# SIGAR

**Special Inspector General for Afghanistan Reconstruction**

SIGAR 18-76 Inspection Report

# Marshal Fahim National Defense University: Phase I Construction Generally Met Contract Requirements, but Non-Compliant Fire Doors and Inadequate Maintenance Place Building Occupants at Risk

SEPTEMBER

2018

September 20, 2018

The Honorable James N. Mattis
Secretary of Defense

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Commander, U.S. Central Command

General Austin Scott Miller
Commander, U.S. Forces–Afghanistan and
Commander, Resolute Support

Major General Robin L. Fontes
Commander, Combined Security Transition Command–Afghanistan

Mr. Edwin H. Oshiba
Director, Air Force Civil Engineer Center

This report discusses the results of SIGAR's inspection of the phase I construction of the Marshal Fahim National Defense University. In September 2008, the Air Force Center for Engineering and the Environment—reorganized as the Air Force Civil Engineer Center (AFCEC) in 2012—awarded the first of four contracts to construct facilities at the Afghan National Army's (ANA) Marshal Fahim National Defense University (MFNDU) in Kabul. The four contracts correspond to three phases of work. The Department of Defense funded the completion of phases I and III through the Afghanistan Security Forces Fund, while the completion of phase II was funded through the NATO Trust Fund. This report focuses on our inspection of phase I. We will issue a separate report on phase III.

On September 11, 2008, AFCEC awarded a $70.2 million cost-plus-fixed-fee contract to AMEC Earth & Environmental, Incorporated (AMEC E&E), an American company, to design and construct facilities and infrastructure for the MFNDU phase I. The contract required AMEC E&E to design and construct 85 buildings, support facilities, and other structures, such as administration buildings, barracks, dining facilities, and gymnasiums. After 18 modifications, the contract's value increased by $24.5 million to $94.7 million.

During our November and December 2017 site visits, we found that the phase I buildings and supporting facilities and infrastructure generally complied with contract requirements. However, we found that AMEC E&E installed non-certified doors in 14 buildings where the contract required certified fire-rated doors. These non-certified doors increase building occupants' risk of injury or death should a fire occur.

We found that most of the MFNDU's phase I facilities are being used, but they are not being well maintained. We found broken or missing door locking assemblies in 20 of the 38 phase I buildings and empty or non-compliant fire extinguishers in 19 buildings. Further, we found that due to maintenance issues, some facilities—such as the wastewater treatment plant and the water treatment plant, which cost about $2 million each—are not operational, and have not been since 2015 and 2014, respectively. Currently, wastewater is still pumped into the plant, but is not treated and flows into nearby ditches and towards a local village, which may create health hazards for local residents. The MFNDU facility manager told us that the budget to purchase equipment and supplies for repairs is not sufficient to maintain the facilities. In 2018, the Combined Security

Transition Command–Afghanistan and the Ministry of Defense agreed that the ministry would establish repair and maintenance policies and procedures and guidelines for hiring facility engineers, developing training, and awarding repair and maintenance contracts.

Because the Afghan government is now responsible for operating and maintaining the MFNDU, we are not making any recommendations in this report

We provided a draft of this report to the Department of Defense. AFCEC provided written comments in which it concurred with the report. Those comments are reproduced in appendix III.

We conducted this inspection under the authority of Public Law No. 110-181, as amended, and the Inspector General Act of 1978, as amended; and in accordance with the *Quality Standards for Inspection and Evaluation*, published by the Council of the Inspectors General on Integrity and Efficiency.

John F. Sopko
Special Inspector General
for Afghanistan Reconstruction

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# ABBREVIATIONS

| | |
|---|---|
| AFCEC | Air Force Civil Engineer Center |
| AMEC E&E | AMEC Earth & Environmental, Incorporated |
| ANA | Afghan National Army |
| CSTC-A | Combined Security Transition Command–Afghanistan |
| MFNDU | Marshal Fahim National Defense University |
| MOD | Ministry of Defense |
| NFPA | National Fire Protection Association |
| UL | Underwriters Laboratories |

In September 2008, the Air Force Center for Engineering and the Environment—reorganized as the Air Force Civil Engineer Center (AFCEC) in 2012—awarded the first of four contracts to construct facilities at the Afghan National Army's (ANA) Marshal Fahim National Defense University (MFNDU) in Kabul, Afghanistan.[1] The four contracts correspond to three phases of work. The Department of Defense funded the completion of phases I and III through the Afghanistan Security Forces Fund, while the completion of phase II was funded through the NATO Trust Fund.[2] The MFNDU includes the National Military Academy, the ANA Officer's Academy, a Non-Commissioned Officer Academy, and a Joint Services Academy. This report focuses on our inspection of the phase I construction.[3]

AFCEC awarded a $70.2 million cost-plus-fixed-fee contract to AMEC Earth & Environmental, Incorporated (AMEC E&E), an American company, to design and construct buildings and infrastructure for the MFNDU phase I on September 11, 2008.[4] The contract required the design and construction of 85 buildings, support facilities, and other structures, such as administration buildings, barracks, and a medical clinic.[5] After 18 contract modifications, the contract's value increased by $24.5 million to $94.7 million. The modifications included increasing security for the facility during construction, as well as adding equipment for classroom buildings.

