

Chapter 6

Construction Management

What is Construction Management?

6.1 One of the most significant, if not the most significant, decisions taken during the course of the Project was to adopt construction management as the procurement vehicle for the construction of the Holyrood building. Construction management is one of the relatively new “fast track” methods of construction procurement, developed in the late 1980s. Under traditional contracting, design is substantially completed before the construction work is put out to tender after which a contract is agreed with a contractor to carry out that work, either directly or through sub contractors, increasingly on a fixed price basis. Under construction management design, tendering and construction overlap. The client employs a designer and, separately, a construction manager who is engaged as a fee earning consultant to programme and co-ordinate the design and construction activities. The actual construction work is divided into packages which are sequentially put out to tender and are undertaken by trade contractors who are contracted to the client. Construction management offers the advantage of speed but with the disadvantage of price uncertainty until the last package contract has been let.

Identifying a Contract Strategy

6.2 The Inquiry was assisted with an objective understanding of best practice in the selection of the appropriate procurement vehicle, and by a professional’s understanding of construction

management, with evidence from Mr Colin Carter of Gardiner & Theobald.²⁶³ Gardiner & Theobald, who are one of the United Kingdom's largest providers of independent professional advice and services to the property and construction sectors, were appointed to give construction expertise to the Auditor General for Scotland and the Holyrood Inquiry in December 2003. I would want to highlight Mr Carter's extensive experience in the construction industry, including his co-authorship of the White Paper, 'Setting New Standards — a Strategy for Procurement by Government'; and his involvement in the publication 'Scrutiny of Construction Procurement by Government'.²⁶⁴ Mr Carter has had no personal involvement with the Holyrood Project. Mr Carter's evidence was supplemented by slides²⁶⁵ one of which is reproduced below.

- 6.3 In connection with the choice of strategy Mr Carter stressed the vital importance of establishing priorities and taking decisions from the start and told the Inquiry that in relation to a project such as Holyrood there were four key areas for consideration:

The Client Body

In relation to the client body it was necessary to identify its capabilities, resources, culture and profile. Issues to be addressed included its experience, its attitude towards risk, the importance to it of having a fixed price and how good it is at making decisions.

The Project Team

It was important to identify the capabilities and profile of the Project Team including issues such as its experience of different construction methods and the extent to which it is able to work as a collaborative and integrated team, which was considered to be of particular importance in the case of construction management.

The Objectives and Constraints

The constraints of time, quality and cost are traditional considerations for most projects and most clients profess that all three are equally important. It was important to identify whether one was more important than the others and to try and establish at the start what were the true aims and objectives.

Risk profile

A critical consideration was the client's attitude to risk and in particular whether it required a fixed cost before start-up or was content for the final cost to emerge during the course of the Project.

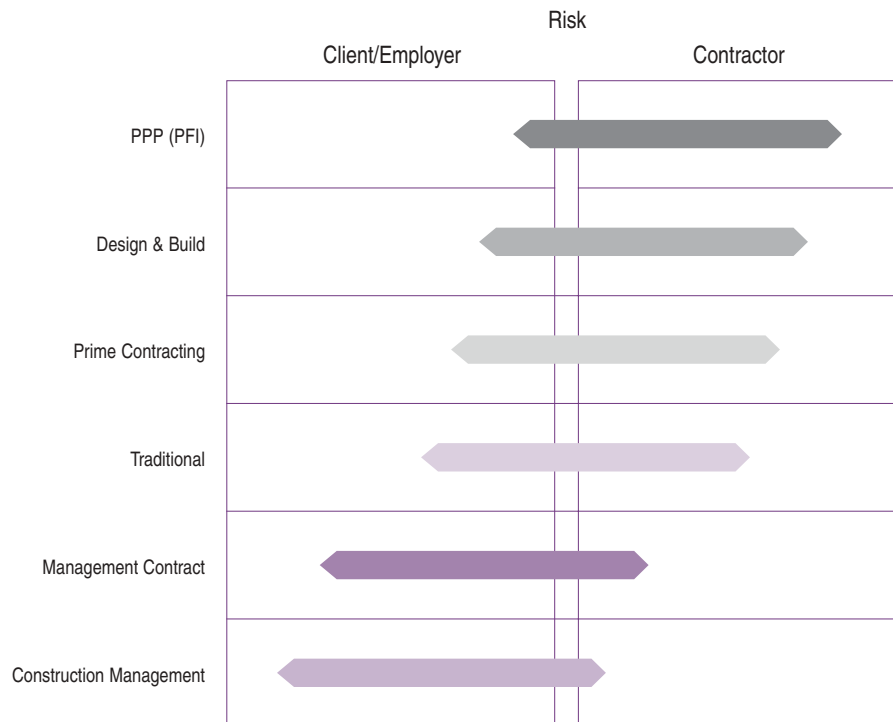
²⁶³ Evidence of Mr Colin Carter on 12 February 2004

