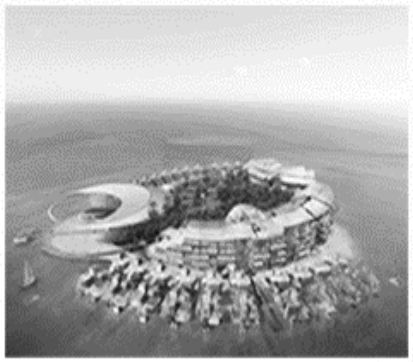
ICON PY

COMPANY GENERAL CAPABILITIES - 2023

INTERNATIONAL ARCHITECTURAL & ENGINEERING CONSULTANT



CEO WORD

As Planners, Architects and Engineers,
We Aim to Serve Our Societies Through Our Noble Profession,

Our Mission Is to Shape the Future with Knowledge, Culture and Ethics …

Dr. Pierre Younes
Urban Planner / Architect
Founder - CEO

@ ICON PY

ABOUT ICON

ICON PY (International Consultant – Pierre Younes), in Joint Venture with its Sister Engineering Company **DEP (Design Engineering Partners)**, is one of the fastest growing Architectural and Engineering Consultancy Companies in the MENA region, offering consulting services for over 18 years in Planning, Architectural and Engineering Design, Project & Construction Management of Master Plans, Buildings, Infrastructures, Energy / Water and Environment.

ICON has attained an impressive roster of clients since the beginning of its corporate operation. It has put forward expertise and technical efficiency to optimize its client business performance. It has expanded its operation to cover different countries worldwide, offering effective solutions to the growing demand for integrated services and investing in its own organizational structure to meet the ever-increasing market expectations.

ICON is a member of the Lebanon Green Building Council (LGBC) and has an active member in the council. It has been involved in a number of LEED projects, and is promoting Green Designs practices in both passive and architectural aspects, active energy efficient and heat recovery MEP systems.

With Headquarters in Beirut, over the years ICON has gained more and more experience also on the international market establishing operation in USA, France, Saudi Arabia, Qatar, Oman, UAE, Egypt, Africa, etc., with the aim not only to further increase the production capabilities of the Company in the field of multidisciplinary design, but also to play a key role as a catalyst among the major Gulf market players for the development of international design & build integrated activities.

A FAST-GROWING DESIGN FIRM

18 YEARS OF EXPERIENCE

85% OF INTL REVENUES

20 COUNTRIES

70% OF REVENUES FROM
CONSTRUCTION COMPANIES

The services supplied by ICON are based on a combination of know-How and resources providing answers to the variety of needs of Clients, both at the design and construction stage. The multi-disciplinary approach to every aspect of the project implementation is a guarantee of ICONs commitment to deliver value and innovation in all fields of engineering design and management of complex projects.

ICON has specialized software for the design and management of project documentation with related service and update contracts constantly activated.

EXCELLENCE

KNOW HOW

From engineers to architects and from international experts to local experts, ICON offers its clients a vast network of talent and passion. We look with continuity at the latest learning, updating and training opportunities. The outcome is a team of result-oriented experts, continuously investing in their skills aiming at maximizing the quality of the rendered services, while creating Value of Engineering solutions that assure the Clients' maximum success and return on investments.

VALUE ENGINEERING

COSTS SAVINGS

All of our professionals are graduated.

Among our staff we have young talents and experienced professionals, speaking 4 different languages and with outstanding skills and knowledge in all fields of engineering, as well as in new technologies. The 25% of ICON's personnel are travelling abroad on temporary missions.

FLEXIBILITY

OUR STAFF

CONSULTANCY SERVICES FOR DESIGN AND SUPERVISION OF MASTER PLANNING

MASTER PLANNING IN BRIEF

A city is much more than just a place for people to live and do business. Cities sit at the heart of a country's economic and cultural well-being, each with their own distinct personalities and needs.

A master plan is a dynamic long-term planning document that provides a conceptual layout to guide future growth and development.
Master planning is about making the connection between buildings, social settings, and their surrounding environments. A master plan includes analysis, recommendations, and proposals for a site's population, economy, housing, transportation, community facilities, and land use. It is based on public input, surveys, planning initiatives, existing development, physical characteristics, and social and economic conditions.

BRIEFING

Master planning can assume some or all of these roles:

- Develop a phasing and implementation schedule and identify priorities for action
- Act as a framework for regeneration and attract private sector investment.
- Conceptualize and shape the three-dimensional urban environment.
- Define public, semiprivate, and private spaces and public amenities.
- Determine the mix of uses and their physical relationship.
- Engage the local community and act as builder of consensus.
- Depending on the role of the master plan, it could have various sections and be developed in several ways. However, some common denominators for a good master plan are required.

Master Planning is in close relation with some major factors such as **Sustainability**, **Feasibility Study**, **Strategic Framework**, **Physical and Spatial Elements**.

Ecosystem degradation and environmental urban development create a new trend in the context of global ecological crisis. This trend involves the need to shift urban facilities to sustainable development, which in turn is linked to the necessity to modernize urban environment in the view of comfort, economy, and ecological compatibility.

The design of sustainable cities plays a natural catalytic role for change and improvement of the environment quality.

In this regard, key words are essential in this process such as sustainability, green architecture, energy efficiency, ecologization …

The feasibility study is an objective review of available options for development. It includes findings, analysis, and conclusions from the visioning and scoping exercises for a given site or inner-city area.

It indicates whether the chosen site is suitable for the intended function, taking into account the financial, social, and environmental aspects of each proposal.

Many comprehensive master plans start with a feasibility study in order to understand the site's geographic, environmental, and historic context. This process builds on the information collected and analysis developed during the scoping phase.

SUSTAINABILITY

FEASIBILITY STUDY

Any background reports that are deemed necessary (that is, hydrology, environment, cultural heritage, transport, and so on) should also be commissioned at this stage to inform the master planning process.

The strategic framework accompanies the master plan and sets the scene in establishing baseline information related to the physical, social, and economic context of the site and surroundings.

This background information should outline the site location and dimensions, topography, and existing uses. It should highlight the current zoning regulations and relevant / applicable planning policies, as well as any particularly important opportunities and constraints relevant to the site.

In summary, the strategic framework includes:

- Physical aspects of the regeneration project
- Vision and scope prepared during the scoping phase
- Various elements or functions that could act as catalysts for change
- The business case for development
- Strategic delivery issues and options
- Guidelines about how the strategic framework will inform and impact design

The strategic framework is critical for developing a sound spatial master plan in the next stage. It includes all of the studies and analysis that are needed before entering the design phase, especially urban design analysis, which provides options for various urban form scenarios.

Once the feasibility study and strategic framework have been undertaken, the

STRATEGIC FRAMEWORK

PHYSICAL & SPATIAL ELEMENTS OF A MASTER PLAN

physical master planning process continues.

Based on the first two phases, master plans establish and develop options for land use, which will later be translated into three-dimensional models to identify the resulting development needs, as well as costs and values.

In summary, the spatial master plan should include elements such as massing, height, densities, orientation, grids and blocks (without architectural or style details), transportation systems, open spaces, plots determination, and the related Infrastructure.

ICON MASTER PLANNING REFERENCES

SEA BRIDGE PROJECT – LEBANON, 2018

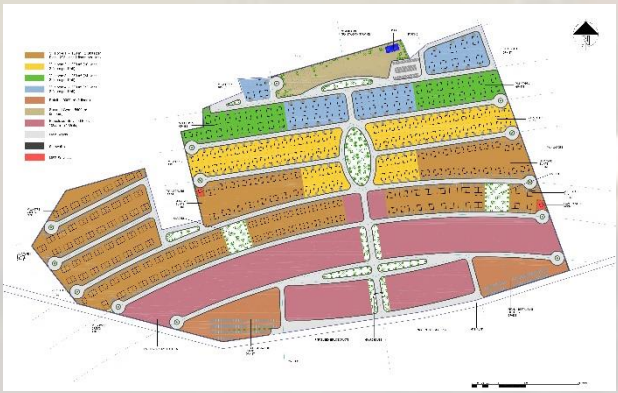
Client
Deputy Neemat Ephrem

Lead Consultant
International Consultant (ICON)

Description
The project consists of the planning of 17 km sea bridge from Tabarja to Beirut, with the design of three islands that include hotels, residential and offices buildings, retail, leisure facilities, service plots, and other international investments.

ICON Scope
Concept Design.

POLEMIDIA DEVELOPMENT – CYPRUS, POLEMIDIA, 2017



Lead Consultant
International Consultant (ICON)

Description
A luxurious residential complex in Polemidia, Cyprus with a total built-up area of 99,000 m2. The project comprises luxurious high-end finished villas, residential buildings, retail and parcelized serviced plots.

ICON Scope
Architectural Concept Design.

SLEMANI Residential & Business District – IRAQ, Kurdistan, 2014

Client
Ministry of municipality & Tourism of Kurdistan

Lead Consultant
International Consultant (ICON)

ICON Scope
Concept Design for a 47 km2 of land including industrial areas, office buildings, residential buildings, medical facilities, malls and retail, sport facilities and educational projects.

MAYEGUN MASTER PLAN - NIGERIA, 2014

Client
Mr. Mazen Bacha

ICON / ICON Scope
Master Planning for 500,000 m2 of residential buildings, offices, green areas and services facilities.

BOUTCHAY HILLS - RESIDENTIAL PROJECT – Lebanon, 2011

Client
ESLA - LEBANON

Lead Consultant
International Consultant (ICON)

Description
A new village located in the heart of Baabda, just 12 min. from the city of Beirut. Its location together with its urban architectural design provides its residents with tranquility, comfort and functionality, living within just two steps of the city.

ICON Scope
Concept Design.

ECUADOR ISLAND - UAE, 2008 – 2009

Client
ACI (UAE)

Lead Consultant
International Consultant (ICON)/T&M (UAE)

Description
In one of the World's most prestigious project, the Ecuador island consists of the “PACHA” Club as the core of its development along with residential developments at the site perimeter, including four-story serviced apartments, two-story independent villas, water bungalows and a resort type hotel of two stories with a variety of restaurants in different locations.

ICON Scope
Concept Design.

ROC DE TCHIKOBO - La Pointe Noire - CONGO, 2009

Client
Maison Sans Frontières (MSF)

Lead Consultant
International Consultant (ICON) / EK Concept (France)

ICON Scope
Master Planning and Animation for 1,000,000 m2 of reclaimed land to include hotels, offices buildings, retail and villas.

VINNITSA LOGISTIC CITY - UKRAINE, 2007 - 2008

Client
Government of Vinnitsa

Lead Consultant
International Consultant (ICON)

Description
The areas consisted of Residential, Commercial & mixed-use Buildings, as well as Mall & Municipality.

ICON Scope
Conceptual Master Planning & Infrastructure Studies

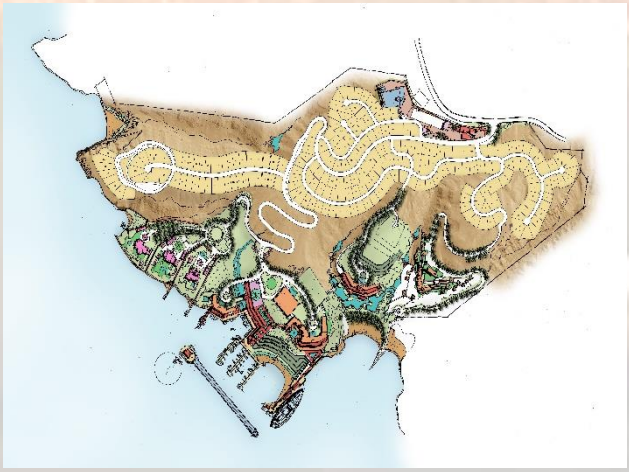
ABU DHABI AIRPORT – FREE TRADE ZONE, 2008

Client
Abu Dhabi Airport

Lead Consultant
ICON

ICON Scope
Complete master plan study, Infrastructure and buildings

KHASAB FAMILY RESORT – OMAN, 2006 - 2007



Client
Majan Gulf Properties (Oman)

Lead Consultant
International Consultant (ICON)

Description
Consisting of a residential area, leisure spaces, hotels, hospitality and recreational areas in the attractive tree-lines mountain area.

ICON Scope
Master plan and infrastructure studies.

TECHNOPARK - UKRAINE, 2006

Client
Government of Vinnitsa

Lead Consultant
International Consultant (ICON)

Description
The Project is a mixed use of technology with luxurious accommodation and offices

ICON Scope
Complete Master Planning & Market Research Analysis

CONSULTANCY SERVICES FOR DESIGN AND SUPERVISION OF AIRPORTS

INTRODUCTION

Made up of airport and other engineering services experts, ICON engineering teams share their passion, experience and know-how in airport designs with an impressive roster of Clients since the commencement of the corporate operation. It has put forward expertise and technical efficiency to optimize its client business performance and has expanded its operation to cover different countries worldwide.

ICON Airport portfolio ranges from large-scale planning to terminal design phases. From pre-feasibility studies to building design, from renovations and expansions to new buildings, ICON airport experts work with our clients to develop planning and design solutions that address the unique requirements of each project starting from concept design phase to tender phase in addition to site supervision and construction management services.

ICON CAPABILITIES IN AIRPORTS SECTOR

ICON excels in multilayer airports/airfield consultancy services ranging from Airfield capacity and Airfield Operation, Geometry, Grading, Marking, Pavement and other factors as listed below.

