

Chapter 31

**Department of Foreign Affairs and
International Trade**

Delivery of Capital Projects
in Four Missions

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Department of Foreign Affairs and International Trade

Delivery of Capital Projects in Four Missions

Main Points

31.1 This audit examined how the Department of Foreign Affairs and International Trade planned and implemented six capital projects at four missions in Seoul, New Delhi, Geneva and Bangkok. Capital costs for these missions totalled about \$75 million, representing approximately 20 percent of the capital expenditures planned by the Department over the five-year life of its Long-Term Capital Plan.

31.2 Delivering capital projects outside of Canada entails significant additional risks, difficulties and challenges not experienced in the delivery of capital projects domestically.

31.3 The audit confirmed that valid reasons existed for initiating each of the projects and that users are generally satisfied with their new accommodation. Overall, the projects were delivered within budgets and project schedules. In general, contracts were awarded on a competitive basis and change orders were well managed. We noted several positive initiatives to address environmental concerns.

31.4 However, we identified weaknesses in the preliminary planning of the projects. Indicative project estimates were incomplete and unreliable. The preliminary cost estimates of three projects increased by \$38 million, representing increases ranging from 64 percent to 153 percent over their initial estimates. In one case, a poor cost estimate may have resulted in an uneconomical expenditure of \$15 million. We estimate that, over the last five years, the opportunity cost of this payment totals \$8 million.

31.5 We are also concerned with the lack of rigour of the Department's analysis of options in support of their recommendations to the Treasury Board. We found instances where the Department failed to document the results of its analysis of various options that may have realized savings totalling at least \$7 million over a 20-year period. We also noted weaknesses in the methodology used by the Department to support its investment decisions, and the lack of documentation to support a particular option.

31.6 The quality of reporting to the Treasury Board to explain project delays and budget increases needs to be improved.

31.7 In summary, the magnitude and frequency of increases in preliminary cost estimates and other problems identified by the audit seem to indicate that systemic weaknesses exist in the Department's planning of capital projects and these need to be addressed.

Background and other observations

31.8 The Department of Foreign Affairs and International Trade manages a significant and diverse portfolio of office and residential accommodation, encompassing property in 160 locations in over 100 countries. The estimated value of these Crown-owned properties abroad is \$1.5 billion to \$2 billion and annual leasing and capital expenditures total approximately \$110 million and \$60 million respectively. The Department and other government departments use the facilities to deliver their programs.

31.9 This audit reaffirmed our opinion that the government's administrative policies for managing capital projects are sound, but problems persist in their application.

The Department of Foreign Affairs and International Trade agrees with the chapter's recommendations and has developed an action plan that addresses our concerns.

Introduction

31.10 Acquisition, management and disposal of capital assets by all government departments amounts to more than \$10 billion annually. Capital assets include, but are not limited to, land, buildings, works, inventory and equipment. Departments require them for the fulfilment of their mandates and delivery of their operational programs.

31.11 Our review of the government's Part III Estimates for 1997–98 identified planned expenditures of more than \$32 billion over the time required to complete 159 projects, each costing \$10 million or more. The magnitude of these numbers indicates the importance of sound management of this aspect of government operations. Improvements in the planning, design, acquisition, and operating and maintenance of capital projects over their life cycle can result in significant savings to the government.

Audit strategy for capital projects across government departments

31.12 Our Office audits capital projects on a selective basis, taking into account cost, risk and sensitivity. Recent audits include the Parliamentary Precinct Restoration and Renovation Program, the Federal Laboratories for Human and Animal Health Building Project and buying of major capital equipment by National Defence. These and previous audits identified a range of deficiencies in the approval and management practices that resulted in project delays, increased costs and lack of value for money. We continue to audit capital projects on a selective basis across government departments.

Responsibility for capital projects in the Department of Foreign Affairs and International Trade

31.13 The Department of Foreign Affairs and International Trade manages a

significant and diverse portfolio of office and residential accommodation, encompassing property in 160 locations in over 100 countries. The Department estimates that the value of these Crown-owned properties abroad is about \$1.5 billion to \$2 billion and annual leasing and capital expenditures total approximately \$110 million and \$60 million respectively.

31.14 Within the Department, responsibility and decisions relative to major capital expenditures are shared among the Department's Executive Committee, Physical Resources Bureau (the Bureau), the Geographic Branches and the missions.

31.15 The Bureau is responsible for strategic property planning, analysis and reporting to senior management and the Treasury Board, as appropriate; the implementation and delivery of major capital projects; and the provision of technical services to support the operation and maintenance of facilities abroad. It manages the Long-Term Capital Program, the acquisition (purchase or lease) and construction of chanceries and official residences, the purchase or construction of staff quarters, and major renovation and maintenance projects.

31.16 The Geographic Branches identify property needs, provide assistance and input to the Bureau in prioritizing those needs, and allocate the necessary resources to the missions for the day-to-day operation and maintenance of property abroad, including funding for leasing costs.

31.17 Missions are responsible for the leasing of staff quarters, for landlord-tenant relationships in leased chanceries or official residences, for the day-to-day operation and management of all property in their inventory and for minor maintenance projects. Missions also play an important role in identifying their property needs and assist the Bureau by providing information about local property markets. Other government

The Department of Foreign Affairs and International Trade manages a significant and diverse portfolio of office and residential accommodation, encompassing property in 160 locations in over 100 countries.