²⁶⁴ MS/14/002 - Profile of Mr Colin Carter

²⁶⁵ MS/14/001-031 - Gardiner & Theobald Presentation on Procurement and Contract Strategies

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6.4 Mr Carter's evidence was that for the risk profiles of the various procurement and contract strategies which might have been used for the Holyrood Project there is a spectrum from the low risk PPP/PFI, which is essentially a service delivery, through to construction management where almost all of the risks lie with the client. It can be illustrated as follows:



Advantages and Disadvantages of Construction Management

6.5 Focusing in on construction management Mr Carter spoke of what he saw as its key advantages and disadvantages. The former included:

- its relative speed resulting from the possibility of commencing construction before completion of design;
- the possibility of making late changes by the reorganising or redesign of later packages before they are let;
- the control of design; and
- the relative ease with which individual non-performing trade package contractors can be removed.

Crucially however he identified among its many disadvantages:

- the greater client risk;
- the complexity of administering many different trade packages (around 60 in the case of Holyrood);
- the requirement for the client to be informed and decisive;
- the need for a good team and brief;
- the relative difficulty of managing delay and disruption; and

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- most important of all, the absence of any overall contractual programme or contract sum.

Perhaps most tellingly in the context of the Holyrood Project Mr Carter said:

“If you are a client who is dependent on having a fixed price before you start, you do not choose to go construction management, because it does not deliver that”.²⁶⁶

6.6 From his extensive industry experience Mr Carter suggested that for construction management to work effectively it was necessary to have:

1. an experienced and informed client with an understanding of construction and construction processes;
2. an experienced and efficient team with good leadership not forced down the route of just trying to keep the Project going and managing any change;
3. well-defined roles and responsibilities from the start;
4. an architect who can envisage the whole and the detail at the same time, if retrospective change is to be avoided with resultant ripple effect on trade packages;
5. sufficient time up front in planning to foster a “no surprises” culture and to avoid crisis management;
6. a very good construction instruction, approval and change process; and
7. an effective and well-managed risk-management process.

Significantly in the context of the Holyrood Project Mr Carter was of the opinion that it does help to have co-location of the team. He emphasised the importance of getting the team working together in one place.

6.7 Mr Carter’s conclusion was:

“It is not easy to use Construction Management well but it is possible if the client and Project Team remain focused on those factors which are most important to achieve success for the client.”²⁶⁷

6.8 Mr Carter’s analysis was a penetrating one and it verges on the embarrassing to conclude, as I do, that virtually none of the key questions were asked. Similarly none of the disadvantages of construction management appear to have been identified and evaluated. If the key questions had been asked and subjected to rigorous assessment, I cannot speculate whether the requirement for an early completion date would have been revisited, enabling a less risky procurement method to be adopted, or whether the construction management route would in fact still have been followed. It is, however, evident that the Scottish Office, while working to publicly declared fixed budgets and being highly “risk averse”, was preparing to follow a procurement route for which there could be no fixed budget and a high degree of risk would rest with the client.

