50 YEARS
SINCE 1969

ECG
Credentials

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

ECG is one of the largest engineering firms in the Middle East and Africa.

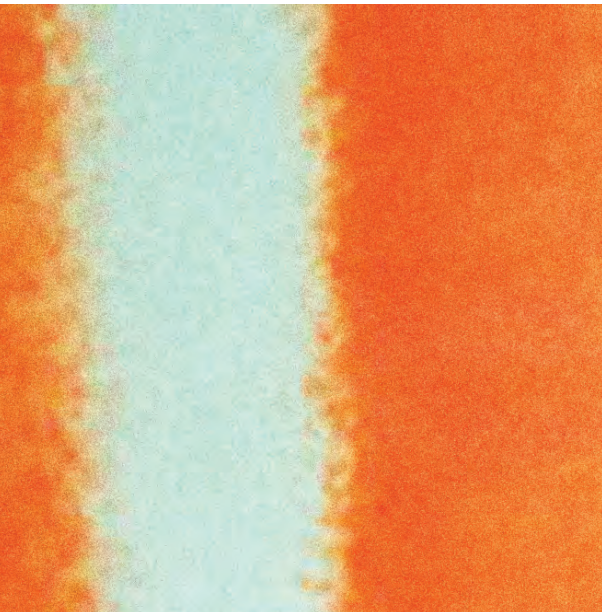
An outstanding record of over 50-years of operation and accomplishments testifies to ECG's supremacy in the engineering consultancy field. With a total construction value surpassing US$200 billion, multiple key projects have been completed in Egypt and the MENA region covering all key engineering fields. Our multidisciplinary portfolio includes architecture and landscaping, civil and structure, electromechanical, process and piping, environmental engineering, and urban development.

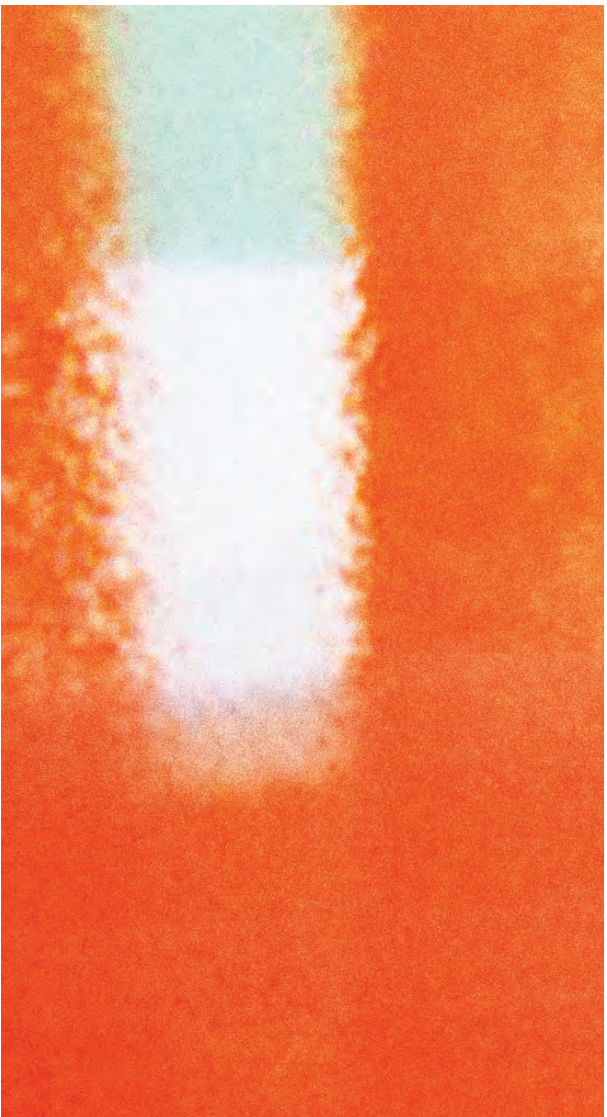
ECG harnesses the adept expertise and talent of more than 2,965 permanent full-time individuals. Our unique brand of engineers have the capacity to deliver almost the full range of professional engineering services. These encompass project identification, pre-feasibility/ feasibility studies, property and site appraisals, site selection, design and detailed engineering, construction management and supervision, procurement, inspection, quality control, and personnel training.

ECG's Overseas revenues sustainably account for more than 77% of the firm's total income stream.

- Founded in 1969
- Architecture & Engineering Multi-Disciplinary Firm
- ECG ranks among the top 5 in the Middle East (Ref. ENR 2020)
- Total construction value surpassing USD 200 billion
- Revenues for 2019 according to our consolidated financial statements (which include the main branch in Egypt, and the subsidiary companies, foreign branches, along with ECG – KSA and ECG – Tanzania) amount to USD 111,066,340

Our History





50
Years of Growth

2016-2018
In 2016, we presented to Egypt and the North African region the first LEED platinum certified building. Today, Crédit Agricole Egypt's Head Office Complex is one of only a handful of buildings with LEED Platinum status in the entire African continent.

2017 was no less remarkable. In Egypt, we took on various mega projects of national importance. The notable list includes Cleopatra Business & Industrial City, New Mansoura City, Sheikh Zayed City Extension, New Beni Suef City and Al-Sadat City Technology Parks, New Assiut City Electronics Factory, Al-Massa Park in the Administrative Capital, and Borg Al-Arab International Airport Extension.

We have also been commanding attention overseas as we actively engaged in one large-scale project after another. To name a few, there is the Qatar Rail Real Estate Services and the Senegal-based SEEN Hotel & Residences.

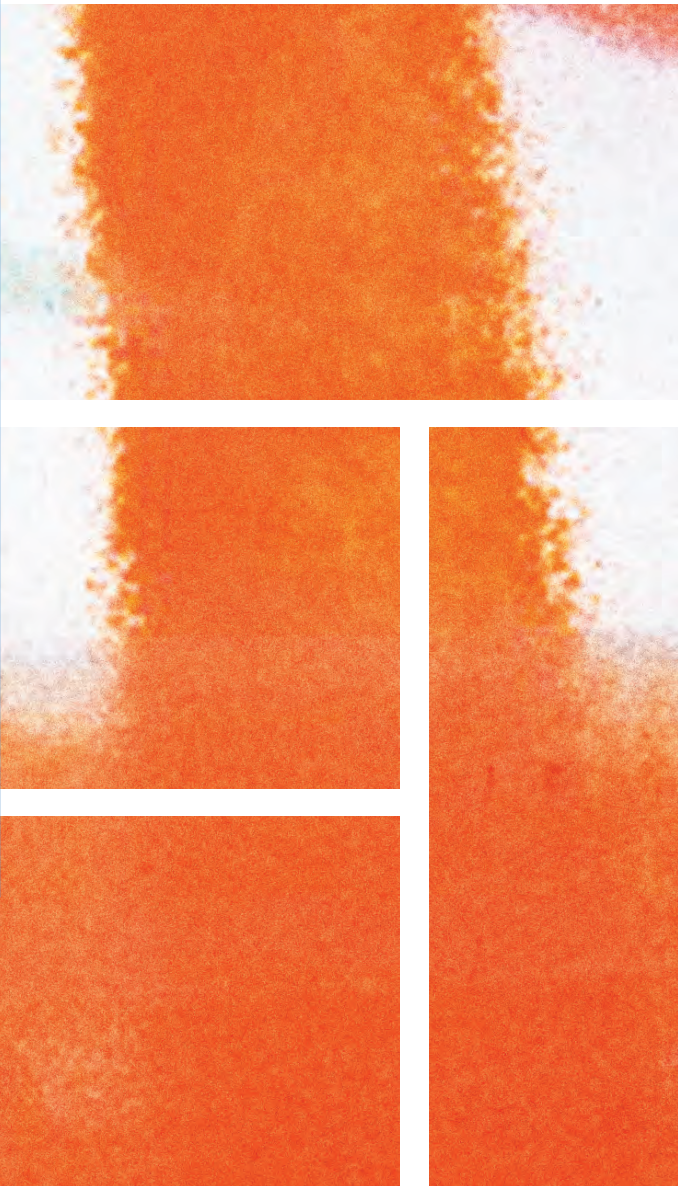
2010-2015
In 2010, our commitment to do good by the environments in which we work led us to register our company in the U.S. Green Building Council (USGBC).

2006-2009
The regional real estate boom was upon us and of course, we were more than ready to be part of it. In Dubai, we developed Burj Al Alam and OQYANA, while in Doha, we provided architectural, infrastructural and urban design, as well as landscape and construction services for Wa'ab City, a significant multidisciplinary project for us. However, it is Egypt that awarded us the lion's share with megaprojects such as Madinaty, Garden Heights, Cairo Festival City and Marassi.

1996-2005
ECG became a force to reckon with, transforming the engineering landscape one year at a time. After establishing our Union Association to acquire company stock, we opened our branches in Dubai, Qatar and Sudan. Amongst our most significant accomplishments was the US$1 billion ElKuraimat New Combined Cycle power plant, and winning the state-sponsored worldwide competition to develop Smart Village, Egypt's state-of-the-art communications and information technology business hub.

1992-1995
All eyes were on ECG as we won two key airport contracts to execute Terminal 3 at Cairo International Airport and renovate Terminal 1. Our wide range of capabilities was put to the test once more when we secured the contract for the Attaqa Thermal Power Plant, our first project in the power sector.

1983-1991
ECG went from strength to strength as it changed its legal status from a partnership to a joint stock company. Soon after, our branch in Abu Dhabi, UAE opened its doors. To empower our engineers and architects, we also launched the CADD System and our Oracle-based database.



1978-1982
ECG completed a series of groundbreaking wastewater schemes in collaboration with CH2M HILL, Metcalf & Eddy, and ES Parsons. Those included the water supply for Kafr El Sheikh governorate, the US$500 million USAID funded Rod El Farag Water Treatment Plant, and the US$5 billon Alexandria Wastewater Upgrade Program.

1970-1977
Our first consultancy contract, the US$2.5 million Qena-Safaga Potable Water Pipeline marked the beginning of a new wave of infrastructural development works undertaken by us across the country. Under the US$1 billion Greater Cairo Waterworks Master Plan and the US$150 million Port Said Water and Wastewater Master Plan in Egypt.

1969
The year it all began. In 1969, Mahmoud Sami Abdelkawi and Ashraf Hassan Allouba founded ECG Engineering Consultants Group as a business partnership.

Founders Experience

Mahmoud Sami Abdelkawi
Founder and Senior Advisor

Mahmoud Sami Abdelkawi, born in Cairo, Egypt, received a bachelor's degree in mechanical engineering from Cairo University in 1948. Following a three-year period as a teaching assistant at Cairo University's Faculty of Engineering, he formed a business partnership/contracting company that later evolved into one of the leading construction and transportation firms in Egypt. In 1962, under the existing socialist regime, the firm was nationalized. Later, Mr. Adbelkawi joined The Arab Contractors (Osman Ahmed Osman & Co.).

In 1969, Mr. Abdelkawi established ECG Engineering Consultants Group S.A. in collaboration with his partner Ashraf Allouba, where they contributed to a range of large-scale projects shaping our lives today in the field of construction of dams, power plants, and utilities, alongside transportation, infrastructure, and oil and gas facilities—across Egypt and abroad. Such landmark projects included the Alexandria Wastewater Program, Attaqa Thermal Power Plant in Suez, Cairo International Airport Terminal Building 3, alongside the Hydro-Agricultural Development Project (Great Man-Made River) in Libya and a number of other megaprojects.

In recognition of his achievements, Mr. Abdelkawi was awarded the "Order of the Republic of Egypt" in 1966. In 2005—by way of a presidential decree—he was appointed Chairman of the Egyptian Society of Engineers for two terms up to 2009. Mr. Abdelkawi is currently active with a number of prestigious associations, including the Egyptian Syndicate of Engineers, Egyptian Society of Engineers, Egyptian Society of Mechanical Engineers, Egyptian Geographical Society, L'Institute d'Egypte, and American Society of Mechanical Engineers.

Ashraf H. Allouba
Founder and Senior Advisor

Ashraf Hassan Allouba, born in Cairo, Egypt, graduated from Cairo University in 1955 with a bachelor's degree in architecture. Upon graduation, he worked as an architect and later joined the supervision team responsible for the construction of the Nile Hilton hotel. Afterwards, he joined The Arab Contractors.

Back in 1969, Mr. Allouba and his life-long companion Mr. Sami Abdelkawi established ECG through which they implemented a variety of engineering projects: urban and town planning; educational, healthcare, and sports facilities; industrial, administrative, and commercial buildings; hotels, resorts, and recreational facilities; mosques; and power plants; as well as many other public and private sector projects in Egypt, the Middle East and North Africa region, and in Europe. He was also the main author of the "Study of National Policy of Urban Development" funded by the U.S. Agency for International Development (USAID) and the Egyptian Ministry of Housing, Utilities, and Urban Communities.

As a pioneer in modern-day engineering practice—both in the Arab World and internationally—Mr. Allouba received several awards of excellence in recognition of his remarkable achievements. Awarding bodies included the Egyptian Syndicate of Engineers, Cairo University, Egyptian Society of Consulting Engineers, National Society of Professional Engineers, and the Egyptian Businessmen's Association.

Global Experience

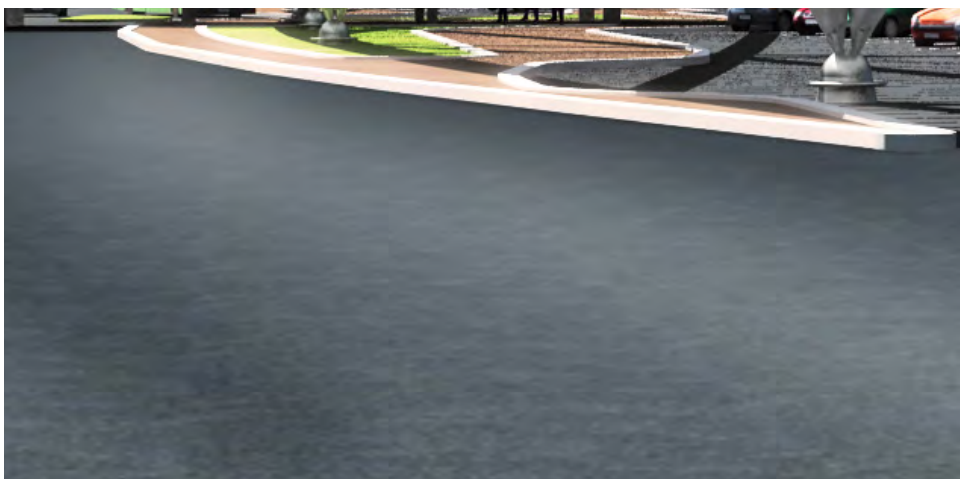
Since it's foundation, ECG has completed more than 2,500 projects in 39 countries, over 4 continents, including:

Africa

Algeria
Congo
Cote d'Ivoire (Ivory Coast)
DR Congo
Egypt
Equatoral Guinea
Ethiopia
Ghana
Guinea
Kenya
Liberia
Libya
Malawi
Morocco
Niger
Rwanda
Senegal
Somalia
Sudan
Tanzania
Uganda
Zambia

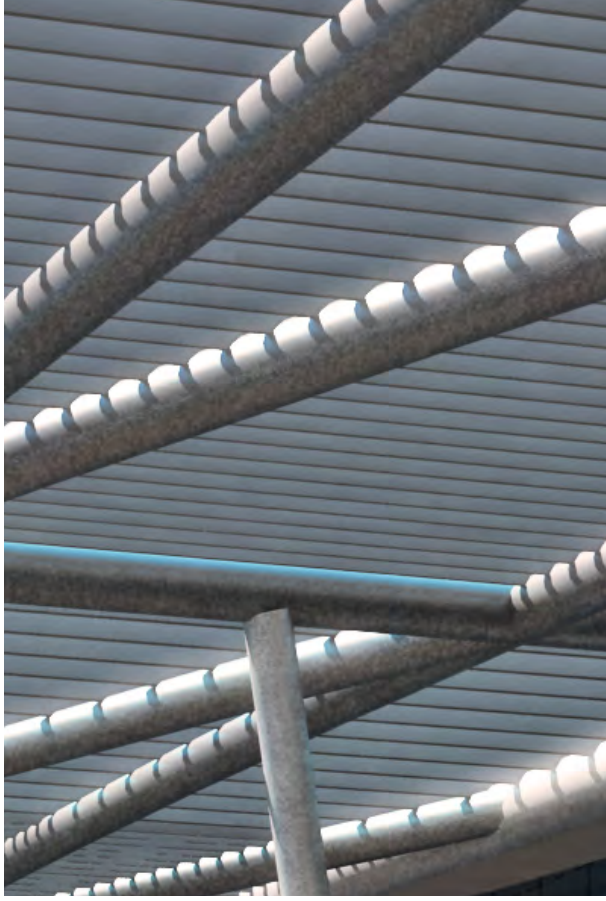
Europe

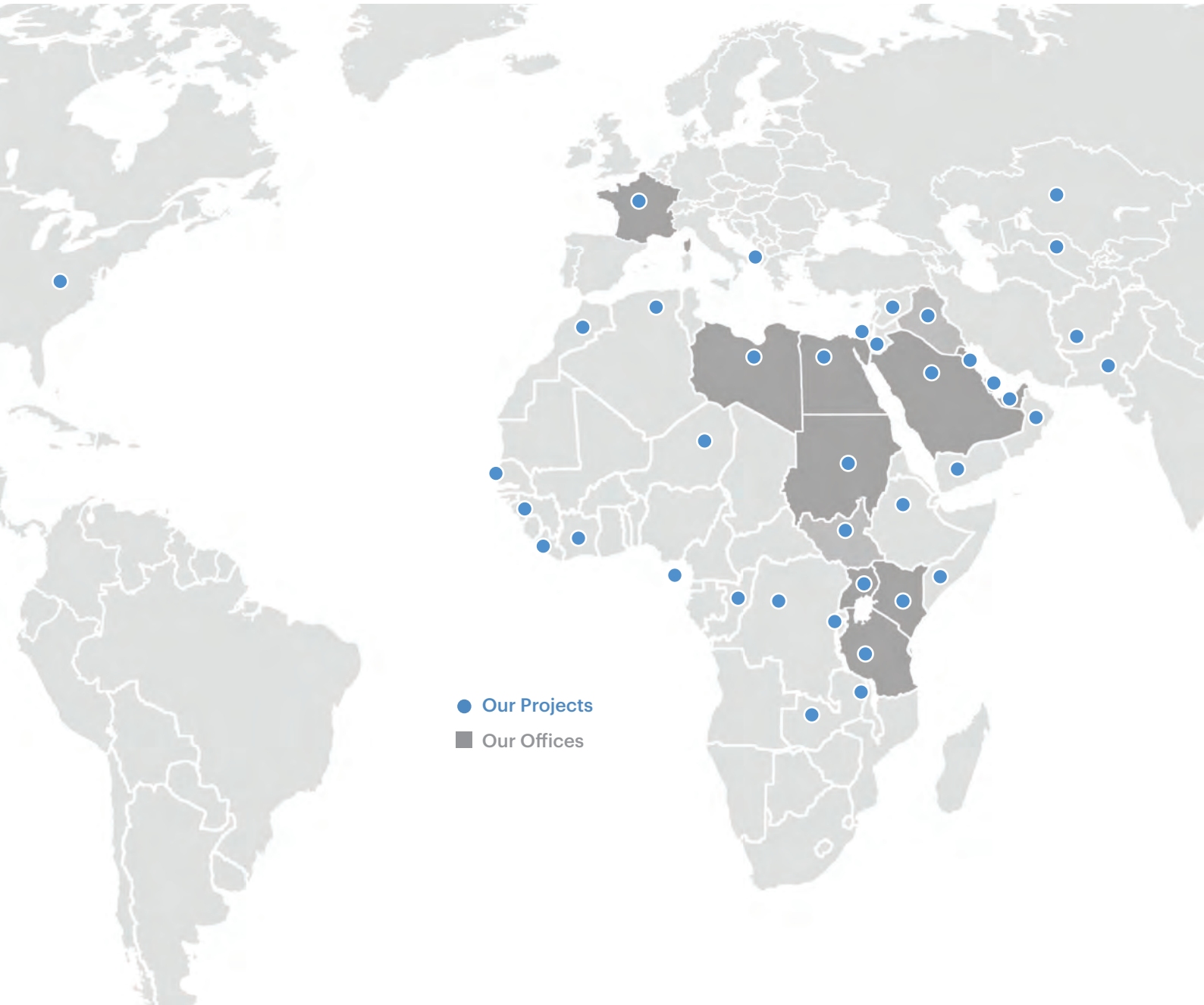
Albania
France



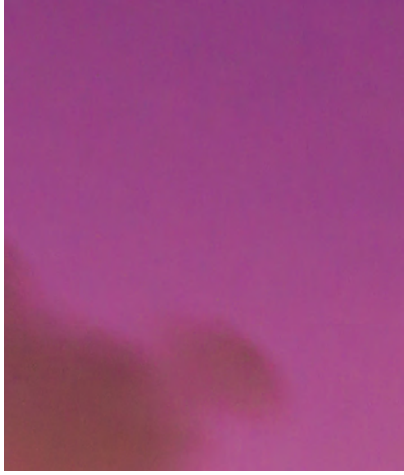
North America
USA

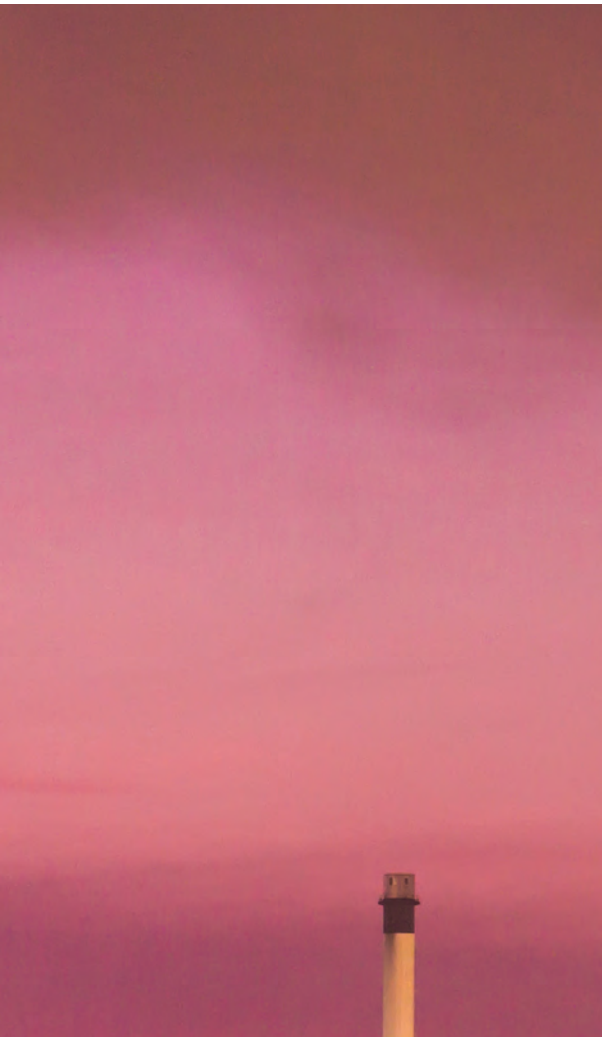
Asia
Afghanistan
Iraq
Jordan
Kazakhstan
KSA
Kuwait
Oman
Pakistan
Palestine
Qatar
Syria
Uzbekistan
UAE
Yemen





Organizational Chart

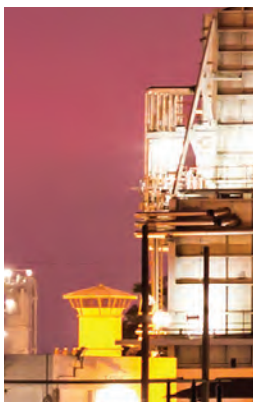


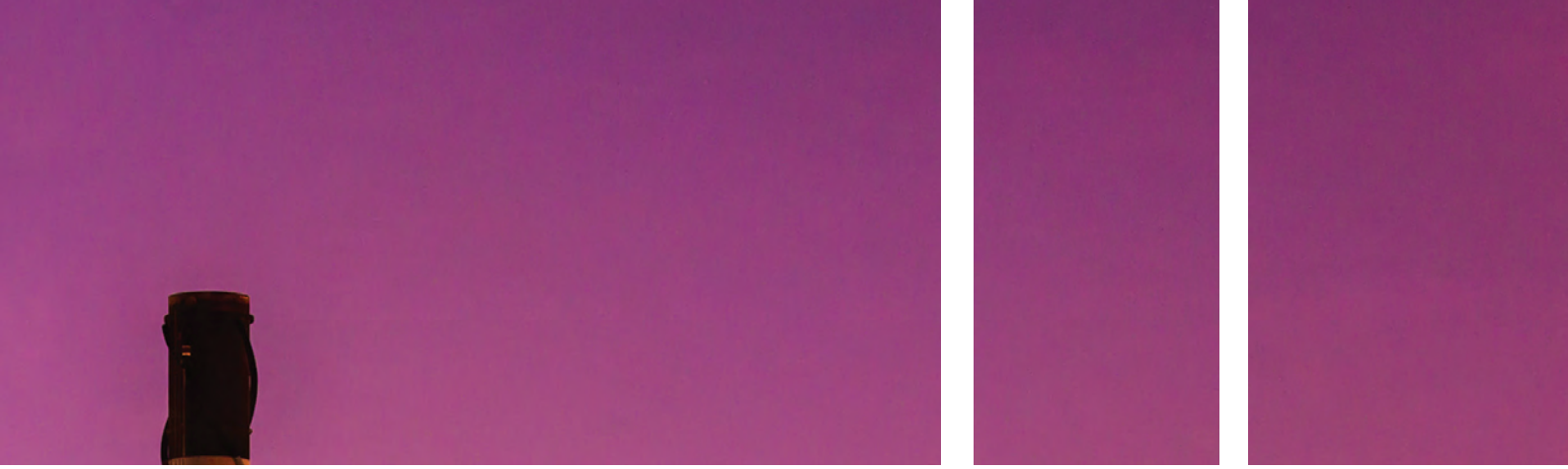


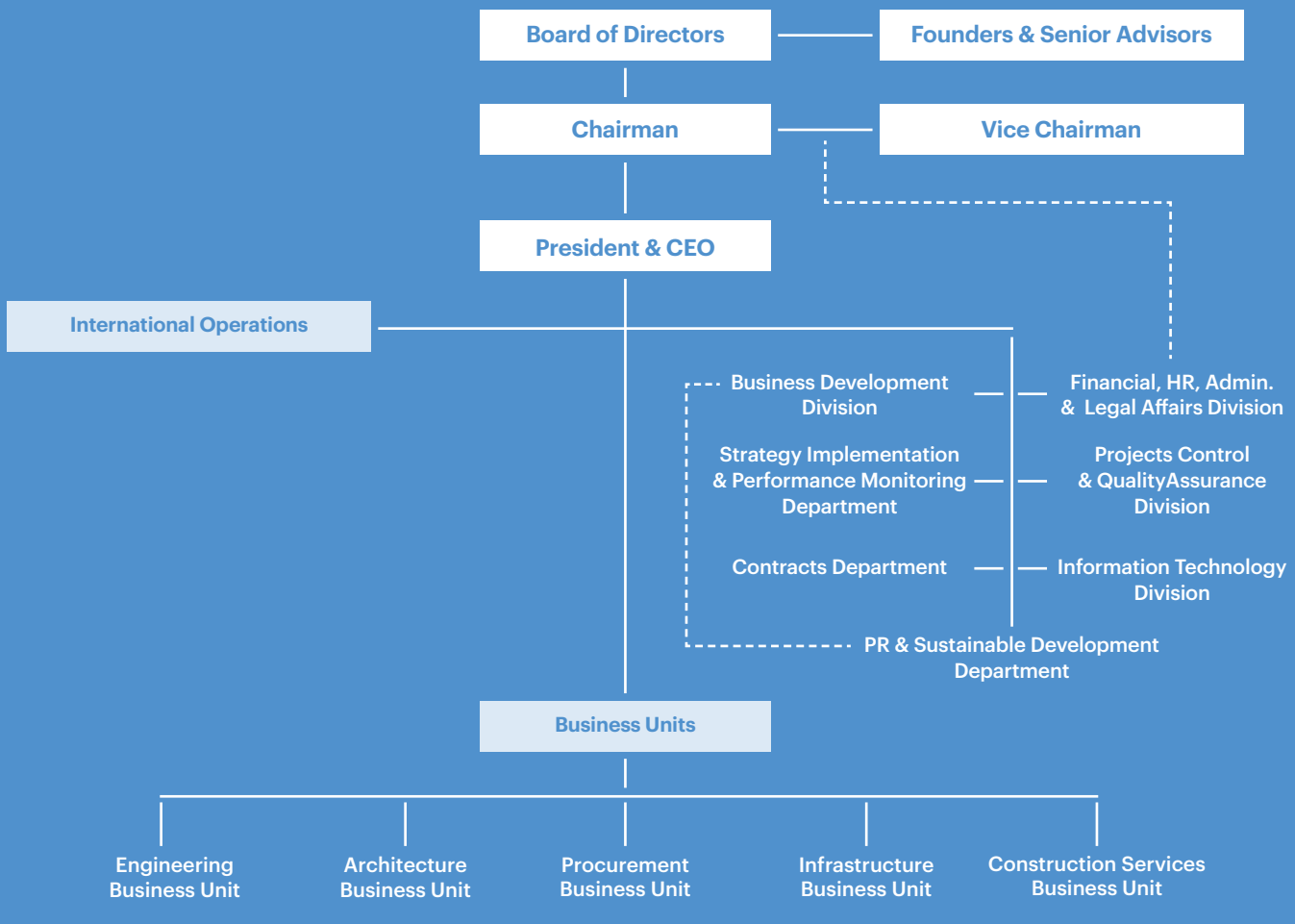
Organized in a highly efficient, robust and cross-functional structure that allows for a health and progressive growth in size, skill and quality.

ECG Organizational Chart shows the relationship between the company's various divisions and departments. All chart components contribute as required to the overall effort of engineering and construction of any specific project.

It is the policy of ECG to assign to each of its projects a dedicated team. This team is composed of a group of skilled individuals assigned from various divisions on a full-time basis as required. Team members perform their respective duties in accordance with a set planned schedule and budget. Headed by a Project Manager responsible for directing all project activities, the Project Team is sustained during the project lifetime. All members of the Team, whilst reporting to the Project Manager for all matters related to the project, still are held accountable to their Section and Department Heads for quality and conformity with design standards and practices adopted in ECG Manuals.






Board of Directors
Founders & Senior Advisors
Chairman
Vice Chairman
President & CEO
International Operations
Business Development Division
Financial, HR, Admin. & Legal Affairs Division
Strategy Implementation & Performance Monitoring Department
Projects Control & QualityAssurance Division
Contracts Department
Information Technology Division
PR & Sustainable Development Department
Business Units
Engineering Business Unit
Architecture Business Unit
Procurement Business Unit
Infrastructure Business Unit
Construction Services Business Unit

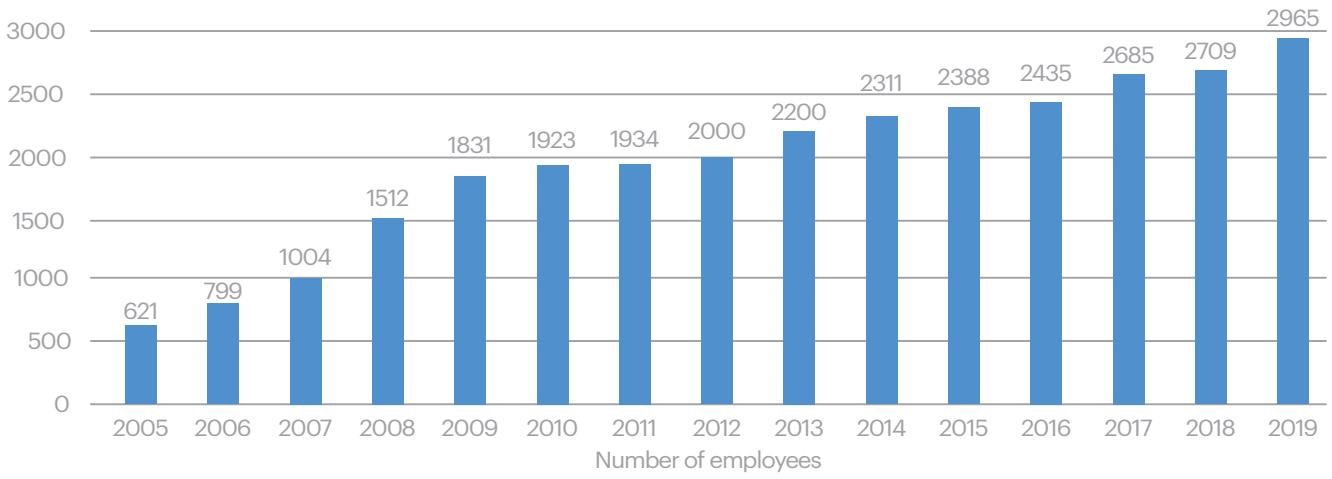
Human Resources

As an international consulting firm, the types of projects undertaken by ECG are challenging and diverse. Over the last 50 years, our firm has earned a reputation for technical excellence and reliability. ECG receives a high level of respect from clients, and its workforce takes pride in continuing to earn this respect.

Everyone grows at ECG. That is because we strongly believe in sharing knowledge across all boundaries and levels. Our professional engineers are familiar with state-of-the-art projects and developments. They also gain first-hand knowledge of some of the world's most complex projects. We build careers and personalities, not just projects.

At ECG, our staff members enjoy a wide range of advantages. These include competitive salaries, benefit packages, ongoing education and training, and opportunities to work on diverse projects in a variety of international environments. ECG employees also receive financial support to pursue educational opportunities and professional growth.

Staff Classification	Number
Architect	265
Interior Engineer	32
Healthcare Engineer	13
Urban Engineer	34
Landscape Engineer	63
Structural Engineer	120
Mechanical Engineer	69
Electrical Engineer	115
Communication & Light Current Engineer	47
Infrastructure Engineer	61
Roads Engineer	58
Instrumentation Engineer	2
Piping Engineer	4
Chemical Engineer	2
Biomedical Engineer	4
Agriculture Engineer	6
Project Manager	62
Project Engineer	35
Business Development	21
Environmental Engineer	3
Management	118
Designer	46
Chief Draftsman	99
Computer Programmer	20
Computer Operator	37
Construction Supervision Manager	96
Site Engineer	703
Document Controller/Secretary	191
Surveyor	33
Geologist	1
Agriculture Technician	1
Chemist/ Physist	1
Accountant	150
Administrative Staff	453
TOTAL	**2965**



ISO
Certifications

ECG is a pioneering engineering company providing high-quality engineering consultancy services to its clients.

BUREAU VERITAS Certification

ECG ENGINEERING CONSULT

Address: Building 2, Block 10, Sefarat District, Nasr City, 11765, Cairo
ARAB REPUBLIC OF EGYPT

Bureau Veritas Certification Holding SAS – UK Branch certifies that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below

ISO 9001:2015

Scope of certification

Engineering & Technical Consultancy services, Comprising design Project Management, Green Building services, design services (for Architectural, Master planning, structural, electrical, Extra Low Voltage, Information & communication Technologies, Mechanical, Industrial, Roads, water and waste water, Landscape, Interior design, Healthcare planning& Equipment Selection) Construction project Management /supervision services, Traffic impact study, Loan Management and Environmental studies

Original cycle start date:	16th July 2015
Expiry date of previous cycle:	15th July 2018
Recertification Audit date:	5th July 2018
Recertification cycle start date:	9th August 2018

Subject to the continued satisfactory operation of the organization's Management System, this certificate expires on: 15th July 2021

Certificate No. IND18.9310 U/Q Version: No.1 Revision date: 9-August-2018

Signed On Behalf of BVCH UK Branch
Ayman Ibrahim
Certification BL Manager

UKAS MANAGEMENT SYSTEMS 0008

Certification body address: 66, Prescot Street, London, E1 8HG, United Kingdom
Local office: 51 Hassan Afifion Street, Ard El Golf, Nasr City, P.O. Box 1731, Cairo, Arab Republic of Egypt
Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organisation. To check this certificate validity, please call: (+202 2418 3020)

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BUREAU VERITAS Certification

ECG Engineering Consultants Group S.A.E.

Address: Building 2, Block 10, Sefarat District, Nasr City,Cairo
ARAB REPUBLIC OF EGYPT

Bureau Veritas Certification Holding SAS – UK Branch certifies that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below

ISO 14001:2015

Scope of certification

Engineering & Technical Consultancy Services, Comprising Design Project Management, Design Services, Green Building Services, Project Construction Management and Construction Supervision Services

Original cycle start date:	28th November 2012
Expiry date of Previous Cycle:	25th November 2018
Recertification Audit date:	08th November 2018
Certification cycle start date:	21st January 2019

Subject to the continued satisfactory operation of the organization's Management System, this **Certificate expires on:** 25th November 2021

Certificate No.IND18.5624 U/E Version: No.1 Revision date: 21st January 2019

Signed On Behalf of BVCH UK Branch
Ayman Ibrahim
Certification BL Manager

UKAS MANAGEMENT SYSTEMS 0008

Certification body address: 66, Prescot Street, London, E1 8HG, United Kingdom
Local office: 51 Hassan Afifion Street, Ard El Golf, Nasr City, P.O. Box 1731, Cairo, Arab Republic of Egypt
Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organisation.
To check this certificate validity please call: (+202 2418 3020)

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BUREAU VERITAS Certification

ECG ENGINEERING CONSULTANTS GROUP S.A

Contracting Entity: Floor 8, 11 & 12, Al Owinah Tower (Waseef),
Museum Park Street, Old Salata,
P. O. Box: 24071, Doha

STATE OF QATAR

Bureau Veritas Certification Holding SAS – UK Branch certifies that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below

ISO 14001:2015

Scope of certification

ENGINEERING & TECHNICAL CONSULTANCY SERVICES COMPRISING DESIGN PROJECT MANAGEMENT, DESIGN SERVICES, GREEN BUILDING SERVICES, PROJECT CONSTRUCTION MANAGEMENT AND CONSTRUCTION SUPERVISION SERVICES.

Original cycle start date:	12th May 2016
Expiry date of previous cycle:	11th May 2019
Re-Certification audit date:	18th April 2019
Re-Certification cycle start date:	12th May 2019

Subject to the continued satisfactory operation of the organisation's Management System, this certificate expires on: 11th May 2022.

Certificate No. IND 19.8726 U/E-A Version: No. 1 Revision date: 12th May 2019

Vinoth. K. P - Certification Manager

Certification body address: 5th Floor, 66 Prescot Street, London E1 8HG, United Kingdom
Local office: G1-G3, Ground Floor, KG Building
(Bldg. No. 194, Street No. 220), C Ring Road,
Opposite Gulf Times, P. O. Box: 22157,
(Doha) Qatar

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organisation.
To check this certificate validity please call: +974 40328729

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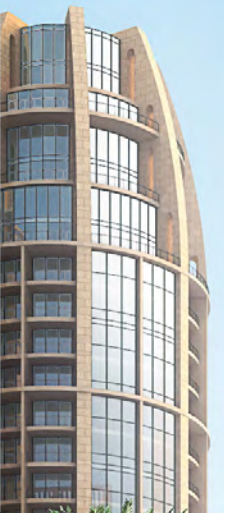

BUREAU VERITAS
Certification

ECG Engineering Consultants Group S.A.E.
Address: Building 2, Block 10, Sefarat District, New City,Cairo
ARAB REPUBLIC OF EGYPT

Bureau Veritas Certification Holding SAS – UK Branch certifies that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below

ISO 45001:2018

Scope of certification

Engineering & Technical Consultancy Services, Comprising Design Project Management, Design Services, Green Building Services, Project Construction Management and Construction Supervision Services

Original cycle start date: ***21th January 2019***
Expiry date of Previous Cycle: ***NA***
Cert / Re-cert audit date: ***8th November 2018***
Cert / Re-cert Cycle Start Date: ***21th January 2019***

Subject to the continued satisfactory operation of the organization's Management System, this certificate expires on: **20th January 2022**

Certificate No. IND18.5624 U/HS Version: No.1 Revision date: 21th January 2019

Signed On Behalf of BVCH UK Branch
Ayman Ibrahim
Certification BL. Manager

UKAS MANAGEMENT SYSTEMS
0008

Certification body address: 66, Prescot Street, London, E1 8HG, United Kingdom
Local office: 51 Hassan Afifion Street, Arif El Golf, Nasr City, P.O. Box 1731, Cairo, Arab Republic of Egypt
Further clarifications regarding the scope of this certificate and the applicability of the management system
To check this certificate validity, please call: (+202 2418 3020)

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BUREAU VERITAS
Certification

ENGINEERING CONSULTANTS GROUP (ECG)
ABU DHABI
Address: Unit 2201 B2 Tamouh Tower Building 12, Marina Square, Reem Island, Abu Dhabi
P.O. Box 29556, Abu Dhabi, UAE

Bureau Veritas Certification Holding SAS – UK Branch certifies that the Management System of the above organisation has been audited and found to be in accordance with The requirements of the management system standards detailed below

ISO 9001:2015

Scope of certification

Engineering & Technical Consultancy Services, Comprising Design Project Management, Green Building Services, Design Services (for Architectural, Master Planning, Structural, Electrical, Extra Low Voltage, Information & Communication Technologies, Mechanical, Industrial, Roads, Water, Landscape, Interior Design, Healthcare Planning & Equipment Selection) and Construction Management/Supervision

Original cycle start date: 8th April 2011
Expiry date of previous cycle: 24th April 2020
Certification Audit date: 13th April 2020
Certification cycle start date: 6th May 2020

Subject to the continued satisfactory operation of the organization's Management System, **this certificate expires on: 24th April 2023**

Certificate No. MER20.362/UQ Version: No.1 Revision date: 6th May 2020

Signed on behalf of BVCH SAS UK Branch

UKAS MANAGEMENT SYSTEMS
0008

Certification body address: 66, Prescot Street, London, E1 8HG, United Kingdom
Local office: Bureau Veritas Egypt 51 Hassan Afifion Street, Arif El Golf, Nasr City, P.O. Box 1161 Cairo, Arab Republic of Egypt
Further clarifications regarding the scope of this certificate and the applicability of the management System requirements may be obtained by consulting the organisation
To check this certificate validity, please call: (+202 2418 3020)

BUREAU VERITAS
Certification

Engineering Consultants Group (ECG) - QATAR
Address: Al Owenah Tower, Old Salata, 12th Floor - Doha, Qatar

Bureau Veritas Certification Holding SAS – UK Branch certifies that the Management System Of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below

ISO 9001:2015

Scope of certification

Engineering & Technical Consultancy Services, Comprising Design Project Management, Green Building Services, Design Services (for Architectural, Master Planning, Structural, Electrical, Extra Low Voltage, Information & Communication Technologies, Mechnical, Industrial, Roads, Water, Landscape, Interior Design, Healthcare Planning & Equipment Selection) and Construction Management/Supervision

Original cycle start date: **26th February 2010**
Expiry date of previous cycle: **24th February 2019**
Recertification Audit date: **14th February 2019**
Recertification cycle start date: **2nd April 2019**

Subject to the continued satisfactory operation of the organization's Management System, This certificate expires on: **24th February 2022**

Certificate No. IND19.9110 U/Q Version: No.1 Revision date: 2nd April 2019

Signed On Behalf of BVCH UK Branch
Ayman Ibrahim
Certification BL. Manager

UKAS MANAGEMENT SYSTEMS
0008

Certification body address: 66, Prescot Street, London, E1 8HG, United Kingdom
Local office: 51 Hassan Afifion Street, Arif El Golf, Nasr City, P.O. Box 1731, Cairo, Arab Republic of Egypt
Further clarifications regarding the scope of this certificate and the applicability of the management system
Requirements may be obtained by consulting the organisation.
To check this certificate validity, please call: **(+202 2418 3020)**

BUREAU VERITAS
Certification

ECG ENGINEERING CONSULTANTS GROUP S.A
Contracting Entity: Floor 8, 11 & 12, Al Owinah Tower (Waseef),
Museum Park Street, Old Salata,
P. O. Box: 24071, Doha
STATE OF QATAR

Bureau Veritas Certification Holding SAS – UK Branch certifies that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below

ISO 45001:2018

Scope of certification

ENGINEERING & TECHNICAL CONSULTANCY SERVICES COMPRISING DESIGN PROJECT MANAGEMENT, DESIGN SERVICES, GREEN BUILDING SERVICES, PROJECT CONSTRUCTION MANAGEMENT AND CONSTRUCTION SUPERVISION SERVICES.

Original cycle start date: **12th May 2019**
Expiry date of previous cycle: **N/A**
Certification audit date: **18th April 2019**
Certification cycle start date: **12th May 2019**

Subject to the continued satisfactory operation of the organisation's Management System, this certificate expires on: **11th May 2022.**

Certificate No. IND 19.8726 U/HS-B Version: No. 1 Revision date: 12th May 2019

Vinodh. K. P - Certification Manager

Certification body address: **5th Floor, 66 Prescot Street, London E1 8HG, United Kingdom**
Local office: **G1-G3, Ground Floor, KG Building (Bldg. No. 194, Street No. 230), C Ring Road, Opposite Gulf Times, P. O. Box: 22157, (Doha) Qatar**

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organisation.
To check this certificate validity please call: **+974 40220720**

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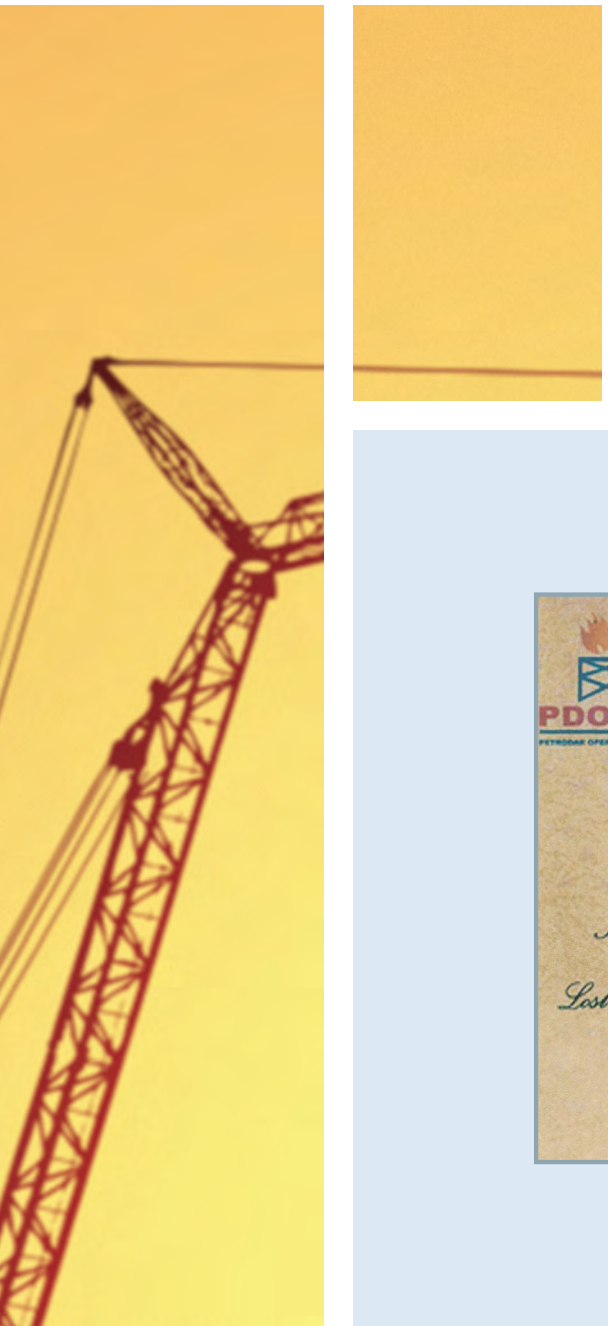
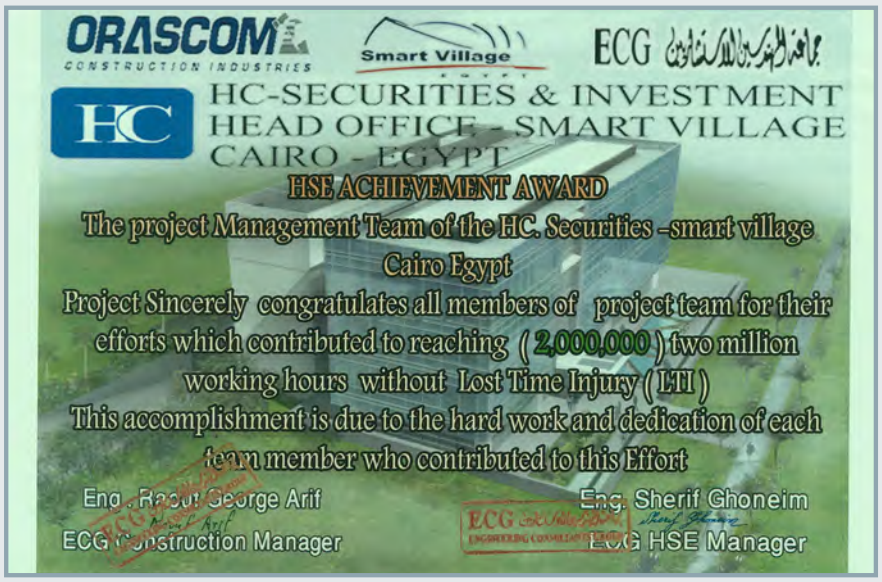
Health, Safety and Environment

ECG considers HSE as an integral part of business

- Establish safety and environment objectives to continual improvement of safety and environmental management system in order to achieve the ZERO Accident and save of Environment.
- ECG Engineering Consultants Group is committed to maintain a safe, healthy and sustainable working environment wherever we operate. Everybody is responsible for safety.
- Leading the Architectural / Engineering firms in Egypt, ECG is the first Egyptian Architectural design firm to register a LEED project in Egypt.
- ECG use in-house "LEED Green Associates" covering all engineering disciplines.
- ECG is committed complying and conform with Occupational Health & Safety management systems ISO 45001 and Environment management system ISO 14001.




ORASCOM
CONSTRUCTION INDUSTRIES
Smart Village
ECG
HC
HC-SECURITIES & INVESTMENT
HEAD OFFICE - SMART VILLAGE
CAIRO - EGYPT
HSE ACHIEVEMENT AWARD
The project Management Team of the HC. Securities -smart village
Cairo Egypt
Project Sincerely congratulates all members of project team for their efforts which contributed to reaching (2,000,000) two million working hours without Lost Time Injury (LTI)
This accomplishment is due to the hard work and dedication of each team member who contributed to this Effort
Eng. Raouf George Arif
ECG Construction Manager
Eng. Sherif Ghoneim
ECG HSE Manager


شهـــادة تقـديـــر
الهيئة الهندسية للقوات المسلحة
وزارة الدفـــاع
تتقدم الهيئة الهندسية للقوات المسلحة بالشكر والتقدير
إلى شركة جماعة المهندسين الإستشاريين (E C G)
على الخدمات الإستشارية والمجهود الوافر لإستعادة كفاءة المجمع العلمى
وذلك بعد الحريق الذى تعرض له خلال أحداث ثورة " ٢٥ " يناير.
مع تمنياتنا بدوام الرقى والتقدم .
والله ولى التوفيق ،،،،،،
التوقيع :
لـواء أ ح / طاهـر عبـد الله طـه
رئيس الهيئة الهندسية للقوات المسلحة
القاهرة فى ١/ ٥ / ٢٠١٢

LEED AP BD+C

GREEN BUILDING CERTIFICATION INSTITUTE CERTIFIES THAT

HAS ATTAINED THE DESIGNATION OF

LEED ACCREDITED PROFESSIONAL

with a Building Design + Construction Specialty

by demonstrating the knowledge and understanding of green building practices and principles needed to support the use of the LEED® Green Building Rating System™.

10651114-AP-BD+C
CREDENTIAL ID

18 APR 2013
ISSUED

17 APR 2017
VALID THROUGH

GAIL VITTORI, GBCI CHAIRPERSON

MAHESH RAMANUJAM, GBCI PRESIDENT

U.S. Green Building Council

ECG Engineering Consultants Group

MEMBER SINCE 2010

THE U.S. GREEN BUILDING COUNCIL IS THE NATION'S FOREMOST COALITION OF LEADERS WORKING TO TRANSFORM THE WAY BUILDINGS AND COMMUNITIES ARE DESIGNED, BUILT AND OPERATED, ENABLING AN ENVIRONMENTALLY AND SOCIALLY RESPONSIBLE, HEALTHY, AND PROSPEROUS ENVIRONMENT THAT IMPROVES THE QUALITY OF LIFE.

Tim Cole, Chair

S. Richard Fedrizzi, President, CEO and Founding Chairman

إستدامة
estidama

EmiratesGBC

QSAS
QATAR SUSTAINABILITY ASSESSMENT SYSTEM
المنظومة القطرية لتقييم الاستدامة

International Ranking

ECG ranks among the top 5 in the Middle East

TOP 225

The Top **International** Design Firms

On The Top 225 International Design Firm list, firms are ranked based on design revenue from projects outside of their home countries, measuring their presence in international commerce.

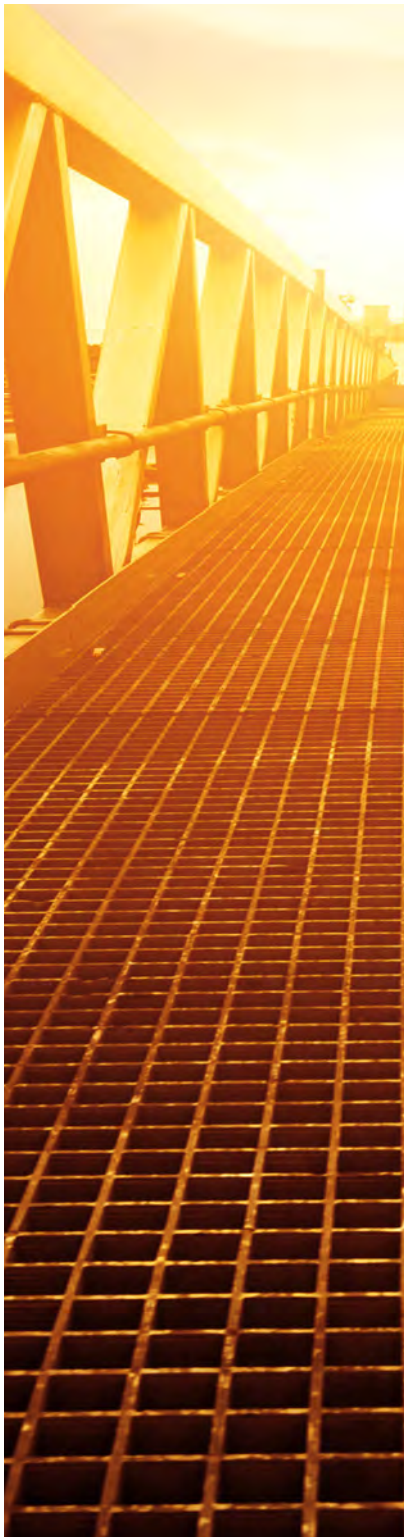
RANK 2020	RANK 2019	FIRM	FIRM TYPE	2019 INT'L REVENUE IN $ MIL	2019 INT'L REVENUE % OF TOTAL REV.	GENERAL BUILDING	MANUFACTURING	POWER	WATER SUPPLY	SEWER / WASTE	INDUS. / PETROLEUM	TRANSPORTATION	HAZARDOUS WASTE	TELECOM
92	90	**ECG ENGINEERING CONSULTANTS GROUP SA,** Cairo, Egypt	EA	78.5	59	84	0	5	9	0	0	2	0	0

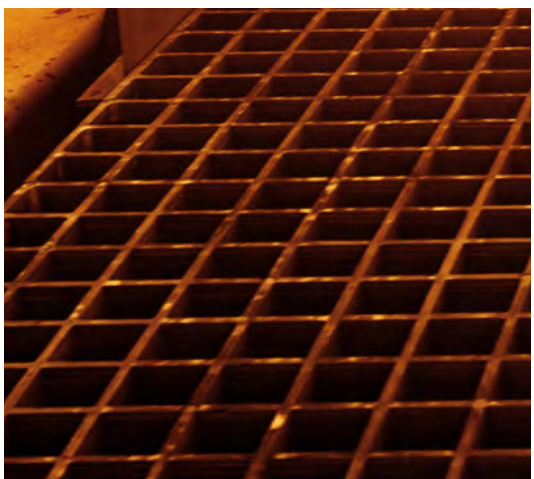
ECG ranked prestigiously within the subcategories of the ENR “Top International Design Firm” list

The Engineering News-Record (ENR), the globally circulated magazine with profoundly respected ratings and analyses, has recently published its Global Sourcebook December 2019. This year’s sourcebook is based on the 2018 Revenue for the Top International Design Firms.

According to the sourcebook, ECG ranked prestigiously within the subcategories of the “Top International Design Firms” list:

- 39 out of 50 (USD 58.4 million) in General Buildings;
- 16 out of 25 (USD 12.7 million) in Commercial Offices & Banks;
- 19 out of 25 (USD 7.1 million) in Education;
- 25 out of 25 (USD 4.2 million) in Healthcare;
- 15 out of 25 (USD 10.1 million) in Hotels, Motels & Convention Centers;
- 16 out of 25 (USD 15.5 million) in Multi-Unit Residential;
- 19 out of 20 (USD 3.0 million) in Chemicals (Non-Petroleum);
- 21 out of 25 (USD 7.5 million) in Transmission Lines and Aqueducts





Value Engineering Practice

ECG performs value Engineering practices using the in-house "Associates Value Specialists" covering all engineering disciplines.

SAVE International

ASSOCIATE VALUE SPECIALIST

The Certification Board of SAVE International® Declares that

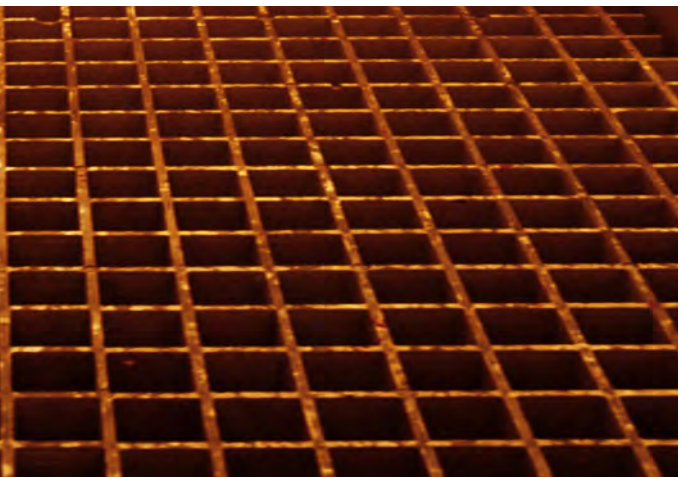
Having met all the requirements of Value Experience and Education required for professional competence is registered as an ***Associate Value Specialist.***

AVS Certification Valid
From January 10, 2012
To January 31, 2013

Certification Board Chairman, SAVE International®

President, SAVE International®

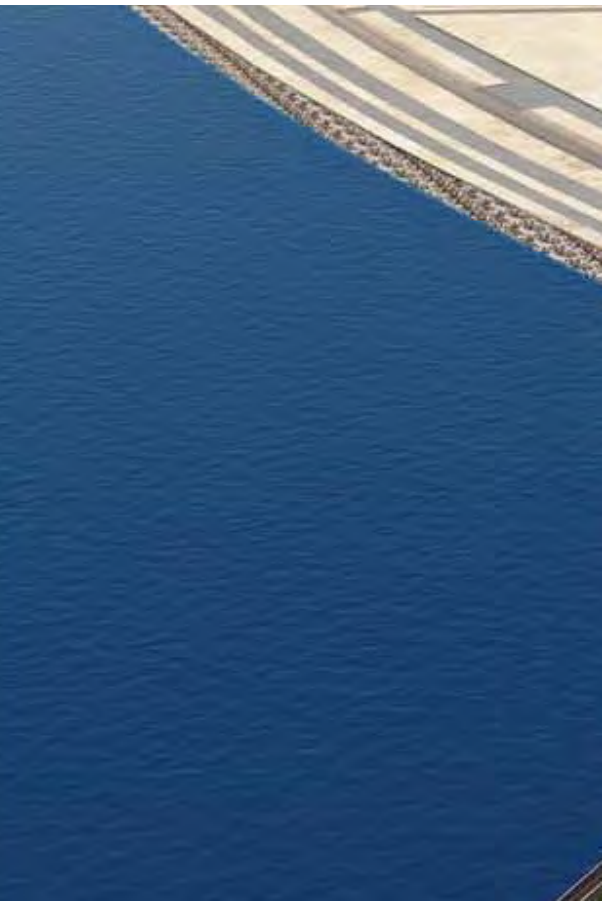
Certification No. 201201007



Project Cycle

Our multi-disciplinary approach provides our clients with the most efficient, integrated and cost effective designs.

Feasibility Studies → Master Planning & FEED → Concept Designs → Detailed Designs → Tender Action → Construction Management/ Supervision → Project Handover



General Buildings

Architecture
Structures
Mechanical
Electrical
Interior design
Light current
Landscape

Oil & Gas

Piping
Process
Mechanical
Electrical
Equipment selection
Instrumentation
Structures
Rotary equipment
Vessels

Power

Piping
Process
Mechanical
Electrical
Equipment selection
Instrumentation
Structures
Rotary Equipment
Vessels

Water & Wastewater

Process
Mechanical
Electrical
Instrumentation
Structures
Piping
Equipment selection

Aviation

Architecture
Structures
Mechanical
Electrical
Interior design
Light Current
Landscape
Airport planning
Conveying systems

Mixed Use Development

Urban Planning
Architecture
Structures
Mechanical
Electrical
Light Current
Landscape
Roads

Our Services

Studies and Master Planning

ECG's extensive studies and master planning portfolio covers a diversity of specializations. With a solid track record in master planning, geotechnical, and GIS studies, the firm additionally offers a wide spectrum of feasibility studies, social studies, and asset appraisals and valuations. Moreover, our support for green development is demonstrated by the company's history and experience in preparing studies addressing environmental pollution control and energy savings.

Engineering and Architecture Design

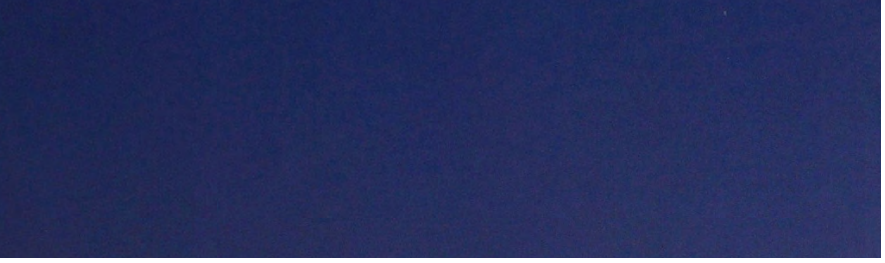
Our multi-disciplinary approach and long-established track record enables us to provide a unique design for each project with an emphasis on innovation, cost effectiveness, quality of work, and environment al consideration. No project is 'typical' at ECG. By receiving support and feedback from the Construction Management Division, our designs consider all available construction methodologies and complexities. We specialize in all project phases including Front-End Engineering Design (FEED), concept, preliminary, schematic, and detailed designs, as well as construction documents, specifications, bill of quantities, value engineering, and computer simulations.

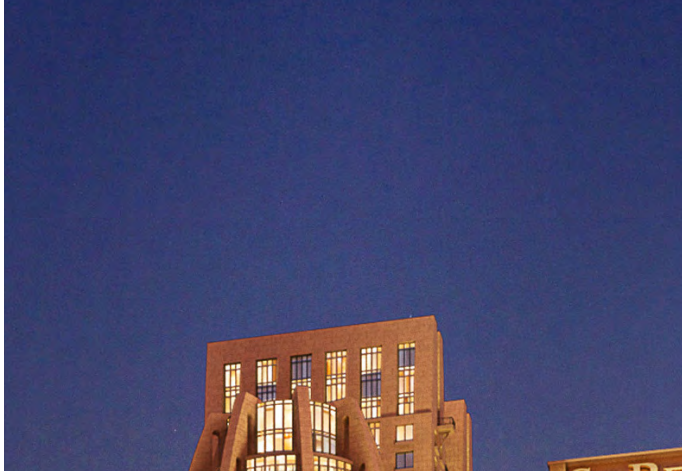
Construction Management and Supervision

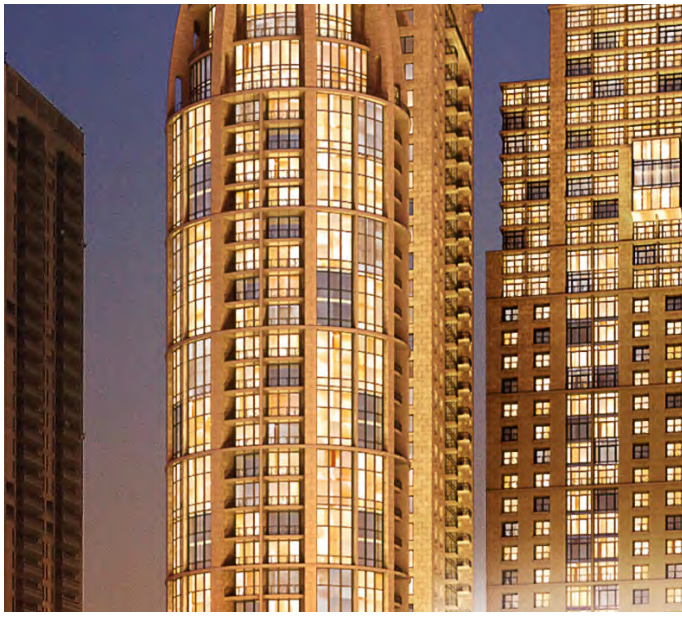
ECG is renowned for providing highly qualified, accurate, and time-efficient supervision services to support and enhance project execution. By employing and developing the best available resources, our construction managers, resident engineers, supervision engineers, and inspectors utilize their local knowledge and ECG's growing experience to deliver high quality projects. We provide construction supervision services for all our served sectors. ECG services encompass project daily inspection and supervision, design review, shop drawing review, material submittal approval, and project specification conformity.

Project Management

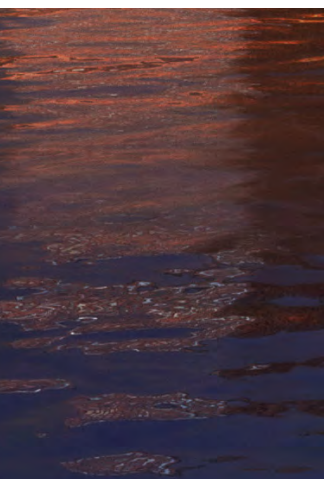
From inception to completion, we plan, execute, and control projects backed by proactive planning and first-hand knowledge of contract terms, client objectives, responsibilities, and capabilities. Project budgets are continuously monitored to secure budget and contract compliance. Adept technical and human resources are pooled to forge effective project organization structures. We focus on strong, reliable communication with clients to sustain long-lasting business relationships. Meanwhile, in accordance with the best engineering ethics, plans are set, goals are defined, and methods are devised to accomplish projects' requirements within set budgets and time schedules.

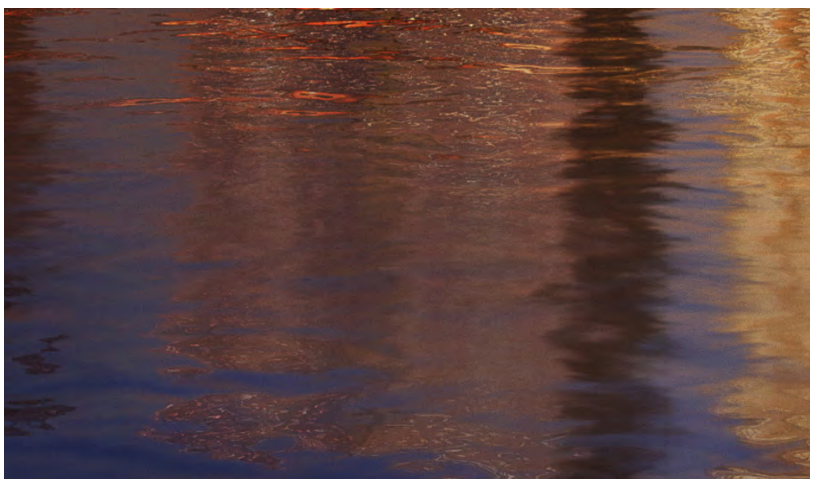




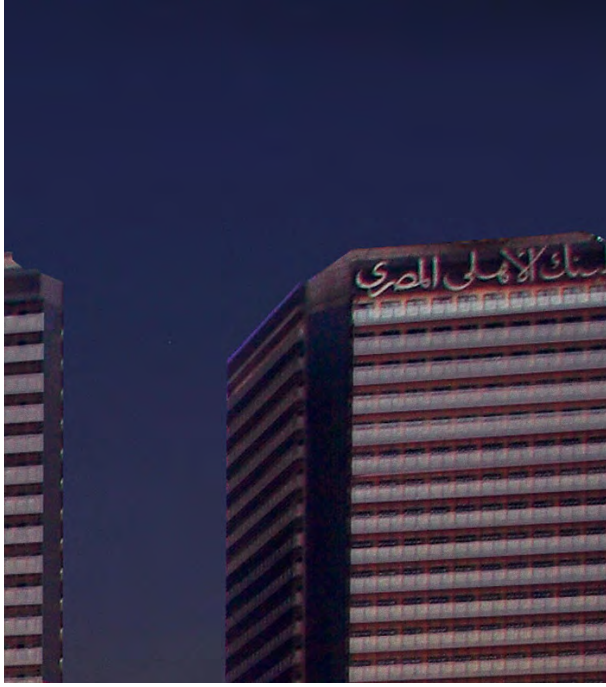


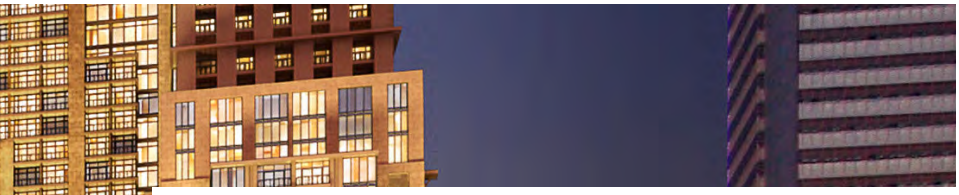
Projects





Our Sectors





Buildings

Banks
Convention Centers
Education
Government
Healthcare
High-Rise Buildings
Hotels & Resorts
Labs
Office & Commercial buildings
Religious Buildings
Residential Buildings
Retail
Sports Clubs & Facilities

Industrial, Oil and Gas

Cement Plants
Chemical & Fertilizers Plants
Cold Storage
Factories
Food & Beverages Plants
Oil & Gas
Pharmaceutical Plants
Sugar Plants
Workshops & Warehouses

Power

Power Generation
Substations
Transmission & Distribution

Utilities

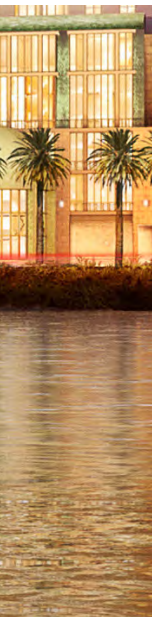
Irrigation
Solid Waste Management
Wastewater Networks
Water Networks
Water & wastewater Treatment Plants

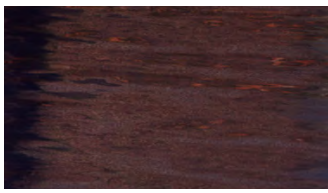
Transport

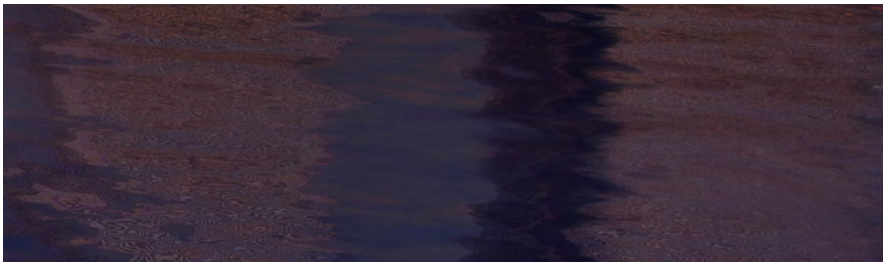
Aviation
Metro
Ports & Harbors
Roads & Highways

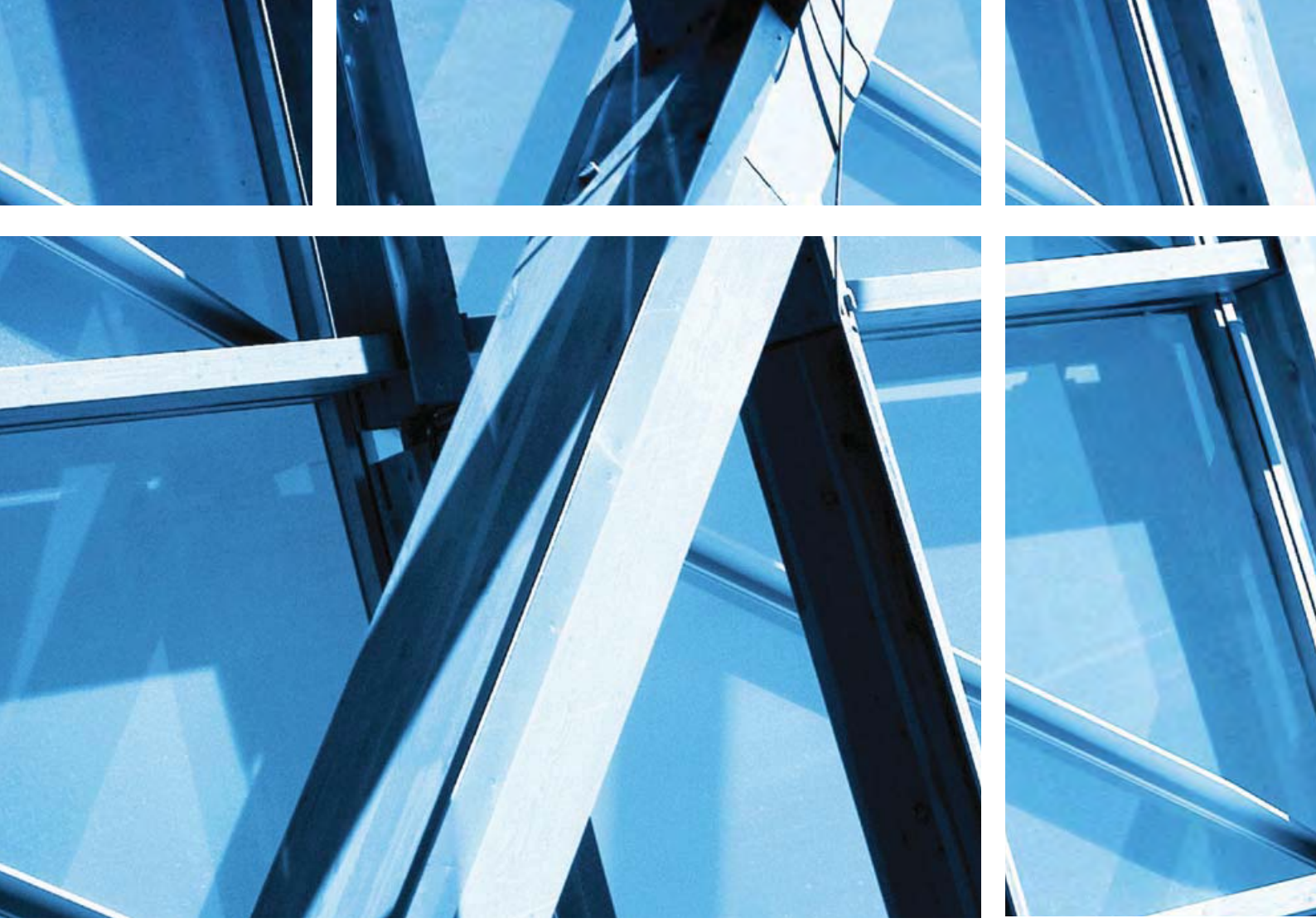
Urban Development

Urban Planning & Mixed-use Developments









Buildings

ECG
ENGINEERING CONSULTANTS GROUP S.A.
مجموعة المهندسين للاستشاريين

Banks

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Export Development Bank of Egypt Headquarters

Client
Export Development Bank of Egypt (EBE)

Scope of Work
Concept design
Schematic design
Detailed design
Construction supervision

Location
New Capital, Egypt

Types of Activities
Architectural
Interior design
Landscape
Structural

On a land area of about 8,590 m^2 in the Financial District, EBE bank is based in a central, well-connected location; enjoying excellent prominence in the vicinity of the Presidential Palace, Business Center and the Diplomatic District.

The 38 meter-high building comprises 2 basements, ground, first, and 5 typical floors, in addition to a VIP floor (7^{th}), with a total built-up area of 29,196 m^2 (excluding basements).

Adopting the efficient space-planning concept of allocating main design elements around two service cores enclosing the main atrium, the building accommodates office spaces, MPU, lounges, meeting room, bank branch and its related services, waiting & operation areas, and HQ and VIP entrances.

Export Development Bank of Egypt Headquarters

QNBAA Qatar National Bank Al-Ahli

Client
QNBAA Qatar National Bank Al-Ahli

Scope of Work
Master plan
Conceptual design
Schematic design
Detailed design
Tender documents
Construction supervision
Design permits

Location
New Capital, Egypt

Types of Activities
Architectural
Interior design
Landscaping
Structural

The building is located south the Business and Financial District at the New Capital, on a plot area of about 6,500 m^2.

While every floor is carefully planned and designed for maximum benefit, efficiency, and productivity, the architectural design, based on allocating the main design elements around a service core in an L-shaped structure, allows users to enjoy working in a workspace with a vision for wellbeing and prosperity. The building includes office spaces, multi-purpose units, lounges, meeting room, tenant spaces and their related services, bank's branch and it's related services, waiting and operation areas, HQ entrance and its related services, and a VIP entrance & its related services.

With a maximum height of 38 meters, and a total built-up area of 22,498 m^2, the building consists of two basement floors, a ground floor, first floor, five typical floors (from 2nd to 6th), and a 7th VIP floor.

QNBAA Qatar National Bank Al-Ahli

Faisal Islamic Bank of Egypt

Client
Faisal Islamic Bank of Egypt

Scope of Work
Master Plan
Conceptual Design
Schematic Design
Basis of Design Report
Detailed Design
Tender Documents
Tender Action
Construction Supervision

Location
New Capital, Egypt

Types of Activities
Architectural
Electrical
Interior Design
Landscaping
Structural
Urban Design

The project falls within the Business & Financial District, over an overall plot area of approx. 7,050 m^2, a footprint of approx. 3,292 m^2, and a built-up area of 22,247 m^2.

The bank building comprises a ground floor, seven typical floors, and two basement levels dedicated to parking space accommodating 164 cars. The design layout is divided as follows:

Banking transactions concourse over 1,028 m^2, consisting of the following components:

- Public entrance including an ATM Center
- Main public hall including customer-service counters
- Bank Database
- Branch Services, including male and female lavatories...etc.

The building also comprises open administrative and office space for the bank branch, totaling an area of 14,650 m^2, including 6,920 m^2 of net office space, services area over 7,730 m^2, and investment office space (leasable) over a total area of 6,660 m^2, including 4,337 m^2 of net office space, and services over approx. 2323 m^2.

Faisal Islamic Bank of Egypt

CIB Headquarters at the New Capital

Client
CIB Commercial International Bank

Scope of Work
Conceptual design
Schematic design
Detailed design
IFC (Issued for construction)
Construction supervision

Location
New Capital, Egypt

Types of Activities
Architectural
Interior design
Structural

CIB new headquarters is located in the Financial District at the New Capital. On a land plot area of 9,164 m^2 and with a built-up area of 50,404 m^2, the project is designed on core and shell basis, comprising 2 basement floors, a ground floor, and 7 typical floors.

CIB Headquarters at the New Capital

Banque Du Caire

Client
Banque Du Caire

Scope of Work
Conceptual design
Schematic design
Detailed design
Construction supervision

Location
New Capital, Egypt

Types of Activities
Architectural
Landscape
Structural

Banque Du Caire building is located in the heart of the Financial and Business District on a total land area of 14,671.25 m^2 and with a built-up area of 57,492 m^2 .
The building includes two underground car parks with an area of 20,906 m^2 and a capacity of 350 cars.

The building includes the following:

- Four main entrances
- A main conference hall hosting more than 280 people
- A ground floor consisting of meeting rooms, training centers, and auditorium
- Typical upper floors accommodating bank staff with an adjoining meeting room in each floor
- The fifth floor is allocated for senior management
- The sixth floor consists of a restaurant for staff and senior management

Banque Misr Building at the New Capital

Client
Banque Misr

Scope of Work
Conceptual design
Detailed design
Schematic design
Design development
Construction supervision

Location
New Capital, Egypt

Types of Activities
Architectural
Landscape
Structural

Capitalizing on its long-established legacy for a whole century in service of the national economy, Banque Misr, the first national banking industry giant, introduces its well-engineered built masterpiece in close vicinity to the Central Bank of Egypt, to empower BM brand and urban visuality in Egypt's New Capital.

Contemporary wholly glazed facades were inspired by BM's legacy, as well as the building's impressive large scale, with extensive structurally glazed frontage, monumentally recessed entrance, giant pillared walls, emerging horizontal shades, and dramatic roof overhang. All these elements impose a sculptural form of symbolic presentation on the building, as a landmark and a gateway to the Money and Business District.

Built in a premium strategic location, BM's massive scenic building stands on Plot No. 23A.2, with a plot area of 11,245 m^2, 4,322 m^2 of footprint area, and up to a total height of 34 meters, comprising two basement floors, a ground floor, and seven upper floors. The ground floor houses main and VIP entrances, a banking hall including screened teller counters with vast back-office areas, service areas including restrooms and pantry, and entry/ exit ramps to underground parking in basements; accommodating up to 400 parking spaces. Floors from 1st to 7th are allocated to BM's office areas.

Banque Misr Building at the New Capital

Housing and Development Bank

Client
Housing and Development Bank

Scope of Work
Concept design
Schematic design
Detailed design
Tender documents
Review shop drawings

Location
New Capital, Egypt

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Interior design
Landscape
Mechanical
Structural

Located in the Financial District, with a total built-up area of 41,555 m^2, the bank comprises 2 basement floors for cash center, archives, technical rooms, general services, and parking areas (210 cars); a ground floor for reception & lounge, meeting rooms, and cafeteria; and 7 upper floors for administrative offices and branches of bank companies.

The building layout is designed to be consistent with the general character of the financial district and in line with the adjacent neighborhood of ministries.

The façade adds a modern touch while adopting a unique Egyptian theme.

Housing and Development Bank

Crédit Agricole Egypt New Head Office

Client
Crédit Agricole Egypt

Scope of Work
Schematic design (Structural & MEP)
Design development
Detailed design
LEED coordination
LEED documentation
Tender documents
Tender action
Construction supervision

Location
New Cairo, Egypt

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Interior design
Landscape
Mechanical
Roads
Structural

The new head office complex of Crédit Agricole Egypt (CAE) was planned to accommodate headquarters staff from different locations in Central Cairo; provide CAE with a high-quality head office building that enjoys a clear identity and prestigious image; and fulfill banking requirements in terms of features, modularity, and flexibility.

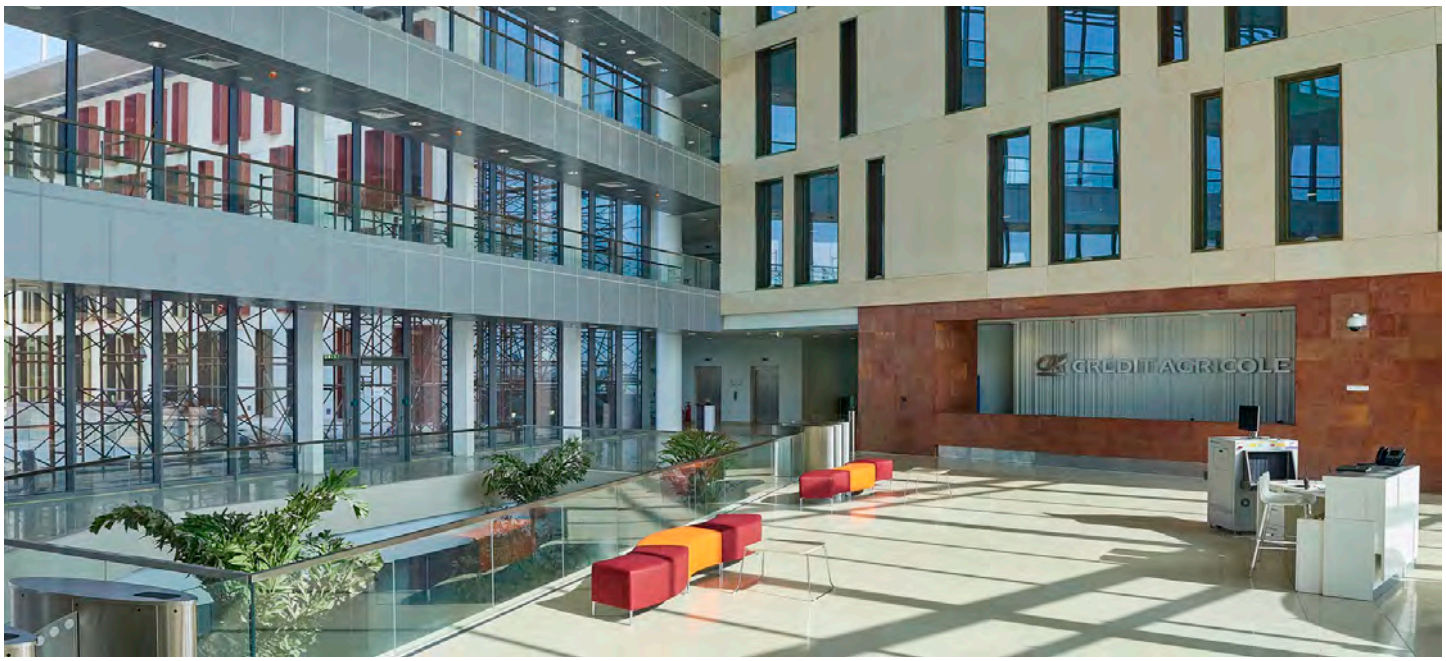
The complex is located in the 5th Settlement of New Cairo over a land area of 20,385 m^2. It comprises a state-of-the-art two-wing building implemented on a footprint area of 5,100 m^2, along with services and landscaped areas serving up to 1,500 employees.

With a gross floor area of 24,655 m^2, the building consists of two basements, garden level, ground floor, and three typical floors arranged as follows:

• basement: building management room & security room; central document center; archiving area; storage rooms; maintenance rooms; drivers' room; gymnasium; two prayer rooms & ablution area; main IT communications and data center; staff restaurant & associated facilities; loading bay and post room; and training center comprising four training rooms and an auditorium; lobby dedicated to guests and breaks; and parking areas

• garden level: the garden is situated on a natural grade,


Crédit Agricole Egypt New Head Office



revealing an additional usable floor (garden level) located beneath the main ground floor; the garden and garden level both organize the building into a "U" shape focused around an oasis of palm trees and large boulders

• ground floor: open working spaces; retail branch with separate entrance & self-contained facilities; safe room for cash storage; central reception and waiting area; and reception and employee meeting area

• 3 typical floors: open spaces comprising groups of four to six workstations separated by filing cabinets; cellular spaces around the internal core for fire protection and confidentiality; individual offices; board room; internal meeting rooms equipped with videoconferencing facilities; breakout spaces and pantry facilities; and multifunctional photocopying/printing room

The complex was designed to meet the qualifications required for LEED Platinum certification. In the process, full LEED documentation was prepared, including feasibility studies, daylight simulation, and others. The LEED Platinum rating already attained entails that the bank's head office complex has achieved 80+ out of 100 points in the different categories relating to green building design: water efficiency, energy and atmosphere, materials, resources, and indoor environmental quality.

ECG's LEED coordination also involved the development of an energy simulation model to evaluate the building's form and orientation in relation to its overall energy efficiency. Meanwhile, to satisfy the needs of this particular project in terms of accurate modeling and coordination among different disciplines, ECG used the Revit BIM package throughout the design process, starting from schematic design all through the subsequent design stages.

ECG's scope for this project covered value engineering, conceptual design (retail branch), schematic design (structural & MEP), design development (all disciplines), detailed design (all disciplines), LEED coordination, LEED documentation, tender documents, tender action, and construction supervision, as well as Architect of Record services.

Crédit Agricole Egypt New Head Office

Emirates NBD Headquarters (Formerly BNP Paribas)

Client
Orascom Construction Industries, Egypt

Owner
Emirates NBD (Formerly BNP Paribas)

Scope of Work
Design development
Detailed design
Tender documents

Location
New Cairo, Egypt

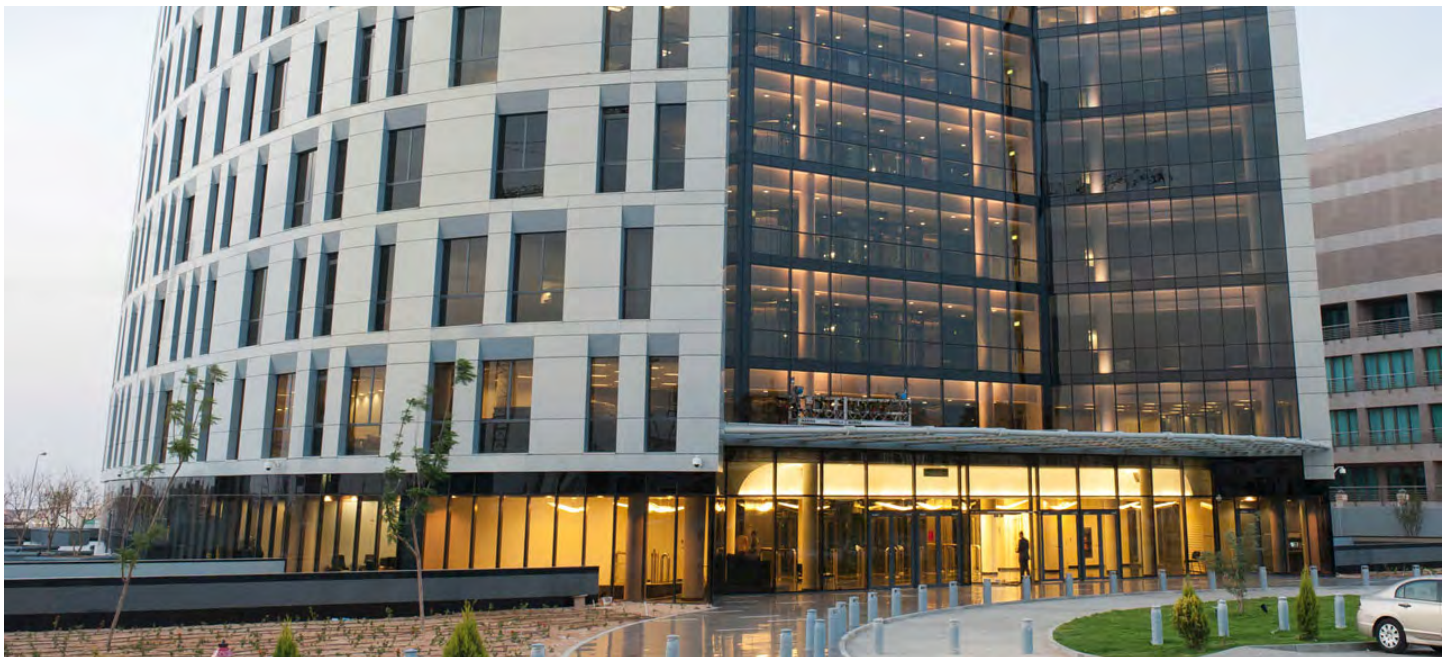
Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Landscape
Mechanical
Structural

BNP Paribas intended to construct a Head Office building at the Banks Area, 5th district in New Cairo to regroup headquarters staff from three existing locations in Central Cairo. The design project was awarded to the Joint Venture of ECG and Orascom Construction Industries.

The project was implemented on 25% of the area (1,795 m^2), with a built-up area of (12,500 m^2). The building comprised two basements, garden level, ground floor and six typical floors.

The building layout was inspired from the dung rolling scarab beetle sacred to the ancient Egyptians as it seemed to emerge from nowhere. The apparent "self-creation" of the scarab beetle resembled that of the Egyptian God of the Sun, who created himself out of nothing. The scarab beetle therefore served as a symbol of regeneration and creation; conveying ideas of transformation, renewal, and resurrection. The ellipsoid shape of the said beetle shaped the building layout. The building encompassed two above ground wings of six floors connected by a hall lobby and external bridges. These floors comprised retail branch, safe room, reception, offices, archiving areas, training center and meeting rooms.

Emirates NBD Headquarters (Formerly BNP Paribas)



Basement levels were constructed to extend the plot area for car parking and ancillary accommodation, the central vault, security room, maintenance areas, prayer rooms, IT and data rooms. The difference in levels between north and south roads was smartly used to create a breathtaking garden floor at level (-4.40m). This was to accommodate mainly restaurant, kitchen, fitness center, ancillary...etc. The well-sorted palm trees, lawns and water springs naturalized the surrounding and perfectly recalled the oasis ambience.

Energy conservation was considered from the very beginning. The energy losses were limited to the minimum by insulating building facades, glazing, walls, roofs and floors. Solar gains have been managed taking into account sun trajectory in winter and summer, building orientation and shading.

HSBC Bank New Head Office

Client
HSBC Egypt

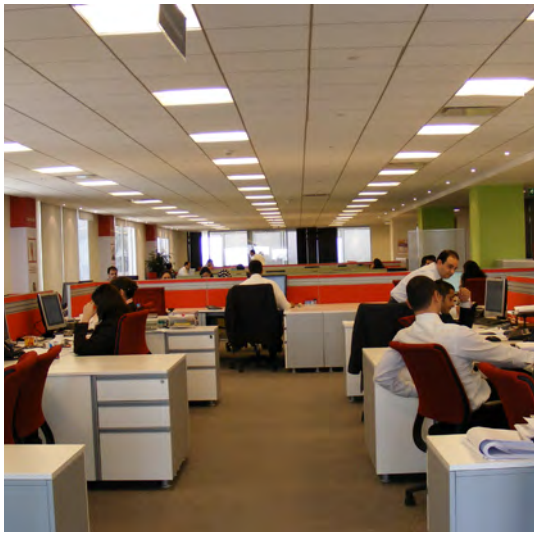
Scope of Work
Architect of Record
Schematic design
Detailed design
Tender action
Construction Supervision

Location
Cairo, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

Relocating the HSBC Bank New Head Office to Maadi Suburb in Cairo involved the development of a 4,000 m^2 office footprint area. With a total built-up area of 25,500 m^2 (2,150m^2 per floor), the postmodern, blast resistant office building accommodated a basement, a ground floor, and nine typical floors; five of which were handed over on a core and shell basis, while the other floors were fully finished.

BC Bank New Head Office



African Export-Import Bank Headquarters

Client
African Export-Import Bank

Scope of Work
Project management
Concept design review
Schematic design
Detailed design
Tender documents
Tender action
Construction management
Construction supervision

Location
Cairo, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Interior design
Landscape
Mechanical
Structural

The new African Export-Import Bank Headquarters intended to accommodate the bank staff, and the remaining areas were to be leased to different enterprises.

The building was erected over a land area of 3,000 m^2, composed of (2) tower wings linked by a bridge at the 6th floor level and a ten-floor curved wing. The building comprised 2 basement floors (6,000 m^2) for parking, ground and 10 typical floors with a total built-up area of 16,350 m^2.

The building was elegantly designed and decorated to reflect the heritage, culture and spirit of the African nations.

African Export-Import Bank Headquarters

Arab Bank New Office

Client
Arab Bank

Scope of Work
Concept design
Schematic design
Design development
Detailed design
Tender documents
Tender action
Construction management
Construction supervision

Location
Smart Village, Egypt

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Landscape
Mechanical

Construction of Arab Bank new premises in Smart Village. With a built-up area of 13,700 m^2, the new Premises comprised one basement for parking and services; a ground floor with a main entrance lobby; and three typical office floors. The design adopted a dividable open space concept commanding full flexibility and meeting variable office space requirements.

Arab Bank New Office

ABC Bank New Headquarters

Client
Arab Banking Corporation Egypt (ABC Bank)

Scope of Work
Concept design for structural and MEP works
Schematic design for MEP works
Design development
Detailed design
Tender documents
Construction Supervsion

Location
New Cairo, Egypt

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Interior design
Landscape
Mechanical
Structural

ABC bank has acquired a skeleton building that was originally designed to function as an administrative building. Thus, the original building design shall be developed to accommodate the bank requirements.

With a total built-up area of around 12,700 m^2, the newly designed building will consist of the following:

- 2-level basement: cash centre, archives, technical rooms, general services, in addition to parking areas (around 260 cars);
- Ground floor: reception & lounge, meeting rooms and cafeteria; and
- 6 typical floors: administration & staff offices, as well as prayer rooms.

A data center (a capacity of 48 racks) is included in the bank building.

ABC Bank New Headquarters

National Bank of Egypt Branches

Client
National Bank of Egypt

Scope of Work
Project management
Concept design
Schematic design
Detailed design
Tender documents
Tender action
Construction supervision

Location
Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Interior design
Landscape
Mechanical
Structural

ECG was contracted by the National Bank of Egypt to design, construct, and renovate the bank's branches distributed nationwide, and develop potential branch network expansions. The reconstruction process comprised elevations' cladding replacement, interior refurbishment and mechanical/electrical/ plumping system.

ECG was in charge of enforcing steadfast quality and cost control measures during the construction, substantial completion, and final completion stages of contract's project elements. It also ensured that the project handover was implemented according to agreed time schedule, and handled document control management.

ECG scope of services for existing and future NBE branch network development included land plot selection for acquisition/leasing purposes; financial and technical property evaluation; review, validation, and approval of designs pertaining to all trades; construction supervision of branches designed by ECG; tender review and evaluation; assessment of tender document packages performed by others; as well as contractors' bids evaluation (financial/technical) and selection.

A data center (a capacity of 120 rack) is included in the bank building.

National Bank of Egypt Branches

Expansion and Renovation Program of CIB Branches

Client
Commercial International Bank (CIB)

Scope of Work
Project management
Design development
Detailed design
Structural Assessment
Construction supervision

Location
Egypt

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Mechanical
Structural

The Commercial International Bank (CIB) implemented a challenging plan to expand in the Egyptian market, ECG supported this plan through the construction of new branches, renovation and fitting out of existing branches. The program covered 13 branches nationwide (Dahab-South Sinai, Tanta- Gharbeya, Port Ghablib-Red Sea, Al-Arish-North Sinai, Mina Dammietta-Dammietta, Marssa Matrouh-Marssa Matrouh, Mina Alexandria-Alexandria, Akkassia-Alexandria, El Sabteya-Cairo, Head Office-Cairo, Ramsis-Cairo, Dokki-Cairo, and Sheraton Heliopolis-Cairo).

Tanta Branch (Tanta, Gharbeya):
Construction of 990 m^2 footprint area with 11,880 m^2 total built-up area. The building comprised: basement, ground floor and 10 typical floors.

Ramsis Branch (Ramsis, Cairo):
Construction of a 375 m^2 ground floor branch.

Port Ghalib Branch (Marsa Alam, Red Sea):
Construction of 1,800 m^2 footprint area building with 9,000 m^2 total built-up area. The building comprised: basement, ground floor and 2 typical floors.

Al Arish Branch (Al Arish, North Sinai):
Construction of 800 m^2 footprint area building with 8,000m^2 total built-up area. The building comprised: basement, ground floor and 8 typical floors.

Central Bank of Egypt Headquarters

Client
Central Bank of Egypt

Scope of Work
Project management

Location
El Gomhoria Street, Cairo, Egypt

Types of Activities
Architectural
Electrical
HVAC
Mechanical
Structural

After 10 years of challenge with various construction and design problems, the Central Bank of Egypt assigned ECG to manage and achieve an easy, safe, trouble free handover of the Central Bank of Egypt new building to mobilize the bank staff to the new building without interrupting the operations of the work; and put the new building in operation under the control of a qualified facility management contractor as well as collect, organize and archive all related documents in a system that is easy to handle and update whenever necessary.

The new office facility comprised 10 floors + 3 basements occupying 44,000 m^2 built-area and had 2 main entrances, one for the employees from Gomhoria street and the other for the customers from the back street. The building was served by 16 elevators (2 for cargo, 2 for currency, 2 for top management and guests and 10 for the employees). It also contained four (1,000 KVA) G.E transformers fed from 2 different substations, central air conditioning plant consisted of 4 train chillers, 2 MG UPS systems, 1 G.E UPS system dedicated to the main computer room, power and lighting network, domestic and water lifting pumps, fire water lifting pumps and sprinkler system, seepage water lifting pumps, clean agent fire fighting system (CO2 and FM 200) in certain areas, telephone system and computer and safety integrated system (CCTV, fire alarm, controlled access doors, sound system, etc..).

ECG conducted a full review and investigation of all the systems in CBE main building with the objective of facilitating the handover of the building from the contractor and consultant to the CBE. ECG carried out an evaluation of the completed work and identified the incompleted or required items for the safe occupation of the building.

ECG also made safety evaluation and test program for all electrical and mechanical systems, and managed the modifications to the systems to improve and ensure the safe operating as well as implementing architectural modifications to enhance the life safety measures.

Central Bank of Egypt Headquarters

National Bank of Egypt Branches in Sudan

Client
National Bank of Egypt (NBE)

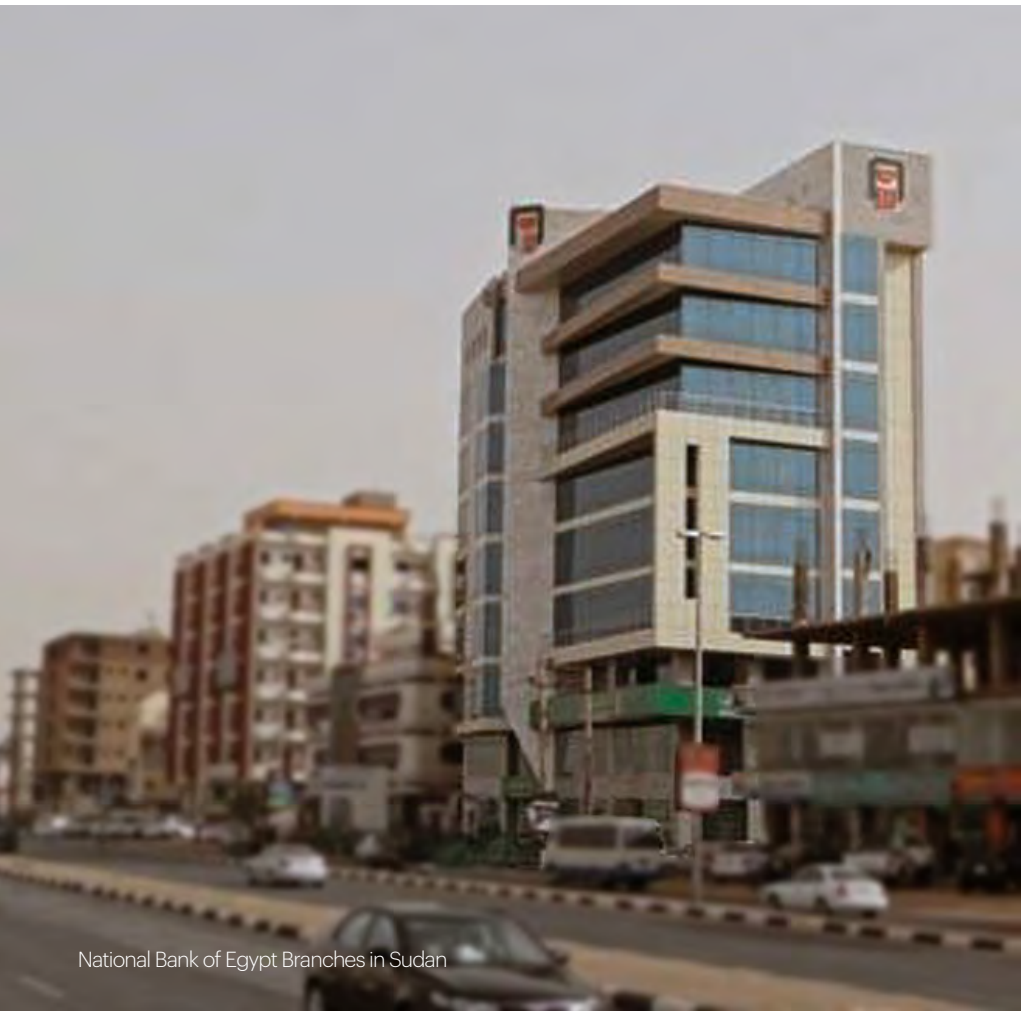
Scope of Work
Design development
Detailed design
Tender documents
Construction supervision

Location
Sudan

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Interior design
Mechanical
Structural

This project covered the renovation and expansion of a number of NBE branches in Sudan. Renovations covered the interiors and MEP systems. ECG was in charge of enforcing steadfast quality and cost control measures during the construction, substantial completion, and final completion stages of project elements. ECG also ensured that the project was handed over to the client in compliance with the time schedule, and that document control activities were properly handled
.

ECG's services for existing and future NBE branches include land plot selection for acquisition/leasing purposes; property evaluation (technical and financial); review, validation, and approval of the design drawings pertaining to all engineering disciplines; construction supervision of the branches designed by ECG; tender review and evaluation; assessment of the tender document packages prepared by others; and evaluation and selection of contractors' bids (technical and financial).


National Bank of Egypt Branches in Sudan

High Rise Buildings

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

GTC 519-Kahramaa New Tower

Client
Kahramaa Qatar General Electricity & Water Corporation

Scope of Work
MEP design modifications / Verifications
Architect of record
Construction supervision

Location
Qatar

Types of Activities
Civil works
Electrical
HVAC
Instrumentation
Mechanical
Structural

On a plot area of 8,962 m^2, the project is located in the Marina District of the new city of Lusail, north of Doha, Qatar. Road A9 borders the area to the south, Road E21 to the west and Road A11 to the east, and there are road intersections at each end of the southern boundary. General utility services are adjacent to the tower site.

The Marina District in Lusail, where the GTC 519 Kahramaa Tower will host the main headquarters of the Qatar General Electricity and Water Corporation, is home to a number of prestigious projects currently under development. With a total built-up area of about 85,278 m^2, the building consists of a five-floor basement, 19 upper floors, and 1 technical floor; with a total height of 116.24 meters, in addition to parking spaces that accommodate 807 cars.

GTC 519-Kahramaa New Tower

New Al-Alamein City Seafront

Client
Ministry of Housing, Utilities & Urban Communities

Scope of Work
Design Review
Construction Supervision

Location
Al-Alamein, Egypt

Types of Activities
Architectural
Civil works
Communication & Security Systems
Electrical
HVAC
Mechanical
Roads
Structural

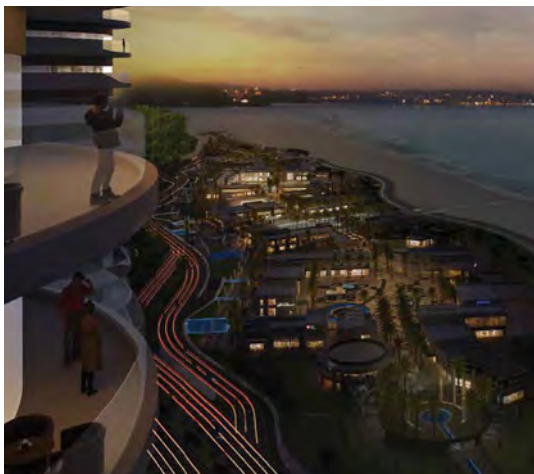
The project is designed as self-sufficient and prioritizes convenience with dedicated amenities, retail, and commercial areas, thereby turning New Al-Alamein into a permanent hub, rather than a temporary gateway.

The towers' architecture reflects the school of easy-going, modern, and sleek design, rendering them as iconic—yet minimalistic—masterpieces of the city.

The project occupies a premium location on Al-Alamein's seafront and skyline, providing state-of-the-art living standards, topped with a breathtaking view. The project comprises the following:

- **Commercial Area:** comprises a basement on a plot area of 165,842 m^2 for (parking areas), and 48, two-story, separate buildings with a total built-up-area of 173,100 m^2.
- **Towers Area:** consists of 15 towers, as follows:
  - **Plot LD00:** includes four towers on a plot area of 42,000 m^2 with a total built-up-area of 324,000 m^2
  - **Plot LD01:** includes four towers on a plot area of 34,000 m^2 with a total built-up-area of 258,000 m^2
  - **Plot LD05:** includes one tower on a plot area of 46,700 m^2 with a total built-up-area of 318,000 m^2
  - **Plot LD06:** includes one tower on a plot area of 20,760 m^2 with a total built-up-area of 258,000 m^2
  - **Plot LD07:** includes two towers on a plot area of 26,000 m^2 with a total built-up-area o 163,200 m^2
  - **Plot LD08:** includes three towers on a plot area of 39,500 m^2 with a total built-up-area of 241,000 m^2


New Al-Alamein City Seafront



Al-Mutahidah Towers

Client
United Development Co. (UDC)

Scope of Work
Conceptual design
Design development
Detailed design

Location
Doha, Qatar

Types of Activities
Architectural
Electrical
HVAC
Instrumentation
Interior design
Landscaping
Mechanical
Structural

Al-Mutahidah Towers are residential high-rises located on Plot VB-27 and Plot VB-28 southeast of Viva Bahriya on Pearl Island, Doha, Qatar. The two connected high-rises stand side by side on the beachfront of Viva Bahriya, a district that is perfect for families and all those seeking a more relaxed locale with spectacular sea and city views.

With a total built-up area of 149,278 $m^{2,}$ the towers comprise a three-level car park, ground floor, first floor, and 22 upper floors arranged as follows:

- **three-level car park:** 727 parking slots, together with a retail area at the boardwalk with access to the public beach (bakery, F&B area, beauty salon, baby-care area, café, pharmacy, and services & administration area)
- **ground floor and first floor:** 14 loft apartments with direct pool view; indoor spa (pool, steam, sauna, massage treatment, lockers, indoor Jacuzzi, and showers);lounge; terrace; billiard hall; games room; cigar lounge; pantry; multipurpose halls; and administration area, as well as an outdoor swimming pool, outdoor Jacuzzi, shaded kids area, and two kids swimming pools, all surrounded by landscaped areas
- **22 upper floors:** 170 one-bedroom apartments, 120 two-bedroom apartments, 40 three- bedroom apartments, 106 studios, and 12 penthouses with spectacular roof gardens and a sea view

The towers project also includes 14 duplex townhouses with separate entrances and a marina view.


Al-Mutahidah Towers

Burj Al Alam

Client
Nikken Sekkei Ltd, Japan

Scope of Work
Enabling works

Location
Dubai, UAE

Types of Activities
Architectural
Structural

In May 2007, ECG was awarded the contract to be the Architect of Record for the iconic 108-storey Burj Al Alam tower. Burj Al Alam towers soar 501 meters, making it the second highest hotel skyscraper in Dubai. As one of the most distinguished schemes ECG had been involved in, the one-of-a-kind initiative unfolded ultra-modern offices, a five-star hotel, exclusive hotel apartments, a high-end shopping plaza, and the world's first roof top Sky Saloon.

Linked to the tower is an 11-storey podium with a five-floor basement and four floors of retail space. The basement comprises five floors housing facilities including car parks, electromechanical/plumbing rooms, and a loading area for retail and hotel merchandise. Independent of the tower, the podium's top seven floors function solely as a multi-level car parking space. The tower tapers as it rises before splaying out with six filaments which resemble the opening of a flower's petal; set within is a multifaceted glazing area which takes the shape of a hexagonal diamond.

Burj Al Alam

St. Regis Towers (Nile Corniche)

Client
Qatari Diar

Scope of Work
Architect of record
Architecture and Interior design modifications
Construction supervision

Location
Cairo, Egypt

Types of Activities
Architectural

Designated as Architect of Record for the St. Regis Hotel towers, ECG also supervised the construction of the exclusive development. The 200,000 m^2 hospitality and hotel-serviced residential complex debuted the global St. Regis brand to Africa and encompassed two towers and a retail atrium with sweeping views of the River Nile.

The Cairo Nile Corniche Towers combine luxury residential apartments and penthouses, serviced apartments, offices, retail, restaurants and a five-star hotel. Towering 38 storeys high, St. Regis hosts 226 furnished rooms, 60 suites, 98 serviced apartments, 16 luxury serviced apartments, 102 luxury hotel serviced apartments, and a penthouse. Other amenities offered included more than 8,000 ft^2 of meeting and conference space, a business center, retail units, four restaurants, a lounge, an outdoor pool, a luxury spa, a fitness centre, and an 800-slot underground car parking area.

St. Regis Towers (Nile Corniche)

Ocean Heights Facilities

Client
DAMAC Properties, UAE

Scope of Work
Lead consultant
Architect of record
Facade engineering
Construction supervision
Project management

Location
Dubai, UAE

Types of Activities
Architectural
Electrical
Mechanical
Structural

One of the most exclusive waterfront addresses in Dubai, Ocean Heights soars to 310 meters whilst accommodating 87 floors. The super tall tower showcases 680 condominiums, a gymnasium, a sauna, a steam room, a game room, a children's play area, swimming pools, restaurants, a health club, and view decks.

Ocean Heights Facilities

Samrya Twin Towers

Client
Gulf East Trading & Contracting, Qatar

Scope of Work
Construction supervision

Location
Qatar

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Landscaping
Mechanical
Structural

With a total built-up area of 111,893 m^2, Samrya twin towers entailed completion and maintenance of two symmetric business 44-storey towers mirroring each other as well as erection of a unitized and stick curtain wall system covering an area of 66,000 m^2.

With a height of 180m, both towers share two basement levels with an area of 19,120 m^2 and a capacity of 610 parking spaces, and a ground floor. Each tower separately features a mezzanine, a first floor allocated to conference halls; 38 office floors (9,560 m^2 each), in addition to floors reserved for mechanical, electrical, and plumbing (MEP) equipment on the 21st and 41st levels, along with additional MEP floors on roof decks premised on the 42nd, 43rd, and 44th levels.

The twin towers were designed by MZ & Partners with a construction cost of QR 350,000,000.


Samrya Twin Towers

44 West Bay Residential Tower

Client
Qatari Investors Group, Qatar

Scope of Work
Design review
Construction management
Construction supervision

Location
Qatar

Types of Activities
Structural

With a total built-up area of 65,000 m^2, 44 West Bay Residential Tower comprises the following components:

- Two-level basement for parking (323 parking slots)
- Ground floor: main and private entrances, a lounge, gymnasium, swimming pool, cafeteria, and multipurpose hall
- Mezzanine: electromechanical services
- 44 residential floors: 168 apartments and 4 duplex units
- 4 top floors: overhead tanks, elevator machine rooms, and additional electromechanical services

The high-rise is also served by a 34-slot above ground parking lot.

44 West Bay Residential Tower

Marina Rise Towers

Client
Eshraq Development Company, UAE

Scope of Work
Conceptual design
Schematic design
Detailed design
Tender documents
Tender action

Location
Abu Dhabi, UAE

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Interior design
Landscaping
Mechanical
Structural

Located on AlReem Island, Abu Dhabi, UAE, Marina Rise Towers consisted of two high-rise towers housing two basements, three-storey parking, retail stores, a ground floor, two podiums, 25 typical residential floors (tower one) and 30 typical residential floors (tower two). With a total construction cost of US$ 65 million, each tower entertained a total built-up area of 37,500 m^2.