We examined six projects which are being delivered by the Department of Foreign Affairs and International Trade in four missions.

departments identify their property needs abroad and work with the Bureau to fulfil those needs.

Focus of the audit

31.18 We examined six projects, described in Exhibit 31.1, which are being delivered by the Department of Foreign Affairs and International Trade in four missions. These projects have capital

expenditures totalling about \$75 million, representing approximately 20 percent of the capital expenditures planned by the Department over the five-year life of its Long-Term Capital Plan. They comprise a mix of chanceries, staff quarters and an official residence. In selecting the projects, we took into account the project's cost, sensitivity, location (developed and developing countries),

Exhibit 31.1

Projects Selected for Audit



Planned \$55.2 million office and residential complex in Seoul, South Korea

economic crisis. At the time that the construction contract was cancelled, the estimated cost of the project had increased to \$55.2 million, with a revised completion date of summer/fall of 2001. To date, approximately \$17.2 million has been spent on acquisition of the site, design development, costs for contract termination and project management, including travel.

1. In December 1994, the Department purchased a site in Seoul's Central Business District for approximately \$15 million. During preliminary planning, the project envisaged the design and construction of office and residential accommodation, with a combined gross area of approximately 6,600 square metres at an estimated cost of \$33.6 million, including land. The project was to be completed by December 1997. The Department recently informed us that it has terminated the construction contract and is reassessing its accommodation requirements and options in Seoul due to the increasing availability and lower cost of leased space following the Asian



\$25.8 million addition to the existing chancery in New Delhi, India

1993, with completion in September 1996. The project was delivered on budget and approximately five months behind schedule.

2. The New Delhi chancery project consisted of construction of an addition to the existing chancery, covering a gross area of approximately 3,380 square metres (which approximately doubled its capacity), as well as upgrading of mechanical and recreational facilities. In June 1988, the Treasury Board provided Preliminary Project Approval of \$14 million to complete the project by August 1991. In February 1993, the Treasury Board approved an \$11 million increase primarily due to scope increases and unplanned travel and on-site management costs. Construction was planned to commence in March



18 new staff quarters costing \$9.1 million in New Delhi, India

3. The New Delhi staff quarters project comprised the construction of 18 new staff quarters on the compound. In February 1995, the Department approved a project budget of \$3.8 million, with the project to be completed by March 1997. In January 1997, the budget was increased to \$9.6 million, with a completion date of July 1998. Construction began in January 1997 and the staff quarters were fully occupied in March 1999. The final cost of the project was \$9.1 million.

type (lease, fit-up, construction), and status (work-in-process versus completed). We examined the major aspects of the projects from the perspective of generally accepted practices of good project planning and implementation.

31.19 Our interest in departmental program issues was limited to obtaining a

general understanding of the program requirements that the new facilities were designed to meet. Except for their role in the projects examined, we did not audit the Physical Resources Bureau, the Geographic Branches or the missions. Further details on the audit are found at the end of the chapter in **About the Audit**.



\$1.5 million reconstruction of the official residence in New Delhi, India



\$20.0 million new Canadian chancery in Geneva, Switzerland



\$3.2 million fit-up of the chancery in a new leased building in Bangkok, Thailand

4. The New Delhi official residence project comprised a major reconstruction of the 65-year-old residence to replace various building components and systems, notably the roof, plumbing, air conditioning and electrical systems. The project was approved in June 1996 at an estimated cost of \$1.3 million and with a completion date of June 1997. The total cost of the project was \$1.5 million and it was delivered on schedule.

5. On 21 March 1996, the Treasury Board approved the purchase of land for the design and construction of a 2,200 net square metre chancery in Geneva, Switzerland at a total estimated cost of \$21.4 million. It was anticipated that the project would be completed by 1 April 1998. As at 29 September 1999, the building was substantially completed at a cost of \$19.5 million. The remaining cost to complete the project is estimated at \$500,000.

6. On November 1996, the Treasury Board approved a three-year lease with two three-year extension options, for approximately 1,980 square metres in a new Class A building, at an average annual rent of Baht 13,300,000 (C \$720,000). The Board also approved \$2.9 million for chancery fit-up and moving costs. The fit-up project was completed approximately two months behind schedule at a cost of \$3.2 million.

Exhibit 31.1 (cont'd)

Observations and Recommendations

Risks and challenges in delivering projects abroad

31.20 Although we believe it is important that capital projects meet performance, cost and schedule objectives, we recognize that chanceries and official residences are used to promote Canadian presence and image abroad, which may result in higher costs. We also recognize that there are significant additional risks and challenges in delivering projects outside Canada. For example, the work must adhere to a wide variety of local building, health and safety, fire and environmental codes and comply with all applicable Canadian laws and regulations. Language and cultural differences also add to the complexity of doing business abroad.

