

June 2006

EMBASSY CONSTRUCTION

State Has Made
Progress Constructing
New Embassies, but
Better Planning Is
Needed for Operations
and Maintenance
Requirements



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Highlights

Highlights of [GAO-06-641](#), a report to the Chairman, Committee on Foreign Relations, U.S. Senate

Why GAO Did This Study

In response to 2 bombings of U.S. embassies in Africa in 1998, the Department of State embarked on a \$21 billion program to replace 201 insecure and dilapidated diplomatic facilities. In November 2004, GAO reported that State's Bureau of Overseas Buildings Operations (OBO), which manages the construction program, had implemented reforms to its planning, design, construction, and funding processes designed to expedite the construction process and prevent cost overruns that were common to previous State diplomatic construction programs. This report updates GAO's earlier report, by discussing OBO's completion rates and costs for embassy construction projects and the impact the reforms and other factors have on completion rates. It also discusses the changes in the costs for operating and maintaining these new facilities.

What GAO Recommends

GAO recommends that the Secretary of State develop an integrated and comprehensive facilities plan that clearly specifies the immediate and long-term resource needs for operating and maintaining new embassy compounds.

We received comments from the Department of State, which generally agreed with our findings and reported that it plans to implement our recommendation. State's comments are reprinted in appendix III.

www.gao.gov/cgi-bin/getrpt?GAO-06-641.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Jess T. Ford at (202) 512-4128 or fordj@gao.gov or Terrell G. Dorn at (202) 512-6923 or dorn@gao.gov.

EMBASSY CONSTRUCTION

State Has Made Progress Constructing New Embassies, but Better Planning Is Needed for Operations and Maintenance Requirements

What GAO Found

State has made significant progress constructing new embassy compounds (NEC). The average time to design and construct the 18 embassies and consulates completed from 1999 to 2005 is nearly 3 years faster than for embassies built during the 1980s and 1990s, despite these new facilities being significantly larger and more complex. Although only half of the 18 projects were completed according to planned schedules, 15 of the 18 NECs were opened ahead of, on, or within 1 month after their scheduled move-in dates, and approximately 8,700 U.S. government employees were relocated to these secure and modern facilities. Construction costs for 14 of the 18 completed projects were significantly lower than budget estimates OBO provided to Congress. Strategic and procedural reforms implemented by State, including elevating the former Foreign Buildings Office to bureau status, switching to the design-build contract delivery method, and developing a standard embassy design have had a cumulative positive effect on project cycle times; however, it is still difficult to quantify the effects of any single reform. GAO found that factors specific to individual projects affected OBO's ability to complete work on time and on budget, including the experience levels of OBO and contractors' projects teams, unforeseen conditions at construction sites, and weather conditions, among others.

Due to increased size and complexity, annual operations and maintenance costs for NECs are significantly greater than the costs for previous locations; once all 201 NECs are completed, annual operations and maintenance costs could increase by at least \$111 million, and possibly several times more. These costs include increases in utility usage; the need to hire highly qualified technical staff; new maintenance needs; and costly equipment, supplies, and spare parts. State does not clearly identify the projected operations and maintenance costs for NECs it builds. Thus, there is currently no mechanism that allows decision makers to determine whether NEC operations and maintenance needs are being adequately planned for and funded. A lack of a comprehensive long-term plan that clearly identifies the significant increases in resources that are likely to be needed as more NECs come online could increase the risk of earlier-than-expected deterioration of NECs.

Previous and New U.S. Embassy in Zagreb, Croatia



Source: U.S. Department of State.

Previous embassy



New embassy

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Abbreviations

FBO	Office of Foreign Buildings Operations
FEBR	Forced Entry and Ballistic Resistant
ICASS	International Cooperative Administrative Support Services
NEC	New Embassy (or Consulate) Compound
OBO	Bureau of Overseas Buildings Operations
USAID	U.S. Agency for International Development

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United States Government Accountability Office
Washington, DC 20548

June 30, 2006

The Honorable Richard G. Lugar
Chairman
Committee on Foreign Relations
United States Senate

Dear Mr. Chairman:

In 1999, the Department of State (State) began the Capital Security Construction Program, an unprecedented \$21 billion, multiyear program to construct 201 new embassies and consulates. This program was developed in response to the 1998 embassy bombings in Kenya and Tanzania that killed 220 people and injured thousands more. The program's primary goal is to provide secure, safe, and functional workplace facilities for all employees assigned to U.S. overseas posts. This goal is designed to implement the Secure Embassy Construction and Counterterrorism Act of 1999, which requires that new diplomatic facilities abroad be sufficiently sized to ensure that all U.S. government personnel at the post are located on-site unless security conditions permit otherwise and it is within U.S. national interests to locate personnel outside the new facility.¹ State's Bureau of Overseas Buildings Operations (OBO), which operates the program, also intends that these new embassy and consulate compounds (NEC) are efficient, state-of-the-art office buildings.

In the past, we have reported on the significant construction delays and cost overruns associated with previous embassy construction efforts. This report addresses (1) the progress OBO has made in completing embassy and consulate construction projects according to planned schedules and budgets and (2) whether posts are prepared to operate and maintain the new facilities.

To complete our work, we reviewed the report of the Overseas Presence Advisory Panel,² previous GAO reports on State's embassy construction

¹See 22 U.S.C. § 4865, "Security Requirements for United States Diplomatic Facilities."

²Former Secretary of State, Madeleine Albright, established the Overseas Presence Advisory Panel following the 1998 embassy bombings in Africa. Department of State, *America's Overseas Presence in the 21st Century, the Report of the Overseas Presence Advisory Panel* (Washington, D.C.: November 1999).

programs, OBO's past five annual Long-Range Overseas Buildings Plans, the files of 18 completed projects, and the monthly program performance updates and documents of more than 20 ongoing projects. To track OBO's performance in completing construction projects on time and on budget, we developed and analyzed a database containing planned and actual project schedule and cost data, which were obtained from individual construction project files. We interviewed key State officials in Washington on the planning for and adequacy of NECs, and we met with contractors currently involved in construction projects to discuss OBO's reforms to the planning and construction processes. We also visited nine posts with either ongoing or completed construction projects to observe the construction process, solicit views of State and the contractors' field staff, and review posts' plans for operating and maintaining the new facilities.³ We performed our work from January 2005 to June 2006 in accordance with generally accepted government auditing standards. Appendix I provides more information on our scope and methodology.

Results in Brief

State has made significant progress in completing new embassy and consulate compounds in a timely manner and according to planned costs. From 1999 to the end of calendar year 2005, State completed construction of 18 embassies and consulates at a cost of approximately \$1.3 billion. Despite the increased size and complexity of the modern facilities it constructs, State has significantly reduced the time it takes to complete construction of NECs over past programs. In addition, although only one-half of State's construction projects were completed according to the contractual schedules, all but three were sufficiently completed to allow posts to occupy their respective facilities on, ahead of, or within 1 month after the scheduled move-in date. As a result, approximately 8,700 U.S. government employees now work in safe, secure, and modern office buildings. Moreover, actual construction costs for most completed projects were significantly lower than the funding levels OBO reported as needed for those projects. Although it is too early to fully assess schedule performance and costs of yet-to-be-completed projects, we noted that six of the nine ongoing NEC projects scheduled for completion in 2006 are currently behind schedule and three of the nine projects are currently estimated to cost more than originally intended. However, OBO reported

³The posts visited included U.S. embassies in Abuja, Nigeria; Bamako, Mali; Conakry, Guinea; Kingston, Jamaica; Luanda, Angola; Phnom Penh, Cambodia; Tbilisi, Georgia; and Tunis, Tunisia; and the U.S. consulate in Cape Town, South Africa. We also met with the OBO project director for the Tashkent, Uzbekistan NEC project.

that it has taken actions to mitigate the impact of these delays, and, in the case of the three projects estimated to exceed original cost estimates, that it has notified Congress of the need to reprogram funds as a result of higher-than-expected contractor costs for two projects and the need to pay workforce remobilization costs to complete the third project. OBO and contractors' staff reported that strategic and procedural reforms implemented by State—including transforming the former Office of Foreign Buildings Operations (FBO) to the Bureau of Overseas Buildings Operations, switching to the design-build contract delivery method,⁴ and developing a standard embassy design—have had a cumulative positive effect on project cycle times; however, it is difficult to quantify the effects of any single reform. We found that other factors specific to individual projects also affected OBO's ability to complete work on time and on budget, such as the timeliness of procurement and delivery of materials; conditions at the project site; political and social conditions in the host nation; staffing and labor issues; and climatic and environmental conditions.

Operations and maintenance costs for newly constructed embassies and consulates are significantly higher than the operations and maintenance costs for facilities they replaced. We estimate that once all 201 NECs are completed, these total annual operations and maintenance costs, adjusted to 2006 constant dollars, could increase by \$111 million over those posts' previous facilities, and possibly by several times more. According to analyses of data from the International Cooperative Administrative Support Services (ICASS) system, OBO staff, and post officials, these cost increases are driven in part by technical security requirements that resulted in greater utility consumption, the need for highly qualified technical staff, and new maintenance requirements that posts did not have at their previous locations. State initially did not recognize the magnitude of new costs for the day-to-day functional requirements of NECs, but State subsequently developed guidance for posts to help determine the notional staffing and financial resources for individual NECs. However, State has not developed a clear budgetary line item to project operations and maintenance costs. Currently, these costs are intermingled with domestic and other nonfacilities-related administrative costs among several accounts, and no mechanism exists for determining how global costs for

⁴The design-build contract delivery method reduces project cycle time by combining design and construction in a single contract award and allows contractors to begin construction before the building design is complete.

operations and maintenance will increase in the long-term. Thus, decision makers cannot determine whether NEC operations and maintenance needs are being adequately planned for and funded. In the past, GAO and others noted that inadequate funding for operations and maintenance of overseas posts led to unsafe, insecure, and dilapidated embassies. A lack of a comprehensive long-term plan that clearly identifies the significant increases in resources that are likely to be needed as more NECs come online could increase the risk of earlier-than-expected deterioration of NECs.

To protect the \$21 billion investment in these new facilities, this report contains a recommendation that the Secretary of State develop an integrated and comprehensive facilities plan that clearly specifies the financial and human resources needed for meeting the immediate and long-term operations and maintenance requirements for new embassy compounds.

We received written comments from the State, which are reprinted in appendix III. The department generally agreed with our findings and conclusions. Moreover, State reported that it supports and would take the necessary steps to address our recommendation. State also provided technical comments, which were incorporated throughout the report, as appropriate.

Background

In the wake of three bombings at U.S. facilities in Beirut, Lebanon—the U.S. Embassy in April 1983, the Marine barracks in October 1983, and the U.S. Embassy Annex in September 1984—then Secretary of State George P. Schultz convened the Advisory Panel on Overseas Security to review security issues at U.S. overseas facilities. Among the panel’s many suggestions for improving security for U.S. overseas missions and employees, it recommended that the chanceries, consulates, and other office buildings at 126 of the 262 overseas posts be replaced due to security conditions and their locations. In 1987, State estimated that under the resulting Diplomatic Security Construction Program—also known as “the Inman Program” after the head of the Advisory Panel, Rear Admiral Bobby Inman (Ret.)—it could complete construction of 57 new office buildings and other capital projects for approximately \$2.1 billion. In November 1991, however, we reported that the program was characterized by funding shortfalls, construction delays, and cost increases, and State

ultimately completed only 24 of the 57 planned new office buildings under the program.⁵ From 1994 to 1998, Congress appropriated \$134 million for security-related capital projects,⁶ although not all of this money was targeted to the construction of new embassies or consulates.

Capital Security Construction Program

On August 7, 1998, terrorist bombings at the U.S. Embassies in Nairobi, Kenya, and Dar es Salaam, Tanzania, killed more than 220 people and injured 4,000 others. Among the dead were 12 American U.S. government employees and family members, in addition to 32 Kenyan and 8 Tanzanian nationals working at those embassies. In January 1999, the Accountability Review Boards, formed to investigate the bombings, reported that unless security vulnerabilities at U.S. embassies and consulates were addressed, “U.S. government employees and the public in many of our facilities abroad” would remain at risk from terrorist bombings.⁷ The board also noted more than 200 attacks at U.S. diplomatic facilities from 1987 to 1997. Also in 1999, the Overseas Presence Advisory Panel reported on the unsafe, overcrowded, deteriorating, and “shockingly shabby” conditions of U.S. embassies and consulates. Both the board and the panel recommended that State embark on a multiyear, multibillion dollar program to replace insecure and aging diplomatic facilities worldwide. This new effort was named the Capital Security Construction Program.

Annual Costs and Production

In October 1998, Congress appropriated \$627 million for reestablishing embassies in Kenya and Tanzania, relocating other high-risk embassies

⁵GAO, *State Department: Management Weaknesses in the Security Construction Program*, [GAO/NSIAD-92-2](#) (Washington, D.C.: Nov. 29, 1991) and GAO, *State Department, Status of the Diplomatic Security Construction Program*, [GAO/NSIAD-91-143BR](#) (Washington, D.C.: Feb. 20, 1991).

⁶Congressional Research Service, *Embassy Security: Background, Funding, and the Budget*, RL 30662 (Washington, D.C.: Oct. 4, 2001).

⁷This board was appointed by former Secretary of State Madeleine Albright to investigate the facts and circumstances surrounding the 1998 embassy bombings. See Department of State, *Report of the Accountability Review Boards on the Embassy Bombings in Nairobi, Kenya and Dar es Salaam, Tanzania on August 7, 1998* (Washington, D.C.: Jan. 1999), and Admiral William J. Crowe, *Press Briefing on the Report of the Accountability Review Boards on the Embassy Bombings in Nairobi and Dar es Salaam* (Washington, D.C.: Jan. 8, 1999).

and consulates, and improving security at embassies and consulates worldwide.⁸ From fiscal year 1999 to the end of calendar year 2005, State

- obligated a total of \$3.1 billion for the construction of 40 NECs;⁹ and
- completed 18 NEC projects through the end of calendar year 2005, at a cost of approximately \$1.3 billion.¹⁰

As of year-end 2005, State had 22 ongoing NEC projects, 9 of which are scheduled for completion by year-end 2006. From 2009 to 2018, State expects an average annual funding level of approximately \$1.4 billion for NEC projects. In total, State plans to build 201 NECs under the Capital Security Construction Program.

