

# The new Scottish Parliament building

An examination of the management of the Holyrood project

PREPARED WITH THE ASSISTANCE OF AUDIT SCOTLAND

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## Glossary

<b>Clerk to the Parliament</b>	The Clerk is appointed by the Corporate Body and is responsible for advising the Parliament on the conduct of its business and for managing the services supporting the Parliament and the Corporate Body.
<b>Client</b>	The client for the new Parliament building was the Secretary of State for Scotland until 31 May 1999. Thereafter the project transferred to the Corporate Body.
<b>Construction manager</b>	In a traditional construction route, a main contractor tenders for the construction contract and takes the risk of employing and managing all subcontractors. Under <i>construction management</i> the client employs a construction manager to oversee and manage the construction but employs all subcontractors directly.
<b>Corporate Body</b>	The Scottish Parliamentary Corporate Body comprises the Presiding Officer and four elected MSPs. It is responsible for the completion of the new Parliament building, the operational running of the Parliament and the support services provided to MSPs.
<b>Cost consultants</b>	<i>Cost consultants</i> are quantity surveyors and others employed to provide professional advice to clients on the level of construction costs for new buildings and major refurbishment works and to monitor and report on the actual costs.
<b>Cost plan</b>	The <i>cost plan</i> is a statement of how the design team proposes to allocate the available money between the elements of the works. It provides a basis for financial planning, monitoring and control throughout the project life.
<b>Design team</b>	The professional consultants (architects, structural engineers and the mechanical and electrical engineering services consultants) responsible for designing the building to the client's requirements.
<b>Outline design</b>	The Royal Institute of British Architects (RIBA) has defined a Plan of Work, in eight stages from A to H, describing the work in a construction project from inception to completion. <i>Outline design</i> is Stage C, where the general approach to layout, design and construction is prepared to obtain the authoritative agreement of the client.
<b>Scheme design</b>	<i>Scheme design</i> is Stage D of the RIBA Plan of Work, when major issues affecting design, planning, construction method and specification are considered. Sketch plans are produced which cover the major building elements including structural framework, environmental engineering services and internal finishing.
<b>Value engineering</b>	Value engineering is a process usually undertaken at key stages in the development of a project's design to determine whether the major elements of the design provide value in relation to their costs, whether a different approach might offer a better value, and whether the value from the design could be increased within existing costs. To provide an independent, fresh view it may be undertaken in conjunction with a team not directly involved in the project.
<b>Works package</b>	A specific defined element or group of elements of construction work that is let for tender. For example: the frame of the MSP building, external cladding.
<b>World Heritage Site</b>	The United Nations Educational Scientific and Cultural Organisation (UNESCO) has recognised a number of sites as being of such historic significance that it designates them World Heritage Sites. The Old and New Towns of Edinburgh was designated such a site in 1995.

# The Parliament Building at Holyrood

Exhibit A: Current design (at June 2000)



Above: Photograph of the architect's model built to illustrate the latest design of the new Parliament building.

The computer-generated images below and right illustrate the area linking the MSP building with the main Parliament buildings. The view below is looking towards the MSP building on the western edge of the site.



The view above is looking towards the east and shows the staircase rising to the route into the debating chamber on the level above.

# The new Scottish Parliament building

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Laid before the Scottish Parliament by the  
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## Preface by the Auditor General

It is important that my examination of the Holyrood project is viewed in context.

Providing a home for the new Parliament is a unique project at a singular time in the history of Scotland. The vision of the architect and the design team bears no relation to a standard office block. The realisation of this vision has involved complex and challenging decisions for everyone connected with the project. If the new building can be completed within the approved project budget, the Scottish Parliament will have a distinctive high-quality building of historic significance at a cost which seems to bear comparison with other major public buildings.

Much remains to be done over the next two years to ensure successful completion of the project. My report contains recommendations for consideration by all those now responsible for the project.

I have undertaken the examination under section 23 of the Public Finance and Accountability (Scotland) Act 2000. I may under this section examine the economy, efficiency and effectiveness with which resources have been used, but I am not entitled to question the merits of policy objectives.

It is unusual to examine a project which has not been completed. The financial numbers in the report have been supplied by the various parties involved and have not been independently audited.

I am very grateful to everyone who has co-operated in providing information, often against tight deadlines. I am also grateful to the staff of Audit Scotland who worked on the examination against a very demanding schedule.

Robert W Black  
Auditor General for Scotland  
Edinburgh  
September 2000



## Executive summary and recommendations

1. This report concerns the management of the project to provide the new Scottish Parliament building at Holyrood. The examination has been undertaken in response to a request earlier this year from the Convener of the Parliament's Audit Committee and in the light of the increasing costs and slippage in the timetable for completion (Exhibit 1).

**Exhibit 1: Changes in the forecast cost and completion of the Holyrood project**

	Originally in January 1998 (March 1998 prices)	Current target (outturn prices)
Construction cost	£50 million	£108 million
Other project costs	£40 million	£87 million
Total costs to the Corporate Body	£90 million	£195 million
Landscape and ancillary road costs (for which the Scottish Executive are responsible)	–	£14 million*
Forecast completion (ready for occupation)	July 2001	December 2002

\* Note: Approximate order of cost – see paragraph 15 of this summary.

Source: Audit Scotland

Annex A

2. The objective of my examination is to identify and explain the reasons for delays in the timetable for the project and for the large increases in the estimated costs. My report also examines the management processes applied to delivering the building and how far these were conducive to achieving economy, efficiency and effectiveness. Policy decisions such as the location of the Parliament at Holyrood and setting objectives for its completion were matters for which Ministers initially and now the Scottish Parliamentary Corporate Body are responsible, and I have not examined these policy matters. Annex A describes how the examination was undertaken.
3. Building the new Scottish Parliament is a challenging task. There are few other public sector projects which combine its complexity, size, urgency, status and location within a World Heritage Site. The timing of the project corresponds with a period of major change in the government of Scotland which has brought many pressures upon elected representatives and officials. Against this background, there are risks and uncertainties which will continue to require careful management in order to secure a Parliament building which will meet users' needs and represent value for money.

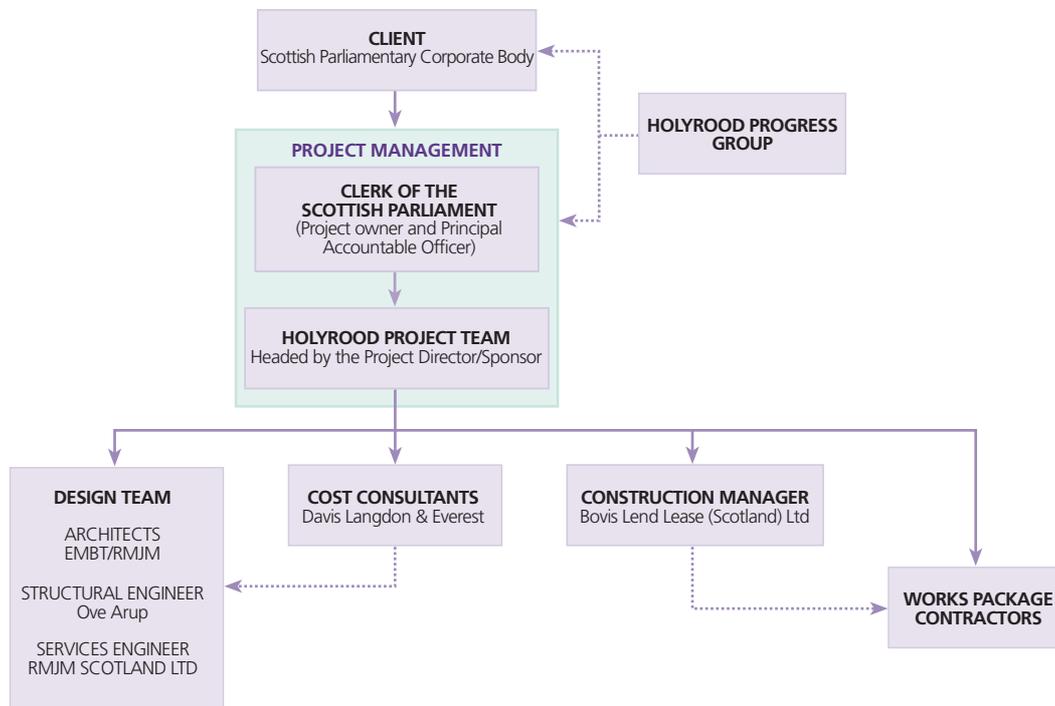
### Part 1: Project overview

Paragraph 1.1

4. Part 1 analyses the progress of the project since inception in 1997.

- Exhibit 2 on page 5
- Paragraphs 1.2 and 1.3
- Exhibits A, B, D and E on the front and back cover
- Paragraphs 1.8 to 1.34
- Paragraphs 1.11 to 1.14,  
1.22 to 1.24,  
1.27 to 1.30
- Exhibit 18 on page 41
- Paragraphs 1.28 to 1.34
5. Until 1 June 1999 responsibility for the project rested with the Secretary of State for Scotland as *client*. On 1 June 1999 this responsibility transferred to the Scottish Parliamentary Corporate Body. *Project management* are the officials responsible for managing and delivering the project on the client's behalf, advised and assisted by their appointed *cost consultant*. Developing the project is the *design team* headed by the lead architect Enric Miralles until his untimely death in July 2000. The *construction manager* coordinates the design and construction processes and the works contractors. Exhibit 2 on the next page describes the main parties involved in the Holyrood building project in more detail.
  6. Since the project was initiated in 1997 these parties have cooperated to undertake a great deal of good work. The Corporate Body signed off the latest design of the building in June 2000, while on site the new buildings to the west of the site are taking shape.
  7. Despite these achievements, there have been significant challenges throughout the project. In October and November 1998, shortly after commencing their assignment, the architects had difficulty in complying with a demanding project brief, which subsequently proved unrealistic in regard to the total area specified. Whilst their first design met the vision for a quality building in a sensitive location, there were concerns about the overall size and consequently the cost. At various times the client accepted advice from officials that more space was needed than previously thought, and after the Parliament commenced work in June 1999 the Corporate Body saw the need for other changes. There were serious difficulties with progressing the project in autumn 1999 which were not fully resolved until the following spring. Consequently, while the original April 1998 programme for the project called for scheme design approval in March 1999, in practice this was not achieved completely until June 2000.
  8. There was uncertainty about cost estimates, the more so because the client was unable to freeze the brief and the design until June 2000. Project management were reluctant to concede increases in the project budget until satisfied that these were necessary to deliver a building of the size and quality required. But there were different views on what the most likely costs would be and project management did not fully inform the client about their cost consultant's predictions on costs, which from the outset consistently exceeded the approved budget. Despite the challenges and changes affecting the project, over the two years to April 2000 the consistent advice from officials was that construction costs could be met within the budget of £50 million (initially) or £62 million (from May 1999).
  9. There was an independent review for the client in April 2000 (the Spencely report). From that point, the advice was that the construction costs implicit in the design would be substantially greater, namely £108 million. This construction cost figure was approved by the client, as part of the total budget of £195 million approved by the Parliament in April 2000.

**Exhibit 2: Holyrood project – main parties (from June 2000)**



Note: Shows the position from 20 June 2000 when the Holyrood Progress Group was established. Before 1 June 1999 the client was the Secretary of State.

**The client**

The *client* owns the project and the investment decisions involved. Until 1 June 1999 the client was the Secretary of State for Scotland. On 1 June 1999 client responsibility transferred to the Scottish Parliamentary Corporate Body.

From June 2000 the Holyrood Progress Group have assisted the Corporate Body in their functions as client.

**Project management**

The *project owner* and the *project team* together constitute project management.

The Clerk and Principal Accountable Officer of the Scottish Parliament is the *project owner*, the most senior official responsible for the successful delivery of the project to the client. Prior to the change of client on 1 June 1999 the project owner was a senior Scottish Office official. The Clerk is also responsible for ensuring that the Parliament and the Corporate Body receive sufficient, informed and independent advice about the project.

The *project team*, including civil servants and private sector appointees on secondment to the team, are responsible through the project sponsor to the project owner for managing and delivering the project. While the membership of the team has evolved over time the team did not change when the client changed on 1 June 1999.

**The cost consultant**

The *cost consultant* is Davis Langdon & Everest. They advise and act for project management and liaise with the design team on cost matters. Project management appointed them in April 1998 after a competition.

**The design team**

EMBT/RMJM Limited are the *architects*, appointed in July 1998 after a competition. EMBT/RMJM Limited is a company formed as a partnership between EMBT who are architects from Barcelona and Edinburgh based RMJM Scotland Limited, which is a firm providing a range of architectural, engineering and related services. They have lead responsibility for the design of the new building.

Within EMBT/RMJM the *lead architect* for the Holyrood project was Enric Miralles. Sadly, during late March 2000 it became known that Enric Miralles was seriously ill and he died in early July 2000.

The *other members of the design team* are Ove Arup and Partners and RMJM Scotland Limited, and are responsible for structural and mechanical and electrical engineering services. They were chosen by the architects and approved and appointed by project management in 1998.

**The construction manager**

The *construction manager* is Bovis Lend Lease (Scotland) Limited, appointed in January 1999 after a competition. Bovis provide a service for the client side and are independent of the contractors responsible for constructing the building. In summary they manage and co-ordinate the services provided by the design team and the organisation and supervision of the site. The construction manager also administers, prepares, implements and settles all construction works contracts on behalf of the client who remains the employer for all contracts.

Source: Audit Scotland

10. In summary, the whole of 1999 and the early part of 2000 was a difficult period for the project when timetables slipped and there was scope to improve financial monitoring and reporting. Looking ahead at the next two years of construction, there is a suitable group of people ready to complete the job according to a design which the client has approved. But, as with any major construction project at this stage, significant risks and uncertainty remain, which may threaten the achievement of the latest approved construction cost budget. There is construction cost inflation risk and estimating uncertainty, and there are risks associated with coordinating and completing the large and complex programme of work on site within what is now a very tight programme.