AIRPORT BUILDINGS DESIGN

1. Airside Planning requirements

- FAR Part 77 and TERPS Requirements
- Aircraft Maneuvering
- Air Traffic Control Tower
- Emergency Equipment Access Roads
- Airside Security
- Aircraft Apron/Gate Access Points

2. Terminal Apron Planning Criteria

- Aircraft Gates and Parking Positions
- Aircraft Parking Guidance Systems
- Apron Pavement Design
- Blast Fences
- Apron Service Roads
- Aircraft Servicing
- Ground Service Equipment
- Apron Lighting

3. Aircraft Gate Requirements

- Apron Circulation
- Jet Blast Effects and Mitigation

A. Terminal Planning and Design Considerations
B. Terminal Concept Development
C. Terminal Facility Requirements

- Ticket/Check-in Lobby
- Passenger Screening
- Hold rooms
- Concessions
- Passenger Amenities
- Domestic Baggage Claim
- International Arrivals Facilities-Federal Inspection Services
- Public Spaces
- Circulation

AIRSIDE TERMINAL FACILITIES

TERMINAL BUILDING FACILITIES

- Airline Areas
- Baggage Handling
- Checked Baggage Screening
- Support Areas
- Gross Terminal Area Planning Factors

D. Other facility considerations:
    - Baggage Handling Systems
    - Information Technology Systems
    - Buildings Systems

LANDSIDE TERMINAL FACILITIES

a) Transportation/Traffic Planning
b) Intermodal Connections
c) Airport Roadway Systems
- Entrance/Exit Roadways (Airport Access Road)
- Terminal Approach Roads
- Terminal Curb front
- Recirculation Roads
- Service Roads
- General Guidelines for Airport Roadways

d) Terminal Curb Requirements
e) Parking Facility Requirements
f) Roadway Circulation and Way-finding
g) Landside Security

AIRFIELD DESIGN SERVICES

ICON can translate passenger forecast and aircraft movements maneuvering into an Airfield Master Plan.

Aircraft type and runway category are a major key design element; ICON can design airfield to suit code F dimensions.

Based on existing topographical survey and on the Airport Master Plan configuration, ICON can produce a Master Grading Plan that replies to ICAO / FAA / UFC requirements, specifically:

- PANS / OPS DOC 8168, I & II
- Obstacle fee zone and OLS limitation study
- Complete Airfield categories I, II, IIIA, IIIB and IIIC
- Runways, Taxiways and Aprons
- Fuel Spillage slopes considerations.
- Tie-in point and Buildings/Aircraft Hangars entry level considerations.

AIRFIELD CAPACITY AND OPERATION

GRADING

- DTM (Digital Terrain Models) output that also generates Cut & Fill quantities.

GEOMETRY

Airfield geometry design ICON ends on Aircraft code, airport category as well as on approach category. Geometry Design covers the following:

- Runway length, clearway, stop way, runway safety area, width take off/ landing airspace definition and limitation, and protection zone.
- Taxiways width lead-in / lead-out dimensions, fillets and the like.
- Apron dimensions and the like.
- Distances and separations between Runway and Taxiways, as well as distances between Runway threshold and rapid exit Taxiways.
- All transversal and longitudinal slopes.
- All shoulders edge and tie-in points' geometry.

MARKING

Including mandatory and information marking layout in accordance to ICAO/FAA requirements. Marking scope comprises:

- Runway clean way, stop way, threshold, touch down, etc.
- Runway / taxiways center lines, edges, intermediate holding positions, lead in / lead out, stop bars, ILS critical and sensitive limits and others.
- Apron MARS configuration marking, aircraft position delineation, lead in / lead out marking.
- Airfield nomenclature marking in accordance with Runway / Taxiways / Aprons naming and in accordance with guidance signs design.

PAVEMENT

Airfield pavement marking based on FAA standards mostly, since these are more rigorous that ICAO ones. The design elements are the frequency of operation, aircraft load, aircraft weight, wheel base maneuvering and the like. ICON can simulate the above via a pavement design software and compute all data, then translate the results into drawings and cross sections. In addition to above, ICON team can certainly produce cross sections of pavement at different areas showing compaction ratios, composite formation and thicknesses.

Last but not least, ICON always coordinate with Airport technical team to present and obtain their understanding on the pavement maintenance procedures. These lead to determine flexible pavement (asphalt) and rigid pavement (concrete) in different areas, especially at apron areas, lead in / lead out, rapid exit, runway holding position, touchdown areas and others.

We design based on FAARFIELD for civil and PCASE for military airport.

AIRFIELD ELECTRICAL & MECHANICAL DESIGN SERVICES

1. Airfield lighting design
2. Jet Blast Fence simulation and design
3. Maneuverability study

- 400 Hz converters networks, including 200V decentralized system, 690V centralized systems with explosion proof step down transformers
- Visual Docking Guidance System
- Apron CCTV coverage system
- Preconditioned Air system: decentralized and centralized, including glycol boosting station
- Compressed air, potable water supply, blue water collection and networks and plants
- Emergency Fuel shut-off system
- Pits' system for all services stated above
- Controls and interlocks of all services stated above with the telescopic passenger pedestrian bridge system (TPPB)
- Surveillance Radars
- Ground Movement Radar
- ILS system (Instrumentation landing)
- Metrological systems (Runway Visual, Met Radar, Weather stations)
- VHF emitter and transmitter stations
- Control Tower
- Complete control tower design, including surveillance control room, visual control room, equipment room, workshops and related integrated systems.
- **ADS-B**
- **DIGITAL REMOTE TOWER**
- Common Utility Terminal Equipment

APRON GROUND SUPPORT SERVICES

NON-VISUAL NAVIGATIONAL AIDS

TERMINAL AND CONCOURSE EQUIPMENT

- UFIS Universal Flight Information system (including FIDS and BIDS / flight and baggage information display systems)
- Disembarking/ Embarking Passenger Routing system.
- Integration with AGMCS (advanced ground movement control system)

FUEL FARM AND FUEL NETWORK

Complete Fuel Farm and Fuel Network including tanks, pipes and P&ID instrumentation:

- SCADA system
- Leak detection system (differential type)
- Emergency Fuel Shut off network
- Fiber optic networks for remote valves and motorized equipment control and monitoring.

ICON AIRPORTS DESIGN REFERENCES

Juba Military Airbase, South Sudan, 2019

Client
Spectrum Engineering Consultant

Lead Consultant
International Consultant (ICON)

Description
Juba Airbase is defined as land used Airport to operate, maintain and host required facilities for the proper functioning of the facility based on the level of operation and levels of services
It includes facilities to control 1 runway of 3.1 km and 2 helipads with a total master plan area of 5.5 km2, complete with brigade, battalions, supporting facilities and hangars for maintenance.

ICON Scope
Complete Design of master planning, infrastructure, buildings architecture and engineering services as well as tender documents preparation.

HAB (Al Hasa Aviation Brigade), KSA, 2017-2018

Client
Saudi Arabia National Airport Guard

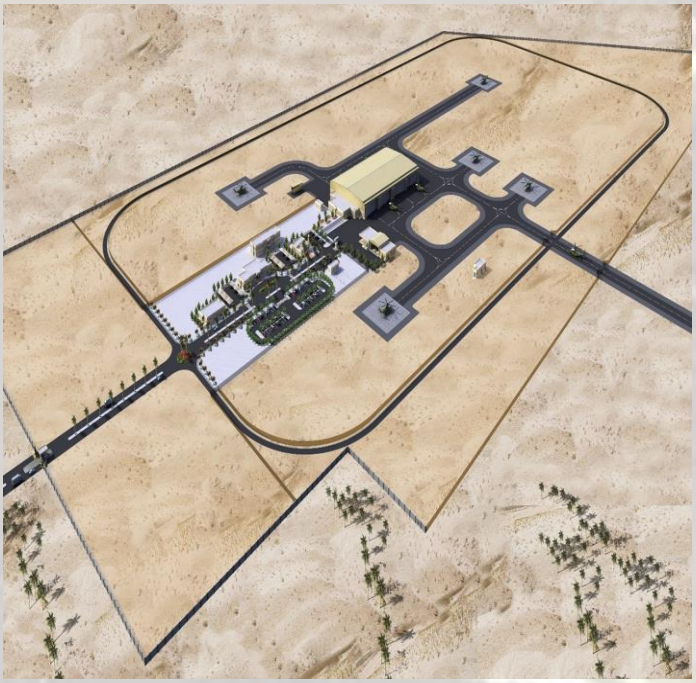
Main Consultant
Zuhair Fayez Partnership

Sub-Consultant
International Consultant (ICON)

Description
Military Airbase in Al-Hasa which consists of two main areas: Landside and Airside surrounded by patrol and security roads. The Landside is divided into Aviation brigade headquarters, two Aviation Battalions, one Support Aviation Battalion, while the Airside comprises of six Rotary Wings Runways and Apron Facilities.

ICON Scope
Complete design of all exterior and interior works involving but not limited to civil, architectural, mechanical, electrical, structural, security and fire protection disciplines for all facilities. The design includes also the identification of all infrastructure and all utility hook-ups required to make the new Al-Hasa Air Base fully functional.

Dammam Aviation Squad (DAS), KSA, 2017 - 2018



Client
Saudi Arabia National Airport Guard

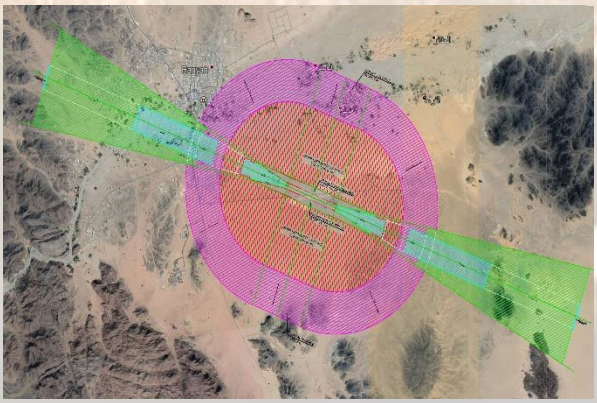
Main Consultant
Zuhair Fayez Partnership

Sub-Consultant
International Consultant (ICON)

Description
Military Airbase in Dammam which consists of two main areas: Landside and Airside surrounded by patrol and security roads. The Landside comprises of Headquarter, Maintenance hangar, Fire Station and utilities buildings, while the Airside comprises of four Rotary Wings Helipads and Apron Facilities.

ICON Scope
Complete design of all exterior and interior works involving but not limited to, civil, architectural, mechanical, electrical, structural, security and fire protection disciplines for all facilities. The design includes also the identification of all infrastructure and all utility hook-ups required to make the new Dammam Air Base fully functional.

Ranyah Regional Airport, KSA, 2018



Sub-Consultant
International Consultant (ICON)

Description
Regional Airport in west KSA serving internal operations with 4 km Runways, Taxiways and Aprons complete with control tower and supporting facilities.

ICON Scope
Complete Design of grading, storm water, pavement, airfield lighting, non- visual navigational aids, control tower, infrastructure, patrol road and supporting facilities

SAUDI ARABIAN NATIONAL GUARD AIRPORT - SANG-II – KSA, 2011 - 2013

Client
Saudi Arabia National Airport Guard

EPC
Nesma & Partners

Engineering
International Consultant (ICON)

Description
A military airbase consisting of 80 buildings such as brigade headquarters, support buildings & facilities, runways, taxiways, aprons, hardstands/pads, helipad and other aviation facilities.

ICON Scope
Re-design, shop drawings and site engineering assistance for all civil (including pavement, grading and earthworks),structural, architectural, electrical, mechanical and infrastructure networks (including storm, sewer, fire hydrant, lighting, electrical and communication/IT), airfield lighting, navigational aids and all related systems.

KING ABDULAZIZ INTERNATIONAL AIRPORT (KAIA), KSA, 2012 - 2018

Client
Saudi Government / General Authority of Civil aviation

Engineering Sub-Consultant
International Consultant (ICON)

Main Consultant/ Design Reviewer/Supervision Consultant
Dar Al-Handasah (Shair & Co.)

Contractor
Al Mabani/ Avicorp Middle East

ICON Scope
Design, shop drawings, engineering procurement and construction management for the following apron services:

- Potable water treatment plants and potable water piping from Tech. rooms to PCA pits.
- Blue water treatment plants and blue water piping from Tech. rooms to vacuum pits.
- Vacuum receiver plants and piping from blue water pits to plant rooms to sewer drainage lines.
- PCA air handling units installed in node building.
- PCA air ducting from node buildings to PCA pits.
- Glycol water piping from node buildings to Tech. room
- Glycol chillers systems in Tech. rooms
- PCA/Potable water pits
- Vacuum/Blue water pits
- 400 Hz pits / GPU 400 Hz units installed in node buildings / GPU coilers installed under the PBB

BAHRAIN INTERNATIONAL AIRPORT, BAHRAIN, 2010 - 2011

Main Consultant
HILL INTERNATIONAL

ICON Scope
Design Review of airfield configuration including Obstacle Limitation Surfaces, runways, taxiways & aprons, non-visual navigational aids systems, infrastructure, fuel, marking, geometry, Profile and Sections.

FLIGHT SIMULATOR FACILITY, LEBANON, 2010 - 2012

Client
US Army Corps of Engineers

Lead Consultant
International Consultant (ICON)

Contractor
Construction Services Company (Lebanon)

Description
The project is located in Rayak air base, the facility houses two Helicopters simulators.

ICON Scope
Design and site supervision of all architectural and engineering trades.

ABU DHABI INTERNATIONAL AIRPORT FREE TRADE ZONE, UAE, 2008

Client
ICONARTMENT OF CIVIL AVIATION (DCA), U.A.E

Main Consultant
PMDC (Project Management and Development Consultants)

Description
The Abu Dhabi International Airport project includes the complete master planning and urban planning, as well as Phase 1 design of a 4 Km2 Free Trade Zone for light industries. The Project consists of light industrial units/warehouses, cargo facilities, couriers' facilities, high end offices and amenities.

ICON Scope
Design and site supervision of all architectural and engineering trades.

NEW DOHA INTERNATIONAL AIRPORT (NDIA) - EMIRI TERMINAL AND CONTROL TOWER, QATAR, 2008 - 2009

Client
New Doha International Airport (NDIA)

Main Consultant
Overseas Betchel International (OBI)

MEP Consultant
International Consultant (ICON)

ICON Scope
MEP Design and Engineers Secondment.

