

U.S. ARMY CORPS OF ENGINEERS

Project Experience

Armed Forces Reserve Center / OMS / UHS

Wilmington, North Carolina

Three building campus on an existing 11 acre commercial site, including existing facility demolition and site redevelopment. The reserve center is a joint use facility between the US Army Reserve and the US Navy Reserve. The combined building area is 53,000 sq.ft. The project is designed to meet LEED® Silver.

Complete HVAC, Plumbing, Fire Protection, Electrical, IT, alarms, mass notification, and access control design for a facility housing members of the Army and Navy Reserve. High efficiency natural gas boilers, air-cooled chiller, and VAV air handling units will be used. DDC control for HVAC systems will be part of design, including carbon dioxide sensing in high-occupancy areas and humidity sensing. OMS building includes overhead radiant heating, CO sensing, make-up air ventilation for maintenance bay.

Project Size: Training Center 55,354 SF, OMS 6,332 SF, Unheated Storage 1,520 SF; Project Cost: \$21,304,000

Armed Forces Reserve Center / VMS / UHS

Fort Snelling, Minnesota

Complete HVAC, Plumbing, Fire Protection, Electrical, IT, alarms, mass notification, and access control design. High efficiency natural gas boilers, air-cooled chiller, and VAV air handling unit will be used. DDC control for HVAC systems will be part of design. OMS building includes in-floor radiant and overhead infrared heating, CO sensing, make up air ventilation for maintenance bay.

Project Size: Training Center 30,508 sq.ft., OMS 6,206 sq.ft., Unheated Storage 913 sq.ft.; Project Cost: \$10,834,000

Brigade Transformation/Brigade Headquarters

Fort Riley, Kansas

This 40,000 SF design/build new construction project is a Brigade Headquarters. The construction of this project is substantially complete. Information technology/data center areas comprising 7,000 SF of raised floors that are secure section components consist of a Brigade Operations Center (BOC), Sensitive Compartmented Information Facility (SCIF), and Network Operations Center (NOC). A 65 kVA uninterruptible power supply and a 375 kW emergency backup generator were engineered for this project. Dedicated and redundant mechanical ventilation and cooling systems were engineered for the BOC, NOC, SCIF and Communication Rooms.

FY 08 Brigade/Battalion COF/SOF Headquarters

Fort Lewis, Washington

Complete mechanical peer review of the plumbing and HVAC systems, fire protection design, and electrical distribution at 15 kV and outside plant telecommunications design for five buildings, including Battalion Headquarters, GSB Headquarters, Marops, TEMF, Hazardous material storage building, and one future medical warehouse building. Electrical distribution included overhead line work; extensive underground ductbank, manhole and line work; pad mounted switchgear; and pad mounted transformers. Outside plant work included extensive underground ductbank and manhole work with large copper and fiber optic cable distribution from three separate facilities.

**Gausman
& Moore**

Mechanical and Electrical Engineers

U.S. ARMY CORPS OF ENGINEERS

Project Experience

NCO Academy Phase 1

Fort McCoy, Wisconsin

Gausman & Moore provided mechanical and electrical design for this Army Reserve Center project which included a system design for Administration/Medical (12,648 sq.ft.) and PLDC/Billeting (51,704 sq.ft.) buildings as well as an addition to the existing Organizational Maintenance Shop (1,594 sq.ft). The design included Anti-Terrorism Force Protection (ATFP). This project received a Gold SPiRiT sustainable project rating.



Complete HVAC, plumbing and fire protection system design was provided. Some features included variable volume heating/cooling air handlers, 4-pipe heating/cooling fan-coil units for the billets, hot water boilers with primary/variable secondary pumping, and outdoor air cooled chillers with primary/variable secondary pumping, DDC controls.

Complete electrical distribution, lighting, communications and alarm system design was provided. Some features included exterior site lighting, interior lighting, emergency lighting, building power transformation and distribution, fire alarm system, mass notification system, communications outside plant and premises distribution, telephone system, and lightning protection system.

17 September 2007 contractual completion date

Original award amount: \$11,998,902.00; Final contract amount: \$12,119,617.00

United States Army Reserve Center / ASF UHS Gray Army Airfield

Fort Lewis, Washington

Mechanical and electrical systems were designed for a 59,057 sq.ft. helicopter Aviation Support Facility (ASF), a 26,809 sq.ft. two-story Training Building, a 3,768 sq.ft. Organizational Maintenance Shop Building (OMS), and a 1,070 sq.ft. Unheated Storage Building. The design included Anti-Terrorism Force Protection (ATFP). The project received a Bronze SPiRiT sustainable project rating.