Paragraphs 1.35 to 1.41

## Part 2: The reasons for the increased costs and later delivery

11. Part 2 analyses the main reasons for the increases in costs and changes in the timetable affecting the project.

Paragraphs 2.21 and 2.22

12. Construction cost estimates have increased in total, from £50 million to £108 million (116 per cent). Almost half the increase is attributable to a 47 per cent increase in the total area of the building, which is now some 31,000m<sup>2</sup>. At the outset officials carefully considered how much space would be needed but their original target allowance for “balance” areas (for circulation, stairs, lifts, void areas, plant rooms etc) proved to be unrealistically low. In other areas more space was needed to meet increasing demands from the new Parliament. The client also approved the architects’ proposals to expand specific areas for functional reasons.

Paragraphs 2.3 to 2.9

13. The other main reason for increased construction costs is that the approved design is more complex than the notional ideas for the building at the feasibility stage in 1997, when initial cost estimates were prepared. The approved design is now of a much higher quality and is more costly. There has been a 48 per cent increase in unit construction costs and the report identifies features of the current design that helps to explain this.

Paragraphs 2.11 and 2.12

14. Associated project costs have increased from £40 million to £87 million as a consequence of increased construction costs. These are mainly the estimated costs of fees for design and managing the construction project (now £26 million), a contingency allowance equivalent to 10 per cent of the construction costs (£11 million), furniture and fit out costs for the new building (£17 million) and VAT (£28 million, of which £4 million will be recoverable from Customs & Excise).

Paragraphs 2.13 to 2.18

Exhibit 8 on page 25

15. In addition to construction and associated costs there are ancillary costs for landscaping and road realignment works. These costs are the responsibility of the Scottish Executive and have been excluded from the Corporate Body’s current project estimate of £195 million. The detailed design of these ancillary works remains to be determined and may be affected by public spending decisions yet to be made by Ministers. The Scottish Executive estimate the costs of the necessary works may be approximately £14 million.

Paragraph 2.19

16. Concerning the completion date for the project much of the extended timescale can be attributed to difficulties in achieving an approved design. Some of the delay arose from difficulties encountered by the architects in complying with the original demanding brief to a tight timetable, and unforeseen changes requested by the client added to the workload of the design team.

Paragraphs 2.20 to 2.34

Exhibit 9 on page 26

### Part 3: Project management and governance

- Paragraphs 3.1 to 3.5
17. Part 3 examines how far the project organisation, management and procurement processes complied with good practice, including procedures recommended by HM Treasury for public bodies. It also considers some wider questions of governance regarding the project.

#### Project management

- Paragraph 3.3
18. The project management team faced special challenges. Not only was the project complex but, very unusually, there was a change of client after two years. Project management had to respond to changes in the client specification, particularly after the client became the Corporate Body, which was charged with looking after the developing requirements of the Parliament.
- Paragraphs 3.6 to 3.15
19. The creation of the project management team reflected good practice. There was a clear chain of command. The Scottish Office appointed a team with a mix of relevant skills and there was clear communication with other officials planning for the new Parliament. However, the type of contract (construction management) was innovative in the public sector and, while offering advantages of control, it leaves most of the risk with the client rather than the contractor. In this context it is possible to question whether project management always had available the appropriate professional construction expertise to meet the demands of this large complex project.
- Paragraphs 3.16 to 3.36
20. Competition is central to effective procurement and value for money. In general terms, the appointments of the consultants to the project were properly undertaken though some aspects should have been more systematic and better recorded. Managing risk and uncertainty should also have been a key element in procuring the project, to help identify how best to manage the project's cost and programme during the design phase. However, the Scottish Office did not prepare a comprehensive procurement strategy at the outset. As described in the report, the Scottish Office decided after due professional consideration to choose the construction management route, but the design and construction teams were appointed using traditional contract terms that set fees as a percentage of approved construction costs. I suggest that project management could have explored more carefully alternative fee arrangements with financial incentives to reinforce the achievement of value for money.
- Paragraphs 3.37 to 3.45
21. Other areas of project management did not match HM Treasury guidance. There should have been a formal project execution plan and value engineering should have been more fully integrated into the process of design. There should have been change control procedures based on a detailed cost plan agreed between all the parties at an early stage. This would have provided a better basis to manage change within the project, which should have assisted delivery on time and within budget. It is a concern that, reflecting the delay in achieving an approved design, there is still no firm cost plan agreed between all the main parties responsible for the project.
- Paragraphs 3.46 to 3.59
22. There were shortcomings in the project's arrangements for cost reporting. There was not an arrangement which required project management to provide full cost information to accountable officers or to the client on a regular and systematic basis. Before June 1999 particularly, monitoring concentrated on core construction costs rather than the full financial provisions which were necessary for fees, furniture and fittings, and VAT. For most of the project's life there was a general contingency allowance of 10 per cent of construction costs. But an important shortcoming was that project management did not identify and quantify a separate allowance for the major risks potentially affecting the project, as is good practice.

### Governance aspects

- Paragraphs 3.60 to 3.62
23. Corporate governance is about the direction and control of organisations. It is concerned with systems, processes, controls, accountabilities and decision-making. Good governance of the Holyrood project requires the client, as the investment decision maker, to have complete, reliable and relevant information to inform stewardship and monitoring.
- Paragraphs 3.63 to 3.65
24. In June 1999 when responsibility passed to the Corporate Body, the project was one amongst many responsibilities being assumed by the Corporate Body and none of the members had previous responsibility for or direct knowledge of it. There was therefore a need for the Corporate Body to have satisfied themselves about the status and health of the project with a degree of independence from project management. It is unfortunate that an independent review did not take place, since at that time the project had not reached the point where the design was firmly fixed and the cost consultants were estimating construction costs which were significantly above the budget but which were not accepted by project management.
- Paragraph 3.66
25. The Clerk of the Parliament is responsible for all the administrative arrangements associated with the establishment and management of the Parliament. He is also responsible for ensuring that the Corporate Body are properly informed and, where needed, that they receive adequate independent advice on all matters for which they are responsible. As the senior official he was also owner of the Holyrood project and responsible for its successful delivery. With hindsight, it may have been advisable to allocate the responsibility for the Holyrood project to another senior official within the Parliament, so as to safeguard the effective exercise of each role.
- Paragraphs 3.68 to 3.69
26. The recommendations of the Spencely report for strengthening the management and oversight of the project have been adopted by the Corporate Body, and the establishment of the Progress Group in June 2000 should be of assistance to the Corporate Body in ensuring effective stewardship of the remaining stages of the project. It is encouraging to note that the Progress Group includes an architect and a surveyor both of whom are independent of project management. The Corporate Body has also restructured project management to ensure that it contains the right skills to deliver the project on a very demanding timescale.

## Recommendations

27. It will be over two years before the project is completed and most of the expenditure has yet to be incurred. I have therefore listed below a number of recommendations which, if they are implemented, should help to ensure that future risks are properly managed and the Scottish Parliament building is delivered on time and within budget.
  - a. Project management should instruct the construction manager and the cost consultant to prepare as soon as practicable a risk analysis, which should identify all remaining risks to the project and their potential impact on costs and deadlines. This analysis should take account of the main risks identified in Part 1 of this report and quantify the most likely outcomes as well as best and worst cases. The results should be the basis for an action plan to manage the remaining risks.
  - b. Project management should look again at the overall cost provision in the light of the risk analysis. They should ensure that, in accordance with good practice, there is a proper, separate allowance for risk in the estimate.
  - c. Project management, the design team and the construction manager must agree a cost plan taking account of risks and uncertainty, to provide an effective basis for managing the remaining stages of the project.
  - d. Now that the design of the building is firm project management should pass more responsibility to Bovis as the construction manager and avoid the danger of duplicating the services that Bovis are commissioned to provide.
  - e. A single authoritative point of contact between the client and project management must be confirmed. Similarly all instructions to the construction manager and the design team on the client's behalf should come only from a single authoritative point within project management.
  - f. Project management have a key role to oversee and monitor delivery of the project and represent the client's requirements and decisions. Project management should identify and agree major milestones or targets for the remaining project period for the purposes of reporting and monitoring progress, both with the client and with the design and construction teams.
  - g. Project management should review and report project costs regularly (possibly monthly) to the client on a comprehensive and systematic basis. Estimates should include all relevant costs i.e. including construction (works package) costs, construction risk allowance, consultants fees, construction manager fees and costs, furniture and fit out costs for the new building, any non-construction risk allowance that may be necessary, and VAT. There should be a succinct commentary which draws attention to variances since the last report and provides explanation wherever possible. The team's report should include the costs associated with the project that will be met by other public bodies.
  - h. In September 2000 the Clerk of the Parliament advised the Corporate Body of the results of his wider review of governance arrangements for the organisation as a whole. The Clerk and the Corporate Body should consider whether there is any need in future for independent advice and reporting on the Holyrood project.

## Part 1: Introduction and project overview

- 1.1 This part of the report analyses the progress of the Holyrood building project since inception in 1997. Exhibit 2 in the Summary describes the main parties involved in the project.

### The current project design and the project chronology

- 1.2 Exhibit A on the inside front cover and Exhibit E on the outside back cover of this report are illustrations of the latest designs for the new building, which the Corporate Body signed off in June 2000. Construction work on site remains at an early stage, though there is a firm programme to advance the remaining construction. Project management expect to achieve the target completion date of December 2002.
- 1.3 The remainder of this part of the report analyses the main events contributing to the progression of the project so far. Exhibit D, which unfolds from the inside back cover of this report, is a summary project chronology for ready reference.

### In 1997 a process to evaluate suitable sites for the new Parliament led to the selection of Holyrood in January 1998

- 1.4 After the general election in May 1997 an early issue for Scottish Office Ministers and officials was accommodation for the planned new Parliament. In June 1997 officials advised Ministers of possible options in Edinburgh. In July 1997 the White Paper '*Scotland's Parliament*' referred to expected costs in the range £10 million to £40 million. A precise estimate of cost was impossible until further progress was made on issues such as the location, whether to build new or refurbish existing buildings and whether a procurement route such as the Private Finance Initiative (PFI) was suitable.
- 1.5 Officials conducted a site search with the City of Edinburgh Council, which provided a long list of 27 sites in Edinburgh. In September 1997 officials advised on shortlisted options, though costs remained necessarily approximate. Ministers approved further work on three leading options: two new build options, either at Leith or Haymarket, or adapting and developing the existing St Andrews House building. Ministers also approved progress on developing the detailed specification for the new accommodation (including overall space requirements) and recognised the need to provide temporary accommodation for the new Parliament until 2001 while permanent accommodation was completed. Temporary accommodation was subsequently obtained in Edinburgh, in the General Assembly building of the Church of Scotland and nearby buildings.
- 1.6 In October and November 1997 officials commissioned three leading architectural firms to conduct design feasibility studies on the three shortlisted sites. They commissioned a cost consultant to review and evaluate the building cost elements of each. In December Ministers agreed that a fourth site at Holyrood, which had previously been long listed and had recently become available, should be scrutinised in the same way. The completed architectural feasibility studies for the four sites went on public display in December.

- 1.7 In January 1998 officials advised on the results of the appraisal of the shortlisted sites and on this basis Ministers concluded that the Parliament should be at Holyrood. The Scottish Office immediately made arrangements to buy the Holyrood site at fair market value, completing the purchase in June 1998.

#### Later in 1998 after the appointment of the design team design difficulties and the risk of higher costs emerged

- 1.8 Also in January 1998 Ministers decided that to procure a new building of high quality there should be an international competition to appoint a designer. In April 1998 project management issued the project brief for the building on behalf of the client. This confirmed the design, aims, detailed space requirements etc and set a £50 million construction cost budget and a target for completion in July 2001.
- 1.9 In July 1998 a panel chaired by the Secretary of State selected the winner of the designer competition, EMBT/RMJM, and the necessary design team appointments were made. As part of the competition EMBT/RMJM confirmed that it would be possible to deliver a building which complied with the overall concept proposed and the brief within the construction cost budget of £50 million. To meet the overall timetable the objective for the design team was to deliver outline proposals by September 1998 and the scheme design for approval by March 1999.
- 1.10 Also in July 1998 project management chose to adopt the construction management method of contracting for the construction of the building consistent with advice from the design team and the cost consultants. In this form of contracting there is no main building contractor. The client appoints a construction manager to coordinate the design and building processes. There are advantages and disadvantages to this approach, which are set out in Part 3 of this report.
- 1.11 In October 1998 the Secretary of State accepted broadly the architect's outline proposals, which were publicly exhibited. But the £69 million estimated cost associated with these proposals – which were at an early stage – were beyond the approved budget of £50 million and the proposed area of the design exceeded the requirements set in the brief. Accordingly in November 1998 project management instructed the architects to try and reduce the overall area (and therefore the cost) as part of the process of continuing design. At the same time, further changes to the design became inevitable, since project management had revised the brief on behalf of the client in November 1998 increasing the total space required by five per cent.

#### In March 1999 the client was unable to “freeze” the scheme design or set a cost plan as intended

- 1.12 The design team presented further design proposals in March 1999, which were publicly exhibited in April. Project management and the client were satisfied with the overall design concept, and they accepted the design could not be as economical as they had at first required. But there was still insufficient progress on detailed aspects for the client to approve the design at this time, as planned, and there remained uncertainty about cost.
- 1.13 During March, April and May 1999, prior to the transfer of client responsibility for the project from the Secretary of State in June, project management advised the Secretary of State that an increase in project costs was becoming likely. They advised that design developments meant that an increase in construction costs from £50 million to £62 million was most likely, while there would be

consequential increases in other project costs such as general contingency (which would increase from £5 million to £6 million), fees and VAT. In total a project budget of some £109 million would be required. Project management also now forecast overall completion in autumn 2001, three months later than the original target.

- 1.14 The estimate of project costs was carefully prepared and represented project management's best judgement on the most likely outcome taking into account the progress achieved on the design so far. Inevitably, though, there remained uncertainty and risk at this still early stage of the project. The estimate of construction costs given to the client by project management was considerably lower than the independent estimate provided at that time by the cost consultant to project management. This reflected different views on how far the risk of higher costs during subsequent construction would or would not materialise<sup>1</sup>.

