DAR Engineering

Book 2018

الدار الدولية للهندسة
DAR ENGINEERING

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Contents

Strength, resilience and success

Sultan Saleh Al-Sudais, GM of DAR Engineering

A Message from General Manager

Without a doubt, 2017 has been a complex year in the world. In this tough economic climate, and despite certain difficulties, we have to say that overall, the balance has been a successful year for DAR Engineering.

As can be seen in this publication, we have consolidated our activity with magnificent projects around the world, developing even further our capacity to undertake large-scale and complex world-class projects in diverse locations such as Saudi Arabia, Malta, Uganda, Nigeria, Pakistan and Indonesia.

Furthermore, we have achieved some success of which we are particularly proud. These projects have not just been an opportunity to undertake profits of a high professional level, but we have shown a great capacity to meet the specific needs of our clients, something that would have seemed almost impossible in the past.

For instance, in terms of Healthcare, we have built and commissioned state-of-the-art large-scale facilities all over the world, in record time. We have also designed, again in record time, 15 Hospitals and Healthcare facilities in three different continents simultaneously.

And this is an aspect of DAR we would like to highlight and enhance. Our objective is not only to develop technologically complex and important projects, but above all, resolve the problems that really concern our clients, understanding their needs and doing everything possible and impossible to meet their needs in any location around the world.

DAR Engineering pursues the vision of operating at a global scale in the near future, being able to serve clients all over the world. The addition of top tier professionals to develop new verticals and to increase our engineering capabilities, is a priority in the growth plan of the firm.

We imagine DAR delivering clean water and energy, building iconic healthcare facilities, planning new cities, connecting people and economies with roads, bridges, tunnels and transit systems, designing parks where children play and helping governments maintain stability and security.

We connect expertise across services, markets, and geographies to deliver transformative outcomes. Worldwide, we design, build, finance, operate and manage projects and programs that unlock opportunities, protect our environment and improve people's lives.

Sultan Saleh Al-Sudais
General Manager

We have imagined it.
We are delivering it.

We value our people's dedication and commitment

Our clients trust in our capabilities, innovation and technical excellence. And we look forward to contributions the region's economic expansion.

For the last two decades, DAR Engineering has been providing high-quality engineering and support services across a wide range of sectors ranging from Power and Energy infrastructure to Buildings and integrated Project Management solutions.

Today, DAR Engineering has grown to become a diversified engineering delivering integration expertise, reliable solutions and unmatched support.

Our most valuable assets are our team of skilled engineers and our capability to integrate various technologies.

As an example DAR Engineering's innovative approach to the fast-growing market requirements, helped it become the leading Power and Energy engineering in the region, playing a major role also on international developments.

We are confident that our strategies will pave the way for major achievements to meet the highest expectations on growing economies and well-established international markets.

One-Stop-Shop

Our business line expansion has enabled us to pursue contracts across the complete spectrum of professional technical services related with infrastructure development, from initial planning, engineering, project management and design, across the whole lifecycle of the asset.

We are focused in large scale projects that will be undertaken on behalf of clients with whom we have long-term relationships and an established reputation for quality and service.

During the past years, the average size of our project wins has become larger, as clients look to firms such as DAR for a fully integrated "one-stop shop" solution rather than parceling out the work among several firms.

Shahbaz Tufail
Deputy General Manager

Shahbaz Tufail, DGM of DAR Engineering

Retain a competitive edge with DAR Engineering innovative design solutions

Our vision

Our vision is to be the trusted partner for providing services around the world, delivering infrastructure and creating places that bring lasting benefits to our customers and the communities in which we live and work.

DAR aims to be a reference firm for future engineers generation, as an organization, global reach and quality of work.

As a multidisciplinary design and engineering solutions provider, DAR Engineering has established itself as a prominent partner for numerous clients in markets such as, Power Generation, Power Transmission, Distribution, Healthcare, Architecture and Construction Supervision.

Our approach to each and every project is through a complex design and construction process that blends the technical expertise, dedication and experience of a passionate team of professionals.

Our holistic approach to the projects results in delivering successful design solutions.

DAR Engineering is one of the leading integrated engineering services companies, with a substantial portfolio of building and infrastructure projects, extensive power and energy capabilities and a sector-leading ability to deliver sustainable solutions.

Our winning edge

We attribute our success to our core beliefs and values, that make us stand ahead of the competition.

People
The primary and the greatest strength of our company and the reason for success is our vibrant and growing team. Through continual development and hard work, we ensure that our people have the cutting-edge skills and demonstrate the highest professional standards in each area we operate.

Quality
Our well drafted QMS policies guide us to deliver outstanding quality in our work. Giving utmost consideration to client satisfaction through sustainable and efficient designs, we showcase a high level of professionalism and dedication.

Safety
Safety, risk, environmental, sustainability and public accountability are of high and increasing significance. All our businesses enjoy remarkably high standards of health and safety. We achieve these high standards by ensuring health and safety as an integral part of everyone's approach to work.

Delivery
'On-time delivery exceeding the client's expectation' is our delivery motto. Understanding the clients' frequent rush requirements, we are very well committed to meet the tightest delivery schedules.

Leading Edge Technology
We have experts in a range of efficient, renewable and passive technologies, enabling us to influence both building design and policy developments. Through our relationships with government, international clients and joint venture partners, our design teams have the benefit of being able to share the most up to date technological and operational knowledge.

Relationships
Working collaboratively, we develop sustainable objectives that meet and exceed expectations. Providing clients with high-performance solutions that are good for their businesses and their communities are always top priority.

750
Total number
of accomplished projects

94
Total number of served clients

History and growth

We attribute our success to our core beliefs and values, that make us stand ahead of the competition.

DAR Engineering Foundation

New office in Cairo, Egypt

First Power Generation Project

First Healthcare Project

1999 — 2000 — 2006 — 2007 — 2008 — 2009 — 2010

One of the first completed Power and Energy projects

New office in Chennai, India

Reaching 500 Employees

DAR Engineering was established in 1999. With a team close to 1,200 engineering and design professionals, we combine our areas of expertise to deliver comprehensive and sustainable design services for our clients through quality, innovation and sustainable solutions.

The full range of design services we offer includes architecture, mechanical, electrical, plumbing, structural and civil design. From concept through delivery, we ensure seamless integration of engineering systems to support and enhance our designs with energy-efficient and cost-effective building systems.

First Water Project

First Medical City

New office in
Lahore, Pakistan

Reaching
1000 Employees

Center of Excellence
in Europe

2011 2012 2013 2014 2015 2016 2017

First
Education Project

First Mixed-use and
Retail Project

First PPP
Project Assignment

Investment Advisory
Vertical

The two pivotal guiding factors of DAR Engineering are our commitment to high quality and attention to employee Development.
DAR Engineering is ISO9001:2008 accredited.

DAR Engineering strives to consistently surpass quality standards conforming both to the client-set and to the international standards. We are fully committed to performing all our obligations with full responsibility, due diligence and efficiency.

Adopting a quality management system based on internationally recognized standards, we ensure a planned, systematic and proactive approach to quality in all aspects of our work.

We apply the multi-disciplinary talents of an international management consultancy allied to that of a world-class engineering firm. DAR is well committed to deal with customers fairly and professionally by establishing flexibility and adaptability in our approach.

The quality policy of DAR Engineering has been diligently followed by our team, enabling them to meet the set standards time after time resulting in total customer satisfaction. To sustain our belief of quality output through a skilled and motivated team, DAR Engineering has a comprehensive human resources department that constantly provides training to our Engineers and Designers.

Geographical presence

DAR Engineering offices are located in all major regions of Saudi Arabia with Headquarters at Riyadh.

A workforce of 1,200 professionally qualified engineers consisting of engineers, architects and design professionals contribute to our global market particularly to our clients spread across the Middle East, Central Asia and Africa.

70%

Market share in Saudi Arabia

10

Nationalities

20

Languages

1

Team

DAR Engineering plans to continue its growth strategy next year, and plans to continue to invest in its services and improve its global reach by 2018. DAR will continue on its strategy of organic growth from Europe to Asia, leveraging on the geo-centricity of the KSA.

During 2017, DAR scaled up its staff with the addition of professionals from top-notch consultancies in Architecture, Building Services Engineering, Healthcare and Business Development. Including the reinforcement of its European-hub or Center of Excellence.

As for markets, DAR unlocked five new project-location points and one new office, rounding off the year with +20 international projects on its global reach.

9600

Total megawatt installed

1Million

Square meters delivered in site supervision

Key personnel

Market leader in the power sector

"DAR Engineering is swiftly embracing and realigning its resources to serve the industry in response to the technological advancements in the Power Sector by induction of highly qualified staff..."

Yogesh Kanna
Executive Manager, Operations

Our vision is to be trusted partner for providing a cost-effective, simple but state of the art design solutions to Power industry, Energy sector and infrastructure projects catering to global markets that deliver lasting benefits to our valued customer.

