OFFICE OF THE SPECIAL INSPECTOR GENERAL FOR IRAQ RECONSTRUCTION

CRITICAL CARE UNIT
IBN AL BITAR HOSPITAL
BAGHDAD, IRAQ

SIGIR-PA-06-066
SEPTEMBER 12, 2006

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SPECIAL INSPECTOR GENERAL FOR IRAQ RECONSTRUCTION

September 12, 2006

MEMORANDUM FOR COMMANDING GENERAL, MULTI-NATIONAL FORCES - IRAQ
COMMANDER, GULF REGION DIVISION-PROJECT AND
CONTRACTING OFFICE, U.S. ARMY CORPS OF ENGINEERS
DIRECTOR, IRAQ RECONSTRUCTION MANAGEMENT OFFICE

SUBJECT: Report on Project Assessment of the Critical Care Unit at the Ibn Al Hospital, Baghdad Iraq (Report Number SIGIR-PA-06-066)

We are providing this project assessment report for your information and use. We assessed the in-process construction work performed at the Critical Care Unit at the Ibn Al Hospital, Baghdad, Iraq to determine its status and whether intended objectives will be achieved. This assessment was made to provide you and other interested parties with real-time information on a relief and reconstruction project in order to enable appropriate action to be taken, if warranted. The assessment team included an engineer and an auditor.

This report does not contain any negative findings. As a result, no recommendations for corrective action are made and further management comments are not required.

We appreciate the courtesies extended to our staff. This letter does not require a formal response. If you have any questions please contact Mr. Brian Flynn at (703) 604-0969 or brian.flynn@sigir.mil or Mr. Jon Novak, at (703) 343-9149 or jon.novak@iraq.centcom.mil.

Stuart W. Bowen, Jr.
Inspector General

Special Inspector General for Iraq Reconstruction

SIGIR-PA-06-066 **September 12, 2006**

Critical Care Unit, Ibn Al Bitar Hospital
Baghdad, Iraq

Synopsis

Introduction. This project assessment was initiated as part of our continuing assessments of selected sector reconstruction activities for Facilities and Transportation. The overall objectives were to determine whether selected sector reconstruction contractors were complying with the terms of their contracts or task orders, and to evaluate the effectiveness of the monitoring and controls exercised by administrative quality assurance and contract officers. We conducted this project assessment in accordance with the Quality Standards for Inspections issued by the President's Council on Integrity and Efficiency. The assessment team included a professional engineer and an auditor.

Project Assessment Objectives. The objective of this project assessment was to provide real-time relief and reconstruction project information to interested parties in order to enable appropriate action, when warranted. Specifically, we determined whether:

1. Project components were adequately designed prior to construction or installation;
2. Construction or rehabilitation met the standards of the design;
3. The Contractor's Quality Control plan and the United States Government's Quality Assurance program were adequate;
4. Project sustainability was addressed; and
5. Project results were consistent with original objectives.

Conclusions. The assessment determined that:

1. The design provided to the assessment team was sufficient to construct the facility. The design included architectural, electrical, mechanical, plumbing, and structural drawings. The design, coupled with a consistent bill of quantities, provided enough information and detail for the contractor to construct a Critical Care Unit.

2. Based on the review of U.S. Army Corps of Engineers Quality Assurance Reports, their construction photos, and our site visit, the work completed to date appeared to be consistent with the standards of the contract design. The U.S. Army Corps of Engineers Deputy Resident Engineer and staff capably managed the project. As a result, the Ibn Al Bitar Cardiac Hospital should receive a new and functional Critical Care Unit.

3. The contractor's Quality Control plan was not sufficiently detailed to effectively guide the contractor's quality management program. However, the contractor did submit daily Quality Control reports containing information such as work accomplished each day with the location, activity, test results, deficiencies and corrective actions, equipment utilized, and material received on site.