#### **In June 1999 the Corporate Body became the client and instructed some revisions to the design of the chamber**

- 1.15 In June 1999 the Corporate Body became responsible for the project and project management briefed them about the revised costs and completion forecasts on the same basis as they had reported to the Secretary of State. These were £109 million project costs (including £62 million construction costs) and completion in Autumn 2001. The Corporate Body published the same information about the project in preparation for a debate on the Parliament building on 17 June 1999.
- 1.16 In the June 1999 debate MSPs voted to continue with the project on the basis of the revised cost and completion forecasts. These became the new targets for the project. MSPs raised various issues affecting the design of the building, most importantly the layout of the debating chamber. Consequently with the approval of the client project management instructed the architects to investigate the feasibility of an alternative chamber design that would meet MSPs' preferences.
- 1.17 To assist this process in July 1999 members of the Corporate Body including the Presiding Officer visited Parliament buildings in Holland and Belgium accompanied by the architects and members of project management. By August 1999 the architects had proposed a revised chamber design, which the Corporate Body accepted in September.

#### **In August 1999 serious difficulties with the project were identified**

- 1.18 At a meeting between project management and the design and construction teams at the end of August 1999 serious difficulties with the project were discussed:
- At the direction of the client, the architect continued to work on aspects of the overall design including the chamber. This was delaying elements of the more detailed architectural design and the services and structural design which were time critical.

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<sup>1</sup> Part 3 of this report considers further the issues of project cost and risk reporting.

- Additional pressure on the design team arose from the continuing need to respond to other external influences affecting the design. In particular there was uncertainty on Queensberry House, a listed historic building integral to the site, and protracted negotiation continued with Historic Scotland and conservation interests to agree a design solution that could be recommended for planning authority approval.
- The most recent checks on the design had indicated the area for the whole building was now some 4,000m<sup>2</sup> (18 per cent) more than the total accepted as right in April 1999 (paragraph 1.12). Although there was no precise valuation this was likely to increase construction costs greatly. There was no obvious explanation for the extra area and the need to investigate would cause delay.
- It remained unclear when design approval, planned for March 1999, would be achieved. The construction manager's critical path analysis in August 1999 showed that because of the extended design period, construction would run at least four months beyond the target completion date of September 2001.
- Some works packages had been let and work commenced on site. But because the design remained uncertain there was an increasing prospect that essential construction information from the design team would dry up. This created a risk of wasting expenditure on consequential claims from contractors for disruption and idle time.
- Most critically of all, there was no agreement between the design team and project management on the £62 million target cost for construction works set in June 1999 (paragraph 1.16), which the architects now firmly stated to be insufficient. On the design details available in August 1999 the cost consultant predicted total costs of as much as £115 million, including risk allowances of £21 million. It was still therefore impracticable to agree a cost plan for the project.

1.19 These difficulties led the project sponsor to start an immediate review of the project, which they completed in September 1999. The review indicated that even on very optimistic assumptions the earliest completion date for the project would be January 2002. It also confirmed that the latest budget forecasts were unacceptable and recommended an immediate value and cost review, in an effort to establish a reliable base line cost for the project and to enable a cost plan to be prepared.

#### **In autumn 1999 a new demand for extra space added to uncertainty and increased the chances of extra costs and delay**

1.20 In relation to the estimated construction costs project management told the design team in September 1999 that there could be no increase compared to the target of £62 million. But this position became increasingly untenable. In November 1999:

- Project management advised the Corporate Body of the results of the value and cost review of the existing design (paragraph 1.19). This had involved all the key parties in the implementation of the project and provided estimated savings at some £20 million.
- In contrast the latest estimate from the cost consultants (September 1999) continued to predict construction costs of some £115 million. There was no progress in relation to the project review recommendation that a cost plan be established.

- At the same time as these efforts to control costs were in progress the Corporate Body accepted advice from Parliament officials on newly emerging demands for additional space within the Parliament. This need reflected experience and lessons since the Parliament had started business the previous June, including the need for more staff, and translated into a potential requirement for 10 per cent more space than was accepted as necessary the previous April. With the Corporate Body's approval project management instructed the design team to investigate the feasibility of an alternative design that would provide extra space. (Meeting the requirement for extra space subsequently reduced the estimated savings identified by the value and cost review from £20 million to £6-7 million.)

1.21 Preparation works had started on site in April 1999, with piling for the first structures commencing in August 1999. There was a strategy of phasing construction from west to east on the site so that the MSPs block to the west, where design was most advanced, would go up first. While this helped to mitigate the impact of design delay, it could not prevent it entirely. Also, the value and cost review and the additional feasibility work instructed in November 1999 diverted the design team effort from work in support of the construction programme. Consequently in November 1999 the construction manager forecast in his monthly report to project management that even on optimistic assumptions completion of the project could be delayed until June 2002.

1.22 In December 1999 the Corporate Body issued a report inviting MSPs to comment on the newly identified requirement to provide additional space. The Corporate Body's report did not estimate the cost of the extra space, though it indicated that it would inevitably result in increased costs, which savings in other areas might offset to some limited extent.

**By February 2000 there was a solution which would provide extra space but uncertainty remained about cost and programme**

1.23 Meeting the new demand for extra space was a priority for the design team from November 1999 to February 2000. While the extra space was some 10 per cent of the total requirement it had a disproportionate impact on the whole design. It required fundamental review of most elements of the design, which already made good use of the available space within the site and which had recently been subject to scrutiny within the November cost and value review.

1.24 In early February 2000 project management advised the Corporate Body that it was not possible to forecast accurately costs or programme for the project, though adverse changes in both remained likely. Estimates could not be firmed up until the architects had completed feasibility work to provide the extra space.

1.25 Later in February 2000 the architects presented proposals for providing the extra space to the Corporate Body who accepted them. Central to the proposals was low-level new build and the re-introduction of an external corridor in the garden of Queensberry House. The new proposals would both add space and improve the efficiency of the whole building design.

1.26 While the architects were confident about the latest proposals there was a need once more to develop the more detailed architectural drawings and to provide service and engineering details that would allow the client finally to sign off the design. The changes in the design were such that the planning authority (City of Edinburgh Council) would need the opportunity to consider and approve

amendments to an earlier application for approval of the proposed development. There was also a need to obtain comments from the Royal Fine Art Commission for Scotland. The changes affected the proposals for Queensberry House, requiring further dialogue with Historic Scotland on conservation aspects. The architects advised the Corporate Body directly that in their view completion of the project could now slip to December 2002 or beyond.

- 1.27 Project management reported to the client later in February that, on the basis of the recently available report from the cost consultant, the most likely cost estimate was now £125 million excluding fit out, VAT, fees and contingency.

**In February 2000 the Corporate Body commissioned an independent review to resolve the uncertainty**

- 1.28 At the end of February 2000, in response to the uncertainty arising from these developments, the Corporate Body, with advice from the RIAS on suitable candidates, appointed an independent architect Mr John Spencely to review and report urgently on the project costs and programme.
- 1.29 In parallel with this review, and after acceptance of the feasibility proposal in February 2000, work on scheme design continued. Project management advised the Corporate Body in March 2000 that the construction costs associated with the redesign could not be contained within the previous budget of £62 million. The main parties therefore focused on identifying and agreeing new cost and programme targets, which would be capable of delivering the latest proposed design. This was in line with John Spencely's emerging conclusions that construction and project costs of the current design would greatly exceed the available budget.
- 1.30 These efforts came together at the end of March 2000 when John Spencely made his report, which the Corporate Body immediately published together with their report to Parliament. The Corporate Body's most important conclusion was that, should the Parliament decide to proceed with the project, it could be completed to the latest design by end December 2002 within a total budget of £195 million (Exhibit 3).
- 1.31 The Spencely Report also provided information of the costs of other buildings, although none are strictly comparable to the proposed Holyrood building (Exhibit 4).

**Exhibit 3: The Spencely Report and the Corporate Body's response March 2000**

<b>Recommendations by Spencely</b>	<b>Corporate Body response</b>
That the Parliament should go no further than setting a costs limit for the Project as a whole.	The Parliament set a cost limit of £195 million for the project on 5 April 2000.
The brief for the project should now be finalised.	Amendments to the brief agreed and issued 6 June 2000.
Appoint one member of the Corporate Body as the principal link with the Project Team...or establish a Project Progressing Committee to support the Corporate Body in the delivery of the project.	The Corporate Body established a Progress Group on 20 June 2000 to ensure closer monitoring of the project on their behalf and on behalf of the Parliament.
The management and direction of communication within the project can be improved.	The Corporate Body approved restructured project management arrangements in July 2000, with the aim of improving communication and project control.
The cost of the facades of the MSP block could be reduced by simplifying the design. This would also make the facades easier to build and reduce the frequency of maintenance, without compromising the integrity of the architectural design.	A review of the facades is in hand as part of a continuing series of design exercises which examine value for money issues while retaining the integrity of the original design.
"I recommend that the future design work of the Architects should take place only in one office, rather than being split geographically."	The work is now taking place principally in the Edinburgh office of EMBT/RMJM Limited.
<b>Queensberry House</b> "...the current approach may be considered essential and I appreciate that the design and design approval processes may have reached a stage of finality which to undo might cause real harm to the programme. If this is the case, the same effect could be achieved at lesser costs by building anew from new foundations and I recommend that this be done."	"We note the Spencely Report's recommendation in relation to Queensberry House and understand and concur with its conclusion on the expense involved. However, mindful of the historic importance of the House and the role it plays in integrating the design with its historic surroundings and urban landscape, as required by the original brief, we believe it is right to proceed as planned."
"I recommend that arrangements are made to facilitate a closer working relationship between the Architects and Engineers and the Quantity Surveyors."	Accepted.

Source: Spencely Report and Audit Scotland

**Exhibit 4: Cost comparisons provided by Spencely**

Holyrood buildings		Portcullis House*	Corporate Headquarters building in Edinburgh	Museum of Scotland
MSP Block	£3,659/m <sup>2</sup>	£4,742/m <sup>2</sup>	£1,544/m <sup>2</sup>	NE
Queensberry House	£4,061/m <sup>2</sup>	NE	NE	NE
Assembly/Debating chamber	£3,521/m <sup>2</sup>	NE	NE	£2,587/m <sup>2</sup>
Fit out costs as a percentage of basic construction costs	13.3%	NE	16.0%	38.0%

\* Portcullis House is new office accommodation for MPs at Westminster constructed above Westminster Underground Station.

NE: No equivalent comparator provided.

Source: Spencely Report

**After the April 2000 debate there was a firmer basis for the project to move forward**

1.32 The Spencely report formed the basis of the Parliament’s debate on the project on 5 April 2000. In summary the outcome of the debate was a resolution directing the Corporate Body to progress the project within the revised targets that they had offered (Exhibit 5).

**Exhibit 5: The Parliament’s resolution after the Holyrood debate 5 April 2000**

That the Parliament notes the report of the Scottish Parliamentary Corporate Body on the Holyrood Project; approves its terms, and directs the Corporate Body to establish a progress group comprising representatives of the Parliament and relevant professionals to work with the Corporate Body to (a) finalise the design; (b) complete the project by the end of 2002 within a total budget of £195 million, and (c) report regularly, or as from time to time may be required, on progress including on expenditure to date and estimated completion costs to the SPCB and to members.

Source: Official Report

1.33 Following the debate the Corporate Body established the Holyrood Progress Group as the principal advisory body in fulfilling the resolution of the Parliament, namely finalising the design, completing the project by the end of 2002 and keeping everyone informed about progress. The Progress Group formed on 20 June 2000 and meets fortnightly. Membership of the Group is three MSPs, two senior independent building professionals (an architect and a quantity surveyor) and two from the Scottish Executive, a senior official responsible for constitutional affairs and the Chief Architect. The Corporate Body retains its statutory responsibilities regarding the project.

1.34 Meanwhile, the responsible teams had continued work on finalising the design of the building and developing the programme for its delivery. In June 2000 the Corporate Body accepted the final scheme design proposals from the design team (known as the “stage D” report). They did so jointly with the Progress Group, on the basis of confirmation from all the main parties that the building can be completed by the end of 2002 and that the construction costs are estimated at just under £108 million in line with the resolution of 5 April. The Progress Group stated in June 2000 that, having agreed the construction cost, it is now their responsibility to manage the total budget of £195 million.

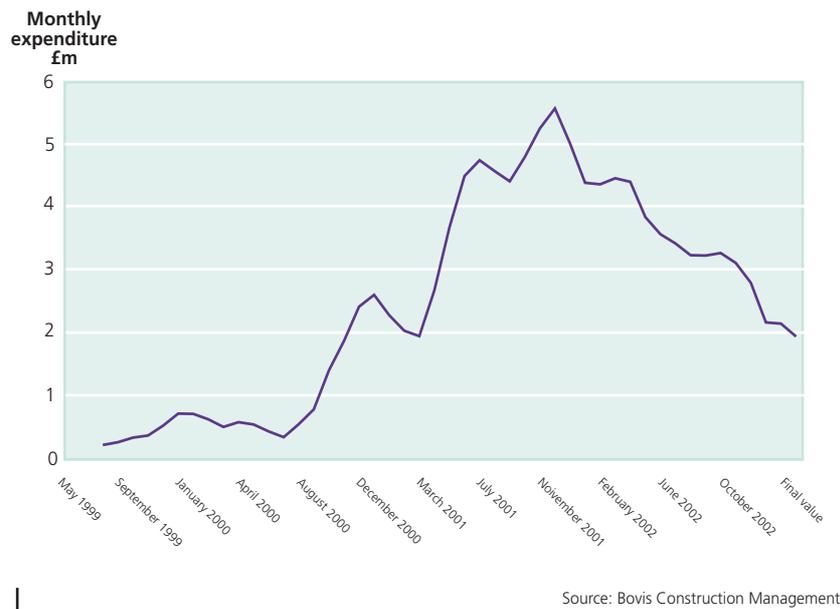
### There remain risks associated with the achievement of the current targets

1.35 While there is now a firmer basis for delivering the project against the revised targets the progress of construction on site remains at a relatively early stage. In July 2000 the main structure for the MSPs block was starting to take shape on the site but the foundations/basement areas for the eastern side of the building complex had not yet started (Exhibit B on the inside back cover of this report). More than two years work remains and the targets for construction are not guaranteed. Risks and uncertainty remain regarding the completion of the project, as described below.