²⁶⁶ Evidence of Mr Colin Carter on 12 December 2003, Para 48

²⁶⁷ MS/14/001–031 - Gardiner & Theobald Presentation on Procurement and Contract Strategies

- 6.9 In his June 2004 report “Management of the Holyrood Building Project”,²⁶⁸ the Auditor General has undertaken an equally elegant analysis of the risks of construction management and also its advantages. He had covered this ground previously in his September 2000 Report but what he correctly emphasised, more recently, was that under construction management the client retains construction risk: all contracts are placed directly between the client and trade contractors; the client retains interface risk, although managed through the construction manager; and the construction manager is consultant, co-ordinator of the Design Team, manager of the trade contractors, construction adviser to the client, but is not the main contractor.
- 6.10 Although construction management was relatively new in 1997/1998, published guidance did exist on good project practice – most notably HM Treasury’s Guidance Note on Contract Selection Strategy for Major Projects.²⁶⁹ It listed the advantages and disadvantages very much as Mr Carter did in his evidence to the Inquiry and suggested procurement selection strategies similar to those referred to by him. Mr Wyllie²⁷⁰ confirmed that Treasury Guidance was available to Government Departments across the UK, was available in his office and, in addition to himself, was probably familiar to Dr Gibbons, Mr Armstrong and Mrs Doig. He was less certain about Mr Gordon and Mr Brown’s familiarity with the guidance.²⁷¹

Selection of Construction Management

- 6.11 There was no detailed consideration of procurement options while the site selection question remained undecided. As discussed in paragraph 2.43 Mr Gordon put up a carefully considered minute on 6 January 1998 in which he considered procurement by the PFI/PPP route as against what he described as a ‘conventional procurement’ route.²⁷² He was more concerned to contrast PFI with conventional procurement than to analyse the so-called ‘conventional’ options. It must be open to question whether there was a sufficiently thorough examination of the range of contract routes available at this stage, although I appreciate that the primary focus at that time was on the selection of a site.
- 6.12 This, in my view, is the point when the wheels began to fall off the wagon. Ministers had decided unequivocally that for the reasons given a PFI solution should not be pursued and a ‘conventional’ one should. The primacy of reasoning given for rejecting PFI was that such a course might cause unacceptable delay to the completion of the Parliament building. That was a political judgment Donald Dewar and ministerial colleagues were entitled to make and they

²⁶⁸ Auditor General for Scotland’s Report of June 2004, Page 39

²⁶⁹ SE/5/348–367 - HM Treasury Guidance No 36 Contract Selection for Major Projects, June 1992

²⁷⁰ Evidence of Mr Alastair Wyllie on 4 November 2003, Para 445 *et seq*

²⁷¹ *ibid*, Para 463 - 466

²⁷² SE/5/027-34 – Minute from Mr Robert Gordon to PS/Henry McLeish and PS/Secretary of State, 6 January 1998

did so without qualification. After the meeting on 14 January 1998 to consider Mr Gordon's minute, inexplicably Ministers were never again asked to take a decision on the procurement route with senior officials arrogating that responsibility to themselves.

- 6.13 On 6 January 1998 Mr Hugh Fisher, Partner of Davis, Langdon & Everest, faxed Mr Armstrong a handwritten note saying: "Attached are some notes on Construction Management – hope they are of interest!",²⁷³ which may give an insight into the relative lack of importance placed on this topic at that time. The attachments comprised four pages from CUP Guidance Note 36: Procurement Routes and Guidance Notes on Construction Management²⁷⁴ and a copy of some notes of a 1996 lecture by a Mr Brian Whitehead (provenance unknown).²⁷⁵ There is no record of a mature discussion of the contents of these papers.
- 6.14 After the selection of the Holyrood site, Mr Armstrong minuted Mr Brown on 6 February 1998, advising that the programme largely dictated the adoption of either construction management or management contracting, as traditional contracting would extend programme completion to mid to end 2002. At that time it was envisaged that construction required to be completed by June 2001. Since, in his view, management contracting had been problematic when adopted for the procurement of the Scottish Office building at Victoria Quay, that left only construction management. In Mr Armstrong's view construction management offered some advantages, such as "the early involvement of the contractor with the design team, producing a rational approach to the management of the design information." He expressed the view that the construction management route should be adopted, listing the implications as:
- a. there would be a fee of 1.5% to 1.75% of the construction cost to pay to the Management Contractor (sic);
 - b. the cost of preliminaries, site huts etc would be around 8%, which, taken with the fee, equated to the approximately 10% overhead normal in the traditional contract;
 - c. although the construction management route would increase fees, it would not increase the overall budget;
 - d. it would allow a wider choice of contractors; and
 - e. there would be an extra Scottish Office staffing requirement.²⁷⁶
- 6.15 On the evidence which I have heard, while all of these implications are essentially correct, it is surprising that nowhere in this minute did Mr Armstrong address or seek to compare the respective profiles in terms of client risk of construction management and management contracting. Significantly higher risk attaches to the former. While it may have been that the programme was a given factor for Mr Armstrong, and I do not disagree with his view that it

