed consultants,*
- *Mediation.*

Provision has been made for named specialists but no provision for nomination. Partnering has been facilitated by the scope for the use of in-house procedures and the need to discuss matters such as insurance, cost savings and value improvements. The MPF can be used in conjunction with the JCT Non-Binding Partnering Charter (The Joint Contracts Tribunal, 2006).

3.4 A review of the JCT Standard Building Contract 2005

The JCT 2005 suite consists of contract families made up of main contracts and sub-contracts, together with other documents that can be used across certain contract families (See Appendix E). For a summary of the main contracts in the JCT standard Building suit of contracts 2005, listed (i-x) below, the reader is referred to Appendix G.

(i) Standard Building Contract (SBC) 2005
(ii) Intermediate Building Contract (IC)
(iii) Intermediate Building Contract with contractor's design (ICD)
(iv) Minor Works Building Contract (MW)
(v) Minor Works Building Contract (MW) without contractors design

(vi) Minor Works Building Contract with contractor's design (MWD)

(vii) Design and build (DB)

(viii) Major Project Construction Contract (MP)

(ix) Management Building Contract (MC)

(x) Construction Management Appointment (CM/A)

Table 6 illustrates the name changes applied to the main contracts of the SBC 2005 contracts in comparison to the superseded JCT 98 forms of Building Contract. Source: (Joint Contracts Tribunal, 2006)

Version	JCT Contract	Use
New	JCT 05 Standard Building Contract	This form of contract is intended for larger projects where the **employer** has engaged a professional consultant to advise on and to administer its terms.
Old	JCT 98 Standard Form of Building Contract	
New	JCT 05 Major Project Construction Contract	This Form of Contract is intended for larger projects being carried out by experienced users and knowledgeable **contractors** who require limited procedural provisions.
Old	JCT 98 Major Projects Form (MPF)	
New	JCT 05 Design and Build Contract (DB)	This Form of Contract is intended for projects where a **contractor designs** and builds the works for an agreed Lump Sum.
Old	JCT WCD 98 Standard Form of Building Contract With Contractor's Design (WCD)	
New	JCT 05 Intermediate Building Contract (IC)	This Form of Contract is intended for those projects in the range between those for which the JCT 98 Standard Form of Building Contract and those for which the JCT 98 Agreement for Minor Building Works would be used. The Form is suitable for works of a simple content without any building service installations of a complex nature.
Old	IFC 98 Intermediate Form of Building Contract (IFC)	

Table 6: Main contracts: JCT 98 and 2005 equivalent

The key changes to the JCT 2005 suit of contracts as summarised by Sarah Lupton (2005) are as follows:

Additions:

- *Contractor's Designed Portion Supplement provisions now integrated*
- *CDP PII insurance requirement added*
- *CDP design submission procedure added*
- *Copyright in the Contractors design Documents added*
- *Sectional Completion Supplement provisions now integrated*
- *Fluctuations options included (as a schedule)*
- *'Third party rights' included as a schedule (Purchaser/Tenants, Funders)*
- *Inclusion of provisions for collateral warranties from the contractor (Purchaser/Tenants,*
- *Funders: the warranties themselves are separate documents)*
- *Inclusion of provisions for collateral warranties from sub-contractors (Purchaser/Tenants,*
- *Funders and Employer: the warranties themselves are separate documents)*

Omissions:

- *Nominated sub-contractor provisions removed*
- *Nominated supplier provisions removed*
- *Performance specified work provisions removed*
- *Contractors Price Statements removed ('1.3A' retained)*
- *Clause 22D insurance omitted (loss of liquidated damages)*
- *Construction Industry Scheme provisions largely removed*
- *VAT supplementary agreement removed*
- *Requirement to certify 'frost damage" under clause 17.5*

Layout/ Terminology differences:

- *Contract Particulars follow Articles, replacing the Appendix*
- *"13A quotations' under a schedule*
- *Insurance under a schedule*
- *Architect becomes Architect/contract administrator*
- *'Employer's persons' and 'Contractor's persons' defined*
- *"Insolvent1: "purchaser and tenant' 'relevant omissions' defined*
- *Extension of time section now headed 'Adjustment of Completion Date'*
- *Defects liability period now 'rectification period'*
- *Determination now 'termination'.*

Other changes:

- *EDI replaced by broader 'electronic communications' provision whereby parties may agree their own procedure.*
- *Extension of time provisions revised, relevant matters reduced*
- *Determination (now 'Termination') provisions simplified*
- *Arbitration - default changed to legal proceedings*
- *Adjudication now under the Scheme*
- *Mediation moved from footnote to an express clause*

For Comparisons of Contract provisions for SBC 05, DB 05, MP 05, SBC 05, IC, ICD 05, MW 05 and MWD 05 refer to Appendix C.

3.5 Summary

The information provided in this chapter has set the stage for a comparative analysis in chapter four. The following chapter will study the effects of the changes applied to SBC2005, which did not exist in JCT 98.

Chapter 4: Comparative Analysis of SBC 2005 and JCT98

4.1 Introduction

Having described the three main procurement methods in use in the UK in Chapter 2 and introduced the JCT 98 form of Building contract and its 2005 equivalent to the reader, Chapter 4, follows on from chapters 2 and 3. It basically looks at the following:

- The need for SBC 2005
- The impact of SBC 2005
- Risk Management under SBC 2005
- Benefit of SBC 2005 to the Employer/ Client and Contractor

4.2 The need for SBC 2005

Criticisms were levelled at all the JCT contracts produced prior to the SBC 2005 was their format, complex language and often-confusing amendments. JCT98 did not seem to solve this problem as it tended to retain the shortfalls of JCT 80.

In the words of the authors (Ndekugri and Rycroft, 2000) "JCT 98 was still too complex and convoluted. *It no doubt remained a lawyers' paradise and a source of dispute like its predecessors. For many of the building industry's practitioners, it was probably a document to be signed, put in a drawer and forgotten until things went wrong".* It is no surprise that the JCT 98 was criticised as its predecessor JCT 80 had also retained the style of JCT 63 and the RIBA forms. These were more of an update, rather than a comprehensive review. Further amendments were issued for JCT 98 in the same year of publication, however, the complex and prolific cross-referencing, which made JCT 80 difficult to use, remained. It may be argued that the intended principal advantages that JCT 98 had over JCT 80 and JCT 63 were hindered by adherence to the old format.

Clearly there was a need for a comprehensive review of the JCT98 contract forms. In 2005 over the period of May to December the Joint Contract Tribunal commenced a comprehensive review-taking note of the comments made on all the previous contracts to date. As a result the SBC 2005 contract was drafted. This was described as a welcome development by the construction industry, one article comments, *"In general terms, the changes implemented by the 2005 suite of JCT contracts are to be welcomed and evidences the fact that constructive criticism from commentators is not necessarily ignored"*! (Boulding and Lamont, 2006).

4.3 The impact of SBC 2005 on choice of procurement option

As with its predecessors, the impact of SBC 2005 on choice of procurement method depends on the *nature and scope* of the proposed work, *apportioned risk*, *design responsibility*, *coordination of work* and on the *price basis* on which the contract is awarded. Authors (Clamp and Cox, 2003) pointed out that *" the choice of form of contract cannot usually be settled until the procurement method and type of contract have been established'* (See Appendix C for factors affecting choice of procurement options).

