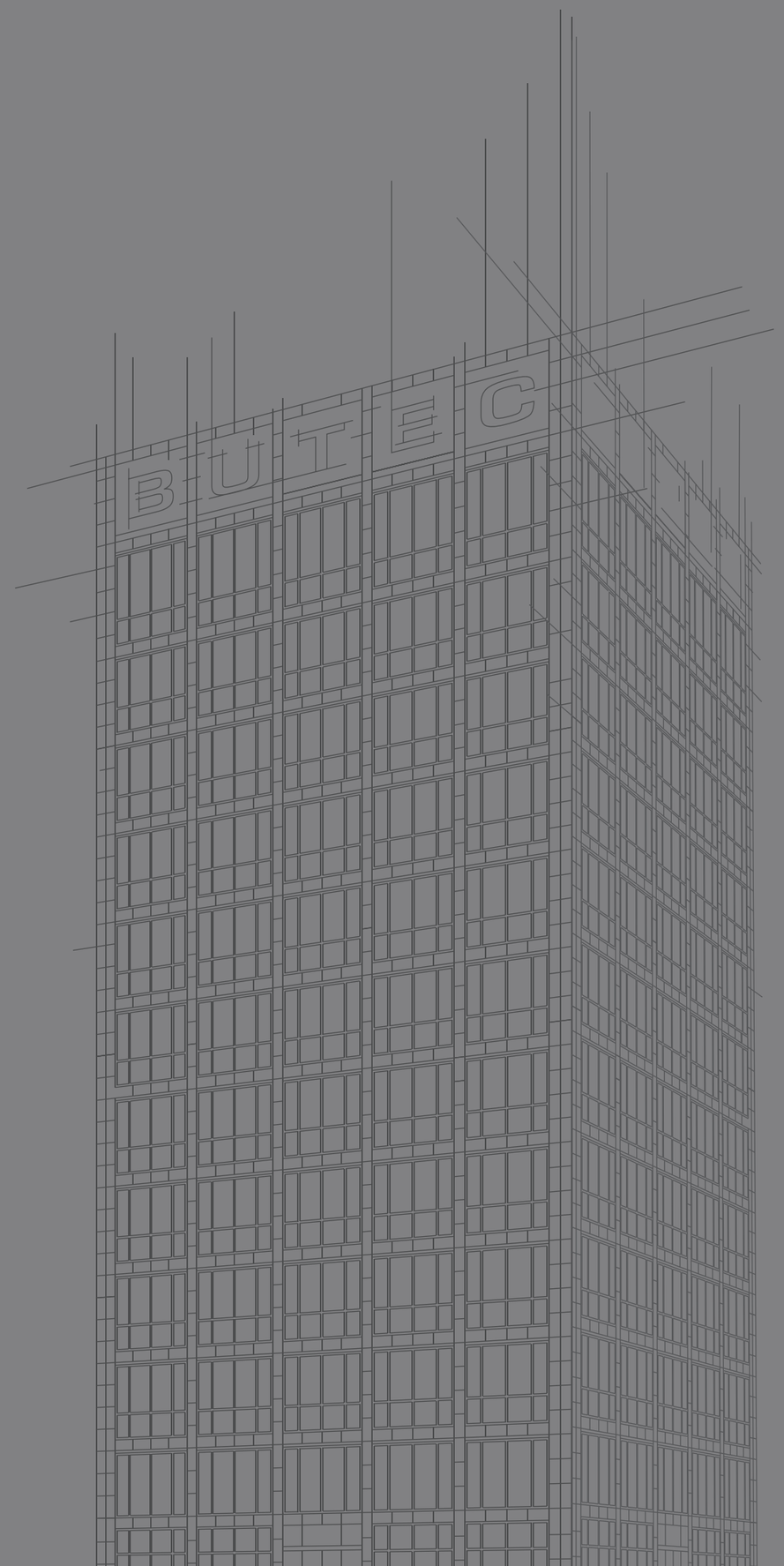
BUTEC

Company Profile

www.butec.com



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Founder Address

More than 50 years ago BUTEC began as a venture that embodied a dream, a certain perception of life, and a vision for development and social progress.

What we have achieved since fills me with pride and satisfaction. The company has flourished through the years, despite all the challenges it faced, including Lebanon's 16-year civil war, and the current torments of the Middle East.

Today, many new challenges are still ahead. I have passed the torch to the Chairman, Ziad Younes, who is setting BUTEC on a path that continues our strong track record. I would not have taken this step had it not been for my confidence in Ziad's merits, excellent competence, and determination to lead our company into the highest ranks of its fellows worldwide.

I may now move on to what has always been my very deep and strong personal duty: bringing together all components of our diversified Lebanese society and drive all my efforts into crossing to "my other Lebanon". Namely helping make Lebanon a democratic civil state that secures a culture of citizenship, coupled with freedom and development. I believe that our country faces an existential danger against which we must all fight.

While I do not perceive as easy the abandonment of my career, in a noble profession which I have cherished and spent most of my life on, I am not able to resist my drive to make a move in order to fight for national issues and for Lebanon.

Dr. Nizar Younes
Founder

My dear companions on this arduous path, I will always be a companion for all of you, the one who follows up on your work and achievements, and observes you come to grips with difficulties and solve them. I am exhilarated by the perfection, prowess, and pride embodied in your work.
I am impressed by your adherence to the highest values, the code of ethics of our noble profession, and the dignity of the company to which you belong.

Rest assured I have never lost sight of your suffering when you are away from your country and your families; however, I find solace in the great significance of your achievements, and their relevance to the national struggle for Lebanon's role. Please remember that this is your struggle for the dignity of your country, to reestablish its values in your lives, and to consolidate its cultural distinctiveness and fundamentally the essential economic growth without which nothing is possible.

It delights me that you may now realize the extent of my deep affection for you and for the younger generations, and the energy it bestows upon me to accomplish what I promised my grand children and what I am promising you today - the "Other Lebanon" and your BUTEC.

Milestones

- **1964** BUTEC was founded - incorporated in 1966
- **1971** First regional project
- **1974** Syria Branch
- **1976** Relocation of Headquarters to Paris (until 1990)
- **1978** Iraq Branch (active until 1990)
- **1980** Dubai Branch
- **1982** Saudi Arabia Branch (active until 1991)
- **1990** Relocation of Headquarters to Beirut
- **2005** Algeria Branch
- **2006** Qatar Branch
- **2007** Abu Dhabi Branch
- **2008** The International Finance Corporation (IFC) member of the World Bank Group, became an equity partner (16.67%) of BUTEC Group
- **2010** Jordan Branch
- **2011** Establishment of BUS (BUTEC UTILITY SERVICES)
- **2015** Rawabi BUTEC Limited Co. in KSA
- **2015** Iraq Branch

Chairman Address

BUTEC, "Bureau Technique d'Etudes et de Construction", or Technical Office for Engineering and Construction, was conceived as an EPC contractor some 50 years ago, long before the concept or its acronym even existed.

As an innovative and new entity, this was a telling start that susbsequently set the tone for the next 50 years. BUTEC was then, as it is now, a contractor that strived to be at the forefront of its field and a leader to a better way of doing business. BUTEC never believed that modernity was only a status to achieve but rather a path to forge and a continuous motor to remain ahead.

BUTEC is
A bold contractor, who believes more in the capacity of its men and women to learn, improve, innovate and deliver than in the book value of depreciating machinery.

A faithful and prudent contractor, who understands that the essence of its role is to make good on its contractual obligations, act in the best interest of its clients and has never failed one in 50 years.

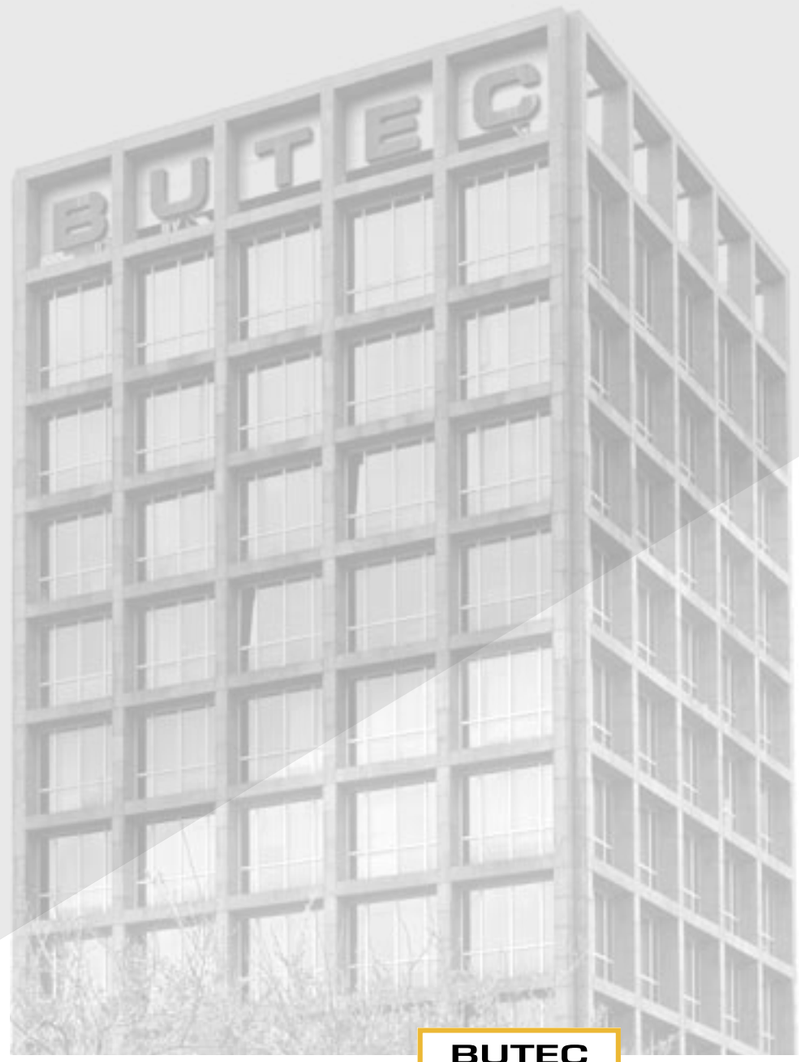
A competitive and competent contractor, who can, in every country it is active in, have the cost structure of a local contractor and the technical expertise of an international contractor. Finally, a company that has retained the values of a family while having the World Bank, through the IFC, as a shareholder.

I am honored to have been chairman of this groundbreaking and successful contracting company since 2015 and relish the next phase of our growth path. The challenge for us all is not an easy one; in these uncertain times, we look to preserve the BUTEC tradition of

Ziad Younes
Chairman

perpetual, dynamic and yet careful movement which will keep us ahead of the game and will allow us to grow. I look to each one of you to play your specific and essential part in the exciting journey we have embarked upon.

Company Profile



BUTEC

Business Activities

BUTEC's business activities focus on the following sectors:

- Water
- Oil & Gas
- Industrial Facilities
- Power
- Infrastructure
- Building Construction
- Utility Services

BUTEC as EPC Contractor

Engineering
BUTEC prides itself on its in-house multidisciplinary engineering and design capabilities. This has been a hallmark of the firm since inception. The ability to create value engineering is a core part of the firm's offering. It has empowered BUTEC with a strong competitive advantage while enabling the firm to offer its Clients more value-based solutions. Such solutions range from analysis of requirements to project execution, and include conception and design of turnkey projects, financial analysis, in-depth study and a selection of materials and methods.

Procurement
BUTEC's central procurement department is dedicated to providing the widest range of professional services to serve each of the company's projects efficiently and effectively. The firm has strong relationships with both local and international suppliers. During any procurement process, close collaboration between the central procurement department and procurement officers at various branch offices abroad takes place to ensure prompt deliveries. The department also ensures that all procured materials, equipment and sub-contracted services match the Client's specific quality and budget requirements.

Construction
Drawing on its considerable resources, expertise and talent, BUTEC confidently undertakes any job, in any location with unmatched proficiency. Leveraging the company's solid foundation of technical capabilities, BUTEC excels at managing projects with the client's best interests in mind.

The company's expertise in construction and logistics as well as its well-established local presence in its various markets enables the prompt mobilization of equipment. This coupled with the skills of a highly qualified engineering team, allows BUTEC to complete every project on time and within budget, while adding value at every level.

Services
BUTEC has diversified into the services sector in order to further answer its Clients' needs. BUTEC Utility Services "BUS" is envisioned to be a leading utility services provider in the MENA region. The firm currently owns capabilities in the power, water, oil and gas, industrial, waste, renewable energy, and other utility sectors.

A Qualified Workforce

To create optimal solutions relies on the skills of the best human talent, a fact that guides BUTEC in its selection of employees. As such, the company's more than 6,000 personnel, including 670 expert engineers and administrators, constitute a solid network of professionals who deliver impeccable service to BUTEC's clientele.

In its pursuit of excellence, BUTEC employs a rigorous hiring procedure, selecting its senior hires from their impressive industry track records, and handpicking its junior hires from esteemed universities in Lebanon and around the world. BUTEC is committed to developing the potential of its employees, offering in-house training prior to starting, as well as training updates and apprenticeships abroad. BUTEC's engineers are distinguished for their in-depth local knowledge and strong ability to create on-the-spot solutions, as well as for their thorough grounding in the construction industry and its latest, state-of-the-art developments.

Nurturing a genuine team spirit and dedication to the firm are essential for BUTEC's aims of client satisfaction and long-term corporate sustainability. This is achieved through a company culture of transparency and honesty, forming the bedrock of an environment that enables all potential challenges, whether on site or elsewhere, to be resolved efficiently.

IMS

Integrated Management System

BUTEC's integrated management system (IMS) combines the company's three separate quality, environment, and occupational health & safety management systems into one, thus reducing bureaucracy and ensuring greater efficiency.

The IMS defines how the firm's activities are conducted and ensures that the relevant procedures and documentation are in place to satisfy the criteria of BUTEC's awarded certification in Quality Management Systems (ISO 9001:2015), Environment Management Systems (ISO 14001:2015), and Occupational Health and Safety Assessment Series (OHSAS 18001:2007).