Mechanical systems included infrared heating and CO monitor controlled life safety ventilation exhaust and makeup air for helicopter and vehicle maintenance bays; hot water boilers with primary/secondary pumping; air handling units with hot water coils; and DDC controls. Buildings were fully sprinklered. An Aqueous Film-Forming Foam (AFFF) fire suppression system was designed for helicopter maintenance bays.

Electrical systems included exterior high voltage distribution; interior low voltage services and distribution; 400HZ aircraft power conversion and distribution system; aviation lighting, site lighting, and interior lighting; emergency lighting central inverter system; fire alarm system; outside plant copper and fiber optic cabling, premises data distribution cabling, telephone system, fire alarm system, mass notification system, cathodic protection, lightning protection, and special grounding systems.

U.S. ARMY CORPS OF ENGINEERS

Project Experience

Public Safety Center

Fort McCoy, Wisconsin

Gausman & Moore provided mechanical and electrical design for this new \$5 million Public Safety Center (PSC) building, which is 12,200 sq.ft. with a remote communications tower that is 250 feet tall. The design of this project used Building Information Modeling (BIM) technology of Microstation Version 8 TriForma for 3-D visualization of design concepts to improve coordination between disciplines and to automate CADD standardization.



The PSC building houses Protective Services Division and Criminal Investigation Division. The PSC building was sited next to the existing fire station to centralize emergency services. Also included is a lobby, police dispatch with bullet resistant glass, offices, detention cells, arms vault, evidence storage rooms, interview and observation rooms, classroom, conference room, toilets/locker/showers, break room, and associated functions.

The communications tower is furnished with aircraft navigation lights, special grounding, emergency power, and provisions for the installation of communication equipment.

Complete HVAC, plumbing, and fire protection system design was provided. Some features included variable volume heating/cooling air handlers, hot water boilers with primary/variable secondary pumping, outdoor air cooled chiller with primary/variable secondary pumping, DDC controls, and redundant heating/cooling units and FM200 fire protection for the communications tower equipment.

Complete electrical distribution, lighting, communications, and alarm system design was provided. Some features included exterior site and security, lighting, aviation obstruction lighting, interior and emergency lighting, building power transformation and distribution, emergency generators, fire alarm system, mass notification system, communications outside plant (OSP) and premises distribution, telephone system, special communications systems, security system, lightning protection system, and special grounding systems.

The design included Anti-Terrorism Force Protection (ATFP). This project received a Gold SPIRiT sustainable project rating.

United States Army Reserve Center / UHS at Fort Shafter

Honolulu, Hawaii

Complete HVAC, plumbing and fire protection, electrical distribution, lighting, communication, and alarm system design for an Army Reserve Training Center. Features include variable volume central station cooling/ventilation air handling units, outdoor air cooled chiller with interior chilled water distribution, split system direct expansion air conditioning units for areas having special cooling needs requiring dedicated units, DDC controls. Features include exterior lighting, interior lighting and control, emergency lighting, and security lighting. Medium voltage electrical distribution and voltage transformation, fire alarm/mass notification system, telephone/data systems, SIPRNET cafe systems design, CATV distribution system, and security system design. 29,987 sf USARC and 913 sf UHS. Cost \$19 million.



U.S. ARMY CORPS OF ENGINEERS

Project Experience

United States Army Reserve Center Herrera Hall / OMS / UHS

Mesa, Arizona

Mechanical and electrical systems were designed for a 49,000 sq.ft. Training Building, a 19,000 sq.ft. Unit Storage Building and a 5,748 sq.ft. Organizational Maintenance Shop Building (OMS). The design included Anti-Terrorism Force Projection (ATFP). The project received a Bronze SPIRiT sustainable project rating.



Mechanical systems included infrared heating and CO monitor controlled life safety ventilation exhaust and makeup air for vehicle maintenance bays; hot water boilers with primary/secondary pumping; evaporative air cooled chiller with primary/secondary pumping for office area cooling; variable volume air handling units with hot water and chilled water coils; and DDC controls. Buildings were fully sprinklered.

Electrical systems included low voltage services and distribution; site, interior, and emergency lighting; fire alarm system, mass notification system, telephone system; sound system; security system; cathodic protection system; lightning protection system; and premises data distribution cabling.