31.21 The Department also has an obligation to provide Canadian based staff with living conditions similar to those in Canada, with respect to quality of accommodation. This is particularly important at posts where measures of isolation, location conditions, climate, health, medical care, hostility and violence exist. The Department has developed a “hardship level” one to five rating (five representing the greatest hardship) that is intended to recognize the existence of undesirable conditions at the various posts and to reinforce the importance of providing appropriate accommodation that meets Canadian standards. The hardship levels for the missions that we examined are:

- Bangkok, Thailand — Level III
- Geneva, Switzerland — N/A
- New Delhi, India — Level IV
- Seoul, South Korea — Level III

Government administrative policies for managing capital projects are sound, but problems persist in their application

31.22 Based on previous audits of capital projects, the Auditor General informed the Standing Committee on Public Accounts, on 4 June 1998, that the Treasury Board’s administrative policies for managing capital projects across the government are fundamentally sound and consistent with an environment of increased delegation of responsibilities to departments. We noted that during the past several years, the Treasury Board approved several significant reforms to allow the Department of Foreign Affairs and International Trade to operate in a more businesslike manner. For example, subject to the consideration and approval of an annual Business Plan by the Treasury Board, the Physical Resources Bureau was granted authority to spend in future years the sales proceeds generated by the disposal of properties in any current year in return for reduced dependence on appropriations. Moreover, various contracting authorities were also increased, with a view to making project approvals more efficient.

31.23 Although the government’s policies and guidelines on capital projects are sound, problems continue to persist in their application. We noted that the Bureau has undertaken a number of initiatives to improve the planning, management and delivery of capital projects by the Department; however, we identified variances between preliminary cost estimates and final project budgets, as well as other problems related to scheduling and project planning. These indicate that opportunities for improvement exist and that management needs to continue to focus on this aspect of the property program. We also noted that the Inspector General’s audit of three other capital projects identified similar concerns with project planning. Accordingly, we believe that management needs to address the concerns raised by

**We identified
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and project planning.**

both audits. We also encourage the Inspector General's Office to continue to give priority to this aspect of the Department's operations.

Planning

The projects were justified and users are generally satisfied

31.24 The audit confirmed that valid reasons existed for initiating each of the projects and users are generally satisfied with the results. In the case of New Delhi, the need to expand the existing chancery dates back to 1982 when the immigration programs began to increase significantly. Additional staff quarters were constructed to replace some of the older staff quarters and in response to concerns among the diplomatic community in New Delhi about the deteriorating quality of rental accommodations. The already expensive rental costs that were anticipated to continue to rise over the next few years (projections of up to 150 percent) were also a concern among the diplomatic community. The official residence is located in a historical and architecturally significant section of New Delhi. It is a 65-year-old building that required major reconstruction.

31.25 In Bangkok, the purpose of the relocation was to reduce the amount of space and to upgrade the quality of accommodation as the Mission had occupied the facility for over 20 years. We confirmed that the previous premises were old and were scheduled to have been torn down and redeveloped. The Ambassador reported that staff are very satisfied with their new work environment and morale has improved. The staff we spoke to confirmed these views.

31.26 The rented premises in Geneva were one of the Department's most expensive leases. We found that the Department acted appropriately in taking advantage of an economically viable opportunity to secure a long-term

Crown-owned solution for its accommodation requirements. Mission management told us that the new facility will enable them to deliver their programs more effectively and to better accommodate the large number of government officials who conduct business in Geneva.

31.27 The need to seek alternative accommodation in Seoul, South Korea was in response to the landlord's request to vacate the premises in order to carry out needed renovations to the building, and to secure a long-term Crown-owned solution for the Department's accommodation requirements. The Mission and Geographic Branch initially approved the proposed project, consisting of one tower of office space and one tower for residential accommodation. However, current Mission staff have since expressed concern with the proposed project to combine office and residential accommodation in the same building complex. During our field trip, management and staff at the Mission reconfirmed the need to relocate and expressed a high level of dissatisfaction with their current office accommodation. They supported pursuing options to secure new alternative accommodation as soon as possible.

Preliminary project estimates were incomplete and unreliable

31.28 Treasury Board policy on capital projects states that cost estimates must have a sufficiently high degree of quality and reliability to support Treasury Board's consideration of the project or specific phase of the project. For greater clarity, the Treasury Board requires that estimates be prepared as indicative and substantive, as described in Exhibit 31.2.

31.29 Exhibit 31.3 illustrates that the preliminary budgets of three of the six projects examined experienced increases, totalling \$38 million and ranging from 64 percent to 153 percent over their initial estimates, due to changes

The preliminary budgets of three of the six projects examined increased by \$38 million, representing increases ranging from 64 percent to 153 percent over their initial estimates.

in the projects' scope and to poor cost estimation. As a result, management and the Treasury Board did not have a reliable estimate of the project's cost prior to granting preliminary approval. The case study on page 31–13 provides an example of how a poor cost estimate was used to support an uneconomical investment option that may have led to an unproductive \$15 million expenditure.

31.30 In the case of the New Delhi chancery, the Department informed the

Treasury Board that the additional costs were necessary to correct deficiencies in the existing facilities. The costs were mainly due to upgrades to the mechanical systems in the existing building as a result of on-site inspections, to improvements in the recreational facilities, and to other unplanned costs for travel and on-site management. We believe that most of these costs could have reasonably been identified prior to seeking preliminary project approval.