Marina Rise Towers

The Prime Tower at Business Bay

Client
AlMasaleh development - Kuwait

Scope of Work
Detailed design
Tender action
Construction supervision

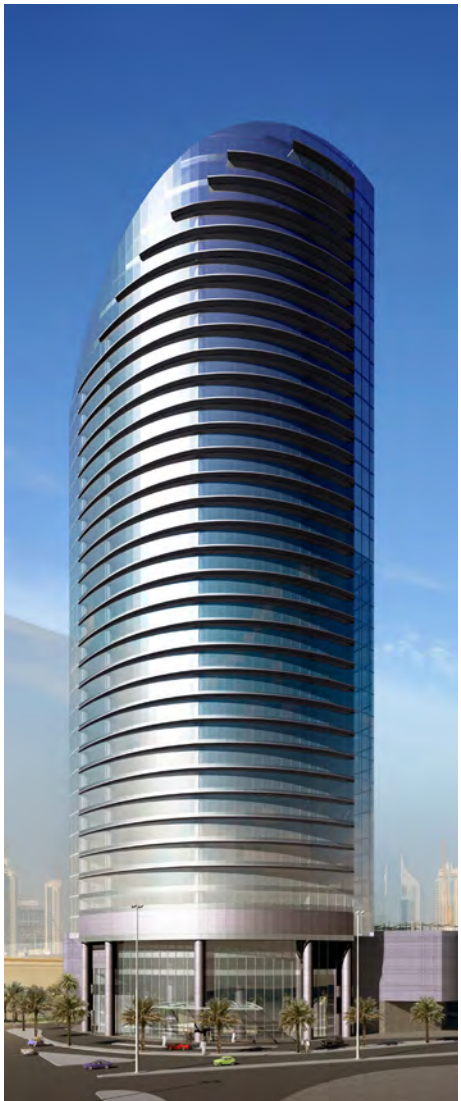
Location
Business Bay, Dubai, UAE

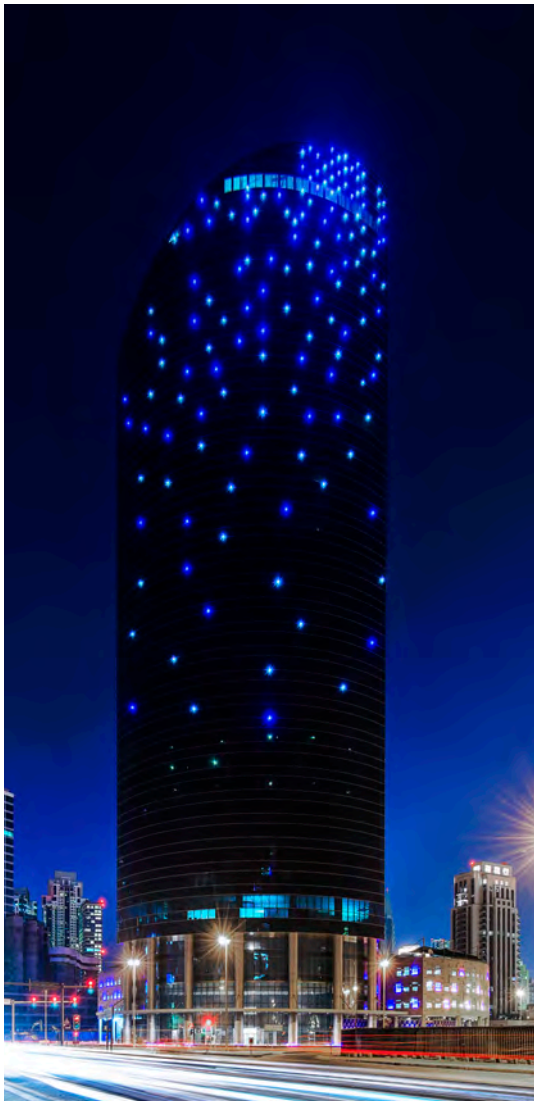
Types of Activities
Architectural
Electrical
HVAC
Mechanical
Structural

Spread over an area of 381,486 ft2 , the project comprises 3 basements, ground floor and 36 well-planned and spacious floors. The Prime Tower houses 30 levels of comfortable office space with one level reserved for a health club and cafeteria and two levels allocated for retail establishments. Additionally, the tower has six parking levels at the podium, three basement levels, a drop-off area for visitors, and a special zone for loading service trucks.

Every office located in the tower enjoys panoramic vistas of the city through a fully glazed transparent facade. The state-of-the-art amenities and services for the offices, visitors and residents includes a four-floor glass atrium, elegantly designed lobbies and plush reception areas.

The functionality of the Prime Tower is maximized by six high-speed elevators, one of which functions as a service lift (when required). The complex also features elevators with private access, connected to the parking levels in addition to parking bays for the disabled located on the ground floor near the main entrance. Pedestrian access to the Prime Tower is also available all around the complex via covered walkways connected to the adjacent buildings, leading directly to the retail stores.





Executive Heights

Client
DAMAC Properties, UAE

Scope of Work
Lead consultant
Concept design
Detailed design
Tender documents
Construction supervision

Location
Dubai, UAE

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

A masterpiece of practicality and contemporary design, soars 25 floors high whilst offering 360,000 ft^2 of office space equipped with state-of-the-art communications and networking technology. Moreover, Executive Heights offers stylish restaurants, cafes, a swimming pool, a health club, and an open air jogging track at the podiums roof.

Executive Heights

Park Towers at DIFC

Client
DAMAC Properties, UAE

Scope of Work
Lead consultant
Design development
Detailed design
Facade engineering
Construction supervision
Construction management

Location
Dubai, UAE

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

In the heart of Dubai International Financial Center (DIFC), the two high-end mixed-use towers rise 49-storey high each. With a built-up area of almost 2 million square feet, Park Towers is designed to convey a sense of luxury with the corporate perspective in mind. In the meanwhile, the development allows its residents to live, work and play within its perimeter enjoying all the DIFC privileges.

The two towers are designed to provide luxurious one, two and three-bedroom apartments that are served by panoramic lifts viewing the financial hub – giving the residents and their guests a thrilling sense of exhilaration every time they make their way up the towers.
Providing an escape from the hectic schedules of business environment, Park Towers are also served by five-star facilities and recreational areas including advanced temperature-controlled swimming pool; state-of-the-art gymnasium; spacious steam and sauna rooms; Jacuzzi; tennis court; barbecue area; exquisitely designed lobby with a concierge desk offering 24-hour service; banquet hall; meeting room facilities designed for private parties, gatherings of special occasions and business meetings.

The design draws inspiration from the House of Faberge's bejeweled eggs –an iconic symbol of opulence and luxury. The lower podium occupies the full site rising to three levels above ground, clad in aluminum with brushed feature grills, trimmed in stainless steel and granite, all lit by blue Light-Emitting Diode (LED) lighting. By dropping the ground level less than one metre, the architects managed to get an additional floor of parking into podium height restriction for a more efficient provision.

The twin elliptical towers change shape as they expand from the base, with vthe maximum floor plates achieved at the mid-point, before receding until they reach the very top of the towers. In addition, the computer controlled LED lighting system spectacularly illuminates the elliptical towers in the evening. By day, Park Towers sparkle like a jewel while twinkle like stars in the night sky.

The external façade of the towers is comprised of triangular, energy-reducing, solar glass panels glistening in the sunlight. The glass cladding proposed a challenge for the contractors due to the fact that each panel on the façade has a different size and shape; creating a giant 3D puzzle which was solved with highly sophisticated computer modeling and controlled fabrication. Completing the giant 3D puzzle required the latest CAD design and 3D software to configure the panels. The glass cladding allows every residential and office unit to have a sheer glass outlook, and also serves to create an "Industrial Chic" image to the interiors.

Park Towers at DIFC

Landmark Tower

Client
Dubai Maritime City

Scope of Work
Schematic design
Detailed design

Location
Dubai, UAE

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

Set within Dubai Maritime City, the environmentally friendly Landmark Tower is a true mixed-use development, with offices, a 5-star business hotel with serviced apartments, a business centre, and a retail and leisure facility, the 229-meter tower will be the tallest tower in Dubai Maritime City.

With a plot print area of 24,017 m^2, footprint area of 15,595 m2 and built-up area of 111,250 m^2 , the project comprises 3 underground floors, 45 above ground floors and car park with a capacity of 927 cars.
Highly visible from sea, the state-of-the-art tower will beckon seafarers to the Dubai shores, offering magnificent views of the Gulf, the coastline, and Dubai itself. The Landmark Tower sets new standards in architectural excellence, using reinforced concrete and concrete filled tube for the building structure.

Landmark Tower

Two Towers in Lusail

Client
El–Jaber Group

Scope of Work
Design permits DC1
Concept design
Schematic design
Detailed design
Design permits DC2

Location
Qatar

Types of Activities
Architectural
Communications and security systems
Electrical
Infrastructure
Landscape
Mechanical

Located along the coast, at the northern part of Al Daayen municipality, Lusail City extends over a land area of 35 km², 15 km north of Doha center. The city combines artistic elements of architecture with practical services in order to satisfy all needs of residents and visitors. Along with a variety of residential options, the new city provides commercial, hospitality and entertainment venues that are integrated with parks, marinas and spacious open spaces.

These venues are planned to accommodate up to 260,000 people. Lusail towers are located in "Marina District"; the most prestigious area in Lusail city. This area represents an anchor within a city of mixed-use developments (offices, residential and commercial space). The aim of the project is to design modern and green buildings as per the Global Sustainability Assessment System "GSAS" targeting a 2-star certificate.
Using state-of-the-art technology (Building Information Modeling "BIM") and high quality materials, the towers create a major landmark in Lusail city. The height of the towers (including the podium) is 91.5 meters. The towers are divided into 4 parts:

- 3-level basement: including parking space for 670 cars, and service rooms.
- 3-floor podium: comprising entrances, a commercial center and a health club.
- Hotel tower: 19 floors above the podium comprising guest rooms, apartments, royal suites, studios and service rooms. The hotel's roof accommodates a swimming pool and a restaurant overlooking the Arab gulf.
- Office tower: 18 floors including open space for business facilities and service rooms.


Two Towers in Lusail

Al Zamil Residential Tower

Client
Zamil Group Holding Co.

Scope of Work
Design development
Detailed design
Design permits
Tender documents
Construction documents

Location
Riyadh, Saudi Arabia

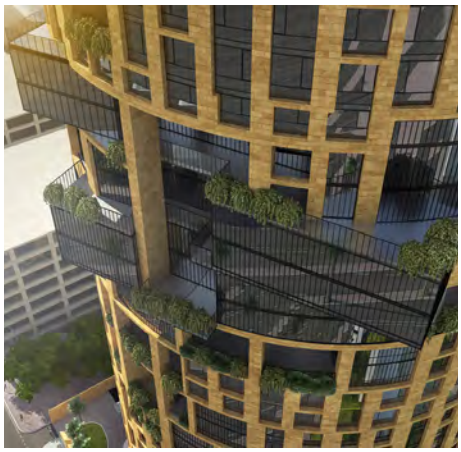
Types of Activities
Architectural
Communication & security systems
Electrical
HVAC
Infrastructure
Landscape
Mechanical
Roads
Structural

Located on King Fahad Road over a plot area of 3,650 m^2, Al Zamil residential tower serves as a unique smart vertical compound. The design concept uses state-of-the-art technology of the Building Management System (BMS); which enables all residents to remotely control their properties.

With a built-up area of 42,000 m^2, the 32-floor tower features 161 different housing units, parking and utility services, in addition to business, leisure and recreational facilities as follows:

- Four-level basement: for car parking and utility services;
- Ground floor: consists of the main entrance, a reception desk and the tower's administration office, in addition to 4 two-storey villas with private swimming pools and open landscaped gardens;
- Two-level mezzanine: mezzanine (1) is the second floor of villas, and mezzanine (2) is allocated to drivers' accommodation with a separate and secured entrance at the other side of the tower;
- Four types of residential apartments: 54 one-bedroom, 69 two-bedroom and 26 three-bedroom apartments;
- Eight duplex penthouses: seven of which with private swimming pools, all penthouses contain open landscaped gardens that give the feeling of living in a villa with a front garden; and
- Business, leisure and recreational services (16th, 17th and 18th floors): a multi-purpose hall (115 persons); a kindergarten (60 children); a restaurant (260 persons); a health club with a gym (128 persons) and a spa. Each of the three floors has a mezzanine level.


Al Zamil Residential Tower



Atria Towers

Client
Adel Al Mojil Consulting Engineers (AK Design)

Scope of Work
Architect of record
Detailed design
Construction supervision

Location
Dubai, UAE

Types of Activities
Structural

The towers are located in the heart of Dubai's vibrant Business Bay on a plot area of 10,882 m^2. The first Atria tower encompasses 219-key residential apartments. The other tower encompasses 350-key serviced apartments in addition to a pool and health club in the 25th level, and a restaurant with associated culinary facilities.

With a total built-up area of 109,500 m^2, each tower features a 3-level basement, utilized for MEP services, parking, and potential area for residents' storage; a ground floor including retail spaces and food & beverages outlets; in addition to twenty nine other floors. The towers also have a 2 level podium that include 5 duplex villas, and are served by common recreational and sports facilities including mini golf, kids pool, squash court, steam and sauna, Jacuzzi and play area, lap pool for residents, open air half basketball court on level 1 and residents health club and gym on the 24th level overlooking


Atria Towers

Smouha Mixed-Use Towers

Client
Hassan Allam Construction

Scope of Work
Concept design
Schematic design
Detailed design
Construction documents

Location
Alexandria, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Interior design
Mechanical
Structural

The mixed-use towers are located in the Alexandria upscale district of Smouha. With a total built-up area of 127,000 m^2, the project comprises 4 towers, each consisting of 13 floors and a basement utilized as follows:

- 2-level basement: parking area (around 347 cars) and utilities;
- 3-floor podium: around 175 retail shops, 4 cinema halls, a food court, and kids area;
- 2 floors above the podium: administrative area (96 office units); and
- 8 residential floors: 256 serviced apartments.

The project is set to deliver fully finished residential and administrative units. Delivery of the retail units will be on a core & shell basis.

Smouha Mixed-Use Towers

Al Andalus Tower

Client
Nikken Sekkei LTD

Scope of Work
Architect of record

Location
Jeddah, KSA

Types of Activities
Architectural
Building Management Systems (BMS)
Communication & security systems
Electrical
HVAC
Infrastructure
Landscape
Mechanical
Roads
Structural

Over a land area of 6,892 m^2 and with a built-up area of 65,600 m^2, the mixed-use tower is located on Al Andalus Street in Jeddah, KSA.

The tower encompasses the following:

- 3-floor basement: utilized for car parking and mechanical services;
- Ground floor and 5-floor podium: entrance, lounges, restaurants, retail space, business centre, ballroom, gym and swimming pools; and
- 23 typical floors: 255-room hotel, 50 serviced apartments and 2 penthouses.

Al Andalus Tower

Hotels

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Al Masa Capital

Client
Armed Forces Finance Authority

Scope of Work
Concept design
Schematic design
Detailed design
Construction management
Construction supervision
Master planning

Location
New Capital, Egypt

Types of Activities
Architecture
Infrastructure
Interior design
Landscape
MEP
Structural

The project stretches over an area of approximately 100 feddans (with a total built-up area of 226,713 m^2) in the Administrative Capital. The aim of the development is to construct a high-end, luxurious compound.

The project comprises a five-star hotel building (80,910 m^2), which includes 400 rooms and suites; staff housing (accommodating 200 persons); three specialty restaurants; and a main kitchen.

The project includes a conference center encompassing a conferences and events building (80,000 m^2); three ballrooms (900, 600, and 300 persons respectively); 24 lounges with six meeting rooms; and a theater (accommodating 2,000 persons). In addition, there are lounges, offices, and a multipurpose hall.

The project also includes a hotel apartments tower (7,750 m^2); 15 villas; clubhouse with a main restaurant and a golf course; mall (45,000 m^2); and lagoon with dancing fountains; as well as swimming pools and a wave pool.

The project's utilities include a mosque (900 m^2); sports area; gym and spa; multistory car park (around 400 cars); gates; utility buildings; chillers and electrical substations; and landscape and hard/softscape.

Al Masa Park at New Capital

St. Regis Towers (Nile Corniche)

Client
Qatari Diar

Scope of Work
Architect of record
Architecture and Interior design modifications
Construction supervision

Location
Cairo, Egypt

Types of Activities
Architectural

Designated as Architect of Record for the St. Regis Hotel towers, ECG also supervised the construction of the exclusive development. The 200,000 m^2 hospitality and hotel-serviced residential complex debuted the global St. Regis brand to Africa and encompassed two towers and a retail atrium with sweeping views of the River Nile.

The Cairo Nile Corniche Towers combine luxury residential apartments and penthouses, serviced apartments, offices, retail, restaurants and a five-star hotel. Towering 38 storeys high, St. Regis hosts 226 furnished rooms, 60 suites, 98 serviced apartments, 16 luxury serviced apartments, 102 luxury hotel serviced apartments, and a penthouse. Other amenities offered included more than 8,000 ft2 of meeting and conference space, a business center, retail units, four restaurants, a lounge, an outdoor pool, a luxury spa, a fitness centre, and an 800-slot underground car parking area.

St. Regis Towers (Nile Corniche)

Five at Palm Jumeirah Dubai

Owner: Five Holdings

Lead Consultant: P&T Architects & Engineers Ltd.

Scope of Work
Architect of Record
Construction supervision

Location
Dubai, UAE

Types of Activities
Architectural
MEP
Structural

The hotel features state-of-the-art architecture within the trunk of Palm Jumeirah, the world-famous artificial archipelago of Dubai. The hotel is designed to offer residents and guests breathtaking panoramic views of the Gulf and Dubai Marina, as well as the anticipated development of Bluewaters Island.

With a total built-up area of 186,000 m^2, the project comprises the following components:

- two-level basement: parking spaces, main kitchen, staff area, and laundry
- ground area: villas, main swimming pool, all-day dining restaurant, two specialty restaurants (Italian and Asian), and spa with a Turkish bath, pool bar, and relax lounge, alongside many others services
- 17 floors housing 477 guestrooms suspended over a steel bridge
- 221 residential apartments and penthouses designed with private swimming pools and large terraces featuring luxurious finishes all around

The steel bridge is enveloped by an inclined façade with clear 30-meter spans. Besides the guestrooms, it also houses a sky lounge, ballroom, and royal suites.

The hotel is further accentuated by a unique glass-on-glass entrance and lobby that stands as the world's largest glass structure (15 meters high). The structure encapsulates a DNA-inspired wooden sculpture.

Five at Palm Jumeirah Dubai

SEEN Hotel & Residences

Client
DOS Architects LTD.

Scope of Work
Basis of design report
Schematic design
Detailed design

Location
Dakar, Senegal

Types of Activities
Communications and security systems
Electrical
HVAC
Infrastructure
Mechanical
Structural

The SEEN Hotel & Residences is designed in such a way as to reinvent the concept of economic hospitality in Dakar. The hotel is located over a plot area of 430 m^2 at the Intersection of De Thann Street and Caille Street in Dakar.

With a gross floor area estimated at 4,200 m^2, the hotel consists of a two-level parking basement (16 car bays) overtopped by a ground floor, a mezzanine, and seven upper floors.

The hotel includes 44 keys as follows:

- 14 studio suites (36 m^2 each)
- 23 one-bedroom apartments (54 m^2 each)
- 7 two-bedroom apartments (72 m^2 each)

Other amenities and services include a lobby, restaurant/ bar, business corner, fitness center, and back of house, as well as external parking spaces.

SEEN Hotel & Residences

Anjum Hotel

Client
Abdul Latif Jameel Real Estate Investment Co. Ltd

Scope of Work
Construction management

Location
Makkah, KSA

Types of Activities
Architecture
Civil works
Communication & Security Systems
Electrical
HVAC
Interior
Landscape
Mechanical
Structural

With total cost of 758 Million SAR and on a land area of 6,850 m^2, Anjum Hotel is considered one of the largest hotels in the world (in terms of room numbers), with a unique location; only 50m away from the Holy Mosque (El-Haram El- Makki).

In phase one of the project, Anjum Hotel comprises 32 floors (3-floor basement, ground floor, mezzanine, first floor, MEP floor and 26 typical floors) with total 1,800 residential rooms expected to accommodate up to 7,000 guests.

Construction management services provided by ECG comprised project improvement, re-structuring, developing project's program, structural assessment and electromechanical technical support services.

Anjum Hotel

JW Marriott Hotel

Client
Daphne Hotel Company

Scope of Work
Construction supervision

Location
Doha, Qatar

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Interior design
Landscaping
Mechanical
Structural

Located in a prime site on Doha's West Bay area, the 5-star JW Marriott hotel is a privately owned development by Daphne Hotel Company. ECG has been assigned to provide the construction supervision consultancy services for the 51-storey tower.

With a total built-up area of about 119,285m^2, the 215-metre high hotel features the following components:

- Parking area accommodating 488 slots in a 3-level basement;
- Lobbies, reception areas, restaurants and retail shops on the ground floor;
- Business center on the mezzanine floor;
- 297 hotel rooms: 112 standard rooms, 62 executive rooms, 75 double rooms, 42 suites, 4 VIP suites and 2 presidential suites;
- 120 serviced apartments; and
- Leisure facilities: a ballroom, a conference hall, a spa, a gym and fitness center, a night club, 2 sky restaurants on the 50th and 51st floors, in addition to a cantilevered pool deck on the 33rd floor including a main swimming pool, children's pool, shallow water pool and water fountain.

Four Seasons Hotel, Jeddah

Client
MIDAD Real Estate Development & Investment Co.

Scope of Work
Design review
Tender documents
Construction management
Construction supervision

Location
Jeddah, KSA

Types of Activities
Architectural
Communication and security systems
Electrical
HVAC
Interior design
Mechanical
Structural

On a plot area of 18, 812m^2, the iconic building is located in an idyllic spot on the corner of Sari Street and Abdulrahman Fakieh Street. The building lies within Al-Shate'e area in Jeddah; an upscale district housing single-family villas, multi-storey apartment buildings as well as upmarket commercial developments.

The 137-metre high building resembles twin gateways on top of a podium. The building height, multifaceted elevations, angled massing make the design unique and distinguished.

With a built-up area of 200,000m^2, the mixed-use building encompasses the following:

- **Basement:** for the building services and a parking area (960 cars);
- **Ground Floor:** the main entrance and a parking area (115 cars);
- **9-Storey Podium:** retail shops, meeting rooms, a ballroom, Back Of House (BOH) services and a parking area (754 cars). The podium roof is designed as hanging gardens hosting outdoor Jacuzzi and swimming pool, pool lounges and cabanas, a spa, restaurants and children facilities.
- **23 Upper Floors:** 275-key hotel and 75 serviced apartments (all operated by the Four Seasons Hotel).

Four Seasons Hotel, Jeddah

Le Méridien - Cairo International Airport Hotel

Client
Airotel Co. for Hotels, Tourist, Entertainment, and Medication Services

Scope of Work
Design review
Tender action
Project management
Construction management
Construction supervision

Location
Cairo, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Interior design
Mechanical
Structural

Embodied in a chic and contemporary setting, Le Meridien overlooks Cairo International Airport, featuring a sophisticated, modern and sleek architectural concept. With a built-up area of 37,000m^2, the 5-star hotel comprises an east wing, a west wing, main and cargo service buildings that are conveniently connected to Terminal Building (TB3) through an air-conditioned skyway.

The hotel accommodates 349 guest rooms, 66 VIP rooms (Starwood Club), 9 executive studio suites, 9 panoramic deluxe suites, a presidential suite and leisure facilities that include a heated swimming pool and a fitness centre, with an exquisite selection of dining venues varying from Oriental to Mediterranean cuisines in addition to a vivacious sports bar.

Business facilities include seven conference rooms, a business centre, Lotus ballroom accommodating 2000 persons, as well as multiple sized event suites with capacities ranging from 2 to 400 persons with total area of 750m^2, supported by the latest audiovisual equipment.


Le Méridien - Cairo International Airport Hotel

Le Méridien Pyramids Hotel

Client
ElShams Pyramids Company for Hotels & Touristic Projects

Scope of Work
Tender documents
Tender action
Construction management
Construction supervision

Location
Giza, Egypt

Types of Activities
Architectural
Communications and security systems
HVAC
Electrical
Mechanical Structural

Under Le Méridien Pyramids Hotel project, ECG was engaged in the renovation of the existing hotel building, associated recreational area, and supporting facilities. Entertaining a land area of 1,631 m^2, the hotel building included two basements, a ground floor, three typical floors, and a roof floor with plant room for chillers and cooling towers. ECG was also involved in the development of a 126-room guest wing extension.

Le Méridien Pyramids Hotel

Mena House Oberoi

Client
Egyptian General Authority for Tourism and Hotels

Scope of Work
Construction Management
Construction Supervision

Location
Giza, Egypt

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Interior design
Mechanical
Structural

The phased refurbishment of Mena House Oberoi involved the upgrade, renovation, and construction of guest wings A, B, C, D, and E comprising 365 keys; 64 special palace rooms; a new energy building; the Oasis, AlWaha, and Italian restaurants; swimming pools; exterior facades; lobbies; a kitchen; a health club, and landscaping facilities.

Mena House Oberoi

Robinson Club Soma Bay

Client
Soma Bay Development Company
Scope of Work
Design development
Detailed design
Tender documents
Construction management
Construction supervision

Location
Soma Bay, Egypt

Types of Activities
Architectural
Communications and security systems
Civil works
Electrical
HVAC
Interior design
Landscape
Mechanical
Structural

The five-star, 300-room hotel along the Red Sea coast comprises restaurants, a regeneration centre, administration facilities, and staff accommodation.

Robinson Club Soma Bay

Sheraton Soma Bay

Client
Soma Bay Development Company

Scope of Work
Design development
Detailed design
Tender action
Construction management
Construction supervision

Location
Soma Bay, Egypt

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
Structural
Urban design

The five-star, 312 room resort offers a mix of comfortable guest rooms, central suites and beach front apartments. The Resort also has 14 exclusive, beach front apartments with the beach and sea at their footsteps. They consist of one and two-bedroom units, with a private swimming pool, pool deck and pool bar for their sole exclusive use.

Sheraton Soma Bay

Four Seasons Hotels and Resorts, Madinaty City

Client
Hill TMG Project Managment

Scope of Work
Design review
Construction supervision

Location
Madinaty, Egypt

Types of Activities
Architectural
Interior design
Landscaping

Entertaining a built-up area exceeding 50,000 m^2, the Four Seasons Hotel and Resort of Madinaty embraces a six-storey hotel, three-storey conference center, 11 neighborhood buildings, spa, number of villas, remote service buildings, access roads, car parking, hard and soft landscaping including a 250,000 m^2 simple grass area, swimming pools, and water features.

Four Seasons Hotels and Resorts, Madinaty City

Four Seasons, Sharm ElSheikh

Client
Shaker Consultancy Group

Scope of Work
Design review
Architect of record
Construction supervision

Location
Sharm ElSheikh, Egypt

Types of Activities
Architectural
Interior design
Landscaping

Stretching over a total plot area of approximately 962,000 m^2, the Hotel expansions unfold 96 hotel rooms, royal suite, 32 villas, 72 chalets, conference center, kids club, eight buildings integrating retail and restaurant facilities, staff housing, water features, swimming pools, beach restaurants, snack bar, fixed furniture and equipment, landscaping, and sports facilities. The project also includes the development of an 18-hole signature golf course and club house surrounded by 60 villas.

Four Seasons, Sharm ElSheikh

Restoration of Sofitel Cataract Hotel

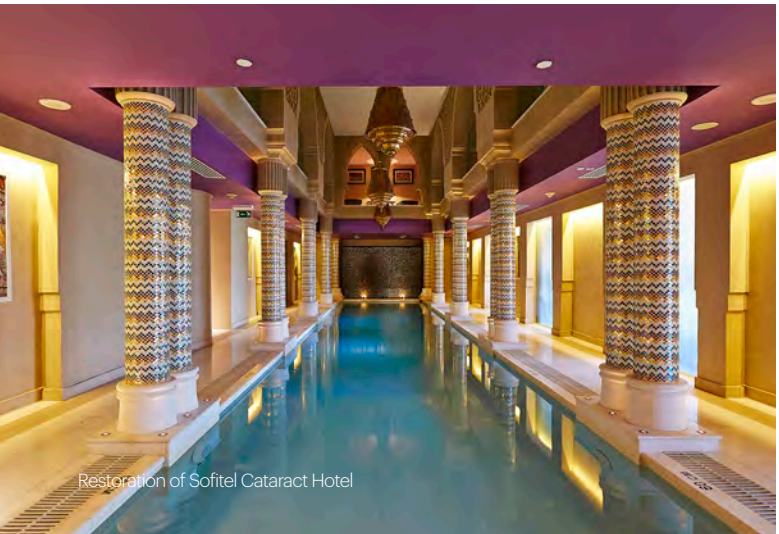
Client
Egyptian General Company for Tourism and Hotels

Scope of Work
Concept design
Schematic design
Design development
Detailed design
Tender documents
Tender action

Location
Aswan, Egypt

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Mechanical
Structural

Established 20 km away from the Aswan International Airport, Sofitel Cataract Hotel is located in the Nubian Desert on the Nile River bank. The hotel elements include two main buildings and a number of service edifices set amidst a large landscaped plot, and a total capacity of 123 rooms and 8 legendary suites. The first main building (Old Hotel) was opened in 1899. It features a main site entrance, two above-ground floors, service areas, saloons, cafeterias, a bar, and a restaurant. The second building (New Hotel) was developed in the 1960s and is located behind the old one. It consists of eight typical above-ground floors as well as a mezzanine and a service floor. One of its facades overlooks the Fantine Islamic Hotel located on the opposite side of the Nile River bank, whilst landscaped grounds dominates the views of its other elevation. The renovation cost of this historic landmark hotel reached EGB 300 million. This legendary hotel has hosted numerous well known identities including Winston Churchill, Agha Khan, King Farouk, Lady Diana and Agatha Christie.



Restoration of Sofitel Cataract Hotel

Intercontinental Abu Dhabi

Client
Turner Construction

Scope of Work
Facade concept design
Engineering design review

Location
Abu Dhabi, UAE

Types of Activities
Architectural
Structural

The refurbishment of Intercontinental Abu Dhabi involved the renovation of the international hotel's guest rooms, entrances, meeting rooms, executive club, lounge, pool deck, public areas, restaurant, VIP areas, and exterior cladding.

The hotel is sitting on the only hill in Abu Dhabi over looking a beautiful Marina and a sandy beach. Intercontinental Abu Dhabi comprises 390 guest rooms and 54 suites.

Intercontinental Abu Dhabi

Dubai Pearl Movenpick Hotel

Client
HL-Technik Engineering Partner

Scope of Work
Preliminary design

Location
Dubai, UAE

Types of Activities
Electrical
Mechanical

Situated on the west coast of the Arabian Gulf in Dubai, the five-star hotel unfolds 500 guest rooms across 52 floors over a total built-up area of 34,000 m².

Dubai Pearl Movenpick Hotel

Refurbishment of 5 Hotels in Kenya

Client
Kingdom Hotel Investments Company (KHI), Saudi Arabia

Scope of Work
Verification of existing conditions
Design development
Detailed design
Tender documents
Tender action
Construction management
Construction supervision

Location
Nairobi, Mara, Mount Kenyaand Aberdare, Kenya

Types of Activities
Architectural
Civil works
Communications & security systems
Electrical
HVAC
Interior design
Landscape
Mechanical
Roads
Structural

Refurbishment of five hotels located in different places in Kenya, namely: Norfolk Hotel, Nairobi, Mount Kenya Safari Club, the Ark, Aberdare Country Club and Mara Safari Club. The hotels shall be operated by Fairmont.
Norfolk Hotel, Nairobi; comprises 167 rooms, 34 of them needed complete renovation, while the remaining rooms needed some repairs. This is in addition to necessary upgrade in public areas (restaurants, public toilets, ballroom, meeting room, luggage area, swimming pool, laundry, offices and engineering area).

Mount Kenya Safari Club; comprises 107 guest rooms, 68 of them needed complete renovation, while the remaining rooms needed some sort of repairing. This is in addition to necessary upgrade in public areas (members dining room, lobby, lounges, bar, lounge terrace and garden lounge, restaurants, shop, managers offices, secretary office, business center, public toilets, meeting/conference room, gas station and swimming pool). Also some upgrades were needed for River Ride Cottages, William Holden Cottages and Garden Suites.

The Ark; it is built in the form of a wooden ship; attention was mainly addressed to painting of rooms and electro-mechanical fixtures; upgrading of corridors; public areas (Levels B, C and D Decks, including: public toilets, dinning rooms, bar, fire place and lounge).

Aberdare Country Club; attention was addressed to main building, rooms, kitchen, meeting room, laundry and staff housing.

Mara Safari Club; it is mostly made of tents. Upgrades were addressed to cover entrance walkway, main building, pool restaurant, tents, kitchen, new storage room and garage area.


Refurbishment of 5 Hotels in Kenya

Al Rigga Hotel

Client
Juma Al Majid Group

Scope of Work
Conceptual design
Schematic design
Tender documents
Construction supervision

Location
Dubai, UAE

Types of Activities
Architectural
Electrical
HVAC
Mechanical
Structural

Al-Rigga Hotel is strategically situated on a plot area of 3,877m^2 near the financial district, about 650 metres away from Dubai's historic creek.

Located about 10 minutes away from Dubai Airport, the 4-star hotel is surrounded by leisure and transportation facilities; namely, Dubai Festival City, Deira City Centre, Dubai Creek Park and Al-Rigga metro station.

The modern luxurious hotel overlooks the famous Burj Khalifa and Dubai Mall, catering multi-functional business and leisure services.

With a total built-up area of 37,797m^2, the hotel comprises:

Parking area: a 3-level basement for parking with a capacity of 195 vehicles.

Ground floor: includes the main entrance, the main restaurant, the front office desk, a cafeteria and 1,000-guest dynamic ballroom.

Mezzanine floor: includes a SPA, restaurant/cafeteria, five meeting rooms, a business centre with a meeting room, 10 offices with waiting lounges, shopping area and bridal suites with access to the ballroom.

Leisure floor: above the mezzanine floor and includes a swimming pool, a kids playing area, a gymnasium, two 3-bedroom wings and one guest suite.

Upper floors (2nd to 12th): offer 279 rooms and suites including 140 standard rooms, 102 large rooms, 2 executive suites and 35 deluxe suites.

Al Rigga Hotel

Al-Barsha Hotel

Client
Arabtec Construction (L.L.C)

Scope of Work
Conceptual design
Preliminary design
Design permits
Detailed design
Construction documents
Construction supervision

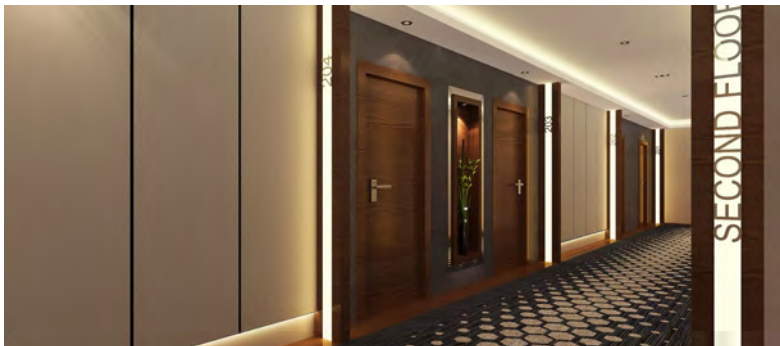
Location
Dubai

Types of Activities
Architectural
Civil
Communications & security systems
Electrical
HVAC
Landscape
Interior design
Mechanical
Structural

The 3-star hotel is located in Al-Barsha First, one of the sub-communities of Al-Barsha in Dubai, UAE, over a plot area of 1,440m^2. Al-Barsha is a newly developed collection of sub-communities connected by the Sheikh Zayed and Sheikh Mohamed Bin Zayed Roads. The community is close to the Mall of the Emirates.
With a built-up area of 11,550m^2, the hotel will consist of the following:

- **2-level basement:** car parking area (36 cars) and staff facilities;
- **Ground floor:** outdoor parking area (around 4 cars), hotel lobby and reception area, restaurant, café, BOH "Back of House" functions and MEP spaces;
- **1st floor:** restaurant & kitchen, bar and administration offices;
- **9 typical floors:** 162 guest rooms and services;
- **Roof:** swimming pool, gymnasium, lockers and steam room facilities; and
- **Upper roof:** mechanical equipment.


Al-Barsha First



Culture Village Hotel

Client
Mohamed Farid Fouad Khamis

Scope of Work
Conceptual design
Schematic design
Design development
Tender documents
Tender analysis

Location
Dubai, UAE

Types of Activities
Architectural
Civil
Communications & security systems
Electrical
HVAC
Mechanical
Structural

The 4-star hotel is located on Al-Khail Road, which is a main road close to the key transport routes of Dubai. This convenient location allows for the easy ingress and egress of the vehicles of hotel guests. With a total built-up area of 17,143 m^2, the hotel consists of the following:

- **3-level basement:** stores, water tanks, fire pump rooms, MEP rooms, and a car parking area (approximately 55 cars)
- **ground floor:** retail area, guest & employee entrances, reception & waiting area, lobby café, dining area, bar, elevators, and service rooms
- **1st floor:** all-day restaurant, administration offices, and meeting rooms
- **10 typical floors:** 180 standard guestrooms, 10 suites, toilets, and guest services
- **roof:** swimming pool, recreational area, gym, lockers, MEP rooms, and service facilities

The design of the building is based on engineering requirements of high standards.

Culture Village Hotel

Laguna Residence

Client
Highness Architecture and Interiors

Scope of Work
Schematic design
Detailed design
Construction documents

Location
Doha, Qatar

Types of Activities
Architectural
Civil
Communications & security systems
Electrical
HVAC
Landscaping
Mechanical
Roads

The project is a 5-star serviced apartment hotel near Katara Complex and the Pearl development in Doha, Qatar. Over a plot area of approximately 12,486 m^2, and with a built-up area of 43,701 m^2, the building comprises a 2-level basement, a ground floor, 12 typical floors, and 3 typical top floors. The building has 303 serviced apartment units, with 138 one-bedroom units, 111 two bedroom units, and 54 three-bedroom units.

Car parking spaces (300 cars) are housed in the 2-level basement, and vehicle circulation has been designed to allow for smooth traffic flow into and out of the building.

The ground floor accommodates amenities that include a large all-day dining facility, with a large terrace overlooking the lagoon. It also includes male & female gyms and a swimming pool. The spacious and very efficient unit designs serve to maximize the convenience of residents. All units have balconies with spectacular views of the lagoon.

The Modern International Style of the façade adopts the use of a framework of architectural elements that create a unique overall image. External finishes have been carefully selected to achieve the best possible energy efficiency and other properties pertaining to recyclability and sustainability.


Laguna Residence

Valcastel

Client
Valcastel S.A.

Scope of Work
Feasibility study
Master plan
Conceptual design
Design development
Detailed design
Construction permits

Location
France

Types of Activities
Architectural
Communications & security systems
Electrical
HVAC
Interior design
Infrastructure
Landscape
Mechanical
Structural
Roads

The main objective of Valcastel project is to develop five sites (Aubazine, La Siauve, Outre- Val, Grange Haute, and Château de Val). Each site enjoys unmatched natural features and distinguished historic buildings of French architecture dating back to medieval era.

Valcastel S.A. assigned ECG to design the five sites. The development plan includes five different hotels, residential villas, conference centers, cinemas and theatres, sports facilities, recreational buildings, café, restaurants, service buildings and all related required infrastructure works. Prior to commencing the development plan of the aforementioned five sites, ECG was assigned to develop the existing site (Château de Val). This phase is called Phase (0) which comprises substituting an existing old 2-star hotel (13 rooms) by a 4-star hotel (60 rooms), business center, in addition to 15 residential villas with two different façade treatments (classic style and modern style).

The Hotel building:
A four-star hotel, 3-storey high, comprising a basement, ground, first and second floors with total built-up area of approximately 9,275 m^2. The hotel has 61 rooms; 52 standard guestrooms and 9 suites. The building consists of many luxurious facilities: restaurants, bar, café, lounges, saloons, reception, public toilets, spa, massage room, gymnasium, 6 retail shops and indoor-outdoor swimming pool.

Functionality as well as aesthetics are considered in the design of guestrooms. The hotel entrance and salon are the most areas affected by the main theme of the interior design; as they represent the main transition from the authentic building exterior and surroundings to the interior functions of the spaces. Materials like marble flooring, simple moulds and paint, as well as French architecture artwork are used to create the authentic French style. Comfort, neatness, and relaxation are achieved by incorporating floor carpets and wall paints in the guest rooms.

Centre d'Affaires Valcastel:
With a total built-up area of 1,200 m^2, Valcastel business center provides leisure and professional conferencing


Valcastel

facilities in a stylish contemporary setting. It comprises a conference and cinema hall of (250) persons, 4 small meeting rooms, public toilets, cafeteria and service rooms.

Residential Villas - Classic Style (11 units):
With a total built-up area of 150m^2, each villa consists of a basement that includes storage, laundry and MEP room, and a ground floor accommodating 3 bedrooms, living area, kitchen, 2 bathrooms, toilet and garage.
The villas' façades will be rough-textured natural stone, acrylic paint and steep pitched roof covered with slate tiles, reflecting the classic look of France's old and monumental buildings. The interior design philosophy is to respect and complement the historic essence of the location through emphasizing on the French style's elegance, graciousness and originality while adding an aspect of modernity and practicality to the space.

Residential Villas – Modern Style (4 units):
With a total built-up area of 150m^2, each villa consists of a basement that includes storage, laundry and MEP room, and a ground floor accommodating 3 bedrooms, living area, kitchen, 2 bathrooms, toilet and garage.
The design concept explores simplicity and clarity focusing on the space itself rather than details, using white paint, straight lines and hardwood floors. The furniture pieces are simple and uncluttered; portraying individuality and uniqueness.

Anantara Doha Island Resort

Client
Private Engineering Office (PEO)

Scope of Work
Architect of record
Design review
Value engineering
Construction supervision

Location
Doha, Qatar

Types of Activities
Architectural
Civil works
Electrical
HVAC
Communication & security systems
Mechanical

On a plot area of 165,361m^2, the banana-shaped island is located approximately 3 km from the new Doha International Airport. The luxurious, Asian-themed resort encompasses 141 keys. The project has an exclusive, fully equipped and manned marina with the capacity of 33 berths for luxury and mid-range super yachts in addition to artificial reefs and a golf course. The resort comprises different types of onshore and offshore villas with associated services as follows:

Over water villas: anchored alongside an eye-shaped pier that extends from the shoreline and into the ocean with an integrated private pool for each villa, of 2 types:
- 2-bedroom villas: 8 units (230m^2 each).
- 3-bedroom VIP villas: 3 units (270m^2 each) with private yacht berthing facilities connected directly to the villa pier.

Land villas: located on the eastern side of the island comprising a private pool each, of 3 types:
- Single-bedroom Majlis: 16 units (112m^2 each).
- 2-bedroom Majlis: 6 units (148m^2 each).
- King chalets: 12 units (119 m^2 each).
- Family suites: Victorian style townhouses located in the centre of the resort, of 2 types:
- Garden family suites: 24 rooms located on the ground floor overlooking the front yard, and opening onto a sand bottomed pool.
- Loft family suites: 48 suites located on the first and second floors. Each unit has a private balcony with a lagoon overlooking thick vegetation.
- Hotel suites: scattered across the eastern beach side with a total of 24 keys, each of these rooms have a planted courtyard and ample privacy for guests. The rooms are intended for family accommodation and boasts with modern amenities.

Spa: 6 treatment rooms, 2 steam room units, sauna and whirlpool.

Restaurants: 4 exquisite restaurants to satisfy different tastes, encompassing:
- An iconic lookout restaurant.
- An all-day dining restaurant located in the wellness centre.
- A dive in centre area café.
- A beach club Seafood Restaurant.

Anantara Doha Island Resort

Pools: 6 different pools spread over the island:

- Wading pool: located at the northern head of the island outside the all-day dining restaurant next to the main lobby. Overlooking Doha metropolitan cityscape.
- Kids tide pool: located at the north western end of the entertainment area with a Shark Encounter in the front. The pool is designed to allow water flow, creating tides that resemble lagoon motion.
- Surf pool: is located in the midst of the teenage activities club area. It is designed to generate variety of waves just like a natural surf area.
- Lagoon swimming pool: with sand infill at the bottom.
- Beach club pool: designed to be a quiet place to sit back and relax. It is surrounded by lush greenery and is annexed to the Beach Club and the Seafood Specialty Restaurant.
- Diving pool: located near the diving school.

Wellness health centre: located in the heart of the Island on a plot area of 4,018m^2 comprising an indoor climate controlled park over 1 km of tropical plants and foliage, a fitness centre, gardens, a waterfall, an oxygen bar and cafés.

Ritz-Carlton Palm Hills Golf Club & Resort

Client
Palm Hills Developments

Scope of Work
Schematic design
Design development
Detailed design
Construction supervision
Construction management

Location
Palm Hills October, 6th of October City, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
Geotechnical investigation
Infrastructure
Interior design
Landscaping
Mechanical
Roads
Structural

The Palm Hills Golf Club and Resort is a five-star hotel managed by the world-renowned Ritz-Carlton Hotel Company, L.L.C. In addition to overlooking a 27-hole golf course designed by the internationally acclaimed Nicklaus Design. With a built-up area of 70,000 m^2, the project involves the development of a 160-key luxury hotel and a world-class golf club.

The hotel comprises the basement floor with a total area of approximately 19,000 m^2 including the parking and the main utilities of the building which are the Main Kitchen with its services, the Laundry, Boiler, and the MEP rooms; the ground and the mezzanine floors with a total footprint area of approximately 14,500 m^2 including; public spaces which are mainly the hotel main lobby with its services and lounges, a 3-meal restaurant, ball rooms, a speciality restaurant, a golf club and spa with a separate entrance from outside the hotel and some guest rooms; and the upper two levels encompass mainly of the guest rooms with their utilities and housekeeping rooms.

Ritz-Carlton Palm Hills Golf Club & Resort

Renovation of Mena House Oberoi Golf Course & Golf Club House

Client
Egyptian General Authority for Tourism and Hotels

Scope of Work
Design review (golf course)
Detailed design (golf course)
Design permits (golf course)
Tender documents (golf course)
Tender action (golf course)
Construction supervision (golf course & golf club house)
Construction management (golf course & golf club house)

Location
Giza, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Landscaping
Mechanical
Structural

The Mena House Hotel Golf Course is the first golf course developed in Egypt. It remains the centerpiece of a multitude of outstanding entertainment facilities offered by Mena House Oberoi Hotel.

Nestled within close proximity of the fascinating Pyramids of Egypt, the 100,000 m^2 golf course was upgraded to18 holes instead of nine within a nine fairway constraint. ECG designs provided entertaining views of gently rolling grass dunes, radiant white sand traps, strategically positioned lakes, natural treasures of old-growth flora, all complemented by an intense green buffer system to preserve players' safety.

The golf course's two-storey Club House also witnessed major renovation efforts. The intricately ornamented marble plaza and cobblestone parking lot added a touch of antique elegance to the Club House guest entrance. Moreover, all Club House facades and interiors were dominated by the Arabian Islamic theme seen in other hotel buildings. The Club House components include a restaurant with indoor and outdoor facilities, standup bar, main kitchen, rest rooms and showers, lockers area, drop off and service yard, storage area, administration area, and retail section.

Renovation of Mena House Oberoi Golf Course & Golf Club House

Marassi

Client
Emaar Misr for Development SAE, Egypt

Scope of Work
Acquisition of governmental/authorities permits and approval
Synthesis of master plan
Master plan Detailed design of several villa types and beach club
Construction supervision

Location
North Coast, Egypt

Types of Activities
Architectural
Communication and security systems
Electrical
HVAC
Interior design
Landscaping
Mechanical
Roads
Structural
Urban design

Overlooking the glorious view of Sidi AbdelRahman Bay, Marassi is a 6 km waterfront community that unfolds a year-round upscale residential, tourism, leisure, and commercial lifestyle development lining the Mediterranean Sea coast. Spread over a land area of 6.25 million m^2, the project features seven waterfront residential districts inspired by various architectural styles including that of Andalusian, Santa Barbara, Tuscan, Formal Italian, and Spanish Colonial.

Offering a built-up area of 1.85 million m^2, Marassi features an 18-hole golf course, a marina, spas, a town and commercial center, and a number of public services. Strong focus is devoted to the establishment of convention facilities and accommodation amenities via eight major hotel establishments. With a construction cost of 1.7 Billion US$, Marassi comprises two world-class beach clubs which offer the development's residents a string of recreational outlets including magnificently landscaped panoramas.

Marassi

Marassi Beach Club House

Client
Emaar Misr for Development SAE, Egypt

Scope of Work
Topographic surveys
Studies
Geotechnical surveys
Design development
Detailed design
Construction supervision

Location
North Coast, Egypt

Types of Activities
Architectural
Communication and security systems
Electrical
HVAC
Interior design
Landscaping
Mechanical
Structural

Stretching over a 20,000 m^2 area, the Moroccan-style beach club has a built-up area of 2,000 m^2 accommodating a ground floor and two above-ground floors. The club can host over 3,500 guests at a time while preserving a uniquely refined atmosphere.

Marassi Beach Club House

Dreamland Golf Country Club

Client
Dreamland - Member of Bahgat Group

Scope of Work
Design review
Detailed design
Tender documents
Tender action
Construction management
Construction supervision

Location
Giza, Egypt

Types of Activities
Architectural
Civil works
Communications & security systems
Electrical
HVAC
Interior design
Landscape
Mechanical
Structural

The project comprised a golf country club and a hotel with a total area of approximately 30,000 m^2. The golf country club consists of 1,100,000 m^2 golf course, men and women change/locker rooms, women's wing, golfers terrace overlooking the golf course, and golf professional shop.

The 100-room hotel comprises a basement in the east wing, with a footprint area of 12,000m^2 for golf carts parking and mechanical equipment; a ground floor dedicated to services, golfers' lockers and health center with lounges and bars. The main entrance is located on the first floor includes the main lobby front desk and lounges, conference hall, and banquet hall while the guest rooms are located on the upper two floors. The pitched-roof top floor is dedicated to the mechanical equipment. Both the golf country club and the hotel have access to an indoor swimming pool, a fenced women's swimming pool, an outdoor mixed swimming pool, two whirl pools, lounges, terraces, restaurants, dining rooms and retails.

Dreamland Golf Country Club

Ritz Carlton Club House

Client
Palm Hill Development

Scope of Work
Detailed design

Location
6th of October City, Egypt

Types of Activities
Architecture
Communications and security systems
Electrical
HVAC
Mechanical
Structure

The project's objective was to redesign a residential villa as a golf clubhouse using Revit BIM Package. The building consists of a basement, ground floor, and two above-ground floors. According to the design, the basement floor comprises the Back of the House (BOH) area (main kitchen, staff area and the golf cart parking); the ground floor encompassing male changing rooms, administrative area, golf shop and cafeteria; the first floor comprising female changing rooms, meeting rooms and administrative area; and the second floor including bar and dining area.


Ritz Carlton Club House

Millennium Resort Hotel

Client
RAK Properties

Scope of Work
Concept design
Schematic design
Design development
Detailed design
Tender action
Construction supervision

Location
Ras AlKhaimah, UAE

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Interior design
Landscape
Mechanical
Structural
Urban design

Hosting an exotic South Pacific theme, Millennium Resort Hotel stretched over a 50,000 m^2 plot area whilst entertaining a vast 840 m beach perimeter. The luxury five-star beach development encompassed two village clusters unveiling 300 rooms/suites and a series of entertainment amenities. ECG's scope of work spanned the full spectrum of multi-disciplinary consultancy services ranging from design to construction supervision.

Millennium Resort Hotel

Baia Bianca Resort

Client
United for Touristic Development

Scope of Work
Preliminary design
Detailed design
Tender documents

Location
Nabq, Sharm El Sheikh, Egypt

Types of Activities
Urban Design
Service Buildings
Architectural
Communications & security systems
Electrical
HVAC
Infrastructure
Landscape
Mechanical
Roads
Structural

On a footprint of approximately 200,000m^2, the multi-mix use resort Baia Bianca is located in Nabq's exotic deserts, north of Sharm Al Sheikh city, situated on the southern tip of Sinai.

ECG worked on the urban design and infrastructure of the resort, which incorporates an exclusive 180,000m^2 lagoon, Aqua Park and a series of widespread waterways, created through a series of enormous artificial lakes which flow through the property linking the different components of the resort together in an atmosphere of luxurious beauty. The different zones of the lake cascade are due to the remarkable land level differences.

With a total built-up area of about 600,000m^2, Baia Bianca includes 5 hotel properties with a capacity of 3,000 guest rooms and a 13,000m^2 leasable area, 4,250 residential units and villas, which are powered by service buildings that comprise a Reverse Osmosis (RO) plant, a wastewater treatment plant and electrical substations.

The resort is surrounded with a landscaping inspired from the native environment of Sinai Peninsula as the picturesque scenery and the extended wide vision of the vast green areas. Walkways, quays, bridges and broad walks are designed for pedestrian accessibility through the lake zones and greenery.

Baia Bianca Resort

Sir Bani Yas Beach Resort Master Plan

Client
Abu Dhabi Ports Company

Scope of Work
Master plan
Concept design
Detailed design

Location
Sir Bani Yas Island, Abu Dhabi, UAE

Types of Activities
Architectural
Communications systems
Electrical
Infrastructure
Landscape
Mechanical
Roads
Urban design

In their efforts to reinforce the UAE's status as a leading cruise tourism destination in the region, Abu Dhabi Ports-the master developer, operator and manager of ports and industrial zones in the emirate-is developing a new beach stopover at Sir Bani Yas island that will be utilized by the cruise lines visiting Abu Dhabi.

Over a land area of approximately 180,000 m^2, the beach destination will provide facilities that reflect the high standards and quality of service the cruise lines offer their customers. Facilities include the following:

- Welcome center (240 pax): open-air & shaded retail and F&B facilities
- Buffet facilities
- Dining facilities (800 pax)
- Bars: 4 main bars & 4 Tiki bars
- Transportation area (120 pax)
- Staff facilities
- External fixtures and fittings: 2,000 beach chairs, 1,000 umbrellas, and 77 beach cabanas

Sir Bani Yas Beach Resort Master Plan

Golden Domes Hotel & Mall

Client
Confidential

Scope of Work
Conceptual design (interior)
Schematic design
Detailed design
Tender documents
Construction documents

Location
Cairo, Egypt

Types of Activities
Architectural
Communications and security systems
Cost estimation
Electrical
HVAC
Infrastructure
Interior design
Landscaping
Mechanical

The Golden Domes Hotel & Mall is a luxurious visitor attraction located in Nasr City of Cairo on a plot area of 23,000 m^2. With prestigious entrance approaches, the development comprises a hotel, mall, and day-use building, as well as a kids play area, green areas, and water features.

With a total built-up area of 25,881 m^2, the hotel consists of 11 floors arranged as follows:

- Three lower floors: luxurious entrance & lounges, restaurant, cafeteria, gym & spa, two ballrooms, and business center
- Eight typical floors: 344 rooms including single rooms, double rooms, suites, VIP suites, and royal suites

With a built-up area of 11,280 m^2, the mall consists of two floors housing shops, two food courts, two movie theaters, and a hypermarket.

The day-use building consists of two floors with a total built-up area of 1,767 m^2. The building comprises 21 chalets overlooking a swimming pool. A two-level basement with a built-up area of around 38,250 m^2 occupies the entire plot area. While the basement is mainly utilized as a parking area (455 cars), it also contains a kitchen and other services.

Golden Domes Hotel & Mall

Renovation of Somerset West Bay Hotel

Client
Katara Hospitality

Scope of Work
Conceptual design
Schematic design
Detailed design
Tender documents
Construction management
Construction supervision

Location
Doha, Qatar

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Interior design
Landscaping
Mechanical
Structural

On a land area of 4,666 m^2 and with a built-up area of 43,124 m2, the hotel is located at West Bay, a newly developed neighborhood that is considered one of the key districts in Doha, Qatar.

The building consists of the following components:

- One-level basement: offices, car parking (around 120 cars), and technical services
- Ground floor: hotel reception, lobby, offices, meeting rooms, restaurant, gym, and swimming pool
- 1st floor to 25th floor: 200 apartments (two- and three-bedroom units) stylishly furnished with modern interiors and fittings and fully equipped with kitchens and home entertainment systems
- Roof: technical services

The apartments are complemented with Somerset West Bay's lifestyle facilities and business support services, thus offering the residents peace of mind and great comfort through their busy life in the heart of the city.

ECG's services cover the renovation of the ground floor and 200 apartments, in addition to the conversion of 30 of the three-bedroom units into 60 one-bedroom units, which brings the total number of apartments to 230.

Services also include the development of three retail shops at the reception area, as well as the replacement of the existing façade of glazed curtain walls with a new energy-saving façade system in compliance with sustainability requirements.

ECG is also responsible for managing the required submissions to achieve Qatar Sustainability Assessment System (QSAS) certification in accordance with the established requirements of sustainable design. In the process, a QSAS-accredited professional shall be assigned for each discipline to fulfill sustainability requirements.

Renovation of Somerset West Bay Hotel

Al-Baker Hotel Towers in Doha, Qatar

Client
Al-Baker Architects

Scope of Work
Design review
Schematic design
Detailed design
Architect of Record

Location
Doha, Qatar

Types of Activities
Civil
MEP

The project covers the conversion of two high-rise office buildings at Al-Dafna area in Doha's West Bay into two five-star hotel towers. It also comprises the extension of podium levels (ground floor, mezzanine, first floor, and second floor) in both towers to create more space for leisure facilities (luxury spa opening toward an open-air swimming pool area, multiple F&B outlets, and a double-height lobby).

Hotel Tower 1 (203 meters high) has a gross floor area of 27,707 m^2 and a plot area of 4,445 m^2. It comprises three basements, a ground floor, a mezzanine, and 52 floors offering 425 hotel accommodation units, 3,300 m^2 F&B areas, and a 900 m^2 spa and gym area.

Hotel Tower 2 (190 meters high) has a gross floor area of 37,805 m2 and a plot area of 5,320 m^2. It comprises three basements, a ground floor, a mezzanine, and 47 floors offering 430 hotel accommodation units, 2,200 m^2 F&B areas, and a 1,200 m^2 spa and gym area.

Al-Baker Hotel Towers in Doha, Qatar

Golden Domes Hotel & Mall

Client
Confidential

Scope of Work
Conceptual design (interior)
Schematic design
Detailed design
Tender documents
Construction documents

Location
Cairo, Egypt

Types of Activities
Architectural
Communications and security systems
Cost estimation
Electrical
HVAC
Infrastructure
Interior design
Landscaping
Mechanical
Structural

The Golden Domes Hotel & Mall is a luxurious visitor attraction located in Nasr City of Cairo on a plot area of 23,000 m^2. With prestigious entrance approaches, the development comprises a hotel, mall, and day-use building, as well as a kids play area, green areas, and water features.

With a total built-up area of 25,881 m^2, the hotel consists of 11 floors arranged as follows:

- Three lower floors: luxurious entrance & lounges, restaurant, cafeteria, gym & spa, two ballrooms, and business center
- Eight typical floors: 344 rooms including single rooms, double rooms, suites, VIP suites, and royal suites

With a built-up area of 11,280 m^2, the mall consists of two floors housing shops, two food courts, two movie theaters, and a hypermarket.

The day-use building consists of two floors with a total built-up area of 1,767 m^2. The building comprises 21 chalets overlooking a swimming pool. A two-level basement with a built-up area of around 38,250 m^2 occupies the entire plot area. While the basement is mainly utilized as a parking area (455 cars), it also contains a kitchen and other services.

Golden Domes Hotel & Mall

Soma Bay Golf Club (Currently - La Résidence des Cascades)

Client
Cascades Hotel Company

Scope of Work
Schematic design
Design development
Tender documents
Construction management
Construction supervision

Location
Soma Bay, Egypt

Types of Activities
Architectural
Structural

A 5-star golf club along the Red Sea coastal area at Soma Bay South of Hurghada. The project comprises a 5-star, 111-room hotel, club house, restaurants, health club, ballroom, 18-hole golf course, swimming pool, tennis court, golf cart parking area and administration facilities. It covers a total built-up area of 12,000 m^2. The development encompasses the accommodation area, the public area, roads, footpaths, green areas as well as sport facilities such as a tennis court, two swimming pools, and necessary service support facilities. The accommodation area consists of a three-storey high building offering 222 beds for guest accommodation.

The public area consists of the club-house comprising the reception lobby, administration facilities, restaurants, health club, ballroom, golf carts parking area, main lounge, laundry, main kitchen and service area.

Soma Bay Golf Club (Currently - La Résidence des Cascades)

Multi-Storey Car Parks

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Al-Boustan Multi-Story Car Park & Commercial Center

Client
Al-Boustan Commercial Center Company

Scope of Work
Preliminary design
Tender documents
Tender action
Construction management
Construction supervision

Location
Cairo, Egypt

Types of Activities
Architectural
Civil
Communications & Security Systems
Electrical
HVAC
Mechanical
Roads
Structural

The pilot project occupies a total area of about 3,700m^2. It consists of an eleven story building with a total built-up area of 40,700 m^2. The ground, first and one third of the second, third and fourth floors are used as commercial areas of about 6,800 m^2. The other parts of the second, third and fourth floors up to the eighth floor offer parking space for 934 cars. The ninth and tenth floors are used as office space with a total built area of about 6,000 m^2.

The commercial areas of the building are centrally air-conditioned and equipped with sophisticated communication and safety systems. The car park is monitored by a closed circuit T.V. and is equipped with billing and space control systems. A standby diesel generator set is installed to supply emergency power.

The building foundation system is composed of 350 bored piles, reinforced concrete footings, tie beams, and retaining walls. The superstructure consists of cast-in-situ columns, precast composite slabs, precast prestressed beams (16 m span, 50 cm deep), and reinforced concrete circular ramps.

Al-Boustan Multi-Story Car Park & Commercial Center

ADNOC Headquarters Underground Parking

Client
Arabtec Construction

Scope of Work
Shop drawings review
Design permits
Construction inspection

Location
Abu Dhabi, UAE

Types of Activities
Structural

With a floor area of 21,750 square meters, the car park is exclusive to the employees of Abu Dhabi National Oil Company (ADNOC). It consists of three levels with parking slots accommodating a total of 1,616 vehicles.

Reviewed shop drawings covered structural design drawings associated with value engineering, shoring, piling, pile foundation loads, and effects on the raft foundation.

Convention Centers

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

El-Gouna Concert Hall

Client
Orascom Hotels & Development

Scope of Work
Project management
Architect of record
Schematic design
Design development
Construction documents

Location
El-Gouna, Egypt

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Interior design
Landscape
Mechanical
Structural

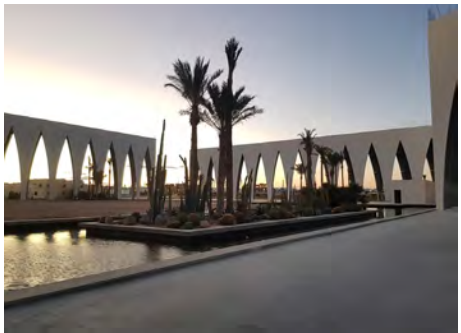
The Concert Hall consists of a building of ground, first and second floors, with a total BUA of approximately 4,500 $m^{2:}$ and a land area of about 30,000 m^2 including an outdoor Auditorium.

Building components are as follows:

- The Concert Hall [accommodating 611 seats]
- An Orchestra pit [For Opera performances]
- A Flat floor event space
- Side conference meeting rooms
- Admin offices
- A Kitchen
- Toilets and changing rooms
- Storage facilities
- Back-of-house and loading dock
- A foyer that acts as welcoming reception area, with a front-desk and a lobby

Outdoor Auditorium components are as follows:

- Accommodates 1,400 seats
- Variable-sized to host El-Gouna Film Festival and other conventions
- A Pre function lobby with a large bar
- A large area for holding celebrations and parties
- A Red Carpet aisle
- A café building that accommodates a bar, preparation kitchen, and toilet facilities serving outdoor guests



Smart Village Conference Centre

Client
Smart Villages Company

Scope of Work
Concept design
Design development
Detailed design
Tender documents
Tender action
Construction supervision
Construction management

Location
Smart Village, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural
Urban design

A huge multi-function state-of-the-art building, spreading over 15,000 m^2 in the heart of Smart Village, Egypt with a breath taking view of greenery and lakes.

Smart Village Conference Centre hosts a number of facility halls including a 500-seat exclusive auditorium fully equipped with the latest audio-visual devices, simultaneous interpretation facilities and wireless connectivity; one large meeting room and six small ones that accommodate from 20 up to 100 persons for smaller scale functions.

For indoor exhibitions and events, an outstanding multifaceted set up takes place across its two-level open space design that hosts more than 1,000 guests in an harmonized environment.

Splendid out-door green platform allows the smooth drive of any open air function where audience may experience the finest merge of business & leisure.

Smart Village Conference Center is one of Egypt's best destinations where conferences and corporate events become a thrilling experience.


Smart Village Conference Centre

Petroleum Institute Male Student Centre and Auditorium Facilities

Client
Abu Dhabi National Oil Company

Scope of Work
Concept design
Preliminary design
Schematic design
Detailed design
Tender documents

Location
Abu Dhabi, UAE

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Interior design
Landscape
Mechanical
Structural

With a construction cost of US$ 30 million, Abu Dhabi National Oil Company (ADNOC) in its continued effort to develop and improve the educational environment of its educational campus, planned to build this new project inside the Petroleum Institute campus in Sas Al Nakhl area in Abu Dhabi. With a total land area of 27,700 m^2, the Petroleum Institute Student Centre and Auditorium comprise a male student centre (5,900 m^2) over a G+1 building, which consists of activity halls, student union rooms, coffee shops, and staff support offices serving the campus students with a service block attached; auditorium building (6,300 m^2) over G+2, serving as a public building to visitors and its location works as a gateway to Abu Dhabi Island, includes a 1000-seat auditorium hall, a VIP lounge, meeting facilities, delegation rooms, multi-purpose halls and a covered plaza with a built-up area of 1,400 m^2 encompassing a gathering area for multiple activities.

Petroleum Institute Male Student Centre and Auditorium Fa

Auditorium at Ras Laffan Industrial City

Client
Qatar Petroleum

Scope of Work
Topographic survey
Geotechnical survey
Environmental studies
Conceptual design
Preliminary design
Detail design
Tender documents

Location
Ras Laffan, Qatar

Types of Activities
Architectural
Electrical
HVAC
Infrastructure
Interior design
Landscape
Mechanical
Structural

On a land area of 34,230 m² and with a built-up area of 3,500 m², the Auditorium Building is located in the heart of the multipurpose administration complex of Ras Laffan Industrial City.

The building's main components include the following:

- Auditorium and Multi-Purpose Hall: consists of Auditorium accommodating 200 persons, multipurpose hall for 200 persons including VIP dining area, exhibition hall, kitchen, laundry room, refuse room and store, praying room with ablution area and shoe racks, washrooms/ toilets (males, females and disabled).
- **VIP Reception and Special Meeting Section:** comprises VIP entrance (including security room with visual access to lobby), reception area to accommodate 40 persons, conference room for 40 persons and VIP washrooms/ toilets.
- **Public Relations' Offices:** accommodate offices for 12 persons (including single occupancy offices for Section Head, Administrative Assistant and senior staff; and triple occupancy offices for Public Relations staff), filing room, equipment room, pantry and staff washrooms/ toilets.
- **Workshops and Storage Areas:** include store rooms, book store, equipment room, pantry and restrooms.
- **Parking:** includes shaded car parking area for VIPs (40 cars), car parking area for visitors (10 cars), shaded car parking area for staff (10 cars) and bus parking area (3 vehicles)

Auditorium at Ras Laffan Industrial City

Canteen & Auditorium Building at Ruwais

Client
Abu Dhabi Gas Industries LTD. (GASCO)

Scope of Work
Concept design

Location
Abu Dhabi, UAE

Types of Activities
Architectural

Over a land area of 5,750 m^2, Abu Dhabi Gas Industries Ltd. (GASCO) intended to construct a new building to serve as a restaurant and auditorium within the Ruwais non-process compound. The building comprises an auditorium hall with seating capacity of 250 persons, and a mess hall for 300 persons, with a separate entrance for each hall.

The building is a blast resilient two- storey RC framed structure having double external skin, finished with natural stone cladding tiles.

Canteen & Auditorium Building at Ruwais

Educational

Arab Academy for Science, Technology & Maritime Transport – New Al-Alamein

Client
Arab Academy for Science, Technology & Maritime Transport

Scope of Work
Schematic design
Detailed design
Design development
Construction supervision

Location
New Al-Alamein, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Interior design
Infrastructure
Mechanical
Roads
Structural
Urban design

On a land area of 280,000 m^2, the Arab Academy for Science, Technology & Maritime Transport (AASTMT) new campus is located in New Al-Alamein City, Egypt; about 90 km from Alexandria and 240 km from Cairo.

The new campus serves the residential communities in New Al-Alamein and the surrounding cities, including Alexandria and Sidi Abdel Rahman. The state-of-the-art designs remarkably shape the campus providing an attractive educational environment.

The project includes the following:

- **Five Entrances:** students and staff entrance, academy buses entrance, school buses entrance, residence, VIP entrance, and emergency exit.
- **Educational Campus:** eight college buildings, continuousing education building, innovation centre, main library, precedence and administrative facilities
- **International School :** nursery, special needs educational building, and school cafeteria.
- **Sports Complex and Facilities:** playground, courtyards, gymnasium, theatre, VIP restaurant, college, and school dorms.
- Support service buildings, mosque, copy centre, garage, and transportation building.
- **Underground Service Level:** MEP utilities, workshops, lockers, services, main kitchen, laundry & garbage collection and a parking lot.

Arab Academy for Science, Technology & Maritime Transport – New Al-Alamein

Umm Al-Qura University Academic Spine

Client
Umm Al-Qura University

Scope of Work
Schematic design
Detailed design
Tender documents

Location
Makkah, Saudi Arabia

Types of Activities
Civil
Communications and security systems
Electrical
HVAC
Infrastructure
Landscape
Mechanical
Roads
Structural
Urban design

Umm Al-Qura University is considered the first higher education institution in Saudi Arabia. It is distinguished by its unique location in the Holy City of Makkah and its academic reputation of excellence in Islamic studies and scientific & applied disciplines. The university is built on a plot area of 1,500,000 m^2, with a total built-up area of 368,000 m^2.

Over a total footprint area of 100,000 m^2, the project comprises the following components:

- **new academic buildings (built-up area of 155,000 m^2):** College of Business Management, Community College, College of Islamic Economics & Finance, College of Community Service & Continuing Education, College of Judicial Studies & Regulations, and Islamic Architecture Department, in addition to academic spine buildings
- **extensions to existing academic buildings (built-up area of 74,000 m^2):** College of Applied Sciences, College of Shari`ah & Islamic Studies, College of Da`wa and Usul-ud-Din, College of Arabic Language, College of Social Sciences, and College of Education
- **non-academic buildings (built-up area of 139,000 m^2):** 11 support services centers, Deanships Building, Business & Innovation Vice-Presidency Building, Branches Vice-Presidency Building, utility plants (HVAC & electricity), pedestrian walkways, 3 mosques, 2 landmark towers, and parking areas

Umm Al-Qura University Academic Spine

El Alsson British & American International School

Client
New Giza Real Estate Development Co.

Scope of Work
Design review
Detailed design
Tender documents
Construction supervision

Location
New Giza, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical

Established in 1982 and later relocated to New Giza, El Alsson British & American International School offers both British and American education to all grades according to international standards. The school prides itself on its stature as one of the best international schools in Egypt. After so many years since its establishment, the school still enjoys a reputation for quality education and excellent customer service.

This project covers a school extension that stretches over a total area of about 15 feddans in New Giza. The extension project comprises the following buildings:

- American School Building: four stories with a built-up area of 16,992.40 m^2
- British school building: four stories with a built-up area of 16,992.40 m^2
- Main Administration Building: four stories with a built-up area of 2,512.50 m^2
- Sports Hall: five stories with a built-up area of 4,051 m^2
- Support Service Workshop: five stories with a built-up area of 1,285 m^2
- Performing Arts Building: four stories with a built-up area of 2,011 m^2
- Powerhouse: gates, fences, and sewage pump station with a built-up area of 270 m^2

El Alsson British & American International School

Girls' Campus of the Islamic University in Niger

Client
Islamic Development Bank (as Administrator of Fael Khair Program)

Scope of Work
Master-planning
Site survey
Environmental & Traffic Studies
Conceptual design
Schematic design
Basis of Design Report
Detailed design
Tender documents
Tender action

Location
Niamey, Niger

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Landscaping
Mechanical
Road
Structural

The Girls' Campus of the Islamic University in Niger stretches over a total area of approximately 117,000 m^2 in Niamey, the Capital City of Niger. With a total built-up area of about 65,000 m^2, the campus includes seven zones comprising a range of academic and non-academic buildings.

Zone 1: Administration & Ceremony Buildings

- University Administration & Student Affairs Building
- Research & Conference Center

Zone 2: Academic Buildings

- Faculty of Medical Science
- Faculty of Administration & Computer Science
- Faculty of Education
- Faculty of Arabic Language
- Faculty of Sharia & Islamic Law
- Faculty Members' Social Club

Zone 3: Faculty Members' Housing

- Four apartment blocks
- University President's House
- Kindergarten

Girls' Campus of the Islamic University in Niger

Zone 4: Recreation & Assembly Facilities

- Central Library, Students' Social Club & Shared Lecture Hall
- Campus Restaurant
- Campus Mosque
- Sports facilities

Zone 5: Student Dormitories

- Six dormitories (198 student per dormitory)

Zone 6: Investment Returns Zone

- Commercial Building
- Grand Mosque

Zone 7: Campus Services

- Parents' Meeting Hall & Medical Clinic
- Training Workshops
- Central Stores
- Workers' Accommodation
- Utility buildings

International Hungarian University

Client
Modern Educational Services (MES)

Scope of Work
Topographic surveys
Geotechnical surveys
Acoustic studies
Environmental impact assessment
Master-planning
Conceptual design
Schematic design
Value engineering
Design development
Detailed design
Design permits
Tender documents
Tender action
Construction supervision

Location
New Administrative Capital, Egypt

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Landscaping
Mechanical
Interior design
Roads
Structural
Urban design

The University campus stretches over a total area of approximately 126,000 m^2 in the New Administrative Capital of Egypt.

With a total built-up area of about 109,783 m^2 and a total footprint area of approximately 20,633 m^2, the campus is set to include the following buildings:

- **Administration Building:** with a built-up area of 8,350 m^2
- **Faculty of Architecture:**with a built-up area of 7,154 m^2
- **Faculty of Information Technology:** with a built-up area of 6,769 m^2
- **Faculty of Pharmacy:** with a built-up area of 9,380 m^2
- **Faculty of Political Science:** with a built-up area of 6,769 m^2
- **Faculty of Arts:** with a built-up area of 9,562 m^2
- **Faculty of Business Administration:** with a built-up area of 9,898 m^2
- **Faculty of Mass Communications:** with a built-up area of 7,168 m^2
- **Faculty of Engineering:** with a built-up area of 15,526 m^2
- **A library:** with a built-up area of 3,300 m^2
- **conference halls and the auditorium:** with a built-up area of 13,560 m^2
- **Dorms:** with a built-up area of 9,297 m^2
- **Commercial facilities:** with a built-up area of 1,350 m^2
- **Sports Area:** with a built-up area of 900 m^2
- **Clock Tower:** with a built-up area of 800 m^2

International Hungarian University

AlQassim Medical Colleges Complex

Client
Imar Urban Consultants

Owner
AlQassim University

Scope of Work
Medical planning
Preparation of space program
Concept design
Schematic design
Design development
Detail design
Tender documents

Location
Qassim, KSA

Types of Activities

Architectural
Civil works
Communications and security systems
Electrical
HVAC
Interior design
Landscape
Mechanical
Structural
Urban design

Occupying a total land area of 110,000 m^2, and with a total built-up area of 138,000 m^2, the complex comprises the following components:

- Faculty of Applied Medicine: including outpatient and physical therapy facilities
- Faculty of Pharmacy
- Faculty of Dentistry: emergency department, surgery department which houses two operation theatres, and five prosthetics laboratories
- two nursing faculties catering separately for male and female students
- common facilities serving all buildings: laboratories, variable capacity lecture halls and classrooms, faculty/management administrative offices, libraries, and parking zone.

All faculties surround and have direct access to a four-storey central building. The sky-lit structure has a large atrium acting as an entertainment platform entailing an exhibition hall, coffee shops, cafeterias, faculty break rooms, prayer facilities, and space for student activities.

AlQassim Medical Colleges Complex

L'Universite Francaise D'Egypte

Client
The French University in Cairo

Scope of Work
Data Collection
Existing construction and utilities survey
Preparation of the proposed space program
Architectural and furniture design concept
Preliminary design
Detailed design
Construction supervision on all works indicated in ECG documents as modifications from the original building design

Location
El Sherouk, Cairo, Egypt

Types of Activities
Architectural
Electrical
HVAC
Interior design
Mechanical

The project involves the assessment and rehabilitation of an existing construction in Al-Sherouk City central area to accommodate the French University facilities in Egypt.

The 3-storey building encompasses four different faculties, administration facilities, 250-seat theater, labs, main library and other specialized libraries, and indoor and outdoor entertainment facilities distributed as follows:

- ground floor: entrance hall, three computer labs, main language lab, eight classrooms, theater, main library, cafeteria and electromechanical and maintenance facilities
- first floor: lecture and exhibition rooms and six computer labs, in addition to staff and administrative offices
- second floor: ten language labs, large lecture rooms, ten computer labs, and specialized libraries

L'Universite Francaise D'Egypte

Arab Academy for Science, Technology & Maritime Transport

Client
Arab Academy for Science, Technology & Maritime Transport

Scope of Work
Data collection
Geotechnical & topographical studies
Site survey
Conceptual design
Schematic design & BODR
Detailed design
Authorities' approvals
Tender documents
Tender action
Construction documents
Construction supervision

Location
Smart Village, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Interior design
Infrastructure
Mechanical
Roads
Structural
Urban design

The Arab Academy for Science, Technology & Maritime Transport (AASTMT) is a regional university operated by the Arab League. It is known for its programs on marine transportation, business, and engineering. AASTMT aims to establish a new educational headquarters and a center of excellence at Smart Village over a total footprint area of 4,685 m2, with a built-up area of 46,000 m2.

The planned project comprises a building for the Faculty of Engineering and the Faculty of Business Administration. The building consists of a 2-level basement, a ground floor, and 5 upper floors designed in accordance with the building requirements set for Smart Village, and in line with higher education requirements.

The building comprises the following:

- Center of excellence
- Educational spaces: auditorium, classes, laboratories, workshop, studios, and library
- Academic staff spaces: offices and cafeteria
- Administrative services: admission, finance, and procurement offices
- Student services: clinic, cafeteria, bank, prayer rooms, stationery room, photocopying room, and gymnasium
- General services: entrances, VIP lounge, outdoor lounge, horizontal and vertical circulation, parking areas, storage areas, repair shop, security offices, and electricity rooms

Arab Academy for Science, Technology & Maritime Transport

Zakho University

Client
Ministry of Higher Education & Scientific Research

Scope of Work
GIS
Master plan
Concept design
Preliminary design (Infrastructure)
Detailed design (Infrastructure)
Tender documents

Location
Zakho, Duhuk, Kurdistan-Iraq

Types of Activities
Architectural
Civil works
Communications & security systems
Electrical
HVAC
Landscape
Mechanical
Roads
Urban development
Infrastructure

To meet the growing demand for high quality education, Kurdistan Regional Government took an ambitious initiative to develop and expand the existing Universities of Zakho and Raparin (Ranya), Kurdistan. The objective of this reform was to upgrade the two educational institutions to become nationally and internationally recognized.

On a land area of 1,270,040 m^2, and with an internal road of length 7,230 km, the project includes the following existing and potentially proposed educational facilities:

Theoretical Zone: Faculty of Education, Faculty of Economics & Law and Faculty of Administration.

Engineering Zone: Faculty of Arts, Faculty of Engineering and Faculty of Information Technology.

Medical Zone: Faculty of Medicine, Faculty of Pharmacy, Faculty of Medical Assistance and Faculty of Dentistry, in addition to an educational hospital.

Central Service Zone: research center, cultural center, library, conference hall (sky dome), medical center services, general registration office, university bank, police station & civil defense center, fuel station, mosque, mini-markets and services.


Zakho University

Accommodation Zone: male/ female dormitories and staff accommodation.

Sports Zone: international football field, tennis court, indoor swimming pool, sports facilities and multi-use playgrounds.

Existing Zone: Faculty of Science, Faculty of Humanity, Faculty of Commerce, Faculty of Applied Science, Zoology lab, research center, theater & auditorium, university presidency building, student affairs center, indoor sports hall, green houses, chemical storage, main storage and two (2) water treatment facilities for proposed buildings and future extension.

The design of the university serves to integrate the new buildings with the existing ones and allows future extension to the spaces and buildings. The design provides enhanced circulation around the campus and around the university's built form. It provides minimal intersections with vehicular paths, allowing for minimal interruption along the walking paths. It also includes 8,100 asphaltic internal roads with 15 m carriageway width.

The landscape design for the University is strongly influenced by the Kurdish style. The perimeter of the site, the open space, the entries, the faculties and other architectural features in prime locations convey the community character in both building style and landscape treatment. Other areas within the campus are influenced by the character of the region.

Raparin University in Ranya

Client
Ministry of Higher Education & Scientific Research

Scope of Work
GIS
Master plan
Concept design
Preliminary design (Infrastructure)
Detailed design (Infrastructure)
Tender documents

Location
Ranya, Sulymaniah, Kurdistan-Iraq

Types of Activities
Architectural
Civil works
Communications & security systems
Electrical
HVAC
Landscape
Mechanical
Roads
Urban development
Infrastructure

To meet the growing demand for high quality education, Kurdistan Regional Government took an ambitious initiative to develop and expand the existing Universities of Zakho and Raparin (Ranya), Kurdistan. The objective of this reform was to upgrade the two educational institutions to become nationally and internationally recognized.

On a land area of 948,767 m^2, and with an internal road of length 8,000 km, the project comprises the following existing and potentially proposed educational facilities:

Presidency Zone: university presidency building, shareholders council, IT & community service center and police station & civil defense center.

Theoretical Zone: Faculty of Humanities, Faculty of Primary Education, Faculty of Law and Faculty of Administration & Management.

Engineering and Science Zone: Faculty of Engineering, Faculty of Computing, Faculty of Fine Arts and Faculty of Science & Bio-medical Science.

Medical Zone: Faculty of Medicine, Faculty of Pharmacy, Faculty of Dentistry, Faculty of Medical Assistance in addition to an educational specialized hospital.

Academic Service Zone: main lecture hall, university bank & commercial center, multi-purpose unit, student affairs center, main library, culture center, research center,

Raparin University in Ranya

conference center, auditorium, amphitheater in addition to a food court.

Residential Zone: staff accommodation, male/ female dormitories, school, nursery, mosque and utilities.

Sports and Recreational Zone: football pitch, swimming pool & services.

The design of the university serves to integrate the new buildings with the existing ones and allows for future extensions to the buildings and spaces.

The design provides enhanced circulation around the campus and around the university's built form. It provides minimal intersections with vehicular paths, allowing for minimal interruption along the walking paths.

Gulf Medical University (Formerly Gulf Medical College)

Client
Bin Laden Contracting Group

Owner
Gulf Medical University

Scope of Work
Preliminary design
Detailed design

Location
Ajman, UAE

Types of Activities
Architectural
Electrical
Mechanical
Structural

Financed by Islamic Cooperation for the Development of the Private Sector (ICD), Jeddah-Saudi Arabia, Gulf Medical University is the first medical school in the region to offer admission to both males and females of all nationalities.

The university was established with the Decree No. 1 dated January 28, 1998 issued by His Highness Sheikh Humaid Bin Rashid AlNuaimi, the Ruler of Supreme Council, UAE, as there was a felt need for a medical college in the United Arab Emirates.

The university comprises a library, two lecture halls and a social centre.

Expansion of the American International School in Abu-Dhabi

Client
American International School in Abu-Dhabi

Scope of Work
Concept design
Detailed design
Tender documents
Construction supervision

Location
Abu Dhabi, UAE

Types of Activities
Architectural
Communication & security systems
Electrical
HVAC
Mechanical
Structural

The American International School in Abu Dhabi (AISA) is the first school in Abu Dhabi that offers the International Baccalaureate Primary Years Program (IBPYP) and International Baccalaureate Diploma Program (IBDP).

For the purpose of accommodating the increasing number of students wishing to enroll, it was decided to expand the existing built-up area by constructing the following facilities:

- new Kindergarten KG building (G+2) linked to the existing school building with an approximate built-up area of 5,100 m^2
- new service block with a built-up area of approximately 250 m^2
- all-male building: addition of two floors to the existing ground floor with a built-up area of approximately 2,000 m^2, in addition to vertical circulation spaces at the ground floor level
- hardscape works surrounding the new buildings
- site adjustments (relocation of sheds, fence modifications, demolition works, etc...)
- car parking outside the plot, and adjustments to the surrounding roads

Expansion of the American International School in Abu-Dhabi

Three Ma'arif School Campuses

Client
Ma'arif for Education & Training Holding Company

Scope of Work
Architect of Record
Adaptation of concept design
Schematic design
Detailed design
Tender documents
Construction documents

Location
Jeddah and Dammam, KSA

Types of Activities
Architectural
Civil works
Electromechanical works
Interior design
Landscaping
Structural

The project comprises three new school campuses in the Jeddah districts of Muhammadiyah and Safaa, and the Dammam district of Shatie. Broadway Malyan was appointed as Design Architect for the new schools prototype.

The three campuses provide both male and female students with kindergarten, elementary, intermediate and secondary education following the international IB & IGCSE curricula, as well as national Saudi curricula (normal and advanced).

Each of the Safaa and Shatie campuses (with capacity of 2,040 and 1,825 students respectively) comprises a basement for car parking and services, a ground floor and 2 upper floors, with built-up areas of 33,000m^2 and 25,000m^2, respectively. The Muhammadiyah campus (with a capacity of 2,600 students) comprises a ground floor and 2 upper floors, with a built-up area of 40,000m^2.
The ground and upper floors of all three campuses are utilized as follows:

- ground floor: entrance, administration & staff rooms, classes, labs, library, as well as sports & activities facilities
- first & second floors: classes, staff rooms and utilities

Three Ma'arif School Campuses

Metropolitan School

Client
Al-Habib for Private Education

Scope of Work
Conceptual design
Design development
Detailed design
Tender documents
Tender action
Construction management
Construction supervision

Location
New Cairo, Egypt

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Landscaping
Mechanical
Structural

On a land area of 20,000 m^2, the international school is located south of the Police Academy in New Cairo, Egypt. The total footprint area of school buildings is 6,000 m^2, and the remaining area of 14,000 m^2 is carefully utilized to provide children with spacious playgrounds and outdoor sports facilities, including football, basketball, and volleyball fields, as well as a tennis court and storerooms.

The school basement, which occupies the entire land area, includes indoor football, basketball, and volleyball fields, as well as two indoor swimming pools, two cafeterias, along with storerooms and a parking area.

The school project was implemented in three main phases as follows:

- kindergarten building (ground floor and two upper floors above the school basement): 10 classrooms, administrative offices, and a clinic
- 4 school buildings connected to a main spine: two preparatory school buildings (30 classrooms) and two buildings for primary and secondary schools (15 classrooms)
- administration building: multipurpose hall, indoor swimming pool, cafeteria, gymnasium hall, library, auditorium, and administrative offices

The conceptual design had portrayed the school buildings in such a way that emphasizes the value and power of education in Egypt. Power, beauty, and simplicity have subsequently been taken as prime factors governing the entire design process. In the same context, building façades feature colored curtain walls neatly mixed with metal cladding, thus adding a modern touch harmonizing with the surrounding environment.


Metropolitan School

Schools Complex at Ruwais

Client
Abu Dhabi National Oil Company

Scope of Work
Concept design
Design development
Detailed design
Tender documents
Tender action

Location
Abu Dhabi, UAE

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Landscape
Mechanical
Structural

With a construction cost of Dhs 190 million and over a land area of 75,000m^2, the schools complex comprises four typical secondary schools (2 for males and 2 for females), each school consists of classrooms, labs, sports hall, auditorium, external playgrounds (tennis, basketball and football), swimming pools for males, enclosed swimming pool for females, mosques, two primary schools, kindergartens in addition to service blocks.

Madinaty British International School

Client
Arabian Co. for Projects and Urban Development

Scope of Work
Shop drawings

Location
New Cairo, Egypt

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Mechanical
Structural

With a total construction cost of EGP 110 million, the project is constructed on a total land area of 7,031 m^2. The school comprises 36 classes distributed over four floors [ground floor (6,399 m^2), first floor (5,063 m^2), second floor (5,237 m^2) and third floor (1,879 m^2)], in addition to 240 m^2 playground.

The school's state-of-the-art facilities include air-conditioned classrooms, a large swimming pool, labs, a sports hall, sports fields and a multi-purpose hall.

Madinaty British International School

New Types of Secondary Schools

Client
Public Works Authority (ASHGHAL), Qatar

Scope of Work
Basis of design report
Concept design
Preliminary design
Schematic design
Design development
Detailed design
Tender documents
Tender action

Location
Qatar

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Landscape
Mechanical
Roads

Twelve (12) Preparatory and Secondary Schools, for girls and boys, were designed with a capacity of 300-400 students each. Premised on areas ranging from 10,000 -18,000m^2, the schools designs incorporated classrooms, laboratories, multipurpose sports halls; computer, language and science rooms; and lecture halls. The design also integrated provisions for handicapped students.

The LEED-compliant structures adopted highly energy-efficient designs. To ensure that form follows optimum function, traditional and modern materials were selected to induce seamless integration with a wide range of environmental factors such as the movement of the sun, shadow masses, and wind flows.


New Types of Secondary Schools

GEMS World Academy

Client
GEMS Education, UAE

Scope of Work
Detailed design
Construction supervision

Location
Dubai, UAE

Types of Activities
Architectural
Electrical
Mechanical
Structural

On a plot area of 10 acres and with a total built-up area of 21,000 m^2 and construction cost of DR 190 million, the high standard School Complex consists of the following components:

- International School: the elementary building holds over 40 spacious and well-appointed, ICT rich classrooms. The ground floor Kindergarten classrooms are lead from the dedicated elementary school reception and into the KG indoor and outdoor play areas. The shaded outdoor KG play area includes wet and soft play facilities. KG children also benefit from their own library and computer lab dedicated to their early childhood needs
- sports facilities: 400 m athletics track, 3 tennis courts, Olympic swimming pool, skateboard area, golf simulator, ski simulator, trainer pool (12m x 8m), 5 tennis courts, 2 squash courts, all weather artificial sports pitch, large 480-seat gymnasium, junior gym, fitness center with modern exercise equipment, climbing wall, bouldering, low traverse walls and multi-purpose sports hall which includes standard basketball court that hosts a variety of activities from basketball and volleyball to netball and badminton
- 70-seat planetarium
- 660-seat theatre: the focal point for performing arts and is supported by music rooms, TV studio, recording studio, dance room, black box theatre (drama studio) and offices
- Discovery World: at the heart of the school featuring a spacious library which is the focal point of the school with science, robotics, design technology and arts rooms clustered around it
- cafeteria


GEMS World Academy

Primary Schools Construction Program

Client
The General Authority for Educational Buildings

Scope of Work
Project management
Schematic design
Design development
Detailed design
Tender documents
Tender action
Construction management
Construction supervision

Location
Egypt

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Interior design
Mechanical
Structural

The construction program involves 653 schools in Al-Beheira, Quena, Al-Fayoum, Beni-Suef, Al-Sharkia and Aswan governorates.

The project whose duration is 12 years has various aspects comprising construction of new schools, partial and complete rehabilitation, expansions, restoration and maintenance of existing schools. The program also comprises the furnishing works of classes, activity halls and computer laboratories, in addition to the decentralized regular maintenance works practiced by the school principals and the direct supervision financed by German Reconstruction Bank "Kreditanstalt für Wiederaufbau KFW".


Primary Schools Construction Program

Halliburton Training & Technology Centre

Client
Halliburton Energy Services

Scope of Work
Concept design
Design development
Detailed design
LEED coordination
LEED documentation
Tender documents
Construction management
Construction supervision

Location
Marsa Matrouh, Egypt

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Landscape
Mechanical
Roads
Structural

Over a land area of 16,800m^2 and with a built-up area of 6,173 m^2, the new training center encompasses 3 main buildings, 4 service buildings, and parking areas for 20 cars and 2 buses.

Logging & Slickline Building (2,810 m^2): the ground floor includes a main entrance, second entrance, administration, logging classrooms, slickline classroom, logging workshops, logging cabins, slickline workshops, slickline cabins, slickline offices, TCP offices, TCP classroom, EUIC lab, break room, storage lockers, toilets, exit stairs, corridors and services area, while the first floor comprises classrooms, offices, break room, storage rooms, lockers, toilets, exit stairs, corridors and service area.

Accommodation Building (748 m^2): the ground floor includes 26 small suites (bed area and bathroom), IT room, electric room, administration rooms, exit stairs, corridors and waiting areas, while the first floor comprises 39 units and service area.

Halliburton Training & Technology Centre

Recreation Building (643 m²): main entrance, secondary entrance, main lobby, lounge, main restaurant, kitchen, stairs, toilets and kitchen services.

Gate and Control Building (138 m²): guard room and a control room for site safety.

Generator and Transformer Building (166 m²): generator room, L.V. room, transformer room and a ring main unit room.

Underground Water Tank Building (56 m²): compressor room.

Radioactive Storage Building (142 m²): holes of the radioactive unit.

The Petroleum Institute ARZANAH Building for Female Educational Facilities

Client
Abu Dhabi National Oil Company

Scope of Work
Concept design
Detailed design
Shop drawings
FEED
Design permits

Location
Sas AlNakhl, Abu Dhabi, UAE

Types of Activities
Architectural
Structural

Located in the Petroleum Institute's educational campus, Arzanah Building is devoted solely to the education of female students. Occupying an area exceeding 15,000m^2, and with a built-up area of 28,000m^2, the development unfolds classrooms, laboratories, workshops, a library, and a dining hall.

Noteworthy, ECG also addressed the MEP coordination for the project with a construction cost stood at US$ 48 million.

The Petroleum Institute ARZANAH Building for Female Educational Facilities

Petroleum Institute Support Facilities

Client
Amana Contracting & Steel Buildings

Owner
Abu Dhabi National Oil Company

Scope of Work
Detailed design
Shop drawings
Design permits

Location
Sas AlNakhl, Abu Dhabi, UAE

Types of Activities
Architectural
Structural

Support facilities for the Petroleum Institute encompass offices, classrooms, computer laboratory, and staff administrative offices over a total built-up area of 2,700m^2.

Furthermore, a total built-up area of 1,150m^2 is devoted to a dining hall and a kitchen. Meanwhile, an indoor sports hall, with total built-up area of 8,400m^2, is developed with separate zones for males & females, changing and locker rooms, a gym, and a coffee shop. Interconnected male and female zones accommodate an indoor common entrance and a squash court.

For the project whose total construction cost is US $ 19 million, ECG's mandate also involved MEP coordination.

Petroleum Institute Support Facilities

ADNOC Petroleum Institute Building No. III

Client
Abu Dhabi National Oil Company

Scope of Work
Basis of Design Report
Detailed design
Tender documents

Location
Umm Al Nar, Abu Dhabi

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Mechanical
Structural

With a built-up area of 12,000m^2, the building comprises a ground floor, two upper floors and a roof. The ground floor contains the main entrance lobby, administrative offices, classrooms, laboratories, prayer halls for men & ladies, ablution areas, elevators, staircases, landscape courtyards, toilets, stores and services rooms. The first and second floors include administrative offices, classrooms, laboratories, elevators, staircases, toilets, stores & services rooms. The roof comprises outdoor type Air Handling Units (AHU).

The building contains two (2) open-to-sky atriums which provide natural lighting to classrooms and main staircases. A central void covered with a skylight provides natural lighting to the main entrance lobby, and two (2) fully glazed bridges connect existing Buildings No. II & III on all floors.

The building is surrounded with a pedestrian footpath which leads to the electrical substation and the water tanks. The existing Temporary Petroleum Institute fence is extended opposite to Building No. III and a new fence is constructed surrounding the water tanks. Planted landscaped atriums are located within and between both Buildings II & III.

ADNOC Petroleum Institute Building No. III

New Training Centre at Mesaieed

Client
Qatar Petroleum

Scope of Work
Concept design
Preliminary design
Detailed design

Location
Mesaieed Industrial City, Doha, Qatar

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

Qatar Petroleum Company identified the need for a high quality training centre in Masaieed to serve various industry and technology population. The project addresses existing and potentially proposed training needs till the year 2025.

With a footprint area of 17,500m^2 and over a land area of 65,618m^2, the training centre consists of a main building encompassing ground and first floor, and an auxiliary building. The project elements comprise administration, professional, mechanical and welding, electrical and instrument, process, mathematics, science, and English departments in addition to auditorium, library, recreation area, canteen, kitchen, praying area, lounge and service areas.

The centre has a modern architectural appearance producing a modern, innovative and distinctive look, utilizing modern materials and superior quality finishes.

New Training Centre at Mesaieed

Our Own High School at Al Warqa

Client
Al Naboodah / Varkey Group, UAE

Scope of Work
Architect of record
Preliminary design
Detailed design
Tender documents
Construction supervision

Location
Dubai, UAE

Types of Activities
Architectural
Electrical
Mechanical
Structural

Our Own High School, Al Warqa'a, is a GEMS school created as a single shift facility for boys of "Our Own English High School, Dubai" which was established in Bastakiya in 1968.

The new school building (capacity of 5,000 student) has spacious classrooms and wide passages, administrative offices, large multi-purpose hall, bookstore, art & craft room, canteen, 3 spacious libraries, mathematics laboratory, 10 large well-equipped science laboratories, computer science center, and indoor & outdoor playgrounds for football, volleyball, basketball, cricket, badminton, table tennis and swimming, in addition to school mosque.


Our Own High School at Al Warqa

Dubai Modern High School

Client
GEMS Education, UAE

Scope of Work
Architect of record
Preliminary design
Detailed design
Tender documents
Construction supervision

Location
Dubai, UAE

Types of Activities
Architectural
Electrical
Mechanical
Structural

With a construction cost of Dhs 100 million, and a total built-up area of 34,200 m^2, the school comprises the following components:

- main building: activity room, outdoor play area, art and craft room, library, science laboratories, ICT and robotics center
- sports block: multi-purpose hall, squash courts, senior & junior swimming pools, and main & secondary football stadiums
- ancillary buildings: service block, guard room and toilets

Dubai Modern High School

Smart Village School

Client
Child and Society Development Institution

Scope of Work
Concept design
Design development
Detailed design
Construction management
Construction supervision

Location
Smart Village, Egypt

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Landscape
Mechanical
Roads
Structural

On a plot area of 70,870 m^2, the project was developed in 4 phases:

- **Phase I:** nursery and kindergarten building including administration offices and services
- **Phase II:** primary building 1 (3 typical floors), gym and multipurpose building encompassing administration offices and a theatre
- **Phase III:** primary building 2 (basement and 3 typical floors), and library building
- **Phase IV:** preparatory and secondary building (lower ground floor, ground floor, and 3 typical floors)

The project also comprised playgrounds, fences, gates and car & bus parking area, as well as infrastructure.

The main challenge was that the works had to be completed, tested, commissioned and operated at least one month before the beginning of the school year to allow the owner to start his activities such as furnishing and fixing of equipment and apparatus, thus leaving only about eight months for construction, testing & commissioning. Accordingly a fast track construction procedure was adopted.

Manarat Al-Madinah School

Client
Ma'arif for Education & Training

Scope of Work
Conceptual design
Schematic design
Detailed design
Tender documents
Construction documents

Location
Al-Madinah Al-Monawarah, Saudi Arabia

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Landscaping
Mechanical
Roads
Structural

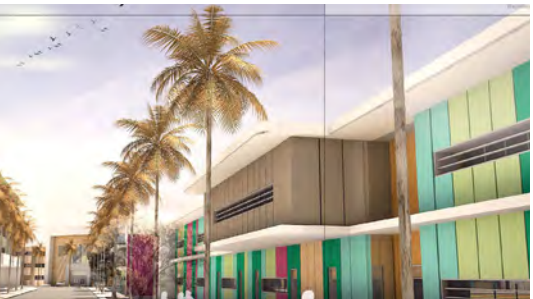
Established more than 40 years ago, Ma'arif for Education & Training is the largest owner and operator of private schools in Saudi Arabia. The company owns and operates 13 series of private schools comprising more than 60 school campuses attended by more than 23,000 students in various locations of Saudi Arabia. Ma'arif schools offer virtually all levels of preuniversity education (kindergarten, elementary, preparatory, and secondary education) for both genders.

The school campus covered by this project, Manarat Al-Madinah School, is located in Al-Khalidiyah District of Al-Madinah Al-Munawarah over a plot area of about 39,719 m^2.

It provides students with American (SAT-focused) and British (IGCSE) education systems, alongside the Saudi national education system (normal and advanced). Scheduled to open before the Academic Year 2018/2019, the school campus is designed to accommodate approximately 5,200 students in the kindergarten and primary levels.

With a built-up area of 45,000 m^2, the campus building consists of a ground floor and two upper floors utilized as follows:

- ground floor: entrance, administration & staff rooms, classes, labs, library, and sports & activities facilities
- first & second floors: classes, staff rooms, and utilities



Governmental

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Renovation of Attaba Egypt Post Office

Client
Post for Investment (PFI)

Scope of Work
Detailed Design
Construction Supervision

Location
Attaba, Cairo, Egypt

Types of Activities
Communication and Security Systems
Electrical
Mechanical

The Post Authority building in Attaba is considered one of the most important archaeological buildings in Greater Cairo. It is where lies the Zero Pinpoint used to measure distances between Cairo and the rest of the governorates in Egypt. The project is the complete development and of the building of the General Office of the National Post Authority in Attaba, and increasing its competence. The Building's built-up area is 14,700 square meters, and consists of a ground floor, mezzanine, first floor, second floor, and the roof of the building. The development is divided into two phases:

The Phase I:
A challenge to restore the building to its archaeological origin; along with renovation and development by:

- Expansion of the Postal Museum located in the building on the first floor.
- Reviving the main archaeological entrance to the building, while preserving the ancient heritage of the museum and building
- Adding a conference room
- Installation of air conditioning systems for museum spaces
- Installation of fire alarm systems and placement of fire extinguishers in all areas.

Phase II:
- Renewal, development, and upgrading of the building's efficiency
- Ventilation of all building areas
- Installation of HVAC systems
- Securing the building with a fire alarm system and a firefighting system, along with the needed electrical upgrading works needed to raise the efficiency of the building's electrical panels to comply with the new loads resulting from the development scheme.

Renovation of Attaba Egypt Post Office

Royal Consulate General of Saudi Arabia

Client
Ministry of Foreign Affairs, Saudi Arabia

Scope of Work
Traffic Impact Study
Conceptual Design
Schematic Design
Design Development
Detailed Design
Tender Documents
Tender Action

Location
Alexandria, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Interior design
Landscaping
Mechanical
Roads
Structural

The project involves the transformation & restoration of the Saudi consul's residence into a building for the Consulate General. The residence is a historical residential villa in Alexandria; with a total built-up area of approximately 2,181 m^2, which will be restored to accommodate the offices for the consulate's employees.

The building comprises a basement, ground and first floors, as well as a roof. While preserving heritage and showing our culture and legacy, the project includes the revival of the garden of the villa, in order to enhance the overall atmosphere of the venue, and provide it with a lively ambiance worthy of a place of political and cultural significance.

Royal Consulate General of Saudi Arabia

Governmental District At New Capital

Client
Military Engineers

Scope of Work
Conceptual design
Detailed design
Design development
Tender documents

Location
New Capital, Egypt

Types of Activities
Architectural
Interior design
Landscape
Structural

The Governmental District is a multi-building master-plan project, in which sustainable design strives to create not only a dynamic experience between two architectural elements, but also positions itself to fashion an enlivened pedestrian experience with a comfortable interior and exterior microclimate for users.

The location of the Governmental District is key due to it is central location adjoining the presidential palace, business center, and the diplomatic district, which provides a strong link to the significant zones, with a total built-up area of approximately 1,580,000 m^2. Phase I of the project comprises a total of 34 buildings over ten land plots.

The Governmental District comprises several clusters as "A typical cluster," which comprises a single building of "L1" type, a single building of "Lc" type, and two buildings of "L2" type, and another cluster comprising a single building of "U" type.

Ministry buildings types "L1," "L2," and "Lc" are eight stories high, except for part of "L2" type buildings, which is six stories high. "U" type buildings are 10 stories high, while some parts are eight stories high and others six stories high.
A car park, which occupies almost the entire area of the two-story building, is located under the buildings of each cluster.

Governmental District At New Capital

Renovation and Development of Ministries Complex Buildings

Client
First United General Trading & Contracting Company

Scope of Work
Construction management

Location
Kuwait

Types of Activities
Architectural
Civil
Electromechanical
Structural

The ministries complex is considered the largest governmental setting in Kuwait, it currently consists of 19 main blocks (six floors each) for various ministries offices over a footprint area of 90,000 m^2 .

With a total built-up area of 600,000 m^2, the complex accommodates more than 7,000 occupants and 13,000 visitors on daily basis.

The project involves full internal renovation as well as significantly altering the external facades of the whole complex, redevelopment of the entrances of main blocks, building a new car park and a new central power plant.

The complex is surrounded by East, South and North parking areas which serve the complex buildings as follows:

- East parking area: a flat ground floor serving 600 cars, to be expanded to a multi-storey parking for 4,000 cars.
- South parking area: under construction and will be served as a multi storey parking for Wataniya company with a capacity up to 2,400 cars (of which 1,300 parking slots serving the ministries complex buildings).
- North parking area: accommodating 800 cars.

Renovation and Development of Ministries Complex Buildings

ECG scope encompasses the construction management for three main parts:

Interior renovation:

- Renovation of targeted blocks 7, 8, 9, 10, 17, 18 and 19.
- New circulation program for all public areas and entrances at complex ground floor.
- Rehabilitation of the wet areas and pantries (more than 250 units).
- Strengthening the RC of the complex foundations, the RC skeleton of the two existing basement floors and the RC super-structure skeleton.

Exterior renovation:

- External facades of the whole complex buildings.
- Full rehabilitation of the existing ring road around the complex through developing new traffic strategy, new parking areas and infrastructure.

New construction:

- A new VIP multi-storey car parking.
- New entrance areas for buildings 24 & 34.
- A North-East pedestrian bridge connecting the first floor level of block 34 to the new East parking area.
- A new central power plant.

Impoundment Complex for the General Execution Administration

Client
BNTC-Bayan National Trading

Scope of Work
Preliminary design
Detailed design

Location
Kuwait

Types of Activities
Electrical
HVAC
Infrastructure
Landscape
Mechanical
Roads

According to the development plan of Kuwaiti government for restructuring the governmental authorities, the Ministry of Public Works (MPW) on behalf of the government of Kuwait sought to contract a high qualified consultant such as ECG to design and drive to completion the Impoundment Complex for the General Execution Administration along with its facilities and services.

Over a plot area of 20,000 m^2, the project is located in Al-Ardaya Industrial Zone at Al-Farwaniyah governorate comprising administration offices, automated car parking, showroom for auctions, mosque and citizen service center.

The complex will be used for storing and re-sale of the reserve judicial items by using the most advanced and efficient techniques.

Impoundment Complex for the General Execution Administration

Public Prosecution Office Building

Client
Public Prosecution Authority

Scope of Work
Concept design
Preliminary design
Detailed design
Tender documents
Tender action
Construction management
Construction supervision

Location
ElErfan City, Oman

Types of Activities
Architectural
Civil
Electrical
HVAC
Mechanical
Structural

Over a land area of 18,053 m^2, the Omani Public Prosecution Authority office building was built in El-Erfan City. With a built-up area of 14,772 m^2, the building consists of a ground floor and five floors. To achieve functional independence among users, the building has five separate entrances: one for the Attorney General and VIPs with a panoramic elevator; one for the conference hall; one for visitors; one for employees connected directly to the parking area, in addition to a service entrance.

The building floors are designed as open-space areas to accommodate the requirements of the Omani Public Prosecution Authority for various departments with associated services comprising:

- Office for Attorney General
- Administrative offices
- A conference hall with capacity of 200 persons
- A reception hall for VIPs
- Waiting areas
- Three employee elevators
- Other facilities including male/ female restrooms and prayer rooms, kitchen, exit stairs and service elevators.

The conceptual design of the castle-themed building associated Omani architectural heritage, with modern design elements and functionality.

ECG is well-known for its dedication to environmental sustainability which was adopted by our client through incorporating the latest infrared technology applications. This technology aims to analyze electricity and water consumption, consequently reducing its carbon footprint and contributing to the environment.

The environmental elements, topography of the site and existing natural slopes, provided us with beneficial factors to utilize; through creating an additional floor and decreasing excavation and backfilling works, resulting in reducing construction duration and cost.

The building's courtyard was covered by "skylight" to provide internal illumination, to minimize energy consumption and maintain internal cooling.


Public Prosecution Office Building

Dar Al-Ifta' Al-Masriyyah New Building

Client
Dar Al-Ifta' Al-Masriyyah

Scope of Work
Concept design
Detailed design
Tender documents
Tender action
Construction management
Construction supervision

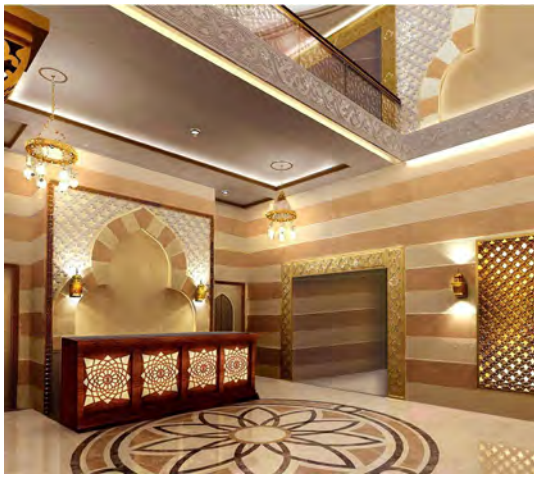
Location
Cairo, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
External utilities
HVAC
Interior design
Landscape
Mechanical
Structural

Comprising a built-up area of 4,300 m^2, the new building is composed of a basement, a ground floor, a mezzanine, and four typical floors. Ground floor facilities are devoted to key purpose of the new expansion, that is, extending sharia'-based fatwa to the public. Those accommodate two Islamic consultation offices specifically assigned to individuals seeking private advice from specialized Muslim scholars. Whilst waiting for admittance, visitors are hosted in a waiting lounge. Moreover, adults with children can always place their youngsters in a children's playroom until their private session is concluded.

The remaining floors are dedicated to the institution's various administrative activities. They introduce research and communication centers; a meeting room; a general archive; a fatwa heritage chamber; an archive for books and publications; a books restoration and indexing room; a vast library; and training classes for Islamic scholars.

Other supplementary facilities crucial to the integrated functioning of the structure entail the grand mufti's office; a 515 m^2 prayer hall with separate quarters for both men and women; administrative offices (Islamic scholars; finance, legal, engineering, human resources, warehousing and procurement); a cafeteria; a basement car parking; an electromechanical room in all floors; and a drivers' common room.



Ministry of Communications and Information Technology Complex

Client
Ministry of Communications & Information Technology

Scope of Work
Basis of Design Report
Design development
Detailed design
LEED coordination
LEED registration
Tender documents
Tender action
Construction management
Construction supervision

Location
Smart Village, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
Mechanical
Structural
Urban design

Over a land area of 40 acres, the Ministry of Communications and Information Technology (MCIT) complex is the largest zone in Smart Village in terms of surface area and floor space.

The complex encompasses a series of buildings, including the Administration Building, Training Center, National Center for Documentation of Civilization and Natural Heritage, National Telecom Regulatory Authority, and Technology Innovation and Entrepreneurship Center. The complex buildings are registered for LEED certification.

Ministry of Communications and Information Technology Complex

Cairo Contact Centres Park

Client
Ministry of Communications & Information Technology

Scope of Work
Basis of Design Report
Concept design
Detailed design
Tender action
Construction supervision

Location
Maadi, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Interior design
Mechanical
Structural

ECG was involved in the design and construction supervision of Buildings types Mb1, Mb3, and Mb5 of the Cairo Contact Centres Park in Maadi.

Constructed over a footprint area of 4,200 m^2, Building type Mb1 comprised a basement, a ground floor, and two above-ground floors. Designed to host call centre activities, the building was divided into three separate structures each served by its own facilities. IT rooms and electrical services were housed in the basement.

Buildings types Mb3 and Mb5 comprised five parts that could be used individually or as one all-inclusive building. The type MB3 building was dedicated to call centre activities, whereas Mb5 was reserved for the Egypt Post company. Mb3 and Mb5 featured two car parking basements and five typical floors with an area of 7,000 m^2 per floor. The total built-up area of the three buildings is 18,000 m^2.

All buildings' elevations were cladded with natural stone integrated with structural glazing curtain walls.

Cairo Contact Centres Park

Telecom Regulatory Authority Building

Client
Telecom Regulatory Authority

Scope of Work
Concept design
Design development
Detailed design
Tender documents
Tender action
Construction management
Construction supervision

Location
Smart Village, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

Constructed over an area of 3,300 m^2 and with a total built-up area of 14,900 m^2, the Telecom Regulatory Authority Building consists of a basement, a ground floor, and two floors comprising administrative departments, a standardization laboratory, and a 1,100-seat multi-purpose hall.

Telecom Regulatory Authority Building

National Post Authority Office Building

Client
Ministry of Communications & Information Technology

Scope of Work
Concept design
Concept design
Design development
Detailed design
Tender documents
Tender action
Construction management
Construction supervision

Location
Smart Village, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
Mechanical
Structural

With a built-up area of 12,200 m^2 the National Post Authority Office building consists of a 4,500 m^2 basement, a 3,000 m^2 ground floor, a 3,000 m^2 first floor, and a 1,700 m^2 second floor.

National Post Authority Office Building

Centre for Documentation of Cultural and Natural Heritage Building

Client
Ministry of Communications & Information Technology

Scope of Work
Basis of Design Report
Design development
Detailed design
Tender documents
Tender action
Construction management

Location
Smart Village, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
Mechanical
Structural

The building lies within the Smart Village Complex. It is considered the first of its kind in Egypt. The centre was carefully designed to contain 3D models for all Egyptian monuments throughout the ages. The building consists of ground floor, first and three top smaller floors covering an area of 1,350 m^2 for each floor. The ground floor comprises a multi-purpose hall, a walk through exhibition hall, a cafeteria, a meeting room and offices. In the corner of the building lies the entrance, which leads to a double height entrance hall containing a panoramic elevator overlooking a nicely landscaped atrium.

Centre for Documentation of Cultural and Natural Heritage Building

Ministry of Communications & Information Technology Training Centre

Client
Ministry of Communications & Information Technology

Scope of Work
Basis of design report
Design development
Detailed design
Tender documents
Tender action
Construction management
Construction supervision

Location
Smart Village, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
Mechanical
Structural

The training center, which covers an area of 1,300 m^2, with a total built-up area of 2,600 m^2 consists of a ground floor and first floor. The ground floor comprises three training classrooms equipped with state-of-the-art IT equipment, a cafeteria, a kitchen, a conference room, and a library. Meanwhile, the first floor comprises three training classrooms, four 10-person capacity classrooms, an administration building, and lecturers rooms.

Ministry of Communications & Information Technology Training Centre

Building Type MB4-Cairo Contact Centres Park

Client
Ministry of Communications & Information Technology

Scope of Work
Basis of Design Report
Concept design
Design development
Detailed design
LEED coordination
LEED documentation
Tender action
Construction supervision

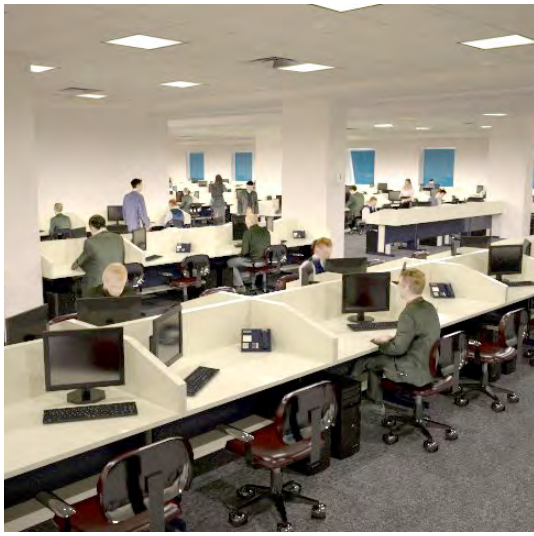
Location
Maadi, Egypt

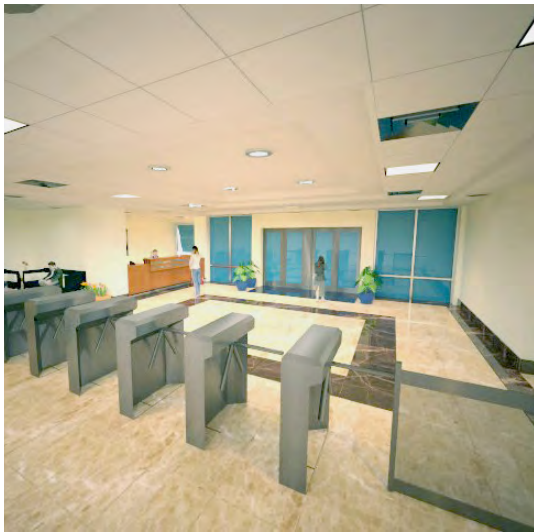
Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Interior design
Mechanical
Structural

Equipped with state-of-the-art electromechanical facilities, Building MB4 is dedicated to call center activities. With a footprint area of 4,200 m^2, the building comprises a basement, a ground floor, and four aboveground floors, with a total built-up area of 25,200 m^2.