Certificate of REGISTRATION
BUTEC S.A.L
ISO 9001:2015


Certificate of REGISTRATION
BUTEC S.A.L
ISO 14001:2015

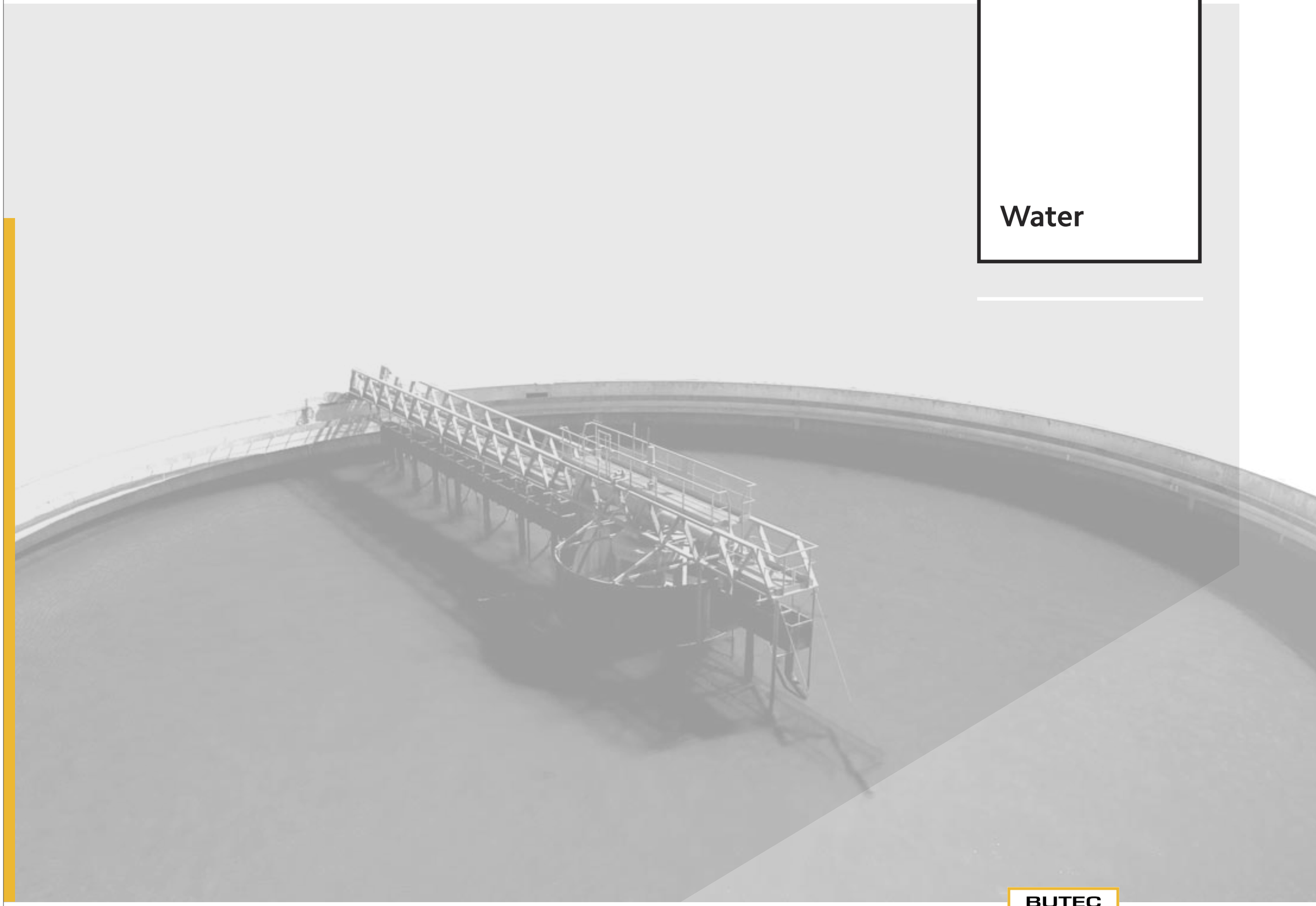
QHSE

Quality, Health, Safety, Environment

BUTEC's success and growth are a direct result of the company's emphasis on quality across all of its activities. BUTEC is committed to protecting the environment on project sites while equally paying attention to the health and safety of the workforce by regularly allocating the necessary resources to minimize any potential risk or hazards. Although the diversified nature of undertaken projects dictates varying QHSE requirements, BUTEC rises to the challenge, successfully adapting to each project's needs, a fact evidenced by the company's various certifications. All this is successfully navigated while achieving sustainable growth.


Certificate of REGISTRATION
BUTEC S.A.L
OHSAS 18001:2007

Water



BUTEC

Tripoli Wastewater Treatment Plant

Financing
European Investment Bank (EIB) for process
Lebanese Government for civil works

Employer
Ministry of Energy and Water

Delegated Employer
Council for Development and Reconstruction (CDR)

Role of BUTEC
Contractor for civil & MEP works and installation of process equipment.
Contractor for process: Degrémont, subsidiary of "Groupe Suez", France

Awarded
2003

Scope of Work

EPC for civil works and electro-mechanical installation as well as erection of all equipment.

Project Description

- Population equivalent: 1,000,000 PE
- Total daily design flow: 135,000 m^3/d
- Design peak flow: 9,263 m^3/h
- 3 phases of treatment: Pre-treatment, biological treatment and UV sterilization
- 120,000 m^2 of plant area, out of which 40,000 m^2 is reclaimed land
- 4,500 m of assorted pipework, DN 300 to DN 1,800
- A total of 30 structures for process and facilities including construction of reinforced concrete aeration tank with a capacity of 41,368 m^3, 6 clarifiers with the capacity of 7,827 m^3 each
- 2,500 drawings and technical documents
- 14,500 m^2 of roads and 55,000 m^2 of landscaping and green areas
- 734 m sea breakwater
- Treatment of the heterogeneous soil (compressible layer of clay from 3 to 30 m thick):
  - 10,000 pre-drilling of 8 to 20 m deep holes (wick drains)
  - 3,000 dynamic compaction points using a 15-ton load dropped by a 40 m crane
  - 1,000,000 m^3 of earth works and general fill
- 40,000 m^3 of concrete works
- 5,000 tons of reinforcement steel bars
- 90,000 m^2 of formwork
- Design and construction of non-process electrical works for all structures & buildings: low voltage equipment, complete plant lighting, lightning protection, earthing protection, telephone system, and fire alarm system
- 12 transformers (1,600 kVA, 2,000 kVA, 3,150 kVA)

Jbeil Wastewater Treatment Plant

Financing
French protocol for process
Lebanese Government for civil works

Employer
Ministry of Energy and Water

Delegated Employer
Council for Development and Reconstruction (CDR)

Role of BUTEC
Contractor for civil & MEP works and installation of process equipment
Contractor for process: Degrémont, subsidiary of "Groupe Suez", France

Awarded
2007

Project Description

- Population equivalent: 45,000 PE
- Total daily design flow: 8,179 m^3/d
- Design peak flow: 903 m^3/h
- Sea outfall DN: 500 mm, length: 910 m
- 20 buildings and structures, landscaping, irrigation, process and service networks
- 2 generator sets of 860 kVA and 260 kVA, 2 transformers and MV switch gears. UPS, normal lighting fixtures, CCTV, data, telephone network, SCADA, and intrusion alarm systems
- HVAC, water supply, drainage, irrigation and sewer, and industrial water network

Scope of Work

EPC for civil works and electro-mechanical installation as well as erection of all equipment.
The biofiltration used in the process system ensures an increase up to 50% to the overall capacity of the plant.

Barwa Wastewater Treatment Plant

Employer
Barwa City – Marafeq Qatar

Role of BUTEC
Main contractor in Consortium with Degrémont, subsidiary of "Groupe Suez", France

Awarded
2010

Scope of Work

EPC for civil works, electro-mechanical installation as well as erection of all equipment.

Project Description

- Population equivalent: 50,000 PE
- Total daily design flow: 13,500 m^3/d
- Design peak flow: 1,400 m^3/h
- EPC of 18 process structures (pretreatment cyclor cells, filtration, dewatering building, etc.)
- Construction of ancillary buildings (administration, workshops, laboratory, pump house,etc.)
- Landscaping and related networks
- Installation of process utility networks (sludge, industrial water, rain water drainage, etc.)

Deira Island Wastewater Treatment Plant

Project Name
Deira Island Wastewater Treatment Plant

Employer
NAKHEEL Group PJSC / the Palm Deira LLC, Dubai

Role of BUTEC
Main contractor in consortium with VWS Emirates LLC (Veolia Water Systems)

Awarded
2017

Scope of Work

EPC for civil works, electro-mechanical installation as well as erection of all equipment.

Project Description

- Population equivalent: 240,000 PE
- Total daily design flow: 36,000 m^3/d
- Design peak flow: 3,000 m^3/d
- Designed based on a Membrane Bioreactor type (MBR) of biological treatment process. The proposed plant consists of all major treatment steps, i.e. preliminary treatment, secondary treatment, tertiary treatment, sludge and odor treatment.
- Structural design and construction of 20 process & facility buildings
- Electrical & control equipment installation
- Installation of all process mechanical equipment and mechanical process networks (sewerage, Process water & compressed air)
- Installation of mechanical non-process networks (Water supply, irrigation, storm water & firefighting) and HVAC system for utility and administration buildings.

Chekka, Batroun, Zahle Wastewater Treatment Plants

Financing
French Protocol for process
for Chekka, and Batroun
Italian Protocol for process for Zahle
Lebanese Government for civil works

Employer
Ministry of Energy and Water

Delegated Employer
Council for Development and
Reconstruction (CDR)

Role of BUTEC
Contractor for civil & MEP works and
installation of process equipment
Contractor for process: Degrémont,
subsidiary of "Groupe Suez"

Awarded
2003 – Chekka
2006 – Zahle
2007 – Batroun

Scope of Work

EPC for civil works and
electromechanical installation
as well as erection of all equipment.

Projects in Figures

	Chekka	Batroun	Zahle
Popuation Equivalent	49,500 PE	45,000 PE	300,000 PE
Total Daily Design Flow	9,500 m^3/d	3,888 m^3/d	56,000 m^3/d
Design Peak Flow	903 m^3/h	512 m^3/h	3,800 m^3/h
Hydraulic Concrete Structures	22	18	20

Djelfa, Mecheria, Mostaganem Wastewater Treatment Plants

Employer
Ministry of Hydraulic Resources
National Office for Sanitation (ONA)

Role of BUTEC
Main Contractor in consortium with:
OTV subsidiary of VEOLIA for Djelfa
COMSA for Mecheria
Mennani for Mostaganem

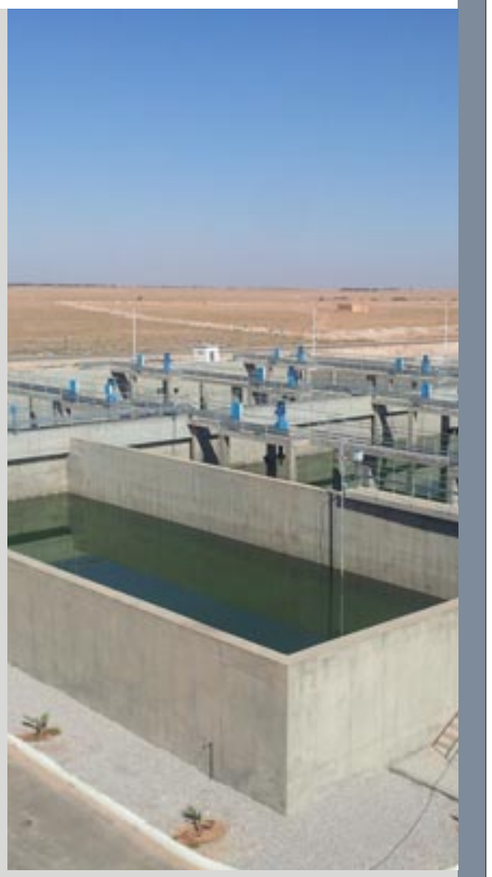
Awarded
2009 – Djelfa
2011 – Mecheria
2014 – Mostaganem

Scope of Work

EPC for civil works, as well as installation of the various process & utility networks, and erection of all equipment for Djelfa, and Mecheria wastewater treatment plants. In Mostaganem it covered architectural, civil, and electromechanical works for process and non-process as well as testing and commissioning of the plant, in addition to management and operation for a period of two years starting with the date of the preliminary acceptance.

Projects in Figures

	Djelfa	Mecheria	Mostaganem
Popuation Equivalent	270,000 PE	92,000 PE	350,000 PE
Total Daily Design Flow	36,300 m^3/d	12,880 m^3/d	56,000 m^3/d
Design Peak Flow	2,360 m^3/h	915 m^3/h	3,735 m^3/h
Hydraulic Concrete Structures	11	20	17



Aspire Zone TSE Plant by Reverse Osmosis

Employer
ASPIRE Zone Foundation

Role of BUTEC
Main contractor in consortium with Degrémont, subsidiary of "Groupe Suez", France

Awarded
2015

Scope of Work

EPC for civil works and installation of process equipment in addition to testing, commissioning, operation and maintenance for treated sewer effluent (TSE) water supplied by ASHGHAL and water coming from Aspire ground water network.

- TSE maximum inlet flow: 33,000 m^3/d
- TSE maximum outlet flow: 18,750 m^3/d

The project aims at improving the water consumption sustainability by minimizing the dependence on KAHRAMAA potable water for major consumption areas like the irrigation system and cooling purposes. The water should be polished in a reverse osmosis (RO) treatment plant to remove the large majority of contaminants, sediment, suspended particulate matter, viruses and pathogens. The water parameters should be refined in order to meet the requirements and guidelines of WHO for the safe use of wastewater in agriculture.

Mahlissa & Laklouk Agricultural Development Plan

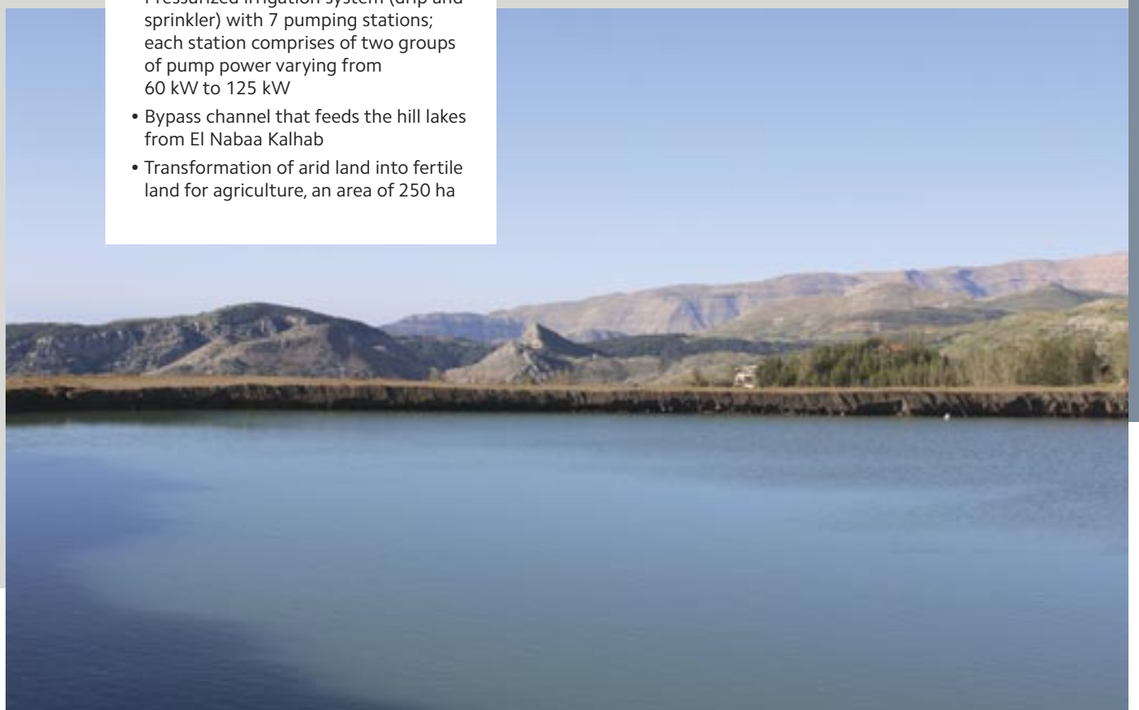
Employer
NOVAFLOR S.A.L.