Exhibit 31.2

Indicative and Substantive Cost Estimates

An "indicative estimate" provides a rough cost projection used for budget planning purposes in the early stages of concept development of a project. It replaces what were formerly "Class C and D Estimates". It is an order-of-magnitude estimate that is not sufficiently reliable to warrant Treasury Board approval as a cost objective. It is usually based on an operational statement of requirement, on a market assessment of products and technological availability that would meet the requirement, and on other considerations such as implementation, life cycle costs and operational savings. Preliminary Project Approval from the Treasury Board is normally based on an indicative cost estimate. According to Public Works' Project Management Standard, it is generally accepted to have a plus or minus 15 to 20 percent level of accuracy with respect to construction projects.

A "substantive estimate" is one of high quality and reliability and is based on detailed system and component design, design adaptation, workplans and drawings for components, construction or assembly, and installation. It replaces what were formerly "Class A and B Estimates". It includes site acquisition, preparation and any special requirement estimates. Contingency funding requirements must be justified based on line-by-line risk assessments, including market factors, industrial capability and labour considerations. It also includes the cost of all significant and identifiable deliverables, as well as the costs of the government's contribution to employee benefit plans. Effective Project Approval from the Treasury Board is normally based on a substantive cost estimate. According to Public Works' Project Management Standard, it is generally accepted to have a plus or minus 5 to 10 percent level of accuracy with respect to construction projects.

The Department of Foreign Affairs and International Trade informed us that a preliminary cost projection with a margin of accuracy of plus or minus 15 to 20 percent is reasonable for seeking preliminary project approval in the domestic environment with a suitable allowance factored in to recognize the exigencies, risks and challenges of delivering capital projects abroad.

Exhibit 31.3

Projects With Significant Increases Between Indicative and Substantive Estimates

Project	Indicative Estimate (\$ millions) / Date	Substantive Estimate (\$ millions) / Date	Increase (\$ million)/%
New Delhi Chancery	\$14.0 June 1988	\$25.0 February 1993	\$11.0 79%
New Delhi Staff Quarters	\$3.8 February 1995	\$9.6 March 1997	\$5.8 153%
Seoul Office and Residential Complex	\$33.6 August 1994	\$55.2 August 1997	\$21.6 64%
Total	\$51.4	\$89.8	\$38.4 75%

31.31 We found that the budget increases for the New Delhi staff quarters were primarily due to poor cost estimation. For example, the unit costs did not reflect local conditions and insufficient allowances were made when determining the amount of gross space that would be needed to provide for the required net space. However, it is important to note that both the cost and quality of the new staff quarters are similar to those recently constructed for the British High Commission.

31.32 The Department of Foreign Affairs and International Trade should strengthen its capability to prepare preliminary cost estimates that have a sufficiently high degree of quality and reliability to support the Treasury Board's consideration of the project.

The quality of the analysis and reporting of options needs to be improved

31.33 According to the Department's property manual, alternative accommodation solutions should be analyzed and a ranking of feasible options should be documented and reported to senior management. We found instances where the analysis of several options that might have produced significant cost

savings were not adequately documented. We also found that the documentation supporting the preferred option was incomplete. This lack of adequate documentation of the analysis of options raises questions as to the quality of the analysis carried out in support of recommendations made to senior departmental management and to the Treasury Board.

31.34 Geneva chancery. In December 1995, when it became apparent that the cost of the new chancery in Geneva would significantly exceed the approved budget, the project team proposed condensing the footprint of the building and adding a floor. It was estimated that this option could have saved between \$2 million and \$3 million. A smaller footprint would have also obviated the need to acquire additional land (which is currently under consideration) and to move the services on site to accommodate a pedestrian right-of-way. In addition, a smaller footprint would have addressed security concerns about the close proximity of the proposed walkway to the chancery. The cost of purchasing additional land and landscaping is estimated at \$500,000.

31.35 Documentation supporting the decision to exclude the official residence

Seoul Duple Project

In June 1994, on the basis of a build-versus-lease cost analysis that favoured the build option, the Department of Foreign Affairs and International Trade sought preliminary project approval and spending authority from the Treasury Board to purchase a building site and construct a stand-alone diplomatic complex in Seoul, South Korea. The indicative cost of the total project was estimated at \$33.6 million (land cost: \$14.8 million; design fees and management: \$2.0 million; construction: \$12.3 million; relocation and fit-up cost: \$4.5 million). The Treasury Board approved the proposal in August 1994 and, in December 1994, the Department purchased a site in Seoul's Central Business District for approximately \$15 million.

We found that the indicative project cost estimate used to justify the build option was incomplete and not reliable. For example, it was not based on sound local knowledge and experience of the region, its construction industry and intended procurement method. The Department did not secure a comprehensive and reliable indicative estimate of the project's construction cost until April 1996, almost two years after seeking Treasury Board approval. A cost-consulting firm hired by the Department in early 1996 estimated the project's construction cost at \$25.8 million, a 110 percent increase compared with the 1994 estimate of \$12.3 million. If a reliable indicative estimate had been obtained in 1994, the project would have been judged to be uneconomical and the Bureau might not have spent \$15 million to purchase a site that has since been vacant. Using the Bank of Canada's five-year borrowing rate of interest in December 1994, we calculated that the opportunity cost of spending \$15 million on land that has been idle for about five years totalled approximately \$8 million.