### Construction cost inflation risk and other estimating uncertainty

1.36 Associated with the latest construction cost target of £108 million is a contingency allowance of £11 million, which is regarded as essential to manage future uncertainties. This gives a total target provision for construction of £119 million. Within this sum contracts already awarded have an estimated value of some £37 million of which some £11 million was due to be paid by September 2000 (Exhibit 6). This means that almost 70 per cent by value of the work has yet to be tendered and there is a corresponding risk that estimates, however carefully prepared, may not accurately predict the market price.

Exhibit 6: Holyrood construction contracts – indicative expenditure profile



1.37 Project management and all consultants consider that £119 million is a cash limit within which the contract costs must be contained. However Audit Scotland's work shows that this could be a significant challenge because it is not yet possible to say how far inflation or other estimating uncertainty may alter, if at all, the current estimated construction costs.

1.38 Specifically, the cost consultants have estimated construction costs based on constant March 1998 prices. On the face of it, these estimates therefore exclude actual and forecast building cost inflation over the three and a half years from March 1998 to September 2001, the mid point for financial settlement of all works contracts. Based on published indices this could add 10 per cent in total to estimated construction costs<sup>2</sup>. However since most of the cost consultants' estimates have yet to be confirmed by the results of tendering it is not possible to assess fully the potential impact of inflation, which may be within the inevitable margin of uncertainty within the cost forecasts. Project management have therefore undertaken to review the inflation risk with their cost consultants in the light of the tender results for the major works packages, which they expect to award in early autumn 2000.

### *Construction risk*

1.39 Project management, assisted by the construction manager, aim to maximise the transfer of construction risk to contractors as far as is right and practicable. However significant risks will inevitably remain with the client under the construction management procurement route. Momentum is building up and works are now progressing on site within a tight programme. Anything that interferes with progress could have serious impact on both cost and programme. The main risks are outlined below:

- The ability of the architects to provide the significant volume of detailed construction drawing information etc to meet the programme. Any delays in providing the necessary detailed construction information could hold back the award of construction contracts and consequently the overall programme. Letting contracts with less specific information (for example on the basis of "stage D" general arrangement drawings at a scale of 1:200 rather than with specific construction detail at scales of around 1:20) may increase the risk of variations and delays and consequent claims from contractors.
- Any further change or refinement of design requested by the client would have similar effects, by diverting effort away from the construction drawing programme.
- The ability of the construction manager to manage effectively the complex business of co-ordinating design and construction activity and supervising contractors and site organisation through to completion. It is evident however that the construction manager has hitherto used best endeavours to keep the project team informed at all stages and to provide the services they are responsible for effectively. There appears to be a good team on site and no basis to question the performance to date.
- The other normal construction risks associated with any project of this scale. For example: delays, disruption and extra costs as a result of adverse weather conditions; poor performance by any works package contractor; the need for unforeseen design adjustments and revisions revealed as the work progresses; difficulties with sourcing the necessary materials or having them available in time; adverse exchange fluctuations where materials are imported.

1.40 The contingency allowance of £11 million is available to deal with construction cost inflation and other construction risks. Managing risk is an aspect considered further in Part 3 of this report.

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<sup>2</sup> BCIS all in tender price index March 2000.

*Risks associated with other project costs and project related costs*

1.41 In relation to the other elements of the project costs there are similar uncertainties. In particular:

- Fees and costs payable to the design team members and the construction manager are related to the value of the construction work. There is a need for project management to agree with these parties a firm basis for total remuneration in the light of the significant changes that have affected the project since their appointments.
- Furniture and fit out costs. The existing provision is an estimate for which no tenders have yet been obtained. There is therefore a significant element of estimating risk. Since, however, project management prepared the estimates in spring 2000 at current prices, there is a lower inflation risk than with the main construction costs. A significant element relates to information technology, which is subject to a higher degree of uncertainty than other items such as furniture.

## Part 2: The reasons for increased costs and later delivery

- 2.1 There have been substantial changes in the overall costs and timetable for the project. In summary:
  - The Corporate Body have reported that the estimated total project costs have risen from £90 million (January 1998) to £195 million (latest).
  - The latest forecast for delivery (ready for occupation) is by December 2002, 18 months later than the first forecast (made in April 1998) of July 2001.
- 2.2 This part of the report analyses the main reasons for increased costs and changes in timetable.

### The £50 million construction estimate made in January 1998 is the best available against which to compare subsequent cost increases

- 2.3 The initial £10 million to £40 million estimate of construction cost published in July 1997 (paragraph 1.4) was not a suitable benchmark. It was based on outline assumptions about requirements of the Parliament, which at that early stage could not be accurately assessed. The lower end of the range reflected very low cost options, which Ministers shortly afterwards eliminated as unrealistic. While officials estimated a range of possible costs based on various possible options there was no allowance for uncertainty.
- 2.4 The £50 million construction estimate underlying the selection of Holyrood in January 1998 is however a suitable benchmark against which to assess the subsequent increase in forecast costs for the following reasons:
  - It was based partly on a careful desk assessment by civil servants of the expected space requirements for the new Parliament. The assessment started from a clean sheet and reflected inspections of and comparisons with similar buildings elsewhere in Europe.
  - The desk assessment resulted in a detailed schedule of areas required for the new Parliament, totalling some 21,000m<sup>2</sup>, which provided the baseline for the subsequent user brief issued to the design team in April 1998.
  - The December 1997 appraisal of all four short-listed sites for the new Parliament provided additional information to help evaluate costs (paragraph 1.6). For each of the sites including Holyrood, independent architects prepared a feasibility design for the new Parliament, and the results for Holyrood confirmed the feasibility of accommodating a 21,000m<sup>2</sup> building on the site. At the same date the quantity surveyor advising the project team estimated the basic construction cost of providing such a building on the Holyrood site at £50 million.
- 2.5 Although it was systematically researched, the £50 million estimate still reflected only a notional design for the building. It pre-dated the competition to appoint the design team for the new Parliament, which commenced in January 1998 and led to appointments in July 1998. It also pre-dated the elections for and the establishment of the Scottish Parliament in May and June 1999. Inevitably

therefore there was no opportunity at this early stage to take account of the expectations and the direct experience of the main users, namely the Members of the Scottish Parliament, nor to draw on knowledge of the actual operation of the new Parliament.

- 2.6 Exhibit C (inside back cover) shows an illustration from the architectural feasibility study for Holyrood completed in December 1997, which informed the £50 million construction cost estimate made then. The lead architect and the design team subsequently developed an entirely different concept for the new Parliament building (Exhibit A, inside front cover).

### Compared to initial assumptions the scale of the building required has increased by almost 50 per cent

- 2.7 There are various measures of space in a building. The *gross* internal area describes the total area enclosed within the walls of the building. The *net* useable area of the building available for its primary functions will usually account for most of the internal area. But there is also a *balance* area, accounting for the difference between gross and net, which accommodates areas such as stairs, lifts, plant rooms and any void areas.
- 2.8 In January 1998 when the Secretary of State selected Holyrood as the site of the new Parliament the space estimated to be required was some 14,000m<sup>2</sup> net, or some 21,000m<sup>2</sup> gross. The current design provides space of some 20,000m<sup>2</sup> net, 31,000m<sup>2</sup> gross. There has been 43 per cent increase in net space, 47 per cent in gross space.
- 2.9 In summary the increase in gross space of some 10,000 m<sup>2</sup> arises from:
- Some 3,000m<sup>2</sup> added to the net useable space because the client and the project management have requested additional provision at various times since the original brief in April 1998.
  - Some 6,300 m<sup>2</sup> added as a result of an increase in balance area. The original brief underestimated the balance area to be expected for the building. It allowed 2,800m<sup>2</sup>, 13% of the gross area, while the current design allows balance of almost three times as much, 9,200m<sup>2</sup> or 32% of gross area. Project management originally specified a low balance area as an incentive to the architects to achieve an economic layout within the building but they now consider the allowance to have been unrealistically low. The architects have emphasised that the current balance area is similar to the provision made in other recently constructed European parliament buildings.
  - Some 2,500m<sup>2</sup> of additional net space because of architectural design changes which the client has accepted as right. For example the architects have increased greatly the size of the two main entrance areas (for MSPs and the public) to promote their status and to permit a less intensive use of the historic Queensberry House.
  - A reduction in the area required for parking of 1,900m<sup>2</sup>. In developing the design of the building the project team and the architects have explored opportunities to reduce areas and achieve economies in construction. As part of this in November 1999 the Corporate Body approved proposals to reduce car parking in the building from 130 to 65 spaces, permitting the saving in space. This was a further reduction from the April 1998 brief which specified 170 spaces.

### The increase in the scale of the building explains half of the total increase in forecast construction costs of £58 million

2.10 The significant increase in the area of the building has inevitably increased construction costs; but the average unit cost of construction has also increased (Exhibit 7). Proportionately, the increase in the gross area of the building since April 1998 (47 per cent) is close to the increase in unit costs in the same period (48 per cent). Since the 116 per cent increase in total construction costs is a product of these two factors, the increase in gross area explains almost exactly half of the £58 million increase in forecast construction costs.

**Exhibit 7: The impact of additional space and increased unit costs on the estimated construction costs of the Holyrood building project**

	Original brief April 1998	Latest design June 2000	Increase	(per cent)
Gross briefed area	20,700m <sup>2</sup>	30,600m <sup>2</sup>	9,900m <sup>2</sup>	+47%
Target construction cost (excludes contingency)	£50 million	£108 million	£58 million	+116%
Unit cost	£2,411/m <sup>2</sup>	£3,557/m <sup>2</sup>	£1,146/m <sup>2</sup>	+48%

Source: Audit Scotland

### The high quality design for the building and the extended programme explain the remaining increase in construction costs

2.11 Exhibit 7 shows that the 48 per cent increase in unit construction costs from £2,411 to £3,557 per square metre accounts for just over half of the total increase in construction costs of £58 million.

2.12 Audit Scotland did not make a technical assessment to quantify precisely the factors contributing to the higher unit construction costs. However the significant delay in finalising the design has extended the site preparation and initial works period, which will have added to costs. Also, the notional high efficiency office block design was replaced by a more complex concept, which has evolved into a larger building with a higher quality of finish. Audit Scotland has identified the following particular factors that are likely to have contributed to the higher costs compared to initial estimates.

- Higher quality finishes. For example only granite, slate and stainless steel are to be used as cladding for the building rather than cheaper materials such as concrete. The concrete frames for the MSPs block that will be exposed internally are also expensive to construct because of the very high standard of finish they require.
- The increased cost of providing the basic building fabric based on a design incorporating several smaller buildings. This is different from the monolithic single building in the original “box” feasibility design.
- Within this, the use of features such as curved walls and elaborate external detailing in the facades throughout the structure, which are now an integral part of the architects’ current design and which involve the use of high-cost materials and construction methods.

- Necessary but costly security aspects have now been included. For example, in many areas the main structures of the buildings have to be constructed to be sufficiently strong to withstand bomb blast.
- The relatively high costs of refurbishing Queensberry House. The original feasibility design in late 1997 did not include Queensberry House within the Parliament site. It was included in the architect's original concept but retaining the building on conservation and town planning grounds became firm only later in 1998, after consultation with Historic Scotland and the City of Edinburgh Council as the planning authority. The cost of refurbishing Queensberry House is now some £7 million, about £2 million more than the project management first expected. This is because of the need for additional structural repairs that initial surveys (made shortly before the Scottish Office bought the property) could not have readily detected.
- Other risk factors associated with the construction process which were excluded from initial estimates have crystallised, as the design has evolved and become more detailed. For example, the extended design period has resulted in delays to the progress of the earliest works packages which may add to costs.

**As construction costs have risen so have other dependent costs, adding £47 million to total project costs**

- 2.13 In addition to the construction costs target of £108 million the Corporate Body must incur other expenses in order to complete construction and prepare the building for use. The Corporate Body now forecast that these additional expenses will be £87 million, £47 million (117 per cent) more than forecast at the outset of the project (Exhibit 8).
- 2.14 The £5 million site purchase and associated costs of demolition and archaeology work were incurred shortly after the inception of the project and have not changed.
- 2.15 The £11 million allowance for contingency remains at 10 per cent of the base construction cost. This is the same percentage originally applied by project management at the outset of the project. The total provision has more than doubled because of the increase in the underlying base estimate of costs.
- 2.16 The estimated cost of fees for designing and managing the construction project has increased because fees were set as a proportion of the approved construction cost. In Part 3 of this report, concerns are expressed about the value for money of this arrangement, which is now subject to negotiation between the Corporate Body and the consultants concerned.
- 2.17 Furniture and fit out costs have increased as the scale of the project has increased. Costs have increased as the requirements of the new Parliament have become clearer as a result of the first year of operation.
- 2.18 VAT costs have increased as a consequence of the increases in the underlying elements of the project costs. The current £195 million target for total project costs includes £28 million for estimated VAT costs. In cash terms there will be a saving against the £28 million because it includes £4 million estimated VAT on professional fee costs, which the Corporate Body can reclaim from Customs & Excise.

**Exhibit 8: The increase in the forecast costs of the Holyrood building project**

	Original estimated cost January 1998 (at site selection) March 1998 prices	Current target August 2000 (outturn prices)	Increase since original estimate	(per cent)
<b>Construction costs</b>	<b>£50 million</b>	<b>£108 million</b>	<b>£58 million</b>	<b>+116%</b>
<b>Other project costs</b>				
■ Site acquisition, demolition, archaeology	£5 million	£5 million	–	–
■ Construction contingency	£5 million	£11 million	£6 million	+116%
■ Fees	£10 million	£26 million	£16 million	+160%
■ Furniture, fit out etc	£8 million	£17 million	£10 million	+127%
■ VAT	£13 million	£28 million	£16 million	+129%
<b>Total other project costs</b>	<b>£40 million</b>	<b>£87 million</b>	<b>£47 million</b>	<b>+118%</b>
<b>TOTAL COSTS TO THE CORPORATE BODY</b>	<b>£90 million</b>	<b>£195 million</b>	<b>£105 million</b>	<b>+117%</b>
■ Landscape and ancillary road costs (approximate order of costs – see paragraph 2.19)	–	£14 million	£14 million	–
<b>TOTAL COSTS TO THE SCOTTISH BLOCK</b>	–	<b>£209 million</b>	–	–

**Notes:**

The inflation element associated with the current construction target of £108 million is uncertain (see paragraph 1.37 and 1.38).