Compound Features and Requirements

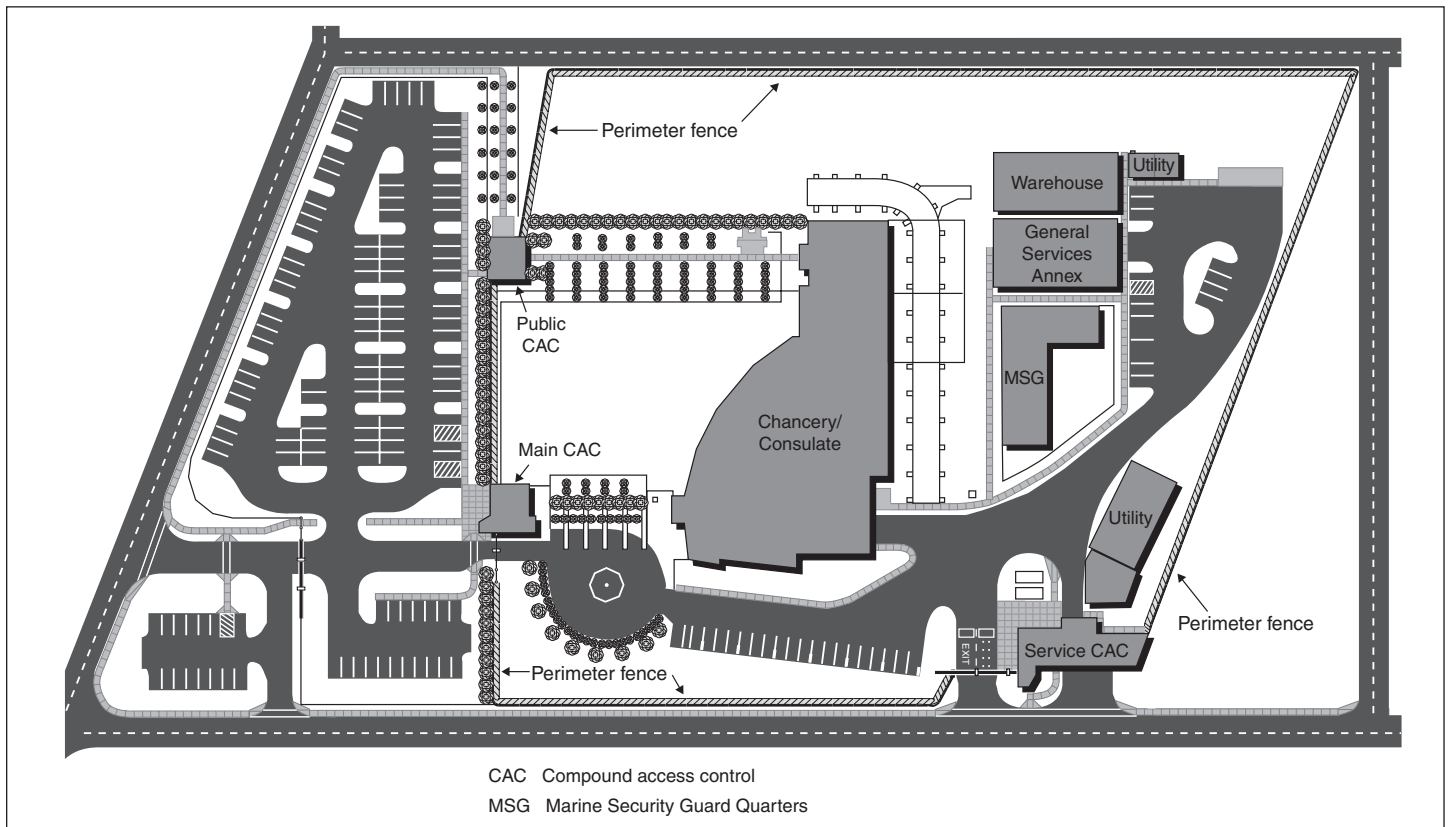
NECs generally consist of a chancery or consulate building, compound access control buildings, utility buildings housing the mechanical and electrical systems that operate the compound, Marine Security Guard quarters (if a post has a Marine contingent), and an antiram/antitomb perimeter fence (see fig. 1). Depending on the site, the project budget, and the needs of the post, a new compound could also include a General Services support annex, a warehouse, maintenance shops, recreation facilities, and employee and public parking areas. Some compounds also include an annex building for USAID or other program or agency functions that do not require access to secure areas. On rare occasions, the new compounds may also include housing units for post employees, although these units are generally only located in high security-risk locations, such as Kabul, Afghanistan.

⁸Omnibus Consolidated and Emergency Supplemental Appropriations Act of 1999, Pub. L. No. 105-277, 112 Stat. 2681 (1998).

⁹Only NEC projects funded under the capital security construction fund were included in this total. The cited obligation does not include funds budgeted for Embassies Baghdad and Beijing, which combined are estimated at more than \$1 billion. Since 1999, State has also constructed nine annexes on existing diplomatic compounds, four interim office buildings, four fit-outs of newly acquired buildings, several major rehabilitation projects, and \$100 million in compound security projects.

¹⁰Total costs for these NEC projects include the costs for site acquisition, design, construction, security equipment, furniture and furnishings, and project supervision. Reimbursements from other agencies are not included in the total costs.

Figure 1: Features of a Notional NEC (without USAID annex)



Source: GAO synthesis of OBO documents.

NECs must comply with the physical security and collocation requirements of the Secure Embassy Construction and Counterterrorism Act of 1999.¹¹ The act requires that, in site selection, the Secretary of State shall ensure that all U.S. government personnel under the authority of a chief of mission, including foreign national employees, be colocated onto a single compound. In addition, all buildings on NECs must meet stringent security standards for setback and blast resistance. However, according to State officials and the *Foreign Affairs Handbook*, only those buildings where U.S. government personnel will be stationed are required to be on compound. Buildings that do not contain desk space for employees or in

¹¹Consolidated Appropriations Act of 2000, Pub. L. No. 106-113, Div. B, sec. 1000(a)(7), 113 Stat. 1536 (1999). State elaborates on these requirements in the U.S. Department of State *Foreign Affairs Handbook*, 12 FAH-5.

Reforms to the Construction Process

which employees are not permanently located, such as warehouses, need not be on the new compound.

In 1991, we reported that State was unable to complete as many projects as originally planned under the Inman Program due to systemic weaknesses in program management and funding limitations.¹² We also reported that this program suffered from delays and cost increases due to poor program planning, difficulties acquiring sites, changes in security requirements, and inadequate contractor performance.

In November 2003, we reported on a number of organizational and managerial reforms to State's current capital construction process.¹³ These reforms, which were designed to reduce the construction cycle times and costs, include the following:

- the transformation of the Office of Foreign Buildings Operations to the Bureau of Overseas Buildings Operations with responsibility for all capital construction and maintenance operations at U.S. diplomatic facilities at home and abroad;
- the development of the Long-Range Overseas Buildings Plan, which prioritizes and summarizes capital construction projects over a 6-year cycle;
- efforts to standardize the planning, design, and construction processes, including eliminating the use of design-bid-build contract delivery in favor of design-build contract delivery—and the development of a standardized design for most new embassy and consulate compound projects (see fig. 2);
- monthly project status reviews in Washington, where senior OBO managers meet to discuss ongoing projects and resolve issues that could adversely impact construction schedules and costs;
- quarterly meetings of an Industry Advisory Panel, which advises OBO on industry best practices in the construction sector;

¹²GAO/NSIAD-92-2.

¹³GAO, *Embassy Construction: State Department Has Implemented Management Reforms, but Challenges Remain* GAO-04-100, (Washington, D.C.: Nov. 4, 2003).

-
- advance identification and acquisition of sites; and
 - additional training for OBO headquarters and field staff.

Figure 2: Construction of the Standard-design New Embassy Compound in Tbilisi, Georgia



Source: U.S. Department of State.

State Has Made Significant Progress in Completing New Embassy and Consulate Compounds

State has reduced the average project cycle time by approximately 2 years and 9 months, compared with that for embassies built during the 1980s and early 1990s. Though only 9 of the 18 recently constructed compounds were completed according to contractual schedule requirements, 15 of the 18 projects were sufficiently completed to allow posts to occupy their respective facilities on, ahead of, or within 1 month after the scheduled move-in date, and State reported that, as of March 31, 2006, approximately 8,700 U.S. government employees had been relocated to new, safe, and secure facilities. Actual NEC construction costs were most often significantly less than the estimates reported to Congress; however, in some cases, projects were completed outside the official NEC project and, therefore, the total cost was not captured. Although it is too early to fully assess schedule performance and costs of yet-to-be-completed projects, we noted that six of the nine NEC projects scheduled for completion in 2006 are currently behind schedule and that three of the nine projects are currently estimated to cost more than originally intended. However, OBO

reported that it has taken actions to mitigate the impact of these delays, and that it has notified Congress of the need to reprogram funds as a result of higher-than-expected contractor bids for two projects and the need to remobilize a workforce to complete a third project. Strategic and procedural reforms implemented by State—including the creation of OBO, the implementation of performance management and strategic planning principles, and the use of the design-build contract delivery method and a standard embassy design—resulted in reduced project cycle times and costs. However, due to the small numbers of projects, it is difficult to quantify the specific effects of any one reform. Many factors influence OBO’s ability to complete construction on time and on budget, such as the timeliness of procurement and delivery of materials; conditions at the project site; political and social conditions in the host nation; staffing and labor issues; and climatic and environmental conditions.

Overall Project Cycle Time Was Greatly Reduced Compared with Past Programs, but Performance Measured against Project Schedule Requirements Is Mixed

Depending on the benchmark used, OBO’s performance varied in completing NEC projects on schedule. We examined three performance indicators for timeliness: (1) total project cycle time, which we defined as the number of months from the start of the design phase to construction completion; (2) whether construction was completed according to contractual requirements; and (3) whether posts occupied the new compounds by the planned occupancy date.

Average Construction Cycle Time Was Significantly Reduced

We compared the cycle times for the 18 projects completed under the current program with projects completed during the late 1980s and early 1990s. In November 1991, we reported that 11 of the projects then ongoing had completion dates extended by 14 to 54 months. Moreover, OBO reported, according to FBO records, that the average cycle time for 13 embassy construction projects completed from 1986 to 1991 was 69.4 months. In contrast, the average cycle time for the 18 completed projects under the current program was 36.7 months, approximately 2 years and 9 months less than the average cycle time State reported for the earlier projects. State officials stated that these reductions are even more impressive, given that the scopes of work under the current effort, consisting of multistructure compounds, are significantly larger and more complex than facilities constructed during the Inman program, which consisted of single buildings. Moreover, State intends to reduce cycle times even further. In November 2003, we reported that State established new performance targets for project cycle times based on the size of the NEC. Although individual contract requirements may result in slightly

different authorized project durations, since fiscal year 2003 State now targets design and construction cycle times to average 15 months for small NECs, 24 months for medium-sized NECs, and 28 months for large NECs.¹⁴ Construction industry representatives and contractors with whom we met stated they have concerns over whether these shorter cycle times can be met. They indicated that the new time frames increase performance risks for them, which could expose them to financial losses and result in higher future bids. However, no NECs built to the new time frames have yet been completed. Thus, it is too early to determine the effect of the reduced timeframes on contractor performance, or to assess the impact the new timeframes may have on contract costs.

Performance Measured against Contractual Schedule Requirements Is Mixed

Based on the requirements set forth in the construction contracts, however, State's record in completing construction projects according to planned schedules was mixed, with some projects completed significantly ahead of schedule and others delivered substantially behind.¹⁵ Figure 3 shows that construction for 9 of the 18 completed NEC construction projects was finished on or before the planned construction completion date.¹⁶ Of the remaining nine projects, two were completed within 1 month after the planned completion date, three within 1 to 3 months after the planned date, and four within 3 to 6 months after the planned completion dates. State officials said that when contractors are late the department assesses liquidated damages.¹⁷ As of April 2006, OBO had collected or assessed approximately \$2.4 million in liquidated damages.

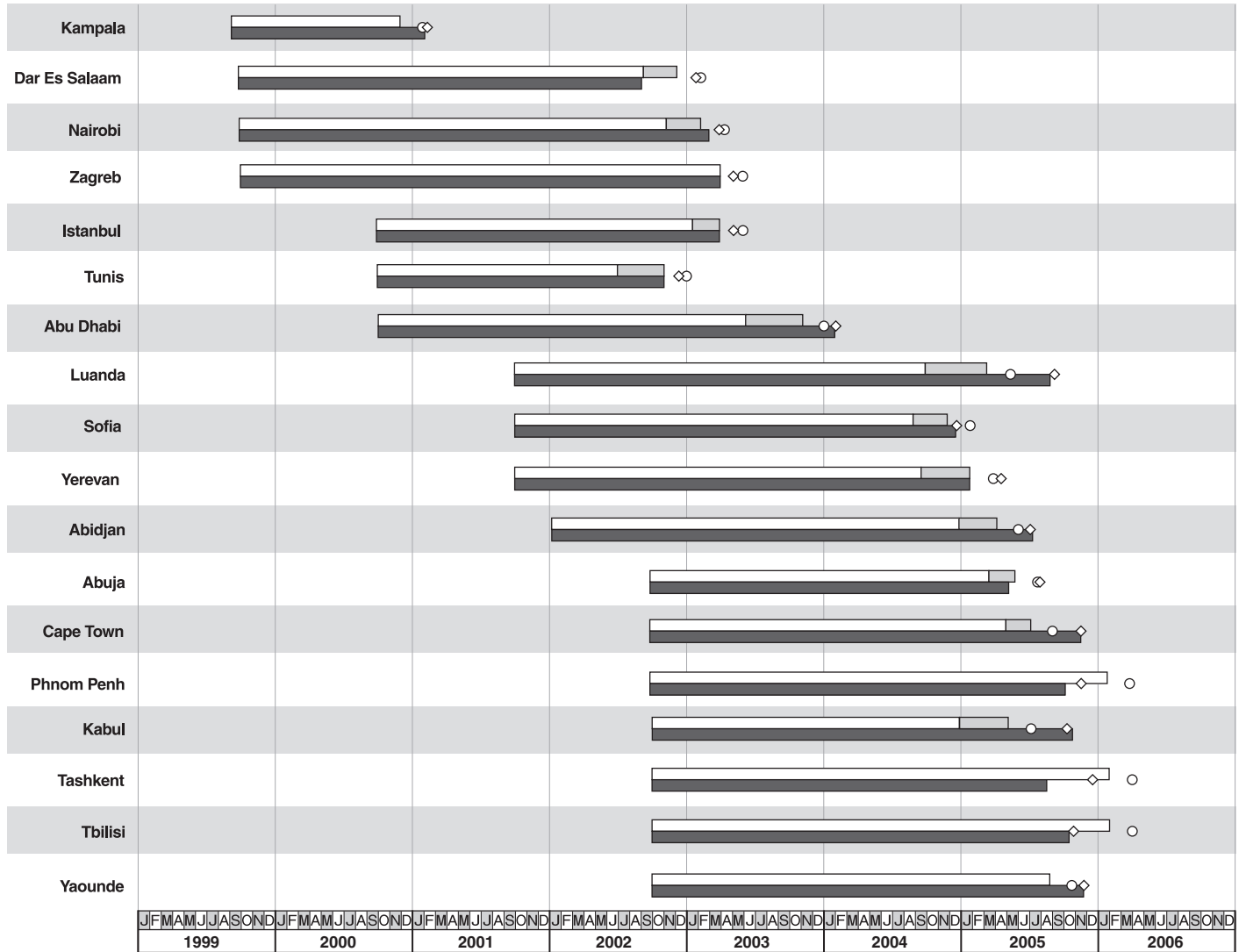
¹⁴The 18 completed NEC projects cited above began between 1999 to 2002, and thus were not held to the new average cycle time requirements.