It is divided into two separate structures, each served by its own facilities. Common facilities, such as prayer rooms and training rooms, are housed in the basement. All building elevations are clad with natural stone integrated with structural glazed curtain walls.


Building Type MB4-Cairo Contact Centres Park





The Pearl Island Fire Station

Client
United Development Company

Scope of Work
Project management
Construction supervision

Location
Doha, Qatar

Types of Activities
Architectural
Structural
Electrical
Mechanical

The fire station building is located at the central zone of Pearl Island over a plot area of 3,087 m^2. With a total built-up area of 1,963 m^2, the building consists of a ground floor and first floor. The ground floor comprises a parking area for fire trucks, as well as offices, operation rooms, fire brigade facilities, a training yard, and an underground tank. The first floor includes a lecture room, gymnasium, dining room, offices, storage area, sleeping room, and senior staff facilities.

The Pearl Island Fire Station

Fire Station No. 6 at Ras Laffan

Client
Qatar Petroleum

Scope of Work
Geotechnical survey
Environmental impact assessment
Concept design
Preliminary design
Detailed design
Tender documents

Location
Doha, Qatar

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Interior design
Landscape
Mechanical
Roads
Structural

The project aimed at providing a fast and effective firefighting response in the West Side Service Area of Ras Laffan. With a gross floor area of 2,600 m^2 and a plot area of approximately 18,700 m^2, the facility includes truck bays for 12 trucks, dormitories, a training room, dining room, kitchen, fitness room, toilets, and other service rooms. The fire station is located in the northern part of the project site in order to

- ease the access of fire trucks;
- segregate the main entrance from the truck exit; and
- reserve an area at the back of the fire station for a drill tower and fire truck maneuvers for training purpose, as well as a parking area (44 parking slots) for the day-shift crew and for visitors.

The two-floor concrete structure is designed to accommodate parking slots for fire trucks at the ground floor bay, with a direct exit to the main road. Services are grouped in one area at the right side of the bay. Meanwhile, the fire brigade facilities are located at the left side of the ground floor. The area designated for day-shift and administration staff is at the left side of the first level.

The drill tower is a six-story structure mainly used by the fire brigade for training purposes. It is easily accessed by vehicles, in such a way that allows for maneuvering through all four sides. It is also equipped with ladders, suitable anchor points for rope rescue training, and a hauling rig to lift rescue training dummies.

Medical Board Building

Client
Ministry of Higher Education and Scientific Research

Owner
Medical Board

Scope of Work
Soil investion
Topographic survey
Concept design
Design development
Detailed design
Tender documents

Location
Erbil, Kurdistan-Iraq

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

The project aimed at accommodating Kurdistan's medical board staff in a new building that stands as a masterpiece of practicality and contemporary design.

Over a land area of 3,680 m^2 and with a built-up area of around 17,879 m2, the medical board building consists of two parking basements (200 cars), a ground floor, and five floors. The floors contain a conference hall (250 persons), staff offices, staff lounges, cafeterias, management offices, meeting rooms, storage rooms, library, reading room, study halls, and examination halls, as well as a roof garden.

Medical Board Building

Cairo and Alexandria Stock Exchange Office

Client
Cairo and Alexandria Stock Exchange

Scope of Work
Concept design
Detailed design
Design permits
Construction supervision

Location
Smart Village, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

With a total built-up area of 18,200 m^2, Cairo and Alexandria Stock Exchange Office Building (EGX) comprises two basements, ground floor and three upper floors located in the core of the Smart Village Area. It is connected to the main buildings in the Financial District, in a harmonized plan.

The office building is served by a main road crossing the area and has a secondary road serving all the buildings of the Financial Market Centre. The parking lots are adequately distributed on this road serving all the visitors and tenants.

The Stock Exchange Office building and the rest of the Financial District buildings are also served by a rear ring road connected with the basement of each building accommodating parking lots, electromechanical and other rooms, archiving and storages, etc..

The building is surrounded by green areas and landscape that provide proper value to all various elements of the landscaping through trees, fountains and green areas.

Cairo and Alexandria Stock Exchange Office

Southern Africa Trade and Transport Facilitation Project (SATTFP)

Client
Tanzania National Roads Agency

Scope of Work
Feasibility study
Traffic impact study
Social impact assessment
Environmental impact assessment
Cadastral and topographic surveys
Custom data modeling
Geotechnical investigations
Concept design
Schematic design
Design development
Detailed design
Tender documents
Construction supervision

Location
Borders between Tanzania and Malawi, Africa

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
Infrastructure
Interior design
Landscaping
Mechanical
Roads and highways
Structural

The governments of Tanzania and Malawi have observed that delays in crossing the border, cargo clearance, and movement of passengers create barriers to trade in the region. Such delays, which account for the congestions at the Songwe-Kasumulu border crossing, also raise the cost of transportation of goods, which in turn affects the economy of both countries. The governments of Tanzania and Malawi have thus reached an agreement to build a One-Stop Border Post (OSBP) on their common border at the Songwe-Kasumulu crossing.

In collaboration with ECG, the Tanzania Buildings Agency (TBA) will provide consultancy services for the intended OSBP construction and improvement.The timeframe for the execution of this project will be 36 months on two phases.

Luxor West Bank Lighting Project, Valley of the Kings and Queens

Client
Misr Company of Sound, Light, and Cinema

Location
Luxor, Egypt

Scope of Work
Detailed design

Types of Activities
Electrical

Located in Luxor, the world's greatest archaeological open-air museum, the "West Bank Lighting Project" aimed to boost the city's tourism revenues and commercial activity; enhance the West Bank's security system; and extend tourist activity hours (currently restricted to daytime only) into the night to accommodate nighttime city visitors.

Engaged as the project's power supply consultant, ECG was responsible for the design of a low-voltage power supply system that respected the globally unparalleled historic terrain, maintained the integrity of its unique topography, and offered a secure and reliable setting showcasing a sensational panorama of a professionally lighted West Bank. ECG undertook this project in collaboration with the international consultants "LUMIERE" and its mother company "CITELUM Group", France, who were handling the project's lighting concept design.

ECG's low voltage electrical designs involved the positioning and rating of a substantial number of camouflaged lighting fixtures/racks, panels, cable routing schemes, hand holes, and the transformers main distribution boards. With a total rating of 469 kW, nine hundred ninety two projectors were to light up the rocky elevations, particularly underscoring temples/tombs entrances for East Bank viewers. Three hundred up-lighters featuring a total rating of 45kW focused their beams on the rural strip palm trees. Other electrical system design components needed for this massive scheme entailed nine transformers mains with a total rating of 1,000kVA, fifty-eight distribution panels, twenty-three kilometers of cables, and twenty-one kilometers of wiring. All equipment selected ensured complete compatibility with site integrity in terms of color; texture; future maintenance; durability; equipment protection in case of volatile electric current fluctuations, complete outages, transients, and inrush current; as well as ongoing archaeological exploration and excavation plans.

Luxor West Bank Lighting Project, Valley of the Kings and Queens

Healthcare

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Dahab General Hospital

Client
Ministry of Health and Population- Egypt

Scope of Work
Conceptual Design
Schematic Design
Design Development

Location
Dahab, Sinai, Egypt

Types of Activities
Architectural
Civil
Communications and Security Systems
Electrical
HVAC
Landscaping
Mechanical
Medical Planning
Roads
Structural

The hospital is located in South Sinai Governorate, among a new greenfield dedicated land area, to serve the governorate residents and also individuals in Egypt and the Arab region. Equipped with the latest up-to-date healthcare services and care, the hospital's dedicated land area is about 35,000 m², where the building consists of one ground floor with a total BUA of 14,800 m².

The main buildings are as follows:

- Main Hospital Building (Laboratories, Radiology, Surgical theatres, ER, Physical Therapy, and Inpatient Departments)
- OPD Building (Phlebotomy, General & Specialized Clinics, and a Retail Pharmacy)
- Staff accommodation building
- Ancillary buildings

Dahab General Hospital

Portsaid Clinics

Client
Ministry of Health and Population- Egypt

Scope of Work
Conceptual Design
Schematic Design
Detailed Design
Tender Action

Location
Port Said, Egypt

Types of Activities
Architectural
Communications and Security Systems
Electrical
HVAC
Landscaping
Mechanical
Medical Planning
Structural

The project consists of two buildings; an Outpatient Building, and a Nursing School Building. The outpatient building comprises 3 floors (G + 2), with a total built-up area of 2,770 m^2. It features around 27 clinics; Radiology, Ultrasound, Fluoroscopy, and Mammography departments; in addition to a Laboratory Department (chemistry, hematology, and bacteriology) with all support services, including storage, toilets, and other.
The nursing school building encompasses 2 floors (G + 1), with a total built-up area of 560 m^2, including administrative offices, classes, lounges, and toilets

Portsaid Clinics

Madinat Khalifa Healthcare Centre

Client
Public Works Authority (ASHGAL)

Scope of Work
Conceptual Design
Detailed Design
Tender documents

Location
Doha, Qatar

Types of Activities
Architectural
Civil works
Communications and Security systems
Electrical
HVAC
Landscaping
Mechanical
Medical planning
Interior design
Roads
Structural

Madinat Khalifa Healthcare Center is the ninth health center design successfully delivered by ECG under the National Primary Healthcare Strategy of the Primary Healthcare Corporation (PHCC).

The objective of the new health centers is to create facilities that are of outstanding architectural merit that will become clinical centers of excellence, supporting patients and their families as well as the clinical staff. PHCC strives for venues that will be evidence-based, purpose-built, patient-centred, family-oriented, respectful to culture, supportive to clinical practice, safe, reliable and sustainable. The new health centers will be among the most modern and unique health centers not only in Qatar but also in the whole region.

The Healthcare Centre will be built on a plot of an area of 11,880 m^2, and it includes the main center building that will provide general and specialist primary healthcare services to residents. These include primary walk-in services, a phlebotomy lab, diagnostic imaging, specialized clinics, dental clinics, maternal and child health clinic, family medicine clinics, and administrative offices. This is in addition to the main building, which has a total built-up area of 21,500 m^2 and comprises a parking basement and three floors, the design also includes a substation and guardhouses.

Madinat Khalifa Healthcare Center

Tanta Oncology Center

Client
Ministry of Health and Population- Egypt

Scope of Work
Conceptual design
Schematic design
Design development
Tender action

Location
Tanta, Sharqiya, Egypt

Types of Activities
Architectural
Civil
Communication & Security Systems
Electrical
HVAC
Landscaping
Mechanical
Medical Planning

The Tanta Oncology Center, (of capacity 250 beds), consists of a main building comprising 6 floors + 2 floors allocated for the basement, with a total area of 42,793m^2. The main building includes radiotherapy; reception and emergency; outpatient clinics; radiology and nuclear radiology; laboratories; chemotherapy; endoscopy; inpatient wards; surgery rooms and intensive care; regular intensive care for internal medicine; pediatric intensive care unit; and bone marrow patient accommodation rooms.

The building also includes the doctors' residence, nursing staff, and administrative department, in addition to service departments and an electrical substation.

Tanta Oncology Center

NEWGIZA University Hospital

Client
NEWGIZA for Real Estate & Development

Scope of Work

Conceptual design
Schematic design
Tender documents
Tender action

Location
New Giza, Egypt

Types of Activities
Architectural
Communication & Security Systems
Electrical
Furniture & Medical Equipment
HVAC
Mechanical
Medical Planning
Roads
Structural

NewGiza for Educational Services aims to construct a state-of-the-art health park in New Giza. The park will include a general teaching hospital, and 4 outpatient buildings. The hospital project consists of a building with a total BUA of around 22,400 m^2, and a capacity of 168 beds. It includes 5 levels: a basement, ground floor, 2 upper floors, and roof rooms; comprising different medical departments such as emergency, cath lab, operations, ICUs , endoscopy, and IVF; in addition to administrative & service departments.

New Giza University Hospital

Renovation of Women Health Center

Client
Ministry of Health and Population- Egypt

Scope of Work
Conceptual design
Design development
Tender documents
Tender action

Location
Cairo, Egypt

Types of Activities
Architectural
Civil
Communications & Security Systems
Electrical
HVAC
Mechanical
Medical Planning

With a total built-up area of approximately 2,000m^2, the building comprises a ground and four upper floors, including Outpatient Clinics, Specialized Diagnostic Radiology Department (Ultra sound, Mammography, and Densitometry), Laboratories Department (Chemistry, Hematology, and Parasitology), Radiology Electronic Services Department (PACS: Picture Archiving Communication System), Research and Educational Services Department, and supporting medical, non-medical, and administrative services.

Renovation of Women Health Center

Boulaq Al-Dakrour Hospital

Client
Ministry of Health and Population- Egypt

Scope of Work
Conceptual design
Design development
Tender documents
Tender action

Location
Cairo, Egypt

Types of Activities
Architectural
Civil
Communications & Security Systems
Electrical
HVAC
Interior Design
Landscaping
Mechanical
Medical Planning
Roads

With a total built-up area of approximately 20,000 m^2, the medical complex comprises the hospital building, consisting of a ground and four upper floors for diagnostic, treatment, medical and non-medical services, with the capacity of 200 beds.

The hospital building comprises ER, Diagnostic Imaging, Laboratories, Renal Dialysis, Catheterization Lab, Endoscopy, MICU, SICU, NICU, CCU, Nursing and In-patients, and Gynecology & Obstetrics Departments; in addition to various medical and nonmedical services, including a sterilization center, laundry, kitchen, central pharmacy, morgue, waste management center, and others.

The complex also comprises an outpatient building of a ground and four upper floors, accommodating 50 clinics of all specialties; electromechanical services buildings of one ground floor height; doctors' and staff housing building of a ground and four upper floors; and a training center building encompassing classrooms.

Boulaq Al-Dakrour Hospital

Suez Medical Complex

Client
Ministry of Health and Population- Egypt

Scope of Work
Conceptual design
Design development
Tender documents
Tender action

Location
Suez, Egypt

Types of Activities
Architectural
Civil
Communications & Security Systems
Electrical
HVAC
Interior Design
Landscaping
Mechanical
Medical Planning
Roads
Structural

The Suez Medical Complex encompasses the main hospital building, an outpatient building, doctors' housing building, staff housing building, playground area, and buildings for electromechanical services, with a total built-up area of about 60,000 m^2.

The main hospital building consists of a ground and four upper floors, allocated for diagnostic and treatment services, and medical and non-medical services, with a capacity of approximately 420 beds. The outpatient building comprises a ground and four upper floors, and including 50 outpatient clinics for all specialties. The electromechanical services buildings are of one floor height. The male and female doctor accommodation building consists of a ground and four upper floors, and the housing building for male and female workers consists of a ground and four upper floors. A bridge is also included in the plan to connect the various buildings of the medical complex.

The complex accommodates two types of departments:

1. Medical departments, including the ER, Diagnostic Imaging, Medical Laboratories, Renal Dialysis, Physiotherapy, Catheterization (Cardiac And Cerebral), Endoscopy, Internal Medicine Intensive Care Unit (MICU), Surgical Intensive Care Unit (SICU), Neonatal Intensive Care Unit (NICU), Critical Cases Unit (CCU), Pediatric Intensive Care Unit (PICU), Stroke Unit, Day-Case Surgery, Operating Theatres, Center For Non-Invasive Cardiac Examinations, Nursing and Inpatient Units, Gynecology and Obstetrics.
2. Medical and non-medical services such as a sterilization center, laundry, kitchen, central pharmacy, morgue, waste management center, and others.

Suez Medical Complex

New Giza Hospital

Client
New Giza Real Estate Development Company

Scope of Work
Conceptual design
Schematic design
Detailed design
Tender documents
Tender action

Location
Giza, Egypt

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Interior design
Landscaping
Mechanical
Medical planning
Roads

New Giza Hospital is a state-of-the-art tertiary healthcare facility located in New Giza Meditown health park. Phase 1 of the hospital has a capacity of 300 beds expandable to 500 beds by the end of Phase 2. The 300 beds of Phase 1 include 120 beds serving New Giza University medical colleges, alongside 180 beds operating as a general hospital.

With a total built-up area of about 55,000 m^2, the hospital building comprises a two-level basement, a ground floor, and two upper floors arranged as follows:

- Basement: pharmacy, kitchen, housekeeping unit, waste management unit, cafeteria, staff lockers, warehouses & services, and parking area
- Ground floor: outpatient department, radiology unit, emergency unit, intensive care unit, critical care unit, cardiac intensive care unit, pediatric intensive care unit, pediatric inpatient unit, outpatient clinics, operating room, dental center, endoscopy center, catheterization laboratory, surgical theater, entrances & admission, and public services
- First & second floors: inpatient beds

New Giza Hospital

NEWGIZA Community Service Clinics

Client
NEWGIZA for Real Estate & Development

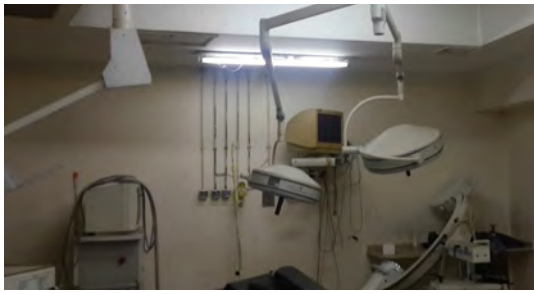
Scope of Work
Conceptual design
Schematic design
Design development
Detailed design
Tender documents
Tender action
Construction supervision

Location
Cairo, Egypt

Types of Activities
Architectural
Electrical
HVAC
Infrastructure
Landscaping
Mechanical
Medical planning

The project covers the renovation of Al-Sayeda Nafeesa Charity Hospital, which is set to be renamed as "NEWGIZA Community Service Clinics" following the completion of renovations. The hospital is planned as a charity healthcare facility serving the surrounding community.

With a total built-up area of 3,500 m^2, the hospital building consists of a basement, ground floor, and two upper floors. The planning concept features a "Dental Bay" that includes 30 dental chairs, alongside a number of outpatient clinics and a radiology department. The department operates a number of imaging techniques, including computed tomography, fluoroscopy, ultrasound, and panoramic dental X-ray.



Sulaiman Al-Rajhi Hospital

Client
Sulaiman Al-Rajhi Colleges

Scope of Work
Design review
Design rectification

Location
Al-Qassim, KSA

Types of Activities
Architectural
Building Management System
Biomedical
Civil
Communication and security systems
Electrical
HVAC
Interior design
Landscaping
Mechanical
Medical planning
Structural

Over a total plot area of 85,000 m^2, the new Sulaiman Al-Rajhi Hospital is designed to be a state-of-the-art healthcare facility in Al-Bukayriyah, Al-Qassim, Saudi Arabia. The hospital is envisaged to further improve healthcare education, patient care, and biomedical research according to international standards.

With a built-up area of 90,323 m^2, the hospital building comprises the following:

- Basement: sterile supplies center, laboratory, pharmacy, mortuary, waste management facility, general storage, security room, central laundry, catering unit, distribution unit, supplies delivery unit, and car parking
- 3-level podium:
  - Ground floor: admissions department, accident & emergency department, outpatient department, pediatric outpatient department, renal dialysis unit, women's health section, allied health physical therapy section, imaging room, and pharmacy
  - 1st floor: obstetrical units, coronary care unit, intensive care unit, day surgery unit, operating theaters, endoscopy department, medical records department, top management offices, and roof garden
  - 2nd floor: administration area, IT section, staff rooms, and restaurants
- 6 upper floors: general stroke & palliative care unit, antenatal & postnatal wards, pediatric ward, assessment ward, cardiology ward, general medical ward, intermediate care ward, acute surgical ward, geriatric medicine ward, VIP ward, and public services

A chiller plant is located near the hospital building with a built-up area of around 2,000 m^2.


Sulaiman Al-Rajhi Hospital

Meditown Clinics Complex in New Giza

Client
NEWGIZA for Real Estate & Development

Scope of Work
Conceptual design
Schematic design
Design development
Detailed design
Tender documents
Tender action
Construction supervision

Location
Giza, Egypt

Types of Activities
Architectural
Electrical
HVAC
Infrastructure
Landscaping
Mechanical
Medical equipment
Medical planning
Roads
Structural

The Clinics Complex is located in the Meditown health park of New Giza. With a total built-up area of about 95,000 m^2, the complex comprises 10 buildings accommodating a total of about 700 outpatient clinics, including a standalone building for diagnostic radiology units and laboratories, alongside medical and nonmedical support services.

Outpatient clinics cover a range of medical specialties, including internal medicine, ophthalmology, pediatrics, neuroscience, otorhinolaryngology, nephrology, urology, cardiovascular medicine, pulmonology, diabetes/ endocrinology, hematology, nutrition, orthopedics, gynecology, surgery, dentistry, and dermatology.

Diagnostic radiology units cover a range of imaging techniques, including X-ray, fluoroscopy, magnetic resonance imaging, multislice computed tomography, ultrasound, densitometry, mammography, Positron-Emission Tomography & Computed Tomography (PET-CT) scans, and gamma camera.

Laboratory facilities cover the disciplines of chemistry, hematology, microbiology, parasitology, immunology, and pathology.

Al-Minya Oncology Hospital

Client
Ministry of Military Production

Scope of Work
Construction Supervision

Location
Al-Minya, Egypt

Types of Activities
Architectural
Electrical
HVAC
Mechanical

The project covers the renovation of Al-Minya Specialized Oncology Hospital, located in Al-Minya City, Egypt. With an area of 1,500 m^2 per floor, and a total built-up area of 7,500 m^2, the building comprises a basement, ground floor, and four typical floors.

The hospital includes two surgical operating theatres, an inpatient bed ward, and a radiology department.

Al-Minya Oncology Hospital

Al-Salam Governmental Hospital

Client
Ministry of Military Production

Scope of Work
Construction Supervision

Location
Al-Salam City, Egypt

Types of Activities
Architectural
Civil
Communications & Security Systems
Electrical
HVAC
Interior design
Mechanical
Medical planning
Structural

The project covers the renovation of Al-Salam Governmental Hospital (Phase I – Burn Care Building) over a land area of about 4,000 m^2. The building comprises a ground floor and three typical floors above as follows:

- **Ground floor:** comprises a burns unit emergency reception, including patient rooms, wet dressing, dry dressing, and a surgical operating theater for critical patients, in addition to the administrative and management facilities for the building.
- **First & Second floors:** comprises inpatient bed wards with required facilities, such as clean supply, soiled utility, medication supply, nourishment, and nurses and staff required workrooms.
- **Third floor:** dedicated to resident staff accommodation and support facilities.

Al-Salam Governmental Hospital

Kafr Al-Sheikh Oncology Hospital

Client
Ministry of Military Production

Scope of Work
Conceptual design
Schematic design
Detailed design
Construction Supervision
Tender documents
Tender action

Location
Kafr Al-Sheikh, Egypt

Types of Activities
Architectural
Civil
Communications & Security Systems
Electrical
HVAC
Interior design
Mechanical
Medical planning
Medical equipment
Structural

With a total built-up area of about 19,000 m^2, the Kafr Al-Sheikh Oncology hospital building includes a basement floor, ground floor, and six upper floors as follows:

- **Basement:** contains the oncology radiotherapy department, including two linear accelerators' bunkers, one HDR high-dose rate brachytherapy, and one CT computed tomography simulator. In addition to the medical and non-medical services, there are medical gases storages, warehouses including separate storages for logistics, central kitchen and staff dining quarters, central laundry, CSSD, and MEP services.

- **Ground floor:** contains the oncology outpatient department with a group of clinics, in addition to diagnostic imaging, as well as a stabilization emergency department.
- **First floor:** contains two chemotherapy departments, one dedicated to pediatric chemotherapy services, in addition to an endoscope department, including three procedures' room for various procedures. In addition, it includes the oncology surgical operating theatres adjacent to the oncology SICU surgical intensive care unit.
- **Second floor:** contains the central laboratory, in addition to a separate department housing the blood bank with storage facilities, and a bed ward.
- **Third floor:** contains the resident staff accommodation, and administration with an MPU hall, in addition to bed ward.
- **Fourth & Fifth floors:** the fourth floor and fifth floors contain bed ward facilities.
- **Sixth floor:** dedicated to oncology MICU medical intensive care unit, including an intensive care hall, high-dependency intensive care rooms, in addition to isolation facilities.

Kafr Al-Sheikh Oncology Hospital

Nasser Institute Hospital – C Tower

Client
Ministry of Military Production

Scope of Work
Design review
Construction supervision

Location
Shubra, Cairo, Egypt

Types of Activities
Architectural
Communications & security systems
Electrical
HVAC
Mechanical
Medical planning

The project covers a renovation program of the Section "C" tower, for Nasser Institute for Research & Treatment, with a built-up area of about 12,000 m^2, with an 850-bed capacity, comprising a ground floor and eight typical floors, including the vital treatment and diagnostic services of the hospital as follows:

- **Ground floor:** dedicated to the emergency department, including required facilities for triage, resuscitation, isolation, observation, minor OR for local anesthesia procedures, and treatment with the required medical and non-medical services, such as diagnostic X-ray, lab for quick tests as CBG and tubulin, etc.
- **First floor:** comprising the Kuwaiti section observation hall.
- **Second floor:** dedicated to maternal and pediatric medical services, including the obstetrics department (Caesarian C-section operations, LDR labor delivery & PICU), and the NICU neonatal intensive care unit with the required lactation, incubators' cleaning, parents, and isolation facilities.
- **Third, Fourth, Fifth, Sixth & Seventh floors:** are dedicated to inpatient bed wards, including a variety of accommodation between double rooms, single rooms, and suites.
- **Eighth floor:** dedicated to MICU medical intensive care unit, including the intensive care hall, high-dependency intensive care rooms, and isolation rooms.

Nasser Institute Hospital – C Tower

AlDammam International Hospital

Client
Vision Architectural Design Office

Scope of Work
Space program
Concept design
Schematic design
Preliminary design
Design development
Detailed design

Location
Dammam, Kingdom of Saudi Arabia

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

AlDammam International Hospital is a cutting-edge medical project undertaken by ECG. Stretching over a total built-up area of 120,000 m^2, the 400-bed general hospital displays a wide spectrum of core departments such as emergency, radiology,laboratories, pharmacy, cath lab, endoscopy, endoscopy surgery, surgery (10 major operation theaters), sterilization, maternity, nursery, intensive care (26 rooms) and physical therapy, in addition to 56 out-patient clinics catering to wide range of diverse disciplines.

The 10-storey hospital features a series of centers engaged in cardiology; in-vitro fertilization, kidney dialysis (female/male), labor/delivery (8 rooms for natural labor and 2 rooms for caesarian sections). Supporting departments comprise administrative, maintenance, custodian services and laundry departments along with the central kitchen and the electromechanical ancillary building. For an ultra-lavish experience the exceptional facility is rich in first-class amenities such as royal suites; health clubs featuring gyms, dry saunas, jacuzzis, steam rooms, and massage chambers; a banquet hall; restaurants and cafeterias; and a 6-storey garage.

Ease of circulation is viably secured between all hospital components. ECG designs incorporate a flexible framework to permit the increase of total hospital capacity to 600 beds.


AlDammam International Hospital

Danat AlEmarat Women and Children Hospital

Client
United Eastern Medical Services LLC, UAE

Scope of Work
Design development
Detailed design
Tender documents
Tender action
Construction supervision

Location
Abu Dhabi, UAE

Types of Activities
Architectural
Communications & security systems
Electrical
HVAC
Mechanical
Landscape
Structural

Occupying a land of 90,000 ft^2, Danat AlElmarat Women and Children Hospital aims to deliver comprehensive healthcare services in a 12-floor luxurious setting to UAE women and children. Specialized medical and gynecological services are offered starting from birth, to menopausal transition, to elderly years.

Meanwhile, children healthcare services unfold newborn facilities, outpatient pediatrics, inpatient care, and intensive care units.

All hospital design features systematically integrated green engineering methods and energy conserving technologies to create a healthy, hazard-free interior environment as well as effectively reduce patient recovery durations and ensure sustainable operability.

With a built-up area of 84,000 m^2, the 180-bed hospital offers a wide array of medical specializations addressing reproductive, family, internal medicine; allergy and immunology; dermatology; speech therapy; general dentistry and oral surgery, general surgery and plastic surgery; orthopedics; as well as various clinics for cancer care, cardiopulmonary, and women's health. For an ultralavish experience, the exceptional facility is rich in first-class amenities such a extensive foliage, royal and VIP suits; a wellness centre/spa comprising a fitness studio, gymnasium, water therapies, a salon, a boutique retail concourse; out/ indoor dining restaurants, and a gift shop.

Danat AlEmarat Women and Children Hospital

National Eye Hospital

Client
The National Eye Hospital

Scope of Work
Concept design
Detailed design
Tender documents
Tender action
Construction supervision

Location
KM 4.5 Cairo – Suez Road, Egypt

Types of Activities
Architectural
Communications & security systems
Electrical
HVAC
Mechanical
Medical planning
Landscape
Roads
Structural

On a plot area of 2,070 m^2 and with a built-up area of 11,000 m^2, the facility is one of the leading hospitals in the MENA region specialized in eye treatment and surgery featuring the following:

- 3-level basement:
- Laundry room;
- Medical records room;
- Utilities room; and
- 2 levels for car parking.
- 5 upper floors:
- 25 outpatients and specialized clinics;
- 8 major operating rooms;
- 2 minor operating rooms for accidents cases;
- 2 LASIK rooms;
- 1 ward for day patients;
- Auditorium for international conferences;
- 2 VIP suites;
- Pharmacy;
- Optician room;
- Doctors and nurses' changing rooms and lounges; and
- A complete floor for central sterilization and offices for management & administration staff.

The hospital is designed according to the international standards and most updated communication systems with the aim of transmitting live Eye Operations to Internet viewers all over the world as well as keeping electronic copies of patients' files for 10 years and monitoring the hospital's floors for security.

National Eye Hospital

Al Marasem International Hospital

Client
Al Marasem International Hospital Co.

Scope of Work
Medical planning
Design development
Detailed design
Tender documents

Location
New Cairo, Egypt

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Interior design
Landscape
Mechanical
Roads
Structural

With a built-up area of 30,000 m^2, the 200-bed general hospital aims to deliver comprehensive healthcare services to citizens. The hospital comprises surgical department with an intensive care section, labor/delivery department including a caesarean section, Intensive Care Unit (ICU), coronary angioplasty department, vendoscopy unit, emergency section, physical therapy department and outpatient clinics in addition to high-tech x-ray department and laboratories.

The hospital supporting departments include central kitchen, laundry, morgue, administrative offices and sterilization unit in addition to parking areas for the outpatient clinics, staff, visitors, emergency department and service loading and unloading area.

The state-of-the-art medical facility is designed according to the domestic and international standards which qualifies the hospital to be LEED certified. The facility implements the international systems for medical and non-medical waste disposal.


Al Marasem International Hospital

New Pediatric Oncology (57357) Hospital

Client
Association of Friends of the National Cancer Institute

Scope of Work
Design review
Tender action
Construction management
Construction supervision

Location
Cairo, Egypt

Types of Activities
Architectural
Interior design
Landscape

With a construction cost of EGP 380 million and a total built-up area of 50,000 m^2, the project aimed at constructing a highly technological 185-bed hospital for the treatment of children's cancer. The hospital consists of a sevenstorey inpatient tower integrated with a four-storey diagnostic and service unit with a basement containing laundry rooms, offices, garages, electrical and mechanical rooms.

New Pediatric Oncology (57357) Hospital

Refurbishment of Children's Cancer Section at AlHelal Hospital in Tanta

Client
Children's Cancer Hospital Foundation 57357 (CCHF)

Scope of Work
Concept design
Space program
Schematic design
Detail design
Tender documents
Tender action
Construction supervision

Location
Tanta, Egypt

Types of Activities
Architectural
Communication and security systems
Electrical
HVAC
Interior design
Landscape
Mechanical
Structural

Refurbishment of parts of Al Helal El Ahmar Hospital for Children's Cancer in Tanta with a capacity of 50 beds, CCHF 57357 in Tanta is designed to be fully independent from Al Helal El Ahmar Hospital and has identical systems as CCHF 57357 in Cairo.

The Hospital includes an operation department, sterilization unit, morgue, intensive care unit, day care unit, clinical pharmacy, kitchen, laundry and outpatient building. The project comprises ground floor, 4 typical floors and roof with a built-up area of 4,000 m^2. The design took into consideration a complete face lift for the hospital's elevations matching with the design of CCHF Cairo, while maintaining the daily operation of the hospital during the refurbishment works.

Refurbishment of Children's Cancer Section at AlHelal Hospital in Tanta

Extension of Pediatric Oncology (57357) Hospital

Client
Association of Friends of the National Cancer Institute

Scope of Work
Medical planning
Space program
Concept design
Detail design
Tender documents
Tender action
Construction Supervision

Location
Cairo, Egypt

Types of Activities
Architectural
Structural

With a total built-up area of 2,400 m^2, the extension was developed to host 60 inpatient beds for children's cancer treatment located on an additional floor to the state-of-the-art 185-bed hospital.

Extension of Pediatric Oncology (57357) Hospital

AlQassim Medical Colleges Complex

Client
Imar Urban Consultants

Scope of Work
Medical planning
Space program
Concept design
Schematic design
Design development
Detail design
Tender documents

Location
Al Qassim, KSA

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Interior design
Infrastructure
Landscape
Mechanical
Structural
Urban design

AlQassim Medical Colleges Complex occupies a total land area of 110,000m^2 in AlQassim University, KSA. With a total built-up area of 138,000 m^2, the complex comprises three faculties for Applied Medicine, Pharmacy, Dentistry, in addition to two Nursing faculties catering separately for male and female students.

Common facilities serving all buildings include laboratories, variable capacity lecture halls and classrooms, faculty/management administrative offices, libraries, and an expansive parking zone. All faculties surround and have direct access to a four-storey Central Building.

The sky-lit structure is a large atrium acting as an entertainment platform entailing an exhibition hall, coffee shops, cafeterias, faculty breakrooms, prayer facilities, and space for student activities.

Extending public medical services to AlQassim's population, the faculty of Applied Medicine includes outpatient and physical therapy facilities. Meanwhile, the faculty of Dentistry, comprises an emergency dentistry department, a surgery department which houses two surgery operation theatres, and five prosthetics production laboratories.

AlQassim Medical Colleges Complex

Health and Wellness Care Centre

Client
Public Works Authority (Ashghal)

Scope of Work
Medical planning
Space program
Concept design
Preliminary design
Detailed design
Tender documents
Tender action

Location
Um Sulal, Qatar

Types of Activities
Architectural
Interior design
Structural

Occupying a land area of 49,620 m^2 and with a built-up area of 9,110 m^2, the center comprises emergency department, laboratory, outpatient clinics, conference hall, educational center, wellness center, physical therapy unit, radiology centre and pharmacy.

Health and Wellness Care Centre

Jaber Al-Ahmed Al-Jaber Al-Sabah Hospital

Client
Arab Contractors

Scope of Work
Providing technical office services to the main contractor.

Location
Kuwait

Types of Activities
Monitoring the Architectural technical works.
Monitoring the Architectural and MEP contractual procedures.

On a total land area of 224,180 m^2, Jaber Al-Ahmed Al-Jaber Al-Sabah Hospital is the latest addition to Kuwait's state-of-the-art facilities and the largest healthcare facility in the Middle East.

The hospital encompasses the following buildings:

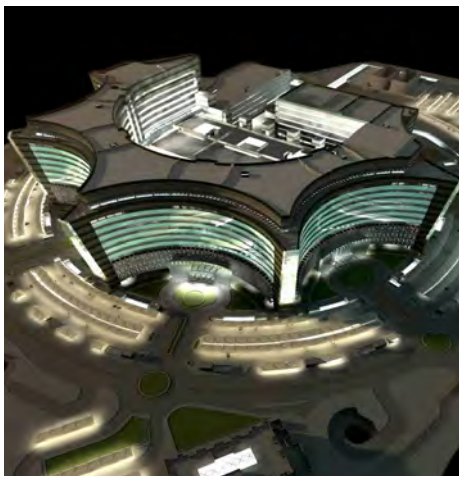
Main Building:
With a built-up area of 469,370 m^2, the building is located at the north side of the hospital site. It comprises a one-level basement, a ground floor and seven upper floors; 5 of which are for building services.

The building accommodates 1,168 beds in addition to and VIP suites for the visiting Heads of States. It provides a comprehensive range of services including administrative services, intensive and long-term care services, inpatient & outpatient care services, diagnostic & treatment services, trauma center services, and obstetrics & gynecology services.

Dental Building:
With a built-up area of 14,100 m^2, the dental building is located near the southwest side of the hospital site. The building consists of a one-level basement for civil defense shelters, a ground floor for patient services and an upper floor for administration offices and laboratories. The facility also provides all amenities necessary for complete and proper dental care.

Staff Accommodation Building:
The residential building is located at the northwest side of the site. With a built-up area of 10,270 m^2, it consists of a ground floor for service rooms and one upper floor for staff & nurses accommodation (204 studio rooms).

Jaber Al-Ahmed Al-Jaber Al-Sabah Hospital



Service Building:
The building is 20 m deep underground with a reinforced concrete structure, and is located near the south side of the site. With a built-up area of 21,350 m^2, it contains central services including laundry, maintenance workshop as well as outdoor service yard.

Parking Areas:
There are a number of parking areas with a total capacity of approximately 4,728 cars, including:

- a three-level underground parking structure with a built-up area of 171,100 m^2
- other parking areas located around the buildings

Helipads:
The hospital site includes three helicopter landing pads to provide rapid transfer of critical patient cases from outside as follows:

- the 1st helipad is on the roof of the Trauma zone on top of the main building
- the 2nd and the 3rd helipads are on the roof of the 8th floor of the east and west inpatient wings on top of the main building.

Cairo International Medical City

Client
Cairo International Medical City (CIMC)

Scope of Work
Medical planning
Schematic design & BODR
Design development
Detailed design
Tender documents

Location
Madinaty- New Cairo

Types of Activities
Architectural
Communications & security systems
Electrical
HVAC
Interior design
Infrastructure
Landscape
Mechanical
Piping & instrumentations
Roads
Structural

On a land area of 138,258 m^2, Cairo International Medical City (CIMC) is a state-of-the-art medical edifice designed to the international standards to serve patients from Egypt and the MENA region.

The medical city includes the hospital's main building (plot area of 14,720 m^2), an academic research center, a psychiatric unit, staff accommodation units, a hotel, wellness resort & park, a health club and a medical mall. ECG works covered the design of the hospital's main building.

With a built-up area of 73,600 m^2, the 360 bed-hospital main building comprises a two-level basement, a ground floor and four upper floors as follows:

Two-level basement:

First level:

- Mobility Center: including physical therapy treatment, medical examination rooms, a gymnasium, procedure rooms and a hydrotherapy pool
- Oncology Center with infusion therapy unit, examination rooms and Linear Accelerators (LINACS);
- Imaging facilities such as Computed Tomography (CT) scan
- Blood Bank and Kidney Dialysis Center

Cairo International Medical City

- Material Management department
- Waste Management department
- Environmental Control department
- IT department
- **Supporting facilities:** in-house pharmacy, the hospital morgue, in addition to laundry and kitchen services

Second level: is allocated for parking with a capacity of 351 cars.

Ground Floor:

- Emergency department
- Radiology department including 2 Computed Tomography (CT) scan, 1 angiography scan , 2 X-ray imaging, 4 Ultra Sound (U/S) Scan Units, 2 Magnetic Resonance Imaging (MRI)
- Auditorium
- Top Management offices
- Retail Pharmacy
- Bed ward

First Floor: Outpatient department

- 100 Outpatient Clinics
- 26 Procedure rooms including Neuroscience Center and Cardiac Center
- Bed ward

Second Floor: designed on a core and shell basis for future extension to be used as specialty centers.

Third Floor:

- 11 Labor and Delivery Rooms (LDRs)
- Neonatal Intensive Care Unit (NICU) with a capacity of 25 beds
- 2 Caesarian rooms (C-section)
- Woman and Child Center with a capacity of 22 examination rooms and related imaging facilities
- In-Vitro Fertilization (IVF) Unit with 2 procedures' rooms
- Pre-partum ward (9 beds)
- Post-partum ward (14 beds)
- General bed ward

Fourth Floor:

- 12 General Operation rooms
- 2 Hybrid Operation rooms
- 1 Robotic Operation room
- Endoscopy department including 4 Endoscopy Procedures rooms
- 3 Catheterization rooms
- Post Anesthesia Care Unit (PACU)
- Intensive Care Unit (ICU)

Five Healthcare Centers in Qatar (Packages 6, 7 & 8)

Client
Public Works Authority (ASHGHAL)

Scope of Work
Detailed design
Tender documents
Tender action
Construction management
Construction supervision

Location
Qatar

Types of Activities
Architectural
Civil works
Communications & security systems
Electrical
HVAC
Interior design
Landscaping
Mechanical
Medical planning & medical equipment
Structural

The project comprises five healthcare centers in different sites in Qatar; namely, Al-Wakra, Al-Mashef, Ain Khaled/ Umm Snim, Al-Shamal and Al-Khor. Offering various medical services as well as patient health education including antenatal classroom and premarital services, the centers are built as per the following three design types:

Type A (Al-Wakra area): a single-storey building with ancillary facilities with a total built-up area of 3,000 m^2. Type (A) provides basic medical services that include a primary health center, an ambulance garage, a substation service/ yard, a mosque and underground utilities.

Type B (Al-Mashef & Ain Khaled/ Umm Snim areas): consists of ground and first floors with a basement for car parking. Each building is constructed with a total built-up area of approximately 8,400 m^2. Type (B) comprises a healthcare clinic, an ambulance garage, an ancillary building and underground utilities.

Type C (Al-Shamal & Al-Khor areas): consists of ground and first floors with a basement for car parking. Each building is constructed with a total built-up area of approximately 10,800 m^2.

Type (C) includes a primary healthcare center, an ancillary building, an ambulance garage, an Emergency Medical Services (EMS) hub and swimming pool facilities.

All five healthcare centers include the following common facilities:

- Specialty clinics: otolaryngology, ophthalmology & optometry;
- Chronic disease clinic: cardiology, mental health, dietetics and maternal health;
- Women/post-partum & baby/ child clinics;
- Dental clinic;
- Radiology and imaging section: ultrasound and mammogram & panorama scans; and
- Supporting amenities: examination rooms, a pharmacy, nursing services, and waiting areas.

Infectious Diseases Hospital

Client
Kuwaiti Ministry of Health (MOH)

Scope of Work
Design review
Project management
Construction supervision

Location
Kuwait

Types of Activities
Architectural
Civil works
Communications & security systems
Electrical
HVAC
Interior design
Landscaping
Mechanical
Medical planning
Roads
Structural

The Kuwaiti Ministry of Health (MOH) commenced a national healthcare expansion plan to upgrade and develop the State's existing medical facilities. Within the framework of the expansion plan, a new 224-bed hospital has been developed in Al Andalus district. The hospital is the only Kuwaiti center of excellence specialized in infectious diseases requiring isolation.

On a total plot area of approximately 46,523 m^2, the project comprised the development of the new hospital building over a land area of 13,300 m^2 with car parking area accommodating approximately 536 cars, and the renovation of an existing administration building over a land area of 2,147 m^2 and with a built-up area of 7,000 m^2. The site also included a mosque (396 m^2) and a support substation (517 m^2) which were out of ECG scope.

With a built-up area of 74,000 m^2, the new hospital building comprises a basement, a ground floor and five upper floors as follows:

Basement:

- parking area: with a capacity of around 167 cars
- public area: retail shops, barber shop, coffee area and prayer room
- educational facilities and auditorium: with a capacity of 150 persons
- waste management department
- engineering and electromechanical utilities services

Infectious Diseases Hospital

- engineering and environment department
- warehouse

Ground floor:

- medical registration department
- outpatient pharmacy
- inpatient pharmacy storage area
- radiology department
- emergency department
- medical store
- laundry
- central kitchen
- surface parking lots (four parking areas with a total capacity of approximately 369 cars located around the hospital building)

First floor:

- outpatient clinics
- outpatient administration area
- on call physicians rooms
- Laboratory
- Central Sterilization Supply Department (CSSD)
- MEP areas

The first floor of the hospital building is connected to the second floor of the administration building through a bridge.

Typical floors (2nd-5th): inpatient accommodation

- 32-bed Intensive Care Units (ICU)
- 192 inpatient beds
- service rooms

Al-Sadd Healthcare & Wellness Centre

Client
Public Works Authority (ASHGHAL)

Scope of Work
Conceptual design
Schematic design
Detailed design
Tender documents
Quantity survey
Construction supervision

Location
Doha, Qatar

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Landscaping
Mechanical
Roads

At a prime site of Doha, northwest of Al-Sadd and Al-Waab Streets intersection Al-Sadd Healthcare and Wellness Center is part of an integrated healthcare system that offers general and specialized medical services.

Over a land area of 28,043 m^2 and with a total built-up area of approximately 16,971 m^2, the center comprises the following:

- basement: parking area (512 cars), utilities and facility management areas
- ground floor: primary care & walk-in service, maternal & pediatric health clinic, wellness center, laboratory, phlebotomy lab, diagnostic imaging center, pharmacy, as well as a parking area (104 cars)
- first floor: specialized medical clinics, dental clinics, family medicine clinics administration offices, staff & facility management areas
- mosque and ancillary buildings

Al-Sadd Healthcare & Wellness Centre

Biyala, Al-Bayadeyah, Nagaa Hammadi and Abu Tesht Hospitals

Client
ARAB INTERNATIONAL OPTICS

Scope of Work
Conceptual design
Schematic design
Detailed design
Tender documents
Quantity survey
Construction supervision

Location
Qena, Luxor and Kafr Al-Sheikh, Egypt

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Landscaping
Mechanical
Medical equipment-Bio-medical engineering
Medical planning
Roads

The project covers the reconstruction of Biyala Hospital, as well as the refurbishment, demolition, and construction of new parts in three other hospital buildings:

Biyala Hospital, Kafr Al-Sheikh: main building and a service building on a land area of 4,978 m^2, with a total built-up area of 15,121 m^2. The main building comprises the following:

- Ground floor: emergency department, laboratories, radiology section medical records room, medical gases room, waste management section storage area, pharmacy, laundry, kitchen, engineering services, as well as a morgue;
- 5 upper floors: outpatient clinics, inpatient wards (54 beds + 6 isolation rooms), 4 operation rooms, Intensive Care Unit (ICU) with 4 beds + 1 isolation room, Neonatal Intensive Care Unit (NICU), Central Sterile Services Department (CSSD), endoscopy unit, management area, nursing education centre and storage area; and
- Roof: equipment

Al-Bayadeyah Hospital, Luxor: main building and 4 service buildings on a land area of 4,012 m^2, with a total built-up area of 10,817 m^2 (8,714 m^2 to be reconstructed and 2,103 m^2 to be refurbished). The main building comprises the following:

- Ground floor: emergency rooms, radiology section, medical gases room waste management section, laundry, kitchen, pharmacy, as well as a morgue;
- 6 upper floors: kidney dialysis centre (22 units + 2 isolation rooms) outpatient clinics, inpatient wards

(18 beds + 2 isolation rooms), 4 operation rooms, ICU (8 beds + 2 isolation rooms), NICU (15 beds + 2 isolation rooms), CSSD, endoscopy unit, laboratories, administration and management area nursing education centre and storage area; and
- Roof: equipment.

Abu Tesht Hospital, Qena: main building and 7 service buildings on a land area of 11,517 m^2, with a total built-up area of 13,949 m^2 (7,599 m^2 to be reconstructed and 6,350 m^2 to be refurbished). The main building comprises the following:
- Ground floor: emergency department, laboratories, pharmacy, radiology section, medical records room, medical gases room, waste management section, laundry, kitchen, as well as a morgue;
- 5 upper floors: kidney dialysis centre (24 units + 2 isolation rooms) outpatient clinics, inpatient wards (36 beds + 4 isolation rooms), 4 operation rooms, ICU (5 beds + 2 isolation rooms), NICU (7 beds + 1 isolation room), obstetrics & gynecology unit (16 beds), CSSD, as well as staff accommodation and management area; and
- Roof: equipment.

Nagaa Hammadi Hospital, Qena: main building and a service building on a land area of 8,473 m^2, with a total built-up area of 19,616 m^2 (10,715 m^2 to be reconstructed and 8,901 m^2 to be refurbished).

The main building comprises the following:
- Ground floor: emergency department, laboratories, pharmacy, medical gases room, waste management section, laundry, kitchen, as well as a morgue;
- 5 upper floors: kidney dialysis centre (31 units + 3 isolation rooms) outpatient clinics, inpatient wards (64 beds + 7 isolation rooms), burns unit (ICU and inpatient wards), 5 operation rooms, ICU (11 beds + 1 isolation room), NICU (14 beds + 1 isolation room), obstetrics & gynecology unit (18 beds), CSSD, endoscopy department, chest department, medical records room, management area and staff accommodation; and
- Roof: equipment.

ECG's client for this project is Arab International Optics, one of the companies operated by the National Service Products Organization of the Egyptian Ministry of Defense (MoD). The four hospitals are owned by the Egyptian Ministry of Health and Population (MoHP).

Magrabi New Hospital

Client
Magrabi Hospitals and Centers

Scope of Work
Medical planning
Space program
Concept design
Schematic design
Design development
Detailed design
Tender Documents
Tender Action

Location
Tanta, Egypt

Types of Activities
Architectural
Civil works
Communications & security systems
Electrical
HVAC
Interior design
Landscape
Mechanical
Structural

The new Magrabi 200-bed Hospital is located in a multi-storey building in Tanta.

The building comprises a basement which is allocated to support services (IT room, electrical room, generator room, storages, pharmacy and mechanical room); a ground floor used as a reception area for the hospital. The first floor is used for patient preparation, operation rooms and patient recovery and the second floor is dedicated for patient accommodation. ECG scope is limited to the basement and 1st floor only.

Magrabi New Hospital

Magrabi Medical Center

Client
Magrabi Hospitals and Centers

Scope of Work
Schematic design
Design development
Detailed design

Location
Muscat, Oman

Types of Activities
Architectural
Civil works
Communications & security systems
Electrical
HVAC
Interior design
Mechanical
Structural

With a total floor area of 761m^2, the project aimed to design and construct an extension to Magrabi Hospital building on the ground floor. The new extension comprises operating theatres for LASIK operations, pre-and post-operation wards, Central Sterile Supply Department (CSSD), male wards, female wards, nursing support facilities, doctors' lounge, reception areas, toilets and administration offices.

Magrabi Medical Center

Maternity Hospital

Client
Petromaint Co.

Scope of Work
Design development
Detailed design

Location
Alexandria, Egypt

Types of Activities
Architectural
Interior design
Structural

One of the first planned Public Private Partnership (PPP) maternity hospitals projects in Egypt. With a footprint area of 19,500 m^2 and a built-up area of 30,000 m^2, the specialized hospital comprises 250 inpatient beds, ICU, NICU, labor unit, outpatient clinics, surgery operating rooms, cathlab, endoscopy unit, emergency unit, day ward, radiology center, physical therapy unit, pharmacy, laundry, morgue, administration offices and blood bank.

Maternity Hospital

Al-Agouza Hospital Renovation & Extension

Client
Ministry of Military Production

Scope of Work
Conceptual design
Schematic design
Detailed design
Tender documents
Tender action

Location
Nile Street, Giza,Egypt

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Interior design
Landscape
Mechanical
Medical equipment
Medical planning
Roads
Structural

Al Agouza Hospital is one of the oldest governmental hospitals in Egypt, founded and inaugurated in 1939, located in Al-Agouza, Giza. With a total built-up area of about 35,000 m^2, and of a capacity of 210 beds, the project comprises six buildings as follows:

- **First building:** comprises a ground floor dedicated to oncology radiotherapy and radiology diagnostics, encompassing two linear accelerators bunkers, and one HDR high-dose rate brachytherapy, in addition to the oncology diagnostic imaging of PET CT Positron emission computed tomography, CT computed tomography, CT computed tomography simulator and GAMMA camera imaging.
- **Second building**: dedicated to oncology treatment and patients' accommodation, the building comprises three floors as follows:
- **Ground floor:** oncology clinics for outpatient operating basis and a chemotherapy department serving inpatients and outpatients.
- **First floor:** oncology inpatient bed ward.
- **Second floor**: oncology surgical operating theatres, in addition to oncology MICU/SICU medical intensive care unit/surgical intensive care unit.

Al-Agouza Hospital Renovation & Extension

- **Third building:** dedicated for neuroscience treatment and patients' accommodation, the building comprises three floors as follows:
  - **Ground floor:** comprising a variety of clinics, and includes the CSSD central sterilization services department serving the whole campus and connected via one soiled connection and one clean connection.
  - **First floor:** includes the catheterization facilities and an inpatient bed ward for neuroscience patients.
  - **Second floor:** includes neuroscience patients' medical/surgical intensive care units, in addition to specialized surgical operating theatres for neurosurgery.

- **Fourth building:** dedicated to urology/nephrology medicine, the building comprises three floors as follows:
  - **Ground floor**: urology and nephrology clinics on an outpatient-operating basis, in addition to the renal dialysis department, including a dialysis hall and isolation rooms for infected/low immunity patients.
  - **First floor**: includes the specialized urology and nephrology diagnostics for urodynamic and lithotripsy, in addition to the renal patients' bed ward.
  - **Second floor:** includes the urology/nephrology medical/surgical intensive care unit, in addition to the specialized urology/nephrology surgical operating theatres.

- **Fifth building:** dedicated to maternity/gynecology/neonatal medical services, the building comprises three floors as follows:
  - **Ground floor:** maternity clinics operating on an outpatient basis, in addition to dexa (densitometer) and mammography diagnostic facilities.
  - **First floor:** includes an NICU neonatal intensive care unit, in addition to obstetrics department, including Caesarian C-section and LDR labor delivery.
  - **Second floor:** includes a maternity inpatient bed ward, including the well-baby nursery services.

- **Sixth building:** the building comprises four floors, and is totally dedicated for the administration and management services for the hospital.

International Medical Center Medical College

Client
Perkins Eastman, USA

Scope of Work
Cost Estimating

Location
Jeddah, Saudi Arabia

Types of Activities
Architectural
Electrical
HVAC
Interior Design
Mechanical
Medical Equipment
Structural

The International Medical Center (IMC) is a tertiary care hospital with a capacity of 300 beds, located in Jeddah, Kingdom of Saudi Arabia.

The IMC intends to expand its current range of medical service provision, through establishing its own educational service by building a state-of-the-art medical college.

The IMC project encompasses the following components: Medical College: The College is designed to support current and future technologies and techniques for surgical, interventional, and emergency procedures, in addition to critical and acute patient care, and providing a collaborative teaching, training, and research facility, which will also undertake clinical research activities.

Hospital Tower Expansion: The expansion of the existing hospital tower covers an area of about 24,500 m^2 , and is designed as a standalone infrastructure, comprising:

- **Basement & Ground Floor:** Existing structure and construction are utilized, while the internal organization of the building is altered.
- **Floors 1–8:** Covers new construction of clinical floors that utilize the existing structure below, while reinforcing where necessary.
- **Mechanical Floor:** The tower's top floor enclosed, environing the mechanical equipment for the new tower.
- Roof: Consists of elevator bulkheads, stair bulkheads, fans, and cooling towers.

Campus Master Planning: Comprises all Campus services, excluding the laundry and warehouse programs—which are located offsite in the Service Building—and a parking garage across Bothour Al-Mahabbah Street.

International Medical Center Medical College

Global Hospital

Client
The Global Hospital Co.

Scope of Work
Conceptual design
Preliminary design
Detailed design
Tender documents

Location
Alexandria, Egypt

Types of Activities
Architectural
Civil works
Communications & security systems
Electrical
HVAC
Interior design
Landscape
Mechanical
Structural

Located in Green Towers Development in Smouha, Alexandria on a plot area of 5,200 m^2 and with a total built-up area of 41,738 m2, the 220-bed hospital comprises a basement and 3-floor podium serving the two-hospital towers as follows:

- Basement floor for services & utilities (AHU, electrical rooms, IT rooms,... etc); parking area; public circulation (stairs and elevator pits); storages; in addition to unused areas.

- 3-floor podium (ground floor+mezzanine+1st floor) encompassing:

- Medical support facilities (pharmacy, morgue and Central Steam Sterilization Department "CSSD").
- Non-medical support facilities (storages, medical waste and nonmedical waste, food preparation, nonmedical staff dining room, housekeeping, security and laundry).

- Surgery department (19 major Operation Rooms "OR", obstetrics center (3 cesarean OR, 2 labor rooms & pre-labor rooms), In-Vitro Fertilization "IVF" centre (2 IVF OR), endoscopy & colorectal centre (4 endoscopy OR), Neonatal Intensive Care Unit "NICU" (9 NICU rooms), emergency department, radiology department, laboratories & blood bank, pediatric surgery, pediatric centre & Pediatric Intensive Care Unit "PICU" (5 PICU rooms),

- Top management and administration department, main reception and admission.

- Public amenities, cafeterias, staff facilities and technical area (HVAC units, electrical area, medical gases, boiler and tanks in addition to a conference hall).

- **North & South towers (from 2nd to 10th floor):**

- North tower comprises outpatients departments (ophthalmology centre, oncology & hematology centre, kidney dialysis centre, orthopedic & spine centre, dental centre, urology & uro-surgery centre, general surgery, colon, rectal surgery & GIT centre, neuro-science centre, chest and chest surgery centre, Ear, Nose and Throat "ENT" & audiology centre, hepatic centre, diabetes & endocrinology centre, dermatology & plastic surgery centre and rehabilitation centre.

- South Tower comprises 64 Intensive Care Units (ICU) (2nd and 3rd floor) and 156 inpatient wards (4th to 10th floor) including 39 double wards, 64 single bed rooms, 7 suites and 7 isolation rooms.

Technical Orthopedic Center

Client
Institut National de Sécurité Sociale

Scope of Work
Design review
Schematic design
Detailed design
Tender documents
Quantity surveying

Location
Lubumbashi, DR Congo

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Interior design
Landscape
Mechanical
Roads
Structural

Located in Lubumbashi in the southeast of DR Congo, the Technical Orthopedic Center has a footprint area of 10,400 m^2 over a land area of 49,644 m^2.

With a built-up area of 12,180 m^2, the center building consists of the following components:

- **ground floor:**
  - reception & administration (public hall,administrative offices & admission office)
  - multipurpose halls & services
  - six outpatient clinics (each with a separate waiting area)
  - laboratory & radiology department (echocardiography & radiology rooms)
  - emergency department
  - rehabilitation department
  - surgical department (four operating rooms & services)
  - five inpatient wards (196 beds in total)
  - general services (kitchen, laundry & workshops)
- **first floor:**
  - administration area & finance department
  - top management offices & meeting rooms
  - six outpatient clinics (each with a separate waiting area)

Labs

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Biological Control Laboratory and Agricultural Research Facility

Client
Public Works Authority (ASHGAL)

Scope of Work
Data collection
Site survey
Conceptual design
Preliminary design
Schematic design
Design development
Detailed design
Design permits
Tender documents
Tender action

Location
Umm Salal, Qatar

Types of Activities
Communications and security systems
Electrical
HVAC
Landscaping
Mechanical
Piping
Roads
Structural

The biological control laboratory and agricultural research facility are located at Al-Mazrouah Yard in Umm Salal Municipality, Qatar. The first-of-its-kind facility employs state-of-the-art technologies with the aim of significantly raising the harvested volume, quality, safety, and diversity of agricultural food commodities produced in Qatar.

With a total area of approximately 150,000 m^2, the national project comprises a main complex that houses two facilities: a biological control laboratory and an agricultural research facility. The project also includes a multipurpose annex for training sessions and conferences, workshop, field workshop, nursery, greenhouse, guardhouse, telephone room, and covered car parking area (140 cars), in addition to a lysimeter and irrigation system.

Designed to portray the traditional architectural heritage of Qatar, the buildings structures also comply with international safety and security codes and standards.

Biological Control Laboratory and Agricultural Research Facility

Borouge Innovation Centre

Client
Abu Dhabi National Oil Company (ADNOC)

Scope of Work
Conceptual design
Schematic design
Design development
Detailed design
Project management
Tender documents
Tender action

Location
Abu Dhabi, UAE

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Interior design
Landscaping
Mechanical
Structural
Urban planning

A polymer research facility, Borouge Innovation Centre is one of only four similar initiatives developed globally. Other polymer research facilities have been developed in Austria, Sweden, and Finland.

With a total built-up area of 20,000 m^2, the project involves the design development of key elements of the center, including a three-floor innovation tower (1,600 m^2), two-floor building for laboratories (5,500m^2), application hall (7,800 m^2), pipe academy building (2,500 m^2), ancillary and service buildings (2,600 m^2), and adjacent business and future expansion areas (25,000 m^2).

Constructed in two phases, all buildings are designed to sustain a structural lifespan of 50 years.

To effectively support the center's state-of-the-art manufacturing/testing lines, extensive business development activities, and researches on innovative products, ECG developed unique designs featuring cutting-edge research facilities, well-planned office spaces, expedient lecture and exhibition halls, and contemporary showrooms, testing laboratories, and training rooms, as well as an outdoor demonstration area and a fully serviced business center.

Borouge Innovation Centre

The piping design, which employs advanced instrumentation and control systems, allows for the conveyance of a range of industrial gases of varying purity (including cryogenic liquid nitrogen, hydrogen, oxygen, argon, gaseous nitrogen, helium, compressed air, and bottled air), along with industrial and chemical waste and cooling and demineralized water. A network of approximately 8,600 meter-long pipes of various sizes and materials is established to guarantee the efficient execution of various processes.

Places of worship

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

7 New Mosques

Client
Public Works Authority (ASHGAL), Qatar

Scope of Work
Topographic survey
Soil investigation
Concept design
Preliminary design
Schematic design
Design development
Detailed design
Design permits
Tender documents
Tender action

Location
Doha, Qatar

Types of Activities
Architecture
Civil
Communications and security systems
Electrical
Interior
Infrastructure
HVAC
Landscape
Structural

Demolishing and rebuilding 7 new 3-floor mosques in 7 different locations in Qatar. Each mosque has its own special design matching with the gulf architectural style, society and climate paying particular attention to disabled people requirements. With a total plot area of 6,267m^2, each mosque comprises the following:

- **Ground floor:** includes men's praying hall, ladies praying hall and toilets, Daa'wa room with kitchen and toilet, cleaning room, a muezzin's temporary room with kitchen and toilet, enclosed service courtyard, ablution facilities and toilets.
- **First floor:** includes men's praying hall.
- **Second floor:** includes an Imam's house with 3 bedrooms, living room with kitchen and 2 toilets; Muezzin's house consisting of 2 bedrooms, living room with kitchen and 2 toilets, one elevator and separate entrance for the two houses.

7 New Mosques

Mosque Complexes (Package 7)

Client
Public Works Authority (Ashghal)

Scope of Work
Construction supervision

Location
Doha, Qatar

Types of Activities
Architectural
Civil
Electrical
Mechanical

The project covered four mosque complexes at four different locations. Construction was generally based on reinforced concrete structures and blockwork. Work covered all associated finishes, services, and external works (including fencing, gates, paving work, and bitumen work), as well as parking areas, softscaping, and hardscaping.

The total area occupied by the mosques, Imam houses, and other facilities amounts to approx. 8,193 m^2. With a total built-up area of approx. 2,309 m^2, buildings are included in the following mosque complexes:

Complex A

- Single-Story Mosque (approx. 428 m^2): prayer hall (230 worshippers), ladies' prayer hall (50 worshippers), Da`wah room (with a pantry), minaret, ablution facilities, and toilets.
- Imam House (Type 5; approx. 167 m^2): three bedrooms, kitchen, and bathroom.
- Muazzin House (Type 1; approx. 107 m^2): two bedrooms, kitchen, bathroom, open courtyard, water tank, and electric room.

Mosque Complexes (Package 7)

Complex B

- Single-Story Mosque (approx. 225 m^2): prayer hall (188 worshippers), ladies' prayer hall (25 worshippers), Da`wah room, minaret, ablution facilities, and toilets.
- Imam House (Type 5; approx. 167 m^2): three bedrooms, kitchen, and bathroom.
- Muazzin House (Type 1; approx. 107 m^2): two bedrooms, kitchen, bathroom, open courtyard, water tank, and electric room.

Complex C

- Two-Story Mosque (approx. 564 m^2 of demolition and reconstruction): main prayer hall (240 worshippers), ladies' prayer hall (45 worshippers), minaret, open courtyard, water tank, electric room, ablution facilities for men and women, and toilets.
- Imam House: two bedrooms, living room, kitchen, bathroom, and courtyard.
- Muazzin House: bedroom, living room, kitchen, bathroom, and courtyard.

Complex D

- Two-Story Mosque (approx. 465 m^2): main prayer hall (213 worshippers), Da`wah room (with a pantry), minaret, open courtyard, water tank, electric room, and ablution facilities, toilets.
- Imam House: two bedrooms, living room, kitchen, bathroom, and courtyard.
- Muazzin House: bedroom, living room, kitchen, bathroom, and courtyard.

Mosque Complexes (Package 8)

Client
Public Works Authority (Ashghal)

Scope of Work
Construction supervision

Location
Doha, Qatar

Types of Activities
Architectural
Civil
Electrical
Mechanical

The project covered the construction supervision and maintenance services for mosque complexes affiliated with the Ministry of Endowments & Islamic Affairs. Work covered four mosque complexes at four different locations.

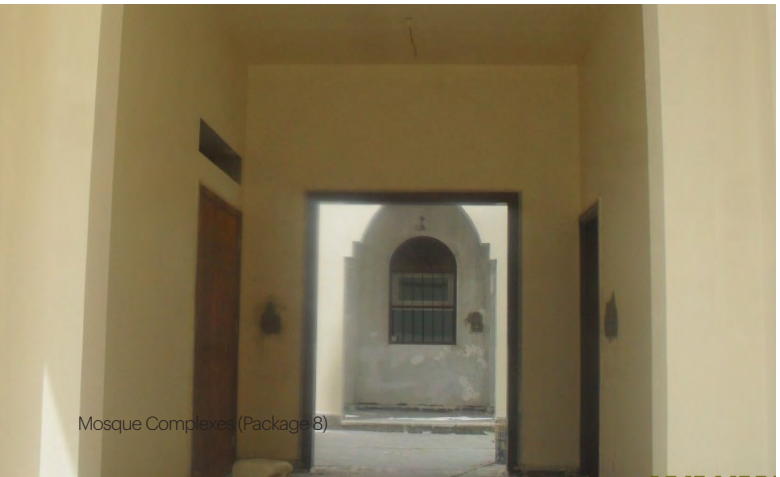
The four mosque complexes stretch over a total area of approx. 9,109 m^2. With a total built-up area of approx. 3,681 m^2, the buildings constitute the following complexes.

Complex A

- Standard Single-Story Mosque (approx. 428 m^2): main prayer hall (230 worshippers), ladies' prayer hall (50 worshippers), Da`wah room (with a pantry), minaret, water tank area, courtyard, ablution facilities, and toilets.
- Imam House (approx. 160 m^2): three bedrooms, kitchen, two bathrooms, and courtyard.

Complex B

- Standard Two-Story Mosque (approx. 754 m^2): main prayer hall (200 worshippers), Da`wah room (with a pantry), minaret, water tank area, courtyard, ablution facilities, and toilets.
- Imam House: three bedrooms on the first floor.
- Muazzin House: two bedrooms on the ground floor.



Complex C

- Two-Story Mosque (approx. 630 m^2 of demolition and reconstruction): main prayer hall on the ground floor (212 worshippers), prayer hall on the first floor (190 worshippers), Muazzin room (with a pantry), Da`wah room (with a pantry), minaret, open courtyard, water tank, electric room, ablution facilities, and toilets.
- Imam House: two bedrooms, living room, kitchen, bathroom, and courtyard.

Work also covered all associated mechanical, electrical, plumbing, and drainage services, together with an area for external works and infrastructure services.

Complex D

- Two-Story Mosque (approx. 1,605 m^2 of demolition and reconstruction): main prayer hall (530 worshippers), daily prayer hall (120 worshippers), mezzanine prayer hall (120 worshippers), ladies' prayer hall (65 worshippers), Da`wah room (with a pantry), minaret, open courtyard, water tank, electric room, ablution facilities for men and women, and toilets.
- Imam House: two bedrooms, living room, kitchen, bathroom, and courtyard.
- Muazzin House: two bedrooms, living room, kitchen, bathroom, and courtyard.

9 Residential Buildings & a Mosque

Client
Ministry of Endowments & Islamic Affairs

Scope of Work
Construction supervision

Location
Doha, Qatar

Types of Activities
Architectural
Civil
Electrical

The project covered the construction supervision services for nine residential buildings and a mosque at the New Msheireb area of Doha.

Mosque Complexes (Package 11)

Client
Public Works Authority (Ashghal)

Scope of Work
Construction supervision

Location
Doha, Qatar

Types of Activities
Architectural
Civil
Electrical
Mechanical

The project covered the construction supervision and maintenance activities for mosque complexes affiliated with the Ministry of Endowments & Islamic Affairs. Work covered three mosque complexes at three different locations.

Complex A

- Single-Story Mosque (approx. 344 m^2): main prayer hall, ladies' prayer hall, open courtyard, Muazzin room (with a pantry), minaret, water tank area, ablution areas, and toilets.
- Standard Imam House (approx. 167 m^2): Majlis, kitchen, three bedrooms, two bathrooms, and courtyards.

Complex B

- Single-Story Mosque (approx. 420 m^2): main prayer hall (230 worshippers), ladies' prayer hall (50 worshippers), Da`wah room (with a pantry), minaret, water tank area, open courtyard, ablution areas, and toilets.
- Imam House (approx. 167 m^2): Majlis, kitchen, three bedrooms, two bathrooms, toilets, and courtyards.

Complex C

- Mosque with a ground floor (1,876 m^2), first floor (726 m^2), second floor (726 m^2), and ablution area.
- Imam House & Mezzanine (260 m^2).
- Substation (built by the contractor).

Mosque Complexes (Package 11)

Khalifa Bin Abdullah Al-Attia Mosque

Client
Urbacon Trading & Contracting

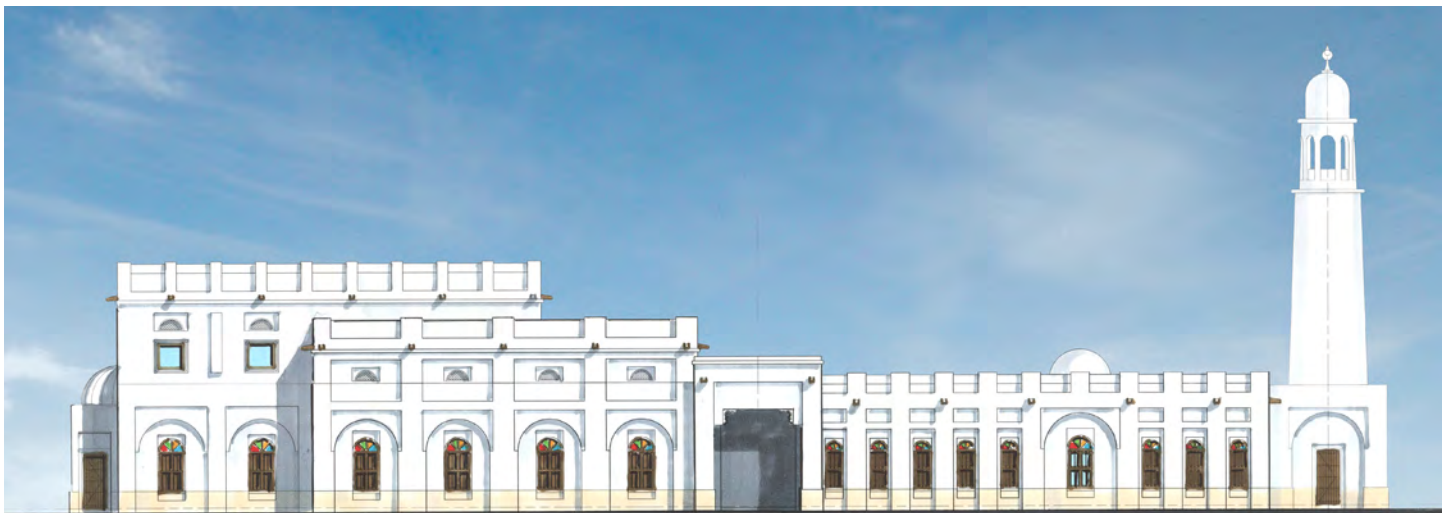
Scope of Work
Detailed design
Tender documents

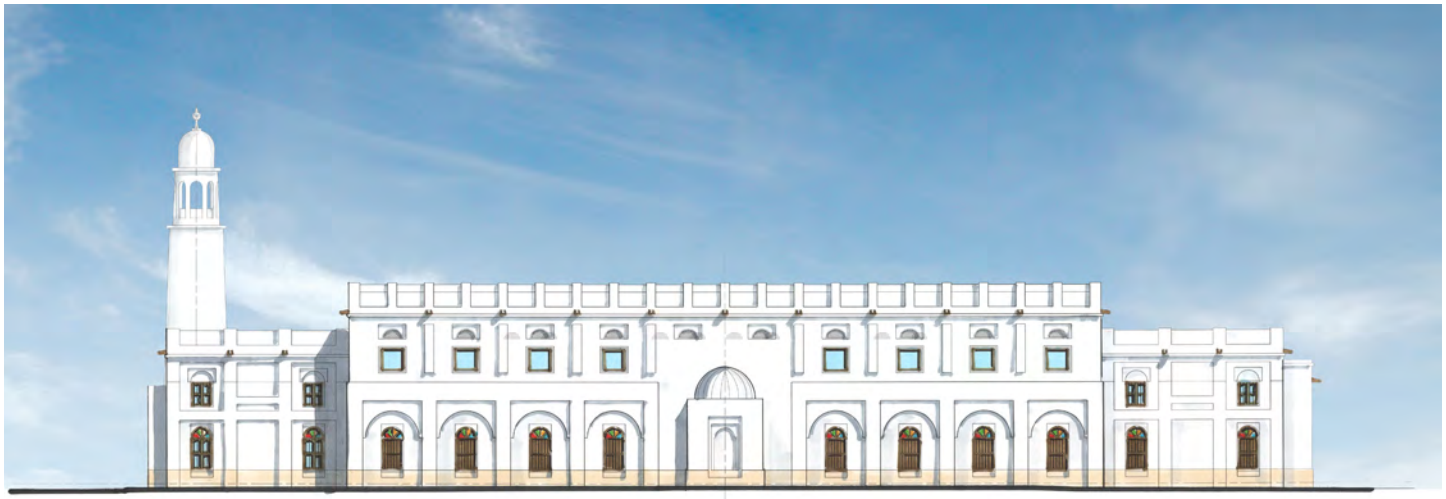
Location
Umm Gam, Qatar

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Interior design
Landscaping
Mechanical
Structural

The project is a public mosque located in Umm Gam city area over a land area of 100 m^2, with a built-up area of 2,400 m^2. The mosque consists of a landscaped courtyard, male & female entrances, male & female ablution areas, shaded pre-assembly areas, and male & female prayer areas, as well as a Madrassa, minaret, Imam house, and parking area.

Khalifa Bin Abdullah Al-Attia Mosque





Khalifa Bin Abdullah Al-Attia Mosque

Mosque Complexes (Package 9)

Client
Public Works Authority (Ashghal)

Location
Various Locations, Qatar

Scope of Work
Construction supervision

Types of Activities
Architectural
Civil
Electrical
Mechanical

The project covered the construction supervision and maintenance services for mosque complexes affiliated with the Ministry of Endowments & Islamic Affairs. Work covered four mosque complexes at four different locations.

The mosque complexes stretch over a total area of approx. 4,800 m^2. With a total built-up area of approx. 1,055 m^2, the buildings are included in four complexes as follows.

Complex A

- Standard Single-Story Mosque (approx. 165 m^2): prayer hall (70 worshippers), minaret, water tank area, courtyard, ablution facilities, and toilets.
- Imam House: two bedrooms, kitchen, bathroom, and courtyard.

Complex B

- Single-Story Mosque (approx. 150 m^2 of demolition and reconstruction): main prayer hall (50 worshippers), minaret, water tank area, ablution facilities, and toilets.
- Imam House: two bedrooms, kitchen, bathroom, and courtyard.

Mosque Complexes (Package 9)

Complex C

- Single-Story Mosque (approx. 300 m^2 of demolition and reconstruction): main prayer hall (65 worshippers), minaret, open courtyard, water tank, electric room, ablution facilities, and toilets.
- Imam House: two bedrooms, living room, kitchen, bathroom, and courtyard.

Complex D

- Single-Story Mosque (approx. 440 m^2 of demolition and reconstruction): prayer hall (200 worshippers), ladies' prayer hall (50 worshippers), Da`wah room (with a kitchen), minaret, ablution facilities, and toilets.
- Imam House: two bedrooms, kitchen, bathroom, open courtyard, water tank, and electric room.

Old City Church

Client
Ministry of Housing, Utilities & Urban Communities

Scope of Work
Conceptual design
Preliminary design
Schematic design
Design development
Detailed design
Construction supervision

Location
New Al-Alamein, Egypt

Types of Activities
Architectural
Communications & Security Systems
Electrical
HVAC
Landscaping
Mechanical
Interior design
Structural
Urban design

Located in the Residential District in the southeastern part of the project, the Old City Church comprises a single, continuous two-floor building (ground and first) with a total built-up area of 6,329 m^2 and a footprint area of 3,254 m^2.

The church consists of a main entrance, horizontal and vertical circulation elements, mechanical and service rooms, prayer hall, toilets, priest rooms, classes, and baptism chambers.

The concept combines the hybrid features of a cross-shaped plan and Noah's Ark in form.

The cross's longest part is represented by the prayer aisle, and the altar area is located at the cross's junction.

The contemporary church towers soaring skywards reconstruct the New Al-Alamein City skyline.

Old City Church

Old City Mosque

Client
Ministry of Housing, Utilities & Urban Communities

Scope of Work
Conceptual design
Preliminary design
Schematic design
Design development
Detailed design
Construction supervision

Location
New Al-Alamein, Egypt

Types of Activities
Architectural
Communications & Security Systems
Electrical
HVAC
Landscaping
Mechanical
Interior design
Structural
Urban design

Located in the Financial District in the northeastern part of the project, the Old City Mosque is a single, continuous, two-floor building (ground and mezzanine) with a total built-up area of 3,826 m^2 and a footprint area of 3,188 m^2.

The mosque consists of a main entrance, horizontal and vertical circulation elements, mechanical and service rooms, men's prayer hall, women's prayer hall, open court (Sahn), ablution space and toilets, and the imam's residence opposite to the main entrance, equipped with a living room, bathroom, kitchen, and a main bedroom.

There are four majestic pencil-shaped minarets standing at the corners, with copper-clad spires and domes, and an impressive central dome ringed by four, small, semi-circular domes, rising on four single-arched domed riwaqs (colonnaded naves), with the domes hierarchy culminating at the entrance/Qibla riwaqs, topped diagonally with four shorter hexagonal minarets with dome-shaped crowns and smaller domes.


Old City Mosque

Office and Commercial Buildings

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Design of WHO Office Building and Warehouse in Garowe City, Somalia

Client
World Health Organization (WHO))

Scope of Work
Conceptual Design
Detailed Design
Tender Documents

Location
Garowe City, Somalia

Types of Activities
Architecture

The World Health Organization premises is located in Garowe City, Somalia; with a total land area of approximately 10000 m^2. The project comprises the following buildings:

- Office Building: With a footprint area of 725 m^2 and total built-up area of 1200 m^2, the building comprises two floors, including an internal court, in addition to the following:
  - Library: with a private entrance providing direct access to the library without passing through the security gates (offering toilet for library users only); and a security room.
  - Offices Space: including the Manager's room, kitchen and services.
  - The Conference Hall: located between two planted courts; to reduce the internal temperature, and create a delightful atmosphere.
- Warehouse: one floor building comprising a steel structure hall. The hall encompass an office and air conditioned storage for medicines, on a footprint area of 720 m^2.
- Ancillary Building: including generators room, and septic and water tanks.

Design of WHO Office Building and Warehouse in Garowe City, Somalia

EMAL Administrative Offices and Facilities

Client
Ali & Sons Contracting Company
Emirates Aluminum Company (EMAL)

Scope of Work
Design review
Detailed design
Medical planning
Value engineering
Construction supervision

Location
Abu Dhabi, UAE

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
Interior design
Landscape
Mechanical
Roads
Structural

Emirates Aluminum Company (EMAL) has Aluminum Smelter and associated facilities at Al Taweelah, 300 km North East of Abu Dhabi. EMAL planned to develop and construct contemporary administration offices and support facilities to efficiently serve the smelter.

The complex comprises 12 buildings:

- **Reception Building:** ground and first floors comprising check in/out points, security office, electrical room, stores, toilets and pantry.
- **Administration Building:** ground and first floors comprising reception and waiting area, meeting rooms, offices and toilets.
- **EMAL Central Hall:** auditorium, reception hall, stores, toilets and entrances.
- **Plant Training Facility:** ground and first floors comprising classrooms, training halls, offices, meeting room, filing room, library, changing rooms, toilets, lockers, storage, electrical room, compressor room and pantry.
- **District Cooling Plant:** ground floor only including offices, control room, toilets, store, electrical substation and LV switchgear room.
- **Indoor Recreation Center:** ground and first floors comprising instructors' rooms, changing rooms, shower cabinets, toilets, lockers, separate men

EMAL Administrative Offices and Facilities

& ladies gym halls, store, hub room, sports hall, electrical room and janitor's closet.

- **Outdoor Recreation Service Block:** ground floor comprising changing rooms, showers, lockers, toilets and storage area.
- **Mobile Equipment Training Center:** ground floor comprising communication room, simulator training room, classrooms, offices, toilets, lockers, prayer room and pantry.
- **Emergency Response Center**
- **Kitchen and Cafeteria**
- **Mosque:** entrance lobby, main prayer hall, ladies prayer hall, secondary prayer hall, minaret and toilets.
- **Excellence Center:** not included in ECG scope.

GASCO Management and Auditorium Buildings

Client
Abu Dhabi Gas Industries Ltd. (GASCO), UAE

Scope of Work
Concept design
Schematic design
Design development
Detailed design
Tender documents

Location
Bu Hasa, Abu Dhabi, UAE

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Landscape
Mechanical
Roads
Structural

Over a total land area of 5,600 m^2, the buildings comprise a new management building, auditorium building, existing building (remodeling), and substation. The 220-person auditorium is devoted to GASCO Bu Hasa Oil Field staff with a total built-up area of 1,050 m^2. Development components comprise a foyer, a main hall, male/female restrooms, and service rooms. The auditorium is also provided with a state-of-the-art audiovisual system that delivers multimedia and distance delivery facilities.

Additionally, the project involved the development of a LEED-certified management building housing GASCO's administrative staff with a total built-up area of 2,000 m^2. Both management and auditorium buildings are served by an auxiliary building hosting chillers, a substation, and a pump room. ECG designs secured streamlined functionality, seamless constructability, and cost-effective maintenance requirements.

GASCO Management and Auditorium Buildings

El-Sewedy Administrative Building

Client
El-Sewedy Cables

Scope of Work
Concept design
Schematic design
Design development
Detailed design
Tender documents
Tender action
Construction supervision

Location
New Cairo, Egypt

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Interior design
Mechanical
Structural

The administrative building is built over a land area of about 7,260m^2 , located in New Cairo, Egypt. The building comprises two basements (6,000m^2), ground floor and six typical floors (1,815m^2). The ground and aboveground floors are built over 25% of the land area.

El-Sewedy Administrative Building

GNPOC New Head Office Building

Client
Greater Nile Petroleum Operating Company, Sudan

Scope of Work
Project management
Construction management
Construction supervision

Location
Khartoum, Sudan

Types of Activities
Architectural
Communications & security systems
Electrical
Equipment selection
HVAC
Landscape
Mechanical
Piping
Structural

The leading international oil producer Greater Nile Petroleum Operating Company (GNPOC) has acquired a 10,000 m^2 plot area for its new Head Office building in Sudan's prominent business hub Al-Mogran Central Business District.

The building is a 17-floor tower that stands as an ovoid curvilinear steel structure encased with dramatic glass elevations. Additional three top floors are devoted to mechanical, electrical, and plumbing services. Effectively integrated with its surrounding environment through landscaping, paving, visitor parking, and vehicular right-of-way features, the high-rise tower entertains a fully automated building management system. Moreover, as night falls across the Sudanese landscape, a unique jewel-shaped structure atop the tower building lights up to highlight the landmark edifice and attest strong drive towards sustained development.

Comprising three distinct facades, the new Head Office building captures spectacular panoramic views of the three Niles: the Blue Nile, the White Nile, and the point where these two merge to form the Nile River. Encircling the tower structure, a two-floor curved recreational building and its underlying basement entails a comprehensive bouquet of staff recreational facilities, including a multipurpose auditorium/theater, a gymnasium, a health club, a nursery, and a restaurant. The building is linked to the tower via an elevated bridge. Other key project facilities comprise an underground parking facility with a 200-car capacity.


GNPOC New Head Office Building

PDOC Headquarters Building

Client
Petrodar Operating Company (PDOC), Sudan

Scope of Work
Project management
Design development
Detailed design
Construction supervision

Location
Khartoum, Sudan

Types of Activities
Architectural
Communications and security systems
Electrical
Equipment Selection
HVAC
Landscape
Mechanical
Piping
Structural

Set to be the company's main headquarters in Sudan, the PDOC Headquarters Building involved the construction of a 15-floor office tower, an underground parking, and an ancillary building dedicated to recreational activities of staff members and their families. The tower's architectural concept and construction methods effectively integrated functionality, safety, durability, and economy elements. Moreover, the fully automated building was designed to merge seamlessly with its surrounding environs. PDOC, the awarding entity, is a consortium of international oil exploration and production companies operating in Sudan and the company's production in this arena reportedly accounted for almost half of Sudan's total crude oil output in late 2006.

In 2008, ECG was awarded the PDOC Health, Safety and Environment (HSE) Recognition Certificate for supervising one million man-hours of construction work with no Lost Time Injury (LTI), that is, no human injuries or fatalities were incurred during project duration. The acknowledgment underscored the effective timelines in which project milestones were realized and emphasized ECG's outstanding track record in the competent management of its HSE operations. The award receipt came under ECG's successful management of the new PDOC Office Building's construction works with a team of 350 senior engineers, site engineers, supervisors, and laborers keenly participating in the construction initiative so as to achieve effective task completion by the handover date of July 2008.


PDOC Headquarters Building

Samrya Twin Towers

Client
Gulf East Trading & Contracting, Qatar

Scope of Work
Construction supervision

Location
Qatar

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Landscaping
Mechanical
Structural

With a total built-up area of 111,893 m^2, Samrya twin towers entailed completion and maintenance of two symmetric business 44-storey towers mirroring each other as well as erection of a unitized and stick curtain wall system covering an area of 66,000 m^2.

With a height of 180m, both towers share two basement levels with an area of 19,120 m^2 and a capacity of 610 parking spaces, and a ground floor. Each tower separately features a mezzanine, a first floor allocated to conference halls; 38 office floors (9,560 m^2 each), in addition to floors reserved for mechanical, electrical, and plumbing (MEP) equipment on the 21st and 41st levels, along with additional MEP floors on roof decks premised on the 42nd, 43rd, and 44th levels.

The twin towers were designed by MZ & Partners with a construction cost of QR 350,000,000.


Samrya Twin Towers

The Prime Tower at Business Bay

Client
AlMasaleh development - Kuwait

Scope of Work
Detailed design
Tender action
Construction supervision

Location
Business Bay, Dubai, UAE

Types of Activities
Architectural
Electrical
HVAC
Mechanical
Structural

Over a land area of 381,486 ft2, the Prime Tower comprises three basement levels, six parking levels at the podium, a ground floor, and 36 well-planned floors, 30 of which designated for comfortable office spaces. One floor is reserved for a health club and a cafeteria, and two other floors are reserved for retail units. The tower area has a drop-off for visitors and a special zone for loading services.

Every office floor in the tower enjoys panoramic vistas of the city through a fully glazed, transparent façade. Other amenities and services include a four-floor glass atrium, elegantly designed lobbies, and plush reception areas.

The functionality of the tower is maximized by six high-speed elevators, one of which functioning as a service elevator when necessary. Elevators with private access are connected to parking levels. The tower is also equipped with parking bays for the disabled at the ground floor level near the main entrance. Pedestrians can access to the tower via covered walkways leading directly to the retail stores. These walkways are connected to adjacent buildings.

The Prime Tower at Business Bay

LEED Certification of Ruwais Administration Building

Client
GASCO Abu Dhabi Gas Industries Ltd.

Scope of Work
Site visit & data collection
LEED assessment study
Resources conservation study
Detailed technical & commercial study
Preparation of detailed engineering documents
Tender documents

Location
Abu Dhabi, UAE

Types of Activities
Architectural
Electrical
HVAC
Mechanical

The project aimed at conducting the studies necessary to obtain the Leadership in Energy and Environmental Design (LEED) certification for the existing GASCO Administration Building. The building is a two-floor (ground floor + first floor) concrete structure with a floor area of approximately 3,414 m^2 over a total plot area of 25,000 m^2.

Completed at the end of 2009, the building started operation early in 2010. It is located inside the Ruwais Industrial Complex on the Arabian Gulf coast, approximately 230 km west of Abu Dhabi.

ECG conducted a full technical and commercial study to evaluate the potential for obtaining LEED certification and to identify the possible level of certification under LEED 2009 Operations and Maintenance (LEED O&M). ECG's scope also included the engineering consultancy services necessary for the implementation of design and system modifications in line with LEED certification requirements.

LEED Certification of Ruwais Administration Building

Madinah Development Authority's Headquarters

Client
Dar Al Riyadh

Scope of Work
Conceptual design
Schematic design

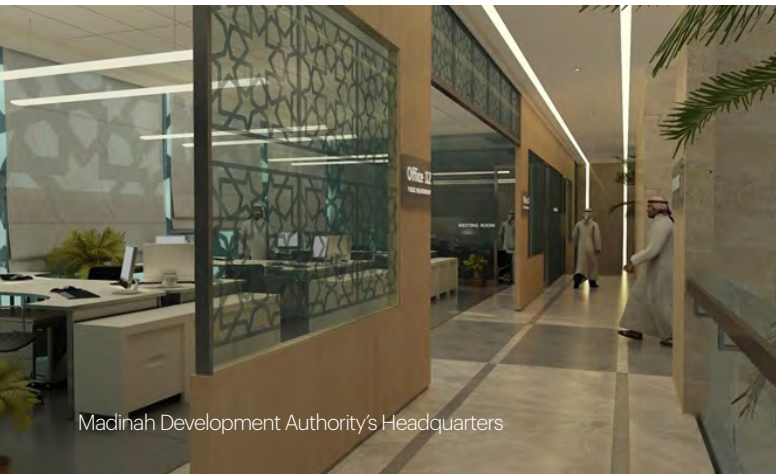
Location
Al Madinah, Saudi Arabia

Types of Activities
Architectural
Civil
Communication & security systems
Electrical
HVAC
Interior design
Infrastructure
Landscape
Mechanical
Roads
Structural

Located on Khaled ibn Al-Waleed St. in Madinah, the new administration building consists of a two-level basement, ground floor, and six upper floors. The total plot area is approximately 11,656 m^2 and the built-up area is estimated at 52,000 m^2.

The building accommodates the offices of the Prince of Madinah, Minister of Pilgrimage, Minister of Finance, and Madinah Secretary-General, as well as the offices of other distinctive departments, along with an exhibition hall and a multipurpose hall.

ECG provided its design services for the administration building. The design involves Islamic and modern architectural themes reflected in the building's interior and the motifs printed on the façade's curtain walls. The design of public areas within the building, such as the entrance and corridors, further enhances the richness and elegance of the conceptual design. It turns the interior into a piece of art in the eyes of visitors and employees. The acoustically designed VIP areas feature a luxurious, welcoming environment furnished with high-quality finishing materials.



Madinah Development Authority's Headquarters

Arabian Gulf Holding Co. Office Building

Client
Arabian Gulf Holding Co.

Scope of Work
Schematic design
Design development
Design permits
Detailed design
Tender documents

Location
Kuwait

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Landscape
Mechanical
Roads
Structural

On a total land area of around 7,444m^2 and with a built-up area of approximately 5,572m^2 , the new contemporary office building shall be located at the Free Commercial Zone in Kuwait.

The building comprises the following:

- Basement (total gross area of 7,444m^2): allocated for car parking with a capacity of around 94 cars, and services;
- Ground floor (total gross area of 2,228m^2): 3 main entrances, administration offices and services rooms;
- 1st floor (total gross area of 2,228m^2): administrative offices, pantries and services rooms; and
- 2nd floor (total gross area of 1,116m^2): administrative offices, pantries and services rooms.

For the maximum view, most of the building services are located in the core, while office areas are near the glazed elevations. Using huge glass panels in the elevations inject light into the building; providing a convenient atmosphere for work and innovation.

The building is surrounded by three main roads and one pedestrian passage; the access to the entrances is through the three main roads.

Arabian Gulf Holding Co. Office Building

Dhahiat Sumou Sales Centre

Client
Sumou Real Estate Co.

Scope of Work
Conceptual design
Preliminary design
Detailed design
Cost estimation
Tender documents
Construction documents
Construction supervision

Location
Saudi Arabia

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Infrastructure
Landscape
Mechanical
Structural

Bawabat Makkah is a new visionary suburb strategically located at the western entrance of the Makkah Al-Mukarramah Region. The area of Bawabat Makkah covers approximately 83 km^2 of land and will have an estimated population of 690,000.

Sumou Real Estate Development Company is developing the Dhahiat Sumou Project within Bawabat Makkah. The company has entered into a joint venture with Bawabat Makkah Company to develop the first mixed-use development in the new suburb. When complete, the development will be a major attraction in the Makkah Al-Mukarramah Region, with the responsibility of setting a standard for the future development of the whole suburb of Bawabat Makkah.

On a plot area of 12,000 m^2 and with a built-up area of 1,500 m2 , the building is designed to be cost-effective, creative, unique, and appropriate to Makkah's culture and climate. It consists of the following:

- Ground floor: main entrance, reception area & VIP lounge, main exhibition & multipurpose halls, offices of bank representatives, sales offices, kids area, prayer rooms, toilets, and cafeteria; and
- First floor: administrative area for managers, meeting room, and archives.

The site layout is designed to include a prestigious entrance approach, green areas, water features, as well as 75 parking spaces and an outdoor parking area for golf carts.

Dhahiat Sumou Sales Centre

Travco Group Headquarters

Client
Travco Group, Egypt

Scope of Work
Concept design
Design development
Detailed design
Tender documents
Tender action
Construction management
Construction supervision

Location
Sheikh Zayed, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

The Travco Group Headquarters was designed to integrate all of the firm's companies into one complex. Developed to sustain maximum office space density, the building comprises a basement, ground floor, mezzanine, and two upper floors, with a total built-up area of 7,500m^2.

Travco Group Headquarters

World Health Organization (WHO) Office Building

Client
World Health Organization (WHO), Regional Office for the Eastern Mediterranean

Scope of Work
Project management
Concept design
Schematic design
Design development
Detailed design
Tender documents
Tender action
Construction supervision
Construction management

Location
Cairo, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

Over a total land area of about 5,800 m^2 and with a built-up area of 29,500 m^2, the new headquarters of the WHO Regional Office for the Eastern Mediterranean is constructed as part of the WHO Expansion Program.

The project is composed of two buildings: Building A & Building B. Both buildings are composed of a basement, a ground floor, and seven typical floors, with a large internal court located at the center of the two buildings. An international conference hall is located at the basement level underneath the internal court.

The ground and upper floors include office spaces, a central library, a computer center, and office facilities. The basement is divided into two main parts. The first is below Building A and comprises the international conference hall, travel agent office, stores, print shop, workshop, staircases, toilets, and generator room. The second part is underneath Building B and includes a parking garage, main mechanical/electrical rooms, and a landscaped area around the international conference hall.

The building was constructed in two phases. The first phase included Building A and the international conference hall with a built-up area estimated at 13,750m^2. The second phase included Building B and its related facilities with a built-up area of 15,750 m^2.


World Health Organization (WHO) Office Building

WHO Alexandria Office Building Extension

Client
World Health Organization (WHO), Regional Office for the Eastern Mediterranean

Scope of Work
Concept design

Location
Alexandria, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

The project comprised vertical and horizontal extensions to the existing WHO building. The four-floor building occupies an area of 850 m^2 consisting of a parking area at the first basement level, as well as electrical/mechanical services at the second basement level.

Office spaces are available in the ground, second, and third floors. A conference room, lounge, and cafeteria are located in the first floor. The building is centrally air-conditioned and is equipped with modern fire alarm, fire protection, and telephone systems.

The project's most challenging constraint was to maintain the architectural style of the original building, which was constructed in 1929.

ECG completed the design task. However, the WHO decided to cease the project and move its offices to the new headquarters in Cairo.

WHO Alexandria Office Building Extension

IBM Office Building

Client
IBM World Trade Corporation, USA

Scope of Work
Concept design
Cost Estimate
Tender documents
Tender action
Construction supervision

Location
Giza, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

To merge all of its offices in Egypt, IBM launched a new, all-encompassing branch in Giza. Equipped with state-of-the-art systems and equipment, the structure comprised a basement, a ground floor, and three typical floors occupying a total built-up area of 6,400m^2.

IBM Office Building

New Additional Office Building at ASAB 1 & 2

Client
Abu Dhabi Gas Industries (GASCO)

Scope of Work
FEED
Tender documents

Location
Abu Dhabi, UAE

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Lanscape
Mechanical
Structural

The project comprised the construction of a new building for the Technical Services Department staff of the Natural Gas Liquid (NGL) extraction facility at ASAB field over a land area of 2,000 m^2. Following the requirements of Shell Department of Environmental Protection regulations, the two-floor rectangular-shaped building has a central skylight at the roof to provide natural light to all offices.

The ground floor comprises an inspection lab with offices for the inspectors, inspection technical assistant, section head, senior engineers, and civil engineers. It also has a process department, planning department, refreshment area, store room, and toilets. Offices are accessed from more than one point and are equipped with egress doors that directly open to the outside of the building. The server and PABX rooms are accessed from a separate secondary entrance. The main electrical and telecom rooms are located at the middle area of the ground floor to easily serve all functions around.

The first floor accommodates offices for HSE, major projects, and short-term contractors, as well as the Shutdown Section and IT Section, along with a documents room, training room, conference room, refreshment area, store room, toilets, electrical room, and AHU mechanical space.

The roof of the building accommodates HVAC equipment, which may be exposed or covered depending on GASCO recommendations.

To maintain a flexible office arrangement, the design has taken the following considerations into account:

- Drywall partitions do not exceed the height of the ceiling.
- The network of trenches is provided within the screed to allow for additional floor boxes in the future.
- Linoleum tile flooring is provided for office spaces to allow easy access.

New Additional Office Building at ASAB 1 & 2

AlMehwar Office Building

Client
AlMehwar for Real Estate Investment, Egypt

Scope of Work
Bases of design report
Design development
Detailed design
Tender documents
Tender action
Construction supervision
Construction management

Location
Smart Village, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

Located in the core of the general layout of the new extension of the Smart Village and with a footprint area of 1,000m2 , AlMehwar office building comprises three basements, a ground floor, and five floors with total built-up area of 11,200m^2.

The building is served by a main ring road crossing the area and a rear ring road connected with the basements for parking lots, electromechanical, archiving and storage rooms.

The building design expresses the power, beauty, simplicity and majesty of the concept of the investment and development in Egypt. Also, the difference in level between the front and Lagoon levels gives a good vision and flexibility of landscape design.

The design is clearly represented in the entrance and the main facade of the building. Using external vertical solid columns in front of glass elevations controls the direct solar radiation while the wide double glass allows the natural lighting. A huge curtain wall cladding covers the building skin with external vertical solid columns until the fourth floor.

The design provides a central area for main elevators, main staircase, toilets, pantry and services to serve all functions as one space. The recessed main entrance with the 2 free vertical columns represent the entrance elevation.

AlMehwar Office Building

Citadel Capital Building

Client
Citadel Capital

Scope of Work
Architect of record

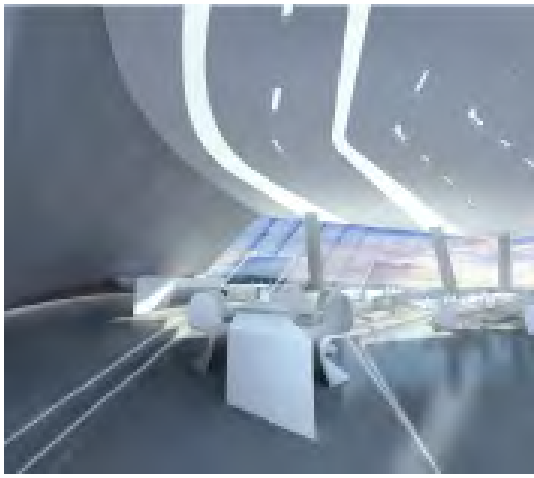
Location
Smart Village, Egypt

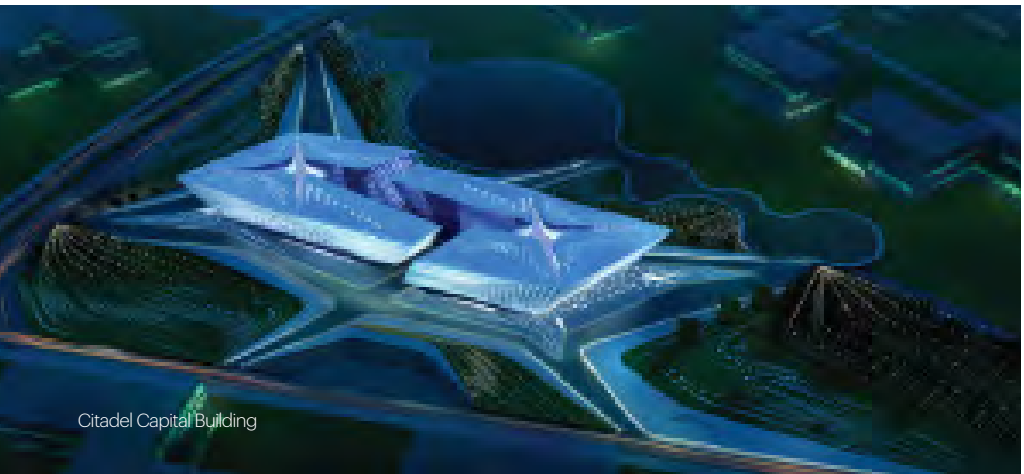
Types of Activities
Architectural
Communications and security systems
Electrical
Mechanical
Structural

In this prestigious project, ECG was keen to seize the opportunity to liaise with some of the world's top consultants, notably Zaha Hadid Architects, to develop the new Citadel Capital Building located in Smart Village, Cairo-Alexandria Desert Road, Cairo, Egypt.

Based on a deconstruction philosophy, the project aimed to sculpt a pyramid via a sunken two-block building emerging from luxuriant landscapes enriched by an artificial lake. As the two building blocks wrapped around an open-air courtyard, the building's base was parametered by an extended, sloped/ perforated slab. The slab functioned as an efficient ventilation cavity for the multi-storey underground car parking serving each building block. It also featured a skylight system to naturally light up recreation areas concentrated in the ground floor area. Recreation areas included an entrance lobby, a visitors' lounge, a cafeteria and dining areas, and a health club.

With a total built-up area of 42,280m^2 , the two building blocks could operate independently of one another and accordingly had independent entrances and exits. Once inside, offices could be operated flexibly either as open plain spaces or partitioned offices. All floors' grand interiors were designed to maximize the amount of light entering the space whilst taking full advantage of the landscaped views witnessed from the interior. To facilitate access to all floors, panoramic lifts with dramatic courtyard views were provided. Meanwhile, top floors enjoyed a blue, star-shaped skylight roof system admitting filtered sunlight throughout the whole building.





Citadel Capital Building

Microsoft Corporation New Office Building

Client
Microsoft

Scope of Work
Concept design
Design development
Detailed design
Tender documents
Tender action
Construction supervision
Construction management

Location
Smart Village, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
Mechanical
Structural

Like many of its global peers, the international information technology firm Microsoft Corporation was keen to plant a strong foothold in the ambitious Smart Village Cairo venture. It opted for a uniquely designed office building with a construction cost of US$ 4,100,000, comprising four floors of office space and two basements reserved for parking. With a gross floor space of 8,000 m^2 , ECG successfully delivered fully flexible, custom-tailored designs to effectively meet specific tenant long-term lease requirements.

Artificial stone plaster and high tech glazing are used in the facade which creates a unique and exciting contrast of materials. Fixed sunscreens and sunshades are used in elevations and above the roof.

A careful study of the sun paths & building orientation during the design developed large aluminum wings suspended in front of the eastern and western elevations, with a certain angle attached to a space truss (designed with photovoltaic panels) above the roof of the building.

Microsoft Corporation New Office Building

Vodafone Headquarters Building

Client
Vodafone Company, Egypt

Scope of Work
Concept design
Design development
Detailed design
Tender documents
Tender action
Construction supervision
Construction management

Location
Smart Village, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

Vodafone Headquarters houses two basements, a ground floor, and a number of typical floors. The design of office spaces is based on a dividable open area concept to suit flexible office space requirements. Artificial stone plaster and high-tech glazing were used in the façade to create a unique and exciting contrast of materials. Moreover, fixed sunscreens and sunshades were adopted in the office building's elevations. A careful study of sun paths and building orientation during the design resulted in the development of three rows of horizontal membranes stretched across steel posts stabilized by a net of vertical, horizontal, and bracing cables.

Vodafone Headquarters Building

Alcatel New Premises

Client
Alcatel, Egypt

Scope of Work
Concept design
Design development
Detailed design
Tender documents
Tender action
Construction supervision
Construction management

Location
Smart Village, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
Mechanical
Structural

Alcatel new premises comprised one basement for parking and services; a ground floor with a main entrance lobby; and typical office floors. The design adopted a dividable open space concept commanding full flexibility and meeting variable office space requirements.

Alcatel New Premises

EFG Hermes New Regional Headquarters

Client
Mace International Ltd, UAE

Scope of Work
Concept design assistance
Design development
Detailed design
LEED coordination
Tender documents
Tender action
Construction management
Construction supervision

Location
Smart Village, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Interior design
Mechanical
Structural

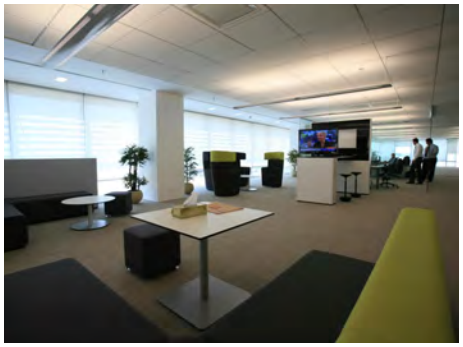
The development accommodates approximately 900 of the group's staff. The 4,000 m^2 footprint building was completed and fully operated in April 2010. It consists of 2 basements, a ground floor, and 3 typical floors with a total built-up area of 28,000 m^2.

The building, located at the far northeastern side of Smart Village, not only breaks the mold of business premises in the region, but also represents a physical manifestation of EFG Hermes' values. The design embodies the company's core values of transparency, dynamism, and drive to be a pioneer and leader in its field of business.

With emphasis on sustainability, the premises were built using environmentally friendly materials. All amenities support EFG Hermes' objective of maintaining a healthy work-life balance for staff by creating superior work and after-hours conditions.

The building layout is split into two halves bordering a 4-floor-high naturally lighted atrium and a main entrance.

EFG Hermes New Regional Headquarters



Communication bridges connecting office spaces pass through the atrium. The open space office layout was designed to allow maximum light into the work area. The ground floor level provides all services required by the staff, including 3 different food outlets with indoor/outdoor eating spaces, a data center (145 m^2) and a well-equipped gym. Office layouts allow for break areas in all floors to encourage social interaction among staff.

Advanced Computer Technology Office Building

Client
Advanced Computer Technology, Egypt

Scope of Work
Concept design
Design development
Detailed design
Tender documents
Tender action
Construction supervision
Construction management

Location
Smart Village, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

With a total built-up area of 8,000 m^2, the Advanced Computer Technology new office building comprises a basement, a ground floor, and three typical floors.

Advanced Computer Technology Office Building

Prime Group Office Building

Client
Prime Group, Egypt

Scope of Work
Concept design
Design development
Detailed design
Tender documents
Tender action
Construction supervision

Location
Smart Village, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

Occupying a total land area of 2,000m^2, the Prime Group office building has a total built-up area of 8,000m^2 . Consisting of two basements, a ground floor, and three typical floors, the building embraces a major conference center, an exhibition center, a business center, an information center, a hotel, hotel apartments, a shopping center, a restaurant, and indoor/outdoor sports and recreation facilities for visitors and employees.

Prime Group Office Building

Commercial International Capital Holding Company Office Building

Client
Commercial International Capital Holding Company

Scope of Work
Concept design
Schematic design
Design development
Detailed design
Tender documents
Tender action
Construction supervision
Construction management

Location
Smart Village, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

With a built-up area of 14,900 m^2, the Commercial International Capital Holding Company office building in Smart Village comprises underground basements, a ground floor, and 3 typical floors.

The design provides a central area for reception, toilets, pantry, services (electrical, communications, janitor, etc.) and facilities for the handicapped. The office module is designed to suit office space requirements, and to ease the division of open spaces in individual offices in various areas. Natural lighting through a wide double glass is implemented. The maximum depth of the working area does not exceed 9 meters.

The main objective adopted in the architectural design was to produce a high-class, functional office building using high-quality exterior and interior finishing material based on the availability and cost-effectiveness in the local market.

Commercial International Capital Holding Company Office Building

Raya Holding Office Building

Client
Raya Holding Company, Egypt

Scope of Work
Concept design
Design development
Detailed design
Tender documents
Tender action
Construction supervision
Construction management

Location
Smart Village, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Landscape
Mechanical
Structural

Raya Holding office building was the first project of the Smart Village program. Occupying a total land area of 1,500m^2 , the building has a total built-up area of 7,500 m^2, consisting of two basements, a ground floor, and three typical floors with a construction cost of EGP 43,222,674.

Raya Holding Office Building

Beltone Financial Office Building

Client
Beltone Financial, Egypt

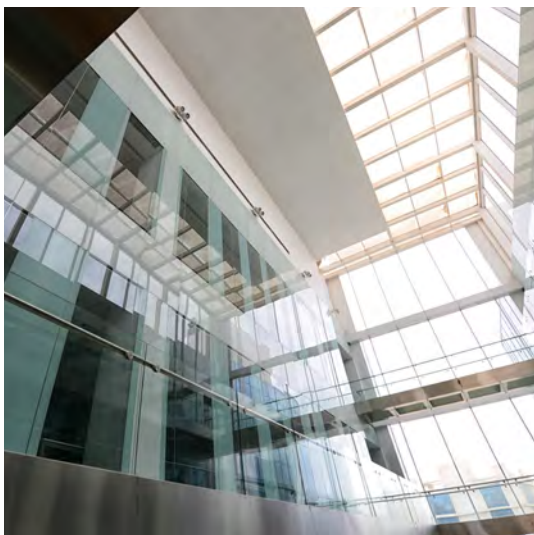
Scope of Work
Concept design
Schematic design
Design development
Detailed design
Construction supervision

Location
Smart Village, Egypt

Types of Activities
Electrical
HVAC
Interior design
Mechanical
Structural

With a built-up area of 13,550 m^2 and a footprint area of 2,550 m^2 , the new office building for Beltone Financial comprises 2 basements, ground floor and 3 typical floors.

Beltone Financial Office Building



HC Securities & Investment Office Building

Client
HC Securities & Investment SAE, Egypt

Scope of Work
Concept design
Schematic design
Design development
Detailed design
Construction supervision

Location
Smart Village, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

Located in the Financial District of Smart Village on a footprint area of 1,500 m^2, the office building of HC Securities & Investment consists of two basements, a ground floor, and three upper floors.

The two basements (1,800 m^2 each) are used for parking. The ground floor and three upper floors are mainly designated for office spaces. The building also includes a data center occupying an area of 44 m^2.

HC Securities & Investment Office Building

Xceed Call Center Building

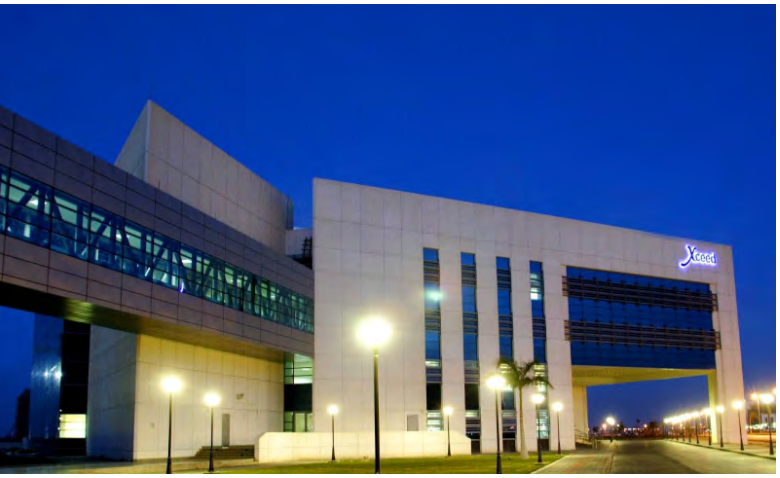
Client
Smart Villages Company (SVC), Egypt

Scope of Work
Master plan
Conceptual design
Detailed design
Tender documents
Tender action
Construction management
Construction supervision

Location
Smart Village, Egypt

Types of Activities
Architectural
Electrical
Communication & security systems
Mechanical
Structural
Urban design

With a total built-up area of 31,500 m^2, Xceed Call Center lies within the complex of the Ministry of Communications & Information Technology in Smart Village. The development consists of a basement, ground floor, and three upper floors. It is split into two buildings with a shared basement: call center building and IT Building. The basement comprises a data center (650 m^2), including an equipment area, voice system room, staging and testing room, and control and store rooms, in addition to office spaces. It also includes a parking area and rooms for drivers, equipment, and air-conditioning, communications, electrical, and mechanical systems.



Xceed Call Center Building

e-finance Office Building

Client
e-finance

Scope of Work
Concept design
Schematic design
Bases of Design Report
Detailed design
Tender documents
Tender action
Construction supervision

Location
Smart Village, Egypt

Types of Activities
Architectural
Communication & security systems
Electrical
HVAC
Interior design
Infrastructure
Landscape
Mechanical
Structural

e-finance picked "Smart Village" as a distinguished location for its new premises. With a plot area of 1,200m^2 and a total built-up area of 10,500m^2 , the building consists of a ground floor, 3 typical floors each 1,200m^2 , 3-level basement, each 1,900m^2 ; level 1 and 2 are allocated for a parking area with capacity up to 80 cars. Overlooking Smart Village club, e-finance accommodates many facilities: data center, IT rooms, board rooms, meeting rooms, office spaces, cafeteria and prayer room in addition to outer parking space for 28 cars.

ECG encountered a challenge to create a unique design that reflects e-finance's identity and power in today's competitive market; using a sleek and high tech approach that carries out the main theme of "Smart Village" and adds character through bold colors and incorporation of different materials like metal and glass with the beneficial factors of energy saving and cost efficient solutions.

The design of the office space was based on a dividable open space planning concept to suit the office space requirements. For the maximum view enjoyment, most of the building services are located in the core, while office areas are near the glazed elevations. Using louvers and huge glass panels in the elevations inject light into the building; providing a convenient atmosphere for work and innovation. High partitions to ceiling had been used to separate offices in order to achieve privacy and sound control.

The landscape design of e-finance matches the whole modern theme of "Smart Village". A simple landscape design that combines softscape elements with hardscape materials was used. The main entrance plaza of the building is characterized by a row of palm trees on both sides with water features in the middle.

Capital Market Authority Office Building

Client
Capital Market Authority

Scope of Work
Concept design
Design development
Detailed design
Tender documents
Tender action
Construction supervision

Location
Smart Village, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

The project comprised the construction of the Capital Market Office Building in the financial district, Smart Village. With a built-up area of 14,000m^2 , the building consists of two basements and 2 blocks, each block consists of ground & 3 floors (3,000m^2 each). The office building includes a data center occupying an area of 932m^2.

Capital Market Authority Office Building

ECG Premises in Smart Village (B17)

Location
Smart Village, Egypt

Scope of Work
Concept design
Design development
Detailed design
Tender documents
Tender action
Construction management
Construction supervision

Types of Activities
Architectural
Communications and security systems
Electrical
Mechanical
Structural

The new premises of ECG Engineering Consultants Group in Smart Village (B17) were inaugurated in 2009. The building also accommodates TEA Computers.

