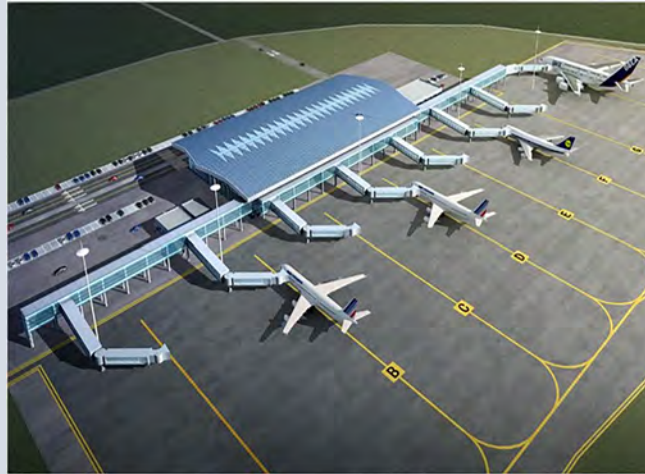




**PMC Engineering (Private) Limited**  
PLANNING | MANAGEMENT | CONSULTING



# AIRPORTS & AVIATION FUEL SYSTEMS

Project  
Management  
Services

**REDUCING RISK □ ADDING VALUE**

## Project Management Consultancy Services

Project  
Management  
Services

INNOVATION & TECHNOLOGY IN  
AVIATION FUEL INFRASTRUCTURE



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## Project Management Consultancy Services

The Company is focused on providing specialised petroleum engineering services superior to the industry norm in methodology, standards and performance. The management team have an unparalleled wealth of experience in servicing the needs of our clients on a design-build, engineering, procurement, project management, construction, and a commissioning basis. We, in association with collaboration from our associates and partnering companies offer a full-spectrum of professional engineering and consulting services for the transportation of aviation Jet A-1 fuel, fuel storage, in addition to the receiving and off-loading handling facilities.

Our in-house technical and management expertise allows us to serve as an extension of our clients' engineering and management staff. Through hundreds of fuel-related projects, our engineers and other professionals bring specialised expertise to each client's objectives.

Although we are specialized, the company offers a comprehensive list of professional engineering services and provides a proactive approach to project management. This proactive approach ensures that our clients' get the maximum benefit of programming, planning, design, and construction follow-on along with management services for their petroleum projects from a single source. The Company can provide engineering design services for fuel receiving, storage and distribution systems for aviation and transportation-related fuel facilities.

The Company has access to highly experienced and qualified, professional team of engineers including senior project managers, qualified engineers, quantity surveyors and technical staff. Due to the nature of the work undertaken the company has very high standards and guidelines of Safety Management and HSE Systems. The Company carries out regular monitoring of all its Systems and Operating Procedures to ensure that all works under taken or materials supplied through its approved supply chain of major suppliers are carried out in full compliance with the very latest legislation and recommendations.

In line with this Total Quality Commitment the company has in-house Quality Assurance Systems to monitor and control all aspects of the work undertaken. Our technical and management expertise has extensive experience in providing Project Management, Consultancy and Engineering Services on aviation fuel related projects from overseeing the construction installation and commissioning of fuel hydrant systems to the project management of Engineering, Procurement, Construction and Commissioning (EPCC) of Fuel Handling, Storage and Distribution Facilities.

The Company's management teams have all worked closely, over the last decade, with the Civil Aviation Authority (CAA) in Dubai, Abu Dhabi, Sharjah and the Federal Civil Aviation Authority (FCAA) in other Emirates. The Oman Civil Aviation Authority (OCAA) in the Sultanate of Oman, the General Authority of Civil Aviation, Kingdom of Saudi Arabia (GACA), the Directorate-General Civil Aviation (DGCA) in Kuwait. Outside of the Middle East the Management team have worked closely with the Ministry of Civil Aviation, Sri Lanka, the Civil Aviation Authority of Singapore (CAAS) and the Hong Kong Airports Authority (HKAA).

Members of the Management's Project team have also worked closely with the General Head Quarters (GHQ) UAE Armed Forces for aviation fuel systems and associated facilities along with US Army Corp of Engineers (USACE)

We and our associate member partners are a Joint Inspection Group (JIG) compliant company.

