

Issues in the construction of the scottish parliament



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Introduction

This report intends to answer – how a national iconic project turned into “...a hugely expensive and politically embarrassing fiasco?” (Fortescue, 2004) – by analyzing the reasons that led to delay, cost overrun and quality issue in construction of new Scottish Parliament Building. This report has utilized the researches available on the internet, auditor’s report and other articles available from varied sources. This report will start by introduction to the background of Scottish Parliament project and will continue by discussing the reason for delays and cost increases, role of the project management and at the end concluding the lessons learned from this project. The reason for selection of this project is that the Scottish Parliament building was estimated to be completed in £40m but finished at over £400m which is an interesting parameter to study (BBC, 2004).

Background to the Scottish Parliament Project:

After the referendum in 1997, Scottish parliament was established as a devolved legislature by Scotland Act 1998. Thereafter, Donald Dewar, Secretary of Scotland state adjudicated to have a purpose built facility to accommodate the Parliament in the Edinburgh city. After having a chaotic journey to completion, Scottish parliament Complex was inaugurated on 9 Oct 2004 by Queen Elizabeth II. Remarkable features of the complex consist of leaf-shaped buildings, flipped over boat shaped roof, a grass-roofed division meeting into adjacent parkland and gabion walls made from the stones. All over the building there are various repeated motifs. Scottish parliament is a complex building comprising of new and old buildings such as Dewar room, Canon gate building, Debating chamber, Garden lobby, MSP

building, Media tower, Main hall, Tower building, and Queensberry house. All of these buildings were renovated or constructed as per Architect's vision. High end materials like Granite, Cattiness Stone, Oak Timber, Sycamore Timber, Steel Glass and Marble was used in the construction. Detailed environment and sustainability study was carried out which confirmed that propose built complex is environment friendly (Fraser, 2004).

Brief summary of the Project: Road to Holyrood

Site Selection:

To begin with, Edinburgh City Council provided a long list of 27 sites in Edinburgh. In September 1997 officials short listed three leading options: two new build options, either at Leith or Haymarket, or adapting and developing the existing St Andrews House building (old Royal high school). At this stage, an engineer Jones Lang Wootton was engaged by the Scottish office to viably evaluate the acquisition costs of the shortlisted sites. Measurements of environmental issue and traffic issue were also considered at this point. Haymarket was never considered as preferred option and officials sensed real hostility in Edinburgh to house the Parliament anywhere except centrally thus reducing the chances of Leith (Auditor General, 2000).

The Holyrood site was not considered at this stage as it was occupied by Scottish and Newcastle brewery and was anticipated that it would not be completed within the required deadline. However, an accidental meeting of a civil servant on train with an official of Newcastle and subsequent negotiations resulted in the company demonstrating that they would evacuate the site in early 1999. As a consequence, on 8th December Holyrood was short-listed, and design and cost viability studies undertaken.

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Davis, Langdon and Everest (DLE) , Cost Consultants were commissioned to provide initial cost estimate for proposed sites and the Holyrood site was selected in early 1998 from the shortlist based on the following cost estimate (Auditor General, 2000).:

Design Selection:

Once, the location was finalized the Scottish Office announced an international competition to acquire a designer for a new-fangled building to accommodate the parliament through a competitive selection procedure. The competition was suitably setup with a press release on 26 January 1998. The final design teams named on 7th May 1998 providing the project cost as being in the range of £50 million excluding VAT (Fraser, 2004).

Under the chairmanship of Dewar, a design committee was allotted to choose from a shortlist of designer. Conceptual designs were cost and displayed for public to view and provide their opinion. Feedback from the public depicted that the Catalan architect Enric Miralles' designs were one of the most popular. The design team considered public opinion on the designs, and on 6 July 1998 the Enric Miralles' s design was selected, with work being awarded to a Spanish Scottish design company namely EMBT/RMJM (Scotland) Ltd, exclusively created for the project. Construction management system of procurement was adopted and BLL was appointed as construction manager. In June 1999, construction commenced, by demolishing the Scottish and Newcastle brewery and opening the foundation work (The royal society of Edinburg, 2001).

Journey of Estimate:

The construction of the Scottish Parliament Complex generated controversy in several aspects. Spiraling costs and the use of public capital to fund the project rendered most controversy. By early 2004, the project was estimated to be £430m, some ten times higher. In my opinion it is not fair to compare final figure with initial figure of £10m as it was never an estimated price but an indicative one (Fraser, 2004).