²⁷³ DL/1/029 – Faxed Note from Mr Hugh Fisher to Mr William Armstrong, 6 January 1998

²⁷⁴ DL/1/030-044 - CUP Guidance Note 36 Procurement Routes and Construction Management, 6 January 1998

²⁷⁵ DL/1/034-044 – Notes by Mr Brian Whitehead on Construction Management, 6 January 1998

²⁷⁶ SE/5/068-069 – Minute from Mr William Armstrong to Mr Alistair Brown, 6 February 1998

dictated a “fast track” construction method, he might appropriately also have emphasised to Mr Brown, who was not a construction professional, that both construction management and management contracting necessarily entailed very significantly higher client risk than traditional procurement vehicles. Mr Armstrong’s advice was poor in this respect and betrayed either a surprising oversight, or at any rate a misunderstanding on his part.

- 6.16 On 5 March 1998 Mr Brown minuted Mr Armstrong²⁷⁷ noting that since 6 February he had on two occasions discussed the matter with Dr Gibbons, Mrs Doig and Mr Wyllie and that it had been agreed that traditional contracting was not feasible and that either construction management or management contracting would have to be adopted. It would be helpful, he said, in the three months before a decision had to be taken, to see examples to illustrate the advantages and disadvantages of both methods. He also suggested that it might be helpful to have a presentation from a construction manager on the perceived advantages of the different routes. There is no evidence that any examples were produced, or that his prudent idea of a presentation was followed up.
- 6.17 The Architect was appointed on 6 July 1998, the contract being silent on the method of procurement, save only that the definition of principal contractor may include “the Construction Management Contractor”(sic). The minute of the first Design Team Meeting on 21 July 1998 attended by Mrs Doig, Dr Gibbons and Mr Armstrong, records that after discussion it was agreed by all parties that “The Scottish Office should follow the construction management process”.²⁷⁸ This, it was said, would allow the client to remain in control of the overall Project. It is not demonstrated how this conclusion was reached, nor that it received the priority consideration it merited. In a three page minute only four lines are given to this vital subject. In evidence Mr Armstrong confirmed that he was still of the view that it was the “only decision possible at that time”.²⁷⁹ Mrs Doig described the choice as being by “pretty unanimous agreement”.²⁸⁰ No consideration appears to have been given to the involvement of Ministers in this decision or even to the possibility of informing them of it. I note that this is in the starkest of contrast to the approach adopted by Mr Gordon in relation to consideration of the possibility of PFI/PPP procurement as described in paragraphs 2.43 and 6.11 where Ministers were fully involved and informed in relation to the decision making process.
- 6.18 It is clear to me that the implications, particularly as regards risk, of the choice of construction management, which was promoted by Mr Armstrong, were not fully understood. The decision was arrived at principally because it was the only procurement method which could

²⁷⁷ SE/5/071 – Minute from Mr Alistair Brown to Mr William Armstrong, 5 March 1998

²⁷⁸ SE/5/072-074 - Minutes of Design Team Meeting of 21 July 1998

²⁷⁹ Evidence of Mr William Armstrong on 3 December 2003, Para 252

²⁸⁰ Evidence of Mrs Barbara Doig on 4 December 2003, Para 491

accommodate the programme requirements of the political leadership. It must be said, however, that no witness has put forward any suggestion that any other form of construction procurement would have better suited the situation.