Ali Airbase, IRAQ, 2005 - 2006

Client
US Corps of Engineers

Main Consultant
International Consultant (ICON)

Contractor
MELEC

Description
Design built military airbase in Iraq consisting of Airfields, Runways, Taxis and Aprons.

ICON Scope
Design of Airfield Lighting, Pavement and Storm Water Drainage.

CONSULTANCY SERVICES FOR DESIGN AND SUPERVISION OF COMMERCIAL SECTOR

ICON COMMERCIAL DESIGN REFERENCES

VOX CINEMAS – DOHA OASIS, QATAR, 2016 - 2017

Client
VOX Cinemas

Contractor
IMAR Qatar

MEP Consultant
International Consultant (ICON)

Description
A unique concept of movie experience within Doha Oasis Complex including 19 movie theaters (comprising VIP Max, Laser Max and 4DX), a bowling hall, gourmet restaurants, party rooms, kitchens and high end audiovisual environment all to the requirements of VOX Cinemas.

ICON Scope
Detailed MEP Design and Tender Documents

ZAATAR W ZEIT, DEEK DUKE, BAR TARTINE & ROADSTER RESTAURANTS - LEBANON, 2010 – 2017

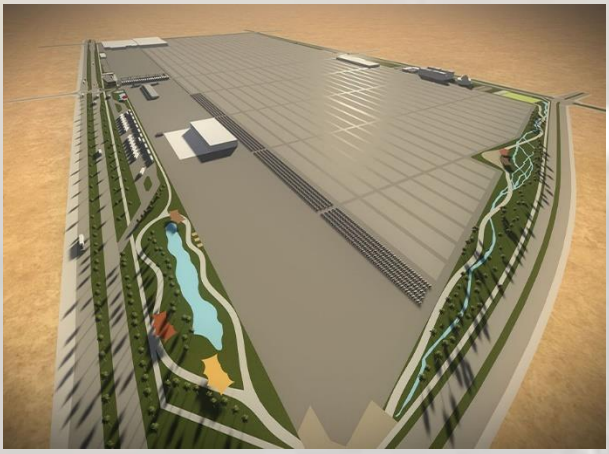
Client
Breakfast & Co.

MEP Consultant
International Consultant (ICON)

Description
More than 30 outlets of Lebanese and regional famous ZWZ, Roadster Dinner, Bar Tartine, Deek Duke and central kitchens & Delivery Centers.

ICON Scope
Full MEP design and site supervision.

TOYOTA ALJ VEHICLE PROCESSING CENTER AND LOGISTIC HUB in KAEC - KSA, 2015 – 2016



Client
ALJ TOYOTA (KSA)

Lead Consultant
IBI group (MI - USA)

Engineering Sub-Consultant
International Consultant (ICON)

Description
Located in KAEC/KSA, the project consists of developing a major vehicle processing center and automotive logistics hub on 150 hectares of raw land.

ICON Scope
Architectural & Engineering design assistance and review, Full Electrical design, Quantity Surveying and Cost Estimation

BEIRUT BUSINESS CENTER – LEBANON, 2013 – 2017

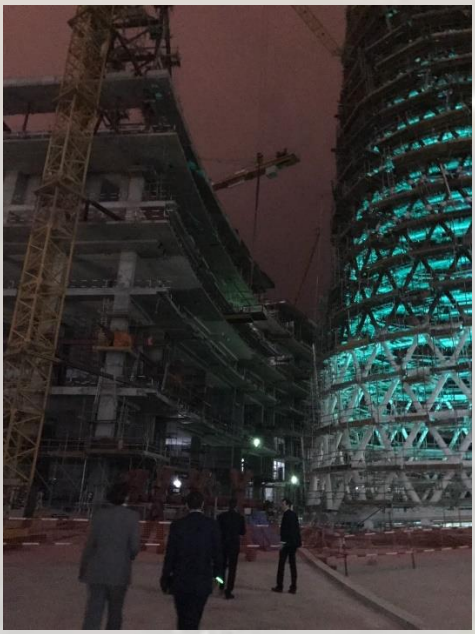
Client
Real Estate Developers (RED)

Lead Consultant
International Consultant (ICON) / DEP

Description
Located on Sin El-Fil Boulevard, with an overall built-up area of 40,000 m², this project acts as a multifunctional quarter including retail, offices, warehouses, and parking spaces all together.

ICON Scope
Full Architecture & Engineering design (incl. authorities and permit follow-up).

DOHA OASIS MIXED USE COMPLEX – QATAR, 2011 – 2017



Client
Halul Real Estate Investment Co. (HREIC)

Main Consultant
Projacs (Qatar)

Lead Consultant
Nabil Gholam Architecture & Planning (Lebanon)

MEP Consultant
International Consultant (ICON)

Supervision Consultant
ARUP(UK) & NEB (UAE)

Description
Doha Oasis is a mixed-use development project with a total built up area of approximately 440,000m2 and is currently under construction in the Mushaireb district in the heart of Doha, Qatar. The project is composed of 5 main components:

- An elliptically shaped high end residential buildings compound
- A four-story commercial/retail podium
- An indoor theme park
- A standalone hotel tower operated by La Cigale
- Four basement levels of parking and support facilities.

ICON Scope
Full MEP design (incl. KAHRAMAA, ASHGHAL & QCD approvals).

CAPITAL BANK - GHANA, 2016

Client
ARG1 Africa

Lead Consultant
International Consultant (ICON) / ICON

Description
Located in Accra, Ghana, the project is a commercial bank of 250 m2

ICON Scope
Complete Architectural and Engineering Design

KOALA COMMERCIAL CENTER – GHANA, 2014 – 2015

Client
KOALA Ghana

Lead Consultant
International Consultant (ICON) / ICON

Description
Located in Accra, the Project acts as a multifunctional commercial center that includes a supermarket, retail spaces and parking structures with an overall built-up area of 15,000 m².

ICON Scope
Complete Design

SHOPPING MALL, JODP ZONE N5 – MAKKAH, KSA, 2012 – 2014

Client
Jabal Omar Development Company

Lead Consultant
International Consultant (ICON)

PMC
Hill Int. (KSA)

Description
Two-story luxurious shopping mall located in Jabal Omar Development Project zone N5 directly accessible from Radisson Blu hotel.

ICON Scope
Architectural, Interior Architecture & Engineering Design

KASLIK COMMERCIAL COMPLEX – KASLIK, LEBANON, 2013 – 2014

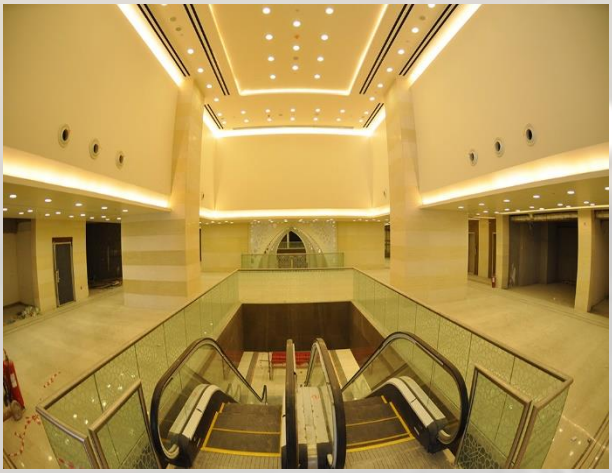
Client
Kaslik 1766 SAL

Lead Consultant
International Consultant (ICON) / ICON

Description
Located in Kaslik, with an overall built-up area of 30,000 m², this project acts as a multifunctional quarter providing retail, offices, and parking spaces all together.

ICON Scope
Concept Design

SHOPPING MALL, JODP ZONE N3 – MAKKAH, KSA, 2011 – 2013



Client
Jabal Omar Development Company

Lead Consultant
International Consultant (ICON)

PMC
Hill Int. (KSA)

Description
Two-story luxurious shopping mall located in Jabal Omar Development Project zone N3, few hundred meters from the Holy Haram, directly accessible from Hilton Convention hotel.

ICON Scope
Architectural, Interior Architecture, Engineering design and shop drawings services in addition to site engineering assistance.

CENTRO MALL – JNAH, LEBANON, 2013

Client
Centro Mall SAL

Lead Consultant
International Consultant (ICON) / ICON

Description
The project is located in Jnah, Beirut, with a total area of 90,000 m2 including retail areas, supermarket, shopping mall and other commercial facilities

ICON Scope
Architecture and ID Concept Design

METN MALL - LEBANON, 2012

Client
Dr. Joseph Semaan

Lead Consultant
International Consultant (ICON) / ICON

Description
Located in Kornet shehwan area, this mall of 70,000 m2 of internal spaces includes retail areas, cinemas, shopping mall and other commercial facilities.

ICON Scope
Elevations Concept Design.

NATIONAL COMMERCIAL BANK – Lebanon, 2011

Client
National Commercial Bank (NCB)

Lead Consultant
International Consultant (ICON) / ICON

Description
Located in Beirut, downtown – Solidere district, this bank of 200 m2 area is a high-end image for VIP clients

ICON Scope
Full ID and MEP Design, as well as supervision activity

LA POINTE NOIRE, HARBOR ADMINISTRATION - CONGO, 2009

Client
Maison Sans Frontières (MSF)

Lead Consultant
EK Concept (France) and
International Consultant (ICON)

ICON Scope
Full Architecture & Engineering design.

TOYOTA NATIONAL DISTRIBUTION CENTER - ALGERIA, 2007 – 2009

Client
GESTIM (Lebanon)

Lead Consultant
A-Consult (Lebanon)

MEP Consultant
International Consultant (ICON)

Description
The property houses a vehicles' area of 386,000 m² for more than 12,500 cars, a service area, a central parts department, an after-market parts department, an academy and training center and the supporting administrative facilities with a total of 48,420 m² built-up area.

ICON Scope
Full MEP Design

CONSULTANCY SERVICES FOR DESIGN AND SUPERVISION OF EDUCATIONAL SECTOR

ICON EDUCATIONAL DESIGN REFERENCES

EKO ATLANTIC SCHOOL – NIGERIA, 2014 - 2015

Client
Mr. Mazen Bacha

Lead Consultant
ICON / ICON

Description

With a total built up area of 7,362,00 m², the proposed plot for this primary school is 27,080 m², containing the school building which is composed of a ground, first, second and a roof floor, in addition to a common space, an auditorium and an indoor sports area.

ICON Scope
Architectural Concept Design.

UNIVERSITY OF DAMMAM, BOYS CAMPUS - KSA, 2015

Client
MAS Consultants-KSA

Lead Consultant
ICON / ICON

Description
The concept reflects a transformation from an exterior into an interior space.
Close to the girls' campus, the university is located at Al Dammam, KSA, and composed of four faculties shown as one big rectangular volume and two squares connected by a glass construction and a central glass dome, to create a light interior matching with the general modern character of the university.

ICON Scope
Concept Design

UNIVERSITY OF DAMMAM, FEMALE CAMPUS - KSA, 2011 – 2013

Client
University of Dammam (UOD)

Lead Consultant
M. Al-Sabeg Consulting Engineers & Architects (KSA) /
International Consultant (ICON)

Description
An extension of the existing male campus extending over 1,000,000 m² of reclaimed land & consisting of a medical faculty, a business administration faculty, a design faculty, building administration, residential and recreational units for the staff and students and all supporting utilities.

ICON Scope
Master planning and design from concept up to design development phase for all architectural and engineering trades.

SOCIAL DEVELOPMENT CENTER in Qatar Foundation Education City - QATAR, 2008 – 2011

Client
Qatar Foundation

Lead Consultant
Nabil Gholam Architecture & Planning (Lebanon)

MEP Consultant
International Consultant (ICON)

Description
A four-story educational center with 21,000 m² total built-up area for persons with disabilities. Building consists of offices, training facilities which also include a Beauty Academy, several departments including Projects and Investment, Training and Rehabilitation, Finance and Administration, Social Services and Studies in addition to Marketing and Public Relations offices.

ICON Scope
Full MEP design (incl. KAHRAMAA & QCD approvals).

Central Library in Princess Nora Bint Abdulrahman University (PNU) - KSA, 2009 – 2010

Client
Saudi Government, Ministry of Finance

Lead Consultant
Dar Al-Handasah (Shair & Co.) / Oger Int'l (France)

Contractor
SAUDI OGER Ltd. (KSA)

Life Safety & Shop drawings
International Consultant (ICON)

Description
A gold LEED certification building spread over 8 stories, with a total built-up area of 40,500 m², consisting of an undergraduate library, research and post graduate section, closed stacks and administration, located in the central court of the female administration building of Princess Nora Bint Abdulrahman University (PNU), an educational facility dedicated for female students in one of the eastern suburbs of Riyadh spread over an 8,000,000 m² area with 3,000,000 m² total built-up area accommodating 40,000 students.

ICON Scope
Detailed design along with the Consultant approval of active life safety and fire protection systems i.e. emergency & exit lighting, fire alarm, firefighting, smoke management systems with CFD simulations and detailed Cause & Effect (C&E)

CONSULTANCY SERVICES FOR DESIGN AND SUPERVISION OF HEALTHCARE SECTOR

ICON CAPABILITIES IN HEALTHCARE SECTOR

ICON's expert architects and engineers have long lead practice in hospital design projects including architectural concept, medical waste treatment, air-conditioning, building management system, fire and life safety, plumbing, medical gases, water treatment, security, ICT, nurse call and low current among others.

DESIGN PHIILOSOPHY

The **Design Philosophy** is to provide for clinical functionality space for the workforce requirements and a flexible, robust and friendly environment for patients, staff and visitors alike. As such, our approach to the design strategy is to provide configurations that are sustainable and which:

- Provides the stated clinical functional content;
- Is sensitive to the needs of VIP patients and visitors;
- Will be cost efficient to build and run;
- Complies with National and International guidelines and standards.