The Government Quality Assurance (QA) program was effective in monitoring the contractor's Quality Control program. The Quality Assurance Representative also prepared daily Quality Assurance reports containing project-specific information to document construction progress and highlight deficiencies. The Quality Assurance Representative also supplemented the daily reports with detailed photographs, reinforcing the narrative information provided in the reports. The Quality Assurance Representative did not maintain a continuous QA deficiency log, but did document deficiencies on daily non-conformance logs and in the QA reports.

4. A review of the contract file and discussions with the U.S. Army Corps of Engineers Deputy Resident Engineer disclosed no sustainability issues associated with the project. The contract required the contractor to warrant their equipment, materials, design furnished, or workmanship for a period of one year from the date of acceptance. Additionally, there will be on-the-job training for operations and maintenance of the fire alarm system and the water system including the water heaters, water softener, and pumps.

5. If the current level of oversight continues by the Gulf Region Division's International Zone Resident Office, the project when completed should meet and be consistent with the contract objectives. Although funding constraints prevent the completion of the first floor (2^{nd} story) of the building, the completed ground floor should result in a modern and functional Critical Care Unit for the Ibn Al Bitar Hospital.

Recommendations and Management Comments. This report does not contain any negative findings or recommendations for corrective action. Although management comments were not required, the Commander, Gulf Region Division of the U.S. Army Corps of Engineers reviewed the report and had no additional comments or information to offer.

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Introduction

Objective of the Project Assessment

The objective of this project assessment was to provide real-time relief and reconstruction project information to interested parties in order to enable appropriate action, when warranted. Specifically, we determined whether:

1. Project components were adequately designed prior to construction or installation;
2. Construction or rehabilitation met the standards of the design;
3. The Contractor's Quality Control (CQC) plan and the United States Government's Quality Assurance (QA) program were adequate;
4. Sustainability was addressed; and
5. Project results were consistent with original objectives.

Pre-Site Assessment Background

Contract and Costs

The Ibn Al Bitar Hospital Critical Care Unit was awarded and administered by the U.S. Army Corps of Engineers (USACE) Gulf Region Division (GRD) – Central District (GRC). The GRC awarded contract W917BG-05-C-0145, dated 27 September 2005, a firm-fixed price, design and construct contract to be performed within 180 days from the notice to proceed. The contract was awarded by the GRC to a local Iraqi contractor for $579,284.80. The notice to proceed was issued on 3 January 2006, which required construction to start within 10 working days.

There was one modification to contract W917BG-05-C-0145.

- Modification A00001, issued 17 July 2006, revised the original Bill of Quantities (BOQ) to complete the ground floor and construct the shell only of the first floor (second story) in accordance with the revised BOQ with no change to the contract value. Modification A00001 extended the contract completion by an additional 90 days.

Project Objective

Based on the USACE Statement of Work (SOW), the objective of the project was to design and construct the Critical Care Unit (CCU) at Ibn Al Bitar Cardiac Hospital. The original CCU building was destroyed by looters who stole all of the equipment and burned the building to the ground during Operation Iraqi Freedom.

Description of the Facility (pre-construction)

The description of the facility (pre-construction) was based on information obtained from the contract SOW and the USACE project file. The project site, located within the grounds of the Ibn Al Bitar Cardiac Hospital, in Baghdad, Iraq, was also the location of the previous CCU. The looters, who completely destroyed the previous CCU, left nothing standing with only the concrete foundation and ground floor

concrete slab remaining. Site Photo 1 shows the clinic site and parts of the ground floor concrete slab.

Site Photo 1. Old and new site of the Ibn Al Bitar Hospital Cardiac Care Unit (Photo provided by USACE)

The hospital is in an urbanized area within the city of Baghdad, west of the Tigris River. City water was available to the site. In addition, the hospital relied on an existing on-site electrical generator to provide electrical power.

Scope of Work of the Contract

The contract SOW listed a requirement for a critical care unit building containing two floors, each approximately 646 square meters (m^2) in area.