Project  
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# Dubai World Central Al Maktoum International Airport (DWC) - United Arab Emirates

## Project Description:

The Project Management team members were actively involved during the whole process of the project

- 3 Nos. Jet A1 aviation fuel storage tanks of 9,500 m<sup>3</sup> to API 650
- 2 Nos. Jet A1 aviation fuel storage tanks of 13,500 m<sup>3</sup> to API 650
- 1 Nos. Fire Water tank with a capacity of 3,767 m<sup>3</sup> to API 650
- To undertake the management of the Process Works including the establishment and operation of Quality Assurance and Quality Control procedures, site safety management, engineering and design, material procurement, expediting and inspection and control procedures.
- To provide all necessary detailed design and engineering, method statements, calculations and installation procedures based upon the FEED documentation provided in this contract and produce required deliverable. This shall include the preparation of all designs for permanent Process works, the design of all temporary works necessary for the construction of the permanent Process works, and the incorporation of the specific requirements for installation of procured items of plant and equipment.
- To coordinate and provide access to others for Hydrant Feeder and SVDU installation and Tie-in Works, Power Instrumentation, Control and Communication for Hydrant, Pipeline Reception and into plane communications.
- To undertake a Hazard and Operability Study (HAZOP) and Control System HAZOP (CHAZOP) which shall be issued to the Engineer as a detailed design deliverable?
- To undertake a SIL assessment of the works this shall be issued to the Engineer as a detailed design deliverable.
- The design responsibilities also include the Manufacturer package and related design and associated detailed design to incorporate the specific requirements of equipment as selected by the Contractor such as tankage design, equipment foundations, support detail requirements and stress
- To undertake to design, supply, install, and test and commission the electrical works in accordance with DEWA regulations for the MV Power Supplies, MV and LV Switchgear, 11kV/13.3kV and 3.3kV/400V Transformers, UPS supply & Battery Chargers, DC Trip Supply Unit, Pump Motors, Valve Actuators and Diesel pump controllers, etc.
- To undertake a resistivity survey at site in order to design the Cathodic Protection system. The CP works shall include the supply, installation, testing, pre-commissioning and commissioning of temporary and permanent CP systems for buried pipe sections, the underside of above ground storage tank bases and underground tankage
- To undertake to design supply, install, and test and commission the Instrumentation Works for Metering Systems, Depot Control & Inventory Management Systems, Tank Gauging Systems, ESD System, and Hydrant Pump Control Systems; provision for interfaces with Pipeline Control System. Hydrant Control ESD and LDS systems Into-plane Services Area Control System, Display of Airport Information Management System data, Security and CCTV systems, and Fire Detection System
- To design, supply, install, and test and commission the Mechanical and Fire Protection Works and piping works including supply of all necessary equipment and materials, prefabrication, installation, inspection, NDT, hydrostatic testing, cleaning drying, painting, line identification and markings.



Client	Dubai Aviation Engineering Projects
Year	2006 - 2011

**REDUCING RISK □ ADDING VALUE**

# Sharjah International Airport (SHJ) - United Arab Emirates

**Project Description:**

Expansion of the Cargo and Passenger Aprons with the construction of a new General Aviation (GA) Fuel Hydrant System for Air Arabia Terminal at Sharjah International Airport.

**Scope of Work:**

The Project Management team members were actively involved and participated along with the site project teams for the Engineering, Procurement, Construction & Commissioning (EPCC) of a new Fuel Hydrant System (FHS) at the new Air Arabia Terminal to include

- Supply, Install & Commission a Jet A1 Fuel Hydrant System comprising of 3 km of fuel pipe ranging from 16” in diameter
- Supply, Install & Commission 31 hydrants comprising of API standard hydrant pits, under hydrant valves and hydrant valves
- Supply, Install & Commission full bore Double Block & Bleed (DB&B) valves ranging in size from 16”
- Supply, Install & Commission Emergency Shutdown (ESD) System
- Supply, Install & Commission Leak Detection System (LDS) in line with API 1540 Appendix E requirements
- Supply, Install & Commission fuel hydrant control and monitoring system



The Sharjah International Airport Authority (SIAA) is to invest a total of AED1.5bn (\$408.8m) to expand various facilities, including construction of a new passenger terminal building at the Sharjah International Airport (SIA). The expansion will be executed in several phases and features a number of projects. Under the expansion project, a terminal building will be built over the next four years. It will help the airport increase the passengers handling capacity to 20 million by 2027.