¹⁵The terms of each construction award specify the time frame that contractors have to complete the requirements of the contract.

¹⁶For the contract completion date, we used the "substantial completion" date, which is the date that OBO certifies a contractor has met all requirements of the contract, although minor items may still need completion. For planned completion dates, we used the original dates set forth in the contract unless a contract modification resulted in a time extension.

¹⁷Liquidated damages provisions essentially provide for a contractor to pay a specified amount (typically on a per-diem basis) for failing to perform some element of the contract. Such provisions are typically tied to maintaining contract schedule, with the contractor bearing a stipulated daily cost for failing to meet the schedule by reason of its inadequate performance.

Figure 3: Comparison of Planned and Actual Contract Completion, and Planned and Actual Occupation Dates of New Embassy Compounds



- Original duration
- Time extension
- Actual duration
- Certificate of occupancy (planned)
- ◇ Certificate of occupancy (actual)

Source: U.S. Department of State, Bureau of Overseas Buildings Operations NEC Project Files.

We also reviewed schedule performance for the nine ongoing projects that OBO plans to complete during calendar year 2006, as presented in OBO's April 2006 Program Performance Review meeting.¹⁸ At the time of the meeting, six of the nine projects were already behind schedule or exhibited signs of missing their scheduled completion dates. Reasons for some of the delays were provided in the projects' monthly summaries. For example, terminating the contractor for cause shut down the Dushanbe, Tajikistan, NEC project for many months. As a result, the project is currently expected to be more than 23 months late. OBO recently awarded a construction contract to a new contractor and expects to complete construction for post occupancy by July 2006. OBO reported that, as of March 31, 2006, construction of the Astana, Kazakhstan, NEC was 25 days past its scheduled completion date and that the project would likely be more than 9 months late when completed. OBO also reported that construction of the Kingston, Jamaica, NEC would likely be delayed by more than 5 months and that the Bamako, Mali, and Freetown, Sierra Leone, NEC projects would likely miss their scheduled completion dates by approximately 1 month. Finally, OBO reported that construction of the Conakry, Guinea, NEC was certified as substantially complete on March 16, 2006, 31 days past its scheduled completion date. OBO said it has taken actions to address delays with these projects, including revising contract schedules; providing time extensions, where warranted; withholding payments until projects are back on schedule; assessing liquidated damages; accelerating work plans; and adding personnel to the site. In addition, contractors for some of the NEC projects requested contract modifications for time extensions. At the time of the April 2006 meeting, no delays were considered likely or foreseen for the NEC projects in Belmopan, Belize; Lome, Togo; and Managua, Nicaragua.

Posts Occupied NECs on,
ahead of, or within a Month of
Schedule

While it is important to consider performance against contractual requirements, the purpose of the program is to move staff into safe, secure, and functional facilities as quickly as possible; therefore, we also compared the planned and actual building occupancy dates. State officials reported that, between completion of construction and occupancy, a 60-day facilities accreditation process must take place, involving certification of the mechanical, electrical, and security systems, and other requirements for the compound. Once all systems within the compound are deemed functional, and the security, safety, and construction requirements are

¹⁸This Program Performance Review Meeting was held from April 25 to 26, 2006, and reviewed project data, as of March 31, 2006.

met, posts may occupy the new compound. Nine of the 18 completed NECs were certified for occupancy ahead of schedule, and another 6 posts occupied their new compounds within approximately 1 month past their expected occupation date. Only three posts were occupied significantly later than planned. OBO reported that, as of March 31, 2006, approximately 8,700 U.S. government employees had been relocated to new, safe, secure, and functional facilities, and it plans to relocate another 3,400 by the end of this calendar year.

Most Projects Were Completed within Planned Funding Levels; However, Work beyond Original Project Scopes Required Additional Funds

Actual costs for all but 4 of 18 completed NEC projects were significantly less than State's cost estimates. However, construction outside the original NEC project scope adds to the total cost of construction at the 18 NEC sites. In addition, as of April 2006, six of the nine ongoing NEC projects were within OBO's budget parameter, while three ongoing projects showed signs of cost growth.

Most Project Costs Lower than State's Estimates

We compared the actual total project costs for State's 18 completed NEC projects with the estimated total project funds that State told Congress it would need to complete those projects,¹⁹ and we found that actual costs for 14 of the 18 projects were significantly less than State's cost estimates (see table 1). Actual obligations for these 14 projects ranged from about 5 to 33 percent less than what State had reported to Congress concerning the amount that would be needed to complete construction. Reasons given for these lower-than-expected costs varied, including the following:

- Contractors bundled proposals for multiple projects. OBO reported that on five occasions it awarded contracts based on combined proposals, including for Dar es Salaam and Nairobi; Yerevan, Armenia, and Sofia, Bulgaria; Tunis, Tunisia, and Kampala, Uganda; Tbilisi, Georgia, and Tashkent, Uzbekistan; and the ongoing projects in Lome, Togo, and Accra, Ghana. These bundled proposals allowed the contractor to create an economy of scale, thereby allowing State to award the combined projects at a lower cost than the estimated sum of the individual projects.

¹⁹Data for estimated total project costs derive from notifications to Congress of State's intent to obligate funds for embassy and consulate construction. These notifications were addressed to the Chairmen of the Subcommittee on Commerce, Justice, State, the Judiciary, and Related Agencies, Committee on Appropriations, House of Representatives.

- Competition among contractors sometimes resulted in aggressive proposals at less cost than the government estimated.
- OBO's policy to limit changes to project scopes resulted in fewer cost increases.
- Removal of certain facilities or features from the project scopes reduced overall costs; however, sometimes these costs reappeared in the form of secondary construction projects outside the scope of the NEC project.

In some cases, construction and fit-out of certain facilities outside the scope of the NEC contract resulted in additional costs for completing all facilities on the new compound. The need for additional construction derived from multiple sources, including security requirements established after construction of the NEC began, nonconcurrent appropriations that funded USAID facility construction,²⁰ and certain items that were either removed from the original scope of work or deferred for later construction.

Table 1: Estimated and Actual Total Project Costs for Completed NEC Projects

Dollars in millions

Project	Project execution year (FY)	Congressional notification estimate	Actual costs ^a	Variance	Percent from estimated level
Dar es Salaam	1999	\$51.2	\$51.9	\$0.7	1.3%
Kampala	1999	\$32.5	\$36.2	\$3.7	11.3%
Nairobi	1999	\$67.8	\$60.4	-\$7.5	-11.0%
Tunis	1999	\$86.0	\$59.5	-\$26.5	-30.8%
Zagreb	1999	\$66.9	\$63.3	-\$3.6	-5.4%
Abu Dhabi	2000	\$93.0	\$64.0	-\$29.0	-31.2%
Istanbul	2000	\$83.2	\$76.3	-\$6.9	-8.3%
Luanda	2000	\$39.2	\$51.7	\$12.5	31.8%
Abidjan	2001	\$108.6	\$74.5	-\$34.1	-31.4%
Abuja	2001	\$69.5	\$63.6	-\$5.9	-8.5%
Sofia	2001	\$100.6	\$72.0	-\$28.6	-28.5%

²⁰At posts where USAID required more than 50 desks in the NEC, a USAID-funded annex was included in project scope. See GAO, *Embassy Construction: Achieving Concurrent Construction Would Help Reduce Costs and Meet Security Goals*, [GAO-04-952](#) (Washington, D.C.: Sept. 28, 2004).

Dollars in millions

Project	Project execution year (FY)	Congressional notification estimate	Actual costs ^a	Variance	Percent from estimated level
Yerevan	2001	\$79.6	\$68.1	-\$11.5	-14.5%
Cape Town	2002	\$71.9	\$48.1	-\$23.8	-33.1%
Kabul	2002	\$120.5	\$177.2	\$56.7	47.1%
Phnom Penh	2002	\$87.9	\$71.5	-\$16.4	-18.6%
Tashkent	2002	\$92.5	\$73.7	-\$18.8	-20.3%
Tbilisi	2002	\$87.2	\$75.6	-\$11.6	-13.3%
Yaounde	2002	\$79.8	\$65.0	-\$14.8	-18.6%
Total		\$1,418	\$1,252	-\$165.5	-11.67%

Source: Department of State.

Note: As of year-end 2005, Cape Town, Kabul, Luanda, Phnom Penh, Tashkent, Tbilisi, and Yaounde had pending claims for contract modifications that could change the value of actual obligations in the table.

^aThe congressional notification estimates and the actual costs do not include costs funded by other agencies. Reimbursements from other agencies totaled approximately \$22.7 million, which is primarily for furniture and equipment.

Actual costs for four projects were greater than the expected costs originally reported to Congress, with actual costs for three of them (Kabul, Kampala, and Luanda) being significantly greater than their expected costs. In the case of Kabul, OBO awarded a cost-plus-fixed-fee contract to construct a new embassy compound in September 2002. By February 2004, project costs had increased, and the schedule had slipped in part because, as State's Inspector General reported, the cost-plus-fixed-fee contract provided little incentive for the contractor to contain costs or complete construction according to schedule.²¹ As a result, in September 2004, OBO reprogrammed \$43.9 million previously allocated to construct a NEC in Surabaya, Indonesia, to the Kabul NEC project to cover the costs for converting the existing cost-plus-fixed-fee contract to a fixed-priced contract, as well as for completing construction requirements. Costs for the Luanda, Angola, project rose by approximately 32 percent due to a higher-than-anticipated contract award and to security-driven design changes. In Kampala, costs increased by more than 11 percent to resolve defective designs for the building's windows and the heating and

²¹U.S. Department of State and the Broadcasting Board of Governors, Office of Inspector General, *Report of Audit: Evaluation and Analysis of Cost/Schedule Data, Kabul Embassy Compound Project*, Report Number AUD/CG-04-34 (Washington, D.C.: July 2004).

ventilation system, as well as to compensate the contractor for construction delays resulting from the redesign efforts.

Overall, OBO obligated a net \$165.5 million less for these 18 projects than the amount it had reported to Congress it would need. OBO reprogrammed this net difference for alternative uses, including the following:

- Acquiring sites and conducting planning for NEC projects in future years.
- Providing additional funds for other projects. For example, in December 2005, State notified Congress of its intent to reprogram more than \$48 million in unused funds from nine completed NEC projects to enable the awarding of several fiscal year 2005 projects—NECs in Khartoum, Sudan; Mumbai, India; Quito, Ecuador; and the new annex building in Moscow, Russia—where winning proposals exceeded the government estimates. In addition, OBO notified Congress that it would reprogram \$13 million to restart construction at another post—Dushanbe, Tajikistan—where the previous contractor was terminated for cause.
- Accelerating funding of future year projects. For example, State reported that the new embassy compound in Freetown, Sierra Leone, was funded with approximately \$60 million in funds previously obligated, but not needed, for other NEC projects.

Construction Outside the NEC
Project Adds to Total
Construction Costs

OBO also obligated, or plans to obligate, additional funds for 9 of the 18 completed posts to construct facilities that were either not originally intended as part of the NEC or were deferred to future years. Some of these additional projects are USAID annexes for which USAID did not receive funding in time for concurrent construction with the rest of the NEC, and, as a result, deferred the projects to a later date.²² Construction for one USAID annex—Dar es Salaam—was conducted concurrent with, but under a different contract from, the NEC project. In addition, prior to 2002, quarters for Marine Security Guards were not required to be colocated on NECs, and the change in security requirements of embassy compounds was applied retroactively to newly constructed NECs. As a result, State was required to construct housing for posts' Marine Security

²²OBO reports that, in the future, USAID annexes will be funded through the Capital Security Cost Sharing Program.

Three Ongoing Projects Show Signs of Cost Growth While Six Are Within Budget Parameters

Guards at five of the completed NECs, thus raising their costs.²³ Finally, the additional construction accounts for other facilities identified as needed, but that were outside the original scope of the NEC project, such as a cafeteria, recreation center, warehouse, and health unit for the Kabul NEC; and an annex and the completion of the previously unfinished third floor at the Abuja, Nigeria, NEC. Construction costs for these additional projects is approximately \$168 million to date, including projects planned for fiscal year 2006, a 31 percent increase over the NEC project costs at these posts. Once all construction is complete, these additional projects increase the total cost of construction at the 18 NEC sites from approximately \$1.25 billion to approximately \$1.42 billion.

We also compared the current budget for the nine ongoing NEC projects with the budgets OBO had reported to Congress as being needed for these projects.²⁴ Three of the nine ongoing projects have thus far experienced cost increases ranging from approximately 6.5 to 16 percent over what OBO initially estimated it needed, while three projects were on budget and the remaining three projects were under budget by 4 to 8.5 percent. In total, costs for these nine projects have thus far increased by a net of approximately \$9.2 million.²⁵ The Dushanbe project has experienced a \$13 million increase attributable to remobilizing a workforce to complete the portions of the NEC that were unfinished when the original contractor was terminated in June 2005. In addition, OBO reported that costs increases to the Belmopan and Conakry NEC projects were due to higher-than-expected contractor bids, while decreased costs for Astana, Lome, and Managua are due to lower-than-expected contractor bids.

²³The five posts were Dar es Salaam, Tanzania; Istanbul, Turkey; Kampala, Uganda; Nairobi, Kenya; and Zagreb, Croatia. The \$13.2 million costs for these Marine houses include funding for Marine quarters at the U.S. Embassy in Doha, Qatar, which we could not disaggregate from the five NECs in our analysis.

²⁴Current budget, as reported at the April 2006 Program Performance Review Meeting.