Role of BUTEC
Main contractor

Awarded
Phase I: 1995
Phase II: 2012

Scope of Work

- Construction of 7 lakes with capacities from 60,000 m^3 to 350,000 m^3
- Gravity drainage system in the basaltic formations Mahlissa tray on 250 ha (length of 11 300 m)
- Pressurized irrigation system (drip and sprinkler) with 7 pumping stations; each station comprises of two groups of pump power varying from 60 kW to 125 kW
- Bypass channel that feeds the hill lakes from El Nabaa Kalhab
- Transformation of arid land into fertile land for agriculture, an area of 250 ha



Treated Water Sea Outfalls for Wastewater Treatment Plants

Employer
Ministry of Energy and Water

Delegated Employer
Council for Development and Reconstruction (CDR)

Role of BUTEC
Main contractor in JV with
Land & Marine for Tripoli's Sea Outfall
Main contractor for Civil and Sea Outfall Works for Jbeil,
Batroun and Chekka

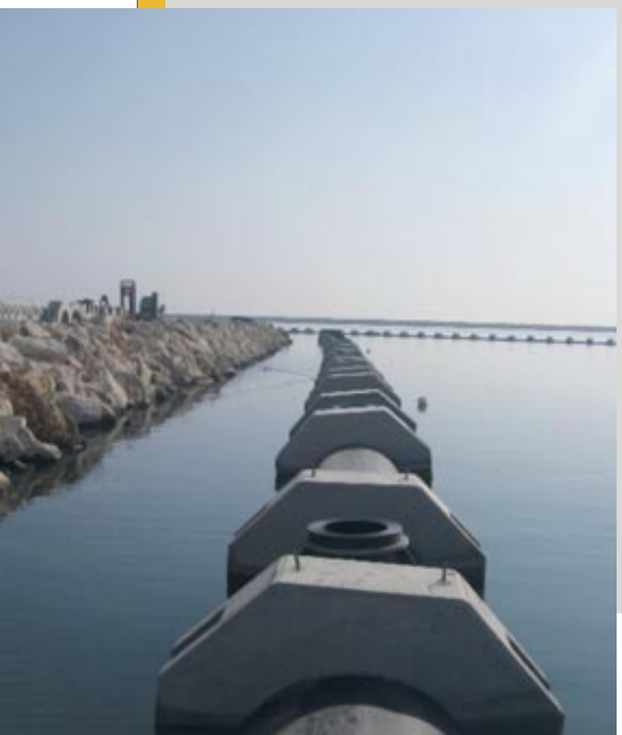
Awarded
2005 – Chekka
2008 – Tripoli
2009 – Jbeil
2010 – Batroun

Scope of Work

EPC on turnkey basis including testing, commissioning and maintenance for 4 sea outfalls to discharge treated water offshore into the sea.

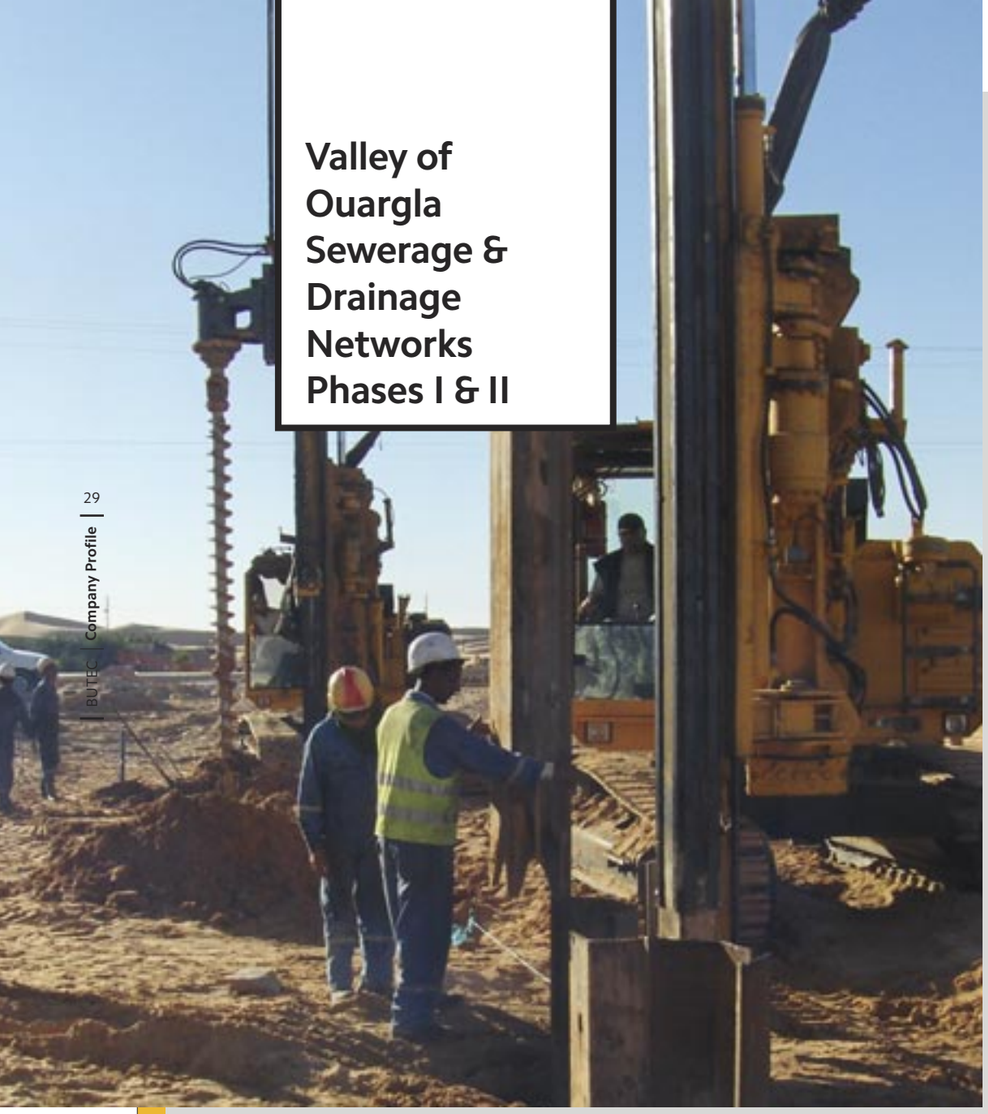
Although the UV tertiary treatment ensures the elimination of pathogenic agents, a model simulating the discharge dilution using CORMIX-GI was developed in order to protect the frontal coast from any risk of pollution. CORMIX-GI is a program approved by the US Environmental Protection Agency (EPA).

The simulation methodology was adopted in optimizing the proposed outfall to assure appropriate dilution rates that meet MED POL II seawater quality standards, which are consistent with the standards disseminated by the Ministry of Environment Decree (1/52).



Projects in Figures

	Chekka	Tripoli	Jbeil	Batroun
Length	1,200 m	1,475 m	910 m	760 m
Type	GRP SN 5000	HDPE, SDR 26 PE 100	HDPE, SDR 26 PE 100	HDPE, SDR 26 PE 100
DN	300 mm	1 600 mm	500 mm	350 mm
Under Seabed Submersion	1.5 m	1 m	2 m	2 m
End Suction Diffuser Length	20 m	175 m	75 m	17.5 m
Diffuser Risers	3, DN 200 mm	16, DN 700 mm	16, DN 500 mm	8, DN 110 mm
Reinforced Concrete Ballasts	Thrust block at each direction change	Collar every 2 m	Collar every 5 m	Collar every 5 m



Valley of Ouargla Sewerage & Drainage Networks Phases I & II

Employer
Ministry of Water Resources - MRE

Delegated Employer
National Office for Sanitation – (ONA)

Role of BUTEC
Phase I: Main contractor
Phase II: Main contractor in JV with VINCI Construction Grands Projets and SOGEA SATOM

Awarded
Phase I: 2005
Phase II: 2006

Scope of Work

EPC for civil works, sewer networks, ground water drainage network and all related appurtenances.

Project Description

- 33 sewage pumping stations including installation of hydraulic and electro-mechanical equipment
- 120 km of sewers, DN 300 to DN 1,100 covering an area of 7 000 ha
- 1,500 tons of steel sheet piling for:
  - Lost formwork in construction of pump stations, most of which are over 11m deep
  - Box sheeting for excavation and installation of sewers, due to high water table (60 cm below ground surface) and loose nature of subsoil (sand)
- Client senior staff accommodation (apartment buildings – built-up area of 2,500 m^2)
- Contractor's camp total area: 20,000 m^2 (labor housing, canteen, infirmary, administration building, offices, workshops, recreation areas, landscaping and green area)

South Bekaa Irrigation Project

Financing
World Bank

Employer
Litani River Authority

Role of BUTEC
Main contractor

Awarded
1998

Scope of Work

EPC and rehabilitation of various structures, hydraulic and electro-mechanical equipment, irrigation networks, electrical substations, high and medium power supplies, transmission and monitoring networks, pumping stations, water reservoirs, main supply canal, deep water wells, water level (control and measuring structures) service roads, office building, workshop and store yard, and installation of all equipment.

Project Description

- Rehabilitation of Karoun main pumping station downstream from the Karoun dam
- Reconstruction of 66 kV overhead supply line and electrical substation
- Concrete lining of the 14.4 km long existing main supply canal
- Rehabilitation of the Karoun secondary pumping stations, Karoun 1 and Karoun 2, with their delivery pipelines, elevated water storage tanks and irrigation networks serving an area of 700 ha
- Construction of a 4.4 km extension of the main supply canal, and 18 km of service road
- Construction of Joub-Jannine pumping station
- Drilling of 5 deep water wells, up to 220 m deep
- Construction of office building, workshop and storage yard
- Installation of a remote supervision and monitoring system

Potable Water Treatment Plants & Pumping Stations

Employer
Council for Development and Reconstruction (CDR)

Role of BUTEC
Main contractor in consortium with OTV-Veolia

Awarded
1996

Scope of Work

EPC of civil works and installation of hydraulic, mechanical, and electrical equipment for 7 potable water treatment plants including coagulation, flocculation, decantation, sand filtration and sterilization units in addition to the drilling of wells.

Rehabilitation and construction of 209 new pumping stations, 45 wells, chlorinating systems, electrical works, reservoirs, pumps, valves, pipes, etc. The diversified locations of the pumping stations required a detailed logistics plan to adapt to technical and other site requirements.

Project Description

Contract No. 1733

- Rehabilitation of potable water treatment plants ranging from 10,000 m^3/d to 40,000 m^3/d
- Construction of potable water treatment plants ranging from 12,000 m^3/d to 16,000 m^3/d
- Supply and installation of pumping stations

Contract No. 1734

- Pumping station characteristics:
  - Submersible well pumps; capacity range: 342 m^3/h at 257 m head
  - End suction pumps; capacity range 172 m^3/h at 200m head
  - Vertical multi stage pumps; capacity range 172 m^3/h at 300 m head
  - Horizontal multi stage pumps; capacity range 72 m^3/h at 300 m head
  - 2,000 m of various pipework, DN 150 to DN 200

Oil & Gas

BUTEC

Upgrade Fire Protection and Industrial Drainage System Turaif

Employer
SAUDI ARAMCO

Role of Rawabi BUTEC
Main Contractor

Awarded
2019

Project Description

Works on the project can be described as follows:
- Civil: Excavation, Backfilling, Concrete, Steel Structure, and Architectural works
- Mechanical: Firefighting, Dewatering, HVAC, Industrial Drainage and Plumbing works
- Piping: Welding Works and Non Destructive Testing of Underground Product Supply Lines and Suction/Discharge piping Electrical: Power Distribution and Power Cabling
- Low Current: Fire Detection, Fiber and Copper Structured Cabling and Distribution Panels, Paging System, Audio/Video and Telephone systems
- Instrumentation: Field devices, Local Control panels and Structured Cabling.

Scope of Work

To upgrade the existing Storm Water Drainage and Firewater Distribution systems. The purpose of the facility is to restore and upgrade the firefighting capability and industrial drainage systems to meet safety requirements. BUTEC is responsible of material procurement, construction management, quality management and testing and commissioning of all works related to the upgrade of the Bulk Plant in , Saudi Arabia.

Design and Construct Chemical Offloading Bays and Railway Crossover Bridge

Employer
Al Hosn Gas (Abu Dhabi Gas Development Company Limited)

Role of BUTEC
Main contractor

Awarded
2015

Project Description

Design and build extension and enhancement works at the Shah Gas Sulphur recovery live plant to increase the safety and efficiency of the plant's critical operations.

Scope of Work

Chemical Unloading:
The objective is to safely and securely discharge Biocide and Surfactant from an ISO container (24,000L) delivered upon a lorry into the respective Chemical storage tanks (40,000 L capacity) within the Chemical injection Packages.

The scope included the supply and installation of air operated double diaphragm type chemical unloading pumps in PDVF/ Teflon diaphragm with piping and standard accessories.

Railway Crossover Bridge:
The objective is to provide a Railway Over Bridge to the North side of the tracks at the Sulphur Loading Facility with a retractable access platform made of structural steel, to enable safe access of the operators to the North side of the railway when a train is in station and to enable safe access to the top of the railway carriage for Sulphur re-distribution activity.

The scope included the design and construction of a structural steel crossover bridge running above the "live" Etihad railway line. The scope includes the supply and installation of special mechanical system for handling of sulfur as well as the installation of explosion-proof CCTV system.

Aqaba New Liquefied Petroleum Gas Terminal

Employer
Aqaba Development Corporation

Role of BUTEC
Main contractor in JV with Al-Tarawneh

Awarded
2014

Scope of Work

EPC and commissioning of an LPG jetty located on the south shoreline of Aqaba, Jordan.

Project Description

The jetty platform is equipped with two marine loading arms mounted in duty/standby configuration, having an unloading capacity of 300 m^3/h each, and connected to an LPG line of 8 inches diameter which ties the jetty to an existing LPG pipeline 600 meters away from the jetty, below the oil terminal trestle.
The works included:

- Wharf furniture for the jetty
- General lighting and power supply
- Control cables
- Standby emergency generator set for critical loads; (quick release hooks with remote monitoring)
- Automatic berthing/docking system
- Onshore civil works for access ramp
- Fire and gas detection system and a fire fighting system

QAIA Fuel Hydrant System Project

Employer
AIG – Airport International Group

Role of BUTEC
Main contractor

Awarded
2011

Scope of Work

Construction of the fuel hydrant network for the new Queen Alia International Airport in Amman including the emergency fuel shut down system EFSO and the leak detection system, tightness monitoring system (TMS), together with all electrical, mechanical, and civil works.

The emergency fuel shut down system and leak detection system was subcontracted to Hansaconsult GmbH.

Project Description

- Laying of fuel pipe network, 9,000 m long, of 16″ seamless specially coated pipes, with 1,000 m of 20″ double encasement pipes under taxiways, and all related accessories, link seals heat shrink sleeves and pipes cathodic protection
- Supply and installation of 100 fuel hydrants, outlet Ø1.5″
- Supply and installation of 11 double block and bleed valves with actuators, 3″ drain and vent ball valves
- Civil works including excavation, backfill, concrete and asphalt saw cutting, reinstatement of concrete aprons, construction of valve pits with sections of 6.5 m x 4.5 m, most of which are 6.5 m deep
- Installation of 2 km of control cables

Shah Gas Development Program Buildings Works Package B

Employer
Al Hosn Gas, Abu Dhabi

Role of BUTEC
Subcontractor for civil works and installation of equipment
Main contractor: ENI – Saipem S.p.A

Awarded
2011

Project Description

Package 2:
- Central area: 3 primary substations 33/11 kV
- West area: 2 primary substations 33/11 kV
- East area: 3 IES (instrument equipment shelters)

Package 3:
- Central area: 3 primary substations 33/11 kV and 1 IES (instrument equipment shelter)

Scope of Work

EPC in addition to testing and commissioning for all civil works, as well as associated MEP works and equipment installation. It covers 12 buildings of package "B" related to the units Shah Process Plant (EPC package 2) & Shah Sulfur Recovery Units (EPC package 3), located at Shah, U.A.E. in the frame of the Shah Gas Development (SGD) Program.