Over past two decades, DAR has emerged as a market leader in the power sector of the region working with all major Utilities, EPC contractors, OEMs such as Siemens / ABB/ Alstom/ Hyundai / Samsung / GE as qualified Design & Engineering consultant for SEC, Royal commission, Marafiq, Aramco, SABIC, SWCC, Maa'dan, etc. covering tender feed, detail design, project management and construction management services.

DAR Engineering has gained the distinction of being a most preferred consultant by client and contractor alike for all their strategic, and fast-track mega projects. DAR Engineering has contributed to major part of Kingdom power infrastructure development of 70GW network by productively involving in Design Engineering, Project, and construction management services over past two decades.

The year 2017 in particular, added new feathers in DAR Engineering cap with its foray into 500kV Bi-polar HVDC inter-country transmission project, utility-scale solar project, roof top PV projects, PMC of Distribution Control Center projects and entry into new territories / countries.

Power and Energy sector is undergoing rapid transformations and novel developments in terms of innovation in energy production and adaptation of new technology for transmission and distribution of thus produced energy. Bulk generation and distributed generation is developing in tandem through the application of power electronics and power systems complementing each other. On one hand enhancement of transmission capacity over very long distances by utilizing existing lines or adding new lines through application of FACTS and HVDC to provide most efficient and viable way of reaching consumers from bulk generation resources and on other hand distributed power generation near consumer ends through renewable energy generation, rapid proliferation of smart devices, energy storage techniques, and sophisticated monitoring devices for efficient delivery of the energy all together paving way for inclusive growth of power sector. DAR Engineering has developed its expertise through application of in house RND and offers full range of power system studies engineering services to utilities, IPPs, and Industries to cater to interconnection of new generation, power quality enhancement and improve the efficiency of new and existing installations and power distribution networks.

In addition, Dar Engineering has published many technical papers / articles in various International conferences as part of knowledge sharing with peer group.

DAR has successfully entered and right now delivering both utility scale Solar PV plant and Roof Top Solar PV projects for industrial needs to deliver sustainable power and playing its role to reduce carbon foot print, improving the environment and conserving the resources for future generations.

DAR Engineering is swiftly embracing and realigning its resources to serve industry in response to the technological advancements in the Power Sector by induction of highly qualified staff, skill augmentation of resources through continuous education and training programs and addition of modern Computer Aided Engineering tools, upgradation of design processes and introduction of communication apparatuses to deliver high quality integrated design product.

DAR added several intelligent 3D modeling over the past five years for delivery of well-coordinated, clash free, accurate and economical design solutions, DAR also upgraded design process and workflows in line with the requirements of 3D design tools in a collaborative environment.

Key personnel

Sharing knowledge, building relationships

Javier Poveda
Executive Director

DAR Engineering Buildings

DAR Engineering Buildings is living exciting times supported by a double-digit steady growth since its opening as new vertical in 2009.

Operating as one firm with six global offices, the Building Business Unit position itself as leading architecture firms with approximately 160 staff members from 12 different countries, and developing large-scale projects in four continents.

The firm's diverse portfolio comprises healthcare - our core expertise, high-rise office buildings, hospitality, academic, medical, research, transportation, residential, and mixed-use projects in the international markets.

Talent

Our business success today revolves largely around people, not capital. DAR Engineering has consistently engaged top-notch talent, with international experience, and multidisciplinary deep expertise in large scale projects.

Career development, training and coaching programs have created a solid base of near two hundred professionals leaded by our Europe-based center of excellence. The process has been consolidated in the past years, to compete today with the top building consultancies in the market.

Global expertise. Local networks

Our expertise is delivered across a broad range of sectors and geographies. Right now, our people are working on projects in Europe, Middle East, Central Asia and East Asia.

Strong ties on the ground combined with global expertise, and right balance of agility to react at our client's needs, are the key success factors of our international growth.

Team effort and long-term

Building design is a team effort, and very complex from start to finish. It's an amazing accomplishment for not just architects, but for the clients, engineers, contractors, and materials suppliers – all of the craftsman. There are often well over 1,000 people who work on large buildings including the suppliers – from the architect to somebody who is quarrying the marble in Europe and shipping slabs to the GCC.

Today, we design and finish our buildings over a period of four to ten years. Obviously, some can take a longer time, and the more complex ones have a longer time frame. We're currently working on hospitals that are under construction and, by the time that are finished, will have been over a 10-year span of work.

Long- term relationships business

The period from design through to construction is reasonably long and it is important that the relationship between consultant and client remains strong so that the resulting building is outstanding and successful. A successful building is the result of the collaboration between the client, team of architects, engineers, contractors and equity investors.

If the relationship is strained, then the product suffers, as does its long-term success. From the consultants' point of view, an excellent relationship will pretty much guarantee new projects from the owner, while a poor one will likely lead to disqualification from other projects.

One of the most important aspects of a good relationship between an architect and client is that each understands the other's goals, process, and limitations and that there is trust between them. Our approach is to go after clients, not projects. We wanted to go after the best clients and get them to know and like us so, when a project did come up, they would think of DAR.

"Our practice is global, we design projects all over the world for clients, and technology is fundamental to operate globally."

Key personnel

Team representing owner's to protect their interests

Raed Al Shalaan
Executive Manager, General Consultancy Service

We are committed and have strong believe in provision of quality services to the optimum level of customer's satisfaction. We support our customers by contributing to their efforts to take on corporate transformation challenges. Our mission is to become most reliable long term partner for the clients to meet their business goals by providing full range of engineering consulting services for Construction Management, Project Management and Construction Supervision.

General Consultancy Services team comprises of more than 500 Engineering & Highly Skilled Professionals serving for Construction & Project Management, Site Supervision, Engineering Services and Professional Manpower Supply Services in order to provide Specialized & Engineering Support for all types of projects including, but not limited to: Infrastructure, Healthcare & Medical City, High-rise Buildings, Industries, Water Projects, Power Plants, Substations and Transmission Lines & Under Ground Cables Projects etc., to various iconic Clients across the Kingdom of Saudi Arabia and offshore as well.

Building and Construction Projects are always high-risk undertakings due to innovation, complexity, individuality and significant capital investment. Hailing from around the world, and with experience across international markets, our skilled team's commitment to exceptional results, client-dedicated practices, and uncompromising integrity ensures all projects are delivered to our high standards and to our client's complete satisfaction.

DAR established geo-strategic objectives while considering the general economic recession observed during the preceding year that led to large and persistent declines in the capital investment especially in the Middle East and most parts of the world, strategically targeting at GCC, Africa, Asia and European countries to expand and penetrate as a trusted partner in the global market.

Prominent offshore projects attributed to DAR during year 2017 concludes, Construction Management of Schools awarded by Ministry of Public Works & Housing, Jordan and Consultancy Services for Construction of Agriculture, Food and Drug Laboratories awarded by Infrastructure Development Authority, Punjab-Pakistan.

"Hailing from around the world, and with experience across international markets, our skilled team's commitment to exceptional results, client-dedicated practices, and uncompromising integrity ensures all projects are delivered to our high standards and to our client's complete satisfaction."

"Good team and right expertise means half work done."

Frederico Ramos
Head of Architecture

With over 23 years' experience, 12 of them in Asia, Frederico worked in places as diverse as Portugal, Macao, Angola, Hong Kong, Singapore and Australia, with projects in Western Europe, Eastern Europe, Africa, South America, Middle East, Oceania and Asia.

Experienced in all project stages from inception to completion of healthcare, infrastructure, hospitality, retail, commercial, institutional and residential works; Frederico's diverse experience enables his current engagement in projects of wide-ranging scope.

Frederico is particularly experienced in complex institutional projects and large-scale fast- track projects, such as the Macao Venetian Cotai Strip Parcel 5 & 6, the West Kowloon terminus or the Macao Last Appeal Court.

Particularly active in mentoring, BIM and R&D, with talks in Europe and Asia; Frederico was a panellist for the ULI 2017 Future Leaders Forum to discuss the impact of technology in the real estate industry.

Badreddin Al Karmy
Lead Project Management

Badreddin Mhd. Al Karmy graduated with a Bachelors Degree in Architecture from College of Architecture, Damascus University, Syria He has a varied experience in Healthcare, Educational, Commercial, Residential and Mixed Used Development and has been involved in the design of a range of residential, industrial and institutional projects. He has delivered several large projects from inception to completion and Commissioning.

At DAR Engineering he is involved in Project Management of Residential and Healthcare projects. He is a Project manager of both King Faisal Medical City – ABHAA – and Prince Mohammed Medical City – Al Jouf - working closely with our international partners and our Medical Planning and Engineering Teams. In addition to that, he is a project manager for several projects at King Fahad Medical City and other clients, including private clients.