United States Army Reserve Center / OMS / UHS

Ft. Indiantown Gap, Pennsylvania

Gausman & Moore provided mechanical and electrical design for this 300-member Army Reserve Center. Project included a Training Building (39,094 sq.ft.) and an Organizational Maintenance Shop / Regional Training Site – Maintenance (OMS/RTS-M) Building, and an Unheated Storage Building (2,200 sq.ft.). The design included Anti Terrorism Force Protection (ATFP). The project received a Bronze SPIRiT sustainable project rating.



Mechanical systems included infrared heating and CO monitor controlled life safety ventilation exhaust and makeup air for maintenance bays; chiller with primary and secondary pumping for office area cooling; hot water boilers with primary/secondary pumping; and variable volume air handling units with hot water and chilled water coils for occupied space ventilation, heating and air conditioning. An energy management DDC control system was provided for HVAC system monitoring and energy conservation. Buildings were fully sprinklered.

Complete electrical distribution, lighting, communications and alarm systems design. Some features included new medium voltage underground distribution loop, re-routing of overhead fiber and copper outside plant distribution, exterior site and security lighting, interior and emergency lighting, building power transformation and distribution, fire alarm and mass notification systems, premises distribution, telephone system, security system, cathodic protection and lightning protection.

U.S. ARMY CORPS OF ENGINEERS

Project Experience

United States Armed Forces Reserve Center OMS / AMSA / UHS

Moreno Valley, California

The California Air National Guard and Army Reserve project consisted of four buildings. Unique solutions were engineered for each building based on occupancy type and function.

Gausman & Moore mechanical engineers designed a primary/secondary chilled water system to cool the office area of the reserve center. Heating is provided by energy efficient condensing hot water boilers with variable air handling units.



The maintenance performed in the OMS/AMSA buildings often require vehicles to be running in an enclosed space. A carbon monoxide monitor system was designed to ensure occupants have a healthy work environment. Before CO levels can rise to an unhealthy level, the system activates a series of exhaust fans and make-up air handling units. When heating is required on those cool California nights, an energy efficient infrared heating system keeps the work bays comfortable even as vehicles are moved in and out of the building.

Utility supplied medium voltage cable and padmount transformers provide 277/480 volt electric service to the Training Building, the OMS/AMSA building, and the heated storage building. The unheated storage building is sub-fed from the heated storage. Inside the buildings, Gausman & Moore engineered energy efficient lighting, the power distribution system, telephone, and data systems.

Special systems designed for the buildings include fire alarm, mass notification, sound, access control, and cathodic protection. The fire alarm and access control systems were integrated with the existing campus equipment.

Design coordination and constructability are enhanced through the use of Building Information Modeling (BIM) software. Conflicts between architectural, structural, mechanical and electrical elements are easily identified in the three dimensional imagery. Conflicts resolved in design phase save time and money during the construction phase.

Gausman & Moore's sustainable design expertise contributed to the buildings receiving a Gold SPIRiT rating.

U.S. Army Reserve Center

Camp Parks RFTA, Dublin, California

Preparation of an engineering feasibility study including mechanical and electrical design concepts, criteria and standards for the HVAC, plumbing and fire protection systems, interior and exterior lighting, fire alarm, communications, CATV, security system, cathodic protection, and lightning protection. Preliminary load calculations and utility coordination were completed. The project was designed for 44,593sq.ft.

U.S. ARMY CORPS OF ENGINEERS

Project Experience

Puerto Rico Armed Forces Reserve Center Projects: Mayaguez, Ft. Allen, Ft. Buchanan and Cieba

U.S. ACOE, Louisville District

The four U.S. Army Corps of Engineers projects are located in Puerto Rico, a territory identified for projects in this solicitation and demonstrate Gausman & Moore's federal government contracting experience. The projects are all Design/Build Requests for Proposals which includes planning, programming, value engineering, and preliminary design. Sustainable Design and Development and Energy Policy Act of 2005 features will be provided.



Mayaguez Site Plan

The **Mayaguez** project consists of a 58,000 GSF Armed Forces Reserve Center, 17,000 GSF Vehicle Maintenance Shop, and is estimated to cost \$34 million. Primary facility is a 400 member training center that includes administrative, educational, assembly, library, learning center, vault, weapons simulator, and physical fitness areas for seven Army Reserve units and three Puerto Rico Army National Guard (PRARNG) units. The organizational maintenance shop will provide work bays and maintenance administrative support.

The **Ft. Allen** project consists of a 43,000 GSF Armed Forces Reserve Center estimated to cost \$18 million. This 150-member training center will include administrative, educational, assembly, library, and learning center area for two Army Reserve Units, and one Puerto Rico Army National Guard (PRARNG) unit.