Between August 8 and December 19, 2011, AFCEC accepted the MFNDU phase I construction and transferred the completed phase I buildings, supporting facilities, and other structures to the Combined Security Transition Command–Afghanistan (CSTC-A). By December 2011, CSTC-A had transferred all of phase I to the Ministry of Defense (MOD). The final warranty period for phase I expired in December 2012.

The objectives for this inspection were to determine whether the MFNDU phase I facilities (1) were constructed in accordance with contract requirements and applicable construction standards, and (2) are being used and maintained.

We conducted our work in Kabul, Afghanistan, from July 2017 through September 2018, in accordance with the *Quality Standards for Inspection and Evaluation*, published by the Council of the Inspectors General on Integrity and Efficiency. The engineering assessment was conducted by our professional engineers in accordance with the National Society of Professional Engineers' *Code of Ethics for Engineers*. Appendix I contains a discussion of our scope and methodology.

## MFNDU PHASE I CONSTRUCTION GENERALLY MET CONTRACT REQUIREMENTS, BUT AMEC E&E DID NOT INSTALL CERTIFIED FIRE DOORS AS REQUIRED

We made four site visits to the MFNDU from November to December 2017 and found that the construction of the phase I buildings, supporting facilities, and other structures generally complied with contract requirements. For example, the seven cadet barracks we examined were well constructed, and all plumbing fixtures within those buildings had been installed as required. In addition, AMEC E&E installed ceiling fans and mechanical

[1] On October 1, 2012, the Air Force Center for Engineering and the Environment, the Air Force Civil Engineer Support Agency, and the Air Force Real Property Agency merged to become AFCEC. We refer to these organizations as AFCEC throughout this report.

[2] Congress established the Afghanistan Security Forces Fund to equip, supply, and train the Afghan National Defense and Security Forces, which consists of the ANA and the Afghan National Police. It also funds facility and infrastructure construction, repairs, and renovations.

[3] SIGAR is currently conducting another inspection of the MFNDU phase III construction. The U.S. Army Corps of Engineers awarded two contracts—one to State Corps Limited and the other to Assist Consultants Inc.—for the last project phase. The MFNDU phase II construction was initially awarded by the AFCEC with CSTC-A funding, but the resolicited completion contract is being funded using German and Australian contributions to the NATO Trust Fund.

[4] Contract # FA8903-06-D-8507

[5] See appendix II for a complete list of the buildings and structures required by the contract.

equipment, such as heating and air conditioning units, in all of the buildings. The four administration buildings and two classroom buildings that we inspected were well constructed, and all light fixtures and electrical outlets were installed and working. We also found that AMEC E&E built the kitchens in the two dining facilities according to size requirements and constructed the wastewater treatment plant and the water treatment plant. In addition, the contractor constructed the power plant, which was operational at the time of our visits.

However, we found that AMEC E&E installed non-certified doors in 14 buildings even though the phase I contract required those buildings to have certified fire-rated doors.[6] Specifically, the phase I contract required AMEC E&E to install 537 certified fire-rated doors in 14 buildings: the 2 dining facilities, 6 barracks, 1 vehicle maintenance building, 3 administrative buildings, 1 gymnasium, and the auditorium. Fire doors are designed to protect building occupants from the spread of smoke and flames during a fire.[7] The phase I contract required AMEC E&E to complete the construction in accordance with the International Building Code, which includes fire protection standards. The code requires the fire door manufacturers to have products tested to fire protection standards by an independent, third-party testing and certification agency. These independent agencies use Underwriters Laboratories (UL) and National Fire Protection Association (NFPA) standards to test and certify fire doors to ensure that they are manufactured to meet fire resistance specifications. The manufacturer's fire-rated doors are to be certified by one of three certifying agencies—UL, Factory Mutual Engineering and Research, or Warnock Hersey International—to ensure that the doors meet UL and NFPA standards for withstanding fires. Once a manufacturer's product meets UL and NFPA standards, the manufacturer's product is considered certified, and the certifying agency includes the product in its directory of approved fire-rated products.