Iyad Tammas
Business Development and Sales Manager

Iyad has a Bachelor's Degree in Electrical Engineering from Al Baath University, Syria. He has more than 12-year experience in prestigious multi-disciplinary projects in a lot of well-known private and governmental bodies.

After graduation, he joined A. Abunayyan Trading Corp, as a Senior Proposal Engineer, and then moved to DAR Engineering, to act as a Business Development and Sales Manager, where he managed a large number of projects and built strong business relationships with clients and partners all over the world.

At DAR Engineering, Iyad worked with the internal team, sales and marketing staff, and other technical managers in order to increase sales opportunities and the revenue, by finding potential new customers and ultimately converting them into clients while helping to manage existing clients and ensuring their satisfaction.

Patrícia Lima
Lead Architect

Over 16 years' experience in developing architectural projects from inception to completion, covering all design phases - Concept Design, Design Development and Construction Documents / IFC Drawings.

Her major fields of expertise include Healthcare, Education, Residential and Interior Design, and her core competencies are team leading, preparing preliminary layouts in compliance with owner criteria, project management and a keen interest in streamlining the design process.

During 10 years, Patricia ran her own studio, which gave her an overall perception of everything related to projects, coordination and management. Over the last 5 years she has also been dedicated to BIM implementation, office guidelines, drawing standards/ workflows and quality check and control.

Patricia has worked in several world regions and is very interested in learning from the different cultures, understanding the clients, the end-users and everything that is connected with the design process.

Vasco Carvalho
Design Director

Vasco has 18 years' experience in several architectural key areas, as a Lead Architect and Concept designer, that include Mixed-use, Retail, Workplace, Residential, Hospitality, Healthcare, Educational, Interior Design, Transportation, Leisure & Sports, Masterplan and Logistics, with a scope of work that goes from concept to detail design and construction.

Vasco has a long international experience with projects from the Middle East to Asia, Europe, Eastern Europe, Africa and South America. In the past, he had several collaborations in different architectural practices, experiencing different ways of working.

Vasco worked for 10 years in an international architectural firm with 15 offices in 13 different countries, winning 8 competitions for large-scale projects in less than 3 years, and several 2nd places. He left as Associate Director, with the responsibility to lead the concept design team of Lisbon office.

Pedro Gargaté
Senior Healthcare Architect

Pedro has 16 years' experience in large-scale buildings design, with the last 10 focused on Healthcare Design and projects designed and built in Western Europe, Africa and South Asia with proven success.

From Medical Planning to Detail Design, Pedro has extensive experience in the healthcare area and is versed in identifying client requirements, developing medical planning guidelines, space programs and full architectural layouts, as well as coordinating Architecture with MEP, guiding the whole team in delivering a full documented project ready to be built. He has extensive knowledge of international building codes and healthcare guidelines, evidence-based design and new healthcare trends, and follows the best practices to ensure the most suitable projects, always in line with the provided scope of work.

Pedro worked for 9 years in the Leading Portuguese Healthcare Design Practice where he acquired great expertise in the field, designed and followed the construction of several key Healthcare projects.

Ivo Costa
Lead Architect

Ivo has over 10 years' experience working on high-profile international projects from inception to completion. He joined a multinational company in 2008, where he worked on several different projects including the Pushkin State Museum in Moscow, the New Beijing South International Airport and the winning bid for the New Slussen Masterplan competition in Stockholm.

He subsequently worked on the design of 3 residential towers in Shanghai and coordinated the integration of building services, vertical transportation and various tenant brief requirements, ranging from world-class financial institutions to a luxury hotel, for a mixed-use high rise tower in Beijing.

He was the technical coordinator of the Schematic Design of the iconic Lusail Stadium, the main venue for the 2022 FIFA World Cup in Qatar. Prior to joining us, he was the design manager for Lusail Plaza in Qatar, a large infrastructure project that he permanently coordinated on site as Associate Partner for over two years.

We have more than 1,200 architects, engineers and design professionals.

Pedro Nave
Structural Conceptualization

With more than 8 years experience specialized in buildings, his experience includes residential, offices, retail, museums, schools and an airport.

Pedro is used to working as part of multidisciplinary teams with architectural and MEP members. Recent work includes projects in China, Panama, United States, Middle East and Europe.

He performs well under pressure, remaining calm and goal focused at all times. Pedro has full professional fluency in English, Portuguese and Spanish. His typical duties include leading, managing and coordination of structural design teams on one major project or several small to mid-size projects while performing structural design and analysis to international codes and standards of structural systems for all building types.

Pedro is also proficient at designing structures beyond the scope of the codes by using a performance based design approach, including non-linear pushover analysis.

Tomé Caupers
Senior Healthcare Architect and BIM Manager

Tomé is a Registered Architect at the Official Board of Portuguese Architects. He has a background that joins a classical education in Architecture and Urban Planning, from School of Architecture, University of Lisbon, with a solid experience using BIM tools and workflows.

Tomé has also completed 2 postgraduate courses from University of Wollongong, one on Health Facility Planning and another on Health Service Planning. Having worked as a Design Architect for more than 3 years in Europe and as a BIM Manager and Health Planner in Healthcare Projects for more than 6 years in the UAE and Portugal.

In the last 4 years Tomé has been working exclusively in Planning and Design of large-scale fast track Health Facility projects both as a Senior Healthcare Architect and as a BIM Manager. His portfolio includes several flagship healthcare projects in the MENA region, Pakistan and Australia.

Magda Gonçalves
Senior Landscape Architect

Magda is a Registered Landscape Architect at the Portuguese Association of Landscape Architects, recognized by the International Federation of Landscape Architects (IFLA). She has over 13 years of experience in Landscape design, with the main focus on the Healthcare field in the Middle East region in the recent years.

Magda has a Bachelor degree in Landscape Architecture from School of Agriculture (University of Lisbon) and in the past she had experience in companies in the field of Engineering, Architecture and Landscape Architecture, working in projects for different countries in Europe, Middle East and Africa.

In the last years beside leading the Landscape team Magda's main role has been the coordination of landscape projects with other disciplines. She has worked on several projects, from inception to completion, in different project's fields as Large Scale/Masterplan, Healthcare, Mixed Used, Infrastructure, Leisure & Sports Parks and Residential.

"Great things in business are never done by one person. They're done by a team of outstanding people."

Mahmood Ashraf
Country Manager, Pakistan

Mahmood Ashraf graduated with a Bachelor's Degree in Electrical Engineering from University College of Engineering and Technology, MirPur, Pakistan.

Mahmood has 18 years of experience in the Electrical & Power systems and possesses wide experience in the design and engineering management in Transmission & Distribution. His experience covers management of engineering projects including project design, planning, progress and business development.

Mahmood's exposure is spread across the design and engineering for control, protection, metering and mentoring systems of EHV and HV substations. His hands-on experience in the management of design and engineering projects has ensured repeated business from his clients.

Anwar Badawy
Head of Structural Design, Egypt

Anwar Badawy has 30 years of experience in the field of structural engineering. He has obtained his PhD degree in structural engineering from Imperial College, London University, in 1997. He has obtained a DIC degree from Imperial College in 1997, a MSc Degree in structural engineering from Ain Shams University in 1992 and graduated with a BSc Degree (with Honors) in structural engineering, from Benha University in 1987. He is a professor of Structural Engineering at Benha University.

Badawy joined his PhD Program in the UK, working as a Structural teaching assistant at Imperial College. His professional experience includes renowned companies in Egypt and UAE from 1989 to 2015.

While working there as a Head of the Structural Design department, he gained a wide experience in the field of structural design of high rise buildings, hospitals, industrial buildings, educational facilities and steel structures, especially in the Gulf area.

Muhammad Saeed
Engineering Manager, Buildings

Muhammad Saeed's experience spans over 27 years. He started his career in 1990 from Structural division of National Engineering Services of Pakistan (a leading consultant in Pakistan).

He joined Central Design Office of Pakistan Water and Power Development Authority in 1992 after undergoing Management and Technical Training courses after induction in WAPDA. He won ADB Japan scholarship in an Asia Wide Open Competition for post-graduate studies.

He worked in Bridges and structures division of Department of Civil Engineering of University of Tokyo, on a project of the Japanese government.

Saeed has been associated with DAR Engineering since 2000, and has served the company as Section Manager Civil and has been working as Engineering Manager for the last 10 years. He has been actively involved in preparation of bid proposals, contract reviews, project budget control, coordination with international partners and resolution of technical and commercial matters.

Hasan Al-Shamrani
Regional Manager, Western, KSA

Mr. Hasan Al-Shamrani graduated with a Bachelor's Degree in Electrical Engineering from King Fahed University of Petroleum & Minerals KFUPM – Dhahran KSA. Mr. Hasan has over 13 years' experience in the field of Engineering, Construction and Project Management, and Commissioning fields of substations. Before starting with DAR Engineering Hasan was an Expert Engineer in Commissioning Department at Saudi Electricity Company where he supervised all the commissioning activities for all kinds of substations in kingdom-wise. Also, he was a group leader for the experts' team within the internship between SEC and SIEMENS for one-year period in Germany. He was involved for all stages of substations projects starting from design review, project planning, testing and commissioning up to operation and maintenance levels.