With a total built-up area (BUA) of 11,000m^2, the building comprises the following components:

- 2-floor basement (BUA 3,000m^2): parking area (153 cars) and utilities;
- Ground floor (BUA 2,000m^2): main reception area, offices and services;
- First, second and third floors (BUA 6,000m^2): office spaces, in addition to elevator lobby, reception area, prayer rooms, meeting rooms, and services.

The main objective adopted in the architectural design was to put up a functional, landmark office building equipped with high-quality exterior and interior finishing materials.

ECG Premises in Smart Village (B17)

ECG Premises in Smart Village (F16)

Location
Smart Village, Egypt

In November 2014, ECG Engineering Consultants Group acquired and rehabilitated an additional building (F16) to its premises in Smart Village. The building, designed to suit office space requirements, accommodates open spaces divided into individual offices and workstations.

With artificial stone plaster and high-tech glazing, the glass-fronted facade features a unique, vivid contrast allowing for natural lighting and providing a work environment convenient for innovation.

With a total built-up area of 6,168m^2 , the new building comprises the following components:

- 2-floor basement: parking area and utilities;
- Ground floor: reception area, elevator lobby, office space divided into workstations, administrative offices, prayer rooms and services; and
- 3 upper floors: elevator lobby, office space divided into workstations, administrative rooms, meeting rooms, prayer rooms and services.

Due to the expansion of business, ECG is set to relocate a significant portion of its work force to the additional building, which accommodates about 450 employees.

The two-phase relocation process had its first phase completed in November 2014. The second phase is scheduled during 2015.

ECG Premises in Smart Village (F16)

AlJazeera Arabic Channel Building Extension

Client
Perkins Eastman

Scope of Work
Bases of Design of Report
Detailed Design
Tender Documents
Tender Action
Construction Supervision

Location
Doha, Qatar

Types of Activities
Architectural
Electrical
HVAC
Mechanical
Structural

The project is an extension to the currently operating Al Jazeera Arabic Channel Office Building. The extension building is attached to the existing building, which already includes a studio and rooms for news operations.

The extension's total built-up area is 6,150 m^2 distributed over three floors as follows:

- ground floor (2,750 m^2): newsrooms, studios, editing rooms, offices, VIP lounge, and service facilities
- first floor (1,400 m^2): offices, meeting and conference rooms, and services facilities
- second floor (2,000 m^2): office spaces, meeting rooms, and service facilities

The structural system adopted for the extension was selected to sustain all the vertical and lateral loads applied, with a considerable safety factor. Design services were provided for all MEP works, including pipe sizing, HVAC ducting, and electrical cabling.

AlJazeera Arabic Channel Building Extension

Manateq Headquarters in Ras Bufontas

Client
Habtoor Leighton Group

Scope of Work
Design review
Schematic design
Detailed design

Location
Doha, Qatar

Types of Activities
Architectural
Interior design
MEP
Structural

Manateq is the master developer and operator of specialized economic zones, logistic parks, and warehousing parks in Qatar. Manateq Headquarters at Qatar Economic Zone 1 (QEZ-1) plays a major role in the development of the economic zone and Ras Bufontas area at large. It serves as a one-stop shop for investors in relation to a range of operations, including marketing, sales, permitting, licensing, and other support functions.

The building maintains the highest technical, functional, operational, and aesthetic standards, with state-of-the-art facilities and services. This comes in line with Manateq's requirements of efficient, sustainable, and ongoing operation and maintenance.

Over a land area of 23,000 m² and with a built-up area of 35,000 m², the building consists of four wings enclosing an internal yard. The four wings are interconnected by pedestrian bridges and rise above a lower ground floor that includes 270 parking slots, technical spaces, and other building amenities.

Each building wing consists of a ground floor, four upper floors, and a roof:

- ground floor: lobbies, reception area, offices, prayer rooms, kitchen, gym, pantries, toilets, and utilities
- four upper floors: waiting area, offices, meeting rooms, and audiovisual room
- roof: open gardens and utilities

The upper floors of Wing 1 and Wing 4 are designed on a shell-and-core basis.

An external area features piazzas, gardens, ramps, surface car parks, and a drop-off. A technical yard is located in an adjacent parcel owned by Manateq. The yard provides electric power and chilled water to the building to keep it fully operational until QEZ-1 infrastructure networks are in service.

Manateq Headquarters in Ras Bufontas

IKEA Store at Cairo Festival City

Client
Al-Futtaim Group Real Estate

Scope of Work
Initial studies
Design review
Architect/Engineer of Record
Coordinating architectural, structural, and MEP requirements with CFM
Construction management
Construction supervision

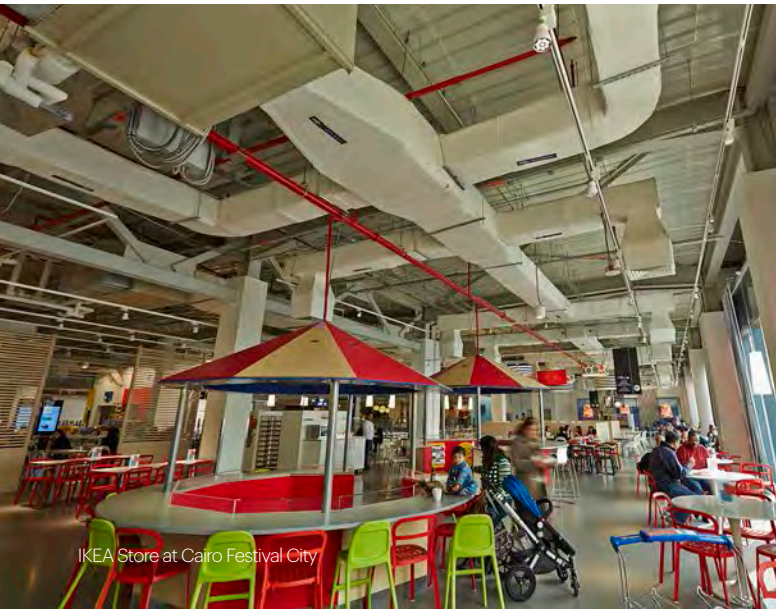
Location
Cairo Festival City, New Cairo, Egypt

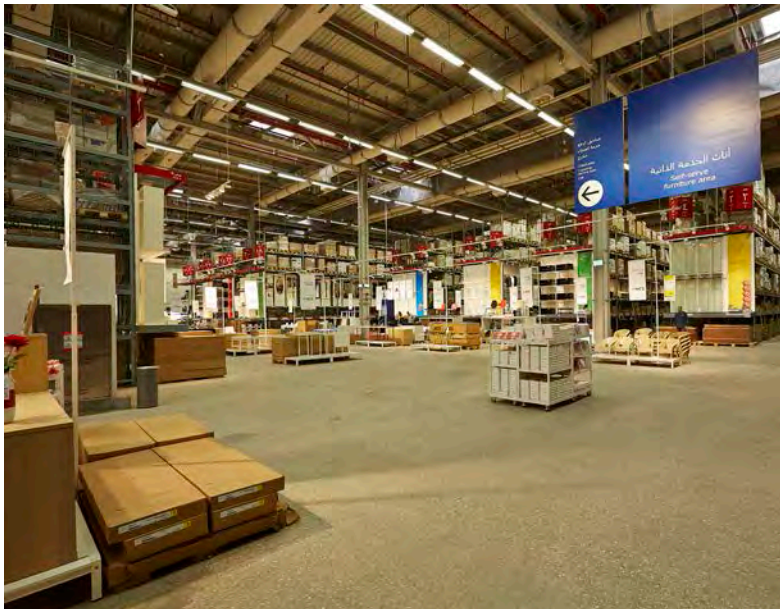
Types of Activities
Architectural
MEP
Structural

IKEA, the world's largest furniture retailer, is a Swedish company that designs and sells ready-to-assemble furniture, appliances, and home accessories. In 2013, Al-Futtaim Group opened the first IKEA store in Egypt at Cairo Festival City (CFC). Wrapped in IKEA's distinctive blue and yellow brand colors, the store stands as an iconic landmark within the commercial complex.

As the lead consultant of CFC, ECG studied a range of design parameters and developed a group of solutions to blend IKEA's standard layout with the mall. These aspects included the approach, visibility, utilities, structural loads, structural grid, circulation, and connectivity.

The store's main building comprises two floors with a built-up area of 30,000 m^2. The area is divided into a series of interconnected departments leading to one another, with an attached double-height hall containing a self-serve furniture area. There is also a three-floor parking structure with a built-up area of around 60,000 m^2, which brings the total built-up area to approximately 90,000 m^2.


IKEA Store at Cairo Festival City



Residential Buildings

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Labor Accommodation Complex "Village" (Phase 3) In King Abdullah Economic City

Client
Emaar Economic City

Scope of Work
Construction Supervision

Location
King Abdulla Economic City (KAEC), KSA

Types of Activities
Architectural
Civil
Communications and Security Systems
Electrical
HVAC
Landscaping
Mechanical
Roads
Structural

The Labor Accommodation Complex (known as the "Village") stretches over a plot area of 48,450 m^2 within the Industrial Valley (Phase 1A) of King Abdullah Economic City. With a total built-up area of 63,869 m^2, the complex is designed to meet the growing demand for labor and staff accommodation buildings for the Industrial Valley and King Abdullah Port. Phase 3, which is the final phase of the complex, provides accommodation for an additional 2,458 residents.

It comprises several components as follows:

- Four regular accommodations buildings (G + 4) with a capacity of 1,984 beds.
- Three senior accommodation buildings (G + 3) with a capacity of 496 beds.
- Associated roads, paving, and service infrastructure.
- Landscaped park and greenery.

Labor Accommodation Complex "Village" (Phase 3) In King Abdullah Economic City

Tower Bay Complex (Buildings & Infrastructure)

Client
Tower Developments

Scope of Work
Basis of design report
Detailed design
Design permits
Tender documents
Tender action
Construction documents

Location
West of Port Said, Egypt

Types of Activities
Communication & Security Systems
Electrical
HVAC
Infrastructure
Mechanical
Structural
Roads
Urban

Tower Bay is a distinctive project by "Tower Developments", the renowned real estate developer. The unique location introduces a renewed philosophy of life that captures all the blessings of living by the sea. The result is a comprehensive understanding of the function of this project, where all layers of modern life are accommodated. The gross area of the project is 52,000 sqm.

The residential complex, located 20 km west of Port Said city, includes 3,200 residential units. This project covers Phase 1 buildings, along with the infrastructure and road networks for the entire complex area. The buildings include sixteen Type B buildings (comprising three floors with three apartments on each); five Type C buildings (duplex villas with sea view); and a new studio building type, for private developers expanding their business horizon. Work also covers a sewage treatment plant and an electrical substation, in addition to the Beach Club, which would allow for the expression and appreciation of all kinds of life style, and a smartly planned, dense, and vibrant mixed-use area serving the whole project.

Tower Bay Complex (Buildings & Infrastructure)

NEWGIZA Westridge Residential Units

Client
NEWGIZA for Real Estate and Development

Main Consultant
NGDS Architects

Scope of Work
Conceptual design
Design development
Detailed design
Value Engineering
Cost estimation

Location
Giza, Egypt

Types of Activities
Communications and security systems
Electrical
HVAC
Mechanical
Structural

Westridge is a neighborhood of NEWGIZA, the upscale residential compound located on Cairo-Alexandria Desert Road (Kilometer 22), only 6 km away from the Grand Egyptian Museum.

This project covers the residential units included within the Westridge Neighborhood whose design features a high level of elegance, seclusion, and connection to nature. The neighborhood stretches over a total plot area of 531,987 m^2. It contains a variety of residential units with a total built-up area of 211,516 m^2:

- RB09 Apartment Buildings (each with a built-up area of 3,225 m^2)
- RB10 Apartment Buildings with lakeside views (each with a built-up area of 1,543 m^2)
- Rock A RB11 Apartment Buildings (with a built-up area of 1,592 m^2)
- RT08 Two-Unit Townhouse Blocks (with a total built-up area of 610 m^2)
- RT08 Four-Unit Townhouse Blocks (with a total built-up area of 1,220 m^2)
- RT09 Two-Unit Townhouse Blocks (with a total built-up area of 680 m^2)
- RT09 Four-Unit Townhouse Blocks (with a total built-up area of 1,360 m^2)
- RT10 Two-Unit Townhouse Blocks (each with a built-up area of 750 m^2)
- RT10 Four-Unit Townhouse Blocks (each with a built-up area of 1,500 m^2)
- RT11 Lofts (each with a built-up area of 355 m^2)

NEWGIZA Amberville Residential District

Client
NEWGIZA for Real Estate and Development

Scope of Work
Schematic design
Design development
Tender action
Tender documents

Location
Giza, Egypt

Types of Activities
Civil works
Communications and security systems
Electrical
HVAC
Mechanical
Structural

Perched high above Cairo, with impressive vistas of the Pyramids of Giza and the city beyond, Newgiza is located on Cairo-Alexandria Desert Road (Kilometer 22).

With a total built-up area of 281,329 m^2, Amberville (Newgiza's Neighborhood 7) includes 41 buildings designed to overlook a splendid backdrop of open spaced landscapes, including a golf course, scenic lakes, and public gardens.

The residential units included in the neighborhood are as follows:

- RB-12 (with a total built-up area of 6,109 m^2)
- RB-13 (with a total built-up area of 6,137 m^2)
- RB-18 (with a total built-up area of 4,834 m^2)
- RB-19 (with a total built-up area of 5,014 m^2)
- RB-20 (with a total built-up area of 5,535 m^2)

Real Estate Services for Qatar Railways: Umm Ghuwailina and Al-Mansoura Sites

Client
Qatar Railways Company (Qatar Rail)

Scope of Work
Feasibility study
Market analyses
Topographic surveys
Geotechnical surveys
Environmental studies
Traffic impact study
Conceptual design
Preliminary design
Design permits
Detailed design
BIM
Tender documents
Construction supervision

Location
Doha, Qatar

Types of Activities
Architectural
Electrical
Landscaping
Mechanical
Structural
Urban design

The overall rail transport project of Doha Metro stresses the importance of land development around each station, thus offering a unique opportunity for future growth in the most coordinated and effective way possible. By planning for the development associated with transit, Qatar Rail significantly contributes to a vibrant future for the city of Doha. Not only will new developments and communities centered on transit be attractive and desirable places for living, working, and recreation, but they will also serve as generators of social and economic development in the areas surrounding them.

This project, implemented jointly with TYPSA, covers the infrastructure of the residential areas surrounding two main stations of Doha Metro: Umm Ghuwailina and Al-Mansoura. Perkins Eastman Architects (New York, USA) is appointed as subconsultant for architectural design during the master-planning and schematic design phases. KPMG Qatar is appointed as project developer in relation to market research and financial studies.

Umm Ghuwailina Green Urban Axis

The master plan of Umm Ghuwailina Green Urban Axis proposes a gross floor area of 898,030 m^2. It comprises a wide range of programs, including a large area designated for mixed-use purposes (apartments, serviced apartments, mall, retail, offices, school and kindergarten, specialty hospital, and hotels). Located in downtown Doha, the site overlooks Doha Metro Red Line. A complete neighborhood is envisioned around a system of streets and blocks, with pedestrian walkways providing important connections, as well as a number of office buildings interconnected with air-conditioned pedestrian bridges. Outdoor spaces (in the form of a green pedestrian axis) consociate with courtyards in close proximity to residential units. For Qatar Rail future developments, this is the second largest site area and the second largest program in the master-planning document.

Al-Mansoura Smart Living Neighborhood

Al-Mansoura is the southernmost stop on the Doha Metro Green Line, with Musheireb being the next stop. The master plan of Al-Mansoura Smart Living Neighborhood proposes a gross floor area of 96,559 m^2. It comprises residential buildings, hotel-serviced apartments, retail units, and offices. Linking two station entrances, the site is envisioned as residential towers overtopping commercial bases in such a way that forms a vibrant pedestrian realm connected to the surrounding urban fabric.

Citystars Al-Sahel

Client
Al Arabia Real Estate Development Co.

Scope of Work
Construction supervision

Location
North Coast, Egypt

Types of Activities
Architectural
Communications and community service
Electrical
HVAC
Landscaping
Mechanical
Structural

City Stars Al-Sahel is located 195 km west of Alexandria, on Alexandria-Matruh coastline, 30-minutes away from El Alamein International Airport. Spreading over an area of 1,864,800 m^2 (444 feddans), the project features residential areas, including villas, twin houses, chalets, and apartments; as well as luxury hotels; shopping malls; and recreational areas.

Phase 1 is located in Platform (G) on the western part of the project over an area of 84,000 m^2 (20 feddans), comprising 28 buildings with total built-up area of 42,340 m^2 as follows:

- **Apartments type AP (G+3):** 168 units in 12 buildings. Each building comprises 4 apartments in the ground, first, and second floors and 2 apartments in the third, with an area of 640 m^2 per floor.
- **Apartment type TC (G+2):** 56 units in 14 buildings. Each building comprises 2 apartments in each floor, with an area of 455 m^2 per floor.
- **Duplex apartments TH:** 8 units in 2 buildings, with a BUA of 500 m^2 per floor.

Citystars Al-Sahel

Petroleum Institute Villas

Client
Abu Dhabi National Oil Company, UAE

Scope of Work
Master plan
Concept design

Location
Sas AlNakhl, Abu Dhabi, UAE

Types of Activities
Architectural
Landscaping

The project is part of the Petroleum Institute (PI) campus in Sas El Nakhl, Abu Dhabi comprising the following:

- Seven individual (3 bedrooms and 1 guest room) family villas for senior staff with off-street covered garages.
- One (3 bedrooms and guest room) family villa for the president.
- Residents' club incorporating swimming pool, playground, community rooms, pool side restaurant and barbecue area.
- Landscape and car park.

Petroleum Institute Villas

Residential, Leisure and Commercial Compound

Client
Private Property Management

Scope of Work
Detailed design
Construction supervision

Location
Abu Dhabi, UAE

Types of Activities
Architectural
Communications and security systems
Electrical
Landscape
HVAC
Mechanical
Structural

Set adjacent to the Abu Dhabi Shooting Club, the residential, leisure & commercial compound extends over a total plot area of 240,000 m^2. It comprises 385 villas of 6 different types (ground and 2 floors); 8 residential buildings (basement, ground and 7 floors) hosting 532 apartments; a recreation centre unfolding a mosque, a gym, retail shops, a bowling centre, and other entertainment facilities. Moreover, the project incorporates a hypermarket with a total built-up area of 3,965 m^2. The project's total construction cost stood at US$ 449 million.

Residential, Leisure and Commercial Compound

Andalusia Collection at Dubai Land

Client
National Properties, UAE

Scope of Work
Design review
Construction supervision

Location
Dubai, UAE

Types of Activities
Architectural
Electrical
HVAC
Mechanical
Structural

Embracing the Spanish theme that defines neighboring area, the Andalusia villa collection reflects the historical link between the people of the Middle East and the famous Spanish region Andalusia – a name that is derived from the Arabic word "Al Andalus".

With a total built-up area of 55,000m^2, the Andalusia collection is located within the villa residential area in Dubai Land, conveniently near the Global village. The project consists of 69 luxurious villas; each features 5-6 bedrooms, 1 large Majlis, 2 living rooms, middle courtyard and a swimming pool.

The villa collection is divided into three types as follows:

- **Diamante:** 31 villas (with a built-up area of 8,300ft^2 and plot areas ranging from 15,300 to 30,300ft^2).
- **Zafiro**: 17 villas (with a built-up area of 8,000ft^2 and plot areas ranging from 14,400 to 17,600ft^2).
- **Perla:** 21 villas (with a built-up area of 7,000ft^2 and plot areas ranging from 12,000 to 22,000ft^2).

Capital Bay C

Client
DAMAC Star Properties LLC

Scope of Work
Design development
Detailed design
Construction supervision

Location
Dubai, UAE

Types of Activities
Architectural
Structural

With a total built-up area of 22,000m^2, the 60-metre high tower of "Capital Bay C" is located in Dubai's Business Bay. The tower comprises 144 hotel serviced apartments, encompassing the following components:

- Ground floor: includes a retail area (162m^2) facing the walkway and a main restaurant (166m^2).
- 3-level podium: for parking area with the capacity of 147 vehicles. The podium roof is an open landscaped sitting area.
- 12 typical floors: for 144 serviced apartments divided into 3 types of units:
  - Studios: a total of 47 units, served by 32 parking lots.
  - Two-bedroom apartments: a total of 48 units, served by 50 parking lots.
  - One-bedroom apartments: a total of 48 units, served by 33 parking lots.
- There are also 32 parking spaces provided for the visitors and the retail area.

This design of the tower is in compliance with the requirements of Dubai Department of Tourism Commerce and Marketing (DTCM) for deluxe hotel serviced apartments.


Capital Bay C

La Fontaine Compound

Client
Al-Arabia for Real Estate Development Company (ARDCO)

Scope of Work
Master plan
Conceptual design
Schematic design
Detailed design
Design development
Tender documents

Location
New Cairo, Egypt

Types of Activities
Architectural
Communications & Security Systems
Electrical
HVAC
Infrastructure
Landscape
Mechanical
Roads
Structural
Urban Design

La Fontaine project is an elite residential compound located in the extension of Tamr Henna District in New Cairo, Egypt. On a land plot area of about 142,800 m^2, the project comprises residential units, entertainment and service facilities, and a shared basement parking below every set of apartment blocks as follow:

Residential Units (Townhouses & Apartment Blocks)

- Two types of apartment buildings with an underground parking accommodating two cars per apartment as follows:
  12 Type A units (G+3), with a footprint area of 955 m^2.
  15 Type B units (G+3), with a footprint area of 700 m^2.
- Six types of townhouses as follows:
  Four-Block Townhouses: include four units (G+1), with a footprint of 380 m^2 per unit.
  Five-Block Townhouses: include five units (G+1), with a footprint 475 m^2 per unit.
  Six-Block Townhouses: include six units (G+1), with a footprint 570 m^2 per unit.

Entertainment & Service Facilities: The entire compound is designed as a social hub, including the following:

- Main Clubhouse Building, including social activities (lounge, themed restaurant, billiards room, and library)
- Admin. and Retail building
- Fence & Gates

La Fontaine Compound

Infrastructure works include preparing detailed designs for the following:

- **Potable Water Supply Network** from the municipality pipeline, feeding the combined water & firefighting local tank (1,600 m^3).
- **Water Distribution Network** feeding the different project buildings, using pipes with a total length of 4,000 m, and diameters ranging between 32-200 mm.
- **Firefighting Loop Network** feeding and externally protecting the different project buildings through the storage tank pumping station, using pipes with an average length of 1,500 m and diameters ranging between 160-250 mm.
- **Gravity Collection System** using pipes with an average length of 3,400 m and diameters ranging between 160-500 mm.
- **Surface Water Collection System** from different catchment areas, including paved roads and parking areas. Catchment is collected by gravity through grate inlet catch basins and drained into the gravity collection system.
- **Irrigation Water Supply System** from the municipality pipeline, feeding the local irrigation tank (550 m^3).
- **Irrigation Loop Networks** for landscaped areas and streetscape turfs, using pipes with an average length of 17,650 m and diameters ranging between 32-160 mm.
- **Solid Waste Collection System.**

Al waha Village 1 - Phase 2

Client
EMAAR

Scope of Work
Master plan & landscape design
Detailed design
Tender documents
Tender action
Construction supervision

Location
King Abdulla Economic City (KAEC), KSA

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Infrastructure and storm drainage networks
Irrigation system
Interior design
Landscape
Light current
Mechanical and firefighting system networks
Roads
Urban design

ALWAHA Village is one of the first residential communities developed in King Abdullah Economic City (KAEC) under the auspices of the Saudi Arabian General Investment Authority (SAGIA) and the Economic City Authority. ECG just completed the design and the project is in tender stage.

Using Revit BIM package throughout the design process, the design concept of ALWAHA Village adopts various architectural styles (Arabian, Italian, Moroccan and Spanish) in four types of housing units and a community centre.

With a total land area of 380,000m^2, ALWAHA V1-P2 comprises 1,009 housing units accommodating 5,300 residents scattered over 505 attached and detached buildings.

- **Apartment Buildings** - 12 detached buildings: Italian and Spanish style (G+2+roof); ranging between studios, one and two-bedroom apartments. Each building accommodates 43 units totaling approximately 516 units.
- **Townhouses** - one building: Moroccan style (G+2+roof), accommodating 12 attached units.
- **Paired Houses** - 190 attached buildings: Arabian, Italian, Moroccan and Spanish style (G+1+roof) with a total of 380 units.
- **Villas** - 101 detached units: Arabian, Italian, Moroccan and Spanish style (G+2+roof).
- **Community Centre:** one Spanish-style building, providing leisure and social services through restaurants and play areas.


Al waha Village 1 - Phase 2

Al-Waha Village 1 - Phase 1

Client
Emaar, The Economic City

Scope of Work
Infrastructure networks concept design
Schematic design
Detailed design
Tender documents
Tender action
Construction supervision

Location
Rabigh (close to Jeddah), Saudi Arabia

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Infrastructure and storm drainage networks
Irrigation system
Landscape
Light current
Mechanical and firefighting system networks
Roads

Al-Waha Village is one of the first residential communities developed in King Abdullah Economic City (KAEC) under the auspices of the Saudi Arabian General Investment Authority (SAGIA) and the Economic City Authority. Phase (1) is expected to be constructed by November 2015.

Using Revit BIM package throughout the design process, the design concept of Al-Waha Village adopts various architectural styles (Arabian, Italian, Moroccan and Spanish) in four types of housing units and a community centre. The project includes internal asphalt roads (5,500 m long with carriageway of 15 m width).

With a total land area of 214,000 m^2, Al-Waha V1-P1 comprises 608 housing units accommodating 3,000 residents scattered over 230 attached and detached buildings as follows:

- Apartment Buildings - 10 detached buildings: Italian and Spanish style (G+2+roof); ranging between studios, one and two-bedroom apartments. Each building accommodates either 37 or 43 units totaling approximately 388 units.
- Townhouses - 12 detached buildings: Moroccan and Spanish style (G+2+roof). Each building accommodates 12 attached units with a total of 144 units.
- Paired Houses - 23 attached buildings in two groups: Arabian, Italian, Moroccan and Spanish style (G+1+roof) with a total of 46 units.
- Villas - 30 detached units: Arabian, Italian, Moroccan and Spanish style (G+2+roof).
- Community Centre: one Spanish-style building, providing leisure and social services through restaurants and play areas.


Al-Waha Village 1 - Phase 1

Retail

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Souq 7 Development

Client
DLR Group Middle East

Scope of Work
Conceptual Design (MEP)
Schematic Design
Detailed Design
Tender Documents

Location
Jeddah, Saudi Arabia

Types of Activities
Architectural
Civil
Communication & Security Systems
Electrical
HVAC
Mechanical
Landscaping
Structural

Souq 7 is a retail-focused Urban Regeneration project to re-develop a 198-feddan district of southern Jeddah. With a total plot area of 764,460 m^2, total BUA of 362,876 m^2, and a total footprint area of 282,601 m^2; the project comprises 106 blocks, in addition to a variety of commercial markets (total of 8 zones) including a food market, traditional market, furniture area, auction area, entertainment area, building materials area, auto-cars area, and food & beverages, and restaurants. The project is to be implemented according the concept of old K7 markets.

ECG scope of work includes preparing a design guideline document for the overall architectural development of the investor / third party developer buildings.

A tenant guideline package describing the architectural, landscape, and signage guidelines also include a description of exterior materials usage. The package is to be prepared according to the buildings' typology; not for each block. In addition, a complete set of working drawings for eight building blocks is to be delivered.

Souq 7 Development

Al-Rehab Phase 9 Mall

Client
Talaat Mostafa Group

Scope of Work
Conceptual design
Schematic design
Detailed design
Permits documents
Construction documents

Location
New Cairo, Egypt

Types of Activities
Architectural
Communication & Security Systems
Electrical
HVAC
Interior design
Landscaping
Mechanical
Piping
Roads
Structural

The Arab Company for Projects & Urban Development intends to build a new commercial mall at Al-Rehab City's Phase 9, to serve the residential community.

The project is located on a net land area of 21,000 m^2, where the buildings will consist of ground, first, and second floors.

The ground floor features the commercial space with an area of 6,350 m^2, which comprises a supermarket, banks, furniture and general retail shops, food & beverage outlets, and two pharmacies; and the lower level includes a 18,500 m^2 parking lot accommodating 320 cars.

The 1st and 2nd floors include clinics with an average area of 35 m^2, an X-Ray room of 400 m^2, and a laboratory with an area of 400 m^2.

Al-Rehab Phase 9 Mall

Al-Kattameya Mall

Client
MARAKEZ

Scope of Work
Technical advisory
Schematic design
BODR
Design development
Tender action
Construction documents

Location
Cairo – Al-Ain Al-Sokhna Road, Egypt

Types of Activities
Architectural
Communications & Security Systems
Electrical
HVAC
Infrastructure
Landscape
Mechanical
Roads
Structure
Urban

Al-Kattameya Mall project is located on the Cairo–Al-Ain Al-Sokhna Road, on a land area of 100 feddans, with a total built-up area of about 420,000 m^2.

Stretching over a land area of 280,000 m^2, the project's first phase comprises: a mall building with a built-up area of 70,667 m^2 and a footprint of 70,667 m^2; utility building with a built-up area of 2015 m^2 and a footprint of 2015 m^2; and ancillary buildings, based on an adaptation of the final package of the Mohammed bin Zayed Mall to be adapted for B01 – Mall. As for the ancillary building, the scope is considered to be shell-and-core.

Sultan Crystal

Client
Assaudia Real Estate Development Company (SREDCO)

Scope of Work
Conceptual design
Schematic design
Detailed design
Tender documents
Construction documents

Location
Jeddah, Saudi Arabia

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Infrastructure
Interior design
Landscaping
Mechanical
Roads
Structural

Sultan Crystal is a retail center developed to meet the growing demand for lifestyle destinations in Saudi Arabia. The project site overlooks Jeddah's Prince Sultan Street at a close distance from various city landmarks, including King Abdul Aziz International Airport, King Abdul Aziz University, Makkah Gate, and Jeddah City Center.

The total site area is estimated at 5,800 m^2, with a total area of 4,250 m^2 is designated for indoor spaces, and a total area of 1,550 m^2 for outdoor spaces and terraces.

The mall is set to be home to casual dining restaurants (65% of the total leasable area), fine dining restaurants (16% of the total leasable area), and cafés & bakeries (19% of the total leasable area).

The retail center comprises the following levels:
- **ground floor & mezzanine:** café, bakery, steakhouse, fast-food (burger) restaurant, Italian cuisine restaurant, Japanese (Sushi) restaurant, and Saudi/Turkish cuisine restaurant
- **first floor:** Lebanese cuisine restaurant, international cuisine restaurant, and Korean cuisine restaurant

The project covers the following infrastructure works:
- **Water:** Connection to existing potable water pipeline.
- **Sewage:** Connecting the Project outfall to the existing sewer line through one, single manhole. Including a cast-in-situ reinforced concrete water-sealed tank, with a reinforced concrete cover slab, classified according to dimensions and depth, as indicated on drawings.
- **Irrigation:** Works include supply and installation of uPVC pressure pipes used for irrigation water, valves, and irrigation equipment.

Sultan Crystal

Al-Rehab Shopping Centre - Phase 5

Client
Talaat Moustafa Group

Scope of Work
Conceptual design
Schematic design
Design development
Detailed design
Tender documents

Location
El Rehab, Cairo, Egypt

Types of Activities
Architecture
Civil works
Communications and security systems
Electrical
HVAC
Interior design
Landscape
Mechanical
Structure
Urban planning

The new shopping centre is located in Al Rehab City (phase 5) with a plot area of 25,087 m^2, and a built-up area of 16,050 m^2, surrounded by the intersection of 2 main roads; Othman Ibn Effan and Talaat Mostafa and wrapped by a secondary backwards street. The project is located in the centre of residential buildings and serves both residential phases number 4 and 5.

The shopping centre comprises retail shops, fast food restaurants, restaurants located on multi storeys along with open terraces and shaded terraces, rentable office spaces, showroom, hypermarket, banks, service area and parking.

The main objective of the design is to reflect high technology, yet functional, energy saving and with the luxury of convenient maintenance. Careful concern is given for the elderly and handicapped. Entrances to the site are positioned to provide convenient pedestrian access from the parking area around the shopping center.

Service yards and roads are provided, distributed along the shopping center external facades to serve the retails, restaurants and food court, in addition to the main banks areas, show room and the super market. ECG used Revit BIM Package throughout the design process.

AlHofuf Mall

Client
Fawaz Abdulaziz AlHokair Real Estate, KSA

Scope of Work
Basis of design report
Design development
Detailed design
Tender documents

Location
AlHofuf, Kingdom of Saudi Arabia

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

Extending over a total plot area of 131,400 m^2, AlHofuf Mall is one of the largest shopping/retail centres located in AlHofuf city, Saudi Arabia.

The project covers a built-up area of 67,400 m^2 and integrates 230 in-line retail units, a hypermarket, an entertainment area, a food court, and an external car park accommodating 1,570 vehicles.

AlHofuf Mall

Cairo Festival City

Client
Al-Futtaim Group Real Estate (AFGRE)

Scope of Work
Concept design
(except architecture and landscape)
Schematic design
Design development
Detailed design
Tender documents
Construction management
Construction supervision

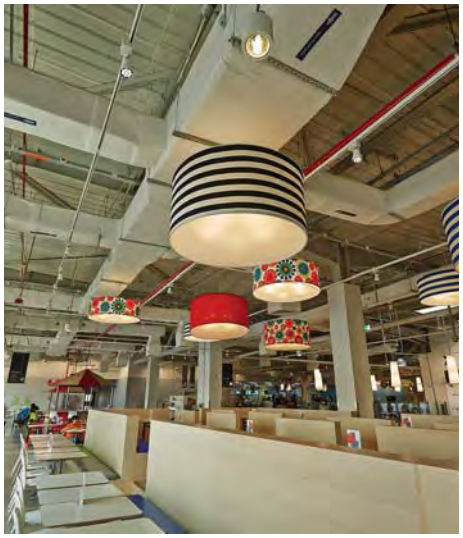
Location
New Cairo, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Interior design
Mechanical
Structural

Spanning a total land area over 2,923,956 m^2, Cairo Festival City (CFC) is the most prominent mixed-use development in Egypt, strategically located at the gateway to New Cairo. CFC sets new standards as Egypt's premier indoor-outdoor shopping, educational and entertainment destination. The development also provides luxurious residential villas and prime office spaces. All components are set within a beautifully landscaped and tranquil environment. The project is composed of Cairo Festival City Mall, Retail Village, KidZania building and Oriana villas. It is also designed to allow additional area of 80,000 m^2 for retail space expansion.

CFC Mall is a major regional retail shopping center with 222,130 m^2 leasable areas, anchored by the international brands of IKEA, Marks & Spencer, Zara, Debenhams, H & M, along with Carrefour hypermarket, cinema complex (17 screens), foodcourt units (18), in addition to a wide variety of shops (117). All served by over 7,000 parking spaces.

Cairo Festival City



The second facet of CFC is the Retail Village that surrounds a superbly romantic lake with a dancing fountain. The Village comprises ten buildings, accommodating 51 restaurants and cafes. There is an exciting outdoor palm tree-lined promenade with 24 shops and boutiques in a streetscape environment connecting the Village's many open-air dining terraces, shaded plazas and courtyards to the indoor shopping area of Cairo Festival City Mall. Adjacent to the mall, stands out the recreational and educational building of KidZania; which provides children with a safe, unique and very realistic educational environment. The developmental setting of KidZania allows kids to use role-play by mimicking traditionally adult activities.

The fourth main component of CFC is the high-end residential villas of Oriana. The spectacular villas introduce a new level of luxury using the state-of-the-art engineered smart home systems. ECG used BIM package throughout the design process.

Mall of Arabia

Client
Fawaz Abdulaziz AlHokair Real Estate, KSA

Scope of Work
Schematic design
Detailed design
Construction management
Construction supervision
Project management

Location
6th of October City, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Roads
Structural

Developed to be city symbol and significant retail landmark, Mall of Arabia is one of the city's largest shopping/ retail centres covering a total plot area of 882,000 m^2, a built-up area of 267,000 m^2, and a footprint area of 159,000 m^2.

Unfolding a contemporary architectural style, the mall is an organic spine arcade wrapped around an open-air plaza featuring terraces, pergolas, verandas, restaurants, and coffee shops. Indoors, the retail centre comprises a series of retail stores/anchors. Outdoors, 680,000 m^2 of parking space surrounds the mall's perimeter.

Mall of Arabia

Bonyan Strip Mall

Client
Bonyan Development and Trading Company, Egypt

Scope of Work
Design review
Construction management
Construction supervision

Location
Alexandria, Egypt

Types of Activities
Architectural
Communications and security systems
Civil works
Electrical
Mechanical
Structural

Bonyan Strip mall was developed with the aim of creating a prominent design destination set to revolutionize Egypt's design industry.

Located on the Cairo-Alexandria Road, km 38, the mall is the ultimate interior design complex for the homeowner, interior designer, and aspiring artist. Built on a total area of 120,000 m^2, it comes in the form of a design library, a world-class design school, a personal shopping department, an art gallery, and an auditorium for art work exhibitions.

The mall was completed in three distinct phases: the retail section, the entertainment complex, and the educational attractions.

Bonyan Strip Mall

Palestine Street Mall

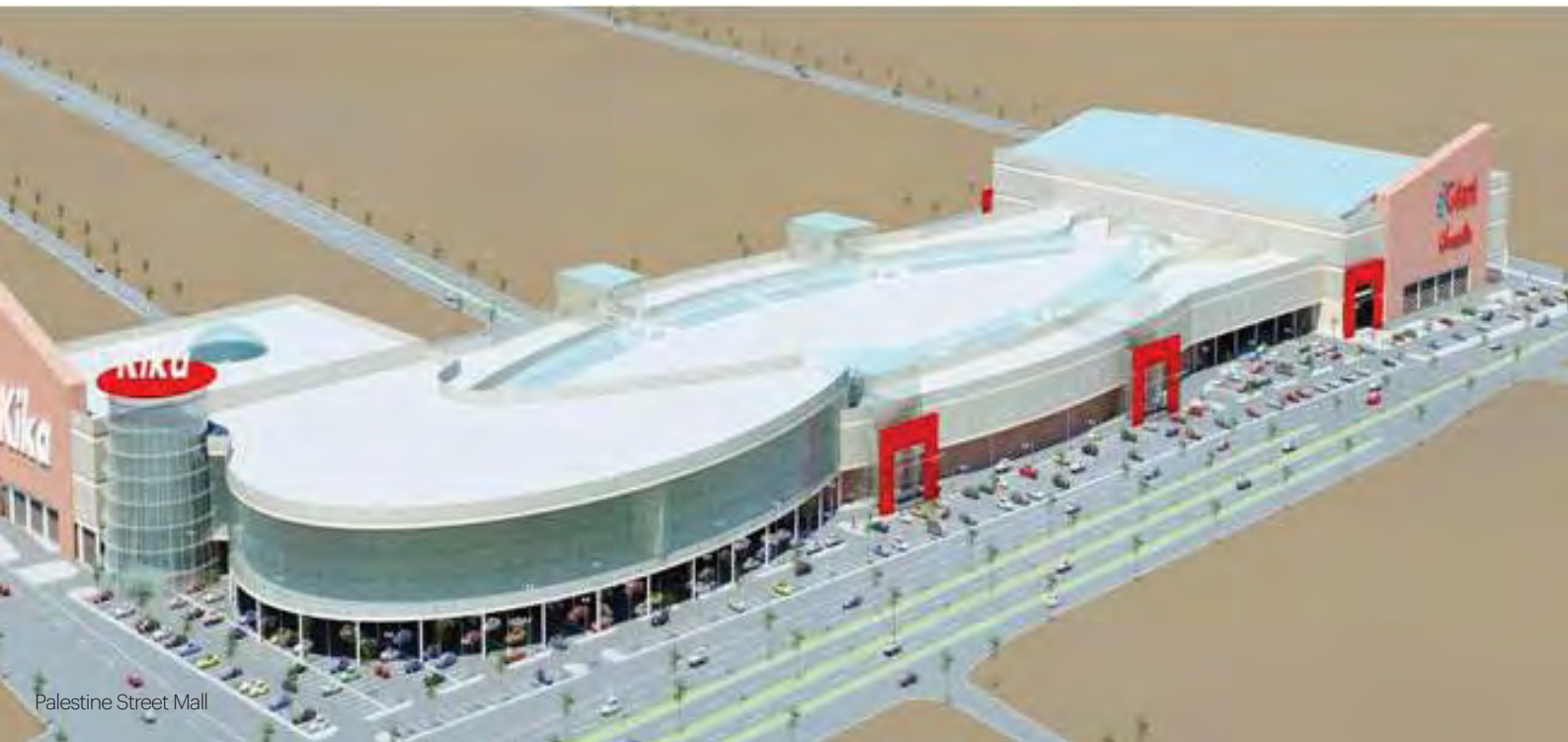
Client
Fawaz Abdulaziz AlHokair Real Estate, KSA

Scope of Work
Basis of design report
Detailed design
Tender documents

Location
Jeddah, KSA

Types of Activities
Architectural
Communications & security systems
Electrical
HVAC
Landscaping
Mechanical
Structural
Urban design

Occuping a total area of 91,300 m^2 and with a total built-up area of 98,200 m^2, Palestine Street mall comprises a ground floor (37,900 m^2), a mezzanine (5,400 m^2), a first floor (49,500 m^2), a second floor (5,400 m^2), and a parking lot with 1,600 slots.



Palestine Street Mall

Riyadh Galleria

Client
Biout Mecca for Contracting, KSA.

Scope of Work
Concept design
Schematic design
Detailed design

Location
Riyadh, KSA

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

Located in the heart of Riyadh City, Saudi Arabia, Riyadh Galleria was designed to create a unique shopping experience.

It unrolls carefully constructed interiors, hi-tech structural systems (spider system, curtain walls, and precast concrete walls), and naturally lighted wide public spaces adopting 40-m span space trusses for greater flexibility and a broader vision for mall visitors.

Covering a total land area of 150,000 m^2, the project called for the development of a three-floor shopping mall and a hypermarket. The mall stretches over a total footprint area of 50,000 m^2 and has a total built-up area of 100,000 m^2. It features a leasable area of 38,000 m^2, 162 shops, department stores, a food court hosting 26 food chains and 4 restaurants, a children's play area; and funfair on the ground floor. Its design concept was based on 12-m structural module to facilitate a favorable layout of retail shops with varying areas.

On the other hand, the hypermarket, which unveils a one double-height ground floor, accommodates a total rental area of 11,000 m^2 and is served by 2,000-slot car parking.

Riyadh Galleria

Ruwais Shopping Mall

Client
Gulf Contractors/ GDM

Scope of Work
Concept design
Design development
Detailed design
Shop drawings
As built drawings

Location
Abu Dhabi, UAE

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Interior design
Irrigation
Landscape
Mechanical
Roads
Structural

With a plot area of 111,000 m^2 and built-up area of 30,395 m^2, the shopping mall comprises a two-storey building (29,555 m^2) which includes shops, supermarket, restaurants, coffee shops, foodcourt area, department store & entertainment areas (4 cinemas, bowling, ice skating rink and kids play area) in addition to a servicebuilding (840 m^2) which includes substation, chiller yard pump rooms and underground tanks.

Ruwais Shopping Mall

City Gate Retail Buildings (Zone 1)

Client
Barwa New Cairo for Real Estate Investment S.A.E

Scope of Work
Schematic design
Detailed design
Building permits
Tender documents
Construction documents
Value engineering

Location
New Cairo, Egypt

Types of Activities
Architectural
Civil works
Communications & security systems
Electrical HVAC
Landscape
Mechanical
Roads
Structural

With a total built-up area of 650,000 m^2, City Gate retail project is one of the biggest retail developments in the MENA region. The project includes 16 residential buildings above retail area with a built-up area of 40,000 m^2 offering over 300 residential units, and parking with a total built-up area of 380,000 m^2. The retail development comprises department stores, F&B retail and outlets, hypermarket, power centre, parade of brands, entertainment block and indoor mall.

The Town Centre retail destination is the core essence of the master plan, made up of contemporary buildings and landscape featuring a variety of uses. A mix of outdoor entertainment, shops, cinema and dining lends itself as a true destination. The exciting outdoor pedestrian friendly High-Street environment, over 500 m long, connects the Town Centre's many open-air dining terraces, shaded plazas and courtyards. It is to become the new place to be seen and to gather and meet friends; the central stage of an ever changing series of events and activities.

The architecture of Town Centre is a thoughtful integration of buildings, landscape, materials and features. The spaces between the buildings are carefully choreographed for pedestrians to create quality experiential design for the varied open spaces. The architecture design language is inspired by the intricate layers of Cairo building elements and its history, in forms of spatial juxtaposition as layers of volumes and spaces. Buildings comprise patterned facades, shaded arcades, decorative screens and stepped massing.

City Gate Retail Buildings

Building volumes and facades create an ever-changing dynamic spatial experience, and are complemented by the gentle curves of the surrounding streets. The sloping topography of the site, adds another dimension to the built form with stepped storefronts, two-storey shops and multiple ground floor retail opportunities. The blending of these elements, yields a contemporary building language with the local building context. Natural colors and rich textures are used throughout each building; and carefully composed arcades, canopies and shade devices offset the region's climate conditions.

City GateTown Centre is designed and organized into multiple shopping districts which include: High-Street, the Parade of Brands, Entertainment Zone, Power Centre, and Indoor Shopping Centre – This grouping of various store formats, provides a top shopping destination feature that distinguishes the Town Centre as the region's new destination for shopping, food, entertainment, and living. The organizing element and central spine through the Town Centre is the High-Street; a boulevard inspired by the urban model of European cities and villages; incorporating streets, pedestrian walkways, access for cars, shopping arcades and central plazas. It provides access to various types of shops along a beautiful network of landscape, water, recreational and pedestrian ways. Anchoring the High-Street to the South is the entertainment block, and to the North the retail hotel. The strong axial street is lined with double height retail spaces with residential above.

With High-Street as its main focus, the retail tenants of the parade of brands occupy the ground level and central spine of the street. Double height volume stores with optional mezzanine levels form High-Street Parade of Brands. Tenants cater to the shopper seeking luxury brand name goods and services. Direct connection to the block is provided from parking below and valet service. Above the retail are the residences of City Gate Town Centre; modern living apartments surrounding a grand garden podium. Residents have convenient access to High-Street within a comfortable secure atmosphere.

This multi-level entertainment zone accommodates a variety of restaurants and entertainment choices. The principal anchors include the multi-plex cinema, IMAX theater, atrium dining court, theme restaurants and family entertainment centre. An open air dining terrace and atrium organize the many entertainment uses; with strategic views to High Street and luxury Resort Hotel. A feature bridge from the dining area connects pedestrians to the interior of the Shopping Centre. Lobby access from street levels provides direct vertical circulation from underground parking to the ground and upper level uses. Adjacent to the High-Street is the Town Centre's principle indoor shopping and environment. A multi-level retail centre accommodates international brands, flagship hypermarket, large format anchors and a wide variety of shops and restaurants. The retail districts include fashion, lifestyle, houseware, and electronics. At primary nodes and pedestrian crossings of the centre are dramatic courts which include the media square, civic plaza and crystal court. Each themed and strategically branded to reflect the surrounding retailers. The indoor shopping and entertainment is designed to enliven the retail visitor experience with a rich architectural language and amenities to complement the high street district. Anchoring the eastern edge of the Town Centre is the power centre.

The district consists of large format anchors of home improvement, electronics and discounted brands. It is served by adjacent surface parking directly in front of tenants and provides a ceremonial drive and visitor drop off on axis with the retail centre. Between the power centre tenants lies the Oasis court, the principle outdoor gathering plaza available for large scale events, dining and social interaction.

Madinaty Open Air Mall

Client
Alexandria Real Estate Investment Company

Scope of Work
Master plan
Concept design
Schematic design
Design development
Detailed design
Tender documents
Tender action
Construction supervision

Location
New Cairo, Egypt

Types of Activities
Architecture
Civil works
Communications and security systems
Electrical
HVAC
Landscape
Roads
Structure

Built on a footprint area of 159 acres, the commercial area contains shopping centres designed according to international standards. The project comprises: Cinema complex, which includes:

- 15 cinemas
- Hypermarket (22,000 m^2)
- Foodcourt (18,000 m^2)
- Four retail buildings (8,000m^2, 10,000 m^2, 12,000 m^2 and 14,000 m^2)
- Family entertainment building (15,000 m^2)
- Lake (30,000 m^2).

Park Avenue

Client
Hyde Park Properties for development S.A.E

Scope of Work
Review of concept design
Preliminary design
Detailed design
Tender documents
Construction supervision

Location
New Cairo, Egypt

Types of Activities
Architecture
Civil works
Communications and security systems
Electrical
HVAC
Landscape
Mechanical
Structural

Park Avenue is designed as a high-end retail destination, and among the biggest in the Middle East, with over 1,700 shops. It is developed in three phases, with 309 retail outlets built in the first phase over a built-up area of 29,206 m^2. The mall consists of 4 commercial blocks A, B, C, & D.

Blocks A & C, each consists of ground and 3 floors. The ground floor (11,750 m^2) and the first floor (9,150 m^2) include shopping malls, while the second floor (5,700 m^2) and third floor (2,900 m^2) comprise restaurants, food court, & cafes.

Blocks B & D, each consists of ground and one floor. The ground floor (14,760 m^2) and the first floor (13,710 m^2) contain shopping malls.

Park Avenue

The Ribbon

Client
Union Properties (UP)

Scope of Work
Preliminary design
Detailed design
Tender documents
Construction supervision

Location
Dubai, UAE

Types of Activities
Architectural
Electrical
Mechanical
Structural

With a total built-up area of 7,744 m^2, the Ribbon complex is located on plot no.674-233 at the Motor City district in Dubai, UAE. The Ribbon is a retail commercial complex with 20 retail spaces that include shops, cafes and restaurants.

Inspired by the complex name, the building's skyline and hardscape elements are harmoniously undulating in ribbon-like structure; which adds a modern twist to the architectural design concept.

The complex consists of 3 buildings; two of which comprise a ground floor and a mezzanine floor, while the third building comprises a basement, a ground floor and a mezzanine floor.

The Ribbon

El-Rehab Commercial Mall

Client
Talaat Mostafa Group of Companies

Scope of Work
Conceptual design
Schematic architectural design
Detailed design
Design development
Tender documents
Construction documents
Design permits
Marketing package

Location
New Cairo, Egypt

Types of Activities
Architectural
Electrical
Interior support
Landscaping
Piping
Roads

The new commercial mall will be located at the north of El-Rehab Club to serve the residential communities, designed in a modern way that turns shopping into a truly pleasurable experience. In addition to the wide variety on display, the family can enjoy the recreational facilities available. Those include a cinema complex, restaurants and cafeterias.

Over a land area of 54,029 m2, and with a built-up area of 45,850 m2, the mall shall comprise a basement, ground, and 2 upper floors as follows:

- Basement: parking area (around 870 cars), retail shops, prayer rooms, toilets, showers & lockers, and services.
- Ground floor: 3 entrances, retail shops & anchors, kiosks, supermarket, 2 pharmacies, restaurants, toilets & services, and outdoor parking area (around 290 cars).
- First floor: retail shops & anchors, supermarket, cinema complex, cinema foyer, toilets and services.
- Second floor: retail shops, kiosks, food court & restaurants, kids area, mall administration, toilets & services, and outdoor terrace.

El-Rehab Commercial Mall

Al-Othaim Mall in Al-Jubail

Client
Al-Othaim Real Estate Investment & Development Company

Scope of Work
Master Plan
Conceptual design
Schematic design (structural)

Location
Al-Jubail, Saudi Arabia

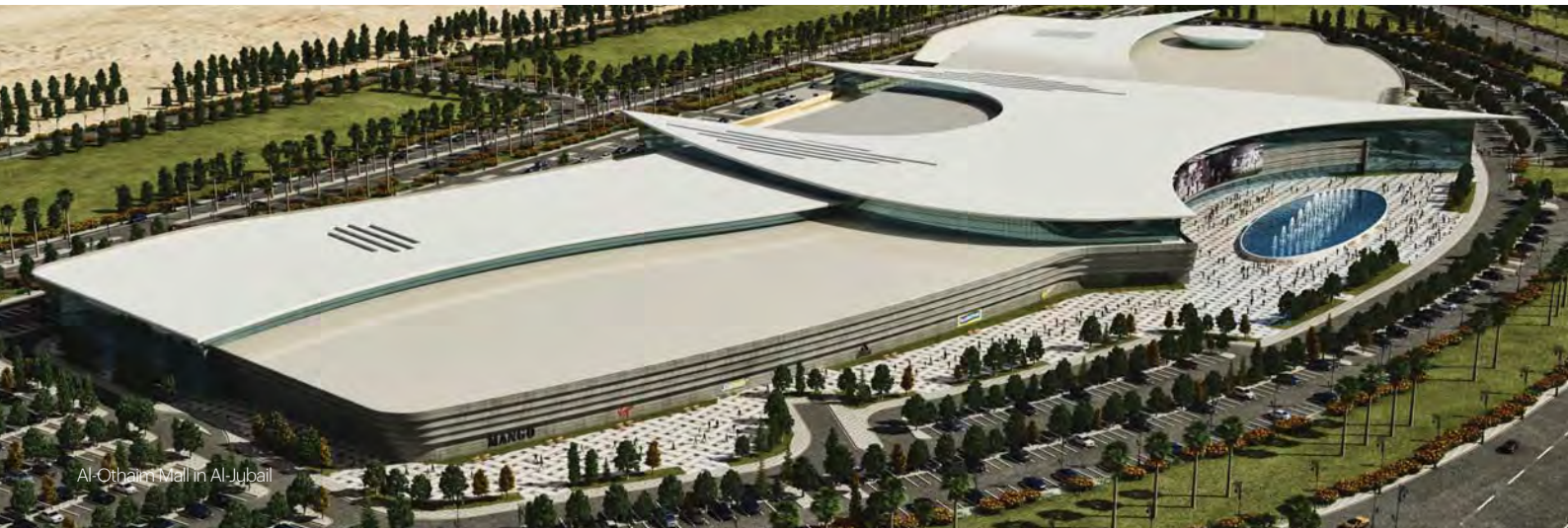
Types of Activities
Architectural
Civil
Landscaping
Roads

Al-Othaim Real Estate Investment & Development Company is specialized in the field of establishing, managing, and operating large commercial complexes. It is the owner of a series of malls in Saudi Arabia.

The new mall is located in Al-Jubail Industrial City in the Eastern Province on the Arabian Gulf coast. The city is considered one of the largest industrial cities in the Middle East and the world.

With a built-up area of 125,678 m^2, the mall building consists of the following components:

- Ground floor: food court & dining area, retail area, entertainment area, toilets, and services
- Mezzanine: offices & administration area, sitting area, prayer halls, storage area, lockers & toilets, and utilities
- Surface parking



Al-Othaim Mall in Al-Jubail

The Plateau – Citystars

Client
Golden Pyramids Plaza

Scope of Work
Conceptual design
Schematic design
Design development
Detailed Design
Tender documents
Construction documents
Tender action
Project management

Location
Cairo, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Interior design
Landscaping
Mechanical
Roads
Structural

The Plateau is an extension to Citystars Center at the front yard of Gates 1, 2, and 3 on Omar ibn Al-Khattab Street in Nasr City, Cairo, Egypt.
The Plateau comprises several components:

- a large fountain topped by a magnificent large glass pyramid and surrounded by elevated public spaces and outdoor restaurants and cafés
- two glass buildings housing two restaurants each
- The Boulevard: a charming wide passageway between the hotel and the office towers; it is redesigned to be the most vibrant part of the development

The glass pyramid is implemented in such a way that emphasizes the main entrance, with historical symbolism serving as a focal point complementing the scale and design of the entire mall.

The project includes renovations to the façade of Citystars at the concerned gates, so that it matches the Plateau's theme and its new architectural elements, such as atriums, multimedia screens, lighting fixtures, and stone cladding.

The design is inspired by the architectural styles of Ancient Egypt. It rhymes with the architectural style characterizing the existing complex. The simple, yet powerful, design utilizes angled shapes to create magnificent expressions and inspire the exterior massing, overlapping volumes, and textures of the Plateau.

The Plateau – Citystars

North Gate Mall And Office Buildings (Phase 1)

Client
North Gate WLL
Scope of Work
MEP construction supervision

Location
Doha, Qatar
Types of Activities
Electrical
Communication and security systems
HVAC
Irrigation
Mechanical

The project will be executed in several phases and is intended to be a global development and centre of attraction for commercial activities, as well as businesses. In addition, the development is planned to play an active role in the cultural and recreational activities of Qatar and the Middle East.
The first phase covers the construction of a shopping mall and six office buildings, along with infrastructure, landscaping and road works provided for the several buildings.
Shopping Mall
With a built-up area of 396,130 m^2, the shopping mall stands as a podium comprising the following:

-3 level mall housing 398 shops, 9 of which are anchor stores (including a hypermarket); the shops offer world-famous brands of jewellery, trendy clothes, sports clothing as well as electronics and goods;
-15 state-of-the-art cinema halls, in addition to a number of unique visitor attractions, including the Crystal Garden, Market Street indoor/outdoor dining precinct, Shamal Hall with its unique architectural features and a landscaped terrace with pavilions; and
-2-level car park (4,000 parking slots).

Six Office Buildings
Each office building comprises 5 levels. The total built-up area of the six buildings is 69,900 m^2.
In general, the various spaces in the North Gate site shall be furnished with landscaping, hardscaping and water fountains, which are set to turn the site into a fancy attraction and a landmark in the northern area of Doha.

The Plateau – Citystars

Data Centers

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

GTC 859-KM Customer Contact & AMI Center

Client
Kahramaa Qatar General Electricity & Water Corporation

Scope of Work
Construction supervision

Location
Qatar

Types of Activities
Civil works
Electrical
HVAC
Instrumentation
Mechanical
Structural

On a plot area of 20,023.46 m^2, the existing building is located inside the Kahramaa Complex situated in Al-Thumama south of Doha, where the present location of Electricity National Control System (NCC) and the National Water Control Center (NWCC) are also located.

The main building consists of the following:
- **Basement Floor:** consists of a car parking, electrical HV & transmission control room (TCR), services room for MEP tanks and locker rooms with required facilities, as well as toilets, storage & lobby, etc.
- **Ground Floor:** consists of a main entrance, data center with separate entrance & hall, different types of stores, conference rooms, toilets, and CCTV rooms, and different types of offices with all required facilities as shown on the tender drawings.
- **First Floor:** consists of a conference hall lab section head room, SCADA test room, general laboratory, different types of offices, etc.
- **Second Floor:** consists of a security control room, secured server room, UPS room, lobby, different types of offices, etc. as mentioned in the tender drawings.
- **Services Floor:** consists of services & machine rooms.
- **Main Building External Envelope:** consists of using different types of materials (aluminum composite panel, curtain wall covers by screen mesh from solid aluminum sections, artificial stone and GRP for the horizon surface).

The project also comprises an external Chiller Area surrounded by a chain link fence, soft and hard scape with water body, gate, boundary wall, shaded car parking, etc.

GTC 859-KM Customer Contact & AMI Center

Kaust Tier III Data Center Complex

Client
Ashi & Bushnag Co. LTD.

Scope of Work
Detailed design

Location
Thuwal, Saudi Arabia

Types of Activities
Civil
Communications and security systems
Electrical
HVAC
Interior design
Landscaping
Mechanical
Roads
Structural

The Tier III Data Center Complex is located on the eastern edge of King Abdullah University of Science and Technology (KAUST) within the university's Research & Technology Park.

The complex consists of two independent, yet identical, buildings. Each building has a total built-up area of 12,680 m^2 and consists of the following levels:

- **ground floor:** six power rooms providing a total of 2000 kW to the data halls and the spaces accommodating support functions
- **first floor:** Six data halls, each stretching over an area of 800 m^2

The ground floor of each building also includes a lobby and customer spaces. A number of special zones at the front of each building are designated for the Dubai-based data center space provider Gulf Data Hub. Loading, storage, and utility entrances and generators are located at the eastern end of each building's ground floor.

The two buildings are organized with optimal space efficiency. A main corridor runs along the length of each floor, thus providing access to major utilities.

Kaust Tier III Data Center Complex

MCIT Data Center

Client
Ministry of Communications and Information Technology (MCIT)

Scope of Work

Conceptual design
Detailed design
Design development
Construction documents
Construction supervision

Location
Smart Village, Giza, Egypt

Types of Activities
Architectural
Civil
Communication & security systems (ELV/ICT)
Infrastructure
Interior design
Landscaping
MEP
HVAC
Structural

The project covers the redesign of an existing building into a data center. The building rises over a footprint area of 1,420 m^2 and comprises a ground floor, first floor, and a roof (each with a floor area of approximately 1,500 m^2). Redesign entails the demolition and dismantling of certain building sections. The state-of-the-art data center is designed according to the standards which qualifies the building to be TIER III Design certified by Uptime Institute. Work also covers setting up three cabinet halls (a total of 90 cabinets) on the ground floor of the existing building. The project also covers the following new buildings and structures:

- utility buildings for chillers and UPS systems
- fence and gates

MCIT Data Center

Etisalat Data Centers

Client
Deerns Raadgevende Ingenieurs BV

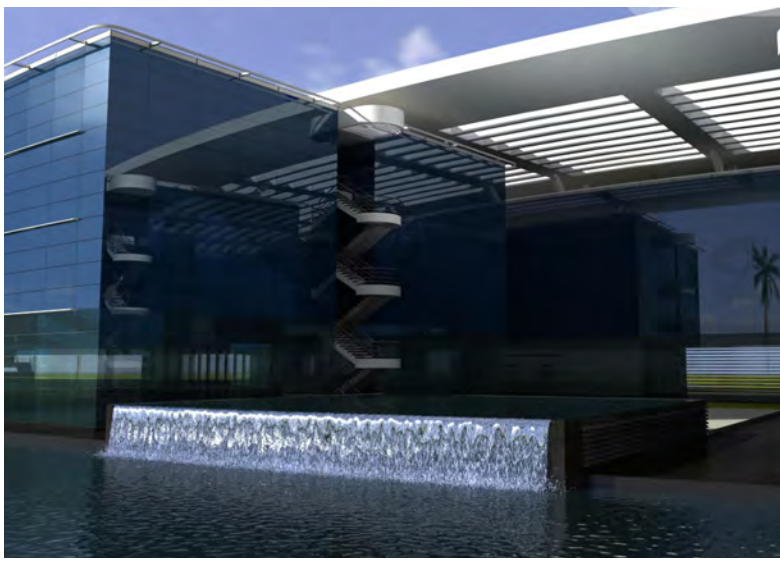
Scope of Work
Conceptual design
Schematic design
Design development
Detailed design
Design permits
Tender documents

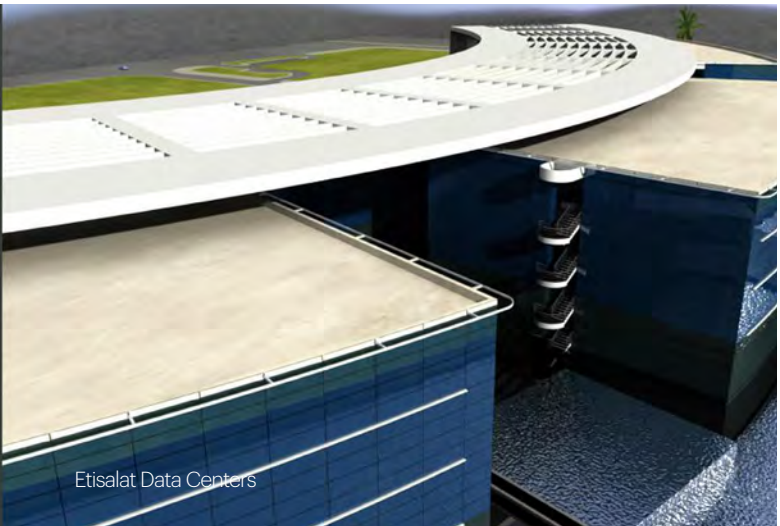
Location
Al-Ain & Jebel Ali, UAE

Types of Activities
Civil
Communications and security systems
Electrical
HVAC
Interior design
Landscaping
Mechanical
Roads
Structural

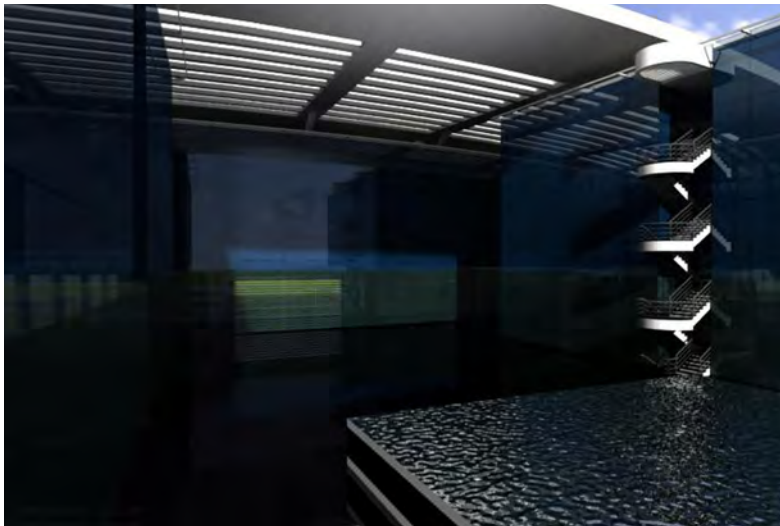
The project consists of two data centers, one located in Jebel Ali (total built-up area of 24,500 m^2) and the other in Al-Ain (total built-up area of 6,500 m^2).

Each building consists of a data room, auxiliary room, exhibition room, and administrative room, as well as internal and external mechanical spaces for dry coolers. Each building also includes an information technology power range and an electrical space 2N configuration.





Etisalat Data Centers



Sports Facilities

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Al-Burouj Sports Club

Client
Capital Group Properties

Scope of Work
Schematic Design Review
Design Development
Detailed Design
Design Permits
Tender Documents
Tender Action

Location
New Cairo, Egypt

Types of Activities
Architectural
Civil Works
Communication & Security Systems
Mechanical
Landscaping
Roads
Structural
Urban Design

Al-Burouj is an envisioned mixed-use development, located on Cairo Ismailia Road, over a land area of 5 million square meters. Al-Burouj is a complete development composed of residential communities, internationally renowned schools, as well as sports & community clubs. This adds to a prime retail mall, cultural hub, boutique hotel and an office park.

Al-Burouj Sports Club stretches over an area of 37,809 m^2, and is divided into two phases. The land area of phase 1 is 15,717 m^2 (Which is in the contractor awarding process). The services include reviewing the concept and schematic designs prepared by an international consultant, and preparing the concept and schematic designs for all of infrastructure, structural, and MEP works. ECG will also prepare the full detailed and developed designs, assigned to meet the international consultant's designs in complete harmony.

Al-Burouj Sports Club

FIFA World Cup Competition Venue Tournament Overlay

Client
Supreme Committee for Delivery & Legacy

Scope of Work
Conceptual design
Design Validation
Pre-Concept Design
Schematic Design
Tender Documents

Location
Qatar – Various Cities

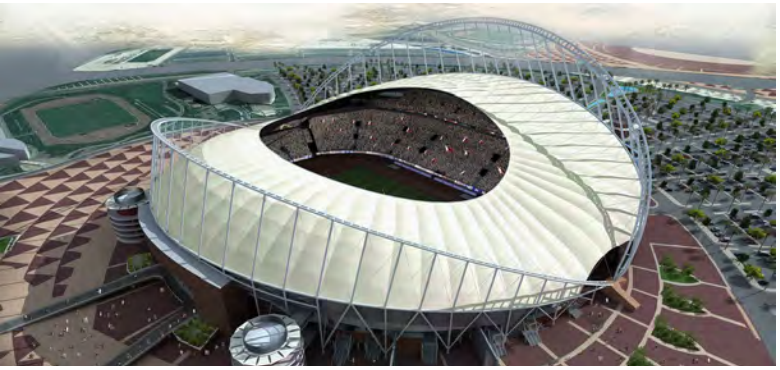
Types of Activities
Architectural
BIM
Civil
Communication and Security Systems
Electrical
HVAC
Landscaping
Mechanical
Roads

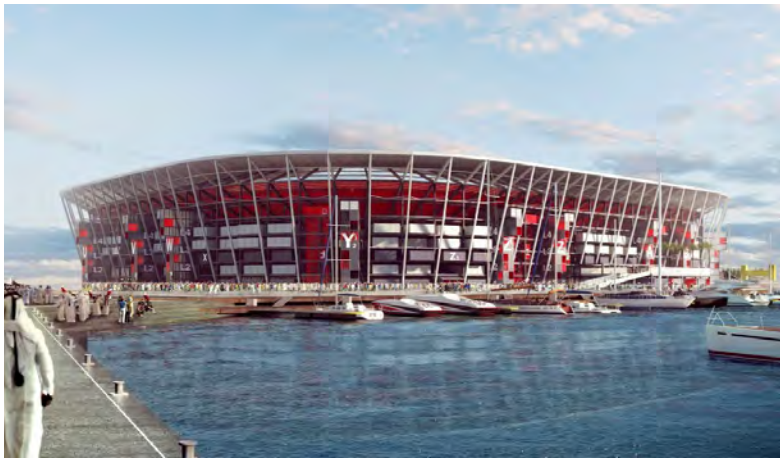
Hosting the 2022 FIFA World Cup tournament, the state of Qatar will hold the matches on the following 8 stadiums or "competition venues":

- Lusail Stadium
- Al-Bayt Stadium
- Ar-Rayyan Stadium
- Education City Stadium
- Ras Abu Aboud Stadium
- Khalifa International Stadium
- Al-Janoub Stadium
- Al-Thumama Stadium

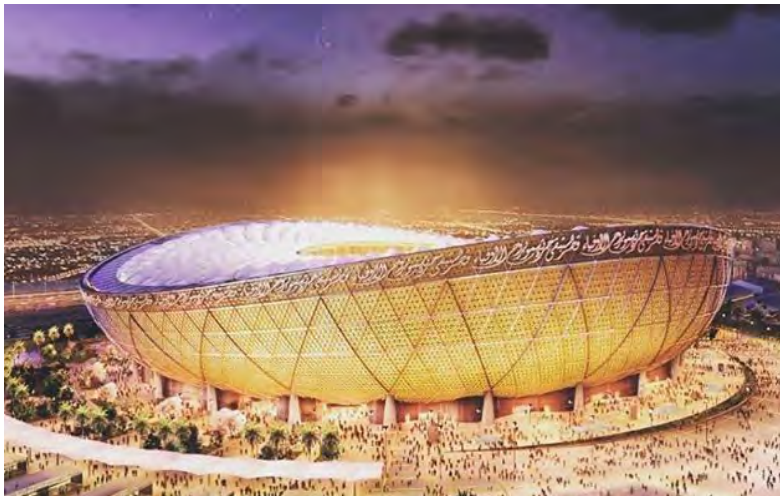
It is proven that the most modern and sophisticated stadia in the world require modifications and enhancements, to meet the unique, albeit temporary, requirements of a FIFA world cup tournament.

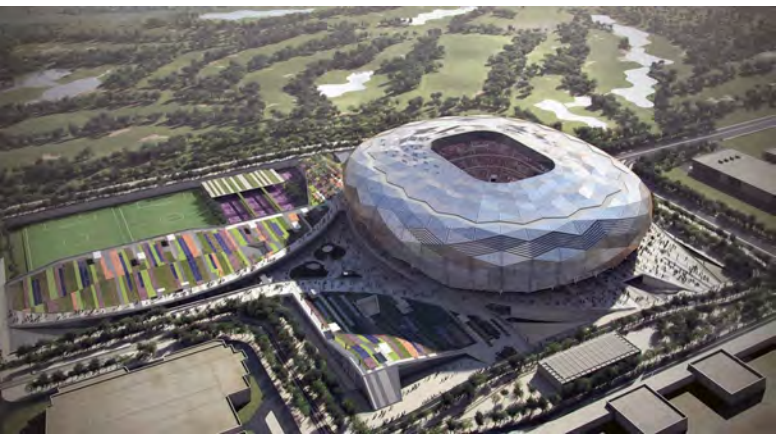
These demands include accommodating the increased attendance across all constituent groups; segregated and dedicated access points and amenities; increased technical requirements for broadcasting and media; significant modifications to support enhanced operations for security, transport, protocol, hospitality, and marketing; and numerous other event related facilities.

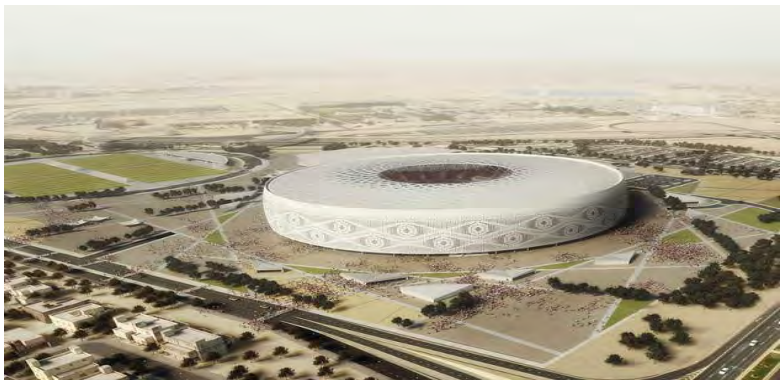




FIFA World Cup Competition Venue Overlay







ECG's scope is providing the design consultancy for the various overlay elements that will be implemented into the stadium precincts. Overlay elements will be combined with existing infrastructure, to meet the specific requirements of the events of the tournament, such as the pedestrian queuing, security screening area, kiosks for merchandising, channel studios, bridges (cable and pedestrian), broadcasting compound, camera platform, commentator's cabin, temporary video screens, mixed zone, office fit-out, directional signage, hospitality village, hospitality tent, cable conduit runs, hospitality build-out, media center fit-out, temporary fencing, control room fit-out, and the temporary seating.

Cairo Stadium Renovation

Client
Cairo Stadium Authority

Scope of Work
Conceptual design
Schematic design
Detailed design
Construction supervision

Location
Cairo, Egypt

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Landscaping
Mechanical
Structural

The project consists of the renovation and upgrading of Cairo International Stadium, in preparation for the 2019 Africa Cup of Nations, with a capacity to approximately 75,000 seats.

The modernization efforts included the façade of the Main Entrance; the Presidential Entrance on the ground floor; VIP Lounges (over an area of 2,600 m^2); the Main Cabin for VIP spectators; and the salon compartments introduced on the first floor, above the Cabin Entrance. This is in addition to the newly added rooms, which include rooms for teams, referees, and dubbing (over an area of 3,000 m^2). The project also covers lighting the stadium's entrance and its external block; landscaping works; modification of existing restrooms; and works for both the fountain pump room and the substations' rooms.

Cairo Stadium Renovation

Madinaty Sports Club

Client
TMG (Talaat Mustafa Group)

Scope of Work
Detailed design
Design developments
Design permits
Basis of design report
Tender documents
Construction management
Construction supervision

Location
Cairo- Suez Road, Cairo, Egypt

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Mechanical
Roads
Structural

Located in New Cairo Egypt, Madinaty Sports Club comprises the following facilities:

- A Social Club building consisting of a basement (with an area of 3,600 m^2), ground floor (with an area of 4,400 m^2), and a roof.
- The club mosque, consisting of a ground floor (with an area of 1,220 m^2) and a mezzanine (with an area of 900m^2).
- Fifteen water fountains, deployed all over the club.
- Fields and courts: this category includes soccer fields comprising 2 large fields + 4 futsal courts; tennis courts comprising 12 courts + a standard stadium; mixed-use courts comprising 2 handball courts + 2 basketball courts, in addition to 6 volleyball courts.
- Tennis Academy building: consists of a basement floor + ground floor + one upper floor + a roof.
- Soccer Academy building: consists of a basement floor (with an area of 3,100 m^2), ground floor (with an area of 3,160 m^2), one upper floor (with an area of 2,750 m^2), in addition to grandstands.
- Recreational swimming pool zone: comprises a 6,000-meter squared recreational swimming pool, a competition pool with an area of 360 m^2, a service building consisting of a basement (with an area of 24,000 m^2), which includes changing rooms, toilets, air-conditioning rooms, service areas, and tanks; a ground floor with the same area containing relaxation

Madinaty Sports Club

venues (massage and sauna), aerobics hall, terrace, cafeteria, first-aid, and office spaces; and an upper floor of an area of 6,000 m^2, which includes an indoor restaurant, outdoor restaurant, power rooms, toilets, aerobics hall, and a gym; in addition to grandstands.

- Olympic swimming pool zone: comprises a service building consisting of a basement (with an area of 10,350 m^2) which includes changing rooms, toilets, power rooms, air-conditioning rooms, service areas, and tanks; a ground floor (with an area of 17,350 m^2) featuring a cafeteria, administrative offices, swimming pools, toilets, lockers, and class venues; and finally the grandstands on the roof.

Lekhwiya Sports Stadium

Client
Al Khayyat Contracting and Trading, Qatar

Scope of Work
Detailed design
Specifications
Construction supervision

Location
Doha, Qatar

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Landscape
Mechanical
Structural

Perkins Eastman and ECG were awarded the design and construction supervision consultancy services for Lekhwiya Sports Stadium.

The overall project included two phases, phase (1) comprised a soccer stadium, with a built-up area of 6,863m^2 and concourse area of 720m^2, four training soccer fields and the related facilities. Phase (2) comprised a fitness center, a mosque, utility buildings, changing rooms, substations and a sewage treatment plant.

The stadium has a capacity of 10,000 seats spread over a seating area of 6,005m^2.

Lekhwiya Sports Stadium

Upgrading of Heliopolis Sporting Club

Client
Heliopolis Club

Scope of Work
Preliminary design
Detailed design
Construction supervision

Location
Cairo, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

The project aims at developing the cinema annexed to the club and the telecommunications center and renovating the interior design, as well as rehabilitation and development of the site, clubhouse, swimming pools, underground car park and services.

Upgrading of Heliopolis Sporting Club

Development of Alaraby Sports Club

Client
Tadmur Contracting & Trading Establishment

Scope of Work
Project management
Concept design
Schematic design
Detailed design
Design permits

Location
Doha, Qatar

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

Renovation, upgrading and development of Al-Araby Sports Club including the following facilities: swimming pool entertainment and multipurpose hall (SEMH) complex, athletics yard and football field, football training pitch, external soft and hard landscaping including car parking areas.

Development of Alaraby Sports Club

Renovation of Cairo Stadium, Egypt

Client
National of Authority for Military Production

Scope of Work
Project management
Concept design
Schematic design
Detailed design
Design permits

Location
Cairo, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

The project involves works of refurbishment to the following components of Cairo Stadium:

- Horseback Riding Stadium (8,400m^2);
- 6 service buildings (each comprising 3 floors), with a total built-up area of 3,300m^2, plus 2 floors containing locker rooms and toilets in another service building within the Indoor Halls Complex;
- Painting of the walls and floors of Halls 2, 3 and 4 (each hall has a floor area of 1,800m^2 and total wall surface area of 3,600m^2);
- Table Tennis Hall within the Indoor Halls Complex (520m^2);
- Flooring of Halls 3 and 4 (1,750m^2 per hall);
- Audience seats of Halls 1 and 2 (20,000 seats per hall); and
- Pentathlon Hall at Gate 2 of the Indoor Halls Complex (800m^2).

Renovation of Cairo Stadium, Egypt

City Gate Club House

Client
Barwa Real Estate Company

Scope of Work
Concept design
Schematic design
Detailed design
Tender documents

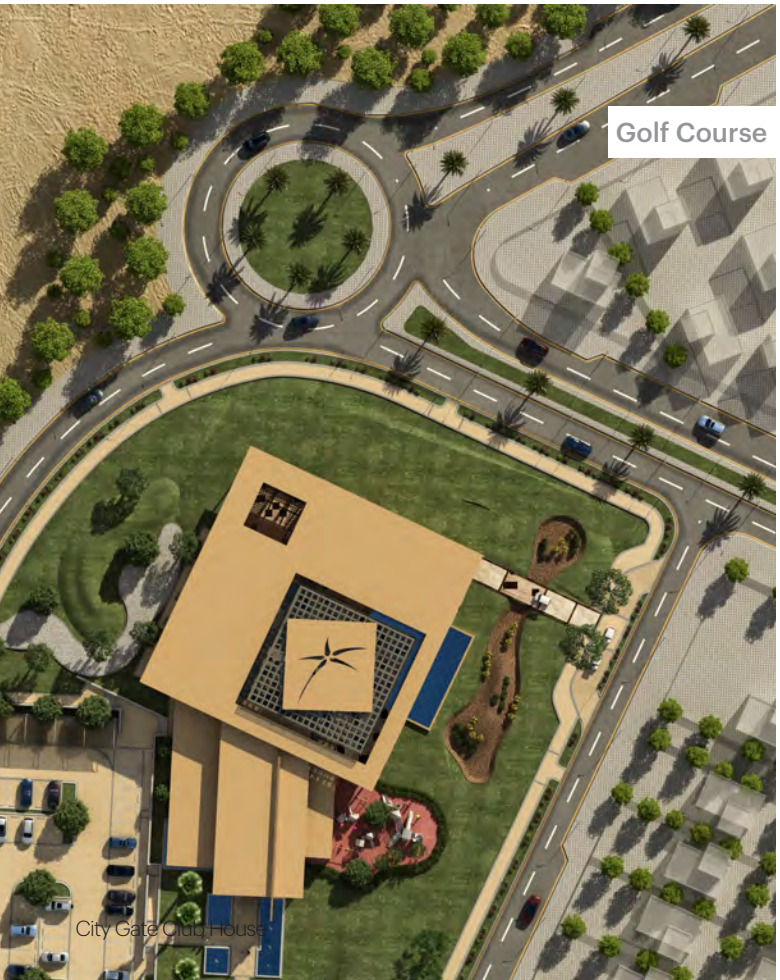
Location
Cairo, Egypt

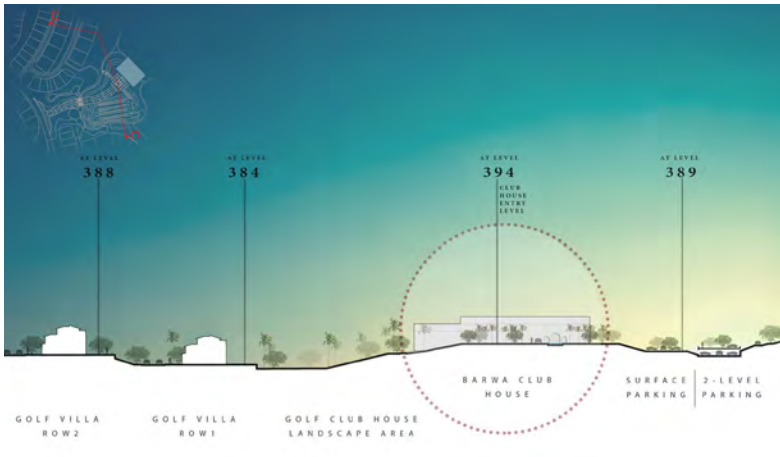
Types of Activities
Architectural
Communication & security systems
HVAC
Interior design
MEP

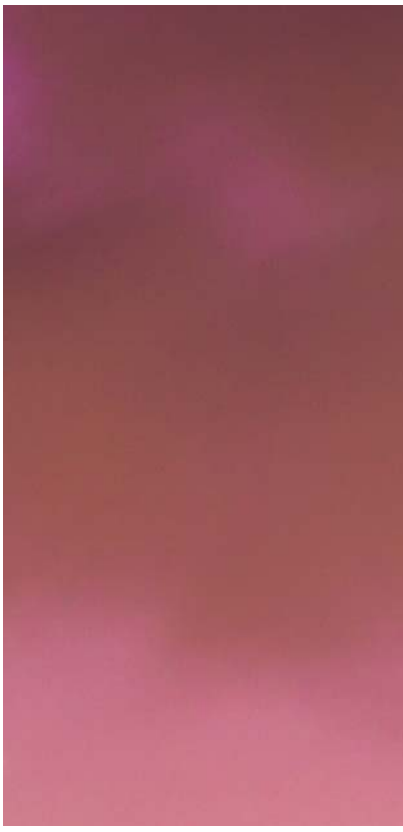
City Gate is a world-class gated community containing various facilities and housing units surrounded by huge beautifully kept green spaces, all distributed over a well-planned area of 8.5 million square meters. Situated a walking distance from the golf community, is a remarkable clubhouse overlooking the 18-hole golf course.

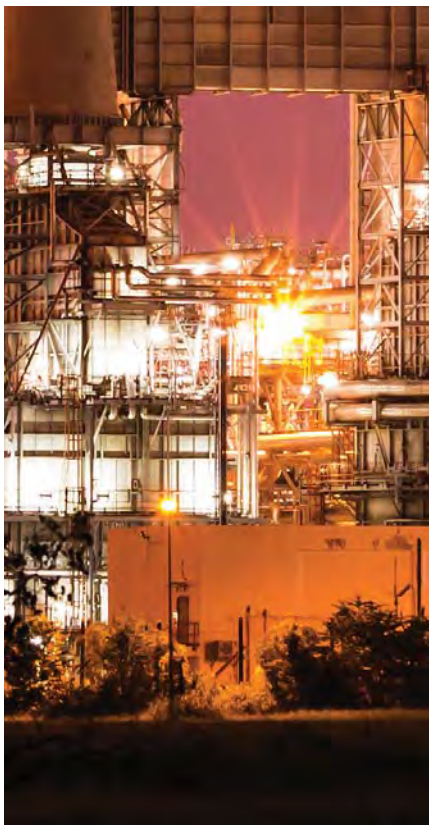
With 2 different entry levels, the club house comprises the following:

- Lower ground floor (2,610 m^2): golf reception, administration area, arcade, public shops & bars, staff canteen, kitchen services, prayer rooms, changing rooms, sauna, loading bay, buggy parking area, service corridors, and electrometrical services
- Upper ground floor (1,715 m^2): entry foyer, public lobby/ corridors, terraces, ball room, ball room lobby, cigar lounge, toilets, administration area, kitchen, restaurant, stores, services, and electromechanical services
- Upper ground floor roof (470 m^2): business lounge, meeting room, corridors & elevators, toilets, bridal suite with terrace, and service area
- Chiller plant (174 m^2): (estimated height for the chiller is 3 m)









Industrial, Oil & Gas

ECG
ENGINEERING CONSULTANTS GROUP S.A.

Oil and Gas

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Aqaba Oil Terminal

Client
Egyptian Maintenance Company (EMC)

Scope of Work
Technology assessment
Basis of design report
Detailed design

Location
Aqaba, Jordan

Types of Activities
Civil
Communications and security systems
Electrical
Instrumentation and control
Piping
Structural

The oil terminal, owned by the Aqaba Ports Corporation, was constructed in 1986 to accommodate oil supertankers of the class Very Large Crude Carrier (VLCC). This project covers the rehabilitation of the oil terminal. The project site comprises the following areas:

- 13-bay loading area with a capacity of 26 road tankers for crude oil and heavy fuel oil
- oil berth and jetty area
- walkways between mooring and berthing dolphins with quick-release hooks

The project comprises the following components:

- rehabilitation of the oil tanker loading/unloading area to include loading arms, metering skids, crude oil and heavy oil piping, and a steel shed, together with lighting, power supply, firefighting, fire alarm, and gas detection systems
- oily water drainage and separation system
- emergency shutdown system for crude oil and heavy fuel oil systems
- communications and security and systems for the terminal (CCTV, access control, and IP telephony)

Aqaba Oil Terminal

Exxon-Mobil Lube Oil Plant Design and Extension Plans

Client
Exxon-Mobil

Location
Egypt

Exxon Mobil Egypt (formerly ESSO) planned to implement a series of projects over a period of 5 years comprising:

ESSO Lube Oil Blending Plant, 10th of Ramadan City:
The lube oil blending plant produces 65,000 tons per annum for automotive, industrial and marine oils of different categories.

ECG's scope covered basic design, preliminary design, tender documents and cost estimates for process, electro-mechanical systems and civil/structural works.

Extension of 10th of Ramadan Lube Oil Blending Plant:
Exxon-Mobil aimed to extend the production capabilities of the plant to suit the new Exxon-Mobile market strategy. Extension comprised two additional unloading points for Mobil-branded finished products, four tanks (190 tons capacity each), three pumps in the external exchange area, two piggable transfer lines to internal exchange area, and expansion of the filling hall and the warehouse.

ECG's scope covered basic design, detailed design, specifications and tender documents including architectural, structural, roads, mechanical, tanks, piping, process, instrumentation, electrical and CCTV systems.

El Max Terminal Extension, Alexandria:
The project aimed to increase the capacity of El Max Terminal. The extension included the addition of two typical tanks of 1000-ton storage capacity each and 2-4 loading pumps and loading arms.

ECG's scope covered design and detailed design comprising calculation sheets, drawings, diagrams; specifications; bill of quantities; cost estimate and preparation of tender documents including structural, tanks, piping, process and electrical designs.

Mostord Warehouse, Cairo:
The project aimed at demolishing old oil blending facilities and constructing a new warehouse for lubes on an area of 3,500 m^2.

ECG's scope covered detailed design, specifications, cost estimate and preparation of tender documents encompassing architectural, civil/structural, electrical and mechanical (including water supply, drainage and fire protection).

Exxon-Mobil Lube Oil Plant Design and Extension Plans

Extension of ELAB Storage Tanks

Client
Petromaint Co.

Owner
Egyptian Linear Alkyl Benzene Co. (ELAB)

Scope of Work
Design development
Detail design

Location
Alexandria, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
Mechanical equipment/pumps selection
Utilities
Instrumentation and control
Piping design
Process
Roads
Structural
Storage tanks
Vessels

The Egyptian Linear Alkyl Benzene Company "ELAB" located in EL Mex petroleum area in Alexandria, Egypt installed new storage tanks as an extension to its existing tank farm on a plot area of 10,695m^2.

Engineering Consultants Group (ECG) was awarded the contract to provide engineering services covering the basic design, detailed design while project supply and construction were carried out by Petromaint.

ECG scope of work included the basic and detailed design for all disciplines encompassing design of storage tanks of capacities 1,400m^3 for Benzole products with floating roof, two normal paraffin fixed roof tanks with total capacity of 6,200m^3, and one jet A/Kerosene fixed roof storage tank with capacity of 5,500m^3. The design included the development of piping and instrumentation diagrams for the different systems, identification of tie-ins with existing plant facilities, related piping works, feed pumps selection, in addition to the development of project site layout, structural design, roads and crane access design, fire protection systems design, electrical design and low current design.

Extension of ELAB Storage Tanks

Ten Filling Stations

Client
Abu Dhabi National Oil Company for Distribution (ADNOC-FOD)

Scope of Work
Schematic design
Design development
Detailed design
Tender documents

Location
UAE

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Landscape
Mechanical
Structural
Urban planning

ECG was awarded the contract to provide the consultancy services to carry out the design and preparation of complete tender documents for the purpose of constructing 10 various types of its filling stations at different locations in U.A.E.

Filling stations facilities generally include petroleum products storage tanks, fuelling bays, convenient stores/ shops/amenity buildings, carwash facilities, lube change, tire repair, LPG cylinder storage, car repair facilities, mosque, staff accommodation, car recovery, utility building and Natural Gas Vehicle (NGV).

ECG prepared several alternatives for the general layout proposals based on the particular services required for each station.

In addition to ECG's original scope, ADNOC requested ECG to create new alternatives for the typical fabric tent used in the minor amenity food court.

Ten Filling Stations

Caltex Lube Oil Blending Plant

Client
Caltex Egypt S.A.E

Scope of Work
Master plan
Concept design
Schematic design
Preliminary design
Design development
Detailed design
Procurement
Construction management
Construction
Commissioning

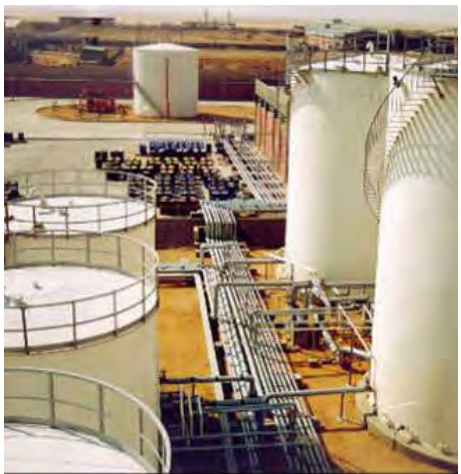
Location
6th of October, Egypt

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
Fire Protection
Instrumentation and control
Piping design
Process
Roads
Structural
Tank design

Premised on a plot area of 26,000m^2, the 7 million dollar lube oil blending facility produces 23,000 tons of automotive, industrial and marine oil of different categories. The plant consists mainly of 3,200m^2 base oil storage area surrounded by a bund wall of soil embankment covered by a bituminous sand layer with eight steel tanks of 300m^3 to 1,000m^3 capacity; 2,400m^2 steel-structured blend center / warehouse building comprises the blending area with five (20m^3) heated tanks (blending kettles) and filling machines; 600m^2 mezzanine floor for storage of empty containers and cartons as well as finished product storage area of 780m^2; in addition to a two-storey building for offices and laboratory; 300m^2 finished product storage area of reinforced concrete bund wall including two steel tanks of 50m^3 to 100m^3 capacity; utility building where the plant boiler and air compressor are located; and 3,000m^2 of uncovered storage area for the storage of drummed additives and products in addition to an extra area for the plant future expansion.

ECG also designed and constructed the site infrastructure including roads, fire protection system, roads and plant fences.

Caltex Lube Oil Blending Plant



Sweidieh Oil Field

Client
Syrian Petroleum Company

Scope of Work
Concept design
FEED
Detailed design
Tender documents
Tender action
Project management

Location
Sweidieh, Syria

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
Equipment selection
HVAC
Instrumentation
Mechanical
Processing
Piping
Plant design
Structural

To significantly increase the Swedieh Oil Field liquid/oil production rate, ECG undertook the FEED and detailed engineering of 150 oil wells' gathering stations; three-phase, 2 stage, 3 gas/oil/water separation plants; transmission pipelines, and a number of massive water injection pump stations. State-of-the-art process, piping, corrosion, erosion, hydraulic, electrical, instrumentation control, telecommunications, civil, and architectural engineering consultancy services were effectively delivered since inception of contract award.

The project aimed at constructing three oil gathering and transportation stations (GTS) with remote test stations (RTS) as well as all necessary pipeline networks and facilities to separate oil from water and associated gases then transport each product in order to optimize their utilization. The project was carefully designed to significantly increase the liquid/oil production rate from the massive formation in Sweidieh Oil Field.

The liquid/oil collected from 150 oil production wells is transported via a network of flow lines to the gathering and transportation stations passing through the remote wells test stations. The main function of each GTS is to handle 20,000m^3 per day of production liquid/oil collected from 50 wells, separate oil with 10-30%

Sweidieh Oil Field

concentration from the associated formation water and gas and test 10 neighboring wells.

The separation process consisted of two stages. Gas separated from Stage I (suspension pressure = 2-3 barg) is transported through gas pipelines to Sweidieh gas plant, while gas separated from Stage II (separation pressure = 0.1-0.2 barg) is first compressed then transported through the same gas pipeline to Sweidieh gas plant. The separated formation water is injected in 60 injection wells, 20 wells for each GTS. The produced oil is transported through pipelines to Tel Addas Terminal Station. The GTS is supplied by electricity through two overhead lines from the exiting 20 kV distribution switchgear at the gas turbine power plant. The GTS units are secured by incorporating an emergency shutdown system.

The project consists of flow lines between wells and RTSs, as well as three main oil GTSs; the pipelines between RTS and related GTS to transport produced liquid/oil from RTSs to GTSs; three pipelines between GTSs to Sweidieh gas plant to transport separated associated gas; three pipelines from GTSs to Tel Addas Station to transport oil containing 10-20% of water and 60 flow lines between GTSs injection manifold to injection wells (20 W.I. wells for each GTS).

Each GTS comprises wells inlet manifold; vertical test separator; bulk production horizontal three phases separators (Stage I); bath water type heaters; horizontal two phases separators (Stage II); oil with 10-20% water shipping centrifugal pumps; formation water settling Con Roof tank; formation water pumps; skimmed oil tank; associated gas centrifugal compressors electrically driven, gas/oil/water wells flow lines and pipelines; control and communication systems; control building including control rooms and offices; two flare units, high and low pressure type; chemical injection system; fire protection system; lake and drain system; fence around each GTS and rigging system.

CPF Export Crude Oil Quality Improvement

Client
RAM Energy, Sudan

Owner
GNPOC, Sudan

Scope of Work
FEED review
Detailed design
Construction documents

Location
Heglig, Sudan

Types of Activities
Civil works
Electrical
Instrumentation and control
Piping
Process
Rotary equipment
Static equipment
Structural

The processed oil in Heglig Central Processing Facility (CPF) is exported to Sudan Port via 28" crude oil export pipeline supported by 6 pump stations as per Greater Nile Petroleum Operating Company (GNPOC) export oil specifications (BS&W <=0.5%). Lately, the export oil BS&W was observed to exceed the specifications more frequently.

An efficient method was sought to enhance the CPF processing efficiency keeping in consideration upgrading of CPF facilities including addition of more tanks. As per process design, un-separated emulsion in the Electro-Static Treaters (ESTs) should flow to the Off-Spec Tank, and then be recycled back to the ESTs for reprocessing. However, the process gets upsets whenever Off-Spec Tank contents are recycled to the ESTs. To overcome that, the Off-Spec Tank contents were spiked directly to Crude Oil Storage Tank (COST) after water draining.

ECG scope included design of fixed roof Off-Spec Storage Oil Tank 10,000 BBL capacity with all needed attachments and accessories, sizing selection of an Off-Spec Oil spiking pumps, design of interconnecting piping from & to the Off-Spec Oil Tank / Off-Spec spiking pump including piping layout, stress analysis, pipe supports and isometrics, instrumentation & control of the system, design of fire protection system for the Off-Spec Storage Oil Tank and electrical designs for power, lighting, earthing, lightning & cathodic protection.

CPF Export Crude Oil Quality Improvement

South Annajma Early Production Facility

Client
RAM Energy, Sudan

Owner
Star Oil Company, Sudan

Scope of Work
Basis of design report
Detailed design
Procurement services

Location
South Annajma, Sudan

Types of Activities
Architectural
Civil works
Communications and security systems
Infrastructural
Instrumentation & control
Mechanical
Process
Piping
Static equipment
Structural

Star Oil Operating Company started processing early crude oil production facility of about 10,000 BOPD from five targeted wells in the recent remarkable discoveries in South Annajma area. This phase was executed on a fast-track mode with an overall duration of 7 months. The project comprised field surface facilities and operation base camp. South Annajma Oil Field is located in the north-east of Keyi Oil Field, approximately 22km away from Keyi Field Production Facilities (FPF).

The mission of this project was to transfer the crude oil from five wellheads within South Annajma Oil Field to an Early Production Facility (EPF) for removal of bulk water as well as further treatment to meet export specifications of maximum 0.5% BS&W and then export 10,000 BOPD approximately via 43km export pipeline to the existing light crude shipping tanks at Fula CPF of Petro-Energy Operating Company (Block 6). The combined oil sales of (Star Oil Company and Petro-Energy L/C) is transferred via the Light Crude pipeline connected to the GNPOC pipeline.

South Annajma FSFs comprises Oil wellhead facilities for the 5 wellheads covering piping assembly, sand traps, pig launchers, chemical injection system, on-site electrical work including: outdoor lighting and electrical heat tracing for above-ground piping, earthing, cathodic protection and all the tie-in works to electrical substation

South Annajma Early Production Facility

(supplied and installed by others), instrumentation and telecommunication system inclusive of fiber optic cables connecting wellheads to the main plant control room, related civil works. FSF works also included 5 flow lines of 6" diameter, insulated and underground of total length of around 8 km.

The operation base camp comprises fully furnished accommodation rooms for 60 persons; fully furnished administration offices; fully furnished Mosque and ablution area for 100 persons; fully equipped and furnished laundry building; fully equipped and furnished Restaurant Building including kitchen & dining for 100 persons; equipped internal recreational building & outdoor Futsal ground; clinic; potable and utility water supply system; electrical substation; emergency generator; concrete walkways; satellite TV system; computer system with Local Area Network system (LAN); Safety and Information sign boards; fire alarm and fire protection systems; internal gravel and concrete road; perimeter and area lighting; car parking area; fuel station; workshop; warehouse; perimeter fence including main and emergency gates; observation towers; guard room and general material stockyard.

The Operation Base Camp is designed and constructed taking into account all factors of safety, functionality, maintainability and to provide a satisfactory comfort level while complying with relevant international codes and practices and Sudan government regulations.

South Annajma Early Production Facility

South Annajma Export Pipeline System

Client
Petroneeds Services International

Scope of Work
Basis of design report
Detailed design
Procurement documentation

Location
South Annajma, Sudan

Types of Activities
Electrical
Mechanical
Piping
Pipeline
Processing
Static equipment
Structural

Star Oil Operating company is a newly formed petroleum company to carry out the development of block 17, which covers an area of 22,185m^2 in south Kordofan. The development's objective was to transport 60,000 BOPD of crude oil, that is coming from the early production facility "EPF" at Annajma area to the Central Processing Facility "CPF" at Fula area. To meet this target, 43km - 12'' underground pipeline was constructed to transfer 10,000 Barrels of Petrol per Day (BOPD), in its first stage to be increased gradually to 60,000 BOPD.

Star Oil awarded the EPCC project to "Petroneeds Services International", which entrusted ECG with the services of design, detailed engineering and procurement documentation. The project comprised head pump station at Annajma area; two metering skids, one on each end of the pipeline; pigging facilities at both ends of the pipeline; emergency power generation; all related facilities for safe operation and control of the pipeline; service road of approximately 4.8km including a seasonal river crossing, in addition to tie-in with Petro-Energy CPF at Fula.

Project design services included process and pipeline dynamic simulation, Piping and Instrumentation Diagram (P & ID), Piping Flow Diagram (PFD), Utility Flow Diagram (UFD), safeguarding philosophy; pump station design (plot plan, equipment layout, pipe supports and general arrangements); pipeline design (alignment sheets, crossing details, etc), Instrumentation & Control (I & C); stress analysis; cathodic protection; electrical (power, lighting, earthing); and HAZOP study.

Also, a fibre optic cable was designed to be routed along the side of the pipeline for the transfer of control data.


South Annajma Export Pipeline System

Infrastructure for the Transmission of Natural Gas to Upper Egypt: Natural Gas Pipeline

Client
Kvaerner Process Limited

Scope of Work
Theoretical Study of Soil Properties
Soil Investigation
Topographic Survey
Environmental Impact Assessment
Determining Pipeline Route
Studies of Archeological Areas
Logistic Studies
Preliminary Studies

Location
From 6th of October to Assuit, Egypt

Types of Activities
Civil
Pipeline System
Structural

The project included part of the preliminary studies for extending a high-pressure pipeline to transport natural gas from 6th of October City to Assuit.

The pipeline, owned by Wadi El-Nile for Natural Gas Company, is a part of SETI project. With a diameter of 36 inch, the pipeline main route extends for 470 km; with two branches (70 km each) allocated to transfer the natural gas to a company manufacturing sugar and another one manufacturing cement.

The pipeline pressure is preserved at 70 bar to be consistent with the pressure of the natural gas network.

Aviation Depot Handling Jet A1

Client
Caltex Egypt

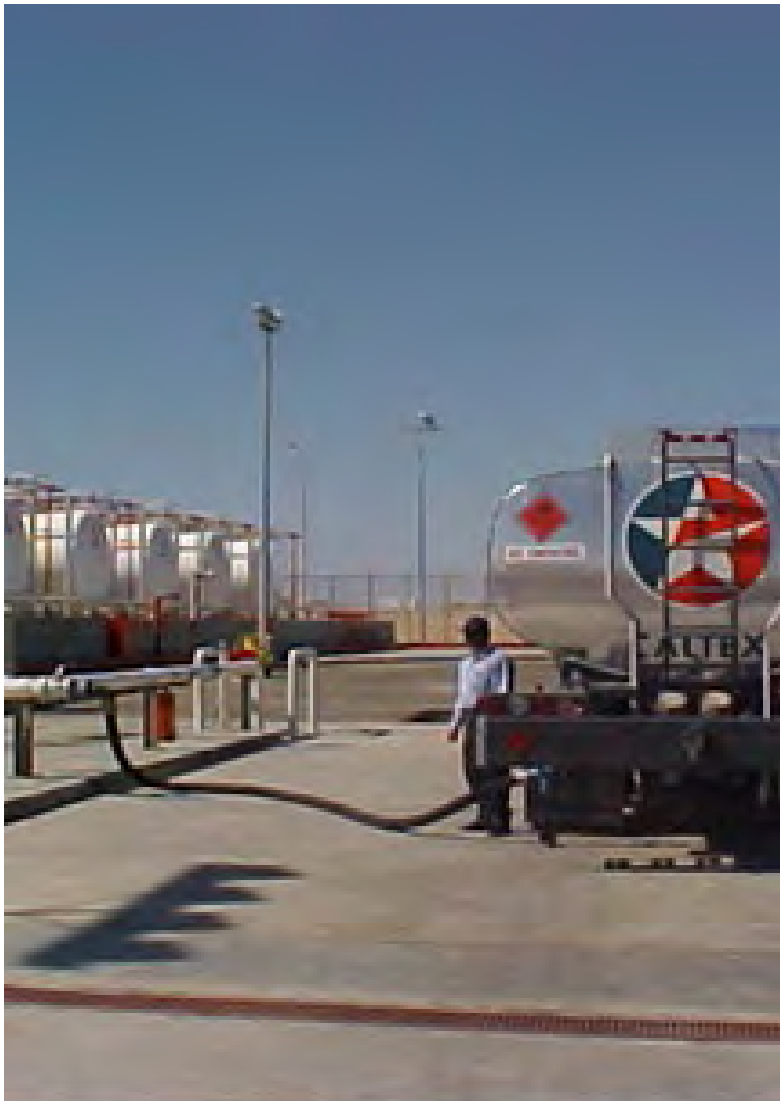
Scope of Work
Conceptual design
Detailed design
Procurement
Design permits
Tender documents
Tender action
Construction management
Construction supervision

Location
Marsa Alam, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
Mechanical
Plant design
Structural
Urban design

The project aimed at the construction of an aviation depot handling jet fuel comprising five 50,000-liter tanks, dike wall, product receiving system, refueled loading system, fire protection system for operational building, two storage blocks, vehicle wash system, oil/ water separator, administration building, area paving and hardscaping.

Aviation Depot Handling Jet A1



Jet Fuel System for Cairo International Airport-Terminal Building 2

Client
Ministry of Civil Aviation
(Cairo Airport Company)

Location
Cairo International Airport, Egypt

Scope of Work
Basic design
Detailed design
Technical specifications
Tender documents
Construction supervision

Types of Activities
Process design
Hydraulic analysis
Instrumentation and control
Piping

The jet aircraft fuel system allows refueling personnel to pump, manage, and deliver jet fuel to aircraft either at remote stands or at the apron connected gates.

This project had covered the demolition of the existing refueling network. This included 650 meters of the main 24" pipelines; 500 meters of the 18" pipelines; and 600 meters of the 16" pipelines within the distribution network of Terminal Building 2.

To maintain the refueling of airplanes at the new 18 different locations, two 3,000 meter-long 24" pipelines and two 1,600 meter-long 14" pipelines were installed to replace demolished parts.

Jet Fuel System for Cairo International Airport-Terminal Building 2

Jet Fuel System for Cairo International Airport-Terminal Building 3

Client
Ministry of Civil Aviation
(Cairo Airport Company)

Scope of Work
Basic design
Detailed design
Technical specifications
Tender documents
Construction supervision

Location
Cairo International Airport, Egypt

Types of Activities
Hydraulic analysis
Instrumentation and control
Piping
Process design

The jet fuel system allows refueling personnel to manage, pump, and deliver fuel to aircraft either at remote stands or at the apron connected gates.

This project covered the installation of a jet fuel pumping station and a control system attached to the jet fuel storage tanks already existing at Terminal Building 3. The control system encompasses a distributed control system, distribution network, and jet fuel hydrants.

The system of jet fuel hydrants includes 13 km-long 14" pipelines, 1 km-long 6", 8", and 24" pipelines, and three 17-bar pumps (each 250 m^3/hr), along with cathodic protection, leak detection, filtration, instrumentation and control systems.

The system is designed for the simultaneous refueling of 10 airplanes at 70 different new parking locations.

Jet Fuel System for Cairo International Airport-Terminal Building 3

Fire Alarm, Firefighting, and Gas Detection Systems for Nasr Petroleum Co.

Client
Petroleum Safety & Environmental Services Co. (PETROSAFE)

Location
Egypt

Scope of Work
Fire protection system philosophy
Schematic design
Detailed design
Tender documents
Basis of design report

Types of Activities
Communications & security systems
Mechanical
Instrumentation

The project covered the automatic fire alarm, firefighting, and gas detection systems for a total of 19 buildings, including all electrical substations and control buildings, as well as a data center, at Nasr Petroleum Co.

The firefighting system includes clean agent and CO2 systems. The total annual production is 6.5 million tons of petroleum products.

Fire Alarm, Firefighting, and Gas Detection Systems for Nasr Petroleum Co.

Fire Alarm, Firefighting, and Gas Detection Systems for Nasr Petroleum Co.

Client
Petroleum Safety & Environmental Services Co. (PETROSAFE)

Scope of Work
Fire protection system philosophy
Basis of design report
Detailed design
Tender documents

Location
Egypt

Types of Activities
Civil works
Communication & security systems
Electrical
Mechanical
Piping
Structural

The project covered the automatic fire protection system for 32 storage tanks and 8 process pump stations at Nasr Petroleum Co. The fire protection system depends on foam and cooling water for firefighting, alongside fire alarm and gas detection systems.

Work also covered a steel structure for pipe racks. The total Annual production is 6.5 million tons of petroleum products.

Fire Alarm, Firefighting, and Gas Detection Systems for Nasr Petroleum Co.

Fire Protection System for Pump Stations & Vapor Recovery Units at Nasr Petroleum Co.

Client
Petroleum Safety & Environmental Services Co. (PETROSAFE)

Location
Egypt

Scope of Work
Fire protection system philosophy
Basis of design report
Detailed design
Tender documents

Types of Activities
Communications & security systems
Mechanical
Instrumentation

The project covered the automatic fire protection system of 5 pump stations associated with crude oil distillation units. The fire protection system utilizes foam and cooling water for firefighting, alongside fire alarm and gas detection systems.

Work also covered a steel structure for pipe racks. The total annual production is 6.5 million tons of petroleum products.

Fire Protection System for Pump Stations & Vapor Recovery Units at Nasr Petroleum o.

Fire Alarm & Firefighting Systems at Al-Zaytiat Port Platforms for Nasr Petroleum Co.

Client
Petroleum Safety & Environmental Services Co. (PETROSAFE)

Location
Egypt

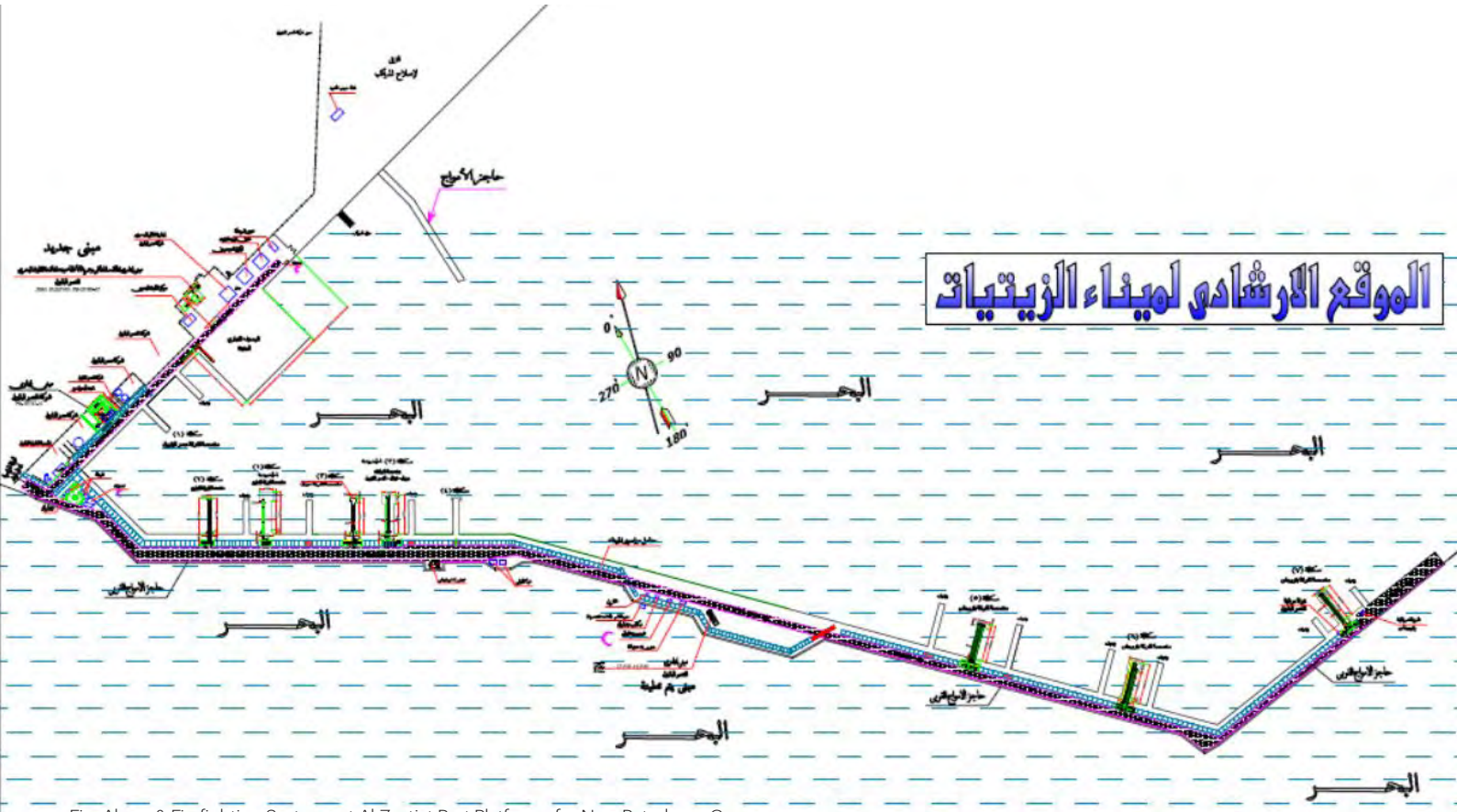
Scope of Work
Fire protection system philosophy
Basis of design report
Detailed design
Tender documents

Types of Activities
Communication & security systems
Mechanical
Instrumentation
Piping
Structural

Operated by Nasr Petroleum Co., Al-Zaytiat Port is a specialized naval port located in Suez. It comprises seven platforms dedicated to the import of petroleum products (liquids and gases) for petroleum companies.

Products imported to Al-Zaytiat Port constitute around 90% of the total petroleum products imported to Egypt. The port also contains a commercial platform.

This project covered the automatic fire protection system at the port. The system employs clean agent and CO2 systems for firefighting, alongside fire alarm and gas detection systems.



Fire Alarm & Firefighting Systems at Al-Zaytiat Port Platforms for Nasr Petroleum Co.