Time delay and cost overrun

From the beginning, the complex and its construction have been controversial. For instance, Auditor General of Scotland expressed "...in the recent history of Scotland there has not been public building project as complex or as difficult to deliver as the Holyrood Project" (Prasser, S., n. d.). Almost all aspect such as location, design, architect, construction management company, project manager all have been criticized by different factions namely, politician, media and general public. Due to complexity of the project, it is very difficult to single out one reason for delay and cost overrun but infect it was compound and interaction of many factors that resulted in delay and cost overrun (Fraser, 2004).

Location: Selection of Holyrood to be the seat of parliament has contributed to delay and cost overrun. Holyrood was not an easy area to work due to the approach and being located in populated area. The selection of Holyrood added £4. 5m to the project being the cost for site acquisition and clearing. As the table1. 1 (Fraser, 2004) shows, according to the costing done by DLE Holyrood was not economically attractive.

Design and Design Development Factor:

Main cause of the delay to the project was from Sept2000 due to the production of detailed design variations and the late supply of information during the construction process (Auditor General, 2004). Construction started in June1999 but Stage D design was approved after a year. Everyone anticipated that this will put an end too uncertainly and provide some sort of anchorage for the project but it did not happen. The project was densely populated, unusual and complex and was pitted against tight deadline. In some cases, trade contractors were responsible for part design but both the architects and some trade contractors failed to deliver some critical elements on time. Design development process added another £80m to the cost of project. It is a process of bringing approved design to detailed design. This process runs parallel to Tendering and award of work packages and subsequent work on site. From 2000 onward, client didn't change its requirements significantly but the cost of bringing envisioned design to reality escalated (Black, 2004).

Increase in area: after several revisions and new requirement were incorporated, total area reached from 16000. 00 m² to 31, 000. 00 m² resulting in an increase of 47% and consequently effecting schedule and cost of the project. Building user's brief prepared by the authorities substantially underestimated the requirements which resulted in various revisions and thus increase in area. For instance, Mr. Stewart said that the original estimate was "...absolutely, too optimistic for a public building of this nature..." (Fraser, 2004). The experience and expertise in construction

management was not fully developed and was not present in the early stages of development.

Procurement vehicle: In 1998, Civil servants opted for fast track method known as – construction management form of procurement – to build the parliament complex (Fraser, 2004). It works by fragmenting complete job into several small packages that are awarded, monitored and designed independently of one another. Its advantage is that the overall design doesn't have to be complete at the start of building works. In this form of contract, risk stays with the client, which is responsible for management of each individual work package-in this case around 60. However, after keeping in mind importance and urgency of the project, construction management procurement was the only viable option available. For instance, Harry Thorburn articulated, "...The reality is that construction management was the only contract option for a client wanting to make an early start on a project that was still at the design concept stage" (Fortescue, S. 2004).

Communication and coordination was another issue which added to the woes of already troubled project. Fraser (2004) reports that there was a lack of communication, coordination and understanding between stakeholders, for example, resolution of many design issues was delayed due to misunderstanding and lack of communication between RMJM & EMBT.

Landscaping is although minor part of overall figure, still it reflects failure of system. Cost of landscaping amounting to £ 14 m came to the surface and was added when the project was well underway during autumn 2001 (Fraser, 2004).

Schedule: Time-table for completion by project management was very demanding and idealistic rather than realistic. Construction manager consistently tried to achieve the set target but failed. According to Auditor General's report (2004), schedule set in Sept 2000 for completion by December 2002 was probably unachievable. Proper EU guidelines and procedures were not followed for appointment of Bovis Lend and Lease as construction manager. BLL was not the lowest, yet they were awarded. BLL's contract was supposed to be converted to Lump sum after finalization of cost plan but was not done. Conversion of fees would have provided a powerful incentive to Bovis to apply maximum rigor in relation to cost control. No system was devised and implemented neither for performance measurement nor for cost reporting, analysis and financial control.

Queensberry House proved to be the most costly item, in terms of cost per square meter (Fraser, 2004). However, Queensberry's cost was comparatively minor in context of the full cost of the Project at completion. Golden triangle of quality time and cost was ignored and quality was preferred against time and cost, time was preferred against cost. The undue importance given to time and quality resulted in escalated cost.

Security issue and 9/11 factor also played an important role in delay and spiraling cost of the project. Fraser in his inquiry agrees that security bill amounted to £29. 11. Design of anti-blast measures causes a sum of £17. 54m and delay associated with blast causes additional sum of £11. 57m. Another major factor to be recognized was constructing a very complex, unusual building, visionary architecture was difficult to bring to reality. The Debating chamber roof, for example, was an extremely challenging task both

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for designers and builders (Fraser, 2004). Proper risk analysis and cost management studies were not done. At the early stage of decision making, no independent professional project management company was involved to advise the client.