All rounded to nearest £1 million, totals added before rounding.

Source: Audit Scotland

**Arising from the project there are additional landscaping and road costs which are the responsibility of the Scottish Executive**

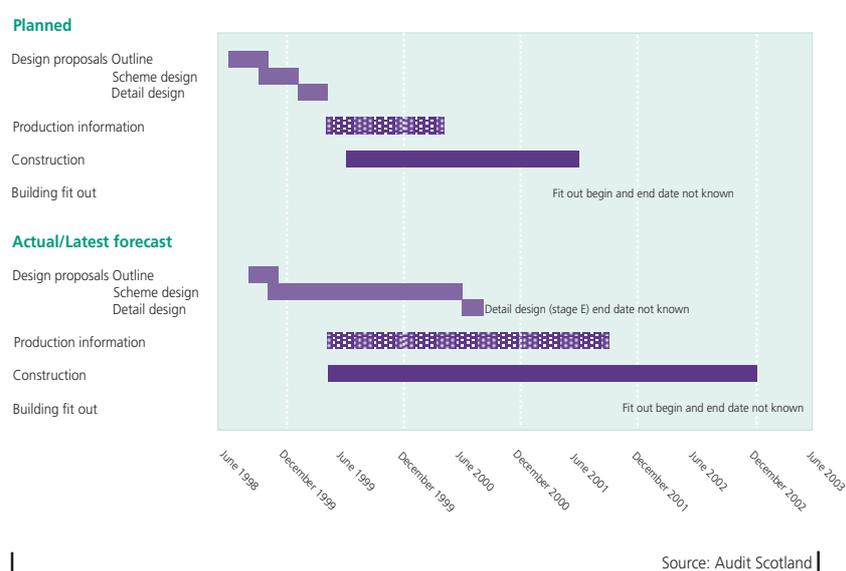
2.19 In addition to the project costs for which the Corporate Body is directly responsible there will be additional costs to complete landscaping to the south of the site and road works in its vicinity, all on land for which the Corporate Body is not responsible (Exhibit E on the outside back cover of this report is a site plan including an indication of these works). These costs have been excluded from the project estimates because they will not be funded from the Corporate Body’s direct resources but are the responsibility of the Scottish Executive. The Scottish Executive have advised Audit Scotland that the detailed design and scope of these works has yet to be finalised. On the basis of current designs, the cost consultants have estimated costs at around £14 million including contingencies at around £2 million. Funding for this project is being taken forward as part of the current spending review.

**The extended design period is the main source of delay in the forecast completion of the project**

2.20 Part 1 of this report summarised the main events in the progress of the project so far. Much of the extended timescale for the project can be attributed to the difficulties in achieving an approved design for the building. In particular, the original programme called for scheme design approval by March 1999 but in practice this was not completely achieved until June 2000.

- 2.21 Exhibit 9 summarises the changes in the forecast programme for completing the Holyrood building project. As well as highlighting the protracted design phase of the project the Exhibit shows how the design period has run in parallel with construction activity on site to a much greater degree than originally planned.
- 2.22 Exhibit 9 also shows an extended construction period compared to original plans. The building is now almost 50 per cent larger than first expected, which has required more design work and additional construction activity. However, the extended design period is the main cause preventing construction from being completed as soon as originally planned.

**Exhibit 9: Changes in the forecast programme for completing the Holyrood building project**



**Some delay arose from the architects' difficulties in complying with the original brief and in progressing a tight design timetable**

- 2.23 A complex mix of factors has contributed to the increase in the time required to complete and agree the design of the building. Because of the interaction between these factors I have not attempted to investigate the causes in detail. However, the time taken by the architects in responding to the design requirement has been a factor in the delay.
- 2.24 At various times during the early stages of their appointment, from July 1998 through to November 1998, project management expressed concern at the slow initial progress that the architects were making in preparing initial designs. This put the planned programme six to eight weeks behind schedule by the end of that year.
- 2.25 This initial period coincided with disagreement between the architects and project management on some fundamental aspects of the design, with project management raising concerns about the developing design being over area and over budget (paragraph 1.11).

- 2.26 By the spring of 1999 the architects had made significant progress and project management accepted their proposals for a higher balance area and other refinements to the brief. By the end of March 1999 project management and the client were satisfied with the architects' proposals for the building, which now had a gross area estimated to be some 23,000m<sup>2</sup>. But the architects did not provide at that stage the detailed design information and reports that they were required to provide, the "stage D" report, to allow project management to formally accept the design. The architects provided some information relevant to this requirement later, in July 1999, but by then other factors were affecting the project and preventing progress (paragraphs 1.16 and 1.17).
- 2.27 In August 1999 the architects informed the project team that the estimated size of the building had increased by some 4,000m<sup>2</sup> to approximately 27,000m<sup>2</sup>, without being able immediately to identify why.
- 2.28 Between July 1998 and November 1999 the lead architect attended only six of the fifteen meetings, which project management convened to review progress and exchange information with the design team and resolve issues arising, though at least one director from EMBT/RMJM attended each meeting. Other members of the design team and project management found it necessary to visit Barcelona to progress aspects of the work, at additional cost and with some inevitable disruption.

#### Some delay arose from the need for additional work to satisfy requirements from the client

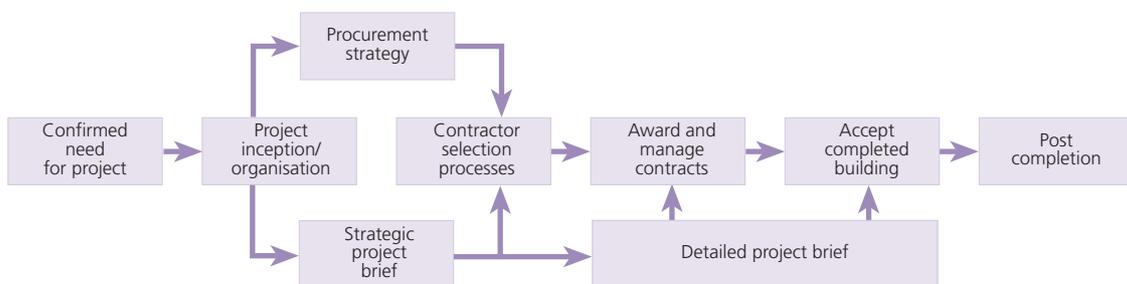
- 2.29 Unforeseen changes requested by the client added to the work load of the design team, particularly the architects. These have contributed significantly to the extended timetable for the project.
- 2.30 Project management issued a revised brief in November 1998 with an increased space requirement of some five per cent (paragraph 1.11). While this did not present enormous difficulties at that early stage it inevitably required extra work by the design team.
- 2.31 Following the June 1999 Parliament debate, project management instructed the architects to look again at the design of an important element, the debating chamber (paragraph 1.16). This involved significant additional work by the architects and other members of the design team. In particular there were visits to Holland and Belgium accompanied by members of the Corporate Body to examine the arrangements in the Flemish and Dutch Parliament buildings and to help identify the most effective solution for Holyrood. It took some three months from June to mid-September 1999 for the architects to resolve this single issue, hindering the progress of work on the rest of the design.
- 2.32 In September 1999, in the light of the difficulties facing the project, the Corporate Body and project management initiated a wide-ranging value and cost review in an effort to establish a reliable baseline cost for the project (paragraph 1.19). The design team participated fully in this review and presented proposals in November 1999, which offered potential savings estimated at some £20 million.

- 2.33 However, in parallel with the results of this effort to control costs, in November 1999 the Corporate Body initiated feasibility work by the architects for an alternative design to accommodate 10 per cent more space potentially required within the Parliament (paragraph 1.20). Although this was a relatively small change in the required area it required extensive reworking of the detailed scheme design. Project management estimated in February 2000 that this work represented a significant change to 75 or 80 per cent of the existing scheme design. Reworking the design reduced the estimated value of the savings from the earlier review that could be implemented, from £20 million to only £6-7 million. Preparing new design proposals and working through the necessary design details took about six months, from November 1999 until April 2000.
- 2.34 More generally project management and the client required the whole design team, and particularly the architects, to provide external presentations and support in negotiations. Throughout the project the design team were involved in a series of exchanges with others interested or involved in the project. These included Ministers, MSPs, the leaders and other representatives of the political parties, the City of Edinburgh Council as planning authority, Historic Scotland, the Royal Fine Arts Commission for Scotland and conservation bodies such as the Cockburn Association.

## Part 3: Project management and governance

- 3.1 This part of the report examines the strengths and weaknesses of the project management processes applied to the Holyrood building project. In particular it appraises how far the project organisation, management and procurement complied with the established framework of good practice within the public sector. This part also considers some wider questions of governance regarding the project.
- 3.2 The main sources of good project practice are HM Treasury's *'Essential Requirements for Construction Procurement'* (1997) and subsequent papers in that series, *'Scottish Enterprise's Knowledge Management in Construction and Environmental Projects'* (1999) and the Scottish Office/ Scottish Executive's *'Finance Manual Section T: Major Capital Expenditure Projects'* (1999). The recommendations of the Committee of Public Accounts at Westminster, who have previously examined several major construction projects in the public sector where increased costs or changes in timescale have occurred, are also relevant. The Construction Industry Board has also issued guidance.
- 3.3 It can be argued that the challenges of the Holyrood building project reinforce the importance of following established procedures which are known to be effective. There is, however, no set of procedures or guidance which accounts for all possible eventualities in such a complex project with a high public profile. It is important to acknowledge the special challenges to which project management have had to respond in this case. There was a change of client after two years and the client specification altered significantly over time, particularly after the project was passed to the Corporate Body, which was charged with looking after the developing requirements of the Parliament.
- 3.4 The following Exhibit (10) summarises key steps in construction procurement and provides a framework for evaluating the management of the Holyrood project.

**Exhibit 10: Key steps in the construction procurement**



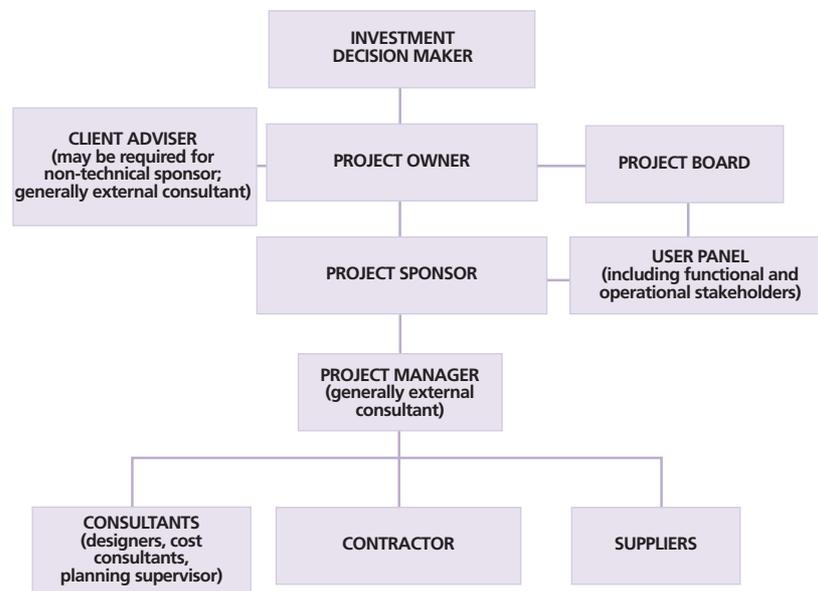
Source: Audit Scotland

- 3.5 The main findings in this part cover the following areas, reflecting progress so far achieved on the project:
- Project inception and organisation
  - The user requirement (project brief) and the strategy for procuring the project
  - Contractor selection and management
  - Project reporting and budgetary control
  - Reporting to the client and governance aspects.

### Initial project organisation reflected good practice

- 3.6 Good practice in construction procurement requires the client to establish:
- A project team with sufficient skills, knowledge and resources to match the expected demands of the project
  - A clear chain of command, to provide the basis for decision making and accountability
  - Satisfactory arrangements for project appraisal and monitoring, including budgetary control.
- 3.7 Exhibit 11 below illustrates HM Treasury’s model of good project team organisation, command and communication.

**Exhibit 11: Good practice in project organisation**



Source: HM Treasury 1997 'Essential Requirements for Construction Procurement'

- 3.8 The creation of the Holyrood project team broadly reflected this good practice. The Scottish Office established a project steering group with senior management representation at an early stage (August 1997), consistent with the Treasury model. They appointed a project team with a mix of relevant skills and knowledge. There was a clear assignment of responsibilities at the outset within the team. There were clear communication channels between the project team and other officials planning wider aspects of the operation of the new Parliament, so that the expected user requirements could be conveyed to the building project team.

### Did the project management always have the best possible mix of skills for this demanding project?

- 3.9 It is possible to question whether project management's organisation was adequate at all stages to meet the demands of this large, complex project. The questions relate to the skill mix within project management and whether there was a sufficiently clear plan for effective implementation of the project.
- 3.10 HM Treasury's procurement guidance describes the necessary management and technical abilities of those with responsibility for leading and managing the implementation of large construction projects. As Exhibit 11 above shows, key appointments are the project owner, the project sponsor and the project manager. Exhibit 12 summarises the particular role and responsibilities of these positions.

#### Exhibit 12: Project team roles and responsibilities – best practice

##### Role and responsibilities – best practice

The *project owner* is the named individual accountable to the investment decision maker for the project and its budget.

The *project sponsor* is the named individual responsible to the project owner for the client's interest in the project. The sponsor acts as a single focal point for management of the client's interest in a project.

Where the project sponsor is not a construction professional he or she should appoint a *client adviser* to provide the necessary substantial professional expertise

The *project manager* is the client's professional agent responsible for the day-to-day management of the project and reports directly and solely to the project sponsor. He or she acts as the interface between the project sponsor on the client's side and consultants and contractors on the supply side, within a communication framework set by the project sponsor.

