Completion Report

March 2017

Special Capital Budget Project: Rehabilitation of the ADB's Headquarters Building and Enhancement of Security

Asian Development Bank

ABBREVIATIONS

ADB	–	Asian Development Bank
EVAC	–	emergency voice and alarm communication
FMS	–	fire management system
m^2	–	square meter
MVAC	–	mechanical, ventilation, and air-conditioning
OAFA	–	Facilities and Asset Management Division
OAFA-AP	–	Asset and Project Management Unit
OAS	–	Office of Administrative Services
SCBP	–	special capital budget project

NOTE

In this report, $ refers to the US dollar.

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I. PROJECT DESCRIPTION

1. The Asian Development Bank (ADB) headquarters was designed in 1984. Construction began after the architectural and engineering building designs were finalized in 1985 and was completed in 1990. At the time, the headquarters building was considered to be a model for energy-efficient building design and its adherence to environmentally friendly practices. After almost 15 years of operation, ADB Management proposed a special capital budget project (SCBP) to ADB's Board of Directors in 2004.[1] The project aimed to address the needs of an ageing building and improve the security features, which were not designed to mitigate current security threats, such as the possibility of terrorist attacks or bombings. The Board approved a special capital budget of $14.76 million to fund a project to enhance the security environment at the headquarters site and rehabilitate and improve the physical security and occupational safety and health measures in the building.[2]

2. The SCBP for Rehabilitation of the ADB's Headquarters Building and Enhancement of Security comprised five subprojects, each of which had several components. The SCBP was implemented from 2004 to 2012.

3. **Enhanced security access control to Bank facilities.** New reception facilities were built at the entrances to the headquarters on ADB Avenue and Bank Drive and at the Guadix Drive Gate entrance (Appendix 1). These were intended to enhance the security controls on access to the ADB premises by allowing the registration and processing of visitors and security screening to be undertaken at stations away from the main building. In addition, the east and west core lobbies were improved by introducing air locks and new security equipment.

4. **Protection from intrusion or terrorist attack.** To protect the interior and exterior physical facilities of the building against intrusion or terrorist attack, the project works

(i) reinforced the perimeter wall around the ADB headquarters compound;
(ii) installed shatter-resistant film on the building's external windows; and
(iii) undertook security measures to protect the outside air intake for the building's air-conditioning system.

5. **Rehabilitation of fire management system.** ADB's fire management system (FMS) had been in use for more than 13 years at the time of SCBP appraisal. The FMS consisted of fire suppression system, and fire detection and alarm system. It interfaces with the building services such as security systems, elevators, mechanical ventilation and air-conditioning (MVAC) system, public address system, and building automation system; and its operation forms part of the life safety system of the building. The performance of the FMS had declined over the years. Most of its components were obsolete and had exceeded their life cycle. Thus, replacement parts were hard to find and it had become very difficult to maintain the FMS properly.

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[1] ADB. 2004. *Special Capital Budget Proposal: Rehabilitation of ADB's Headquarters Building and Enhancement of Security*. Manila.

[2] As per Administrative Order 4.04, Appendix 2, para. 27, project completion reports (PCR) will be prepared and submitted by the project management team for each sub-project once it is fully completed and the facility becomes operational. The PCR will include: (i) description of the project; (ii) evaluation of project design and implementation arrangements; (iii) summary of variations including reallocations made and savings realized; (iv) evaluation of performance; (v) overall assessment and lessons learned; and (vi) conclusion and recommendations. The PCR after approval of the Management will be circulated to the Board for information.

6. The fire suppression system of the FMS was using an ozone-depleting substance (Halon 1301) that had to be replaced with a more environment friendly gas to comply with the Montreal Protocol of 1989.[3]

7. This FMS subproject was completed in October 2010 and has been maintained since then.

8. **Improving efficiency of facilities.** Regular maintenance had been carried out to maintain the structural utility and safety of the headquarters building since it opened. Wear and tear of the facilities, engineering equipment, and machines, compounded by harsh weather conditions and climate change, had nonetheless driven up the maintenance and repair costs. In view of this situation, the Office of Administrative Services (OAS) identified several components of an SCBP subproject that would (i) undertake the required periodic maintenance and rehabilitation, including replacement of ageing equipment with state-of-the-art equipment that is more efficient to reduce future annual maintenance costs; and (ii) make improvements to meet current building safety, and occupational health and safety requirements and standards.

9. These components involving upgrades to the physical plant (i.e., central air-conditioning chillers, the main electrical distribution system, and lighting dimmer control units); renovation of kitchen facilities, the building facade, and the roof deck; and the restoration of marble flooring have improved the performance of building operation.

10. **Space planning and optimization.** The ADB headquarters staff had grown significantly from 1,620 to almost 2,000 staff since ADB moved from the original building on Roxas Boulevard to the new offices in 1991. Office space had become a major staff concern by the time of SCBP appraisal, and about 90% of the building's office area (not including the library) was occupied. By realigning available space to maximize its use, an SCBP subproject enabled ADB to meet the short-term space requirements for staff expansion.

II. EVALUATION OF DESIGN AND IMPLEMENTATION

A. Relevance of Design and Formulation

11. The project supported ADB's security strategy to mitigate terrorist attacks and bombings. The 1984 ADB headquarters design did not include the security features needed to mitigate the security threats and risks that had emerged in the third quarter (Q3) of 2003. In the aftermath of the bombing of the United Nations office in Baghdad in 2003, security experts recommended that the security standards at the facilities of international organizations needed to be substantially improved.[4] Strengthened access control mechanisms and the associated physical and technical security infrastructure were said to be particularly important. The SCBP addressed and met this need.

[3] United Nations. 1989. *Montreal Protocol on Substances That Deplete the Ozone Layer*. https://treaties.un.org/doc/Treaties/1989/01/19890101%2003-25%20AM/Ch_XXVII_02_ap.pdf

[4] United Nations. 2003. Report of The Independent Panel on the Safety and Security of UN Personnel in Iraq. http://www.un.org/News/dh/iraq/safety-security-un-personnel-iraq.pdf

B. Project Outputs

12. **Enhanced security access control to Bank facilities.** The enhancement of security controls on access to ADB's headquarters facilities involved several activities (Appendix 2):

(i) New reception facilities were built for the three access points. These were
  (a) an ADB Avenue reception facility, which included 272 square meters (m^2) of enclosed space and 293 m^2 of entrance and exit control canopies;
  (b) the Guadix Drive Gate entrance (123 m^2 of enclosed space and 141 m^2 of control canopy; and
  (c) the Bank Drive entrance that included fixed bollards, 97 m^2 of enclosed space, and 103 m^2 of control canopy.

(ii) The main and west lobby access controls (entry and exit) were segregated by introducing two different lanes. The staff and visitors' entry is through a metal detector complemented with x-ray machine while the exit lanes are without controls.

(iii) Security systems components were installed, comprising
  (a) heavy-duty security booms at driveway entry and exit points;
  (b) walk-through scanners and x-ray bag screening; and
  (c) cantilevered gates.

(iv) Civil works were executed for the geometric reconfiguration of driveways.

(v) Trees and vegetation affected by the project were relocated.

(vi) All areas affected during the execution of the works were repaired and touched up including minor greening restoration.

(vii) Clean-up was completed in time for the turnover of the project.

13. **Protection from intrusion or terrorist attack.** Several steps were taken to protect the headquarters from intrusion or terrorist attacks:

(i) **Security reinforcement of ADB perimeter wall**. Welded steel wire mesh mounted on steel structures was erected above the existing perimeter wall from the EDSA - Guadix Drive junction to the Guadix Drive visitor reception center to protect the liquefied petroleum gas tanks, gasoline station, and satellite dishes within the headquarters compound. Similar steel wire mesh was also erected on top of the cooling tower from Guadix Drive to the ADB Avenue to protect the operation of its fans and motors that support the central air-conditioning system of the headquarters.