The International Building Code also requires that a fire-rated door be installed with labeling attesting to the door's fire rating, or the number of minutes it can withstand a fire, and the manufacturer's information. Specifically, the International Building Code requires fire-rated door labels to:

- show the name of the manufacturer;
- show the name or trademark of the approved certifying agency and the fire protection rating;
- be permanently affixed to the fire door; and
- be applied at the door manufacturer's factory.

During our site visits, we randomly selected and examined 10 doors in each of the 14 buildings that required fire-rated doors and found that none of the doors had a label. As a result, we could not determine who manufactured the doors or whether they were certified fire-rated doors, as the phase I contract required. Further, we found no documentation to support that AMEC E&E requested to use or purchased fire-rated doors. The installation of non-certified doors in the phase I buildings creates a safety risk to MFNDU occupants should a fire occur.

In June 2018, CSTC-A sent a letter to the MOD stating that inspections conducted at facilities throughout Afghanistan indicated that fire safety standards and equipment do not exist as designed, or have been circumvented in some facilities. The letter also stated that fire doors and fire extinguishers may not be present and, as a result, impact the ability for personnel to effectively address fire hazards. CSTC-A recommended that the MOD undertake a review of its facilities and consider assigning a primary and alternate fire warden to each facility to identify and resolve fire safety issues. CSTC-A also provided the Afghan MOD with a recommended checklist for the fire wardens to complete monthly to ensure that personnel and facilities are not put at undue

[6] We have identified other construction projects where the U.S. government accepted non-certified doors even though the contracts required certified fire-rated doors (for example, see SIGAR, *Afghan Ministry of Interior Headquarters Project: Phase 2 Experienced Lengthy Delays, Increased Costs, and Construction Deficiencies that Need to Be Addressed,* SIGAR 17-65-IP, September 11, 2017; and SIGAR, *Afghan Ministry of Interior Headquarters Project: Phases 1 and 3 Experienced Construction Deficiencies, Poor Oversight, and Increased Costs*, SIGAR 18-35-IP, March 23, 2018).

[7] A fire door is one component of a fire door assembly, which is any combination of a fire door, frame, hardware, and other accessories that together provide a specific degree of fire protection. For this report, we use the term "fire door" to refer to all components of the fire door assembly.

risk. The fire safety checklist contained 50 items, such as ensuring that fire alarm systems function and are tested regularly; portable fire extinguishers are in their proper location, are fully charged, and properly tagged; and flammable and combustible liquids are stored in an approved cabinet.

## MOST OF THE PHASE I BUILDINGS AND INFRASTRUCTURE ARE BEING USED, BUT THEY ARE NOT WELL MAINTAINED

During our November and December 2017 site visits, we found that most of the MFNDU's phase I buildings, support facilities, and other structures were being used. For example, we found that the power plant was operational and that power was readily available. In addition, six of the seven barracks were fully occupied, and the administration buildings and both dining facilities were in use. However, we found that the two kitchens were not being used. The facility manager told us that the kitchen stoves produced too much smoke. The manager told us that the cooking is now done on wood-burning stoves at a kitchen near the dining facilities. We also found that one of the women's barracks was not being used because, according to the facility manager, construction of a nearby gymnasium cut off access to the barracks.[8] MFNDU officials stated that once the gymnasium construction is completed, the women's barracks would be re-opened for use.

We also found that neither the MOD nor MFNDU personnel were adequately maintaining the MFNDU phase I facilities. The MOD assumed responsibility for operating and maintaining the facilities after CSTC-A transferred them and the warranty began in 2011. During our site visits, we found recurring maintenance issues in all of the phase I buildings, including broken or missing door locking assemblies in 20 of the 38 buildings. We also found empty or counterfeit fire extinguishers in 19 buildings.[9] Although many of these fire extinguishers did not meet contract requirements, we could not determine whether AMEC E&E had installed them during construction or if MFNDU personnel replaced the fire extinguishers at a later date. Nonetheless, the non-compliant empty and counterfeit fire extinguishers expose building occupants to increased safety risks in the event of a fire.