Stress Analysis for GASCO Piping System

Client
Abu Dhabi Gas Industries Ltd. (GASCO)

Location
Abu Dhabi, UAE

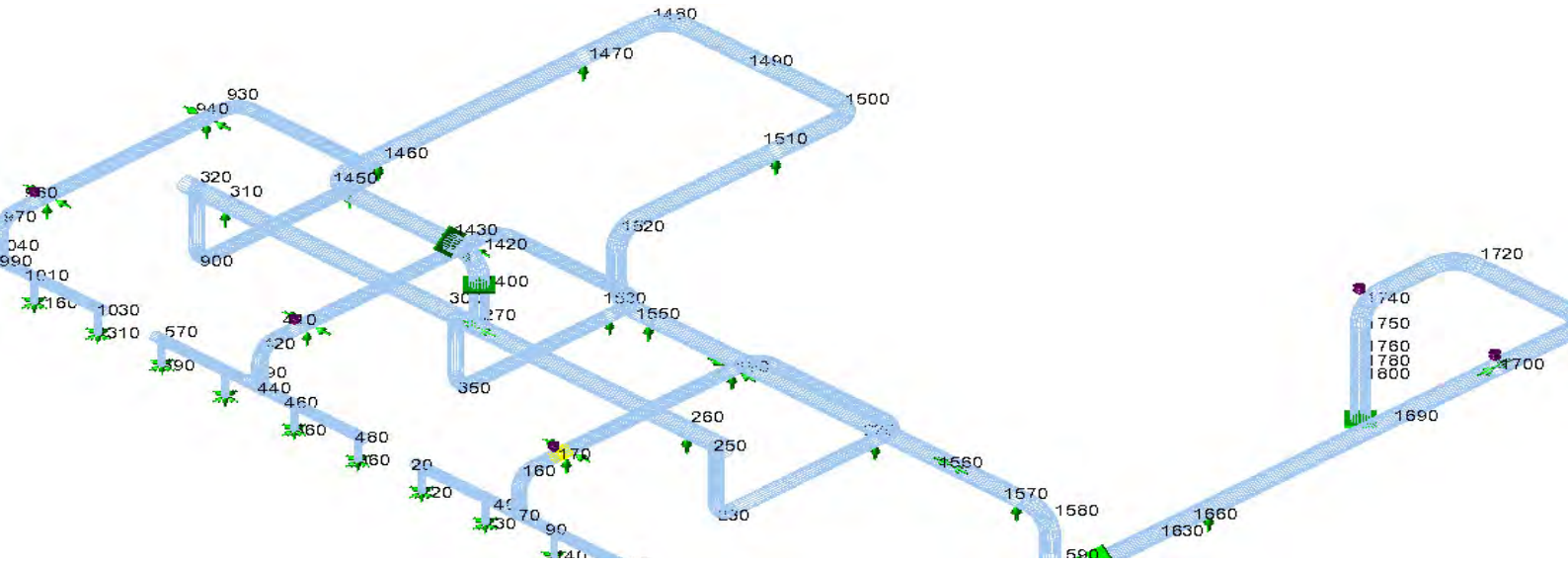
Scope of Work
Studies

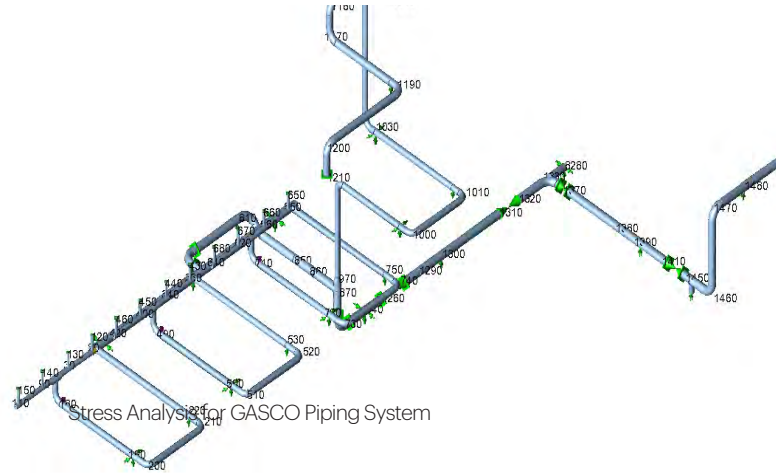
Types of Activities
Plant design

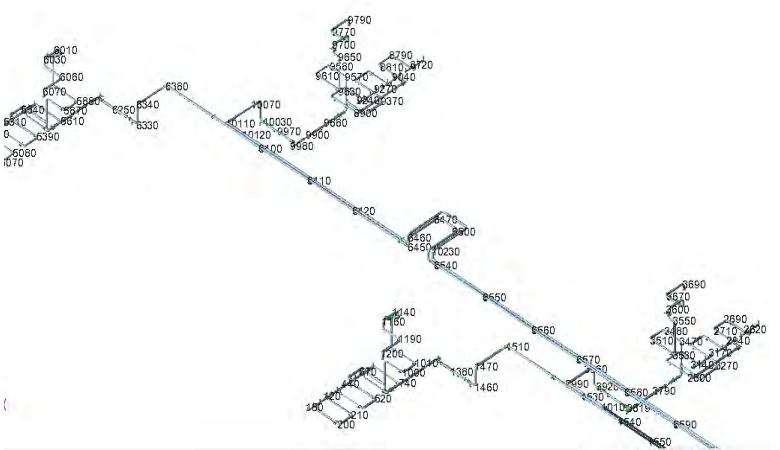
Established in 1978, Abu Dhabi Gas Industries Ltd. (GASCO) is the operating company responsible for processing the natural and associated gas produced from onshore oil operations in the Emirate of Abu Dhabi. The project aimed at conducting a stress analysis to determine the causes of flange gasket leakage in Units 391, 392, 393, and 394 of the Habshan Gas Processing Facility owned and operated by GASCO.

The analysis was carried out using the pipe stress analysis software CAESAR II, with due consideration of Process Piping Code B31.3 of the American Society of Mechanical Engineers (ASME). The analysis covered an assessment of the adequacy of pipe supports, as well as an investigation as to whether there were excessive piping system loads at flange locations.

The project was concluded with a stress analysis report covering the four units (a total of 32 process lines). The report included rerouting recommendations for the piping system to resolve the leakage problem.







Automatic Fire Alarm and Firefighting System for Suez Oil Processing Co. – Tanks

Client
Petroleum Safety & Environmental Services Co. (PETROSAFE)

Scope of Work
Basis of design report
Detailed design
Fire protection philosophy
Tender documents

Location
Gulf of Suez, Egypt

Types of Activities
Communications and security systems
Mechanical (firefighting)
Piping
Structural

Suez Oil Processing Company (SOPC) is one of the leading and largest petroleum refineries in Egypt, with total annual capacity of 2 million tons of petroleum products.

The petroleum sector in Egypt is currently focusing on the safety of major production facilities, and SOPC is currently upgrading and expanding its existing fire protection systems.

ECG was awarded a contract by PETROSAFE to prepare designs and perform detailed engineering services for the automatic fire protection systems for 16 floating-roof crude oil tanks, and 2 natural gas pressure vessels. The scope of work covers firefighting systems (foam and cooling water), fire alarm and detection systems, control system architecture, as well as the required steel structure for pipe racks, and civil design for foundations.

Automatic Fire Alarm and Firefighting System for Suez Oil Processing Co. – Pump Stations

Client
Petroleum Safety & Environmental Services Co. (PETROSAFE)

Scope of Work
Fire protection philosphy
Concept design
Detailed design
Tender documents

Location
Gulf of Suez, Egypt

Types of Activities
Communications & Security Systems
Mechanical (firefighting)
Piping
Structural

Suez Oil Processing Company (SOPC) is one of the largest petroleum refineries in Egypt, with a total annual capacity of 2 million tons of petroleum products.
At the moment the petroleum sector in Egypt is focused on the safety of the major production facilities, and SOPC is currently upgrading and expanding its existing fire protection systems.

ECG was awarded a contract by PETROSAFE to perform detailed engineering services for the automatic fire protection system for the reformers pumps and pumps repair station. The scope of work covers firefighting systems (foam and cooling water), fire alarm and detection systems, and control system architecture, as well as the required steel structure for pipe racks, and civil design for foundations.

Upgrade of Fire Alarm and Firefighting Systems at Ras Gharib Petroleum Treatment Plant

Owner
General Petroleum Company (GPC)

Client
Egyptian Maintenance Company

Scope of Work
Detailed design
Design review

Location
Ras Gharib, Egypt

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
Mechanical

The project aims at upgrading and developing the firefighting and fire alarm systems covering the crude oil tanks and the new control room at Ras Gharib Petroleum Treatment Plant, in one of the oil fields in the Eastern Desert.

The new firefighting system includes:

- New water tank
- New firefighting pump station
- Cooling networks for 10 crude oil tanks
- Foam firefighting networks for 24 crude oil tanks, complete with bladder tanks for foam concentrate storage, and deluge valves
- Spray nozzles for the water cooling systems
- Piping and supports

Architectural and civil designs include:

- Reviewing and updating control room architectural and civil drawings.
- Issuing soil investigation reports for tank area, pump station, and control room building.
- Reviewing and updating foundation calculations and detailed drawings for fire tank and ring beam, bladder tanks, piping supports, and sleepers.
- Preparing foundation calculations and detailed drawings for pumps and valve chambers;
- Steel structure calculations and detailed drawings.

Communications and Security Systems include:

- System layouts showing the equipment, outlets, points distribution.
- Systems layouts showing cables routing to feed/ connect different locations.
- Single line diagrams covering Low Current Systems.
- Systems Technical Specifications.
- Systems bill of quantities.
- Cause and Effect, and loop diagrams

Electrical systems include:

- Lighting
- Earthing
- Cathodic protection

Mechanical designs include:

- Issuing fire protection philosophy
- Reviewing and updating water, foam and CO2 demand reports
- Hydraulic calculations for water and foam piping
- Developing firefighting water network layout
- Piping general arrangement
- Stress analysis
- Issuing data sheets

Firefighting and Fire Alarm Systems for GEMPETCO Facilities

Client
Petroleum Safety & Environmental Services Co. (PETROSAFE)

Scope of Work
Basis of design report
Detailed design
Fire-protection philosophy
Tender documents

Location
Gemsa, Egypt

Types of Activities
Civil
Communications & Security Systems
Mechanical (Firefighting)
Piping Stress Analysis
Plant Design
Fire Alarm & Detection
Instrumentation & Control
Structural

Gemsa Petroleum Company (GEMPETCO) is conducting an upgrade of its fire-protection and detection systems for its existing facilities in Zeit Bay, Gemsa.

ECG was awarded a contract by Petrosafe to perform detailed engineering design services of the automatic fire-protection system for the following components:

- 2 Crude Oil Storage Tanks
- Diesel Fuel Storage Tank
- Process Area
- API Separator
- Chemical Storage Yard
- Workshop Building
- Control Building
- Accommodation Area

Chemical/ Fertilizer Plants

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Chemicals Plant at Wadi El-Natroun Industrial Zone

Client
Obegi for Chemicals Industrial and Polymers S.A.E

Scope of Work
Conceptual design
Detailed design
Tender documents
Construction supervision

Location
Wadi El-Natrount, Egypt

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Instrumentation and control
Mechanical
Piping
Static equipment
Structural

Located in the Industrial Zone of Wadi El-Natroun, on a total land area of about 39,771 m^2, the project includes a new chemical plant for the production of two main product streams: Polyvinyl Acetate (PVA) and Styrene Acrylic (SA); as well as raw material storage, process building, final product warehouses, and administration building, along with all the ancillary facilities required for the operation of the plant.

The chemical plant is designed to include various components:

- Main production building
- Administration building
- Maintenance workshop
- Power station and substation
- Nitrogen/air generators
- Wastewater treatment plant and pump room
- Air-conditioned secondary raw material warehouse
- Monomers storage area
- Firefighting foam system and storage
- Firewater/raw water tank and firewater pump room
- Electrical utilities buildings (transformer, diesel generator, distribution panels, etc.)
- Potable water, firewater and demineralized water tanks and pumps along with demineralization plant
- Fences and guardhouses
- General site utilities, including infrastructure networks and roads

Chemicals Plant at Wadi El-Natroun Industrial Zone

Extension of Alexandria Chemicals Terminal (ALX-CT)

Client
Alexandria Chemicals Terminal S.A.E, Egypt

Scope of Work
Concept design
Detailed design
Construction management
Construction supervision

Location
Alexandria, Egypt

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
Equipment selection
Instrumentation and control
Mechanical
Piping design
Process
Roads
Structural
Tank design

After concluding the design and construction supervision of Alexandria Chemicals Terminal (ALX-CT) in 2009, the Owner assigned ECG to start the design development for the "Extension" of the terminal located at El-Dekheila Port. The project's aim was to increase the total storage capacity from 26,000m^3 to be 65,000m^3 by the end of construction.

Key project components comprised adding 13 chemical storage tanks of capacities ranging from 1,870m^3 to 4,000m^3, two piggable pipelines each with a length of 550m for the transfer of products from the jetty to the storage facilities, expansion of the truck loading station for bulk chemical land shipments; expansion of the nitrogen blanketing system for all chemical storage tanks; along with the expansion of all other service utilities including fire alarm, fire protection and compressed air systems.


Extension of Alexandria Chemicals Terminal (ALX-CT)

Aswan Fertilizer Plant

Client
Abou Zaabal Fertilizer & Chemical Company

Scope of Work
FEED
Concept design
Detailed design
Project management
Construction management
Construction supervision

Location
Aswan, Egypt

Types of Activities
Architectural
Civil works
Communications & security systems
Electrical
HVAC
Mechanical
Plant design
Piping
Structural

The fertilizer production facility, located in ElSebaaeya district of Edfu, produces single superphosphate and triple superphosphate at a combined capacity of 1,600 MT/ day. The facility resides on a 350,000m^2 plot area and is divided into two zones.

The first comprises fertilizer production and auxiliary facilities stretching over a total expanse of 207,000m^2.

The second is reserved for future production of sulfuric acid. Ideally located 500m away from the River Nile banks, the facility is assured of a secure water supply source that is vital for its industrial/domestic uses and cost-effective operations.

Aswan Fertilizer Plant

KIMA Ammonia and Urea Fertilizers Plant

Client
Tecnimont S.p.A

Scope of Work
- Endorse and countersign the complete set of civil documentation
- Undertake the responsibility of the design before local authority

Location
Aswan, Egypt

Types of Activities
Architectural
Structural

Tecnimont S.p.A., main subsidiary of Maire Tecnimont Group, has been awarded an engineering procurement-construction-commissioning (EPCC) contract on a lump-sum turnkey basis for the realization of a new fertilizers complex within the existing industrial area in the Aswan governorate (Upper Egypt). The owner is Egyptian Chemical & Fertilizers Industries – KIMA; an Egypt-based company that operates in the chemical sector.

The new fertilizers complex will be composed of:
- One ammonia production unit of 1,200 tons/day capacity, implementing the KBR "Purifier" technology;
- One urea melt & granulation production unit of 1,575 tons/day capacity implementing the "Granulated Urea" technology of Stamicarbon;and
- All the necessary utilities & off-site facilities to support the process units.

The completion is expected by the end of 2017 and production is expected to start by early 2018 with a total investment of about USD 550 million.

KIMA Ammonia and Urea Fertilizers Plant

Softner Manufacturing Plant

Client
Confidential

Scope of Work
Design development
Detailed design
Shop drawing
Construction supervision

Location
6th of October City, Egypt

Types of Activities
Architecture
Communications and security systems
Electrical
HVAC
Interior design
Mechanical
Structure

The purpose of this project was to construct a new softener manufacturing facility on an area of approximately 5,500m^2 within the existing plant. The project houses all the facilities required for the planned production including:

- Making Building: one-storey high, air conditioned, steel-structured space divided into few separated functional spaces for batch making system, raw material staging, buffer tanks and workshop.
- Packing building: one-storey high, air conditioned, steel-structured space divided into few separated functional spaces for packing and warehouse.
- Utilities building: two levels, subject to future expansion up to four levels including transformers in the ground floor, ring main unit and medium & low voltage panels in the first floor, compressed air unit in the second floor, and chillers & cooling towers on the roof.
- Administration building: two levels, subject to future expansion up to 4 levels including IT room, quality assurance labs, 2 meeting rooms that could be converted to one larger room, 2 huddle rooms, breakout area, toilets (for 20 permanent workers), and office spaces accomodating 15 persons.
- Tank farm, which has reinforced concrete foundation to support the tanks.

ECG used Revit BIM Package throughout the design process.

Softner Manufacturing Plant

Shahrazad Phase 2 (Sodium Carbonate Plant)

Client
Solvay Alexandria Sodium Carbonate SASC

Scope of Work
Project management
Detailed design
Tender documents
Tender action
Construction management
Construction supervision

Location
Alexandria, Egypt

Types of Activities
Architectural
Electrical
Instrumentation
Mechanical
Piping
Static equipment
Structural

Alexandria Sodium Carbonate Plant was established in 1974 as a government Company, and was acquired by Solvay, Belgium in 2008. Solvay is a world known firm specialized in this field and is named after the Belgian industrial chemist Ernest Solvay who developed the production method in 1861. Solvay owns and operates several similar facilities worldwide.

Solvay planned to complete modernizing the old plant by 2014 as well as increase the production of the plant from 130,000 to 200,000 metric tons through a 3-phase development program.

ECG scope in phase II comprised Engineering, Procurement and Construction Management (EPCM) through the provision of the detailed engineering works for the new production facility including:

- Review of manufacturers' shop drawings for static production lines;
- Detailed design of the associated piping, instrumentation, rotating equipment and electrical power and lighting details, foundations of the production equipment ranging from 20m to 43m high and weighing 150 tons to 300 tons;
- Design and obtaining permits for the steel structure (7.5m x 22m x 36m), access platforms and foundations; and
- Review of the existing steel structure (14m X 30m X 36m) of the production plant in order to verify the requirements for replacement and reinforcement to enhance the building structure before the demolition of the connected adjacent older building as well as to determine the corrosion removal or treatment.


Shahrazad Phase 2 (Sodium Carbonate Plant)

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ECG work required close coordination with Solvay representatives both in Brussels and Alexandria for the local and international procurement of Plant equipment, components and materials as well as local manufacturing services and construction contracting.

Our construction management team was tasked to complete the installation as a fast track project to meet plant operation, production plans and ultimately client financial commitments. Furthermore, the restricted plant space, hazards in operating a chemical plant, transportation and installation of heavy and large size pieces of imported equipment; all posed additional challenges necessitating accurate planning, close monitoring, immediate corrective actions and highly skilled construction management team.

Alexandria Chemicals Terminal (ALX-CT)

Client
Alexandria Chemicals Terminal S.A.E, Egypt

Scope of Work
Concept design
Environment assessment study
Detailed design
Construction management
Construction supervision

Location
ElDekheila Port, Alexandria, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
Equipment selection
Infrastructure
Instrumentation and control
Mechanical
Piping design
Process
Structural
Tank design

In 2007, ALX-CT, a newly founded company specialized in the fields of importing/exporting and handling industrial chemicals, awarded ECG the engineering services contract entailing the design, detailed engineering, construction supervision and management, and commissioning of the Alexandria Chemicals Terminal (ALX-CT) project. The terminal provides bulk chemical receiving, storage, and packaging. ALX-CT is currently the first-of-its-kind terminal in North Africa and is the third terminal of its type in the Middle East.

Key project components comprised:
- 13 chemical storage tanks of capacities ranging between 850m^3 and 2,100m^3.
- At the harbor quay, 550m away from the terminal, a chemical receiving station was set up to secure conveyance of industrial chemicals to the chemicals storage tanks via 3 extended piggable pipelines.
- A state-of-the-art truck loading station for bulk chemical land shipments; nitrogen generators for tank blanketing of all chemical storage tanks; a cutting-edge control unit adopting a programmable logic controlling system.
- An administration building housing a control room and a laboratory.
- Service utilities: including fire alarm, fire protection and compressed air systems.

The design also took into consideration the potential of doubling the capacity of the terminal in the future.


Alexandria Chemicals Terminal (ALX-CT)

Polyvinyl Acetate (PAVC) Plant

Client
Vinavil - Egypt (Tibah Chemicals Company)

Scope of Work
Topographic survey
Geotechnical study
Detailed design
Tender documents
Tender action
Construction management
Construction supervision

Location
Suez, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
Infrastructure
Mechanical
Piping
Process design
Structural
Tanks and pressure vessels

The plant was constructed aiming to produce vinyl/ polymers compound which is used mainly for adhesives and paints applications. With a plot area of 16,500m^2, the plant comprises the industrial building which accommodates 2 reactors with the provision of adding a third one, it also includes the finishes product silos (5 x 60 m^3) and the filling machines, office building, security room, electric substation, monomer tank farm, utilities area, and production & drumming unit building.

Polyvinyl Acetate (PAVC) Plant

Extension of Jotun Paint Plant

Client
ElMohandes Jotun S.A.E.

Scope of Work
Basis of design report
Schematic design
Detailed design
Tender documents
Tender action
Construction supervision

Location
Industrial Zone, Ismailia, Egypt

Types of Activities
Communications & security systems
Electrical
HVAC
Instrumentation
Mechanical
Piping
Plant design
Roads
Static equipment
Structural

ElMohandes Jotun S.A.E is one of the leading paint companies in Egypt, possessing a remarkable market share. Due to the growing needs in the Egyptian market, it has become necessary to upgrade and expand the existing Jotun Paint Plant.

The project aimed to expand the capacity of the tank farm with additional three 40,000-liter tanks; install new filling, unloading and emptying (transfer) pumps; incorporate four smaller tanks in the production building; in addition to fitting all the associated mixers, pumps, piping, civil and electrical services.

The works also encompassed raising the use of automation and instrument/ control techniques; improving the safety and health measures, especially firefighting and ventilation systems in the two new warehouses; re-location of some machinery pipe conversion; dismantling some of the existing equipment; completing new installations required for the expansion process as well as related structural works.

Factories

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

APEX Pharma Factory

Client
Multi-Apex Pharma

Scope of Work
Concept Design
Schematic Design
Detailed Design
Tender Documents
Tender Action

Location
King Abdullah Economic City, Saudi Arabia

Types of Activities
Architecture
Communication and Security Systems
Electrical
HVAC
Landscaping
Mechanical
Roads
Structural

Located in King Abdullah Economic City, on a total area of 49,960 m^2, the project is a state-of-the-art pharmaceutical production facility comprising a ground and first floors, designed and constructed over two phases:

Phase 1: with a built up area of 15,300 m^2, comprises solid dosage forms and commercial batches production areas, a pilot area for manufacturing process development; and the Research and Development Department.

Phase 2: with a built up area of 8,500 m^2, is reserved for the manufacturing of other dosage forms.

APEX Pharma Factory

Renovation of Unilever Factory

Client
Unilever Mashreq

Scope of Work
Conceptual design
Detailed design
Tender documents
Tender action

Location
6th of October City, Egypt

Types of Activities
Architectural
Building Management System (BMS)
Electrical
HVAC
Mechanical
Structural

With a footprint area of 5,412 m^2 and a total built-up area of 13,500 m^2,
The factory of Unilever Mashreq is located at Industrial Zone 4 in 6th of October City.

The project covered the renovation and refurbishment of the Powder Factory (steel structure), which comprises the following buildings:

- Sprays Tower (for powder drying)
- Process Building (production): ground floor and five upper floors
- Packing Building: ground floor and mezzanine

Renovation of Unilever Factory

Electronics Factory in New Assiut City

Client
Wadi El Nile for Contracting & Real Estate Investments

Scope of Work
BODR
Design development
Detailed design
Construction supervision

Location
New Assiut, Egypt

Types of Activities
MEP

The factory building consists of a ground floor and three upper floors. The ground and first floors are planned to be fully finished and equipped.

The second and third floors (designed on a shell-and-core basis) are set aside for future expansion, and would include electromechanical systems.

The project also covers a power plant adjacent to the factory building.

Electronics Factory in New Assiut City

ANSDK Second Direct Reduction Plant

Client
Kobe Steel Ltd.

Location
Alexandria, Egypt

Scope of Work
Preliminary design
Detailed design
Shop drawings
Bills of quantities (Piping Package)

Types of Activities
Electrical
Instrumentation and control
Piping

Owned by Alexandria National Iron & Steel Co. (ANSDK), the plant was established to be the same as the First Direct Reduction Plant established back in 1986.

This project covered the piping of the Second Direct Reduction Plant within the core area and the rack yard. The design package included the piping route plan, steel structure arrangement plan, general foundation and anchors plan, piping arrangement drawings, piping isometrics, piping support drawings, operation support drawings, operation platform drawings, piping stress analysis, and material takeoff lists for piping, supports, insulation, and site painting and welding.

The plant includes a Midrex iron-making plant with an annual production capacity of 830,000 tons (within the Core Area), a water treatment system, and a material handling system. Based on improvements in available technology, some modifications were introduced to the plant to improve production and maintenance activities.

The plant is divided into three areas:

- Core Area: furnace, compressor, reformer, and stack areas
- Raw Material (Iron Oxide) & Finished Product Area
- Rack Yard: overhead piping on the pipe racks within the plant battery limit

Piping mainly consists of utility fluid distribution pipes (up to 2,200 mm in diameter), and weighs approximately 900 tons. The piping system also includes the pipes interconnecting the Water Treatment System and the Core Area. Piping endpoints at other areas or buildings are located in the vicinity of the pipe rack.

The plant was successfully established at a construction cost of USD 125 million, and the first production was initiated in September 1997.

ANSDK Second Direct Reduction Plant

Energya Extra High-Voltage Cables Factory

Client
Energya Industries Group (ElSewedy Helal)

Scope of Work
Detailed design
Shop drawings review

Location
10th of Ramadan City, Egypt

Types of Activities
Architectural
Communications & security systems
Electrical
HVAC
Mechanical
Piping
Plant design
Roads
Structural

Premised on a plot area of 168,000m², Energya extra high-voltage cables factory was constructed in the industrial city of 10th of Ramadan. The main component of the factory was the production building. With a built-up area of 51,750m², it accommodated all production equipment and testing/laboratory facilities. Other factory elements included a 10,000m² warehouse, a 10,000m² carpentry workshop, an 830m² luxurious three-storey office building, a 120m high tower, hot-air treatment rooms, a mosque and associated facilities, a raw material building and an open-air product storage room. A highly advanced compressed air and nitrogen chilled water utility system was installed at the factory.

Energya Extra High-Voltage Cables Factory

Pirelli Tyre Factory

Client
Pirelli Alexandria Tyre Co., SAE

Scope of Work
Detailed design
Construction management
Construction supervision

Location
Alexandria, Egypt

Types of Activities
Architectural
Civil works
Landscape

Located on El Nahda Road, El Amereya in Alexandria, Egypt on a plot area of 52,000m^2, Pirelli Tyre Factory comprises the following components:

- Production line building: includes a ground, a mezzanine and an inspection area with a total built-up area of 18,288 m^2.
- Raw material & finished product building: a 72 meter high building designed to store tyres and facilitate logistics.
- Mixer building: comprises 3 levels with a total height of 33 meters and a total built-up area of 14,562 m^2.
- Locker rooms/ canteen building.
- Compressed air/ boiler building: of total built-up area of 637m^2.
- Claim building: storage area for returned and defected tyres.

Pirelli Tyre Factory

Edfu Pulp Paper Co. New Deaerator

Client
Egyptian Sugar & Integrated Industries (SIIC)

Scope of Work
Detailed design

Location
Edfu, Egypt

Types of Activities
Industrial

Misr Edfu Pulp Writing and Printing Paper Co. (MEPPCO) was inaugurated in 1963 with the aim to produce 18,000 tons/year dry unbleached pulp.

SIIC assigned ECG to design the new deaerator for the plant boiler of MEPPCO at Edfu, Egypt.

ECG was assigned to conduct the studies of sizing and design of the new deaerator (4 nos.) including the interconnecting piping system between the deaerators and the boilers complete with piping arrangement drawings; pipe supports; pipe stress analysis; isometrics and the platform supporting the new deaerator.

Edfu Pulp Paper Co. New Deaerator

Edfu Pulp Writing and Printing Paper Co.

Client
Egyptian Sugar & Integrated Industries (SIIC)

Scope of Work
Detailed design

Location
Edfu, Egypt

Types of Activities
Industrial

SIIC has operated a plant since 1963 to produce unbleached pulp paper in Edfu, Upper Egypt.

With a view to increasing the company's profitability, a new plant was constructed in the same site of the old pulp writing and printing paper plant.

SIIC assigned ECG to design and provide detailed engineering for installing a huge machine in a new plant and the process tie-in lines between the existing pulp plant and the new plant; encompassing piping layout, pipe routing, tie-in at both sides, pipe racks, pipe supports, piping isometrics and piping stress analysis.

Edfu Pulp Writing and Printing Paper Co.

Baby Care Manufacturing Plant

Client
Procter & Gamble

Scope of Work
Preliminary design
Detailed design
Design permits
Tender documents
Construction management
Construction supervision

Location
Egypt

Types of Activities
Architectural
Communications & security systems
Electrical
HVAC
Mechanical
Roads
Structural

Premised on a plot area of 250,000 m^2, the child care products manufacturing plant comprises eight primary functional areas: raw & packing material storage; process utilities; diaper converting; central administration; office spine; finished product material storage; guardhouses; and empty pallet storage.

Baby Care Manufacturing Plant

Velvety Cosmetics Manufacturing Factory

Client
Velvety Cosmetics Manufacturing

Scope of Work
Preliminary design
Design development
Tender documents
Construction supervision
Design permits

Location
Dubai, UAE

Types of Activities
Architectural
Electrical
Mechanical
Structural

Over a a plot area of 5,876m^2 and with a total built-up area of 217,771m^2, Velvety is a cosmetics manufacturing factory located at Al-TTAY area in Dubai.

The factory consists of ground and future mezzanine floors as follows:

- Ground floor: loading & unloading area, cartoon packing area, weighing room, raw material storage, class C & class D and office; and
- Future mezzanine: finished product store and office.

Pharmaceutical Plants

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Pfizer Pharmaceutical Plant

Client
Kvaerner Process (UK) Limited

Scope of Work
Soil investigation
Topographic survey
FEED
Design review
Detailed design

Location
6th of October City, Egypt

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
Fire protection
HVAC
Instrumentation
Mechanical
Piping
Structural

The new facility houses the existing plant, which was initially built in 1968 along with the extensions built in the 70's and 80's. The new extension occupies a total land area of approximately 30,350m^2, with a built-up area of 83,000m^2 for nine functional buildings: production/ packaging, premix/soluble powders, product 1, product 2, administration, distribution center, high-bay store, workshops and central powerhouse.

Horus Pharmaceutical Factory

Client
Orascom Construction Industries

Scope of Work
Basis of design report
Detailed design
Building permits

Location
6th of October City, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Infrastructure
Mechanical
Piping
Structural

ECG's involvement in this prestigious EPC project, in collaboration with Orascom Construction Industries, has led to the successful completion of a state-of-the-art pharmaceutical factory owned by Horus Pharmaceutical Industries at Polaris International Industrial Parks in 6th of October City.

Over a land area of 125,000 m^2 and with a built-up area of 64,000 m^2, the pharmaceutical factory building features a design with a historical theme employing traditional building materials, such as limestone and glass.

The factory's main production area includes a solid production area, sterile production area, and auxiliary buildings. Infrastructure networks and utilities include the following:

- Irrigation network: 11,070 meter-long uPVC Pipes PN10 with diameters ranging from 32 mm to 160 mm
- Potable water network: 1,847 meter-long uPVC Pipes PN16 with diameters ranging from 25 mm to 200 mm
- Firefighting network: 2,656 meter-long DI Pipes PN6 with diameters of 60 mm, 150 mm, and 250 mm.
- Sewage and storm network: 2,565 meter-long uPVC Pipes PN6 (250 mm in diameter), plus a 12 meter-long uPVC force main (200 mm in diameter)
- Industrial network: 1,452 meter-long HDPE Pipes PN4 and PN6 with diameters of 200 mm and 250 mm
- Wastewater treatment plant with a capacity of 2,500 m^3/day

MUP Cephalosporin & Penicillin Plants

Client
Medical Union Pharmaceuticals (MUP)

Scope of Work
Geotechnical investigation
Schematic design
Detailed design
Tender documents
Construction supervision

Location
Abu Sultan, Egypt

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
Fire protection
Landscape
Mechanical
Roads
Structural

The construction of two new pharmaceutical plants for Medical Union Pharmaceuticals (MUP) Company in Abu Sultan over a total land area of 61,000m^2. The project comprises Cephalosporin factory, Penicillin factory, service building, gates, fence, landscape, water tanks, external roads in addition to plant facilities.

Cephalosporin Factory building and Penicillin Factory building; each is composed of two floors with a built-up area of 10,000m^2. The ground floor occupies an area of about 5,000m^2, contains sterilized areas for production, packaging, raw material warehouse, finished product warehouse, labs, entrances, toilets and lockers for workers. The first floor encompasses administration area, cafeteria, kitchen, toilets, HVAC equipment area, de-ionized water station and storage area.

The service building ground floor; occupying an area of 2,000m^2 includes electrical rooms, boilers, spare parts store, workshop and fire station.

MUP Cephalosporin & Penicillin Plants

Modernization of RAMEDA Pharmaceutical Plant

Client
The 10th of Ramadan for Pharmaceutical Industries & Diagnostic Reagents-RAMEDA

Scope of Work
Schematic design
Detailed design
Tender documents
Tender action
Construction supervision

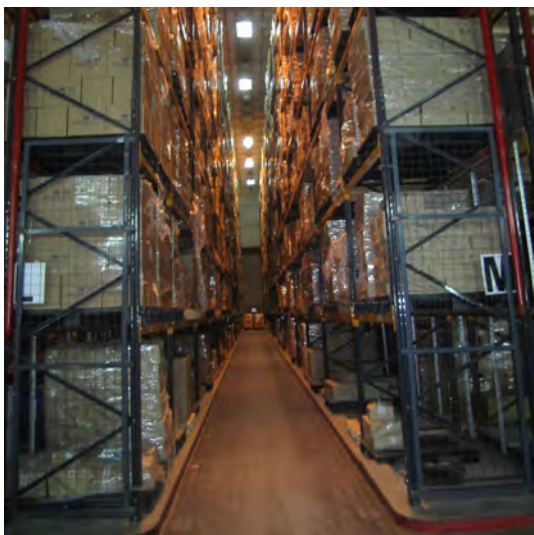
Location
6th of October City, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Interior design
Industrial piping
Mechanical
Roads
Rotary equipment
Structural

The Tenth of Ramadan for Pharmaceutical and Diagnostic Reagents (RAMEDA) specializes in manufacturing and marketing a wide range of high quality pharmaceutical products. To cope up with the advancements of pharmaceutical industry, RAMEDA awarded ECG the contract to modernize its existing pharmaceutical plants with a view to increasing the production capacity.

The modernization program comprises preparation of new designs for solid production area, Cephalosporin and Penicillin production area, water for injection area, warehouses, central laboratories and loading and unloading area; redesigning and renovation of the main elevation and main entrance for the administration building; renovation of labor service building (main central gowning male/female, toilet and locker areas) and dispatch & delivery area; relocation of jar filling line and construction of watch towers; in addition to design of fire alarm and smoke detection system for the whole plant.

Modernization of RAMEDA Pharmaceutical Plant



HoldiPharma New Pharmaceutical Plants

Client
Holding Company for Pharmaceutical Chemicals and Medical Appliances

Scope of Work
Concept design
Schematic design
Detailed design
Tender documents
Tender action

Location
6th of October City, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Industrial Piping
Mechanical
Roads & Infrastructure
Rotary Equipment
Structural

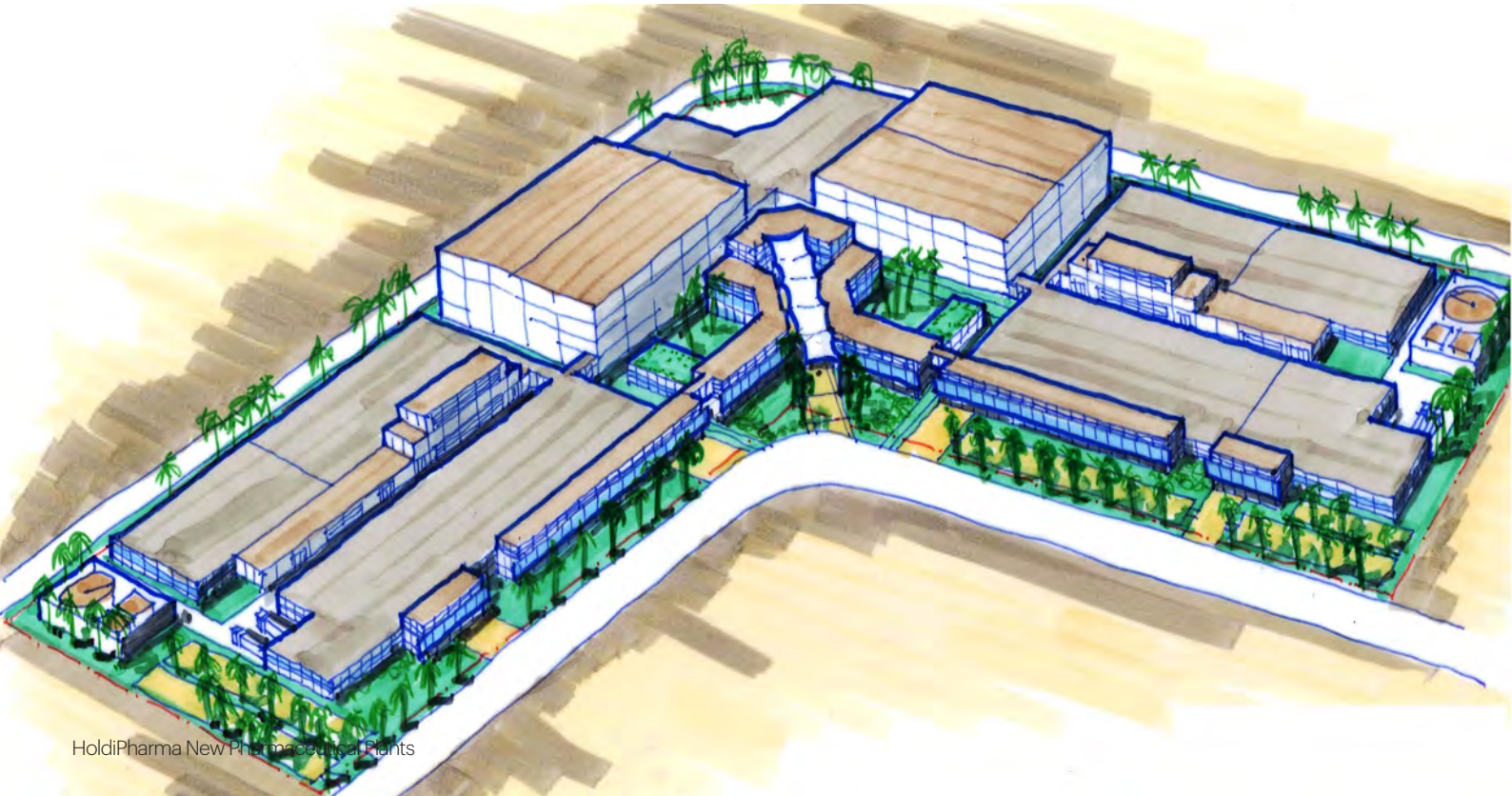
With a total built-up area of 172,000m^2, the project comprises the construction of new pharmaceutical plants (KAHIRA and CID) for HoldiPharma on a land area of 140,000m^2.

KAHIRA pharmaceutical plant occupies an area of 65,000m^2, comprising a 2-storey solid & sterile production building and a 2-storey liquid production building. This is in addition to the serving facilities such as warehouses, central utilities area, administration building for 650 employees, engineering workshops, quality control laboratories, Research and Development (R&D) centre, car park, car repair and maintenance area.

CID is a multipurpose traditional pharmaceutical production and packaging plant, occupies an area of 75,000m^2 comprising three, 2-storey production buildings. The first building is for solid production, the second building is for liquid & sterile production and the third for hormone production. This is in addition to the serving facilities such as warehouses, central utilities area, administration building for 850 employees, engineering and workshops, quality control laboratories, Research and Development (R&D) centre.

The integrated Pharmaceutical plants' design took into consideration upgrade and future expansion to accommodate manufacturing of all types of pharmaceutical dosage forms according to the current GMP stated by WHO, and FDA and European standards for pharmaceutical manufacturing. The design is considered high quality of value engineering and meets the requirements of power saving and resource conservation.

ECG scope included underground water tanks, wastewater treatment plants, roads, service buildings, fences, landscape, administration buildings, laboratories, warehouses and other facilities.



HoldiPharma New Pharmaceutical Plants

MUP Pharmaceutical Plant

Client
Medical Union Pharmaceuticals (MUP)

Scope of Work
Site survey
Soil investigations
Cost estimate
Detailed design
Tender documents
Tender action
Construction management
Construction supervision

Location
Abu Sultan, Egypt

Types of Activities
Architectural
Civil works
Mechanical
Processing
Piping
Structural

The multi-functional pharmaceutical plant is constructed to be in compliance with the Good Manufacturing Practice (GMP) standards. It aims to enhance the local manufacturing of pharmaceutical products in order to meet the rapid increase in demand. The plant is constructed on a total land area of 115,000m^2 with estimated built-up area of 41,000m^2 .

The project comprises plant building, services building, prefabricated warehouse and associated facilities. The plant building is composed of a ground floor and a mezzanine. The ground floor occupies an area of 22,500m^2 that includes a production area of 8,360m^2, sterile rooms with an area of 1,140m^2, a warehouse with an area of 5,750m^2, a Research and Development (RD) laboratory with an area of 1,800m^2, in addition to other necessary facilities. The mezzanine floor occupies an area of 16,140m^2, comprises an area of 12,290m^2 for mechanical equipment, an administration area of 2,020m^2, laboratories of area 1,200m^2 and other related facilities.

The services building houses cooling towers, boilers and other electro-mechanical equipment serving the production area. It covers an area of 1,730m^2. The project facilities include, but not limited to, a maintenance workshop, an emergency diesel power plant, water tanks, fuel tanks, an industrial waste treatment plant, road network and parking facilities, a drip irrigation system, green areas and windbreaks. The plant and the services buildings are connected together by a steel bridge, 120m long, to carry power lines and HVAC piping system (load 1.5 tons/m).

MUP Pharmaceutical Plant

SwissPharma Plant Extension

Client
Novartis

Scope of Work
Concept design
Schematic design
Detailed design
Building permits
Tender documents

Location
Al Amiria - Egypt

Types of Activities
Architectural
Electrical
Landscape
Structural

The project comprises main building, warehouse and administration building.

The main building comprises three floors with a total built-up area of 8,200m^2 for pharmaceutical processing, production, and packaging attached to a fully automated high stack warehouse for finished goods and raw material with plan dimensions of 18 x 108 m and height of 20 m. The building also houses a cold store, a conditioned store, a finished goods dispatch area, a staging and sampling area, lockers, a dispensing area and all other facilities.

The administration building encompasses a ground floor and six typical floors with a total built-up area of 7,750m^2, and height of 30 m. The ground floor houses main entrance, main dining area, kitchen, cafeteria, and other relevant facilities. The typical floors were designed for offices and administration.

SwissPharma Plant Extension

Medicated Food Plant

Client
Arab Medical Food Co.

Scope of Work
Bases of design report
Schematic design
Detailed design
Building permit
Tender documents
Construction supervision

Location
Abu Sultan - Egypt

Types of Activities
Architectural
Electrical
Mechanical
Structural

With a total built-up area of 6,360 m^2, the project comprises the construction of a new medicated food plant over a land area of 15,000m^2. The project consists of production and administration building, services building, gate, fences, roads and landscape.

The production and administration building comprises production areas, raw material storage, finished products storage, laboratories, administrative offices and workers' facilities (cafeteria, clinic, showers and toilets, male and female locker rooms and praying area).

The services building encompasses production support facilities including boilers, generator, transformer, workshops, spare parts store....etc.

Medicated Food Plant

District Cooling

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Smart Village Central Chiller Plant

Client
Smart Villages Company

Scope of Work
Detailed design
Construction management
Construction supervision

Location
Smart Village, 6th of October City, Egypt

Types of Activities
Electrical
HVAC
Light current
Mechanical
Infrastructure

The Smart Village buildings are equipped with a centralized air-conditioning and heating system run by a central gas-fired HVAC plant implemented over several stages. The system requires a plant producing both chilled and heated water, in addition to a water distribution network extending to all Smart Village buildings, including those of the Ministry of Communications & Information Technology Complex.

With a built-up area of 12,000 m^2, the chiller plant includes 12 absorption chillers and two centrifugal chillers. Chilled water is distributed using primary and secondary pumps to serve 85 buildings. With a total capacity of 24,000 tons or refrigeration (TR) per hour, the chiller plant is implemented in four stages with the following capacities: 8,000 TR/hour; 6,000 TR/hour; 6,000 TR/hour; and 4,000 TR/hour.

Smart Village Central Chiller Plant

Administrative Capital District Cooling Plants

Client
Armed Forces Finance Authority
Scope of Work
Master-planning
Conceptual design
Schematic design
Detailed design
Tender documents
Construction management
Construction supervision

Location
Administrative Capital, Egypt
Types of Activities
Architectural
Civil
Communications and security systems
Electrical
Geotechnical
HVAC
Interior design
Infrastructure
Landscaping
Light current
Mechanical
Roads
Structural
Urban design

The project covered two district cooling plants serving a number of facilities at Al-Massa Park in the Administrative Capital. Served facilities include the hotel, conference building, residential towers, mall, clubhouse, crystal restaurant, and mosque.

With a refrigeration capacity of 19,250 kW (5,500 TR), each plant consists of five chillers (four of which in operation and one standby), as well as HFC-134a refrigerants. The centrifugal, water-cooled, parallel counterflow chillers utilize the vapour compression cycle, and each chiller has a capacity of 3,850 kW (1,100 TR).

District Cooling System
- Chilled water design temperature: 5.6 C
- Chilled water supply/return: 5.5 C/11.1 C

Pumping Details Per Plant
- Primary chilled water pumps: 5
- Secondary pumps: 5
- Drive: variable speed
- Condensation pumps: 5
- Pump type: horizontal split case

Cooling Towers Per Plant
- Position: atop each plant
- Cooling towers: 5
- Cells per cooling tower: 2
- Cooling tower temperature: 5.6 C
- Cooling tower design temperature (in/out): 35.0 C/29.4 C

Al-Galala Resort District Cooling Plant

Owner:
Egyptian Ministry of Defense
Client
Misr Engineering Development Company (MEDCOM)
Scope of Work
Shop drawings

Location
Al-Galala Resort, Al-Ain Al-Sokhna
Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Infrastructure
Landscaping
Mechanical
Structural

This project was undertaken by a consortium comprising ECG Engineering Consultants Group, Misr Engineering Development Company (MEDCOM), and ECM Energy Services.

The district cooling plant consists of a ground floor and a mezzanine, with a total built-up area of about 3,500 m^2. The plant, operated using chilled water, has a total cooling capacity of 16,866 kW (4,800 TR).

It includes the following components:

- double-height chiller yard complete with chillers, pumps, piping, and connections
- administration area that includes offices, meeting room, toilets, storage area, and other services
- electrical rooms with low-voltage and medium-voltage generators

The plant has four centrifugal, water-cooled, parallel counterflow chillers, as well as HFC-134a refrigerants. The chillers utilize the vapor-compression cycle, and each chiller has a capacity of 2 × 5,622 kW (2 × 1,600 TR) at a constant speed, and a capacity of 2 × 2,811 kW (2 × 800 TR) at a variable speed.

District Cooling System

- Chilled water design temperature: 8.9 C
- Chilled water supply/return: 4.4 C/13.3 C

Pumping

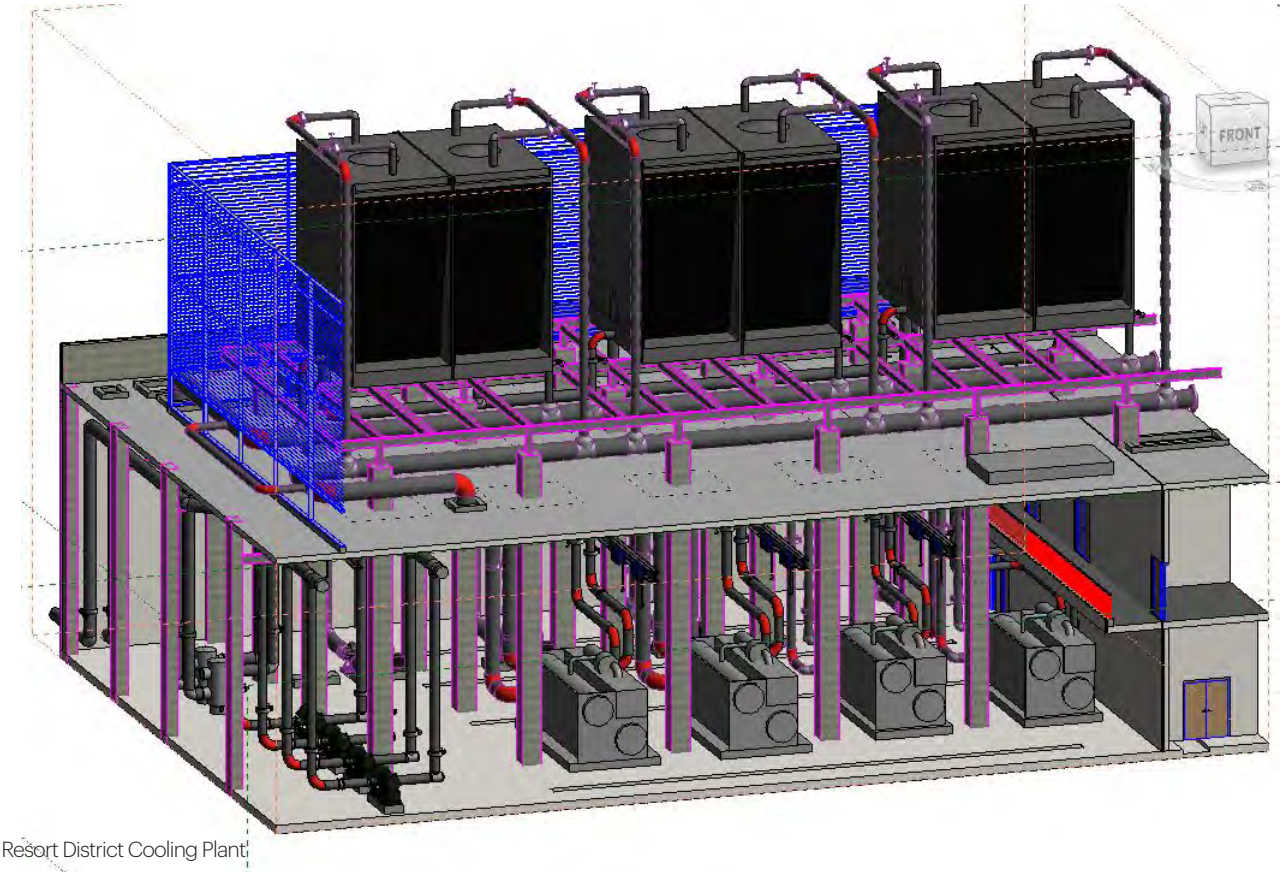
- Primary chilled water pumps: 4
- Secondary pumps: 4

Drive: variable speed

- Condensation pumps: 4
- Pump type: horizontal split case

Cooling Towers

- Position: atop the plant
- Cooling towers: 4
- Cells per cooling tower: two towers have two cells each, and two towers have one cell each
- Cooling tower temperature: 5.6 C
- Cooling tower design temperature (in/out): 35.0 C/29.4 C



Al-Galala Resort District Cooling Plant

District Cooling Plant at Cairo International Airport Terminal 3

Client
Cairo Airport Company (CAC)
Scope of Work
Schematic design
Design development
Detailed design
Construction supervision

Location
Cairo, Egypt
Types of Activities
Architectural
Civil
Communications and security systems
Electrical
Landscaping
Mechanical
Roads
Structural

The district cooling plant serves Terminal 3 of Cairo International Airport. With a total refrigeration capacity of 24,500 kW (7,000 TR), the plant consists of seven chillers (six in operation and one standby), as well as HFC-134a refrigerants. The centrifugal, water-cooled, parallel counterflow chillers utilize the vapor-compression cycle, and each chiller has a capacity of 3,500 kW (1,000 TR).

District Cooling System
- Chilled water design temperature: 5.6 C
- Chilled water supply/return: 5.5 C/11.1 C

Pumping
- Primary chilled water pumps: 7
- Secondary pumps: 7
- Drive: variable speed
- Condensation pumps: 7
- Pump type: horizontal split case

Cooling Towers
- Position: atop the plant
- Cooling towers: 7
- Cells per cooling tower: 1
- Cooling tower temperature: 5.6 C
- Cooling tower design temperature (in/out): 35.0 C/29.4 C

District Cooling Plant at Cairo International Airport Terminal 2

Client
Cairo Airport Company (CAC)
Scope of Work
Design review
Detailed design
Construction supervision

Location
Cairo Airport Company (CAC)
Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Infrastructure
Interior design
Mechanical
Structural

The district cooling plant has a refrigeration capacity of 16,800 kW (4,800 TR). It consists of four chillers (three in operation and one standby), as well as HFC-134a refrigerants. The centrifugal, water-cooled, parallel counterflow chillers utilize the vapour-compression cycle. Each chiller has a capacity of 4,200 kW (1,200 TR).

District Cooling System
- Chilled water design temperature: 5.6 C
- Chilled water supply/return: 5.5C /11.1 C

Pumping
- Primary chilled water pumps: 4
- Secondary pumps: 4
- Drive: variable speed
- Condensation pumps: 4
- Pump type: horizontal split case

Cooling Towers
- Position: atop the plant
- Cooling towers: 5
- Cells per cooling tower: 1
- Cooling tower temperature: 5.6 C
- Cooling tower design temperature (in/out): 35.0 C/29.4 C

Umm Al-Qura University District Cooling Plants

Client
Umm Al-Qura University

Scope of Work
Schematic design
Detailed design
Tender documents

Location
Makkah, Saudi Arabia

Types of Activities
Civil
Communications and security systems
Electrical
HVAC
Infrastructure
Landscaping
Mechanical
Roads
Structural
Urban design

The project covered 23 chillers included within three district cooling plants serving a total of 45 faculties of Umm Al-Qura University. The chillers, which have a refrigeration capacity totaling 34,500 tons of refrigeration (TR), are equipped with centrifugal compressors, as well as condensers that utilize the vapor-compression cycle.

District Cooling Plant CUP01

With a total refrigeration capacity of 21,000 kW (6,000 TR), the district cooling plant includes 4 chillers, each with a capacity of 5,250 kW (1,500 TR). The plant serves six faculties comprising various educational facilities.

District Cooling Plant CUP06

With a total refrigeration capacity of 52,500 kW (15,000 TR), the district cooling plant includes 10 chillers, each with a capacity of 5,250 kW (1,500 TR). The plant serves 25 faculties comprising various educational facilities.

District Cooling Plant CUP07

With a total refrigeration capacity of 47,250 kW (13,500 TR), the district cooling plant includes 9 chillers, each with a capacity of 5,250 kW (1,500 TR). The plant serves 14 faculties comprising various educational facilities.

District Cooling Plant for EMAL Administrative Complex

Client
Ali & Sons Contracting Company

Scope of Work
Design review
Value engineering
Detailed design
Construction supervision

Location
Abu Dhabi, UAE

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
Interior design
Landscaping
Light current
Mechanical
Roads
Structural

With a capacity of 8,925 kW (2,550 TR), the plant includes three chillers (two in operation and one standby). The chillers contain HFC-134a refrigerants, and each chiller has a capacity of 2,975 kW (850 TR). Compressors are centrifugal, and condensers are water-cooled.
The district cooling plant serves six administrative buildings, as well as a medical center, reception building, and conference building.

District Cooling System
- Chilled water design temperature: 8.89 C
- Chilled water supply/return: 5.55 C/14.44 C

Pumping
- Primary chilled water pumps: 4
- Secondary pumps: 4
- Drive: variable speed
- Condensation pumps: 4
- Pump type: horizontal split case

Cooling Towers
- Position: atop the plant
- Cooling towers: 3
- Cells per cooling tower: 1
- Cooling tower temperature: 5.0 C
- Cooling tower design temperature (in/out): 39.0 C/34.0 C

District Cooling Plants for Al-Wakrah and Al-Rayyan Stadiums

Client
Aspire Zone Foundation

Scope of Work
Conceptual design
Preliminary design
Detailed design
Tender documents

Location
Al-Wakra & Al-Rayyan, Qatar

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Light current
Mechanical
Structural

The project covered two water-cooled district cooling plants at Al-Wakrah Stadium and Al-Rayyan Stadium in Qatar. Each plant has a capacity of 71,750 kW (20,500 tons of refrigeration) and a thermal energy storage capacity of 16,000 m^3 (28 m diameter × 30 m height).

Each plant comprises five centrifugal chillers utilizing the vapor-compression cycle. Each single-circuit chiller has a capacity of 14,350 kW (4,100 tons of refrigeration).

The two district cooling plants deliver chilled water to the facilities of both stadiums, including mosques, hotels, and various utilities. The plants are equipped with all the systems necessary for power supply, potable water supply, chilled water production, and fire protection, together with communications and security systems

Al-Kayaan District Cooling Plant No. 4

Client
MEDCOM-EMC Energy Joint Venture

Scope of Work
Procurement and Technical office

Location
Administrative Capital, Egypt

Types of Activities
Civil
Communications and security systems
Electrical
HVAC
Structural

This project was undertaken by a consortium comprising Misr Engineering Development Company MEDCOM, and EMC Energy.

With a total built-up area of around (6 000 m^2), the district cooling plant building consists of a Ground floor, that includes seven centrifugal, water-cooled chillers with a total refrigeration capacity of (10,000 TR), as well as HFC-134a refrigerants.

District Cooling System
- Chilled water design temperature: 7.8°C
- Chilled water supply/return: 4.4°C/12.2°C

Pumping
- Primary chilled water pumps: 8
- Secondary pumps: 8
- Drive: variable speed
- Condensation pumps: 8
- Pump type: horizontal split case

Cooling Towers
- Position: atop the plant
- Cooling towers: 7
- Cells per cooling tower: five cooling towers have two cells each, and two cooling towers have one cell each
- Cooling tower temperature: 5.6°C
- Cooling tower design temperature (in/out): 35.0°C/29.4°C

Cement Plants

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

130 TPH Slag Grinding Plant

Client
CBMEC (Middle East) Contracting L.L.C, Green Cement Factory LLC

Location
Dubai Industrial Park, Dubai, UAE

Scope of Work
Conceptual Design
Preliminary Design
Schematic Design
Design Development
Tender Documents
Architect of Record
Construction Supervision

Types of Activities
Architectural
Civil works
Electrical
Mechanical
Pluming
Structural

Located in Dubai Industrial Park, on a land plot area of 43,210 m^2 and with a built-up area of 7,700 m^2, the Cement Grinding Plant produces approximately 1,000,000 tons per year of ground-granulated blast-furnace slag (GGBS) required for cement/concrete production.

The plant comprises a grinding mill, 4 cement silos, 1 clinker silo, packing plant, and an additive hopper, as well as the following buildings:

- Limestone storage and gypsum storage: with a built-up area 560 m^2; an administration building with a built-up area 541 m^2.
- Central control room: with a built-up area 188 m^2.
- Warehouse: with a built-up area 382 m^2.
- Workers facility and workshop: with a built-up area 423 m^2.
- Ancillary building: including a compressor room.
- Service building: including shaded parking, diesel tank, RMU room, MV room, and transformer rooms.

130 TPH Slag Grinding Plant

Djelfa Cement Plant

Client
Arab Swiss Engineering Company (ASEC), Egypt

Scope of Work
Design review

Location
Algeria

Types of Activities
Structural

The Djelfa Cement Plant project in Algeria involved the design of two production lines with a capacity of 4,500 tons per day each.

This project is ASEC largest investment outside Egypt. Djelfa deployed the latest environmentally friendly technologies and focused on upgrading the technical skills of the Algerian workforce.

Djelfa Cement Plant

Qena Cement Plant

Client
Misr Cement Company (Qena), Egypt

Scope of Work
Design review
Construction supervision

Location
Qena, Egypt

Types of Activities
Structural

ECG was involved in the structural development of the new cement factory with an annual production capacity of 1.3 million tons.

Qena Cement Plant

Falcon Cement Factory

Client
CEMEX-Dubai

Scope of Work
Preliminary design
Detailed design
Tender documents
Construction supervision

Location
Dubai, UAE

Types of Activities
Architectural
Electrical

A cement grinding plant with annual production of 1.3 million tons. The plant includes vertical mill with cement productivity of 210 t/h, slag productivity of 160 t/h, clinker silo of 50,000 tons capacity, 4 cement silos each with a capacity of 10,000 tons, gypsum and limestone storage with a capacity of 5,000 tons, and bulk loading stations.

Ras Al-Khaima Cement Plant

Client
Six Construction LTD

Scope of Work
Detailed design
Shop drawings
Construction documents

Location
Ras Al-Khaima, UAE

Types of Activities
Architectural
Structural

The project consists of a two-storey administration building and a steel- structured workshop building.

Cement Plant - Al-Fujairah

Client
Orascom Construction

Scope of Work
Detailed design
Construction documents

Location
Dubai, UAE

Types of Activities
Architectural
Electrical
HVAC
Landscape
Light Current
Infrastructure
Mechanical
Roads
Structural

Civil design & engineering for all non-process buildings, infrastructure and fence for the cement plant.

Sugar Plants

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Delta Beet Sugar Co. Tie-in Lines

Client
Egyptian Sugar & Integrated Industries (SIIC)

Scope of Work
Data collection
Schematic design
Detailed design

Location
Kafr ElSheikh, Egypt

Types of Activities
Piping
Process
Structural

Delta Sugar Co. is Egypt's leading producer of sugar extracted from sugar beet. The company maintains sugar production that fulfills more than 25% of the demand on sugar nationwide.

This project covered the tie-in lines linking different units with their supporting structures. Work included a pipe bridge crossing a 22 meter-wide public road, with tie-in lines to various battery limits of different units. Work also covered piping layout, pipe routing, pipe supports, piping isometrics, and pipe stress analysis.

Edfu Pulp Paper Co. New Deaerator

Abu Korkas Beet Sugar Factory Piping

Client
Egyptian Sugar & Integrated Industries (SIIC)

Scope of Work
Preliminary design
Detailed design

Location
Abu Kurkas, Egypt

Types of Activities
Industrial
Structural

The Beet Sugar Factory produces 7,500 tons/ day from five production plants: juice extraction, juice purification, juice filtration, juice softening, and liquor filtration.

ECG's scope of work encompasses the design of the piping system for the sugar extraction plant of Abou Korkas Beet Sugar Factory to work on a dual system (Sugar Cane & Sugar Beet).

The piping system includes 1,320 pipelines and 2,140 valves, with 120 tie-in pipelines connecting the production plants with existing facilities.

Rosetta Sugar Refinery

Client
Cargill Trading Egypt

Scope of Work
Schematic design
Design development
Detail design
Tender documents

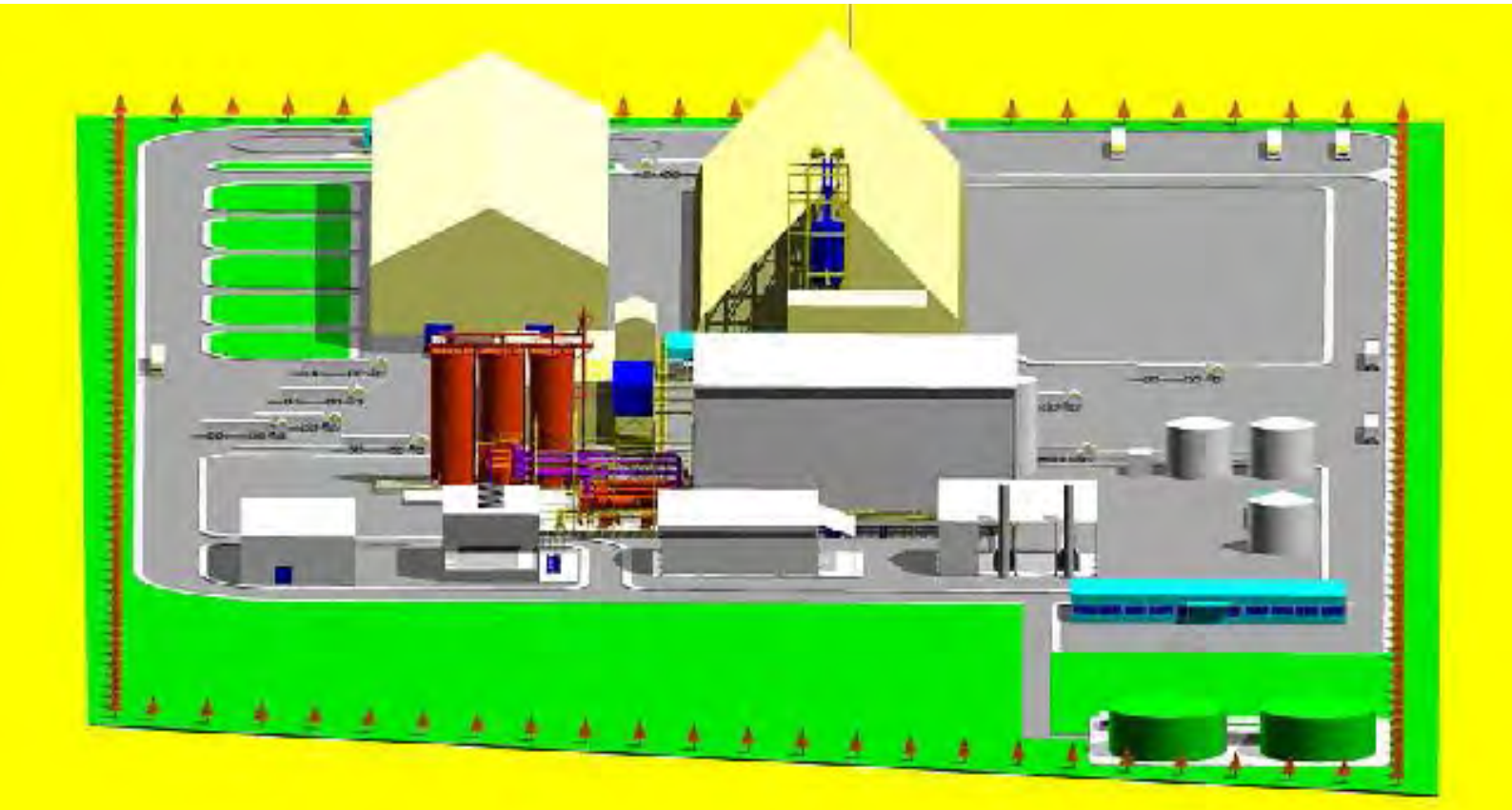
Location
Alexandria, Egypt

Types of Activities
Architectural
Civil works
Communications and security systems
HVAC
Landscape
Structural
Urban Planning

Cargill-Egypt decided to build a greenfield White Sugar Refinery in the fifth Industrial Zone in Borg Al-Arab, Egypt. ECG was awarded the contract to provide engineering consultancy services of preliminary design and detailed design.

With land area of approximately 150,000m^2 and a built-up area of 100,000m^2, the plant comprises process building, white sugar warehouse, raw sugar warehouse, re-melt area, high voltage area and fire protection building; fence and ancillary buildings including maintenance building; administration building, mosque, canteen, guard house and weigh bridge house.The Plant has access to roads, water, natural gas and electricity networks.

The new refinery produces Very High Polarity (VHP) white sugar from raw sugar. The plant's nameplate reads operation capacity of 2,000 tons of melted VHP sugar/ day which is equal to 660,000 tons of raw sugar/year. The refinery's capacity is designed to be easily expandable to 3,000 tons/day.



Rosetta Sugar Refinery

SIIC Plants

Client
Egyptian Sugar & Integrated Industries (SIIC)

Scope of Work
Studies
Basic design
Detailed design
Procurement
Project management
Construction management
Construction supervision
Field services
Quality control and quality assurance

Location
Egypt

Types of Activities
Civil
Chemical
Computer
Electrical
Instrumentation
Mechanical
Piping

The Egyptian Sugar and Integrated Industries Company (SIIC) runs about 18 different factories all over Egypt, scattered in Cairo and Upper Egypt governorates. These factories include 8 sugar extraction plants, one big sugar refining plant, chemical plants producing alcohols, bakery yeast plants, perfume plants and paper pulp plant. SIIC signed a call-off contract with ECG, as a binding agreement to perform projects on a job-by-job basis, whenever needed.

Kom Ombo Rehabilitation Project

Client
Egyptian Sugar & Integrated Industries (SIIC)

Scope of Work
Data collection
Detailed design
Studies

Location
Kom Ombo, Egypt

Types of Activities
Industrial

SIIC decided to undergo a huge complete rehabilitation program for the Sugar Extraction plants constructed in 1940. The plants are divided into two main process buildings (front and rear).

ECG was assigned to provide engineering designs, specifications and drawings for the piping system of the first stage (front building) of Kom Ombo Sugar Plant including:

- Piping layouts & pipe routing
- Pipe stress analysis
- Piping isometrics
- Pipe supports and pipe racks

Revamp of Naga Hamadi & Kom Ombo Steam Piping

Client
Egyptian Sugar & Integrated Industries (SIIC)

Scope of Work
Engineering design
Structural design
Vessel design
Assessment
Detailed design

Location
El Kuraimat, Egypt

Types of Activities
Instrumentation
Piping

SIIC undergoes excessive maintenance for its steam generation and steam lines, as the company uses steam extensively in the sugar extraction process as well as in power generation for its own needs.

Due to the depreciation of steam lines, SIIC decided to carry out a complete rehabilitation program for its steam lines in two of its main plants; Naga Hamadi & Kom Ombo.

ECG provided consulting services for the engineering design and detailed design for those plants.

Sugar Plant Rehabilitation

Client
Islamic Development Bank (IDB)

Scope of Work
Studies

Location
Uganda

Kinyara Sugar Works Ltd. (KSW) was established in 1969 and located about 220 km north west Kampala and 15 km west of Masindi, Uganda. The International Islamic Bank (IDB) of Jeddah, Saudi Arabia assigned ECG to review the situation of Kinyara sugar estate and work on the development of the existing sugar factory through reviewing and commenting on:

- The feasibility and viability of the Kinyara Sugar Factory rehabilitation programme.
- The cane development for Kinyara Sugar Estate.
- The market projections.
- The cost of production and the existing price structure with the international sugar price.

Al-Nouran Sugar Factory

Client
Al-Sharqia Sugar Manufacturing Company (ASSM)

Scope of Work
Project management
Construction management

Location
Al-Salhiya Al-Jadida, Al-Sharqia, Egypt

Types of Activities
Architectural
Electrical
Communications and security systems
HVAC
Mechanical
Piping
Process
Structural

Over a land area of approximately 1,774,500 m^2, the project is located north of the Industrial Zone of Al-Salihiyah City, Egypt. The project stands as the first sugar production facility in Al-Sharqia Governorate with a construction cost of EGP 3.1 billion. The factory's main activities will include the production of sugar from sugar beet, as well as the refinement of raw sugar into white sugar. Refinement byproducts (molasses and fodder) will be sold at international markets.

The land area is designated for the sugar factory and its future expansions. The factory is expected to have a daily processing capacity of 12,000 tons of sugar beet, which gives rise to an annual production of 241,000 tons of sugar. Sugar refinement capacity for the production of white sugar is estimated at 1,768 tons per day. Annual production rates of molasses and fodder are estimated at 105,000 tons and 106,000 tons, respectively.

Al-Nouran Sugar Factory

Food/Beverage Factories

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Coca Cola Concentrate Plant Fire Protection

Client
Atlantic Industries Limited

Scope of Work
Project management
Concept design
Preliminary design
Detailed design
Tender documents
Tender action
Construction management
Construction supervision

Location
Cairo, Egypt

Types of Activities
Architecture
Civil works
Communications and security systems
Electrical
HVAC
Mechanical
Structure

The client entrusted ECG with a broad scope of work to construct a fire protection system for their plant. The construction works comprised non-combustible material (Rock wool insulated sandwich panel walls and roofs on a steel frame) and small detached concrete buildings for gatehouse, clinic and spare parts stores.

The plant produces concentrates for an international beverage brand. Finished concentrates are distributed to bottling companies in central and North Africa, Middle East and east countries like Sri Lanka and Bangladesh.

The facility consists of a main building for production and storage with an area of about 10,000m^2 and of an office building of about 1,000m^2. This site was partially built in 1983, and new warehouse and shipping areas (about 2,450m^2) were built during 2009/2010. The production and storage building comprises one floor, mezzanine and basement for parking.

Coca Cola Concentrate Plant Fire Protection

Beyti Plant Extension (Al Marai)

Client
International Company for AGRO (Beyti)

Scope of Work
Design review
Detailed design
Tender documents
Tender action
Construction management
Construction supervision

Location
Alexandria, Egypt

Types of Activities
Architecture
Civil works
Communications and security systems
Electrical
HVAC
Mechanical
Roads
Structure

The new owner for BEYTI plant wished to upgrade the existing plant to increase the production capacity.

The project is composed of four production buildings and filling area, each building comprises ground floor, mezzanine and a roof with a footprint area of 1,0750m^2, in addition to 3 raw material warehouses with footprint area of 5,650m^2.

Beyti Plant Extension (Al Marai)

Domiatec Packing Plant

Client
Domiatec Group for Investment & Agriculture Development

Scope of Work
Project management
Concept design
Schematic design
Design development
Detailed design
Tender documents
Tender actions
Shop drawings
Construction supervision

Location
Beheira, Egypt

Types of Activities
Architectural
Civil works
Communications & security systems
Electrical
HVAC
Interior design
Landscape
Mechanical
Structural

The construction project of the Domiatec Packing Plant comprises five buildings: administration building, packing building, refrigerator building, service building and storage building.

The administrative building (total built-up area of 2,850m^2) consists of: ground floor encompassing the main entrance lobby, employee cafeteria, clinic, workers' changing rooms for male and female, outlet hall and offices; first floor comprising employee offices and rest rooms; and second floor for future use.

The packing building (total packing area of 12,500m^2) serves with 2 loading docks for loading and unloading 10 trails simultaneously. The building is divided to 6 packing rooms with different sizes.

The refrigerator building (total area of 3,000m^2) comprises 6 cold and freezing rooms as well as engine and mechanical rooms.

The service building (total area of 1,400m^2) accommodates all the mechanical and electrical services and staff rest rooms for 25 workers.

The storage building (total area of 300m^2) consists of storage areas and workers' rest rooms.

The main gates are annexed with control and security rooms on two sides of the plant at different streets allowing all vehicles entering the plant to pass over a truck scale, both gates could be used as entrance and exit gates in emergencies.

Domiatec Packing Plant

Domiatec Group Agricultural Packing Plant

Client
Domiatec Group for Investment & Agriculture Development

Scope of Work
Project management
Concept design
Schematic design
Design development
Detailed design
Tender documents
Tender actions
Shop drawings
Construction supervision

Location
Monofia, Egypt

Types of Activities
Architectural
Civil works
Communication & security systems
Electrical
HVAC
Interior design
Landscape
Mechanical
Structural

With construction cost of 45 million Egyptian Pounds, the new agricultural packing plant comprises a 40,000-ton capacity cold storage encompassing 10 cold storage units with capacity of 10,000 tons each.

The storehouse is a well-ventilated area for grading and sorting to enable separation of agricultural products as well as accessibility to shipping and unpacking.

The packing building (of total packing area 6,000m^2) serves with 1 loading dock for loading and unloading.

The administration building (total built-up area of 2,850m^2) consists of ground floor for reception, showroom, financial department and room for dealing with sales agents. The first floor is allocated to the top management and meeting rooms; guest house comprising suite for the CEO, 4 suites Class A, 4 suites Class B, and a conference hall attached with a kitchen.

The service building comprises control room for weighing scales, product sample room, equipment and spare parts storehouse, lounge, locker rooms for male and female workers with relevant toilets, janitors' closet, and transformer and back-up generator's room. There is also a mosque accommodating all staff.

The main gates are annexed with control and security rooms on two sides of the plant at different streets allowing all vehicles entering the plant to pass over a truck scale, both gates could be used as entrance and exit gates in emergencies.

Domiatec Group Agricultural Packing Plant

Fire Protection for Savola Plant

Client
United Sugar Company of Egypt (Savola Egypt)

Scope of Work
Building permits
Detailed design
Due diligence report
Tender documents

Location
AlAin AlSokhna Port - Egypt

Types of Activities
Communications and Security Systems
Mechanical

The United Sugar Company of Egypt (Savola Egypt) sought the assistance of ECG's engineering consultancy services for the assessment of the existing fire detection and fire fighting systems for its Sugar Plant as well as developing remedial solutions for the current problems. The project aims to enhance the existing fire fighting system for its sugar plant located in the free zone of AlAin AlSokhna Port. The plant consists of separate structures and buildings including administration building, locker room and canteen; refinery building, raw material storage; power house (turbine, compressor and transformer); commissioning building; wastewater treatment plant; chemical store; workshop and store; chemical storage; silos; packing area; packing material storage; warehouse area and car service area.

Savola Egypt entrusted ECG with providing the engineering services for the assessment of the existing fire detection and fire fighting systems for its Sugar Plant as well as developing remedial solutions for the current problems.

The fire alarm system is fully interfaced with other systems such as the fire fighting system. The fire detection and fire alarm system is based on Main Fire Alarm Control Panel (MFACP) and Satellite Fire Alarm Control Panels (SFACP's).

The new fire fighting system incorporates:

- Suitable types of detectors are properly distributed.
- Wiring and devices are supervised in all operations.
- Manual means of alarm initiation for all exits at every floor level.
- Connecting all fire alarm components to the MFACP in the administration building.
- Manual pull stations, audio-visual alarm devices, monitor and control modules covering all areas of the buildings as appropriate.

Fire Protection for Savola Plant

Mars Egypt Site Development

Client
Mars Egypt for Manufacturing

Scope of Work
Conceptual design
Preliminary design
Schematic design
Detailed design
Tender documents
Construction supervision

Location
6th of October City, Egypt

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Landscaping
Mechanical
Structural

On a land area of 19,000 m^2, the project was initiated by Mars Egypt for Manufacturing as an extension to the existing plant located at Industrial Zone 3 in 6th of October City. The steel-structure extension was amalgamated with the existing plant.

The extension was constructed in line with LEED Gold certification requirements, which guarantee the application of better standards in relation to electricity usage, natural lighting, wastewater management, waste management, and recycling.

The expanded Twix Production Line takes up the entire investment of the Mars Plant in Egypt (USD 93 million). This line maintains the position of Mars Egypt for Manufacturing as an important regional export hub.

MARS EGYPT Site Development Project

Workshops & Warehouses

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Halliburton Workshop

Client
Halliburton

Scope of Work
Design review
Construction supervision

Location
New Cairo, Egypt

Types of Activities
Architectural
Communication & security systems
Electrical
HVAC
Infrastructure
Mechanical
Structural

Construction of Halliburton new workshop in Kattamya over a footprint area of 2,000m^2. The workshop consists of mezzanine and ground floor housing storage facilities, offices, lockers, laboratories, and control room.

Halliburton Workshop

Hyundai & Kia Service Workshops, Al-Quoz Industrial - Area 1

Client
Juma Al-Majid Group

Scope of Work
Architect of Record
Conceptual design
Schematic design
Design development
Tender action
Construction documents
Construction supervision

Location
Dubai

Types of activities
Architectural
Electrical
HVAC
Mechanical
Structural

On a plot area of 60,180m^2, Juma Al-Majid Group is planning major renovations and expansion to existing Hyundai & Kia service workshops at Al-Quoz Industrial Area.

The required works are detailed as follows:
Existing structures (total built-up area is approximately 18,835m^2):

- Major refurbishment/renovation to an existing workshop, with a view to suiting the requirements of Hyundai service workshop (dent repair section painting section, pre-delivery inspection section and passenger car service & maintenance area);
- Conversion of an existing workshop (3,735m^2) into a Hyundai commercial car service workshop and a body repair/body parts section;
- Conversion of a shed (7,800m^2) into a Kia service workshop offering services similar to those provided by the Hyundai service workshop; and
- Demolition of two existing warehouses (17,500m^2).

Construction of new buildings (total built-up area is approximately 20,430m^2):

- Hyundai customer service building (ground + mezzanine) of area 1,600m^2 including reception and waiting area, in addition to a car parking area;
- Hyundai spare parts store (double height ground floor) of area 840m^2;
- Kia customer service building (ground + mezzanine) of area 1,600m^2, plus a car parking area;
- Kia overseas training centre (ground + mezzanine) of

area 1,700m^2 along with a gated car parking area.
- Kia spare parts store (double height ground floor) of area 840m^2.
- Gate houses of approximately 150m^2 total area; and
- 2-level building of area 12,000m^2 for car parking & staff facilities (offices, changing rooms, showers, toilets and prayer room).

The construction works of both the Hyundai and Kia service workshops will follow the same lines of quality and design for the establishment of an iconic model of service workshops in the Middle East.

Edita New Premises

Client
Edita Food Industries S.A.E.

Scope of Work
Bases of design report
Conceptual design
Design development
Detailed design
Design permits
Tender documents
Tender action
Construction management
Construction supervision

Location
Sheikh Zayed City- Egypt

Types of Activities
Architectural
Communications and Security Systems
Electrical
HVAC
Infrastructure
Interior design
Landscape
Mechanical
Roads

To increase its production capacity, Edita Food Industries Company decided to relocate its logistic hub to Sheikh Zayed City. The project site is served by a road network encompassing parking area accommodating 112 spaces for distribution vehicles, 95 spaces for passenger cars and 10 spaces for trucks at the loading dock.

The project is air-conditioned through a central chilled water plant and it is electrically and structurally ready to receive chillers for future requirements.

The project land is 4.00m below the street level, the distribution trucks and vehicles use two huge ramps with width of 10.00m to reach the logistic hub using adequate internal roads. Private cars and passengers use a bridge to reach the main entrance of the office building at both the ground floor and the basement as well as the indoor parking of the office building.

Over a land area of about 20,770m^2, the project comprises 4 buildings:

Headquarters Office Building: with a footprint of about 2,400m^2, the building includes all employee and top management offices. It is composed of basement, ground and three typical floors. The building design is based on a dividable open space-planning concept to suit office space requirements. The central area encompasses main staircase, toilets, janitors' closet and other services. Natural lighting passes through the wide double glass windows.

Edita New Premises

Logistic Hub: with a footprint area of 2,730m^2, the building comprises a ground floor and three typical floors. The design is based on an open space theme to suit storing requirements and maximum capacity with the most flexible maneuvering. The building is designed to store all kinds of Edita products using special racks facilitating the in-out process of all products at any time.

Services Building: with a footprint of about 1,050m^2, the building comprises a ground floor and two typical floors. It includes vehicles' workshops to provide maintenance services for the company vehicles and spare parts storages. The building also includes cafeteria, praying area, distributors' offices, workers' lockers, etc.
Power Station Building.

Warehouse Park, KAEC

Client
Emaar, The Economic City

Scope of Work
Concept design
Schematic design
Design permits
Detailed design
Value engineering
Cost estimation
Tender documents

Location
King Abdullah Economic City, Saudi Arabia

Types of Activities
Architectural
Civil
Communication and security systems
Electrical
HVAC
Infrastructural
Landscaping
Mechanical
Roads
Structural

Spread over a total land area of approximately 30,433 m^2, the Warehouse Park is located at Phase 1B of the Industrial Valley in King Abdullah Economic City, Saudi Arabia.

Emaar, The Economic City (EEC) intends to develop 12 fully serviced shell warehouse buildings with a total built-up area of 12,540 m^2, with a view to creating a landmark of warehouse buildings. Each unit has a ground floor and mezzanine, with a total built-up area of 1,045 m^2.

The warehouse units are intended for commercial activities relating to logistics, storage & distribution, light manufacturing, as well as assembly, and will be leased by EEC to individual tenants.

With a modular warehouse building design, the warehouse units will allow for flexible combinations in terms of size and layout to serve the requirements of tenants with respect to the main functions of each commercial activity.

Warehouse Park, KAEC

Cold Storage

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Cold Storage Facility

Client
Horticultural Export Improvement Association

Scope of Work
Project management
Detailed design
Tender documents
Tender action
Construction management
Construction supervision

Location
Cairo, Egypt

Types of Activities
Architectural
Communications & security systems
Electrical
HVAC
Mechanical
Structural

Located at Cairo International Airport, with a plot area of approximately 26,000m^2, the storage facility comprises 3,500m^2 single storey-concrete structure refrigeration building, 390m^2 single-storey, concrete structured administration building, water tanks, service building and guard room.

Cold Storage Facility

KIZAD Cold Storage Warehouse

Client
IBR - Emirates L.L.C.

Scope of Work
Conceptual design
Preliminary design
Detailed design
Construction supervision

Location
Abu Dhabi, UAE

Types of Activities
Architectural
Civil works
Communications & security systems
Electrical
HVAC
Landscaping
Mechanical
Roads
Structural

The Cold Storage Warehouse is located in Khalifa Industrial Zone Abu Dhabi (KIZAD); one of the world's largest industrial cities/ cargo ports.

According to the classification of Abu Dhabi municipality, KIZAD is a revolutionary transformation of industrial zones developed by Abu Dhabi Ports Company (ADPC). The project design concept is to achieve 1 Pearl Design rating as per the sustainability measures of Abu Dhabi Urban Planning Council (ESTIDAMA).

With a total land area of about 44,047m^2, KIZAD warehouse provides cold storage management services to different companies specialized in the food, pharmaceutical, flowers and other distribution businesses.

KIZAD Cold Storage Warehouse Facility includes the following components:

Public Refrigerated Warehouse (PRW) (23,323m^2): consists of four separate rooms; three rooms serve goods requiring controlled-temperature freezer, while one room serves goods requiring controlled-temperature cooler.

Administration Building (G+2): facilities administration and facility management services. Ground floor contains the main entrance, private offices,open secretarial spaces, drivers' zone and labourers' zone.

The first and second floors include administration offices, open secretarial space, private offices, conference rooms, a prayer room and a cafeteria.

Guard House: a small room for the security staff to control the access to and from the KIZAD warehouse site.

KIZAD Cold Storage Warehouse

Urban Development

ECG
جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Urban Planning and Mixed-Use Developments

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Antoniades Complex

Client
Confidential

Scope of Work
Conceptual design
Schematic design
Detailed design

Location
Alexandria, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Interior Design
Landscaping
Mechanical
Roads
Structural

Antoniadis Complex is located in Smouha, Alexandria, 2.6 km from the Mediterranean Coast. The project's total built-up area is approximately one million square meters, which makes it one of the largest integrated projects accomplished by ECG, and indeed the largest project ever implemented in Alexandria. The multi-purpose project includes nine residential towers with various numbers of floors, a mall, a gym, and recreational areas.

Since the project is located in the vicinity of Antoniadis historical gardens, and overlooks the ancient Antoniadis Palace; the project is based on the idea of linking the palace and gardens with the project to revive their historical value. In furtherance of this idea, most of the surface areas of the podium are considered to be green, with an area of approximately one hundred thousand square meters, which strengthens the relationship between the project and its outer perimeter and conveys the impression of being an extension of the historical gardens surrounding the project.

Hamad International Airport City

Client
Office of Metropolitan Architecture (OMA)

Scope of Work
Architect of Record

Location
Doha, Qatar

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
Environmental (sustainability)
Fire and life safety
HVAC
Landscaping (hard and soft)
Mechanical
Roads
Structural
Urban Development

Hamad International Airport City is a 10 kilometer squared – development, where 200,000 people will live and work, linking the new Hamad International Airport with the city of Doha in Qatar. ECG's scope was as Architect of Record for the project, for which the master plan features a series of four circular districts along a spine that is parallel to the HIA runways. It intends to create a strong and unique visual identity for the districts. Phase I of the 30-year master plan links both airside and landside developments for business, logistics, retail, hospitality, and residence purposes.

Hamad International Airport City

ZED Towers

Client
ORA Developers

Scope of Work
Feasibility Study
Design Development
Detailed Design
Tender Documents
Design Permits
Tender Action
Construction Documents

Location
Sheikh Zayed, Egypt

Types of Activities
Architectural
Communication & Security Systems
Electrical
HVAC
Interior design
Mechanical
Structural

The project vision is to create a distinct, vibrant, yet exclusive destination; one that would include residential, office, cultural, entertainment, F&B and retail components, which would allow for the expression and appreciation of all kinds of life styles. It includes a 65-acre park, which positions the development as one of a kind in Sheikh Zayed city. The gross area of the project is 165 acres.

The mid- to high-rise developments are a new type of offering for private developers, expanding their contributions in the suburbs of East and West Cairo. Creating a smart planned, dense, and vibrant destination will bridge the gap between the crowded and unplanned central Cairo, and the under-populated, non-lively private developments. The towers are of 60 meters height, with 10 fully finished different types of apartment units per each floor.

ZED Towers

Alburouj – Park Phase 2

Client
Capital Group Properties

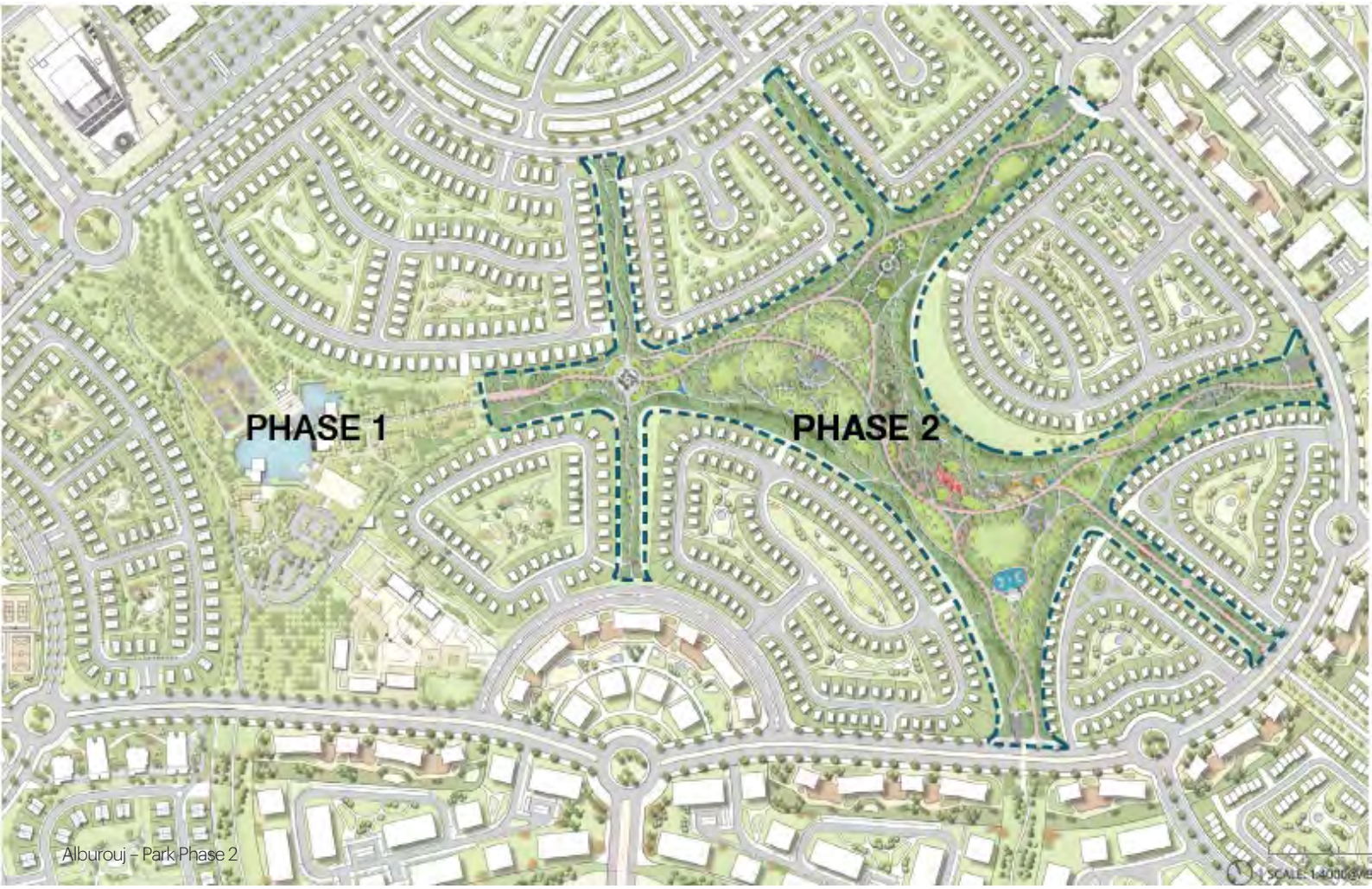
Scope of Work
Concept Design
Schematic Design
Design Development
Detailed Design
Design Review
Permitting
Tender Documents
Tender Action

Location
New Cairo, Egypt

Types of Activities
Architectural
Civil Works
Communication & Security Systems
Mechanical
Landscaping
Roads
Structural
Urban Design

Alburouj is an envisioned mixed-use development located on Cairo Ismailia Road over a land area of 5 million square meters. Alburouj is a complete-project development, composed of residential communities, internationally renowned schools, as well as sports & community clubs. This adds to a prime retail mall, cultural hub, Boutique Hotel and an office park.

ECG services are limited to the park, which stretches over an area of 70 feddans and divided into two phases. The land area of phase 2 alone is 161,110 m^2. The services include reviewing the concept & schematic designs prepared by an international consultant, and preparing the concept & schematic designs for all of infrastructure, structural, and MEP works. ECG will also prepare the full detailed and developed designs, assigned to meet the international consultant's designs in complete harmony.



Al-Sadat City Industrial Zone

Client
El-Sewedy

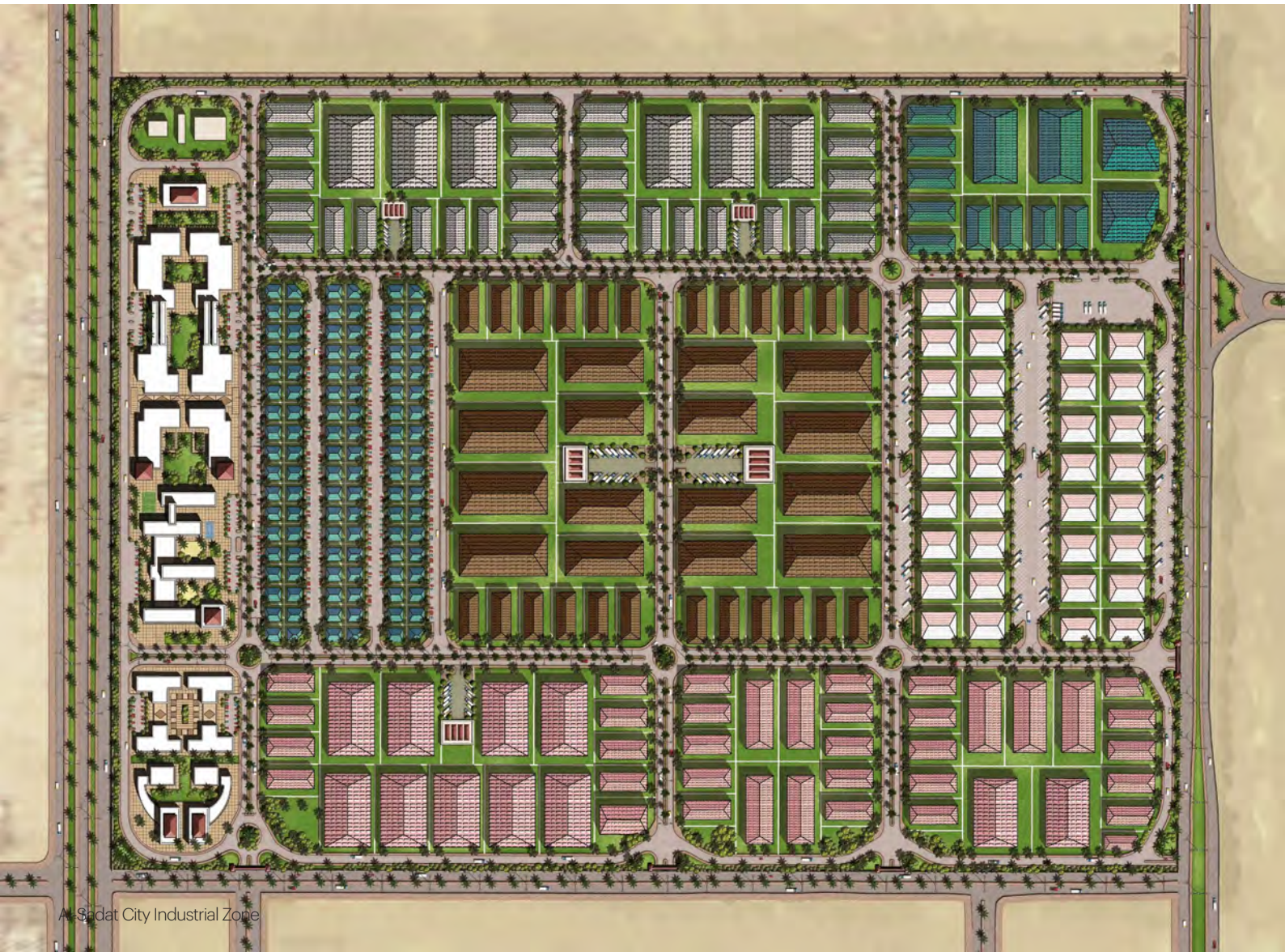
Scope of Work
Data collection and site studies
Basis of design report and preliminary design
Design development
Detailed designs
Tender documents
Construction supervision

Location
Al-Sadat City, Egypt

Types of Activities
Civil
Electrical
HVAC
Infrastructure
Landscape
Mechanical
Roads
Structural
Urban design

On an area of 1,338,000 m^2, Al-Sadat City Industrial Zone is an integrated project comprising an administrative building (1,000 m^2); technical education center (2,400 m^2); child care center (200 m^2); sales, marketing, and advertising center (1,200 m^2); and main gates and security building (50 m^2).

The project includes, a wastewater treatment plant with a capacity of 500 m^3/d and a firefighting water tank (2,000 m^3). Infrastructure networks include internal roads, water & firefighting, irrigation, sewage and storm drainage, as well as power and telecommunication networks.



Al-Sadat City Industrial Zone

Elsewedy Industrial Park

Client
Elsewedy Group

Scope of Work
Master planning
Conceptual design

Location
Entebbe, Uganda

Types of Activities
Electrical
Infrastructure
Roads
Urban design

Elsewedy Industrial Park is located northwest of Entebbe Bay on Lake Victoria in Uganda, near Entebbe International Airport. On a land area of approx. 100,000 m^2, the project aims to support linking future development areas by a modern, regional road network.

The project comprises the following components:
• Elsewedy Industries is divided into two phases:
- Phase 1 includes:
Technical Academy: comprises a ground floor and a first floor, with a built-up area of 1740 m^2 .
Main Factories: comprises a ground floor, with a built-up area of 28,749 m^2.
Warehouse: comprises a ground floor, with a built up area of 5775m^2.

- Phase 2 includes: a future extension on a plot area of 5,775 m^2

• **Elsewedy Development is divided into two phases:**
- Phase 1 includes:
Retail and Administration: comprises a ground floor and two upper floors, with a built-up area of 7,050m^2.
Residential Area: comprises a ground floor and three upper floors, with a built-up area of 7040 m^2.
Warehouses: comprises a ground floor, with a built up area of 12,514 m^2.

- Phase 2 includes: a future extension on a plot area of 9,642 m^2.

Elsewedy Industrial Park

Sheikh Zayed City Extension

Client
New Urban Communities Authority (NUCA)

Scope of Work
Preparatory Phase (studies)
Strategic plan and outline of land uses
Detailed design for top-priority projects as defined by NUCA
Ministerial degrees

Location
Sheikh Zayed, Egypt

Types of Activities
Communications and security systems
Economic
Electrical
Environmental
Infrastructure
Landscaping
Roads and transportation
Solid waste management
Urban planning

The project covers the strategic plan and development strategy of Sheikh Zayed City Extension, which stretches over an area of 8,500 feddans, including an area of 1,800 feddans for a preparatory phase covering top-priority segments of the extension. The strategic plan and development strategy ensure optimal land uses within the area and its territorial elements. They are integrated with the overall strategic plan of Sheikh Zayed City and 6th of October City.

The projects of the strategic plan aim to:

- establish an attractive and functional layout meeting the housing needs of the increasing residents of Giza Governorate
- foster residential communities and boost investments in Greater Cairo
- establish an integrated urban environment and multifunctional developments, with proportional distribution of residential and other land uses

Work covers a variety of activities:

- performing data collection in coordination with relevant government authorities
- studying and analyzing the current situation of economic activities, in terms of macroeconomic fundamentals, land uses, size of investments, development opportunities, demand for urban and residential activities, problems and obstacles to development, illegal land seizures, and role of Sheikh Zayed extensions within the Investment Map adopted by the government
- studying and analyzing transportation and infrastructure networks (water, sewage, telecommunications, electricity, gas, etc.), and identifying environmental resources, energy sources, and electric power transmission mechanisms, with SWOT analyses for study sectors
- identifying urban development trends, goals, and objectives, and selecting an optimum scenario of urban development to establish an investment hub to the west of Cairo
- preparing a strategic urban development plan and urban planning alternatives; selecting the optimum alternative; and identifying top-priority projects to implement the required development strategy

Sheikh Zayed City Extension

- preparing a strategic economic development plan, including plans for infrastructure networks, public services, transportation, public transport, and conservation of natural resources (energy and water)
- outlining land uses in light of development indicators; identifying the requirements of housing projects and associated services; defining the implementation stages of top-priority projects; proposing urban patterns; determining the physical configuration of central areas; and specifying the structural requirements for the extension's areas
- conducting economic studies; preparing a proposal on the best systems that can be utilized to encourage investments; and preparing an investment guide for top-priority projects
- preparing a detailed master plan showing land use zoning, public services, landscaping, and various other project components, and identifying building regulations for all land uses and project components
- preparing detailed design drawings and tender documents for infrastructure networks

Zone R5 in the New Capital

Client
Ministry of Housing, Utilities & Urban Development

Scope of Work
Master planning
Concept design
Schematic design
Design development
Detailed design
Tender documents
Quantity surveying

Location
New Capital, Egypt

Types of Activities
Architectural
Communications & security systems
Electrical
HVAC
Landscaping
Roads
Structural

The project stretches over an area of approximately 984.67 feddans divided into a series of typical, interrelated blocks of diverse vernacular to break stereotypical monotony. The project mimics the distinct urban vernacular of Paris and Khedivial Cairo.

The project is divided into four neighborhoods: 19th Century Western Architecture, Modern Architecture, Villas, and finally Towers; a neighborhood predominantly earmarked for commercial and administrative use.

The project comprises 59 prototypes of residential buildings, including a commercial ground floor, and each square plot accommodates a number of buildings' prototypes sharing a common basement dedicated for parking spaces. In addition, the project contains four prototypes of villas and townhouse units, as well as various ancillary buildings, including schools, mosques, a hospital, family health clinic, sports club, police station, civil defense center, and a post office. Moreover, the project contains two hotels in the Tower Neighborhood adjoining the Green River.

Zone R5 in the New Capital

Al-Alamein Old City

Client
Ministry of Housing, Utilities and Urban Communities

Scope of Work
Conceptual design
Schematic design
Detailed design
Construction supervision

Location
Al-Alamein, Egypt

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Landscaping
Mechanical
Interior design
Structural
Urban design

Al-Alamein Old City stretches over a total area of approximately 1,091,500 m^2 in Al-Alamein, Egypt.

The project comprises the following components:

- **Main Entrance:** with a total built-up area of about 33,000 m^2.
- **Entertainment & Arts Neighborhood:** with a total built-up area of about 134,200 m^2.
- **Investment & Commercial Neighborhood:** with a total built-up area of about 122,200 m^2.
- **Cultural Neighborhood:** with a total built-up area of about 82,500 m^2.
- **Old City Neighborhood:** with a total built-up area of about 187,000 m^2.
- **Residential Neighborhood:** with a total built-up area of about 82,500 m^2.
- **Opera House:** with a total built-up area of about 93,200 m^2.
- **A Waterway:** with a total built-up area of about 84,000 m^2.
- **A Tramway Track:** with a total built-up area of about 23,000 m^2.
- **Roads & Parking Spaces:** with a total built-up area of about 250,700 m^2.

The project's master plan also covers a museum, mall, mosque, church, residential studio apartments, cinema complex, city hall, island boutique hotel, and a library.


Al-Alamein Old City

Cleopatra Industrial Park in Al-Ain Al-Sokhna City

Client
Cleopatra Group

Scope of Work
Marketing study
Master planning

Location
Al-Ain Al-Sokhna, Egypt

Types of Activities
Landscaping
Urban design

The Cleopatra Industrial Park is located in a prime location within the Second Economic Sector situated northwest of the Gulf of Suez.

The park is bounded eastward by Al-Ain Al-Sokhna Port, southward by Cairo-Sokhna Road, and northward by a road connecting Ismailia-Hurghada Road with Hadabat Al-Galala Road. The site, being well-connected with regional roads, is considered to serve as a distinctive gateway to Eastern Egypt.

The project, which stretches over a total area of 2,190 feddans (approximately 9,198,000 m^2), is planned for completion in three phases. It is envisaged as an integrated economic, administrative, and industrial complex that includes the following components: residential area, administrative zone, mosque, sports club, mall, showrooms, offices, cafés, restaurants, labor accommodations, parking areas, services, and utilities.

Cleopatra Industrial Park in Al-Ain Al-Sokhna City

Marassi Greek Village

Client
Emaar Misr for Development S.A.E.

Scope of Work
Master-planning
Basis of Design Report (BODR)
Schematic design
Design development
Tender documents
Tender action

Location
North Coast, Egypt

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Interior design
Mechanical
Roads
Structural
Urban

Located at the southwestern corner of Marassi Resort on the North Coast of Egypt, the Greek Village stretches over a total land area of 295,686 m^2. The village partially overlooks the Marassi course golf. It is bounded by Alexandria-Matrouh Coastal Road to the south, and by Marassi Ring Road to the northeast.

The Greek Village comprises residential buildings, leisure hubs, and retail units, all reflecting the vernacular of the Greek island of Santorini:

- **Residential Buildings (total built-up area of 200,000 m^2):**
  - **90 Townhouses** (total built-up area of 90,000 m^2 and a total of 360 keys): each townhouse consists of two floors and a roof, as well as a private yard spanning two sides and a parking area with a capacity of two cars per key.
  - **1,341 Apartments** (total built-up area of 108,556m^2): each apartment building has views of either the sea or the golf course. The apartments are classified into six types as follows:
    - 493 studios (65 m^2 each)
    - 447 one-bedroom units (85 m^2 each)
    - 362 two-bedroom units (105 m^2 each)
    - 39 three-bedroom units (140 m^2 each)
- **Leisure Hubs:** two community hubs, each with a built-up area of 1,625 m^2.
- **Retails Units** (total built-up area of 1,400 m^2): the units are mostly included in a retail bay whose average width is 8 meters. Other units occupy the ground floors of selected residential buildings. Units include F&B outlets and coffee shops (each with an outdoor sitting area), alongside other types of retail shops.

Marassi Greek Village

New Mansoura City

Client
Ministry of Housing, Utilities & Urban Development

Scope of Work
- **Phase 1:** Preparatory work, existing situation studies, and development strategy
  - **Stage 1**: Preparatory work, existing situation studies, and analyses
  - **Stage 2:** Development strategy and future vision

- **Phase 2:** Strategic plan and land use plans
  - **Stage 1:** Strategic plan (including infrastructure)
  - **Stage 2:** Land use plans
  - **Stage 3:** Alternatives for diverting Qalabshu & Zayyan Agricultural Drain and its sea outlet

- **Phase 3:** Master plan for New Mansoura City Phase 1 (2,000 feddans)
  - **Stage 1:** Detailed land use plans
  - **Stage 2:** Detailed master plan (showing the main traffic routing, service area location, recreational facilities, etc(for New Mansoura City Phase 1 2,000 feddans)

- **Phase 4:** Detailed design and tender documents for New Mansoura City Phase 1 (2,000) feddans; detailed design and tender documents (infrastructure networks) for New Mansoura City Phase 1 (2,000); and detailed design for road and transportation networks, solid waste management facilities, and landscaping work, as well as potable water, firefighting, irrigation (treated sewage effluent), sewage, stormwater, power, and telecommunication networks

- **Phase 5:** Detailed design for the selected alternative of diverting Qalabshu and Zayyan Agricultural Drain and its sea outlet

- **Phase 6:** Detailed design for the seafront and the coastal road

- **Phase 7:** Residential buildings
  - **Stage 1:** Conceptual design for residential buildings
  - **Stage 2:** Detailed design and tender documents for residential buildings

Location
Al-Daqahlia, Egypt

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Infrastructure
Landscaping
Mechanical
Roads
Structural
Urban design

New Mansoura City

The project of New Mansoura City is set to be completed in several phases. The city is planned as a smart city stretching over a total area of approximately 5,100 feddans on the Mediterranean coast, approximately 20 km from New Damietta City.

New Mansoura City is set to be home to more than 650,000 residents residing in approximately 165,000 residential units. The residential units include the following types:

- **Semi-Attached Villas (two types):** each unit includes bedrooms, living room, dining room, lobby, toilets, and kitchen
  - **Type 1 Villas:** each villa consists of a ground floor, first floor, and roof, with a gross floor area of 120 m^2
  - **Type 2 Villas**: each villa consists of a ground floor, first floor, and roof, with a gross floor area of 160 m^2

- **Stand-Alone Villas (two types):** each unit includes bedrooms, reception, living room, dining room, lobby, pool access, toilets, kitchen, storage area, and roof terrace
  - **Type 1 Villas:** each villa consists of a ground floor,first floor, and roof, with a gross floor area of about 200 m^2 over a plot area of about 500 m^2
  - **Type 2 Villas:** each villa consists of a ground floor, first floor, and roof, with a gross floor area of about 240 m^2 over a plot area of about 600 m^2

- **Townhouses (two types):** each unit includes bedrooms, living room, dining room, toilets, kitchen, atrium, terrace, and outdoor area
  - **Type 1 Townhouses:** over a plot area of 200 m^2 and a footprint area of 80 m^2, each unit consists of a ground floor and first floor
  - **Type 2 Townhouses:** over a plot area of 300 m^2 and a footprint area of 120 m^2, each unit consists of a ground floor and first floor

- **Apartments Buildings:** each apartment building has a built-up area of 1,500 m^2, and each apartment has a floor area of 200 m^2, including bedrooms, reception, dining room, bathroom, and kitchen

Citystars Kattameya

Client
Al-Arabia Real Estate Development Company

Scope of Work
Master-planning
Conceptual design
Schematic design
Design development
Detailed design
Tender documents

Location
Kattameya, Cairo, Egypt

Types of Activities
Architectural
Communications and security systems
HVAC
Landscape
MEP
Structural
Urban design

Citystars Kattameya is a unique mixed-use development in one of the most prestigious districts located at the heart of New Cairo. The site, which overlooks the Ring Road, is easily accessible from downtown Cairo, Cairo International Airport, and Giza Pyramids. It is on the route leading to important destinations to the east of Cairo, including the Suez Canal and Al-Ain Al-Sokhna.

Over a land area of 245,000 m^2, the mixed-use development includes the following components:

- retail building: shops, restaurants, food court, ourmet market, D-Box movie theaters, entertainment park, snow city, and aquarium
- office district
- international hotel
- three luxurious apartment buildings

The hotel building comprises the following:

- three-level basement: lobbies, meeting rooms, administration area, retail area, storage area, and parking area (2,610 cars)
- ground floor: entrance, reception, offices, cafés, retail area, toilets, and services
- nine upper floors: lobbies, rooms, suites, swimming pools, gym, spa, terrace, and services

Located near the hotel, the three residential buildings offer more than 200 apartments providing residents with an atmosphere of ultimate relaxation and total luxury, with direct access to the amenities included in the development as a whole.

Each residential building consists of a ground floor and eight upper floors. While upper floors are exclusively designated for apartments, the ground floor of each building contains entrances, lounges, meeting rooms, a business center, administration area, restaurant, bar, and retail area.

Citystars Kattameya

Damietta Smart Village

Client
Smart Villages Company

Scope of Work
Master plan

Location
New Damietta, Egypt

Types of Activities
Urban design

The Damietta Smart Village is located in New Damietta City on a site area of 100 feddans, with a total built-up area of 71,400 m^2. The business park is designed to include several office buildings, centers, and service buildings with various built-up areas as shown below:

- Administrative & Operation Building (412 m^2)
- Office Buildings (11,159 m^2)
- Training & Development Building (2,232 m^2)
- Citizen Services Building (1,392 m^2)
- Utility Buildings (944 m^2)
- ICT & Outsourcing Services Centers (11,841m^2)
- Excellence, Development & Innovation Center (2,232 m^2)
- Commercial Center (10,600 m^2)
- Convention Center (2,272 m^2)
- Medical Center (5,316 m^2)
- International School (5,000 m^2)
- Rest Houses (18,000 m^2)

All communications and technological services are set for the establishment of an efficient and integrated business park.

Citystars Red Sea Riviera

Client
Golden Coast for Hotels, Touristic Villages & Leisure Projects

Scope of Work
Master-planning
Conceptual design
Schematic design
Tourism Development Authority's approvals
Design development
Detailed design
Tender documents
Construction documents
Construction supervision

Location
Safaga, Egypt

Types of Activities
Infrastructure
Landscaping
Urban design

Citystars Red Sea Riviera is a landmark resort that extends over a land area of 10 million square meters at Abu Soma south of Hurghada, Egypt.

The resort—owned by Citystars Properties—is set to be a luxurious, gated mixed-use community anchored by the upscale Fairmont Citystars Resort and Fairmont-branded residential apartments and villas, alongside recreational, cultural, commercial, and social facilities for residents and visitors.

The resort project is divided into six main phases. Phase 1 (A & B) extends over a land area of approximately 2,000,000 m^2 and includes four- and five-star hotels, furnished hotelserviced apartments, residential buildings, a marina, and a lagoon, as well as commercial and recreational areas.

This project covers the master-planning of the resort's entire land area, along with the urban, infrastructure, and landscape design of the land area earmarked for Phase 1 (A & B).

City Gate - New Cairo

Client
Barwa Real Estate Company)

Scope of Work
Conceptual design
Schematic design
Design development
Value engineering
Design review
Infrastructural planning
Construction supervision

Location
New Cairo, Egypt

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Roads
Urban planning

The project is a unique high value added community that is being created as a focus for national economic regeneration. Its launch will be a 'true' living style for which all aspects of business life will be catered. It will attract the cream of Egyptian network and Middle Eastern personnel as well. International companies will be interested to move in the office parks. The highest international standards is used in its design and development.

ECG, the Local Lead Consultant (LLC), was invited to assist with the land use and infrastructure planning for City Gate project. It was proposed to develop an area of some 8.5 million m^2 as a major focus for economic growth. The site is located about 25 kilometers to the East New Cairo.
The project consists of 2,300 villas of various types and sizes, 30,000 apartment units, 30,000 m^2 of multiple retail facilities, four hotels, 720,000 m^2 of offices in three business parks, three training centers, grand mosque, four neighborhood mosques, medical complex, sports and recreational parks/ facilities, 18-hole golf course, clubhouse, and landscaping, in addition to infrastructure, including both asphalt and interlock roads (61,800 m long with a carriageway width ranging from 10 to 40 m). ECG used Revit BIM package throughout the design process.

The city includes a data center with a capacity of 40 racks.

Aspire Zone-Phase II

Client
Aspire Zone Foundation

Scope of Work
Master planning
Pre-concept design
Design optimization
Basis of design report (BODR)

Location
Doha, Qatar

Types of Activities
Architectural
Civil
Communications & security systems
Electrical
Landscaping
Roads
Urban design

On a plot area of approximately 1.7 million square meters, Aspire Zone Phase II is developed as a mixed-use development that includes the following areas:

- Residential Area: single- and multi-family units
- Commercial Area: offices, restaurants, and business parks
- Community Area: mosques and schools
- Recreational Facilities: green areas with car parking spaces

The site of Phase II is located near that of Phase I, close to Doha Corniche. It is connected to Doha through major modes of transportation. Phase II site is also home to two heritage sites that have been preserved during the overall master-planning.

Aspire Zone Phase II is envisioned to encompass a sustainable park with a flexible design streaming along a continuous pedestrian pathway linking the whole site. The park is designed to add a cultural, economic, and aesthetic value to the surroundings, with a lake enfolding the main spine and the central zones.

As Qatar gears up for the FIFA 2022 World Cup, this development is designed to include training sites for the FIFA-compliant team base camps. For the tournament phase, the overall master-planning introduces safety measures aimed at maintaining the team base camps and training sites in line with FIFA regulations. After the tournament, the commercial avenue and business parks are set to be further developed according to the highest standards.

Aspire Zone-Phase II

Al-Shorouk Community, (Area H2-8 – Phase 1), KAEC

Client
Emaar, the Economic City

Scope of Work
Construction supervision

Location
Rabigh (close to Jeddah), Saudi Arabia

Types of Activities
Architectural
Communications and security systems
Civil
Electrical
HVAC
Landscaping
Mechanical
Roads
Structural

ECG provides the engineering consultancy services to many new communities developed in King Abdullah Economic City (KAEC), including Al-Shorouk.

Al-Shorouk is an integrated mixed-class community, located about 10 Km south Rabigh and 120 km north Jeddah.

The modern city of KAEC creates a variety of new economic opportunities along with futuristic urban communities that provide lavish lifestyle for potential residents.

The affordable residential community of Al-Shorouk covers four areas (H2-5), (H2-6), (H2-7) and (H2-8), accommodating multi-family apartments, schools, mosques, parking areas, commercial area, in addition to public services.

On a total plot area of 151,167 m^2, area H2-8 comprises residential apartments, parking areas, green areas and social facilities.

ECG's scope covers area H2-8 (Phase I) on a plot area of 75,513 m^2. This phase includes one, two, three and 4-bedroom apartments.