Source: HM Treasury 1997 'Essential Requirements for Construction Procurement'

- 3.11 Project management had a mixture of relevant experience and skills. The successive project owners<sup>3</sup> and the project sponsor were senior experienced administrative civil servants. The project sponsor could draw on advice from the Chief Architect and Head of the Building Directorate in the Scottish Office (later the Chief Architect in the Scottish Executive) and his staff, particularly on professional matters. The successive project managers were appointed on the basis of their significant previous experience in the specialist area of project management<sup>4</sup>.
- 3.12 Despite these strengths it is possible to question whether project management provided the best possible combination of skills taking into account the unique nature of the project. The type of contract (construction management) is described in Exhibit 13. It leaves considerable risks with the client rather than the contractor and is complex to manage. The project management must therefore include professionals with expertise in construction.

<sup>3</sup> A new project owner became responsible for the project from 1 June 1999 when client responsibility passed to the Corporate Body.

<sup>4</sup> The original project manager resigned from December 1998 and his successor took up post in January 1999.

**Exhibit 13: Selecting a procurement route**

Procurement route	Key features
Traditional lump sum	<ul style="list-style-type: none"> <li>Client has separate agreements with designer and main contractor which may discourage innovation.</li> </ul>
	<ul style="list-style-type: none"> <li>Design and construction work are sequential, extending timescales.</li> </ul>
	<ul style="list-style-type: none"> <li>Construction is 80% tendered before work starts on a lump sum basis, providing greater cost certainty once the design is completed.</li> </ul>
	<ul style="list-style-type: none"> <li>Overall lowest degree of risk transfer from the client to suppliers.</li> </ul>
	<ul style="list-style-type: none"> <li>Not recommended by the Treasury</li> </ul>
Construction management	<ul style="list-style-type: none"> <li>Used for completing fast track projects where there is a high degree of design uncertainty.</li> </ul>
	<ul style="list-style-type: none"> <li>Design and construction work overlap leading to an earlier start on site. This means later changes in design may be accommodated without necessarily incurring a high premium on construction costs.</li> </ul>
	<ul style="list-style-type: none"> <li>Separate agreements with designer and construction manager.</li> </ul>
	<ul style="list-style-type: none"> <li>There is no main contractor and the client still bears most of the design and construction risk.</li> </ul>
	<ul style="list-style-type: none"> <li>The client appoints all construction sub-contractors and the construction manager receives a fee for managing this work.</li> </ul>
	<ul style="list-style-type: none"> <li>The construction manager is responsible for the management and co-ordination of design and construction works, encouraging teamwork.</li> </ul>
	<ul style="list-style-type: none"> <li>In June 1999 the Treasury recommended that this route should only be used where there is a very clear value for money case for doing so.</li> </ul>
Management fee	<ul style="list-style-type: none"> <li>Used on complex fast track projects.</li> </ul>
	<ul style="list-style-type: none"> <li>As construction management except the management contractor bears more construction risk.</li> </ul>
Design and construct	<ul style="list-style-type: none"> <li>Design and construction work – and the attendant risks – are the responsibility of the main contractor.</li> </ul>
	<ul style="list-style-type: none"> <li>Usually used for more straight forward buildings.</li> </ul>
PFI	<ul style="list-style-type: none"> <li>Single contractor responsible to the client for funding, providing and servicing the project over an extended period – together with the attendant risks.</li> </ul>
	<ul style="list-style-type: none"> <li>Client pays for the satisfactory provision/availability of a service not an asset.</li> </ul>
	<ul style="list-style-type: none"> <li>May promote maximum degree of innovation and better risk management but with potentially high financing costs compared to public sector finance.</li> </ul>
	<ul style="list-style-type: none"> <li>Involves high tendering and set up costs and calls for thorough advance preparation which may cause delay at the outset.</li> </ul>
	<ul style="list-style-type: none"> <li>Overall highest degree of risk transfer from the client to suppliers.</li> </ul>
Prime contracting	<ul style="list-style-type: none"> <li>This is a new and radical procurement model which since 1999 the Treasury have encouraged public bodies to explore.</li> </ul>
	<ul style="list-style-type: none"> <li>Single point of responsibility (the prime contractor) between the client and the supply chain.</li> </ul>
	<ul style="list-style-type: none"> <li>The client selects the prime contractor early in the project. The contractor carries out value and whole life costing analysis to help review users needs and takes responsibility for meeting the client requirements effectively.</li> </ul>
	<ul style="list-style-type: none"> <li>At concept design the prime contractor provides a Guaranteed Maximum Price.</li> </ul>
	<ul style="list-style-type: none"> <li>The prime contractor brings together and manages all suppliers – designer, facilities manager, financier and construction firms etc.</li> </ul>
	<ul style="list-style-type: none"> <li>The prime contractor monitors the completed building to provide proof of the effective performance of the building in use.</li> </ul>

Source: Audit Scotland (developed from Scottish Enterprise, 'Knowledge Management in Construction and Environmental Projects', 1999)

- 3.13 Bearing in mind the particular design and construction challenges presented by the project there is a case that the Scottish Office/Executive and later the Corporate Body should have ensured that at all times a senior construction professional occupied at least one of the three key project management positions (project owner, project sponsor or project manager). After the resignation of the original project manager in December 1998 there was no construction professional at this level within project management. However, the current project manager (who took up post in January 1999), though not from a construction discipline, has significant experience in project management in the construction field and formal qualification and is supported by two deputies who are quantity surveyors.
- 3.14 As discussed later in this part of the report, in some areas project management processes such as risk analysis and cost reporting did not fully match established good practice for major projects. Greater professional construction experience within the project management might have altered the processes applied.
- 3.15 Until the establishment of the Holyrood Progress Group in June 2000 there has been no opportunity for those with direct professional experience at senior level within the construction field to provide independent advice to project management. The Group now established includes two senior independent building professionals, an architect and a quantity surveyor. They can provide advice and guidance to project management based on their significant practical experience on professional aspects, to complement similar advice from the Chief Architect in the Scottish Executive.

**The procurement strategy and user brief should have given greater recognition to the importance of managing risk and uncertainty**

- 3.16 The main consideration in the choice of procurement route is the need to obtain value for money over the life of the project. In recent years, new approaches to procurement have been developed which encourage the parties to work together on process improvements, alternative designs, value and risk management and other innovations which can improve value for money. For example:
- Design and construct contracts
  - Prime contracting
  - Public private partnerships and PFI.
- 3.17 In general terms each method of procurement has its own advantages and disadvantages. The priority the client wishes to apply to different aspects of the project will govern which method they choose (Exhibit 13).

***The procurement strategy should have included a more considered analysis of the different procurement options and the risks associated with each option***

- 3.18 It is good practice to prepare a procurement strategy at the outset of a project to help determine the best approach ie, which route is the most likely to satisfy the objectives of the project. This also provides an opportunity to identify risks associated with each procurement option and, perhaps most importantly, to devise a strategy to manage those risks which will remain with the client rather than the supplier.

3.19 The Scottish Office analysed some important procurement issues at the outset:

- In 1997 and 1998 they evaluated the possibility of PFI procurement for the Parliament building. Ministers rejected this because it might be slow and they anticipated difficulties in specifying the service and in committing the Parliament to a long-term solution before it was up and running.
- Following the selection of Holyrood as the site for the new Parliament in January 1998 the Scottish Office evaluated approaches to a competition for the design of a suitable building. Ministers concluded a *design* competition involved too many risks to cost and delivery of the project. Overall they concluded a *designer* competition, while still involving risk, would allow more control over the design and would have a higher probability of delivering a successful building on time and within budget.

3.20 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. As the history of the project shows (Part 1) there were significant risks to the overall cost and programme during the design phase, and those risks crystallised.
- There should have been an analysis of how to use incentive structures to promote added value in the design and construction processes. A common practice in major construction projects, where deadlines are tight, is to seek to ensure that contractors meet the required performance level through financial bonuses for early completion and penalties for delays.

*The project brief should have allowed for more flexibility in the face of uncertainty*

3.21 A project brief is a document fully describing the requirements for a project in a form that both the eventual users and those responsible for providing it can understand. Its preparation is a crucial activity and the Construction Industry Board divide the process into two stages:

- The strategic brief, which sets out the client's vision and the overall objectives for the project. This defines the quantum, quality and location of the required building.
- The project brief, which develops the strategic brief into a detailed description of every aspect of the project. This is akin to the user brief for the Parliament building which defined detailed requirements for accommodation, adjacencies, flows and services within the building.

- 3.22 One of the advantages of the two stage approach is that it encourages a flexible approach that can balance a concern for quality with, for example, the need to “freeze” requirements as soon as possible to control costs and meet timescales.
- 3.23 The Scottish Office did not issue separate strategic and detailed project briefs for Holyrood. Project management issued the user brief in April 1998, with amendments to it in November 1998 and further amendments in June 2000. Before the initial issue the project team had carefully researched the brief over a period of six to nine months.
- 3.24 The user brief was successful in presenting a clear vision of the requirements of the new Parliament, which was a significant challenge. It prescribed clearly and in detail the requirements relating to area, cost, timing and quality with detailed description and schedules of the areas and adjacencies required in the new building.
- 3.25 Despite this considerable strength, the brief did not address the potential for conflict between the various dimensions of area, cost, time and quality, nor did it recognise that client needs might evolve. This may have made it more difficult to resolve these issues when they arose during the course of the project. For example the original project brief confirmed a tight timetable for the delivery of the project, which did not provide any opportunity for MSPs and other eventual users of the building to comment before completion of the scheme design. When in response to MSPs’ views the client required changes to the design of the chamber in June and July 1999 there was no allowance in the programme for the additional, disruptive design effort required.

### There should have been incentives for consultants to avoid cost increases and deliver the project on time

- 3.26 Key elements of Government procurement policy for construction projects<sup>5</sup> are that:
- Consultants should be appointed on the basis of value for money and not lowest price alone.
  - Robust mechanisms specific to each project should be developed to evaluate quality and price components of each bid in a fair, transparent and accountable manner.
  - Key criteria for selecting (short listing) consultants and contractors and awarding contracts should include: partnering and teamworking; and evidence of skills ability.
- 3.27 Audit Scotland examined the procurement processes including the designer competition leading to the appointment of the main consultant advisers to the Holyrood project team. The main consultants selected for professional services on the Holyrood project are shown in Exhibit 14.

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<sup>5</sup> HM Treasury Procurement Guidance No 3 ‘Appointment of Consultants and Contractors’, December 1997.

**Exhibit 14: Holyrood project – main consultant appointments and costs**

Consultant	Role	Appointment date and method	Latest approximate forecast outturn cost
Davis Langdon & Everest	Cost consultant/ adviser to project management	April 1998 after a competition	£2 million
<b>The Design team</b>			
EMBT/RMJM Limited	Architect, lead consultant and design team leader	July 1998. Separate appointments for each firm after the designer competition to appoint the whole design team.	£13 million  (Combined value for three firms)
Ove Arup and Partners	Structural services design		
RMJM Scotland Limited	M&E services design		
Bovis Lend Lease (Scotland) Limited	Construction manager	January 1999 after a competition	£11 million  (includes fee and reimbursable site and organisation costs)

Source: Audit Scotland

- 3.28 In general terms the appointments of the consultants were properly undertaken. There were strengths in the selection procedures contained in the designer competition. The competition notice attracted a good response from the market, including internationally renowned architects. Though some aspects of the selection procedures should have been better recorded, the appointment was based on merit and the selection panel included two eminent independent architects and the Chief Architect of the Scottish Office. The remit of the selection panel was appropriate and the panel was unanimous in its final choice of a design team.
- 3.29 There was also a good response to the advertisement of the construction management appointment, with 15 firms making pre-qualification submissions and four invited to tender after initial interviews with six firms. However the procedures for this appointment were not completely systematic. For example, the winning firm was the second highest tenderer and project management selected them taking into account quality factors and after obtaining significant financial adjustment of their bid. It was right for project management to take quality as well as price into account but the supporting analysis should have been better recorded.
- 3.30 Although the client side procedures could have been more systematic or better recorded, the successful bidders are reputable firms of high quality and I do not consider that the shortcomings on the client side adversely affected the outcomes with regard to management of the project. I suggest, however, that project management could have explored more carefully alternative fee arrangements to reinforce the achievement of value for money.

- 3.31 Project management have appointed all their main consultant advisers on broadly similar fee terms. Each consultant's fee remuneration is a percentage value of the approved construction cost of the project. The tender proposal of successful firms made during the process leading to their appointment sets the percentage fee that applies to them. In aggregate the fees represent approximately 14 per cent of the approved construction cost.
- 3.32 The current estimate of total fees payable is £26 million. About half of the design team fees of £13 million are payable to the architects. In addition, based on the current estimates the cost consultants are likely to receive some £2 million. The construction manager's remuneration is similarly calculated. In addition to fees set as a percentage of the approved construction cost the construction manager receives certain defined site organisation and staffing costs reimbursed at 100 per cent of an agreed budget. Most of Bovis' estimated remuneration of some £11 million relates to these reimbursable costs rather than fees (Exhibit 14).
- 3.33 All the appointments were made between April 1998 and January 1999 when the approved budget for construction costs was £50 million. At that time the estimate of the fees payable to the consultants was £10 million. The subsequent increase in estimated construction costs explains the significant increase in fees payable. In the construction manager's case, in addition to the increased fees, there are additional reimbursable costs as a consequence of the extended design and construction period. At the time of these appointments project management could have not have known that such a large increase in construction costs would arise.
- 3.34 Nevertheless, as noted above (paragraph 3.20, final point), at the outset of the project there should have been an analysis of how to use incentive structures to promote added value in the design and construction processes. In 1997 the Government had confirmed the need to learn lessons from weaknesses in managing the British Library project in London, including "the need for fee arrangements which provide a financial incentive to complete projects to time, to quality and within budget"<sup>6</sup>.
- 3.35 Since project management believed that the construction cost budget was firmly fixed, one option would have been to fix the percentage fee bids as equivalent, fixed lump sums. However this would not be the best option because it would leave the consultant with the risk of meeting higher costs through any changes to the project, some of which (for example changes that the client might initiate) the consultant would not be able to control. A better alternative, which would have the affect of sharing such risks between the client and the consultant, could have involved a fee rate reduction mechanism to cover cost increases. Increasing the cost and the scale of the project will increase the amount of work it is necessary for the consultants to undertake, but it is well recognised that professional fees will normally reduce as a proportion of construction cost as the level of construction cost increases. A fee rate reduction mechanism could therefore have shared the risks of cost increases more fairly and, as Exhibit 15 illustrates, significantly reduced the level of fees now expected.