Scope of work includes also the construction of a site camp covering an area of 70,000 m² for 700 residents (housing canteen, nursery, recreation areas and sport fields, etc.).

Arzew GNL 3Z Project

Employer
SONATRACH

Role of BUTEC
Subcontractor for civil works
Main contractor: Saipem-Italy / Chiyoda-Japan J.V.

Awarded
2011

Scope of Work

Construction of the following structures:

- Discharge holding basin
- Separation tanks and annexed trenches
- Liquefying tank and annexed trenches
- Safety/security building
- Administrative building

Pearl GTL Temporary Power Supply

Employer
Qatar Shell GTL Limited

Role of BUTEC
Main contractor in consortium with SIEMENS GmbH

Awarded
2006

Scope of Work

Power supply for the construction site of the gas to liquid plant; covering an area of 4 km² and power supply for a construction camp accommodating up to 25,000 persons on a plot of 1.7 km².

Project Description

EPC of the following:

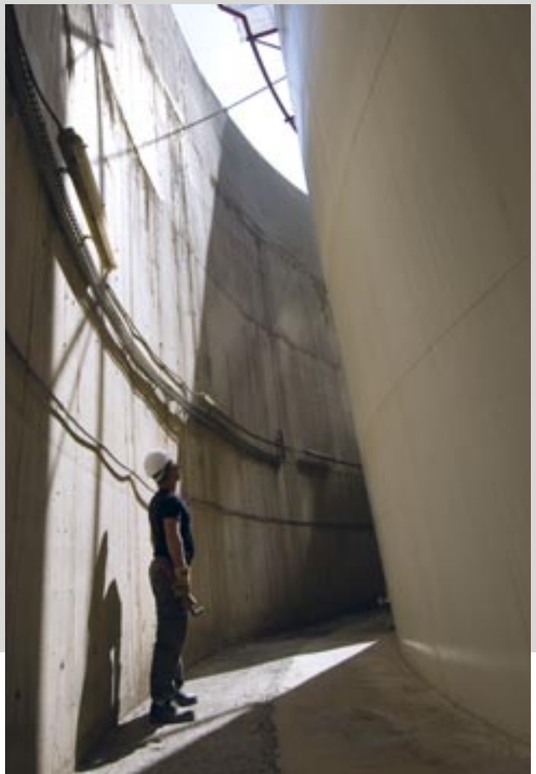
- Civil works for 4 substations, 33/11 kV, 40 MVA each
- 120 km of underground 11 kV cables for ring main units
- 110 km of underground 33 kV cables and connection to power grid
- 20 km of underground fiber optic cables
- Earthing grid for substations
- Installation of the following:
- 130 ring main units, 1 MVA each
- 11 kV and 33 kV switchgears
- Power transformers and oil refilling
- Assistance to SIEMENS in testing and commissioning

Rafic Hariri International Airport Reconstruction & Rehabilitation of 3 Jet A1 Storage Tanks

Employer
Council for Development and Reconstruction (CDR)
General Directorate for Civil Aviation

Role of BUTEC
Main contractor

Awarded
2006



Scope of Work

The project consisted mainly of rebuilding facilities destroyed during the war of July 2006 including 3 fuel storage steel tanks with a concrete skin for protection and a supported cone roof. The capacity of each tank is 6 000 m³

- 2 restored as follows:
  - Bottom 10%
  - Shell 40%
  - Roof structure 100%
  - Roof plates 100%
  - Accessories 100%
  - Painting (internal and external) 100%
  - Fire fighting system (water cooling & foam networks) 100%
  - Control system and instrumentation 100%
- 1 completely rebuilt including all related works, concrete ring foundation, dikes and roads
- Reconstruction of site networks
  - Kerosene filling and emptying systems
  - Fire fighting system

Ohanet Station Condensate Storage Tank

Employer
SONATRACH

Role of BUTEC
Main contractor in consortium with Rym Sekoura

Awarded
2009

Project Description

- One storage tank (floating roof, double deck) for condensate
  - Internal diameter: 57 m, Height: 17m, Nominal volume 35,000m³
  - 1,000 tons of steel plates conformant to ASTM and API 650
  - Welding procedures according to ASME and American Welding Society norms & code
  - Non destructive testing according to API 650 and ASME codes
  - Provisions for identical future tank
- Distribution pipework according to ASME and API standards
  - 300 tons of steel pipes conformant to API Gr.x 52 and Gr. B
  - Filling pipes: Ø 36, 30 & 24"
  - Emptying pipes: Ø 24"
  - Underground piping system with cathodic protection
- Fire fighting system as per NFPA standards with fire hydrant network serving the site and the following systems for storage tank(s):
  - Automatic fire detection system including a linear heat detection cable, IR flame detectors on the rim, and gas detectors inside retention dike
  - Automatic spray water cooling system
  - Automatic discharge foam system with rim mounted foam pourers
- Supply of trunnion mounted ball valves, with Rotork actuators, sizes 36", 30", 24", 20", 16" &10"
- Process instrumentation system
  - Level gauging system
  - Temperature monitoring system
  - Inventory system of tank farm
  - Mechanical level gauging system
  - Remote monitoring from control room of motorized valves
- Lightning protection and earthing systems
- Infrastructure works: internal roads, new dikes & concrete lining for existing dikes, external lighting, peripheral fence, drainage system

Qatar Gas 3 & 4 Onshore Project Storage Tanks Works in Ras Laffan

Employer
Qatar Liquefied Natural Gas Company Limited (3), Qatar Petroleum & Shell Gas-Power Development B.V

Role of BUTEC
Subcontractor to Chiyoda / Technip J.V. (CTJV)

Awarded
2007

Scope of Work

EPC contract for the construction of 25 steel tanks for the storage of chemical products with diameters up to 21.4 m and heights up to 25.5 m.

Project Description

- Full and detailed tank design according to API 650 addendum 4 and Qatar Gas special requirements
- Design, fabrication, and installation of internal and external steam heating coils for several tanks
- Welding procedures specification and procedures qualification records
- Quality plan
- Procurement and inspection of materials (plates CS & SS, structural profiles, shell & roof nozzles, internal piping CS & SS, PV vents, insulation and painting)
- Fabrication, testing, packing, transportation and handling
- Erection and non destructive testing including ladders, platforms, pipe supports & spiral staircases
- Insulation and external and internal surface treatment works
- Pre-commissioning and commissioning

Banias Refinery Fuel Storage Tanks & Related Pipeworks

Employer
Banias Refinery Company
Ministry Of Petroleum
And Mineral Resources

Role of BUTEC
Main contractor

Awarded
2003

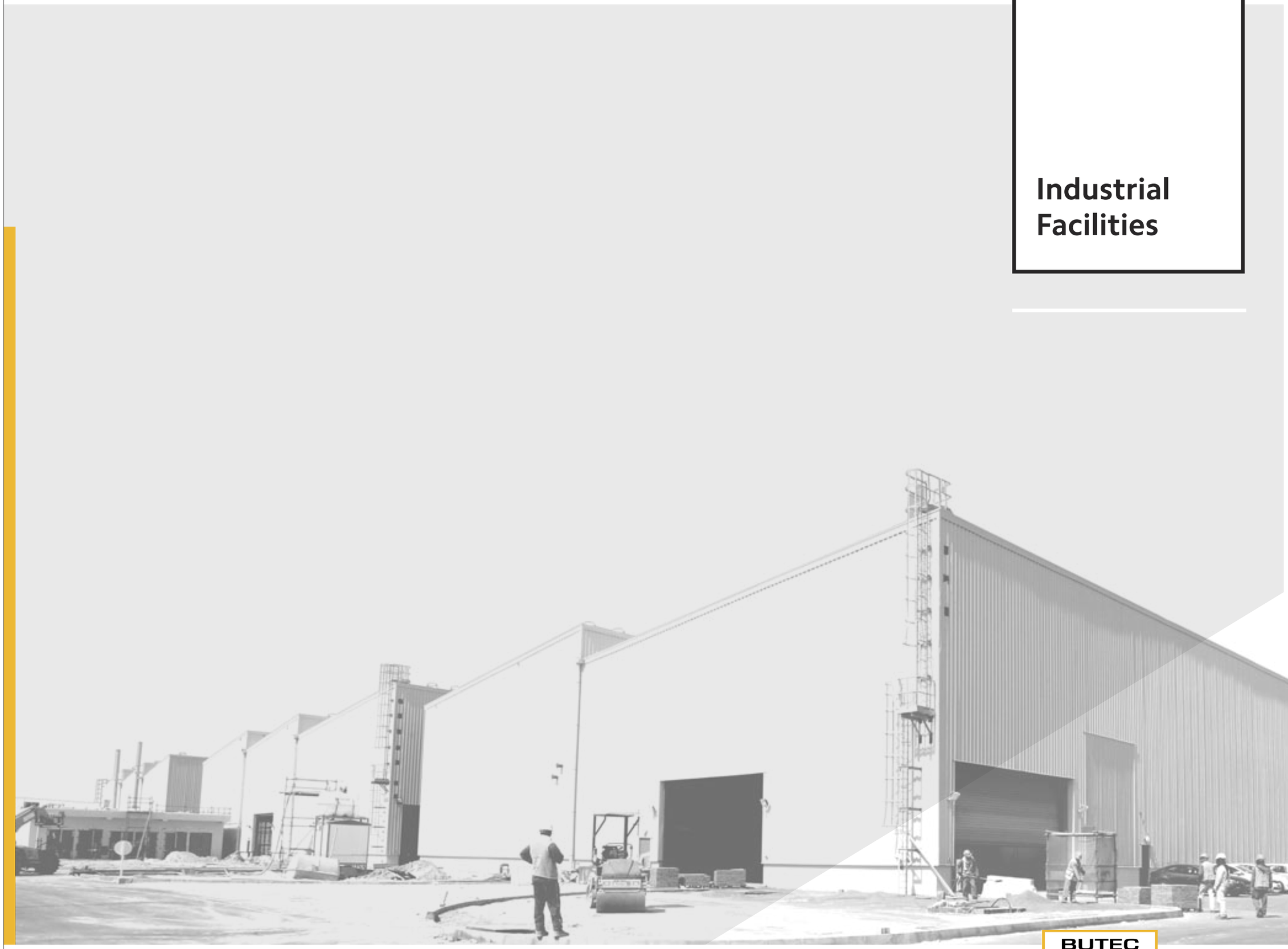
Scope of Work

- EPC contract for the construction of 10 storage steel tanks, 33,000 m^3 each
- 8 tanks with floating roof for heavy crude oil, light crude oil, naphta and gasoil
- 2 tanks with fixed roof for fuel oil

Project Description

- Steel plates conformant to ASTM and API specifications
- Distribution pipe network - according to ASME & API standards:
  - Supply pipes Ø 24", underground with cathodic protection
  - Suction line from tanks: Ø 28" above ground
- Fire fighting network – foam and cooling systems
- Heating network with steam for coils inside fuel oil tanks. Both fuel oil and tracing lines are insulated
- Spider network in each crude oil tank
- Power distribution network for lighting system and supply of motorized valves
- Lightning and earthing protection system
- Process instrumentation:
  - Remote terminal: storage/transmission of data in real time through a bi-directional communication link with the central control
  - Telemetry network
  - Software of supervision
- External site works: roads, dikes, fence, drainage network, exterior lighting etc.

Industrial Facilities



BUTEC

Sharjah Waste to Energy Project

Employer
Sharjah Waste to Energy Company (a JV between Masdar and Bee'ah)

Role of BUTEC
Subcontractor to CNIM

Awarded
2019

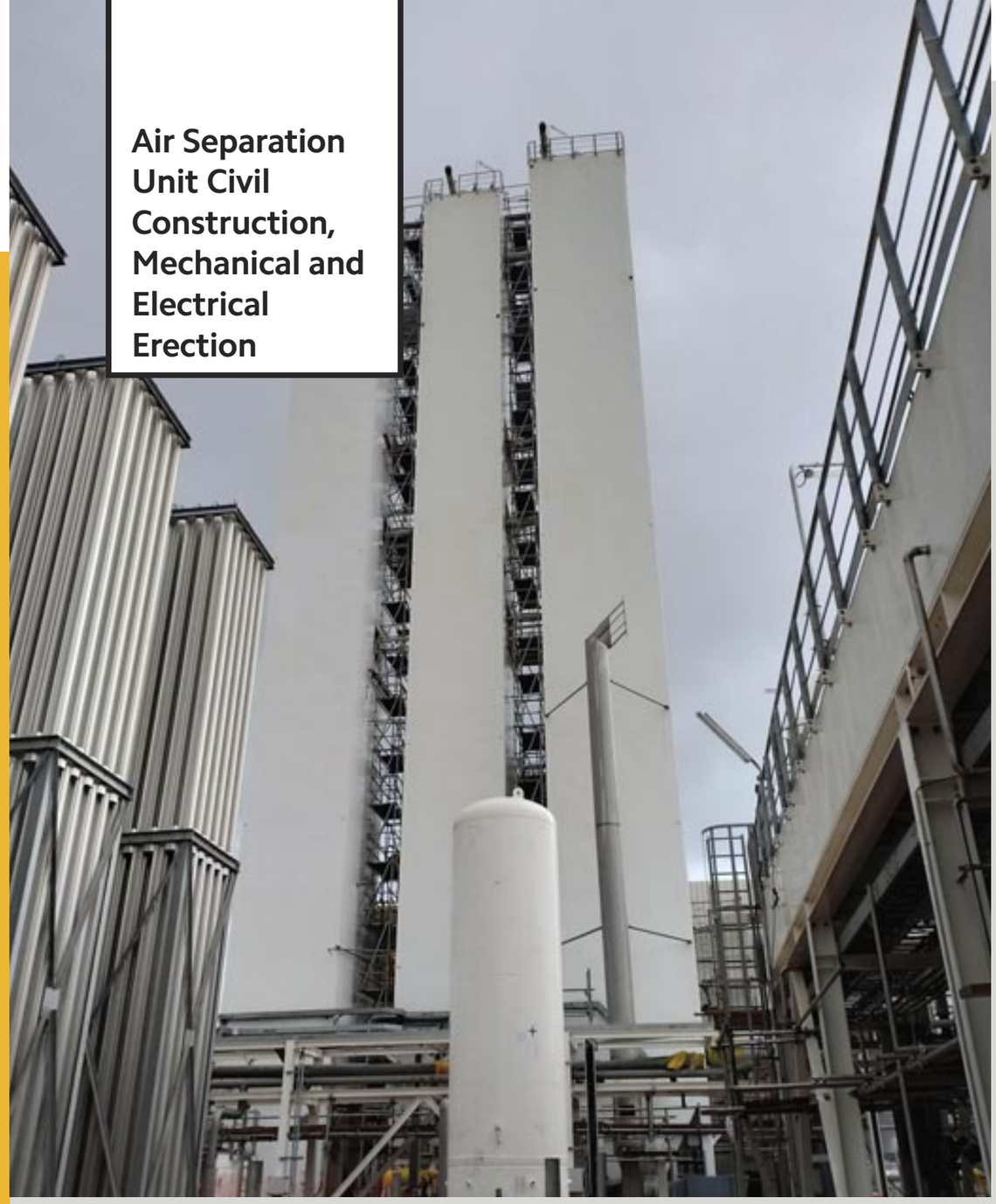
Scope of Work

Civil works of the entire site and the construction of all buildings of the project which consist of 30MW generation from the Sharjah Municipality domestic waste and tie-in to SEWA's grid.