The **Ft. Buchanan** project consists of a 72,000 GSF Armed Forces Reserve Center, and 9,200 GSF Vehicle Maintenance Shop and is estimated to cost \$40 million. Primary facility is a 300-member training center. The facility will provide administrative, educational, assembly, library, learning center, vault, and weapons simulator areas for two Army Reserve units, two Puerto Rico Army National Guard (PRARNG) units, and a U.S. Marine Corps Reserve Unit.

A separate simultaneous project at Ft. Buchanan included a new high voltage, primary electrical substation to serve the entire Fort estimated to cost \$12 million. The project included a new double ended, 38kV to 13.8kV, 20 MVA substation and modifications to the medium voltage distribution system.

The Army Reserve Center at **Cieba** consists of an 63,000 GSF Armed Forces Reserve Center, 11,000 GSF Vehicle Maintenance Shop, and two Unheated Storage Buildings totaling 5,000 GSF, and is estimated to cost \$32 million. This 600-member training center will provide administrative, educational, assembly, library, learning center, vault, weapons simulator, and physical fitness areas for six Army Reserve units.

U.S. Army Reserve Center / ARC / VMS / UHS

Joliet, Illinois

Complete HVAC, plumbing, fire protection, electrical, and IT system design. High efficiency boiler & chiller will be used, diesel powered fire pump (for both training/OMS buildings) will be located on grade, DDC, VAV boxes. OMS in-floor radiant heating, overhead infrared, make-up air ventilation system for maintenance bay. Training Building 53,862 sq.ft.; OMS 9,152 sq.f.t, USH 3,3341 sq.ft. Programmed Cost \$16,943,000.

**Gausman
& Moore**

Mechanical and Electrical Engineers

U.S. ARMY CORPS OF ENGINEERS

Project Experience

U.S. Army Reserve / Metropolitan Airport Commission OMS / AMSA

St. Joseph, Minnesota

Gausman & Moore provided mechanical and electrical engineering design for this Organizational Maintenance Shop (OMS) / Area Maintenance Support Activity (AMSA) Building (12,628 sq.ft.). The design included Anti-Terrorism Force Protection (ATFP).



Mechanical systems included in-floor radiant and infrared heating as well as CO monitor controlled life safety ventilation exhaust and makeup air utilizing air to air energy recovery for vehicle maintenance bays; gas fired heating with DX cooling for the office area; hot water boilers with primary/secondary pumping for the in-floor radiant heating system; and DDC controls. Buildings were fully sprinklered.

Electrical systems included low voltage services and distribution, site and interior lighting, fire alarm system, premises data distribution cabling, telephone system, sound systems, cathodic protection and lighting protection.

"Please pass along the Army Reserve's compliments to your team at MAC and to the folks at TKDA, Westra and RSP. If the maintenance folks say this building is exemplary, I can think of no higher compliment. And, I want to add my personal "thanks" to everyone. This has been an outstanding project due to the competence and hard work by all involved."

- Robert Wendler, Project Manager, 88th Regional Support Command, DCSEN

U.S. Army Reserve Center / Classroom Building

Grand Prairie, Texas

Gausman & Moore provided mechanical and electrical engineering design for this two-story Classroom and Office Building (23,394 sq.ft.). The design included Anti-Terrorism Force Protection (ATFP). The project received a Gold SPIRiT sustainable project rating.



Mechanical systems included variable volume heating/cooling air handlers, high efficiency condensing hot water boilers with primary/variable secondary pumping, and outdoor air cooled chillers with primary/variable secondary pumping, DDC controls.

Complete electrical distribution, lighting, communications and alarm system design. Some features included exterior site lighting, interior lighting, daylight harvesting, emergency lighting, building power transformation and distribution, fire alarm system, mass notification system, telephone system, and lightning protection system.

**Gausman
& Moore**

Mechanical and Electrical Engineers

U.S. ARMY CORPS OF ENGINEERS

Project Experience

U.S. Army Reserve Center / OMS / AMSA / UHS

Conway, Arkansas

Mechanical and electrical systems were designed for this 22,617 sq.ft. Training Building, a 5,454 sq.ft. Organizational Maintenance Shop (OMS) / Area Maintenance Support Activity (AMSA) Building, and a 536 sq.ft. Unheated Storage Building. The design included Anti-Terrorism Force Protection (ATFP). The project received a Bronze SPiRiT sustainable project rating.



Rendering provided by RSP Architects

Mechanical systems included infrared heating and CO monitor controlled life safety ventilation exhaust and makeup air for vehicle maintenance bays; chiller with primary/secondary pumping for office area cooling; hot water boilers with primary/secondary pumping; variable volume air handling units with hot water and chilled water coils; and DDC controls. Buildings were fully sprinklered.