²⁵OBO notified Congress of the need to reprogram funds for each of the three projects with higher-than-expected costs.

State and Contractor
Officials Attribute
Reductions in
Construction Cycle Time
and Costs to Reforms, but
Limited Data and
Indeterminate Factors
Make It Difficult to
Quantify the Effects of
Specific Reforms

Strategic Reforms

Strategic reforms cited as having the greatest impact include the elevation in status of the former Office of Foreign Buildings Operations to the Bureau of Overseas Buildings Operations, the implementation of performance-based management principles at the strategic and project level, and the development of the Long-Range Overseas Buildings Plan. Significant procedural reforms include the switch to the design-build contract delivery method and the establishment of a standard embassy design. In addition, State continues to examine its procedures for additional reforms to improve schedule performance and reduce costs of NEC projects. Other factors affecting project schedules and costs make it difficult to determine the effects of any one reform.

The elevation of the former Office of Foreign Buildings Operations to the Bureau of Overseas Buildings Operations was one of the most important reforms made by State related to reducing project cycle times and limiting cost increases. Elevation to bureau status allowed OBO to become the equal of the regional bureaus, and resulted in OBO and the regional bureaus and overseas posts having more of a traditional client-service provider type relationship. Prior to this reform FBO often subordinated its own responsibilities to the needs and desires of regional bureaus and posts. For example, many of the delays and cost overruns during the Inman program occurred because FBO did not reject change requests from regional bureaus and overseas posts. As a coequal, however, OBO can and does enforce a more disciplined process that discourages change orders that result in delays and cost increases. In fact, OBO considers project budgets to be locked once project funds are requested from Congress, and OBO will not request additional funds from Congress for those projects.

The second strategic reform that contributed significantly to improved performance was OBO's implementation of performance-based management principles at both the strategic and project level. OBO established specific and quantifiable strategic goals for the program that the Office of Management and Budget reported "clearly represent meaningful measurements of progress."²⁶ Moreover, OBO now integrates all affected parties into the strategic management of the program, as well as throughout all facets of individual projects. OBO also conducts monthly reviews of all ongoing capital projects, including those outside the Capital

²⁶Office of Management and Budget, *Program Assessment: Capital Security Construction Program*, <http://www.whitehouse.gov/omb/expectmore/detail.10000378.2005.html>, (Washington, D.C.: 2004).

Security Construction Program, which allows management to monitor performance and provide early warnings of potential problems.

A third strategic reform viewed as positively impacting the program was the development of the Long-Range Overseas Buildings Plan, which was first implemented in 2002 in response to our recommendations.²⁷ The plan, which is updated annually to ensure that future construction plans align with changing priorities and budget actions, outlines, justifies, and provides likely cost estimates for all capital projects over a 6-year time frame.²⁸ Contractors stated that the plan helps them develop long-term strategies for targeting projects for bidding, determining staffing needs, finding reliable suppliers that can meet OBO's standards, and developing relationships with foreign and domestic subcontractors. The plan also better allows regional bureaus to determine where to apply scarce resources for capital maintenance and provides a baseline from which posts can begin specific processes for prioritizing work and planning their staffing in advance of the NEC process.

Procedural Reforms

Contractors and OBO headquarters and project staff stated that the switch to design-build contract delivery and the development of the standard embassy design have had the greatest influence over cycle times and project costs of all the procedural reforms implemented under the current program. The design-build contract delivery method is designed to reduce project cycle time in two ways. First, it reduces the number of bidding and award cycles from two (one for design and one for construction) to one for both design and construction. Second, it allows the contractor to begin construction before the design is complete. Sixteen of the 18 projects utilized this contract delivery method. Contractors and OBO project directors believed the design-build project delivery method likely reduced total cycle times for their projects. However, contractors' field staff at some of the posts we visited stated they were sometimes unable to start construction as soon as they wanted. They said that construction, which was scheduled to begin when the total design was approximately one-third finished, was delayed until the Bureau of Diplomatic Security approved

²⁷GAO, *Embassy Construction: Better Long-term Planning Will Enhance Program Decision-making*, GAO-01-11 (Washington, D.C.: Jan. 22, 2001).

²⁸In addition to projects for the Capital Security Construction Program, the Long-Range Overseas Buildings Plan contains information on other types of capital construction projects, including major rehabilitations of existing facilities and strategic capital projects, such as the construction of a new facility in Taipei, Taiwan.

the full design for the buildings. In addition, the project director from the Phnom Penh project stated he could have reduced the project's cycle time by as much as 4 months if he had issued a notice to proceed with construction at the 35 percent design phase, the point at which designs for foundations are generally completed, rather than at the 60 percent design phase.

The standard embassy design is a tool that OBO reports better enables it to plan, award, design, and construct NECs; simplifies its construction process; and provides economically feasible facilities. The standard embassy design consists of a series of documents describing requirements for site selection, building plans and specifications, design criteria, site adaptation, and contract requirements. It also provides plans and requirements for all features of NECs, including office buildings, compound access control and utility buildings, housing for Marine security guards at posts with a Marine contingent, and perimeter fences. OBO believes that standard embassy designs help speed the planning, design, and construction of NECs by reducing the amount of time it takes to issue requests for proposals, prepare contract documents and issue awards, and complete design reviews.

Additional Reforms

State continues to examine its operations to discover ways to improve cycle times and reduce costs. In particular, OBO recently developed new ways to think toward achieving these goals, including proposed additional changes to the construction process. Some of these proposed additional process changes include the following:

- clarifying language in the Request for Proposal documents;
- ensuring, to the extent possible, that contractor and OBO project directors have the technical and management skills required to complete the projects on time and on budget;
- adapting the standard embassy design for NEC projects constructed from 2006 and beyond to make NECs more energy efficient and sustainable by applying a more rigorous value engineering process and adopting industry best practices; and
- providing guidance to posts on developing operations and maintenance plans.

Effects of Reforms Cannot Be Quantified

In November 2003, we reported that since no projects had been completed under the reformed processes, it was too early to determine the impact of

the reforms.²⁹ Taken as a whole, the reforms have greatly reduced the overall cycle time for constructing NECs. However, we are still unable to quantify with certainty the effects of specific reforms due to the relatively small number of projects completed under each reform. Although OBO has now completed eight standard-designed embassies and eight nonstandard-designed embassies delivered under the design-build contracting method, these totals are insufficient to complete meaningful quantitative analysis because they each are sensitive to statistical outliers. Moreover, accounting for factors outside the control of the reformed OBO processes, including the size and location of a new embassy, among others, requires that projects be categorized into even smaller subgroups. As a result, comparison of these differing categories becomes even more susceptible to the effects of statistical outliers.

Various Factors Affect Project Schedules and Costs

Many issues specific to individual NEC projects can affect project costs and schedules. Some factors are controllable by OBO and the contractors, while others may not be. Factors that we found affecting our case study projects included the following:

- the timeliness of procurement and delivery of materials,
- site conditions,
- political and social conditions in the host nation,
- staffing and labor issues, and
- climatic and environmental conditions.

Procurement and Material Delivery Can Affect Progress

OBO and contractors both noted the difficulties with procuring and ensuring timely delivery of materials to NEC work sites. OBO and contractor project staff also stated that the contractors sometimes did not appreciate the logistical difficulties associated with delivering materials to remote locations. For example, the contractor for the Bamako NEC said it originally estimated 1 month as the time it would take to send materials from the supplier to the project site. In reality, the first stage—shipping the material to Dakar, Senegal—took approximately 1 month, but it took another month for the material to travel approximately 650 miles overland

²⁹GAO-04-100.

by rail or roads to the project site. Our site visits to Luanda and Cape Town also revealed that materials frequently arrived late or in insufficient quantities, forcing certain activities to be postponed.

One set of materials that contractors frequently had problems obtaining were Forced Entry and Ballistic Resistant (FEBR) doors and windows. Because of the long manufacturing and delivery lead times for these doors and windows, contractors must order these materials well in advance of when they would actually be installed. These lead times are the result of a limited supplier base for FEBR doors and windows. However, as the construction program matured, demand increases for FEBR materials made it increasingly difficult for contractors to obtain FEBR doors and windows in a timely manner. As a result, beginning in 2005, OBO began providing them as government furnished materials on its NEC contracts. As such, OBO is now responsible for ensuring the procurement and delivery of the FEBR doors and windows to meet the contractors' production schedules.

NEC construction is also affected by the contractor's ability to clear materials through customs in a timely manner. Since the volume of shipments and materials can overwhelm port capabilities, OBO sometimes provides a shipping clerk responsible for working with the host nations' customs officials to clear materials for use at the site. A host nation's lack of responsiveness, however, can lead to delays. For example, project staff for the Conakry and Luanda NECs cited frequent month-long delays in clearing items through customs. In Conakry, the contractor considered hiring local legal assistance to expedite the release of materials. In Luanda, embassy personnel reported numerous instances of the Government of Angola delaying the customs clearance process. Delays in each of these countries often required official involvement by high-level U.S. diplomats, including the respective ambassadors, to release the construction materials.

Understanding Site Conditions

In developing the requirements for an NEC, OBO provides geotechnical information, such as the type of soil and the depth to bedrock, derived from a limited number of soil borings on the NEC site. In some past instances, this information did not always provide an accurate picture of the true soil conditions on the site, which resulted in subsequent change orders that increased costs and extended project schedules. For example, in Conakry, Guinea, deep formations of soft soil and large voids were discovered only after construction began, which necessitated a change from deep pilings to a mat foundation. As a result, the original project schedule was delayed by 141 days and costs increased by \$750,000. More

recently, OBO was forced to adjust the scope of the Skopje, Macedonia, NEC project because the steepness of the grade required more funding to prepare the site than OBO had allocated. Other NEC projects cited by contractors as having different site conditions than expected include Abu Dhabi, United Arab Emirates; Astana; Freetown; and Abuja. OBO has recognized the difficulties contractors have faced in developing proposals based on limited information, and has indicated that it will conduct more extensive site investigations and provide more detailed information when issuing future requests for proposals.

Use of Foreign-Manufactured Materials

OBO and contractor officials stated that contract requirements call for contractors to use either American materials or those that meet American standards. However, to reduce the costs associated with procurement and shipping of American-made materials, it is sometimes in the contractors' interests to use foreign-manufactured materials. Contractor officials stated that to use comparable-quality foreign-manufactured materials, OBO requires them to show that the substitute materials meet U.S. standards, and are substantially equivalent to the materials to be replaced. In certain instances, OBO has allowed contractors to use materials from foreign suppliers if the contractor could demonstrate that the material met American standards. For example, in Cape Town, South Africa, the contractor successfully demonstrated that a local steel company could provide rebar that met U.S. standards. In doing so, the contractor reduced the time and costs associated with shipping rebar from the United States to South Africa. However, contractors noted that on other projects OBO project directors did not consistently approve the use of materials even after their compliance with U.S. standards was demonstrated. For example, most embassy designs require the use of Indiana limestone for the building facades, and shipping this material overseas is expensive. One contractor for multiple projects in Africa reported that it had demonstrated that stone from Portugal met the American standards for stonework, and the contractor received approval to use it in 1 location. The OBO project director for another project, however, would not approve the use of this stone. To address this issue, OBO is developing a list of foreign made materials that have already been demonstrated as meeting American standards and that have been approved for use on some construction projects. This list will enable expedited and more consistent decisions regarding the use of foreign materials.

Political Conditions in the Host Nation

Changing political and social conditions and relations between the United States and the host nation can impact NEC schedules and costs. In addition, they can affect the capacity and usage of the NEC. For example, a civil war in Cote d'Ivoire disrupted construction of the Abidjan NEC,

delaying its completion by 3 months and increasing costs by approximately \$1 million, as a result of the delay. Moreover, during the civil war, many agencies moved operations from Abidjan to other nearby U.S. embassies but did not return once the country stabilized. As a result, the new compound currently operates at about one-half its capacity. OBO staff in Washington reported that canceling the project as a result of the war would have resulted in tens of millions of dollars in contract termination costs; therefore, the decision was made to continue as planned.

U.S. relations with host nations can also affect construction time frames and costs. In Tashkent, the Uzbek government required that the U.S. government vacate an Uzbek airbase, which was being used, among other things, as a logistical center for the Tashkent NEC construction project. As a result, construction materials were airlifted to Almaty, Kazakhstan, and then hauled more than 400 miles to Tashkent. In addition, the NEC project in Algiers was temporarily delayed due to a diplomatic dispute between the United States and the host government. Building permits for the NEC project were delayed by a dispute over back rent that the Government of Algeria said the United States owed for use of an access road and a parking lot near the current embassy.

Staffing and Labor Issues Can Delay Projects

The extent to which the local workforce can be used to work on NEC projects varies across posts. Contractors said that in much of the developing world, they generally do not have problems finding a sufficient number of people willing to work, because, in most places, the NEC project provides some of the highest salaries in the country. However, contractor and OBO project staff stated that in many locations, particularly in developing countries, the number of skilled construction workers is low. As a result, contractors say they must train most of the workers in the basics of construction, which takes time and may result in rework. Contractor and OBO staff noted that if local labor is nonexistent or not sufficiently skilled, the contractor may need to hire third-country nationals, who are more expensive to hire, to complete the work.

We observed that an insufficient or inconsistent number of laborers at Bamako, Cape Town, and Luanda contributed to construction delays. For example, OBO project staff said that approximately 480 staff were actually needed for the Bamako NEC project. However, at the time of our visit, the project employed 356 construction workers, most of whom were Malian, but some of whom were direct hires of the Turkish subcontractor in charge of construction. In Cape Town, the contractor and OBO staff stated that the booming South African construction industry made employment

at the NEC less attractive because salaries and benefits were less than what workers could receive on other construction jobs. As a result, the project did not attract the number of workers it needed and, ultimately, the contractor had to hire and transport to the site about 25 noncleared American workers to complete work normally done by local hires. In Luanda, the general contractor fired the subcontractor responsible for the actual construction of the NEC, assumed control over actual construction, and directly hired about 170 experienced construction personnel from the Philippines to complete the work because locally hired employees would have required time-consuming training. The contractor said the Government of Angola delayed issuance of many work visas for the Philippine workers because it preferred that Angolans be hired.

Contractors and OBO staff reported that another problematic issue was ensuring that enough American workers and guards with security clearances are present on construction sites. State requires that construction of classified areas be completed or supervised by American employees with security clearances, and OBO and contractor staff reported difficulties retaining American personnel with clearances due to the high demand for their services. Nonetheless, at only one of the nine construction projects we reviewed was a shortage of cleared American staff cited as a reason for schedule delays. OBO and contractor staff noted that security conditions specific to Angola prevented locally hired employees from entering classified areas of the NEC; thus, more cleared American workers were required than would normally be needed for other projects. However, the contractor was never able to achieve the full complement it needed to complete construction on schedule.