As Regional Manager at Dar Engineering he has been involved in projects of supervision, design and construction management and in the field of commissioning for various clients in western and southern region. He has been actively involved in preparation of bid proposals, project budget control, coordination with clients & partners and planning of company resources.

Deogracias Peter Garcia
Section Manager, Electrical

Deo Peter P. Garcia graduated with a Bachelor's Degree in Electrical Engineering in 1992 from the Polytechnic University of the Philippines (PUP) Manila, Philippines. He has more than 2 decades of combined work experience in the field of Electrical / ELV systems design, project management, project supervision, cost estimation and quantity surveying. Part of the years of experience is the in-depth knowledge managing and coordinating different foreign and local projects.

He has worked in an international consultancy firm, Meinhardt Group, based in the Philippines and was assigned to major offices in Singapore, Dubai, and Melbourne, Australia. He has worked as an Asst. Head of the electrical department and at the same time a senior design electrical / ELV engineer in various international and local projects on infrastructure, residential towers, commercial/ office, industrial, hotels and hospital buildings.

Raafat Abou Al-Ela
Section Manager, Medical Equipment Planning

Raafat Abou Al-Ela is a certified Project Management Professional (PMP) with 29 years´ experience in the field of Biomedical Engineering. He is an expert Technical Project Manager in healthcare industry with the ability to manage concurrent projects and multidisciplinary teams with a proven ability to understand, identify and grow new business and technology opportunities.

Raafat is a dynamic manager who utilizes creativity, leadership and teamwork to design and execute solutions that create customer value. Effective communicator with the ability to guide team members to overcome issues and develop solutions.

At DAR he is the Section Manager of Medical Equipment Planning Department.

Johnson Thomai Nadar
Engineering Manager,
System Studies

Nadar has a solid 36 year' experience in various fields of Power systems. His specialty includes various power system studies for insulation coordination, neutral grounding reactor sizing, load flow, short circuit, transient stability, VAR flow, power factor improvement, capacitor bank, dynamic motor starting & ARC Flash studies using commercially available software.

Additionally, he is also involved in complete protection design, relay settings for all types of protective relays, protection coordination and application, substation design, electrical equipment design for the substation and conducting technical courses for the engineers.

Nadar has submitted articles in national/international conferences. He has also worked in the United Kingdom with a British relay manufacturing company to jointly develop protection algorithm for numerical transformer protection.

Santhi Aarmugam
Engineering Manager, India

Santhi has Bachelor's Degree in Electrical and Electronics Engineering from India, Post Graduate Diploma in Operation Management from India and Master's Degree in Business Administration – Marketing Management from India.

Has 27 years wide experience in the Power Industry & Power systems. Worked in various departments like tender, contracts management, quality, testing and engineering for Electrical products, and projects (Domestic and international).

Has strong exposure in the engineering of power system control, protection, metering and monitoring systems of HV and EHV substations, power plants and various industrial applications. Also has good exposure in the project management and company operation management.

Has been associated with DAR Engineering from May 2008 as Engineering Manager of India office and she is responsible for overall business operations.

M. R. Kannan
Engineering Manager, Power

M. R. Kannan has more than 27 years' experience in Power systems protection design and engineering field. He started his career from M/s Easun Reyrolle Ltd, Hosur, India, as a Protection Design Engineer, and has strong exposure in the field of Design and Engineering of power plant protection, electrical sub station protection, and marketing of electrical control and protection equipment, selection of protection relays suitable for the power system requirement.

M. R. Kannan joined as a Section Manager - Protection in DAR Engineering in 2003 and currently he is working as an Engineering Manager (T&D).

He has good exposure in the field of Protection design, Relay setting calculation, Protective relays coordination, and selection of protection relays, Project planning, Project Management, Man power planning and Handling.

"Individual commitment to a group effort. That is what makes a team work, a company work, a civilization work."

Muhammad Abbas
Manager-Generation

Abbas has completed Post Graduation in Nuclear Power Engineering from KANUPP Institute of Nuclear Power Engineering, Karachi & Bachelor's Degree in Chemical Engineering from the University of Punjab, Lahore, Pakistan.

Abbas has more than 14 years of experience in project management, process, mechanical and piping design, flexibility design, stress analysis, 3D Integration, HAZOP, pre-commissioning of mechanical and piping systems of power & process plants.

His experience covers mechanical, piping, and pipeline design for various industries like Power, Oil & Gas, Petrochemical and other Industrial projects along with administrative and project management skills.

He has exposure to Companies and International codes, along with good hands-on experience in modern plant design software. Abbas has been serving DAR Engineering since 2011.

Syed Quadri
Section Manager, Mechanical

Syed Quadri graduated with a Bachelor's Degree in Mechanical from Osmania University India.

Syed has 26 years of experience in mechanical design works and a wide experience in the design of HVAC, piping, plumbing & fire fighting system and medical gases. His experience covers base & detailed design of Mechanical service.

SM Quadri has worked for about 9 years with a pioneering architectural firm, providing architectural and engineering services in Saudi Arabia.

At DAR he is currently involved in Hospital, Commercial and Residential project in Saudi Arabia.

Muhammad Kamran Bashir
Structural Section Lead

M. Kamran Bashir obtained his Master's Degree in Civil/ Structural Engineering from the University of Engineering and Technology, Taxila, Pakistan.

M. Kamran Bashir has 14 years of experience in analysis, design, review and value engineering for large scale commercial, residential, healthcare and education projects.

His experience also includes correspondence and coordination with sub-consultants, design coordination with various disciplines, technical evaluation and response to request for information from sites and preparing requests for proposals (RFPs') for different design and construction services.

Scope of services

DAR Engineering as an Architectural and Engineering consultant has a team of experienced professionals providing complete design engineering solutions to our clients.

1

Architectural Design

Master Planning

- Master Plans
- Land-use Plans
- Site Plans
- Site Analysis and Selection
- Design Guidelines
- Development Strategies
- Visioning Workshops
- Land-use Program, Feasibility Studies
- Concept Design, Theming
- Functional Space Programming
- Landscape
- Hardscape, Water Feature Design
- Planting Design
- Interior Design, Signage System & Fit-outs
- Kitchen and Laundry
- Waste Management Systems
- Life Safety
- Estimation - BOQs, Specifications and Pricing

BIM, Rendering, CAD Services:

- BIM modeling (up to LOD-300)
- Construction Documents
- Interior Rendering
- 3D Animation and Virtual Reality
- CAD 2D/3D drawings standards

2

Urban Planning

- Urban Land-use Studies
- Urban Landscape Design
- Urban Redevelopment
- Design Guidelines
- Downtown Planning
- Mixed-use Neighborhoods
- Open Space Design
- Public Participation, Consensus Building
- Retail Environments
- Streetscapes
- Transit Oriented Design
- Urban Parks and Plazas
- Vision Plans
- Waterfront Revitalization

3

Sustainable Design and LEED Services

- LEED Feasibility Studies, Consulting and Coordination
- LEED for Building Design and Construction (LEED BD+C)
- LEED for Interior Design and Construction (LEED ID+C)
- LEED for Building Operations and Maintenance (LEED O+M)
- LEED for Neighborhood Development (LEED ND)

4

Mechanical Engineering

- Feasibility Study and Detailed Project Report
- EPC tender specifications
- HMBD & Water balance diagram
- PFD and P&ID
- Plant Layout engineering
- Fire protection / Fire suppression system
- Critical piping and Stress analysis
- Isometrics, 3D modeling
- BOQ estimation
- 3D Model & Isometrics
- HVAC systems (chilled water system, DX system and district cooling plant)
- Plumbing systems (water supply, drainage, landscape irrigation)
- Dynamic thermal & energy simulations
- Bulk Air Analysis
- Specialty Services (Fuel oil, Medical and Non-medical gases)

5

Structural Engineering

- Structural design of low rise and high rise buildings
- Structural Optimization
- Concrete, Precast, Steel, wood, and masonry design
- Code studies and existing condition evaluation;
- Connection design
- Equipment support design
- Equipment foundation design (Dynamic and static)
- Substation & Power Plant Design

6

Consultancy Services and Construction Management

- Site supervision of projects
- Management services for construction
- Witnessing of Pre-commissioning tests
- Commissioning of electrical installation
- Commissioning of mechanical installation

7

Electrical and I&C Engineering

- Equipment Sizing
- Single Line Diagram
- Equipment Specification
- Control & relay panels
- Layout engineering
- Lighting design
- Earthing & Lightning protection system
- Fire detection & Alarm system
- Public Address system
- BOQ estimation
- Vendor evaluation & Procurement support
- Vendor drawing review
- Building Management System / Facilities Management
- Electronic Security
- Master Antenna Television
- Audio-Visual
- IP-based Systems, etc
- Life safety code review and studies
- Hazardous area classification