Client	Sharjah International Airport Authority
Year	2009 - 2010

**REDUCING RISK □ ADDING VALUE**

# Muscat International Airport (MCT) - Sultanate of Oman

## Project Description:

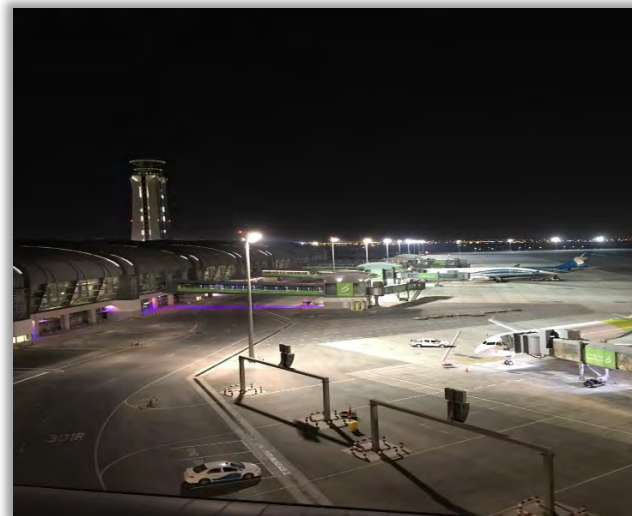
Team members were involved in the project management for the construction of a new General Aviation (GA) Fuel Hydrant System and the construction of a new General Aviation (GA) Fuel Farm at Muscat International Airport MC-1.

### Fuel Hydrant System specifications included

- Supply, Install & Commission a Jet A1 Fuel Hydrant System comprising of 14 km of fuel hydrant piping ranging in size from 12” to 24” in diameter
- Supply, Install & Commission 146 hydrants comprising of API standard hydrant pits, under hydrant valves and hydrant valves
- Supply, Install & Commission full bore Double Block & Bleed (DB&B) valves ranging in size from 12” to 24”
- Supply, Install & Commission Emergency Shutdown (ESD) System
- Supply, Install & Commission Leak Detection System (LDS) in line with API 1540 Appendix E requirements
- Supply, Install & Commission fuel hydrant control and monitoring system

### New Fuel Farm Storage Facility specifications included

- 4 Nos. Jet A1 aviation fuel storage tanks of 9,000 m<sup>3</sup> to API 650
- 1 Nos. Jet A1 aviation de-fuelling storage tanks of 300 m<sup>3</sup> to API 650
- To undertake the management of the Process Works including the establishment and operation of Quality Assurance and Quality Control procedures, site safety management, engineering and design, material procurement, expediting and inspection and control procedures.
- The design responsibilities include the Manufacturer package and related design and associated detailed design to incorporate the specific requirements of equipment as selected by the Contractor such as tankage design, equipment foundations, support detail requirements and stress
- To undertake to design, supply, install, and test and commission the electrical works in accordance with DEWA regulations for the MV Power Supplies, MV and LV Switchgear, 11kV/13.3kV and 3.3kV/400V Transformers, UPS supply & Battery Chargers, DC Trip Supply Unit, Pump Motors, Valve Actuators and Diesel pump controllers, etc.
- To undertake to design supply, install, and test and commission the Instrumentation Works for Metering Systems, Depot Control & Inventory Management Systems, Tank Gauging Systems, ESD System, and Hydrant Pump Control Systems; provision for interfaces with Pipeline Control System. Hydrant Control ESD and LDS systems Into-plane Services Area Control System, Display of Airport Information Management System data, Security and CCTV systems, and Fire Detection System
- To design, supply, install, and test and commission the Mechanical and Fire Protection Works and piping works including supply of all necessary equipment and materials, prefabrication, installation, inspection, NDT, hydrostatic testing, cleaning drying, painting, line identification and marking.



Client	Consolidated Contractors   TAV JV
Year	2010 - 2013

**REDUCING RISK □ ADDING VALUE**

## Mattala Rajapaksa International Airport (MRIA) - Sri Lanka

### Project Description:

The Project Management team members were actively involved during the whole process of the project