Role of Project Management

Role of Project management is to deliver the project on time, within budget and with acceptable quality (Fraser, 2004). In this case, Project management provided an exceptional complex of high quality but failed miserably in context to cost and time.

Black (2004) criticized performance of the project management or officials responsible for delivering the project. Decision making process and control over project was not clearly recognized along with lack of leadership.

Normally project director is responsible for leadership and control, client delegate's the authority to project director to render the project. Here, project director should have had clear responsibility in making decisions on balancing time, cost and quality/performance of the project. Auditor General (2004) affirmed that the client (the Parliament) did not clearly establish leadership and control of project. Leading parties could not agree on cost plan which was a missing link in effective project management, a draft plan was made in late 2000, that was an indicator of the costs instead of available estimate of the cost.

Under construction management, design was vague and deficient initially, therefore the risks remained with the client (Fig 1. 1). Project management selected a high risk route but failed to manage it properly. Risk accounting

was insufficient in early stages and there was no quantified allowance for risk facing the project. Initially project management did introduce a process for quantifying risk and conducted some reviews but the general approach was to accept the cost increase and increase in the forecast as risk materialized. No system or forceful action was adopted to reduce the increase in cost (Fraser, 2004).

Project management did not fully implement cost reporting and financial controls. Regular reporting of the total estimated costs of the project only started in July 2003(Black, 2004). Earlier financial reporting was neither comprehensive nor systematic. Once, the overall budget constraint of £195m was removed by Parliament in June 2001, management did not establish an alternative budget which gave them liberty to achieve high quality and tight deadlines without due considerations of cost implications (Black, 2004; Fraser 2004).

Conclusion

Project management plays an important role in the success of mega and prestigious projects. Construction of Scottish parliament has put a negative mark on the role of project management. Delay and cost overrun of the project cannot be attributed to the failure of project management only, Fraser (2004) in his inquiry stated that it was the result of systematic failure and it is difficult to single out one villain. Also, there were several mistakes but the biggest one was involved in Procurement system. They were interconnected, increased exponentially, and had a rippling effect which was visible all throughout the period of construction. Despite of all the problems, Scotland has got an architectural gem; it's an iconic building representing <https://assignbuster.com/issues-in-the-construction-of-the-scottish-parliament/>

the land. In few years, the people of Scotland will be as proud of it as the people of Sydney are of Opera House, which was also an example of project failure when it was built (Australian Government Department, 2006; Mosaic Projects, n. d.).

The entire project should have agreed project budget and proper set of performance indicators. Proper benchmarking should be done to measure the performance. If, competition is commissioned for selection of design, proper evaluation of pre qualification must be done and compatibility of working cultures should be considered. While selecting the design, attention should be paid to cost and execution problems that may arise due to complexity of design.

Procurement route must always be chosen with care coupled with comprehensive evaluation.

Construction management procurement route should be used rarely for public projects. Before construction starts adequate time should be available for the planning stage. As Fraser (2004) reports that investing time initially, to develop complete definitions reduces the chance of changes later. Good planning will involve (a) right sequence of construction to avoid delays and extra costs, (b) risk management (c) using value management to evaluate the role of each element of the construction processes (Black, 2004) (d) Selection of proper planning system “...There must always be sufficient time for procurement to allow the client’s requirements to be adequately defined so that it may obtain fixed and firm prices for the work in a competition...” (Black, 2004). In all projects, performance payment incentives system should

be initiated for contractors to perform against targets for quality, time and cost.

Clearly defined duties and single point of leadership with explicit authority and responsibility should be ensured. Strong system of reporting and transparent channels of communication must be devised.

It is essential that full contracts, guarantees and bond should be secured to prevent the risk. Early involvement of contractors in design phase might help in solving the problems later on. Concurrent engineering should be carried out to avoid complications during execution. Safety measures needs to be a considered as an integral part. In this particular case, no one would have anticipated the impact of 9/11. So it is better to have some contingency plan in place to tackle unforeseen events.

Bibliography:

1. Auditor General (2004). ' Management of the Holyrood building project – prepared for the Auditor General for Scotland – Project overview, the reason for later delivery and increased costs, project management and control'. Chapters 1-5., pp 1-92. Available from: http://www.audit-scotland.gov.uk/docs/central/2004/nr_040629_holyrood_project.pdf [Accessed: 2nd April 2010].
2. Auditor General (2000). ' The new Scottish Parliament building – an examination of the management of the Holyrood building project – prepared for the Auditor General for Scotland'. Available from: <http://www.audit-scotland.gov>.

uk/docs/central/2000/nr_000919_new_parliament_building. pdf

[Accessed: 3rd April 2010].