8

Survey and Studies

- Portfolio review, survey and feasibility studies
- Site assembly/acquisition
- Review of legal title information, and any salient surveys including TIA, EIA, structural and soil testing
- Compilation and management of development constraints to mitigate third party risk to title and/or dispute: including adjoining landowners, utilities, highways, rights of way/ easements, daylight & sunlight/rights of light
- Preparation of the design brief, budget and project scope

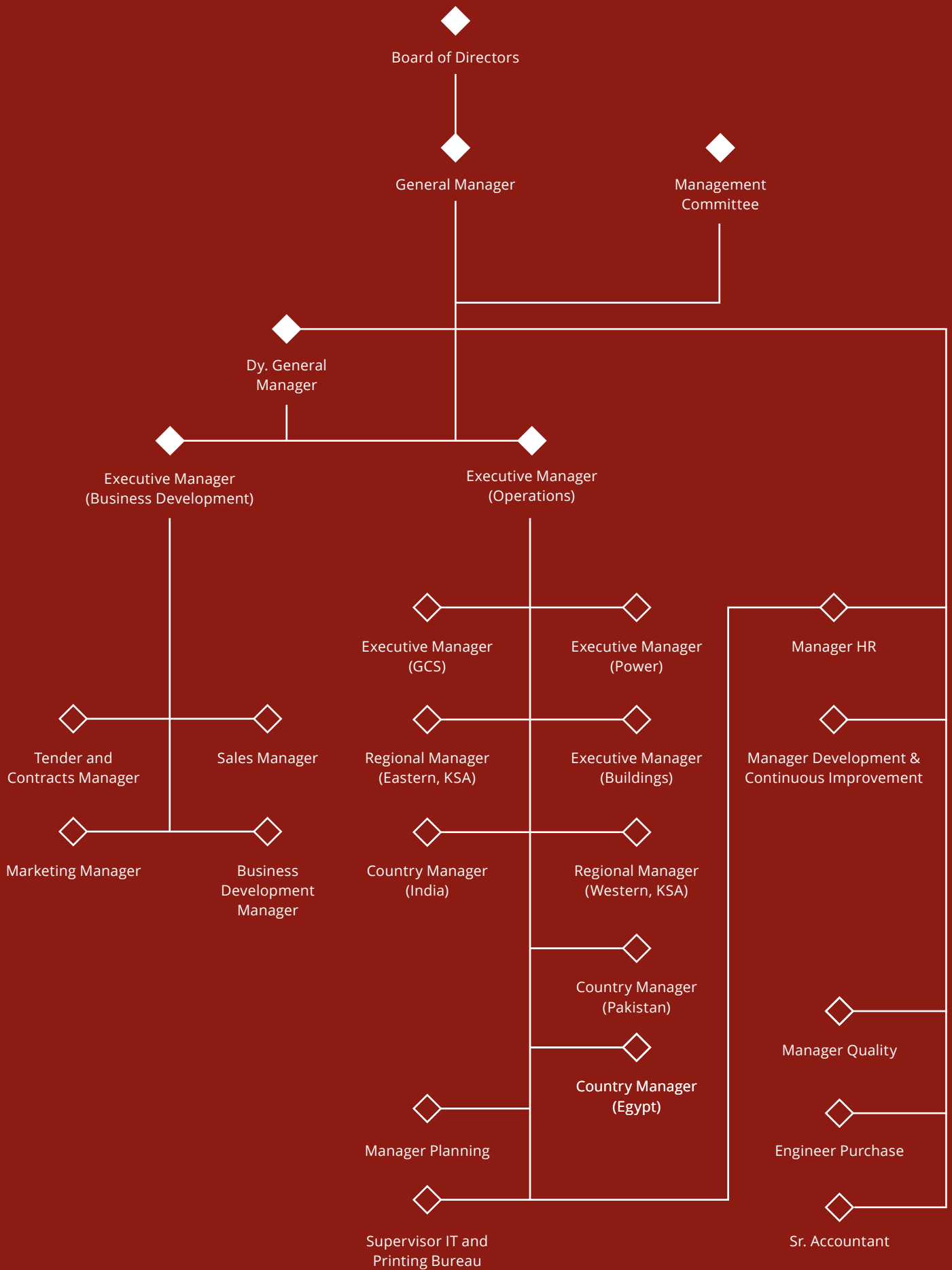
9

Renewable Engineering

- Site Feasibility
- Energy Yield Analysis
- Technology Selections
- Design and Detailed Engineering
- Site plan and development
- Operations and maintenance
- Budgeting and financial modeling

Group structure

A balanced team is formed in a focused way to deliver the design with a high quality within the schedule and budget.


Board of Directors
General Manager
Management Committee
Dy. General Manager
Executive Manager (Business Development)
Executive Manager (Operations)
Executive Manager (GCS)
Executive Manager (Power)
Manager HR
Tender and Contracts Manager
Sales Manager
Regional Manager (Eastern, KSA)
Executive Manager (Buildings)
Manager Development & Continuous Improvement
Marketing Manager
Business Development Manager
Country Manager (India)
Regional Manager (Western, KSA)
Country Manager (Pakistan)
Manager Quality
Country Manager (Egypt)
Manager Planning
Engineer Purchase
Supervisor IT and Printing Bureau
Sr. Accountant

Methodology

How does it works?

DAR Engineering offers a range of consultancy services to developers and lenders covering complete project life cycle from conception to commissioning and operations.

It is a challenge and a key requirement in the highly competitive environment that the industry faces today. To fast-track social, industrial and tourism infrastructure development, utilities are putting more projects in one package and further challenging the enterprises for simultaneous working and commissioning all projects together.

Due to a major increase in number of projects with stringent schedule and increased competition from global players which is a challenge to the project management skills of an enterprise to deliver the land strength expected on time.

The need of the industry is to formulate a model that will help companies involved in such projects to weather out challenges and deliver the project to client on time. DAR is proud to have proactively developed their human resources, quality systems, design management techniques and application of technology and infrastructure to meet such challenges and provide EPC contractor or utility with required support for the successful implementation of mega projects. DAR attributes for unique effective design management.

DAR has developed an in-house capability to provide a complete suite of EPCM services, right from planning and feasibility studies through to detailed engineering, procurement and construction management. We provide EPCM services for owners, developers and EPC Contractors.

Planning

1

Basis of design report

- Siting study
- Fuel logistics
- Power system study
- Pre-feasibility study
- Detailed project report
- Due diligence
- Environmental studies
- Permits and clearances
- Financial modeling
- Financial closing
- Plot plan & GA

Design and Tender

2

Tender Level

- Process (P&Id)
- SLD
- Tender documentation
- Shift plot plan and GA to Planning and add 3D Modeling, Detailed drawings, section and details

Tendering

- Evaluation
- EPC Selection

Vendor documentation review detail design

- Mechanical
- Civil
- Electrical
- I&C
- BoP
- Architecture

Procurement

3

- Purchase specification
- Vendor pre-qualification
- Bid process
- Technical and commercial bid evaluation
- Finalization of purchase orders
- Preparation of purchase orders

Construction

4

- Project planning
- Scheduling
- Cost control
- Communication management
- Contract administration
- Liaison with statutory authorities
- Inspection and expediting
- Construction supervision
- Commissioning supervision
- Performance test
- As-built drawings

Operation and Maintenance

5

- O&M documentation
- Plant simulation
- Optimization studies
- Reverse engineering
- Refurbishment
- Asset evaluation

We take responsibility for:

- Engineering and Engineering Management within all disciplines.
- Procurement and Procurement Management of services and equipment according to the agreed procurement strategy. Advising on optimizing the procurement, acting as the Owners Agent in the procurement scheduling and progress follow-up.
- Construction Management acting as Owner's representative on the construction site and performing site supervision, coordination, scheduling, project reporting, health & safety management, quality management, commissioning to handover and warranty management.

- DAR Engineering delivers projects, provides expertise in engineering, construction supervision and project management offering a wide range of consulting and advisory services. We cover the full life cycle, from creating new assets to sustaining and enhancing operating assets, in the Power & Process, Transmission & distribution and power system studies sectors. Our resources and energy are focused on responding to and meeting the needs of our customers over the long-term and thereby creating value for all stakeholders.

Section 01

Power and Energy

9600
Total megawatt installed

21
Power generation projects

107
EHV Substation projects

2560 km
Overhead transmission line projects

206 / 22
HV / Distribution substation projects

500 Km
Underground cable projects

49
Power system studies projects

DAR Engineering has highly experienced and dedicated talent pool with core engineering skills in key Power and Energy industry segments.

We provide a completely integrated service model focused on cost-effective and environmentaly friendly solutions working through our tried and tested project delivery, core engineering and quality systems.