The scope of work listed in the SOW included the following major work tasks:

1. Demolish and remove any existing structure, debris, and foundations from the site.
2. Construct a new 1,300 m^2 hospital wing complete with all electrical, water, and sewer lines inside the structure.
3. Supply and install an oxygen piping system.
4. Supply and install both hot and cold water plumbing and fixtures.
5. Supply and install central heating, ventilation and air-conditioning (HVAC) in the entire wing.
6. Supply and install a fire alarm system complete with heat and smoke detectors.
7. Supply a telephone system complete with phone jack and phone instruments.

Although the original scope of work required a two-story building, the quantities stated in the original contract BOQ were insufficient to complete the work required for a two-story CCU building. Further, there were not enough funds to provide more construction material to complete the building's first floor (i.e., second story). Therefore, with input from the Director General (DG) of the Ibn Al Bitar Hospital, the USACE Resident Office negotiated an agreement with the contractor to utilize the available funds to completely construct the ground floor and only construct the

first floor shell (structural concrete frame including the roof). Further, the telephone and oxygen piping system were removed from the scope. In addition, the central HVAC system was replaced by individual room HVAC units.

According to the building floor plans, the ground floor consists of patient rooms and an open patient ward, a mechanical room, an electrical room, and two bathrooms.

Current Project Design and Specifications

The SOW included requirements for project design. The design provided to the Special Inspector General for Iraq Reconstruction (SIGIR) assessment team included architectural, electrical, mechanical, plumbing, and structural drawings. Architectural drawings included floor plans, elevations, wall and stair section details, a roofing plan, as well as window and door schedules. Electrical drawings contained separate sheets for electrical outlet location and type, lighting fixture and type locations, cable tray locations, a fire alarm system and a nurse call system. The electrical drawings also provided a single line diagram for the main distribution panel and circuit breakers, as well as the sub distribution panels and circuit breakers. Mechanical drawings showed the bathroom exhaust system, the HVAC unit location and type, and the patient oxygen system. Plumbing drawings included water supply lines, sanitary piping, manhole locations and size, and the location of the water softener, boiler, and pumps. The structural design included plan and sectional drawings showing size, location, and reinforcing requirements for the reinforced concrete foundation, columns, beams, and the floor and roof slabs.

The SOW also included a BOQ. The BOQ was updated to reflect the changes made after the re-scoping of the CCU to complete the ground floor and partially complete the first floor.

Based on our review of the design drawings, there were a few details missing from the design package. They included:

- An electrical drawing containing the electrical distribution panel and sub-panel locations.
- The location of the main power source and details on the electrical connection to the main power source.
- Details on the sanitary manholes showing tie-ins from the building and from the downspouts.

The electrical items omitted from the design were noted by the USACE Deputy Resident Engineer (DRE) during the design review by the USACE Resident Office engineers. The DRE indicated these omissions would be incorporated into the as-built drawings.

Based on the review of the design package and discussions with the USACE DRE, the assessment team concluded the design package including the BOQ, was sufficient for the contractor to construct the CCU.

Site Assessment

On 2 July 2006, we performed an on-site assessment of the Ibn Al Bitar Critical Care Unit. Prior to the site visit, the assessment team reviewed selected project documentation provided by USACE. On the day of the site visit, the contractor was installing door frames, running electrical wire through PVC conduit, placing hot and cold water piping,

installing acoustical ceiling tile, constructing a brick reception table for the nurses' station in the open ward area, and preparing a sidewalk base.

Subsequent to the site visit, the assessment team discussed the project status and management processes with the USACE DRE. Based on the estimate provided by the USACE DRE, the project was approximately 75% complete. The original required completion date of the project (180 days after the notice to proceed date of 3 January 2006) was 1 July 2006. When we visited the site on 2 July 2006, the contractor was one day past the original completion date. However, subsequent to our site visit, the modification issued on 17 July 2006 with the adjusted BOQ, extended the completion date by 90 days.