(ii) **Shatter resistant film for external windows**. Shatter-resistant film was installed on all exterior and interior glass panels.

(iii) **Security protection of outside air intake for the building air-conditioning system**. Eight new air handling units were installed on the roof decks of the office tower and the special facilities block. This made the outside air intake inaccessible to unauthorized personnel and better protected from airborne attack. In addition, the new air handling units enhanced the indoor air quality for ADB staff and decreased transmission of viruses and pollens.

14. **Rehabilitation of fire management system.** The old FMS was replaced by a new fire management control system that interfaced with smoke detectors, heat detectors, public address speakers, pull stations, flow switches, and other related sensing and operating devices; elevators; building automation system; the MVAC system; and the security system. The old fire management suppression system at the data center was also replaced.

15. **Improving efficiency of facilities.** The subproject covered the upgrade of systems and replacement of ageing equipment to improve performance and reduce future annual maintenance costs.

(i) **Physical plant.** Upgrades to the following equipment and systems were undertaken:

(a) **Central air-conditioning chillers.** The subproject installed two complete sets of new 400-ton water-cooled centrifugal chillers on prefabricated concrete plinths and connected them to the existing chilled and condensed water system (Appendix 3).

(b) **Main electrical distribution system.** The subproject reinforced the main electrical distribution system by
(1) replacing switchgears, load break interrupter, and automatic transfer switches;
(2) retrofitting and upgrading protective devices, controls, and accessories;
(3) performing electrical testing and commissioning services;
(4) upgrading and reinforcing circuit feeders; and
(5) increasing the uninterruptible power supply capacity for IT equipment.

(c) **Lighting dimmer control units.** The subproject replaced the existing lighting dimmer control system and control units in the main auditorium hall, Board room, television studio room, display and briefing rooms, mini theater, and Department of External Relations briefing theater with modern programmable control units (Appendix 4).

(ii) **Renovation of facilities.** The subproject improved existing facilities to meet current building safety, and occupational health and safety requirements and standards.

(a) **Rehabilitation of kitchen facilities.** The headquarters' kitchen facilities were rehabilitated through the following (Appendixes 5–7):

(1) The subproject developed a new architectural and engineering design for a more streamlined and flexible layout. This layout provided an efficient flow of food production activities. It enabled the kitchen to deliver complex menus and comply with latest food technology standards and safety regulations.
(2) It rehabilitated and reconfigured the chiller and freezer storage facilities to meet the requirements of the new food quality standards and process flow.
(3) It installed new kitchen equipment.
(4) It modified the existing wall panels, and realigned the drainage and grease trap system.
(5) It improved the flooring to make it non-slip and have a proper gradient to ensure wastewater did not leak into the lower floor.
(6) It realigned and balanced the MVAC system to complement the new layout and improve the kitchen environment.

(b) **Rehabilitation of building facade and roof deck.** The rehabilitation was initiated due to the exposure of the facade and roof deck to harsh weather conditions (Appendix 8).

(1) The subproject replaced the lead flashing, marine plywood backing, and deteriorated organic sealant on the granite wall tiles along the office tower and special facilities block with a better waterproofing membrane, lightweight concrete, and durable inorganic sealant.
(2) It replaced the seismic joints between the office tower and special facilities block buildings with new neoprene membranes.

(c) **Restoration of marble floor.** The restoration work included the leveling of the marble floor and the following:

(1) It removed the cracks and fissures, cleaned up the marble, and restored the surface with the correct polyester filling.
(2) It abraded repaired marble surfaces to level with adjacent stones.
(3) It completed the required polishing and honing of marble baseboard.
(4) It improved the finishing of the marble.

16. **Space planning and optimization.** The subproject realigned the available office space to maximize its use and meet the short-term requirements for staff expansion.

(i) It performed a detailed assessment of workspaces, space design and layout, and implementation plan.
(ii) It carried out remodeling and relocation of offices on all floors.
(iii) It modified furniture and workstations.
(iv) It installed space saving shelves.

C. Project Costs

17. The actual total project cost was $14.73 million. The breakdown of projects costs is shown in Table 1.

Table 1: Financial Report
as of 30 June 2014
($)

Cost Category	Budget		Total Disbursements	Balance
	Approved Budget	Revised Budget		
Subproject and Component				
A. Enhanced Security Access Control to Bank Facilities[a]	3,466,500	2,451,627	2,451,627	0
B. Protection from Intrusion or Terrorist Attack				
1. Security reinforcement of ADB perimeter wall[b]	835,000	115,016	115,016	0
2. Shatter resistant film for external windows[c]	800,000	676,270	676,270	0
3. Security protection of outside air intake for the building air-conditioning system[d]	1,450,000	986,438	986,438	0
C. Rehabilitation of Fire Management System[e]	820,000	896,903	900,823	(3,920)
D. Improving Efficiency of Facilities				
1. Physical plant				
a. Central air-conditioning chillers[f]	630,000	618,508	605,662	12,846
b. Main electrical distribution system	765,000	765,000	754,518	10,483
c. Lighting dimmer control units	55,500	60,000	60,034	(34)
2. Renovation of facilities				
a. Rehabilitation of kitchen facilities[g]	660,000	3,418,992	3,433,714	(14,723)
b. Rehabilitation of building facade and roof deck[h]	1,110,000	1,775,867	1,776,305	(438)
c. Restoration of marble floor[i]	237,000	230,753	230,753	0
E. Space Planning and Optimization[j]	2,650,000	2,726,404	2,702,012	24,392
Contingency[k]	1,282,000	39,222	35,977	3,246
Total	**14,761,000**	**14,761,000**	**14,729,148**	**31,852**

() = negative.
[a] Savings of $1,014,873 from enhanced security access control subproject was added to contingency budget.
[b] Savings of $720,000 from perimeter wall subproject component was added to contingency budget.
[c] Savings of $123,621 from shatter resistant film subproject component was added to contingency budget.
[d] Savings of $463,562 from security protection of outside air intake subproject component was added to contingency budget.
[e] $77,000 of contingency budget was reallocated to the fire management system subproject.
[f] Savings of $42,992 from central air-conditioning chillers subproject component was reallocated to the rehabilitation of kitchen.
[g] $1,680,000 of contingency budget was reallocated to the rehabilitation of kitchen and additional $120,000 was reallocated in March 2010.
[h] Savings of $534,133 from rehabilitation of building facade and roof deck subproject component was reallocated to the rehabilitation of kitchen.
[i] Savings of $6,247 from restoration of marble floor subproject component was added to contingency budget.
[j] $109,000 of contingency budget was reallocated to cover the space assessment service by the consultant. Savings of $32,596 from space planning and optimization subproject was reallocated to the rehabilitation of kitchen.
[k] Overtime was charged to contingency budget. Savings of $349,067 from contingency budget was reallocated to the rehabilitation of kitchen.
Source: Asian Development Bank.

18. **Rehabilitation of kitchen facilities.** The original approved budget for the rehabilitation of the kitchen facilities covered the original scope, which was to replace the kitchen equipment only. In 2005, OAS studied the food services operation and recommended that it be changed from the conventional system then in use to a food court model. The study found that this would help ADB meet the diverse culinary requirements of its multicultural staff and guests. A review of this new model against the existing available operational space in the cafeteria found that additional space would be needed for food stalls to serve a variety of Asian and Western cuisines. Based on this study, additional funds were earmarked to expand the cafeteria facilities, including the kitchen.