- 3 Nos. Jet A1 aviation fuel storage tanks of 1,300 m<sup>3</sup> to API 650
- 1 Nos. Fire Water tank with a capacity of 500 m<sup>3</sup> to API 650
- Construct Fuel Hydrant System from the Apron Area to the Fuel Farm facility
- To undertake the management of the Process Works including the establishment and operation of Quality Assurance and Quality Control procedures, site safety management, engineering and design, material procurement, expediting and inspection and control procedures.
- To provide all necessary detailed design and engineering, method statements, calculations and installation procedures based upon the FEED documentation provided and produce required deliverable. This shall include the preparation of all designs for permanent Process works, the design of all temporary works necessary for the construction of the permanent Process works, and the incorporation of the specific requirements for installation of procured items of plant and equipment.
- To coordinate and provide access to others for Hydrant Feeder and SVDU installation and Tie-in Works, Power Instrumentation, Control and Communication for Hydrant, Pipeline Reception and into plane communications.
- To undertake a Hazard and Operability Study (HAZOP) and Control System HAZOP (CHAZOP) which shall be issued to the Engineer as a detailed design deliverable?
- To undertake a SIL assessment of the works this shall be issued to the Engineer as a detailed design deliverable.
- The design responsibilities also include the Manufacturer package and related design and associated detailed design to incorporate the specific requirements of equipment as selected by the Contractor such as tankage design, equipment foundations, support detail requirements and stress
- To undertake to design, supply, install, and test and commission the electrical works in accordance with Ceylon Electricity Board (CEB) regulations for the MV Power Supplies, MV and LV Switchgear, 11kV/3.3kV and 3.3kV/400V Transformers, UPS supply & Battery Chargers, DC Trip Supply Unit, Pump Motors, Valve Actuators and Diesel pump controllers, etc.
- To undertake a resistivity survey at site in order to design the Cathodic Protection system. The CP works shall include the supply, installation, testing, pre-commissioning and commissioning of temporary and permanent CP systems for buried pipe sections, the underside of above ground storage tank bases and underground tankage
- To undertake to design supply, install, and test and commission the Instrumentation Works for Metering Systems, Depot Control & Inventory Management Systems, Tank Gauging Systems, ESD System, and Hydrant Pump Control Systems; provision for interfaces with Pipeline Control System. Hydrant Control ESD and LDS systems Into-plane Services Area Control System, Display of Airport Information Management System data, Security and CCTV systems, and Fire Detection System
- To design, supply, install, and test and commission the Mechanical and Fire Protection Works and piping works including supply of all necessary equipment and materials, prefabrication, installation, inspection, NDT, hydrostatic testing, cleaning drying, painting, line identification and marking.
- Commission the Fuel Hydrant System within the Apron Area and the Fuel Farm facility



Client	Ceylon Petroleum Corporation
Year	2012 - 2015

**REDUCING RISK □ ADDING VALUE**

# Abu Dhabi International Airport (AUH) - United Arab Emirates

**Project Description:**

Nine Code “E” Hard Stands

Two new code E aprons are proposed to be constructed opposite the existing Apron 2(Cargo stands) at Abu Dhabi International Airport. The new stands are located between Taxiway E in the north and Taxiway F in the south. The smaller ‘western’ apron contains three (3) Code E stands and is situated between Taxiways E11 in the west and Taxiway E13 in the east. The larger ‘eastern’ apron contains six (6) Code E stands and is situated between Taxiway E13 in the west and Taxiway E14 in the east.

**Scope of Work:**

Team members were involved in the project management for the Engineering, Procurement and Construction of Jet Fuel Hydrant System required for Nine (9) Code E Hardstands.

- Supply, Install and Commission a Jet Fuel Hydrant System comprising of 6.3 km of fuel pipe, API 5L Grade B, ranging from 24”, 12” and 6”.
- Supply, Install and Commission 18 numbers of hydrants comprising of API standard hydrant pit valves and Environmental hydrant pit boxes.
- Supply, Install and Commission 10 numbers of hydrant vent and drain assembly comprising of API standard hydrant vent/drain valves and Environmental hydrant pit boxes.
- Supply, Install and Commission of 11 numbers of Motor Operated Double Block and Bleed valves. Size range from 12” to 24”.
- Supply, Install and Commission Leak Detection System in line with API 1540.

This fuel hydrant system is to be connected to the existing fuel hydrant system supplied by the ADNOC Fuel Farm near Gate 1. Each stand will have two fuel hydrants; one on each side of the aircraft. The size of the jet fuel pipeline loop serving the Hardstand is to be 16 inches, which should achieve a flow rate of 1,100 m3/hr sufficient to refuel 6 aircraft simultaneously at the maximum loading rate of 3,000 l/min or 180 m3/hr or a higher number of aircraft at a lower loading rate.

Instrumentation and control lines are only up to the west VC tie-in. All I & C from this VC into the Fuel Farm Control Room is covered under a Provisional Sum.

All instrumentation and control facilities up to the west tie-in VC are part of the base tender, including all containment, cabling, panels, control, patch panels, switches, termination, UPS, software integration etc. All facilities from the west VC tie-in into and across the Fuel Farm into the Control Room to the tie-ins with master system are covered under a Provisional Sum, which includes cabling, containment, patch panels, switches, terminal, full integration (software/hardware), equipment, local UPS, etc.



Client	Abu Dhabi Airports Company (ADAC)
Year	2012 - 2015

**REDUCING RISK □ ADDING VALUE**



## Abu Dhabi International Airport (AUH) - United Arab Emirates

### Project Description:

Midfield Airside Apron Jet Fuel Contract (MTC).