Work Completed

Structural Concrete

The CCU building structural design required a reinforced concrete frame supported by a foundation consisting of isolated pad footers, wall footings, and interconnecting tie-beams. Prior to placement of the footers, the concrete foundation from the previous building needed removal. The contractor removed the existing foundation as the new foundation was constructed. Site Photo 2 shows some of the remaining foundation as well as the form work and reinforcing steel placement for the new tie beams and wall footings. Site Photo 3 shows the completed foundation including tie-beams and wall footings, and some of the previous concrete foundation remaining. According to the DRE, the contractor subsequently removed all of the concrete comprising the previous foundation. Based on our review of the Government Quality Assurance (QA) reports, the construction of the foundation occurred without any known deficiencies.

Site Photo 2 - Wall footings and tie beams under construction (Photo provided by USACE)

Site Photo 3 - Completed wall footings and tie-beams (Photo provided by USACE)

The above grade structural frame supporting the reinforced concrete floor and roof slabs consisted of a network of reinforced concrete columns and beams. The design called for beams 40 centimeters (cm) in width by 50 cm in height, with various reinforcing steel configurations, depending on the location within the span. The 40 cm x 40 cm columns contained vertical reinforcing bars and lateral reinforcing ties. Prior to concrete placement, the USACE QAR found some problems with the beam

reinforcing steel. The QAR documented areas where the steel was not spaced correctly. The QAR also found places where the horizontal and vertical reinforcing were not aligned properly. Based on verbal confirmation from the USACE DRE, these deficiencies were corrected by the contractor.

At the time of the site visit, the suspended ceiling had not been completely installed so the assessment team could see the upper portions of the ground floor columns and beams. We did not observe any noticeable defects with the concrete workmanship such as honeycombing, segregation, or exposed reinforcing steel. Site Photo 4 shows some of the structural concrete work at the CCU.

Site Photo 4. Structural concrete supporting the first floor

Brick Walls

The BOQ listed a requirement to use clay bricks for the ground floor walls. The design required a wall thickness of 24 cm for the exterior and interior walls, except the public bathrooms, which were required to be 12 cm thick. The design required the exterior walls to be plastered with a cement mortar and rendered with a textured finish. The surface finish requirement for interior walls included gypsum plastering and painting. Based on a review of the Quality Assurance reports, it appears the contractor adequately constructed the brick interior and exterior walls to meet the design requirements. Site Photo 5 shows an example of the brick work prior to plastering and Site Photo 6 shows one side of the CCU after the walls were plastered and rendered.

Site Photo 5. Exterior wall brick work (Photo provided by USACE)

Site Photo 6. Exterior walls of the CCU after plastering and rendering.

Work in Progress

There appeared to be significant work in progress, mainly on the interior of the building. The exterior work in progress included roof downspouts, manhole construction, and sidewalk base construction.

Interior Work

The architectural design required seven patient rooms and one doctors' room; all were approximately 26 m^2 in area. Each of these eight rooms included a bathroom

with shower, toilet, and wash basin. The patient rooms and doctors' room were identically configured. The first floor also contained an open ward configured for 13 patients. In addition, the design called for two public bathrooms, a mechanical room, and a separate electrical room.

Patient Rooms (7) and Doctors' Room (1)
The assessment team inspected each of the eight rooms. The design and BOQ for each room called for one aluminum frame window (1.2 m x 1.2 m), plastic (i.e., vinyl) tiled floors, painted and plastered walls, and suspended acoustical ceiling.

The design required a two-ton window HVAC unit in each room. Electrical requirements included two fluorescent light fixtures (4 tubes), a 60 watt spotlight near the room door, two-13 amp and one-15 amp outlets. In addition, in each of the seven patient rooms where the head of the hospital bed will be located, the design required a recessed box containing a group of outlets consisting of: three-13 amp outlets, three-15 amp outlets, and a light switch.