Al-Shorouk Community, (Area H2-8 – Phase 1), KAEC

Arab Contractors' 101 Feddans at Al-Mostakbal City

Client
Arab Contractors (Osman Ahmed Osman & Co)

Scope of Work
Master plan
Conceptual design
Schematic design

Location
East of New Cairo, Egypt

Types of Activities
Architectural
Civil
Communication & security systems
Electrical
HVAC
Landscaping
Mechanical
Roads
Structural

The Arab Contractors (Osman Ahmed Osman & Co.) has acquired a plot of land spreading over an area of about 101 feddans at Al-Mostakbal City. The land is earmarked for a residential compound to be part of Phase 1 of Al-Mostakbal City (1,500 feddans). Along with the residential buildings, the prospective residential compound shall also comprise retail shops, nursery, clubhouse, mosque, and medical complex. The population of the residential area is estimated at around 18,330 inhabitants.

With a total built-up area (BUA) of 363378,24 m^2, the residential buildings are designed to include single and duplex apartments as follows:

- Single apartments: 360 units in 15 buildings, each comprising 6 floors (G + 5 upper floors)
- Duplex apartments: 2068 units in 57 buildings , each comprising 6 floors (G + 5 upper floors)

The apartments feature a range of types:

- Type A: 360 units with a BUA of 65,052 m^2
- Type B: 286 units with a BUA of 44903,04 m^2
- Type C: 154 units with a BUA of 19887,84 m^2
- Type B': 836 units with a BUA of 131255,04 m^2
- Type C': 792 units with a BUA of 102280,32 m^2

Services are aimed for the residential buildings, infrastructure, and landscaping for the entire 101 feddans (427,690 m^2).

Infrastructure works include establishing water, wastewater, irrigation, fire-fighting, and street lighting networks.

Arab Contractors 101 Feddans at Al-Mostakbal City

Smart Village

Client
Smart Villages Company, Egypt

Scope of Work
Master plan
Conceptual design
Detailed design
Tender documents
Tender action
Construction management
Construction supervision

Location
Cairo, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
Mechanical
Structural
Urban design

Spread over 3 million m^2, Smart Village Cairo is Egypt's first, fully operational information technology cluster and business park. The prime development accommodates multinational and local companies; governmental and financial organizations; educational institutions; and research and development centers. All facilities share sophisticated, state-of-the-art infrastructure; up-to-date facility management; and a full range of business and recreation services.

Smart Village

Al Wa'ab City

Client
Al Wa'ab City, Qatar

Scope of Work
Design development
Detailed design
Construction management
Construction supervision

Location
Doha, Qatar

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Landscaping
Mechanical
Structural
Urban design

Al Wa'ab City is one of the largest privately owned real estate projects developed in Qatar. Extending over 1.25 million m^2 and promoted by Nasser Bin Khaled Holding company, the US$ 3.2 billion project is the first family-oriented, self supporting community, a "city" within a city, to be developed in the country.

Blending Islamic cultural heritage with modern technologies, Al Wa'ab City offers a fully integrated mix of residential, commercial, retail, and entertainment amenities. Whilst enjoying one of the country's lowest density city ratios, the safe and well-maintained environment is planned to host over 8,000 people and embrace a pedestrian-friendly environment along with lush landscaping.

Incorporating more than 200,000 m^2 of commercial accommodation and over 100,000 m^2 of retail accommodation including the unique boutique mall Souq Al Waab, Al Wa'ab City showcases a variety of residential components including 92 palatial AlLewan villas; 185 luxurious Hattan villas; 78 Mezzen villas; 43 AlSennyar town houses; and over 1,450 Azha, S'hayl, Al Y'ah, and Merzam apartments.

Al Wa'ab City

OQYANA - World First

Client
OQYANA Ltd., Dubai, UAE

Scope of Work
Conceptual design
Schematic design
Architect of record
Detailed design
Design permits

Location
Dubai, UAE

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural
Urban design

ECG was appointed as OQYANA - World First's Architect of Record covering all phases of work from conceptual design till tender documents and tender action. OQYANA - World First is an archipelago of manmade islands modeling the countries of Australasia on THE WORLD Project.

OQYANA, The world's first fully master planned island retreat extends over a total area of 2 million m^2 of seawater comprising 20 reclaimed islands with an upland area of 420,000 m^2. OQYANA is destined to be a fully harmonized mixed-use lifestyle through a mixture of seaview luxury units with a total built-up area of 771,000 m^2 including ocean beach villas, coastal beach villas, canal homes, coral water homes, marina apartments, reef seaside apartments, penthouse apartments and serviced apartments, complimented with commercial and cultural activities, yacht club, community services, aquarium, five hotels, state-of-the-art spa in addition to ferry terminals and marinas.

OQYANA - World First, Dubai, is accessible only by sea and air. The land mass was selected because of its proximity to the mainland, four kilometers of the Jumeirah Beach coast, thus giving its residents a panoramic view of Dubai.

The entire destination can be isolated as it has no extensive public water corridors running through it, providing the highest privacy levels for residents. OQYANA - World First provides homes of distinction for the world's discerning.


Oqyana - World First

Madinaty

Client
Arab Company for Project and Urban Development

Scope of Work
Detailed design
Tender documents
Construction supervision

Location
New Cairo, Egypt

Types of Activities
Civil
Communications and security systems
Electrical
Mechanical
Structural

A city of international standards, Madinaty stretches over 33.6 million m^2 whilst delivering an accommodation capacity of 120,000 housing units to serve 600,000 residents. ECG's commission in the mixed-use development ranges from the design to the construction supervision of 95% of the city's development works. Acting as an extension of New Cairo City, Madinaty features an 159-acre open-air mall, villas, apartment buildings, golf retreats, healthcare facilities, hotels, educational institutions, sports and social clubs, and entertainment destinations. The city will also have innovative and unique services on its fringes which will cater to the needs of nearby towns and even to the needs of the inhabitants of Greater Cairo. These services will include: water sports areas, shopping centers, and varied educational institutions.

Madinaty

Marassi

Client
Emaar Misr for Development SAE, Egypt

Scope of Work
Master plan
Acquisition of governmental/authorities permits and approval
Detailed design of several villa types and beach club
Construction supervision

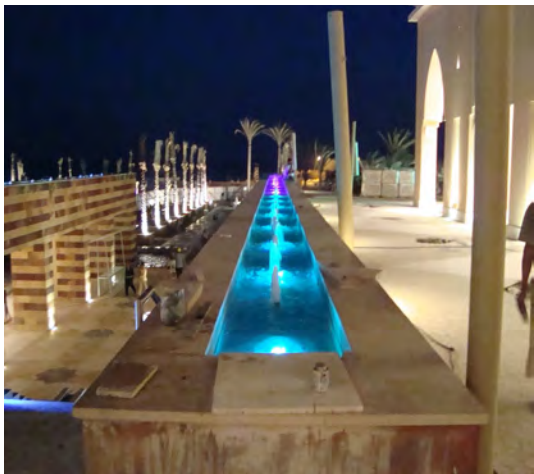
Location
North Coast Egypt

Types of Activities
Architectural
Communication and security systems
Electrical
HVAC
Interior design
Landscaping
Mechanical
MEP works for spa and gym at beach club
Structural
Urban planning

The mega-project Marassi located in the North Coast of Egypt. Overlooking the glorious view of Sidi AbdelRahman Bay, Marassi is a 6 km waterfront community that unfolds a year-round upscale residential, tourism, leisure, and commercial lifestyle development lining the Mediterranean Sea coast. Spread over a land area of 6.25 million m^2, the project features seven waterfront residential districts inspired by various architectural styles including that of Andalusian, Santa Barbara, Tuscan, Formal Italian, and Spanish Colonial.

Offering a built-up area of 1.85 million m^2, Marassi features an 18 hole golf course, a marina, spas, a town and commercial center, and a number of public services. Strong focus is devoted to the establishment of convention facilities and accommodation amenities via eight major hotel establishments. With a construction cost of 1.7 Billion US$, Marassi comprises two world-class beach clubs which offer the development's residents a string of recreational outlets including magnificently landscaped panoramas.

Marassi



Hyde Park

Client
Hyde Park Properties for development S.A.E

Scope of Work
Review of concept design
Preliminary design
Detailed design
Tender documents
Construction supervision

Location
New Cairo, Egypt

Types of Activities
Architectural
Communications & security systems
HVAC
MEP
Structural

Hyde Park is a unique residential and commercial development located in new Cairo over 6.3 million m^2. The development comprises luxury villas, large family villas, townhouses 2, 4 and 6 plex units), apartments, retail centers, 72 m-high commercial/ office towers, a golf course, a golf club, a sports and health center, and community facilities.

Hyde Park

Discovery Gardens

Client
Nakheel PJSC, Dubai, UAE

Scope of Work
Schematic design
Design development
Detailed design
Tender documents
Tender action
Construction supervision

Location
Dubai, UAE

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural
Urban design

The US $ 2 Billion project consists of a cluster of 3, 2 and 1 of buildings, arranged in a circular pattern, and divided into 6 different types of neighborhoods, based on architectural and landscaping style.

The 243-building development comprises 8,789 studios, 7,838 one-bedroom apartments, and 2,320 two-bedroom apartments.

Dicovery Gardens

Palm City Gardens

Client
Al-Mana Real Estate Company, Qatar

Scope of Work
Design review
Detailed design
Construction supervision

Location
Qatar

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

Palm City Gardens unfolds 128 super deluxe villas (56 type A, 64 type B, and 8 type C), a clubhouse, a nursery, an accommodation/ administrative building, two guard houses, and two substations. The compound buildings are concrete-framed structures adopting block work walls with internal and external wall finishings. Moreover, all units are provided with drainage and irrigation networks, hot/ cold water plumbing, air-conditioning and ventilation, CCTV, SMTAV, intercoms, a security access system, landscaping, roads, a boundary wall, fencing, and all utilities allocated to the turn-key delivery of the residential compound.

Palm City Gardens

Palm Parks

Client
Palm Hills

Scope of Work
Design development
Detailed design
Tender documents
Construction supervision

Location
6th of October City, Egypt

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Landscape
Mechanical
Structural

Located in 6th of October City, Egypt, the Palm Parks residential development stretches over a total area of 474,600 m^2. The project is divided into two different parks of different functions (office park and residential park).

The 143,640 m^2 office park consists of 9 separated office buildings sharing a basement, having underground car parking spaces and services.

The 330,960 m^2 residential park consists of residential buildings of different types (apartments and townhouses) surrounded by landscape features, green areas, lakes and car parking spaces in addition to a small substation building serving the neighborhood. The civil works within this project includes asphalt-paved roads 15,330 m long, with a carriageway of 10 m width.

Palm Parks

Petroleum Institute Villas

Client
Abu Dhabi National Oil Company

Scope of Work
Master plan
Conceptual design

Location
Sas AlNakhl, Abu Dhabi, UAE

Types of Activities
Architectural
Landscape

The project is part of the Petroleum Institute (PI) campus in Sas El Nakhl, Abu Dhabi comprising the following:

- Seven individual (3 bedrooms +1 guest room) family villas for senior staff with off-street covered garages.
- One (3 bedrooms + guest room) family villa for the president.
- Residents' club incorporating swimming pool, playground, community rooms, pool side restaurant and barbecue area.
- Landscape and car park.

Petroleum Institute Villas

ADNOC PI Staff Accomodation at Al Maqta Bridge Area

Client
Abu Dhabi National Oil Company, UAE

Scope of Work
Design development
Detailed design
Tender documents
Construction supervision

Location
Maqta bridge, Abu Dhabi, UAE

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Landscape
Mechanical
Structural

With a land area of 22,627 m^2 and construction cost of US $ 125 million, the development comprises 3 apartment blocks (G+9 (15,080 m^2), G+7 (12,064 m^2) & G+5 (9,048 m^2)) with basement parking and common amenities (swimming pool, fitness centers and kids playground), in addition to 12 villas (G+1 (228 m^2)).

The residential development intends to serve as an accommodation for approximately 825 staff of the ADNOC Petroleum Institute.

Petroleum Institute Staff Accomodation at Al-Maqta Bridge Area

National Sustainable Tourism Strategic Master Plan

Client
Tourism Development Authority, Ministry of Tourism, Egypt

Scope of Work
Traffic impact study
Environmental studies
Energy studies
Studies
Social studies

Location
Cairo, Egypt

Based on Egypt's national economic and social development objectives, a comprehensive national tourism plan was drawn up for the country. It covers the period until the year 2020 and was designed to ensure that tourism development was carried out within a sustainable and environmentally sound framework.

The project was divided into 3 phases: Phase 1 handles the review of existing conditions and objectives; Phase 2 engages in the preparation and establishment of a strategic plan; and phase 3 entails the development of a five-year action plan.

National Sustainable Tourism Strategic Master Plan

Cordoba Hills

Client
Akar Development

Scope of Work
Master plan review
Tender documents review
Tender action
Construction management
Construction supervision

Location
Aleppo, Syria

Types of Activities
Architectural
Electrical
Mechanical
Structural

The Cordoba Hills Project is developed as a self contained city, designed to nurture healthy family living and provide a unique lifestyle for all its residents. The residential development will be an integrated compound, providing first-class facilities to ensure harmonious and comfortable day to day living.

With proximity to urban Aleppo but at a distance from the traffic and chaos associated with city life, Cordoba Hills is ideally located and surrounded by an environmentally rich landscape of vegetation that makes up more than 60% of the land. Located 18 km (15 minutes) from the ever expanding city of Aleppo, Cordoba Hills is spread over 1.3 million square meters of outstanding natural beauty.

The Cordoba Hills project is characterized by its clusters. Comprising 800 luxurious villas all distributed over twenty clusters; Cordoba Hills ensures its residents the privacy and independency they seek.

To accommodate diverse tastes, Cordoba Hills offers several villa types for residents to choose from: Spanish, colonial French, Mexican, and Moroccan The exceptional layout of every home ensures the best use of interior space, regardless of which villa type or design is chosen. Each home will exist in harmony with its outside surroundings, providing breathtaking scenery as well as absolute privacy for all residents.

Cordoba Hills

New City in Sohag Master Plan

Client
Upper Egypt Red Sea for Investment & Development

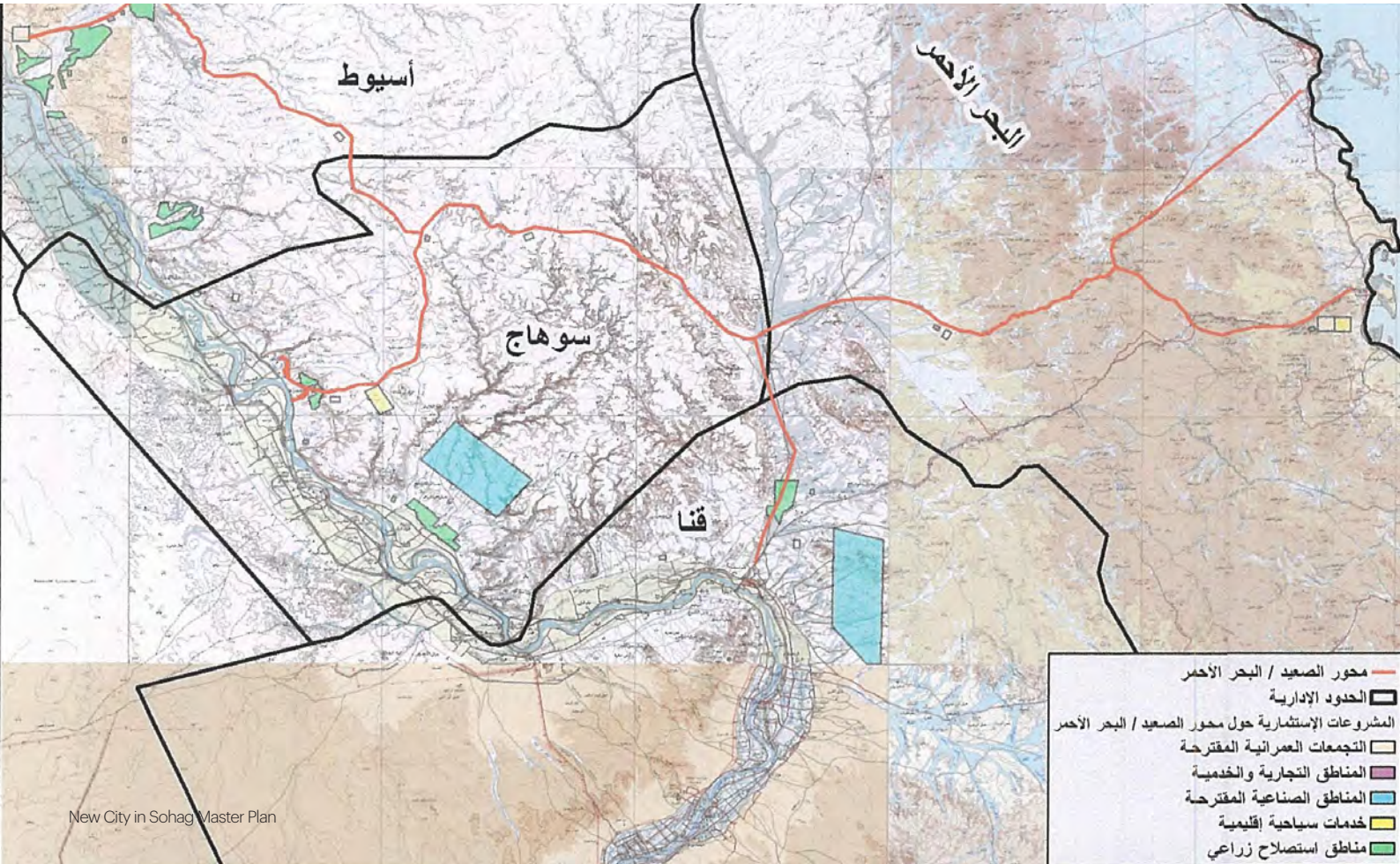
Scope of Work
Feasibility study
Master plan

Location
Sohag, Egypt

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Landscape
Mechanical
Roads
Structural

Upper Egypt Red Sea for Investment & Development awarded ECG with the collaboration of Eco Plan to develop a Master Plan for the new city located in Sohag.

Spread over a land of 18.3 million meter square, the project features residential areas accommodating economical, medium and luxury apartments; service area which comprises administrative buildings, retail, mosque and hospital; sports area with an olympic stadium and sports club; educational area comprising schools, university and technical institution, in addition to an area for entertainment.



Al-Ghadeer Development - Phase 1

Client
SOROUH

Scope of Work
Design development
Tender documents
Tender action

Location
Abu Dhabi, UAE

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

ECG & SUNJIN – Engineering & Architecture have joined forces and were successfully awarded the design of the DHS 870,614,000 project . With a plot area of 643,246 m^2 and built-up area of 257,000 m^2, the project houses three types of villas (153 villas (G+1), 518 townhouses (G+1), 133 terraced apartments (G+2)) and eight types of 6-apartment buildings comprising basement, ground, first and 3 typical floors.

The development offers community facilities which include 2 typical club houses, swimming pools, coffee shop, retail stores, fitness and social center and external landscape and parks.

The project is designed to comply with Abu Dhabi ESTIDAMA requirements for sustainable design achieving 1 PEARL rating.

Al-Ghadeer Development - Phase 1

Shah New Accommodation and Administration Complex

Client
Abu Dhabi Company for Onshore Oil Operations (ADCO)

Scope of Work
Design development
Detailed design
Tender documents

Location
Shah, Abu Dhabi, UAE

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Landscape
Mechanical
Structural

Shah new accommodation & administration complex aims to serve the new Shah Gas Plant. The project consists of 2 complexes, accommodation complex (88,605 m^2) & administration complex (11,750 m^2).

The accommodation complex comprises staff accommodation building; contractors' accommodation building; contractors' amenities building; staff amenities building (reception area, reception lounge & VIP lounge, restaurant facilities, coffee shop, T.V. room/ Arabic Majlis, kitchen & laundry, auditorium and miscellaneous facilities (barber shop, maintenance workshops and snooker facility, etc); recreation facilities (indoor sports arena, swimming pools, football field, tennis court, squash, gymnasium, sauna and Jacuzzi, etc); clinic; mosque; service yard; sewage treatment plant; electrical substation; helipad; car parks; automotive repair shop and fuelling station; waste management area and standby diesel generators to the supplied grid power.

The administration complex comprises administration building, workshop, laboratory building, fire station, pipeline/ welding workshop and stores, first aid treatment facility, service yard, electrical substations, sewage treatment plant, 9,000 m long roads with carriageway of width 15 m, and the paving methods varies between asphalt and interlock.

The complex is designed to comply with Abu Dhabi ESTIDAMA requirements for sustainable design achieving 1 PEARL rating.

Shah New Accommodation and Administration Complex

Asab, Bab and Sahil Expansion

Client
Abu Dhabi Company for Onshore Oil Operations (ADCO)

Scope of Work
Conceptual design
Design development
Detailed design
Tender documents
Tender action

Location
Abu Dhabi, UAE

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Landscape
Mechanical
Structural

Over a land area of 217,330 m^2, the project comprises the expansion of Asab and Bab accommodation compounds, and development of Sahil complex. The expansion of Asab compound comprises developing 8 accommodation clusters (474 rooms), football field with a spectator seating, Mizeeraa (coffee shop), contractors' accommodation (72 rooms) and expanding the administration area by adding workshop, clinic, in addition to providing 80 new caravans.

The expansion of Bab compound comprises developing 4 accommodation blocks (262 rooms), contractors' accommodation block (80 rooms), playground, new auditorium building and laundry, in addition to expanding the restaurant and kitchen, dining room, gymnasium, mosque, majless, coffee shop and redesign of the existing auditorium to include IT and ICC rooms with offices. Sahil new complex is developed to include service facilities for the 2 accommodation compounds which comprise administration building, clinic and fire station with its external services.


Asab, Bab and Sahil Expansion

ADPC Workforce Accommodation

Client
Abu Dhabi Ports Company

Scope of Work
Project management
Conceptual design
Schematic design
Design development
Detailed design
Tender documents
Tender action

Location
Abu Dhabi, UAE

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Interior design
Landscape
Mechanical
Structural
Urban design

The Khalifa Port and Khalifa Industrial Zones Abu Dhabi (KIZAD) Project is being developed by the Abu Dhabi Ports Company (ADPC) to be one of the world's largest industrial zones. To support the work force requirements of the industries in KIZAD zones A and B, there is a need for Work Force Accommodation, along with all the required facilities to sustain it, to be provided within the development. To meet this requirement, a number of standard villages or "clusters" are constructed within certain dedicated areas of Zone B, with each cluster accommodating a total of 5000 workers, the development comprises accommodation buildings (34,923m^2), main restaurant & kitchen (3,236 m^2), community facility (1,664 m^2), retail centre (1,060 m^2), MEP facilities and utility networks within the plot and landscape area.

The project is designed to comply with Abu Dhabi ESTIDAMA requirements for sustainable design achieving 1 PEARL rating.

ADPC Workforce Accommodation

Residential Development for EMAL Operators

Client
Abu Dhabi Ports Company

Scope of Work
Conceptual design
Schematic design

Location
Abu Dhabi, UAE

Types of Activities
Architectural
Civil works
Electrical
HVAC
Mechanical
Structural

Emirates Aluminum Company Limited (EMAL) development is the world's largest aluminum smelter project, and the largest industrial project in the UAE outside the Oil and Gas sector. The Project embraces the concept of establishing a self-sustainable living environment for EMAL operators working inside KIZAD with standards higher than the typical labor accommodation.

The project is located on a greenfield site in Al Taweelah, Abu Dhabi, and mainly comprises residential clusters to accommodate 1,375 residents. This approach to the project will be achieved through phasing strategy in which phase 1 of the project accommodates 825 residents while phase 2 accommodates 275 residents and phase 3 accommodates 275 residents.

The project's main components are residential accommodation buildings comprising residential accommodation with nominal size of 20.25 m^2, laundry room, common recreation area, refuse room and IT room, common toilets and showers amenities, storage and janitor rooms; cafeteria with a capacity of 400 people; mosque (520 m^2) to accommodate 400 prayers and car park for 50 vehicles; multi purpose hall to accommodate 1,000 persons; commercial center building comprising laundry, supermarket, barber, travel agent, tailor and ATM; security and facilities building comprising security office, administration offices, medical center, visitor's center (for 100 people), common reception, waiting area and toilets; indoor recreation facilities building comprising club house, gymnasium and multi-purpose sports hall; outdoor recreation facilities (semi-olympic outdoor swimming pool, multi-purpose field (football, cricket and hockey), sports equipment store and grandstand seating (up to 150 people); workshop and car and bus parking area.

Telecom, Media and Technology (TMT) City

Client
Orange Jordan (Jordon Telcom Group)

Scope of Work
Master plan
Conceptual design
Project management
Topographic survey
Geotechnical investigation
Environmental impact assessment
Traffic impact study
Cost management
Business model
Market plan
Risk analysis

Location
Amman, Jordan

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Landscape
Mechanical
Roads
Structural

The Project is a world-class mixed use development stretched on a plot land area of 240,642 m^2. With a built-up area of approximately 870,000 m^2 (excluding underground parking space), the business oriented Smart City consists of grade "A" office space (at least 50% of the project), 4 and 5-star hotels, commercial center and all supporting service facilities.

The intention of the project is to attract international companies in Information Technology (IT), media, telecom and software sector to either function or to use it as a regional hub.

The development will be a landmark for the Hashemite Kingdom of Jordon as it incorporates public spaces, landscaped areas, community multi-use facility for events, promenades, parking and all necessary ancillary uses.

The site is strategically located at the outskirts of Amman city in a prime area off the Queen Alia airport road, 25 km away from the airport, and at the intersection of a major future planned arterial east-west and north-south roads
.

Telecom, Media and Technology (TMT) City

Phase 2 of New Natural Gas Liquid (NGL) Support Campus at Mesaieed

Client
Qatar Petroleum

Scope of Work
Conceptual design
Preliminary design
Detailed design
Tender documents
BOQ

Location
Doha, Qatar

Types of Activities
Architectural
Civil
Communications & security systems
Electrical
Fire protection
HVAC
Internal & external signage
Irrigation
Interior design
Landscape
Life safety
Mechanical
Structural

Qatar Petroleum gas operations in Mesaieed lies 45 km south of Doha, Qatar. The operations are currently located around 2 km north-west of the existing Natural Gas Liquid (NGL) Complex.

The New NGL Support Campus is developed on a 330,383 m^2 area, located at south west of Masaieed Industrial City. The Campus consists of an L-shaped strip of land, partially wrapping an existing sand dune along its southern eastern side.

The project comprises eight zones; two of which are combined to form the administration/canteen complex.

The project's buildings are designed for maximum utilization of the built-up areas and are annexed to phase 1 buildings to maintain the overall characteristics of NGL Campus. Each area is serviced by separate parking space.

Laboratory Building
The building consists of a ground floor and a first floor. The ground floor contains eight laboratories of several specialties, double height waiting area, storage areas, in addition to ancillary spaces.

The first floor contains an administrative area and ancillary spaces.

Phase 2 of New Natural Gas Liquid Support Campus at Masaieed

Administration and Canteen Buildings
The complex consists of an administration building with capacity of 300 employees and canteen with 350-seat hall, in addition to 200-car parking spaces. The building presents a group of engineering solutions and efficient zoning.

Mosque
The building includes ablution and toilet facilities. Male/ Female prayer areas are separated, with two different entrances.

Central Workshop
The new central workshop is designed to accommodate the operational requirements and future needs. Smooth operation is allowed for maximum efficiency to fulfill the end-user operation requirements.

Warehouse and Stores
This area comprises five buildings: the main warehouse building, the chemical store, the sorting shed, the open sided shed and the gas cylinders storage shed, in addition to a laydown yard with an area of 12,000 m^2. Building heights allow for maximum volume utilization, widths allow for smooth circulation of forklifts and buildings' locations allow for easy interconnectivity between the different storage areas.

Transport Depot & Fuel Vending Facility
This area comprises administration building, storage building and vehicle service workshop as well as gas station shed and a shed covering large vehicles parking area. The parking spaces allocated to employees are located at the parameter of the zone, while the internal road crossing the plot is used for car-in-service movement.

Maintenance Building and Washing Yard
This area comprises two buildings: the maintenance building and the outdoor washing yard. The maintenance building is designed as an office building for maintenance and inspection personnel. It consists of a ground floor which contains 5 staff rooms, contractor's stuff room, smoking room, in addition to service rooms. The washing yard is dedicated for washing, testing and/ or inspection of equipment and is designed to drain the water and material used in the washing process. The area has a 1.50m high wall with car barriers at the northern and southern parts. Opposite to the road at the northern part of the yards is a platform that contains a proposed location for a water tank, compressor and an underground GRP lined reinforced concrete storage tank for oily water and hydrocarbon contaminated waste wash water.

Rehabilitation of Parks in Qatar

Client
Qatari Ministry of Municipality and Urban Planning

Scope of Work
Conceptual design
Preliminary design
Tender documents
Detailed design
Authority approvals

Location
Qatar

Types of Activities
Architectural
Communications & security systems
Electrical
HVAC
Landscape
Mechanical
Structural

Following the rehabilitation of the first set of parks by ECG in coordination with the Qatari Ministry of Municipality & Urban Planning, ECG was awarded a contract for the rehabilitation of another 13 parks in various places in Qatar. The first stage included the following six parks:

- Al-Meera Park (9,656 m^2)
- Merweb Park (11,172 m^2)
- Al-Maroona Park (10,533 m^2)
- Khalifa North City Park (7,137 m^2)
- Hazm Al-Markhiya Park (1,995 m^2)
- Ras Abu Abboud Park (25,000 m^2)

The second to fifth stages cover the rehabilitation of the following 13 parks:

- Bu Fasseela Park (10,844 m^2)
- Snai Lehmaidi Park (4,832 m^2)
- Umm Abirieh Park (5,005 m^2)
- Muraikh Park (3,672 m^2)
- Mehairja Park (4,832 m^2)
- Al-Jamiliyah Park (4,113 m^2)
- Al-Aziziya Park (4,671 m^2)
- Umm Salal Mohammed Park (2,336 m^2)
- Al-Zijhawa Park (3,191 m^2)
- Umm Salal Ali Park (11,108 m^2)

- Al-Dhakira Park (2,550 m^2)
- Al-Shamal Park (5,263 m^2)
- Al-Ghuwariyah Park (8,173 m^2)

The project with all its packages comprises the following elements:

- Administrative buildings
- Restaurants, cafeterias and kiosks
- Public toilets
- Guard rooms and stores
- Hardscaping and softscaping
- Landscape furniture, gazebos, pergolas, drinking fountains, and interactive musical fountains
- Boundary wall and decorative steel fences
- Playgrounds fully equipped with outdoor cooling systems and tent structures
- Public facilities and utilities (including parking areas) in proportion to the estimated number of users
- Pump rooms
- Underground water tanks
- Automated irrigation systems
- Surface parking inside the parks
- External and internal electrical systems including substation
- Running tracks

Pradera: Golf Community (GC-1B/GC2), KAEC

Client
Emaar, the Economic City

Scope of Work
Design assessment
Detailed design for infrastructure and landscaping
Tender documents
Construction supervision

Location
Rabigh, Close to Jeddah, KSA

Types of Activities
Architectural
Communications and security systems
Electrical
Infrastructure
Mechanical
Structural

Located in AlMurooj, Pradera is a Golf Community within phase 1 of King Abdullah Economic City (KAEC); about 10 Km south Rabigh and 120 Km north Jeddah.

The modern city of KAEC creates a variety of new economic opportunities along with futuristic urban communities that provide lavish lifestyle for potential residents.

Pradera Golf Community (GC-1B/GC2) is a high-end residential community divided into 5 zones on a land area of 196,215 m^2.

With a built-up area of 75,020 m^2, the community comprises 147 villas (types A (S1&S2), B (S1&S2), C (S1&S2), D, E, and F (S1&S2); each villa consists of a two-storey reinforced concrete structure.

Pradera: Golf Community (GC-1B/GC2), KAEC

Porto October

Client
Amer Group

Scope of Work
Construction supervision

Location
6th of October City, Egypt

Types of Activities
Architectural
Earthwork
Electromechanical
Infrastructure
Landscape
Structural

Built on a total land area of approximately 1,381,925 m^2, the fully-integrated community of Porto October is five minutes away from Juhayna Square in 6th of October City.

With a total built-up area of about 646,000m^2, ECG's scope involves the construction supervision of the mixed-use project comprising:

- Villas Area (275,000 m^2): 1539 villas of 5 types distributed over 6 housing zones, varying from totally detached villas to semi-detached villas, quadrant villas and six rows of townhouses.
- Little Rome Zone (114,000 m^2): 12 buildings (basement + ground floor + 3 typical floors + roof) including indoor and outdoor commercial spaces, mall, cinema complex of 8 units, a huge food court and a number of anchor stores, office spaces, in addition to a hotel/ residential studios on the top floor.
- Stanly Zone (183,000 m^2): 14 residential apartment buildings (of four types); lake zone buildings including indoor and outdoor commercial malls and strip malls, a 50-key hotel, lake zone residential apartments and an entertainment city.
- Service Buildings Area (74,000 m^2): a sporting club, a hospital, a clinic, 3 schools, and a mosque.


Porto October

Al-Murooj Beach Community BC 1

Client
EMAAR

Scope of Work
Design review
Detailed design
Value engineering

Location
Rabigh Close to Jeddah, KSA

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Landscape
Roads
Structural

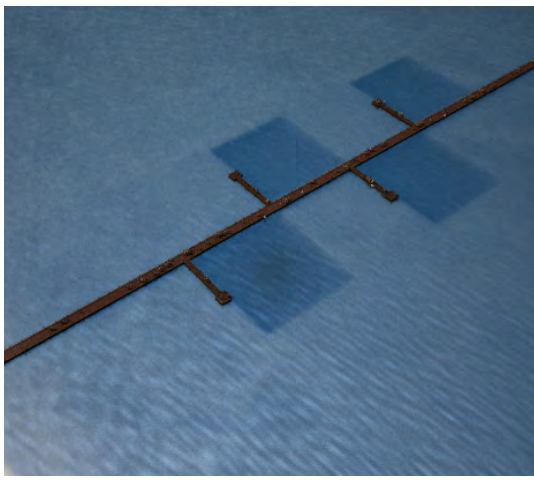
Al-Murooj is a premium low-density residential development located within King Abdullah Economic City "KAEC", 120 km north of Jeddah, bound along the east and west by the Yanbu – Jeddah Highway and Red Sea.

The project of Beach Community BC1 is a part of Al-Murooj development. It will promote the image of KAEC in terms of providing comprehensive, upscale facilities and lavish ifestyle.

The project components comprise:

- Al-Murooj Beach Community BC1 infrastructure and landscaping works.
- A fully serviced community club house with a built-up area of 500 m^2 providing the residents with several leisure facilities including a gym overlooking the swimming pool, a football field, tennis courts, lounging area and billiard.
- State-of-the-art, 350 m long pier that stretches across the sea with recessed pools built along the pathway connecting BC1 to the rest of the AL-Murooj community.

Al-Murooj Beach Community - BC1



Al-Murooj Beach Community BC 2

Client
EMAAR

Scope of Work
Master plan
Detailed design
Tender documents
Value engineering
Cost Engineering

Location
Rabigh Close to Jeddah, KSA

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Landscape
Roads
Structural

Al-Murooj BC2 is an upscale beach residential community extending over an area of approx. 68 hectars within the "King Abdullah Economic City" (KAEC). The project comprises several distinct open space corridors and activity centers which provide places for leisure, worship, socializing and relaxation. Al-Murooj BC2 is unified by this system of open spaces, corridors and roadways as well as landscaping, aesthetic treatments, and signage.

ECG Engineering Consultants Group was assigned by EMAAR the Economic City (EEC) to assess and conduct value engineering for Al-Murooj BC2 infrastructure and landscape detailed design.

Al-Murooj Beach Community - BC2

ADMA-OPCO Accommodation and Administration Complex

Client
Al Geemi and Partners Contracting Co.

Scope of Work
Preliminary design
Detailed design

Location
Zirku Island Abu Dhabi, UAE

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Interior design
Mechanical
Roads
Structural

As part of Satah al-Razboot (SARB) Oilfield Development on Zirku Island, about 200 km north-west of Abu Dhabi, the project involves the detailed design of the accommodation and administration complex for Abu Dhabi Marine Operating Company (ADMA-OPCO).

The complex includes an administration building, an accommodation building, a fire station, a recreational building, an ablution building and a mosque, in addition to other facilities comprising electric substations and services utilities.

Accommodation Building:
With a built-up area of 9,500 m^2, the building comprises a ground floor and 3 floors with an open-air courtyard. The building shall accommodate 254 residents in single occupancy rooms. The ground floor will accommodate common facilities and administrative functions.

Administration Building:
With a built-up area of approximately 5,400 m^2, the blast-resistant building consists of a ground floor and two floors comprising offices, meeting rooms, 150-person auditorium, praying room & ablution area.

ADMA-OPCO Accomodation and Administration Complex

The sky lit full-height atrium provides natural lighting and reduces energy consumption.

Fire Station:
With a total built-up area of approximately 5,625 m^2, the blast-resistant building comprises ground and first floors, lower roof and upper roof, in addition to a covered parking area for fire vehicles.

- The ground floor comprises administration offices, lockers, a kitchen, a dining room, laundry and prayer rooms.
- The first floor comprises 47 accommodation rooms, a linen room, storage rooms, a pantry and a lounge.
- The lower roof floor comprises AHU rooms, toilets and a lobby.
- The upper roof floor includes an Emergency Control Room (ECR).

Recreation Building:
With a total area of 600 m^2, the building includes a gymnasium, a foyer, toilets and a squash court, in addition to an external football field and tennis court.

Ablution Building & Mosque:
With a total area of 135 m^2, the ablution building consists of an ablution area, a foyer, bathrooms, in addition to a hand washing area.

With a total built-up area of 925 m^2, the mosque accommodates 800 persons.

Zakho University Master Plan

Client
Ministry of Higher Education & Scientific Research

Scope of Work
GIS
Master plan
Conceptual design
Preliminary design
Detailed design
Tender documents

Location
Zakho, Duhuk, Kurdistan-Iraq

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Landscape
Mechanical
Roads
Urban development
Infrastructure

To meet the growing demand for high quality education, Kurdistan Regional Government took an ambitious initiative to develop and expand the existing Universities of Zakho and Raparin (Ranya), Kurdistan. The objective of this reform is to upgrade the two educational institutions to become nationally and internationally recognized.

On a land area of 1,270,040 m^2, and internal road length of 7,230 km, Zakho University encompasses the following existing and potentially proposed educational facilities:

- Theoretical Zone: Faculty of Education, Faculty of Economics & Law and Faculty of Administration.
- Engineering Zone: Faculty of Arts, Faculty of Engineering and Faculty of Information Technology.
- Medical Zone: Faculty of Medicine, Faculty of Pharmacy, Faculty of Medical Assistance and Faculty of Dentistry in addition to an educational hospital.
- Central Service Zone: research center, cultural center, library, conference hall (sky dome), medical center services, general registration office, university bank, police station & civil defense center, fuel station, mosque, mini-markets and services.
- Accommodation Zone: male/female dormitories and staff accommodation.
- Sports Zone: international football field, tennis court,

Zakho University Master Plan

indoor swimming pool, sports facilities and multi-use playgrounds.

- Existing Zone: Faculty of Science, Faculty of Humanity, Faculty of Commerce, Faculty of Applied Science, Zoology lab, research center, theater & auditorium, university presidency building, student affairs center, indoor sports hall, green houses, chemical storage, main storage and two (2) water treatment facilities for proposed buildings and future extension.

The design of the university serves to integrate the new buildings with the existing ones and allows future extension to the spaces and buildings. The design provides enhanced circulation around the campus and around the university's built form. It provides minimal intersections with vehicular paths, allowing for minimal interruption along the walking paths.
The landscape design for the University will be strongly influenced by the Kurdish style. The perimeter of the site, the open space, the entries, the faculties and other architectural features in prime locations will convey the community character in both building style and landscape treatment. Other areas within the campus will be influenced by the character of the region.

Raparin University in Ranya Master Plan

Client
Ministry of Higher Education & Scientific Research

Scope of Work
GIS
Master plan
Conceptual design
Preliminary design
Detailed design
Tender documents

Location
Ranya, Sulymaniah, Kurdistan-Iraq

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Landscape
Mechanical
Roads
Urban development
Infrastructure

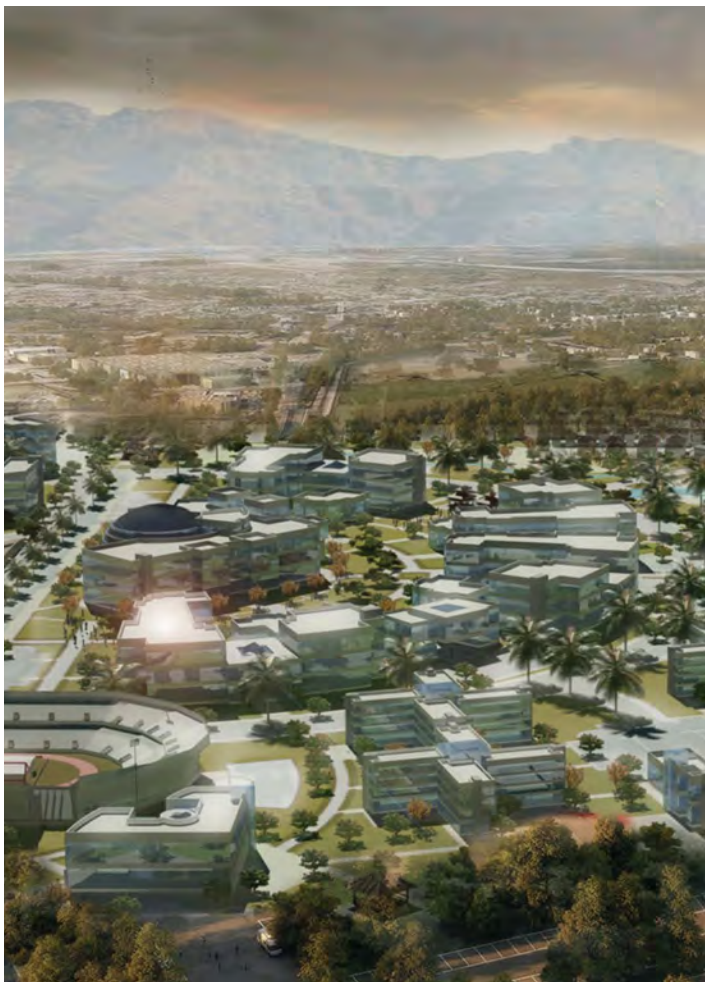
To meet the growing demand for high quality education, Kurdistan Regional Government took an ambitious initiative to develop and expand the existing Universities of Zakho and Raparin (Ranya), Kurdistan. The objective of this reform is to upgrade the two educational institutions to become nationally and internationally recognized.

On a land area of 948,767 m^2, and internal road length of 8,000 km, Raparin (Ranya) University encompasses the following existing and potentially proposed educational facilities:

Presidency Zone: university presidency building, shareholders council, IT & community service center and police station & civil defense center.

Theoretical Zone: Faculty of Humanities, Faculty of Primary Education, Faculty of Law and Faculty of Administration & Management.

Raparin University Master Plan



Engineering and Science Zone: Faculty of Engineering, Faculty of Computing, Faculty of Fine Arts and Faculty of Science & Bio-medical Science.

Medical Zone: Faculty of Medicine, Faculty of Pharmacy, Faculty of Dentistry, Faculty of Medical Assistance in addition to an educational specialized hospital.

Academic Service Zone: main lecture hall, university bank & commercial center, multi-purpose unit, student affairs centre, main library, culture center, research center, conference center, auditorium, amphitheater in addition to a food court.

Residential Zone: staff accommodation, male/female dormitories, school, nursery, mosque and utilities.

Sports and Recreational Zone: football pitch and swimming pool & services.

The design of the university serves to integrate the new buildings with the existing ones and allows for future extensions to the buildings and spaces.

The design provides enhanced circulation around the campus and around the university's built form. It provides minimal intersections with vehicular paths, allowing for minimal interruption along the walking paths.

Dhahiat Sumou Block 5 (Phase 1)

Client
Sumou Real Estate Company

Scope of Work
Design review
Schematic design
Design development
Detailed design
Tender documents
Design permits
Value engineering
Construction supervision

Location
Makkah, KSA

Types of Activities
Architectural
Building Modeling Systems (BMS)
Communications and security systems
Electrical
HVAC
Interior design
Mechanical
Structural

On a land area of 1.6 million m^2, Dhahiat Sumou Project - Block 5 - Phase 1 is located within Bawabat Mecca development in Saudi Arabia.

Bawabat Mecca is a new 83 million m^2 visionary city strategically located at the western entrance of the Holy Mecca Region. Dhahiat Sumou project is located at the western border of the city in the Shemaisi area along Jeddah-Mecca Expressway.

With a built-up area of 59,900 m^2, Block 5 - Phase 1 comprises the development of (12) types of single-family units (villas, duplexes and townhouses) built on 123 plots as follows:

- Villas: 6 types.
- Duplexes: 2 types.
- Townhouses: 4 types.

Dhahiat Sumou Block 5 (Phase 1)

Al-Othaim New Development

Client
Al-Othaim Holding Company

Scope of Work
Master plan
Concept design

Location
Al-Qassim, KSA

Types of Activities
Civil
Electrical
Landscape
Urban design

Located near Al-Qassim airport in Saudi Arabia on a land area of approximately 2,000,000 m^2, the mixed-use development is divided into 3 zones as follows:

Commercial Zone: air-conditioned shopping centre (accommodating IKEA) over a land area of 150,000 m^2, with a possibility for expansion of nearly another 150,000 m^2, car showrooms, banks area, restaurants and parking areas;

Residential Zone: hotel and club house, international 250-key resort, chalets and serviced apartments (100 units) over a land area of 60,000 m^2, 389 plots over a land area of 140,935 m^2 and parking areas; and
Entertainment Zone: entertainment park inside the shopping mall linked with an outdoor park, restaurants, retail spaces and parking areas.

Al-Othaim New Development

Hayat Alex Park

Client
Marseilia Real Estate Investment

Scope of Work
Conceptual design
Design development
Detailed design
Construction documents
Construction supervision

Location
Alexandria, Egypt

Types of Activities
Architectural
Electrical
HVAC
Mechanical
Structural

Marseilia-Hayat Alex Park is a new compound of hotel and residential buildings located in Al-Montazah District of Alexandria. The compound introduces a new model of real estate development attaining high levels of modernity.

Over a land area of about 30,300 m^2, the compound features the following:

- 2-floor basement: parking area and services for the whole compound;
- 2-floor mall occupying the ground and first floors: two main entrances with dazzling entrance lobbies overlooking the well-known International Coastal Road; restaurants; cafeterias; cinemas; megastores; water parks; a kids area and hypermarket;
- Administrative area overlooking inspirational green courts;
- 7-floor hotel building (approximate plot area of 2,960 m^2): rooms and serviced apartments; the hotel, which overlooks the main road, is centralized within the compound amid a marvelous U-shaped court with water-themed features, cafeterias and various beautiful landscaping elements; and
- 16 connected 9-floor residential towers (total plot area of 12,126 m^2) oriented around four beautiful U-shaped courts containing various flat designs of different sizes:
  - Small 2-bedroom flats: 96 m^2 to 118 m^2;
  - Medium 3-bedroom flats: 146 m^2 to 160 m^2; and
  - Large 3-bedroom flats: 189 m^2 to 291 m^2.

Hayat Alex Park

CICPA Qusahwira & Shah Camps

Client
Al Hosn Gas

Scope of Work
Conceptual design
Preliminary design
Detailed design
Construction management
Construction supervision

Location
Qusahwira & Shah Oilfields, Abu Dhabi, UAE

Types of Activities
Architectural
Electrical
Infrastructure
Landscape
Mechanical
Structural

ECG has successfully completed its engineering consultancy services for two complexes of the Critical Infrastructure and Coastal Protection Authority (CICPA) in Shah & Qusahwira, UAE, for Abu Dhabi Gas Development Company Ltd. (Al Hosn Gas).

Each complex comprises an administrative building, staff accommodation building, social club, mosque, services and stores, along with infrastructure and landscaping works.

Established on 1 February 2010 in Abu Dhabi, Al Hosn Gas is a subsidiary company of the ADNOC group of companies. Its purpose is to develop the sour gas reservoirs located in the Shah Field on the shore of Abu Dhabi.

CICPA Quashwira & Shah Oil Fields

Al-Andalus - Phase A

Client
Jumeirah Golf Estates

Scope of Work
Architect of record
Master plan
Schematic design (concept design has been prepared by others)
Design development
Construction documents
Tender documents

Location
Dubai

Types of Activities
Architectural
Cost consultancy
Electrical
HVAC
Mechanical
Signage & way finding
Structural

Al-Andalus is a luxurious, self-sustained residential & golf community located at the Jumeirah Golf Estates (JGE) development on Sheikh Mohammed bin Zayed Road in Dubai.

With a total built-up area of approximately 157,000 m^2, the community comprises the following:

- 7 residential buildings: ranging from G + 6 to G + 11 floors, including 1, 2, 3, or 4-bedroom apartments, in addition to a common parking area
- 75 townhouses: 2, 3, or 4-bedroom units
- 2 clubhouses: gymnasium, sauna, changing rooms, swimming pool, activity rooms, and dining area
- head office for JGE: comprises basement, ground floor, first floor and roof
- mosque for 500 prayers.


Al-Andalus - Phase A

Umm Al-Houl Economic Zone (QEZ 3)

Lead Consultant
Egis

Scope of Work
Design review (for infrastructure utilities and external networks)
Conceptual design (for some community service and utility buildings)
Preliminary design (for some community service and utility buildings)
Detailed design (for infrastructure utilities and external networks)
Tender documents

Location
Umm Al-Houl, Qatar

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Infrastructure (wet utilities)
Interior design
Landscape
Mechanical
Structural

The Economic Zones Company (Manateq) plays a vital role in developing Qatar's National Vision by establishing and operating advanced projects of economic zones. Manateq is currently developing three special economic zones with a view to establishing an efficient, sustainable, and world-class business environment that enables and supports foreign and private-sector investments in Qatar.

Umm Al-Houl Special Economic Zone is intended to serve as a complete city integral to Qatar National Vision 2030, which aims to establish strong industries meeting the local demand. Located at Umm Al-Houl area near Mesaieed and Al-Wakrah, the industrial park project accommodates around 60,000 persons, offering them accommodation, recreation, and public & community services, alongside the commercial and business activities.

As a design subconsultant to Egis within the new economic zone, ECG shall work on developing full infrastructure utilities as follows:

- Four district cooling plants with a total capacity of around 150,000 TR
- Telecommunications network
- External networks & facilities of wet infrastructure utilities (including potable water, foul water, and treated sewage effluent utilities, as well as reservoirs)
- Sewage treatment plant.

With electricity approaching 1,500 mega volt-ampere, the networks shall cover all project areas with high reliability for industrial functions.

Umm Al-Houl Economic Zone (QEZ 3)

Dhahiat Sumou Block 5 (Phase 2)

Client
Dhahiat Sumou Real Estate Co.

Scope of Work
Conceptual design
Schematic design
Detailed design
Tender documents

Location
Makkah Region, Saudi Arabia

Types of Activities
Architectural
Civil
Communication and security systems
Electrical
HVAC
Landscaping
Mechanical
Structural

Located at the western border of the Bawabat Makkah development, Dhahiat Sumou spreads over a land area of 1.6 million square meters in Al-Shumaisi area on Jeddah-Makkah Highway to the west of Makkah Region.
Phase 2 of Block 5 comprises the development of 6 types of residential buildings over 20 land plots. A total of 283 residential units are included in a range of building types as detailed below:

- **AP7 & AP7 Corner (G + 3):** 64 residential units, each with a Majlis, living area, dining area, and 2 bedrooms
- **AP15 (G + 3):** 90 residential units, each with a Majlis, living area, and 2 bedrooms
- **CR3 (G + 5):** 60 residential units, each with a Majlis, living area, dining area, and 2 or 3 bedrooms
- **N1 (G + 5):**
  - 20 residential units, each with a Majlis, living area, and 2 bedrooms
  - 24 residential units, each with a Majlis, living area, dining area, and 3 bedrooms
- **CR1 (G + 5):**
  - 10 residential units, each with a Majlis, living area, and 2 bedrooms
  - 15 residential units, each with a Majlis, living area, dining area, and 2 or 3 bedrooms

The ground floors of CR1 and CR3 buildings are designated for retail areas, with a total area of 1,546 m^2.

Dhahiat Sumou Block 5 (Phase 2)

Lemania Development

Client
Sky Architects

Scope of Work
Schematic design
Detailed design
Quantity surveying

Location
Abidjan, Côte d'Ivoire

Types of Activities
Architectural
Building Management Systems
Civil
Electrical
HVAC
Landscaping
Mechanical
Roads
Structural
Urban design

Lemania is a gated residential community located in Cocody suburb north of Abidjan, Côte d'Ivoire. The protected residential enclave will include different types of housing facilities that create a prestigious neighborhood providing better quality of life for its inhabitants.

The entire compound consists of villas, houses, apartment buildings, and recreational areas. The community is located on a land area of 47,614 m2, with a total built-up area of 22,541 m2. The project area is divided into land lots containing 4 types of units, with a variety of unit typologies offering a range of homes to different types of buyers.

- Apartments (Type A): 12 units with 2 typologies and a total built-up area of 1,430 m2
- Apartments (Type B): 24 units with 3 typologies and a total built-up area of 5,117 m2

Lemania Development

- Houses (Type C): 24 units with 4 typologies and a total built-up area of 11,021 m2
- Villas (Type D): 8 units with 2 typologies and a total built-up area of 4,046 m2

Located close to the community's entrance and main green area, the apartments are designed for young professionals and new families. Small gardens will be attached to the ground floors of apartment buildings, and the upper floors will have terraces.

The houses, designed for young families, are built in the middle of the project area. Depending on the topography of terrain, differences in plot heights range from 1.5 meters to 3 meters.

The villas are designed for well-established families. Although the design of all villas follows the same scheme, designs will not be identical. The varying sizes of plots (due to the topography of terrain) have led to some variation in the master plans, and thus the designs, of villas.

The project also comprises recreational areas, which include a 2-level clubhouse that contains a gym, bar, and many facilities with a total built-up area of 368 m2. Recreational areas also include a community park on a land area of 1,690 m2.

NITA IT Park

Client
National Information Technology Authority-Uganda (NITA-U)

Scope of Work
Inception report
Site selection study
Feasibility study
Marketing study
Health and socioeconomic study
Environmental impact assessment
Master plan
Basis of design report
Tender documents

Location
Uganda

Types of Activities
Architectural
Electrical
HVAC
Infrastructure
Landscaping
Mechanical
Roads
Structural
Urban planning

The National Information Technology Authority-Uganda (NITA-U) was established as a statutory body under the National Information Technology Authority-Uganda Act 2009, with the aim of serving as a key player in the Information & Communications Technology (ICT) sector.

Located about 700 meters from Entebbe-Kampala Highway near Lunyo Swamps in Entebbe, the project covers the development of an Information Technology/ Business Process Outsourcing (IT/BPO) park that aims to transfer knowledge from multinationals to local IT entrepreneurs, host local business incubation models, and create jobs. The IT Park will thus stimulate the start-up growth of technologically intensive and knowledge-based businesses, transfer skills, and help to facilitate the links between research and industrial communities.
On a land area of 87,805 m^2, the park comprises the following buildings: IT innovation & incubation center; ICT Ministry offices; National Information Technology Authority; exhibitions & events center; convention center; training labs; integrated office complex for IT companies; banks; restaurants; lounges; shopping complex; indoor games building; outdoor games area; health club; lush green garden; utilities; and parking area for approximately 162 cars.


NITA IT Park

Katara Park

Client
Aspire Zone Foundation

Scope of Work
Master-planning
Pre-concept design

Location
Doha, Qatar

Types of Activities
Landscaping
Urban design

Katara Park is set to be the largest national park in Doha, with a total built-up area of 577,000 m^2. The park's design adopts a "Hills & Valleys" theme featuring diverse landscaped areas. The park is divided into north and south zones with built-up areas of 280,000 m^2 and 297,000 m^2, respectively. The two zones encompass various areas and activities as follows:

- relaxation area: residential huts, hotels, and spas
- tropical forest areas hosting a wide variety of plants
- adventure area: amusing activities (such as play areas with historical themes) and steep man-made hills with private bungalows overlooking the amazing skyline of Doha across the Arabian Gulf
- gathering area: functions and events

The South Zone, which is larger than the North Zone, is planned as a commercial and gathering zone at the entrance, with a number of greenhouses. The two zones will be linked through a pedestrian bridge crossing the existing Commercial Avenue.

Katara Park

Mixed-Use Development on Doha Airport Road

Client
Sheikh Abdullah Abdul Rahman Soud Al-Thani

Scope of Work
Conceptual design
Preliminary design
Detailed design
Tender documents
Construction supervision

Location
Doha, Qatar

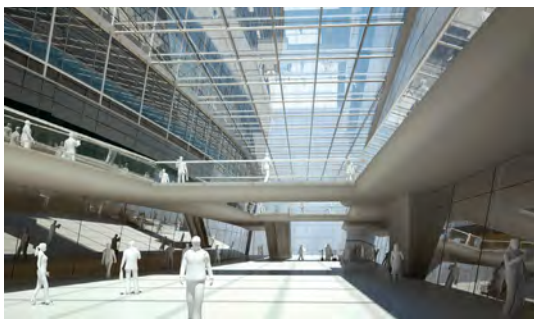
Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Landscaping
Mechanical
Structural

On a total plot area of 16,736 m^2, the mixed-use development is designed to be a landmark on the Airport Road in Al-Najma area of Doha.

With a total built-up area of 110,000 m^2, the development consists of the following:

- 3-floor basement: 750 parking spaces
- podium (ground floor + mezzanine): retail shopping center over 12,000 m^2
- two buildings (7 floors each) atop the podium:
  - 1st building: 4-star hotel (207 keys) with a roof of around 1,000 m^2 for leisure functions including a spa, pool deck, and gymnasium
  - 2nd building: offices with a total built-up area of 32,000 m^2 (each floor is divided into 6 office spaces for rent)

The design covers all engineering requirements, including the parking ventilation & smoke evacuation systems; 12 MVA electrical substation; back-up generators; 2,500 TR chiller plant with cooling towers; and reverse osmosis plants for the polishing of treated sewage effluent & treatment of cooling towers' blowdown water.



Mixed-Use Development on Doha Airport Road

Marassi - R1 Parcel

Client
EMAAR Misr for Development S.A.E

Scope of Work
Master plan
Geotechnical survey
Traffic impact study
Conceptual design
Schematic design
Design development
Design permits
Detailed design
Design optimization
Cost estimation
Quantity surveying
Tender documents
Tender action

Location
Sidi Abdel Rahman, Egypt

Types of Activities
Architectural
Building Management System
Civil
Communications and security system
Electrical
Fire Safety
HVAC
Infrastructure
Interior design
Mechanical
Roads
Structural
Technical coordination
Urban design

Marassi is a new exciting development nestled along the mesmerizing blue Mediterranean water of Sidi Abdul Rahman Bay in North Egypt. R1 Parcel is located in the most premium spot in Marassi over a land area of 99,092 m^2, with a seafront stretching over 900 meters along the sandy beach. The parcel comprises four basic types of residential blocks and four optional types over 36% of the land area, with 1,105 residential units (built-up area: 125,059 m^2) and retail units (built-up area: 4,525 m^2) as shown below:

- Type A (G + 4): 3 blocks (residential only) and 1 block (residential & retail)
- Type B (G + 4): 6 blocks (residential only) and 1 block (residential and retail)

Marassi - R1 Parcel

- Type C (G + 4): 4 blocks (residential only) and 1 block (residential and retail)
- Type D (G + 4): 6 residential blocks

Retail areas occupy the ground floors of the residential buildings at the parcel's east boundary. They consist of retail shops and F&B outlets varying between fast-food restaurants, coffee shops, and restaurants with outdoor sitting areas overlooking the marina promenade and the open spaces.

Swimming pools cover an area of 576 m^2 (550 m^2 for the main pool and 26 m^2 for the kids' pool).

The elevations of residential blocks feature a contemporary Mediterranean style and allow for a maximum visibility of the marina, sea, and golf course.

The Infrastructure Works cover a variety of activities, principally:

- Preparing detailed designs for the Combined Potable Water & Fire Fighting Loop Networks feeding and protecting—externally—the different project buildings, with pipe diameters ranging between 110-200 mm, and an average pipe length of 2,250 m.
- Preparing detailed designs for the Gravity Collection System gathering the different peak-generated sewage flow from the different buildings, and discharging the collected sewage flow into the lift station in the site area—via force main pipe—with pipe diameters ranging between 200-500 mm, and an average length of 2,000 m. The force main pipeline's diameter is 315 mm diameter, with a length of 570 m.
- Preparing detailed designs for the TSE Water Loop Networks, including turf irrigation for the streetscape, irrigating the different landscape area through the lagoons' pumping station, with pipe diameters ranging between 200-400 mm, and an average pipe length of 20,675 m.

Al-Sadat City Technology Park

Client
Wadi El Nile for Contracting & Real Estate Investments

Scope of Work
Master-planning
Conceptual design
Schematic design
Detailed design
Tender documents
Shop drawings
Construction supervision

Location
Al-Sadat City, Egypt

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Infrastructure
Landscaping
Mechanical
Roads
Structural

The technology park is located in the City Center of Al-Sadat City. It is directly connected to Cairo-Alexandria Desert Road. Over a land area of about 50 feddans, the technology park comprises the following buildings:

- Two-Story Mosque: men's prayer hall (320 m^2) on the ground floor; service area and ladies' prayer hall (160 m^2) on the first floor; and an outdoor courtyard (520 m^2).
- Call Center: ground floor (2,000 m^2) and first floor (2,030 m^2). The structural design allows the addition of three upper floors.

Al-Sadat City Technology Park

- Citizen Service Building: ground floor (1,445 m^2) and first floor (555 m^2).
- Office Building: ground floor (2,000 m^2) and first floor (2,270 m^2). The structural design allows the addition of three upper floors.
- Training Building: ground floor (2,000 m^2) and first floor (2,010 m^2). The structural design allows the addition of three upper floors.

New Bani Suef City Technology Park

Client
Al-Boustan Commercial Center Company

Scope of Work
Master-planning
Conceptual design
Schematic design
Detailed design
Tender documents
Shop drawings
Construction supervision

Location
New Beni Suef City, Egypt

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Infrastructure
Landscaping
Mechanical
Roads
Structural

The technology park is located in the City Center of Al-Sadat City. It is directly connected to Cairo-Alexandria Desert Road. Over a land area of about 50 feddans, the technology park comprises the following buildings:

- Two-Story Mosque: men's prayer hall (320 m^2) on the ground floor; service area and ladies' prayer hall (160 m^2) on the first floor; and an outdoor courtyard (520 m^2).
- Call Center: ground floor (2,000 m^2) and first floor (2,030 m^2). The structural design allows the addition

New Bani Suef City Technology Park

of three upper floors.

- Citizen Service Building: ground floor (1,445 m^2) and first floor (555 m^2).
- Office Building: ground floor (2,000 m^2) and first floor (2,270 m^2). The structural design allows the addition of three upper floors.
- Training Building: ground floor (2,000 m^2) and first floor (2,010 m^2). The structural design allows the addition of three upper floors.

Mostakbal City

Client
El Mostakbal Company for Urban Development

Scope of Work
Design Review
Design & Sustainability Guidelines
Tender Documents
Tender Action

Location
East of New Cairo, Egypt

Types of Activities
Contract Administration
Landscape
Roads
Urban
Tendering

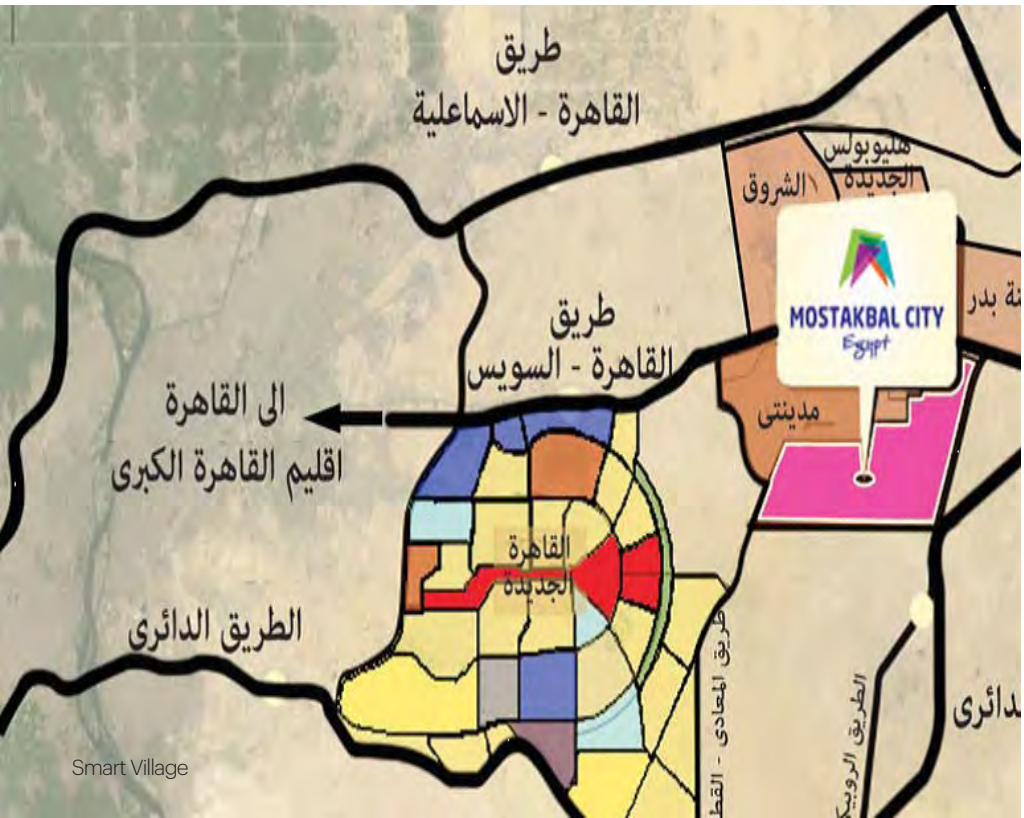
Established in 2006, El Mostakbal Company for Urban Development is an Egyptian shareholding company specialized in urban and real estate development. As a master developer of Mostakbal City, the company takes the responsibility of preparing the city's master plan and conceptual design; securing authority approvals; and implementing main road and infrastructure networks.

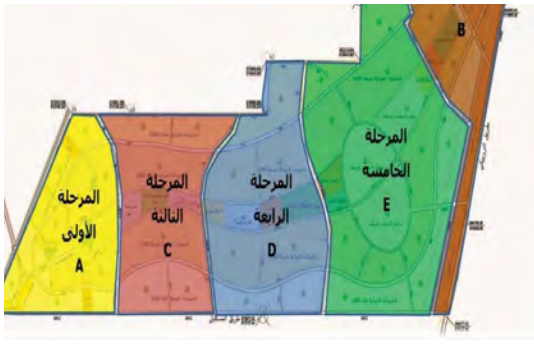
The city, which stands as the first mega green residential project in New Cairo, offers a new concept of modern living, with fully integrated land uses that include residential, commercial, healthcare, educational, recreational, logistics, and service zones.

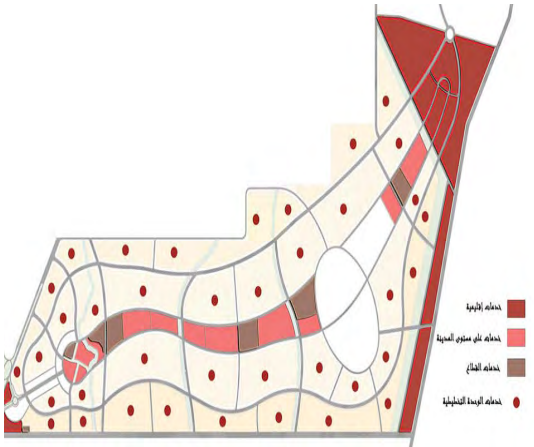
The development of individual project zones is handed over to a number of sub-developers, yet in full compliance with the master plan and design guidelines. The overall development is planned in five phases on a total land area of 11,000 feddans, 50% of which designated for roads and green areas. When complete, the city would accommodate a population exceeding one million.

ECG's services cover the preparation of design and sustainability guidelines, as well as city management regulations, to ensure that the entire city is established and managed according to the highest standards.

Services also include reviewing and countersigning the master plan, as well as the road drawings developed by sub-developers, to guarantee that all drawings comply with design guidelines. ECG also takes the responsibility of preparing tender documents and performing tender action activities, including the evaluation of the technical and financial packages submitted by the sub-developers bidding for contracts of parcels within the project.







Nesaj Residential Compound

Client
Nesaj Real Estate

Scope of Work
Construction supervision

Location
Al-Khobar, Saudi Arabia

Types of Activities
Architectural
Civil
Electrical
HVAC
Infrastructure
Landscaping
Light current
Mechanical
Roads
Structural

Nesaj Residential Compound extends over a land area of approximately 127,320 m^2 north of Al-Khobar in Saudi Arabia. The project covers the following components of the compound.

1. Residential Buildings

- 23 four-bedroom villas (each with ground and first floors and a built-up area of approx. 360 m^2): one master bedroom with a walk-in closet & bathroom; three bedrooms with private bathrooms; two family rooms; living room; dining room; kitchen & maid's room; and garage
- 26 three-bedroom villas (each with ground and first floors and a built-up area of approx. 284 m^2): one master bedroom with a walk-in closet & bathroom; two bedrooms with private bathrooms; living room; family room; dining room; kitchen & maid's room; and garage
- 148 three-bedroom townhouses (each with ground and first floors and a built-up area of approx. 494 m^2): one master bedroom with a walk-in closet & bathroom; two bedrooms with private bathrooms; living room; dining room; kitchen & maid's room; and garage

- 29 two-bedroom townhouses (each with ground and first floors and a built-up area of approx. 419 m^2): one master bedroom with a walk-in closet & bathroom; one bedroom with a private bathroom; living room; dining room; kitchen & maid's room; and garage
- 75 apartments (3 types): three-bedroom apartment (built up area of approx. 162 m^2); two-bedroom apartment (built-up area of approx. 130 m^2); and one-bedroom apartment (built-up area of approx. 72 m^2)—each cluster of apartment buildings is provided with parking areas

2. Clubhouse

   With a built-up area of 6,709 m^2, the building consists of the following floors:

- basement: swimming pool, kitchens, various stores, and utilities
- ground floor: lobby, restaurant, multipurpose hall, sitting areas, bowling area, and videogame area
- first floor: guestroom terrace, health club, gym, squash court, and beauty salon

3. Administrative Building

   With a built-up area of 576 m^2, the building consists of a ground floor and first floor that include office spaces, meeting rooms, two administrative offices, and a room for the general manager, along with services.

4. Female Staff Accommodation Building

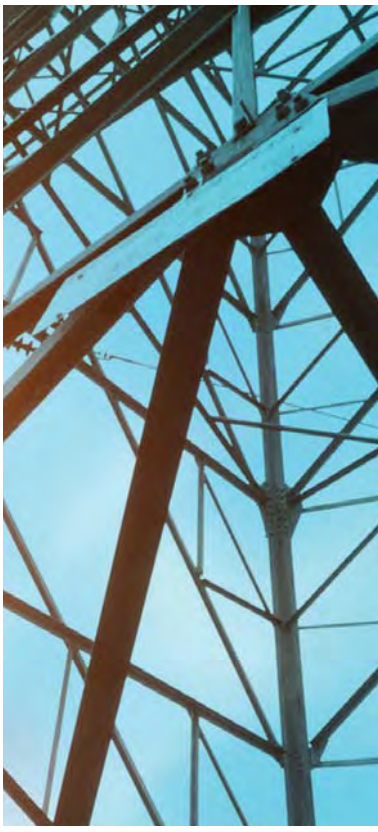
   With a built-up area of 672 m^2, the building consists of a ground floor and first floor that include a reception, dining room, sitting room, and 21 bedrooms with bathrooms, along with services.

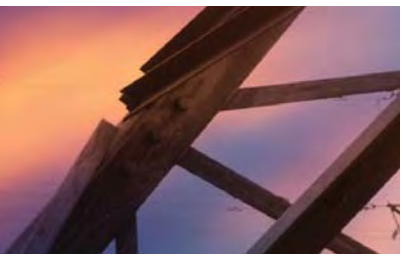
5. Male Staff Accommodation Buildings

- three buildings for tenants: each building has 10 beds & services on one floor with a built-up area of 245 m^2
- male workers' building (built-up area of 232 m^2): 16 beds & services
- maintenance technicians' building: (built-up area of 232 m^2): 16 beds & services









Power

ECG
مجموعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Power Generation

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Al Aweer Power Plant "H" Station, Phase IV Extension

Client
Elsewedy Power System Projects (PSP)

Scope of Work
Architect of record
Roads, Storm water and Street lighting
Infrastructure design

Location
Dubai

Types of Activities
Architectural
Electrical
Mechanical
Structural

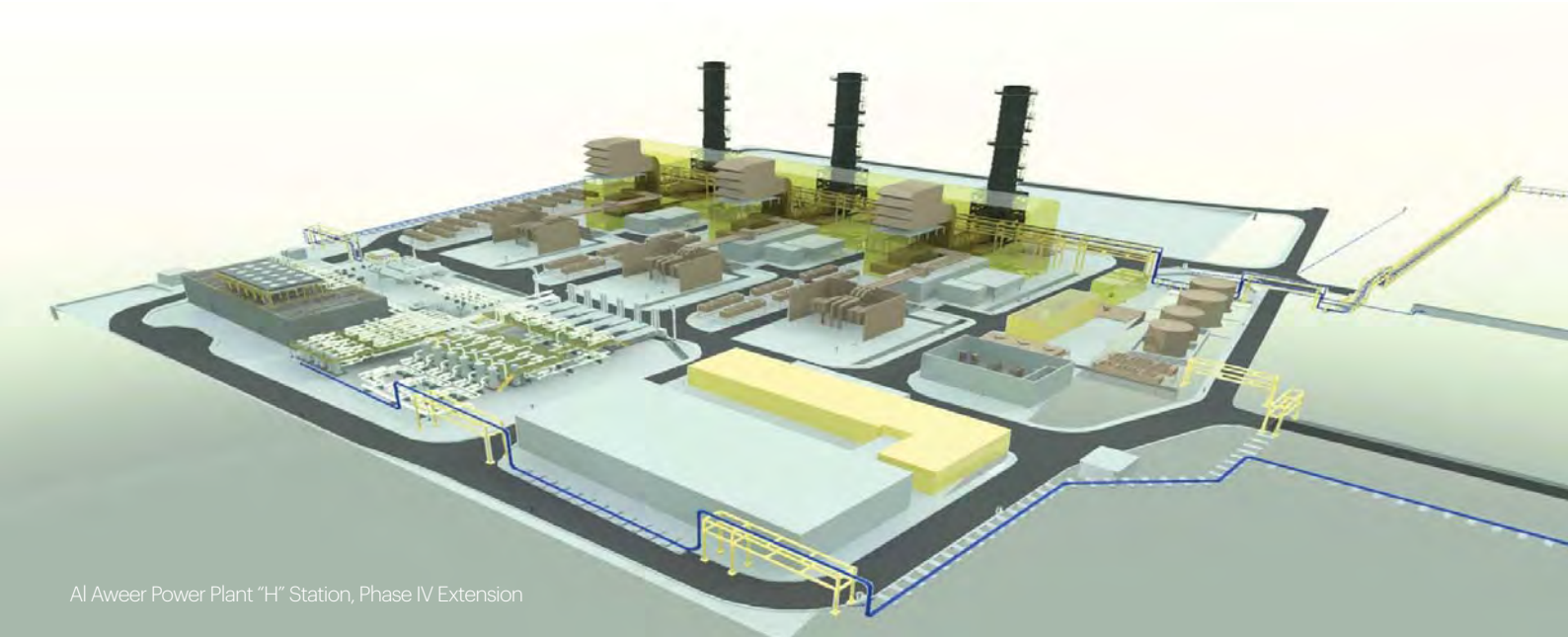
Al Aweer Power Plant will be revving up its performance by adding an extension to its 'H' Station.

The new project adds three turbines fueled completely with natural gas. These produce a total capacity of 800MW through a simple cycle power plant on turnkey basis and are equipped with the latest control systems and technologies designed to reduce emissions.

The new extension is expected to increase this capacity by adding three Class F gas turbines with dual fuel firing capability. The turbines are designed for indoor installation and will be capable of burning natural gas as primary fuel and diesel fuel oil (DFO) as back-up fuel. Each turbine will operate in a single (open) cycle mode.

The project will stretch over 60,000 m^2 with a total built up area of about 17,350 m^2 and will consist of 60 buildings and structures. These will include The Gas Turbines Building, Electric Buildings, Emergency Diesel Generator Building, in addition to supporting buildings such as, a workshop, a pump house, a compressed air building and more.

Our extensive service portfolio is what has enabled us to play such a multi-faceted role in this significant project.



Al Aweer Power Plant "H" Station, Phase IV Extension

Jebel Ali Power Station 'K', Phase III

Client
DURO FELGUERA S.A.

Scope of Work
Architect of Record
Construction Supervision

Location
Jebel Ali, Dubai – UAE

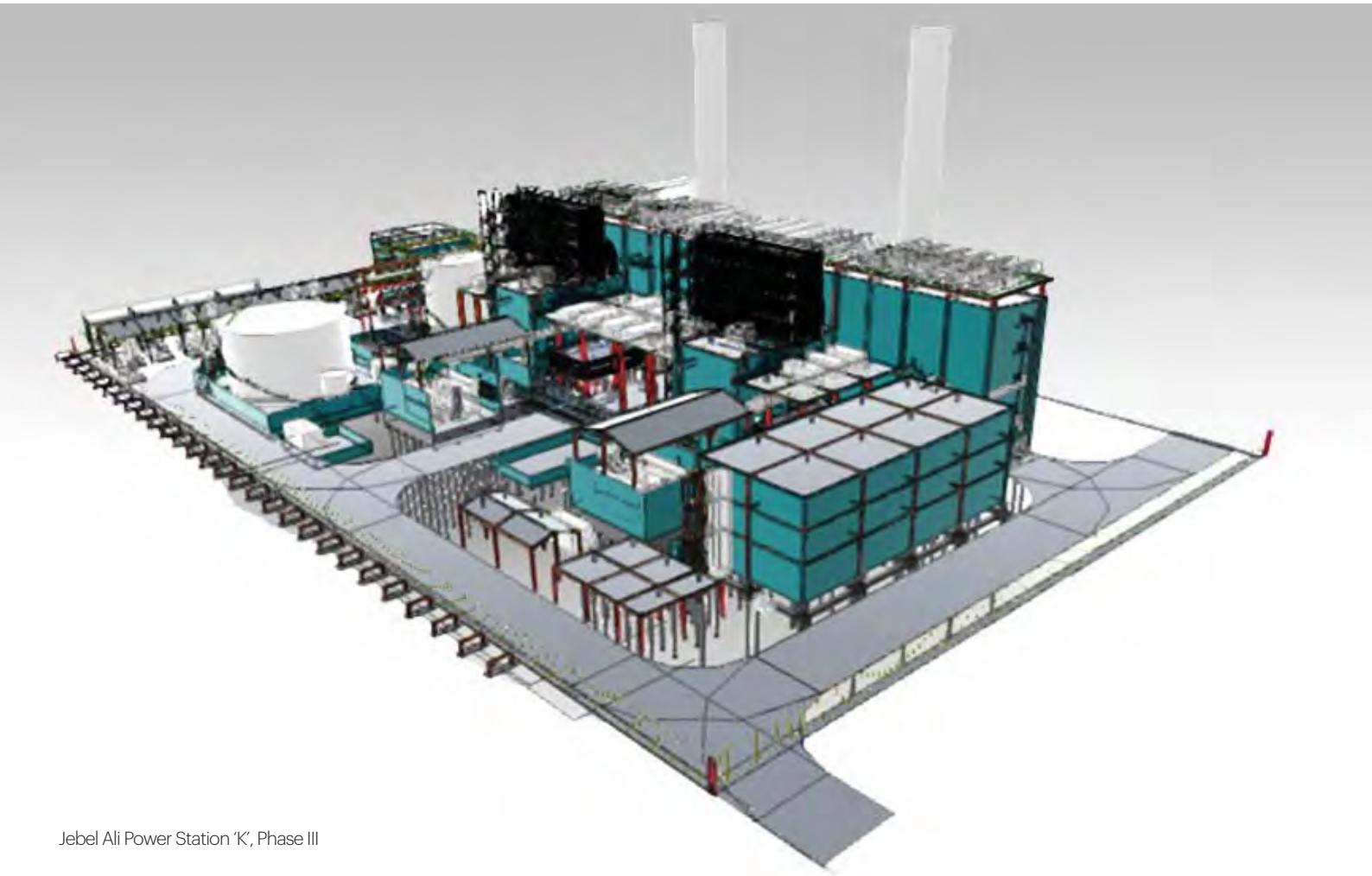
Types of Activities
Architectural
Electrical
Mechanical
Structural

Jebel Ali Power Station 'K' is located in Jebel Ali, Dubai, and is owned and operated by the Dubai Water and Electricity Authority (DEWA).

DEWA has contracted Duro Felguera as EPC contractor to design, manufacture, erect, and commission a combined cycle power plant.

Phase III involved two F-class gas turbines, with a minimum net power output of 500 MW at ambient air temperatures of 50 degrees centigrade. The turbines are planned to be operational by the second quarter of 2019.

The K-Station is part of the Jebel Ali power and water desalination station, and one of the main plants providing Dubai with reliable, efficient, and high-quality electricity and water services.



Jebel Ali Power Station 'K', Phase III

Al-Mahmoudeya Power Plant

Client
Elsewedy Power System Projects (PSP)

Scope of Work
Design review
Construction supervision

Location
Al-Beheira, Egypt

Types of Activities
Architectural
Civil
Electrical
HVAC
Instrumentation and control
Mechanical
Piping
Roads
Structural

Elsewedy Power System Projects (PSP), a subsidiary of Elsewedy Electric, was awarded an Engineering, Procurement, and Construction (EPC) contract for Mahmoudia Gas Turbine Power Plant. Understanding the urgency of implementing such a national high-priority project within the predetermined time constraint, ECG has rapidly set up a task force involving senior staff to plan and meet the project's staffing requirements and to immediately start the mobilization of personnel specifically appointed to meet PSP milestones. This has enabled a quick start of construction, and has allowed for a timely execution of the PSP Construction Scheme.

The simple cycle power plant in Mahmoudia has 2 × AE94.2 Ansaldo Gas Turbines with a total rated capacity of 330 MW.

The project also covers the installation of equipment and units such as transformers; GIS; gas-receiving system and networks; administrative and control buildings; as well as workshops and site utilities (compressed-air system, industrial wastewater system, sewage treatment system, tanks, demineralized water system, stormwater drainage, and low-current systems).

Al-Mahmoudeya Power Plant

Attaqa Gas Turbine Power Plant

Client
Elsewedy Power System Projects (PSP)

Scope of Work
Design review
Construction supervision

Location
Suez, Egypt

Types of Activities
Architectural
Civil
Electrical
HVAC
Instrumentation and control
Mechanical
Piping
Roads
Structural

Elsewedy Power System Projects (PSP), a subsidiary of Elsewedy Electric, was awarded an Engineering, Procurement, and Construction (EPC) contract for Attaqa Gas Turbine Power Plant. Understanding the urgency of implementing such a national high-priority project within the predetermined time constraint, ECG has rapidly set up a task force involving senior staff to plan and meet the project's staffing requirements and to immediately start the mobilization of personnel specifically appointed to meet PSP milestones. This has enabled a quick start of construction, and has allowed for a timely execution of the PSP Construction Scheme.

The simple cycle power plant in Attaqa has 4 × SGT-2000E Siemens Gas Turbines with a total rated capacity of approximately 650 MW.

The project also covers the installation of equipment and units such as transformers; GIS; gas-receiving system and networks; administrative and control buildings; as well as workshops and site utilities (compressed-air system, industrial wastewater system, sewage treatment system, tanks, demineralized water system, stormwater drainage, and low-current systems).


Attaqa Gas Turbine Power Plant

Al-Shabab Gas Turbine Generating Plant

Client
Kharafi National for Mechanical and Electrical Works

Scope of Work
Concept design
Schematic design
Design development
Detailed design
Shop drawings

Location
Ismailia, Egypt

Types of Activities
Architecture
Communications & security systems
Electrical
Infrastructure
HVAC
Landscape
Mechanical
Piping
Roads
Structural

Kharafi National (KN) was awarded the Engineering, Procurement and Construction (EPC) contract of Egypt Al-Shabab Gas Turbine Generating Plant (GTGP). ECG was invited by KN to provide the engineering design services in support to their EPC contract.

The first gas turbine unit started commercial operation on June, 2011 for Al-Shabab GTGP. Subsequently, ECG set its fast track methodology to fully complete the design services in a period satisfying KN proposed schedule requirements.

The new plant has eight new gas turbines with a total rated capacity of 1,000 MW using 8*125 MW gas turbines.

Understanding the importance, sensitivity and urgency for implementing the plant within the time constraint being a national "on spot" project, ECG quickly set a task force from its senior staff to plan and set the project staffing requirements and the immediate mobilization of task forces, fast-track quality control measures, and packaging of deliverables which were tailored to meet KN milestones, enabled the quick start of construction and allowed for a continuous flow of KN construction execution scheme.

ECG Scope of Services covered the following:
- Package 1: Enabling work
- Package 2: Foundation package
- Package 3: Tank farm design
- Package 4: Auxiliary systems (service water system, compressed air system, solar fuel system, fire protection system, GIS substation, control s/s, LV transformer, control building, etc)
- Package 5: Infrastructure networks
- Package 6: Ancillary buildings


Al-Shabab Gas Turbine Generating Plant

Damietta Gas Turbine Generating Plant

Client
Kharafi National for Mechanical and Electrical Works

Scope of Work
Concept design
Schematic design
Design development
Detailed design
Shop drawings

Location
Damietta, Egypt

Types of Activities
Architecture
Communications & security systems
Electrical
Infrastructure
HVAC
Landscape
Mechanical
Piping
Roads
Structural

Kharafi National (KN) was awarded the Engineering, Procurement and Construction (EPC) contract of Egypt Damietta Gas Turbine Generating Plant (GTGP). ECG was invited by KN to provide the engineering design services in support to their EPC contract.

The first gas turbine unit started commercial operation on July, 2011 for Damietta GTGP. Subsequently, ECG set its fast track methodology to fully complete the design services in a period satisfying KN proposed schedule requirements.

The new plant has four new gas turbines with a total rated capacity of 500 MW using 4*125 MW gas turbines.

Understanding the importance, sensitivity and urgency for implementing the plant within the time constrain being a national "on spot" project, ECG quickly set a task force from its senior staff to plan and set the project staffing requirements and the immediate mobilization of task forces, fast-track quality control measures, and packaging of deliverables which were tailored to meet KN milestones, enabled the quick start of construction and allowed for a continuous flow of KN construction execution scheme.

ECG Scope of Services covers the following:
- Package 1: Enabling work
- Package 2: Foundation package
- Package 3: Tank farm design
- Package 4: Auxiliary systems (service water system, compressed air system, solar fuel system, fire fighting system, GIS substation, control s/s, LV transformer, control building, etc)
- Package 5: Infrastructure networks
- Package 6: Ancillary buildings

Damietta Gas Turbine Generating Plant

West Damietta Gas Turbine Generating Plant

Client
Kharafi National for Mechanical and Electrical Works

Scope of Work
Concept design
Schematic design
Design development
Detailed design
Shop drawings

Location
Damietta, Egypt

Types of Activities
Architecture
Communications & security systems
Electrical
Infrastructure
HVAC
Landscape
Mechanical
Piping
Roads
Structural

Kharafi National (KN) was awarded the Engineering, Procurement and Construction (EPC) contract of Egypt West Damietta Gas Turbine Generating Plant (GTGP). ECG was invited by KN to provide the engineering design services in support to their EPC contract.

The first gas turbine unit was planned to start commercial operation on July, 2012 for Damietta GTGP. Subsequently, ECG set its fast track methodology to fully complete the design services in a period satisfying KN proposed schedule requirements.

The new plant has four new gas turbines with a total rated capacity of 500 MW using 4*125 MW gas turbines.

Understanding the importance, sensitivity and urgency for implementing the plant within the time constrain being a national "on spot" project, ECG quickly set a task force from its senior staff to plan and set the project staffing requirements and the immediate mobilization of task forces, fast-track quality control measures, and packaging of deliverables which were tailored to meet KN milestones, enabled the quick start of construction and allowed for a continuous flow of KN construction execution scheme.

ECG Scope of Services covered the following:
- Package 1: Enabling work
- Package 2: Foundation package
- Package 3: Tank farm design
- Package 4: Auxiliary Systems (service water system, compressed air system, solar fuel system, fire protection system, GIS substation, control s/s, LV transformer, control building, etc)
- Package 5: Infrastructure networks
- Package 6: Ancillary buildings

West Damietta Gas Turbine Generating Plant

Abu Qir Thermal Power Plant

Client
Orascom Construction Industries

Scope of Work
Detailed design

Location
Alexandria, Egypt

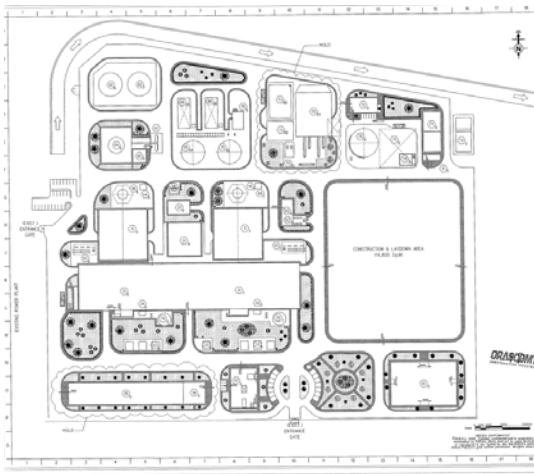
Types of Activities
Civil works
Electrical
Infrastructure
Landscape
Mechanical
Roads

Expanding the capacity of the existing Abu Qir Power Plant, involved the development of the new Abu Qir Thermal Power Plant. Situated on the Mediterranean coast, 20 km east of Alexandria and to the east of the existing Abu Qir Power Plant, the new plant comprises two 650MW indoor condensing steam turbine generating units; two outdoor, dual-fuel fired (natural gas and mazut), pressurized furnace steam generators; and necessary auxiliary equipment including onsite storage; a natural gas reducing and handling facility; desalination plant for plant make-up water, off-shore structures for plant cooling water intake and discharge; water and wastewater treatment and GIS 500 kV indoor switchyard buildings. While the main fuel is natural gas, the plant was also designed to run on heavy fuel (mazut) oil as a backup fuel.

With a construction cost of 875 million euro for this state funded project, the objective was to increase the generation capacity of the Unified Power System (UPS) by about 4% in the year 2012 to meet the electricity demand on the UPS in the short-to-medium term. The project, when completed, would contribute to making available sufficient and reliable power to the various consumers including the households, agriculture, business and industries.

ECG has completed the detailed designs of the underground utility networks (water, sewage, and irrigation); asphalt-paved roads (3,100 m long, with carriageway width of 7 m); and landscaping; alongside the electrical detailed designs of all site buildings.


Abu Qir Thermal Power Plant



Abu Qir Thermal Power Plant Intake Structure

Client
Arab Contractors (Osman Ahmed Osman)

Scope of Work
Detailed design
Shop drawing
Quality control (Construction supervision)

Location
Alexandria, Egypt

Types of Activities
Civil works
Communications and security systems
Electrical
Infrastructure
Mechanical
Roads
Wave breaker

Expanding the capacity of the existing Abu Qir Power Plant involved the development of the Abu Qir Thermal Power Plant. Situated on the Mediterranean coast, 20 km east of Alexandria and to the east of the existing Abu Qir Power Plant, it comprised two-650MW two indoor condensing steam turbine generating units; two outdoor, dual-fuel fired, pressurized furnace steam generators and necessary auxiliary equipment including onsite storage, a natural gas reducing and handling facility, desalination plant for plant make-up water, off-shore structures for plant cooling water intake and discharge, water and wastewater treatment and GIS 500 kV indoor switchyard buildings. While the main fuel is natural gas, the plant was also designed to run on heavy fuel (Mazout) oil as a backup fuel.

ECG was awarded the quality control for this project which included, quality control for the ready mix concert plant, preparing the quality control plan for the civil works, managing the quality control plan with the auditing boards, correction actions for the NCR and supervised all the works to be sure it matches with the quality control plan. The structure scope of work included the intake structure, intake operation building and discharge to seal well structure.

Abu Qir Thermal Power Plant Intake Structure

ElKuraimat New Combined Cycle Power Plant

Client
Arab Contractors
(Osman Ahmed Osman & Company)

Scope of Work
Detailed design

Location
El Kuraimat, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Irrigation
Landscape
Mechanical
Structural

ElKureimat 750 MW Combined Cycle Project is located within the boundaries of the existing 2600 MW Thermal Power Plant site. ECG was involved in the civil design of phases II and III of ElKuraimat New Combined Cycle Power Plant.

Phase II involved two-250MW gas turbine generators, two heat recovery steam generators, and one-250MW steam turbine generator and condenser. Auxiliary facilities undertaken comprised a tank farm, water and wastewater treatment plants, a water intake/discharge, lift stations, a foam house, transformers, and a fuel oil unloading station.

Ancillary buildings developed included an administration building, a warehouse/work shop, a mosque, and a construction office building. Moving forward, phase III of the project comprised two-250MW gas turbine generators, two heat recovery steam generators, and one-250MW steam turbine generator and condenser. The power plant cooling water is withdrawn from the Nile River. When fully operated, the project will provide 750MW generation capacity to Egypt's Unified Power System, representing 6% of the country's total electricity generation expansion during the period 2004/05-2011/12.

ElKuraimat New Combined Cycle Power Plant

Marsa Alam Power Plant

Client
EMAK

Scope of Work
Concept design
Detailed design
Shop drawings
Construction supervision

Location
Marsa Alam, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

ECG was mandated the engineering services for phases I and II of the Marsa Alam Power Plant which housed dual fuel diesel generators with a total power generation capacity of 30MW. In undertaking phase I of the power plant, ECG supervised the construction of ancillary buildings such as tank farms, water and fuel treatment plants, an administration building, and a guard house. In phase II, ECG prepared detailed architectural, structural, and piping designs for tanks as well as fire detection and protection, electrical, and instrumentation and control systems.

Marsa Alam Power Plant

Attaka Thermal Power Plant Extension (Unit IV - 300 MW)

Client
Egyptian Electricity Holding Company

Scope of Work
Construction management
Construction supervision
Testing
Commissioning and start-up services

Location
Suez, Egypt

Types of Activities
Civil works
Mechanical

With a construction cost of US$ 300 million, the extension of Ataka Thermal Power Plant comprises a 300MW steam turbine generator set, a 1,032 ton/h steam generator with auxiliaries 220kV switchyard, new seawater intake and pump house, water treatment plant, chlorination plant, hydrogen generating plant, mazout storage tanks, mazout transfer station, high pressure heating station, natural gas reducing station, and industrial/sewage wastes treatment plants.

The turbine of the plant extension is of a condensing type, seawater cooled and consists of three cylinder reaction turbines. The process is regenerative cycle with high and low-pressure extraction. The turbo-alternator is two-pole 50Hz, with 420MVA rated output, 21kV rated voltage and directly cooled by hydrogen. The steam generating plant has a controlled circulation boiler with a pressurized firebox and it contains a steam reheating system. The burners are designed for tangential firing and are of tilting type. The production of steam at MCR is 1,032 tons per hour of 54°c.

The boiler is capable of burning heavy fuel, light fuel and natural gas. The feed water plant is composed of one steam turbine-driven pump with 110% rated capacity and two electric motor pumps each with 60% rated capacity. The main cooling water for the power plant is sea water led from the Gulf of Suez into an underground

Attaka Thermal Power Plant Extension (Unit IV - 300 MW)

intake culvert then to an intake structure containing inlet screening racks with scraper, fine bank screens and the cooling water pumps.

The plant also contains a closed water system using demineralized water as coolant, which in turn is cooled by seawater. The auxiliary plants consist of:

- Two train demineralization plants for the preparation of make-up water from utility raw water.
- Two train condensate polishing plants consisting of an ionic and a mixed bed exchanger for removal of dissolved solids entering into the condensate main steam.
- A chlorination plant to produce active chlorine from hypochlorite solution.
- A hydrogen generating plant to produce the hydrogen required for cooling the generator.
- A storage farm complete with pumping facilities and a heating plant for the storage of heavy and light fuel oil.
- Facilities for the supply of natural gas at the required pressure are included.
- A wastewater treatment plant to treat all industrial wastewater produced from Ataka Station is provided as an environmental feature meeting the standards required for the effluent, before the release into the Gulf of Suez.
- A sewage treatment is also provided with Unit IV extension for the sanitary sewer of the whole station.

Out of generated power 300MW is stepped up from 21kV to 220kV with the generator transformer and fed into the national grid through a switchyard provided for Unit IV extension. This switchyard consists of two main busbards of 2,000A each connected by a coupler. These busbars are also connected to the existing two busbars via a longitudinal coupler. The transfer busbar composed of four feeders is linked to the national grid. The switchyard includes pantograph isolators, SF-6 circuit breaker, rotating isolators, current transformers, potential transformers, surge arresters and insulators.

Damanhour Combined Cycle Power Station

Client
ESB International, Ireland and Gilbert/ Commonwealth International Inc., USA Joint Venture (ESBI/GCII)

Scope of Work
Geotechnical investigation
Design review
Construction management
Construction supervision
Quality control
Contract administration

Location
Damanhour, Egypt

Types of Activities
Civil works
Communications and security systems
Fire protection
HVAC
Instrumentation
Mechanical
Structural

Owned by the Egyptian Electricity Authority (EEA), the objective of the project was to upgrade the existing power station at Damanhour through the utilization of waste heat discharged to the atmosphere by gas turbines. The exhaust gases from the gas turbines were to be diverted through non-fired heat recovery boilers (HRSG) for the generation of steam. The generated steam produced an additional electrical power of 1x50 MW.

The project involved the addition of four heat recovery boilers to integrate four existing GE frame 5 Gas Turbines, into combined cycle mode of operation. This enabled the powering of 1x50MW Turbo-Alternators.

The heat recovery boilers were to be arranged to produce superheated steam by extracting heat from the exhaust gases of the gas turbines. This superheated steam was to be used to drive a steam turbine generator. The heat recovery boilers were fitted to the gas turbines on a one-for-one basis. The superheated steam produced by four boilers was delivered to one main steam manifold which was connected to steam turbine generator of 50MW steam driven nominal capacity.

The total plant consisting of heat recovery boilers, steam turbine generators and auxiliaries; was controlled and operated by a central control room. The plant also included: additional tank farms; cooling water systems fed by irrigation canals connected to the River Nile; electrical control and instrumentation systems; and civil/ structural works.

Damanhour Combined Cycle Power Station

The project was implemented in four packages, namely:

1. Heat Recovery Boiler Package, including: boilers and related structural steel, foundation works and associated facilities; pipe works; electrical cables and panels; instrumentation and control equipment; and some gas turbine modifications.
2. Steam Turbine Package, including: steam turbines; alternators with necessary accessories; condensing plant and auxiliaries; main cooling water system; water treatment plant; fire protection system; compressed air system; cranes, hoists and handling equipment; electrical equipment; control and instrumentation equipment; and laboratory equipment.
3. Electrical Power Package, including: circuit breakers; transformers; power boards; battery and charger systems; and associated cabling.
4. Civil Works Package, including: turbine/control/administration building, water treatment building and maintenance building (total area was 1,000 m^2) piled foundations for heat recovery boilers construction; cooling water system (intake structure, pumping station, inlet and outlet culverts, and outfall structure); external works e.g. roads, cable ducts, fencing and gates.

Environmental and Social Impact Assessment (ESIA) for Upgrading West Damietta Power Plant

Client
East Delta Electricity Production Company (EDEPC), and the Egyptian Electricity Holding Company (EEHC)

Scope of Work
Environmental and Social Impact Assessment (ESIA)
Quantitative risk assessment

Location
Damietta, Egypt

Types of Activities
Measurements and preparation of the study

West Damietta site is located on the southern shoreline of the Mediterranean Sea, about 200 km from north Cairo along the railway which connects east Damietta to west of the site parallel to the International Coastal Highway.

The Egyptian Electricity Holding Company (EEHC) constructs and operates a new Combined Cycle power plant at the existing West Damietta gas turbines plant.

The power plant has been operating since 2012; the proposed Combined Cycle Power Plant is 750MW comprising four existing 125MW Gas Turbine Generators (GTGs), each with a nominal electricity generating capacity of 125MW and four Heat Recovery Steam Generators (HRSGs) utilizing the GTGs to produce enough steam in order to generate 250MW in a steam turbine, which will be known as West Damietta Combined Cycle Power Plant.

The power output from the proposed plant will be sold to the Egyptian Electricity Transmission Company (EETC). The new project aims to convert the existing simple cycle to a combined cycle plant, which reduces the gas turbines' exhaust gas temperature.

The power plant utilizes both natural gas and solar; this "dual-fuel" operability provides security of electricity provision in the event that gas supplies are unavailable for any reason. In addition, a small emergency generator operating on solar oil will also be provided on-site to operate key equipment within the power plant in the event of power supply failure.

The Environmental and Social Impact Assessment (ESIA) report is prepared by ECG, based on many baseline studies undertaken by independent national and international consultants and on the information provided by EEHC, EDEPC and their sub-contractors.

Environmental and Social Impact Assessment (ESIA) for Upgrading West Damietta Power Plant

Environmental and Social Impact Assessment (ESIA) for upgrading El-Shabab Power Plant

Client
East Delta Electricity Production Company (EDEPC), and the Egyptian Electricity Holding Company (EEHC)

Scope of Work
Environmental and Social Impact Assessment (ESIA)
Quantitative risk assessment

Location
Ismailia, Egypt

Types of Activities
Measurements and preparation of the study

On a total area of approximately 87,248m^2, Al-Shabab site is located at the north western of Ismailia governorate, about 79 km from Markaz At-Tall Al-Kabir at the north eastern of Cairo. The existing Al-Shabab gas turbine power plant has three Gas Turbine Generators (GTGs) (3x33.5 MW).

The Egyptian Electricity Holding Company (EEHC) constructs and operates a new Combined Cycle power plant at the existing Al-Shabab gas turbines plant.

The power plant will start operation by the year 2016-2017; the Combined Cycle Power Plant is 1500MW, with a nominal electricity generating capacity of 125MW eight Heat Recovery Steam Generators (HRSGs) to produce enough steam in order to generate 2x250MW using two identical steam turbines, which will be known as Al-Shabab combined Cycle Power Plant.

The power output from the proposed plant will be sold to the Egyptian Electricity Transmission Company (EETC). The new project aims to convert the existing simple cycle to a combined cycle plant, which reduces the gas turbines' exhaust gas temperature.

The power plant utilizes both natural gas and solar; this "dual-fuel" operability provides security of electricity provision in the event that gas supplies are unavailable for any reason. In addition, a small emergency generator operating on solar will also be provided on-site to operate key equipment within the power plant in the event of power supply failure.

The Environmental and Social Impact Assessment (ESIA) report is prepared by ECG, based on many baseline studies undertaken by independent national and international consultants and on the information provided by EEHC, EDEPC and their sub-contractors.

Farafra Diesel Power Station

Client
Egyptian Maintenance Company (EMC)

Scope of Work
Preliminary design
Detailed design

Location
Farafra, Egypt

Types of Activities
Architectural
Civil
Communications & security systems
Electrical
Landscape
Mechanical
Structural
Roads

The 4 × 4 MW diesel power station is located in Farafra Oasis near Farafra-Wahaat Highway. On a plot area of 62,500 m2, the project comprises the following buildings:

- Powerhouse building (footprint of 760 m2): ground floor (switchgear & main control center) and mezzanine (control room, battery room, offices, and toilets)
- Transformers building (footprint of 168 m2): four transformers surrounded by a chain-link enclosure with four separate chain-link gates; the transformers are separated by reinforced concrete firewalls, and the building is covered with corrugated steel sheets
- Auxiliary transformers building (footprint of 60 m2): two auxiliary transformers surrounded by a chain-link enclosure with two separate gates; the building is covered with corrugated steel sheets
- Workshop & storage building (footprint of 174 m2): enclosed workshop & store, as well as staff changing rooms with lockers and toilets
- Staff housing building (footprint of 250 m2): ground floor and three typical floors; each floor consists of two apartments, each with a living room, two bedrooms, a kitchen, and a bathroom
- Guardhouse (footprint of 25 m2): office, bedroom, and toilet
- Pump room, fire pump room, water treatment room, water tank, and valve room located adjacent to the tank farm
- Open storage (1,000 m2) shaded with corrugated steel sheets
- Perimeter fence (1,000 meters long) with four guard towers at the corners

Farafra Diesel Power Station

Substations

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Cairo Festival City 66/22 KV Substation

Client
Al-Futtaim Real Estate Development

Scope of Work
Conceptual design
Detailed design
Construction supervision
Commissioning and handover

Location
New Cairo, Egypt

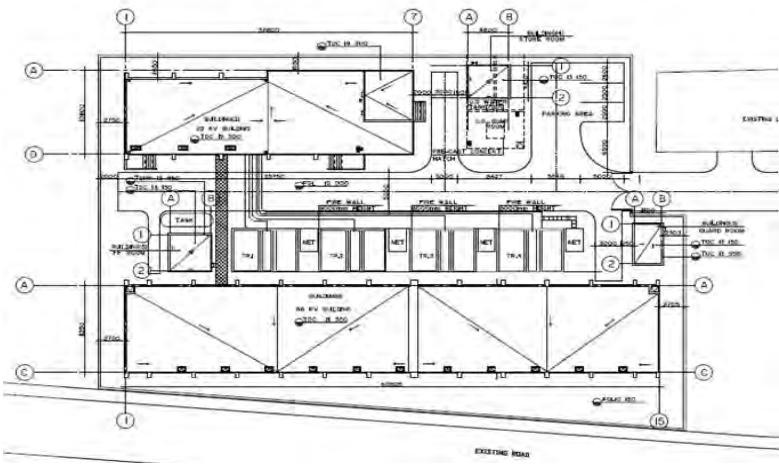
Types of activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Mechanical
Piping
Structural

The project covered a 66/22 kV electrical substation, along with the cables connecting the substation with the external main grid.

The said substation is part of the site-wide infrastructure and associated projects at Cairo Festival City (CFC) located at the 5th Settlement of New Cairo. The substation is interconnected with the New Cairo Power Station (which is 12 km away) via 630 mm^2 cables (Route No. 1) and with Zahraa Madinat Nasr Police Academy Power Station (3.5 km away) through 400 mm^2 cables (Route No. 2).

The CFC substation occupies an area of 3,042 m^2 and consists of the following components:

- 66 kV building (66 kV switchgear and busbars): one floor with a footprint area of about 650 m^2.
- 22 kV building (22 kV switchgear, control hall, AC/DC room, telecommunication room, battery room, and auxiliary transformers): basement and two floors with a footprint area of about 385 m^2.
- Guardroom: one floor with a footprint area of about 20 m^2.
- Firefighting room: one floor with a footprint area of about 25 m^2.
- Store room: one floor with a footprint area of about 28 m^2.
- Underground water tank and pump room: footprint area of about 85 m^2.



Cairo Festival City 66/22 KV Substation

Dubai Substations

Client
Emirates Trading Agency (ETA), UAE

Scope of Work
Detailed design

Location
Dubai, UAE

Types of activities
Architectural
Mechanical
Structural

Our quality of service, reputation, and deliverables position ECG as one of the top substation consultants in Dubai. We have successfully designed as well as supervised and managed the construction of over 50% of Dubai's substations.

Turnkey project for Emirates Trading Agency (ETA)132/11 kV substations with a total built-up area of 3,850m^2 in addition to the substation services is one of these uniquely undertaken projects.

Dubai Substations

Transmission & Distribution

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Maintenance and Refurbishment of SSR Towers and Poles

Client
Confidential

Scope of Work
Detailed design
Construction supervision

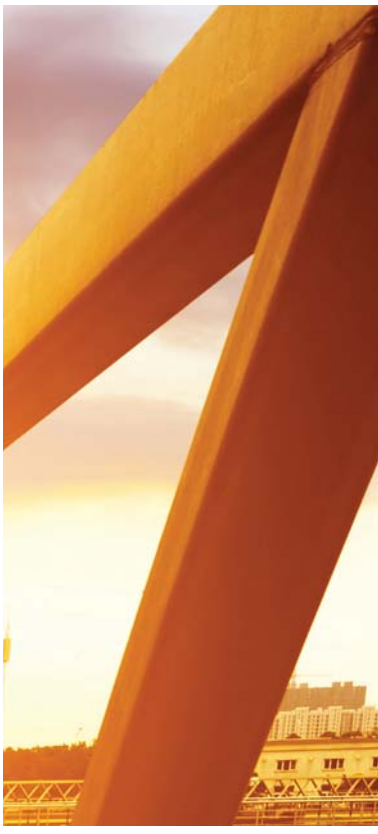
Location
UAE

Types of activities
Civil works
Communications & security systems
Electrical
Structural

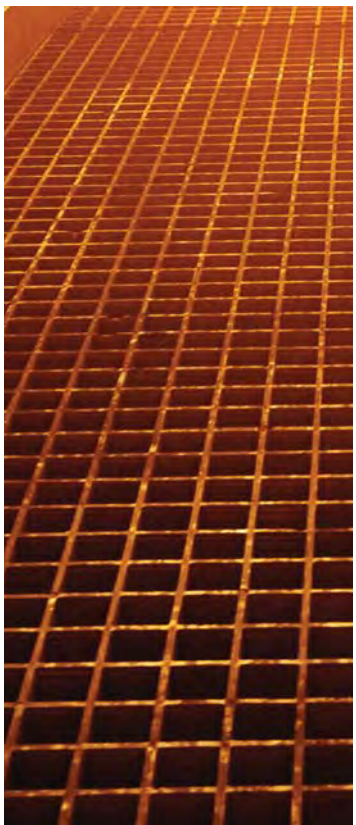
Since 1995, more than 1,900 Self Supporting Radio Transmission (SSR) towers, masts and poles inspections were completely carried out. Inspection of 200 towers, masts and poles are underway for maintenance and refurbishment work, in addition to supervision of refurbishment work for 116 towers all over UAE.


Maintenance and Refurbishment of SSR Towers and Poles









Utilities

ECG مجموعة المهندسين الاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Infrastructure

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Madinaty Infrastructure

Client
Arab Company for Projects and Urban Development S.A.E.

Scope of Work
Master plan
Schematic design
Design development
Detailed design
Tender documents
Construction supervision

Location
New Cairo, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Infrastructure
Mechanical
Roads
Structural

A city of international standards, Madinaty stretches over 33.6 million square meters at the northeast of New Cairo, with a total of 120,000 residential units accommodating 950,000 residents. The city, which acts as a modern extension of New Cairo, features a range of residential buildings, including villas and apartment buildings, together with an open-air mall extending over 159 feddans, as well as golf retreats, educational institutions, healthcare facilities, hotels, sports and social clubs, and entertainment destinations.

Madinaty is also set to be home to a number of unique services scattered along the outskirts to cater to the needs of neighboring residential communities. These services include water sports facilities, shopping centers, and educational institutions.

From engineering design up to construction supervision, ECG's consulting services covered 95% of the city's development activities. With a construction cost of USD 270 million, the city's infrastructure included the following networks:

Madinaty

- **Water Network:** 7.041 km of ductile iron pipelines (300 mm to 900 mm in diameter) and 120.8 km of uPVC pipelines (90 mm to 225 mm in diameter), with all associated chambers and structures, in addition to 700 house connections of a total length of 160.081 km.
- **Irrigation Network**: 9.8 km of ductile iron pipelines (300 mm to 600 mm in diameter) and 134 km of uPVC pipelines (40 mm to 315 mm in diameter).
- **Sewage Network:** 89.136 km of ductile iron pipelines (200 mm to 600 mm in diameter), with all associated structures, as well as 73 km of house connections.
- **Stormwater Network:** 90 km of ductile iron pipelines (160 mm to 700 mm in diameter).
- **Road Network:** 100 km-long network of road widths ranging from 9 m to 22.8 m, along with parking facilities stretching over a total area of 510,000 m^2.
- **Low-Voltage Network:** 1,202 main distribution boards; 4,462 distribution boxes; and aluminum-armored cables with a total length exceeding 618 km.
- **Medium-Voltage Network:** 8 medium-voltage distributers, 305 transformer kiosks, 317 earth pits, and aluminum-armored cables with a total length of about 171 km.
- **Telephone Network:** 2,187 telecom handholes and telecom wiring conduits with a total length exceeding 389 km.
- **Street Lighting:** 5,624 light poles (5, 8, and 12 meters high), along with their associated lighting switches and aluminum-armored cables (about 225 km long).

Smart Village Infrastructure

Client
Smart Villages Company, Egypt

Scope of Work
Schematic design
Detailed design
Tender of documents

Location
Cairo, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
Infrastructure
Mechanical
Roads
Structural
Urban design

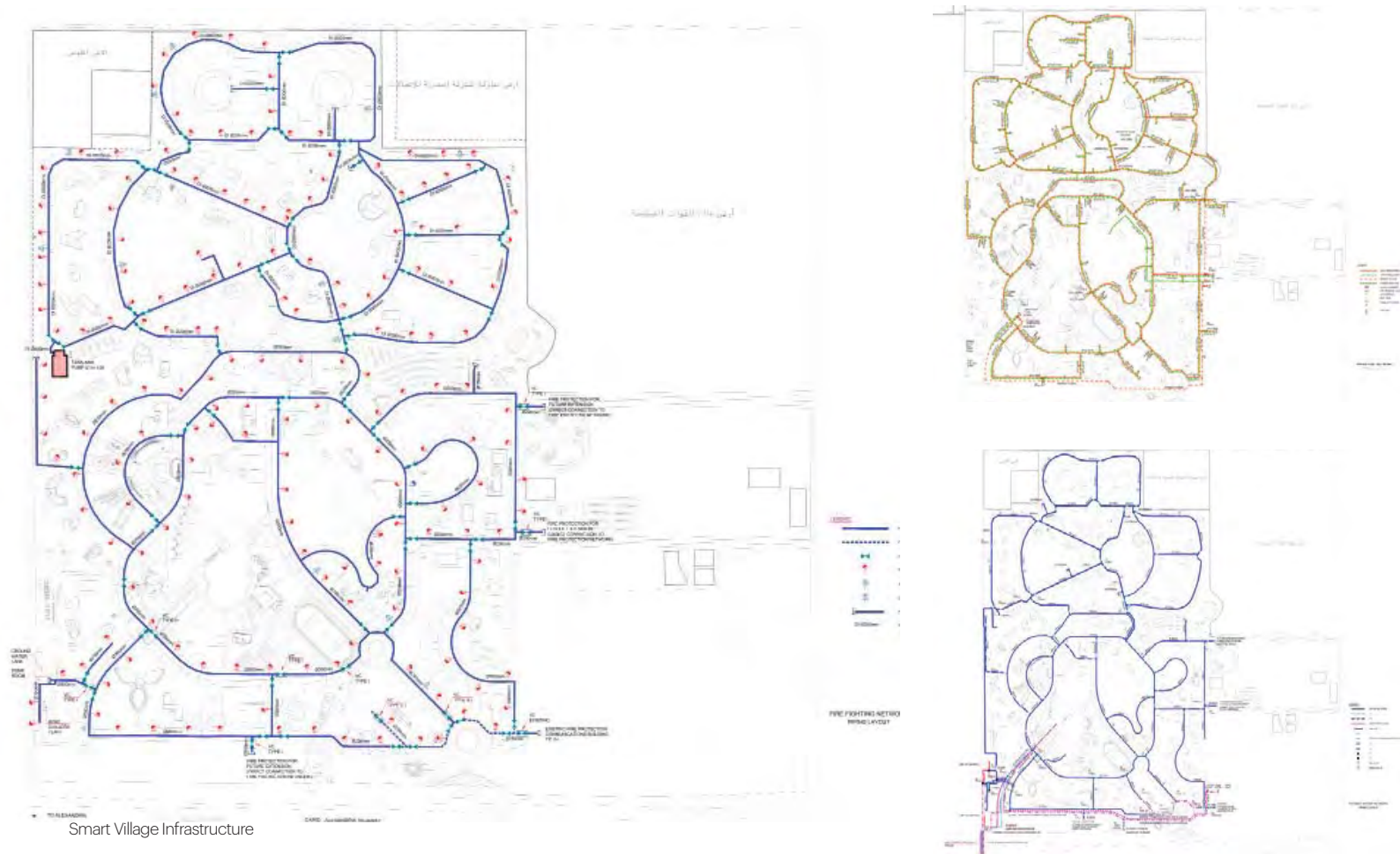
Spread over 3 million m2, Smart Village Cairo is Egypt's first, fully operational information technology cluster and business park. The prime development accommodates multinational and local companies; governmental and financial organizations; educational institutions; and research and development centers. All facilities share sophisticated, state-of-the-art infrastructure; up-to-date facility management; and a full range of business and recreation services.