We believe that the potential cost savings, which we estimate to be at least \$7 million over a 20-year period, were of a nature and significance to warrant a formal review and consideration by senior management.

in the chancery design is not available. We noted that on at least two occasions during March and April 1995, the portfolio manager informed Bureau management of the possibility of constructing an official residence on the new chancery site in Geneva. It was estimated that the additional cost would range from about \$525,000 to \$1.2 million. The Department is currently spending approximately \$470,000 per year to rent and maintain its leased official residence.

31.36 Departmental officials told us that the planning process does not provide a number of equal and comparable design options, with pros and cons that can be applied against a cost framework. They also said that the architectural planning of a building is an evolutionary process, originating with the need to construct on a piece of land and subject to a prescribed set of requirements that aims to meet an approved budget within an agreed period of time.

31.37 In our opinion, the options analysis carried out for the new chancery in Geneva did not provide sufficient substantiation for the decision to pursue the existing design. We believe that the potential cost savings, which we estimate to be at least \$7 million over a 20-year period, were of a nature and significance to warrant a formal review and consideration by senior management.

31.38 Bangkok chancery. In the case of the Bangkok chancery, we noted that there has been a long history of debate between the Physical Resources Bureau and the Mission over whether to lease or own space. Several Heads of Mission recommended a co-located, purchased property as an ideal solution to escalating rental costs, and poor environmental conditions. A lease-versus-purchase analysis for the chancery prepared by the Bureau in 1995 concluded that it was more economical to purchase than to lease. We noted that during the period

1995-96, the Department's preference shifted to a leased chancery solution. In support of this change, we expected to find an updated needs assessment and options analysis. The Bureau informed the Treasury Board that the selected lease solution was based on a careful screening of the various buildings within the Mission's locational parameters and a detailed evaluation was carried out. We noted, however, that a detailed feasibility report containing the needs assessment and options analysis does not exist. Consequently, the Bureau cannot demonstrate that the lease option was the most appropriate decision.

31.39 We also noted that a comprehensive options analysis of the planned project in Seoul, South Korea was lacking. For example, the option of including the official residence in the project was not formally evaluated. The Department has recently purchased the official residence that it had been leasing and is re-evaluating its need for office space and staff accommodation in Seoul.

The methodology used to support investment decisions needs to be improved

31.40 The Department of Foreign Affairs and International Trade carries out an investment analysis to support decisions regarding the financial viability of undertaking investment options and/or determining the costs of holding/disposing real property. We noted that little documentation exists to support the financial variables and cash flows used in the analysis. We are concerned that the investment analysis prepared by the Physical Resources Bureau to support the Seoul project may have been flawed. We discussed our concerns with management and agreed that an independent consultant be engaged to review the investment methodology, using the Seoul project as a case study. Prior to engaging an independent consultant, the Bureau's internal investment analysis had concluded, on several occasions, that the

proposed construction project was the most economically viable option.

31.41 The consultant's report, dated 31 March 1999, confirmed our concerns about the quality and reliability of the economic analysis. The report analyzed three different lease-versus-purchase scenarios, using the Bureau's own figures for the Seoul project, and concluded that the lease option would cost \$3 million to \$19 million less depending on the assumptions used. The report noted that while the formulae and calculations are sound, the following weaknesses exist in the investment analysis model:

- The model does not break out cash flow by type or by year, thereby making it difficult for decision makers to visualize the analysis.
- The model as presently constructed does not easily accommodate alternative options to lease or construct.

- The model does not include a summary report to accommodate sensitivity analysis and reporting.

- The discount rate relative to that used by other organizations appears low.

31.42 The Physical Resources Bureau should identify and analyze all reasonable alternatives that could potentially fulfil requirements, with the results being reported to senior management and the Treasury Board. The rationale for the selected option should be documented.

Implementation

Projects were generally delivered within budgets and project schedules

31.43 Exhibits 31.4 and 31.5 summarize the performance of completed projects as measured against their planned budgets and schedules. We found that these projects were generally delivered within their approved budgets and that the

We found that the projects were generally delivered within their approved budgets and that the nature and extent of project delays were reasonable.

Project	Indicative Estimate	(\$ millions)		Variance Between Substantive and Actual
		Substantive Estimate	Actual Cost	
New Delhi Chancery	14.0	25.0	25.8	(.8)
New Delhi Staff Quarters	3.8	9.6	9.1	.5
New Delhi Official Residence	1.3	1.3	1.5	(.2)
Bangkok Fit-up	2.9	2.9	3.2	(.3)
Geneva Chancery	21.4	21.4	20.0	1.4
Total	43.4	60.2	59.6	.6

Exhibit 31.4
Financial Performance of Completed Projects
(\$ millions)

Project	Preliminary Project Completion	Effective Project Completion	Actual Completion	Delay Between Effective and Actual Completion (months)
New Delhi Chancery	August 1991	September 1996	February 1997	5
New Delhi Staff Quarters	March 1997	July 1998	March 1999	8
New Delhi Official Residence	June 1997	June 1997	June 1997	0
Bangkok Fit-up	October 1997	December 1997	February 1998	2
Geneva Chancery	April 1998	April 1998	July 1999	15

Exhibit 31.5
Summary of Project Completion Versus Planned Dates

nature and extent of project delays were reasonable. For example, the delay in the Geneva project arose because of the need to follow due process as a result of environmental and historical concerns raised by a special interest group over the development of the site. With respect to the staff quarters project in New Delhi, India, the delay was mainly due to the additional time required to obtain imported materials.