Electrical systems included low voltage services and distribution, site, interior and emergency lighting, fire alarm system, premises data distribution cabling, telephone system, sound system, security system, cathodic protection and lightning protection.

U.S. Army Reserve Center / OMS / AMSA / UHS

Granite City, Illinois

Gausman & Moore provided mechanical and electrical engineering design for this 600 member Army Reserve Center project which included a Training Building (52,595 sq.ft.), Organizational Maintenance Shop (OMS) / Area Maintenance Support Activity (AMSA) Building (16,122 sq.ft.) General Purpose Warehouse (3,344 sq.ft), and Unheated Storage Building (3,645 sq.ft.) The design included Anti-Terrorism Force Protection (ATFP). The project received a Gold SPiRiT sustainable project rating.



Mechanical systems included infrared heating and CO monitor controlled life safety ventilation exhaust and makeup air for maintenance bays; chiller with primary and secondary pumping for office area cooling; high efficiency condensing hot water boilers and variable volume air handling units with hot water and chilled water coils for occupied space ventilation, heating and air conditioning. An energy management DDC control system was provided for HVAC system monitoring and energy conservation. Buildings were fully sprinklered.

Electrical systems included low voltage electrical services and distribution; site, interior, and emergency lighting; combined fire alarm and mass notification systems; telephone system; sound system; security system; cathodic protection system; lightning protection system and premises data distribution cabling.

U.S. ARMY CORPS OF ENGINEERS

Project Experience

U.S. Army Reserve Center / OMS / UHS

Binghamton, New York

The design team was selected to participate in this Pilot Project as part of the Army Reserve Energy Reduction Initiative. The primary objectives were to investigate what was required to achieve the “next level” of energy reduction, to achieve LEED Gold and to explore the possibility of Platinum certification, and to explore integrating of renewable energy opportunities. The process included the standard project design charette, but added a sustainability charette, and then coordinated efforts to optimize the buildings sustainability performance. The resulting project will achieve net-zero energy performance by including a 427 kW photovoltaic array.



The Reserve center includes a 34,840 square foot training building, an 8,192 square foot maintenance building, and a 1,242 square foot unheated storage building. The sustainable systems on the project include solar wall for preheating ventilation, air-to-air heat exchangers for heat recovery, energy efficient ductwork, VAV air handling units, one 50 ton water-to-water heat pump and two 30 ton water-to-water heat pumps to provide efficient heating and cooling for the hydronic system, 80 vertical bore well field coupled to the ground source heat pump system, radiant in-floor heating in the maintenance building, 16 panel solar water heater with 2,000 gallons of storage, a 50,000 gallon rainwater harvesting system with ozone disinfection used to flush toilets, for exterior hose bibs, and green roof irrigation on the training center, a 20,000 gallon rainwater harvesting system with ultraviolet disinfection used to flush toilets and wash vehicles on the maintenance building, and high efficiency plumbing fixtures including waterless urinals. The cost for the building project is \$14,264,000 and the photovoltaic array cost is \$3,000,000. The project was designed using Building Information Modeling (BIM) from the earliest concepts that provided a base model for the energy modeling done during the sustainability charette.

The photovoltaic array included 1860-230 watt photovoltaic panels totaling 427.8kW are mounted in groups of 12 panels on ten foot high steel posts and are fixed at an angle equal to the project latitude to maximize the solar insolation. Each string of 12 panels were routed through combiner boxes mounted on uni-strut before connecting to the pad-mount inverters located adjacent to the “PV field.” The spacing provided prevents self shading and the overall design incorporates Anti-Terrorism/Force Protection concerns. 426kW is the amount of fixed axis PV required for this facility to be a net zero facility based on energy cost.

U.S. Army Reserve Center / OMS / Heated / UHS

Hanscom AFB, Bedford, Massachusetts

Preparation of an engineering feasibility study including mechanical and electrical design concepts, criteria and standards for HVAC, plumbing and fire protection systems, power, lighting, security, fire alarm and mass notification, cathodic protection, lighting protection, and communication systems. Preliminary load calculations and utility coordination were completed. The project size was 247,289 sq.ft. and required a Silver SPIRiT sustainable project rating.

U.S. ARMY CORPS OF ENGINEERS

Project Experience

U.S. Army Reserve Center / OMS / UHS

Hays, Kansas

Gausman & Moore provided mechanical and electrical engineering design for this 200 member Army Reserve Center project which included a Training Building with medical warehouse and repair shop functions (36,106 sq.ft.) an Organizational Maintenance Shop (OMS) (6,338 sq.ft.) and an Unheated Storage Building (1,071 sq.ft.). The design included Anti-Terrorism Force Protection (ATFP). This project received a Bronze SPIRiT sustainable project rating.