Project Description

Diverting more than 300,000 tonnes of solid waste from landfill each year, Waste-to-energy plant will contribute to Sharjah's effort to reach "zero waste-to-landfill" target by 2020 and the UAE to deliver its 2021 goal of diverting 75% of solid waste from landfills.
The facility will incinerate around 37.5 tonnes of municipal solid waste per hour to generate energy and will be located adjacent to Bee'ah's existing Material Recovery Facility in Sharjah, where Emirate of Sharjah waste is collected, sorted, recycled and, where necessary, sent to landfills.
The incineration process converts the waste into produced heat which is then used to drive an electrical turbine. The net electrical power produced will be up to 30 MW which will be supplied to the Sharjah electricity grid. The flue gas of the waste incineration will be treated before being released into the atmosphere.

Air Separation Unit Civil Construction, Mechanical and Electrical Erection



Employer
Algerian Qatari Steel Spa

Role of BUTEC
Main contractor in JV with Elecnor

Awarded
2017

Scope of Work

Civil construction including piling foundations and steel structure buildings, Mechanical and Electrical Erection Works for the ASU Package (Construction of an Air Separation Unit Plant for that separates atmospheric air into its primary components: Nitrogen, Oxygen and Argon).

Project Description

Civil works:

- Piling and civil works for foundations of buildings
- Process equipment foundations
- Erection of steel structure buildings
- Road works walkways fence and external lighting

Electrical and Instrumentation works:

- Erection and installation of electrical equipment and systems, such as MV/LV transformer, LV and MV switchgears, control panels, field equipment, cable routes, earthing and lightning systems, field instrumentation devices, etc.

Mechanical works:

- Erection and installation of mechanical equipment and systems, including coldboxes, gas products skids, main air compressor along with its supplied items such as pump skids and ducts, buffer vessels, cooling towers, etc. (around 1600 Tons of erection)
- Heavy lifting of coldboxes, vessels, etc.
- Piping, sandblasting, insulation works, and testing for pipes and joints

Kizad Zone Aluminum Extrusion Plant

Employer
TALEX – Taweelah Aluminium Extrusion Company LLC

Role of BUTEC
Main contractor

Awarded
2013

Scope of Work

Value engineering, design, procurement & construction of an aluminum plant, associated infrastructure, ancillary buildings, as well as erection of all process equipment.
TALEX is an Estidama project - Pearl II rating.
The scope of work includes process, non-process buildings and site works as follows:

- **Buildings:**
  Cast house building, extrusion building, entrance building, delivery gate building, visitor gate building, substation buildings, MV switchgear room, compressor room
- **Site Works:**
  Underground process tank; piezometric tank; landscaping & external areas; fences; R/C works (trenches, thrustblocks, platforms, etc.); mechanical systems and electrical systems

Project Description

- Presses annual capacity: 87,600,000 tonnes of extruded aluminum profiles
- Total site area: 200,100 m^2
- Total built-up area: 67,194 m^2

Civil Works:
- Pre-engineered buildings: 63,382 m^2
- External works
  - Road works & pavement: 58,330 m^2
  - Green areas: 26,580 m^2
- LPG concrete channels: 2,081 m^3
- Concrete buildings: 28,300 m^3
- Dynamic compaction: 127,170 m^2
- Piling:
  - 449 piles of 100 cm diameter (4 600 m^3)
  - 62 piles of 90 cm diameter (550 m^3)

Mechanical Works:
- HVAC system: rooftop packages, DX units and wind driven ventilators
- Wet systems:
  - Fire fighting: 2,500 GPM pumping room, serving hydrants, reels & sprinklers
  - Water: storage and pumping for process, chilled, domestic and irrigation systems
  - Drainage: sewage and storm water piping and pumping
- Compressed air system: 3,000 m^3/h demand, provided by 3 compressors 160 kW each
- Natural gas system: 300 m^3 underground storage, provided with pumping and distribution networks
- Process water cooling: 4 chillers 1,171 kW each, cooling towers 49 l/s each

Electrical Works:
- MV/LV distribution network: 32.33 MW plant including 6 substations with 23 1.5 MVA transformers
- Building services including lighting, small power, lightning, earthing and ELV systems

Lusail Marina District Cooling Plant

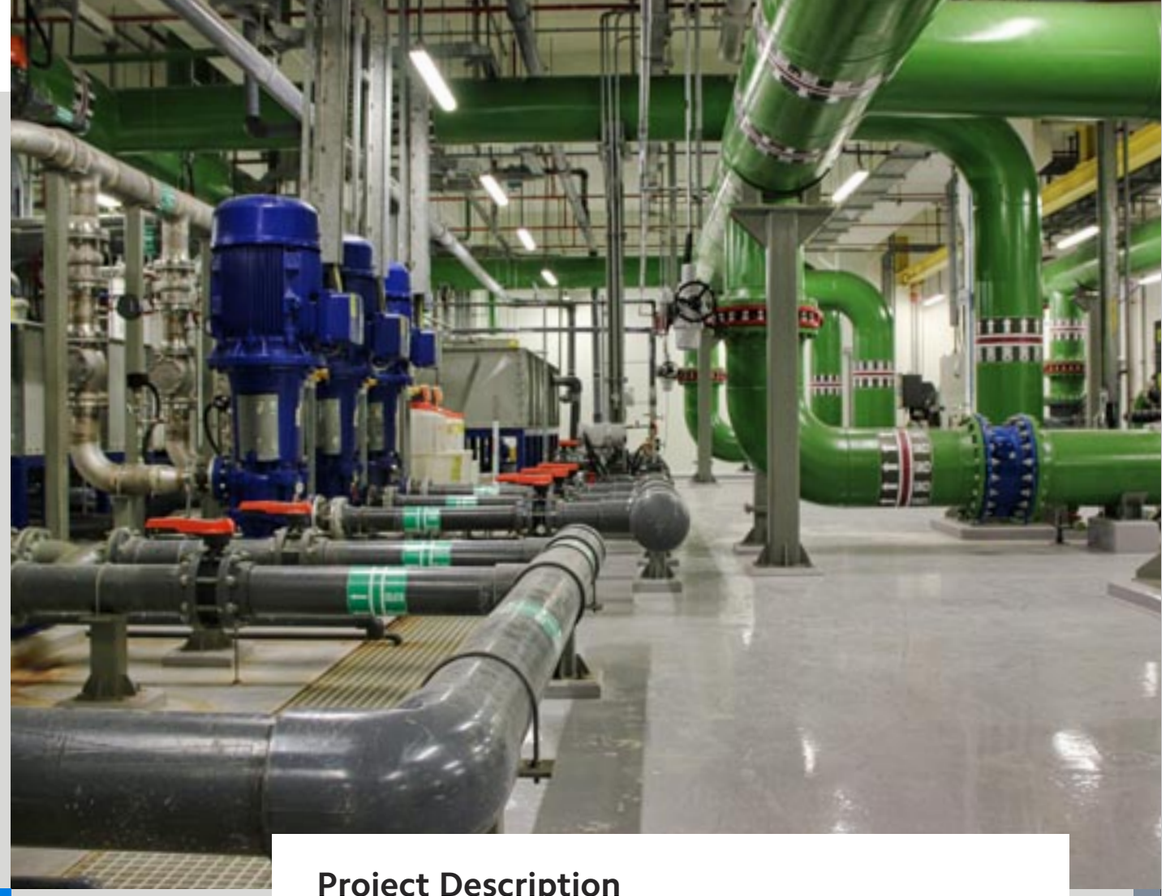
Employer
Marafeq Qatar L.L.C.

Role of BUTEC
Main contractor in JV with ADC Energy Systems LLC

Awarded
2013

Scope of Work

EPC contract on turnkey basis for a district cooling plant with a capacity of 33 250 TR (Phase I) at Marina District in Lusail.



Project Description

- The plant is built in two phases,
  Phase 1: 33,250 TR
  Phase 2: 58,750 TR
- Engineering for the ultimate plant with installed cooling capacity of 92,000 TR
- Construction of the entire civil works for the basement for the ultimate plant capacity 92,000 TR
- Supply and installation of Phase 1 chillers with the aggregate installed cooling capacity of 33,250 TR, together with required mechanical, electrical, and instrumentation equipment and services
- Twelve 11 kV feeders with a total capacity of 43 MVA. (Electrical service for Phase I)
- Booster pumps are installed in the plant to push water from the north to the south
- Water cooled electric centrifugal chillers installed on grade level
- Space for thermal energy storage installed on grade level
- Cooling towers installed on roof level
- Pipe, valves, pumps, and other mechanical components
- Distribution network pumps with space allocated for pumps required for the ultimate plant capacity
- Instrumentation, control and monitoring systems
- Electrical services for mechanical equipment
- Below ground water storage for cooling tower makeup
- Connections to distribution network
- Building services such as plumbing, drainage, HVAC, fire protection, lighting, telecommunications, security, etc.
- Utility connections (electricity, water, blowdown, sewage, and telecommunications)

Bellara Steel Complex Balance of Plant

Employer
Algerian Qatari Steel

Consultant
Idom, Spain

Role of BUTEC
Main contractor in JV with Elecnor

Awarded
2016

Scope of Work

The works consist in the development, installation and coordination between the various external networks related to the new steel complex in Bellara with a production capacity of 2,000,000 tons per year. Scope of work includes as well construction of all utility buildings, foundation works for technological packages, piping and cabling interconnection between technological packages, roads, and infrastructure surrounding the different process facilities of the steel factory.

Project Description

- Foundation Works for the Technological packages including 827 piles and 50,000 m³ of concrete footing
- Construction of concrete utility buildings (offices, clinic, industrial kitchen, …) with a built-up area of 17,000 m², concrete water tanks with a built-up area of 11,000 m² and metal buildings (warehouses, workshops, …) with a built-up area of 82,000 m² and 5,500 tons of steel
- Construction of pipe rack between the technological packages (1,500 tons)
- Supply and installation of the steel pipe network between the technological packages (10,000 lm)
- Supply and installation of electrical and instrumentation network between the technological packages (100,000 lm)
- Site works including 85,000 m² of roads and 1,000 lm of fence
- Supply and installation of rail ways inside the boundary of the project (8,670 lm)
- Construction of an accommodation camp for 80 staff & 200 labors and covering an area of 12,600 m²

Lattakia Spinning Mill Complex Project I - II

Employer
Ministry of Industry In Syria

Delegated Employer
GOTI (General Organization for Textile Industries)

Role of BUTEC
Main contractor in consortium with PECO GmbH

Awarded
Project I: 1993
Project II: 1997

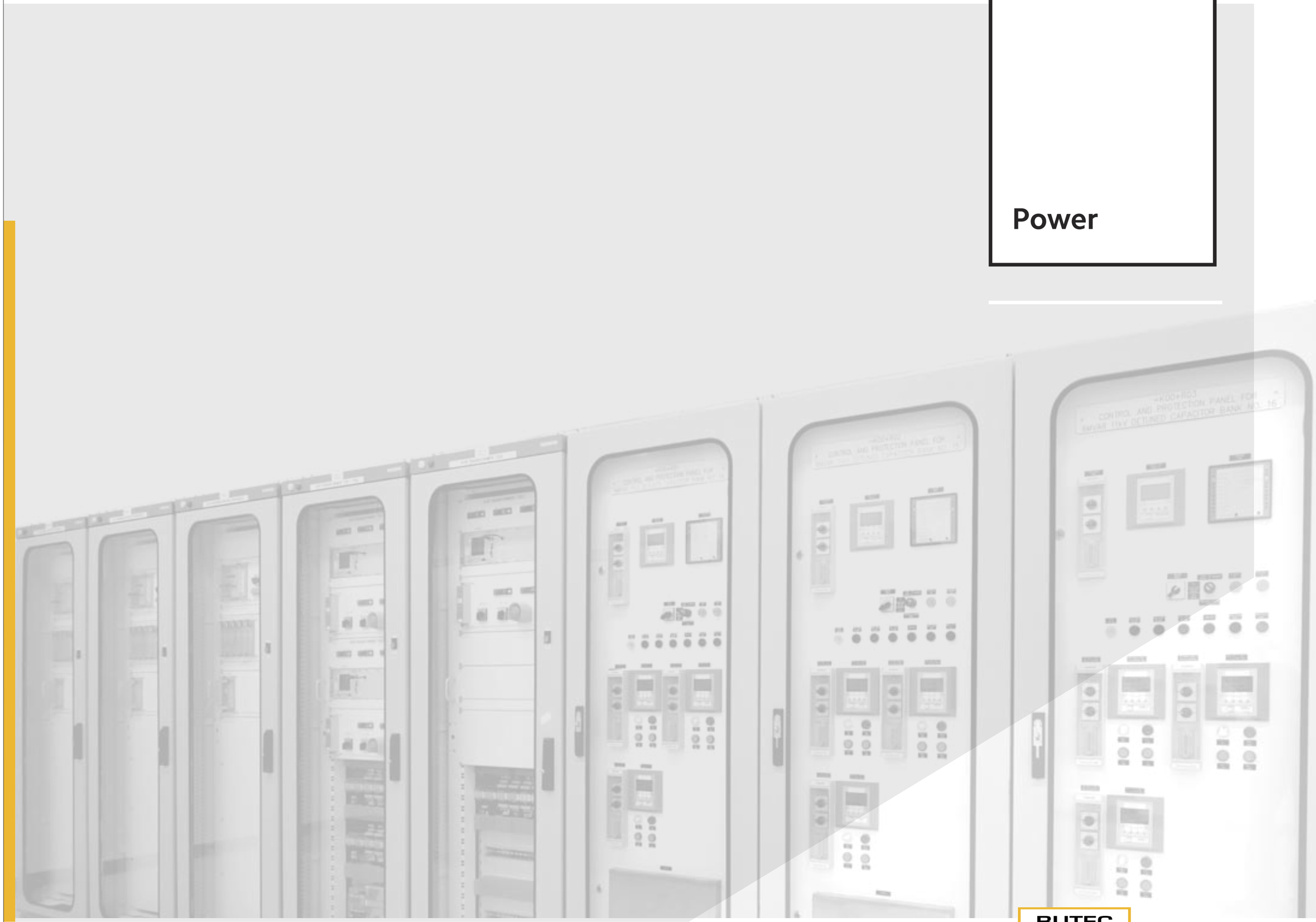
Scope of Work

EPC of civil works, industrial plant utilities and related networks, as well as erection of all process equipment.