31.44 As previously mentioned, the construction contract for the Seoul project has recently been terminated. We support the Department's decision to reassess its accommodation requirements and options in Seoul, South Korea because, in our view, the original project was poorly planned and could not be justified on economic grounds, as the Department had asserted.

Contracts were generally awarded on a competitive basis and change orders were well managed

31.45 We reviewed contracts totalling \$36 million. We found that the bidding and evaluation process was well documented and contracts were generally

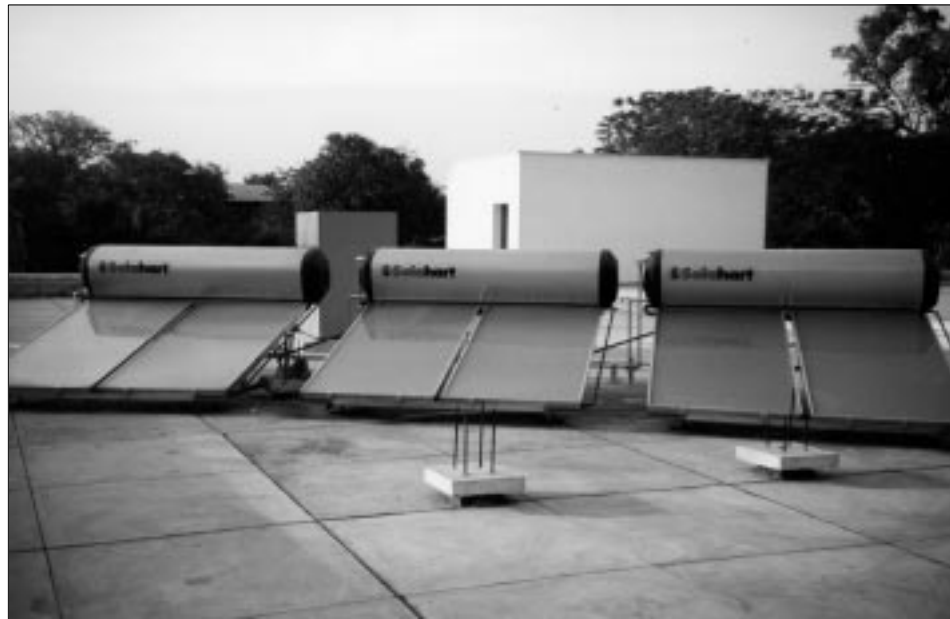
awarded on a competitive basis. In most of the cases, the lowest bid was selected and valid reasons existed when the lowest bid was not selected. We also reviewed a judgmental sample of change orders totalling \$1.6 million, representing approximately 43 percent of total change orders. We found that the changes were justified, well documented and properly approved.

Several positive initiatives address environmental concerns

31.46 Under the Code of Environmental Stewardship contained in Canada's *Green Plan*, the federal government has committed itself to show leadership in environmental matters. Under the Code, departments are obligated to address, among other things, energy and water conservation. In the course of our examination, we noted several positive environmental initiatives that the Department had undertaken.

31.47 Reduced energy use in New Delhi. The level of energy consumption has been significantly reduced in the New Delhi compound. As well, the chancery addition project included significant upgrades to the electrical and mechanical

Solar Panels Used to Heat Water at the Official Residence in New Delhi, India (see paragraph 31.47).



systems. As a result of these upgrades, energy costs of the chancery have remained essentially the same despite doubling the size of the facility. We also noted that solar water heating panels were installed at the official residence in an effort to reduce energy consumption. A recent energy audit and equipment assessment of the Canadian High Commission in New Delhi, India, conducted by Natural Resources Canada, identified the potential for further savings related to energy and water use, including sewer water reclamation.

31.48 Assessing air quality in New Delhi. The air quality in New Delhi is a significant problem and a serious concern and priority of the Mission. The World Health Organization described New Delhi as the fourth most polluted city in the world and the situation continues to worsen. We noted that the Mission has begun to gather data in order to analyze the quality of air in its facilities.

31.49 Minimizing energy consumption in Geneva. Efforts have been made in Geneva to minimize energy consumption. The project's design brief called for the selection of equipment that minimized life cycle costs, for projected maintenance, and for energy consumption over the equipment's life. We noted that a superior heating and cooling system was installed that is expected to significantly reduce energy consumption. However, the Department could not quantify the level of expected energy savings at the time of our audit.

Improved tracking of costs and reporting is required

31.50 Good project management requires that all costs associated with the project be tracked and compared against budget. Accurate and timely reporting of budget variances allows decision makers to address any significant variance or exception. We found that all project costs were not being systematically tracked and

reported to senior management and to the Treasury Board as required by Treasury Board policies for managing capital projects. This issue is of particular importance in the case of projects that consume significant internal resources over long periods of time, such as the New Delhi chancery expansion project that extended over a period of 15 years.

31.51 Using departmental estimates where available, we calculated that the cost of internal resources substantially dedicated to the New Delhi chancery expansion and staff quarters project totalled at least \$800,000 and \$560,000 respectively, excluding the cost of related travel and other out-of-pocket expenses. A similar calculation for the planned Seoul project resulted in a figure of \$522,000. The Department could not provide us with the estimates for the Bangkok and Geneva projects.