Yanbu, Saudi Arabia

Yanbu Power and Desalination Plant Phase III

Date 2016
Power Capacity 2,700 MW
Owner Saline Water Conversion Corporation
Client Empresarios Agrupados

Ras Al Khair, Saudi Arabia

Ras Al Khair Combined Cycle Power and Desalination Plant

Date 2014
Power Capacity 2,400 MW
Owner Saline Water Conversion Corporation
Client SEPCO III

Hail, Saudi Arabia

Hail Power Plant Extension II and III

Date 2011
Power Capacity 672 MW
Owner Saudi Electricity Company (SEC)
Client Alfanar

Located on the Red Sea coast, in the Yanbu industrial city, the plant, in full operational mode, will be capable of producing:

- 2700 MW of power
- 550,000 m^3/day of desalinated water

Power Plant
- KSA's first supercritical power plant to operate on heavy fuel oil.

Desalination Plant
- Multistage flash (MSF) technology to desalinate and supply fresh water.
- Six huge plug-n-play MFD evaporators weighing approximately 4,500 t.

DAR Solution
- Third Party

Located in the Ras Al Khair Industrial City, the project comprises a combined cycle co-generation power plant (Phase-1) having five blocks of combined cycle Units, each block in 2 GTG+2HRSG+1 STG configuration and One block of Simple cycle with 2 GTG units, with plant capacity of 2,400 MW of which 1,350 MW will be supplied to Ma'aden Aluminum Complex.

Desalination Plant
- The biggest desalination plant of its kind in the world - capable of producing 728 million liters/ day of desalinated water.
- A hybrid plant that employs both multistage flashing (MSF) & reverse osmosis (RO) technologies.

DAR Solution

DAR's signature is present on complete facility right from the power plant to power evacuation and grid connection.

Located in Hail, approx. 600 km north-west of Riyadh, the plant has total capacity of almost 672 MW.

Features

EXTENSION II

Includes 2 units indoor Simple Cycle Gas Turbine (GTG), each of Siemens 2000E Model 63 MW, with associated auxiliaries & BOP.

EXTENSION III

Extension III includes 4 Nos. of 67MW GTG units with associated auxiliaries & BOP.

DAR Solution

Pre-Bid Design, Detailed Design, Procurement Support for GTG and BoP Auxiliaries system. Piping ,Pipe Rack,Plant electrical & civil design including MEP Services.
This project was commissioned ahead of time.

Al Ruqui, Saudi Arabia

Al Ruqi Power Plant

Date 2008
Power Capacity 13.75 MW
Owner Saudi Electricity Company (SEC)
Client Al Saleem Corporation

Sharourah, Saudi Arabia

Sharourah Power Plant

Date 2008
Power Capacity 51 MW
Owner Saudi Electricity Company (SEC)
Client Alfanar

Dhurma, Saudi Arabia

PP13 Power Plant

Date 2017
Power Capacity 1850 MW
Owner Saudi Electricity Company (SEC)
Client Alfanar

Located at Al Ruqui Village 110 Km north of Hafer Al Batin near the Kuwait border, project included the extension of the existing Power Plant at Al Ruqui Village to generate an additional power of 13.75 MW.

Features

- 5 X 2.75MW Diesel Generating sets with net Power Generation of 13.75 MW.

DAR Solution

DAR provided a complete multidisciplinary solution for this project.

Located 18km south to the city of Sharourah on Al-wadia road. The project covers a two-part extension, first two new GTGs of 34 MW each and second part with one 17 MW GTG unit including their associated auxiliaries and BoP system.
Two units of MS5001PA heavy duty Gas Turbine - the MS5001PA is a simple-cycle, single shaft gas turbine with a combustor reverse flow combustion system.

DAR Solution

DAR's signature is present on complete facility right from the power plant to power evacuation and grid connection.

Installation of Power Island ME&I and Equipment at 1850 MW Power Plant PP13 Project located at North East of Riyadh around 30 km far from Dhurma city.

Features

COMBINED CYCLE POWER PLANT

- Two power blocks (Block 10 & 20), each block includes 3 GTG + 3 HRSG + 1STG and 1 Air-cooled condenser (ACC).
- Total of 6GTG's + 6HRSG's + 2STG's and 2ACC's generating a power capacity of 1650 to 1980 MW.

DAR Solution

Detailed engineering services for Civil, Electrical, HVAC & Plumbing design for all Electrical & Non-process buildings. Procurement support for HVAC systems & Electrical switchgears.

Riyadh, Saudi Arabia

PP14 Power Plant
Process Buildings

Date 2017
Power Capacity 1850 MW
Owner Saudi Electricity Company (SEC)
Client SEPCO III

Riyadh, Saudi Arabia

PP14 Power Plant
Non Process Buildings

Date 2017
Power Capacity 1,850 MW
Owner Saudi Electricity Company (SEC)
Client AL-Kifah

Riyadh, Saudi Arabia

New North West and South West Substation for Riyadh Metro Project

380 kV Metro Project

Date 2014 - 2016
Voltage Level 380/132/33/13.8 kV
Owner Saudi Electricity Company - COA
Contractor National Contracting Company

Located 45 km south-east of Riyadh city, adjacent to Al-kharaj Road & PP-10 power plant, this project included two power blocks of combined cycle with a power plant of total capacity 1850MW (approx.)

Features

COMBINED CYCLE POWER PLANT

- Two power blocks (Block 10 & 20), each block includes 3 GTG + 3 HRSG + 1STG and 1 Air-cooled condenser (ACC).
- Total of 6GTG's + 6HRSG's + 2STG's and 2ACC's generating a power capacity of 1650 to 1980 Mw

DAR Solution

Detailed engineering of Civil, HVAC, electrical & plumbing design for Power generation and other process buildings. Procurement support for Civil structures, HVAC equipment and electrical Switchgears. Award of this project is a testimony of DAR's experience and capability in handling detail engineering for mega complex projects. The client awarded this project to DAR as a result of an excellent performance in earlier projects.

Located 45 km south-east of Riyadh city, adjacent to Al-Kharaj Road &PP-10 power plant this project included two power blocks with combined cycle power plant of total capacity 1850MW (approx.)

Features

COMBINED CYCLE POWER PLANT

- Two power blocks (Block 10 & 20), each block includes 3 GTG + 3 HRSG + 1STG and 1 Air-cooled condenser (ACC).
- Total of 6GTG's + 6HRSG's + 2STG's and 2ACC's generating a power capacity of 1650 to 1980 MW.

DAR Solution

Detailed engineering services for Civil, Electrical, HVAC & Plumbing design for all Electrical & Non-process buildings. Procurement support for HVAC system & Electrical switchgears.

High Commission of Development of Riyadh (HCDR) proposed this project to feed prestigious Riyadh Metro Project. The new 380 kV Substations are equipped with Substation Automation System (SAS) and are remotely controlled from the Energy Control Center (ECC), through SCADA system, communication System and gateway.

The project also included addition/ modification of protection, control, and communication and SCADA system at associated existing remote end substations.

Major challenge in this project was stringent time frame set by the Riyadh Metro authority to commission the substation within 20 months.

Accordingly, DAR pulled up required resources in various disciplines, and executed this job on a fast track and successfully completed the engineering services. This helped our client to be well ahead of the project schedule.

Jeddah Area, Saudi Arabia

Al-Samer 380/110/13.8 KV BSP

Date 2015 - 2017
Voltage Level 380/110/13.8 kV
Owner Saudi Electricity Company - WOA
Contractor MEEDCO

Waad Al-Shamal, Arar, Tabarjal,
Qurayyat, Al-Jouf, Saudi Arabia

Construction of Five 380 kV Substations in Waad Al Shamaal

Date 2014 - 2016
Voltage Level 380/132/13.8 kV
Owner Saudi Electricity Company - COA
Contractor Alfanar

Construction of Six 380kV Haramain (HHR) Substations

Date 2012 - 2014
Voltage Level 380/132/13.8 kV BSP
Owner Saudi Electricity Company - WOA
Contractor Alfanar

Due to rapid growth of load in and around the Jeddah city, Saudi Electricity company proposed to construct a new indoor 380/110/13.8 kV Gas Insulated Substation named as Al-Samer (SMR) 380/110/13.8kV BSP. The new Al-Samer BSP is equipped with new protection, control, communication and substation Automation System and is remotely controlled from Saudi Electrical Company's Power Control Center (PCC) through SAS and communication. The project has been delivered through Middle East Engineering and Development Company Limited (MEEDCO) on LSTK contract.

Major challenge encountered was in finalization the Site Grading of the substation in line with the SEC requirement. Considering the HV and MV Cables entry /exit from the substation and feasible access to substation buildings/equipment finalization of site grading had become a challenging task. With our technical expertise, DAR has provided a most viable and cost-effective solution without compromising any technical requirement. Saudi Electricity Company has reviewed and accepted our proposal.