All of the eight rooms contained a bathroom. For each of the bathrooms, the BOQ and design required a western style toilet, a shower pan, and a pedestal style wash basin. In addition, the bathrooms contained an exhaust fan connected to a central exhaust system. The design also called for ceramic tile on the bathroom walls and floor, as well as a suspended ceiling.

At the time of the assessment, the patient room walls had been plastered and painted. The contractor had also completed the installation of ceramic tile on the bathroom walls. The flooring and ceilings were not yet installed in any of the patient rooms including the bathrooms. Window frames were in place, but the glass was not yet installed. The frame for the window HVAC unit was in place, but the unit was not yet installed. The contractor was in the process of installing door frames. The contractor also began to rough-in plumbing for the toilets, wash basins, and showers. Site Photos 7 and 8 show the ongoing construction in one of the patient rooms. Site Photo 9 shows the above ceiling water lines and exhaust system ductwork for one of the bathrooms.

All observed work in the patient rooms and doctors' room and their adjoining bathrooms appeared to meet the standards of the design. We did not did find any noticeable defects associated with the quality of workmanship.

Site Photo 7. Patient room looking from entrance

Site Photo 8. Patient room looking towards entrance

Site Photo 9. Water lines and exhaust system ductwork above one of the patient bathrooms

Open Ward Area

Based on the design floor plan, the open ward was configured for 13 patients and was approximately 287 m^2 in area. The design required an open floor plan with aluminum frame windows, painted and plastered walls, plastic tile flooring, and a suspended acoustical ceiling. The design required six, split-system HVAC units, each sized at 4 tons. The electrical design included 26 fluorescent light fixtures, each with four tubes at 20 watts per tube, as well as six-30 amp outlets spaced throughout the ward. The electrical design also called for 13 recessed electrical

boxes consisting of three-13 amp outlets, three-15 amp outlets, and a light switch to be installed for each patient bed.

At the time of our assessment, the contractor had completed plastering and painting the exterior walls. Aluminum window frames were installed. Electrical conduits were in place, and the contractor was in the process of pulling wire to recessed boxes for outlets and switches. Site Photo 10 shows part of the open ward observed during the site visit.

Site Photo 10. Ward area under construction.

In addition to the building components, the contractor was also constructing a brick reception table base (Site Photo 10) for the nurse's station in the open ward area. The BOQ required a ceramic tile finish for the table.

Based on our observations, the work to date in the ward area appeared to meet the standards of the design.

Central Corridor
The CCU contained a central corridor (21.6 m in length) providing access to the patient rooms and the ward area. The corridor also provided an access way for the utilities (water, exhaust, and electric), located above the suspended ceiling. Site Photo 11 shows the water lines, the exhaust system ductwork, and the electrical drops installed by the contractor, as well as part of the suspended ceiling grid. The water supply system consists of three lines of various diameters [15 – 50 millimeters (mm)] of schedule 40 galvanized steel pipes for cold water, hot water, and re-circulated hot water. No noticeable defects were found with the installation of these utilities and the quality of workmanship appeared adequate.

Site Photo 11. Utility installation above corridor suspended ceiling.

Utility Rooms

The design required a mechanical room, accessible from the outside and an interior electrical room. The mechanical room's design included a water softener, two circulation pumps, water heaters, and related piping and valves. At the time of the site assessment, the walls had been plastered and painted, but the contractor had not installed the equipment in the room.

The design included an interior electric room. However, the electrical drawings provided to the assessment team did not show the location of the main electrical distribution panel and two sub-distribution panels that were listed in the BOQ. When we inspected the electrical room, the walls in the room were plastered and painted. The aluminum cable tray was installed and anchored to the concrete slab above the room. One of the contractor's employees indicated to us the location of the main distribution panel inside the electrical room. The contractor was running cable on the cable tray to the panel location as shown in Site Photo 12.

Site Photo 12. Cable tray and cable to connect the main distribution panel.