Project Team members were involved in the project management services to the following aviation fuels project which involved

The existing fuel hydrant system will be extended to suit the ultimate stage (PAL 4) requirements. The fuel distribution system will be a loop linking the two sides of airfield: the new North side airfield and the existing Southside airfield. The North side airfield hydrant system will be fed by a new East Midfield fuel farm (under future project).

The North side airfield fuel distribution system will be constructed under two (2) contracts: The Apron Jet Fuel (AJF) contract and the Main Jet Fuel (MJF) contract. The AJF is the scope of work in this Main Terminal Complex Airside Contract.

### Scope of Work:

Project Management team members actively participated and were involved in the supervision of the Installation of Mechanical Works (Pipes and Fittings) and Testing & Commissioning of Jet Fuel Hydrant System required for MTC-Airside Construction.

- Install and Commission a Jet Fuel Hydrant System comprising of 21 km of fuel pipe, API 5L Grade B, ranging from 36", 16" and 6".
- Install and Commission 158 numbers of hydrants comprising of API standard hydrant pit valves and Environmental hydrant pit boxes.
- Install and Commission of 30 numbers of Motor Operated Double Block and Bleed valves. Size range from 16" to 36".



The new Midfield Terminal Building (MTB) is scheduled to open by the fourth quarter of 2019 and is being built over an area of 742,000m<sup>2</sup> at the UAE's Abu Dhabi International Airport (AUH).

Abu Dhabi International Airport (AUH) is expected to handle more than 45 million passengers over the next ten years.



Client	Abu Dhabi Airports Company (ADAC)
Year	2013 - 2015

**REDUCING RISK □ ADDING VALUE**

## Abu Dhabi International Airport (AUH) - United Arab Emirates

### Project Description:

#### South Airfield Development Contract

Project Team members were heavily involved in providing project management for the following rehabilitation works

The existing Southfield Jet Fuel System fuel hydrant system (FHS) will be extended to suit the ultimate stage (PAL 4) requirements. The fuel distribution system will be a loop linking the two sides of airfield: The new North side airfield and the existing Southside airfield. The North side airfield hydrant system will be fed by a new East Midfield Fuel Farm which was under another future project.

The North side airfield fuel distribution system will be constructed under two (2) contracts: The Apron Jet Fuel (AJF) contract and the Main Jet Fuel (MJF) contract. The MJF is the scope of work in this contract.

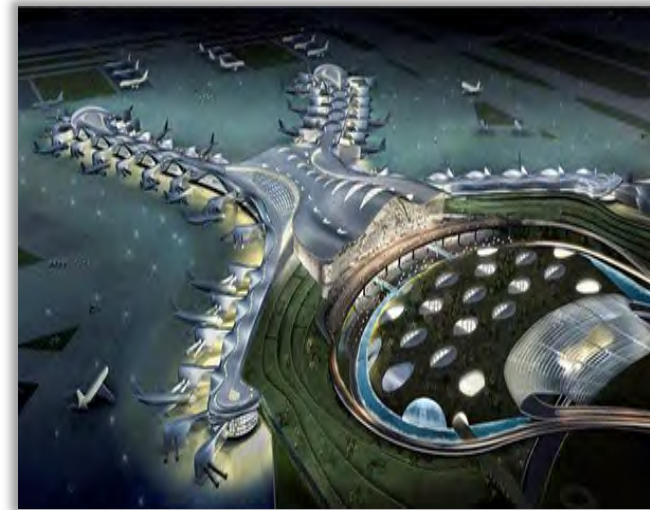
In this contract the scope of work was divided into three divisions of work and the Project Management team members were involved with the viz. South Airfield Development, Main Jet Fuel and Airside Roads. Jet Fuel Hydrant System (FHS) is included in first two divisions only. i.e. the South Airfield Development and the Main Jet Fuel section of the works.

#### Scope of Work:

Supply, Installation and Testing & Commissioning of Jet Fuel Hydrant System including related E & I works excluding Civil works.

- Supply, Install and Commission a Jet Fuel Hydrant System comprising of 21.3 km of fuel pipe, API 5L Grade B, ranging from 36", 24", 16", 12" and 6".
- Supply, Install and Commission 24 numbers of hydrants comprising of API standard hydrant pit valves and Environmental hydrant pit boxes.
- Supply, Install and Commission 71 numbers of hydrant vent and drain assembly comprising of API standard hydrant vent/drain valves and Environmental hydrant pit boxes.
- Supply, Install and Commission of 43 numbers of Motor Operated Double Block and Bleed valves. Size range from 36" to 16".
- Supply, Install and Commission Leak Detection System in line with API 1540.