3. Australian Government Department (2006). ' Sydney Opera House – Nomination by the govt of Australia'. Available from: [http://www.sydneyoperahouse.com/uploadedFiles/About_Us/Ad_Hoc_Information_Pages/WorldHeritageNominationDocument. pdf](http://www.sydneyoperahouse.com/uploadedFiles/About_Us/Ad_Hoc_Information_Pages/WorldHeritageNominationDocument.pdf) [Accessed 8th April 2010]
4. BBC (2004). ' Timeline: Holyrood'. Available from <http://news.bbc.co.uk/1/hi/scotland/3210729.stm> [Accessed: 2nd April 2010].
5. Black, R. (2004). ' Presentation by the Auditor General for Scotland, Robert Black to the Audit Committee of the Scottish Parliament, on his report, Managing of the Holyrood building project' Available from: [http://www.audit-scotland.gov.uk/docs/central/2004/nr_040629_holyrood_projec_statement_pr. pdf](http://www.audit-scotland.gov.uk/docs/central/2004/nr_040629_holyrood_projec_statement_pr.pdf). [Accessed: 4th April 2010]
6. Black R. (2004) ' Audit Scotland'. Available from: [http://www.audit-scotland.gov.uk/publications/pdf/2004/04pf07ag. pdf](http://www.audit-scotland.gov.uk/publications/pdf/2004/04pf07ag.pdf) [Accessed: 4th April 2010]
7. Black R. (2004) ' Audit committee official report 29 June 2004' Available from: [http://www.scottish.parliament.uk/business/committees/audit/or-04/au04-1402. htm](http://www.scottish.parliament.uk/business/committees/audit/or-04/au04-1402.htm) [Accessed: 4th April 2010]
8. Edinphoto (n. d.). ' Scottish Parliament Complex at Holyrood'. Available from: [http://www.edinphoto.org.uk/0_edin_t/0_edinburgh_transport_buses_terminus_36_holyrood_024373. htm](http://www.edinphoto.org.uk/0_edin_t/0_edinburgh_transport_buses_terminus_36_holyrood_024373.htm) [Accessed: 2nd April 2010]

9. Fortescue, S. (2004). 'The £431 million question'. Available from: <http://www.pennwood.org.uk/Level%20Four/L402/Holyrood%20example.pdf> [Accessed: 3rd April 2010]
10. Fortescue, S. (2004). 'The £431 million question – supply management'. Available from: <http://www.supplymanagement.com/analysis/features/2004/the-431-million-question/> [Accessed: 3rd April 2010]
11. Fraser, R. H. L. (2004). 'A Report by the Rt Hon Lord Fraser of Carmyllie QC on his Inquiry into the About Holyrood Project'. SP Paper 205. Available from: <http://www.scottish.parliament.uk/vli/holyrood/inquiry/sp205-00.htm> [Accessed: 2nd April 2010].
12. Fraser, R. H. L. (2004). 'Events Prior to 1 May 1997'. Available from: <http://www.scottish.parliament.uk/vli/holyrood/inquiry/sp205-02.htm>. [Accessed: 2nd April 2010]
13. Fraser, R. H. L. (2004). 'White Paper to the Passing of the Scotland Act 1998'. Available from: <http://www.scottish.parliament.uk/vli/holyrood/inquiry/sp205-03.htm> [Accessed: 2nd April 2010]
14. Fraser, R. H. L. (2004). 'Selection of the Holyrood Site'. Available from: <http://www.scottish.parliament.uk/vli/holyrood/inquiry/sp205-04.htm> [Accessed: 2nd April 2010]
15. Fraser, R. H. L. (2004). 'Appointment of the Architect' Available from: <http://www.scottish.parliament.uk/vli/holyrood/inquiry/sp205-05.htm> [Accessed: 2nd April 2010]
16. Fraser, R. H. L. (2004). 'The Evolution of the Building User Brief.' Available from: <http://www.scottish.parliament.uk/vli/holyrood/inquiry/sp205-06.htm> [Accessed: 2nd April 2010]