AIMS & OBJECTIVES

Specific Aims and Objectives:

- Maintaining a Professional, Therapeutic, Aesthetical and Functional Environment
- Improve Quality of Life
- Improve Quality of Productivity
- Protect Health and Safety
- Clear hospital identity with clear main entrance, corridors and waiting
- Areas that provide simple and clear circulation
- Clear separation of patients and visitors' areas

INTERIOR DESIGN

Interior Design shall start at the very early stage of the project in coordination with Structure, Architecture, Mechanical, Electrical and infrastructure:

- Location of Decorative or Functional Equipment/Fixture to be considered in the load calculations, etc.
- Reflection of the Architectural Space, Interface between External and Internal, etc.
- Coordination for the AC Grills location, Height of RCP, etc.
- Coordination for Electrical Outlets location, height, etc.
- Special Drainage and connection for the IRM, etc.
- Walls and Artwork should provide relaxing atmosphere with paint color and art that offers stress reduction and a tranquil view
- Ceiling should provide a positive distraction and have indirect lighting where patients are recovering

- Floor should provide Comfort, Noise Reduction and Reduce Injuries
- Lighting: the lamp color temperature is important because it can change the color of floor and wall materials by dulling or enhancing their color
- Furniture and Fabrics: It should be Moisture Barrier, Cleanable, Antimicrobial, Abrasion Resistance and Color Fastness

Way-finding is for Patients, Families and Staff; Views to the Outside to create sense of direction; Landmarks to assist in giving directions. Way-finding is an essential element of Hospitals Components to provide:

WAY-FINDING

- Orientation “Where am I?”
- Navigation “How do I get there?”
- Instruction “Life Safety”

Vertical Transportation

VERTICAL TRANSPORTATION

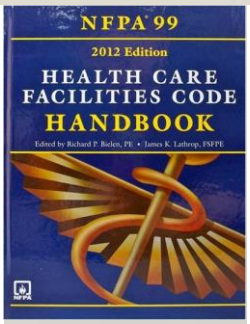
- Bed lifts for Patients:
  - Spacious
  - Pastel Colors
  - Vinyl Coated steel wall Panels or Stainless Steel
  - No Direct Light. Diffused Lateral Light
  - PVC Flooring with Vinyl Bumper Rail for practicality and Hygiene
- Public Lifts:
  - Spacious
  - Clear Indicators with Voice
  - Stainless Steel Finish for Hygiene
- Service Lift:
  - Usually of no concern for ID unless if its Door Falls Under a Public or Patient Area
  - Minimum Compliance with EN81 Safety Code

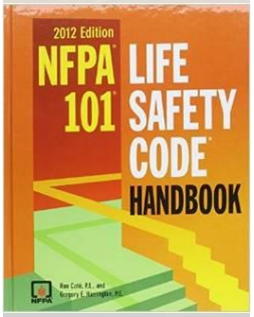
Finishing Materials

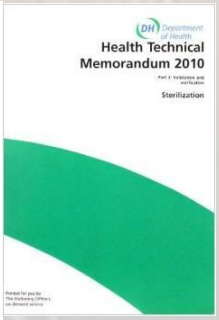
FINISHING MATERIALS

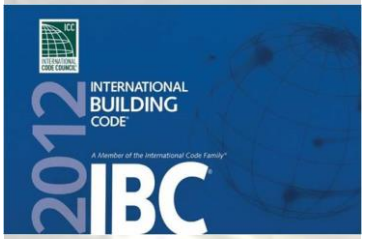
- According to NFPA 99A, all exits (Mainly Stairs) shall have walls & Ceiling Finishing as Class A
- Floor Finishing as Class I or II
- According to NFPA 99A, all exit access corridors shall have walls & Ceiling Finishing as Class A or B on Lower part
- Floor Finishing as Class I or II
- Draperies, Curtains, and Mattresses shall have flame resistant

CODES AND STANDARDS



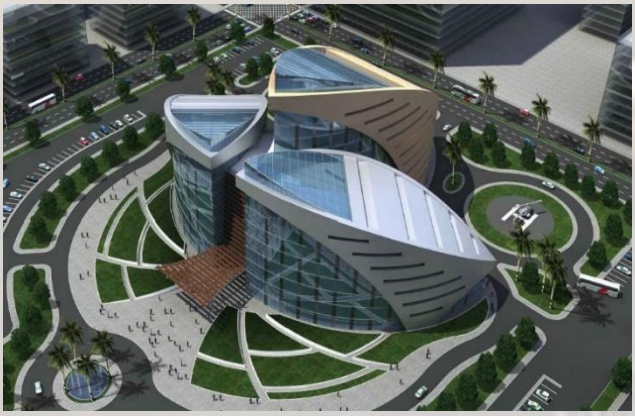






ICON HOSPITALS DESIGN REFERENCES

Al-Dhabi Medical Park, 400 Beds, Abu-Dhabi-UAE, 2016



Client
Ministry of Health

Description
Al-Dhabi medical park is a private hospital of approximately 40,000 sqm. The hospital is eleven levels, with 3
entrances for public, emergency and VIP. The project was a conceptual proposal.

ICON Scope
Concept Design

KING KHALED UNIVERSITY HOSPITAL WARDS RENOVATION, Riyadh - KSA, 2015 - 2016

Client
Empower Contracting

Description
The project consists of the renovation of the wards of an existing hospital in Riyadh. The involved wards include: Renal Dialysis, Labor, Medicine female and IVF, Adolescence Medicine, Gynecology, pediatric, blood, bank, NICU, Laboratories, day care, offices and clinics and other departments.

ICON Scope
Architectural and MEP design of the renovated wards while considering the existing services by integrating to them and complying with the ministry of health and hospital design requirements

Makkah Holy Mosque Hospital (MHMH), 300 Beds, KSA, 2015

Client
Ministry of health

Lead Consultant / PMC / Design Reviewer/Supervision Consultant
Dar Al-Handasah (Shair & Co.)

Engineering Sub-Consultant
International Consultant (ICON

Contractor
Empower Contracting / SBG

Description
The Makkah Holy Mosque Hospital is a full-service hospital located in Makkah approximately one kilometer north of the Grand Mosque (Masjid al-Haram). Makkah Holy Mosque Hospital consists of a podium of 9 floors comprising outpatient services, hospital support and parking. The Project consists as well of an inpatient bed tower of 5 floors rising above the podium and a residential tower of 13 floors rising above the bed tower with a Helipad on top of tower.

ICON Scope
Design review for all MEP systems with regard to the concept as well as full electrical power calculations on ETAP software, acoustic calculations and a comprehensive MEP design review report, in addition to the shop drawings development of the MEP risers and all technical spaces.

IBN SINA University Hospital, 600 beds, IRAQ, 2014 - 2015

Client
Ministry of Higher Education and Scientific Research

MEP Consultant
International Consultant (ICON)

Design Reviewer/Supervision Consultant
Hill Int. (Bagdad)

Contractor
Al-Rawaby Co. & Abraj Al-Yaqoot Co. consortium (Iraq)

Description
Located in Bagdad, with a total built-up area of 88,000 m² housing 600 beds and the following facilities: Emergency Treatment, Outpatients Treatment, Physiotherapy, Day Surgery, Imaging, Dialysis, Intensive care, CCU, PICU, Maternity, Cardiac Imaging, Endoscopy, Surgery, Burns Treatment, Pediatric Care, Gynecology, Obstetric, Oncology and all supporting services.

ICON Scope
Structural, MEP design and construction documentation phases in addition to the construction follow-up, shop drawings development and engineering secondment.

IRAQI GERMAN HOSPITAL, 250 BEDS, BAGHDAD, IRAQ, 2009

Client
Mebex Consultants

Description
Iraqi German Hospital in Baghdad is a private hospital of approximately 250 Beds, depending on whether all bedrooms are single or double. The medical gases are designed for double bed accommodation. The hospital is eleven levels, with a podium of 6,000sq.mt for Basement, G.F., 1st and 2nd Floor, with the remaining inpatient
floors tower having 2,250sq.mt per floor, the top floor is a V.I.P. Floor.
The ground floor contains a large diagnostic department, and an adjacent oncology center with two linear accelerators, brachytherapy and a cyclotron. There are 10 operating theaters (5 General and 1 Gynecology/
Obstetrics) with 3-day surgery heaters and an emergency theater in the accident department. Adjacent to the
operating theaters, there is an I.C.U. department, Endoscopy and Cardiac Catheterization center. The C.C.U. is on the third floor in the tower.

ICON Scope
MEP re-design for all MEP systems. The scope also includes construction works design support in terms of providing technical advice and details and follow up.

BABA HASSEN - Pediatric Hospital, 250 Beds, ALGERIA, 2010 – 2011

Client
Health & Population Administration, Algeria

Lead Consultant
International Consultant (ICON)

Description
Located in Baba Hassen, Draria in Algeria housing 250 beds, 3 operating theaters, an undergraduate Medical Education, ICUs, emergency, neonatology, oncology, radiology, cardiology and other service medical sections and ancillaries.

ICON Scope
Concept Design.

GHANA HOSPITAL, 100 BEDS, GHANA, 2015

Client
ARG1 Africa

ICON Scope
Concept Design

CAIRO MEDICAL CITY, 150 BEDS, EGYPT, 2006

Client
TAAMEER, EGYPT

ICON Scope
Master Planning & Concept Design

CONSULTANCY SERVICES FOR DESIGN AND SUPERVISION OF HOSPITALITY PROJECTS

ICON CAPABILITIES IN HOSPITALITY SECTOR

ICON design experience in the hospitality sector involved 11 international operators and more than 19 branded hotels namely JW Marriott, Marriott, Marriott Courtyard, Hilton Convention, Radisson Blu, Hyatt Place, Hyatt House, Crowne Plaza, Holiday Inn, Westin, Sheraton, Four Points by Sheraton, Sofitel, Best Western and Millennium all located in JODP – Makkah, Ritz-Carlton KAICCJ (Jeddah), La Cigale (Doha Oasis), Gardenia Rotana (Homs- Syria), Al-Bustan hotel and furnished apartments (Sohar – Oman) and Le Meridien – Abu Dhabi (restaurant & kitchen renovation).

ICON design services within the hospitality sector covers the below out of many others:

- Translating the space program into workable BOH and FOH areas planning, coordinated with all involved stakeholders namely hotel operators.
- Façades design and coordination, building maintenance unit and façades lighting.
- Site roads and parking layouts with circulation, entry and exit.
- Structural design and modelling.
- Vertical transportation traffic analysis.
- MEP systems tailored to the Operator guidelines and fully coordinated with Interior Designer and other specialists.
- Life Safety studies including passive and active systems.
- State-of-the-art ICT, Audio-Visual and Security systems.
- Building Management System, Guestrooms Automation System and Hotel Integration System.
- Acoustic studies.
- Signage and way-finding.

ICON HOSPITALITY DESIGN REFERENCES

JW MARRIOTT HOTEL - MAKKAH, KSA, 2013-2015

Client
Jabal Omar Development Company

Lead Consultant
International Consultant (ICON)

Description
Located in Jabal Omar Development Project zone N6C, with a built-up area of 75,000 m², consisting of two towers housing 573 guestrooms in total, over a multifunctional podium including 3 restaurants, the hotel related FOH and BOH areas in addition to independent private apartments. ICON scope: Full Architecture & Engineering design.

ICON Scope
Full Architecture & Engineering design

MARRIOTT COURTYARD HOTEL – MAKKAH, KSA, 2013 - 2015

Client
Jabal Omar Development Company

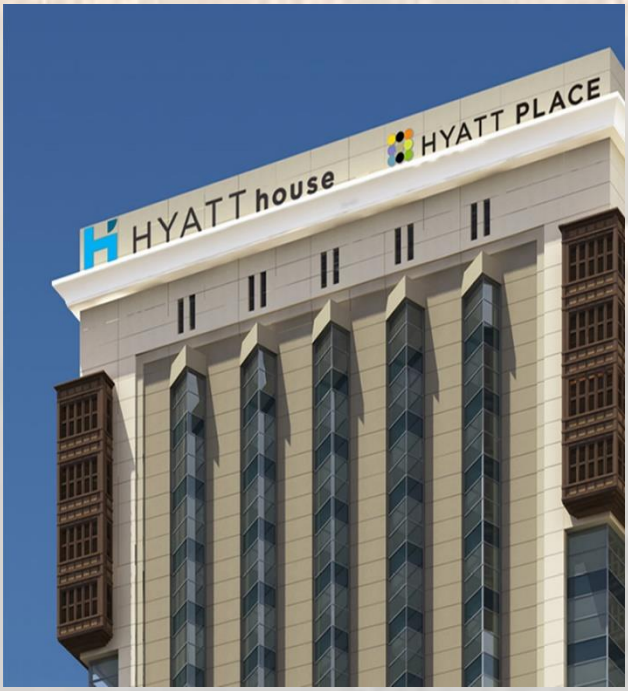
Lead Consultant
International Consultant (ICON)

PMC
Hill Int. (KSA)

Description
Located in Jabal Omar Development Project zone N6B, with a built-up area of 37,300 m², consisting of one tower housing 396 guestrooms, over a multifunctional podium including 3 restaurants and the hotel related FOH and BOH areas.