As part of the Southern Airfield Programme which included the runway renovation an airside tunnel measuring more than 1.2km in length, connecting the MTC with Terminals 1 and 3. The 21-additional wide-body aircraft stands that have been built along the apron will help accommodate increased movement. A total of US\$226m has been invested in the Southern Airfield Programme.



Client	Abu Dhabi Airports Company (ADAC)
Year	2013 - 2015

**REDUCING RISK □ ADDING VALUE**

## Abu Dhabi International Airport (AUH) - United Arab Emirates

### Project Description:

Expansion of the WBS: 1.5.8.2 - 400 Series Hardstands Phase II Contract

Project Team members were heavily involved in providing project management for the following rehabilitation works

The Expansion of the WBS: 1.5.8.2 - 400 Series Hardstands Phase II - Construction at Abu Dhabi International Airport consisting of a 2.3 km extension of the existing fuel hydrant pipelines (FHS) to service addition aircraft parking stands for the Abu Dhabi Airport Company [SCADIA]

### Scope of Work:

Members of the Project Management Team worked within the on-site project team for the Engineering, Procurement, Construction & Commissioning (EPCC) of a new Fuel Hydrant System (FHS) to include

- Supply, Install & Commission a Jet A1 Fuel Hydrant System comprising of 2.3 km of fuel pipe ranging from 16" to 36" in diameter
- Supply, Install & Commission 10 hydrants comprising of API standard hydrant pits, under hydrant valves and hydrant valves
- Supply, Install & Commission Double Block & Bleed (DB&B) valves ranging in size from 16" to 36" in diameter
- Supply, Install & Commission Emergency Shutdown (ESD) System
- Supply, Install & Commission Leak Detection System (LDS) in line with API 1540 Appendix E requirements
- Supply, Install & Commission fuel hydrant control and monitoring system



The Midfield Terminal Complex (MTC) building is designed to be the largest, virtually pleasing and architecturally magnificent structure in the Emirate of Abu Dhabi.

It is being constructed as part of Plan Abu Dhabi 2030, which is an Emirate-wide scheme planned to ensure the growth of Abu Dhabi as a business and tourism centre.



Client	Abu Dhabi Airports Company (ADAC)
Year	2014 - 2015

**REDUCING RISK □ ADDING VALUE**

## Airbase Fuel Systems | Military Applications - United Arab Emirates

### Project Description:

Senior members of the Project Management Teams were actively involved in the delivery of the Construction of four (4) Bulk Storage Fuel Terminals for UAE Armed Forces HQ, Supply & Transport at Abu Dhabi & Northern Emirates part of Contract MW-GS-091-2009 located at different airbases

### Scope of Work:

Providing project management services for the Engineering, Procurement, Construction & Commissioning (EPCC) of bulk storage facility to include the construction of two (02) No JP8 storage tanks facility (but not limited to) as follows:

- **JP8 Storage Tanks:**  
Above ground Steel Storage Tanks for JP8 of Usable Capacity of 250,000 IG with Radar Gauges (DCS System), CP System, Leak Detection System and Floating suction  
Side Protection of Tanks  
Interconnecting tunnel for all pipes and cables
- **Truck Un-Loading System:**  
Truck Un-Loading system to un-load two trucks by providing two un-loading bays with RCC hard standing, Shelter and Asphalt approaches for Trucks movement  
Pantograph System (4" Un-Loading Arm Assembly)  
Two Un-Loading Pumps with combined PD Meter (01 Duty/01 Stand By)  
Two Filter water Separator (01 Duty/01 Stand By)
- **Re-Fueller Loading System:**  
Re-Fueller Loading System to load two Re-Fueller's by providing two loading bays with RCC hard standing, Shelter and Asphalt approaches for Re-Fueller movement.  
Pantograph System (4" Loading Arm Assembly)  
Two Loading Pumps with dedicated Filter water Separator (01 Duty/01 Stand By)  
Preset metering (Batch control Unit)
- **Closed Circuit Sampling System (CCSS):**  
CCSS (Fast Flush Tank and Visual Sampling Unit) for Storage Tanks  
VSU (Visual sampling Unit) for un-loading, loading, tank to tank transfer operation  
One 10,000 IG Horizontal underground Sample Holding Tank (Product Recovery Tank) with floating suction.  
One Tank to Tank Transfer Pump for Tank to Tank Transfer Operations and Product Recovery Transfer Operations
- **De-Fuelling System (For Off-specification/Down-graded Fuel):**  
One 20 cum Horizontal underground De-Fuelling Tank  
One Transfer Pump to Transfer down-graded product from both Product Recovery Tank and De-fuelling Tank with the disposal facility through Truck.