19. ADB was also expecting a significant increase in the size of its headquarters due to the anticipated 2009 general capital increase.[5] This increase was approved in ADB's work program and budget framework for 2010–2012,[6] and additional dining facilities had to be considered. This resulted in the construction of a new mezzanine floor space above the food court and the light well.[7] To build the mezzanine and the light well, ADB's Budget, Personnel and Management Systems Department approved a budget reallocation from the atria project[8] because the objective of allowing natural light to enter the food court and the light well would be met through the construction of the additional dining area on the mezzanine. The overall project costs increased as a result of these changes, which were implemented over 3 years in phases to avoid disruption to the food services operation. The budget funds were provided in increments during implementation.

D. Project Schedule

20. The project began in 2004. The completion dates for the subprojects and their components are shown in Table 2.

Table 2: Implementation Completion Dates

Subproject and Component	Completion Date
A. Enhanced Security Access Control to Bank Facilities	December 2005
B. Protection from Intrusion or Terrorist Attack	
1. Security reinforcement of ADB perimeter wall	November 2006
2. Shatter resistant film for external windows	June 2005
3. Security protection of outside air intake for the building air-conditioning system	December 2006
C. Rehabilitation of Fire Management System	October 2010
D. Improving Efficiency of Facilities	
1. Physical plant	
a. Central air-conditioning chillers	October 2007
b. Main electrical distribution system	June 2013
c. Lighting dimmer control units	October 2007
2. Renovation of facilities	
a. Rehabilitation of kitchen facilities	October 2012
b. Rehabilitation of building facade and roof deck	October 2010
c. Restoration of marble floor	October 2007
E. Space Planning and Optimization	March 2010

Source: Asian Development Bank.

E. Implementation Arrangement

21. The project was implemented following the implementation guidelines prepared in accordance with Administrative Order 4.04,[9] under the direct supervision of the Senior Project Manager, SCBP of the Facilities and Asset Management Division (OAFA) of OAS.

[5] ADB. 2009. *Chair's Summary of Meeting of the Board of Directors.* http://www.adb.org/sites/default/files/institutional-document/31604/chair-summary-gci-v.pdf

[6] ADB. 2009. *Work Program and Budget Framework 2010-2012.* http://www.adb.org/sites/default/files/institutional-document/33475/files/work-program-budget-framework-2010-2012.pdf

[7] An existing open light well in the cafeteria was converted into a dining area for additional seating. To allow daylight to reach the offices below this section of the cafeteria, glass blocks were used for flooring and a glass pyramid was added.

[8] ADB. 2003. *Special Capital Budget Proposal: Improved Daylight Access for the Asian Development Bank Atria and Adjacent Offices.* Manila.

[9] ADB. 2013. Capital Expenditure Policies and Procedures. *Administrative Orders.* AO4.04. Manila

F. Consultant Recruitment and Procurement

22. Consultants were recruited based on ADB's Guidelines on the Use of Consultants.[10]

23. Goods and services were procured in accordance with Administrative Order 4.07 Institutional Procurement and Contract Administration.[11]

G. Performance of Consultants, Contractors, and Suppliers

24. **Enhanced security access control to Bank facilities.** The consultant performed satisfactorily. A single consultant group was selected and contracted to provide services both as architectural and engineering consultant, and project management consultant. In the design phase of the project, the consultant group was responsible for architectural, engineering, and specialized technical design, bid documentation, cost estimates, planning and control, and preparation of bills of quantities and contracts. During the construction phase, the consultant group was responsible for overall planning; coordination; scheduling; contract administration; and supervision, management, and control of project activities. This use of a single consultant group streamlined communications and the exercise of responsibilities and saved valuable time that contributed to the timely delivery of the subproject.

25. The contractor completed the structural works ahead of schedule. The time gained was put to good use in the preparation of additional inputs and details of the architectural works to meet the specified standards. However, it took the contractor almost 6 months to satisfactorily complete the remaining works after the main works had been done despite the assistance of ADB and the project management consultant to speed up the work. The major issues resulting in delays, such as variation orders, are listed in Appendix 9. Delays by the contractor in the purchase of imported materials added to the project's overall delay. The Asset and Project Management Unit, Facilities and Asset Management Division (OAFA-AP) of OAS called the contractor's attention several times due to its failure to provide safety and security measures and maintain site cleanliness. Further, OAFA-AP continued to coordinate with the contractor to complete the subproject satisfactorily despite many obstacles. The overall performance of the contractor was satisfactory through the support of OAFA-AP.

26. **Protection from intrusion or terrorist attack.** Overall, the contractors for this subproject performed satisfactorily. No major issues affected the implementation of the subproject, which included the following components:

(i) **Security reinforcement of ADB perimeter wall.** This was completed in November 2006, 1 month ahead of the scheduled completion date of December 2006.

(ii) **Shatter resistant film for external windows.** This was completed in June 2005, 6 months ahead of the scheduled completion date of 30 December 2005.

(iii) **Security protection of outside air intake for the building air-conditioning system.** This was scheduled to be completed by February 2007, but the contractor finished it ahead of schedule in December 2006 despite such challenges as unfavorable weather, delays in the delivery of equipment, and inconsistencies between the as-built structural plans and the actual site conditions.

[10] ADB. 2002. *Guidelines on the Use of Consultants by ADB and its Borrowers*. Manila.
[11] ADB. 2016. Institutional Procurement and Contract Administration. *Administrative Orders.* AO4.07. Manila

27. **Rehabilitation of fire management system.** The performance of the contractor was satisfactory. This subproject was completed in October 2010, and the FMS was tested and functioned satisfactorily in an operational environment during an emergency drill at ADB headquarters on 3 December 2010.

28. **Improving efficiency of facilities.** Details on the performance of the consultants and contractors for the two components of the subproject to improve the efficiency of the headquarters facilities are as follows:

(i) **Physical plant.** The overall performance of the contractors for this component was satisfactory. The contactors addressed issues and overcame difficulties while working within limited time windows. They minimized the disruption to normal headquarters operations. Except for the main electrical distribution system, the works were completed on schedule and within budget:

(a) **Central air-conditioning chillers.** Minor shipping delays occurred, but the contractor worked in two shifts to catch up on the work. This limited the completion delay to only 6 days from the projected date.

(b) **Main electrical distribution system.** This was originally scheduled for implementation starting in January 2005. However, the ADB staff resourced for this project had other work priorities, and the start date was moved to Q2 2008, with completion expected in September 2009. Due to continuing changes in the power protection technology and the required due diligence in the evaluation of modern systems that could be installed in ADB headquarters, the project completion was deferred to 2013. The project was completed in June 2013.

(c) **Lighting dimmer control units.** This was completed on schedule and within budget on 30 January 2008. The system was used immediately.

(ii) **Renovation of facilities.** The overall performance of the consultants and contractors for each of the components is described below:

(a) **Rehabilitation of kitchen facilities.** The consultant performed satisfactorily, although the review and approval of some shop drawings and material sample submittals were delayed. A single consultant group was selected and contracted to provide services both as the architectural and engineering consultant and the project management consultant. This streamlined communication and responsibilities, as it did in the enhanced security access control subproject.

The contractor who started the project made good progress initially, but delays in the procurement and delivery of materials affected the critical stage of the construction activities. This problem was compounded by the contractor's internal management and financial problems. This led to the contractor defaulting on the delivery of construction of the food court (phase one of the project) and the additional scope of the mezzanine floor. The contract was terminated in May 2010, and the final account excluded the remaining phases of the overall project.

After the contract termination, sole source procurement was approved by ADB's Institutional Procurement Committee to engage the second-ranked bidder from the original bidding exercise in 2009 for the remaining phases of the project. The contract was awarded on 31 May 2011, and works under the contractor began on 13 June 2011.