Mechanical systems included infrared heating and CO monitor controlled life safety ventilation exhaust and makeup air for maintenance bays; chiller with primary/secondary pumping for office area cooling; hot water boilers with primary/secondary pumping; and variable volume air handling units with hot water and chilled water coils for occupied space ventilation, heating and air conditioning. An energy management DDC control system was provided for HVAC system monitoring and energy conservation. Buildings were fully sprinklered.

Electrical systems included low voltage services and distribution, site, and interior and emergency lighting, fire alarm system, mass notification system, premises communications outside plant and distribution, telephone system, sound systems, cathodic protection and lighting protection.

U.S. Army Reserve Center / OMS / UHS

Lincoln, Nebraska

Mechanical and electrical systems were designed for the 46,274 sq.ft. Training Building, 6,222 sq.ft. Organizational Maintenance Shop Building (OMS), and a 2,272 sq.ft. Unheated Storage Building. The design included Anti-Terrorism Force Protection (ATFP). The project received a Bronze SPIRiT sustainable project rating. The AME team received Outstanding Rating on the Performance Evaluation Rating.



Mechanical systems included infrared heating and CO monitor controlled life safety ventilation exhaust and makeup air for vehicle maintenance bays; hot water boilers with primary/secondary pumping; air cooled chiller with primary/secondary pumping for office area cooling; variable volume air handling units with hot water and chilled water coils; and DDC controls. Buildings were fully sprinklered.

Electrical systems included low voltage electrical services and distribution; site, interior, and emergency lighting; fire alarm system; mass notification system; telephone system; sound system; security system; cathodic protection system; lightning protection system; and premises data distribution cabling.

U.S. Army Reserve Center / Full Facility Restoration

Columbia, Missouri

Preparation of an engineering feasibility study including mechanical and electrical design concepts, criteria and standards for the HVAC, plumbing and fire protection systems. A technical design analysis and preliminary calculations in support of the conceptual mechanical and electrical systems design was prepared. Preliminary load calculations and utility coordination were completed. The project was designed for 22,568 sq.ft.

**Gausman
& Moore**

Mechanical and Electrical Engineers

U.S. ARMY CORPS OF ENGINEERS

Project Experience

U.S. Army Reserve Center / OMS / AMSA

Camp Parks RFTA, Dublin, California

Preparation of an engineering feasibility study including mechanical and electrical design concepts, criteria and standards for the HVAC, plumbing and fire protection systems, power, lighting, security, fire alarm and mass notification, cathodic protection, lighting protection, and communication systems. Preliminary load calculations and utility coordination were completed. The project was designed for 72,792 sq.ft.

U.S. Army Reserve Center / OMS / AMSA / UHS

Eau Claire, Wisconsin

Preparation of an engineering feasibility study including mechanical and electrical design concepts, criteria and standards for the HVAC, plumbing and fire protection systems, power, lighting, security, fire alarm and mass notification, cathodic protection, lighting protection, and communication systems. Preliminary load calculations and utility coordination were completed. The project was designed for 52,420 sq.ft. and for a Gold SPiRiT sustainable project award.

U.S. Army Reserve Center / OMS / AMSA Full Facility Restoration

Spokane, Washington

Existing systems investigation and design for complete upgrade of the HVAC, plumbing, fire protection, electrical, lighting and communication systems. The project included an existing 2-story 27,753 sq.ft. Training Building with a 4,800 sq.ft. Medical Training addition, and an existing 10,782 sq. ft. Organizational Maintenance Shop (OMS) / Area Maintenance Support Facility (AMSA) with a 2,000 sq.ft. office addition.

Mechanical systems included variable volume heating/cooling air handlers, steam boiler conversion to a hot water boiler with primary/variable secondary pumps, air cooled chiller with primary/secondary pumps, DDC controls, infrared heating in the vehicle maintenance bays, and CO-controlled maintenance bay exhaust and makeup air ventilation.

Some features included complete replacement of the electrical service and distribution, exterior, interior, emergency and security lighting in phased construction, power to special medical equipment trailers, new fire alarm system, and mass notification system, communication system, phased replacement of premises distribution and phased relocation and expansion of the existing telephone system.