SBC 2005 has had a direct impact on procurement options with design considerations. The JCT have effectively influenced the design responsibilities of the contractor in SBC 2005. For example, the range of forms for traditional procurement has been expanded by the addition of the Intermediate Building Contract with Contractor's Design (ICD) and the Minor Works Building Contract with contractors' Design (MWD). In the SBC 2005 there are no longer separate supplements. Instead, provisions for fluctuations, sectional completion and contractors design portion have all been incorporated into the main contract. With framework procurement options such as 'Partnering' the SBC 2005 contracts include two Framework Agreements, one binding and the other non-binding. These are intended for use for the procurement of construction and engineering related works (Lupton, 2005). See Appendix D for summary of procurement routes according to SBC 2005 Contracts.

4.4 Risk Management under SBC 2005

Risk management under SBC 2005 suit of contracts with regards to commencement, progress and completion is relatively the same in SBC 2005 as JCT 98. However, possible key areas of risk management to highlight in SBC 2005 are in *contractors design responsibilities* and *contractors design obligations*.

Contractors design responsibilities

- *The 2005 reformatting of the JCT contracts has seen two notable additions to the range, namely the Minor Works Building Contract with Contractor's Design ("MWD 2005") and Intermediate Works Building Contract with Contractor's Design ("ICD 2005"), specifically tailored for the smaller end of the market where the contractor provides some design input subject to supervision from the architect or contract administrator. Neither contract MWD or ICD is intended to be a substitute for a Design and Build Contract; both appear only to be suitable in circumstances where the parties intend that the contractor is to be responsible for some element of the design. (Boulding and Lamount, 2006).*

- *MWD and ICD, both contracts oblige the employer to supply detailed requirements for the intended "contractor's design portion" to examine the contractor's proposals in respect of such requirements and to satisfy himself that those proposals are adequate (see Seventh Recital).* (Boulding and Lamount, 2006)

- *It is up to the employer to delete or amend such provisions in an attempt to impose a more onerous design responsibility upon a contractor than was intended by JCT draftsmen. This may well be an area where disputes occur.* (Boulding and Lamount, 2006)

The two contracts (ICD 2005 and MWD 2005) differ with regards to Contractors design obligations. *"Under ICD 2005, the standard of care in*

relation to the design of the particular portion is that of a professional designer.1 Conversely, under MWD 2005 the standard is that of reasonable skill, care and diligence.2 The question which presumably will be left for the courts to decide is whether the reasonable skill and care to be expected of a contractor carrying out design work is different to the skill and care to be expected of a professional designer" (Boulding and Lamount, 2006).

Contractor's design obligations

"By including a clause within SBC 2005, DB 2005, ICD 2005 and MWD 2005 expressly provides that a contractor is not responsible for checking the adequacy of any design contained within the employer's requirements. The courts held that a contractor charged with "completion" of design work was under a duty of care to examine an employer's pre-existing design and to satisfy himself that the same was such that would produce a completed design capable of being constructed. However, this is not to say that a contractor has no responsibility whatsoever in relation to the design. Under SBC 2005, DB 2005 and ICD 2005, a contractor is obliged to notify any inadequacies in the employer's requirements upon becoming aware of the same, and then to seek reimbursement for related costs by way of a variation; It is incumbent on the contractor to ensure that the employer's design complies with any statutory requirements, except in the case of DB 2005 where the employer's requirements state that they are so compliant" (Boulding and Lamount, 2006).

See Appendix E for risk management watch points applicable to SBC 2005.

4.5 Liability issues: Warranties and Third party rights

The Joint Contracts Tribunal in the new suit of contracts SBC 2005 have made conscious efforts to address issues of Liability especially with regards to Warranties and Third party rights. The following is a summary extracted from an article by Boulding and Lamont, 2006.

''SBC 2005, DB 2005 and IC/ICD 2005 now include provisions for main contractor and subcontractor collateral warranties in favour of purchasers, tenants and funders; The MW/MWD05 contains no such clauses, whereas the SBC 05 makes provision for collateral warranties, sub-contractor collateral warranties and the granting of third party rights. It is critical that the Contract Particulars in relation to warranties or third party rights are carefully filled in. In addition to identifying the beneficiaries, the parties also need to identify the part of the works to be purchased or let and whether or not a warranty or third party rights are to be granted if a choice is available. Specific details requiring attention include whether or not a contractor is to be liable for non-repair losses incurred by the beneficiary and any "cap" to be applied to the net contribution clause of the warranty. Should no purchasers, tenants or funders be identified by name, class or description, then an employer will not be able to subsequently ask for warranties or third party rights in relation to the same. The granting of third party rights has already been included in the 2003 Major Project Form ("MPF"). A notice identifying (i) the relevant purchaser, tenant or funder and (ii) his particular interest in the works must be served by actual, special or recorded delivery upon the contractor, following which the contractor has fourteen days to enter into the relevant form of warranty. Third party rights vest in the appropriate beneficiaries upon the contractor's receipt of a notice from the employer. Should sub-contractor remedies be required (as provided for under IC/ICD 05, SBC 05 and DB 05) then it is incumbent upon the contractor to "comply with the requirements set out in the Contract Documents as to obtaining such warranties". It is up to the parties to decide whether such an obligation is absolute or restricted to using the contractor's "best endeavours" or "reasonable endeavours''

''The 2005 suite anticipates that standard form warranties (such as the JCT CWa/P&T (for purchasers and tenants) or the JCT CWa/F (for funders) will be adopted by the parties, but the contracts provide that the agreed forms are subject to bespoke amendments'' (Boulding and Lamont, 2006).

4.6 Benefit of SBC 2005 to the employer, client and contractor

In terms of the benefits accrued by the employer, client and contractor the first and foremost benefit to all parties concerned is the more user-friendly format with less legal humdrum and simplicity of the wording used in the SBC 2005 contract form. Ultimately the benefits of the contract form can only be fully reaped when applied to the appropriate procurement route "ceteris paribus" (other things being equal).

Potential benefits for the following parties are as follows:

Employer

- Third party rights, as an alternative to collateral warranties
- Clauses (as standard) requiring collateral warranties or third party rights in favour of employers
- Insurance for Employer's loss of liquidated and ascertained damages (the old clause 22D)

Contractor

- Termination is no longer automatic on the contractor's winding up or for other events of insolvency (but the employer can terminate by giving notice, of course)
- Performance Specified Work omitted in SBC 2005
- Nominated Subcontractors omitted in SBC 2005
- Nominated Suppliers omitted in SBC 2005
- JCT adjudication rules (replaced by statutory Scheme for Construction Contracts)

- The "default" option for dispute resolution is litigation instead of arbitration

Expressly provides that a contractor is not responsible for checking the adequacy of any design contained within the employer's requirements.

4.7 Summary

This study though not exhaustive has attempted to explore the SBC 2005 JCT contracts. This chapter established the *need* for the introduction of the new SBC 2005 suit of contracts, its *impact* on procurement was discussed, *risk management* and, *liability* and its perceived *benefits* were reviewed. In summary it would appear that SBC 2005 offers unique advantages over the JCT98 suit of Building contract and provides a more effective risk management strategy for the parties involved (See Appendix C). The contracts in themselves are no guarantee of a successful project outcome, indeed the importance of applying the correct procurement route to any project cannot be overemphasised (See Appendix D). The following chapter (Chapter 5) will identify the main drivers that necessitate the publication of a new contract form.