Project Description

- Mill annual capacity: 27,000 tons of combed & carded cotton
- Total site area: 420,000 m^2
- Total built area: 147,000 m^2, including 115,000 m^2 of metallic pre-engineered buildings
- Roads and parking areas: 68,000 m^2
- 20 km of reinforced concrete channels (200 cm wide × 300 cm high) for underground return air
- 20 kV/400 V electrical sub-station with 18 2500 kVA transformers, ring main units, including incoming / outgoing MV cubicles and metering / protection MV cubicles
- 19 built-up air handling plants with air filters, air washers and heat exchangers; cooling capacity 1,760 kW each
- Industrial heating plant: 2,000 kW
- Water collection and storage utility, with river water intake structure: 4×6" pumps, capacity 120 m^3/h each, 6 deep wells, capacity 100 m^3/h each, and a water storage reservoir of 3,500 m^3
- Water treatment and softening plants (filtration, decantation, flocculation): capacity 36 m^3/h
- Air plants, 4×16 m^3/min for process and 4×8 m^3/min for cleaning network, with all ancillaries including filters, dryers, receivers and distribution networks
- Fire fighting system, with fire pumping station (216 m^3/hr), fire hydrants network for site protection, hose reels for production areas and sprinkler system in all stores (includes fire brigade equipment)
- Underground drainage network: 15 km
- Surface concrete channels for rain water drainage: 20 km
- Sewage treatment plant 100 m^3/d, with primary and secondary treatment

Power



BUTEC

Mesaieed IPP of 2000 MW/400 kV

Employer
Mpc Ltd,
KAHRAMAA (Qatar General Electricity & Water Corporation)

Role of BUTEC
Subcontractor for civil works
Main contractor: Iberdrola - Spain

Awarded
2007

Scope of Work

EPC of civil works for the construction of 400, 220 and 132 kV GIS buildings including all associated MEP works and equipment installation:

- Mechanical: Plumbing, HVAC, and fire fighting
- Electrical: Internal/external lighting, small power, distribution boards, telephone network system, intrusion alarm, fire detection and alarm, earthing, and lightning
- Architectural and finishing works for the construction of all 400/220/132/11 kV GIS buildings
- Infrastructure, site works and landscaping

Project Description

- 400 kV GIS building:
  - Floor area 2×3,000 m²; 14.5 m precast beams length; 12.6 m floor clear head
  - The HVAC system consists of 4 packaged units (2 standby), capacity 388 kW (115 TR) each, and fire rated smoke exhaust system 4×14828 l/s and 2×9 886 l/s
- 400 kV control building:
  - Floor area 410 m²; 4.4 m floor clear head
  - The HVAC system consists of 2 packaged units (1 standby), capacity 109 KW (32 TR) each
- 220 kV GIS building:
  - Floor area 2×1400 m²; 8.5 m floor clear head
  - The HVAC system consists of 2 packaged units (1 standby) capacity 310 KW (91 TR) each, and fire rated smoke exhaust system 2×11 735 l/s and 2×5 869 l/s
- 132 kV GIS building:
  - Floor area 2×650 m²; 8.5 m floor clear head
  - The HVAC system consists of 2 packaged units (1 standby), capacity 164 KW (48 TR) each
- 132 kV control building:
  - Floor area 510 m²; 5.7 m floor clear head
  - The HVAC system consists of 2 package units (1 standby) capacity 192 KW (56 TR) each, and fire rated smoke exhaust system 1 × 9 452 l/s and 1 × 5 108 l/s

Power Transmission System Expansion P VIII Umm Birka S/S

Scope of Work

EPC, site delivery, testing & commissioning of all civil works, including all associated MEP works and equipment installation for 400/220/132/11 kV GIS substations:

- Mechanical: Plumbing, HVAC and fire fighting
- Electrical: Internal/external lighting, small power, distribution boards, telephone network system, intrusion alarm, fire detection and alarm, earthing and lightning
- Architectural and finishing works for the construction of all GIS buildings
- Infrastructure, site works and landscaping

Employer
KAHRAMAA (Qatar General Electricity & Water Corporation)

Role of BUTEC
Subcontractor for civil and MEP works
Main contractor: Areva T&D S.A

Awarded
2008

Power Transmission System Expansion P VIII S/S: Packages S-2-2 & S-4-1

Employer
KAHRAMAA (Qatar General Electricity & Water Corporation)

Role of BUTEC
Subcontractor for civil works
Main contractor: Isolux Ingeniera S.A.

Awarded
2008

Scope of Work

EPC,site delivery, testing & commissioning of all civil works for the new 66/11 kV transformer feeders and GIS substations in accordance with the specifications of the KAHRAMAA contract documents as follows:

- Construction of 5 GIS buildings 66 kV: Umm Salal West, Al Khissa North, South East Wakrah, and Mesaieed Industrial City (two substations)
- Construction of 11 kV switchgear room
- Construction of halls for relay & control, telecom, batteries, LV service equipment, and basement for cable entry room
- Transformers yard for all the substations
- HV 66 kV & 11 kV cable corridors, LV cable ways and external ducts
- Fire water tank, pump room, HVAC yard
- Substation lightning protection system
- Road works inside substation connecting to existing/future /ASHGHAL roads

New 33/11 kV Primary S/S & Modification of Existing S/S

Employer
ADWEA (Abu Dhabi Water & Electricity Authority)

Role of BUTEC
Main contractor in consortium with SIEMENS GmbH

Awarded
2007

Scope of Work

- EPC, commissioning and delivery of new 33/11 kV primary substations
- Modification of existing 33/11 kV primary substations as well as related cable connections to interconnect the new primaries with the existing network

Project Description

The works of the 2 phases include all civil works, buildings, electrical power equipment, transformers and switchgears, auxiliary electrical equipment and all equipment necessary to establish the complete substation such as remote end, telecommunication and DMS works.

Phase I:
- Lot 1A: supply & installation of six 33/11 kV new primary substations and extension works at one existing 33/11 kV primary substation
- Lot 1B: 33 kV cable works for interconnection between substations under lot 1A and other interconnections

Phase II:
- Lot 2A: supply & installation of five 33/11 kV new primary substations, relocation of one 33/11 kV package, extension of 33 kV switchgear at NIT substation, extension works at one existing primary substation and extension of 33 kV switchgear at Mussafah GIC

2 x 4 MW Battery Energy Storage System

Employer
ADWEA (Abu Dhabi Water & Electricity Authority)

Role of BUTEC
Main contractor

Awarded
2009

Scope of Work

- EPC including the following:
  - New BESS buildings complete with MEP works
  - Trenching & cabling between main substation & BESS building
  - Integration of BESS and associated systems
  - Lightning protection and earthing
  - 2 auxiliary transformers, dry type, 11/0.41 kV, 1,500 kVA

Project Description

2 units (concrete and steel pre-engineered buildings), 4 MW each, at the following substations:

- HTCO 132/11 kV primary grid substation (E25)
- Port 132/11 kV primary grid substation (E14)

Gas Turbine Units

Employer
SONELGAZ

Role of BUTEC
Subcontractor for civil And MEP works
Main contractor: PW Power Systems

Awarded
2014

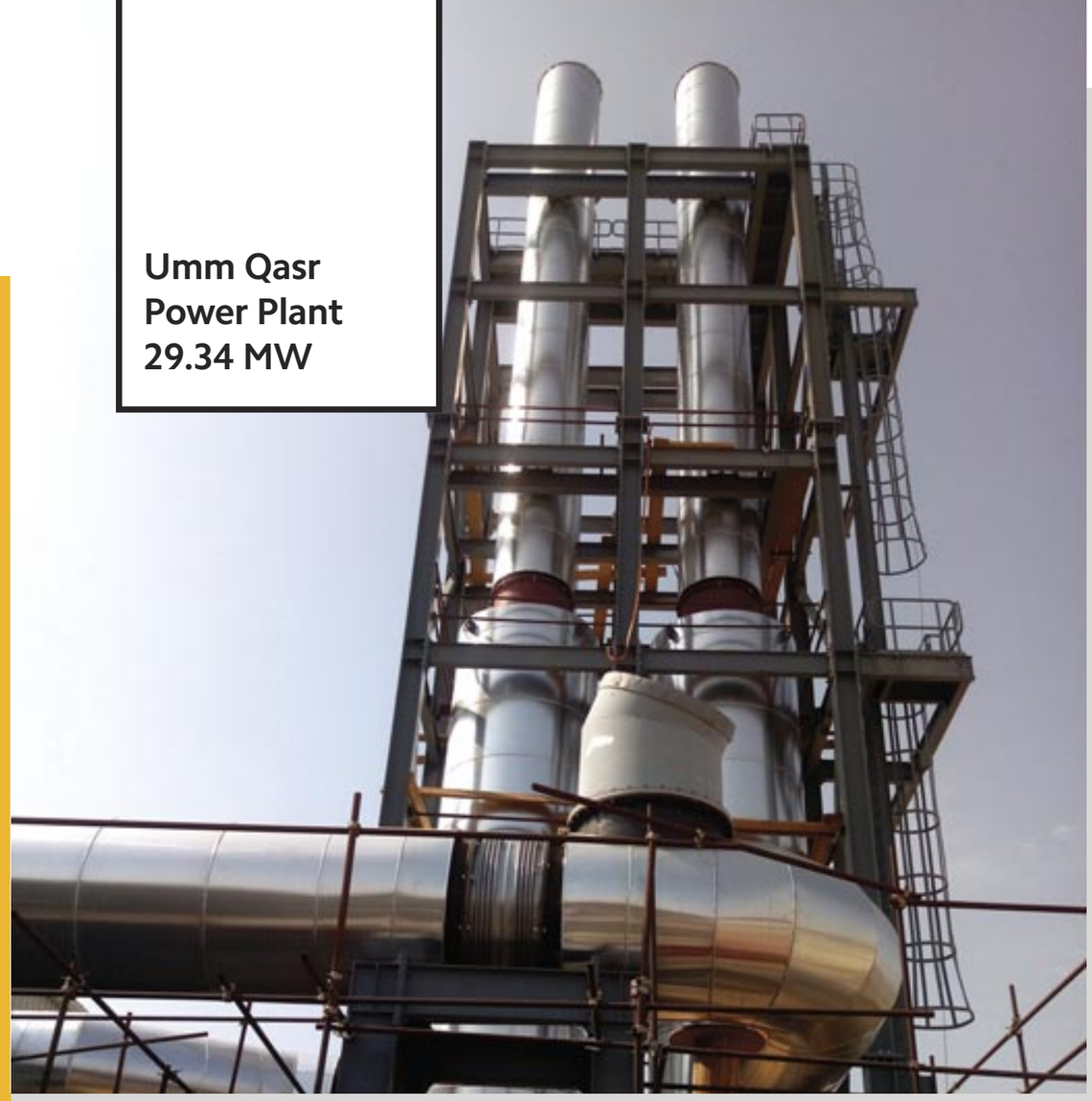
Scope of Work

- Installation and erection of the GT units including power trailer, control trailer, gas skids and small accessory components
- Supply, prefabrication and installation of gas piping including all necessary supports, NDT test, painting and insulation
- Supply, prefabrication and installation of steel structure including all necessary supports, painting and insulation
- Installation and connection of the mobile MV substations
- Installation of the instrumentation system
- Supply, installation and connection of power cable between the GT units and the substations with all necessary cable trays and accessories
- Supply, installation and connection of control cable between the GT units, auxiliaries' equipment and substations with all necessary cable trays and accessories
- Pre-commissioning and commissioning of the plant

Project Description

Installation and commissioning of 11 Mobile Pac® GT units of 25 MW each, including the power trailer, gas skids, small accessory components, cabling and pipe fitting. The project is divided into two lots: 9 units at M'sila site and 2 units at Boufarik site.

Umm Qasr Power Plant 29.34 MW



Employer
Prime Metro Power Holding (PMPH)

Role of BUTEC
Main Contractor

Awarded
2019

Scope of Work

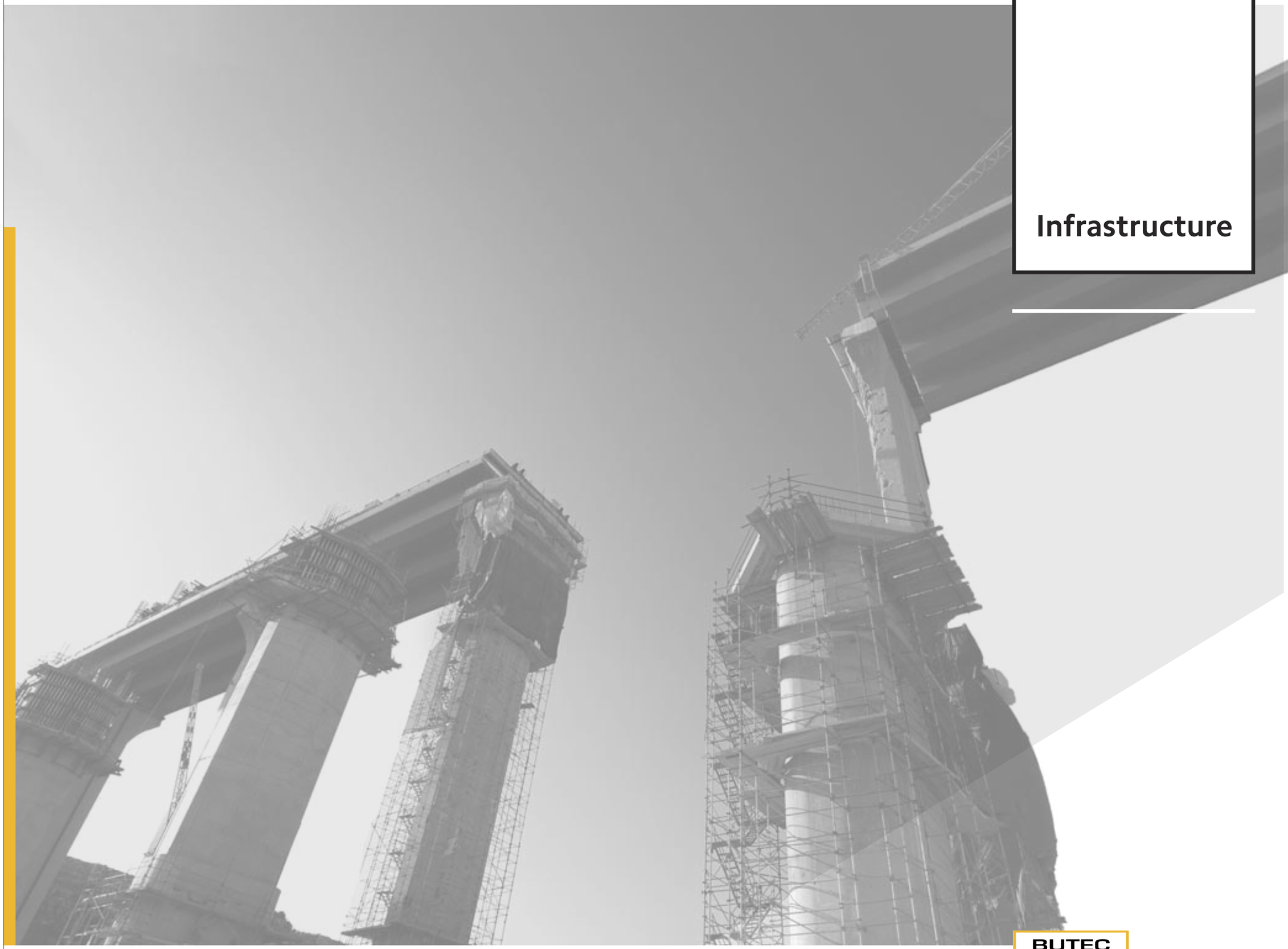
The Umm Qasr Power Plant ("UQPP") project consists of the design, procurement, construction, and commissioning of a 29.34 MW (Phase 1) gas fired captive power plant located at Umm Qasr Port, Basra Governorate, Republic of Iraq.
The purpose of this plant is to deliver base load 24/7 power to the Umm Qasr port operated by the general company for ports of Iraq ("GCPI").