U.S. Army Reserve Center / OMS / UHS

Tustin, California

Preparation of an engineering feasibility study including mechanical and electrical design concepts, criteria and standards for the HVAC, plumbing and fire protection systems, power, lighting, security, fire alarm and mass notification, cathodic protection, lighting protection, and communication systems. Preliminary load calculations and utility coordination were completed. The project was designed for 66,900 sq.ft.

U.S. ARMY CORPS OF ENGINEERS

Project Experience

U.S. Army Reserve Center / Supply / Storage Building *Camp Parks RFTA, Dublin, California*

Gausman & Moore provided complete mechanical and electrical engineering design for this Army Reserve Center project which included a supply / storage building (34,982 sq.ft.)

Mechanical systems included hot water boilers with primary/secondary pumping; and variable volume air handling units with hot water and chilled water coils for occupied space ventilation, heating and air conditioning. An energy management DDC control system was provided for HVAC system monitoring and energy conservation. Buildings were fully sprinklered.

Electrical systems included low voltage services and distribution, site and interior lighting, fire alarm system, mass notification system, premises data distribution cabling, and telephone system.

Wilderness Road Brigade-Battalion Headquarters *Fort Carson, Colorado*

This 140,000 SF design/build new construction project is a combined facility that includes Battalion/Brigade Headquarters and Command and Control Facilities. The construction of this project is currently substantially complete. Information technology/data center areas comprising 7,000 SF of raised floors that are secure section components consist of a Brigade Operations Center (BOC), Sensitive Compartmented Information Facility (SCIF), and Network Operations Center (NOC). A 100 kVA uninterruptible power supply and a 400 kVA emergency backup generator were engineered for this project. Dedicated and redundant mechanical cooling and ventilation systems were engineered for the BOC, NOC, SCIF and Communication Rooms.

D/B RFP for Battle Simulation Center *Fort McCoy, Wisconsin*

Preparation of performance based design/build statement of work, outline specifications and conceptual design for complete HVAC, plumbing and fire protection systems; and power, lighting, security, fire alarm and mass notification, cathodic protection, lightning protection, and communication systems. A technical design analysis and preliminary calculations in support of the mechanical and electrical systems design was prepared. A quality assurance concept review of the contractor's design documents was also performed. The project was 20,830 sq.ft. and a Bronze SPIRIT sustainable project rating.

D/B RFP for U.S. Armed Forces Reserve Center *Fort Allen, Puerto Rico*

Preparation of mechanical performance based design/build statement of work, outline specifications and conceptual design for complete HVAC, plumbing and fire protection systems for a joint use Armed Forces Reserve Center and classroom building. A technical design analysis and preliminary calculations in support of the conceptual mechanical systems design was prepared. A quality assurance concept review of the contractor's design documents was also performed.

U.S. ARMY CORPS OF ENGINEERS

Project Experience

D/B RFP for U.S. Armed Forces Reserve Center / VMS / UHS

Fort Buchanan, Puerto Rico

Preparation of mechanical performance based design/build statement of work, outline specifications and conceptual design for complete HVAC, plumbing and fire protection systems for a joint use Armed Forces Reserve Center and classroom building. A technical design analysis and preliminary calculations in support of the conceptual mechanical systems design was prepared. A quality assurance concept review of the contractor's design documents was also performed.

D/B RFP for U.S. Army Reserve Center / AFRC / OMS / UHS

Moffett Field, California

Preparation of mechanical and electrical performance based design/build statement of work, outline specifications and conceptual design for complete HVAC, plumbing and fire protection systems, power, lighting, security, fire alarm and mass notification, cathodic protection, lighting protection, and communication systems. A technical design analysis and preliminary calculations in support of the conceptual mechanical and electrical systems design was prepared. A quality assurance concept review of the contractor's design documents was also performed. The project size was 266,741 sq.ft. and required a Gold SPIRiT sustainable project rating.

D/B RFP for U.S. Army Reserve Center / Full Facility Restoration

Great Falls, Montana

Preparation of mechanical and electrical performance based design/build statement of work, outline specifications and conceptual design for complete HVAC, plumbing and fire protection systems, power, lighting, security, fire alarm and mass notification, cathodic protection, lighting protection, and communication systems. A technical design analysis and preliminary calculations in support of the mechanical and electrical systems design was prepared. The project size was 26,182 sq.ft.

D/B RFP for U.S. Army Reserve Center / OMS / AMSA / UHS

Sioux Falls, South Dakota

Preparation of mechanical and electrical performance based design/build statement of work, outline specifications and conceptual design for complete HVAC, plumbing and fire protection systems. A technical design analysis and preliminary calculations in support of the conceptual mechanical and electrical systems design was prepared. A quality assurance concept review of the contractor's design documents was also performed. The project size was 63,182 sq.ft. and required a Gold SPIRiT sustainable project rating.