Chapter 5: A module of Life-Cycle of Contract Form

5.1 Contract Life cycle using Product Life Cycle concept

The product life cycle concept (Levitt, 1965) suggests that a product passes through four stages of evolution. Introduction, growth, maturity and decline. This can be said of contract forms. A decline in the popularity of a contract form could be in response to the following factors.

- Legislation evolves e.g. The Disability Discrimination Act 1995 (DDA), The Construction (Design & Management) Regulations (CDM) + Part L building regulations

- Risk and Economic trends in the construction industry. In times of economic stability and growth less risk borne by both sides hence more construction projects. In times of recession there is greater risk on both sides. Some contract forms may be more suited to times of economic growth, also balance of power swings towards contractors in booms, forming use of contract forms prepared by contractors.

- Case Law-Lots of court cases expose flaws in the contract leading to amendments in the contract.

- Unfair terms-subcontractors avoid certain clauses or amend contract document therefore defeating the purpose. May generate tender premiums.

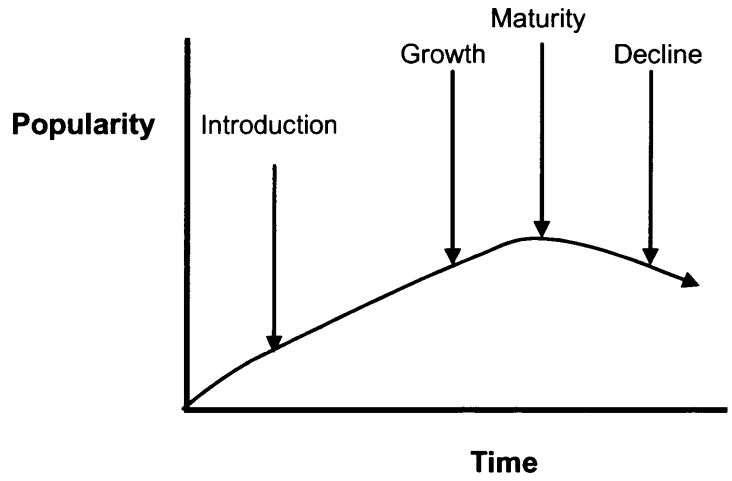

Fig 4: Contract life cycle stages.

Introduction:

As a new contract form much time will be spent by the organisation to create awareness of it presence amongst its target market (construction industry).

Growth

If the industry stakeholders clearly feel that this contract form will benefit them in some ways and they accept it, the contract form will see a period of rapid growth (popularity).

Maturity

Growth continues until the point of saturation. Rapid growth cannot last forever. A contract form is mature when it is well recognised and accepted by the majority of the construction stakeholders' i.e. client, contractor and consultants.

Decline

Decline results when the construction environment changes due to the factors explained earlier. The popularity of the form will then start to decline in response.

Chapter 6: Analysis

6.1 Introduction

A survey of recent projects was carried out as part of this study. The aim of the survey was to identify the

- extent of the usage of the JCT 98 suite of contracts
- reasons why some forms of contract are more successful than others, which versions seem to be more popular and the reasoning behind this
- reason why new forms of contracts are drawn
- why new contract forms have a slow uptake and
- key factors that influence the contract form life cycle (see chapter 5).

6.2 Study

A total of 15 projects were investigated. For each project the following were interviewed:

- Client
- Consultant (who was responsible for the project management and/or architecture)
- Contractor (who was responsible for executing the construction and in some in instances the design).

The interview included

- completion of a questionnaire to obtain the
    - basic facts about the project (e.g. cost, duration and overrun)
    - response to open questions to identify the contract used and reasons for selection
- discussions to gain further insights into consequences of using a particular contract.

All questionnaires were handed out in person and responses received immediately.

The project then carried out a contract form life cycle analysis.

A number of case studies undertaken by a firm (Hornagold and Hills) were examined in the following value ranges.

1. Three case studies less than < £1 million
2. Three case studies £1m< x < £5m
3. Four case studies £5m< x < £15m
4. Five case studies x > £15m

A total of 15 cases, three interviews per case producing 45 reports.

See Table 8 below.

Project (Case)	Project Value (Range)	Interviewed			Form of Contract
		Client (CL)	Consultant (Co)	Contractor (Ctr)	
1	<£1 million	✔	✔	✔	JCT IFC 98
2	<£1 million	✔	✔	✔	JCT IFC 98
3	<£1 million	✔	✔	✔	JCT IFC 98
4	£1m< x < £5m	✔	✔	✔	JCT 98 with Contractor's Designed Portion supplement
5	£1m< x < £5m	✔	✔	✔	JCT 98 with Contractor's Designed Portion supplement
6	£1m< x < £5m	✔	✔	✔	JCT 1998 Edition L.A. with Quantities and Contractors Designed Portion Supplement
7	£5m< x < £15m	✔	✔	✔	NEC 2
8	£5m< x < £15m	✔	✔	✔	JCT IFC 98
9	£5m< x < £15m	✔	✔	✔	JCT 98 Full version
10	x > £15m	✔	✔	✔	JCT 98 + IFC 98
11	x > £15m	✔	✔	✔	JCT WCD 98
12	x > £15m	✔	✔	✔	JCT WCD 98
13	£5m< x < £15m	✔	✔	✔	JCT 2005 with quantities
14	x > £15m	✔	✔	✔	JCT 2005 with quantities
15	x > £15m	✔	✔	✔	Modified NEC

Table 8: Summary of projects and interviews

The purpose of this broad spectrum is to find out if the popular lower end, middle or upper end project value influenced the type of contract applied i.e. are there risks that inform the contract choice. Across a range of project samples, I examined the lower end of the project value spectrum less than £1m to the middle range £1m-£5m followed by the upper end £15m upwards.

For the purpose of this research the responses received from the Client, Consultants and Contractor were grouped in the following order

1. Group A: JCT 98
2. Group B: JCT 2005
3. Group C: NEC 2
4. Group D: Other contracts

Please refer to Appendix H for a detailed summary of client, consultant and contractor view points on the on each case study

6.3 Summary of Findings

Group A

JCT98 was selected by the project teams for the following reasons

- Local authority guidelines, specifying the contract form
- Familiarity of preferred contract form by project team
- Procurement route was traditional
- Contract administrator was often the architect (single point of responsibility as design team leader and administrator)
- Size and complexity of the building project
- Flexibility of the JCT98 with contractors designed portions