17. Fraser, R. H. L. (2004). ' Construction Management'. Available from: <http://www.scottish.parliament.uk/vli/holyrood/inquiry/sp205-07.htm> [Accessed: 2nd April 2010]
18. Fraser, R. H. L. (2004). ' The Appointment of the Construction Manager'. Available from: <http://www.scottish.parliament.uk/vli/holyrood/inquiry/sp205-08.htm> [Accessed: 2nd April 2010]
19. Fraser, R. H. L. (2004). ' Project Management 1998 to 1 June 1999'. Available from: <http://www.scottish.parliament.uk/vli/holyrood/inquiry/sp205-09.htm> [Accessed: 2nd April 2010]
20. Fraser, R. H. L. (2004). ' The Project from Handover to February 2000'. Available from: <http://www.scottish.parliament.uk/vli/holyrood/inquiry/sp205-10.htm> [Accessed: 2nd April 2010]
21. Fraser, R. H. L. (2004). ' Early 2000 and the Establishment of the Holyrood Progress Group'. Available from: <http://www.scottish.parliament.uk/vli/holyrood/inquiry/sp205-11.htm> [Accessed: 2nd April 2010]
22. Fraser, R. H. L. (2004). ' The Holyrood Project June to December 2000 -Stage D - The Cost Plan'. Available from: <http://www.scottish.parliament.uk/vli/holyrood/inquiry/sp205-12.htm> [Accessed: 2nd April 2010]
23. Fraser, R. H. L. (2004). ' The Project from Late 2000'. Available from: <http://www.scottish.parliament.uk/vli/holyrood/inquiry/sp205-13.htm> [Accessed: 2nd April 2010]
24. Fraser, R. H. L. (2004). ' Planning, Queensberry House and the Role of Historic Scotland'. Available from: <http://www.scottish.parliament.uk/vli/holyrood/inquiry/sp205-14.htm>

- parliament. uk/vli/holyrood/inquiry/sp205-14. htm [Accessed: 2nd April 2010]
25. Fraser, R. H. L. (2004). ' Programming and Design Delay- Factual Background- Construction Manager'. Available from: [http://www.scottish.parliament.uk/vli/holyrood/inquiry/sp205-15. htm](http://www.scottish.parliament.uk/vli/holyrood/inquiry/sp205-15.htm) [Accessed: 2nd April 2010]
26. Fraser, R. H. L. (2004). ' Security Issues'. Available from: [http://www.scottish.parliament.uk/vli/holyrood/inquiry/sp205-16. htm](http://www.scottish.parliament.uk/vli/holyrood/inquiry/sp205-16.htm) [Accessed: 2nd April 2010]
27. Fraser, R. H. L. (2004). ' The Holyrood Project from Autumn 2003 Onwards'. Available from: [http://www.scottish.parliament.uk/vli/holyrood/inquiry/sp205-17. htm](http://www.scottish.parliament.uk/vli/holyrood/inquiry/sp205-17.htm) [Accessed: 2nd April 2010]
28. Meredith, J. R. & Mantel, S. J. (2006). ' Project management – a managerial approach' 6th edition. John Wiley & sons, New York.
29. Mosaic Projects (n. d.). ' Avoiding the successful failure'. Available from: [http://www.mosaicprojects.com.au/PDF_Papers/P046_Successful_Failure. pdf](http://www.mosaicprojects.com.au/PDF_Papers/P046_Successful_Failure.pdf) [Accessed: 8th April 2010].
30. Prasser, S. (n. d.). ' Parallels with Overseas Experience: The Holyrood Building Project, Scotland – Overcoming the White Elephant Syndrome in Big and Iconic Projects in the Public and Private Sectors'. Available from: [http://epress.anu.edu.au/anzsog/imp/mobile_devices/ch05s07. html](http://epress.anu.edu.au/anzsog/imp/mobile_devices/ch05s07.html) [Accessed: 4th April 2004]

31. Project Management Institute (2004). 'A guide to Project Management Body of Knowledge third edition (PMBOK Guides)'. Project Management Institute. Newtown Square. USA.: Philadelphia.
32. Roberts, D (2003). 'MSP says Holyrood builders are left idle' Available from: <http://www.scotsman.com/politics/MSP-says-Holyrood-builders-are.2459894.jp> [Accessed: 4th April 2010].
33. Supply management. com (2004). 'The £431 million question'. Available from: <http://www.supplymanagement.com/analysis/features/2004/the-431-million-question/> [Accessed: 3rd April 2010]
34. Scottish Parliament, (2001). 'The Scottish Parliament building'. Available from: http://www.scottish.parliament.uk/business/research/pdf_res_notes/rn01-64.pdf. [Accessed: 5th April 2010]
35. The royal society of Edinburgh (2001). 'Engineering the Scottish Parliament building'. Available from: http://www.royalsoced.org.uk/events/reports/2000-2001/rae_01.pdf [Accessed: 4th April 2010]
36. The Scottish Government (2007). 'The government economic strategy'. Available from: <http://www.scotland.gov.uk/Resource/Doc/202993/0054092.pdf>. [Accessed: 3rd April 2010]
37. Westland, J. (2006). 'The Project Management Life Cycle'. London: Kogan Page.