The new contractor committed to complete the defects list and outstanding works based on the final inspection 39 days after substantial completion on 23 July 2012. This was delayed by 31 days. However, the contractor's work complied with the technical specifications. The quality of workmanship for the civil; sanitary; structural; and the mechanical, electrical, plumbing works was very good. The quality of workmanship for the architectural works was fair. The coordination of subcontractors and suppliers for the mechanical, electrical, plumbing and the architectural works was satisfactory, except for coordination with the waterproofing subcontractor. The defects list and outstanding works were completed on 1 October 2012. Overall, the replacement contractor performed satisfactorily.

(b) **Rehabilitation of building facade and roof deck.** Notwithstanding the unsatisfactory performance of the contractor as noted in the following paragraphs, the consultant performed satisfactorily. This subproject component also selected and contracted a single consultant group to provide services both as the architectural and engineering consultant and project management consultant (para. 24). The engagement of a single project consultant team with responsibility for design, documentation, and construction supervision resulted in an effective and efficient consulting arrangement.

The performance of the contractor was unsatisfactory. The contractor incurred a delay at the onset, and this cascaded to the other phases of the work. The rehabilitation was extended several times, mainly due to inclement weather. Since all works were done on the building exterior, favorable weather conditions were necessary for project execution. The contractor needed to take on work that was not included in the original contract but was found to be necessary after the scheduled works got under way. These additional works entailed a corresponding time extension.

Other factors contributed to the delays. The unsatisfactory performance of the contractor required repetition or modification of the works, and the contractor's problems with scheduling works without disrupting ADB operations delayed the rehabilitation. The contractor transferred the project manager to another one of its projects. This affected the work significantly and left the rehabilitation without a leader to provide proper oversight and management. OAS and the consultant subsequently required the contractor to recall the project manager until the rehabilitation was completed.

These combined delays led to an extension of the contract from the originally scheduled completion date of 3 March 2010 to 19 September 2010. The rehabilitation began on 3 November 2008 and was completed on 18 October 2010, 29 days after the extended target completion date.[12]

(c) **Restoration of marble floor.** The contractor performed satisfactorily. It had shown superior workmanship in previous marble restoration at ADB headquarters and was engaged to maintain this quality and a consistency in the work on the floors. The original project scope was completed in December 2005. Costs savings were used to restore additional areas of the marble floors. These additional works were completed and turned over to OAFA in October 2007, ahead of the projected completion date of 31 December 2007.

29. **Space planning and optimization.** The consultant team performed satisfactorily. The team proposed several strategies to provide additional space within the existing headquarters to accommodate ADB's projected immediate and long-term staff expansion. The team recommended that the best option for a first step was the reorganization of existing spaces, followed by construction of a complete third atrium. The subproject began in September 2004, and the team presented the final recommendations to the SCBP steering committee in February 2005.

30. The implementation of and the budget management for the space optimization subproject were undertaken by OAFA. The measures recommended were implemented in a timely, phased, and coordinated manner to minimize disruption to ADB's operations and determine whether they were appropriate solutions to the current demand. The project was originally scheduled for completion by September 2008. However, due to other priority projects being implemented within ADB, the subproject was completed in March 2010.

H. Performance of Office of Administrative Services in Implementing the Project

31. OAS's performance is rated *satisfactory*. OAS carried out a great deal of work to coordinate with the construction teams for each of the subprojects. It phased subproject works carefully so that they would take place after office hours and on weekends to avoid disrupting operations, other staff and visitor activities, and the headquarters' utilities systems during normal ADB work periods. The majority of the subprojects were completed ahead of the scheduled completion dates and with costs savings.

III. EVALUATION OF PERFORMANCE

A. Relevance

32. The project is rated *relevant.* It was highly relevant at the time of appraisal and at completion. Even before the September 2001 terrorist attacks in New York City and Washington, DC in the United States, OAS had identified a need to institute measures to enhance security at ADB headquarters. The measures undertaken included an increase in

[12] ADB. 2011. *Rehabilitation of ADB Building Facade & Roof Deck Project Close-out Report*. Consultant's report. Manila

security patrols; a comprehensive risk assessment study; the implementation of new procedures to process visitors; and installation of new closed-circuit television surveillance systems, x-ray machines, and metal detectors. The SCBP has reduced ADB's vulnerability to threats. The improvements it brought about continue to ensure the safety and security of those who work at and visit its headquarters. The project strengthened physical security and made the engineering facilities more efficient. ADB's headquarters is now current with the green building standards for new structures.

B. Effectiveness in Achieving Outcome

33. The project is rated *effective* in achieving its intended outcome, which is discussed in paras. 34–38.

34. **Enhanced security access control to Bank facilties.** The project enhanced the security of ADB facilities and the control on access to headquarters to better protect ADB from intrusions and terrorist attacks. Tighter security controls on the arrival and departure of personnel and visitors, additional security equipment, and the reinforcement of the ADB grounds perimeter and the building envelope were put in place without people feeling forced or threatened. Personnel and visitors enter and leave the headquarters smoothly through the gates. The security reinforcement of the ADB perimeter walls is hardly noticeable.

35. **Protection from intrusion or terrorist attack.** The project relocated the outside air intake facilities to the roof deck of the office tower building to protect against an airborne chemical or biological attack on the office air-conditioning system. Instead of drawing exterior air from the ground south parking level for ventilation and pressurization purposes, the air-conditioning system now draws it from the secured roof deck of the office tower block. An additional benefit is the fact that the air quality at the roof deck level is less affected than ground level air by carbon monoxide and other pollutants in the headquarters area. The indoor air quality has improved in the toilets and basement parking garages due to the installation of a new ventilation system.

36. **Rehabilitation of fire management system.** The first component of the FMS, the new fire suppression system (Inert Gas 100) consisting of nitrogen gas, replaced the banned Halon 1301 (consisting of chlorofluorocarbon), an ozone depleting substance. This complies with the Montreal Protocol of 1989 (footnote 2). The second component, consisting of the fire detection and alarm system and emergency voice and alarm communication (EVAC) system, replaced the aging system with obsolete technology.

37. **Improving efficiency of facilities.** The intended outcome is discussed below.

(i) **Physical plant.** The central air-conditioning and main electrical systems are the main arteries of the working conditions inside the headquarters facility. By upgrading them with the latest technology, ADB has demonstrated that the quality of life of the building's occupants is one of its prime concerns.

(ii) **Renovation of facilities.** The reconfiguration of the kitchen and the transformation of the dining-kitchen area into a food plaza have made the cafeteria an attractive and cozy place for dining. Various levels of privacy were created for individuals, small groups, and big groups in different areas by clustering tables and designating nooks. Additional skylights have created a new

atmosphere in the dining spaces that has resulted in a notable increase in the number of meals served daily.

38. **Space planning and optimization.** The remodeling and upgrading of work spaces have effectively addressed the current need of ADB staff for adequate work space and work stations.

C. Efficiency in Achieving Outcome and Outputs

39. The project is rated *efficient*. Some of the subproject component highlights are cited below to show the efficiency of the project in achieving outcome and outputs.

40. **Enhanced security access control to Bank facilities.** The three visitor registration centers located at the entrances to the ADB headquarters compound at ADB Avenue, Guadix Drive, and Bank Drive were constructed as part of this subproject. These visitor registration centers enable the access of visitors to the headquarters through a proper security screening and control, separating the flow from the entrance of staff and dependents. With this segregation, the security access control is managed efficiently by reducing congestion at the main lobbies (east and west) and significantly reduced the risk due to unauthorized access.

41. **Protection from intrusion or terrorist attack.** By securing the building infrastructure particularly the liquefied petroleum gas tanks, the gas station, and satellite dishes including the central air-conditioning cooling tower from any security threat, the operation of the headquarters facility is safely maintained without disruption. This in itself provides ADB operational efficiency on a daily basis.