Project (Case study)	Form of Contract	(On the advise of)	Contract administered by	Comment	Response		
					Client (CL)	Consultant (Co)	Contractor (Ctr)
1	JCT IFC 98	Architect	Architect	Project completed on time	✔	✔	✔
				Project completed within budget	✔	✔	✔
				Did contract form(s) fulfill project objectives	✔	✔	✔
2	JCT IFC 98	Architect	Architect	Project completed on time	✔	✔	✔
				Project completed within budget	✔	✔	✔
				Did contract form(s) fulfill project objectives	✔	✔	✔
3	JCT IFC 98	Architect	Architect	Project completed on time	✔	✔	✔
				Project completed within budget	✔	✔	✔
				Did contract form(s) fulfill project objectives	✔	✔	✔
4	JCT 98 with Contractor's Designed Portion supplement	Joint reccomendation by Client and consultation team	Clients PM	Project completed on time	✔	✔	✔
				Project completed within budget	✔	✔	✔
				Did contract form(s) fulfill project objectives	✔	✔	✔
5	JCT 98 with Contractor's Designed Portion supplement	Joint reccomendation by Client and consultation team	Clients PM	Project completed on time	✔	✔	✔
				Project completed within budget	✔	✔	✔
				Did contract form(s) fulfill project objectives	✔	✔	✔
6	JCT 1998 Edition L.A. with Quantities and Contractors Designed Portion Supplement	Client (a local authority)	Clients PM	Project completed on time	x	x	x
				Project completed within budget	x	x	x
				Did contract form(s) fulfill project objectives	x	✔	✔
7	NEC 2	Client (NHS)	Project Supervisor	Project completed on time	x	x	x
				Project completed within budget	x	x	x
				Did contract form(s) fulfill project objectives	✔	✔	✔
8	JCT IFC 98	Client advisor	Clients PM	Project completed on time	✔	✔	✔
				Project completed within budget	✔	✔	✔
				Did contract form(s) fulfill project objectives	✔	✔	✔
9	JCT 98 Full version	Architect	Architect	Project completed on time	x	x	x
				Project completed within budget	x	x	x
				Did contract form(s) fulfill project objectives	x	x	x
10	JCT 98 + IFC 98	Client advisor		Project completed on time	x	x	x
				Project completed within budget	x	x	x
				Did contract form(s) fulfill project objectives	x	✔	✔
11	JCT WCD 98	Client advisor	Contractor	Project completed on time	✔	✔	✔
				Project completed within budget	x	✔	✔
				Did contract form(s) fulfill project objectives	x	✔	✔
12	JCT WCD 98	Client advisor	Contractor	Project completed on time	✔	✔	✔
				Project completed within budget	x	✔	✔
				Did contract form(s) fulfill project objectives	x	✔	✔
13	JCT 2005 with quantities	Client	Architect	Project completed on time	n/a	n/a	n/a
				Project completed within budget	n/a	n/a	n/a
				Did contract form(s) fulfill project objectives	n/a	n/a	n/a
14	JCT 2005 with quantities	Client	Architect	Project completed on time	n/a	n/a	n/a
				Project completed within budget	n/a	n/a	n/a
				Did contract form(s) fulfill project objectives	n/a	n/a	n/a
15	Modified NEC	Client	Clients PM	Project completed on time	✔	✔	✔
				Project completed within budget	✔	✔	✔
				Did contract form(s) fulfill project objectives	✔	✔	✔

Table 9: Summary of comments by client, consultants and contractor

Group B

JCT 2005 as a contract was implemented for the following reasons

- Client (a university estate department) decision to use the contract un-amended
- Perceived benefits of using the new contract form (JCT 2005) included

i. Simplified format and language in contract documentation

ii. Clearer allocation of responsibilities than the previous contract form i.e. JCT 98

Group C

The NEC 2 form of contract was primarily used for the following reason

- The client (NHS) wanted the ProCure 21 (framework agreement) principles applied to the project and specified NEC 2 as the preferred contract form.

Group D

Other contract forms were selected in circumstances where standard forms of contract were unsuitable for the specific requirements of the project.

In the course of this survey the following was observed:

3/3 of the projects investigated of contracts below £1m used the JCT IFC 98 form of contract. Contracts below £200k tended to use the JCT 98 Minor works contract form.

2/3 of the contracts between £1m-£5m used JCT 98 with contractors design supplement.

The flexibility of the JCT98, which allows for contractors design supplement, appears to be an indication of why it is so popular.

A key observation from this study suggests that clients are prone to changing their minds and the JCT full version is more change friendly avoiding the premium costs involved in changes which ultimately leads to loss and expenses (due to variation clauses) whereas WCD 98 is less flexible.

The survey indicated that experienced clients often suggest the contract form for projects but less experienced clients seek advice from the contract administrator and project team.

In 12/15 of the cases studies where alternative contracts were suggested 'unfamiliarity' with the proposed contract was the prime reason for the contractor, client and project team avoiding it.

11/15 of the contracts had one or more down sides for example with 10/15 of the JCT 98 contracts traditional procurement having to resolve adversarial conflict on site or on completion of the job.

In certain cases the contract form has been predetermined for instance with hospital projects a form of D&B called 'Procure 21' a partnering framework is the only choice available to the contractor.

In 1/15 of the cases where the NEC 2 contract form was used the main complaint from the project manager (contract administrator) was the amount of time spent on administration of the contract compared to JCT 98. In each case extra resource had to be employed to deal with the volume of administration.

Over a 15 year period leading to 2001, 95% of construction projects in the UK used a standard form of building contract (RICS, 2003).

No.	Contract	No.	%
1	JCT	2,685	91%
2	ICE	54	2%
3	GC Works	49	2%
4	Other Standard Forms (NEC)	20	<1%
5	Other contracts	138	5%
6	ACA	10	<1%
	Total no. of contracts	2,956	100%

Total standard forms of contract: 2,808=95%

Table 2: Use of Standard forms of building contracts 1986-2001

Source: Adapted from RICS Contracts in use, 2003

Employing a similar module in the process of the case studies investigated the following results were obtained, as indicated in the table below.

No.	Contract	No.	Ratio	%
1	JCT	13	13:15	86%
2	ICE	0	0	0%
3	GC Works	0	0	0%
4	Other Standard Forms (NEC)	1	1:15	6%
5	Other contracts	1	1:15	6%
6	ACA	0	0	0%
	Total no. of contracts	15		100%
	Total standard forms of contract:	14		

Table 3: Use of Standard forms of building contracts 2001-2006

It would appear from this research that JCT 98 suite of contracts was the predominant contract in use from 2001-2006. In this period other contract forms e.g. NEC has increased in use post ante 2001 in the construction industry. The newly introduced JCT 2005 suite of contracts is experiencing a slow uptake and at the period this study was conducted JCT 2005 contracts accounted for only 2/15 of the construction projects.

Chapter 7: Conclusion

7.1 Summary and Conclusion

The literature review suggests that new contract forms are introduced into the construction industry as a response to case law, legislation, risk management opportunities, economy and unfair terms as summarised in chapter 5.

Indeed all contract forms or suites of contract are a response to the demands of the industry in an attempt to improve industry standards.

The life cycle of a contract form is marked by its introduction into the industry, gradual take off, growth, saturation and a gradual decline dependent on the influencing factors in the construction industry as explained in chapter 5.

The study established that previous contract forms such as JCT 98 experienced a series of amendments between the years 1998 and 2005. JCT 2005 was published in response to these amendments and other matters raised by the JCT 98 suite of contracts.

The main advantage of new suites of contracts (see chapter 4.6) are its;

- clearer allocation of responsibilities,
- simpler language and format
- and current legislation taken into account.

In principle these advantages should assist in the risk management potential of contractual issues on any project.

From the case studies observed in this research older versions of contracts e.g. JCT 98 are preferred than JCT 2005 on the basis of familiarity by the project team.

As the law of contract in English law stipulates that there must be no 'unjust enrichment' of one party at the expense of another it would appear from the case studies that for a contract form to be accepted successfully it should be seen to be fair to all parties involved.

7.2 Limitations of research

The relatively new introduction of SBC 2005 has meant that a large number of construction professionals have had little or no exposure to its practical application on projects. Therefore there are not many practical examples to examine.

7.3 Recommendations

Recommendations to the potential users and those wishing to promote the take up of new contract forms e.g. SBC 2005 are as follows:

1. The UK construction industry bodies and organisations should actively promote more education to the construction professionals on the benefits of new contract forms such as the SBC 2005. This may be achieved with lectures, seminars, CPD's and publications.