Climatic and Environmental Conditions Can Halt Work

To the extent that historical weather patterns are known, contractors should plan construction activities around expected weather conditions. For example, OBO officials reported that in regions with very cold winters, such as in Astana, Kazakhstan, it tries to complete construction of the chancery building's shell before the onset of winter so that construction work within the building could continue through the winter months. In addition, one contractor for multiple projects in West Africa indicated that efforts to get materials to the construction site on time could be impeded during the rainy season. However, uncontrollable weather events may also affect projects. For example, Hurricane Ivan flooded the Kingston NEC site, shutting down construction for 3 weeks in the summer of 2004.

Planning for Operations and Maintenance Costs for New Embassy Compounds Is Neither Comprehensive Nor Transparent

Operations and maintenance costs for newly constructed embassies and consulates are significantly higher than the operations and maintenance costs for facilities they replaced. We estimate that once all 201 new embassy and consulate compounds are completed, these total annual operations and maintenance costs, adjusted to 2006 constant dollars, could increase by \$111 million over those posts' previous facilities, and possibly by several times more. According to analyses of data from the International Cooperative Administrative Support Services (ICASS) system,³⁰ OBO staff, and post officials, these costs increases are driven in part by technical security requirements that resulted in greater utility consumption, the need for highly qualified technical staff, and new maintenance requirements that posts did not have at their previous locations. State initially did not recognize the magnitude of new costs for the day-to-day functional requirements of NECs. As a result, some embassies' ability to prepare for operating and maintaining their new facilities was impaired. OBO, Embassy Tunis, and State's Office of Global Support Services and Innovation ultimately developed guidance for posts to help determine the notional staffing and financial resources for individual NECs. However, State has not developed a clear budgetary line-item to project operations and maintenance costs. Currently, these costs are intermingled with domestic and other nonfacilities-related administrative costs among several accounts, and no mechanism exists for determining how global costs for operations and maintenance will increase in the long-term. Thus, decision makers cannot determine whether NEC operations and maintenance needs are being adequately planned for and funded. In the past, GAO and others noted that inadequate funding for operations and maintenance of overseas posts led to unsafe, insecure, and dilapidated embassies. A lack of a comprehensive long-term plan that clearly identifies the significant increases in resources that are likely to be needed as more and more NECs come on line could increase the risk of earlier-than-expected deterioration of NECs.

³⁰The ICASS system shares the costs of common administrative support items, such as mail, telephones, and building operations, among the agencies that use overseas diplomatic facilities. See GAO, *Embassy Management: Actions Are Needed to Increase Efficiency and Improve Delivery of Administrative Support Services*, [GAO-04-511](#) (Washington, D.C.: Sept. 7, 2004).

Costs of Basic Operations and Maintenance Significantly Increased for NECs

As NECs began to open, posts quickly learned that the cost to operate and maintain their new facilities would be far greater than the cost to run previous ones. Based on interviews with post and regional bureau staff, reviews of analyses conducted by one post and the ICASS Service Center, and budget projections by regional bureaus, we estimate that once all 201 new embassy and consulate compounds are completed, the total annual budget requirements for day-to-day operations and maintenance of overseas posts, adjusted to 2006 constant dollars, would likely increase by at least \$111 million over those posts' previous facilities, and this figure could be several times more.

We discussed posts' experiences in planning for and operating NECs with post managers from 9 of the 10 NEC projects we reviewed, as well as with each of State's six regional bureaus.³¹ Post and bureau officials reported that the costs needed to operate and maintain the new compound on a day-to-day basis were significantly greater than for the previous facilities posts occupied. Embassy Tunis, which opened one of the first NECs in November 2002 (see fig. 4), prepared a comprehensive analysis of the recurring and nonrecurring cost increases associated with running and maintaining its NEC. This analysis revealed that annual recurring costs increased by \$591,000. Other posts we visited also expected the new compound to be significantly more costly to run and maintain once operations commenced, but at the times of our visits, they were unable to provide solid estimates. Officials from State's Bureau of European and Eurasian Affairs reported that operations and maintenance costs for posts in that bureau would increase annually, on average, by \$500,000 per post.

³¹Only four of the NECs—Abuja, Luanda, Phnom Penh, and Tunis—were opened prior to our review of their operations. Embassies Tbilisi and Conakry and Consulate General Cape Town opened after our site inspections, and NEC projects are still ongoing for embassies Bamako, and Kingston. We did not discuss operations and maintenance costs with Embassy Tashkent.

Figure 4: Previous and New U.S. Embassy in Tunis, Tunisia



Source: U.S. Department of State.

Previous embassy

New embassy

We reviewed actual operations and maintenance costs for seven posts, using data originating from those posts' ICASS Building Operations expenses.³² In our analysis, we compared these costs for the year prior to moving into the NEC with the costs for fiscal year 2006. We found cost increases for each post, ranging from approximately \$94,000 to \$2.7 million, and averaging approximately \$894,000 per post per year. We also reviewed projected operations and maintenance costs for eight additional posts provided by State's Bureaus of East Asian and Pacific Affairs and Western Hemisphere Affairs and found increases for each ranging from approximately \$400,000 to \$5.7 million, and averaging approximately \$1.9 million per post per year.³³ Based on these analyses, we estimate that once all 201 NECs are opened, annual post-funded operations and maintenance

³²These posts include the U.S. embassies in Abu Dhabi, UAE; Doha, Qatar; Luanda, Angola; Sofia, Bulgaria; Tunis, Tunisia; Yerevan, Armenia; and Zagreb, Croatia. Costs were converted to 2006 constant dollars.

³³For East Asia and the Pacific, we analyzed cost estimates for Embassy Phnom Penh for fiscal year 2006, and projected operations and maintenance increases for the U.S. embassies in Beijing, China; Rangoon, Burma; and the Consulate General in Surabaya, Indonesia, for fiscal year 2008, and for the U.S. embassy in Suva, Fiji, for fiscal year 2009. For Western Hemisphere posts, we analyzed fiscal year 2006 to 2007 operations and maintenance budgets for U.S. embassies in Belmopan, Belize; Kingston, Jamaica; and Panama City, Panama. All costs were converted to 2006 constant dollars.

costs would likely increase by a minimum of \$71 million over their previous values, and they could increase by several times more.³⁴

In addition, OBO intends to staff each NEC with a full-time facility manager. These positions are funded solely by OBO and their costs are in addition to those within the ICASS structure. To achieve the goal of placing a facility manager in each new embassy compound, OBO reported it would need a minimum of 100 additional positions. Based on per capita costs for maintaining American personnel at overseas posts developed by State's Office of Rightsizing the U.S. Overseas Presence, the annual cost for locating an additional 100 facility managers in overseas Foreign Service positions is approximately \$40 million.³⁵ Adding this figure to the estimates provided above results in a minimum total annual funding increase of \$111 million.

Posts also require significant nonrecurring costs associated with the startup of NECs. For example, post managers at Embassy Phnom Penh reported spending about \$1 million for one-time start-up supplies and equipment, including \$50,000 on a mechanical lift that it uses to change light bulbs on the ceiling of the three-story atrium. Early NEC posts, including Tunis, had to get additional, unbudgeted funding from their regional bureaus to cover these immediate shortfalls, requiring the bureaus to request additional funding from the department or to reallocate money from other posts' funds. Posts also receive funds from OBO to help defray the cost of equipment needed to operate the NECs.

Utility Costs Increased Significantly Due to New Systems and Expanded Space

One of the primary factors driving the cost increases for operations and maintenance was increased utility consumption, primarily due to the higher electricity and water needs for heating and cooling, and irrigating the large landscaped areas that many posts did not previously have. Posts experienced particularly large increases for utility costs, primarily because NECs need much more electricity than did the older, less modern facilities', and electricity is sometimes more expensive to obtain in the

³⁴For a description of how operations and maintenance costs increases were determined, see appendix I.

³⁵The Office of Rightsizing the U.S. Government Overseas Presence estimates that the average total cost for maintaining American direct hire staff at overseas locations to be approximately \$400,000 per year. Total costs include salaries, salary differentials for hardship and danger pay, personal benefits, and support costs, such as for housing.

more rural locations where some new compounds are located. NECs need more electricity to run, for example, new heating, ventilation, and air conditioning systems—which also require routine replacement of expensive air filters—to heat and cool much larger areas than did old embassies that generally had window air conditioning units, if any at all. Some NECs may also have considerably higher water bills due to landscaping requirements of the new compounds.³⁶ The Tunis analysis listed increases in annual utility costs as the second biggest increase after the cost to hire and train new maintenance staff.

NECs were designed to be modern, energy-efficient buildings. Nonetheless, numerous posts reported significant cost increases for electricity, some by well more than 100 percent. Management officials in Phnom Penh stated the post's electricity costs rose from about \$17,000 per month to about \$95,000 per month for the first 3 months of 2006. Based on this rate, annual electricity costs would increase nearly sixfold, from approximately \$200,000 for the old embassy to at least \$1.14 million per year for the NEC. In addition, Embassy Tunis' cost analysis stated that electricity was 127 percent higher for the NEC than the combined costs of the three office buildings the post previously occupied. In our review of ICASS data, we found that electricity costs for Embassy Yerevan more than doubled from \$107,000 in fiscal year 2004 to \$254,000 in 2005, while Embassy Luanda increased its budget for electricity from \$41,000 in 2005 to \$80,000 in 2006. Posts and bureau staff stated the cost increases were due primarily to the increased energy requirements for heating and cooling significantly larger facilities than those the posts previously occupied.³⁷

High electricity costs at some posts derive from multiple factors. Some posts do not have adequate access to the local power grid, and therefore must generate their own power. For example, the NEC in Conakry, Guinea, is located in a suburb that is a considerable distance from the city center. In this location, the power grid does not operate during the daytime. As a result, the new compound will rely on two diesel generators, operating 24 hours a day, to supply the post with electricity. Post

³⁶A key legal requirement of the Capital Security Construction Program is that new embassy and consulate buildings have a 100-foot setback from the exterior wall of the building to the perimeter wall or fence, primarily to provide blast protection. To achieve this setback, OBO seeks to locate NECs on sites of approximately 10 acres.

³⁷These year-to-year increases in electrical costs were not adjusted for year-to-year weather variations.

managers expect costs for fueling these generators to be approximately \$1 million per year, while operating these generators 24 hours a day will require extensive maintenance and, at some point, replacement, creating additional costs. However, management officers in Phnom Penh reported that their high electricity costs derive from the high rates charged for using the local grid. As a result, post staff there are studying the feasibility of either supplementing or switching entirely to post-generated electricity. Still other posts reported that, despite electricity from the grid being affordable, the power supply was unreliable and their posts required diesel generators as backup sources.

Water costs have also increased primarily due to landscaping needs. NECs are generally located on 10 or more acre sites, which are heavily landscaped with grass, gardens, shrubbery, and trees (see fig 5. as example of new landscaping areas). Maintaining these landscaped areas requires significant amounts of water. This often represents a new or substantially increased cost, as many of the NECs replace facilities that were located in city centers and thus had little or no landscaping requirements. For example, Embassy Tunis reported that water consumption costs increased more than 3 times, from \$5,200 in fiscal year 2002 to \$17,700 in 2004. The new Tunis compound has more than 700 trees and significant acreage of grass. Moreover, the post operates its own water treatment plant. ICASS data for Embassy Yerevan showed that costs for water consumption was estimated at \$250 per year for the previous location and increased to an estimated \$12,500 per year at the NEC.³⁸

³⁸The ICASS Service Center reported that water bills were not tracked independently and that billing by the local water company is sporadic and possibly inaccurate. At that same post, the old facility had no natural gas usage but costs for natural gas at the new compound are estimated at \$18,350 for fiscal year 2006, the first full year after move-in.

Figure 5: Previous and New U.S. Consulate General in Istanbul, Turkey



Source: U.S. Department of State.

Previous consulate

New consulate

Need for More and Better Trained Staff to Run and Maintain New Facilities Increased the Cost of Operating the New Compounds

Another primary factor driving the cost increases for operations and maintenance was the need to hire additional staff, some with advanced degrees or certificates, to maintain the new, state-of-the-art office buildings. Some of these staff must come from other countries because local labor markets cannot always supply the skills required by the posts. In preparing to take over the new compounds, posts often found they did not have staff capable of operating and maintaining the new facilities, which include sophisticated equipment—for electrical generation, climate control, fire suppression, and water and air purification. Therefore, many posts were required to hire new, highly qualified staff with advanced technical training, contributing to the increased costs beyond what OBO first envisioned. Management officers at three of the posts we contacted stated that they have already or would need to hire 2 to 10 staff to fill gaps in the posts' technical expertise. For example, Embassy Tunis concluded that none of its existing locally hired maintenance employees were qualified to service the new equipment. These employees were therefore reassigned to residential maintenance duties, and post management created 10 new positions to perform NEC maintenance, including three engineers and seven maintenance mechanics, adding \$147,000 in salaries to the post's payroll.³⁹ Consulate Cape Town reported it would hire an

³⁹In September 2004, we reported on numerous disincentives for posts to consider efforts to streamline administrative functions. See [GAO-04-511](#).

electrician and an air conditioning technician for a combined annual cost increase of \$32,610, while Embassy Phnom Penh hired two engineers and two technical specialists for its maintenance operations. All other posts we contacted reported the need to hire additional technical staff, but most had not yet classified the positions nor calculated the costs as of our site visits.

Regional bureaus and some posts reported having difficulties finding people who have been or can be trained in the technical skills required to operate the new compounds. Moreover, existing post maintenance employees often were not considered capable for filling these new operational needs, even with specific technical training. For example, Africa bureau officials said that in many West African countries—citing posts in Abuja and Conakry, in particular—there are few people who can operate this equipment or be trained to do it. U.S. officials in Conakry added that the post’s current work force is not capable of working on the new systems, and they were doubtful whether they could hire or contract with Guineans with the appropriate expertise. At the time of our visit, the post was studying hiring third-country national employees, noting that doing so would be more costly and would also entail a more lengthy process for classifying, advertising, and hiring for the positions. In Luanda, officials said they assigned three people from their existing maintenance staff to work with the construction contractor on installation and start-up of NEC equipment to help them gain experience running and maintaining this equipment, while also hiring third country nationals to fill the skill gap the Angolan market could not fill. OBO officials have said that hiring third-country nationals should be done as a last resort because it is the most expensive alternative. However, OBO acknowledged that it may be the only way to obtain capable staff in some countries.