Client	GHQ UAE Armed Forces
Year	2009 - 2012

- **Slop System:**  
One Horizontal U/G Slop Tank (50 cum)  
Provision of un-loading Ruptured Tank Truck  
One Truck Pump to transfer product from Slop Tank with disposal off facility through Truck.
- **Oily Water Separator:**  
Under Ground Piping Network for collection of Oily water from whole Facility  
Oily Water Separator  
One Truck Pump to transfer product from OWS with disposal off facility through Truck

**REDUCING RISK □ ADDING VALUE**

## Airbase Fuel Systems | Military Applications - United Arab Emirates

### Project Description:

Senior members of the Project Management teams were actively involved in the delivery of the Construction of four (4) Bulk Storage Fuel Terminals for UAE Armed Forces HQ, Supply & Transport at Abu Dhabi & Northern Emirates part of Contract MW-GS-091-2009 located at different airbases

#### Scope of Work: continued

Engineering, Procurement, Construction & Commissioning (EPCC) of bulk storage facility to include the construction of two (02) No JP8 storage tanks facility (but not limited to) as follows:

- Civil Structure/Buildings:
  - Operation Office Building with Parking Shed.
  - Equipment Building for Fire Fighting Equipment, Electrical Equipment, DG Set
  - Loading and Un-Loading Pump House Building
  - Shelter for Loading Area
  - Shelter for Un-Loading Area
  - Asphalt Road for Un-Loading Trucks and Loading Re-Fueller movement
  - Fence with Two Main Gates and One emergency Gate.
- E & I Works:
  - Electrical Systems includes:
    - LV Switchgear
    - DG Set
    - Lighting System
    - Earthing and Lightning protection system
    - Cabling system
    - CP System for Tanks and Under Ground Lines (Redundant)
- Instrumentation & Control Systems includes:
  - HMI SCADA Systems
  - PLC Control Systems
  - Leak Detection System for Tanks and Piping
  - Radar Tank gauging System
  - Field Instrumentation Package comprising of Flow switches, Pressure gauges, Pressure Transmitters, DP Transmitters, DP Gauges & Level switches.
  - Cabling system
- Fire Fighting System:
  - For the Fire Fighting System, the basic and detail design will be provided by the Fire Fighting Vendor (Designer), shall review/approve and provide support for interfacing/integrating and coordinating the Fire Fighting Design with the main Design.



Client	GHQ UAE Armed Forces
Year	2009 - 2012

- Fire Fighting System: continued
  - 01 No. Fire Water Tank- Above ground-Ring beam foundation-no side protection (Common Tank for Overall Diesel and Petrol Facilities)
  - 02 Nos. Diesel Driven Fire Pump with 01 no. Jockey Pump
  - Fire Ring Main
  - Foam Bladder Type System
  - Foam Deluge System for Un-Loading, Loading Areas and Pump House Building
  - Sprinkler System for Buildings
  - Nitrogen system for Equipment Building
  - Fire Detection System for Buildings and Fuel

**REDUCING RISK □ ADDING VALUE**

## Airbase Fuel Systems | Military Applications - United Arab Emirates

### Project Description:

Members of the company's project management were involved in the construction of a new Bulk Storage Fuel Tanks for UAE Army Forces Contract MW-OU-062-2009

#### Scope of Work:

Engineering, Procurement, Construction & Commissioning (EPCC) of bulk storage facility to include the construction of eight (08) petrol & diesel fuel storage tanks facility (but not limited to) as follows:

- Diesel & Petrol (Gasoline) Storage Tanks:  
Four (04) Nos. Above Ground Vertical Steel Storage Tanks for Diesel of Usable Capacity of 1,500,000 IG with Radar Gauges (DCS System), CP System, and Leak Detection System.  
Four (04) Nos. Above Ground Vertical Steel Storage Tanks for Petrol of Usable Capacity of 1,500,000 IG with Radar Gauges (DCS System), CP System, Pressure/vacuum Relief valves, Internal Floating screen, and Leak Detection System.
- Truck Un-Loading System (For Each Diesel & Petrol Facility):  
Truck Un-Loading system to un-load six trucks by providing six un-loading bays with RCC hard standing, Shelter and Asphalt approaches for Trucks movement  
Pantograph System (4" Un-Loading Arm Assembly)  
Four Un-Loading Pumps with combined PD Meter (03 Duty/01 Stand By)  
Micronics Filters (for Diesel Facility only)
- Truck Loading System (For Each Diesel & Petrol Facility):  
Truck Loading System to load six Trucks by providing six loading bays with RCC hard standing, Shelter and Asphalt approaches for Trucks movement.  
Pantograph System (4" Loading Arm Assembly)  
Four Loading Pumps (03 Duty/01 Stand By)  
Preset metering (Batch control Unit)
- Tank to Tank Transfer System (For Each Diesel & Petrol Facility):  
One Tank to tank Transfer Pump
- Oily Water Separator (For Each Diesel & Petrol Facility):  
Under Ground Piping Network for collection of Oily water from whole Facility  
Oily Water Separator  
One Truck Pump to transfer product from OWS with disposal off facility through Truck
- Civil Structure/Buildings:  
One Operation Office Building with Parking Shed (Common for both Diesel and Petrol Facilities)  
One Equipment Building for Fire Fighting Equipment, Electrical Equipment, DG Set (Common for both Diesel and Petrol Facilities).