2. Insurance companies should encouraged by the construction industry to reduce premiums on projects carried out with new contract forms.

7.4 Future research

In the process of carrying out the case studies it was observed that the full benefits of a new standard form is often missed due to amendments which

more often than not are designed to favour one of the stakeholders and not all the parties. These amendments can adversely affect the risk management opportunities the new standard forms were designed to offer. Further research on limiting the possible number of amendments would be beneficial for setting an industry wide standard and improve the decision making process when deciding procurement route and appropriate contract form.

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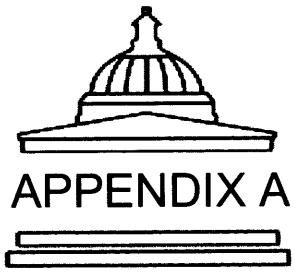


APPENDIX A

Questionnaire

Project name:.....

Form of Contract:.....

Duration: .....

Completed: .....

Procurement: .....

Value: .....

Questions

1. What contract was used on the project?
   .....
   .....
   .....

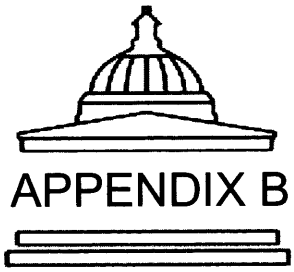
2. Why was the above contract the preferred form of building contract for the project?
   .....
   .....
   .....

3. On who's advice was the above contract form selected?
   .....
   .....
   .....

4. What other contract might have been used given the above project specific circumstance?
   .....
   .....
   .....

5. Why was this alternative contract not used?
   .....
   .....
   .....

6. What was the down sides of using the preferred contract?
   .....
   .....
   .....
   .....



APPENDIX B

Procurement (Traditional)

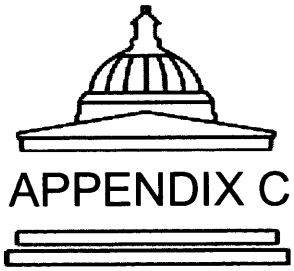
For traditional procurement there are three main types of contract:

1. *Lump sum contracts – where the contract sum is determined before construction work is started. The contractor undertakes a defined amount of work in return for an agreed sum. Contracts 'with quantities' are priced on the basis of drawings and a firm bill of quantities. Contracts 'without quantities' are priced on the basis of drawings and another document — usually a specification or work schedules.*

2. *Measurement contracts – where the contract sum is not finalised until after completion, but is assessed on re-measurement to a previously agreed basis. This is because the work which the contractor undertakes cannot for good reason be measured accurately before tenders are invited. Design will be reasonably complete and an accurate picture of the quality required will be available to the tenderer. Probably the contract of this type with least risk to the client is that based on drawings and approximate quantities. Measurement contracts can also be based on drawings and a schedule of rates or prices. A variant of this is the measured term contract under which individual works can be initiated by instructions as part of a programme of work, and priced according to rates related to the categories of work likely to form part of the programme.*

3. *Cost reimbursement contracts – where the sum is arrived at on the basis of prime (actual) costs of labour, plant and materials, to which there is added an amount to cover overheads and profit. Sometimes referred to as a 'cost-plus' or a 'prime cost' contract; the amount or fee added to cover overheads and profit can be a fixed sum, a percentage, or on some other reimbursement basis. Where the full extent of the work is not known or cannot be designed pre-tender, this is a relatively high risk option for the client and only generally acceptable where the circumstances preclude other alternatives or where a partnering ethos is established.*

Source: (Joint Contracts Tribunal, 2006)



APPENDIX C

Comparison of Contract Provisions

	MP 05	DB 05	SBC 05 without	SBC 05 with CDP	IC 05	ICD 05	MW 05	MWD 05
Client control								
Contract Administrator required	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Quantity Surveyor required	No	No	Yes	Yes	Yes	Yes	No	No
Employer's Agent provided for	Representativ	Yes	No	No	No	No	No	No
Clerk of Works provided for	No	No	Yes	Yes	Yes	Yes	No	No
Clerk of Works has power to issue	N/a	N/a	Limited	Limited	No	No	N/a	N/a
Design responsibilities								
Contractor responsible for completing	Yes	Yes	No	No	No	No	No	No
Contractor responsible for completing part	No	No	No	Yes	No	Yes	No	Yes
Ground conditions at contractor's risk	Yes if default applies	Silent	No	Silent	No	Silent	No	Silent

DB: Design and Build Contract

IC: Intermediate Building Contract

ICD: Intermediate Building Contract with contractor's design

MP: Major Project Construction Contract

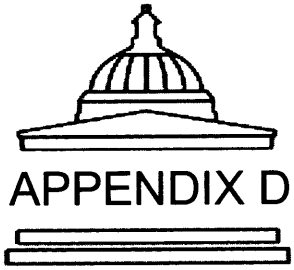
MW: Minor Works Building Contract

MWD: Minor Works Building Contract with contractor's design

SBC without CDP: Standard Building Contract without a contractor's designed portion

SBC with CDP: Standard Building Contract with a contractor's designed portion

Source: JCT Practice Note (2006), page 26



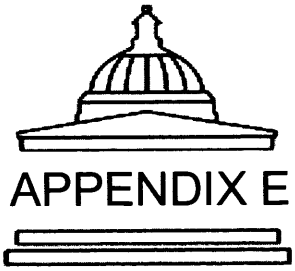
APPENDIX D

Comparison of procurement routes: Relation to risk management and other factors.

	Traditional	Design and Build	Management
Risk	*Generally fair and balanced between the parties*	*Can lie almost wholly with the contractor*	*Lies mainly with the employer almost wholly in the case of construction management*
Speed	*Not the fastest of methods. Desirable to have all information at tender stage. Consider two stage or negotiated tendering*	*Relatively fast method. Pre-tender time largely depends on the amount of detail in the Employer's Requirements. Construction time reduced because design and building is parallel*	*Early start on site is possible, long before tenders have even been invited for some of the works packages*
Complexity	*Basically straightforward, but complications arise if employer requires that certain sub-contractors are used*	*An efficient single contractual arrangement integrating design and construction expertise within one accountable organisation*	*Design and construction skills integrated at an early stage. Complex management operation requiring sophisticated techniques*
Quality	*Employer requires certain standards to be shown or described. Contractor is wholly responsible for achieving the stated quality on site*	*Employer has no direct control over the contractor's performance. Contractor's design expertise may be limited. Employer has little say in the choice of specialist subcontractors*	*Employer requires certain standards to be shown or described. Managing contractor responsible for quality of work and materials on site*
Flexibility	*Employer controls design and variations to a large extent*	*Virtually none for the employer once the contract is signed, without heavy cost penalties. Flexibility in developing details or making substitutions is to the contractor's advantage.*	*Employer can modify or develop design requirements during construction. Managing contractor can adjust programme and costs*