Exterior Work

As mentioned earlier, the exterior walls on the ground floor were painted and rendered with a textured finish. Other exterior work included the installation of manholes for the sewer system and roof downspouts, as well as preparation of the base material for the sidewalk.

The design required 10 manholes of various sizes, while the BOQ listed a requirement for 20 manholes of various sizes. We did not count each manhole to verify the total number, but there were manholes on both sides of the building, spaced as shown in the design drawings.

The BOQ listed a requirement for 80 linear meters of 100 mm (diameter) cast iron downspouts. The architectural drawings show the location of the seven roof drains along the column lines for the building. During the exterior inspection, we observed the cast iron downspouts in the locations noted on the design along the column line. We also noted the downspouts drained directly into the manholes, as shown in Site Photo 13, although the design drawings did not provide details showing the downspouts or connections into manholes.

Site Photo 13. CCU exterior with downspout feeding into sewer manhole.

The BOQ listed a requirement for 100 mm thick concrete sidewalks (150 m^2). At the time of the inspection, the contractor was preparing the base material for the sidewalk on two sides of the building. The design drawings include a section detail showing a 100 cm wide sidewalk adjacent to the building exterior. The detail does not show a base thickness, nor is there a plan view showing the extent of the sidewalk location.

The assessment team planned to inspect the first floor and roof. However, because of recent activity in this area of Baghdad, security concerns prevented the team from going up to the first floor and to the roof. From the ground, we did walk around the building and looked at the exterior columns and beams of the first floor and roof parapet. We did not observe any noticeable defects associated with the concrete workmanship. Site Photo 14 shows the first floor and roof structural concrete work.

Site Photo 14. First floor columns and beams supporting roof

Work Pending

Approximately 25% of the work remained on the project. The remaining interior work included completion of doors and windows, installation of suspended acoustical ceiling, and installation of floor tile throughout the CCU. Other work in the mechanical room included installation of the hot water heater, water softener, circulation pumps, piping, and valves. Other plumbing work included the installation of all fixtures (shower pans, wash basins, and commodes) in the bathrooms. The electrical distribution panel installation and connections remained to be completed, as well as the installation of lighting and electrical outlets. The fire alarm system including the audio and manual alarms, heat and smoke detectors, and fire alarm panel were also pending work items.

Remaining exterior work included completion of the sidewalk and installation of the roof materials. Roofing installation included application of the following materials in the order listed:

- Hot bitumen on the concrete surface
- Clean river sand to form slopes (for drainage) at varying thicknesses (10-20 cm)
- Concrete roofing tiles (80 cm x 80 cm x 4 cm) sloped towards the roof drains
- Heated mastic joint filler

Project Quality Management

Contractor's Quality Control Program

The Ibn Al Bitar Hospital Critical Care Unit contract did not specify a requirement for a CQC plan, CQC daily reports, or a CQC deficiency-tracking log. According to the USACE QAR, the contractor submitted a Quality Control plan. The CQC plan consisted of a one-page description of general scope, management responsibility, resource management, and product realization. We determined the CQC plan did not meet the standards addressed in Engineering Regulation 1180-1-6 (*Construction Quality Management*) or Project and Contracting Office Standard Operating Procedure CN-103 (*Contractor Construction Quality Control Plan*). The CQC written plan shall completely delineate the plans, procedures, and organization necessary for the contractor to carry out his quality management responsibilities and produce an end product. The contractor's written plan did not completely portray the plans, procedures, and organization necessary for the contractor to carry out his quality management responsibilities. However, the contractor did submit daily QC reports containing information such as work accomplished each day with the location, activity, test results, deficiencies and corrective actions, equipment utilized, and material received on site.

Government Quality Assurance Program

Engineering Regulation 1110-1-12 and PCO Standard Operating Procedure CN-100 specify requirements for a Government QA program. The USACE Iraqi National Quality Assurance Representative (QAR) provided on-site quality assurance. The USACE QAR filed QA reports, for each day on site, which were forwarded to the USACE DRE for review and verification of progress completed for payment approval. In addition, the QA reports were sufficiently complete and timely. Furthermore, the QA reports included project specific or detailed photographs to reinforce the information provided in reports.