Client	GHQ UAE Armed Forces
Year	2009 - 2011

- Civil Structure/Buildings: continued  
Loading and Un-Loading Pump House Building (For Each Diesel & Petrol Facility)  
Shelter for Loading Area (For Each Diesel & Petrol Facility)  
Shelter for Un-Loading Area (For Each Diesel & Petrol Facility)  
Asphalt Road for Un-Loading and Loading Trucks movement (For Each Diesel & Petrol Facility)  
One complete Fence with Two Main Gates and One emergency Gate (Common for Overall Diesel and Petrol Facilities)

**REDUCING RISK □ ADDING VALUE**

## Airbase Fuel Systems | Military Applications - United Arab Emirates

### Project Description:

Members of the company's project management were involved in the construction of a new Bulk Storage Fuel Tanks for UAE Army Forces Contract MW-OU-062-2009

#### Scope of Work: continued

Engineering, Procurement, Construction & Commissioning (EPCC) of bulk storage facility to include the construction of eight (08) petrol & diesel fuel storage tanks facility (but not limited to) as follows:

- **Electrical & Instrumentation (E&I) Works:**
  - Transformer (Common for Overall Diesel and Petrol Facilities).
  - LV Switchgear (Common for Overall Diesel and Petrol Facilities).
  - DG Set (Common for Overall Diesel and Petrol Facilities).
  - Lighting System (For Each Diesel & Petrol Facility)
  - Earthing and Lightning protection system (For Each Diesel & Petrol Facility)
  - Cabling system (For Each Diesel & Petrol Facility)
  - CP System for Tanks and Under Ground Lines (Redundant)
  
- **Instrumentation & Control Systems includes:**
  - HMI SCADA Systems (Common for Overall Diesel and Petrol Facilities)
  - PLC Control Systems (Common for Overall Diesel and Petrol Facilities).
  - Leak Detection System for Tanks and Piping (For Each Diesel & Petrol Facility)
  - Radar Tank gauging System (For Each Diesel & Petrol Facility)
  - Field Instrumentation Package comprising of Flow switches, Pressure gauges, Pressure Transmitters, DP Transmitters, DP Gauges & Level switches.
  - Cabling system (For Each Diesel & Petrol Facility)
  
- **Fire Fighting System:**
  - For the Fire Fighting System, the basic and detail design will be provided by the Fire Fighting Vendor (Designer), shall review/approve and provide support for interfacing/integrating and coordinating the Fire Fighting Design with the main Design.
  - 01 No. Fire Water Tank- Above ground-Ring beam foundation-no side protection (Common Tank for Overall Diesel and Petrol Facilities)
  - 02 Nos. Diesel Driven Fire Pump with 01 no. Jockey Pump (Common for Overall Diesel and Petrol Facilities)
  - Fire Ring Main
  - Foam Bladder Type System
  - Foam Deluge System for Un-Loading, Loading Areas and Pump House Building
  - Sprinkler System for Buildings
  - Nitrogen system for Equipment Building
  - Fire Detection System for Buildings and Field.



Client	GHQ UAE Armed Forces
Year	2009 - 2011

**REDUCING RISK □ ADDING VALUE**

## Understanding Fuel

Fuel makes the world operate and we understand its long-reaching impacts. We design and oversee construction of facilities and systems that receive, store, distribute and transport fuel to ensure they meet the high standards required by the international bodies and to ensure that they are Joint Inspection Group (JIG) compliant. We also provide commissioning services so that the facilities have continuous and seamless project management services from inception to completion and hand-over.

With our management team's vast knowledge and experience we can address the unique and specific needs of your Project.

Project  
Management  
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INNOVATION & TECHNOLOGY IN  
AVIATION FUEL INFRASTRUCTURE



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