	Traditional	Design and Build	Management
Certainty	*Certainty in cost and time before commitment to build. Clear accountability and cost monitoring at all stages*	*There is a guaranteed cost and completion date*	*Employer is committed to start building on a cost plan, project drawings and specification only*
Competition	*Competitive tenders are not possible for all items. Negotiated tenders reduce competitive element*	*Difficult for the employer to compare proposals, which include for both price and design. Direct Design and Build very difficult to evaluate for competitiveness. No benefit passes to employer if contractor seeks greater competitiveness for specialist work and materials*	*Management contractor is appointed because of management expertise rather than because his fee is competitive. However, competition can be retained for the works packages*
Responsibility	*Can be clear-cut division of design and construction. Confusion possible where there is some design input from contractor or specialist subcontractors and suppliers*	*Can be clear-cut division, but confused where the Employer's Requirements are detailed as this reduces reliance on the contractor for design or performance. Limited role for the employer's representative during construction*	*Success depends on the management contractor's skills. An element of trust is essential. The professional team must be well coordinated through all the stages*
Summary	*Benefits in COST and QUALITY but at the expenses of TIME*	*Benefits in COST and TIME but at the expenses of QUALITY*	*Benefits in TIME and QUALITY but at the expense of COST*

Source: (Cox and Clamp, 2003)



APPENDIX E

Watch points for choice and use of JCT 2005 Contracts:

Choice

- *Check whether the JCT contract under consideration is appropriate for the procurement method adopted, and that the provisions it contains are likely to prove adequate for the particular circumstances.*

- *Remember that in JCT contracts, design obligations can be imposed upon constructors in various ways, for example:*

- *by selecting the optional integrated provisions such as those contained in the Standard Building Contract.*

- *by using the with contractor's design version of the Minor Works Building Contract or Intermediate Building Contract.*

- *by using the Major Project Construction Contract or Design and Build Contract.*
- *by using the Intermediate Named Sub-Contractor/Employer Agreement.*

Use

- *Check whether the proposed work will be subject to the full CDM Regulations.*

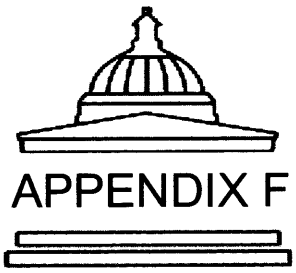
- *JCT contracts are intended to be read as a whole, and ill-conceived amendments can produce unintended results when construed at law. Ad hoc amendments should be avoided as far as practicable, particularly on points of substance. Where an amendment is considered necessary it should be done only with appropriate professional advice.*

- *JCT contracts are intended to be, and are generally accepted as being, fair and evenly balanced between the parties for the projects for which*

they are designed. This balance should not unwittingly be put at risk, e.g. by the ill-considered incorporation into a JCT contract of substantive provisions taken from another form.

- *Check that the provisions for insurance are likely to prove suitable in the particular circumstances.*
- *Exceptional circumstances, e.g. contaminated land, might dictate that special arrangements have to be*
- *made, which the employer will need to discuss with insurance experts and the parties to the contract will need to agree.*
- *Where Employer's Requirements are required, allow sufficient time for their preparation. Also allow time for examining the Contractor's Proposals.*
- *Check that the JCT Contract Particulars and all contract documents are fully completed, and that the Agreement has been signed or otherwise executed before the date for the commencement of the Works.*

Source: Joint Contracts Tribunal (2006)



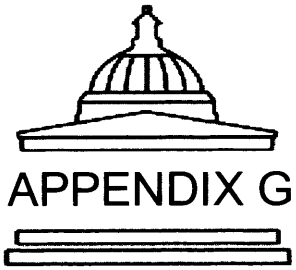
APPENDIX F

Construction Management	Management Contracting
• *CM more positive role than MC and identifies more with common objectives.* • *Direct contracts = prompt payments = prices down.* • *Lines of communication between Client and specialist shorter.* • *Conditions of contract appropriate to work.* • *Responsibilities and risks clear.* • *CM not motivated by the profitability of the construction works.* • *Delinquent contractors more easily removed from the project.* • *CM not responsible for time and cost.* • *Greater management/admin resources required from Client.* • *Informed, proactive Client needed.* • *Multi-point accountability.* • *CM prime costs need to be controlled.* • *No standard form of contract.*	• *Single point responsibility.* • *MC unable to widen his margin through sub-contractors' claims* • *MC responsible for time (bears cost of overruns not covered by extensions of time).* • *Framework does not allow MC the opportunity to manage the project as a Consultant of equal status with the designer, nor allows him to act as a Contractor* • *Low resistance to works contractors' claims.* • *Non-performance of contractors difficult to recover.* • *Duplication of preliminaries, lack of site gang continuity = costs up.* • *Client/design team remoteness from works contractors.* • *Less open-book.*

Table 3: CM and MC "Sub-Options" potential benefits/drawbacks

- *Construction Management (CM)*
- *Management Contracting (MC)*

Source: (Davis Langdon (2005)



APPENDIX G

(i) Standard Building Contract (SBC) 2005

Replaces the standard building contract JCT 98 it may be appropriate for large work designed and or detailed by or on behalf of the client. It may also be suitable for use under the traditional procurement route. This form of contract has three alternatives suitable for varying project circumstance

- With quantities
- Without quantities
- Approximate quantities

Source: (Joint Contracts Tribunal, 2006)

Appropriate Use

With quantities may be used when a bill of quantity is required and full drawing and specification are prepared. Without quantities or approximate quantities may be used when an early start is required on site and it is not possible to produce full design and specification. A Contract Administrator and Quantity Surveyor are to administer the conditions

May be used

Where the Contractor is to design discrete part(s) of the works (contractor's designed portion); where the works are to be carried out in sections; by both private and local authority employers.

May not be used

Where there is a Sub-Contractor involved in the design process of any part of the sub-contract works. Such as the Standard Building Sub-Contract with sub-Contractors' design (SBC Sub/D/A and SBC Sub/D/C) (See Appendix)

(ii) Intermediate Building Contract (IC)

This can be divided into two types,

a. *Intermediate Building Contract (IC) without contractors design*
b. *Intermediate Building Contract with contractor's design (ICD)*

a. Intermediate Building Contract without contractor's design (IC)

Appropriate:

- Where the proposed building works are of simple content involving the normal, recognised basic trades and skills of the industry, without building service installations of a complex nature or other complex specialist work;

- *Where the works are designed by or on behalf of the Employer, where fairly detailed contract provisions are necessary and the Employer is to provide the Contractor with drawings and bills of quantities, a specification or work schedules to define adequately the quantity and quality of the work; and where a Contract Administrator and Quantity Surveyor are to administer the conditions. This contract provides more detailed provisions and more extensive control procedures than the Minor Works Building Contract (MW) but is less detailed than the Standard Building Contract (SBC).*

May be used:

- *Where the works are to be carried out in sections;*
- *By both private and local authority employers;*
- *Where provisions are required to cover named specialists.*

May not be used:

- *Where the Contractor is to design discrete part(s) of the works, even though all the other criteria are met –consider the Intermediate Building Contract with contractor's design (ICD).*
- *Price is based on lump sum with monthly interim payments unless otherwise stated.*

This contract requires the Employer through his professional consultants to provide at tender stage a set of drawings together with another document. Where the other document consists of bills of quantities or work schedules, the Contractor is required to have priced it. Where the other document consists of a specification, the Contractor is required either to have priced it or, if only a lump sum is quoted, then also to have supplied a Schedule of Rates or a Contract Sum Analysis. The priced bills, specification or work schedules or, as the case may be, the Schedule of Rates or Contract Sum Analysis provide price data for the valuation of variations. The contract conditions and procedures are less detailed than those of the Standard Building Contract. All subcontractors, whether chosen by the Contractor or named by the Employer, are domestic, and their performance is the responsibility of the Contractor, although the Employer does assume additional risks in respect of Named Sub-Contractors whose contracts are terminated because of insolvency. For Named Sub-Contractors, the use of the Intermediate Named Sub-Contract documents is required. Even though a Named Sub-Contractor is a domestic sub-contractor, the Contractor is not responsible for any design carried out by a Named Sub-Contractor. Provisions are included for advance payment and a bond for the payment of off-site materials. The contract only provides for limited fluctuations i.e. those arising from contribution, levy and tax changes. However, the Named Sub-Contract (see IC Sub/NAM/C) also includes provisions for fluctuations by formula adjustment and any such amounts are adjusted under the main contract.