Project Description

Overall turnkey design, procurement, construction, and commissioning of Umm Qasr Power Plant 29.34 MW based on reciprocating gas engines (3 x 20V34SG) in accordance with WARTSILA(FI)'s specifications and Employer's requirements, including:

- Power House
- Electrical Building including LV, MV switchgears, control room
- Electro-Mechanical process and balance of plant services, including tanks, steel structures and concrete structures
- Administrative Building, guard house, warehouse and workshop facilities
- Connection to the Natural Gas 40bars pipeline through Gas Pressure Reducing Station
- Step-up transformer (60MVA – 11/33KV) and transmission lines connecting the plant to the existing GCPI substation.

Infrastructure



BUTEC

NDIA Perimeter Security Systems Enhancements

Client
New Doha International
Airport Steering Committee

Consultant
OBI– Overseas Bechtel Inc.

Role of BUTEC
Subcontractor for civil, MEP works,
and installation of security systems

Awarded
2011

Scope of Work

EPC, start-up and commissioning of all elements of the perimeter security systems enhancement (PSSE) and final design of some of these elements, for the New Doha International Airport (NDIA). The works included but were not limited to engineering, procurement, supply of labor, materials and equipment, transportation, field erection and installation, supervision, facilities, environmental, safety and health management, quality control, calibration, testing and commissioning, training of operations and maintenance personnel.

Project Description

The project consists of facilities, equipment, building infrastructure, life safety and other special systems and utilities/site improvements;

- Perimeter intrusion detection system (PIDS)
- Enhancements at access control points (ACPs)
- Perimeter fence enhancements
- Temporary site improvements

Restoration of Casino Bridge

Employer
Council for Development and Reconstruction (CDR)
Casino du Liban

Donor
Casino du Liban

Role of BUTEC
Main contractor in JV with Freyssinet

Awarded
2006

Project Description

- Arch bridge - clear span 95 m
- Project restoration consisted of:
  - Demolition & reconstruction of almost 120 m of damaged arches with associated deck slab
  - Utilization of prestressed strand for stress relief on remaining structure (300 tons) & jacking (400 tons) at key end after reconstruction
  - Use of suspended platform over variable heights
  - High strength concrete application (600 kg/cm^2)

Reconstruction of Mudeirej Bridge

Employer
US Government

Role of BUTEC
Subcontractor in JV with Freyssinet

Awarded
2008

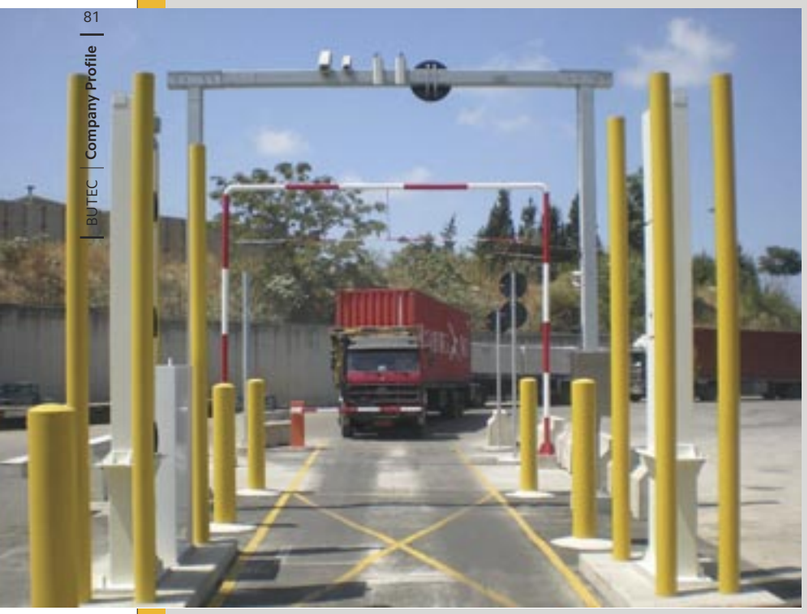
Scope of Work

Replacement of the main structural elements (decks and beams) and installation of the supporting bearings for both the north and the south bridges on an EPC basis.

Project Description

- 40 m span precast U-section including wings, each element weighing 210 tons
- Pre-cast slab permanent formwork application
- Deck slab normal cast
- Post tensioning of pre-cast girders, transportation and maneuver by means of straddle carriers, each having a lifting capacity of 110 tons and a launching truss for application
- External post-tensioning of diaphragm after cast

Port of Beirut Second Line Defense



Employer
POB (Port of Beirut)

Delegated Employer
Washington Defense Division
of URS Corporation, Cleveland - Ohio

Role of BUTEC
Main contractor

Awarded
2010

Scope of Work

The scope of work includes conceptual design, procurement and installation of the radiation portal monitors (RPM), including related works such as earthworks, pavement, foundations, electrical work, collision protection, structural support for the enclosures, security, traffic controls and modifications to the existing electrical infrastructure. The scope of work also includes power and communication cables to the detection system (i.e., monitors, central alarm station, etc.).

Project Description

- Construction, distribution systems and installation are in compliance with U.S. codes and standards
- A traffic control plan, including key plan drawing of traffic flow, was set prior to mobilization
- A quality control plan (QCP) and a health & safety plan (H&S) were prepared prior to mobilization
- Coordination with U.S. government engineers and with the port authorities

QAIA North Runway Rehabilitation

Employer
AIG - Airport International Group,
Amman, Jordan

Role of BUTEC
Main contractor in JV With Al Tarawneh

Awarded
2015

Scope of Work

EPC and renovation of the pavement including associated electromechanical systems of the north runway at the new Queen Alia International Airport in Amman.

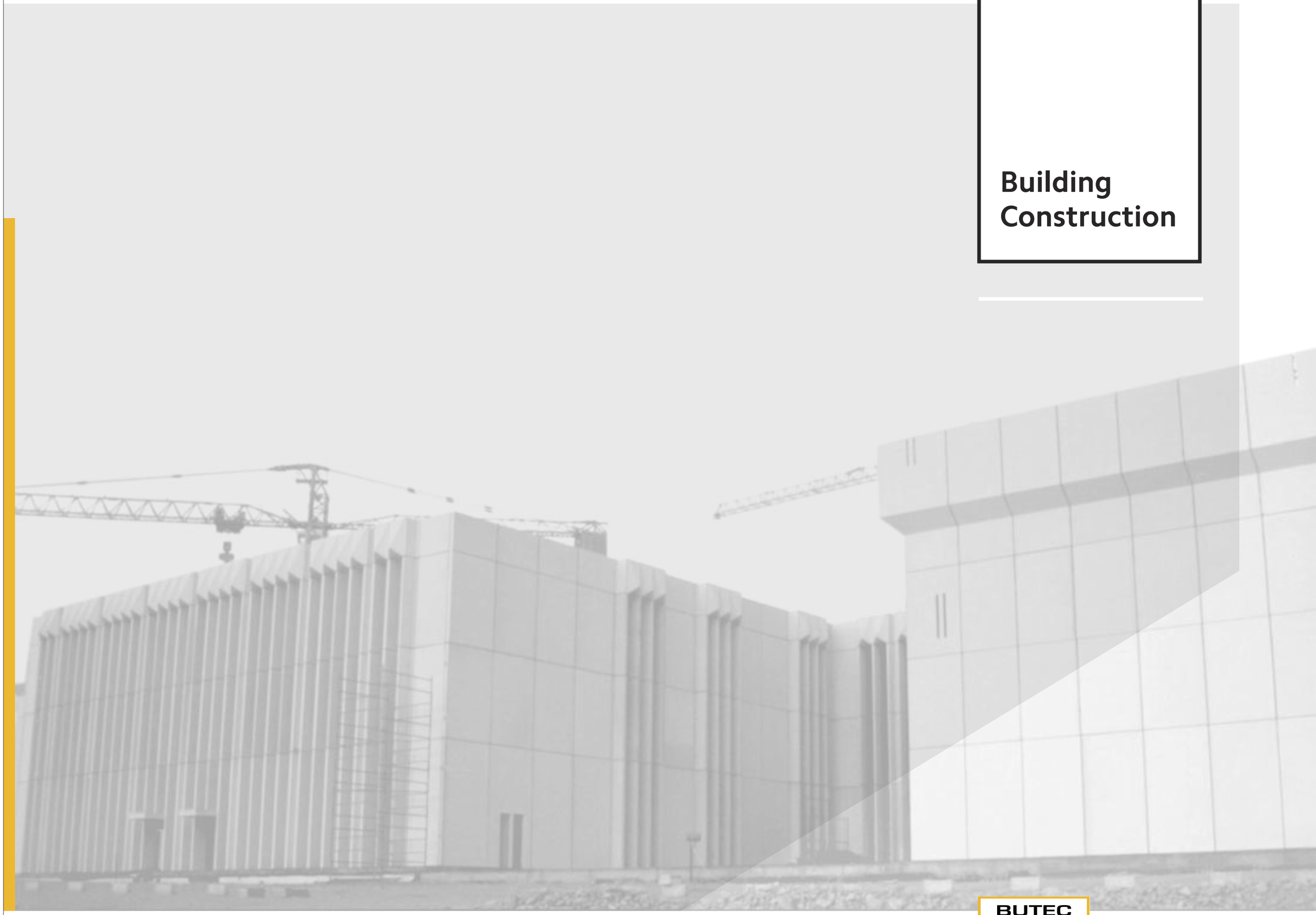
Works are bounded by the 4,080 m x 300 m runway strip plus two 240 m x 150 m runway end safety areas (RESAs) beyond each end of the runway strip. In addition, the full extent of both approach lighting systems is also part of the scope of the project, with associated implications to the functionality of the systems.

Project Description

The works are divided into 6 main areas:

- Runway paved areas (runway, runway shoulders and stopways) - 297,000 m^2 approximately
- Graded portion of the runway strip - 289,000 m^2 approximately
- Runway end safety areas - 72,000 m^2 approximately
- Non-graded portion of the runway strip - 586,000 m^2 approximately
- Taxiway paved areas - 52,000 m^2 approximately
- Airfield lighting systems: these systems are composed mainly of lights, bases, primary and secondary cables, transformers, remote and master control units, constant current regulators, and approach lighting masts

Building Construction



BUTEC

Qatar Foundation QSTP Tech 4 Buildings

Employer
Qatar Foundation

Role of BUTEC
Main contractor in JV with Murray & Roberts

Awarded
2014

Scope of Work

EPC, coordination, development, installation, testing and commissioning of the Tech 4 facility with internal mezzanine floors, workshops and offices. The scope also involves infrastructure development works within the plot limit, such as roads, parking, paved areas, landscape works, signage, etc.

Project Description

The Tech 4 building worksite is located in Zone 4 of Education City, which is in the central area of the North Campus. The facility is providing modules of 500 m² of clear lettable floor space with 15 m height. Integrated structural provisions are provided for a full mezzanine floor at +9.0 m level within each typical module. Complete fit-out of the common/landlord areas and provision of service interfaces only for the tenant areas. Each typical module space of 500 m² provides adequate utility connection points. Provisions are sufficiently foreseen within the main fire alarm panel for integration of tenant fit-out related requirements, and under the base build.

In order to respond to the key guiding principles such as high quality, natural light, contextual, etc., the exterior envelop is proposed to be composed of:

- On the esplanade side, a curtain wall system layered by an aluminum sunshade louver system to control daylight in the common areas
- On the roof and on the loading dock side, a double skin system composed of a layer of semi-transparent composite material to allow for natural light to penetrate the entire volume and a layer of perforated aluminum sheet system serving as "musharabia".

Two New Schools at Doha & Villages, Stage (10A), Package 3

Employer
Public Works Authority (ASHGHAL)
Building Affairs

Role of BUTEC
Main contractor

Awarded
2015

Scope of Work

The works consist of the development of shop drawings, procurement, construction, testing & commissioning and maintenance of 2 New Standard Schools at Al-Mearad.

Project Description

- 50,000 m² total plot areas and 27,000 m² total built-up areas
- 1,400 m² of multi-purpose covered sport courts and 3,800 m² of exterior sport courts
- 8,500 m² total roads area and 5,200 m² landscaping
- 2 substations of 2,600 kVA
- 4 transformers of 1,000 kVA and 1,600 kVA
- Exterior networks including street lighting, MV/LV cabling
- Building services including lighting, outlets, telephone, data, video system, public address and fire alarm system
- HVAC: 26 AC roof packaged units with total capacity of 550 TR, and 20 roof mounted exhaust fans for toilets & kitchens

- Plumbing: 2 main water tanks (23,700 gal. potable water & 3,000 gal. irrigation), 3 sets of booster pumps, 6 toilet batteries (made of 180 sanitary fixtures), storm water and sewage collection networks
- Fire fighting: fire pump set 100 GPM: (1 electrical, 1 diesel and 1 jockey serving 17 internal hose reels)

NDIA Terminal & Qatar Airways Operation Centers

Employer
New Doha International
Airport Steering Committee

Consultant
OBI – Overseas Bechtel Inc.

Role of BUTEC
Subcontractor for civil & MEP works

Awarded
2010

Scope of Work

EPCM contract to perform works for terminal operation centers & Qatar Airways Operations Control Center.

Project Description

- Architectural fit-out including interior special finishes compatible with the overall PTC and in accordance with the contract documents, vertical moveable partition with structural support framing, custom video wall built-in units with related steel structural supports
- Mechanical fit-out including plumbing, HVAC systems with chilled water piping, and controls and interface with BMS
- Electrical fit-out including power panel boards, lighting fixtures, circuiting, controls and interface with BMS, electrical connections to HVAC and plumbing equipment, and earthing
- Fire protection fit-out including sprinkler heads and piping, and complete system of FM-200 clean agent gas suppression as per NFPA requirements
- Special systems & security fit-out

Beirut Central District Hilton Hotel

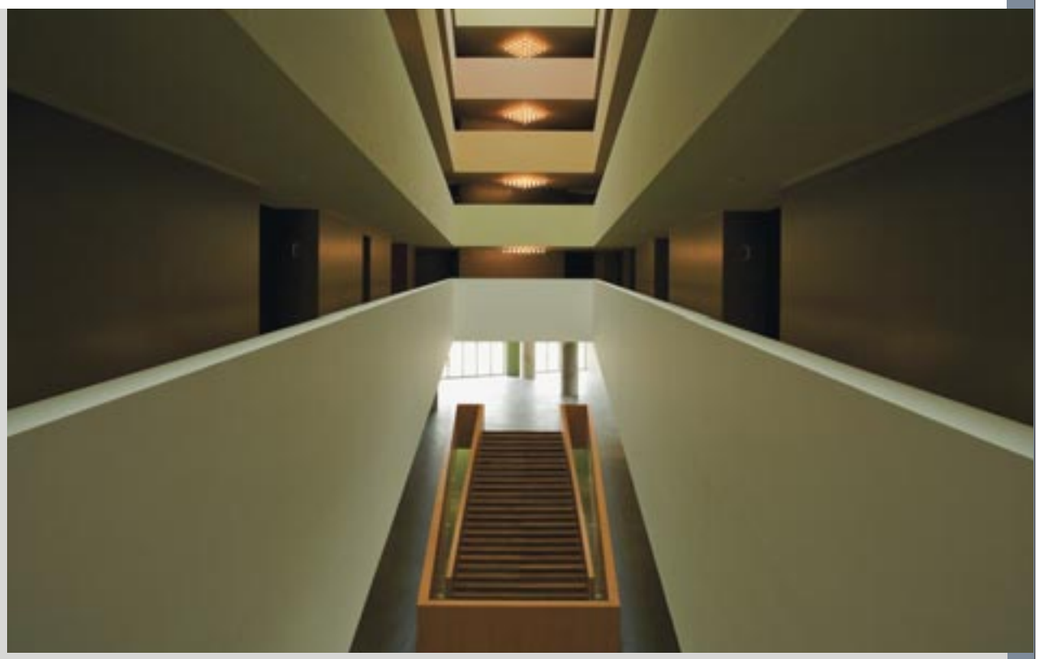
Employer
Al-Iquarat wal Abniat

Role of BUTEC
Main contractor

Awarded
2003

Scope of Work

Construction of a five-star hotel in downtown Beirut, with special attention to architectural and interior design details, which create a high quality designer hotel.