- 6.19 I substantially agree with the thrust of the Auditor General's conclusions in his 2000 report that:

"The Scottish Office chose the construction management procurement route in July 1998 after due professional consideration, including advice from the design team. However, they did not prepare a comprehensive procurement strategy document, and the procurement strategy for the new Parliament was incomplete in that:

There should have been a reasoned analysis supporting the adoption of the construction management route represented by the appointment of Bovis as construction managers in January 1999. Such a strategic consideration of the procurement route could have been best conducted at the beginning of 1998, in conjunction with the evaluation leading to the decision to proceed with an international designer competition for the new Parliament building.

There should have been a systematic assessment of the risks implicit in the chosen procurement route (designer appointment and subsequent construction management) and how best to manage those risks."²⁸¹

- 6.20 I would emphasise particularly the Auditor General's conclusion that there should have been a comprehensive procurement strategy document. Treasury Guidance²⁸² at the time recommended a procedure for the evaluation of contract strategies. It suggested that the Project Manager, in consultation with the Project Sponsor should, if appropriate by a numerical scoring system, decide on the relative weighting of the Project objectives such as those of cost, time and quality. It was the Project Manager's responsibility to show the Project Sponsor how different contract strategies satisfy the Project's objectives. The guidance stated:

'The inability of a particular contract strategy to satisfy an important project objective may exclude the strategy from further consideration. If, for example, price certainty is essential prior to commencing construction, management contracting and construction management strategies would be inappropriate.'²⁸³

²⁸¹ Auditor General for Scotland's Report of September 2000, Para 3.20

²⁸² SE/5/348-367 – HM Treasury Guidance No.36 'Contract Strategy Selection for Major Projects', June 1992, Paras 4.1 *et seq*

²⁸³ SE/5/348-367 – HM Treasury Guidance No.36 'Contract Strategy Selection for Major Projects', June 1992, Para 4.5

It also said:

‘There is unlikely to be a clear-cut “right” or “wrong” contract strategy. Each option will have some disadvantages or an element of risk but some will be better suited than others....’²⁸⁴

- 6.21 The Guidance is not mandatory but a statement of good professional practice. It recommended that the Project Manager should present a contract strategy report to the Project Sponsor providing details of the options available, the risks associated with those options and after an evaluation of the options it should give a reasoned recommendation of a contract strategy.²⁸⁵
- 6.22 In this regard clear and personal responsibilities were expected from Mr Armstrong as Project Manager and from Mrs Doig as Project Sponsor. Mr Armstrong should have prepared a contact strategy report, and Mrs Doig should have insisted upon being presented with such a report, which would have formed an appropriate basis upon which to seek the views of Ministers. I am of the view that the selection of construction management was the single factor to which most of the misfortunes that have befallen the Project can be attributed. Against that background I am highly critical of the failure of Mr Armstrong and Mrs Doig to ensure that there was an appropriate evaluation of the highly risky contract strategy that was adopted, particularly in view of the choice of Architect.
- 6.23 In a letter to me dated 25 May 2004 Lord Elder, who had been one of Donald Dewar’s Special Advisers until May 1999, and who had earlier given evidence to the Inquiry wrote:
- ‘One stark message for the written record is that while there was a careful and clear process as far as site selection was concerned, there is no written record of the decision to adopt ‘construction management’. If, as some would argue, this was the biggest single error, along with the decision on the fee structure, it is astonishing that the record is silent and that no Ministerial sign-off occurred.’²⁸⁶
- 6.24 I regard the decision to adopt construction management without advising Ministers of the attendant risks and the inflexible insistence on a rigid programme as among the most flawed decisions in the history of the Project. It beggars belief that Ministers were not asked to approve the proposal to adopt construction management. Nor did they, as Lord Elder correctly points out, have the advantage of Treasury advice.

²⁸⁴ *ibid*, Para 4.6

²⁸⁵ *ibid*, Para 4.7

²⁸⁶ CB/5/1071–1074 – Letter from Lord Elder to the Holyrood Inquiry, 25 May 2004, available on the Inquiry website under supplementary information