A continuous QA deficiency log was not generated for this project. The QAR's deficiency log was not a continuous log, rather separate non-conformance log sheets generated for a specific day and containing the discrepancies for that particular day. In addition, all discrepancies were noted in the QAR report. The QAR stated he updated the deficiency log sheet when the problem was corrected; however, we were unable to locate the updated deficiency logs. The corrections though, were often noted in the QAR reports. In addition, the QAR's reports included digital photos of any deficiencies noted at the site.

Project Sustainability

A review of the contract file and discussions with the USACE DRE disclosed no sustainability issues associated with the project. The contract required the contractor to warrant their equipment, material or design furnished, or workmanship for a period of one year from the date of acceptance. Additionally, according to the USACE DRE, there will be on-the-job training for operations and maintenance of the fire alarm system and the water system including the water heaters, water softener, and pumps.

Conclusions

We reached the following conclusions for the assessment objectives 1, 2, 3, 4, and 5. Appendix A provides details pertaining to Scope and Methodology and limitations of this project assessment due to the security conditions at the project site at the time of our visit to the USACE RE.

1. Determine whether project components were adequately designed prior to construction or installation.

   The design provided to the assessment team was sufficient to construct the facility. The design included architectural, electrical, mechanical, plumbing, and structural drawings. The design, coupled with a consistent Bill of Quantities, provided enough information and detail for the contractor to construct a Critical Care Unit.

2. Determine whether construction met the standards of the design.

   Based on the review of U.S. Army Corps of Engineers Quality Assurance Reports, their construction photos, and our site visit, the work completed to date appeared to be consistent with the standards of the contract design. The U.S. Army Corps of Engineers Deputy Resident Engineer and staff capably managed the project. As a result, the Ibn Al Bitar Cardiac Hospital should receive a new and functional Critical Care Unit.

3. Determine whether the Contractor's Quality Control plan and the Government Quality Assurance program were adequate.

   The contractor's Quality Control plan was not sufficiently detailed to effectively guide the contractor's quality management program. However, the contractor did submit daily QC reports containing information such as work accomplished each day with the location, activity, test results, deficiencies and corrective actions, equipment utilized, and material received on site.

The Government Quality Assurance program was effective in monitoring the contractor's quality control program. The QAR prepared daily QA reports containing project-specific information to document construction progress and highlight deficiencies. The QAR also supplemented the daily reports with detailed photographs reinforcing the narrative information provided in the reports. The USACE QAR did not maintain a continuous QA deficiency log, but did document deficiencies on daily non-conformance logs and in the QA reports. Further, the QAR and DRE ensured the deficiencies cited during QA inspections were corrected.

4. Determine if project sustainability was addressed.

   A review of the contract file and discussions with the USACE DRE disclosed no sustainability issues associated with the project. The contract required the contractor to warrant their equipment, material or design furnished, or workmanship for a period of one year from the date of acceptance. Additionally, there will be on-the-job training for operations and maintenance of the fire alarm system and the water system including the water heaters, water softener, and pumps.

5. Determine whether project results were consistent with original objectives.

   If the current level of oversight continues by the Gulf Region Division's International Zone Resident Office, the project when completed should meet and be consistent with the contract objectives. Although funding constraints prevent the completion of the first floor (2^{nd} story) of the building, the ground floor of the completed project should result in a modern and functional Critical Care Unit for the Ibn Al Bitar Hospital.

Recommendations and Management Comments

This report does not contain any negative findings or recommendations for corrective action. Although management comments were not required, the Commander, Gulf Region Division of the U.S. Army Corps of Engineers reviewed the report and had no additional comments or information to offer.

Appendix A. Scope and Methodology

We performed this project assessment from May through August 2006, in accordance with the Quality Standards for Inspections issued by the President's Council on Integrity and Efficiency. The assessment team included a professional engineer and an auditor.