Project Description

- Overall built area 23,000 m², 17,000 m² of superstructure and 6,000 m² underground
- 5 basement levels, ground & mezzanine levels, 7 current floors,and a roof floor
- Rooftop restaurant, swimming pool and a solarium terrace on roof
- Total of 162 guestrooms, 20 suites and 2 royal suites on the current floors
- Entrance lobby, reception, luxurious designer boutique shops and a French brasserie overlooking a backyard garden on ground floor, with management offices at mezzanine level
- Business centers, conference hall, bar and a ballroom at first basement level
- 75 parking spaces on basement levels, 6 passenger and service lifts
- Glazed central atrium
- Advanced sound treatment for rooms, and recreation areas
- 3 generator sets 630 kVA each, for complete power redundancy
- Programmable scenery for lighting and auxiliaries in guestrooms
- Interactive television system with LCD TV sets in rooms, splash-proof sets in suite bathrooms

- Building management system
- Fire alarm and public address systems
- CAT6 telecommunication network
- WIFI access points
- Central HVAC system with independent hot and chilled circuits in each room
- Smoke exhaust system
- Fire protection system in guestrooms & public areas and suppression systems for service areas

Tripoli South Stadium

Employer
Council for Development and Reconstruction (CDR)

Role of BUTEC
Main contractor

Awarded
1999

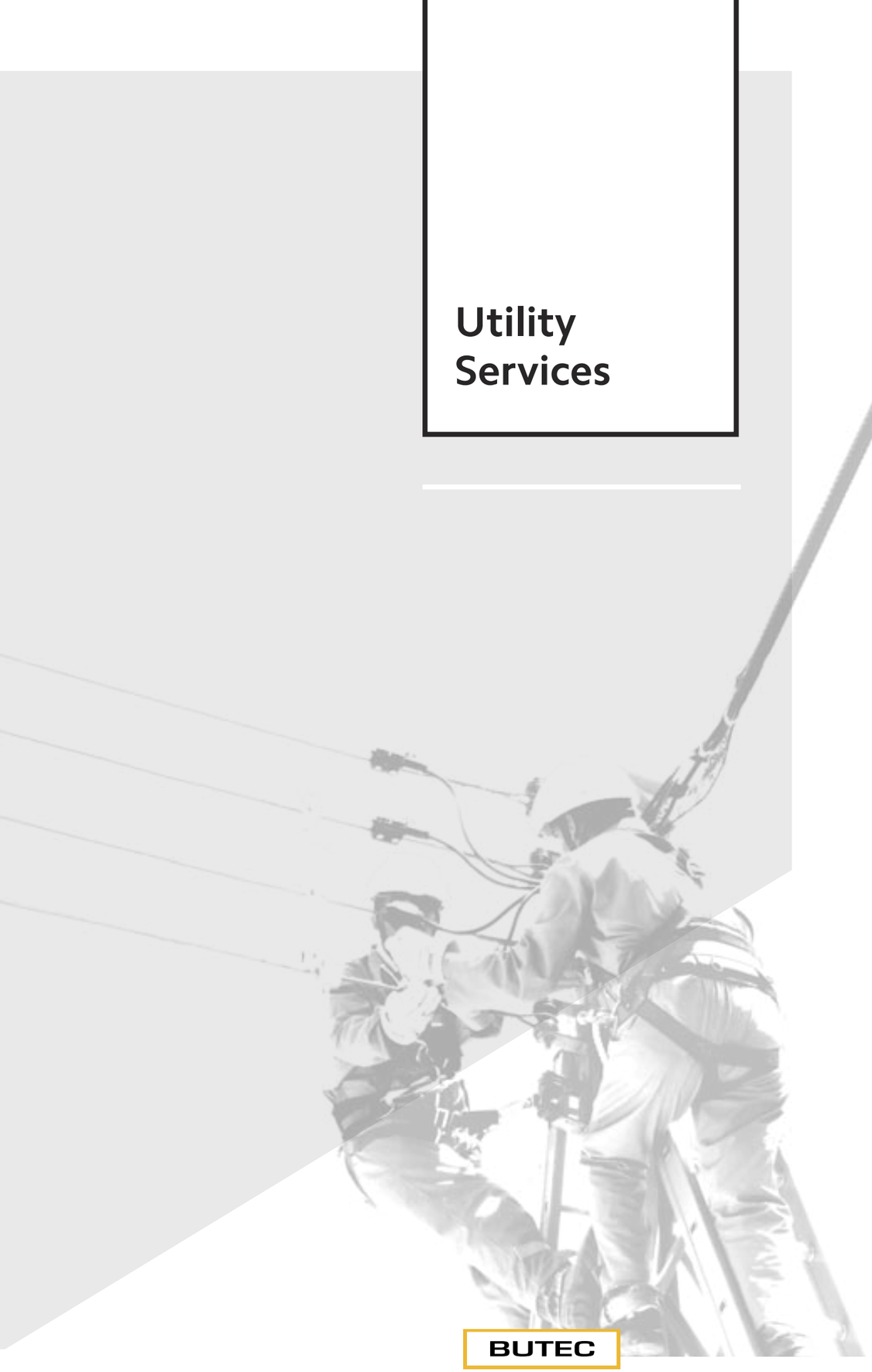
Scope of Work

EPC for an olympic sports stadium (football and other athletic sports) constructed for the Asian Football Cup in a restricted timeframe.

Project Description

- Concrete volume: 24,450 m^3
- Total number of seats: 22,300, with VIP and presidential cubicles
- Total green area : 12,800 m^2
- Facilities, lounges and reception areas, media podiums and amphitheater, interview studios: total area 10,800 m^2
- Precast grandstand beams on fair-face concrete frame and cantilever section ; design of foundations and structure according to French Norms (conditions " très préjudiciables " pour effet sismique , zone 2B) very conservative assumptions for seismic design
- Athletic field track, lawn for football areas
- Steel structure roof frame with PVC textile composite membrane roofing for the grandstand. A 1/10 model for the west stand was subjected to wind tunnel test, at the "Centre d'Essais Aéronautique de Toulouse CEAT
- 2 generator sets of 860kVA and 260kVA
- 2 transformers and MV switch gears
- 4 lighting masts 52 m high with 316 hot restrike projectors
- Anti-panic lighting
- Uninterruptible power System and Standby power unit
- CCTV, Data system, and Telephone network
- Giant score board
- Control , security and surveillance system
- A seashore 350 m protection breakwater designed for 20 years of high tide. The blocks resisting the shocks vary between 0 to 60 mm, 0.1 to 0.5 kg, 1 to 3 tons, and 2 to 5 tons

Utility Services



BUTEC

Distribution Network with Customer and Metering Services

Employer
Ministry of Energy and Water
Electricité du Liban (EDL)

Role of BUTEC
BUS (BUTEC Utility Services)
Distribution service provider

Awarded
2012

Project Description

- Territory covered 3,000 km²
- 535,000 customers
- 2,000,000 inhabitants
- 850 employees
- 6,000 km of MV overhead network
- 12,000 km of LV overhead network
- 700 km of MV underground network
- 500 km of LV underground network
- 6,000 MV/LV substations

Scope of Work

Network survey
- Assessing the condition of all assets
- Developing network mapping
- Network inventory

Plans & programs
- Developing procedures for each of the activities to be performed in the execution of the contact
- Developing an investment plan to improve the state of the network based on the survey findings

Planning & design
- Revision of existing MV and LV networks to identify network bottlenecks and advise of necessary re-enforcement schemes
- Network re-configuration and schemes for power flow optimization
- Thorough mapping of the network
- Design of substations, overhead lines and underground cables
- Design of distribution network protection schemes
- New connections to customers

Construction of new distribution facilities
- Providing new connections to MV and LV customers
- Construction of indoor and outdoor MV/LV substations
- Extension of the MV and LV overhead networks
- Extension of the MV and LV underground networks

Operations & maintenance
- Efficient operation of the MV and LV distribution network
- Availability and reliability of the distribution network
- Minimizing unplanned interruption
- Responding to customer-related operational and emergency requests
- Public and staff safety

Advanced metering infrastructure
Roll-out of an advanced metering infrastructure for remote operation of MV and LV meters including:
- Remote reading
- Remote connection
- Remote disconnection
- Etc.

Using power line carrier technology for communication between meters and data concentrator units (DCUs) installed next to MV/LV substations.

Customer services
- Managing and analyzing all customer complaints
- Responding to customer related operational requests
- Informing the responsible parties to dispatch the technical teams in order to perform the necessary fault isolation and power restoration

Meter reading & bill collection
- Meter reading management
- Collection of bills issued by EDL
- Maintaining detailed records of customer bill collection and accounts receivable
- Identifying and recording all outstanding accounts
- Reporting all non-paying customers and performing disconnect and re-connect activities
- Generation of relevant indices related to meter reading, collection management and quality of service

Non-technical losses reduction
- Monitoring & analyzing of non-technical losses by region
- Setting & performing procedure for violations discovery
- Detection and disconnection of illegal connections

Services

- Operations and Maintenance
- Construction of new Distribution Facilities and Intelligent Meters
- Meter Reading and Bill Collection
- Customer Services
- Planning and Design
- Detection & Removal of illegal connections

Achievements

- Reduction of total network losses by 50%
- Increase in the income of EDL by more than 50%
- Integration of more than 600 ex daily workers of EDL
- Installation and energization of more than 700 km of underground cables 2,500 km of overhead lines 1,200 new HV/LV substations

Selaata Training Center

Smart Meters Laboratory

History & Archive

Over 50 Years of Excellence

BUTEC prides itself with half a century of excellence for quality and timeliness of projects delivered. It boasts an impeccable track record of engineering, integrity, and safety covering a wide variety of complex and innovative projects. BUTEC has given top priority to the interest of its clients believing that client satisfaction is aligned with the firm's own long-term success. The firm's unique business model brings international standards to local markets across the MENA region, thus positioning the firm as the "local contractor of choice". BUTEC plans to continue on delivering world-class engineering and construction projects for the next 50 years and beyond.

1964
BUTEC was founded - incorporated in 1966

1971
First regional project

1974
Syria Branch

1976
Relocation of Headquarters to Paris (until 1990)

Ceramic & Chinaware Plant Project, Lebanon
Uniceramic

1977
Batroun Government Hospital, Lebanon
Ministry of Public Health

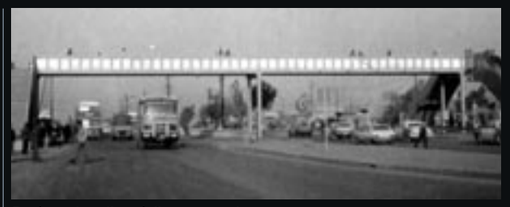
1978
Iraq Branch
(Active until 1990)

Quarantine Compost Plant, Lebanon
Ministry of Public Health

1980
Dubai Branch

Four shoe factories in Nabek, Sueida, Daraa, & Mosiaf, Syria
Unichem

Damascus Military Hospital & Tishreen School, Syria
Ministry of Defense



Pedestrian Steel Overpass, Iraq
Municipalities of Baghdad & Tikrit

Bridges at Beirut Entrances, Lebanon
Ministry of Public Works

Sigillah & Hindiyah Irrigation Project, Iraq
Ministry of Irrigation

Dubai Tower, UAE
Arab Bank for Investment & Foreign Trade

Kerosene Storage Tanks & Pumping Station,
Beirut International Airport, Lebanon
Civil Aviation Authority

Fence, Peripheral Road & Runways Construction
of Rafic Hariri Int'l Airport, Lebanon
Executive Council for Beirut Grand Projects

Electrical System & Utilities Jubail Al Sinayah, KSA
Royal Commission for Jubail & Yanbu

1982 1983 1984 1985 1986 1988

1982 1986 1989

Mosul Compost Plant, Mosul Sewing Factory
& Nassiriya Cables Factory, Iraq
Ministry of Industry & Minerals

Saudi Arabia Branch
(Active until 1991)

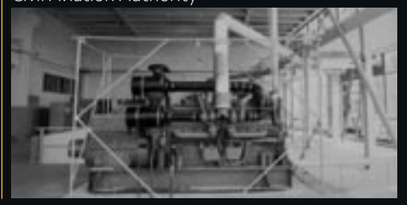
Mosul Power Plant, Iraq
State Organization of Electricity,
Ministry of Industry & Minerals

Bridges at Beirut Crossroads, Lebanon
Ministry of Public Works

Dbayeh Water Treatment Plant, Lebanon
Lebanese Water Organization

PTT Power Station, Lebanon
Ministry of Post & Telecommunications

Power Plant for Beirut International Airport,
Lebanon
Civil Aviation Authority



Iraq Oil Pipeline Trans Saudi Arabia Project - Phase II, KSA
State Company for Oil Projects - SCOP

Gas Compression Station, Basra, Iraq
Ministry of Industry & Minerals

Fire fighting & Telecom Facilities, King Fahd Int'l Airport, Dahran, KSA
Ministry of Defense & Aviation

BUTEC Tower, Lebanon
BUTEC S.A.L.

Refueling Scheme, Rafic Hariri International Airport, Phase I & Phase II, Lebanon
Civil Aviation Authority

1990

King Saud Hospital, Riyadh, KSA
HRH Prince Nahar Ben Saud Ben Abdul Aziz

Relocation of Headquarters to Beirut

1992

1994

Aresco Center, Lebanon
Arab Real Estate Company

1999

2001

2002

Btalloun Village Buildings Renovation, Lebanon
Council for Development and Reconstruction (CDR)

2005

Algeria Branch

2006

Qatar Branch

2007

Abu Dhabi Branch

2008

The International Finance Corporation (IFC) member of the World Bank Group, became an equity partner (16.67%) of BUTEC Group

2010

Jordan Branch

2011

Establishment of BUS (BUTEC UTILITY SERVICES)

2015

Rawabi BUTEC Limited Co. in KSA

2015

Iraq Branch

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