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<sup>6</sup> Treasury Minute dated 12 February 1997 (Cm 3559) in response to the 2nd Report of the Committee of Public Accounts Session 1996-97

**Exhibit 15: Illustration of a fee reduction mechanism to provide an incentive to control costs**

Construction cost	Fees as a flat rate of 6.5 per cent of total construction cost	Fees with rate reducing at 0.2 per cent for each 10 per cent increase over base construction costs	Saving on fees
Base construction cost £50m	£3.25m	£3.25m	–
Total construction cost £60m	£3.90m	£3.66m	£0.24m
Total construction cost £70m	£4.55m	£3.99m	£0.56m
Total construction cost £80m	£5.20m	£4.24m	£0.96m
Total construction cost £90m	£5.85m	£4.41m	£1.44m
Total construction cost £100m	£6.50m	£4.50m	£2.00m
Total construction cost £110m	£7.15m	£4.51m	£2.64m

The exhibit demonstrates how adopting a fee reduction formula could mitigate the effects of increasing fee payments where there are significant unforeseen increases in construction costs. **The figures used are not related to the Holyrood project and are for illustration only.**

Source: Audit Scotland

3.36 It is not possible to say with certainty what wider impact different fee arrangements may have had on the progress or outcome of the project, nor whether in practice it would have been possible to agree such alternative arrangements with the consultants at the outset. Different fee arrangements may not necessarily have been more economic in this case. But a disadvantage of the existing flat rate fee provision is that there has been no opportunity to test by competition the level of professional fees payable on the significantly increased construction costs of the project.

**The framework for delivering the project should have been more fully developed**

3.37 As well as a sound structure and management framework and an effective procurement strategy, the successful delivery of a project involves the adoption of proven, systematic procedures for progressing the project. Measured against the Treasury<sup>7</sup> guidance there were areas where the processes applied to the Holyrood project were incomplete.

*There should have been a project execution plan*

3.38 The project execution plan is the key management document governing the project strategy, organisation, control procedures, responsibilities and, where appropriate, the relationship between the project sponsor and the project manager. It is a formal statement and an active management document, regularly updated, for all parties to use as a means of communication and as a control and performance management tool.

3.39 Project management did not prepare such a plan at the outset. Although they prepared a plan in draft during 1999 and issued it to all parties for comment, the draft has not yet been agreed and finalised.

<sup>7</sup> HM Treasury Procurement Guidance No 2 'Value for Money in Construction Procurement', December 1997

*Change control procedures should have been more fully developed at an early stage*

- 3.40 Since changes in design are one of the major causes of cost overruns and timetable slippages, they can present a major source of risk to value for money. They therefore need careful handling through sound project planning and review.
- 3.41 Formal change control procedures complying with good practice guidance (Exhibit 16) were not established until June 2000, when they were incorporated within the amended issue of the project brief. Earlier versions of the brief referred to change control procedures without specifying them in detail.

**Exhibit 16: Change control guidance from HM Treasury**

Changes to design, especially after contract award, are one of the major causes of cost overruns and poor VFM. Changes arise mainly as a result of unclear or ambiguous project definition, inadequate time spent in project planning, risk analysis and management or due to changing circumstances. The consequences of changes during the construction stage can be many times greater than the direct impacts of the changes.

Change is handled most effectively through sound project planning and review. Where there is a possibility of change for whatever reason, it should be treated as a project risk and addressed in the risk management plan. A robust change control procedure incorporating VFM criteria should be adopted to evaluate and manage change when it occurs.

The need for changes should be minimised by:

- ensuring that the project brief is comprehensive and has the user's agreement;
- taking account of proposed legislation;
- having early discussions with outside authorities to anticipate their requirements;
- undertaking site investigations and condition surveys;
- ensuring that designs are fully developed and coordinated before construction contracts are committed;
- good project management, including forward planning; and
- identifying and managing risks.

A change control procedure should consider all of the following factors for each proposed change before approval is given for the change:

- the reasons for the change;
- its source;
- the full cost, time and performance consequences of the change;
- the risks associated with the change and their impacts;
- properly evaluated alternatives to the proposed change;
- proposals for avoiding or mitigating time over-run; and
- source of funding of any cost over-run.

Source: HM Treasury Procurement Guidance No 2, 'Value for Money in Construction Procurement', December 1997

- 3.42 A good change control process provides sufficient analysis and an audit trail about cost changes and why they may be required. During the design period, project cost reporting did not routinely provide commentary on the significant changes influencing and flowing from the evolving design, either to senior managers outwith the project team or to the client.
- 3.43 A working cost plan, agreed between all the parties, should have been established at an early stage. This would have provided a better basis to manage change within the project and to help ensure delivery on time and within budget. I am concerned that at the time of finalising this report there was still no firm cost plan agreed between all the main parties responsible for the project.

### *Value engineering should have been more fully integrated into the process of design*

- 3.44 Value engineering is a process of design review which starts early in the project and is timed to occur at key points during the development and design process. The objective is to identify possible design changes or innovations which might reduce cost, improve quality, or shorten the timetable while continuing to meet the overall aims of the project.
- 3.45 The value and cost review of the Holyrood project completed in November 1999 led to some important changes to aspects of the design (paragraphs 1.19 and 1.20). However, this took place at a relatively late stage of design development in response to major project difficulties (paragraphs 1.18 and 1.19). The first planned value engineering workshop in March 1999 was cancelled. Another workshop did take place, in July 1999, but was inconclusive since none of the agreed actions resulting were implemented by the target date of August 1999.

### *Project cost reporting was not regular and systematic and concentrated on core construction costs*

- 3.46 A shortcoming of the cost reporting arrangements for the Holyrood project was the absence of a systematic process for full cost reporting and monitoring to the client and to the Parliament.
- 3.47 There can be no doubt about the importance of preparing accurate and complete budget estimates from the outset as a means of controlling major construction projects. This is emphasised in recent guidance from HM Treasury (Exhibit 17).

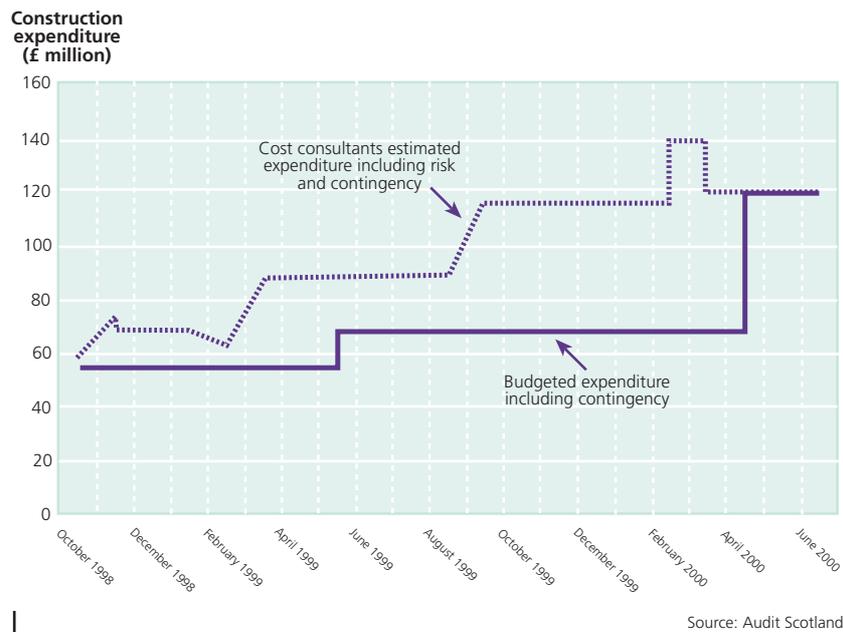
#### **Exhibit 17: Financial aspects of projects – key points from HM Treasury**

- A primary measure of success in preparing budget estimates, is predicting the project outturn capital cost and the whole life cost accurately at project inception. Without the ability to predict the outcome of a project with some degree of accuracy, it is not possible to determine which solution offers the best value for money.
- The initial budget estimate and all subsequent budget estimates should allow for all costs in connection with the project (in-house costs, consultancy costs, land costs, legal costs, operation and maintenance costs, design and construction costs, concession payments and decommissioning costs).
- Budget estimates should, for each element, consist of a base estimate and a risk allowance.
- The risk allowance should be calculated for identified risks and not be just guessed at as a percentage of the total (the term “contingency” should not be used). The risk allowance may well exceed the base estimate during the early project stages.
- Expenditure of risk allowance should be for identified risks only. Project change control procedures should be invoked where unidentified risks occur.

Source: HM Treasury Procurement Guidance No 6 ‘Financial aspects of projects’, June 1999

3.48 From October 1998, as soon as there was sufficient design information to permit it, project management received reports from the cost consultant. These were at intervals that varied between a few days and three months, according to availability of the underlying design information. For most of the project duration there has been a large gap between the cost consultants' estimates and the approved budget, which was the basis for top-level review (Exhibit 18).

**Exhibit 18: Holyrood construction costs estimates and budget**



3.49 On some important occasions project management did not report all relevant construction cost estimates to the client. This was on various grounds but mainly that the cost estimates were unacceptable to project management because they significantly exceeded the available budget, and therefore project management could not recommend them to the client. In my opinion, the high level of the estimates made it *more* not less important that the client was informed about the higher figures from the cost consultant, in order to allow judgements to be made at the highest level regarding the stewardship of the project.

3.50 For example, project management did not inform the Secretary of State as client in November 1998 that the projected construction cost based on the then available design was £69 million compared to a budget then of £50 million. Although the available design which was put on display at that time was known to be over area, accurate information on its likely cost had not been previously available to project management or the client. Later, during the second half of 1999, project management did not report various estimates from the cost consultant to the Corporate Body as the client. These estimates considerably exceeded the £62 million budget available at that time.

3.51 Cost reporting by the project team upward to the project owner and the client was reactive and not regular and systematic in relation to the total costs of the project. All recognised from the outset that there would be wider costs in addition to the core construction costs. Project management estimated construction costs and contingency. While they also estimated fees, furniture and VAT for public expenditure planning, they did not gather together and systematically report these additional cost items to the client on a routine and

consistent basis. Project management did not subject these costs to the same level of monitoring and review as they did the core construction costs.

- 3.52 The additional project costs were not presented publicly until June 1999 in preparation for a Parliamentary debate on the Holyrood project. The absence of full cost reporting from the outset may have contributed to common misunderstandings about the cost of the project. It is not in the best interests of decision-making for there to be misunderstanding about the full costs of such an important and high profile project.
- 3.53 Since June 1999 the Corporate Body has reported to the Parliament on the progress of the project on five occasions (Exhibit 19). On two of those occasions they reported on the cost estimates for the project and this information informed subsequent debates on the future of the project.

**Exhibit 19: Corporate Body reporting on Holyrood to MSPs**

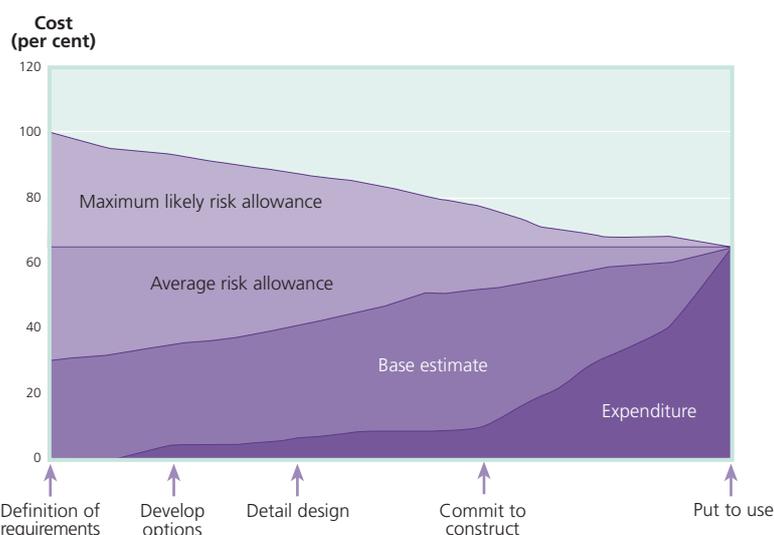
Report	Information presented
1st Report on the Holyrood Project: June 1999	The report was a broad review of the project provided in advance of the debate on the new Parliament Building on 17 June 1999. It reported the latest construction cost estimate of £62 million exclusive of VAT, fees, contingencies, risk allowance, fit out, loose furniture and artworks and site acquisition. It also reported that the total provision of £109 million would be required, excluding landscaping works.
2nd Report on the Holyrood Project: September 1999	The report provided MSPs with further information on developments in the Chamber design, Queensberry House and sustainability issues in relation to the materials planned for the new building.
3rd Report on the Holyrood Project: December 1999	The report dealt mainly with details of accommodation and facilities required within the new building and with Queensberry House. It reported that additional accommodation for higher staff numbers than originally planned would increase costs. It did not estimate the cost of the extra space, though it indicated that it would inevitably result in increased costs, which savings in other areas might offset to some limited extent.
4th Report on the Holyrood Project: April 2000	The report addressed the contents and conclusions of the Spencely Report commissioned by the SPCB in February 2000 and provided an analysis of the movement in cost estimates.
5th Report on the progress of the Holyrood Project: June 2000	The report covers the progress on the project in reaching stage D, scheme design approval.
Newsletter No.1 of the Holyrood Progress Group: July 2000	This newsletter introduced the members of the group and reported on the design, construction, site visits and forthcoming events.

Source: Audit Scotland analysis

### Accounting for risk was insufficient

3.54 A further weakness with cost reporting and monitoring by project management was that there was no proper and separate allowance for risk, as good practice requires. HM Treasury guidance in 1997 was that from the outset risks should be clearly identified together with their potential impact on the project in terms of time, cost and performance and that the estimated cost of a project should comprise the base estimate and the risk allowance<sup>8</sup>. Further guidance in 1999 illustrated the concepts involved (Exhibit 20).