By not having advanced knowledge of the technical qualifications needed to operate the systems, posts were often unable to initiate the recruiting process, which can take 6 months or more, in time to have all required trained staff available at the time of move in. For example, a former Tunis official who helped prepare that post’s analysis of start-up and recurring operations and maintenance costs stated that the post could not get information regarding needed technical qualifications for maintenance staff in advance of the move. He said he spent the 6 months prior to the move trying to obtain this information from OBO with little success. As a result, the post was not able to determine its maintenance staffing needs or begin hiring new maintenance staff until after construction was completed. He added that it took the post 12 to 18 months to fully resolve this situation.

In addition, posts also found that many new maintenance needs arose once the NEC opened, and were thus required to either hire additional staff or contract for maintenance services. For example, many posts were previously in locations with few or no landscaping needs. Upon moving to new compounds, however, posts had to either hire gardeners or contract with local landscaping firms. Embassy Tunis reported that gardening expenses increased by \$35,000 annually,⁴⁰ while another post awarded a \$45,000 contract for landscaping services when it moved into its new facility. In addition, the size of the new compounds often required posts to expand their janitorial staff. For example, Tunis reported that it doubled the size of its cleaning crew, at an additional \$60,000 per year, to maintain the interior of their new facilities. Cape Town reported the need to hire a cleared American escort for approximately \$29,000 per year to supervise the cleanup of the controlled access areas.

Posts Did Not Always Receive Initial Spare Parts

Prior to the completion of construction, NEC contractors are required to provide a list of all spare parts, as well as a short-term supply of critical spare parts. However, posts and regional bureau officials reported that the posts did not always receive the lists or actual parts in a timely manner. Officials in Phnom Penh noted that they did not receive all the spare parts and supplies the contractor was supposed to provide, including some critical items that are needed to keep the embassy operating should the current parts fail. Among the spare parts the post still needed were some with a 3-month or more delivery lead time. Moreover, posts reported not receiving the list of spare parts and supplies until after moving into the NEC, although officials noted that the contractor was obligated to provide the list prior to completion of construction. As a result, these posts did not have enough lead time to order these critical parts to ensure they arrived before the NEC began operations. Officials in Phnom Penh, as well as officials at other posts and the regional bureaus, stated that receiving the list of spare parts and supplies 6 months to 1 year before the NEC opened would have allowed them to understand which parts would be supplied and which were to be provided by the posts, as well as ensure that critical supplies and parts were on site when the new compounds opened.

Knowing the NEC's maintenance needs in advance also would help posts and regional bureaus plan for recurring costs sooner. The Bureau of

⁴⁰This cost is in addition to the increased water costs associated with landscaping needs previously discussed.

European and Eurasian Affairs reported that Embassy Yerevan discovered, a few weeks before it moved to the NEC, that it needed about \$50,000 worth of salt each year to make its water purification system work properly, an expense it had not planned for. Similarly, Embassy Tunis reported replacing over 600 light bulbs in the first 30 months of operation and estimated the annual cost of bulbs alone to be \$14,000. The post also stated that the NEC requires several dozen types of light bulbs and fluorescent tubes, virtually all of which must be purchased in the United States. Moreover, posts and regional bureaus alike cited the high costs of specialized air filters for the heating, ventilation, and air conditioning systems. Officials in the Bureau of European and Eurasian Affairs stated that Embassy Yerevan used \$80,000 worth of filters in its first year, and that a complete set of replacement filters can cost as much as \$300,000, although some of the individual filters are changed less frequently than are others. During our fieldwork in Luanda, one official noted that this already-opened NEC had not yet received the list of system requirements and spare parts from the contractor, and he was concerned that the lack of parts, particularly the filters for the air conditioning units, would delay maintenance and affect the warranties.

OBO and Others Have Developed Guidance for Individual Posts

According to regional bureau and post officials, in the early stages of the program, OBO told them that operations and maintenance costs of the new facilities would not cost much more than those of the replaced facilities. Some regional bureau officials said they were skeptical of this claim from the beginning. When developing the first NECs, OBO believed that, due to their more efficient mechanical and electrical systems, compared with what posts previously had, operational costs would increase little, if at all. However, posts and regional bureaus reported having great difficulty obtaining projections and estimates from OBO on what operations and maintenance requirements the NECs would entail, as well as how costs would change with the new compound. This lack of information prevented posts and regional bureaus from adequately preparing for the staffing and funding resources needed to transition post operations from the previous facilities to the NECs.

Regional bureau officials said that although it took several years, they eventually convinced OBO to include consideration of operations and maintenance costs earlier in the NEC design and construction process. In 2004, OBO began providing posts with estimates of likely operations and maintenance costs about 2 years prior to the onset of construction. However, these are only notional estimates based on generic small, medium, and large NECs, and they may not reflect the actual costs a post

may expect. Nonetheless, these estimates provide posts with a template they can apply to their local circumstances. In addition, approximately 6 months before handing NECs over to posts, OBO provides each post with a Workload Analysis and Staffing Recommendations study that compares an NEC's operations and maintenance needs with the post's current filled and unfilled maintenance positions; assesses whether existing staff meet or can be trained to meet the NEC's operations and maintenance requirements; outlines additional staffing and/or service contractors the post would need to provide newly-required services such as gardening; and details availability of manpower or services from the local labor pool. These studies do not provide cost estimates for new positions or service contracts.

Assistance Provided Outside of OBO

Officials at some posts with more recently completed NECs said the large increase in operations and maintenance costs was not as much of a shock to the post as it could have been, because these increases had become well documented by posts by the time their NECs opened and were even becoming known when these posts started budgeting 2 years earlier. Moreover, information regarding cost and staffing needs for NECs has become increasingly shared as more NECs come online. Tunis was one of the first posts to raise the issue concerning greatly increased operations and maintenance costs, and its work became the basis for many posts' NEC planning. Tunis placed guidance for other posts on its Intranet site that highlights actions posts should take beginning 2 years prior to the NEC opening. The site also provides hints for executing the move itself and operating and maintaining the NEC for the first year after it opens. Officials from numerous posts, including Conakry, Cape Town, and Phnom Penh, among others, have consulted with Tunis officials or visited the post to discuss issues such as operations and maintenance, staffing, training, and funding requirements to operate the NEC.

In addition, State's Office of Global Support Services and Innovation maintains an Intranet site that contains information and guidance on planning and executing moves from old facilities to new embassy compounds, likely operations and maintenance needs, and ways for posts with upcoming NECs to communicate with posts with already opened NECs. The site also contains documents addressing NEC procurement advance planning, the commissioning and decommissioning processes for new and old facilities, NEC lessons learned from posts that already have moved into their new facilities, and other related topics. Nearly all the material on this site derives from overseas staff experienced in planning posts' moves to new facilities and preparing posts for the new operations and maintenance requirements. One post manager with whom we talked

said that this information was very useful and has been disseminated widely.

Facilities Operations and Maintenance Planning Not Comprehensive or Transparent

In November 1999, the Overseas Presence Advisory Panel noted the “shockingly shabby and antiquated building conditions” at U.S. embassies and consulates throughout the world. The panel stated that these conditions were due to overseas property being managed for decades “without a workable plan or funding adequate to provide upkeep and the long-term capital needs of overseas facilities.” In March 2003, we reported that many posts had maintenance concerns common to old and deteriorating buildings, including sinking foundations, crumbling walls, bursting pipes, and electrical overloads.⁴¹ We also reported that at 133 overseas posts, the primary office building had fire and safety deficiencies. These problems, we concluded, were due to essential maintenance and repair requirements that had long been unfunded. We noted that in May 2002, State reported a backlog in capital maintenance of approximately \$736 million and that this figure was likely to increase because of the age of the existing facilities.

In its Long-Range Overseas Buildings Plan, which was first issued in 2002 in response to our recommendations,⁴² OBO establishes requirements and estimates costs of long-term capital repair and equipment replacement programs, such as roof repairs, elevator replacement, and generator refurbishment. Not included in OBO’s plan are the basic, day-to-day operations and maintenance requirements funded by State’s regional bureaus and the tenant agencies at overseas posts, such as utility costs, maintenance staff salaries, janitorial services, and spare parts and supplies, among others (see app. II). Rather, these functions are funded through the ICASS system or are directly paid for by State or tenant agencies.

Funding requirements for basic operations and maintenance needs are assessed only on an annual and incremental basis and, according to State’s Bureau of Resource Management, there is no specific line-item appropriation for these activities. Annual funding requests originate at the post level, are aggregated by State’s regional bureaus, and then are further aggregated and submitted to the Office of Management and Budget and

⁴¹See GAO, *Overseas Presence: Conditions of Overseas Diplomatic Facilities*, [GAO-03-557T](#) (Washington, D.C: Mar. 20, 2003).

⁴²See [GAO-01-11](#).

Congress by the Bureau of Resource Management. The resulting budget request intermingles funding needs for posts' basic operations and maintenance with numerous other costs, such as for domestic administrative needs, nonfacilities-related embassy support functions, and personnel compensation, among others. In addition, agencies with staff in overseas diplomatic facilities help fund operations and maintenance costs—either through the ICASS system or directly for costs they specifically generate—and must request the necessary funds through budget development and appropriations processes independent of State's. There is no source that clearly and solely identifies the specific resource needs for basic operations and maintenance activities at U.S. overseas diplomatic facilities, either on an annual and worldwide basis or on a long-term basis, like that produced by OBO for capital maintenance projects. Thus, there is currently no mechanism that allows decision makers to determine whether NEC operations and maintenance needs are being adequately planned for and funded. A lack of a comprehensive long-term plan that clearly identifies the significant increases in resources that are likely to be needed as more NECs come online could increase the risk of earlier-than-expected deterioration of NECs.

Methodologies for Estimating Operations and Maintenance Needs

Budget officers from two of State's regional bureaus and the Bureau of Resource Management indicated that they cannot accurately predict long-term costs increases because they do not know the types of systems to be installed, the new staffing and service contract needs, maintenance schedules, and likely utility consumption rates, most of which they do not learn until about 1 to 2 years prior to an NEC opening. They said that due to the unpredictability of operating in overseas environments and actual construction schedules, they cannot plan with accuracy their resource needs beyond 2 years into the future. However, as we previously demonstrated, enough NECs have opened to project at least notional levels of changes to operations and maintenance costs for posts with NECs. In addition, methodologies exist for developing operations and maintenance budgets.

We examined two methodologies for estimating long-term costs for operating and maintaining facilities developed by the National Research Council of the National Academies. First, the council developed a method for estimating the total life-cycle costs of buildings.⁴³ The council

⁴³National Research Council of the National Academies, "Investments in Federal Facilities: Asset Management Strategies for the 21st Century" (Washington, D.C.: 2004).

determined that operations and maintenance costs constitute 60 to 85 percent of a facility's life-cycle costs, with construction costs comprising 5 to 10 percent of the total life-cycle costs, and the remainder deriving from land acquisition, programming, conceptual planning, major capital renewal projects, and disposal. The council also stated that when public sector organizations face choices on where to invest limited resources, facilities investments, particularly investments in maintenance and repairs, are often the first to be deferred or cut altogether. It estimated that each dollar in deferred maintenance results in a long-term capital liability of \$4 to \$5, concluding that "an accumulation of deferred investments over the long term may be significantly greater than the short-term savings that public-sector decision makers were initially seeking."⁴⁴

The council also developed a methodology for estimating recurring maintenance requirements on the basis of an index of the ratio of annual maintenance costs to the current replacement value of a facility.⁴⁵ According to the Building Research Board of the National Research Council, an index value of 2 to 4 percent—meaning annual maintenance expenditures between 2 and 4 percent of a facility's replacement value—is recommended. Applying that recommendation to the current replacement value of the 18 NECs, which is approximately \$1.26 billion, suggests that between \$25 and \$50 million should be expended on annual maintenance (see table 2). Total annual maintenance requirements once all projects are completed would range from \$420 to \$840 million, or approximately \$2.1 to \$4.2 million per NEC.⁴⁶ It should also be noted that these costs only apply to routine maintenance needs. Other operational expenses, such as those for utilities, and major capital renewal projects managed by OBO, such as replacing elevators, are not included.

⁴⁴Ibid.

⁴⁵Cited in International Facility Management Association, "Operations and Maintenance Benchmarks," Research Report #26, 2005. Current replacement value is the total expenditure in current dollars required to replace any facility inclusive of construction costs, design costs, project management costs, and project administrative costs. The value of property/land is excluded.

⁴⁶These costs are in addition to the maintenance needs for the approximately 60 posts worldwide that are not expected to have new facilities constructed under State's current capital replacement program.

Table 2: Estimated Annual Operating Costs for Completed NECs

Dollars in millions

Project ^a	Current replacement value	Estimated annual maintenance cost	
		Current replacement value index (2%)	Current replacement value index (4%)
Abidjan	\$74.5	\$1.5	\$3.0
Abu Dhabi	\$64.0	\$1.3	\$2.6
Abuja	\$63.6	\$1.3	\$2.5
Cape Town	\$48.1	\$1.0	\$1.9
Dar es Salaam	\$51.9	\$1.0	\$2.1
Istanbul	\$76.3	\$1.5	\$3.0
Kabul	\$177.2	\$3.5	\$7.1
Kampala	\$36.2	\$0.7	\$1.4
Luanda	\$51.7	\$1.0	\$2.1
Nairobi	\$60.4	\$1.2	\$2.4
Phnom Penh	\$71.5	\$1.4	\$2.9
Sofia	\$72.0	\$1.4	\$2.9
Tashkent	\$73.7	\$1.5	\$3.0
Tbilisi	\$75.6	\$1.5	\$3.0
Tunis	\$59.5	\$1.2	\$2.4
Yaounde	\$65.0	\$1.3	\$2.6
Yerevan	\$68.1	\$1.4	\$2.7
Zagreb	\$63.3	\$1.3	\$2.5
Total	\$1,252.6	\$25.0	\$50.1

Sources: Department of State and International Facilities Management Association.

^aExcludes facilities constructed outside of the official NEC project.