ICON Scope
Full Architecture & Engineering design

HYATT PLACE & HYATT HOUSE HOTELS – MAKKAH, KSA, 2013 - 2015



Client
Jabal Omar Development Company

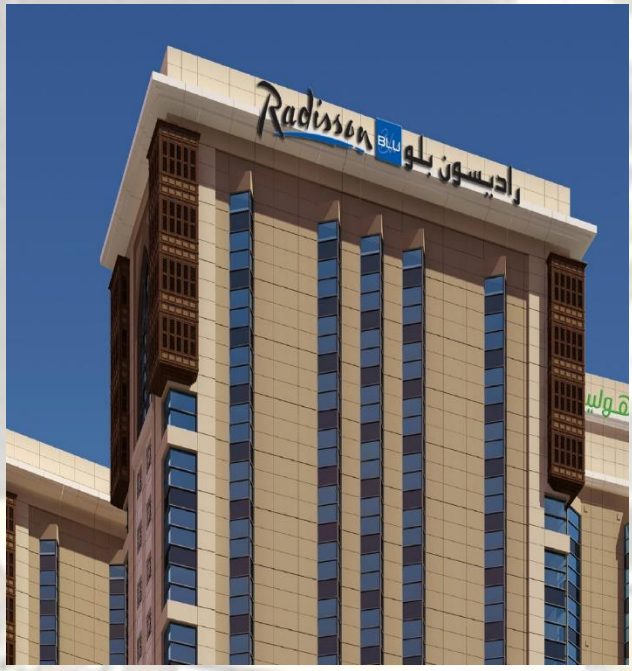
Lead Consultant
International Consultant (ICON)

PMC
Hill Int. (KSA)

Description
Located in Jabal Omar Development Project zone N6B, with a built-up area of 33,250 m², consisting of one tower and two hotels housing 266 guestrooms, studios and hotel apartments in total, over a multifunctional podium including 2 restaurants and the hotel related FOH and BOH areas.

ICON Scope
Full Architecture & Engineering design

RADISSON BLU HOTEL – MAKKAH, KSA, 2012 – 2014



Client
Jabal Omar Development Company

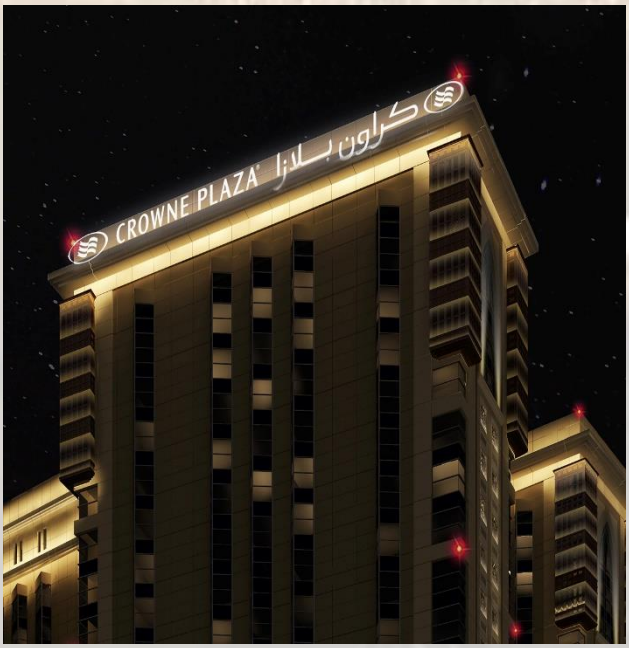
Lead Consultant
International Consultant (ICON)

PMC
Hill Int. (KSA)

Description
Located in Jabal Omar Development Project zone N5, with a built-up area of 24,000 m², consisting of one tower of 25 stories, housing 287 guestrooms, over a multifunctional podium including a parking, 2 restaurants and the hotel related FOH and BOH areas.

ICON Scope
Full Architecture & Engineering design

CROWNE PLAZA HOTEL – MAKKAH, KSA, 2012 - 2014



Client
Jabal Omar Development Company

Lead Consultant
International Consultant (ICON)

PMC
Hill Int. (KSA)

Description
Located in Jabal Omar Development Project zone N5, with a built-up area of 22,000 m², consisting of one tower of 25 stories, housing 287 guestrooms, over a multifunctional podium including 2 restaurants and the hotel related FOH and BOH areas.

ICON Scope
Full Architecture & Engineering design

HOLIDAY INN HOTEL – MAKKAH, KSA, 2012 – 2014

Client
Jabal Omar Development Company

Lead Consultant
International Consultant (ICON)

PMC
Hill Int. (KSA)

Description
Located in Jabal Omar Development Project zone N5, with a built-up area of 21,000 m², consisting of one tower of 26 stories, housing 320 guestrooms, over a multifunctional podium including 3 restaurants and the hotel related FOH and BOH areas.

ICON Scope
Full Architecture & Engineering design

FOUR POINTS BY SHERATON HOTEL – MAKKAH, KSA, 2012 - 2014

Client
Jabal Omar Development Company

Lead Consultant
International Consultant (ICON)

PMC
Hill Int. (KSA)

Description
Located in Jabal Omar Development Project zone N5, with a built-up area of 33,000 m², consisting of one tower of 26 stories, housing 496 guestrooms, over a multifunctional podium including a parking, 2 restaurants and the hotel related FOH and BOH areas.

ICON Scope
Full Architecture & Engineering design

MARRIOTT HOTEL – MAKKAH, KSA, 2011 – 2013

Client
Jabal Omar Development Company

Lead Consultant
International Consultant (ICON)

PMC
Hill Int. (KSA)

Description
Located in Jabal Omar Development Project zone N2, with a built-up area of 80,000 m², consisting of two towers housing 426 guestrooms in total, over a multifunctional podium including a parking and 3 restaurants along with the related FOH and BOH amenities.

ICON Scope
Architectural, Engineering Design and shop drawings services, Interior Architecture shop drawings in addition to site engineering assistance.

HILTON CONVENTION HOTEL – MAKKAH, KSA, 2011 – 2013

Client
Jabal Omar Development Company

Lead Consultant
International Consultant (ICON)

PMC
Hill Int. (KSA)

Supervision Consultant
Socotec (France)

Contractor
Nesma & Partners (KSA)

Description
Located in Jabal Omar Development Project zone N3, with

a built-up area of 128,000 m², consisting of two towers housing 783 guestrooms in total, over a multifunctional podium including a parking, a convention hall for 1300 seats, an auditorium of 292 seats, 4 restaurants along with the related FOH and BOH areas.

ICON Scope
Architectural, Engineering Design and shop drawings services, Interior Architecture shop drawings in addition to site engineering assistance.

Ritz-Carlton King Abdullah International Conference Center Jeddah Hotel-KSA, 2008 – 2012

Client
Saudi Government, Ministry of Finance

Lead Consultant
Rashid Engineering (KSA) / Oger Int'l (France)

Engineering Sub-Consultant
International Consultant (ICON)

Description
A royal high-rise hotel dedicated to house presidential and royal conventions, with 57,000 m² total built-up area, consisting of 23 levels and 224 guestrooms, several restaurants, a SPA as well as a helipad on the upper roof.

ICON Scope
Structural and MEP design from concept to construction documentation phases in addition to the construction follow-up, shop drawings development and engineering assistance

SWISSBELL SALALAH RESORT - OMAN, 2012 – 2013

Client
Royal Court Affairs - Sultanate of Oman

Lead Consultant
International Consultant (ICON)/ICON

Description
This luxurious nine level hotel has a unique aerial view and the capacity of 400 rooms divided between regular rooms, junior suites, executive suites and king suites.

ICON Scope
Concept Design.

WESTIN HOTEL - MAKKAH, KSA, 2014 – 2015

Client
Jabal Omar Development Company

MEP Consultant
International Consultant (ICON)

Description
Located in Jabal Omar Development Project zone S3, with a built-up area of 110,000 m², consisting of two towers housing 507 guestrooms in total, over a multifunctional podium including a parking, 4 restaurants, the hotel related FOH and BOH areas in addition to independent private apartments and three-story shopping mall.

ICON Scope
MEP design and shop drawing services in addition to site engineering assistance.

SHERATON HOTEL - MAKKAH, KSA, 2014 – 2015

Client
Jabal Omar Development Company

MEP Consultant
International Consultant (ICON)

Description
Located in Jabal Omar Development Project zone S3, with a built-up area of 110,000 m², consisting of two towers housing 507 guestrooms in total, over a multifunctional podium including a parking, 4 restaurants, the hotel related FOH and BOH areas in addition to independent private apartments and three-story shopping mall.

ICON Scope
MEP design and shop drawings services in addition to site engineering assistance.

CAP VIEW HOTEL – DBAYEH, LEBANON, 2014

Client
Mr. Michel Saab

Lead Consultant
International Consultant (ICON) / ICON

Description
A 4 stars hotel with a total area of 22,000 m2 and a total of 180 rooms distributed over 20 floors.
It also includes high-end restaurants, multipurpose hall, conference rooms health club and spa.

ICON Scope
Architectural Concept Design.

PARAMOUNT HOTEL – DUBAI, UAE, 2012

Client
Paramount Hotels and Resorts

Lead Consultant
International Consultant (ICON) / ICON

Description
Located in the center of Dubai, this hotel is composed of 9 floors, 400 rooms and covering an area of 60,000 m2.

ICON Scope
Concept Design.

PARAMOUNT HOTEL – LEBANON, 2011

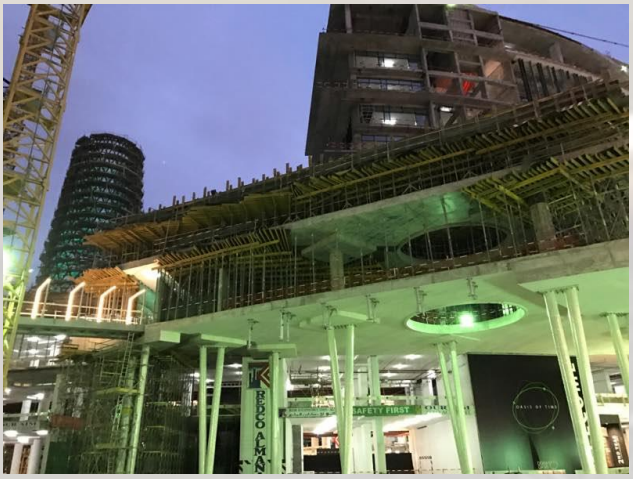
Client
Paramount Hotels and Resorts

Lead Consultant
International Consultant (ICON) / ICON

Description
The 40,000 m2 hotel with 250 rooms is located on the Lebanese coast and reflects the beautiful colonial architecture.

ICON Scope
Concept Design.

LA CIGALE HOTEL – DOHA OASIS, QATAR, 2011 – 2015



Client
Halul Real Estate Investment Company (Qatar)

Architect
Nabil Gholam Architecture & Planning (Lebanon)

MEP Consultant
International Consultant (ICON)

Description
Located in the luxurious Doha Oasis complex, consisting of one tower of 33 stories, housing around 130 luxurious guestrooms and the hotel FOH and BOH areas. The hotel also hosts various international cuisine restaurants with state of the art kitchens.

ICON Scope
MEP Design from Concept to Tender

ROTANA GARDENIA HOTEL & FURNISHED APT. – HOMS, SYRIA, 2006 – 2011

Lead Consultant
Conser International Consultant Engineers (Lebanon)

MEP Consultant
International Consultant (ICON)

Description
A Five-Stars hotel (25 stories, 285 guestrooms) and a furnished Apartments building (19 stories, 45 flats), with 91,000 m² total built-up area, offering luxurious rooms and different services including a SPA/GYM floor, a Banquet Hall, several restaurants and five basements.

ICON Scope
Full MEP Design.

AL BARSHA FIRST 5-STARS HOTEL (4B+G+14) +C46 - Dubai, 2007 – 2008

Client
Hamad Khamis Juma & Saif Al Ghuwais (UAE)

MEP Consultant
International Consultant (ICON)

Description
Located in Al Barsha First district in Dubai, consisting of a hotel building, with a total of 39,500 m² built-up area, housing 320 guestrooms and all related FOH and BOH amenities.

ICON Scope
Full MEP design (incl. DEWA, DCD & DM approvals).

INTERCONTINENTAL HOTEL JEDDAH RENOVATION DESIGN WORKS - KSA, 2016 – 2017

Client
Intercontinental Hotel (Jeddah)

Lead Consultant
Wilson Associates (USA)

Sub-Consultant
International Consultant (ICON)

Description
As part of the complete renovation of the reputable IHG in Jeddah, WA/ICON were assigned to undertake the exterior and interior architectural design works. The hotel consists of 250 keys, 3 restaurants, a ballroom, meeting rooms, a business center, an outdoor swimming pool and a large landscape area with water features.

ICON Scope
Facades and site landscape/hardscape complete design along with the Design Development (DD) and Construction Documentation (CD) of the Interior Design of the hotel guestrooms, corridors, and public areas (FOH).

SOFITEL, BEST WESTERN & MILLENNIUM Hotels – MAKKAH, KSA, 2014 – 2015

Client
Jabal Omar Development Company

PMC
Hill Int. (KSA)

Engineering Sub-Consultant
International Consultant (ICON)

Contractor
RCC (KSA)

Description
Located in Jabal Omar Development Project, consisting of three hotels: Sofitel (3 towers, 652 keys), Best Western (2 towers, 546 Keys) & Millennium (2 towers 581 keys), over a multifunctional podium including the hotels related FOH and BOH functions, an underground parking, five-story shopping mall and private independent apartments.

ICON Scope
Design review, engineering technical management and structural shop drawings development

CONSULTANCY SERVICES FOR DESIGN AND SUPERVISION OF INDUSTRIAL AND UTLITY PLANTS

ICON CAPABILITIES IN MEP DESIGN

Thanks to the technical MEP background of the company's principals and senior engineers the MEP design has become one of the Company's core competency, add to that the extensive training and sharing of knowledge and exposure to big industrial and utility projects, our engineers have developed hands on experience in the design and site engineering works.

Our involvement in the industrial and utility projects with our clients extends from the very conceptual start to the execution and commissioning stages. Most of our projects in this field are part of turn-key contract where we act as the engineering arm of the construction process. The design in such projects would involve a deep knowledge of the technical equipment involved and coordination with the manufacturers and the integrators as well as a serious check of the life safety requirements and compliance.

HAZOP requirements are of critical importance in industrial projects.

The design process starts with analysis and check list for the following requirements:

- Space requirements for the equipment and the MEP services
- Circulation and equipment removal and maintenance space
- Life safety and environmental requirements
- Power and energy requirements
- Embedded elements in the structure of the plant
- Data collection on the weather and the surrounding tie in points and utilities.
- Data collection on the equipment involved and the services needed for them

After considering the above, the concept for the project is set on drawings and a report listing the systems envisaged and the codes that will be followed as well as the basis of design, will be prepared for the client approval.