Exhibit 20: Base estimates and risk allowances in budgets



Source: HM Treasury Procurement Guidance No 6 'Financial aspects of projects', June 1999

3.55 The base estimate is the estimated cost without any risk allowance. Exhibit 20 shows that the risk to the base estimate is at its highest at the start of the project. As the project develops and becomes more clearly defined through the design stages and into construction, risk is minimised by good risk management or the risk crystallises and the base estimate rises. The risk allowance is calculated as part of a formal risk analysis to allow for identified risks; it is not a guess at contingency or a general slush fund. Unidentified risks which arise should be managed by formal change control procedures which feed into the working cost plan and the estimates.

3.56 By April 2000, the independent Spencely report was referring to a construction cost estimate in May 1999 of £89.2 million (a figure provided by the cost consultant). The First Minister asked the Permanent Secretary (the Accountable Officer) of the Scottish Executive for an explanation of why he was advised in May 1999 that the project construction cost was estimated at £62 million plus contingencies (£6 million), when the Spencely Report referred the higher figure. The Permanent Secretary's report to the first Minister was lodged with the Scottish Parliament Information Centre (reproduced at Annex B).

3.57 The Permanent Secretary reported that the £62 million construction cost estimate represented project management's best judgement on the most likely outcome taking into account the progress achieved on the design so far. By comparing the two estimates on a consistent basis Audit Scotland have confirmed that project management's estimate of construction costs was £16 million lower than the cost consultant's estimate because project

<sup>8</sup> HM Treasury Procurement Guidance No 1 'Essential Requirements for Construction Procurement', December 1997

management excluded certain risk allowances made by the cost consultant. These allowances estimated the additional costs arising from specified risks associated with the incomplete status of the design, which project management did not agree were likely to materialise. The report from the Permanent Secretary explains the reasons behind these judgements.

- 3.58 While the particular risk items in question did not subsequently materialise or were overtaken by subsequent changes in the project, there remained a significant risk element throughout the design period. The cost consultant's subsequent reports to project management between August 1999 and June 2000 have contained contingency allowances totalling between £8 million and £19 million. It is only with the acceptance of the scheme design of the project in June 2000 that there has been congruence between project management, the cost consultants, the design team and the construction manager on the total expected construction costs of the project, as Exhibit 18 above illustrated.
- 3.59 The position now appears more satisfactory. The current £11 million contingency sum is consistent with the suggested provision from the cost consultant, whereas earlier provision was not. The design of the scheme is of course also substantially more advanced, which reduces the risk of cost increases as a result of uncertainty. Nevertheless, as noted in Part 1, there remain significant risks associated with the project and it would therefore be prudent for project management to look again at the overall cost provision in the light of these and other risks they may identify. They should ensure that, in accordance with good practice, all risks have been systematically identified and evaluated and that there is a proper, separate allowance for risk in the current estimate.

### There is scope to improve corporate governance of the Holyrood project

- 3.60 Corporate governance is about the direction and control of organisations. It is about the way in which senior managers exercise their responsibilities and authority and how they account for that authority in relation to those who have entrusted them with assets and resources. Corporate governance is concerned with systems, processes, controls, accountabilities and decision-making of an organisation.
- 3.61 Reports on corporate governance<sup>9</sup> have emphasised three fundamental principles – openness, integrity and accountability. The reports contain recommendations about how these principles can be translated into sound systems of control and governance.

### The need to foster good governance arrangements for the Holyrood project

- 3.62 An important element of good governance is the ability of the *members* of an organisation, who are responsible for taking decisions about the direction of an organisation and how it operates, to take a sufficiently independent stance in relation to the permanent *staff*. This separation is in the interests of maintaining the overall health and effectiveness of the organisation.
- 3.63 The members of the Scottish Parliamentary Corporate Body comprise the Presiding Officer of the Parliament and four elected MSPs. The staff of the Corporate Body are led by the Clerk of the Parliament and include most of the members of the Holyrood project team.

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<sup>9</sup> 'The Report of the Committee on the Financial Aspects of Corporate Governance', 1992 (the Cadbury report); 'The First Report of the Committee on Standards in Public Life' (the Nolan Report), 1995; 'The Report of the Committee on Corporate Governance', 1998 (the Hampel report)

- 3.64 A particularly important stage of the Holyrood project occurred when legal responsibility for it passed to the Corporate Body on 1 June 1999. At this stage there was a particular need for those accepting responsibility for the project to have reviewed it, with a degree of independence from the project team, in order to satisfy themselves about its status and health, but there was no such review.
- 3.65 When the Holyrood project was added to the responsibilities of the Corporate Body there was uncertainty about how the Corporate Body would undertake their responsibility to oversee progress and implementation of the project and how often they should meet to do so. It was not until early November 1999 that project management provided the Corporate Body with a report on the project management structure. No decisions were taken at this stage regarding the governance procedures for progressing the project. None of the members had previous responsibility for or detailed knowledge of the project. More should have been done to advise members of the Corporate Body about their proper role, the proper role of officials, and the key features of the contract management arrangements.
- 3.66 The Clerk of the Parliament is responsible for all the administrative arrangements associated with the establishment and management of the Parliament. He is also responsible for ensuring that the Corporate Body are properly informed and, where needed, that they receive adequate independent advice on all matters for which they are responsible. As the senior official, he was also owner of the Holyrood project and responsible for its successful delivery. With hindsight, it may have been advisable to allocate the responsibility for the Holyrood project to another senior official within the Parliament, so as to safeguard the effective exercise of each role.
- 3.67 As already indicated, project management did not routinely provide good quality, high-level information about project costs and risks to the Corporate Body.

*The establishment of the progress group should help to strengthen independent scrutiny of the Holyrood project.*

- 3.68 The establishment of the Holyrood Progress Group in June 2000 (paragraph 1.33) should assist the Corporate Body in providing the most effective stewardship of the remaining stages of the project. A strength of the Project Group is that its membership includes an architect and a quantity surveyor, both of whom are independent of project management. The Progress Group is meeting on site one day a fortnight to monitor progress on the project and to address any issues arising. This is important bearing in mind that construction work on site will not be completed for more than two years and it will be some time beyond that before the project is legally and contractually complete.
- 3.69 The Corporate Body has also approved the restructuring of project management, to achieve a better balance in the skills mix required to progress the project to a very tight deadline. The responsibilities of the project sponsor have been split to provide for a Project Director supported by a Financial Controller and a Secretary to the Progress Group. The roles and responsibilities of the key members of the team are also now set out in detail for the first time.



## Annex A: Examination methodology

The examination was based upon a review of project records and relevant documents held by the Scottish Office, the Scottish Executive and the Scottish Parliamentary Corporate Body. There were also structured interviews with those involved in the project, including:

- Clerk of the Scottish Parliament
- Head of the Scottish Office Constitution Unit
- Chief Architect of the Scottish Executive/Scottish Office
- Project sponsor
- Project manager (current and original)
- Design team (EMBT/RMJM)
- Construction manager (Bovis Lend Lease (Scotland) Ltd)
- Cost Consultants (Davis Langdon & Everest).

Audit Scotland drew on published guidance on good practice in major capital procurement and project management, particularly guidance issued by HM Treasury and they also took advice from consultants.

Gardner & Theobald, an international firm of project cost and management consultants, assisted in the analysis of cost and management issues. Gardner & Theobald were selected through competition.

The Audit Scotland examination team comprised Arwel Roberts (Director), Dick Gill (Project Leader) and Jim Martin (Project Officer).

## Annex B

### Report from the Permanent Secretary of the Scottish Executive to the First Minister, on why officials did not report the cost consultants risk estimates

#### HOLYROOD PROJECT: COST ESTIMATES, MAY 1999

##### Report to the First Minister

1. The First Minister asked for an explanation of why he was advised in May 1999 that the building project construction cost was estimated at £62m plus contingencies (£6m), when the Spencely Report refers (paragraphs 4.3.3 and 4.3.4, and in the 25/05/1999 column of the table on page 8) to a cost estimate of £89.2m. The First Minister was not made aware of the existence of the higher figure and it was on the basis of that figure of £62m that he gave the Scottish Parliament in June 1999 his estimate that the project as it then stood would cost a total of £109m (including contingencies, VAT, fees and fit out costs).
2. In the Project Team's professional judgement, the figure of £89.2m could not be regarded as a sound estimate of the likely cost of the project as it then stood. In their judgement there was no justification at that stage for including most of the elements accounting for the excess over £62m in the estimate on which they should properly base their advice to the First Minister. The following paragraphs explain why they reached that conclusion.

##### General approach

3. During the design stage of any major construction project such as this a Project Team has to handle a wide range of estimates for the cost of most of the elements of the project. These can vary widely as the design is developed and many items are interdependent. There can be no question of accepting any single figure, from whatever source, without thorough analysis and testing. The figures shown in the 25/05/1999 column of the table on page 8 of the Spencely Report represent in fact one single input to the dynamic estimating and design development process which was being monitored and managed by the Project Team. The figures were prepared by Davis, Langdon and Everest (DLE), Quantity Surveyors. The Project Team had to view these figure alongside other available information on the continuing work of the Design Team and, ultimately, to make their own professional judgement on the likely outcome under various headings.
4. In making that judgement, the Project Team was subject to the conventional disciplines of Project Management. These mean that additional items cannot be added to a project without a strong justification. By the same token, firm discipline must be exercised over the amounts built in to provide for various contingencies: to allow such items to be inflated without a clear justification would mean a loss of overall cost discipline especially when working with a highly creative design team. The approach to Project Management in this case also included deployment of the technique known as value engineering, to test the justification of particular elements of the emerging design and detailed specification with a view to stripping out costs.

5. It is against this background that the Project Team approached the specific elements of the cost estimates with which they were presented.

#### Treatment of specific items

6. The difference between the figure of £62 m adopted by the Project Team and the figure of £89.2m quoted in the 25/05/1999 estimate is £27m. The Project Team treated the key elements of this, as set out in the relevant column of the table on page 8 of the Spencely report, as follows:

#### **Enhancement (£4.13m)**

This figure was described as allowing for the possibility that the eventual detailed design would incorporate higher quality specifications than had been included in the original brief and which was covered in the figure of £62m. The standard in the brief was, in the Team's judgement, sufficient to meet client demands, as they were then known. I am informed that these enhancements are not included in the current specification.

#### **Contingencies (£5.22m)**

In the light of the other judgements explained here, this was in fact increased to £6m.

#### **Design risk assessment (£15.86m)**

The largest single item here (£5m) covered the risk of delay at the point of change of client (from the First Minister to the Scottish Parliamentary Corporate Body). The Team expected that this would happen without causing a delay, not least because of the transfer of key personnel. They therefore ruled out this element, and indeed no delay in work on the project occurred at the point of transfer.

The other major items under this heading were described as higher specification interior design and balustrades (£2m); more expensive roofing design (£1m); higher specification stone panels (£2m); and higher specification internal and external cladding (£2m) than were built into the £62m figure. In each case the Project Team, with advice from the Design Team on the detailed proposals emerging, judged that these risks would not materialise and these cost elements were therefore ruled out.

#### **Art (£0.25m)**

This was intended to cover the possibility of including artwork in the building. Given Enric Miralles' strong views on the artistic merit of his architecture and the building's function, it was deemed sufficient to include a modest sum in the fit out line for approval and development as required by the SPCB.

#### **Site costs (£1.58m)**

This covered additional site organisation costs and the risk of additional equipment being required on site in the early stages of the project (summer 1999). The Project Team allocated those of these costs which it accepted to the construction manager fees line and they were therefore covered within the £109 million total.

7. In the Project Team's view, to have included items in these categories without a much stronger justification than was offered would have been wrong. They did however, recommend a somewhat higher contingency of £6m as noted above.

#### Value engineering

8. The Project Team's confidence in the deliverability of the £62m (£6m contingency) for the construction of the building in accordance with the brief as it stood was supported by various risk exercises undertaken before 1 June. The team expected subsequent value engineering exercises to offer the prospect of reducing cost estimates if required. As the Spencely Report makes clear (paragraph 4.3.6) the SPCB commissioned a value engineering exercise in the

autumn which identified potential reductions of £20m. Information is not available on how much of this related to elements of the design as it stood in May 1999, as distinct from design changes introduced after the handover from the First Minister to the SPCB.

Conclusion

9. The above information explains why the Project Team made the professional judgement that the correct figure to use in advising the First Minister was £62m plus £6m contingency rather than the £89.2m as quoted in the Spencely Report. It should be noted that this information relates to the estimates provided by the Project Team in May 1999, and comments only on the reasonableness of the judgements the Project Team made then. Subsequent changes to the specification and design may have introduced new contingencies and design risk elements, but this does not bear upon the information supplied to the First Minister when he made his statement to Parliament in June 1999.

**A M RUSSELL**  
Permanent Secretary  
4 April 2000

## Work in progress

### Exhibit B: Work in progress on the site in mid-July 2000

Below: Looking along the ground floor of the MSP building from the north end to the south. It shows the exposed light grey concrete finish that will feature within the building and the precast vaulted roofs with cast-in detail. Each arched cell forms the basis for an individual MSP's office accommodation.



Above: Taken at the northwest corner of the site looking towards the southeast. It shows the erection of the ground floor of the MSP block, with the precast roof vaults of the individual MSP offices in place. Queensberry House is on the immediate left of the picture, protected by scaffolding and heavy plastic sheeting, with significant work underway. Construction work has still to commence on the main Parliament complex on the east of the site.

## Early feasibility study

### Exhibit C: Illustration from the 1997 feasibility study for a Parliament building at Holyrood

A computer-generated image developed for a feasibility study into the Holyrood site. This visualised a monolithic design which it would be feasible to construct on the site and which would meet the space requirements specified at that stage. The lead architect and the design team subsequently developed an entirely different concept for the Parliament building.



# Chronology

## Exhibit D: Holyrood project chronology

### Project definition, selection of Holyrood site



### Designer selection period



### Design of the Parliament



### Site purchase, site preparation and main construction



### Planned completion



# Site plan

## Exhibit E: The site plan

This shows the overall layout for the site, including landscaping around the Parliament, based on the design at June 2000.





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