U.S. ARMY CORPS OF ENGINEERS

Project Experience

D/B RFP for U.S. Army Reserve Center / OMS / AMSA / UHS

North Canton, Ohio

Preparation of mechanical and electrical performance based design/build statement of work, outline specifications and conceptual design for complete HVAC, plumbing and fire protection systems, power, lighting, security, fire alarm and mass notification, cathodic protection, lighting protection, and communication systems. A technical design analysis and preliminary calculations in support of the conceptual mechanical and electrical systems design was prepared. A quality assurance concept review of the contractor's design documents was also performed. The project size was 64,025 sq.ft. and required a Silver SPiRiT sustainable project rating.

D/B RFP for U.S. Army Reserve Center / OMS / AMSA / UHS

Cleveland, Ohio

Preparation of mechanical and electrical performance based design/build statement of work, outline specifications and conceptual design for complete HVAC, plumbing and fire protection systems, power, lighting, security, fire alarm and mass notification, cathodic protection, lighting protection, and communication systems. A technical design analysis and preliminary calculations in support of the conceptual mechanical and electrical systems design was prepared. A quality assurance concept review of the contractor's design documents was also performed. The project size was 108,834 sq.ft. and required a Bronze SPiRiT sustainable project rating.

D/B RFP for U.S. Army Reserve Center / OMS / UHS

Fort Leavenworth, Kansas

Preparation of mechanical and electrical performance based design/build statement of work, outline specifications and conceptual design for complete HVAC, plumbing and fire protection systems, power, lighting, security, fire alarm and mass notification, cathodic protection, lighting protection, and communication systems. A technical design analysis and preliminary calculations in support of the conceptual mechanical and electrical systems design was prepared. The project size was 44,738 sq.ft. and required a Bronze SPiRiT sustainable project rating.

D/B RFP for U.S. Army Reserve Center / UHS

Pensacola, Florida

Preparation of mechanical and electrical performance based design/build statement of work, outline specifications and conceptual design for complete HVAC, plumbing and fire protection systems, power, lighting, security, fire alarm and mass notification, cathodic protection, lighting protection, and communication systems. A technical design analysis and preliminary calculations in support of the conceptual mechanical and electrical systems design was prepared. A quality assurance concept review of the contractor's design documents was also performed. The project size was 45,110 sq.ft. and required a Silver SPiRiT sustainable project rating.

D/B RFP for U.S. Army Reserve Regional Readiness Sustainment Command Headquarters

Fort Jackson, South Carolina

Preparation of mechanical and electrical performance based design/build statement of work, outline specifications and conceptual design for complete HVAC, plumbing and fire protection systems, power, lighting, security, fire alarm and mass notification, cathodic protection, lighting protection, and communication systems. A technical design analysis and preliminary calculations in support of the conceptual mechanical and electrical systems design was prepared. A quality assurance concept review of the contractor's design documents was also performed. The project size was 79,935 sq.ft. and required a Gold SPIRiT sustainable project rating.

D/B RFP for U.S. Army Reserve Regional Readiness Sustainment Command Headquarters

Fort McCoy, Wisconsin

Preparation of mechanical and electrical performance based design/build statement of work, outline specifications and conceptual design for complete HVAC, plumbing and fire protection systems, power, lighting, security, fire alarm and mass notification, cathodic protection, lighting protection, and communication systems. A technical design analysis and preliminary calculations in support of the conceptual mechanical and electrical systems design was prepared. A quality assurance concept review of the contractor's design documents was also performed. The project size was 79,935 sq.ft. and required a Gold SPIRiT sustainable project rating.

D/B RFP for Whole Neighborhood Revitalization

Fort Knox, Kentucky

Preparation of site electrical performance based design/build statement of work and outline specifications, medium voltage power distribution; roadway, walkway, sports and site amenity area lighting; telephone and CATV outside plant distribution; demolition of existing facilities; and re-routing of fiber optic and copper cable outside plant distribution to existing facilities. A review of the contractor's housing unit electrical design was also performed. The project size was 348,901 sq.ft. and required a Gold SPIRiT sustainable project rating.

D/B RFP Instruction Manual

U.S. Army Engineer District, Louisville, Kentucky

Preparation of a master mechanical and electrical performance based design/build statement of work template, outline specifications and instruction manual for the Army Reserve and Army Reserve Contractors to use in preparing and issuing D/B RFP's for United States Army Reserve Centers throughout the country.