The project infrastructure networks covered the following components:

1. Road Network: four road categories namely Main, access, secondary and local roads are shown as:

- The main roads include the ring road and the roads approaching the project area.
- The secondary and local roads transfer the traffic between the main roads and the different activities.
- The access road is used as an entrance.

The average speed on different road segments is assumed to range between 25 to 45 km/h depending on road class.



Smart Village Infrastructure

2. Portable water network: main source of supply is Sheikh Zayed Water Treatment plant network, feeding project area through transmission 300/ 400 mm diameter with length 15 km feeding local storage tanks capacity 36600 m3 facilitated with pump-stations which is feeding the different project buildings through potable water loop network.

3. Firefighting Network: main source of supply is the potable water storage tank facilitated with separate fire pumping station which is protecting the different project building internally and externally through firefighting loop network.

4. Sewage network: Gravity collection system collecting the different peak generated sewage flow from the different building and discharging the final effluent into Abu-Rawash Wastewater Treatment Plant through lift station facilitated with force main pipe line.

5. Irrigation Network: main source of supply is Sheikh Zayed Water Treatment plant network, feeding project area with brackish water through transmission 300 200 / mm diameter with length 15 km, in addition to second source Barakat well feeding project area with brackish water through transmission 400 mm diameter with length 9 km feeding local main lagoon, facilitated with pump-stations which is irrigating the different landscape area through irrigation loop network and turf irrigation networks.

6. Storm Drainage, Collected surface water from different catchments areas including paved roads and parking areas will be collected by gravity through grate inlet Catch Basins and drained into a soak away draining system of the Circular Dry Wall Lined type. Infiltration will be considered through the side walls and open base of the soak away.

ElSewedy Industrial Complex at Al-Ain Al-Sokhna Industrial Zone

Client
Pyramids Industrial Parks (P.I.Parks)

Scope of Work
Design review

Location
Al-Ain Al-Sokhna, Egypt

Types of Activities
Electrical
Infrastructure
Roads
Telecommunications
Urban design

The "National Suez Canal Corridor Development Project" covers the development of a network of regional roads linking future development areas within the Suez Canal Corridor. One of such development areas is Al-Ain Al-Sokhna Industrial Zone (Egyptian-Chinese Industrial Zone) located to the northwest of the Gulf of Suez. The industrial zone is bounded by Suez-Hurghada Road to the east and by Cairo-Sokhna Road to the south.

This project covers a design assessment report for the existing infrastructure networks of ElSewedy Industrial Complex, which stretches over a total area of 1,651,303 m^2 within Al-Ain Al-Sokhna Industrial Zone.

The infrastructure networks included within the complex are as follows:

- **Road Network:** total length of 8,000 meters
- **Water Supply Network:** uPVC pipelines (150 mm to 400 mm in diameter) with a total length of about 9,300 meters
- **Sewage Network:** vitrified clay pipes (200 mm to 700 mm in diameter) with a total length of about 6,300 meters
- **Primary Telecommunications Network:** civil works for 13 manholes
- **Secondary Telecommunications Network:** civil works for 19 handholes
- **Medium-Voltage Distribution System:** 22 kV substation with a rated capacity of 20 MVA

ElSewedy Industrial Complex at Al-Ain Al-Sokhna Industrial Zone

Water Networks

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ENGINEERING CONSULTANTS GROUP S.A.

Karonga Town Water Supply Project

Client
Northern Region Water Board (NRWB)

Scope of Work
Preliminary Design
Detailed Design
Construction Management
Construction Supervision
Feasibility Study

Location
Malawi

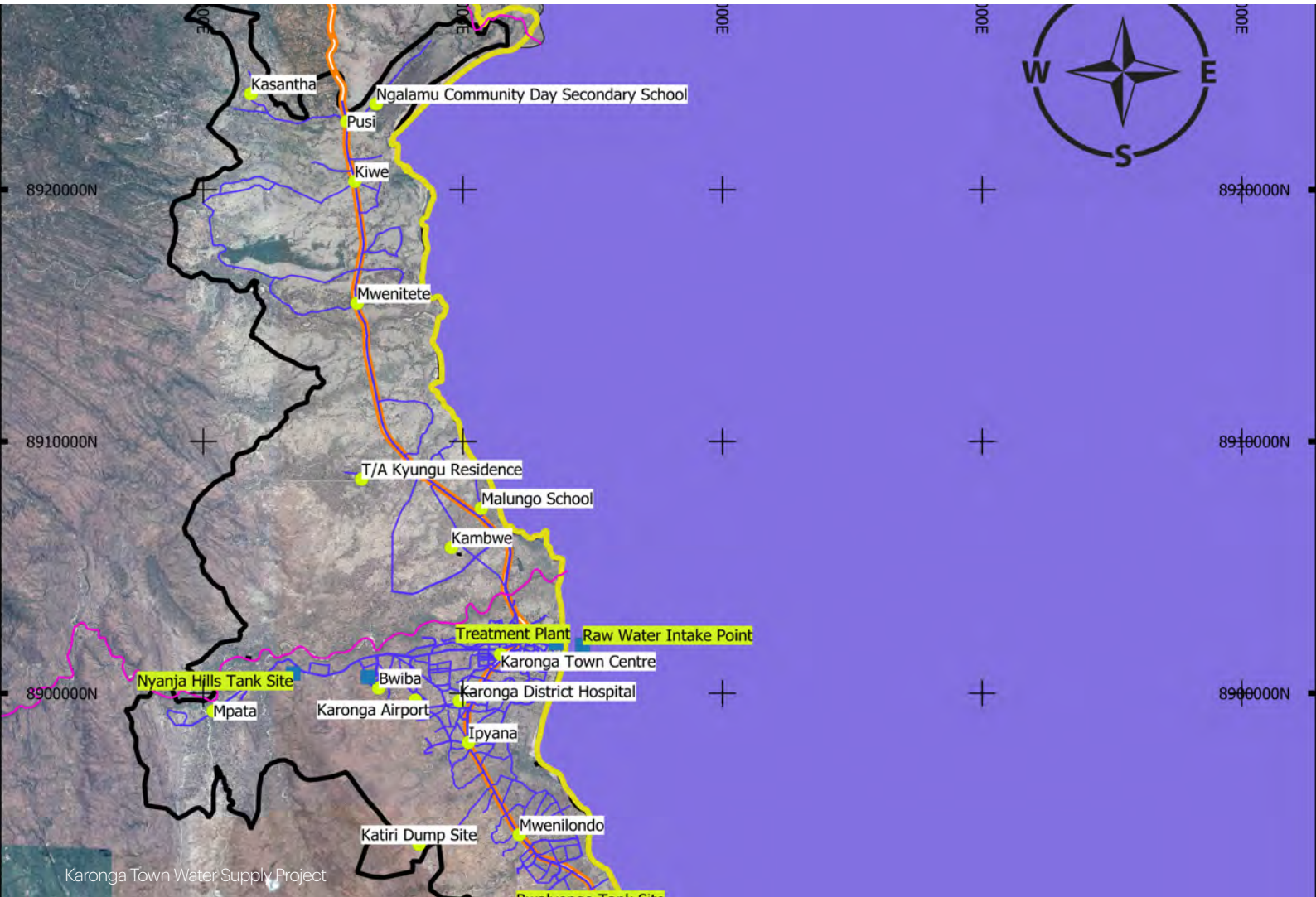
Types of Activities
Civil Works

Karonga Town is located in the Karonga District, which is situated in the Northern Region of Malawi. The town occupies an area of about 44 km^2, with a current population of about 97,500 people; by the year 2035, the projected population is estimated to be about 184,000.

The existing water supply system is unable to provide reliable water supply and meet demand as it can only provide 12,400 m^3/day, while the current demand is about 16,700 m^3/day (in the year 2017); The water supply system in "Karonga" currently provides water to 45,776 people with a water supply of about 10,700 cubic meters per day.

The projected demand for the year 2035 shall be around 30,500 m^3/day. The main objective of the project is to rehabilitate and upgrade the existing Karonga Town water supply systems and extend the distribution pipe network to the surrounding areas.

The intended consultancy services aims for the rehabilitation if the current water supply system and construction of raw water pipeline, treatment plant, water transmission pipelines, storage tanks, pump stations, distribution pipelines, and construction of auxiliary buildings.



Irrigation & Potable Water Lines for the New Capital

Client
CAPW - The Construction Authority for Potable Water & Wastewater

Scope of Work
Preliminary Design & Basis of Design Report
Hydraulic Analysis (Profile, Balance & Calculation)
Detailed Design
Tender Documents
Tender Action

Location
New Capital, Egypt

Types of Activities
Architectural
Civil Works
Electrical
Instrumentation
Mechanical
Structural

The project aims to convey potable water to the New Capital. The project is executed over three parts:

First Part: Construction of Water Line

From the storage tanks lift station to the strategic reservoir lift station as follows:

- A force main from the ground reservoir pump station to the strategic reservoir pump station with a length of approx. 16 km and a diameter of 1000 mm.
- Pump station building with required pump head (16 bar) along with ancillary buildings and necessary units.
- Strategic water reservoirs (total capacity: 100,000 m^3) at the end of the pipeline at the New Capital services zone.

From the strategic, water-reservoir pump station to Project 110

- A force main from the strategic water reservoir pump Station to the Project 110 supply point (length: approx. 3.6 km, diameter: 400 mm) to convey water quantities necessary for construction activities (approx. 15,000 m^3/day).
- Pump station units in the strategic pump station for pumping required discharge flows to Project 110, along with associated electromechanical works.

Second Part: Potable Water from New Cairo Water Plant

Aiming to transfer potable water from New Cairo Water Plant to the Valleys Area in the New Capital and Project 110.

This part consists of two pipelines with a diameter of 1,000 mm for each, conveying 250,000 m^3/day, and is divided into two groups:

- The first group consists of two pipelines with a pipe diameter of 1,000 mm each, and a length of approx. 22 km each with a capacity of 125,000 m^3/day. The water is pumped into this line through a lifting station constructed at New Cairo Water Station and up to the site of the Strategic Reservoir Pumping Station with a capacity of 100,000 m^3.
- The second group consists of one pipeline with diameters of 1,000 mm and lengths of approx. 11 km with a capacity of 125,000 m^3/day. The water is pumped in that line through a lift station constructed at New Cairo Water Station and up to the proposed site for the receiving of water reservoirs with a capacity of 125,000 m^3.

Third Part: Completing Irrigation Lines' Works

This project comprises the following:

- A 1000 mm-diameter forcemain with a length of approx. 20 km.
- Developing the pump stations' electromechanical works with ancillary buildings and necessary support units, namely the diesel, panels, and fuel deport buildings.
- A water reservoir for receiving irrigation water (total capacity: 27,000 m^3).

Gabal Al-Galalah Seawater Desalination Plant

Client
Metito-Orascom JV

Scope of Work
Pre-tender services
Detailed design

Location
Gabal Al-Galalah, Egypt

Types of Activities
Architectural
Civil
HVAC
Infrastructure
Instrumentation and control
MEP
Landscaping
Piping
Process
Roads
Structural

The project, owned by the Egyptian Ministry of Defense, is undertaken under an Engineering, Procurement, and Construction (EPC) contract awarded to a joint venture between Metito and Orascom Construction Industries.

The plant is set to be one of the largest Seawater Reverse Osmosis (SWRO) desalination plants in Egypt. Designed to achieve mega-scale desalination of seawater, the plant employs a raw water intake system on the Gulf of Suez shore in Gabal Al-Galalah area south of Al-Ain Al-Sokhna.

With a capacity of 150,000 m^3/day, the SWRO plant consists of the following components:

- Open intake (375,000 m^3/day)
- Multimedia filters
- RO building
- Limestone contactor building
- Product water tanks
- Product water pumping station
- Chemical dosing station
- Chemicals store
- Workshop and storage building
- Powerhouse
- Generator building
- Fuel bulk storage tank
- Administration building
- Engineers accommodation building
- Staff accommodation building
- Guardrooms
- Guard towers
- Fence

Gabal Al-Galalah Seawater Desalination Plant

Transmission Pipelines Associated with QEZ 3 Desalination Plant

Client
Sinohydro Tianjim Engineering Co. Ltd.

Scope of Work
Studies
Preliminary design
Detailed design

Location
Al-Wakrah, Qatar

Types of Activities
Civil
Communications and security systems
Instrumentation
Structural

The extensive developments currently under way across the State of Qatar create surging demand for potable water production. Such a fast-growing demand on potable water, as well as emergency potable water, can only be fulfilled through the implementation of water desalination projects.

The Qatar General Electricity & Water Corporation (Kahramaa) has thus planned the construction of a desalination plant at Qatar Economic Zone 3 (QEZ3) south of Al-Wakrah Municipality. Constructed in the form of an Independent Power & Water Plant (IPWP), the prospective desalination plant has a capacity of 130 million imperial gallons per day. Kahramaa is simultaneously implementing a transmission pipeline to convey water from the desalination plant to identified interconnection points of the Kahramaa central distribution system and Reservoir & Pumping Station (RPS) system.

Kahramaa is also laying two parallel desalinated water transmission pipelines (each 1,600 mm in diameter) to be interconnected, on a one-to-one basis, to two water delivery points extending from the pumping station of the desalination plant.

Transmission Pipelines Associated with QEZ Desalination Plant

This project involves the design of ductile iron pipelines (approximately 71 km long) ranging from 600 mm to 1,600 mm in diameter. The desalinated water transmission pipeline is expected to be completed ahead of the QEZ3 desalination plant.

The project also involves a hydraulic study and a surge analysis of the pipeline's complete piping system and its associated piping (existing).

Al-Murooj Communities

Client
Emaar, the Economic City

Scope of Work
Master plan
Detailed design
Design review
Value engineering
Tender documents
Cost estimation
Construction management
Construction supervision

Location
Rabigh, Close to Jeddah, KSA

Types of Activities
Architectural
Civil works
Communication & security systems
Electrical
Infrastructure
Landscape
Mechanical
Roads
Structural
Urban design

Within King Abdullah Economic City (KAEC) lies the new communities of Al Murooj over an area of approximately 525 hectares.

The development comprises fifteen residential communities, a sports complex and a town center. Among these communities:

- Beach Community 1 (BC1): an upscale beach residential community that includes 108 Villas, extending over an area of approximately 32 hectares. BC1 is connected to other communities of AlMurooj through a 350-meter long pier stretching across the sea with recessed pools built along the pathway.
- Beach Community 2 (BC2): an upscale beach residential community that includes 392 Villa plots, extending over an area of approximately 68 hectares.
- Beach Community 3 (BC3): an upscale beach residential community that includes 220 Villa plots, extending over an area of approximately 280,381 m^2.
- Golf Community 1C (GC1C): a residential golf resort

Al-Murooj Communities

community that includes 108 villas, extending over an area of 14 hectares.

- Pradera Golf Community (GC-1B/GC2): covers an area of 196,215 m^2 accommodating 147 villas.
- Golf Community 3 (GC3): covers an area of 262,694 m^2 accommodating 238 villas.
- Golf Community 4 (GC4): covers an area of 244,570 m^2 accommodating 226 single-family villas.
- Golf Communities (GC5): covers an area of 295,380 m2 accommodating 260 single-family villas.
- Golf Communities (GC6 & GC7): GC6 covers an area of 200,362 m^2 accommodating 168 single-family villas, while GC7 covers an area of 203,013 m^2 accommodating 175 single-family villas.
- Town Houses Community 1 & 4 (TH1 & TH4): two adjacent townhouse communities that include 523 units, extending over a total land area of approximately 34 hectares.
- Town Houses Community 2 (TH2): townhouse community including 148 units, extending over a total land area of approximately 70,000 m^2.
- Town Houses Community 3 (TH3): townhouse community including 234 units, extending over a total land area of approximately 176,000 m^2.

The project also encompasses the infrastructure works (irrigation, drainage, mechanical systems and overall lighting) as well as the construction management and supervision for an 18-hole golf course and lakes existing in between. The golf course is centralized amongst the golf communities GC1, GC2 (Pradera), GC3, GC4 and GC5 on a total area of approximately 677,000 m^2.

Furthermore, the scope covers evaluation of the existing utilities, a network of primary roads (over 9 km long) in addition to primary infrastructure with all related tanks and pump stations serving the town center and AlMurooj communities.

Cairo and Giza Water Supply Master Plan

Client
Greater Cairo Water Company (GCWC)

Scope of Work
Data collection and analysis
Demographic studies and studies of the demand on potable water hydraulic analysis of potable water distribution system
Feasibility study
Master plan for the period (2037-2007)
Schematic designs
Tender documents for design and construction of high priority projects

Location
Cairo and Giza, Egypt

Types of Activities
Civil works

The project serves a total population of 15 million in the cities of Cairo; Giza; new urban communities around Cairo such as Badr, Shorouk, obour, 15 May and new Cairo; rural areas in Giza as well as current and future urban expansions in Greater Cairo and Shobra Elkhema area.

The master plan entails preparing a strategic plan to provide potable water until the year 2037. ECG prepared five-year plans to improve the services of the potable water networks with a view to meeting the increased demand and finding solutions for eliminating the load on the water system infrastructure. The existing system comprises 16 major water production plants with average daily production of 10 million m3/day, 575 ground water wells, 106 major pump stations, 84 water reservoirs (elevated and ground tanks), 1,800km of water pipelines with diameters of 300mm and 1,600mm.

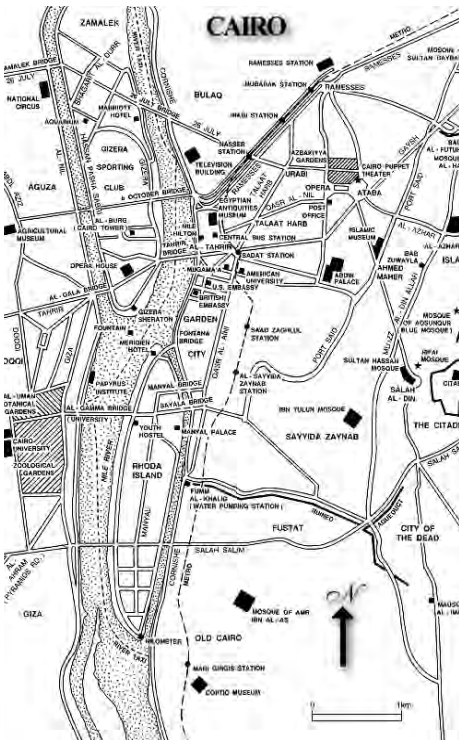
The project comprises the following stages:-

A) Data Collection and Evaluation Stage: Preparing Preliminary and Final reports.

Raw data was collected and sorted in the form of databases and charts in such a way that allows predicting future expectations taking into consideration any possible changes to such data on five-year basis until the target year.

Data collection process was based on approved statistical records of the Central Agency for Public Mobilization and Statistics (CAPMAS), recent versions of urban planning maps approved by the Ministry of housing, utilities and urban Development. The basic information serving design purposes included the following:

- Cadastral maps and contour maps with large scale layout (showing current and future urban boundary).
- Maps for potable water transmission lines and distribution networks including data on pipelines and their diameters, types and status).
- Maps for other utilities (electricity networks, gas networks, telephone cables, railways, roads, water streams, water sewerage and drainage systems).
- Plans and urban studies including land use, current urban boundary, pivotal urban expansions and squatter areas.
- Demographic studies including population density and growth rates; the impact of population growth on economic and social development on the infrastructure.
- Water Sources: identifying potable water permanent sources such as rivers, lakes and ground water, in



addition to the impact of suction rates on water quality, identifying water sources and meeting demand on potable water over the years of the plan.

The preliminary report included a methodological assessment of the current situation; the necessary works to secure water supply systems according to the Egyptian Code and how the produced water complies with the standard specifications and quality assurance system. After the preliminary report was approved, the final report was submitted and included development suggestions, estimation of the required works, estimated value and main duration for the implementation of Master Plan over the five-year state plans until the target year.

B) Preparing High-Priority Project (HPP) documents for the coming five years:

Based on the discussion results, approval of both preliminary & final reports and financial budget available to implement projects for the coming five years, proposal documents for integrated works were prepared to develop and raise the efficiency of potable water stations, distribution networks in order to overcome operation problems and water distribution network problems. This was based on the results of hydraulic analysis of networks using computer programs or similar software as well as results of the water hammer study to conveyor lines in order to secure the service. The required works included:

- General and special conditions
- Technical specifications
- Preliminary drawings
- Bill of Quantities
- Estimated value for required works

C) Preparing Master Plan until the target year 2037:

The Master Plan included submitting studies and analysis of alternatives and giving recommendations on the most appropriate alternative. Also, the annual implementation proposals were submitted for the works in the scope of the Master Plan and expected annual costs estimations. This was presented in the form of a matrix for the works, recommended implementation durations as well as execution costs in such a way that would form a detailed executive and budget action plan.

The Master Plan was prepared taking into consideration the urban expansions, current & future urban boundary in addition to the expectations of the study over five-year plans (2037-2007).

The Master plan included:

1. **Studies on Potable Water Consumption**
   Studying potable water consumption during the five-year plans until the target year showing the bases considered to identify population growth rates and consumption rates (domestic, commercial and industrial).

2. **Hydraulic Analysis for Future Situation**
   Based on the results of the hydraulic analysis of the existing situation for water networks and estimations of future consumption rates, hydraulic models were developed in order to:
   - Identify available alternatives in order to balance future water demand against current water production capacity.

- Suggest basic options for the development of potable water networks, storage capacities and reservoir locations.

3. **Detailed Description of Development Alternatives**
   A detailed description and design drawings were prepared to develop the following elements along with estimated costs for the alternatives:
   - Production sources.
   - Potable water distribution networks.
   - Pump stations and reservoirs.

4. **Economic and Financial Studies**
   Economic and financial studies included the following:
   - Economic costs for alternatives including investment cost for expansion works, support and rehabilitation comprising any costs for land, building, equipment, operation, maintenance and power.
   - Comprehensive analysis of investment costs.
   - Economic analysis of alternatives showing the adopted approach, cost estimations, interests in addition to technical and economic comparison of alternatives for the Master Plan.
   - Identifying the best alternative to develop the service and achieve objectives of the Master Plan.
   - Preparing project implementation plan and implementation time schedule over five-year plans until the target year (2037-2007), in addition to allocating the estimated cost of the expected annual works.
   - Recommending Annual Expenditure Program.

Greater Cairo Waterworks Master Plan

Client
Ministry of Housing and Reconstruction

Scope of Work
Data collection and certification
Topographic survey
Geotechnical investigations
Leak detection
Groundwater studies
Economic and social studies
Water distribution system design (pipelines, pumping stations and reservoirs)
Water treatment plants design
Master plan
Tender documents

Location
Greater Cairo, Egypt

Types of Activities
Civil works

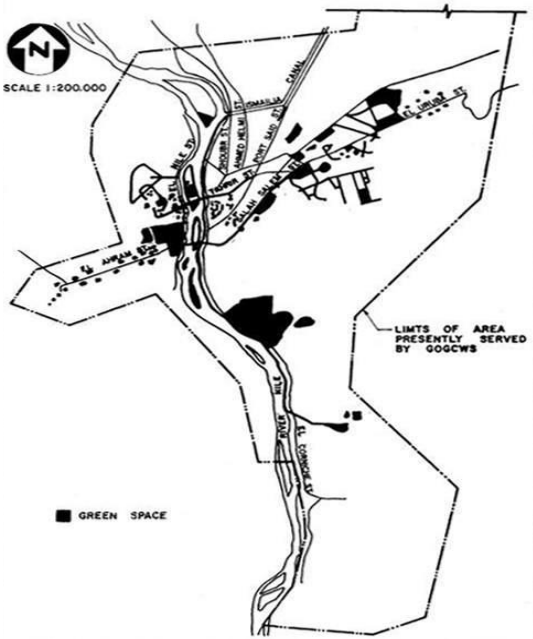
The objective of the project is to develop a Master Plan for the phased development of the Greater Cairo waterworks from 1977 through the year 2000.

The Master Plan covered domestic, industrial and irrigation needs of the served areas up to the year 2000, when the population was expected to grow from the present level of over 8 million to about 16 million inhabitants. Accordingly, the consumption was expected to increase from the present level of 2 millions m3 / day to 8 millions m3 / day. The study also included the development of high priority projects to be implemented immediately as remedial measures to improve the present conditions in areas not adequately served by the existing systems. This system consisted of about 2,500km of mains and branch lines, and several water treatment plants and pumping stations. The area of the project was largely extended since it covered all suburbs from Helwan in the South to Heliopolis and ElAbour in the North as well as the towns of Giza and Shoubra ElKheima.

The Greater Cairo Waterworks Master Plan study included the following:

- Due to the lack of installed dependable fl ow measuring equipment, accurate measurement of water fl ow and pressure at water production facilities and in several areas of the distribution system were carried out by the Consultant using a Cole pitometer. Also, -24hour flow measurements were made within each distribution network.
- Inspection and evaluation of the condition of existing water meters installed in-house and other connections. Inspection and evaluation of the meter maintenance, repair and calibration. Recommendations to upgrade water metering system were presented.
- A leakage survey program using sonic leak detection equipment in conjunction with metal detectors for locating leaks in pipes, valves & appurtenances. The survey includes about 180 km of mains 400 mm diameter or larger. Measures for reducing leakage were recommended.
- A water wastage survey showed that the water lost without benefit to the consumer after it has been delivered to him because of defective sanitary fixtures represents an appreciable percentage of the daily production.
- Recommendations for a water conservation program were prepared and presented to the Greater Cairo Water Organization.

Greater Cairo Waterworks Master Plan



Master Plan for East Cairo Potable Water Transmission Mains

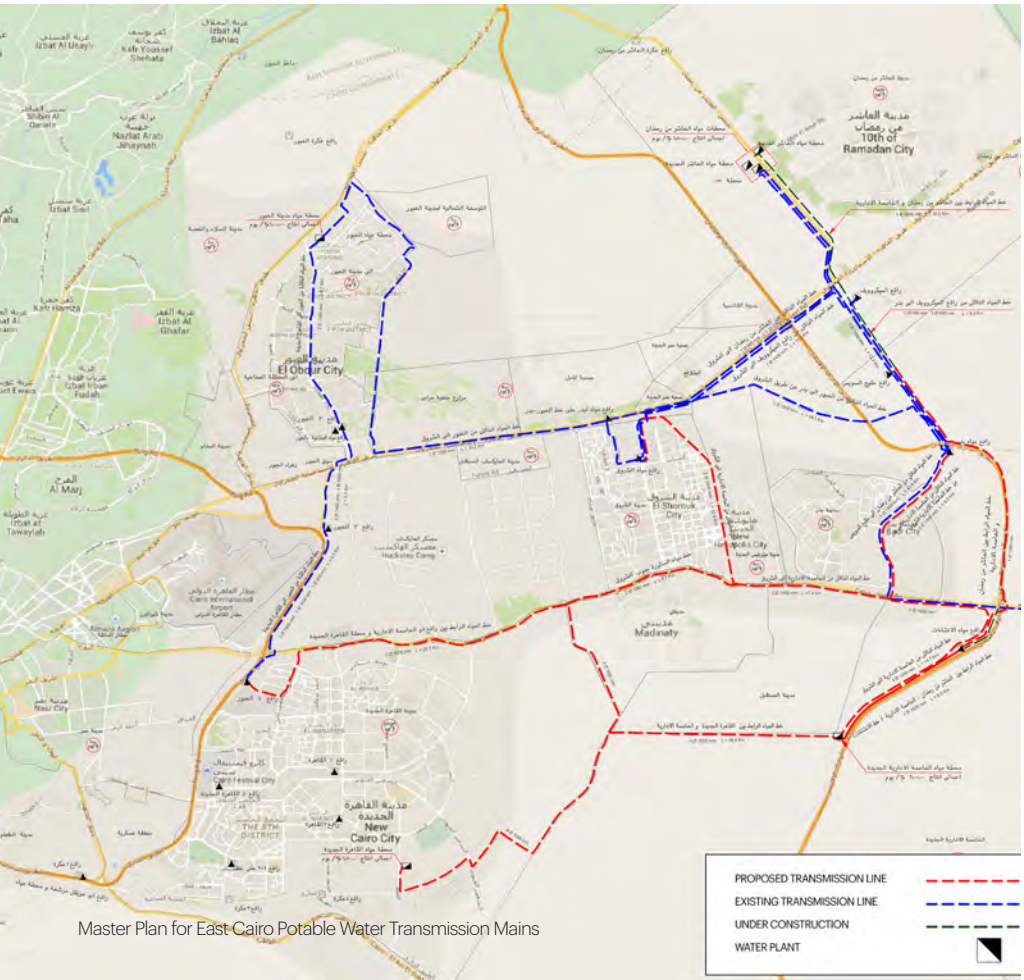
Client
Construction Authority for Potable Water & Wastewater

Location
East Cairo Cities & Urban Communities, including the Administrative Capital

The project aims at developing a master plan over a -6month period for the transmission mains necessary to provide East Cairo cities and urban communities, including the prospective Administrative Capital, with potable water. The area of the study is bounded to the south by the Cairo-Sokhna Road; to the north by Ismailia Canal; to the east by 10th of Ramadan City, Badr City, and the Provincial Ring Road; and to the west by the Ring Road. Master planning also covers the intake area of the New Cairo water treatment plants on the banks of the River Nile in Tura, as well as the proposed pipeline routes extending from the intake to the proposed water treatment plant in the Administrative Capital.

The scope of consultancy services relating to the study comprises the following elements:

- Data collection and verification for the water treatment plants, main and secondary distribution networks, transmission mains, and tanks, in collaboration with the council of each city, the New Urban Communities Authority, and the Greater Cairo Water Company.
- Recent GIS maps showing pipeline diameters up to 600 mm for the cities covered by the master plan: New Cairo, Administrative Capital, Al-Obour 10th of Ramadan, Al-Shorouk, Badr, and Al-Mostakbal.
- Population studies for the cities covered by the study (about 10 million inhabitants).
- Identifying current and expected water demand for the stages of the study, and specifying the target year.
- Developing the network's hydraulic model for East Cairo cities and urban communities for possible integration with the system of digital maps and GIS programs at a later stage. The hydraulic model shall be developed following the provision of the latest versions of maps by the Cairo Utility Data Center through the Construction Authority for Potable Water & Wastewater.
- Full description of required works and suggestions of implementation. This includes the identification of development elements based on the results of the integrated hydraulic analysis of the networks and their accessories (pump stations, tanks, etc...).
- Structural master plan for the main lines to illustrate the method of feeding the cities with potable water. This structural master plan is based on a master



Master Plan for East Cairo Potable Water Transmission Mains

plan for transmission lines and treatment plants leading to the transmission mains feeding the cities. It is also based on the hydraulic analysis of these transmission mains.

- General description of treatment plants and transmission mains including the identification of pump capacities necessary for pumping the required quantities.
- Proposed primary routes of mains and their alternatives, as well as the locations of proposed treatment plants and transmission mains in accordance with the master plan.
- Proposed primary routes and their alternatives for the mains likely to connect a number of treatment plants together, in accordance with the routes available for East Cairo the cities and urban communities.
- Final report of the master plan, as well as a cost estimation of proposed works up to the target year.
- Identification of high-priority projects and their cost estimates.

Master Plan for Potable Water of Qalyoubia Governorate

Client
Construction Authority for Potable Water and Wastewater

Scope of Work
Stage (1): evaluation and data collection, Geotechnical Information System (GIS), topographic survey, and geotechnical investigations, water quality analysis, flow measurement, review of data and previous plans, civilization and population studies, existing and future water consumption studies, and maximum flow rate specification.

Stage (2): analysis, studies, issuance of final report including bases of design.

Stage (3): feasibility studies, conceptual designs for water supply systems, and preparation of tender documents using design and build scheme which comprised technical specifications, bill of quantities, drawings, estimate for each tender and construction schedule for high priority projects.

Stage (4): preparation of Master Plan final report.

Location
Qalyoubia, Egypt

Types of Activities
Civil works

The preparation of Qalyoubia Water Master Plan involved 4 stages. In stage one, a primary report was developed to review the current conditions of existing facilities. Those comprised 57 major surface water treatment plants, 126 water wells, 9 major pump stations, 126 water reservoirs (elevated tanks), 3,500km of pipeline networks involving pipes with diameters ranging from 200mm to 1,000mm.

Stage two included preparation of a final report comprising social, demographic and water demand studies, review and completion of hydraulic studies for the water distribution system, and preparation of alternatives with respect to service improvements implemented every 5 years.

Identification of high-priority projects to be implemented in the first five years was undertaken in stage 3, whereas stage 4 involved the development of a Master Plan for the period 2037-2007, in addition to the preparation of viable alternatives and annual construction cost projections.

Master Plan for Potable Water of Qalyoubia Governorate

Obour City Water Network and Pump Stations

Client
National Authority for Potable Water and Sanitary Drainage (NAPWSD)

Scope of Work
Hydraulic Studies
Detailed design
Tender documents

Location
Obour, Cairo

Types of Activities
Civil works

The National Authority for Potable Water and Sanitary Drainage (NAPWSD) awarded ECG the contract to conduct a hydraulic study and provide design services for the development and upgrading of the water network of Obour City. The project's main objective was to meet the demands of both current areas and future expansions until the target year (on a 10 year basis).

The project's key components include the following:

Transmission pipelines: ductile iron pipes with diameter 1200/1400 mm, 60 km length, using Micro Tunneling Technology including pipe inside pipe DI/RC, 4000/1200 mm with lengths of 75 ,100m & 50m.

Control system: using fiber optics cables network (SCADA) and fl ow control system.

Pump stations: 3 pump stations, each with a capacity of 6000 l/sec, and head pressures of 140 m, 94m & 60m.

Obour City Water Network and Pump Stations

Syrdaria Water Supply Project

Client
MAILC Engineering

Scope of Work
Hydraulic studies
Detailed design
Tender documents
Construction supervision

Location
Uzbakistan

Types of Activities
Civil works

The project's main objective was to improve the availability, quality and sustainability of public water supply to Syrdaria region in Uzbekistan.

The project's main components include:

Distribution network: pipes with diameter range of -50 250 mm (31 settlements).

Ground reservoir: 2,500m3 main source of supply (12 wells, pump station with capacity of 160 m3 /hr, 60m).

Towers: 31 towers with volume range of 250-25m3 feeding different settlements.

Transmission pipeline: pipelines with diameter range of 600-250mm, with length 78 km, using Micro Tunneling Technology including (pipe inside pipe system with capacity of 2000/600mm and length of 50m).

Syrdaria Water Supply Project

Fresh & Brackish Water Supply Systems & Reconstruction of Pumping Stations

Client
PACE PAN Arab Consulting Engineers W.L.L.

Scope of Work
Data collection
Preliminary design
Detailed design
Tender documents
Tender action

Location
Al-Jahra,Kuwait

Types of Activities
Civil works
Instrumentation

Owned by the Kuwaiti Ministry of Electricity and Water, the project comprises a comprehensive study, analysis and recommendations for improvements of the water supply and distribution system in Al-Jahra city which is located north of Kuwait city consisting of AlJahra village areas including AlGaser, AlNaeem, Taimaa, AlWaha, AlNassem and AlOyoon.

The project comprises study and design of all works to supply fresh water to AlJahra areas including all necessary modifications for the main network; renovation/ reconstruction of pump station (P18); study and design of new pump station for brackish water replacing existing pump station (P16) and study and design of all works to supply water from brackish water reservoirs to AlJahra areas.

Same-Mwanga-Korogwe Water Supply Project

Client
Tanzania Ministry of Water & Irrigation

Scope of Work
- Review of the detailed design, tender documents and cost estimates for Phase 1 covering 7 villages in Mwanga and 2 villages in Same.
- Review of all data used for detailed design of the project, i.e. topographical survey data; fi eld survey and market survey data used for the cost estimates.
- Review all project drawings; technical specifications for facility constructions and installation and procurement plan of materials and equipment; tender documents and bill of quantities.
- Review structural designs of thrust blocks and valve chambers, assign strength of masonry, concrete, timber-works as well as other building materials and bar bending schedules.
- Review hydraulic computations of the systems.
- Review the sizing of reservoirs.
- Present results of the review as a new Detailed Design Report.
- Construction supervision of (Phase 1) activities, comprising the construction of infrastructures and distribution systems for 7 villages in Mwanga and 2 villages in Same.
- Confirm water resource availability and reliability at Nyumba ya Mungu Intake.

Location
Tanzania

Types of Activities
Civil works

ECG Engineering Consultants Group in association with Howard Humphreys (HH) Consulting Engineers were contracted by the Tanzania Ministry of Water (MoW) to undertake the professional engineering consultancy services for Same-Mwanga-Korogwe water supply project (Phase 1). The project comprised total network length of 130 KM with Transmission Mains of 250 ,350 ,800 and 200mm; two pump stations (69,000m3 /day each) and one water treatment Plant (69,000m3/ day).

The objective of the project is to provide the means to solve the water supply problem in semi-arid low lands located in the Western part of Pare Mountains stretching through the districts of Same, Mwanga and Korogwe. The project's area covers 37 villages and two small towns with a total population of 126,422.

Due to the large scope of the project and its cost, it was decided to implement the project in two phases. Phase 1 covers the construction of intake, treatment, raw water pumping station, clear water pumping station, storage tank at Kisangara, gravity main and service reservoirs to the 9 villages of Ruvu Mferejini Ruvu, Jiungeni, Handeni, Lang'ata Bora, Lang'ata Kagongo, Nyabinda, Kiti Cha Mungu Njia, Panda and Kirya. Phase 2 will cover the construction of water pumping station at Kisangara, storage tank at Kiverenge, gravity main, and service reservoirs to the rest 28 villages and 2 small towns.

Buraidah Water Network

Client
Engineering & Technical Services Bureau

Scope of Work
Hydraulic analysis for water networks including the following:

- Reviewing and verifying the project data .
- Comparing the drawings of ground levels of the city water network with the hydraulic analysis.
- Reviewing population distribution over the consumption points in the hydraulic analysis.
- Verifying hydraulic analysis and checking used consumption rate so that the review includes the 3 phases of the project:
- Phase (1): until the year 2019.
- Phase (2): from the year 2019 to the year 2034.
- Phase (3): from the year 2034 to the year 2075.
- The report includes the outputs of the review works along with identifying the differences in the input data of the study elements.
- Making the required amendments of the project data including the amendments of the report, drawings and hydraulic analysis.

Location
Al-Qassim, KSA

Types of Activities
Civil works

Directorate of Water at the Ministry of Water and Electricity in Al-Qassim Province assigned the Engineering & Technical Services Bureau to conduct a study with a view to develop and upgrade the water networks of Buraidah City with to meet the demand of both current areas and future expansions until the year 2054.

Serving an approximate population of 1.26 million persons, the project comprises a network of total length 863,437m (574,640m distribution network with pipes diameters ranging from 150mm to 300mm, and 288,797m transmission mains with pipes diameters ranging from 400mm to 1,200mm), two pump stations (King Fisal 2,000 m3 / day and Al Hadya 43,500 m3 / day) and four Water Treatment Plants (Al-Muataa 160,000 m3 /day, Al-Shamal 100,000 m3 / day, Al-Shaqa 100,000 m3 / day and Al-Tawasouaat 80,000 m3 /day).

Engineering & Technical Services Bureau (ETSB) entrusted ECG Engineering Consultants Group with reviewing the "Buraidah Water Networks" study developed by ETSB.


Buraidah Water Network

Kahramaa Headworks Consultancy Services

Client
Kahramaa Qatar General Electricity & Water Corporation

Scope of Work
Design review
Construction management
Construction supervision

Location
Qatar

Types of Activities
Architectural
Electrical
HVAC
Instrumentation
Landscaping
Mechanical
Piping
Roads
Structural

As part of Qatar's ongoing development and to effectively meet expected potable water demand increases, Kahramaa was seeking to improve potable water services by executing various replacements, upgrading, and extension works to some distillate and rising mains.

The Kahrmaa Headworks consultancy services were provided through three separate packages. The first package involved the use of micro-tunneling to transmit potable water from a new desalination plant to various water stations in and around Doha through an 80km transmission pipeline with a diameter of 1,600mm. The second package included the construction of two new concrete reservoirs with capacities ranging from 9-6 MIG (Million Imperial Gallons), while the third package involved the construction of six new concrete reservoirs with a capacity of 6 MIG each. Packages components included pipelines with diameters ranging from 300 to 1,200mm and lengths ranging from 20 to 70km; a pump station; related civil works; connections to existing pipes; fiber optic cable networks (SCADA); and flow control systems.

Kahramaa Headworks Consultancy Services

Hydro-agricultural Development (Great Man Made River)

Client
General Water Authority, Libya

Scope of Work
Feasibility study
Preliminary design

Location
Gulf of Sirt and Sarir Areas, Libya

Types of Activities
Civil works
Electrical
Roads

The objective of the project was to confirm the existence of adequate quantities of underground water in the Sarir well fi eld, for the development of agriculture along the coastal area of the Sirt Gulf to cultivate about 65,000 acres.

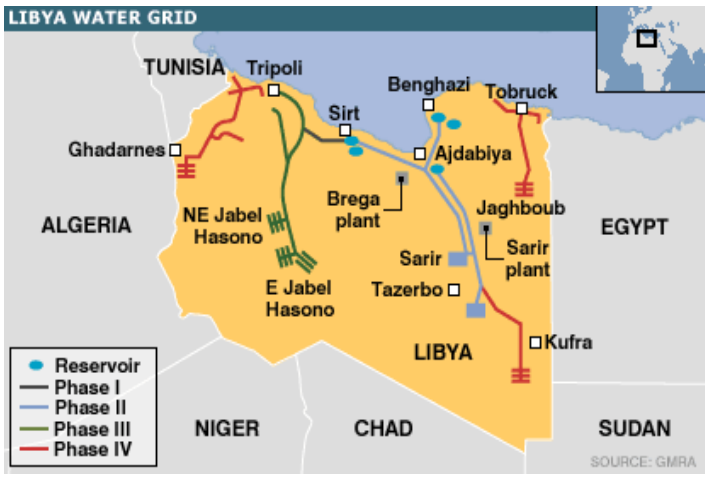
The main features of the project included drawing of underground water from aquifer Sarir well fi eld, collected by means of an 800km long collection network and pumped for a distance of 350km to the coast. Water was then transported for a further distance of 500km along the coastal area of the bay, where it was stored and distributed.

Due to the very large size of the project and the relatively high cost of water lifting and transport, the studies and designs were developed to the highest possible standards where all phases were optimized, using dedicated mathematical models.

The project consisted of:

- Hydro-geological research and studies in Sarir well fi eld covering an area of 30,000km2 .
- Studies and research included:
  - Well drilling to 900m deep including uninterrupted long duration pumping tests to determine the aquifer discharge, water quality and drawdown.
  - Computer studies using a mathematical model to determine the stepped drawdown for a life span of 100 years.
  - Design of 230 production wells and layout to determine the average daily water discharge of 1,000,000m3 .
- Design of 800 km water collecting network within the well field.

Hydro-agricultural Development (Great Man Made River)



- Aerial and ground survey covering an area of 50,000km2 including water production fields, pipeline routes and agricultural development zones.
- Agricultural soil surveys and classification of 375,000 acres on a reconnaissance level and 155,000 acres on a semi-detailed level, studies and research.
- Design of the pipelines and pumping facilities.
- Water reservoirs with a total storage capacity of 110,000,000m3 .
- Design of irrigation and drainage methods and techniques.
- Determination of cropping patterns and crop rotation for each location.
- Animal breeding and related facilities.
- Agro-industrial development of the area using the agricultural and animal products.
- Soil conservation , erosion control and windbreaks.
- Determination of size of farm settlements, villages and public buildings necessary for the project.
- Design of the electrical system for the well field, 150MW power station, 880km of overhead transmission lines (220kV & 30kV), 230 pole mounted transformers with associated switchgear and control equipment for submersible pumps and dispatch and control center.
- 800km of electrical transmission and distribution lines (30kV & 10kV) in the coastal area to supply a load of 77MVA utilized in irrigation, agroindustries and farms.
- Study of the infrastructure required for the project including potable water, sewage disposal, generation and transmission of electricity, public lighting and telephones.
- Design of 460km of roads network to serve the development zone.
- Full optimization of all elements and parts of the project.
- Economic evaluation of the project including estimation of agricultural, animal and industrial production and marketing.

Improving the Operational Efficiency of Al-Mukallah Water Supply System

Client
National Water and Sanitation Authority (NWSA)

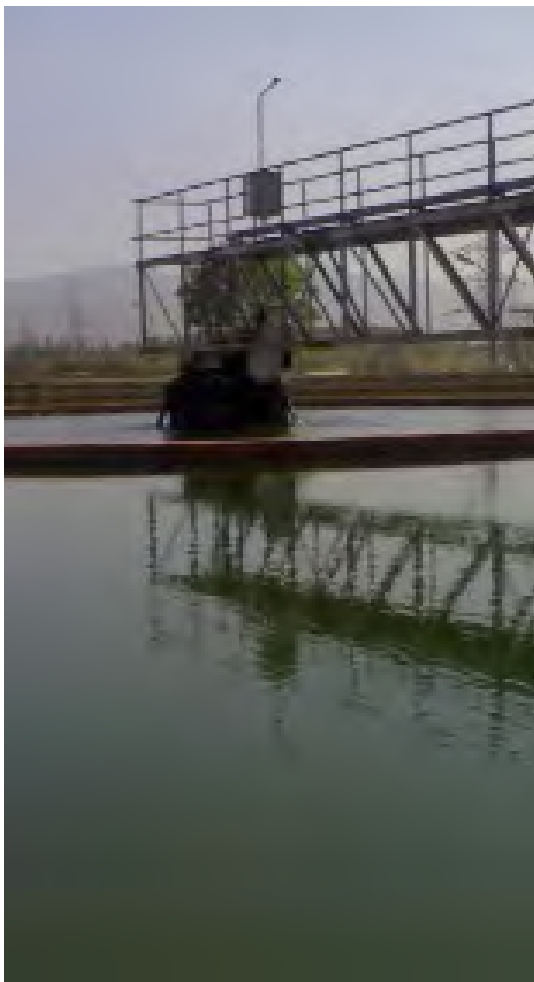
Scope of Work
- Update the existing water distribution system drawings. Implement a leak detection program.
- Develop a computerized mathematical model for simulating network flows and perform pipe network analysis.
- Train NWSA personnel on the use of leak detection equipment and computer software (pipe network analysis, CADD, Lotus, WordPerfect and database).
- Review all existing documentation related to land-use, population, weather conditions, etc.
- Prepare the Master Plan for Al-Mukalla Water Supply System and recommend the required network rehabilitation and reinforcement implementation program.

Location
Al-Mukallah, Yemen

Types of Activities
Civil works

The project main objective was to improve the operational effeciency and effectivness of Al-Mukallah water supply system to provide adequate water at minimum cost to all potential consumers. A secondary objective was to prepare a feasibility study and a master plan for the replacement and/or strengthening of the existing distribution system.

Improving the Operational Effeciency of Al-Mukallah Water Supply System



Al-Mukallah Water Supply System (First Stage)

Client
National Water and Sanitation Authority (NWSA)

Scope of Work
Phase 1: Pre-construction Services:
- Review and approve tender documents for the supply and delivery of water well casings and screens.
- Review and approve tender documents for drilling and testing of boreholes.
- Review and approve tender documents for construction of pump stations, reservoirs and pipelines.
- Contractor's prequalification procedures and preparation of prequalification list.
- Assist NWSA in tender evaluation and award of contracts.

Phase 2: Construction Supervision Services:
Provide complete construction supervision services including: review and approval of contractor's furnished designs and drawings; continuous site supervision of construction and electromechanical installations, and outside inspection in suppliers factories.

Phase 3: Technical Assistance:
Provide NWSA with technical assistance services during construction of the project, on-the-job and overseas (Egypt) training.

Location
Al-Mukalla, Yemen

Types of Activities
Civil works

The objective of the project was to increase water production to meet the actual demand required for Al-Mukalla. Water was conveyed to Al-Mukalla from the existing Wadi Buwaysh wells producing 40 l/sec and the new An-Naga'ah wellfi eld which adds 138 l/ sec.

The project comprised the development of a new wellfi eld at An-Naga'ah by drilling twelve boreholes equipped with wellscreens and borehole electrosubmersible pumps. Water was conveyed through a 400 mm pipeline to a 400 m3 collection tank. At Wadi Buwaysh additional three boreholes were drilled and developed to replace existing wells. Water from the collection tank at An- Naga'ah was conveyed through a 600 mm pipeline to Al-Sedad by means of a new 800 m3 reservoir at Al Huwayrah. From Al-Sedad reservoir a 400 mm pipeline was laid around Al-Mukalla to Bagrain and Al-Omal areas. Booster pump stations were built at Wadi Buwaysh. Moreover, two reservoirs were built at Al-Sedad (1,200m3) and at Al-Omal (2,000m3).

Wastewater Networks

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Kafr El-Sheikh Wastewater Expansion Project – Phase I

Client
Kafr El-Sheikh Water Supply and Sanitation Company (KSWSSC)

Scope of Work
Design Review
Construction Supervision

Location
Motobas & Desouq, Kafr El-Sheikh, Egypt

Types of Activities
Civil works

Kafr El-Sheikh Governorate is located at the north of Egypt, in the lower Nile Delta; approximately 125 km north of Cairo. The Governorate extends on 100 km on the Mediterranean coast, and 80 km inland; with a total area of 3,467 km^2.

A key issue for the Kafr El-Sheikh Water Supply and Sanitation Company (KSWSSC) is the shortage in sanitation coverage in rural areas of the governorate.

The project plan is the construction of two new wastewater treatment plants, the expansion of three existing ones, and the laying of 694 km of sewers; with the installation of 52 pump stations in the towns of Motobas, Desouq, and Burullus.

The projects comprising the Kafr El-Sheikh Wastewater Expansion Program came up with the implementation of first-time sewerage infrastructure in the sanitation service clusters of M.03.2 and D.03.5, forming a top priority for KSWSSC.

Located in the Motobas district, cluster M.03.2 requires new sewer networks and related pump stations that will discharge their wastewater for treatment to the expansion of the existing Motobas wastewater treatment plant. Similarly, located in the Desouq district, cluster D.03.5 involves new sewer networks and related pump stations, which will discharge their wastewater for treatment to the existing Desouq wastewater treatment plant.

The expansion of drainage projects in Desouq and Motobas serves 22 villages. The expansion of Motobas' Central treatment plant aims to increase its capacity from 15,000 to 30,000 m^3/day.

Sewer Network for Legtaifiya, Al Gasser & Onaiza Areas

Client
Public Works Authority (ASHGHAL)

Scope of Work
Concept design
Detailed design
Tender documents

Location
Qatar

Types of Activities
Civil works

The project area is located between Qatar Area referencing System (QARS) Zones 61 and 66, approximately 12 km northwest of downtown Doha, stretching across the areas of Legtaifiya, Al Gasser and Onaiza.

The project is initiated for the re-development of the foul sewer network in the areas of Legtaifiya, Al Gasser and Onaiza, reducing dependency on pumping systems in order to facilitate operations and maintenance savings (energy-related, repair and replacement costs).

Moreover, the project makes way for the decommissioning of a number of existing pumping stations by diverting their flows into a new gravity network. The new gravity network will discharge to PS N25B, for onward pumping to DN-STW via PS 70. The project boundary conjoins northwards West Bay Lagoon,

eastwards Katara Cultural Village, southwards by Ibn Marwan Street, and westwards Al-Jamiaa St. Al Istqlal Street/Lusail Expressway and Onaiza St. pass through the project area as illustrated below.

Sewer Network for Legtaifiya, Al Gasser & Onaiza Areas

Alexandria Wastewater Program (Phase I)

Client
Alexandria General Organization for Sanitary Drainage (AGOSD)/ USAID

Scope of Work
Review/update Alexandria Wastewater Master Plan up to the year 2000
Survey works
Soil investigations
Preliminary and detailed designs
Construction management and supervision services
Preparing O&M Manuals
Commissioning and start-up activities
Conducting extensive training programs

Location
Alexandria, Egypt

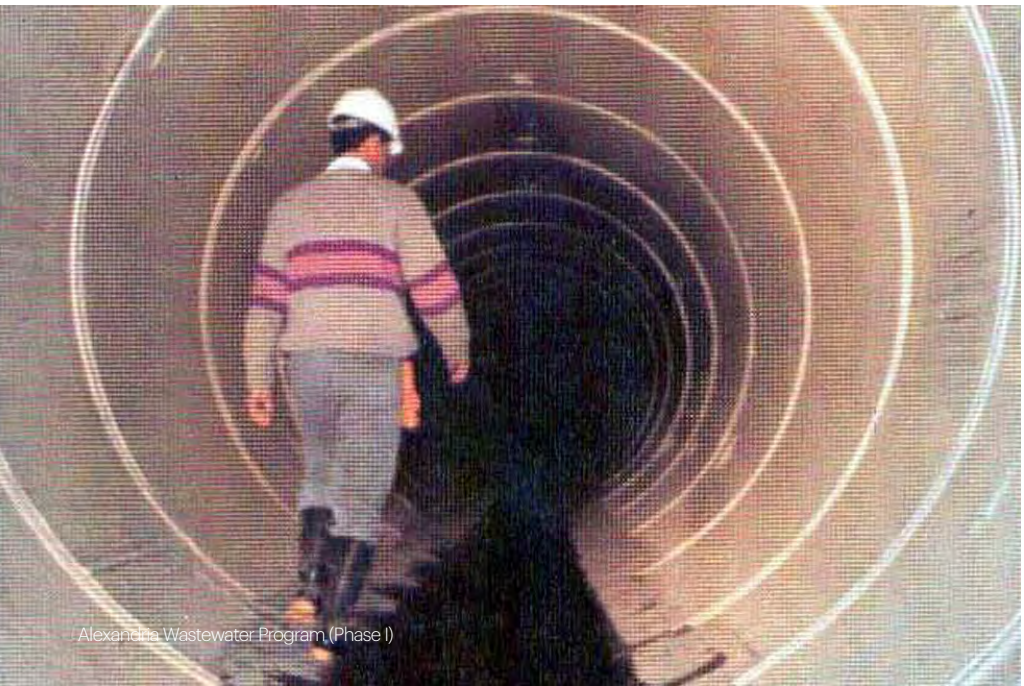
Types of Activities
Civil works

Alexandria's sewer and storm-water networks, pumping stations, and treatment plants were old and deteriorating. Sewer breaks were frequent and untreated sewage flooded over the city streets. Raw sewage was directly discharged into the Mediterranean Sea, polluting both the sea and the beaches. To address such critical situation, a phased implementation plan was initiated by the Government of Egypt and funded by the USAID to improve and expand Alexandria's wastewater system.

ECG, in joint venture with two global US consultants Metcalf & Eddy and CH2MHill, designed and supervised the construction of pumping stations, two major treatment plants, two bored tunnels of 21km length and up to 1,200mm diameter each, under-crossings, force mains, collectors, sewer networks, sea outfalls, drain improvement, sludge disposal facilities, and mechanical sludge dewatering facilities.

From 1980 to 1995, the following sub-projects were implemented under the Wastewater Upgrade Program (Phase I):

- Review and update of Alexandria Wastewater Master Plan up to the year 2000. This review included in-depth feasibility study for re-use of treated wastewater to develop an agricultural area of 70,000 acres. The review also considered the disposal of primary treated wastewater effluent through sea outfalls.
- Field investigations included comprehensive soil investigations and survey programs. The survey works comprised land survey and aerial photography for 750 km2 . Works also comprised ground control of horizontal and vertical stations tied to the national second degree network and mapping in scales of 1:1000 ,1:500 and 1:5000.
- Abu Qir Force Main: 1.2 km long and 450mm diameter.
- Sidi Bishr Force Main: 1.3km long and 1,000 to 1,200mm diameter.
- Smouha Force Main: 1.7km long and 600 to 1,800mm diameter.
- East Zone Force Main: 5.5km long, double line and 1,500 to 1,800mm diameter.
- Smouha Collectors: gravity sewers 6.1km long and 200 to 2,750mm diameter with associated manholes.
- Sidi Bishr Collectors: gravity sewers 4.3km long and 1,200 to 1,500mm diameter with associated manholes.


Alexandria Wastewater Program (Phase I)

- Abu Qir Collectors: gravity sewers 6.7km long and 300 to 1,500mm diameter with associated manholes.
- Smouha Sewage Networks: gravity sewers, 11km long and 200 to 900mm diameter with associated manholes.
- Abu Qir Sewage Networks: gravity sewers, 32km long and 200 to 800mm diameter with associated manholes.
- ElSiouf ElKeblia and Hagar Elnawatiya Sewage Networks: gravity sewers, 8 km long and 200 to 800mm diameter with associated manholes.
- Hydrodrome Drain Improvement including: new transition structures and miscellaneous appurtenances.
- Smouha Drain Improvement: by adding new sewers, manholes, junction boxes, transition structures and miscellaneous appurtenances.
- New East Zone Pumping Station: 21m deep, with maximum lifting capacity of 600,000m3/day. For dry construction purposes, a 20m long steel sheet piles were driven to form circular cofferdam with 54m diameter.
- New Smouha Pumping Station: 17m deep, with maximum lifting capacity of 340,000m3/day. For dry construction purposes, a 20m long steel sheet piles were driven to form a circular cofferdam with 45m diameter. An intensive dewatering system was designed and implemented during the construction period.
- New Sidi Bishr Pumping Station: 13m deep, with maximum lifting capacity of 165,000m3/day.
- New Maamoura Pumping Station: 12m deep, with maximum lifting capacity of 100,000m3/day. For dry construction purposes, a 20m long steel sheet piles were driven to form a circular cofferdam with 45m diameter. An intensive dewatering system was designed and implemented during the construction period.
- Upgrading the East Treatment Plant including: new headwork structures, a new flow split structure, demolishing existing clarifiers and constructing eight (8) new ones, eight (8) new pumping stations and a new on-site employee housing. (further description of the project is included in the subsequent sheets).
- Upgrading the West Treatment Plant including: new influent pumping station (955,500m3/day), new headworks, new primary sedimentation tanks, yard piping (200mm to 2,750mm diameter), modifications to existing building and new on-site employee housing (further description of the project is included in the subsequent sheets).
- ElSiouf ElKeblia and West Zone Tunnels: 21km long of 1,200mm diameter each. Tunneling execution was either by using tunneling boring machine or by shield and jacking equipment according to soil characteristics. All manholes were constructed by sinking caisson method.

- **Smouha and East Zone Undercrossings including:**
  - Smouha force main undercrossings with two highways and a double-track branch line railroad (by jacking method) and with a canal (by tunnel boring machine).
  - East Zone force main undercrossings with two highways and a doubletrack main line railroad (by jacking method) and with a canal (by tunnel boring machine).
  - Smouha drain undercrossing with two highways and a double track branch line railroad (by jacking method).
- Sludge Disposal Facilities: for the disposal of sludge, grit, scum and screenings of the treatment plants.
- Mechanical Sludge Dewatering Facilities: including new sludge equalization tanks; new dewatering pump station with equalization tank; blower and sludge transfer pumps; new dewatering building with sludge feed pumps; belt filter passing polymer system and sludge cake conveyors.

Alexandria Wastewater Program (Phase II)

Client
Metcalf & Eddy International Inc., USA

Scope of Work
ECG scope, with others, included providing construction management services for Alexandria Wastewater Program (Phase II). This included the administration of Host Country Construction Contracts awarded for the construction of wastewater treatment facilities, pumping stations and support facilities. The intent was to award Design/Build Contracts for the subject facilities in accordance with the USAID regulations for Two-Stage Bidding procedure.

The construction management services comprised the following tasks:
- Review of environmental assessments.
- Review of soil investigation.
- Surveying sites for facilities and/or pipeline routes.
- Prequalification of Design/Build contractors.
- Review of Bases of Design Reports for the subject facilities.
- Review of criteria for a comprehensive Quality Control Program for Design/ Build contracts.
- Review of the necessary Invitations for Tenders (IFT).
- Review of cost estimates.
- Evaluation of technical and commercial tenders.
- Monitoring of all construction activities.
- Staff Training on maintenance of facilities.
- Provision of claims handling and arbitration assistance as required.
- Providing the primary survey control for the Construction Contractor.
- Providing related complementary support activities to the Alexandria General Organization for Sanitary Drainage (AGOSD) in the following categories: administration, engineering, design, inspection, maintenance and procurement.
- Overall direction and management of the project.

Location
Alexandria, Egypt

Types of Activities
Civil works

This program aimed at expanding the treatment capacities of Alexandria's East and West Wastewater Treatment Plants, increasing the capacities of six pumping stations, and constructing support facilities. The program was funded in part by a grant from the United States Agency for International Development USAID.

The improvements included:
- Expansion of the treatment capacity and other improvements to the six major pump stations, namely: Ras ElSoda, Maamoura, Sporting, Smouha, Sidi Bishr and East Zone.
- Expansion of the east primary treatment plant from a capacity of 410,000m3 / day to 607,000m3 / day, and expansion of the west primary treatment plant from a capacity of 186,000 m3 / day to 460,000m3 / day.
- Expansion of the sludge dewatering and disposal facilities to accept the sludge from the expanded treatment plants, and facilities at the mechanical dewatering facilities to improve odor control.
- Provision of additional support facilities, including a training/service center, workshops, a garage, storage areas, and other ancillary buildings and equipment.


Alexandria Wastewater Program (Phase II)

The Second Integrated Sewerage and Sanitation Infrastructure Project (ISSIP-2)

Client
Holding Company for Water & Wastewater

Scope of Work
Feasibility study
Topographic survey
Detailed design

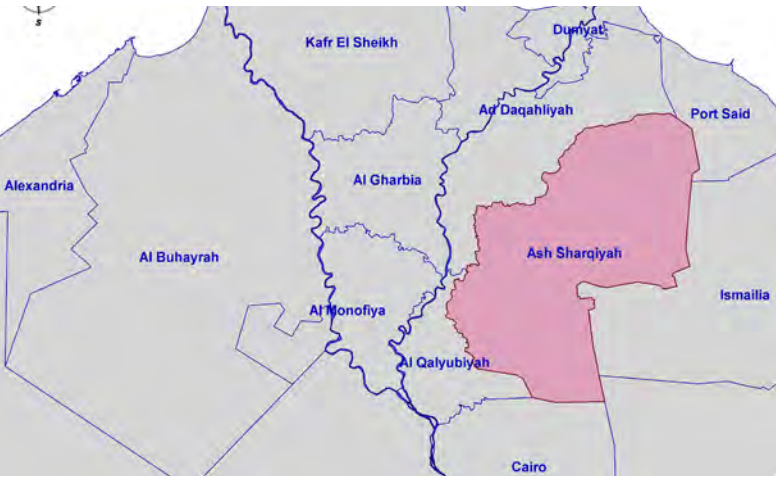
Location
El Sharqya, Egypt

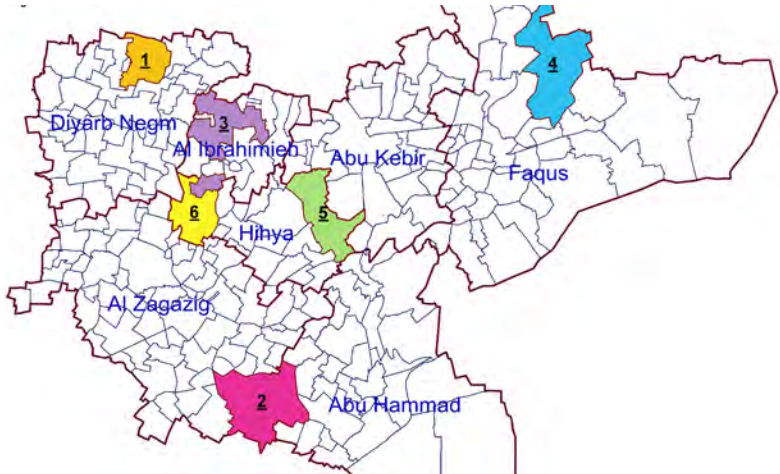
Types of Activities
Civil works

ISSIP2- extends improved sewerage and sanitation services to rural villages of four governorates of Sohag, Assiut, El Sharkeya and Maunofia with a total rural population of approximately 17,000,000 persons. With a budget of US $ 310 million, the project is jointly funded by the World Bank (US $ 200 million) and the Egyptian government (US $ 110 million). ECG was awarded the project area which will cover target 37 villages at El Sharkeya governorate divided into 6 clusters with an allocated budget of US $ 75 million. The population served by ISSIP2- Project at Sharkeya is 785,222 ,1 capita. The project objectives are to:

- Provide badly needed infrastructure sanitation improvements (wastewater collection and treatment) in priority rural areas in the four governorates of Sohag, Assiut, Sharkeya and Monufia.
- Improve water quality and reduce organic load in the selected irrigation canals and drainage basins within the served areas.
- Raise awareness on the improvement of hygiene and sanitation.
- Strengthen capacity to design, implement, operate and maintain the project infrastructure.

The ISSIP2 project promotes the use of low cost and simple technologies to address sanitation and sewerage problems of Egyptian rural communities. The project is implemented through concerted efforts of Holding Company of Water & Wastewater (HCWW), HCWW subsidiary in ElSharqya and National Organization for Potable Water and Sanitary Drainage (NOPWASD).





Kafr ElSheikh Sewerage Project

Client
National Organization for Potable Water and Sanitary Drainage (NOPWASD)

Scope of Work
- Review and update of feasibility studies.
- Collection and review of available information.
- Investigate health/ environmental sanitation, social, economical, financial and organizational aspects and legal provisions.
- Update available survey information and mapping.
- Carry out necessary domestic and industrial waste fi eld and laboratory water quality investigations including site investigations of the proposed facilities.
- Compare wastewater flows with those provided in the water supply project data.
- Provide basic design data for target years 2000 ,1990 and 2010.
- Develop design criteria, preliminary designs and cost estimates for sewerage disposal, on-site disposal systems as well as solid waste disposal facilities.
- Investigate the possibility of reuse of treated sewage, sludge and refuse.
- Prepare a feasibility study and engineering standard designs for conventional wastewater treatment, reuse of treated wastewater and waste sludge, drainage systems and solid waste collection and disposal systems.
- Investigate and recommend new organizational and management structures and arrangements.

Location
Kafr ElSheikh, Egypt

Types of Activities
Civil works

Engineering and management services related to the preparation of the year 2010 sewerage facilities Master Plan and a feasibility study for sewerage and sanitation from 1990 through the target year 2000 in the Governorate of Kafr ElSheikh.

The study comprised collection and evaluation of engineering data, economical analysis, elaboration of design criteria, selection of alternative technical solutions and investigation of preliminary designs and cost estimates. This lead to the implementation of the recommended sewerage treatment facilities, storm water drainage and solid waste collection and disposal systems. The study also comprised the necessary organization and management arrangements and training requirements. This included the identification and justification of the recommended first stage implementation program (year 2000).

Kafr ElSheikh Sewerage Project

Al Fujairah Wastewater System

Client
Bilfinger Berger AG (BB), Germany

Scope of Work
Review of concept design
Detailed design
Shop drawings

Location
Al Fujairah, UAE

Types of Activities
Civil works

To serve the city of Fujairah and its environs, a wastewater collection and treatment system was developed.

The wastewater collection network comprised 120km of sewer pipes, 16 pumping stations, and 11km of wastewater transmission mains. Meanwhile, 4.6km of effluent transmission mains joined the wastewater treatment plant to the Mirbah Dam.

The implementation program was divided into two phases. Phase one involved the completion of the western and central parts of the wastewater collection network, pumping station no. 1, the wastewater pressure main (connecting pump station no.1 to the wastewater treatment plant), the effluent pressure main running to the Mirbah Dam, and the outlet structure at the Mirbah Dam.

In phase two, the remaining coastal strip connections of the wastewater collection network were conducted.

Al Fujairah Wastewater System

Bukhara and Samarkand Sewerage Project

Client
Corporate Solutions Consulting LTD

Scope of Work
Data collection
Supervising topographic surveys
Geotechnical investigations, and CCTV inspection
GIS mapping
Hydraulic modeling by Sewer CAD V8
Review of detailed designs prepared by local consultant
Preparation of bidding documents
Construction supervision
Training and start-up assistance

Location
Uzbekistan

Types of Activities
Civil works
Mechanical

Dating back to the 1960s, both Bukhara and Samarkand sewerage systems were old and suffering from frequent breakdowns. To tackle this issue, the Government of Uzbekistan together with the World Bank embarked on implementing an important project to rehabilitate and improve the overall wastewater services in Bukhara and Samarkand, two important cities in Uzbekistan. The project development objectives were to mitigate the environmental impact from wastewater pollution and to improve the efficiency and sustainability of wastewater management in Bukhara and Samarkand.

As a member of a consortium led by Corporate Solutions Ltd. of the United Kingdom, ECG provided engineering design and construction supervision services to rehabilitate and improve the wastewater systems in both cities.

In Samarkand, the improvement measures focused on rehabilitating 277 km of sewer networks, a total of six (6) wastewater pumping stations, and two (2) wastewater treatment plants (Main WWTP of capacity 139,000m3 /day and Farhad WWTP which is completely out of operation); while in Bukhara, the rehabilitation measures tackled 220 km of sewer system, sixteen (16) wastewater pumping stations, and one (1) wastewater treatment plant (100,000m3 /day). The project also involved the extension of sewer networks to high priority areas in both cities.

The wastewater treatment plants in both Bukhara and Samarkand receive new blowers and modern efficient diff user systems for the aeration tanks; and new return sludge pumps were installed at Bukhara WWTP. New screens (at both cities' WWTPs) and grit chambers (at Bukhara Main WWTP) were installed to better protect all subsequent treatment stages and prevent further damages of existing installations and the new aeration system. Finally, the third WWTP in Samarkand will be completely rehabilitated.


Bukhara and Samarkand Sewerage Project

Water and Wastewater

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

SOBA Development

Client
Soba Real Estate Development Company

Scope of Work
Concept design
Design development
Detailed design
Tender documents

Location
Khartoum - Sudan

Types of Activities
Communications and security systems
Electrical
HVAC
Infrastructures
Roads
Solid waste

SOBA Real Estate Development is one of the most important projects located in South of Al Khartoum, Sudan.

ECG developed the Infrastructure Master Plan for SOBA development that includes conceptual design, design development and detailed infrastructure design for a plot area of about 90,857 m^2.

The project comprises 3 parcels as follows:

• D1: villas, commercial/offices, recreational (club house), utilities, parks and buffer.

• D2: villas, utilities, parks/buffer, and roads.

• D5: apartments and roads.

Between parcels D1 and D2, there is a previously constructed golf area (out of ECG scope).

D5 is located in western edge of golf area. To feed the project units with potable water, fire water, and irrigation water (treated sewage effluent), an effective water/ wastewater system is developed including a Wastewater Treatment Plant (WWTP), a lift station as well as water and fire tanks.

The ground surface is almost flat and the levels vary from 386.50 m to 390 m.

SOBA Development

Al Kaaban RPS & Associated Pipelines

Client
HLG-Leighton Contracting

Scope of Work
Detailed design

Location
Qatar

Types of Activities
Architectural
Civil works
Communication & security systems
HVAC
Infrastructural
Instrumentation
Landscaping
Mechanical
Roads

Qatar General Electricity & Water Corporation (KAHRAMAA) planned to execute major projects to achieve its goals of providing the customers with high quality water service. Al-Kaaban RPS is one of these major projects.

The project aims to construct a new independent water Reservoir Pumping Station (RPS) in order to deliver water to many remote areas located in the northern region. A hydraulic study is conducted for water supply, storing and distribution system including surge and transient analysis of the complete piping system for Al-Kaaban pump station and reservoir systems.

Al-Kaaban RPS comprises:
- 6 million gallon reservoir
- New pump house that accommodates and operates 6 VFD pumps (4 pumps at this stage and 2 future slots)
- Emergency tanker filler station
- Chlorination building
- System Inlet and outlet pipe works
- Lagoon
- Valve chambers
- New concrete boundary wall around the new and future reservoirs
- 6 km rising mains with diameter range between -600 900 mm
- Guard house, 11KV substation building, accommodation building and parking area

ECG's scope of work encompasses the instrumentation design of monitoring and control systems that allow the operations of the RPS from a centralized control center in Doha.

Al Kaaban RPS & Associated Pipelines

Madinaty Water Park

Client
Arab Company for Development Projects and Urban Development

Scope of Work
Infrastructure Master Plan
Complete detailed design
Tender documents
Tender action

Location
Cairo- Suez Road

Types of Activities
Architectural
Communications & security systems
Electrical
HVAC
Hydrological studies
Infrastructure
Mechanical
Structural
Urban design

Madinaty Water Park is expected to stimulate a total re-think in understanding the future of entertainment in Egypt. The water park will complement the epic city of "Madinaty" and will be among the most exciting and stimulating of its countless attractions. The overall objective of the facility is to give fun-seekers an experience they will never forget.

With a total site area of approximately 40 acres, Madinaty Water Park includes an indoor aquatic area and a large outdoor area encompassing pools, streams, slides as well as water adventure areas. Along with the aquatic activities, the park also includes cafés, retail shops, guest facilities, employee facilities and associated services.

Madinaty Water Park

Salboukh Development

Client
Fawaz Abdulaziz Alhokair Real Estate Company

Scope of Work
- Infrastructure design for potable water supply, irrigation main network, storm water drainage, fire fighting external network, and sewerage network. It also includes electricity, power supply with street lighting, telecommunications, roads and sewage treatment plant.
- Mechanical design comprises all the pumping stations for potable water, fire fighting, irrigation, and sewerage.
- Structural and architectural design for all infrastructure service buildings, and structural design for the four bridges.
- BOQ preparation
- Tender document
- Tender action
- Hydraulic analysis

Location
Riyadh, KSA

Types of Activities
Civil works

The state of the art Salboukh city is considered a pioneer project in the Kingdom of Saudi Arabia. With a total construction cost of SAR 15 billion and a land area of 3 million m2 , the project comprises specialized business park, medium size convention center, -4star hotel, -5star hotel, commercial mall, -5star deluxe hotel & resort with golf course, -5star hotel & resort with full SPA facilities, -18hole golf course, equestrian, international schools, clinical center & public services areas, and 5 residential compounds with 1,300 residential units (villas, duplexes & apartments).

Al Shadadiya Industrial Zone Infrastructure Works

Client
KCCEC KCC Engineering and Contracting Co.

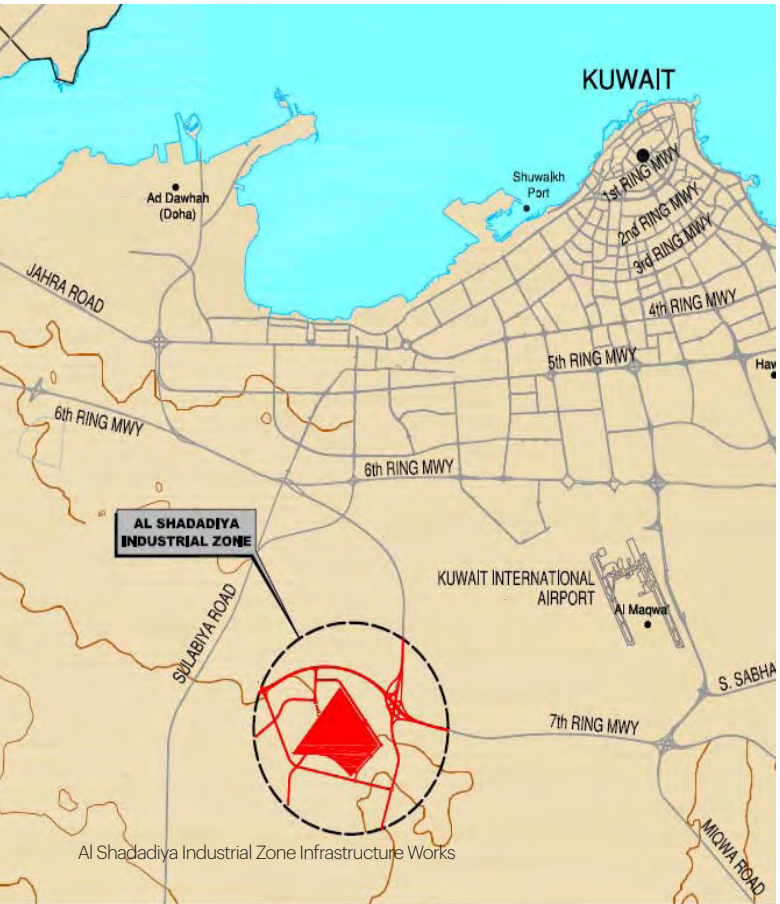
Scope of Work
Preliminary design
BOQ

Location
Kuwait

Types of Activities
Civil works

Al Shadadiya site is situated in the southwestern area of Kuwait City at approximately 25 km from the city centre. The new industrial area provides the State of Kuwait with a modern and attractive area to meet the high demand for industrial zone land.

The design and construction of the site aims to draw a large number of industries to the new industrial zone that includes sufficient infrastructure, complete facilities, general services, dedicated environment for the provision of infrastructure adequate for ongoing technological development.



Al Shadadiya Industrial Zone Infrastructure Works

Clean Fuels Project at Mina Al Ahmadi (MAA) and Mina Abd Allah (MAB) Refineries

Client
Kharafi National for Mechanical and Electrical Works S.A.E.

Scope of Work
Preliminary design
BOQ

Location
Kuwait

Types of Activities
Civil works

The Clean Fuels Project is a major upgrade/ expansion of the Mina Al-Ahmadi (MAA) and Mina Abdullah (MAB) refineries to increase capacities and increase conversion level of Low Sulphur Fuel Oil (LSFO) to lighter end products through processing Bottom of Barrel (BOB) utilizing Atmospheric Residue Desulphurization Unit (ARDS)/ Coker/ Hydrocracker technologies. The objective is to meet 2020 market demands and specifications for transport fuels, increase processing capacity to 800 KBBL/ day (currently 736 KBBL/ day), and to integrate operating capability of the MAA/ MAB refineries with optimum utilization of existing infrastructure.

As part of the Clean Fuels Project (CFP), Kuwait National Petroleum Company (KNPC) plans a major upgrade/ expansion of the MAA and MAB refineries to integrate KNPC's Refining System into one Refining Complex with Full Conversion producing lighter Ends Products. At the MAA Refinery, new CFP units are located in a block south of the existing refinery units and inside the existing refinery fence. The CFP block is bounded by existing underground pipelines from the north, south and east, and two underground sewer lines crosses the site from south to north. The main site elevations for the CFP block is a continuation of the southern edge of the existing refinery site, which is terraced from west to east.

Infrastructure was provided for facilities/ services to support the construction phase of the CFP project by providing temporary utilities. Early works were part of the permanent CFP plant facilities. This included major headers of underground piping under and parallel to the main interconnecting pipe rack. These piping lines were installed to the battery limits of new units. It was proposed to use existing Wadi system, east of the CFP block (Greenfield), with the extension and modification as required, for the storm water drainage. The scope started with a new sump and new concrete lined ditch up to the existing Wadi. The sump receives water discharged by a pipe.

There are four basic site elevations, with the highest on the west and the lowest on the east. Each change in site elevation is approximately 10 feet for Mina AlAhmadi refinery and 13 feet for Mina Abdullah refinery, with an overall difference between highest to lowest of approximately 30 feet for Mina AlAhmadi refinery and 46 feet for Mina Abdullah refinery.

Some new CFP facilities such as the wastewater treatment unit is also located within the existing refinery area. In addition, revamps of existing refinery units and facilities are performed to support the CFP project.

ADNOC Petroleum Institute Infrastructure

Client
Abu Dhabi National Oil Co. (ADNOC)

Scope of Work
Data collection
Preliminary design
Detailed design
Design permits
Tender documents
Contract documents

Location
Sas Al Nakhl, Abu Dhabi, UAE

Types of Activities
Architectural
Civil works
Communication & security systems
Electrical
Electromechanical
HVAC
Infrastructure
Landscaping
Roads

Established in 2000 by Abu Dhabi National Oil Company (ADNOC), the Petroleum Institute (PI) provides academic programs focused on petrochemical, oil & gas exploration and production.

In order to face the anticipated growth in student enrollment at the Petroleum Institute, ADNOC intends to construct new facilities for the PI Campus in Sas Al Nakhl, Abu Dhabi.

On a plot area of 693,260m2, the project comprises utility buildings and plants, solid waste disposal management system, in addition to the following infrastructure networks to serve the PI Campus new components:

- Chilled water;
- Communication;
- Fire protection;
- Irrigation;
- Power;
- Road and transportation;
- Sewerage;
- Storm water; and
- Water supply

ADNOC Petroleum Institute Infrastructure, Abu Dhabi, UAE

Fayoum Drinking Water and Sanitation Project (Phases I & II)

Client
Consultants for Water & Environment IWACO LTD

Scope of Work
ECG, together with IWACO and DHV, carried out the following consulting services in two phases:

Phase I: Inception Studies and Master Planning
- Inception studies included the preparation of an inventory of current situation
- regarding the following:
- Existing water supply system including: raw water intakes, treatment plants and distribution system.
- Existing sewerage systems.
- Present institutional framework, responsibilities, tasks and institutional strength of the local authorities and organizations involved in the project.
- Existing billing methods for drinking water.
- Performance of several types of sewage treatment plants in rural areas.
- Solid waste study in rural areas of Egypt, such as Fayoum Governorate.

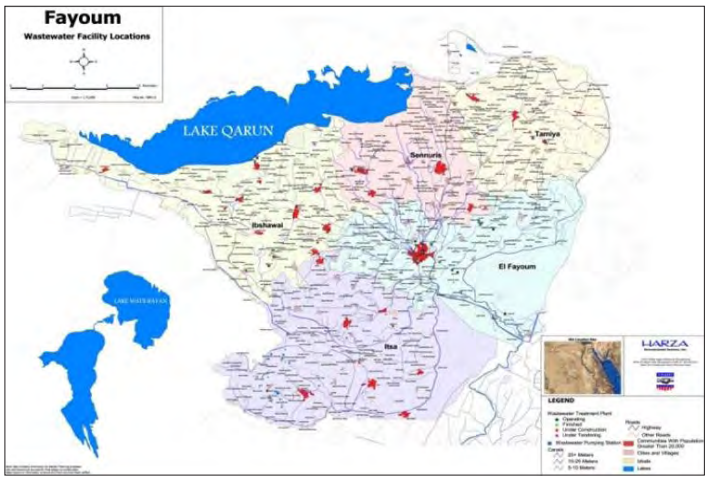
The master planning included the following:
- Developing a master plan for drinking water supply system comprising topographic, demographic and socio-economic parameters; population and water demand forecasts; technical design parameters; computer modeling for distribution systems; leak detection and reduction program; rehabilitation program; institutional development program (e.g. training and twinning programs); preliminary designs for new works and related cost estimates; financial analysis including design of tariff structure and detailed workplan/budgets for detailed design phase.
- Developing a sanitation master plan consisting of a sewage collection and treatment master plan complete with outline designs for one district town and several villages; an approach to solid waste management and an environmental impact study for Fayoum Governorate. The solid waste study included a detailed assessment and analysis of the present situation and practices, setting criteria and developing alternatives, and finally proposing recommendations based on conclusions.
- Institutional development: analysis of the present functioning of organizations involved, mainly, AlAzab Company.
- Developing a consumers participation and education strategy which fully meets their requirements.

Phase II: Detailed Design and Implementation
Involved the detailed design and implementation of the Master Plan for recommended projects, including:
- Preparation of detailed designs and tender documents
- Tender action
- Construction management/ supervision

Location
Fayoum, Egypt

Types of Activities
Civil works


Fayoum Drinking Water and Sanitation Project (Phases I & II)



The long term objective of the two-phase project was to improve the drinking water supply, sanitation and solid waste management systems for Fayoum Governorate to such an extent that it would have a long lasting impact on public health and the well being of the rural population in the Governorate.

These two phases comprised four (4) major components, namely:

- Institutional Strengthening of Fayoum Drinking Water Supply Company (AIAzab Waterworks) and establishing a new Water Supply Company of which AIAzab Water Treatment Plant became an integral part. AIAzab Company is considered the main counterpart organization.
- Technical and managerial assistance to AIAzab Waterworks in the planning, design and implementation of a program to rehabilitate and extend the existing drinking water supply system.
- Preparation of and assistance with the implementation of a sanitation Master Plan for the elimination of the direct discharge of sewage into waterways and the uncontrolled collection for disposal of solid waste, including establishing its institutional framework.
- Preparation and implementation of a consumers participation and education program for both drinking water and sanitation.

The sanitation component included a pilot project on the application of the Upftow Anaerobic Sludge Blanket (UASB) System for domestic sewage treatment (this pilot project is further described in a separate project sheet). The solid waste component included a study of the present situation, analysis and conclusions. The water supply component recommended the upgrade of Alazab water treatment plant to 5,000 liters/sec by the year 2000; moreover, by the end of Phase II, AIAzab water production capacity reached1,500 liters/sec.

Fayoum Drinking Water and Sanitation Project Phase IV

Client
Dutch Embassy / Royal Haskoning

Scope of Work
- Start up of new systems: planning and monitoring, social marketing, sewer connections, start up of the systems, sewer revolving fund and evaluation.
- Applying Proven O&M Concepts in Water & Sanitation: through using open planning mechanism for sanitation; rehabilitation of the existing systems, resolution of physical bottlenecks and feasibility of the UASB technology for domestic wastewater under Egyptian conditions.
- Drinking Water: reduction of Unaccounted For Water (UFW).
- Project Management: comprehensive asset management for existing applications, reconciliation of the Fayoum Economic Management Model Plan with the Holding Company requirements, applying capital investment planning and formulating clear policy for outsourcing.
- Customer Service: social marketing, public awareness, customer relations, public mobilization, measures to ensure affordable and equitable services and presentation of case studies.
- Training: training of the FDWSC staff.

Location
Fayoum, Egypt

Types of Activities
Civil works

The project's objective was to assist Fayoum Drinking Water & Sanitation Company (FDWSC) in:

- Improving its service delivery for water supply and sewerage to the entire population of Fayoum governorate
- Achieving the governorate recovery of operation and maintenance costs through a mix of technical assistance and investments
- Transferring the experiences and managerial tools gained in this project to fellow companies which face similar problems.

By the end of the project, 425,000 house connections (an increase of %40) were provided with continuously drinking water and 207,500 households (an increase of %200) were connected to a sewer. Project's main areas of intervention are sanitation, drinking water, project management and consumer service.


Fayoum Drinking water and Sanitation Project Phase IV

Malawi District Centers Sanitation Study

Client
Ministry of Water Development - Malawi

Scope of Work
The scope of work was divided into two phases:

Phase 1: Development of Master Plan
- Overview of water supply, sanitation, solid waste, sludge and drainage situation in Malawi.
- Recommendation for the enhancement of the quality of service delivery.
- Data collection and analysis, study of existing facilities and preparation of service criteria.
- Preliminary study of the existing environmental conditions, problems and risks to public health.
- Implementation of beneficiaries assessment to determine community demand for services and socio-economic impact of project activities.
- Social Impact Assessment (SIA).

Phase 2: Feasibility Study, Designs and Tender Documents
- Feasibility studies and preliminary designs.
- Environmental Impact Assessment (EIA).
- Financial and economic analysis.
- Institutional analysis.
- Detailed designs, and tender documents.
- Evaluation and recommendations.

Location
Lilongwe, Malawi

Types of Activities
Civil works
Electrical
Mechanical
Structural

The objective of the study was to identify appropriate ways and means to provide suitable sanitation services involving sewerage systems, sludge management and disposal, solid waste and drainage for the population in the district centers.

The study examined and recommended the rehabilitation, extension, and upgrading of existing sanitation facilities, and the provision of new facilities in order to improve public and environmental health. It also identified and recommended appropriate criteria and guidelines for environmental protection from human waste disposal and wastewater discharge and for upgrading and installing of new sanitation facilities in the district centers.

The study was conducted in two phases: phase 1 involved preparation of master plans for all the 43 district centers, and phase 2 involved the feasibility studies, detailed engineering designs and tender documents for the seven districts.

Middle Egypt Water and Wastewater Master Plan

Client
Mongomry Watson Harza

Scope of Work
The scope of work comprised the following interrelated tasks, and the results were compiled in a single master plan for each governorate:

- Existing Conditions: provide an integrated description and evaluation of the present status of water supply and wastewater collection and treatment services, systems and facilities in each governorate, including the physical condition and current capabilities in operation and maintenance of these facilities. Develop a Geographic Information System (GIS) for the existing and new water and wastewater facilities in the three governorates.
- Privatization: Conduct a study and provide recommendations, which would lead to development of opportunities for private sector participation in the water and wastewater sector in the governorates.
- Identification of High Priority Projects: Determine those facilities considered to be the most critical importance to the immediate improvement of sector services, within the criteria established in the scope of work for the selection of such facilities.
- Long-Term Strategic Plan: Prepare a twenty year (through 2022) strategic plan for the least-cost solution for the future development of water supply, sanitation and wastewater collection and treatment facilities.
- First Stage Investment Program: Develop a least cost, priority and affordable first stage investment program to meet the estimated needs in year 2007 for the adequate provision of water supply, sanitation and wastewater collection and treatment services.
- Implementation Plan: Prepare a study and a plan, including the required investment and operation and maintenance costs, for the implementation of the First Stage Investment Program. Performing this task requires close coordination with the work of the institutional strengthening contractor.
- Environmental Review: Conduct an environmental review to identify and mitigate potentially adverse environmental impacts on the proposed water, sanitation and wastewater investments.

Location
Fayoum, Beni Suef and Minia Governorates, Egypt

Types of Activities
Civil works

Starting from the late eighties the USAID funded a series of projects aiming at improving the water and wastewater systems in the three "Middle Egypt Governorates"; Fayoum, Beni Suef and Minia. In 1995, the USAID funded a mega-scale project to develop water and wastewater master plans covering the three governorates.

The project involved the assessment of existing conditions, in terms of the adequacy and quality of the water and wastewater services, as well as the assessment of the physical conditions and O&M of water and wastewater facilities. A long-term strategic plan until the year 2022 was developed for the three governorates.

High priority projects were identified and recommended for design and construction. Within this context, preliminary designs and design/ build contracts were prepared for the following components:

- Kohafa Wastewater Treatment Plant (WWTP) in Fayoum Governorate (activated sludge treatment of capacity 120,000 m3 / day)
- A Wastewater Treatment Plant in Beni Suef Governorate (secondary treatment of capacity 60,000 m3 / day)
- Two Water Treatment Plants in Beni Suef and Minia Governorates of capacity 330 liter/ sec each.
- Wastewater collection system in Beni Ebeid district, Minia Governorate.
- Pump station and wastewater networks improvements in Mina City, Minia Governorate.

Port Said Water & Wastewater Facilities Master Plan

Client
Ministry of Housing and Reconstruction

Scope of Work
Studies
Master Plan

Location
Port Said, Egypt

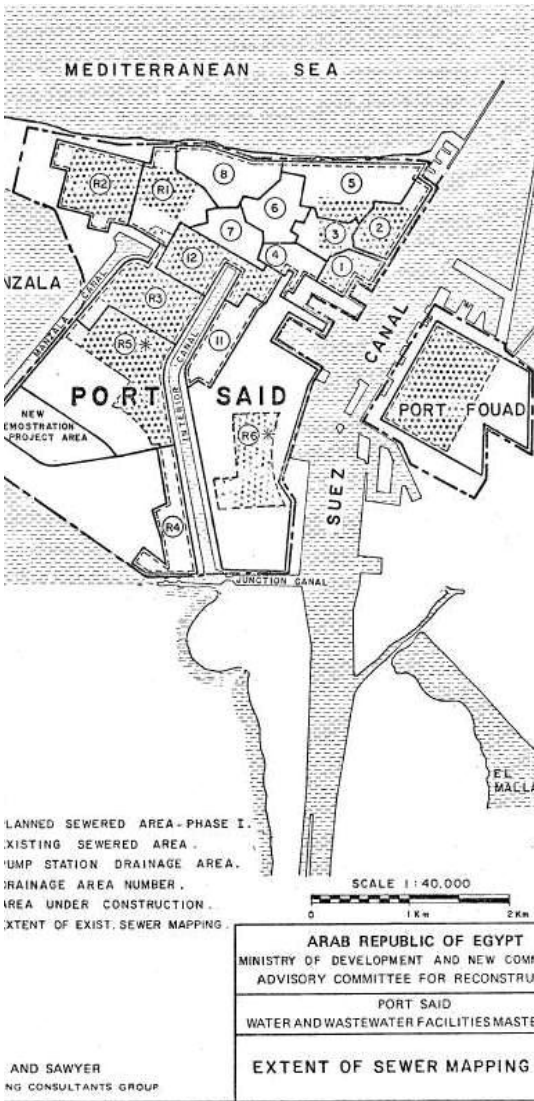
Types of Activities
Civil works

The project aimed at developing a Master Plan for the phased development of the Port Said Water, Wastewater and Storm Water disposal facilities from 1977 through the year 2000.

The Master Plan covered domestic, industrial and irrigation water supply needs of the served areas as well as the wastewater facilities needs up to the year 2000. The study also included the development of high priority projects to be implemented immediately as remedial measures to improve the present conditions in areas not adequately served by the existing systems.

Energy conservation was considered from the very beginning. The energy losses were limited to the minimum by insulating building facades, glazing, walls, roofs and floors. Solar gains were managed taking into account sun trajectory in winter and summer, building orientation and shading.


Port Said Water & Wastewater Facilities Master Plan



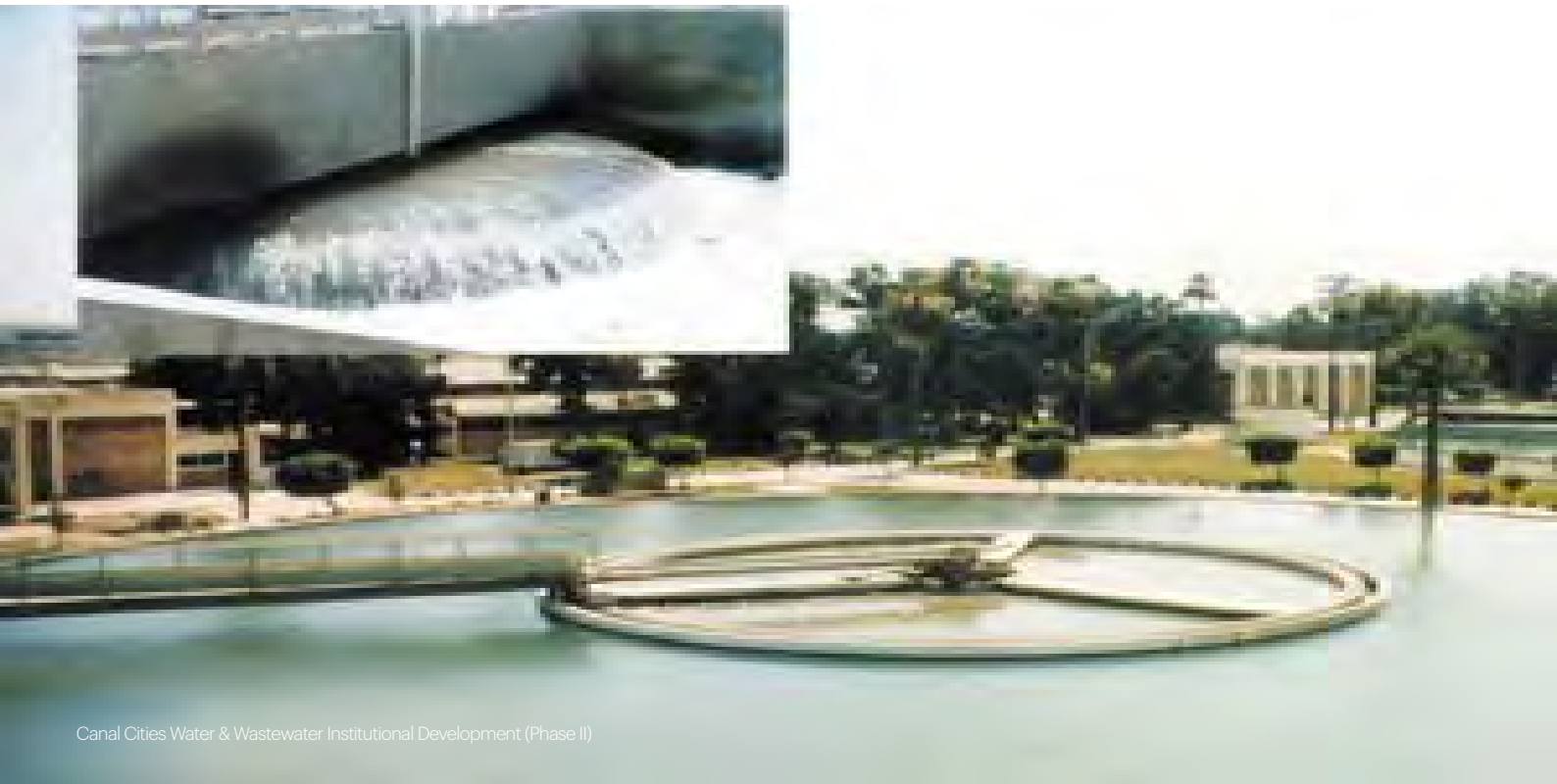
Canal Cities Water & Wastewater Institutional Development (Phase II)

Client
The United States Agency for International Development (USAID)

Scope of Work
- Inventory of Institutional Development Studies: collect and preliminary review of all studies and reports relevant to the organizational structures and objectives of the project. Using the results obtained from that task, a coordination plan was developed to address communication with the project directors responsible for relevant ongoing studies and appropriate representatives of their sponsoring organizations.
- Jurisdictional Responsibilities and Legal Mandates: analyze and evaluate the existing legal basis for planning, coordinating, monitoring, financing, managing, operating, and maintaining water and wastewater facilities and services in the canal cities. Using that elevation, the organizational and legal framework for further institutional development was established.
- Tariff Structural Formulation, and Approved Process: determine historical and estimate future elements (preliminary cost and consumption data) included in the process of calculating the cost of water and wastewater services; developing an automated modeling capability for determining water and wastewater revenue requirements, cost allocation and tariff design; developing a regulatory framework for the tariff function; and developing the system, policies, and procedures needed to perform customer accounting and service activities.
- Financial Management: perform a comprehensive review and in-depth analysis of existing financial management practices; developing alternatives for achieving necessary financial management practices and recommending a course of action; and developing a plan to implement and assist in implementing all aspects of targeted financial management improvements.
- Personnel Management: performing an assessment of career development and personnel management practices; defining implications of the proposed changes developed previously and providing technical assistance in adopting recommendations; and implementation of personnel management changes.
- Inventory Control and Stores Management: review the current procurement and materials management operations including the supporting information system and organization structure.
- Municipal Service and Network Expansion: assisting with municipal efforts to improve the long-range analytical and planning efforts for utility expansion; developing a program to improve the level of service with each currently un-sewered community; and identifying issues and constraints related to the selection and procurement process.
- Training: conducting an inventory and documenting training preparation management and delivery systems, training curricula and material/aids currently available, non-water or wastewater sponsored programs at outside facilities available, existing training centers/vendor facilities, existing laboratory facilities, organization and job classifications/description, and basic skills training programs currently available; developing training plan; and expanding curricula.
- Community Health and Education: issuing monitoring and evaluation system; development of a community education programs that educate all facets of the community on the benefits of maintaining, expanding and using that resource; development of a public information program to create a positive credible image to motivate the public to support the organizations; institutional twinning with one or more comparable U.S. organizations with respect to legal/ regulatory aspects, rate/ tariff structure, financial and personnel management, management information systems (MIS), training, public relations/community education and community health.

Location
Port Said, Ismailia and Suez, Egypt

Types of Activities
Civil works



Canal Cities Water & Wastewater Institutional Development (Phase II)

The project aimed at strengthening the institutional capacities of the water and wastewater sectors in the canal cities to efficiently operate and maintain the physical facilities installed under Phase I and proposed under Phase II.

Objectives of the Canal Cities Institutional Development program:

- Achieve organizational effectiveness (autonomy)
- Improve service delivery capabilities
- Availability of competent manpower

The entire program and each major task were conducted in three phases. The first phase established the baseline. The second phase identified options and alternatives, and provided detailed implementation planning for the selected alternatives. The latter portion of the second and the third phases developed the local systems, personnel, and material resources required to enhance and strengthen the process. The third phase provided the technical assistance support, advice, coaching, training, and other activities required to assure continued achievement of participant, regularity, and popular support.

Irrigation

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

River Nile Protection and Development Project

Client
Ministry of Water Resources & Irrigation

Scope of Work
- Providing technical assistance and equipment for the preparation of prefeasibility studies, conceptual designs and tender documents for priority projects.
- Strengthening the institutions responsible for monitoring, understanding and predicting causes and effects of erosion and pollution.
- Implementing pilot projects in priority areas to test the feasibility of the river channel protection and the treatment of drained water for re-use in irrigation purposes.
- Scope also covered studies related to pollution control, hydro-generation from existing and proposed barrages, increase of river navigation, development of intermediate water storage, utilization of flash float flows and reduction of water spills to the sea.

Location
Cairo, Egypt

Types of Activities
Civil works

Funded by the Canadian International Development Agency (CIDA), the River Nile Protection and Development (RNPD) project aimed at achieving rational utilization of available resources, mitigation of side effects and increasing the efficiency and effectiveness of present use and future development of the River Nile Channel and its two branches, namely, Damietta and Rosetta.

The River Nile Protection and Development (RNPD) Project comprised various tasks and subtasks including:
- Preparing pre-feasibility studies, designs and tender documents for the optimum alternative concerning the following:
  - Protection of the Nile and its main structures from bed degradation and bank erosion.
  - Preparing an acceptable and implementable pollution control system.
  - Hydropower generation in existing and/or proposed barrages and head regulators.
  - River training and navigation improvements.
  - Utilization of surplus releases and flows that exceed consumption requirements.
- Development and implementation of computer programs for monitoring changes in river beds and banks, predicting the impact of new projects, and for pollution control.
- Studying and designing civil works required for stabilizing the river regime, navigable channel and river banks in critical areas upstream of Assiut Barrage. Also, designing the civil, mechanical and electrical works required for reducing the organic pollution in drained water to allow its re-use in irrigation.
- Implementing two pilot projects, one to stabilize the river banks and the other to treat drained water for re-use in irrigation purposes.
- Pre-feasibility study for the development of Naga Hammadi Barrage. The study aimed at investigating present conditions of the Barrage, and immediate maintenance needs to guarantee conditions service, in addition to providing conceptual design and cost estimates for rehabilitation works. The possibility of constructing a new barrage was also studied.


River Nile Protection and Development Project

Wadi Kurkur Irrigation Water & Power Project

Client
Ministry of Development & Housing & Land Reclaimation

Scope of Work
ECG, with others, was responsible for performing the following tasks: studying and optimizing cropping patterns, related agro-industries and animal husbandry, irrigation system layouts and reservoir locations for about 24,000 acres in Wadi kurkur to be irrigated by sprinkler or other systems.

The Basic Design Phase, comprised studies and comparison of possible alternative schemes for the supply of Wadi kurkur with the required irrigation water (up to 1 million m3/ day) in order to determine the optimum method and equipment for accomplishing the purpose intended. The major constraints were the seasonal and annual changes in water levels of the high Dam Lake (minimum elevation: 147m, maximum elevation: 182m). The probabilities of the water level were determined by a simulation model using the recent information on the high Dam Lake reservoir parameters. The various feasible alternative conceptual schemes were analyzed economically and financially. A special mathematical model was programmed for each scheme and the optimal design concept was determined and adopted for detailed design.

One of the studied schemes was to form a natural water sump by constructing a dam of length 180m and height 15m. Different dam alternatives are studied. Those included, reinforced concrete counterforted, arched and gravity dams. The detailed designs of a ground storage reservoir of capacity 380,000m3 were also part of that study.

Studies for the electric power supply required for the water delivery system plus the electric power needs within the agricultural area. The domestic and local commercial demands of an ultimate 12,000 inhabitant community are estimated together with a reasonable allowance for future agro-industry development. The power at 220 kV is obtained from existing high Dam power station or from any other suitable connection point in the existing system. Studies also cover the project power transmission line at 66 kV, transformer stations 80 MVA and all other associated installations.

All necessary surveys, mapping and subsurface investigations for both the water intake, conveyance and storage as well as for the electric power supply are included in the work. The Detailed Design Phase includes preparation of final detailed design drawings, calculations, specifications, cost estimates and all construction contract documents for the lake water intake, pumping & conveyance system, water storage facilities, electric power transmission system, switchgear, substations, transformer stations and other facilities necessary to serve the systems for supply and distribution of water and to serve the local electric distribution system in Wadi kurkur agricultural project area.

Study of the other four agricultural areas on the same side of the high Dam Lake, namely: kalabsha, Dakka, Tushka and Abu Simbel. This includes collection and analysis of relevant data in parallel with that for Wadi kurkur area and establish their requirements and limitations. The applicability of the optimal alternative schemes for Wadi kurkur area is considered for each of the other areas and the overall planning and recommendations for the total region are made. Future electric power transmission to the other four areas is also studied, moreover, the study covered the capacity of system for such expansion in future stages.

Location
Wadi Kurkur, Aswan, Egypt

Types of Activities
Civil works

Engineering, planning and detailed design for the agricultural development of the Wadi kurkur area. The project included the optimal selection of the cropping patterns, agro-industries, design of the irrigation system and the conveyance system to supply water from Aswan high Dam Lake to the agricultural area located on the western side of the Lake, together with the design of the electric power transmission line from the power generators in Aswan to the pumping facilities on the lake and to the agricultural area.

The project also included the study of allowance for future expansion and extension of these services to serve four other agricultural areas on the same side of the high Dam Lake, namely: kalabsha, Dakka, Tushka and Abu Simbel.


Wadi Kurkur Irrigation Water & Power Project

Pyramids Plateau Groundwater Lowering Activities

Client
AECOM Water, USA

Scope of Work
Detailed design
Geotechnical surveys
Tender documents
Tender action
Cost estimates
Construction management
Construction supervision

Location
Giza, Egypt

Types of Activities
Architecture
Civil works
Infrastructure

The Supreme Council of Antiquities (SCA) requested USAID/ Egypt's assistance to develop a program that would mitigate the efforts of rising groundwater in the vicinity of Great Sphinx of Giza, as well as the Pyramids Plateau at Giza.

The Pyramids Plateau, forming part of an important UNESCO World Heritage Sites includes what is arguably the richest concentration of Egypt's most ionic monuments: the Great Sphinx, the Pyramid of Khufu, the Pyramid of Khafre, the Pyramid of Menkaure, the Sphinx Temple, and the Valley Temple. In recent years, the water table has risen to the point where standing surface water has appeared in the Vicinity of the Sphinx Temple, as well as to the east and in front of the Valley Temple. Surface water has also appeared on the south side of the Great Sphinx in an area of archaeological significance known as the Workers Tombs.

The main objectives of this project are to identify the sources and quantity of groundwater to be mitigated and to design a system that would protect the antiquities from future degradation from groundwater.

Another major objective is to build the capacity of Egyptian experts to perform groundwater studies, and develop engineering studies for groundwater lowering projects in antiquities area.

Pyramids Plateau Groundwater Lowering Activities

Water & Wastewater Treatment Plants

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Water Lines, Intake & Lift Stations for the New Capital Water Treatment Plant

Client
New Urban Communities Authority - NUCA

Location
Cairo, Egypt

Scope of Work
For Pipes:
Hydraulic calculation, hydraulic profile, study of hydraulic balance of the pipeline with a length of 70 km, strategic ground tanks (total capacity of 240,000 m3 for each pump station), detailed designs for transmission pipelines & crossing with (canals, drains & roads), technical specifications, and bills of quantities for all units.

For Boosters Pump Stations:
Hydraulic calculation, plant layout, piping & instrumentation diagram, plant mechanical general arrangement, mechanical drawings, electrical drawings, SLD, instrumentation drawings, interconnecting pipes, civil and architectural drawings, technical specifications, data sheets, mechanical equipment submittals, inspection procedures, and bills of quantities for all units.

Types of Activities
Civil works
Electrical
Instrumentation & Control
Mechanical
Structural

The project aims to transfer raw water (1.5 million m^3/day) from the new water intake at the River Nile bank in South Helwan to the location of the WTP in the New Capital.

The project comprises the following Components:

Intake: to carry raw water via three pipelines with a length of 70 km per pipeline from an intake booster pump station (capacity of 800,000 m^3/day) for phase (1) and total volume of 1.5 million m^3/day at the end of phase(2). The design includes the pump house, pipe intake on bridge, electrical substation, transformer, generator, and service buildings.

Three Transmission Pipelines: with a diameter of 2,200 mm and a length of 70 km per pipeline, the design includes the profiles and layout for the pipeline along the routing from the intake to the WTP in the New Capital.
Water Hammer Analysis: to protect the pipeline from the hammer impact.
Four-Booster Pump Station: with capacity of 800,000 m^3/day for phase (1) and a total capacity of 1.5 million m^3/day at the end of phase (2), the design includes underground water tanks (240,000 m^3), pump house, electrical substation, transformer, and a generator, in addition to service buildings, such as a mosque, administration building, and a workshop.

Abu Oweikal Water Treatment Plant

Owner
Construction Authority for Potable Water and Wastewater (CAPW)

Client
Misr Sons Development (Hassan Allam Sons)

Scope of Work
Basis of design report
Conceptual design
Detailed design

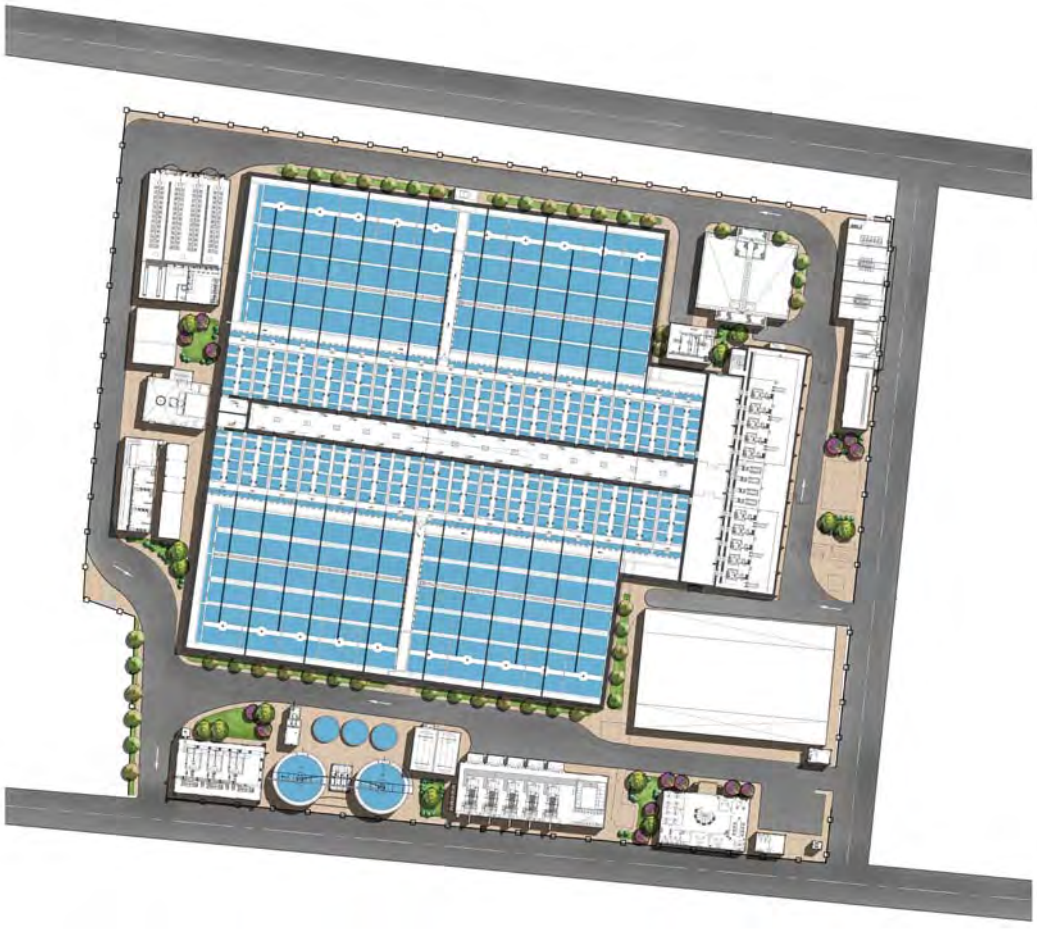
Location
Nasr City, Cairo, Egypt

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Infrastructure
Instrumentation and control
Mechanical
Structural

The Abu Oweikal Water Treatment Plant is a key station planned to serve certain areas in Nasr City and its extensions. The plant is designed to operate with an overall capacity of 500,000 m^3/day. Treated water is pumped from the treatment plant to water networks via two pipelines (each 1,400 mm in diameter).

The Abu Oweikel Water Treatment Plant utilizes a system of rapid sand filters. It comprises a raw water intake, coagulators, flocculates, clarifiers, and sand filters, in addition to service buildings and raw and treated water lift stations.

The treatment plant also comprises a number of electromechanical installations designed to augment raw water inflow at the intake and the booster pump.



Abu Oweikal Water Treatment Plant

Wastewater & Sewage Treatment Plant at Medical Union Pharmaceuticals Factory

Client
Medical Union Pharmaceuticals

Scope of Work
Environmental impact assessment
Basic design
Design development
Detailed design
Tender documents
Construction supervision

Location
Abu Sultan, Ismailia, Egypt

Types of Activities
Civil
Electromechanical

The project aimed at conducting an environmental impact assessment of the effluents resulting from the manufacturing of antibiotics and other pharmaceuticals. It also aimed at providing suitable technical solutions for the treatment of industrial wastewater and sewage. In this context, a treatment plant was designed for the treatment of liquid waste and the safe disposal of sludge. Work also covered the modification of the production process in antibiotic ointment tanks to reduce the loss of antibiotics and reduce the pollutants inhibiting bacterial activity.

For further environmental protection, the following measures were taken:

- Reducing discharge from antibiotic ointment tanks to decrease the load on the treatment plant and to maintain the bacterial activity necessary for biological treatment within the plant.
- Mixing sewage with industrial wastewater to augment the fertilizers (nitrogen and phosphorus) required for bacterial reproduction.
- Utilizing the treated effluent (instead of drinking water) for the irrigation of green areas; in this context, a bulk of about 450 m^3 of drinking water was saved on a daily basis.
- Eliminating foul odors and minimizing soil and groundwater contamination.

Wastewater & Sewage Treatment Plant at Medical Union Pharmaceuticals Factory

Lesaffre Egypt Wastewater Treatment Plant

Client
Lesaffre Egypt

Scope of Work
Design review
Quality assurance

Location
Al-Nubaria, Egypt

Types of Activities
Architectural
Structural

The Lesaffre Wastewater Treatment Plant is located in Al-Nubaria Second Industrial City on Cairo-Alexandria Desert Road. This project covered five structures with a total built-up area of 5,353 m^2 and a total reinforced concrete volume of 4,425 m^3:

- **Aeration Tank:** a seven-meter-high tank with a base area of 1,360 m^2, fill volume of 8,400 m^3, and reinforced concrete volume of 1,530 m^3.
- **Upflow Anaerobic Contact Reactor**: a twelve-meter-high reactor with a base area of 590 m^2, fill volume of 6,343 m^3, and reinforced concrete volume of 1,428 m^3.
- **Equalization Tank:** a tank with a base area of 201 m^2, fill volume of 2,167 m^3, and reinforced concrete volume of 627 m^3.
- **Two Clarifiers:** total base area of 1,360 m^2, total fill volume of 447 m^3, and total reinforced concrete volume of 840 m^3.

Lesaffre Egypt Wastewater Treatment Plant

Al-Gabal Al-Asfar WasteWater Treatment Plant (Stage II-Phase II)

Owner
Construction Authority for Potable Water & Wastewater

Client
Misr Sons Development (Hassan Allam Sons)

Scope of Work
Preliminary design
Design development
Detailed design

Location
Al-Gabal Al-Asfar, Cairo, Egypt

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Landscape
Mechanical
Structural

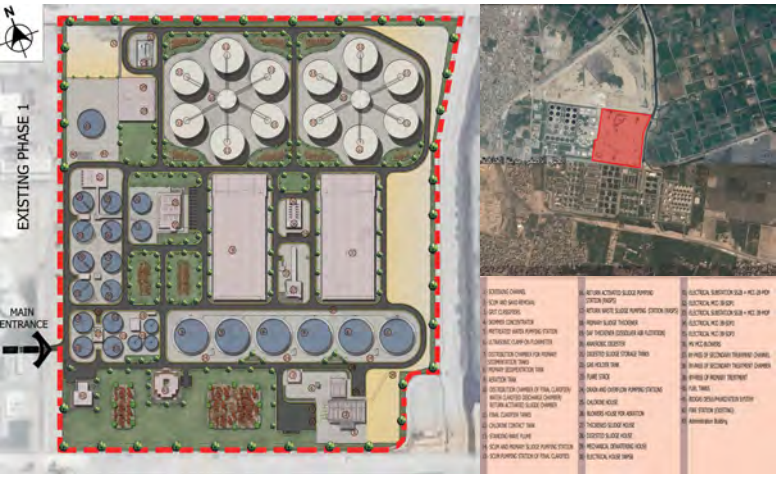
The treatment plant is located in the northeast of Cairo. It receives wastewater from Cairo City via culverts and pumping stations forming a wastewater conveyance system. Following treatment, the final chlorinated effluent is discharged into Al-Gabal Al-Asfar Drain, and the thickened sludge is dewatered before disposal.