In addition, the MFNDU facility manager told us that due to maintenance issues, some facilities—such as the wastewater treatment plant and the water treatment plant—are no longer operational. The facility manager stated that he has technical staff with maintenance responsibilities, but the budget to purchase equipment and supplies for repairs is not sufficient to maintain the facilities. The facility manager also told us that the MOD denied his requests for additional maintenance funds. Further, with the exception of the power plant, the facility manager told us that there is no MOD maintenance contract for the phase I facilities.[10]

According to the facility manager, the wastewater treatment plant, which cost $1.8 million, has not been used since 2015 (see photo 1).[11] The facility manager stated that the plant had not received the required maintenance because the materials needed to operate the plant, such as chlorine, chemical oils, and spare parts were not available. Currently, the untreated wastewater is being pumped into a tank in the non-functional wastewater treatment plant (see photo 2). This wastewater remains untreated, is discharged from the plant through a series of ditches, and flows from the MFNDU towards a nearby village. This untreated wastewater

[8] According to the MFNDU facility manager, this gymnasium's construction does not involve U.S. funds and is not part of any U.S. construction effort. The facility manager stated that as of May 2018, about 50 percent of the gymnasium construction had been completed.

[9] AMEC E&E's fire extinguisher submittal specified Buckeye, an American company, as the manufacturer. However, the extinguishers with Buckeye labels that we examined had characteristics consistent with counterfeit fire extinguishers, such as cylinder bottoms that were rounded instead of straight, gauges with white instead of red backgrounds, and labels without the manufacturer's "born on" date.

[10] In May 2018, CSTC-A told us that there was one operation and maintenance contract for the MFNDU but, as of late July 2018, had not provided us a copy of the contract.

[11] A wastewater treatment plant transforms raw sewage into water clean enough to be discharged into a lake or stream without causing harmful environmental or ecological consequences.

can spread disease and contaminate drinking water sources, which can result in significant health risks, such as the spread of cholera or hepatitis, if the untreated water reaches a community's water source.

**Photo 1 - Unused Wastewater Treatment Plant**

Source: SIGAR, November 1, 2017

**Photo 2 - Wastewater Treatment Plant Tank Filled with Untreated Wastewater**

Source: SIGAR, November 1, 2017

Similarly, we found that the water treatment plant is not operational. This plant was intended to provide clean water for about 4,000 personnel at the MFNDU.[12] According to the facility manager, the water treatment plant stopped operating in 2014, due to maintenance issues with two water pumps and a lack of maintenance on the chlorination system. The facility manager stated that spare parts are needed to repair the water pumps and chlorination system, but the MFNDU did not have sufficient funding to purchase those parts. MFNDU officials stated that they have observed facility personnel getting sick from drinking non-potable water.

Since 2014, CSTC-A has provided the MOD with funding each year to repair and maintain its facilities. However, CSTC-A said that it is not responsible for how the MOD uses those funds or provides services.[13] Nevertheless, in March 2018, the Department of Defense Inspector General reported that CSTC-A continues to manage and oversee U.S. direct funding provided to the MOD ineffectively and recommended that CSTC-A identify and implement a more effective method to do so.[14] CSTC-A's May 2018 financial commitment letter with the MOD for 2018-2019 included language for repair and maintenance policies and procedures, and guidelines for hiring facility engineers, developing training, and awarding repair and maintenance contracts. However, CSTC-A cannot perform any further steps to monitor the MFNDU phase I project repair and maintenance since the letter is non-binding and the Afghan government has been responsible for the project since 2011.

## CONCLUSION

Although most of the MFNDU phase I buildings, support facilities, and other structures were built according to contract requirements, AMEC E&E failed to install certified fire doors in 14 buildings, as required, which has increased the occupants' risk of injury or death should a fire occur. To its credit, CSTC-A has informed the MOD of potential hazards associated with non-compliant fire safety equipment at the MFNDU and other facilities in

[12] Before water is distributed into the public drinking water system, it is treated at a water treatment plant to remove sediment, bacteria, and other impurities.

[13] In annual commitment letters, CSTC-A directly funds the MOD for on-budget operations, including facility repair and maintenance.

[14] Department of Defense Office of the Inspector General, Summary Report on U.S. Direct Funding Provided to Afghanistan, DODIG-2018-090, March 21, 2018

Afghanistan, and provided a checklist to allow MFNDU and other facility officials to identify and address potential safety issues, such as the fire doors, on their own. However, this would have been avoided if AMEC E&E had complied with the contract during construction.

While most of the MFNDU phase I buildings, support facilities, and other structures are being used, some are experiencing maintenance issues. Most notably, there are empty or counterfeit fire extinguishers in 19 buildings, and the wastewater treatment plant and water treatment plant have not been used for the last 3 and 4 years, respectively. Proper maintenance is critical to protecting the almost $95 million U.S. investment in MFNDU phase I and, in these particular instances, to reducing the health and safety risks to MFNDU personnel and nearby residents. It is encouraging that CSTC-A, through its 2018-2019 commitment letter, has agreed to definitive steps with the MOD that should enable the MOD to use annual U.S. funds to maintain and sustain U.S.-funded construction that has transferred to the ministry, such as the MFNDU.