Conclusions

In the past, the Overseas Presence Advisory Panel, State, and GAO reported that inadequate capital maintenance funding for embassies and consulates resulted in decrepit, unsafe, and dysfunctional facilities. In addition, the panel concluded that these decrepit facilities and a “lack of fiscal tools” could contribute to a crippling of American foreign policy. These findings ultimately led to the unprecedented effort to move 201 overseas posts into new, safe, secure, and functional facilities, and State has made significant progress in constructing NECs in a timely manner. However, due to increased utilities consumption, the need to hire highly qualified technical staff, new maintenance requirements, and expensive spare parts and supplies, annual operations and maintenance costs of

NECs are significantly greater than the costs associated with the facilities they replaced. State was slow to recognize the increased funding needed to operate and maintain these new facilities. Moreover, State has not developed a comprehensive plan that details long-term resource requirements necessary for ensuring that the investments made achieve their expected life cycles. Failure to provide posts with adequate financial and staffing resources and a sufficient and timely supply of spare parts (1) could affect posts' operational effectiveness and (2) lead to more costly replacement of capital equipment or the buildings themselves long before the end of their projected life cycles. A long-range plan that clearly identifies the resource needs for basic, day-to-day operations and maintenance at overseas posts, similar to OBO's plan for capital construction and maintenance, would reduce the risk that operations and maintenance needs for NECs are not met and help these new buildings achieve their expected life cycles.

Recommendation for Executive Action

To protect the \$21 billion capital investment in 201 new embassy and consulate compounds, we recommend that the Secretary of State develop an integrated and comprehensive facilities plan that clearly specifies the financial and human resources for meeting the immediate and long-term operations and maintenance requirements for new embassy compounds.

Agency Comments

We received written and oral comments on a draft of this report from the Department of State. State said that it agreed with our principle findings and conclusions. In addition, State wrote that it supported our recommendation to develop an integrated and comprehensive facilities plan that clearly specifies the financial and human resources needed for meeting the immediate and long-term operations and maintenance needs for new embassy compounds, and that it will initiate actions that implement this recommendation. State provided additional clarifying and technical comments on a number of points, which we have incorporated throughout the report, as appropriate. State's comments, along with our responses to specific points, are reprinted in app. II.

We are sending copies of this report to interested congressional committees. We are also sending copies of this report to the Secretary of State. Copies will be made available to others upon request. In addition, this report will be available at no charge on the GAO Web site at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact Jess T. Ford on (202) 512-4128, e-mail fordj@gao.gov, or Terrell G. Dorn on (202) 512-6923, e-mail dornt@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Other GAO contact and staff acknowledgments are listed in appendix III.

Sincerely yours,

A handwritten signature in black ink that reads "Jess T. Ford". The signature is written in a cursive, flowing style.

Jess T. Ford
Director, International Affairs and Trade

A handwritten signature in black ink that reads "Terrell G. Dorn, PE". The signature is written in a cursive, flowing style.

Terrell G. Dorn, PE
Director, Physical Infrastructure

Appendix I: Scope and Methodology

To complete our work, we reviewed the report of the Overseas Presence Advisory Panel, previous GAO reports on the Department of State's (State) embassy construction programs, Bureau of Overseas Buildings Operations' (OBO) past 5 annual Long-Range Overseas Buildings Plans, the files of 18 new embassy (and consulate) compound (NEC) projects, and the monthly Program Performance Review updates and documents of 9 ongoing projects scheduled for completion by December 31, 2006, and 22 ongoing projects scheduled for completion in 2007 to 2008. We did not assess the quality of construction.

Projects within our review were limited to construction under the Capital Security Construction Program, and did not include construction of new embassies funded under the Strategic Capital Program, or major rehabilitations or security upgrades of existing embassies and consulates. In addition, our review focused on construction projects designated by OBO as NECs, which in the early years of the program were called New Office Buildings. In general, we did not consider other types of OBO construction projects, such as renovation of newly acquired buildings, as in Bridgetown, Barbados; individual annexes either for general use, as in Bogota, Colombia, or those dedicated to USAID operations, as in Lima, Peru; or other types of individual projects. However, we did examine costs involving construction of certain facilities at NEC sites that were completed or will be completed outside the scope of the NEC project, such as in cases where USAID annexes were delayed due to funding issues, Marine Security Guard quarters were added after completion of the NEC project, and construction of facilities in the original NEC scope of work was deferred to future years, as well as when concurrent construction projects occurred outside the scope of the NEC project, such as in Kabul, Afghanistan.

To track OBO's performance in completing construction projects on time and on budget, we developed and analyzed a database containing planned and actual project schedule and cost data, which were obtained from the files of 18 embassy and consulate construction projects. Each of the projects was started after the August 1998 bombings in Dar es Salaam, Tanzania, and Nairobi, Kenya, and was declared substantially completed on or before December 31, 2005. Projects started prior to August 1998, such as the new embassy building in Doha, Qatar, were excluded from the analysis.

Data for project schedules included the dates for contract award and notice to proceed with construction, the original construction completion date, the number of additional days approved in contract modifications;

the actual completion date certified by OBO (also known as substantial completion), and the actual occupancy date certified by OBO. In addition, planned dates for project milestones were computed by adding the number of allowable days for specific actions to a baseline date. For example, the planned occupation date was determined by adding 60 days—the amount of time to complete commissioning and accreditation activities at the new facility—to the planned substantial completion date. Data for project costs included the budget estimates for each project provided to Congress and the actual costs of the projects. We also collected information characterizing the site conditions, including building and compound sizes; all contract proposals submitted to OBO; whether the building was a standard design embassy or consulate; the contract delivery method used (design-bid-build or design-build), and the type of contract awarded (firm-fixed-price or cost-reimbursable); and the amount of desk space and the number of personnel to occupy the NEC.

Data used to analyze project schedules was derived primarily from project design packages and requests for proposals; contract awards and modification logs; and memorandums and letters certifying substantial completion of construction, stating that security requirements have been met and that a new facility is ready for occupation. Data for project costs derived from two sources. Budget estimates provided to Congress derive from letters sent by the Department of State to congressional appropriators notifying the Congress of State's intent to fund construction of certain projects. These notifications provided the amount of funding OBO intended to allocate in a given year, and they sometimes included the total funding OBO estimated for the entire project, including site acquisitions. However, since these are notifications for State's obligations, they do not include costs associated with contributions from other agencies. Actual costs for each project were provided by OBO's Financial Management Division. Project descriptions derive from multiple sources. Building and compound sizes and the amount of desk and nondesk space derive from Project Authorization Documents, which are used to track changes in project scopes and budgetary requirements throughout the course of NEC projects. Contract documents identified the contractor, the contract type, the award amount, the contract delivery method, and the contract performance period, while a summary of cost and schedule data for nonwinning proposals was provided by OBO.

We also reviewed schedule and cost performance data for the nine NEC projects scheduled for completion by December 31, 2006, including Astana, Kazakhstan; Bamako, Mali; Belmopan, Belize; Conakry, Guinea; Dushanbe, Tajikistan; Freetown, Sierra Leone; Kingston, Jamaica; Lome,

Togo; and Managua, Nicaragua. Data for our analysis derived from the April 2006 Program Performance Review, a meeting OBO holds on a monthly basis to review the progress of all construction projects, in addition to general management issues within OBO. Data we analyzed derived from project information that is reported to OBO Washington from project directors in the field and is then placed into a standard format for presentation at the meeting. Information we gathered from these presentations include the contract award and notice to proceed dates, the original and modified planned substantial completion dates, the current budget for the project, and planned and actual amount of work completed. In addition, the presentations provide narrative information specific to the project, which may include project scope and reports of critical information, such as potential delays. Progress for 13 additional ongoing NEC projects scheduled for completion beyond year-end 2006 was not sufficient for us to analyze the pace of construction or changes to cost estimates.

We examined the processes by which data are incorporated into the Project Authorization Documents and the presentations for the monthly Program Performance Review meetings. Assessment of these processes included the purpose of the systems, the primary users and their access to the data, how and where the data are collected, what the data describe, the procedures for ensuring the proper data are collected, the currency of the data, and how frequently data are entered. We found the schedule, cost, and project characteristics data to be sufficiently reliable for our purposes. However, we did not conduct a financial audit of the cost data and are not expressing an opinion on them.

To determine the effects of State's strategic and procedural reforms and the factors that affect construction schedules and costs, we interviewed key officials from State's regional bureaus and OBO on the planning for and construction of NECs, and we met with corporate staff for three contractors currently involved in construction. We also visited six posts with either ongoing or completed construction projects to observe the construction process, solicit the views of State and the contractors' field staff, and collect and review project documents.¹ Additionally, we visited Abuja, Nigeria, to review issues surrounding the impact of incomplete and

¹The posts visited included U.S. embassies in Bamako, Mali; Conakry, Guinea; Kingston, Jamaica; Luanda, Angola; Tbilisi, Georgia; and the U.S. consulate in Cape Town, South Africa.

deferred construction on staff location and security. Finally, we interviewed the project directors for the Phnom Penh, Cambodia, and Tashkent, Uzbekistan, NEC projects—while each was briefly in Washington—and conducted telephone interviews with post managers in Phnom Penh. We also discussed reforms with staff from each of State’s regional bureaus.

To determine how total annual operations and maintenance costs would increase once all NECs were completed, we analyzed cost data from four sources, which include the following:

- actual building operations expense budgets for 13 posts with NECs worldwide, as reported through the ICASS system;
- budgeted cost increases for 5 posts, as reported by the Bureau of East Asias and Pacific Affairs;
- budget costs for 3 posts, as reported by the Bureau of Western Hemisphere Affairs; and
- discussions on cost increases for operations and maintenance activities with managers at overseas posts and at State’s four other regional bureaus.

To analyze the ICASS data, we first compared the operations budget for the year prior to the post taking possession of the NEC with the budget for fiscal year 2006. We also compared the operations costs for the years before and after the move. In doing these comparisons, we removed several of the posts from the analysis for different reasons. U.S. Consulates Istanbul, Turkey, and Sao Paulo, Brazil, were removed because as constituent posts, their costs are combined with the respective embassies that oversee their operations (Embassies Ankara, Turkey, and Brasilia, Brazil), and we could not disaggregate these costs from the parent posts. Thus changes in their operations costs may actually be unrelated to the opening of NEC. We also removed Embassies Dar es Salaam, Tanzania; Nairobi, Kenya; and Kampala, Uganda, from the analysis because some agencies at these posts, notably USAID, continued to occupy locations outside the NEC for multiple years after the NEC opened. In addition, when USAID or other agencies own an overseas facility, the support costs for activities in that facility are outside the ICASS system. Thus, for our analyses, we could not determine whether the ICASS costs represented all operations costs for these posts or whether costs were generated outside the ICASS system. Finally, we removed Embassy Abidjan, Cote d’Ivoire, from the analyses because the post went

through a significant downsizing of program and support personnel after the start of construction. As a result, the new facility operates at only half capacity. The seven posts included in the ICASS analysis were the U.S. Embassies in Abu Dhabi, United Arab Emirates; Doha, Qatar; Luanda, Angola; Sofia, Bulgaria; Tunis, Tunisia; Yerevan, Armenia; and Zagreb, Croatia.²

The data provided by the Bureaus of East Asian and Pacific Affairs and Western Hemisphere Affairs included its estimates for the total operations and maintenance cost increases for eight NECs, as well as cost increases associated with those posts' utilities, personnel, and maintenance. The five East Asian posts included estimates for Embassy Phnom Penh, Cambodia, in fiscal year 2006; Embassies Beijing, China, and Rangoon, Burma, and Consulate General Surabaya, Indonesia, for fiscal year 2008; and for Embassy Suva, Fiji, in fiscal year 2009. The three western posts included operations and maintenance budgets for fiscal years 2006 and 2007 for Embassies Belmopan, Belize; Kingston, Jamaica; and Panama City, Panama.

To provide an indication of the possible total minimum annual cost increases for operations and maintenance, we examined all the available data on cost increases including actual costs from eight posts and estimated costs for seven posts. In addition, we considered State's estimate of average costs rising by \$500,000 for posts in Europe and the various factors that are driving the observed and estimated cost estimates. We removed one outlier from the 15 posts (Embassy Sofia), and used the actual costs from the next lowest post, Luanda, of \$351,000, which we applied to all 201 NECs, resulting in an estimated cost increase of \$71 million per year. Our analysis of Luanda suggested that it can serve as a reasonable proxy for the low end of the range because it is small, has only one building, and all staff are colocated on the new compound. While this exercise represents our best attempt to quantify the minimum potential costs, it can only provide a rough indication of what the minimum might be. It assumes that the actual costs for future posts will generally fall within the range we have observed. It also assumes that the costs for medium and larger posts will be considerably greater than \$351,000. Based on the data we have for the remaining 10 posts, some of which have costs that are many times greater than those for Luanda, we suspect that actual

²Although we did not test the reliability of these specific data, in the past, we have conducted general assessments of ICASS data and found the data reliable. See [GAO-04-511](#).

annual cost estimates could be several times greater than that which we provided.

To this minimum cost, we added the costs of adding 100 new OBO-funded facilities managers. State's Office of Rightsizing the U.S. Overseas Presence estimates the total per capita cost of placing American government employees in overseas positions at approximately \$400,000 per year. Based on this figure, the cost of placing Americans in new facility manager positions at 100 NECs would cost approximately \$40 million. Thus, overall operations and maintenance costs will likely increase by a minimum of \$111 million.

All costs for these analyses were converted to 2006 constant dollars using the U.S. Gross Domestic Product Deflator.

We also visited the U.S. embassy in Tunis, Tunisia, and met with former Tunis management staff to discuss how its operations and maintenance needs and costs changed after moving into its new embassy compound; reviewed the worldwide cable it developed to document its cost increases and additional staffing needs; and discussed the assistance the post provides other U.S. embassies and consulates, as they prepare to occupy their own NECs. In addition, we interviewed management and facilities maintenance personnel at eight posts with either ongoing or recently completed construction projects to discuss preparations each made or are making for hiring additional and training current staff, awarding service contracts, developing maintenance plans, ensuring the posts have adequate supplies and spare parts for the initial year of operations, and working with regional bureaus and agency clients to ensure operations and maintenance are properly funded.³

We also interviewed key officials from State's regional bureaus, OBO, and the Bureau of Resource Management on (1) the planning for the operational requirements of NECs and (2) the staffing and funding resources required to ensure they function properly. We also reviewed processes developed by OBO's Facilities Management Office to provide early-on assistance to posts on the types of systems that are to be installed at the NECs, the maintenance needs of the mechanical systems, and the skill requirements and numbers of staff needed to operate and maintain the various systems in the new compounds. Finally, we reviewed

³The eight posts include those cited above with the exception of Tashkent, Uzbekistan.

assistance provided to posts by State's Office of Global Support Services and Innovation.

We performed our work from January 2005 to June 2006 in accordance with generally accepted government auditing standards.