b. Intermediate Building Contract with contractor's design (ICD)

Appropriate:

- *Where the proposed building works are of simple content involving the normal, recognised basic trades and skills of the industry, without building service installations of a complex nature or other complex specialist work;*
- *Where the works are designed and the requirements for the contractor's design of discrete part(s) are detailed by or on behalf of the Employer, and where the Contractor is required to design those part(s) of the work (contractor's designed portion);*
- *Where fairly detailed contract provisions are necessary and the Employer is to provide drawings and bills of quantities, a specification or work schedules to define adequately the quantity and quality of the work; and*
- *Where a Contract Administrator and Quantity Surveyor are to administer the conditions.*

This contract provides more detailed provisions and more extensive control procedures than the Minor Works Building Contract with contractor's design (MWD) but is less detailed than the Standard Building Contract (SBC).

May be used:

- *Where the works are to be carried out in sections;*
- *By both private and local authority employers;*
- *Where provisions are required to cover named specialists.*

May not be used:

- *As a design and build contract.*

Summary

This contract is similar to IC, as described above, but additionally provides for a contractor's designed portion.

(iii) Minor Works Building Contract (MW)

This can be divided into two types,

a. *Minor Works Building Contract (MW) without contractors design*
b. *Minor Works Building Contract (MWD) with contractors design*

a. Minor Works Building Contract (MW) without contractors design

Appropriate:

- *Where the work involved is simple in character;*
- *Where the work is designed by or on behalf of the Employer;*
- *Where the Employer is to provide drawings and/or a specification and/or work schedules to define adequately the quantity and quality of the work; and*
- *Where a Contract Administrator is to administer the conditions.*

May be used:

- *By both private and local authority employers.*

May not be used:

- *Where bills of quantities are required;*
- *Where provisions are required to govern work carried out by named specialists;*
- *Where detailed control procedures are needed*
- *Where the Contractor is to design discrete part(s) of the works, even though all the other criteria are met –consider the Minor Works Building Contract with contractor's design (MWD).*

Price is based on lump sum with monthly interim payments.

This contract requires the Employer through his professional consultants to provide at tender stage drawings and/or a specification and/or work schedules to describe the Works. On acceptance of the tender, the documents that have been provided become contract documents, defining the Works on which the Contract Sum is based. The contract conditions and procedures are much less detailed than those in the Intermediate Building Contract, and it should be noted there is no provision for naming sub-contractors.

This contract provides for the option of limited fluctuations, i.e. those arising from contribution levy and tax changes.

b. Minor Works Building Contract with contractor's design (MWD)

Appropriate:

- *Where the work involved is simple in character;*
- *Where the work is designed and the requirements for the contractor's design of discrete part(s) are detailed by or on behalf of the Employer, and where the Contractor is required to design those part(s) of the work (contractor's designed portion);*

- *Where the Employer is to provide drawings and/or a specification and/or work schedules to define adequately the quantity and quality of the work; and*
- *Where a Contract Administrator is to administer the conditions.*

May be used:

By both private and local authority employers.

Not suitable:

- *As a design and build contract;*
- *Where bills of quantities are required;*
- *Where provisions are required to govern work carried out by named specialists;*
- *Where detailed control procedures are needed.*

This contract is similar to MW, as described above, but additionally provides for a contractor's designed portion.

(iv) Design and build (DB)

Although all versions of the Standard Building Contract (SBC) contain an optional Contractor's Designed Portion in respect of design by the contractor for a defined portion of the work, this is of limited application and does not result in a design and build contract.

Appropriate:

- *Where detailed contract provisions are necessary and Employer's Requirements have been prepared and provided to the Contractor; where the Contractor is not only to carry out and complete the works, but also to complete the design; and where the Employer employs an agent (who may be an external consultant or employee) to administer the conditions.*

May be used:

- *Where the works are to be carried out in sections;*
- *By both private and local authority employers.*

Where the Contractor is restricted to design small discrete parts of the works and not made responsible for completing the design for the whole works, consideration should be given to using one of the JCT contracts that provide for such limited design input by the Contractor and the employment of a Contract Administrator.

Price is based on a lump sum with interim stage payments or periodic payments as stated. The extent of the Contractor's design input can vary considerably. Adequate time and care must be given to compiling the Employer's Requirements, and this will normally mean the appointment of consultants by the Employer. In the event of any conflict between the Employer's Requirements and the Contractor's Proposals, the latter are stated to prevail. When evaluating tenders, adequate time must be given to checking these Proposals, particularly as the contract conditions refer to the Employer having satisfied himself that the Proposals are acceptable. Contractor's design responsibility will normally be that of reasonable care and skill, but the boundaries of design responsibility, particularly in cases when the

Employer's Requirements include scheme design by consultants, need to be carefully defined.

This contract makes no provision for an independent contract administrator. The Employer is directly responsible for issuing statements, instructions, etc. as required under the contract. The Employer may appoint an Employer's Agent to act in his place but his responsibilities and authority should be clearly defined. It is desirable
to keep any Changes to a minimum; the valuation of a Change will be carried out by the Contractor based on figures in the Contract Sum Analysis unless the Schedule 2 Supplemental Provisions apply or as otherwise agreed.

(v) Major Project Construction Contract (MP)

Appropriate:

- *For major works where the Employer regularly procures large-scale construction work and where the Contractor to be appointed is experienced and able to take greater risk than would arise under other JCT contracts;*
- *Where the parties have their own detailed procedures and where limited procedures only need to be set out in the contract conditions;*
- *Where the Employer has prepared his requirements and provided these to the Contractor;*
- *Where the Contractor is not only to carry out and complete the works, but also to complete the design; and*
- *The Employer employs a representative to exercise the powers and functions of the Employer under the Contract.*

May be used:

Where the works are to be carried out in sections. Price is based on lump sum with monthly interim payments based on the Pricing Document.

This contract is for use on major projects where the Employer and the Contractor regularly undertake such projects and have appropriate in-house contractual procedures. The Contractor assumes more risks and responsibilities than under other JCT contracts. It is desirable; therefore, that the Employer and the Contractor, together with their respective advisors and sub-contractors, are experienced in detailed risk management and undertaking large commercial projects.

(vi) Management Building Contract (MC)

Appropriate use:

- *For large-scale projects requiring an early start on site, where the works are designed by or on behalf of the employer but where it is not possible to prepare full design information before the works commence and where much of the detail design may be of a sophisticated or innovative nature requiring proprietary systems or components designed by specialists;*
- *Where the Employer is to provide the Management Contractor with drawings and a specification*
- *And where a Management Contractor is to administer the conditions.*
- *The Management Contractor does not carry out any construction work but manages the Contract for a fee.*
- *The Management Contractor employs Works Contractors to carry out the construction works.*

May be used:

- *Where the works are to be carried out in sections;*
- *By both private and local authority employers.*

Price is based on Prime Cost of the Project plus a Management Fee for the Management Contractor. Interim payments are monthly unless stated otherwise.