The concept is followed with design development and up to shop drawings phase where the details will be incorporated progressively with the advance of the design choices and the equipment selection.

ICON methodology of dealing with turn key project is to prepare the design in the head office.

Upon the start of the execution phase, ICON sends a team of engineers to work with the Client in the country of the project.

MEP SYSTEMS DESIGN

The MEP systems DESIGN in the industrial and utility projects include, but not limited to:

1. 3 D process piping and ducting model
2. P&I Diagrams
3. D&I Diagrams
4. Isometric Diagrams and fabrication drawings
5. HVAC systems including cooling plants, air side equipment, industrial ventilation and air filtration systems, smoke control systems.
6. Compressed air systems including the compressors plant, air dryers, and piping networks Water supply systems and water filtration plants and pumping stations design and control.
7. Sewage and waste networks and environmental treatment for industrial waste.
8. Fire Fighting systems including fire pumps, alarm systems, networks and sprinklers, deluge and pre-action systems, foam firefighting systems and clean agent fire suppression systems.
9. Electrical load and transformers rating and numbers

10. ETAPs voltage drop and short circuit calculations
11. Load flow calculation; i.e. cable sizing, C.B. discrimination and ratings, voltage drop and short-circuit calculations
12. Lighting calculations, UGR and luminaires classification, and lighting coordination with emergency system
13. Communications and security systems design with special emphasize on flexibility and expandability
14. Public address system
15. Energy metering system
16. Lighting control, BMS design
17. SCADA systems implementation where required
18. Layout of 6)7MV switchboard rooms and substations

EXECUTION AND SHOP DRAWINGS STAGE METHODOLOGY AND SEQUENCE OF PRODUCTION:

The shop drawings production is based on multiple layers of development and coordination following a strict sequence taking into consideration the site construction progress by prioritizing all deliverables related to concrete pouring such as slabs and walls openings reservations usually issued in separate drawings called Builder's Works preceded by vertical risers sizing hence freezing the shafts and allowing MEP site works launching.

The latter is followed by the main horizontal connections sizing and routing consisting mainly of pipes, ducts, and cable trays. The following sequence of production has proven to be most beneficial namely in fast-track projects:

1. Coordination with the architectural, structural trades in terms of spaces, weights, openings and imbedded elements.
2. Vertical risers (ducts, pipes, cable trays and bus ducts laid in shafts)
3. The MEP systems risers would be updated as per the final material

submittals and the supplier's requirements.

4. Main branch connections (Major ducts, pipes and cable trays sizing along with routing shown as single line with complete coordination with structure, RCP and other MEP services)
5. A composite layout is done for all the MEP systems starting with the mains of pipes, ducts, cable trays is done at first to define the layers and levels of the services.
6. After defining the levels and routing of the mains, the branches of the ducts, firefighting branches, and all ceiling elements such as fire alarm detectors, lighting fixtures, diffusers, sprinklers and the difference outlets are coordinated and fixed.
7. Based on the composite drawings, the complete final MEP layouts is implemented with the annotations and labeling.
8. Panel boards details and control panels supplier's details are done as per the final manufacturers data

SUPPORT AND PLANT ROOMS COORDINATION, SECTIONS AND DETAILS

1. Support details for the plant rooms and shafts are done as per special calculations done by the specialist
2. Technical rooms' equipment and service shafts sections and details are done either in 2D or 3 D as per the project requirements
3. Adequacy of ceiling heights and above false ceiling clearances, is verified
4. ID and MEP coordination consisting of reflected ceiling plans,
5. ID and electrical coordination consisting of power and communication outlets.
6. A final check of the structural loads incurred is done in coordination with the structural engineers to ensure safety of the structure. Builders works requirements and drawings are done in coordination with the architect and the structural engineers.

LIST OF REFERENCES

MEEZA MSI Service 114 ICT Facilities Tier 3 Data Centers – Doha, Qatar, 2016 - 2017

Client
MEEZA

MEP Consultant
International Consultant (ICON)

Contractor
CITC

Description
The project consists of two Tier III Data Centers (DC) and one Command & Control Center (CCC) in addition to 5 remote support offices. Each DC comprises forty dual power input 42U 19” racks mounted on raised floor, cooled via redundant water-cooled precision units and fed through isolated UPS configuration via static bypasses. The CCC houses 31 operators' desks distributed in front of two wall screens for property management and monitoring.

ICON Scope
MEP Design, shop drawings and Architectural fit out design.

KHOR AL ZUBAIR POWER PLANT, Turbine Intel Air Cooling Plant and System (TIAC) - Basrah, Iraq, 2016

Client / Supervision Consultant
Ministry of Electricity

MEP Lead Consultant
International Consultant (ICON)

Contractor
UNIC

Description
Khor al Zubair Power Station in Iraq involves two existing ALSTOM 13D gas turbines, having an 81.2MW capacity each. ICON scope was to provide a full detailed design study and shop drawings for a cooling system that would cool the inlet air to the gas turbines to increase their efficiency. This specialized technology enables the government to increase the production without interruption of the operation. The design included 3D mechanical model for the mechanical plant rooms and structural design for the steel structure for the filters and piping support. This project consists of installing two chiller plants, composed of 2 chillers each, generating a total of 7000 TR cooling water. These water-cooled chillers, will provide the necessary chilled water to the “filter houses”, where the turbines inlet air will be cooled to reach a temperature of less than 15deg.C at the turbine suction side.

ICON Scope
MEP Design

PETRORABIGH P-II POLYMER & MONOMER LABORATORY – Rabigh, KSA, 2014 – 2015

Client / PMC
Saudi Aramco (KSA)

Lead Consultant
International Consultant (ICON)

Design Reviewer/Supervision Consultant
Saudi Aramco (KSA) / Sumitomo Chemical (JAPAN)

Contractor
Saudi Arabian Baytur (KSA)

ICON Scope
The detailed engineering and design services along with the necessary efforts to secure the design approval from Aramco and Sumitomo for the laboratory building and associated above-ground, underground facilities and tie-ins including architectural, HVAC, plumbing and drainage, electrical, fire protection and technical gazes

MATELEC 220-20-11 KV SUBSTATIONS – Ashrafieh, Dahieh, Bahsas - Lebanon, 2013 – 2016

Client
Matelec (Lebanon)

Lead Consultant
Electricité De France (EDF)

Engineering Sub-Consultant
International Consultant (ICON)

ICON Scope
Architectural, structural and mechanical design of three substations: Ashrafieh, Dahieh and Bahsas, in addition to the coordination between the different trades. ICON was also, the Architect and Engineer of record for the project in charge of obtaining the permit for the three substations. Each substation has 3 x 70 MW HV transformers and ties within an urban context. The challenge was to integrate the highly demanding technical requirements within this context.

REHABILITATION OF PUMP STATIONS - South Lebanon, 2012 - 2014

Client
USAID / Lebanon Water and Wastewater Sector Support (LWWSS)

Lead Consultant / Supervision Consultant
CDM Smith (USA)

MEP Consultant
International Consultant (ICON)

Description
Rehabilitation of booster pump stations and wells in south-Lebanon; the Project is funded by the United States Agency for International Development (USAID)

ICON Scope
Design and supervision of MEP installations.

YEMEN 127 MW POWER PLANT - YEMEN, 2014

client
NPWP (NSA)

Engineering Sub-Consultant
International Consultant (ICON)

ICON Scope
Engineering services and assistance in the contracting bid of a 127MW Gas Turbine with all the BOP systems and the relevant local control in addition to the design of HFO tanks farm and the fuel supply system.

ERBIL 33/11 KV mobile Substation Units - IRAQ, 2012

Client
Regional Ministry of Electricity in Kurdistan

Engineering Sub-Consultant
International Consultant (ICON)

Contractor
Matelec (Lebanon)

ICON Scope
Full Architecture & Engineering Design

THIKA 87 MW HFO/DFO THERMAL POWER PLANT – KENYA, 2011 - 2012

MEP Consultant
International Consultant (ICON)

Contractor
Matelec (Lebanon)

Description
Equipped with 5 MEN 60/48 reciprocating engines (18.7 MW each), combined cycle and steam turbine (7MW). Some important components include: Truck Weighing station, Raw water tank, treated water tank, Fire Fighting water tanks, Condenser, Radiators, 5 Boilers, Auxiliary transformers (15kV/0.4kV) and Step-up transformers (15kV/132kV).

ICON Scope
MEP Design for the building's studies.

NDIA CENTRAL UTILITY PLANTS (CUPs) - CP60 Package - QATAR, 2009 – 2011

Client
UDC(Qatar)

Main Consultant / Supervision Consultant
Overseas Bechtel International (OBI)

Lead Consultant
Worley Parsons Consulting (Australia)

Engineering Sub-Consultant
International Consultant (ICON)

Design Reviewer/Supervision Consultant
Saudi Aramco (KSA) / Sumitomo Chemical (JAPAN)

Contractor
CAT Int. (Qatar)

Description
The project consists of three CUPs serving the New Doha International Airport housing water cooled centrifugal chillers, primary and secondary chilled water circulation pumps, counter flow cooling towers, MV diesel generator sets with remote radiators and medium voltage switchgears and MCCs.

ICON Scope
Architectural, civil and structural foundation design and shop drawings, P&ID drawings for fuel oil system and compressed air system, electrical equipment layout and earthing mesh drawings, electrical single line diagrams for 11kV, HVAC and plumbing layouts, piping general arrangement layouts, sectional views, pipe support details, and miscellaneous details in addition to site engineering assistance.

QATALUM Project - Package T-013 in Mesaieed Industrial City – QATAR, 2008 - 2011

Client
QATALUM

Main Consultant
SNC-Lavalin International Inc. (Canada)

Lead Consultant
International Consultant (ICON)

Contractor
A&C Al-Saad

Description
The Project consists of five different buildings including a mosque, service building including laboratories, canteen and data centers, administration bldg. and heavy workshop bldg. located within the industrial compound of Qatalum.

ICON Scope
Architecture, building services design, complete shop drawings and site engineering assistance.

HOMS SUBSTATION PROJECT – SYRIA, 2010 - 2011

Client
Matelec (Lebanon)

MEP Consultant
International Consultant (ICON)

Description
The project is a substation compound comprising several buildings, one 230 KV transformers and GIS building, one 66 KV building, control building, administration building and other ancillary buildings. The project will be supplying a university and a developed area around it.

ICON Scope
Full Architectural, structural, MEP & Civil Works Design and detailed construction drawings.

INTEGRATED DISTRICT COOLING PLANT FOR THE PEARL OF DOHA - QATAR, 2006 - 2008

Client
UDC / Qatar Cool

Lead Consultant
Stanley Consultants Inc. (USA)

Engineering Sub-Consultant
International Consultant (ICON)

Contractor
CAT Int. (Qatar)

Supervision Consultant
Dar Al-Handasah (Shair & Co.)

Description
One of the World's largest District Cooling Plant, with 203m(L) x 75m(W) x 34m(H) and 48,000 m² B.U.A., consisting of 130,000 tons of refrigeration produced by 52 chillers, 52 pumps and 26 cooling towers distributed via 120 ETS & HEX rooms and necessitating 35,000m3 per day RO plant. The plant main electrical components consist of 170 MVA HV/MV substation (3 nos. 50/60 MVA transformers) supplying through 3 nos. 11 kV feeders 26 nos. 5.9 MVA & 8 nos. 1.6 MVA step down transformers feeding a number of 3.3kV & 415V MCCs.

ICON Scope
Architectural, civil and structural foundation design and shop drawings, P&ID drawings, electrical equipment layout and earthing mesh drawings, electrical single line diagrams for 11kV, HVAC and plumbing layouts, piping general arrangement layouts, sectional views, pipe support details, and miscellaneous details in addition to site engineering assistance.

CONSULTANCY SERVICES FOR DESIGN AND SUPERVISION OF RESIDENTIAL PROJECTS

ICON RESIDENTIAL DESIGN REFERENCES

AL HADA VILLA COMPOUND - KSA, 2016

Client
Prince Khaled Bin Salmen Bin AbdelAziz

Lead Designer & Consultant
International Consultant (ICON)

Description
A luxurious residential complex in one of the most prestigious suburbs of Riyadh City in Saudi Arabia. With a total built-up area of 15,000 m2, the project comprises 68 luxurious high-end finished villas, health club, administration and a common basement for staff accommodation, parking, indoor swimming pool and playground.

ICON Scope
Concept, Schematic, detailed design and tender documentation for Architecture, Interior Design, Structural and MEP design services.

ART OASIS - RIYADH, KSA, 2015 – 2016

Lead Consultant
Nabil Gholam Architecture & Planning (Lebanon)

MEP Consultant
International Consultant (ICON)

Description
A high-end building located in Riyadh with a unique architectural character combining a modern art gallery, food court and retail shops on the ground and first floors. The building is centered by a semi covered courtyard which forms an "Oasis". Special attention was given to sustainable systems while taking into account the architectural design and esthetics of the project.

ICON Scope
MEP design and tender package preparation.

PRINCESS NOURA NEW GUEST VILLAS - OBHUR, KSA, 2015 – 2016

Client
Urban Design Group (KSA)

Engineering Sub-Consultant
International Consultant (ICON)

Description
An extension of princess Noura beach house project, consisting of four guest villas at one of the most beautiful shores of Obhur combining ecofriendly materials with modern architecture, charming landscape with swimming pools for each villa.

ICON Scope
Architecture, Interior Design development, Infrastructure, Structural and MEP Design services, shop drawings, project management and site supervision.

PRINCESS NOURA BEACH HOUSE - OBHUR, KSA, 2014 – 2015

Client
Urban Design Group (KSA)

Engineering Sub-Consultant
International Consultant (ICON)

Description
A beach villa at one of the most beautiful shores of Obhur combining eco-friendly materials with modern architecture, charming landscape with several swimming pools where the service buildings are integrated with the environment and leading to the main villa.