In performing this Project Assessment we:

- Reviewed contract documentation to include the following: Contract, Contract Modifications, Contract documentation, and Statement of Work;
- Reviewed the design package (drawings and specifications), Quality Control Plan, Testing Reports, and Quality Assurance Reports;
- Interviewed the U.S. Army Corps of Engineers Deputy Resident Engineer; and
- Conducted an on-site assessment and documented results at the Ibn Al Bitar Hospital Critical Care Unit Project in Baghdad, Iraq.

Appendix B. Acronyms

BOQ	Bill of Quantities
CCU	Critical Care Unit
cm	centimeter
CQC	Contractor Quality Control
DG	Director General
DRE	Deputy Resident Engineer
GRD	Gulf Region Division
GRC	Gulf Region Division, Central District
HVAC	Heating, Ventilation, and Air-Conditioning
IRRF	Iraq Relief and Reconstruction Fund
km	kilometer
LN	Local National
m	meter
m^2	square meters
m^3	cubic meters
mm	millimeters
PCO	Project and Contracting Office
QA	Quality Assurance
QAR	Quality Assurance Representative
RE	Resident Engineer
SIGIR	Special Inspector General for Iraq Reconstruction
SOW	Scope of Work
USACE	United States Army Corps of Engineers

Appendix C. Report Distribution

Department of State

Secretary of State
    Senior Advisor to the Secretary and Coordinator for Iraq
U.S. Ambassador to Iraq
    Director, Iraq Reconstruction Management Office
Inspector General, Department of State

Department of Defense

Secretary of Defense
Deputy Secretary of Defense
    Director, Defense Reconstruction Support Office
Under Secretary of Defense (Comptroller)/Chief Financial Officer
    Deputy Chief Financial Officer
    Deputy Comptroller (Program/Budget)
Inspector General, Department of Defense

Department of the Army

Assistant Secretary of the Army for Acquisition, Logistics, and Technology
    Principal Deputy to the Assistant Secretary of the Army for Acquisition, Logistics, and Technology
    Deputy Assistant Secretary of the Army (Policy and Procurement)
Assistant Secretary of the Army for Financial Management and Comptroller
Chief of Engineers and Commander, U.S. Army Corps of Engineers
    Commanding General, Gulf Region Division
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Commanding General, Multi-National Force - Iraq
    Commanding General, Joint Contracting Command – Iraq/Afghanistan
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Inspector General, Department of Commerce
Inspector General, Health and Human Services
Inspector General, U.S. Agency for International Development
Mission Director – Iraq, U.S. Agency for International Development

Congressional Committees and Subcommittees, Chairman and Ranking Minority Member

U.S. Senate

Senate Committee on Appropriations
- Subcommittee on Defense
- Subcommittee on State, Foreign Operations and Related Programs

Senate Committee on Armed Services
Senate Committee on Foreign Relations
- Subcommittee on International Operations and Terrorism
- Subcommittee on Near Eastern and South Asian Affairs

Senate Committee on Homeland Security and Governmental Affairs
- Subcommittee on Federal Financial Management, Government Information and International Security
- Subcommittee on Oversight of Government Management, the Federal Workforce, and the District of Columbia

U.S. House of Representatives

House Committee on Appropriations
- Subcommittee on Defense
- Subcommittee on Foreign Operations, Export Financing and Related Programs
- Subcommittee on Science, State, Justice and Commerce and Related Agencies

House Committee on Armed Services
House Committee on Government Reform
- Subcommittee on Management, Finance and Accountability
- Subcommittee on National Security, Emerging Threats and International Relations

House Committee on International Relations
- Subcommittee on Middle East and Central Asia

Appendix D. Project Assessment Team Members

The Office of the Assistant Inspector General for Inspections, Office of the Special Inspector General for Iraq Reconstruction, prepared this report. The principal staff members who contributed to the report were:

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