This project provided power supply to King Abdullah Project for Waad Al-Shamal City development, a world-class city to be established over 440 km^2 with full range of industrial, business, civil and residential development in the North Eastern Region. Accordingly, five new 380kV BSP S/S equipped with Substation Automation System (SAS) controlled remotely from the Energy Control Center (ECC), through SCADA/ communication system are planned to be constructed and interconnected with each other.

The challenging aspect of this project was that the design and engineering for all the five BSP stations has to be carried out concurrently and within a very short span. This requirement of the project demanded us to execute this job in an integrated way on fast track. With our diversified team closely connected, DAR delivered the design of all the 5 S/S's simultaneously and completed all engineering services well in advance and supported the contractor to be on track.

The substation part of this project covers construction of six Nos. New indoor type 380kV GIS Substation named as HHR 380kV Substations including Protection, Control, System Automation, Communication and SCADA system works.

Ambitious plan of Saudi Railway authority to put High-speed Haramain Railways in operation on stringent schedule, demanded tough project time frame of 18 Months to commission all 6 substations.

DAR Engineering was quick to live up to expectations through its huge data bank and expert resources, and completed engineering well ahead of schedule for all 6 SS and it facilitated the contractor to complete the job successfully on time.

Interconnection of Makkah Central, Saudi Arabia

380 kV Underground Cable Works

Date 2013 - 2015
Voltage Level 380 kV
Owner Saudi Electricity Company - WOA
Contractor Alfanar

Ras Al Khair, Saudi Arabia

Construction of Ras AlKhair 380 kV BSP

Date 2014 - 2016
Voltage Level 380 kV
Owner Saline Water Conversion Corporation
Contractor SEPCO III

Jubail, Saudi Arabia

Construction of New Jubail Residential

380 kV Substation

Date 2014 - 2017
Voltage Level 380/230/115 kV BSP
Owner Saudi Electricity Company - COA
Contractor MEEDCO

The project provides two 380kV Underground Transmission circuits between the ongoing Makkah North 380kV BSP to Makkah Central 380kV BSP of approximate route length 6.6 km, two 380kV Underground Transmission circuits between the existing Makkah West 380kV BSP to Makkah Central 380kV BSP of approximate route length 11.4 km and for each circuit along with fiber optic cable a necessary cable concrete box culvert/direct buried cable trenches for 380 kV power cable as well as for non-metallic optical fiber cable.

Major challenge in this project was design coordination with numerous contractors so as to carry out design requirements in line with Project Technical Specifications. The contractors included; Makkah Central Substation Contractor (ABB), Makkah West Substation Contractor (Alfanar), Makkah North Substation Contractor (Al-Toukhi), Bin-Laden (for Tunnel construction at Makkah Central end), Cable Contractor (LS Cables) and finally SEC-WOA (client) . The job was accordingly carried out as per client specified requirements.

The new Ras-AL-Khair 380 kV evacuation Substation connected to RAK CCPP had been constructed to meet the growing Electric Power demand of Saline Water Conversion Corporation (SWCC) as well as to feed the Maadan industrial consumers of Ras-Al-Khair city. The Substation also provides supply to SWCC water pumping station (PS-2). The new Substation is equipped with Substation Automation System (SAS) and remotely controlled from the Power Control Center (PCC) through SCADA communication system.During the execution phase, the client surprised us with a new requirement of providing HVAC for cable tunnels to maintain a temperature of less than 40°C inside the tunnel.

DAR engineering came up with an innovation to bring down temperature to 40°C without adding any additional air condition units. Our expert team performed "Value Engineering" and provided an innovative solution meeting the requirement without changes in the existing design. Further value engineering done by introducing a trough for EHV cable routing in place of 510m long, 10m wide tunnel without compromising ampacity and avoiding heavy civil works and dewatering.

In order to improve the power supply to Jubail residential area and to reinforce the 230kV & 115kV network a New Jubail Residential 380/230/115kV BSP is introduced and this BSP is intended to replace the existing BERRI P/P 230kV Switchyard. The project also includes, modification/addition works at existing remote ends of 5Nos 380kV substation, 15Nos 230kV substation and 9Nos 115kV Substation to facilitate the protection, communication, SCADA and other associated re-arrangement of existing OHTL works as per the requirement.

This project demanded heavy resources and effective planning as it involved interconnection of 29 various existing substations with new BSP requiring major revamping of EHV, HV networks and to be executed in 2 years. It is one of its kind of major restructuring. DAR has taken up this challenging job rendering their best services in line with the client's requirement to meet this stringent time frame.

Yanbu, Saudi Arabia

380 kV OHTL between Ma'Aden-Manifa-Safaniyah

Date 2010 - 2013
Voltage Level 380 kV
Owner Saudi Electricity Company - EOA
Contractor Larsen & Toubro

Bishah, Saudi Arabia

380 kV OHTL from Namerah North BSP to Proposed Bishah

Date 2013 - 2015
Voltage Level 380 kV
Owner Saudi Electricity Company - WOA
Contractor Al Toukhi & Ozdil

Benban Aswan, Egypt

Solar PV Plant

Date Ongoing
Power Capacity 50 MW
Owner EETC
Client Alfa Solar

This project involved design and construction of approximately 94km of 380kV double circuit vertical configuration overhead transmission line from MA'ADEN 380/115KV BSP to Safaniyah 380/115kV BSP including installation of fiber optic cables.
The proposed 380kV OHTL loops in and out one of the circuits to Manifa 380 kV BSP and establishes the following circuits:

- Ma'aden Safaniyah
- Ma'aden Manfia
- Manifia Safaniyah

The project had multiple critical requirements: to finalize the existing Ma'aden-Safaniyah 380kV line and to modify one circuit to Manifa with LILO arrangement. In addition, the technical specifications also required to be interfaced with substation and coordinated with future three 380kV line crossings.

The major challenge was to cross the future three 380kV lines. DAR proposed and designed special gantry under crossing the future 380 kV lines, without affecting the clearance issue and successfully implemented the design.

This project involved Design and Construction of approximately 105 kilometer of 380 KV overhead transmissionline double circuit, vertical configuration, on Saudi Electricity Company design of damily of latticed steel towers between existing structure S1N, TA1N, TA2N, TA3N and DE using four (4-1080 mcm ACAR) conductors per phase in diamond configuration and two 48-Core, non-zero dispersion shifted single mode of OPGW. An interesting project involving tower spotting in the given survey data /coordinates, the challenge being that most of the line route was too steep and on a highly elevated hill with a given Right of way (ROW). The maximum of TL portion was at almost 2000m height from MSL.
DAR team carried out the design with special focus on optimization which was critical in the given hilly terrain. The design was implemented with a very good note from the client.

The project includes design and construction supervision support for 50 MW solar photovoltaic plant located in the proposed 1.8 GW Benban solar complex in the Aswan province of Egypt. The Project will be one of the first utility-scale solar plants in Egypt and will support the country in increasing its renewable energy capacity.

Pre-bid Stage

- Feasibility study analysis
- Initial assessment of site energy resource
- Energy yield analysis
- Pre-bid design and estimation
- Cost Analysis
- O&M proposal
- Financial modeling

Post-bid Stage

- Detailed Engineering Services for Civil, Electrical, Mechanical and Control Systems
- Site Supervision & Construction Management
- Commissioning and Warranty Period Engineering Support.

Ras-Al-Khair, Saudi Arabia

Power System Interconnection Studies for Ras Al Khair Power

Power Capacity 550 MW (50 MW CSP)
Client SEC
Contractor Tractebel

Ras Ghareb, Egypt

Wind Project

Date 2015 - 2016
Power Capacity 50 MW
Client EETC
Contractor Alfa Solar

Duba, Saudi Arabia

Integrated Solar Combined Cycle Power

Date 2016 - 2017
Power Capacity 550 MW (50 MW CSP)
Client Saline Water Conversion Corporation
EPC Consultant Tractebel

Tabuk, Saudi Arabia

Solar PV Plant

Date 2014
Power Capacity 100 MW
Client FRV
Owner KV Consultant

SWCC is developing a Combined Power and Desalination Plant at Ras-Al Khair, which will be designed to meet the power demands of SEC and Saudi Mining Company Ma'aden (Ma'aden) in addition to export of water to SWCC system and Ma'aden. The project is intended to have 12x260 MVA GTG units and 5x213 MVA STG units with a total generation capacity of around 3500 MW. SWCC intends to perform power system studies for validating the plant MV network designs and to validate plant performance during grid interconnected and islanded mode of operation.

Studies Performed
Load flow, short circuit, dynamic stability, motor starting studies, bus change-over studies, Insulation coordination, Ferro-resonance, transfer surge analysis and circuit breaker TRV studies.