The employer is required to appoint an Architect/Contract Administrator, a Quantity Surveyor and such other persons as may be necessary for the Professional Team. The contract is divided into two periods, the Pre-Construction Period and the Construction Period. The Management Contractor should be appointed early so as he can co-operate with the Architect/Contract Administrator, Quantity Surveyor and other members of the Professional Team on such matters as the Project programme; formulating and agreeing construction methods; advising on 'build ability' aspects of the Project; agreeing the Contract Cost Plan; and advising on the works packages for which the Works Contractors will tender. After the Architect/Contract Administrator has notified the Employer that it is practicable to commence construction, the Employer can then decide whether or not to proceed into the Construction Period.
In the Construction Period, the Management Contractor will be required to set out, manage, organise, supervise and secure the carrying out and completion of the project through the Works Contractors, who are directly contracted to him. Although the Management Contractor is responsible for operating the terms of the contract, the consequences of any default by a Works Contractor do not fall upon the Management Contractor if he complies with such terms.

(vii) Construction Management Appointment (CM/A)

Appropriate use:

- *Where a Construction Manager is to manage the project on behalf of the Client; and*
- *where the Client is to enter into direct separate trade contracts using the Construction*

Management

- *Trade Contract (CM/TC) or a special Trade Contract.*

May be used:

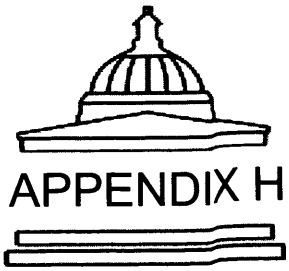
- *Where the works are to be carried out in sections.*

Appointment is the 'main contract' for the procurement path of construction management. It is part of a suite of documentation for use where separate contractual responsibility for the management, design and construction of the project is appropriate. It is drafted as a professional appointment for a Construction Manager. The cost of the Construction Manager is based on his fee plus certain reimbursable costs.

Source: (Joint Contracts Tribunal, 2006)

For further information on the SBC contract see:

www.jtcltd.co.uk


APPENDIX H

Legend

1. CL=Client
2. Co=Consultant
3. Ctr=Contractor

Group A: JCT 98

CL: In case studies 1-3 (carried by the same consultants and contractor).The early stages on case study 1 was the only time in which the project took off to a slow start possibly due to the process of consultant appointments. As soon as the architect (contract administrator) was appointed the project advanced at a steady pace. Case studies 2 and 3 were completed in good time with no significant problems. The success of the projects may be as a result of keeping the same team throughout the project.

Case studies 4-5 were laboratories and for each project the client employed the services of a contract administrator (Project manager) who advised the client on the appointment of a specialist contractor. CL was initially of the opinion that the NEC form of contract should be used but a consensus was reached not to use this form of contract on both case studies due to concerns raised by the contractor. In both case studies the JCT 98 edition with contractor's designed portion supplement contract was used.

In case study 6 the client (a local authority body) was experienced and well informed on construction contracts. The decision to use JCT98 L.A with Quantities plus contractors designed portion supplement was pre-determined by the client.

Case study 7 is reviewed in Group C

Case study 8 the client did not experience any problems with the contract form. The relatively smooth running of the project may be attributed to the competent professionals employed on the job. Case study 9 on the other hand was rather

disappointing considering the contract form (JCT98 full version) was used; it appears there may have been conflict between the architect and contractor.

Case study 10 was administered fairly well and was completed in good time.

Case study 11 the nature of the contract used (JCT WCD98) turned out to be expensive to administer. Minor changes to the brief came at what can best be described as an 'unfair cost'.

Co: In case studies 1-3, the projects went relatively smoothly with little or no hiccups. The success of the project was attributed to the good working relations amongst the project team members.

The contract administrator's consultation with the contractors on case studies 4-5 influenced the decision to use the JCT 98 contract with contracts designed portion supplement instead of other forms like the NEC which they were unfamiliar with.

Case study 6 the client resisted attempts by the consultants to use other contract forms such as the NEC. Due to the local authority's' hierarchy, communication lines and relatively slow response in making decisions key to the progress of the project, case study 6 experienced a 20-week overrun prior to completion.

Case study 7 is reviewed in Group C

Case study 8 used the JCT 98 Intermediate form of contract (IFC) and with the exception of a slow start to the project it was a good project to work on.

Case study 9 lacked sufficient design information at the time of project commencement. This proved problematic as the project progressed. The relationship between the contractor and the architect proved difficult to manage. The project ran a little over budget as a result.

Case study 10 was a lump sum traditional contract and was administered fairly well by the project team.

Case study 11 JCT WCD98 was probably not the best contract form to use considering the nature of the project. Earlier suggestions to use GC works as an alternative was resisted by the contractor.

Case study 12 the only obvious problem with the project was the limited control over the quality of the finished project which was value engineered by the contractor.

Ctr: In terms of case studies 1-3, the projects went well. The contract form was straight forward; clear lines of communication and payments were on time.

Case studies 4-5 were relatively smooth, the contract administrator, consultants and contractor had a good working relationship with high level of commitment to the success of project. Any areas of possible conflict were dealt with speedily and professionally.

Case study 6 an adversarial relationship developed between contractor, consultants and client resulting in legal claims.

Case study 7 is reviewed in Group C

Case study 8 was administered fairly well. On the contrary case study 9 was challenging possibly due to inadequate design information.

Case study 10 no recorded complaints.

Case study 11 the contract form was suitable for the job but the client was not consistent with regards to the initial project brief.

Case study 12 as in case study 11 JCT WCD98 was used. Project administration went fairly well. Construction phase was completed on time.

Group B: JCT 2005

CL: Case studies 13 and 14 are ongoing projects (same client and project team). The decision to use JCT2005 without quantities was taken ex ante by the Estate management board of the university. It appears to be going well, not much more can be said at this time since the project is not complete at this time.

Co: The contract form was pre-selected by the client (university). The NEC should have been used instead as track changes can be better monitored. The project has started well and the project team expects a successful completion.

Ctr: An unfamiliar contract but the changes from prior contracts have been highlighted and addressed. Project has gone smoothly so far.

Group C: NEC 2

CL: NEC 2 was applied in case study 7.The client (NHS) was keen to adopt the principles of Procure 21 and the NEC was used as a forerunner to Procure 21. The contract was fairly satisfactory despite the project overrun, which had nothing to do with the choice of contract form but rather on issues related to funding.

Co: Case study 7 was rather bureaucratic in certain instances and administratively intense when compared with administering a JCT98 form of contract. Funding was also problematic and the project overran by 14 weeks.

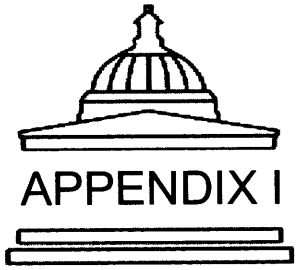
Ctr: Case study 7: Project started relatively well but late payments and other problems led to the project overrunning. Relationships between the main contractor and client became tense towards the end of the project. All matters of conflict were eventually resolved.

Group D: Other contracts

CL: Case study 15 was a Private Finance Initiative project. A modified form of the NEC contract was used operated within a framework agreement. Completed in 18 months to time and within budget.

Co: Case study 15 was administratively quite taxing but the project team performed well and the project was completed in good time.

Ctr: Prior to case study 15 a series of projects have been conducted with the same client. A good working relationship had developed and case study 15 was executed fairly well.



APPENDIX I