Because the Afghan government has had responsibility for the MFNDU phase I project's operations and maintenance since 2011, we are not making any recommendations in this report.

## AGENCY COMMENTS

We provided a draft of this report to the Department of Defense. AFCEC provided written comments in which it concurred with the report. Those comments are reproduced in appendix III.

# APPENDIX I - SCOPE AND METHODOLOGY

This report provides the results of SIGAR's inspection of the phase I construction of facilities and infrastructure at the Marshal Fahim National Defense University (MFNDU) in Kabul. The objectives of this inspection were to determine whether the MFNDU phase I facilities (1) were constructed in accordance with contract requirements and applicable construction standards, and (2) are being used and maintained. Specifically, we:

- reviewed contract documents, design submittals, and other relevant project documentation;
- conducted an engineering assessment of the project drawings and construction methods used;
- interviewed U.S. and Afghan government officials concerning the project's construction, use, and maintenance; and
- conducted site visits on November 1 and 29 and December 4 and 6, 2017.

We did not rely on computer-processed data in conducting this inspection. However, we considered the impact of compliance with laws and fraud risk.

We conducted our inspection work in Kabul, Afghanistan, from August 2017 through September 2018. This work was conducted in accordance with the *Quality Standards for Inspection and Evaluation*, published by the Council of the Inspectors General on Integrity and Efficiency. The engineering assessment was conducted by our professional engineers in accordance with the National Society of Professional Engineers' *Code of Ethics for Engineers*.

We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our inspection objectives. We conducted this inspection under the authority of Public Law No. 110-181, as amended, and the Inspector General Act of 1978, as amended.

# APPENDIX II - LIST OF MFNDU PHASE I FACILITIES AND INFRASTRUCTURE

The Air Force Civil Engineer Center's contract with AMEC Earth & Environmental, Incorporated (AMEC E&E), for phase I of the Marshal Fahim National Defense University (MFNDU) required the company to design and construct 38 buildings and other structures as well as 47 support facilities, as listed in table 1.

**Table 1 - MFNDU Phase I Buildings, Support Facilities, and Other Structures**

| Building, Structure, or Facility | Quantity |
|---|---|
| Administration building | 4 |
| Cadet barracks | 16 |
| Dining facility | 2 |
| Classroom building | 2 |
| Auditorium | 1 |
| Library | 1 |
| Recreational facility | 3 |
| Gymnasium | 2 |
| Medical clinic | 1 |
| Spectator stadium for 10,000 people | 1 |
| Guest quarters | 2 |
| Field house | 2 |
| Ball court | 1 |
| **Total Buildings and Other Structures** | **38** |
| Water treatment plant | 1 |
| Waste water treatment plant | 1 |
| Power generation plant | 1 |
| Munitions depot | 1 |
| Storage building | 1 |
| Warehouse | 2 |
| Post exchange | 1 |
| Parking area | 11 |
| Guard house | 3 |
| Security building | 3 |
| Entry control point | 3 |
| Training area | 6 |
| Water tank | 1 |
| Fire station | 1 |
| Flag pole | 1 |
| Review stand | 1 |
| Parade ground | 1 |
| Bleachers | 2 |
| Academy mall | 1 |
| Fuel storage facilities | 1 |
| Vehicle maintenance building | 4 |
| **Total Support Facilities** | **47** |
| **Total** | **85** |

Source: AFCEC contract number FA8903-06-D-8507

**DEPARTMENT OF THE AIR FORCE**
**AIR FORCE CIVIL ENGINEER CENTER**
**JOINT BASE SAN ANTONIO LACKLAND TEXAS**

10 Sep 2018

MEMORANDUM FOR SIGAR

FROM: AFCEC/CF
2261 Hughes Ave, Ste 155
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SUBJECT: Response to Draft SIGAR Report for Marshal Fahim National Defense University: Phase 1 Inspection Report

1. I appreciate the opportunity to review and comment on SIGAR's Marshal Fahim National Defense University: Phase 1 Inspection Report. AFCEC has supported this audit since receiving notice in February 2017. AFCEC has responded to SIGAR's technical questions and 10 requests for information.

2. AFCEC concurs with SIGAR's decision to not make any specific recommendations in this report as a result of their inspection.

3. If there are any questions or concerns, please contact me at Michael.Prazak@us.af.mil, DSN 969-8313, COMM: (210) 395-8313.

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## APPENDIX IV - ACKNOWLEDGEMENTS

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This inspection was conducted
under project code SIGAR-I-045a.

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- improve contracting and contract management processes;
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- advance U.S. interests in reconstructing Afghanistan.

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