31.52 With respect to the Geneva project, we found that the Bureau was in the process of establishing separate projects for landscaping and the purchase of additional land at a total estimated cost of \$500,000. In our opinion, these activities are directly related to the new Chancery and their cost should be charged to the project.

31.53 We noted several weaknesses in the reporting of project performance to senior management. Reports that monitor project progress (scope, cost and schedule) against plans were not produced on a regular basis. Officials told us that project completion and evaluation reports are seldom produced in a timely manner due to lack of resources. Bureau management relies primarily on meetings and discussions with officials and on a weekly review of the Long-Term Capital Plan monthly cash flow reports to keep apprised of the status of projects. There is also a view within the Department that capital projects do not receive sufficient attention by senior management. We believe that formal reporting and review

We are concerned about the accuracy and completeness of statements in various Treasury Board submissions.

practices would result in better project management.

31.54 The Physical Resources Bureau should track and allocate all costs specifically identifiable with a particular project. The Bureau should prepare reports that monitor project progress (scope, cost and schedule) against plans to allow decision makers to address any significant variance or exception.

Inconsistent compliance with Treasury Board policies is a concern

31.55 We noted two instances where the Department had exceeded its delegated authority and Treasury Board approval was granted retroactively. In one instance, the Department signed a three-year lease at an annual rent of \$785,000 prior to seeking Treasury Board approval. In addition, a \$400,000 deposit was made by the Mission to the landlord before the lease was signed. However, in seeking retroactive approval to enter into the lease, the Department did not inform the Treasury Board of the \$400,000 payment.

31.56 In a second instance, the Department had amended a consultant agreement by \$2.4 million without prior Treasury Board approval.

31.57 Finally, as illustrated by the case study below and as also noted in paragraph 31.30, we are concerned about the accuracy and completeness of statements in various Treasury Board submissions, such as those justifying project budget increases; they appear to be inconsistent with our audit evidence.

31.58 The Department of Foreign Affairs and International Trade should ensure consistent compliance with its delegated authorities.

Recent internal audits of three capital projects have identified concerns about project management practices

31.59 The Department's Inspector General recently issued draft reports on the audit of three capital projects: Algiers Diplomatic Complex, New York Consulate General lease fit-up, and Canada House refurbishment in London. A draft summary report of all three projects was also issued. At the end of our audit, the reports had not yet been finalized. Accordingly, we were not able to formally review the reports and supporting working papers and therefore could not determine the extent to which we could rely on the work. However, based on our discussions with the Inspector General's Office, we noted that its findings are similar to the issues and observations raised in this chapter.

Inaccurate and Incomplete Reporting to the Treasury Board

In August 1994, the Department obtained Treasury Board approval to design and construct a diplomatic complex (chancery plus staff quarters) in Seoul, South Korea at an estimated cost of \$33.6 million. The project was expected to be completed by December 1997. In August 1997, the Department informed the Treasury Board that the estimated project cost had increased to \$55.2 million, with a target occupancy date of June 2000. The increase was attributed to a combination of inadequate information on Korean construction costs at the time, the failure to include the payment of value-added tax as a project cost, and inflation in the Korean construction market. The Department maintained that the only real test of cost is the marketplace, and the tendered cost of the acceptable proposal exceeded the generic cost estimate.

As noted previously, we found that the 1994 project cost estimate was incomplete and unreliable. The Department did not prepare a proper cost estimate until April 1996. In our view, poor estimation of project cost in 1994 was the primary reason for the need to increase the project budget in 1997. We also expected that the Department would have informed the Treasury Board as to the reason(s) for the 2.5 year project delay from December 1997 to June 2000.

Commissioning

Consistent commissioning practices will decrease project risk

31.60 Commissioning is a sequential method of testing and validating results against expected performance criteria for all building components and equipment, systems and integrated systems. We found that commissioning practices varied among several of the projects reviewed.

31.61 New Delhi chancery. Funds were allocated for commissioning in the project budget. Although a formal commissioning plan was not prepared, commissioning activities were appropriately carried out and we did not observe any significant problems. Users indicated that they are generally satisfied with the building's services.

31.62 Geneva chancery. We found that the project budget did not include funds to plan and carry out commissioning. In fact, a commissioning plan had not yet been prepared just days before the building was scheduled for substantial completion. We noted that four different commissioning officers had been involved with the project during the prior eight months. Without a sound commissioning plan and testing, the Department would not have independent assurance that the building's systems will function as intended. Also, there is a greater risk that deficiencies will not be identified prior to acceptance of the building. Project officials have recently informed us that a \$130,000 commissioning contract was awarded on 7 July 1999. Commissioning is expected to be completed by the end of October 1999.

31.63 The Department of Foreign Affairs and International Trade should ensure that projects are commissioned so that program requirements are satisfied with minimum cost and disruption.

Project Files

Project files are maintained in an ad hoc fashion and do not clearly demonstrate closure of issues

31.64 Well-organized and complete project files support effective project management. This is particularly important for the Department of Foreign Affairs and International Trade as it manages projects around the world. Separations of time, distance and foreign cultures, along with the rotational assignment of personnel, underscores the importance of maintaining proper files, which avoids unnecessary revisitation of issues previously studied and analyzed. We noted that project files are generally maintained in an ad hoc fashion and do not fully and easily capture important decisions and conclusions. In particular, we are concerned that project files do not clearly indicate the resolution of issues.