ICON Scope
Architecture, Interior Design development, Infrastructure, Structural, MEP Design Services, Shop drawings, project management and Site supervision.

JAMHOUR VILLAS COMPOUND – LEBANON, 2009 - 2013

Client
La Villa

Lead Consultant
International Consultant (ICON)

Description
Luxurious villas compound with full amenities and common facilities surrounded with pine groves.

ICON Scope
Full architectural and engineering design from concept to tender in addition to site supervision.

AL MAWALEH COMPOUND – OMAN, 2012 - 2013

Client
Al Noumani Group

Lead Consultant
International Consultant (ICON) / ICON

Description
Al Mawaleh compound is an urban complex localized in al Mawaleh, Oman. It is intended to be a sustainable residential area that provides a safe, healthy and viable community for over 560 residents.

ICON Scope
Concept Design

BAGHDAD PRIVATE VILLAS – IRAQ, 2013

Client
Mr. Saadi Saihood

Lead Consultant
International Consultant (ICON)

Description
Luxurious villas complex project on Tigris River in Baghdad for Mr. Saadi Saihood and his family, consisting of mains villas and four annexes villas with a main utilities plant and outdoor landscape design.

ICON Scope
MEP Design and Supervision.

ADMA COMPOUND– LEBANON, 2013

Client
Dr. Joseph Semaan

Lead Consultant
International Consultant (ICON) / ICON

Description
The Compound is built in a sloped hill overlooking the cast.
The project is made up of 20 buildings including apartments with areas ranging from 125 m2 to 220 m2.

ICON Scope
Architectural Concept Design and coordination with the higher Council of urban planning.

AL ISTIKLAL RESIDENTIAL COMPOUND - BAHRAIN, 2013

Client
AL ISKAN BANK - BAHRAIN

Lead Consultant
International Consultant (ICON) / ICON

Description
The project is located in a mixed private residential area.
It consists of 6 blocks of 6 floors each, with 2 apartments per floor and an area of 200 m2 each.
The residential blocks rise on 2 levels closed car parking.

ICON Scope
Architectural Concept Design.

BOUTCHAY HILLS - RESIDENTIAL PROJECT – Lebanon, 2011

Client
ESLA - LEBANON

Lead Consultant
International Consultant (ICON)

Description
A new village located in the heart of Baabda including 51 buildings, just 12 min. from the city of Beirut. Its location together with its urban architectural design provides its residents with tranquility, comfort and functionality, living within just two steps of the city.

ICON Scope
Full design including permit approvals.

BATROUN VILLA, LEBANON, 2010

Client
Mr. Antoine Kahwaji

Lead Consultant
International Consultant (ICON)/ICON

Description
Located in the green hills of Batroun, facing the sea view.
This 1500 m2 Triplex is a perfect combination between contemporary and traditional architecture.

ICON Scope
Full design including permit approvals and supervision.

RABIEH VILLA, LEBANON, 2010

Client
Mr. Semaan Semaan

Lead Consultant
International Consultant (ICON) / ICON

Description
A stunning residence with a panoramic view over the green hills and the sea.
This Triplex villa of 2400 m2 is a combination between the modern architecture and the nature.

ICON Scope
Architectural Concept Design.

SOFAR VILLAS COMPOUND – LEBANON, 2010 – 2011

Client
Ghazzaoui Group

Lead Consultant
International Consultant (ICON)

Description
The project consists of 30,000 m² of total built-up areas consisting of Villas, Studios, Restaurants and one Hotel.

ICON Scope
Architectural Concept Design.

Pershing Luxury Beach Apartments (4B+G+41 & G+6) - Dubai Waterfront Plot no. WFMA-B09B2- UAE, 2008 – 2009

Lead Consultant
T&M (UAE) & International Consultant (ICON)

ICON Scope
Full Architecture & Engineering design

Pershing Luxury Beach Apartments (4B+G+41 & G+6) - Dubai Waterfront Plot no. WFMA-B09B2 - UAE, 2008 – 2009

Lead Consultant
T&M (UAE) & International Consultant (ICON)

ICON Scope
Full Architecture & Engineering design

BORJ AL-SAQR RESIDENTIAL TOWER (G+43) - RAS AL KHAYMA, 2007 – 2009

Lead Consultant
TAA (Lebanon)

MEP Consultant
International Consultant (ICON)

Description
A residential tower of 85,000 m² total built-up area consisting of 249 flats, 173m high and 40 stories building including restaurants and health club.

ICON Scope
MEP Design.

OLYMPUS RESIDENTIAL TOWER (JVC16AHRG002 /2B+G+50) – Dubai, UAE, 2007-2008

Lead Consultant
BDPL (UAE)

MEP Consultant
International Consultant (ICON)

Description
Located in Jumeirah Village South consisting of 50 stories and 333 flats.

ICON Scope
Full MEP design (incl. DEWA, DCD & DM approvals)

AL BROOQ RESIDENTIAL TOWER (2B+G+M+43) – QATAR, 2007-2008

Client
H.E. Abdul Rahman Al Attiyah

Lead Consultant
CICO Consultants (Qatar)

MEP Consultant
International Consultant (ICON)

Description
A luxurious residential tower of 43 stories consisting of 258 flats located in the West Bay area of Doha.

ICON Scope
FULL MEP DESIGN (incl. KAHRAMAA & QCD approvals).

LA POINTE NOIRE – SCI HOUSE APARTMENTS – CONGO, 2008

Client
Maison Sans Frontières (MSF)

Lead Consultant
EK Concept (France) /
International Consultant (ICON)

ICON Scope
Full Architecture & Engineering design.

MAJAN VILLAS COMPOUND – SOHAR, OMAN, 2006 - 2007

Client
Majan Gulf Properties (Oman)

Lead Consultant
International Consultant (ICON)

Description
Located nearby Sohar industrial City, these luxurious villas compounds with full amenities and common facilities, consist of 710 villas in total.

ICON Scope
Master planning, Architecture & Engineering Design in addition to Construction Supervision.

CONSULTANCY SERVICES FOR DESIGN AND SUPERVISION OF TRANSPORTATION PROJECTS

ICON CAPABILITIES IN ROADS, BRIDGES AND TUNNELS

Highway engineering is an engineering discipline branching from civil engineering that involves the planning, design, construction, operation, and maintenance of roads, bridges, and tunnels to ensure safe and effective transportation of people.

ICON provide smart corridors to move people into the future and not just moving them from place to place.

ROADS DESIGN

Our services include the following:

- Planning, design, development, and construction
- Analyzing and resolving traffic impacts
- Navigating the environmental process
- Asset management
- Technical concepts and modeling

ROADS GEOMETRY

The geometric design of roads deals with dimensions and layout of visible features AASHTO deals with the following elements:

- Functional Classification
- Alignment
- Cross Section
- Intersections
- Interchanges
- Freeways

BRIDGES TYPES

ICON design bridges to enrich skylines and provide efficient transportation and carrying pedestrians, roads and pipelines.

Our services include the following bridge types:

- Complex
- Conventional
- Long-span
- Pre-stressed
- Post-tensioned

- Suspension
- Cable-stayed
- Segmental
- Steel
- Concrete

BRIDGES GEOMETRY

The overall bridge and head slope geometry should be determined in accordance with the department's Bridge Conceptual Design Guidelines.
When designing bridges, we carry out these elements:

- Bridge Alignment
- Grades and Cross fall
- Head slopes, Side slopes and Approaches
- Deck Width
- Span Lengths, Substructure Stationing and Bearing Setting
- Horizontal & Vertical Clearances

TUNNELS DESIGN

Tunnel systems are generally complex and critical. Design criteria for new roadway tunnels should consider:

- Performance-based construction specifications
- Design recommendations for extreme events (manmade and natural [e.g., seismic and storm events]) and tunnel security.
- Design criteria for vertical clearance, horizontal clearance, and sight distance
- Criteria for tunnel design life and future maintenance for structural, mechanical, electrical, and electronic systems
- Criteria for new tunnel load rating
- Seismic design criteria
- Placement and layout of the tunnel operations center
- Fire and life-safety systems in tunnels

TUNNELS GEOMETRY

The geometric characteristics have to be defined at the earliest stage of the conception of a tunnel, and even of a road link comprising possibly one or more tunnels.
These characteristics are of very different natures, and can be grouped in the following categories:

- The relation between construction method and cross-section
- The theoretical notions related to traffic capacity
- The general alignment of the road comprising the tunnel:

    - ❖ number of carriageways and lanes,
    - ❖ off-carriageway provisions (lateral and possibly central),
    - ❖ headroom,
    - ❖ maximal slopes,
    - ❖ minimal horizontal and vertical radiuses,
    - ❖ transverse slopes,
    - ❖ the detailed characteristics of the transverse profile inside the tunnel

- The specific geometric characteristics of other features located out of the cross-section: emergency exits, evacuation galleries, by-passes, cross-connections, etc.
- The influence of the geometrical characteristics on safety.

ICON ROAD DESIGN REFERENCES

SAADIYAT DEVELOPMENT PROJECT – LEBANON, 2016 - 2017

Client / PMC
M1 Real Estate

Lead Consultant
International Consultant (ICON)

Description
A real estate development project in Saadiyat, area ~284,275 m2 with around 4.5 Km of roads, divided into small plots suitable for residential villas and buildings with a complete infrastructure, roads networks and services.

ICON Scope
Design of roads, wet and dry utilities including domestic water, irrigation and sewage networks as well as electrical, data networks and street lighting. In addition, preparation of tender documents, construction supervision works as well as assistance in project management.

SAUDI ARABIA NATIONAL GUARD MILITARY FACILITY OF KHASM AL-AAN (SANG II), RIYADH, KSA, 2011-2013

Client/Design Reviewer/Supervision Consultant
SANG (KSA)

Lead Consultant
International Consultant (ICON)

Contractor
Nesma & Partners (KSA)

Description
A military airbase consisting of 80 buildings such as brigade headquarters, support buildings & facilities, runways, taxiways, aprons, hardstands/pads, helipad and other aviation facilities in addition to roads design for an area of 7 km2.

ICON Scope
Re-design, shop drawings and site engineering assistance for all structural and civil works (including pavement, grading and earthworks), architectural, electrical, mechanical and infrastructure networks (including storm, sewer, fire hydrant, lighting, electrical and communication/IT), airfield lighting, navigational aids and all related systems.

KING ABDULLAH PETROLEUM STUDIES & RESEARCH CENTER (KAPSARC) – KSA, 2010 – 2011

Client
Saudi Government, Ministry of Petroleum & Mineral Resources

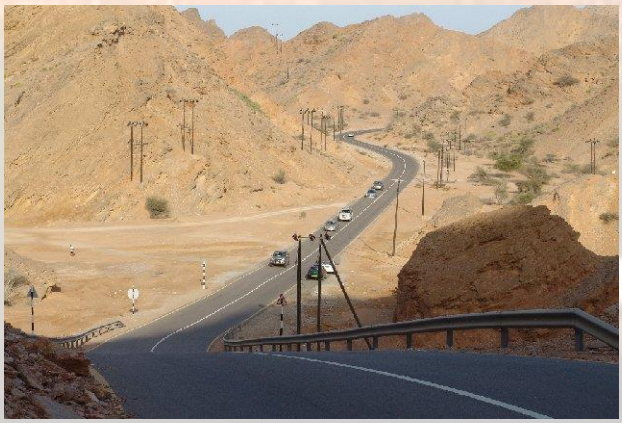
Engineering Sub-Consultant
International Consultant (ICON)

PMC - Design Reviewer/Supervision Consultant
Saudi Aramco (KSA)

Contractor
MMG (KSA)

ICON Scope
Design and shop drawings of roads and grading, hardscape and landscape, infrastructure works consisting of electrical systems, storm and water pumping in addition to sewerage treatment stations.

DUQUM ROAD STREET LIGHTING – OMAN, 2008



Lead Consultant
Conser International Consultant Engineers (Lebanon)

Electrical Designer
International Consultant (ICON)

Description
The project consists of 3 lanes road of 25 Km length and 2 lanes road of total length of 25 Km.

ICON Scope
Street Lighting and related electrical power distribution design.

JABRIN-IBRI ROAD STREET LIGHTING – OMAN, 2008

Lead Consultant
Conser International Consultant Engineers (Lebanon)

Electrical Designer
International Consultant (ICON)

Description
The project consists of 90 km dual carriageway road, 12 interchanges (overpasses or underpasses with ramps & roundabouts) and different types of T-junctions.

ICON Scope
Street Lighting and related electrical power distribution design.

MUDEIREJ BRIDGE – LEBANON,2006

Client
Baker Engineers

ICON Scope
Damage Assessment and Site Supervision of construction works.

KHASAB FAMILY RESORT – OMAN, 2006 - 2007

Client
Majan Gulf Properties (Oman)

Lead Consultant
International Consultant (ICON)

Description
Consisting of a residential area, leisure spaces, hotels, hospitality and recreational areas in the attractive tree-lines mountain area.

ICON Scope
Master Plan roads and Infrastructure studies.

Saudi Railways Project, KSA, 2008 – 2011

Client
Saudi Railways Organization (SRO)

Engineering Sub-Consultant
International Consultant (ICON)

Contractor
CCE (KSA)

Description
The project is a fast-track project and is in the final construction stages with the engineering works running in parallel with the construction the project is divided into two sites: Running Repair Shed Complex Al-Malaz (RRS), and Heavy Repair Workshop Al-Kharj (HRW). These facilities are comprised of large steel structure workshops and ancillary buildings used for the maintenance of coaches, inspection, washing plant, stock areas, wheel lathe shed and repair of the trains. project will be supplying a university and a developed area around it. The footprint area of the RRS and the HRW is about 50000 m2 and 210,000 m2 respectively. Along with the main services, supporting buildings such as offices, technical areas, Prayer Rooms, warehouses and guard houses are within each complex.