Appendix II: Operations and Maintenance Funding Sources

Operations and maintenance costs are funded through five primary sources, including OBO, ICASS, State’s regional bureaus and Bureau of Diplomatic Security, and other agencies, as needed (see table 3). According to the *Foreign Affairs Manual*, basic building and compound operations, such as custodial services, fuel, utilities, supplies, trash collection, and grounds care, among others, are planned for by individual posts and are funded through the ICASS system, from the Diplomatic and Consular Programs fund overseen by State’s regional bureaus, and from other agencies’ operating budgets. OBO is responsible for funding general maintenance and repair projects at overseas posts, including routine services and materials for items of a recurring nature, such as painting, weather stripping, termite control, and small repairs, among others. OBO is also responsible for special maintenance and improvement projects that cost more and are more technical in nature. For example, OBO manages projects for repairs such as those for air conditioning systems, elevators, and fire suppression systems, and also manages emergency repairs caused by unforeseen events. OBO also funds major and minor upgrades for the physical security of embassies and consulates, while costs for technical security equipment are funded by the Bureau of Diplomatic Security.

Table 3: Major Costs and Funding Sources for Operations and Maintenance of Overseas Government-owned and Long-term Lease Office Facilities

Cost center	Funding source
Lease costs	OBO
Building operating expenses	ICASS Diplomatic and Consular Programs ^a Other agencies ^b
Physical security upgrade	OBO
Technical security equipment	Bureau of Diplomatic Security
Maintenance and repair improvements	OBO (government-owned buildings) Leaseholder and OBO (long-term lease buildings)
Program alteration	Other agencies
Grounds care	ICASS Diplomatic and Consular Programs Other agencies
Fire equipment	OBO

**Appendix II: Operations and Maintenance
Funding Sources**

Cost center	Funding source
Furniture	<ul style="list-style-type: none"> • Initial OBO Other agencies • Replacement ICASS Diplomatic and Consular programs Other agencies
Air conditioning units	<ul style="list-style-type: none"> OBO^c ICASS Diplomatic and Consular programs Other agencies
Emergency generators (including overhauls)	OBO
Generator service contract	<ul style="list-style-type: none"> Diplomatic and Consular programs Other agencies

Source: U.S. Department of State, *Foreign Affairs Manual* (15 FAM-120, 160, and 630).

^aPost-held funds allotted by State's regional bureaus.

^bThe ICASS system permits service providers to directly charge any agency, including State, for using a service that can be easily identified as benefiting that specific agency.

^cOn air conditioning units greater than 36,000 BTUs.

Appendix III: Comments from the Department of State

Note: GAO comments supplementing those in the report text appear at the end of this appendix.



United States Department of State

*Assistant Secretary for Resource Management
and Chief Financial Officer*

Washington, D.C. 20520

Ms. Jacquelyn Williams-Bridgers
Managing Director
International Affairs and Trade
Government Accountability Office
441 G Street, N.W.
Washington, D.C. 20548-0001

JUN 19 2006

Dear Ms. Williams-Bridgers:

We appreciate the opportunity to review your draft report, "EMBASSY CONSTRUCTION: State Has Made Progress in Constructing New Embassies, But Better Planning Is Needed for New Operations and Maintenance Requirements," GAO Job Code 320332.

The enclosed Department of State comments are provided for incorporation with this letter as an appendix to the final report.

If you have any questions concerning this response, please contact Stefan Lupp, Branch Chief, Bureau of Overseas Buildings Operations, at (703) 875-5766.

Sincerely,

A handwritten signature in black ink, appearing to read "Brad R. Higgins".

Bradford R. Higgins

cc: GAO – Jess Ford
OBO – Charles Williams
State/OIG – Mark Duda

Department of State Comments on GAO Draft Report

**EMBASSY CONSTRUCTION:
State Has Made Progress In Constructing New Embassies, But Better
Planning Is Needed for New Operations and Maintenance
Requirements, (GAO-06-641, GAO Code 320332)**

Introduction

The Department of State appreciates the opportunity to review and comment on the GAO Draft Report, *EMBASSY CONSTRUCTION: State Has Made Progress In Constructing New Embassies, But Better Planning Is Needed for New Operations and Maintenance Requirements*. Throughout the course of the GAO review, the Bureau of Overseas Buildings Operations (OBO) and other bureaus have been forthcoming in providing information, access to all of their records, making their staffs available to answer questions, and providing briefings. OBO has also invited the GAO staff members to participate in its monthly Program Performance Review meetings. The GAO staff has been professional in its endeavor and has been receptive to our opinions and explanations.

Significant Progress

The Department is pleased that in this extensive study the GAO has concluded, "State has made significant progress in completing new embassy and consulate compounds." As the report notes "State has reduced the average project cycle time by approximately 2 years and 9 months." The report further states that as of March 31, 2006 approximately 8,700 U.S. Government employees have been relocated to new, safe, and secure facilities." This is the clear message of the report, and it should be so noted in the title of the report.

The report correctly cites various OBO management reforms that are in part responsible for the Department's significant progress. In particular the report cites the enhanced status of OBO as a bureau within the Department, the implementation of performance-based management principles at the strategic and project level, and the development of the Long-Range Overseas Buildings Plan, the design-build contract delivery method, the establishment of a standard embassy design, and OBO's

continued examination of its procedures to identify potential additional reforms to improve schedule performance and reduce costs.

Other Comments

While the report acknowledges the Department's significant progress in constructing new embassy and consulate compounds, there are certain areas of the report that require clarification: (1) the omission of other capital construction projects; (2) the omission of the Value Engineering Program; (3) the lack of a performance period benchmark; (4) the impact of routine OBO personnel turnover; (5) the reasons for higher operations and maintenance costs; and (6) the significance of the absence of historical data.

(1) Omission of other Major Construction Projects

The Department understands that this massive GAO review had to be limited in scope. However, by only referring to the construction of new embassy and consulate compounds (NECs), the report masks the true magnitude of OBO's construction program. It should be acknowledged in the report that numerous other projects have been completed during the time period covered by this review, such as 9 annexes, 4 interim office buildings, 4 fit-outs of existing buildings, several major rehabilitation projects, and \$100 Million in compound security projects.

(2) Omission of the Value Engineering Program

The report fails to mention the continuous improvement process used to make the Standard Embassy Design (SED) easier to operate and maintain. In fact, the Value Engineering Program has always been focused on life cycle cost containment and long-term building performance. Higher quality, durable materials were added wherever a favorable business case could be made. Energy conservation features were also embedded in the SED in compliance with all Federal mandates. Indeed, the Department will be challenged with the long-term maintenance of our new buildings, but the situation has been significantly improved due to the SED upgrades, resulting from a robust Value Engineering Program.

See comment 1.

See comment 2.

See comment 3.

(3) Lack of a performance period benchmark

The report lacks any benchmark with industry or other government agencies engaged in similar overseas work with regard to performance periods. It simply compares previous OBO performance with current and past projects. Specifically, the projects where contractors encountered performance problems seem to have little analysis or consideration for the work environment. OBO obviously needs some latitude to adjust schedules for extreme risk factors revolving around the effects of remote locations, shipping, staffing, local labor strikes, civil unrest, customs clearance problems, significant weather events, etc. Despite these unknowns, OBO, remarkably, still managed to reduce delivery time. This salient point seems to be lacking from the report. Again, in light of the difficulties faced by OBO in the overseas environment it would seem fair to acknowledge in the title of the report that "significant" progress that has been made.

See comment 4.

(4) Impact of routine OBO personnel turnover

The following statements in the section entitled "Experienced and Qualified Project Staff" require clarification:

- a) "... because of inexperienced OBO project staff at one NEC construction site, it took nearly twice the normal amount of time to receive responses to work-related requests for information."

This is an inaccurate statement. The procedures and the response time for the Requests for Information (RFI) are set by the contract. So it is not clear what is meant by "*twice the normal amount of time*". OBO personnel in the field meet the contract requirement and timeline.

- b) "... in Cape Town we observed that although both contractor and OBO staff were experienced construction professionals, only 3 of OBO's 7 engineers and none of the contractor's personnel had previously worked on OBO projects. Moreover, since 4 of the OBO staff were South Africans, they could not enter the classified areas of the chancery."

4

This was the first time that this contractor worked for OBO. However, the contractor had been pre-qualified and had an excellent and well-established record. As the contractor pool has been enlarged, allowing for greater competition, contractors who have not previously worked for OBO will, of course, be involved in the program. The statement concerning the 4 OBO engineers who could not enter the classified areas is misleading, because it implies that somehow all 7 were required to work on this area. Yet, in order to keep costs down, the cleared-American workforce is of necessity quite limited, consistent with the limited scale of classified areas that need to be constructed.

- c) "We found that reassignments, terminations, retirements, and resignations among top-level OBO and contractor project staff disrupted work continuity."

Any contractor's personnel turnover might disrupt work continuity, but it is either due to normal personnel action (retirement, resignations etc.) or as an effort on the prime contractor to improve performance (in the case of poor performance). As for OBO personnel turnover, resignations and retirement are part of the natural process of management. People decide to resign and/or retire on a daily basis in any kind of business.

In general, OBO strives to staff their projects with an experienced Project Director and either an experienced Construction Manager or a newly hired Construction Manager (that might not have direct experience with OBO projects, but all of them would be experienced engineers, either with government or the private sector). In the case cited in Luanda, the replacement construction manager replaced the retired Project Director and did an excellent job in managing the project to completion. Also, if OBO feels that the second-in-command does not have the necessary know-how in the event the Project Director retires or resigns, OBO will cover the vacancy from the Washington-based pool of highly experienced Senior Project Executives until a replacement is assigned.

Also, while a contractor may feel that their poor performance can be attributed to occasional OBO staff turnover, the contractor is in full control of the project performance. Without specific examples supporting this assertion by contractors, it is hard to support any correlation between the status of OBO site staffing and the contractor's performance of their work.

(5) The reasons for higher operations and maintenance costs

The draft report states, "annual operations and maintenance costs for NECs are significantly greater than the costs for previous locations." This implies an apples-for-apples comparison, which does not mirror reality. Several important differences are glossed over in the report:

- a) The number one purpose of the capital security program is to provide more secure facilities. This required incorporating new chem-bio features, enhanced physical and technical security features, and more security lighting, for example, with the accompanying higher energy costs; it also requires greater setback necessitating maintenance of the larger green space, etc. These compounds can not be strictly compared to the existing buildings that they replaced.
- b) Maintenance of the previously used facilities was not adequately funded. While this is stated in the report, it is not clearly connected to the increased costs. Therefore, it does not show the true picture. A more accurate approach would be to compare what operations and maintenance should have been to what it is now.
- c) The previously-used facilities were in most cases considerably overcrowded, poorly designed for current needs, and inadequately maintained. Previous facilities were not maintained to industry standards, which mean that historical expenses are understated because they did not include the full maintenance requirements. In nearly all cases, from previous facilities, there has been (i) an increase in the complexity and amount of equipment that needs to be serviced and maintained, (ii) an increase in the total personnel count that use the facilities, (iii) an increase in the size of the facility, and (iv) an increase in security requirements.

See comment 5.

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(6) The significance of the absence of historical data

When the GAO report justifies its recommendation, it points out that enough NECs have now been built to provide data to make predictions of future operations and maintenance costs. However, the earlier absence of considerable relevant historical data is not mentioned to help explain why the Department was unable to accurately foresee the increased costs.

The Department's Response to the Recommendation

The Department supports the GAO recommendation to develop an integrated and comprehensive facilities plan that clearly specifies the financial and human resources for meeting the immediate and long-term operations and maintenance requirements for new embassy compounds (NECs). Accordingly the Department will take the necessary steps to address this recommendation.

See comment 6.

The following are GAO's comments on the State Department's letter dated June 19, 2006.

GAO Comments

1. We modified the text of the report to address this concern.
2. We did not complete a full analysis of OBO's value engineering process. We note that value engineering was integral to OBO's reformatted standard embassy design that will be used beginning with fiscal year 2006 projects. However, until these NECs come on line, it is unclear how the changes will impact operations and maintenance costs for those posts.
3. The first of the two objectives of our review was to assess State's performance in completing NEC projects on time and within cost parameters, and to examine the factors that affect construction projects. As such, the scope of our work, in part, required that we compare State's performance under the current construction program with its past efforts. However, an assessment of OBO's program performance relative to the efforts of other agencies or the private sector was not within the scope of our work.
4. We deleted the statements from our final report.
5. Our review and findings were to demonstrate that (1) the costs for operating and maintaining new embassy compounds are significantly higher than those costs associated with the facilities they replaced and (2) that no mechanism exists that clearly explains the resources needed for operating and maintaining NECs on a day-to-day basis. We neither state nor imply an "apples-to-apples comparison" between the resource requirements for operating NECs and those for the older facilities. To the contrary, we state that NECs are significantly larger, are more complex, and have significantly more demands than the facilities they replace. We attribute these factors, in part, to increased security needs, though we purposefully avoided discussion of specific equipment and functions that could be deemed sensitive. We also acknowledge that increased staffing needs could impact the size of NECs, which in turn, could affect operations and maintenance costs. Finally, in our report we acknowledged that operations and maintenance at U.S. diplomatic facilities had long been underfunded, and we stated how we and others concluded that this led to dilapidated conditions at many overseas posts. The relevant points for decision makers are that costs to operate and maintain the new facilities are significantly greater than the costs of the facilities they

replace, and that failure to provide adequate funding could repeat the cycle of deterioration previously seen at overseas diplomatic facilities. We believe that the first step toward ensuring that operations and maintenance activities are properly funded and staffed is to provide a clear and accurate representation of the necessary resources to those who make funding and human capital decisions.

6. During the course of our work, State officials said there was no way for them to predict how costs for operating and maintaining overseas posts changed when new embassies came online. We disagree with this contention. NECs under the current construction program are larger, tend to have more buildings, and are more complex than embassies and consulates constructed under the Inman program. However, Inman program embassies and others built during the 1990s, such as in Bogota, Colombia, and Lima, Peru, were required to meet many of the same security requirements and were significantly larger than the facilities they replaced. A comparison of actual operations and maintenance expenditures for these facilities may have highlighted the increased costs in a more timely manner.

Appendix IV: GAO Contacts and Staff Acknowledgments

GAO Contacts

Jess T. Ford, Director, International Affairs and Trade, (202) 512-4128, e-mail fordj@gao.gov, and Terrell G. Dorn, Director, Physical Infrastructure, (202) 512-6923, e-mail dornt@gao.gov.

Staff Acknowledgments

In addition to the individuals named above, Michael Courts, Assistant Director; Michael Arnes; Sam Bernet; Joseph Carney; Erika Carter; and Edward Kennedy made key contributions to this report.

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