42. **Rehabilitation of fire management system.** Generally, the components of the FMS met the objectives of the project except for the EVAC system that has been intermittently exhibiting weakness since 2014. This component will have to be diagnosed to identify the root cause of the intermittent problem and implement corrective engineering control measures to restore the system reliability.[13]

43. **Improving efficiency of facilities.** The upgrade of central air-conditioning chillers and main electrical system resulted in average annual savings of $42,600 in electricity. Also, the food plaza concept, as part of rehabilitation of kitchen facilities, has been working well, based on the growth in the number of people patronizing the cafeteria.

44. **Space planning and optimization.** Through this subproject, several strategies were implemented to recover and optimize space from the various areas and locations of the office tower block. It resulted in the recovery of 3,400 m^2 to accommodate the growth until 2010.[14]

D. Preliminary Assessment of Sustainability

45. The project is *likely sustainable* because the measures implemented (i.e., enhanced security access control) are understood by the staff and visitors, and they could assimilate the security and safety guidelines and procedures.

[13] Funding for this work is to be included in 2017 Special Capital Budget.
[14] ADB. 2009. *Special Capital Budget Proposal: Expansion of ADB Headquarters Building and Selected Resident Missions.* Manila.

46. Similarly, the components carried out to improve efficiency of facilities will continue to be maintained throughout its occupancy by complying with good maintenance practices and adhering to original equipment manufacturers' recommendation. The type of refrigerant used in the air-conditioning chillers has no impact to the ozone depletion and also has low global warming impact.

47. ADB has sought to ensure this sustainability by providing education and training on enhanced security and access control to ADB staff. Relevant security and safety information has been made available to staff through the establishment of state-of-the-art security operations center and an enhanced staff emergency communications system.

E. Impact

48. The cost of having an enhanced security system in place is relatively small compared with the potential harm that could be done by a terrorist attack or other serious security event. The impact of the project is significant in terms of the reduction in the risks to ADB's staff and facilities. Their security and safety cannot be compromised.

49. The project has had a significant positive social impact on the building occupants, both through an increased sense of safety and security and the creation of a better work place that can translate into greater staff satisfaction and productivity.

50. ADB initially thought that the stringent screening and registration procedures brought about by the project might have a negative impact on visitors to ADB headquarters. However, this has not become a big issue since the general public in Metro Manila undergoes security measures when entering almost all public buildings.

IV. OVERALL ASSESSMENT AND RECOMMENDATIONS

A. Overall Assessment

51. Except for the FMS particularly the EVAC system, the project is rated *successful*. It (i) reduced ADB's vulnerability to threats, (ii) reduced the risks to staff safety and security, (iii) increased the efficiency of facilities in the building, and (iv) saved on construction and maintenance costs. The project's main objectives were accomplished, i.e., protection from terrorist attacks, and improved efficiency of the headquarters facilities.

B. Lessons

52. Engaging a single consultant group with total responsibility for the design, cost control, and construction supervision of a subproject simplified administration and made coordination easier by providing a single point of contact for both ADB and the contractors.

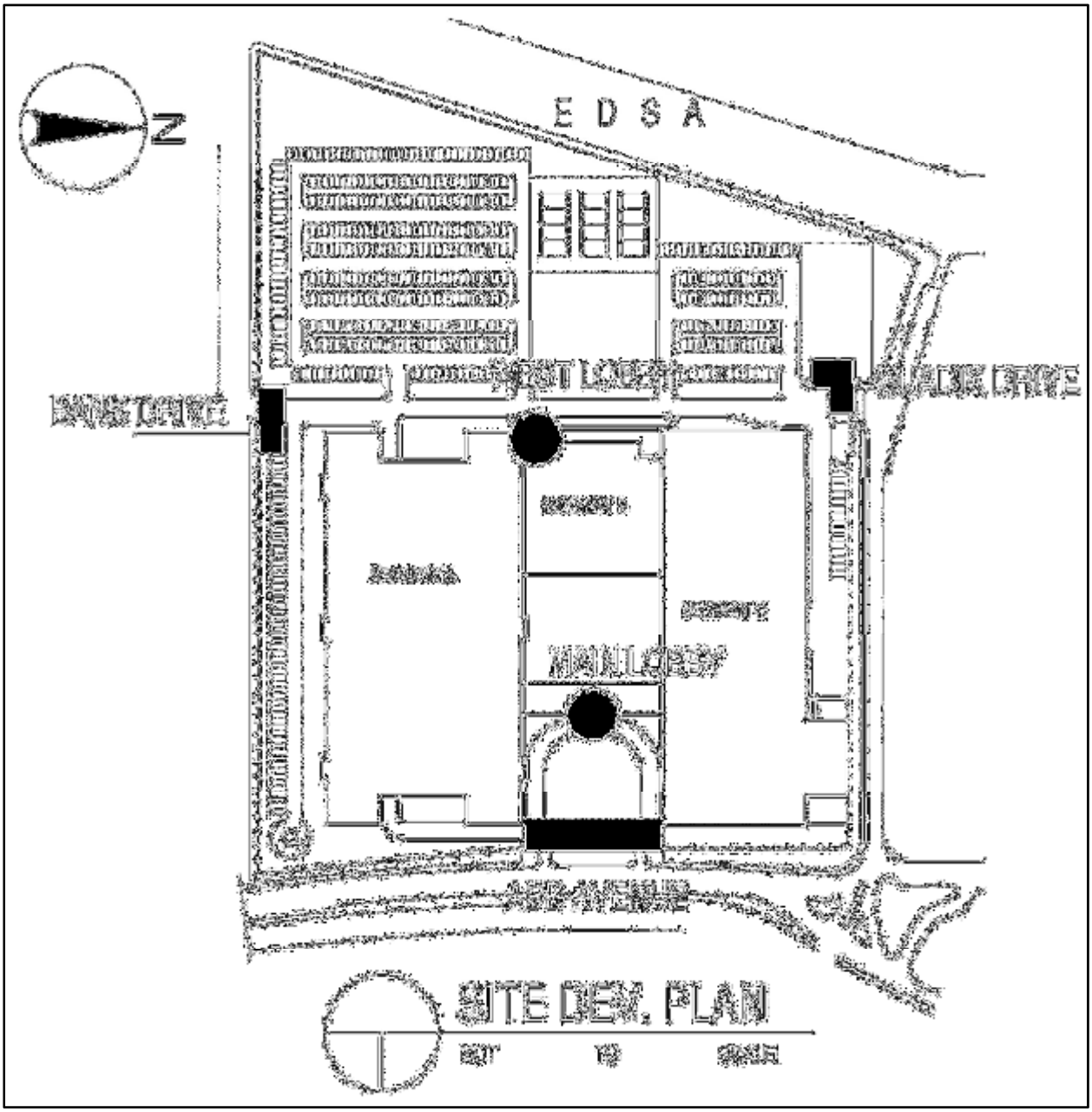
53. The importance of teamwork, proper coordination, and cooperation between ADB and the contractors cannot be overemphasized. Despite challenges in implementing the project against budget and timeline to a large extent, the subprojects were successfully completed.

C. Recommendations

54. Taken together, the subprojects improved the building's efficiency in terms of better indoor air quality, office space allocation, increased uninterrupted power supply capacity, and a better backup to the central chiller operation. However, the headquarters facility's electricity substations and FMS will require subsequent capital investment for upgrades.

55. Study of the electrical power distribution system of the seven substations is planned to be undertaken by Q1 2017. Based on this study, a special capital budget proposal will be prepared. Funding for the corrective measures on the EVAC of FMS and further security upgrades of electronic access control is to be included in the 2017 Special Capital Budget Proposal.