31.65 In Bangkok, departmental officials expressed concerns over a lease signed in 1995 relating to fixtures and furniture for the official residence. During our field visit, we noted that the project files did not indicate whether these concerns had been addressed. In the case of the New Delhi official residence, various options had been presented and discussed for the development of this site prior to the recent renovation. However, we noted that important information supporting the decision was not documented in the project files.

Conclusion

The projects were successfully implemented, but better planning and analysis of options are required

31.66 Our audit findings and observations relate only to the projects examined. Although the findings seem to point to some systemic planning weaknesses that should be investigated by management, we did not audit the

We conclude that the facilities meet the users' stated requirements.

Physical Resources Bureau, the Geographic Branches or the missions in their entirety. We conclude that the facilities meet the users' stated requirements. Officials at the missions we visited generally expressed a high level of satisfaction with their new accommodation. They believe that the facilities enable them to better deliver their programs and have improved staff morale. Overall, the projects were delivered within approved budgets and project schedules. We also noted several positive initiatives to address environmental concerns.

31.67 Capital projects commit the Crown to large one-time capital expenditures and often to even greater ongoing operating and maintenance costs over the life of the asset. It is therefore crucial that reliable estimates of the projects' total costs be provided to senior management and the Treasury Board before the projects become committed. It is equally important that all reasonable options for significant cost savings be explored and reported to senior management and the Treasury Board. We noted weaknesses in both these areas.

31.68 The quality of analysis and documentation used to support investment decisions fell short of that required by the Department's own policies and established methodologies for managing capital projects. The Physical Resources Bureau needs to further improve the way it tracks and reports project costs and budget variances. In addition, we noted two instances in which the Department had exceeded its delegated contracting authority and the Treasury Board approval was granted retroactively. Recent internal audits of three capital projects have

identified similar concerns about the Department's project management practices. In our opinion, all of the above-noted factors may have resulted in additional costs ranging from at least \$8 million to \$15 million over a 20-year period.

31.69 The Physical Resources Bureau has taken initiatives in the past few years to improve its project management systems and practices. We would expect that the Bureau would take into account in its management improvement initiatives the concerns raised by this audit as well as those raised by the Department's Office of the Inspector General. We also encourage the Inspector General to continue to give priority to this aspect of the Department's operations. We plan to monitor future projects delivered by the Physical Resources Bureau and report to Parliament, as appropriate.

Department's overall response: The Department agrees with the Auditor General's recommendations. Project delivery performance has focussed on ensuring that projects are viable and justified based on final cost estimates prior to proceeding. However, preliminary cost estimates have sometimes failed to predict the evolution of program requirements, or market forces during subsequent project planning stages.

The Department will continue to re-evaluate the rationale for capital projects whenever cost estimates change and, as in the case of Seoul, whenever indicated by volatile local property markets.

Project documentation, investment analysis, and reporting to the Treasury Board will continue to be improved.



About the Audit

Objectives

The objectives of the audit were to determine whether the selected facilities meet the clients' requirements and Treasury Board approvals, and whether they were planned and implemented with due regard to economy and efficiency, taking into account environmental considerations.

Scope

We examined the major aspects of the selected projects from the perspective of generally accepted practices of good project planning and implementation. Specifically, we reviewed the needs definition and statement of requirements, options analysis, project definition and approval, design and contracting, construction and commissioning phases, as appropriate. Our review of departmental program issues was limited to obtaining a general understanding of the program requirements that the new facilities were designed to meet. Except for their role in the projects examined, we did not audit the Physical Resources Bureau, the Geographic Branches or the missions. The commissioning phase for the Geneva chancery had not been completed by the end of our field work.

Criteria

Our audit criteria were derived from the established methodologies of the Office of the Auditor General for auditing capital asset projects and from the Treasury Board policies for managing capital projects. We also took into account the Physical Resources Bureau's Project Delivery System that elaborates on Treasury Board policies for managing capital projects.

Approach

We interviewed most of the key departmental program and project officials and reviewed relevant project files and documents. Our fieldwork included site visits to all of the projects. During our site visits, we also looked at several projects completed for other countries.

Audit Team

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The Department of Foreign Affairs and International Trade provided the following action plan in response to our recommendations.

THE DEPARTMENT'S ACTION PLAN

The Department will continue its ongoing improvements to the Property Program, including measures to address issues raised by the Auditor General.

- **The analysis of property options, and estimation of future projects costs, will be further improved:**
 - The practice, begun in 1996, of contracting with internationally experienced quantity surveyors to obtain independent project cost estimates will be continued.
 - In November 1999, the Department will call for expressions of interest to provide cost estimation services through standing offers.
 - Implementation of the recommendations in the March 1999 independent review of the investment analysis methodology will be continued.
 - In January 2000, the Department will complete its revised guidelines for conducting feasibility studies.
- **The Department will examine methods for calculating and reporting the overhead costs of project administration.**
- **Best practices for reporting of project performance and documentation will continue to be introduced:**
 - In February 1999, electronic project files were established for new projects.
 - In late 1999, the “Project Systems” module in the Department’s new integrated financial management system will be implemented.
- **An updated guide to Treasury Board contracting and financial authorities will be disseminated within the Department, and progress on the Action Plan will be reported to the Treasury Board in 2000.**