ICON Scope
Complete structural, electrical and mechanical systems design, shop drawings works of trains maintenance complexes and the relevant site infrastructure.

CONSULTANCY SERVICES FOR DESIGN AND SUPERVISION OF FUEL FARMS AND FUEL NETWORKS

INTRODUCTION

ICON and DEP (JV) have been formed by joining two consulting firms delivering high-end master planning, architectural and engineering services, starting from concept design phase to tender phase in addition to site supervision and construction management services.

Founded by Partners, previous Design Managers in reputed international companies with extensive experience in conceiving and delivering large scale projects. It has put forward expertise and technical efficiency to optimize its client business performance and has expanded its operation to cover different countries worldwide.

JV's professional, on-staff designers bring extensive experience in systems to every project. The Company's focus is in meeting the Client's strategic objectives with provision of high caliber professional support, technical expertise and innovation.

The design approach and methodology of design are always intended to satisfy the client and carry out the related services and deliverables.

About JV

JV is among of the fastest growing engineering consultancy companies in the MENA region, offering consulting services for over 14 years in planning, architectural and engineering design, project & construction management of transport infrastructures, energy / water and environment.

JV has attained an impressive roster of clients since the beginning of their corporate operation, putting forward expertise and technical efficiency to optimize their client business performance. It has expanded its operation to cover different countries worldwide, offering effective solutions to the growing demand for integrated services and investing in its own organizational structure to meet the ever-increasing market expectations.

With Headquarters in Beirut, over the years JV has gained more and more experience also on the international market establishing operation in USA, France, Saudi Arabia, Qatar, Oman, UAE, Egypt, etc., with the aim

A FAST GROWING DESIGN FIRM

12 YEARS OF EXPERIENCE

85% OF INTL REVENUES

14 COUNTRIES

not only to further increase the production capabilities of the Company in the field of multidisciplinary design, but also to play a key role as a catalyst among the major Gulf market players for the development of international design & build integrated activities.

70% OF REVENUES FROM
CONSTRUCTION COMPANIES

The services supplied by JV are based on a combination of know-How and resources providing answers to the variety of needs of Clients, both at the design and construction stage. The multi-disciplinary approach to every aspect of the project implementation is a guarantee of JV's commitment to deliver value and innovation in all fields of engineering design and management of complex projects.

EXCELLENCE

KNOW HOW

JV has specialized software for the design and management of project documentation with related service and update contracts constantly activated.

From engineers to architects and from international experts to local experts, ICON and Multitech offer their Clients a vast network of talent and passion. We look with continuity at the latest learning, updating and training opportunities. The outcome is a team of result-oriented experts, continuously investing in their skills aiming at maximizing the quality of the rendered services, while creating Value of Engineering solutions that assure the Clients' maximum success and return on investments.

VALUE ENGINEERING

COSTS SAVINGS

All of our professionals are graduated

Among our staff we have young talents and experienced professionals, speaking 4 different languages and with outstanding skills and knowledge in all fields of engineering, as well as in new technologies. The 25% of the personnel are travelling abroad on temporary missions.

FLEXIBILITY

OUR STAFF

JV CAPABILITIES IN FUEL FARM AND NETWORKING SECTOR

JV is an aviation fuel specialist.

JV design services within this sector cover the below among many others:

- Design of Tank Plants
- Design of Airport Re-fueling Systems
- Design of Product Pipelines and Pipeline-Stations
- Design of Hot pit re-fueling areas
- Design of Loading/Unloading-Stations for Trucks,
- Leakage Control Systems for Underground Pipelines
- Tightness control system TCS with leak detection & leak location
- Simulation Software, hydraulic calculations, analysis and dynamic simulations for fuel networks
- Virtual modeling and plant simulation
- Pressure shock analysis & Stress Analysis for fuel networks
- Plant Optimization
- Planning and construction site organization
- JIG inspection and training
- Testing and commissioning of fuel networks and aviation fuel storage facilities.

JV DESIGN REFERENCES

KING ABDULAZIZ INTERNATIONAL AIRPORT (KAIA), KSA, 2012 - 2018

Client
General Authority of Civil aviation

Fuel specialist, project and program management
JV

Main Consultant/ Design Reviewer/Supervision Consultant
Dar Al-Handasah (Shair & Co.)

Main Contractor
Saudi Binladen group- Architecture and building division

JOB
New jet fuel hydrants network at KAIA development phase-1

JV Scope

- Supply, Install & commission of 32Km of jet A1-fuel hydrant System comprising of fuel pipes ranging from 12'' to 24'' in diameter and comprising over 400 hydrants API standard hydrant pits, under hydrant valves, over 80 double block & bleed (DB&B) valves ranging in size from 8'' to 24'' in diameter.
- Supply, Install & commission of 16Km of 24'' and 12Km of 20'' jet A1-supply line connecting the ARAMCO bulk farm to the existing airport fuel farm and the newly built fuel farm and the loops for apron stands around the newly built terminal and cargo aprons.
- Supply, Install & commission of new re-fuller station and into plane network.

KING ABDULAZIZ INTERNATIONAL AIRPORT (KAIA), KSA, 2012 - 2018

Client
General Authority of Civil aviation

Fuel specialist, project and program management
JV

Main Consultant/ Design Reviewer/Supervision Consultant
Dar Al-Handasah (Shair & Co.)

Main Contractor
Saudi Binladen group- Architecture and building division

JOB
New jet fuel hydrants network-Tie-in-cleaning, testing and flushing

JV Scope

- De-gazing of line 1 ARAMCO (under pressure) supply line. Line 1 will feed the new fuel by pressure.
- Tie-in to line 1 and the bypass to allow fuel to feed back to the existing fuel farm.
- De-gazing of line 2 (gravity line) supply line.
- Tie-in to line 2. Line 2 will feed the existing fuel farm by gravity until the new farm is fully operational.
- Tie-in 6 Inch feeding the military base.
- De-commissioning of the existing fuel farm.
- Cleaning, Air Blowing, Pressure test D300-Hydrant Network by sections
- Cleaning, Air blowing, Hydro-test, purging and drying J410 supply line from Tie-In to the newly built fuel farm
- Filling, soaking and flushing of the networks alternatively by sections.

KING KHALED INTERNATIONAL AIRPORT, KSA.

Client
General Authority of Civil aviation

Fuel specialist, project and program management
JV

Main Consultant/ Design Reviewer/Supervision Consultant
Dar Al-Handasah (Shair & Co.)

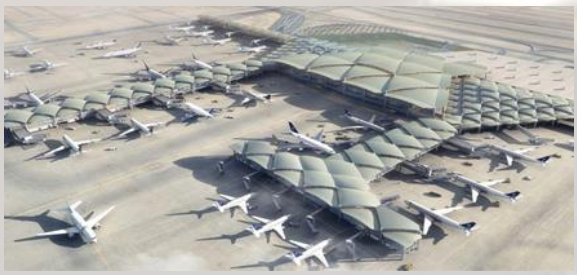
Main Contractor
Saudi Binladen group- Architecture and building division

JOB
Fuel hydrants networks at new aprons to the east of the commercial galleries.

JV Scope

- Supply, Install & Commission of Jet A1-fuel Hydrant System comprising of fuel pipes ranging from 12" to 24" in diameter. Supply, Install & Commission hydrants comprising of API standard hydrant pits, under hydrant valves and hydrant valves, double Block & Bleed (DB&B) valves ranging in size from 12" to 24" in diameter
- CP works including supply, installation, testing of temporary and permanent CP system for Hydrant Network.
- Supply, Install & Commission Emergency Shutdown (ESD) System and Tightness Control System (TCS)
- Cleaning, Filling, Soaking, Flushing of fuel hydrant network, and Start-up of control and monitoring system

KING KHALED INTERNATIONAL AIRPORT, KSA.



Client
General Authority of Civil aviation

Fuel specialist, project and program management
JV

Main Consultant/ Design Reviewer/Supervision Consultant
AECOM

Main Contractor
TAV construction and Al Arrab general contracting

JOB
Upgrade runway, taxiway and airplane parking.

JV Scope

- Design and Detailed Engineering Mechanical electrical and instrumentation works for the Jet A-1 Fuel Supply & Hydrant System
- Supply and install jet fuel piping system including necessary fittings, valves, bends, elbows, hydrant valve pits & covers, low points and high point pits and covers, leveling and NDT testing.
- Supply & Install TCS Leak Detection System for the Main Fuel Pipe up to the Branch Valve chambers for future Loop Connections in T1-T4. Supply & Install SCADA/PLC Specific Software for the New Main Fuel Pipe.
- Supply & Install temporary and permanent Cathodic Protection System.
- Cleaning, blowing, Pressure testing, hydro-test, drying, purging, filling, soaking, flushing, testing, commissioning & Start up.

KING KHALED INTERNATIONAL AIRPORT, KSA.

Client
General Authority of Civil aviation

Fuel specialist, project and program management
JV

Main Consultant/ Design Reviewer/Supervision Consultant
AECOM

Main Contractor
TAV construction and Al Arrab general contracting

JOB
New T3/T4 passenger terminal, fuel hydrants network

JV Scope

- Supply & Install of Jet A1-fuel Hydrant System Network and hydrants comprising of API standard hydrant pits, under hydrant valves and hydrant valves, double Block & Bleed (DB&B) valves.
- CP works including supply, installation, testing of temporary and permanent CP system for Hydrant Network.
- Supply, Install & Commission Emergency Shutdown (ESD) System & Tightness Control System (TCS) in addition to the automatic control and monitoring system.
- Cleaning, Filling, Soaking, Flushing of fuel hydrant network.
- Demonstrate the operation of the complete systems and train personnel for their use

KING KHALED INTERNATIONAL AIRPORT, KSA.

Client
General Authority of Civil aviation

Fuel specialist, project and program management
JV

Main Consultant/ Design Reviewer/Supervision Consultant
AECOM

Main Contractor
TAV construction and Al Arrab general contracting

JOB
Fuel hydrants network apron 5 Terminal 5 at KKIA

JV Scope

- Supply, Install & Commission of Jet A1-fuel Hydrant System comprising of fuel pipes ranging from 12" to 24" in diameter. Supply, Install & Commission hydrants comprising of API standard hydrant pits, under hydrant valves and hydrant valves, double Block & Bleed (DB&B) valves ranging in size from 12" to 24" in diameter.
- CP works including supply, installation, testing of temporary and permanent CP system for Hydrant Network
- Supply, Install & Commission Emergency Shutdown (ESD) System & Tightness Control System (TCS).
- Cleaning, Filling, Soaking, Flushing of fuel hydrant network, and Start-up of control and monitoring system.

CONSULTANCY SERVICES FOR PROJECT MANAGEMENT AND SUPERVISION

INTRODUCTION

Project Management and Construction Supervision Services are essential parts of any construction project especially when it is of large scale.

It insures the coherence of the construction with the design as well as the adherence to the contract conditions, time schedule, budget and quality.

It is simply a core part of the construction management of any construction project.

ICON supervision experience stems from the experience of its staff in handling mega projects with high standards.

Our staff has developed hands on experience in installation supervision for airports such as King Abulaziz International Airport - KAIA in Jeddah-KSA, New Doha International Airport NDIA, SANG airports (Saudi National Guard Airports-KSA), Dubai International Airport, Princess Noura Beach House in Jeddah-KSA, Flight Simulator (US army Corps of Engineers - Lebanon), Jamhour Compound (Lebanon), Lebanese Army Model Regiment (Lebanon - with the European Union), among others.

Our strength in construction supervision resides in our in-depth design experience and our rigorous knowledge of the QA/QC procedures of the construction projects.

Our understanding for the Project Management and Construction Supervision Services scope of work includes, but not limited to the following main categories and sub tasks listed below:

1- PROJECT MANAGEMENT

In carrying out the project management services, ICON requires close coordination and interaction with the Employer to determine the necessities, objectives, key milestone events, budgetary and program constraints, administrative requirements, definition of the project packaging strategy and various contract interfaces,

As well as the development of controls and procedures for the communication between different parties and the development of key procedures, the reports and documents required for managing the design and construction contracts, as well as the development of the management plan.

During this phase, ICON carries out the following tasks in accordance with contract agreement with the employer:

- Project Initiation
- Establishing and Operating the Project Control System
- Master Program
- Tendering (Procurement) Plan
- Quality Assurance/Quality Control Procedures and Plan (QA/QC)
- Health and Safety Plan Procedures
- Setting Basic Requirements for Tender Documents
- Managing Construction Package Tenders
- Managing Construction Contracts
- Managing Construction Completion and Closeout

2- SUPERVISION

ICON supervises all the works until the overall physical completion of the project through Resident Architects/Engineers.

During this phase, ICON carries out the following tasks in accordance with contract agreement with the employer:

- Organization and Mobilization
- Review of Contractor’s Planning and Program
- Survey Check and Material Information
- Review of Contractor's Plan for Site Organization
- Execution Methods
- Time Control
- Quantity Surveying and Cost Control
- Quality Control
- Site Meetings and Record Keeping
- Monthly Progress Reports
- Completion of Works / Taking Over

3- DEFECTS LIABILITY PERIOD

The main purpose of the Defects Liability Period is to demonstrate under operational conditions that the requirements of the Contract have been complied with.

During this period, the Contractor must not only complete such outstanding works as listed in the relevant Taking-Over Certificate, but also remedy any defects that might occur.

During this period, and in realization of the above, ICON's duties will include conducting regular visits to the Project, at intervals not more than one calendar month, to inspect the

completion by the Contractor of the outstanding works, as well as inspecting the Works in general for defects that may be detected during this period.

At the end of this period ICON issues to the Contractor the Defects Liability Certificate.

After the issuance of the said certificate and as per the Contract, ICON reviews the Contractor's Final Statement and issues to the Client the completed form of the Final Payment Certificate.

Accordingly, the duties during this period include the following activities:

- Inspection of Works During Defects Liability Period
- Defects Liability Certificate Issuance
- Final Payment Certificate and Final Report Issuance

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