ENHANCED SECURITY ACCESS CONTROL: SITE DEVELOPMENT PLAN



ENHANCED SECURITY ACCESS CONTROL: STRUCTURES

Photograph A2.1: ADB Avenue Visitor Registration Center

Photograph A2.2: Bank Drive Visitor Registration Center

Photograph A2.3: Guadix Drive Visitor Registration Center

Photograph A2.4: Main Lobby Enhancement

Photograph A2.5: West Lobby Enhancement

SECURITY PROTECTION OF OUTSIDE AIR INTAKE FOR THE BUILDING AIR-CONDITIONING SYSTEM AND CENTRAL AIR-CONDITIONING CHILLERS

Photograph A3.1: Secondary Air Handling Units

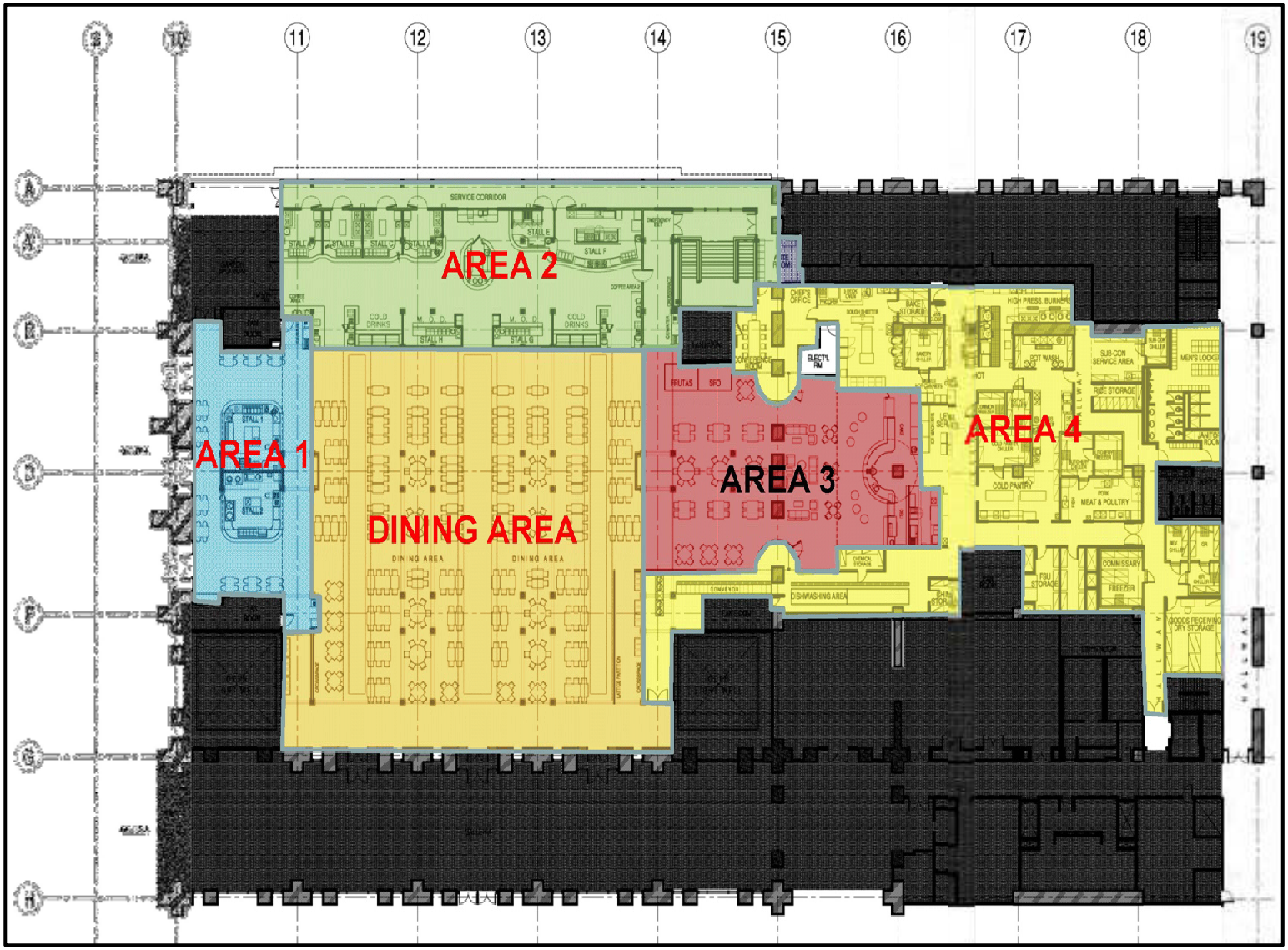
Photograph A3.2: Chillers

LIGHTING DIMMER

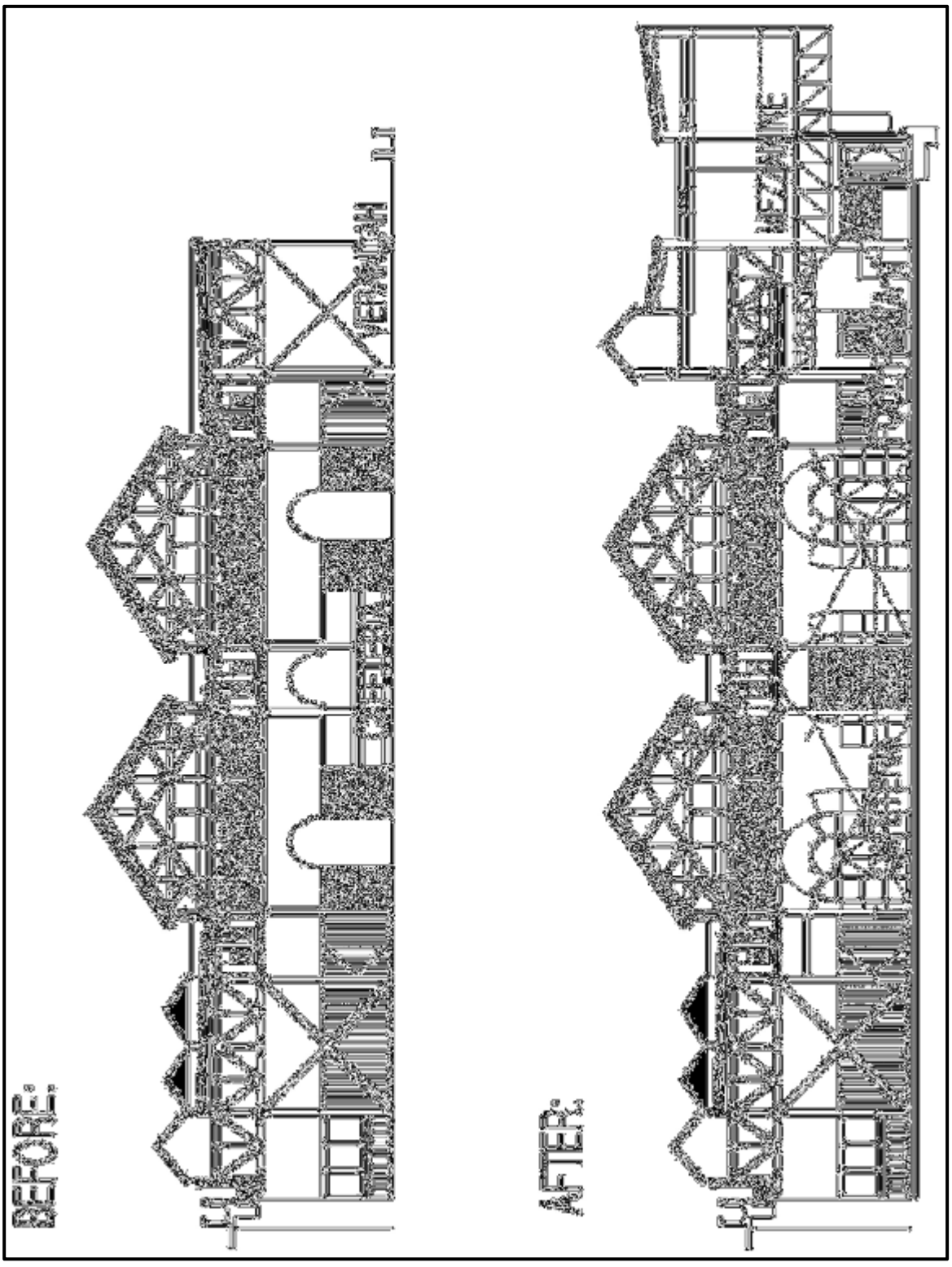
Photograph A4.1: Old Dimmer System Panel