The existing Al-Gabal Al-Asfar Wastewater Treatment Plant involves two stages, each consisting of two phases. Stage I (under operation) is designed to provide treatment for an average raw wastewater inflow of one million square meters per day.

Stage II is constructed in two phases and has been designed to handle an average raw sewage inflow of one million square meters per day. Phase I of Stage II is currently under operation with a capacity of 500,000m^3 / day.

Phase II of Stage II consists of the following processes:
- Preliminary treatment;
- Secondary treatment;
- Sludge thickening;
- Sludge digestion;
- Sludge dewatering.

ECG's scope of work encompasses the design of Phase II of Stage II, with a capacity of 500,000m^3 /day.




Al-Gabal Al-Asfar WasteWater Treatment Plant (Stage II-Phase II)

Rod ElFarag Water Filtration Plant (Expansion Program)

Client
The General Organization for Greater Cairo Water Supply (GOGCWS)

Scope of Work
- Soil Investigations and laboratory analysis.
- Engineering preliminary and detailed designs.
- Preparation of equipment procurement specifications and bid requests, as well as assisting in the evaluation of bids.
- Preparation of construction documents and bid requests, as well as assisting in the evaluation of bids.
- Providing construction management and resident inspection services during construction.
- Start-up and operation of the completed southern complex until completion of performance guarantee tests.
- Training GOGCWS personnel on the O&M of the complete facility.

Location
Cairo, Egypt

Types of Activities
Architecture
Civil works
Infrastructure

With a total construction value of US$ 500 million, Rod ElFarag water filtration plant expansion program was awarded to ECG. It involved increasing the capacity of Rod ElFarag treatment plant from 200,000m3 /day to 600,000m3 /day. The USAID-funded initiative, undertaken in cooperation with ES Parsons, is a landmark in the firm's experience in developing mega-scale water treatment plants.

The project included a new Nile water intake, a new raw water pumping station, water clarification and filtration facilities, a new filtered water pumping station (about 800,000m3 / day), approximately 5 km of new trunk transmission lines and associated appurtenances to handle the increase in water production.

The project included a process study to determine the most suitable, efficient and cost effective process for treating the River Nile water in Egypt and; to determine the most suitable coagulant and coagulant aid dosage; the optimum surface loading, detection time, rise rate, velocity gradients and other design parameters associated with the treatment process were considered. Each studied process was supported with sufficient data

Rod ElFarag Water Filtration Plant (Expansion Program)

and laboratory tests. Pilot plant investigations were carried out to ensure that the recommended process is the most economical and effective process for the upgrade of Rod ElFarag south section treatment complex.

Based on the selected treatment process, improvements; expansions; and modifications were determined taking into account the utilization of the existing treatment units, when economically feasible and without interrupting the existing water production level of the plant.

The expansion scheme of the southern part of Rod ElFarag Treatment Plant included:

- The water treatment plant.
- A new raw water intake (consisting of two 2,400mm pipelines, extending 175m in the River Nile, a raw water pump station including six vertical turbine pumps with total capacity of 780,000m3 / day at 11m head and three traveling screens).
- Two underground storage reservoirs.
- A finished water pump station including eight vertical turbine pumps of a total capacity of 1,200,000m3 / day at 60m head.
- All other facilities of the treatment plant.

Alexandria West Wastewater Treatment Plant

Client
Alexandria General Organization for Sanitary Drainage (AGOSD)/ USAID

Scope of Work
ECG, in joint venture with others, performed the following services:

- All necessary survey, studies, preliminary and detailed designs, tender documents and cost estimates.
- Advising and assisting AGOSD in evaluating tenders and awarding equipment and construction contracts.
- Performing construction management and supervision services during the construction phase.
- Training AGOSD personnel on the Operation and Maintenance (O&M) of the project.
- Preparing O&M Manuals.
- Assisting in starting-up and initial operation of the project.

Location
Alexandria, Egypt

Types of Activities
Civil works

As part of the Alexandria Wastewater Program (Phase I), this project aimed at upgrading Alexandria West Treatment Plant to an average capacity of 186,000m3 / day.

The project includes improvements to existing treatment facilities and construction of new structures for the primary treatment of wastewater.

The upgrading program includes the following major items:

- New influent pumping station (955,000 m3 /day - circular slurry wall 54 m diameter).
- New headwork.
- New primary clarifiers.
- New sludge-blending pumping station.
- New primary sludge pumps, scum pumps and W2 water pumps with hydro-pneumatic tank.
- New staff housing.
- Modifications of the existing building to house W2 water pumps and blowers.
- Modifications of existing building to serve as workshop and storage facility.
- Modifications of existing grit tanks to serve as W2 storage reservoir.
- Yard piping (200 mm to 2750 mm diameter).

Alexandria West Wastewater Treatment Plant

Alexandria East Wastewater Treatment Plant

Client
Alexandria General Organization for Sanitary Drainage (AGOSD)/USAID

Scope of Work
ECG, in joint venture with others, performed the following services:

- All necessary surveys, studies, preliminary and detailed designs, tender documents and cost estimates.
- Advising and assisting AGOSD in evaluating tenders and awarding equipment and construction contracts.
- Performing construction management and supervision services during the construction phase.
- Training AGOSD personnel on the operation and maintenance (O&M) of the project.
- Preparing O&M Manuals.
- Assisting in starting-up and initial operation of the project.

Location
Alexandria, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

As part of the Alexandria Wastewater Program (Phase I), this project aimed at upgrading Alexandria East Treatment Plant to an average capacity of 410,000m3 /day.

The project included improvement of existing treatment facilities and construction of new structures for the primary treatment of wastewater.

The upgrading program included the following major components:

- New headwork structure for screening, grit and scum removal and fl ow measurement.
- New flow split structure.
- Construction of new eight (8) clarifiers, each of 35mm diameter and 4.5 depth.
- Eight (8) new pumping stations including four (4) primary sludge pumping stations, a sludge transfer pumping station, a W2 water pumping station, a recycle pumping station and an employee housing wastewater pumping station.
- New on-site employee housing.

Alexandria East Wastewater Treatment Plant

Expansion of Alexandria East Wastewater Treatment Plant

Client
Arab Contractors

Scope of Work
- Preparation of detailed designs for the rehabilitation and extension of the WWTP to provide primary treatment for an additional average raw wastewater inflow of 190,000m3 /day.
- Preparation of detailed designs for the additional secondary treatment to treat an average daily fl ow of 800,000m3 /day taking into consideration the fluctuation in flow during the day.

Location
Alexandria, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

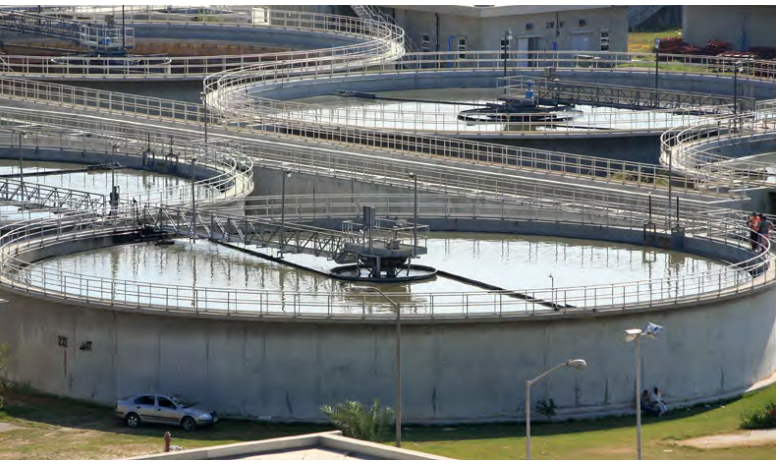
The Alexandria East Wastewater Treatment Plant (WWTP) receives wastewater from different areas in Alexandria City, such as Al-Maamoura, Al-Montaza, Abu Qir and other areas. After treatment, the chlorinated final effluent is discharged into the AlQalaa drain, and the thickened sludge is dewatered before disposal. In order to handle the increase in raw wastewater inflow, an expansion program was developed for Alexandria East WWTP.

The project consisted of two parts: the first part comprised the rehabilitation and increase of the primary treatment capacity to handle an additional average raw wastewater inflow of 190,000m3 /day.

The second part included the upgrade of the treatment process to the secondary level, which is designed to handle an average raw sewage inflow of 800,000 m3 /day.

The Expansion Program included the following components:

- Preliminary treatment comprising screens, grit and grease removal.
- Primary and secondary treatment works, comprising primary sedimentation, aeration tank and final clarification.
- Disinfection (comprising chlorine storage, handling and dosing facilities).
- Treated water pumping station.
- Equalization tank.
- Sludge dewatering facilities.



Kigali Bulk Water Project

Client
Metito Overseas Limited

Scope of Work
Groundwater assessment study
Well field study
Geotechnical investigation
Topographic surveys
Detailed design for civil works
Construction Supervision

Location
Kigali - Rwanda

Types of Activities
Architectural
Civil works
Communication & security systems
Electrical
HVAC
Piping
Plant design
Mechanical
Structural

The project is a Public-Private Partnership (PPP) aiming to develop and operate a proposed water treatment scheme for bulk water supply to the capital city of Rwanda, Kigali. Works involve extracting groundwater from the south bank of the Nyabarongo River and then supplying water north to Kigali.

The water treatment scheme comprises a water treatment plant (40,000 m^3/day capacity), a new reservoir at Kagarama (12,000 m^3/day capacity), a pump station, associated forwarding infrastructure, and a new 8,000 m^3/day reservoir at Bugesera, together with forwarding pumping station & associated infrastructure. Well field development incorporating existing wells at Kanzenze and ann intermediate offtake along the Kagarama pipeline route (Gahanga) to supply planned development of a new stadium and other residential areas.

The scheme also involves the development of a well field incorporating existing wells at Kanzenze, in addition to other development actions.


Kigali Bulk Water Project

UASB Sanhour Wastewater Treatment Plant (Phases III & V)

Client
Fayoum Drinking Water & Sanitation Company

Scope of Work
Topographic surveys
Concept design
Detailed design
Construction management
Construction supervision
Operation & maintenance
Commissioning and start-up services

Location
Fayoum, Egypt

Types of Activities
Civil works
Electrical
Mechanical
Structural

ECG was involved in implementing a pioneering Upflow Anaerobic Sludge Blanket (UASB) system in order to expand and upgrade the existing Sanhour wastewater treatment plant and increase its capacity from - 1,750 14,000m3 / day.

UASB Sanhour Wastewater Treatment Plant (Phases III & V)

Design of Wastewater Treatment Plant in Ar-Rass (Phase II)

Client
Saudi Ministry of Electricity & Water

Scope of Work
Conceptual design
Data collection
Detailed design
Preliminary design
Tender documents
Treatment alternatives study

Location
Ar-Rass Town, Al-Qassim Province, Saudi Arabia

Types of Activities
Architectural
Civil works
Communications and security systems
Electrical
HVAC
Instrumentation
Landscaping
Mechanical
Roads
Structural

The existing Ar-Rass Wastewater Treatment Plant is located in the northern west of Ar-Rass town in Al-Qassim province; one of the 13 regions of Saudi Arabia. The town is almost 400 km north of Riyadh and about 80 km southwest of Buraydah, the regional capital of Al-Qassim Province. The project aims to design the second phase of Ar-Rass Wastewater Treatment Plant with a total capacity of 25,000m3 /day.

The number of process and non-process facilities are expected to be 25 buildings on an area of approximately 100,000m2 .

The plant is designed to achieve carbon and nutrients removal. The treatment facilities involve preliminary, primary, secondary and tertiary treatment processes.

Ar-Rass treatment system works as follows:

- The biological treatment is based on Anaerobic/ Anoxic/Oxic (A2O) systems.
- Rapid sand filter is used for tertiary treatment.
- Chlorine gas is used for treated sewage effluent disinfection.
- Gravity thickener and sludge centrifugal systems are used for sludge treatment.


Design of Wastewater Treatment Plant in Ar-Rass (Phase II)

Tannery Residue Treatment Plant

Client
Ministry of Local Administration and Environment, Syria

Scope of Work
Studies
Tender action
Construction supervision

Location
Adra Industrial Zone, Syria

Types of Activities
Civil works

Funded by the United Nations Industrial Development Organization and the Islamic Development Bank, Saudi Arabia, the project aimed at the construction of an industrial wastewater treatment plant of total production capacity 11,000m3 / day for treating residue of tanning industry. ECG designs secured compliance with Syrian environmental laws and adopted a recycling strategy for the recovery and re-use of chrome in the industrial tanning process.

ECG was engaged in adjusting the plant process designs, performing a topographic survey & geotechnical investigation, studying the impact on the design parameters, studying the increase of the designed hydro quality of water, preparing detailed design and tender documents, assisting Damascus Governorate during evaluation of construction bids as well as during the construction supervision.

Tannery Residue Treatment Plant

Upgrades at Al-Shamal PTP Site

Client
Public Works Authority (ASHGHAL)

Scope of Work
Construction supervision

Location
Qatar

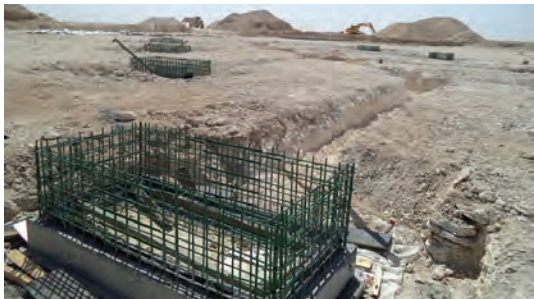
Types of Activities
Civil works
Electrical
Instrumentation
Mechanical

The existing Al-Shamal Package Treatment Plant (PTP) has two Sequencing Batch Reactor (SBR) streams; each designed for 75m3 /day (out of ECG scope). There is no preliminary treatment in the existing PTP, the process is based only on a biological treatment followed by a secondary treatment.

The existing treatment process used in the PTP is as follows:

- The inlet flows gravitate directly to the inlet pumping station; which has two hopper impeller submersible pumps arranged in duty/standby configuration.
- The raw sewage is dumped directly into an inlet chamber via a crude array of removable coarse screen panels fitted to the opening located on roof slab. The screenings/debris retained by coarse screen panels are removed manually and transported off site.
- Flows are then pumped into a circular distribution chamber (fabricated mild steel); the flows are directed to each SBR stream via two V-notch weirs. The SBR tanks are elevated precast concrete tanks of 6m diameter equipped with process units based on 3 floating arms (at 1200mm) and surface aerator.
- There is no tertiary treatment on site; the secondary Treated Sewage Effluent (TSE) is not disinfected. Hence, green algae growth is visible in the settlement lagoon. The two irrigation booster pumps (on duty/ standby configuration) are located in a small building adjacent to the settlement lagoon, draw TSE from the lagoon and feed directly to a sprinkler system located within the compound perimeter.
- Settled sludge from SBR basins is drawn-off from the bottom of each tank and distributed to adjacent five drying beds via an arrangement of pipework and discharge valves. Overflows from SBR tanks are also directed to the drying beds on either side (No. 1 and No. 5) and the supernatant is re-circulated back to the

Upgrades at Al-Shamal PTP Site



sump by gravity.
- The PTP is fully automated and monitored by Programmable Logic Controller (PLC). Process Thermo-wells (TWLs) are controlled and monitored via ultrasonic/fl oat sensors and linked to a local desktop Supervisory Control and Data Acquisition (SCADA) station via the PLC. The plant is run by electric main supply beside a standby generator located on site.

ECG scope of work involves the upgrade of Al-Shamal Package Sewage Treatment Plant (PTP) in Qatar, with specified extension capacity to treat sewage flows of 600m3 /day. The mechanism will be carried out in the form of a single turnkey package.

The new extension of Al-Shamal plant is completely an independent process using Moving Bed Biofi lm Reactor (MBBR); a treatment technology applied for the first time in Qatar. The new extension of the PTP includes the following:
- Replacement of sewage reception facility with sixteen tankers, then the sewage will be transferred through a gravity main from the tanker reception to the lift station.
- A lift station to transfer the wastewater to the PTP and associated works with pipes.
- Provision of three skid mounted package treatment plants; each 200m3 / day.
- Sludge Holding Tank (-1week storage).
- Gravity pipe to overflow the lagoon.
- Covered Treated Sewage Effluent (TSE) storage tanks to the whole PTP.
- Provision of TSE Pumps to discharge the TSE in 24 hours in the vicinity of the treatment plant.

Upgrades at Al-Shamal PTP Site

Upgrades at Al-Dhakhira PTP site

Client
Public Works Authority (ASHGHAL)

Scope of Work
Construction supervision

Location
Qatar

Types of Activities
Civil works
Electrical
Instrumentation
Mechanical

Having a foul sewerage network, Al-Dhakhira village is built on an inlet of the Persian Gulf; about 60km away from Doha, Qatar. Currently, the village is undergoing fast development with a number of housing schemes proposed for the area.

Al-Dhakhira PTP has a conventional Activated Sludge Process (ASP) treatment plant, designed for 1,600m3 /day and will be extended to double its capacity to 3,200m3 /day. There is no primary settlement process available; the process is based on a biological treatment followed by a tertiary treatment. Each process stream comprises aeration and secondary settlement tanks which provide the biological treatment.

The preliminary treatment works with two mechanical screens; one operational and the other is standby.

The wastewater is pumped directly to an inlet pumping station located underground, which has two hopper impeller submersible pumps arranged in duty/standby configuration.

Flows are then pumped into the elevated inlet screens; all tanks are elevated glass lined steel. The aeration system is based on a fine bubble diff user, and the clarifiers are fl at-bottomed settlement tanks.

ECG's scope of work incorporates the similar treatment process (as indicated above) to integrate the existing plant with its new extension to work into a fully automated system.

Package Sewage Treatment Plant (PTP) is upgraded with specific capacity of 3,200m3 /day to treat sewage flows.

Upgrades at Al-Dhakhira PTP site

Solid Waste Management

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Sludge Land Fill/ Composting Facilities at Site 9N

Client
Alexandria General Organization for Sanitary Drainage (AGOSD)

Scope of Work
Project management
Geotechnical investigation
Ground water monitoring survey
Concept design
Schematic design
Detailed design
Tender documents
Tender action
Construction management
Construction supervision

Location
Alexandria, Egypt

Types of Activities
Architectural
Civil works
Communication & Security Systems
Electrical
HVAC
Mechanical
Structural

The project is a part of Alexandria Wastewater Program (Phase I) which was completed in 1995. Over an area of 75 hectares, the project's site (9N) is located at 35 km west of Alexandria. The project site receives sludge cake from the Mechanical Dewatering Facility (MDF); and receives grit, scum, and screening from the East Treatment Plant (ETP) and the West Treatment Plant (WTP).

Grit, sand and screening material generated from ETP and WTP are transported to site 9N by dump trucks. According to 2009/2008 statistics, the total quantities transported to site 9N are 8,312m3 / year of sludge; 7,973m3 / year of sand; 1,749m3 / year of screening material; and 3,338.85m3 / year of industrial solid waste.

Site 9N has been initially developed as a dedicated disposal area for the sludge and land spreading area for dewatered sludge. The sludge is now being composted using tuned withdraw techniques.

The site includes six lined trenches (200m long each) for receiving scum & screening material where the material is placed in layers; every layer is covered with clean sand. The site also includes lined evaporation pond to receive the leached water from the trenches in addition to service facilities comprising maintenance buildings, stores, garage, administration building and laboratory.

The site is served with a lot of heavy equipment such as spreading vehicles, 300 HP trenchers, loaders, composters, dozers and water wagon.


Sludge Land Fill/ Composting Facilities at Site 9N

Erbil Solid Waste Master Plan

Client
The United Nations Children's Fund (UNICEF)

Scope of Work
The Master Plan for Erbil includes the following:
- Executive summary
- Structure of the Master Plan
- Assessment of the existing solid waste management practices (collection, conveyance, treatment and disposal).
- Waste generation and composition
- Solid waste disposal
- Recommendation for supplies and equipment
- Institutional strengthening
- Investment strategy
- Private sector participation
- Social Issues

Location
Erbil, Iraq

Types of Activities
Civil works

The Governorate of Erbil, Iraq is the largest and the most populated in the Kurdistan region confined by Mosul, Dohuk, Kirkuk and Sulaimaniya governorates. Kurdistan region, in general, has endured deprivation and neglect since the establishment of the country Iraqi State in 1921. More recently, in the last few decades, it was subjected to double embargo by both the UN resolution and the regime. The current development has started in earnest in all domains including construction, economy and infrastructure in 2003.

Throughout the region's modern history, solid waste has been discarded without due concern or attention to the environmental issues. All types of waste (domestic, commercial, construction, industrial and others including hospital waste) have been dumped in "conveniently" located open spaces (often topographical depressions) at the peripheral of the towns and cities of the region. In recent years waste impact on health and environment has been noticed in consequence to the major expansion in population and urbanization compounded by significant changes in lifestyle and dietary types and levels of consumption.

In general there is lack of control over collection, transportation and dumping of wastes in the Governorate. The majority of wastes collected by Municipalities or by private contractors is disposed of in open dumps and often burned. Large heaps to small mountains of refuse on the outskirts of the major cities can be

observed. Against this backdrop UNICEF conceived the development of a Solid Waste Management Master Plan for Erbil governorate/ KRG with funding from the European Union (EU). Through this project UNICEF will support the Ministry of Municipalities and Tourism (MMT)/ Kurdistan Regional Government (KRG) in its endeavor to improve the waste management services in Erbil. The Master Plan would form the basis for strategic planning and investment for effective management of the solid waste in the Governorate.

The main objective of Erbil Governorate Solid Waste Management Master plan is: "To instill the principles of environmentally sound management of solid waste into the solid waste departments of Erbil governorate while bringing about a significant improvement in their capacity to manage solid wastes effectively. In this context the Master Plan aims to critically review the prevailing waste management practices and suggest recommendations for improvement, laying the groundwork for short, longer term investments and provides a contextually relevant template for developing similar governorate level master plans in the region."

Flood Protection

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Flood Prevention Scheme For Doha North Area – Phase 3 (C1/850)

Client
Boom Construction Company W.L.L.

Scope of Work
Preliminary Design
Detailed Design
Issued for Construction

Location
Qatar

Types of Activities
Architectural
Civil
Electrical
Communications and Security Systems
Mechanical
Instrumentation
Roads
Structural

The project covers different areas of Muaither, Old Rayyan, Al-Gharafa, Al-Dafna, Bin Omran, Oniaza, Al-Tarfa, and Al-Khisah. Works include hydraulic, civil, and structural design for a storm water network; including pipes, hydraulic structures, diversions, and other under or above ground works. The main components of the network are as follows: semi-perforated pipes with porous trench of diameters ranging from 300 mm to 600 mm, and length of approximately 35,350 m; solid pipes with diameters ranging from 300 mm to 800 mm, and length of approximately 32,250 m; and trench soakaway with length of approximately 4,830 m. The project also includes a pump station, an Emergency Flooding Area (EFA), and another EFA with pump station.

Flood Prevention Scheme For Doha North Area – Phase 3 (C1/850)

Flood Prevention Scheme (FPS-Phase3) for Doha South Areas (C2/850)

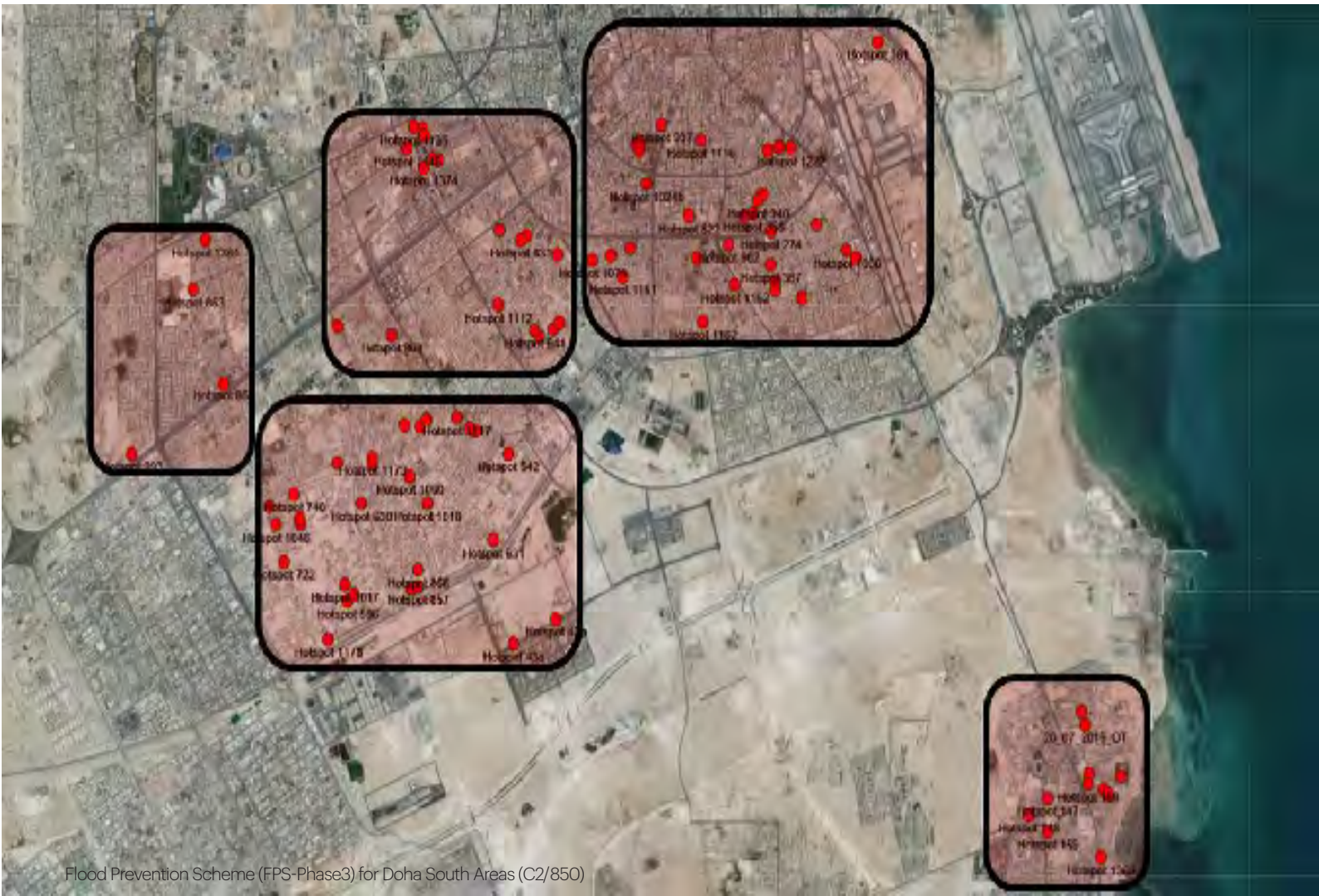
Client
HBK – Hamad Bin Khalid Contracting Co. W.L.L.

Scope of Work
Preliminary Design
Detailed Design
Issued for Construction

Location
Qatar

Types of Activities
Architectural
Civil
Electrical
Communications and Security Systems
Mechanical
Instrumentation
Structural

The project covers the design services of Flood Prevention Scheme (FPS-Phase3) for Doha South Areas (C2/850), including Mamoura, Abu Sidra & Al-Mearad, Old Airport & Nuaija, Ain Khalid and Al-Wakra. Works include hydraulic, civil, and structural design for a storm water network; including pipes, hydraulic structures, diversions, and other under or above ground works. The main components of the network are as follows: semi-perforated pipes with porous trench of diameters ranging from 300 mm to 1,000 mm, and length of approximately 50,220 m; solid pipes with diameters ranging from 400 mm to 1,200 mm, and length of approximately 12,091 m; and trench soakaway with length of approximately 250 m. The project also includes a pump station, an Emergency Flooding Area (EFA), and underground tanks.



Flood Prevention Scheme (FPS-Phase3) for Doha South Areas (C2/850)

Flood Protection for New Sohag City

Client
Nopwasd National Organization For Potable Water & Sanitary Drainage

Scope of Work
Studies (Hydrology, Hydro-meteorology, Hydro-morphology, Geotech., Topo., etc)
Detailed design
Tender documents
Cost estimation

Location
Sohag, Egypt

Types of Activities
Infrastructure

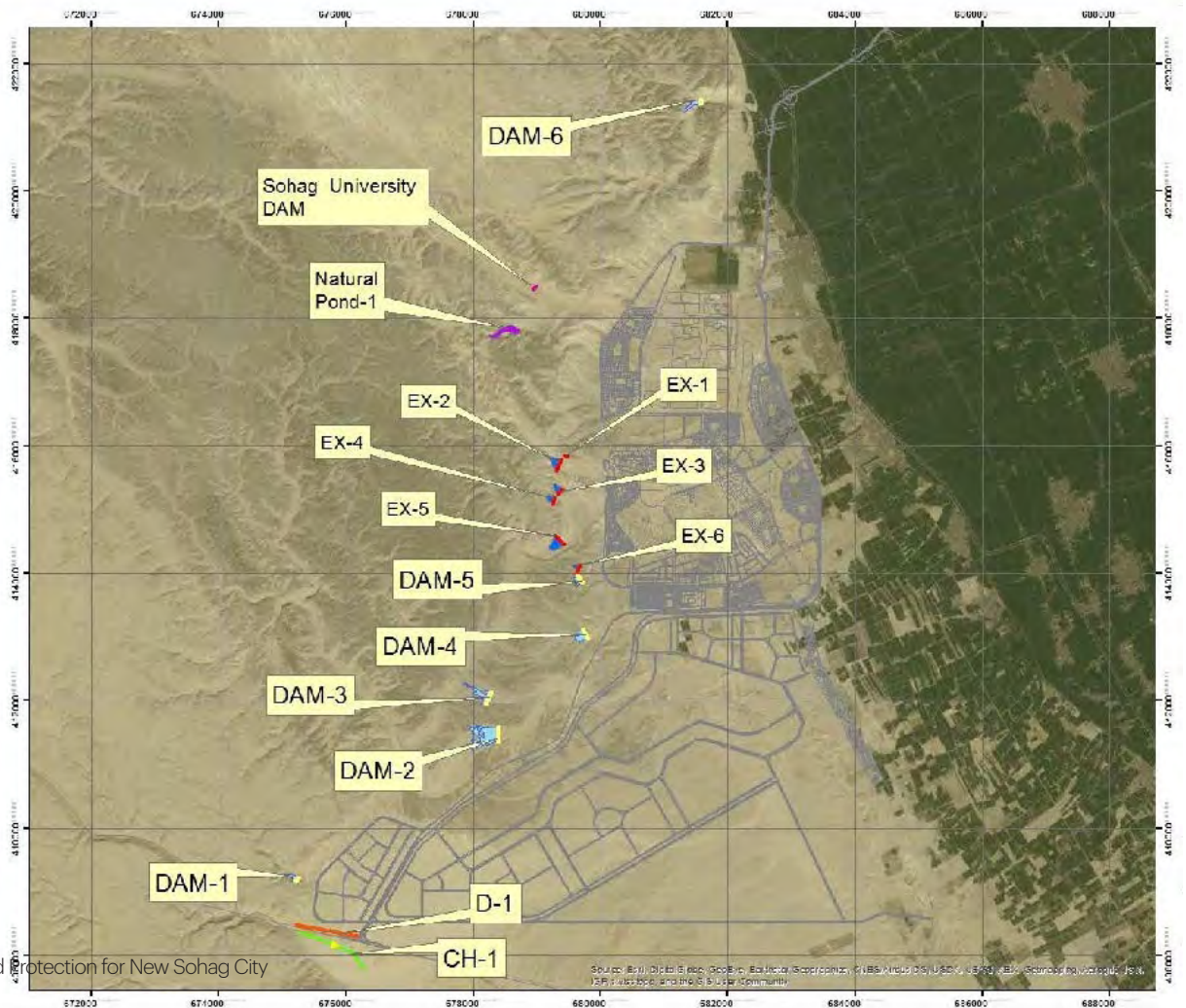
New Sohag City is located approx. 20 km southwest of Sohag city, stretching over an area of 130 square kilometers.

The project area is permeated by several catchment outlets, medium-to-small in size, compared to catchment basins and stormwater run-offs. Hence, it is essential that New Sohag City is protected from the threat of flashfloods, using dams that have been constructed for this purpose, by conducting flood-protection works' studies and designs. This study covers the following:

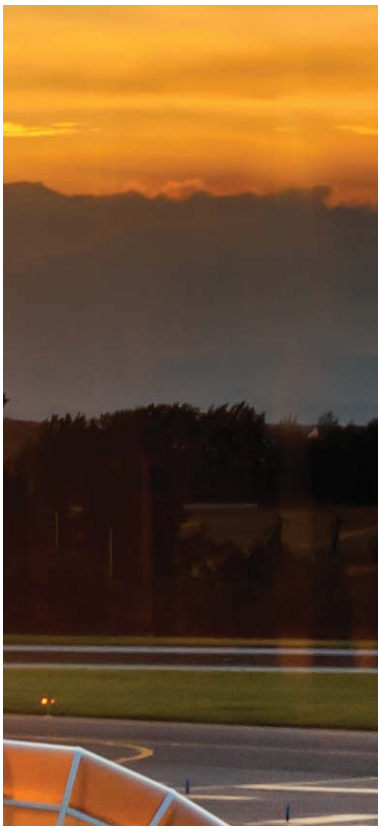
The hydrological study was conducted using available climatic data, particularly stormwater data, as well as topographic maps, digital images captured via satellite for the study area, geological maps, surface run-off data, and land utilization in stormwater catchments.
In order to study the existent circumstances in the study area, a preliminary soil investigation was carried out. The hydrological study encompassed hydrometeorological and hydromorphological studies, alongside hydrological analysis of valleys affecting the area.

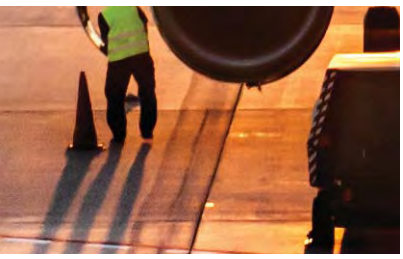
To calculate the maximum flood discharge, the standard formula was applied for valleys smaller than one square kilometer, while in the case of valleys with a greater area; the SCS equation was applied to avoid high discharge rates resulting from using the 'standard equation.

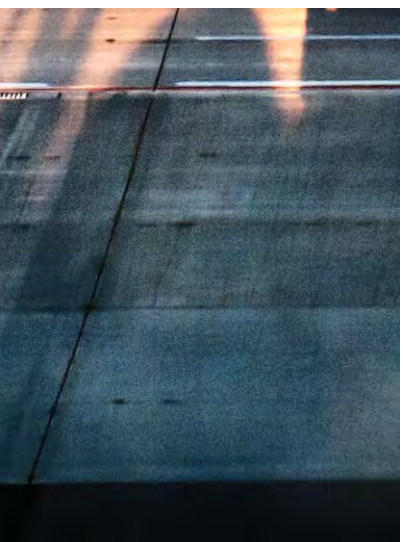
The project covers the design of 6 earth dams with heights ranging from 2 to 6 meters and a capacity of 365,000 m^3.









Transport

ECG مجموعة المهندسين الاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Aviation

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Remote Baggage Transfer Facility Building, Hamad International Airport

Client
Al-Jaber Engineering L.L.C

Scope of Work
Design review

Location
Doha, Qatar

Types of Activities
Architectural
Communication & Security Systems
Electrical
HVAC
Mechanical
Structural

Hamad International Airport (HIA) is undergoing an expansion plan in several stages aiming at increasing the annual capacity of the airport to accommodate the growing number of passengers. The project encompasses raising the capacity of the terminal building to accommodate 53 million passengers per year (MPAX) by 2022. Additionally, early work packages covering the secondary works serving the expansion are released to be carried out independently.

The Remote Transfer Baggage Facility (RTBF) is planned to accommodate baggage-handling requirements with a transfer time of more than 3 hours. The baggage meeting these criteria will be temporarily stored in the RTBF to minimize congestion in the terminal building.

A comprehensive site analysis identified the implantation possibilities and constrains with regards to the existing infrastructure and surrounding buildings. The master planning was then developed to optimize the different buildings arrangement to meet the programmatic and technical requirements of the baggage handling system and the operational flow of circulating vehicles and staff.

The facility is located on the airside of HIA and comprised the following buildings:

- Remote Transfer Baggage Facility Building (RTBF Building)
- Early Container Storage Building (ECS)
- Open MEP Yard

The design seeks aesthetical integration with the nearby buildings, while considering the visual proximity to the Terminal's South Node Halls and the airport's main access way. The forms and materials were selected with the intention of deconstructing the monolithic volume of the RTBF building, and achieving modern sleek lines, which deviate from the typical industrial shed-like design.

Remote Baggage Transfer Facility Building, Hamad International Airport

Al Najaf Airport

Client
Al-Kawthar National Contracting & General Trading Co.

Scope of Work
Design review for concept design documents
Schematic Design
Detailed Design
Tender Documents

Location
Al-Najaf, Iraq

Types of Activities
Infrastructure
Electrical
Communication & Security Systems
NAVAIDS and airfield lighting, as well as metrological studies.

Engineering Consultants Group worked on this project in a joint venture with Euroconsult, which involved reviewing preliminary design (PD) documents and preparing final designs and tender documents for the following components:

- Pavements and visual aids for the new Runway 09-27.
- Airfield lighting and electrical enabling works.
- Electrical diversion works.
- Airfield lighting systems for the new Runway 09-27 and associated taxiways, including related civil and power supply installations.
- Airfield lighting substations.
- LV power supply to non-visual navigational aids.
- Street lighting network for the airport's perimeter roads.
- Telecom and ELV infrastructure and connection with existing systems at the project limit of work.
- NAVAIDS and MET equipment for Runways 09-27, 10-28.
- Drainage, including designing the structures (5 culverts) between the runways and the pond, as well as a sleeve for crossing the taxiway, and a 2-box culvert for crossing the main runway leading to the pond.
- Sleeves for the firefighting system crossing the new runway and taxiways.

Al Najaf Airport

Borg Al-Arab International Airport Extension

Client
Japan Airport Consultants, Inc.

Scope of Work
Detailed design
Construction supervision

Location
Alexandria, Egypt

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Landscaping
Mechanical
Structural

The project covers an extension to Borg Al-Arab International Airport, as decided by the Egyptian Airports Company (EAC), to enhance passenger handling capacity in light of the sharply increasing demand on flights. The project also aims at improving the quality and efficiency of the services provided to passengers.

The extension includes a second terminal building and its associated facilities. The project encompasses two packages as follows.

Package 1: Terminal Building & Associated Facilities
- Terminal Building (BUA of 36,000 m^2)
- New Passenger Terminal Apron(800mx180m)
- Ground Support Equipment Road and Service Road
- Car Parks With a Capacity of 800 Cars,32 Buses and 50 taxis
- Asphalt-paved roads within the terminal area(10000m long with carriageway width of 10m)
- Airfield Lighting /Apron Floodlights
- Power Supply System(3200 KVA)
- Primary Substation Building
- Three Secondary Substations
- Water Supply System(580 ton/day)
- Water Tank
- Sewage Treatment System(550 m^3/day)
- Guardhouse
- Workshop

Package 2: Taxiways
- Taxiways(5400mx23m)
- Airfield Lighting
- Concession Buildings
- Air Navigation Aids


Borg Al-Arab International Airport Extension

Cairo International Airport Terminal Building 3

Client
Cairo Airport Company (CAC)

Scope of Work
Schematic design
Detailed design
Tender documents
Tender action
Construction supervision

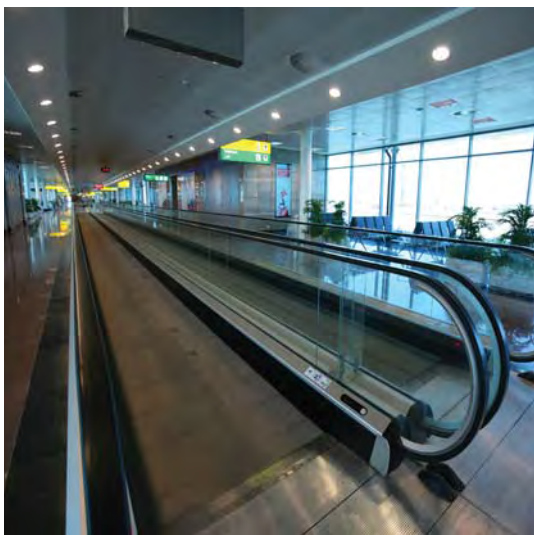
Location
Cairo, Egypt

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
Landscape
Mechanical
Roads
Structural

ECG Engineering Consultants Group worked with NACO Netherlands Airport Consultants in a joint venture to complete the project. Work covered the design and construction supervision of a three-level terminal building.

The US$ 450 million Cairo International Airport Terminal Building 3 required more than 180,000 man hours of design and 430,000 man hours for construction supervision. The project components include a new terminal building and associated facilities for the Cairo International Airport, which are developed to cope with future potential expansions according to the traffic forecasts till the year 2020. The landmark terminal was developed in compliance with the latest international design solutions for airport development and executed to host an annual capacity of 12 million passengers.

The project proposes a total built-up area of 164,000 m^2,comprising latest technologies of security, safety and operational systems, with fifteen swing gate facilities



serving international and domestic flights including the A380 wide body aircrafts; airside area with taxiways serving the terminal building; landside bridges/ flyovers serving the traffic to/ from the terminal building and surface car park; automated baggage handling, screening and sorting system and ancillary buildings including apron control tower, power plant, HVAC equipment building, electrical substation, water reservoir and pumping stations. Halls are 320x150 m, for processing all arriving, departing passengers and a basement housing facilities including stores, workshops, M&E area baggage handling, etc.

Provision of a new central main building spacious enough to accommodate all passengers and facilitate arrival and departure procedures and at the same time improve the passenger facilities to a higher level of functioning comfort, convenience and spaciousness. Also provision of enough gates to cope with present and future peak hour traffic demands (aircraft and passengers).

Cladding and supporting structure were designed to withstand specific bomb blast loads. The bomb blast loading was calculated by GMW, and only limited force was considered.

Cairo International Airport Terminal 1 New Annex Building

Client
Cairo Airport Company (CAC)

Scope of Work
Conceptual design
Detailed design
Tender documents
Tender action
Construction management

Location
Cairo, Egypt

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
Mechanical
Structural

A joint venture between ECG Engineering Consultant Group and NACO Netherlands Airport Consultants was formed to complete the project, which covered the design and construction supervision of a building annexed to Terminal 1.

The transit hall is located at the airside overlooking the apron and runway 16-34, bounded from the south by the "check-in" hall, from the east by hall No. 2 and from the west by the white hall and the arrival gate. The building is a light metal structure with metal roof installed over the roof of the existing transit hall having a glass façade creating a pleasant environment and spacious lounges which are now called the new transit hall. The building is composed of a ground floor, mezzanine and first floor.

The ground floor contains the main access doors, bar, cafeteria, main duty-free shops, scattered boutiques, vertical circulation to other levels, transit/transfer facilities and passengers lounges.

The mezzanine contains business/ first class lounges (overlooking the first floor), museum, toilets and vertical circulation. The lounges in all levels as well as the restaurant overlook the apron.

The first floor contains open lounges (seating capacity of around 1,000 persons), kiosks, banks, public toilets and vertical circulation to other levels.

Cairo International Airport Terminal 1 New Annex Building

Cairo International Airport Terminal Building 2

Client
Cairo Airport Company (CAC)

Scope of Work
Master plan
Conceptual design
Detailed design
Tender documents
Tender action
Construction management
Construction supervision

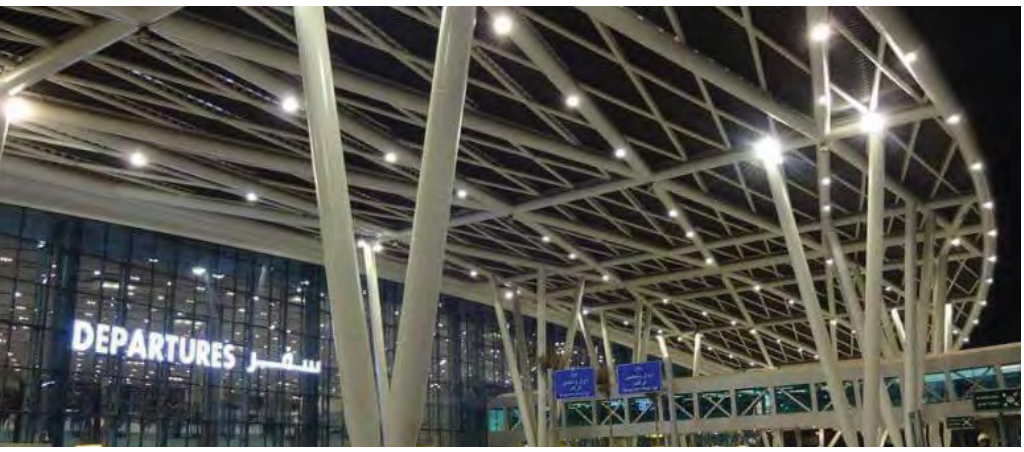
Location
Cairo, Egypt

Types of Activities
Architectural
Airfield Lighting
Baggage Handling System
Passengers Boarding Bridges
Civil (Roads/Apron/Taxiways Pavements, utilities networks, etc.)
Communications and Security systems
Electrical
HVAC
Infrastructure
Interior design
Mechanical
Structural

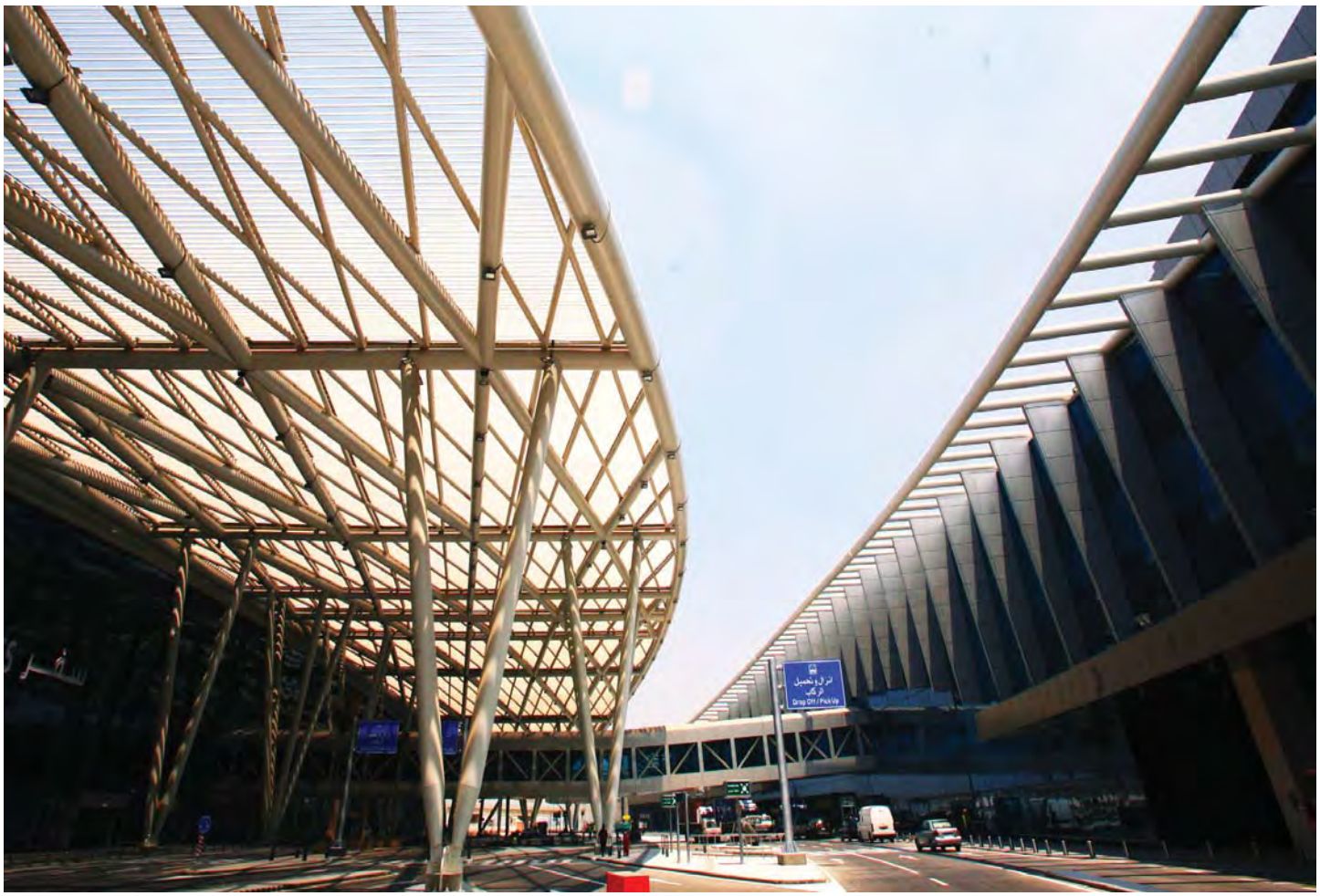
Cairo International Airport Terminal Building 2 has undergone major expansion aimed at doubling its annual passenger handling capacity to 7.5 million passengers. The USD 400 million project was financed by the World Bank.

With a built-up area of 228,000 m², the project involved the demolition of the existing building and construction of a new larger terminal, as well as construction of new airside and landside pavements, with a pavement area exceeding 300,000 m².

The terminal now operates at a baggage handling capacity of 3,000 bags/hour, with early baggage storage, seven baggage reclaim carrousels, 51 metal detectors, and 58 X-ray units. The terminal houses the latest airport technologies and systems.



Cairo International Airport Terminal Building 2 Renovation Program



The construction of new facilities includes the following:

• Airside external work: earthwork, asphalt and concrete hard stands, civil works for potable water and sewerage networks, firefighting networks, storm drainage networks, fuel networks, as well as electromechanical works for airfield lighting, apron flood lighting, in addition to different utilities' networks.

• Building (A): 5 floors with a built-up area of approximately 79,000 m^2.
• Building (B): 5 floors with a built-up area of approximately 102,000 m^2.
• Building (C): 5 floors with a built-up area of approximately 47,000 m^2; and comprising 14 contact air gates, 28 passenger boarding bridges and 40 - room airside hotel.
• Landside external works: external utilities such as potable water, sewerage, firefighting, storm drainage and irrigation networks. External works also include asphalt roads and car parking with a total area of approximately 16,000 m^2.
• Reconstruction of the existing power plant building: power supply including connection with existing Terminal Building 2 power and distribution network through transformers and substations. Terminal Building 2 shall be provided with 3-phase 11 kV, 50 Hz power supply from the existing terminal power plant.

Borg Al-Arab International Airport

Client
Egyptian Airports Company (EAC)

Scope of Work
Geotechnical survey
Topographic survey
Assist in the review of the economic and financial analysis
Conceptual design
Preliminary design
Detailed design
Tender documents
Tender action
Construction supervision

Location
Alexandria, Egypt

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Landscape
Mechanical
Roads
Structural

ECG Engineering Consultants Group, NACO Netherlands Airport Consultants, and Japan Airport Consultants joined forces to complete the project, which was funded by the Japan Bank for International Cooperation (JBIC) and the Egyptian Government, the US$ 100 million International Airport went through a major renovation effort to raise its capacity to 2 million passengers per year, with a new terminal building and new airport facilities.

Modernizing of Borg El Arab International Airport by constructing a new passenger terminal building (20,840 m^2); taxiways (1,494 m x 23 m) and taxiway lights; passenger terminal apron (459 m x 142 m) and cargo terminal apron (71 m x 142 m) including apron flood lights; cargo terminal building (890 m^2); EAC administration and operations building (3,000 m^2); rescue and fire fighting station (800 m^2); car parks with a capacity of 348 cars, 32 buses and 50 taxis; asphalt-paved roads within the terminal area (11,100 m long with carriageway width of 10 m); power supply system (2,400 KVA); water supply system (512 ton/ day); sewage treatment system (550 m^3/day); procurement of three major rescue and fire fighting vehicles, one command car and one ambulance and control tower in order to cope with the increase of air traffic of Alexandria area and to improve the quality of services in the airport, thereby contributing to future development of the area.

The design is based on an image of water and sky, incorporating elements of Egyptian culture and history as well as its geographical location.

Borg Al-Arab International Airport

Borg Al-Arab International Airport Environmental Impact Assessment

Client
Petromaint Co.

Location
Alexandria, Egypt

Scope of Work
Environmental Impact Assessment

Egyptian Airports Company EAC adopted environmental awareness and management efforts, as an integral part of the evaluation of the modernization of Borg El Arab International Airport.

ECG responsibilities included the following as part of the Environmental Impact Assessment preparation:

- Data collection for airlines operating in Egypt
- Gather and compile air traffic demand forecast
- Gather and compile information regarding development policy
- Plans of civil aviation network, progress plans in the aviation field together with other transportation sector
- Prepare inventory of major facilities
- General airport layout plan of each airport in Egypt.

Borg A-Arab International Airport Environmental Impact Assessment

Marsa Alam Airport

Client
EMAK Marsa Alam for Management and Operations of Airports

Scope of Work
Conceptual design
Preliminary design
Detailed design
Construction management
Construction supervision

Location
Marsa Alam, Egypt

Types of Activities
Architectural
Civil
Communication and security systems
Electrical
HVAC
Landscape
Mechanical
Structural

In a joint venture with NACO Netherlands Airport Consultants, ECG Engineering Consultants Group worked on this project, which involved the establishment of an airport and its associated facilities in Marsa Alam.

The importance of this project originates from being the first BOT airport project in Egypt. The project is vital for the touristic development of Marsa Alam and forms part of the overall development program, undertaken by EMAK being the investor. The goall of the project is to accommodate an annual traffic capacity of four (4) million passengers by the year 2040.

Marsa Alam Airport

Control Tower for Borg Al-Arab International Airport

Client
National Air Navigation Services Company

Scope of Work
Construction supervision

Location
Alexandria, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

Jointly with NACO Netherlands Airport Consultants, ECG Engineering Consultant Group contributed to the Borg Al-Arab International Airport Modernization Program. Work covered an air traffic control tower and a number of auxiliary buildings.

ECG scope of work included construction supervision of the 28m high control tower of Borg El Arab International Airport along with necessary auxiliary buildings.

Control Tower for Borg Al-Arab International Airport

International Airport

Client
Confidential

Scope of Work
Conceptual design
Preliminary design
Detailed design
Tender documents
Tender action

Location
Confidential

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC

The construction of an International Airport (airside/ landside) consisting of infrastructure, buildings, services and utilities. The airport would be required to handle aircraft up to the gulfstream G IV, Boeing B737, and Boeing 747 or up to the Airbus A380.

Initially the airport would operate for domestic flights only and incidentally international, but in the longer term international flights would also be handled.

The airport works include the terminal building with a built-up area of 22,000 m^2 which comprises two separated levels, ground floor, and three floor levels to accommodate aircrafts Code F with Peak hour 650 pax, two ways and two Contacts stand boarding lounges for international passengers (Code E & Code F) with three loading bridges to accommodate aircrafts Code C, D, E & F and a provision for an upper deck Code F; cargo building with a built-up area of 86,000 m^2 consists of ground floor, and two floor levels for offices, handles about 50,000 ton/year; catering building with a built-up area of 1,700 m^2 consists of ground and one floor level that provides 1,600 meals per day; aircraft rescue & fire protection building with a built-up area of 1,200 m^2 comprises ground and one floor level, the building is designed to meet ICAO standard category 10; ground service equipment workshop with a built-up area of 650 m^2 and other utility buildings such as water tanks, electrical substations, chillers building, etc. in addition to the staff housing compound which is designed to accommodate families and bachelors.

International Airport

Marsa Alam Airport Terminal Building Extension (Phase 3)

Client
EMAK Marsa Alam for
Management and Operations of Airports

Scope of Work
Construction supervision

Location
Marsa Alam, Egypt

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
HVAC
Landscape
Mechanical
Roads
Structural

ECG Engineering Consultants Group implemented the project jointly with NACO Netherlands Airport Consultants. The project aimed at increasing the annual capacity of the airport to accommodate the growing number of European passengers heading for various Red Sea destinations.

The project aimed at expanding the airport and its associated facilities by having a new international arrival hall with a total area of 1,110 m^2 and a new international hall with an area of 550 m^2.

The extension also included modification of the existing area/ systems and facilities to cope up with proposed extension.

Marsa Alam Terminal Building Extension (Phase 3)

Marsa Alam Airport Runway Extension

Client
EMAK Marsa Alam for Management and Operations of Airports

Scope of Work
Environmental impact assessment
Geotechnical investigation
Technical feasibility study
Master plan
Conceptual design
Detailed design
Pavement design
Airfield planning
Airfield lighting
Tender documents
Tender action
Construction management
Construction supervision

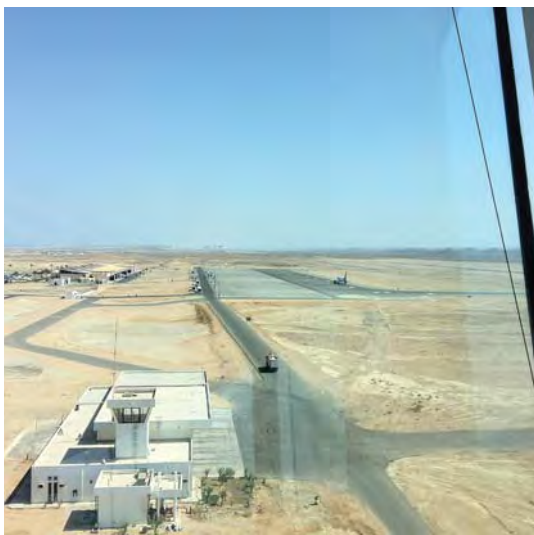
Location
Marsa Alam, Egypt

Types of Activities
Architectural
Civil
Electrical
Roads
Structural

In a joint venture with NACO Netherlands Airport Consultants, ECG Engineering Consultant Group supervised the construction of the airside/runway extension. The project was part of the overall development plan implemented by EMAK Marsa Alam for Management & Operation of Airports, the owner and operator of Marsa Alam Airport.

Extensions consisted of the execution of a parallel taxiway, construction of number of new exit taxiways between the main runway and the parallel taxiway/ secondary runway and extension works for the apron.

Marsa Alam Airport Runway Extension



Bardawil International Airport

Client
Armed Forces Engineering Authority
Egyptian Ministry of Defense & Military Production

Scope of Work
Design review
Schematic design
Detailed design
Construction supervision

Location
Sinai, Egypt

Types of Activities
Architectural
Communications & security systems
Electrical
HVAC
Infrastructure
Landscape
Mechanical
Structural

The project involves the development of the original plans drafted for the terminal building of Bardawil International Airport. The terminal building comprises a basement, mezzanine, and ground floor with a total built-up area of 8,000 m^2.

Overall works in the airport cover the construction of 27 buildings and facilities of various built-up areas, along with associated infrastructure and landscaping works:

- Terminal building (bua 8,000 m^2)
- Administration building (bua 720 m^2)
- Air traffic control tower (bua 1,500 m^2)
- Airport maintenance building (bua 340 m^2)
- Airport waste building (bua 107 m^2)
- Electric substation building 1 (bua 115 m^2)
- Electric substation building 2 (bua 480 m^2)
- Primary airfield lighting building (bua 220 m^2)
- Secondary airfield lighting building (bua 480 m^2)
- Firefighting building (bua 833 m^2)
- Power station building (bua 220 m^2)
- Chiller yard (bua 350 m^2)
- Chlorination room (bua 6 m^2)
- Water tank (bua 525 m^2)
- Meteorology building (bua 110 m^2)
- Weapons storehouse (bua 114 m^2)
- Warehouse/ office building (bua 120 m^2)
- Security building (bua 40 m^2)
- Guard house (bua 17 m^2)
- Airside guard house (bua 134 m^2)
- Permissions building (bua 106 m^2)
- Housing facility (bua 634 m^2)
- Soldiers' mess (bua 316 m^2)
- Bathrooms facility (bua 55 m^2)
- Employees' motel (bua 920 m^2)
- Parking building (bua 375 m^2)
- Mosque (bua 780 m^2)

Bardawil International Airport

Sphinx International Airport

Client
Dept. of Military Engineers
Engineering Authority
Egyptian Ministry of Defense & Military production

Scope of Work
Schematic design
Detailed design
Construction supervision

Location
6th of October City, Egypt

Types of Activities
Architectural
Communications & security systems
Electrical
HVAC
Landscaping
Mechanical
Structural

The project involves the development of the original plans drafted for the terminal building of Sphinx Airport International Airport; the terminal building comprises a ground floor and mezzanine with a total built-up area of 4,250 m^2.

Overall works in the airport cover the construction of 30 buildings and facilities of various built-up areas, along with associated infrastructure and landscaping works:

- Airport maintenance building (340 m^2)
- Airport waste building (107 m^2)
- Fire-fighting building (1,280 m^2)
- Air traffic control tower (853 m^2)
- Airfield lighting system building (240 m^2)
- 2 Airfield lighting buildings (460 m^2)
- 2 Substations (235 m^2)
- Power station (220 m^2)
- Administrative building (720 m^2)
- Accommodation building (120 m^2)
- Guardhouse (17 m^2)
- Airside guardhouse (67 m^2)
- Water tank (525 m^2)
- Water treatment plant (2,314 m^2)
- Warehouse/office building (120 m^2)
- Chiller yard (350 m^2)
- Meteorology building (110 m^2)
- Equipment area (1,190 m^2)
- Security building (40 m^2)
- Weapons and ammunition depot (100 m^2)
- Permissions building (106 m^2)
- Meteorological hangar (7,316 m^2)
- Housing facility (160 m^2)
- Trained dogs facility (300 m^2)
- Bathrooms building (54 m^2)
- Mosque (670 m^2)
- Parking area (375 m^2)

Sphinx International Airport

Capital International Airport

Client
Dept. of Military Engineers
Engineering Authority
Egyptian Ministry of Defense & Military production

Scope of Work
Schematic design
Detailed design
Construction supervision

Location
New Capital, Egypt

Types of Activities
Architectural
Communications & security systems
Electrical
HVAC
Landscaping
Mechanical
Structural

The project involves the development of the original plans drafted for the terminal building of Capital International Airport; the terminal building comprises a ground floor and mezzanine with a total built-up area of 4,250 m^2.

Overall works in the airport cover the construction of 30 buildings and facilities of various built-up areas, along with associated infrastructure and landscaping works:

- Airport maintenance building (340 m^2)
- Airport waste building (107 m^2)
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- Mosque (670 m^2)
- Parking area (375 m^2)

Capital International Airport

Aircraft Washing Yard at Cairo International Airport – Terminal Building 3

Client
Egypt Air

Scope of Work
Geotechnical investigation
Master plan
Conceptual design
Detailed design
Tender documents
Tender action
Construction management
Construction supervision

Location
Cairo, Egypt

Types of Activities
Architectural
Civil (water supply, wastewater, storm water drainage, & irrigation system)
Communications and security systems
Electrical
Fire protection
HVAC
Mechanical
Structural

The construction of an Aircraft Washing Yard located at the west of Cairo International Airport TB3 Apron Area. The facility will serve two code E aircrafts at the same time. The project comprises open yard of 15,000 m^2 of concrete rigid pavement, lighting towers around the open yard, water tank, pump station including pump set including diaphragm tank, water supply network covering the open yard including four outlets for each aircraft in an underground concrete trench, spraying equipment, trolley hose reels, drainage system, earthing system and shed for the pump station.

The project was inaugurated in 2010 due to the successful collaboration between ECG, Japan Airport Consultants and Netherlands Airport Consultants B.V.

Air Craft Washing Yard at Cairo International Airport - Terminal Building 3

Cairo International Airport Terminal Building 1 - Emergency Routes

Client
Cairo Airport Company (CAC)

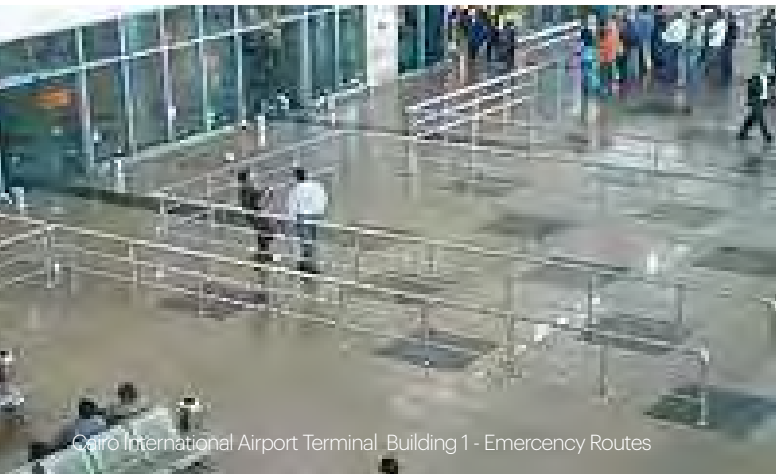
Scope of Work
Tender documents
Tender action

Location
Cairo, Egypt

Types of Activities
Architectural

As a part of the major renovation program undertaken in Cairo International Airport, Cairo Airport Company (CAC) decided to put an adequate emergency plan to consider new extensions and developments.

The emergency plan of Cairo International Airport includes the implementation of escape route for Departure Hall 1 and Terminal Building 1 (Passengers areas).



Cairo International Airport Terminal Building 1 - Emercency Routes

Feasibility Study for the Development of Cargo City - Cairo International Airport

Client
Cairo Airport Company (CAC)

Scope of Work
Feasibility study

Location
Cairo, Egypt

Within the development of cargo city that was inaugurated at Cairo International Airport, CAC performed several economic & feasibility studies.

The purpose was to provide state-of-the-art facilities to support the growth in cargo traffic which reached 285,296 tons in 2007.

The first phase included a cargo terminal capable of handling 170,000 tons as well as two forwarder buildings which went into operation in 2011. In order to increase the quality level a second terminal will be built in the second phase which will add another 150,000 tons.

New Doha International Airport Emiri Terminal Parking Structure & Mosque

Client
Qatar Building Engineering Company

Scope of Work
Conceptual design
Detailed design

Location
Doha, Qatar

Types of Activities
Structural

New Doha International Airport (NDIA) is undergoing an expansion plan to raise passenger capacity to 24 million passengers per year by constructing the Emiri Terminal.

The project includes Emiri Terminal associated facilities, passenger terminal parking structure, Emiri gate, VIP check point, roads and mosque, with all associated systems of buildings service, fire safety and security, external lighting, roads and parking areas.

New Doha International Airport - Emiri Terminal Parking Structure & Mosque

Control Tower for Luxor Airport

Client
National Air Navigation Services Company

Scope of Work
Detailed design review
Shop drawings review
Construction supervision

Location
Luxor, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

Renovation of the air navigation control tower. The tower is 36 m high, the cabin is prefabricated by a Canadian manufacturer.

Control Tower for Luxor Airport

Control Tower for Al-Arish Airport

Client
National Air Navigation Services Company

Scope of Work
Design review
Construction supervision

Location
Al-Arish, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Mechanical
Structural

Renovation of the air navigation control tower. The tower is 36 meters high, and the cabin is prefabricated by a Canadian manufacturer.

Control Tower for Al-Arish Airport

Cairo International Airport Integrated Emergency Plan

Client
Cairo Airport Company (CAC)

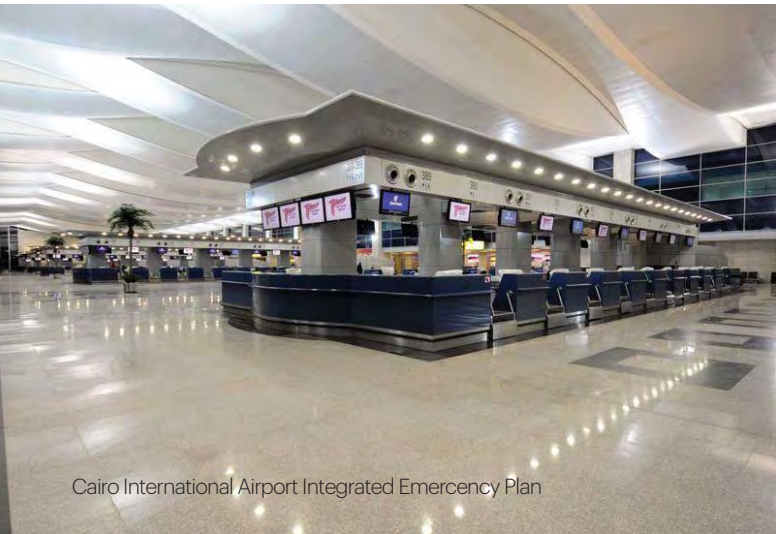
Scope of Work
Concept design
Studies

Location
Cairo, Egypt

Types of Activities
Architectural

For the purpose of safety of terminal building occupants, a study of the implementations of escape route for Cairo Airport Terminals 1 and 2 was conducted.

The goals of this study is to demonstrate all reasonably practicable measures to ensure the safe and effective evacuation, escape and rescue of personnel. Also, to demonstrate the adequacy of evacuation, escape and rescue provisions in response to accident conditions and to provide guidance for management of emergencies.



Cairo International Airport Integrated Emercency Plan

Hurghada International Airport - Environmental Impact Assessment

Client
Egyptian Airports Company (EAC)

Scope of Work
Enivronmental Impact Assessment

Location
Hurghada, Egypt

In response to the rapid increase in tourism in Egypt, and as a part of developing and modernizing Hurghada Airport on the Red Sea coast, an Environmental Impact Assessment (EIA) was conducted by ECG for the development of the Airport to improve its services. Airport is capable of receiving 4.5 million passengers per year, but traffic already exceeds that figure.

Hurghada International Airport - Environmental Impact Assessment

Sharm Al-Sheikh International Airport - Environmental Impact Assessment

Client
Egyptian Holding Company for Airports Air Navigation

Location
Sharm Al-Sheikh, Egypt

Scope of Work
Environmental Impact Assessment

EHCAAN decided to extend the existing Sharm El Sheikh Airport and build a new terminal. The World Bank has expressed interest to finance the project. This necessitates implementing the WB procedures in conducting an Environmental Impact Assessment (EIA).

The project was started in the year 2003 with the aim to identify the main environmental issues that the project will entail and subsequently providing recommendations for mitigating their impacts in the most cost effective manner. Another objective of the EIA was to clarify the past and future environmental liabilities of the project in order to provide appropriate grounds for defining respective responsibilities of the stakeholders.

The proposed development project included physical environment, biological environment, socio-cultural environment (comprising both present and projected); legislative and regulatory considerations; determination of the potential impacts of the proposed project comprising noise impact, tourist environmental impact, water quality, cultural resources, biological resources, energy use, solid and hazardous waste, vehicular traffic and access to the airport, erosion and sediment, social impact, socio-economic impact; analysis of alternatives to the proposed project; development of management plan to mitigate negative impacts; identification of the institutional needs to implement environmental assessment recommendations; development of a monitoring plan and assisting in inter-agency coordination and public/NGO participation.

Sharm Al-Sheikh International Airport - Environmental Impact Assessment

Nozha Airport

Client
Egyptian Holding Company for Airports Air Navigation

Scope of Work
Detailed design
Tender documents

Location
Alexandria, Egypt

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
Mechanical
Roads
Structural

The rehabilitation of the Nozha airport was started in the year 1979 including renovation of the terminal building, upgrading of airport utilities, services and runways to handle modern air crafts.

Nozha Airport

Cairo International Airport Seasonal Flights Terminal Building

Client
Cairo Airport Company (CAC)

Scope of Work
Geotechnical investigation
Master plan
Conceptual design
Detailed design
Tender documents
Tender action
Construction management
Construction supervision

Location
Cairo, Egypt

Types of Activities
Architectural
Civil (water supply, wastewater, storm water drainage, & irrigation system)
Communications and security systems
Electrical
Fire protection
HVAC
Landscape
Mechanical
Roads
Structural

A new Terminal Building designated for seasonal flights e.g. Hajj, Omrah and group travels, to act as an annex to Terminal Building No.3 in Cairo International Airport. The terminal building footprint is about 16,000 m^2. An area of 12,000 m^2 is totally enclosed and air-conditioned whereas the remaining area of 4,000 m^2 comprises a shaded outdoor plaza. In addition, two adjacent facility buildings are designated for providing services to passengers. Also, chiller plant and electric substation are provided. Works also include landscape works, roads and car parking. The building shall serve 2.5 million passengers per year.

Cairo International Airport Seasonal Flights Terminal Building

Cairo International Airport VIP Lounges Building Annexed to Terminal Building 3

Client
Cairo Airport Company (CAC)

Scope of Work
Geotechnical investigation
Master plan
Conceptual design
Detailed design
Tender documents
Tender action
Construction management
Construction supervision

Location
Cairo, Egypt

Types of Activities
Architectural
Civil (water supply, wastewater, storm water drainage, and irrigation system)
Communications and security systems
Electrical
Fire protection
HVAC
Interior design
Landscape
Mechanical
Roads
Structural

A new VIP facility is designed to act as an annex to Terminal Building No. 3 at Cairo International Airport. The project site is about 10,000 m^2. Only 885 m^2 is designated to the building and the remaining area includes landscape, roads and car parking facilities.

Cairo International Airport VIP Lounges Annexed to Terminal Building 3

Autostrad Land Strip Development

Client
Cairo Airport Company (CAC)

Scope of Work
Site survey
Geotechnical investigation
Master plan
Conceptual design
Detailed design
Tender documents
Tender action
Construction management
Construction supervision

Location
Cairo, Egypt

Types of Activities
Architectural
Civil (water supply, wastewater, storm water drainage, and irrigation system)
Communications and security systems
Electrical
HVAC
Landscape
Mechanical
Roads
Structural

A strip of land planned to be developed by Cairo Airport Company (CAC) for commercial development and an airside support base for Egypt Air. The site is divided into a landside area accessible by general public and an area bordering on airside for the various components of the Egypt Air Compound. Crucial to the development of the site is proper locations of landside to airside gates and a secured fencing of the landside to airside boundaries. The overall site area is 59 hectares (590,000 m^2), the Commercial Development takes up an area of 44 hectares (440,000 m^2) and Egypt Air Compound occupies the remaining 15 hectares (150,000 m^2).

Autostrad Land Strip Development

Egypt Air Temporary Facilities at Terminal Building 3

Client
Egyptair

Scope of Work
Geotechnical investigation
Master plan
Conceptual design
Detailed design
Tender documents
Tender action
Construction management
Construction supervision

Location
Cairo, Egypt

Types of Activities
Architectural
Civil (water supply, wastewater, storm water drainage, and irrigation system)
Communications and security systems
Electrical
HVAC
Landscape
Mechanical
Roads
Structural

The construction of temporary facilities buildings to directly serve the airside. With a footprint area of 5,500 m^2, the project comprises 3 buildings, maintenance and engineering building which include offices, lockers area and common services area; cargo and catering building which includes administration offices, assembly area for catering and storage and ground services equipment building which includes waiting areas.

Egypt Air Temporary Facilities at Terminal Building 3

Malabo International Airport Extension

Client
Arab Contractors

Scope of Work
Conceptual design
Preliminary design
Detailed design
Construction documents

Location
Malabo, Equatorial Guinea

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Interior design
Landscape
Mechanical
Roads
Structural

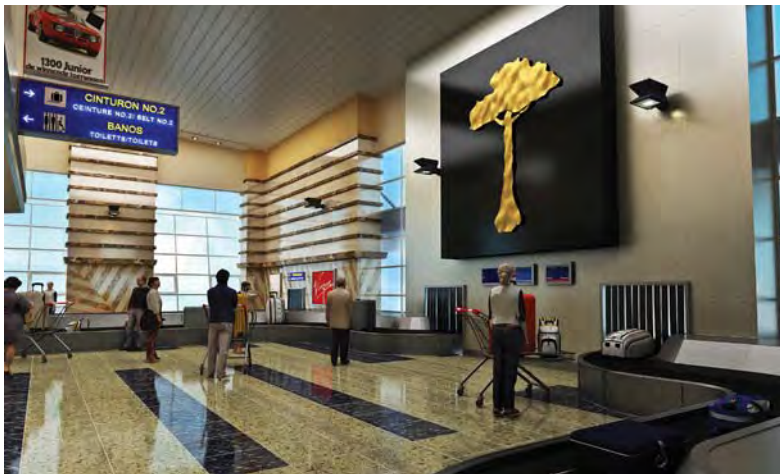
ECG Engineering Consultants Group was involved in the project as a main consultant in relation to the construction of an extension to the highly congested Malabo International Airport.

With a built-up area of 3,400 m^2, the extension comprises two arrival halls consisting of ground and first floors as follows:

- The ground floor includes passport control area (8 counters), reclaim hall (2 belts), 2 customs check counters and related services (toilets, offices and external commercial area);
- The first floor encompasses two VIP lounges with all related services including toilets, kitchen and storages.

Overlooking the ground floor, the first floor is connected to the existing terminal building through a new boarding bridge leading passengers smoothly to the arrival hall. The desig n concept of the extension served to achieve the maximum functionality using the terminal building in many ways. Thus, the first floor can be used for both arrival and departure. Also, glazed curtain walls and steel structured roof were neatly mixed to add a modern touch to the façades of the existing terminal building.

Malabo International Airport Extension



Kisumu Airport

Client
Netherlands Airport Consultants B.V. (NACO)

Scope of Work
Preliminary design
Schematic design
Detailed design
Design development
Tender documents

Location
Kisumu, Kenya

Types of Activities
Architectural
Communication and security systems
Electrical
HVAC
Mechanical
Structural

With a total built-up area of 85,000 m^2, the terminal complex and services facilities of Kisumu airport comprise the following:

- Terminal building and concourse (5,000 m^2).
- Administration facility (500m^2-1,000 m^2).
- Air traffic control tower (about 25 m high).
- Two fire stations (250m^2 and 500 m^2).
- Maintenance workshop (500 m^2).
- Two electrical substations (500 m^2 each).
- Two guard houses (50 m^2 each).
- Two police/ security offices (200 m^2).
- GSE equipment storage area (500 m^2).
- Sewers discharge/ treatment from aircraft and utilities interfaces to outside utilities.
- Landside truck loading docks and access.
- Fuel storage facility.
- Air cargo facility (4,000 m^2) with offices and high roof.
- Two- level catering facility (1,000 m^2) with truck docks.

Kisumu Airport

Quesna International Airport

Client
Arab Contractors (Osman Ahmed Osman)

Scope of Work
Conceptual design
Value engineering
Detailed design
Construction documents
Site support

Location
Menoufia, Egypt

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Plumbing and fire fighting
Structural

ECG, as the Arab Contractor's consultant, provided full technical support to Quesna International Airport EPC project. The project comprises the construction of a new terminal building at Quesna International Airport. It will act as a starting point for passengers travel and Air Cargo throughout the Delta region. The terminal structure is a combination of concrete columns, mezzanine slabs and steel roofing for hall areas.

With one arrival and one departure halls, the terminal building was designed to accommodate the peak, with passengers' capacity estimated 200 pass/hour. The hall is composed of two levels; ground floor and first floor. The ground floor, with an area of 3,500 m^2 encompasses all arrival and departure procedures facilities comprising passport control, luggage reclaim hall, check-in, security check and customs check. Related services include toilets, offices and an external commercial area. The first floor, with an area estimated at 750 m^2, contain offices, airport administration and a VIP lounge with all related services including toilets, kitchen, storages and separate path.

Quesna International Airport

King Khalid International Airport Departure Relief Project

Client
Netherlands Airport Consultants (NACO)

Scope of Work
Conceptual design
Preliminary design
Detailed design
Tender documents

Location
Riyadh, KSA

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Interior design
Mechanical
Structural

ECG Engineering Consultants Group served as a subconsultant to NACO Netherlands Airport Consultants. Work covered three terminal buildings, one for domestic flights and two for international flights.

The project's scope is limited to the departure halls of the three terminals. As the number of departing passengers has increased significantly beyond the current design capacity of the terminals, increased security requirements took place and have led to the implementation of hold baggage screening before check-in. Consequently, congestion and long waiting time for passengers in the departure halls occurred. Therefore, it was decided to redesign/ rearrange all departure procedures areas to relieve the pressure of large numbers of passengers through three measures:

- in line hold baggage screening (beyond check-in)
- increase the capacity of check in counters
- increase the capacity of passport control as well as security screening.

King Khalid International Airport Departure Relief Project

King Abdul-Aziz International Airport (KAIA)

Client
ORASCOM Construction Industries (OCI)

Scope of Work
Shop drawings

Location
Jeddah, KSA

Types of Activities
Civil
Electrical
HVAC
Communications and security systems
Mechanical

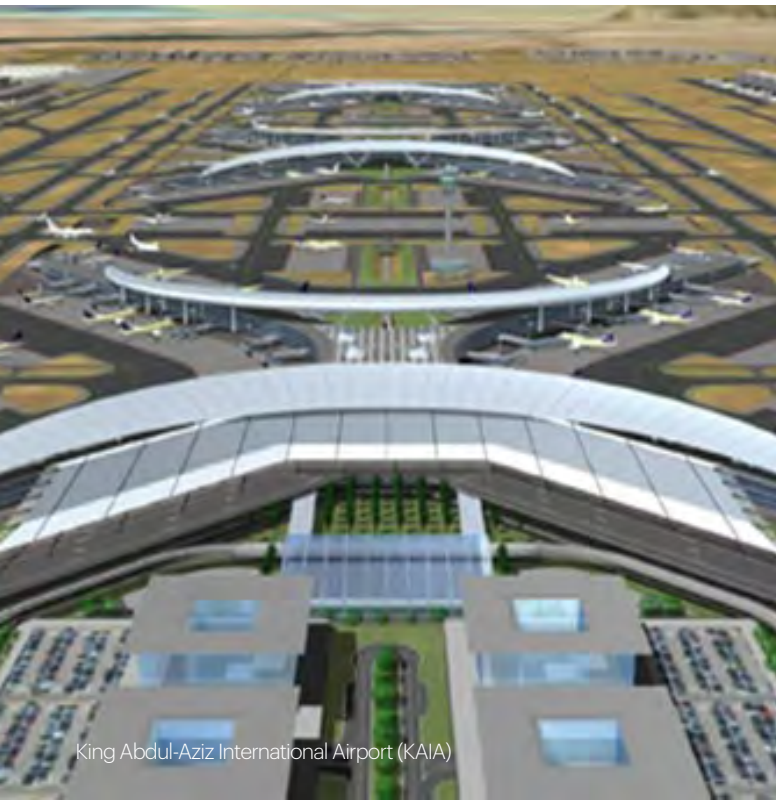
King Abdul Aziz International Airport (KAIA) in Jeddah is the third largest and busiest airport of Saudi Arabia. In 2010, it handled 17.8 million passengers. The airport is the gateway to Saudi Arabia for a large number of pilgrims. It is close to the cities of Makkah and Madinah.

To cope with increased traffic and larger aircraft, KAIA is expanding its runway and passenger capacity by developing a new air traffic control tower, a new terminal complex, transport facilities and supporting buildings (out of ECG scope).

The expansion program will be implemented in three phases; the first phase supports up to 30 million passengers per year, increasing to 45 million in the second phase to an eventual capacity of 80 million passengers per year in the third phase by the year 2035.

ECG scope encompasses the review of detailed design documents, preparation of material list, and preparation of shop drawings for the new utility systems, road networks and tunnels for both airside and landside of phase (1). The asphalt-paved road is 60,000 m long, with carriageway width ranging from 20 to 40 m.

By the end of the 3 phases, KAIA will be a landmark economic development for the region, capitalizing on the Kingdom's ambitious growth plans and the Authority's efforts for Saudi Arabia to enhance the status of Jeddah as an international hub.



King Abdul-Aziz International Airport (KAIA)

Al-Kufra Airfield Rehabilitation

Client
Libyan Engineering Office

Scope of Work
Detailed design
Tender documents

Location
Libya

Types of Activities
Civil
Electrical
Roads

Al-Kufra Airfield is located in Al Kufra region South-East of Libya. The airfield comprises a 3,660m x 30m paved runway.

The objective of this assignment was to rehabilitate the airfield comprising runway, parallel taxiway, apron, marking and signage, airfield storm water drainage, airfield ground lighting system and apron flood lighting in addition to apron support facilities including substations facilities necessary to operate the apron.

Al-Kufra Airfield Rehabilitation

Preliminary Studies for the Construction of a Civil Airport in Al-Dakahlia

Client
Governorate of Al-Dakahlia

Scope of Work
Data collection
Site analysis
Preliminary studies
(planning, economic, and engineering studies)

Location
Al-Dakahlia, Egypt

Types of Activities
Architectural
Civil
Electrical
Infrastructure
Mechanical
Roads
Urban planning

ECG has undertaken a package of preliminary studies for a project aiming at the construction of a civil airport for passenger and cargo aircrafts near an existing air base in Shawa Village of Al-Dakahlia, Egypt. Studies have covered all elements likely to affect the establishment of a civil airport in the area. In the same context, an urban development study of site surroundings has also been conducted, along with a study of the buildings required for the prospective civil airport (including terminal, cargo, service, and ancillary buildings). Overall, the project has comprised the following studies:

When complete, this airport would be an important development in the entire Northern and Central Nile Delta. It would serve thousands of travelers in Al-Dakahlia and neighboring governorates and facilitate domestic flights nationwide, thus contributing to a more rapid economic growth owing to the potential boost in commercial and tourist activities.

People-Mover Systems

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Qatar Education City People-Mover System

Client
WSP Middle East, Siemens Tram Consortium, and Grimshaw Architects

Scope of Work
Design review
Submission to authorities for building permits

Location
Qatar

Types of Activities
Architectural
Civil
Structural

A consortium comprising Leighton Contracting Qatar WLL, Siemens WLL Doha, and Siemens AG has been awarded a US$412 million contract to develop a People-Mover System (PMS) for Qatar Foundation's Education City campus at the west of Doha.

The project, which is set to be the first PMS in Qatar, represents a precursor of the country's US$35 billion investment in rail infrastructure over the next 10 years, as part of the 2022 FIFA World Cup Infrastructure Program.

The energy-saving PMS, which utilizes battery-powered trams, is designed to reduce the flow of traffic within Qatar Education City. It will allow students to travel free of charge to their destination within the city. A fleet of 19 trams will operate on an 11 km-long route, with a capacity of 3,300 passengers/hour in each direction. Trams will operate at four-minute intervals in both directions on the busiest sections of the network.

Siemens Tram Consortium has awarded building design services to WSP Middle East and Grimshaw Architects. As a third-party consultant, ECG will serve as Architect of Record and Engineer of Record for the following components of the project:

- 18 tram stops with single-sided and/or double-sided kiosks as waiting areas for students, employees, and visitors, along with a shaded open space (canopy) for each tram stop
- Siemens underground technical rooms, 8 substations, and a 500 meter-long tunnel
- 17 buildings serving the PMS, with a total built-up area of 10,540 m^2. The buildings include administrative offices, main service stations, panel beaters' workshops, control rooms, and main communication systems
- Electrical service buildings, including MV switchgear for TSS 1–5 and TSS 6–8 feeding the railway and tram stops, with a view to complying with the standards of Qatar General Electricity & Water Corporation (KAHRAMAA)


Qatar Education City People-Mover System

Doha Metro Stations (Green Line)

Client
Gannett Fleming

Scope of Work
Conceptual design
Preliminary design
Detailed design
Quantity surveying
Tender action
Architect of record

Location
Doha, Qatar

Types of Activities
Architectural
Electrical
Landscaping
Mechanical
Roads
Structural

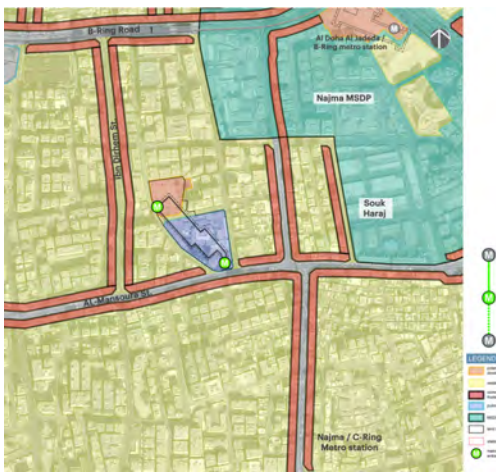
The Urban Integration Plans (UIP) and Station Area Planning (SAP) of this project are prepared by Qatar Railways Company (Qatar Rail) for the Public Works Authority (Ashghal). The project as a whole covers the Green Line of Doha Metro (Phase 1), which runs from Al-Riffa Station to Al-Mansoura Station. The line passes through Education City and is thus also known as the Education Line.

The project aims to ensure that all stations, entrances, and emergency exits are fully integrated with the urban context of their surroundings, and particularly with complementary multimodal transportation facilities. Another objective is to provide a seamless and stress-free experience to all passengers during their transitioning to and from the Doha Metro System.

ECG's services cover the following seven stations of the Green Line, with highest priority given to the first three:

- Al-Riffa (Al-Rayyan Stadium)
- Qatar National Library (Qatar National Library)
- Al-Shaqab (Education City)
- Al-Rayyan Al-Qadeem (Al-Rayyan Al-Qadeem)
- Al-Messila (Al-Rayyan)
- Hamad Hospital (Al-Rayyan/Sports Roundabout)
- Al-Mansoura (Al-Khubaib)

Doha Metro Stations (Green Line)



Ports and Harbors

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Adabeya Port

Client
Arab Contractors (Osman Ahmed Osman)

Scope of Work
Detailed design
Shop drawings
As built drawings

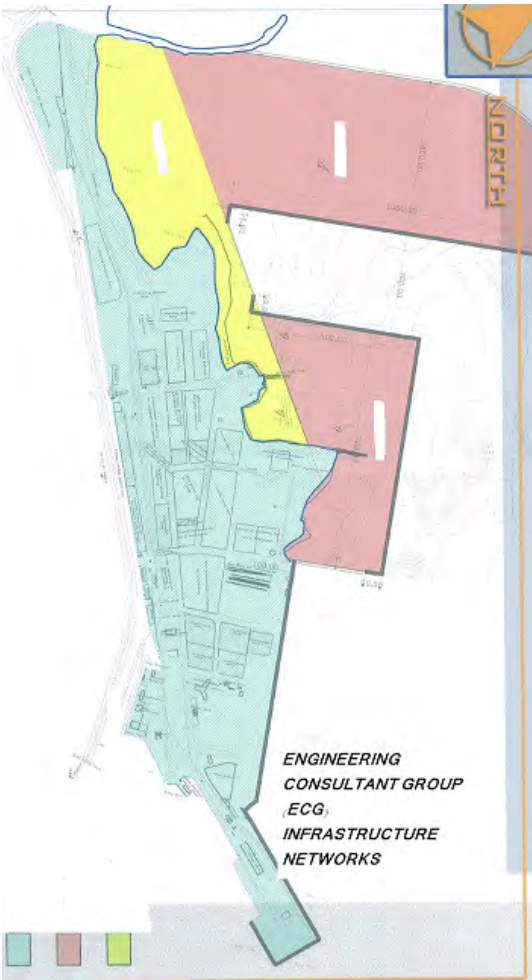
Location
Suez, Egypt

Types of Activities
Architectural
Communications and security systems
Civil works
Electrical
Fire protection
Geotechnical
HVAC
Infrastructure
Marine works
Mechanical
Structural

The General Authority for Red Sea Ports, the owner of the project, decided to execute extensions in the existing port of Adabeya. ECG provided full technical support in Adabeya Port EPC project. ECG scope included the review of detailed design and developing shop drawings for break water design (buildings to be safe against wave impact, sliding, and soil stresses); engine berth design (385m berthes with 12.5 m depth); potable water network (5.5 km piping); fire-fighting network; sanitary sewage network (1.6 km piping); irrigation network (3 km piping) and roads (6,640 m long with carriageway width of 15 m). The pavement is asphalt, interlock, and rigid types).

The port extension comprises infrastructure works (domestic, fire-fighting, sanitary sewage, Wastewater Treatment Plant (WWTP), irrigation, electrical, and communication networks), marine works (cut and fill protection sections, and engine berthes), roads & parking area, service buildings, drivers' building, distributors' building, transformer building, scale building, gates, yard fence, and customs area fence.

Adabeya Port



Onshore Facilities for Ras Al-Hilal Fishing Port

Client
Joannou & Paraskevaides, Cyprus

Scope of Work
Preliminary design
Design report

Location
Libya

Types of Activities
Architectural
Communications and security systems
Civil
Electrical
HVAC
Landscape
Mechanical
Roads

Nestled between Susa village (15 km) and Derna City (40 km) in Western Libya, the Onshore Facilities for Ras Al-Hilal Fishing Port are located on a plot area 30 m above the port. The project comprises a 15-building complex, associated infrastructure, and landscaped views. ECG also developed the port infrastructure design to accommodate various boat sizes.

The building complex comprises a fish market building housing 24 shops, a fish cleaning area, administrative offices, a 25-person classroom, and a conference hall, a service building featuring a bank, a post office, and the environmental authority, accommodation units for employees, fishermen, and VIPs, a workshop building, a fish process building, stores, a restaurant, an ancillary building hosting a police station, an amphitheatre, a clinic, a 570 m^2 cafeteria, a mosque, a substation for the generator, a switchgear, and transformers rooms.

Ras AlHilal is a virgin coastal region enriched with clean water and thriving maritime life. On the back of the natural protection offered by the landscape, the location has been used as a harbor for centuries. The name "Al-Hilal" is drawn from site's crescent-shaped bay that is set amidst white chalk rocks. The closest domestic airport to the project location is Labraq (20 km), the nearest international airport is Benghazi (220 km), and the nearest city AlBayda is about 35 km further inland.

Onshore Facilities for Ras Al-Hilal Fishing Port

Confidential

Client
Confidential

Scope of Work
Conceptual design
Preliminary design
Detailed design
Tender documents
Tender action
Site technical office support

Location
Confidential

Types of Activities
Architectural
Communications and security systems
Electrical
HVAC
Interior design
Local infrastructure, landscape and roads
Mechanical
Structural

The project master plan is closely aligned with the key objectives of the countryl Vision: environmental, economic, human and social development.

Spanning over an area of 26.5 square kilometers, the "New Project Steering Committee" appointed ECG-Rosser joint venture as the Building Design Consultant for the project.

that will be built offshore,. The project will offer technical support, comprehensive logistic facilities, material support accommodation and recreational services. The project will provide housing accommodation for 4,000 personnel.

Confidential

Confidential

Client
Confidential

Scope of Work
Conceptual design
Preliminary design
Detailed design
Tender documents
Tender action
Site technical office support

Location
Confidential

Types of Activities
Architectural
Communications & security systems
Electrical
HVAC
Interior design
Infrastructure
Landscape
Roads
Mechanical
Structural

The project spreads over an area of five million square meters. The self-sustained project comprises around 200 buildings with a total built-up area of over 560,000 m². It is developed as a complete, integral, and state-of-the-art encompassing all functions necessary for operations.

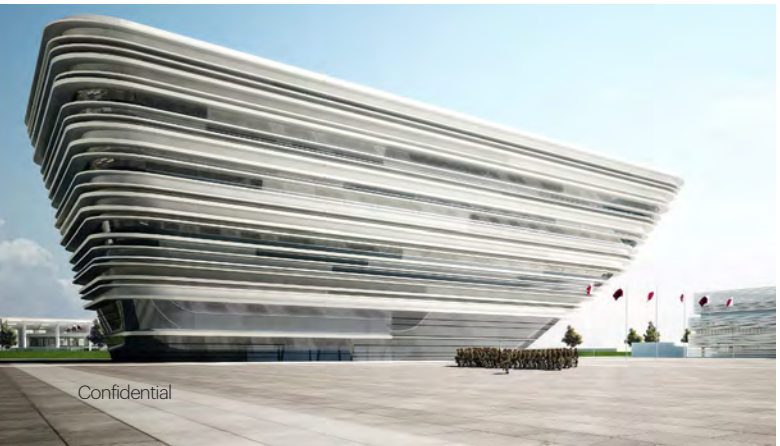
Building types cover administrative, accommodation, recreational, training, logistics, and maintenance facilities, with hierarchical functions that ensure the smoothness of operations, relations, and functionality.

The project is equipped with high-tech engineering systems for operations, back-up power, and data handling & storage, life safety, and security. The systems are carefully tailored to create a backbone of high reliability in relation to the operations necessary for military and crisis management activities.

The project is considered a leading facility due to its highly stringent approach to sustainability & environmental consciousness. The project aims at providing comfort for users, beauty for visitors, and cost- efficiency for work areas. The waterfront combines practicality with the beauty of image seen.

For the purpose of establishing a self-sustained and integrated project, all designs have considered the various details relating to operations and maintenance requirements, with a view to ensuring a prolonged lifespan of the materials used.

The project's boundary is secured with security gates, bulletproof-glass buildings, and detention facilities. The project is monitored through special defense and surveillance towers.



Confidential

Roads and Highways

ECG جماعة المهندسين للاستشاريين
ENGINEERING CONSULTANTS GROUP S.A.

Dukhan New Roads & Upgrading of Existing Roads

Client
Qatar Petroleum (QP)

Scope of Work
Traffic impact study
Survey works
Soil investigation
Sketch design
Preliminary development
Detailed design

Location
Dukhan, Qatar

Types of Activities

Roads
- Horizontal alignment
- Vertical alignment
- Structural design of pavement
- Signage, marking and road safety

Storm Drainage
- Rainfalls calculations
- Catchment area analysis
- Storm pipelines network
- Crossing culverts, catch basins and manholes
- Protection of existing facilities and networks

Irrigation
- Irrigation water demand
- calculations
- Irrigation network routing
- Irrigation system components

Landscape
- Analysis and investigation to existing landscape
- Landscape design for the new areas
- Plantation selection.

Street Lighting
- Selection of electrical substation
- Electrical loads calculations
- Single line diagram
- Cables network routing

The Dukhan field covers an area of 767 km² approximately stretching north to south and east to west about 80 and 17 km respectively. It comprises oil and gas facilities and supporting infrastructures & services which are connected with a dual carriage way spine for ease of traffic movement.

Upgrade of the existing roads was essential to facilitate accessibility and timely emergency response through incorporating installations to complete Dukhan road network.

Dukhan New Roads and Upgrading of Existing Roads

The project phases were developed along the spine road connecting QP staff accommodation to near Dukhan Operations Management Building. The total number of housing units is approximately 1,680 to accommodate about 800 families and 880 bachelors. Likewise, the new Dukhan Operations Management Building has been completed and is operational. It accommodates about 600 personnel. Due to these facilities, there will be substantial increase in the traffic on these roads. Hence, there is a critical need to upgrade the existing roads to cope with increased traffic.

The project aims to facilitate access to QP installations lying north west of the Dukhan Town (Khattiyah north area) for fire fighting vehicles as well as day-to-day maintenance operations. The road started at the QP Accomodation building roundabout to the Khattiyah north roundabout with an average length of 6.50Km, passing over many gas and pipelines crossings which were considered in the design process.

Landside Development for Abu Dhabi International Airport Midfield Terminal Complex

Client
Netherlands Airport Consultants B.V., The Netherlands

Scope of Work
Design development
Tender documents
Construction documents

Location
Abu Dhabi, UAE

Types of Activities
Civil
Roads
Structural

Contracted to finalize the landside design development phase of Abu Dhabi International Airport Midfield Terminal Complex, ECG delivered geotechnical services; structural designs for flyovers, overpasses, underpasses, retaining structures, and drainage systems/ foundations' secondary elements; designs for signage, street lighting, pavements, and drainage; and geometrical designs for roads.

Midfield Terminal Complex is part of Abu Dhabi International Airport expansion effort to raise passenger traffic from 7 million to above 40 million per year and cargo capacity to 2.5 million tons/ year. The Complex connects the new main terminal of the airport with the existing highway through directional multi-level interchange and with the proposed business district established near the airport. The roads network comprises 8 km of elevated roads (bridges) and 20 km of secondary roads.

Landside Development for Abu Dhabi International Airport - Midfield Terminal Complex

10-Year Master Plan & Maintenance Management Plan for Roads, Dukhan Fields

Client
Qatar Petroleum (QP)

Scope of Work

Preparation of the 10-year Master Plan comprised:
- Traffic surveys/ studies
- Data collection and analysis
- Proposing new routes for all QP facilities; optimization of 317 km existing road network; reviewing existing roundabouts design & existing signage; checking current illumination and considering potential illumination for future roads
- Reviewing storm water drainage of existing roads
- Cost estimates and cost benefit analysis

Preparation of Maintenance Management Plan comprised development of plan and preventive maintenance procedures for:
- Road surface and roadside maintenance activities (road shoulder, sidewalks, medians, rest area and roadside facilities, animal fence, six animal crossing and erosion of slope)
- Drainage maintenance
- Traffic maintenance activities (including traffic signs, marking, reflector, rumble strip and speed humps)
- Structure maintenance activities (including 4 bridges, 11 underpasses, RC culvert, steel & aluminum structure, slope & embankment and crash barrier)
- Illumination maintenance
- Development of emergency maintenance plan (including flood control response, road incident and vandalism response, structural damage response and temporary crossing emergency installation)
- Development of Inspection Plan
- Development of road condition classifications scheme
- Development of road risk assessment procedure
- Recommendation of equipment/ tools and software programs for sustainable road maintenance activities

Location
Dukhan, Qatar

Qatar Petroleum (QP) entrusted ECG Engineering Consultants Group with developing the 10-year master plan and maintenance management plan for roads in Dukhan fields. The project site is located at approximately 80 km west of Doha with 65 km long and 12 km wide. Dukhan Fields approximately covers 767 km^2 and comprises oil and gas facilities along with supporting services and infrastructure.

The project included three main stages:
- Conceptual Design: producing Site Survey Report containing all information gathered.
- Preliminary Design: drafting the 10-year Master Plan of Dukhan Fields Roads Development and Roads Maintenance Management Plan.
- Detailed Design: developing a final copy of the 10-year Master Plan of Dukhan Road Networks and Roads Maintenance Management Plan.

Arqeen – Dongola Road

Client
Egyptian Federation for Construction & Building Contractors (EFCBC)

Scope of Work
Data collection
Feasibility study
Economical study
Traffic impact study
Survey works
Soil investigation
Concept design
Tender documents

Location
Sudan

Types of Activities

Roads
- Horizontal alignment
- Vertical alignment
- Structural design of pavement
- Signage, marking and road safety

Storm Drainage
- Rainfalls calculations
- Catchment area analysis
- Storm pipelines network
- Crossing culverts, catch basins and manholes
- Protection of existing facilities and networks

ECG was contracted by Egyptian Federation for Construction and Building Contractors (EFCBC), to conduct the economical and feasibility study, design and tender for approximately 450 km road between Arqeen City, located at the Egyptian Sudanese Border and Donqola City, the capital of the north state, parallel to the Nile River from the west side.

This project is considered one of the main routes to connect between Egypt and Sudan with the African countries located on the same vertical route from Alexandria to Cape Town in South Africa. In spite of the fact that this study covers only the distance between Arqeen and Donqola as part of the middle route, west of the River Nile of Egypt and Sudan, its impact is also spread to cover the north and south African traffic movement throughout the COMESA agreement of the east and west Africa, and also the commercial general agreement either for services or goods.


Arqeen - Dongola Road

City Gate New Cairo

Client
Barwa Real Estate Company

Scope of Work
Traffic impact study
Survey works
Soil investigation
Sketch design
Preliminary development
Detailed design

Location
New Cairo, Egypt

Types of Activities

Roads
- Horizontal alignment
- Vertical alignment
- Structural design of pavement
- Signage, marking & road safety

Storm Drainage
- Rainfalls calculations
- Catchment area analysis
- Storm pipelines network
- Crossing culverts, catch basins and manholes
- Protection of existing facilities and networks

Irrigation
- Irrigation water demand calculations
- Irrigation network routing
- Irrigation system components

Landscape
- Analysis and investigation to existing Landscape
- Landscape design for the new areas
- Plantation selection.

Street Lighting
- Electrical substation
- Roads electrical calculations
- Single line diagram
- Cables network routing

The development is a unique community that is being created as a focus for national economic regeneration. Its introduction will be a 'true' living style for which all aspects of business life will be catered. The highest international standards has been used in its design and development.

The 20,000 m internal road network and 400,000m pavement area are designed according to the specification of the American Association of State Highway and Transportation Officials (AASHTO) and the Egyptian Code of Practice for Roads and Highways.

The internal road network connects to the outer adjacent roads through 13 main access points & 2 secondary access points (ingress\ egress) distributed overall the project area providing sufficient traffic transition for

City Gate New Cairo

the residents and visitors from any direction, and safe evacuation for the vehicles with minimum rescue time in emergency cases.

The access points to the project area are designed to provide no conflicts\ delays for outer traffic volumes due to using wide entrances and pocket lanes with sufficient storage length which can serve the expected peak traffic volumes.

The internal road network is designed to accommodate the site with design speed of 40, 50, and 60 km/h. The roads intersections design concept is simple, at grade intersection providing sufficient sight distances, turning radii and safe maneuvering. Villas areas entrances are provided with bridges to ensure privacy and maintain elite entrances.

Hyde Park

Client
Hyde Park Properties for development S.A.E

Scope of Work
Traffic impact study
Soil investigation
Conceptual design
Design development
Detailed design
Grading
Construction supervision

Location
New Cairo, Egypt

Types of Activities

Roads
- Horizontal alignment
- Vertical alignment
- Structural design of pavement
- Signage marking & road safety

Storm Drainage
- Rainfalls calculations
- Catchment area analysis
- Storm pipelines network
- Crossing culverts, catch basins and manholes
- Protection of existing facilities and networks

Irrigation
- Irrigation water demand calculations
- Irrigation network routing
- Irrigation system components

Landscape
- Analysis and investigation to existing landscape
- Landscape design for the new areas
- Plantation selection.

Street Lighting
- Selection of electrical substation
- Electrical loads calculations
- Single line diagram
- Cables network routing

Hyde Park is a unique residential & commercial development located in new Cairo over 6.3 million m^2. The development comprises luxury & large family villas, townhouses 2, 4 and 6 plex units, apartments, retail centers, 72 m-high commercial/office towers, a golf course, a golf club, a sports and health center, and community facilities.

The 15,000 m internal road network is designed according to the specification of the American Association of State

Hyde Park

Highway and Transportation Officials (AASHTO) and the Egyptian Code of Practice for Roads and highways. The internal road network connects to the outer adjacent roads through 9 access points (ingress\egress) distributed over the whole project area to provide sufficient traffic transition and safe evacuation for the vehicles with minimum rescue time in emergency cases for the residents and visitors.

The access points to the project area is designed to provide no conflicts\ delays for outer traffic volumes due to using wide entrances and pocket lanes with sufficient storage length which can serve the expected peak traffic volumes. The internal road network is designed to accommodate the site with a designed speed of 50 km/h. The roads intersections design concept is simple at grade intersection to provide sufficient sight distances, turning radii and safe maneuvering. Villas areas entrances are provided with bridges to ensure privacy and maintain elite entrances.

Cairo International Airport Terminal Building 3 - Landside and Airside Facilities

Client
Cairo Airport Company (CAC)

Scope of Work
Technical studies & traffic studies
Soil investigation
Preliminary design
Detailed design
Tender documents
Tender action
Construction management
Construction supervision

Location
Cairo, Egypt

Types of Activities

Roads
- Horizontal alignment
- Vertical alignment
- Structural design of pavement
- Signage, marking & road safety

Storm Drainage
- Rainfalls calculations
- Catchment area analysis
- Storm pipelines network
- Crossing culverts, catch basins and manholes
- Protection of existing facilities and networks

Bridges
- Vertical alignment
- Main gurder design
- Support column

Irrigation
- Irrigation water demand calculations
- Irrigation network routing
- Irrigation system components

Landscape
- Analysis and investigation to existing landscape
- Landscape design for the new areas
- Plantation selection.

Street Lighting
- Electrical substation
- Electrical loads calculations
- Single line diagram
- Cables network routing

Parking

Integrated landside and airside facilities were developed in order to facilitate movement and transportion of the passengers, tourists and others, accommodate a large number of vehicles from the new airport extension Terminal Building (TB3), and provide connection between TB3, TB2 and Cairo City and vice versa. The landside facilities include road system (roads length 9,000 m and 7/10 m wide, area 68,000 m^2), car parks (77,000 m^2), flyover bridges and elevated roads (1,885 m long and 7/9 m wide, area 15,000 m^2), serving the traffic to and from the terminal building. The airside facilities include apron service loads, areas for ground handling equipment and aircraft parking configuration.

Cairo International Airport Terminal Building 3 - Landside & Airside Facilities

The project included a group of bridges as follows:

- Departure Elevated Bridge: reinforced concrete continuous girder of multiple lane bridge. The slab is built monolithic with girder, the connection between the girder and the slab offers restraint on the slab.
- Arrival Road Bridge: parallel to the departure bridge having the same statically system and structural dimensions and is constructed on reinforced concrete deck structure rested on roads of three columns supported on RC piles.
- Autostrad Bridge: reinforced concrete continuous box girder type supported on reinforced concrete wall rested on RC piles.

The scope of work covers preparation of conceptual master plan including data analysis for traffic density and future requirements, conceptual design for sanitary and rain water drainage networks, lighting, automatic gates and entrance control units, fire protection; conceptual design for the investment services building; preparation of a Basis of Design Report (BODR) including cost estimate and time schedule; preparation of a 3-D Model with scale of 1:500, technical report, economic studies report and drawings; and participation in the presentation and demonstration for the project elements; detailed engineering; tender documents, tender evaluation and commissioning.

Design of Pedestrian Bridges

Client
Al-Jaber

Scope of Work
Detailed design

Location
Abu Dhabi, UAE

Types of Activities
Structural

ECG was awarded the design of 9 pedestrian bridges at various locations in Abu Dhabi.

The structural system is composed of steel trusses. All bridges are double spanned varying between 28 m and 44 m, the sides are aluminum cladded and covered with sandwich panel roof.

Kakamega-Webuye Road (A1)

Client
Kenya National Highways Authority (KeNHA)

Scope of Work
Construction supervision

Location
Kakamega County, Kenya

Types of Activities
Civil
Roads

Being a part of Kisumu-Kitale Road network, the 40 km Kakamega-Webuye Road is classified by the Kenyan Ministry of Transport and Infrastructure as "Class A1: International Trunk Road". The road plays an important role in import/export traffic, linking Tanzania-Kenya-Sudan with Uganda and Ethiopia, serving about 19.8 million people in Western Kenya as well as facilitating trade and regional integration.

The road connects areas with greater weights of business activities including eco-tourism, industrialization, market diversification, financial institutions among other sectors; which leads to improving the living standards of the people in the area and creates potential economic opportunities including agriculture, livestock, forestry and minerals, fisheries, wildlife and tourism.

The project works include the following:

- Reconstruction and widening of the existing road
- Construction of service roads, access roads and market road loops
- Rehabilitation works
- Preparation for pavement widening and earthworks as well as construction of road shoulders necessary as per drawings and specifications.
- Construction of pipe culverts and ancillary drainage works
- Provision of road furniture and road marking
- Construction of a dual carriageway
- Other operations ancillary to the main works.

Kakamega-Webuye Road (A1)

Tunduma One Stop Border Post

Client
Tanzania Building Agency

Scope of Work
Conceptual design
Schematic design
Detailed design
Tender documents
Construction supervision
Project management

Location
Tanzania

Types of Activities
Architectural
Civil
Communication & security systems
Electrical
HVAC
Mechanical
Roads

Tanzania Building Agency (TBA) entrusted ECG to provide the full design and construction supervision services for the Tunduma One Stop Border Post (OSBP) Project. Over a plot area of 30,910 m^2, the OSBP is located in Tunduma city on the border of Tanzania and Zambia.

With the aim of increasing economic growth by handling exports, imports and transit goods channeled throughout Tanzania, the OSBP comprises the following components with a total built-up area of approximately 8,720 m^2:

- Main office building
- Vehicle inspection building for exports
- Vehicle logistics and services building for exports
- Vehicle inspection building for imports
- Travelling buses' control building
- Employees' accommodation buildings


Tunduma One Stop Border Post

Diversion Road Design for Lusail Expressway

Client
Middle East Traffic Consulting LLC (Trafficonsult)

Scope of Work
Detialed design

Location
Doha, Qatar

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
Roads
Structural

Due to the rapidly growing development of Lusail City and it's critical location, it was mandatory to construct diversion roads during the construction phase of the Lusail Expressway project.

The detour road's length is approximately 3.5 km, connecting several important destinations in north Doha, it comprises a dual 2-3 lanes carriage way for each direction and intersections controlled by traffic signals and roundabouts. Design works include horizontal and vertical roads, signs, markings, surface water, street lighting and security surveillance systems.

The detour is designed as per international standards for permanent roads, achieving "level A" service. The road's alignment will be modified twice to suit the construction works sequence.

Diversion Road Design for Lusail Expressway

Nyahua-Chaya Road Upgrade

Client
Tanzania National Roads Agency (TANROADS)

Scope of Work
Feasibility study
Topographic survey
Traffic impact study
Environmental Impact Assessment (EIA)
Detailed design
Tender documents

Location
Tanzania

Types of Activities
Civil
Landscape
Roads
Structural

Tanzania National Roads Agency (TANROADS) assigned ECG to prepare the feasibility study and update the detailed design of "Nyahua-Chaya Road" (85.4 km) in compliance with the International Bitumen Standards. The project is funded by the Kuwait Fund for Arab Economic Development (KFAED).

The feasibility study shall determine the technical and economic feasibility of upgrading the existing gravel/earth, taking into account environmental and social aspects. The progression of the consultancy services from phase I to Phase II is subject to the results of the feasibility study. To ascertain the technical and economic feasibility of carrying out the proposed construction works for the road, ECG undertakes the update of detailed design and preparation of tender documents for International Competitive Bidding (ICB) as per the KFAED procedures.

Nyahua-Chaya road section forms an important link with the trunk road corridor (1,539 km) that traverses Tanzania from East to West. The road corridor starts at Dar es Salaam city, on the eastern part of Tanzania, passes through three regional headquarters and ends at Kigoma, on the Lake Tanganyika. Dar es Salaam is the leading commercial city and leading port of Tanzania, providing a gateway to the hinterland of Tanzania and several neighboring countries. The eastern end of the road corridor from Dar es Salaam–Dodoma (451 km) and the western end from Kigoma–Uvinza (112 km) are asphalt-paved while the intermediate part from Dodoma–Uvinza is still unpaved.

Nyahua-Chaya Road Upgrade

El Sheikh Fadl–Ras Gharib Road

Client
Nemesis Contracting PLC

Scope of Work
Topographic survey
Geotechnical investigation
Detailed design
Shop drawings

Location
North of Menia, Egypt

Types of Activities
Civil
Electrical
Geotechnical
Infrastructure
Roads
Structural

The objective of the project is to construct a new 3-lane road (90 km length and 11.7 m width, Asphalt pavement type) connecting El Sheikh Fadl Village to Ras Gharib City, and to upgrade the existing road and the median in between, including the carriageway, shoulder and verge.

The project encompasses circulation plan, typical U-turns, road marking & signage, pavement layers and street lighting.

El-Sheikh Fadl-Ras Gharib Road

Southern Africa Trade and Transport Facilitation Project (SATTFP)

Client
Tanzania National Roads Agency

Scope of Work
Feasibility study
Traffic impact study
Social impact assessment
Environmental impact assessment
Cadastral and topographic surveys
Custom data modeling
Geotechnical investigations
Concept design
Schematic design
Design development
Detailed design
Tender documents
Construction supervision

Location
Borders between Tanzania and Malawi, Africa

Types of Activities
Architectural
Civil
Communications and security systems
Electrical
Infrastructure
Interior design
Landscaping
Mechanical
Roads and highways
Structural

The governments of Tanzania and Malawi have observed that delays in crossing the border, cargo clearance, and movement of passengers create barriers to trade in the region.

Such delays, which account for the congestions at the Songwe-Kasumulu border crossing, also raise the cost of transportation of goods, which in turn affects the economy of both countries. The governments of Tanzania and Malawi have thus reached an agreement to build a One-Stop Border Post (OSBP) on their common border at the Songwe-Kasumulu crossing.

In collaboration with ECG, the Tanzania Buildings Agency (TBA) will provide consultancy services for the intended OSBP construction and improvement.The timeframe for the execution of this project will be 36 months on two phases.

Southern Africa Trade and Transport Facilitation Project (SATTFP)

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