Photograph A4.2: New Dimmer Panels Racks

CAFETERIA AND KITCHEN FLOOR PLAN AFTER REHABILITATION



CAFETERIA SECTION BEFORE AND AFTER REHABILITATION



CAFETERIA AND KITCHEN AFTER REHABILITATION

Photograph A7.1: Cafeteria Main Dining Area (October 2011)

Photograph A7.2: Cafeteria Main Dining Area (August 2012)

Photograph A7:3: Food Plaza (May 2010)

Photograph A7.4: Bakery and Deli (May 2010)

Photograph A7.5: Mezzanine Exterior (May 2010)

Photograph A7.6: Kitchen (July 2012)

FACADE AND ROOF DECK REHABILITATION

Photograph A8.1: Roof Capping and Lightning Arrester Installation

Completion of roof capping and lightning arrester installation at Core 1, roofdeck Segment C.

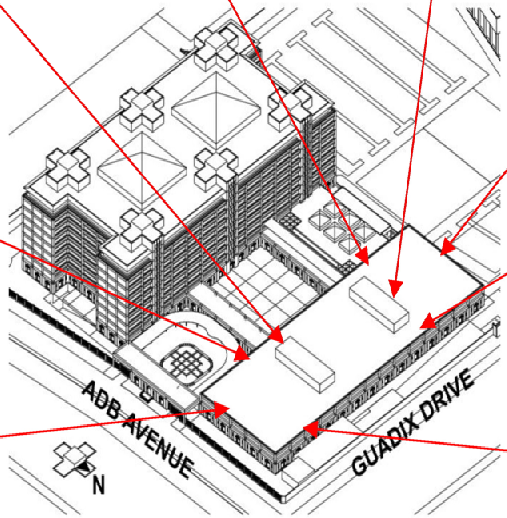
Completion of roof capping and lightning arrester installation at roofdeck Segment C (ADB Ave. side).

Completion of roof capping and lightning arrester installation at Core 2, roofdeck Segment C.

Completion of roof capping and lightning arrester installation at roofdeck Segment C (EDSA side).

Completion of roof capping and lightning arrester installation at roofdeck Segment C (ADB Ave. side).

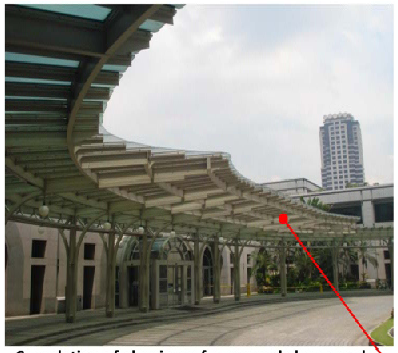
Completion of roof capping and lightning arrester installation at roofdeck Segment C (GUADIX side).



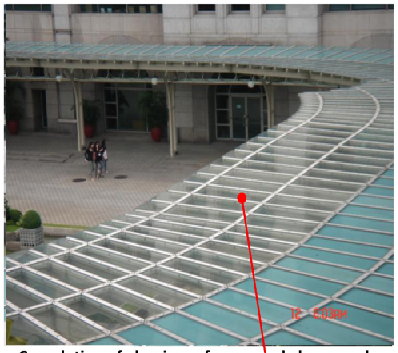
Completion of roof capping and lightning arrester installation at roofdeck Segment C (ADB Ave. side).

Completion of roof capping and lightning arrester installation at roofdeck Segment C (GUADIX side).

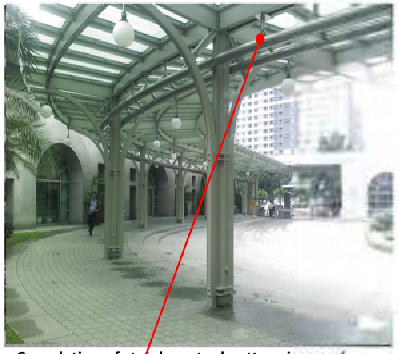
Photograph A8.2: Completion of Installation of Aluminum Frames, Glass Panels, and Stainless Steel Gutter Pipes and Downspouts



Completion of aluminum frames and glass panels installation at east glass canopy extension.



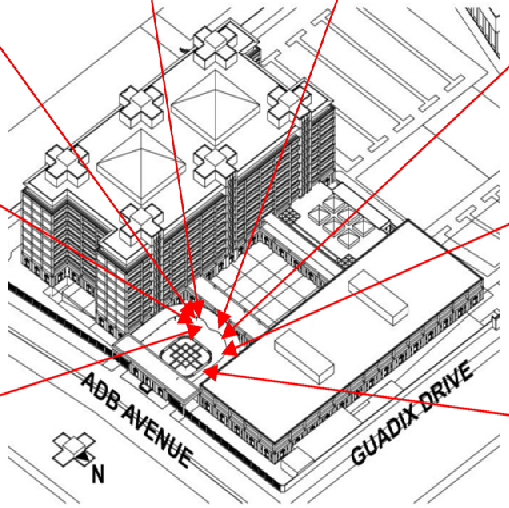
Completion of aluminum frames and glass panels installation at east glass canopy extension.



Completion of stainless steel gutter pipes and downspouts at east glass canopy extension.

Completion of stainless steel gutter pipes and downspouts at east glass canopy extension.

Completion of aluminum frames and glass panels installation at east glass canopy extension.

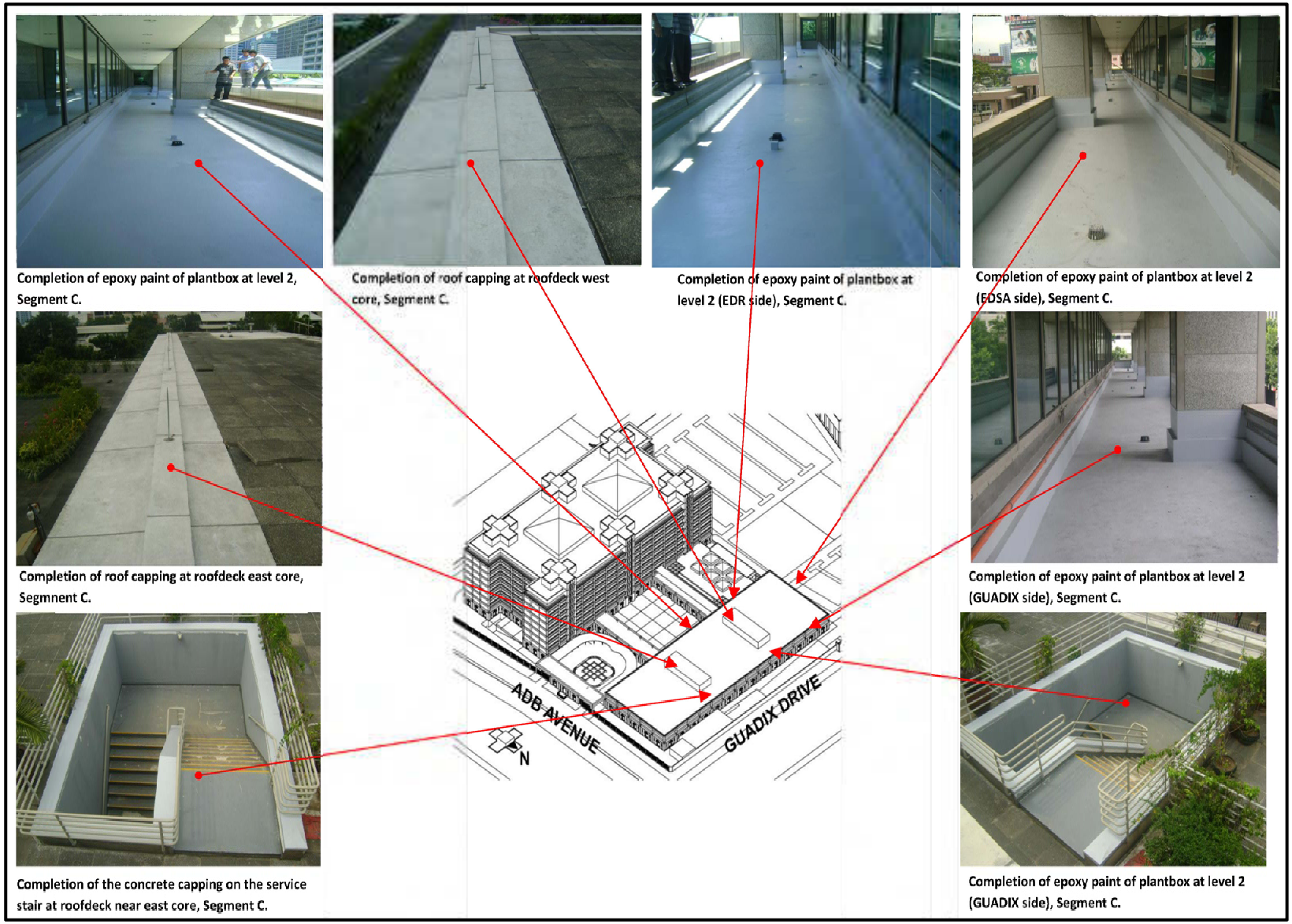


Completion of stainless steel gutter pipes and downspouts at east glass canopy extension.

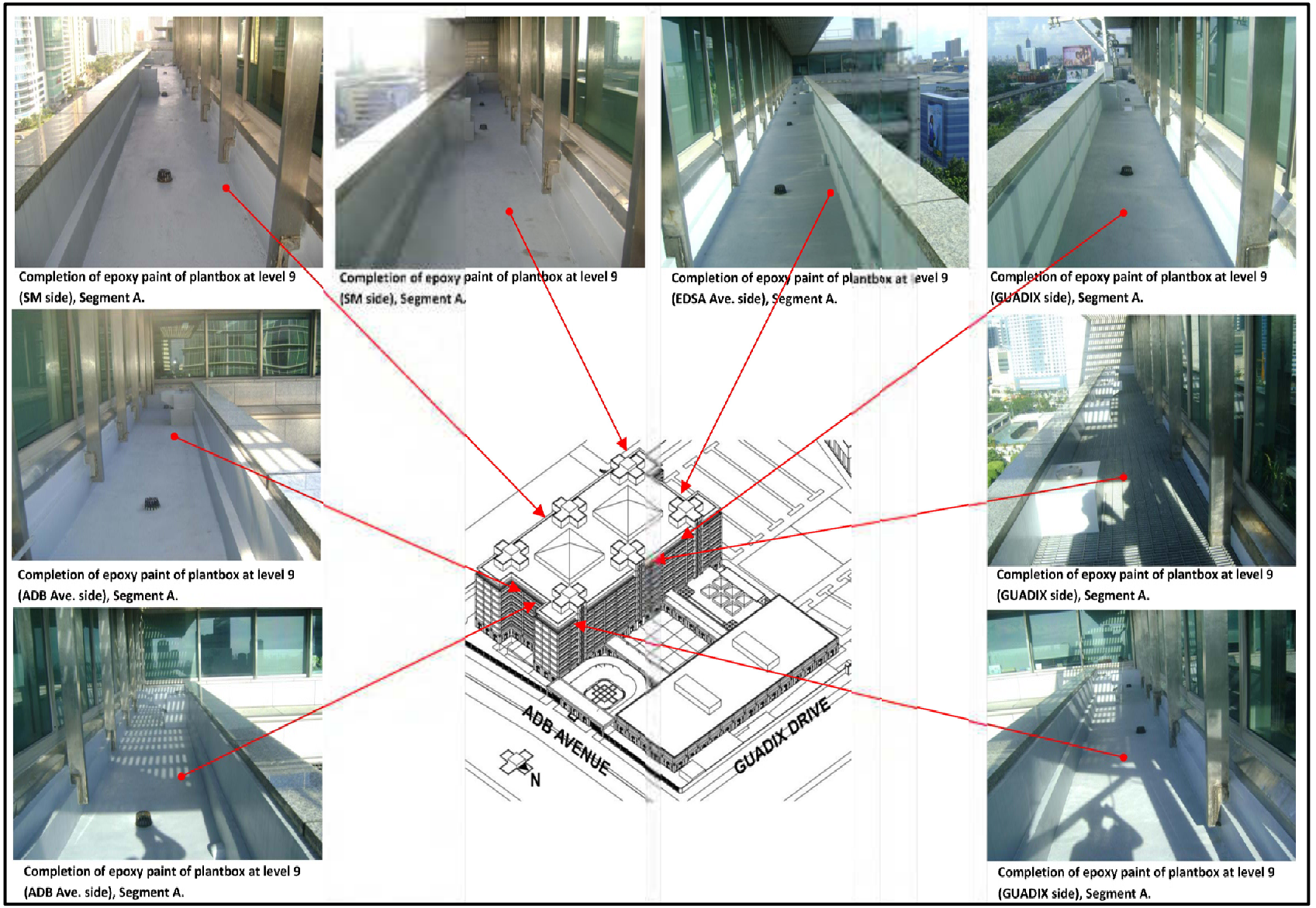
Completion of aluminum frames and glass panels installation at east glass canopy extension.

Completion of stainless steel gutter pipes and downspouts at east glass canopy extension.

Photograph A8.3: Completion of Roof Capping, Concrete Capping and Epoxy Paint of Plantboxes



Photograph A8.4: Completion of Epoxy Paint of Plantboxes at Level 9



ENHANCED SECURITY ACCESS CONTROL: LIST OF VARIATION ORDERS

Variation Order	Description	Cost (P)
Variation order (VO) no. 1	ADB Avenue facility revisions due to reconfiguring of the cantilevered gates and ADB security consultant additional requirements	347,593
VO no. 2	Revision of the foundation system at ADB Avenue facility	578,250
VO no. 3	ADB attic stock: homogeneous tiles and granite tiles	442,302
VO no. 4	Additional electrical, mechanical, plumbing and sanitary works to adapt to actual site conditions	303,650
VO no. 5	Bank Drive facility revisions	859,338
VO no. 6	Guadix Drive facility revisions	722,131
VO no. 7	Main lobby and west lobby revisions	274,766
VO no. 8	Revisions due to ADB shift engineering requirements	1,886,462
VO no. 9	Other changes	704,898
Total		**6,119,390**

VO = variation order.

Source: Asian Development Bank.