Features
- Feasibility study analysis
- Initial assessment of site energy resource
- Energy yield analysis
- Pre-bid design and estimation
- Cost Analysis
- O&M proposal
- Financial modeling

Features
- Project Management
- Construction supervision services

Power System study and preliminary project evaluation:
- Power System modeling using PSSE software
- Load flow studies for the system with export of 100MW
- Contingency analysis to ensure system security under N-1 & N-2 conditions
- BOQ analysis and Cost estimation.
- Data collection

Section 02

Healthcare and Education

23,000
Hospital beds completed

2,000+
Beds in teaching hospitals

27
Medical sites adapted

5
New medical cities

$ 5 Bn
Total worth of projects

200+
Laboratories with Ministry of Health and Ministry of Education in Saudi Arabia

DAR's holistic approach towards Healthcare projects encompasses strategy, planning and world-class technical design services and is based on an integrated multidisciplinary skills base.

We have proven track record of working with numerous high-value healthcare facilities to create sustainable, functional and implementable development solutions that are fully adapted to the local context.

Riyadh, Jeddah and Al Ahsa, Saudi Arabia

Long-Term Care Center

RIYADH
Date 2016
Area 74,795 sqm
Capacity 390 Beds

JEDDAH
Date 2016
Area 74,795 sqm
Capacity 390 Beds

AL AHSA
Date 2016
Area 23,800 sqm
Capacity 90 Beds

Ministry of National Guard - Health Affairs (MNGHA) intends to build the Long-term Care Centers to meet the health and personal care needs for short and long-term treatments. The elderly with multiple chronic conditions will mostly get benefit from these facilities.

These facilities designed to support long-term care center are a typical design a serving identical needs. The twin tower design has 390 patient rooms. Indoor and terrace gardens are provided at each floor that create a magnificent view from the exterior at the same time providing refreshing views for the long-term patients. Smaller tower is connected with the large tower through structural bridges at all three patient floors on the small tower to allow proper circulation through common elevator core located in the large tower. The ample space in KAMC-Riyadh site will be utilized to create dedicated access and parking spaces for the facility, while in KAMC-Jeddah the panned structured parking across the street (not included in this project) is expected to handle the parking needs as the project site is quite restricted.

The facility at Al-Ahsa is a smaller adaptation of LTCC-Riyadh & Jeddah, which constitutes of only one small tower to house 90 patient beds.

Lahore, Pakistan

Lahore Hospital

Date 2017
Area 50,000 sqm
Capacity 500 Beds
Client Private and Public Partnership, Ministry of Health

The proposed facility is a 500 bed General Hospital located in Lahore, in a 26,951 sqm plot of land, planned to provide a care setting with advanced technologies, healing environments and evidence-based design that will advance the diagnosis and treatment of the population of Lahore.

The proposed facility is a 500 bed General Hospital, that comprises the design of a new state of the art healthcare facility that will become the benchmark in the region and medical planning workshops will be developed to pin-point the exact needs of the population inside the proposed hospital catchment area in order to guarantee that the population's needs will be met and the local practices will be respected.


HOSPITAL


HOSPITAL

Lahore, Pakistan

Jinnah Hospital

Date 2017
Area 80,260 sqm
Capacity 1,500 Beds
Client IDAP, Infrastructure Development Authority Punjab, Government of the Punjab

The project comprises the redesign of the existing Jinnah Hospital in Lahore and its upgrade to a modern, state of the art healthcare facility. The existing hospital complex, located in Lahore, occupies an area of 29.73 Acres.

The following are the Hospital Departments and services to be considered in the renovation:

- Accident and Emergency
- Angiography
- Gynecological, Obstetrics and Labor
- Outpatient
- Imaging
- Medical
- Surgical
- E.N.T.
- Ophthalmology
- Orthopedy
- Dermatology
- Neuro-Surgery
- Paediatrics Surgery
- Urology
- Nephrology
- Oncology
- Psychiatry
- Cardiology - CCU
- Cardiac Surgery
- ICU
- Pulmonology
- Plastic Surgery
- Neurology
- Oral & Cranio-Maxillofacial Surgery


JINNAH HOSPITAL

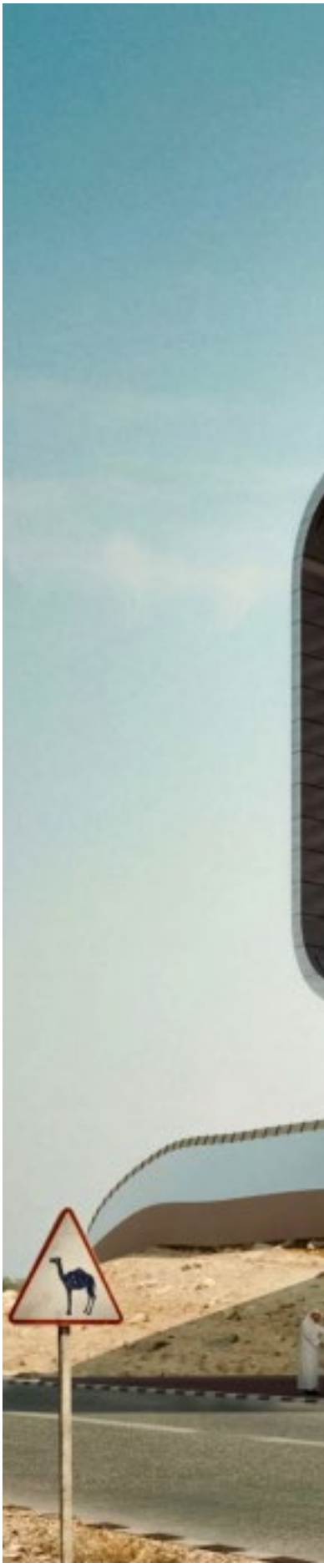
Al-Ahsa, Saudi Arabia

Veterinary Teaching Hospital

Date 2014
Area 55,167 sqm
Client Ministry of Higher Education, King Faisal University

King Faisal University operating under the Ministry of Higher Education appointed DAR Engineering to provide design and engineering services for a Veterinary Teaching Hospital inside the agricultural and veterinary research station of the university. The site is located at the busy international highway between the Kingdom of Saudi Arabia and Qatar demanding impressive and ambitious architecture. Abandoning the existing facility completely, the faculty advised DAR Engineering that the Teaching Hospital building should be constituted of:

- Specialized units with operating rooms
- Stockyards to accommodate animals
- Pharmacy for medications
- Parking areas
- External check-up areas
- Study classes and all supporting services



Al-Jouf, Saudi Arabia

Prince Mohamed Medical City

Date 2014
Area 356,345 sqm
Capacity 1,350 Beds
Client Prince Mohammed Medical City (PMMC)

Site is located in Al-Jouf City. The built-up area of the project buildings is 356,345 sqm. This 1,350 bed Project consists of the following facilities:

- Main Hospital
- Medical Rehabilitation Centre
- Cardiac Centre
- Cardiac Catheterization laboratories
- Ophthalmology Centre
- Neuroscience Centre
- Oncology Centre

The Central Tower is a 500 bed hospital.
The Specialty hospital has 850 beds and is distributed between the North and South Towers.

The master plan of the Medical City includes a mosque, a hotel, a few administration and research facility buildings, a convention center as well as staff residences.

Makkah, Saudi Arabia

Medical Spine Colleges

Date 2016
Area 932,000 sqm
Capacity 420 Beds
Client Ministry of Higher Education,
Umm-Al Qura University, Makkah

The university plays a prominent role in conducting academic research and field studies that leads to the direct development of the local community. These services include academic, health and technical activities necessary for development of the university and local community. The university is keen to further develop its international graduate training program medical competencies and health services.
Once completed this will be world's largest Spine Medical College.

DAR Engineering provided the university with the design solutions for the following colleges:

- Teaching hospital (420 beds)
- Research laboratory
- College of Medicine
  (1500 male & 1500 female students)
- College of Public Health & Health Informatics
  (1200 male & 1200 female students)
- College of Nursing
  (900 male & 900 female students)
- College of Applied medical sciences
  (1500 male & 1500 female students)
- College of Dentistry
  (1000 male & 1000 female students)
- College of Pharmacy
  (1000 male & 1000 female students)
- Café, shared classrooms, exhibition center,
  2 car parking buildings, main mosque etc.

Abha, Saudi Arabia

King Faisal Medical City

Date 2014
Area 356,345 sqm
Capacity 1,350 Beds
Client Ministry of Health

King Faisal Medical City Site is located on Abha's airport highway. The built-up area of the project buildings is 356,345 sqm. The Project consists of the following facilities:

- Main Hospital (500 beds)
- Medical Rehabilitation Centre (200 beds)
- Cardiac Centre (200 beds)
- Cardiac Catheterization Laboratories
- Ophthalmology Centre (100 beds)
- Neuroscience Centre (150 beds)
- Oncology Centre (200 beds)

The Central Tower is the 500-bed hospital. The specialty hospitals consisting of 850 beds are distributed between the North and South Tower.

The master plan of the Medical City possesses a mosque, a hotel, a few administration and research facility buildings, a convention center as well as staff residences.

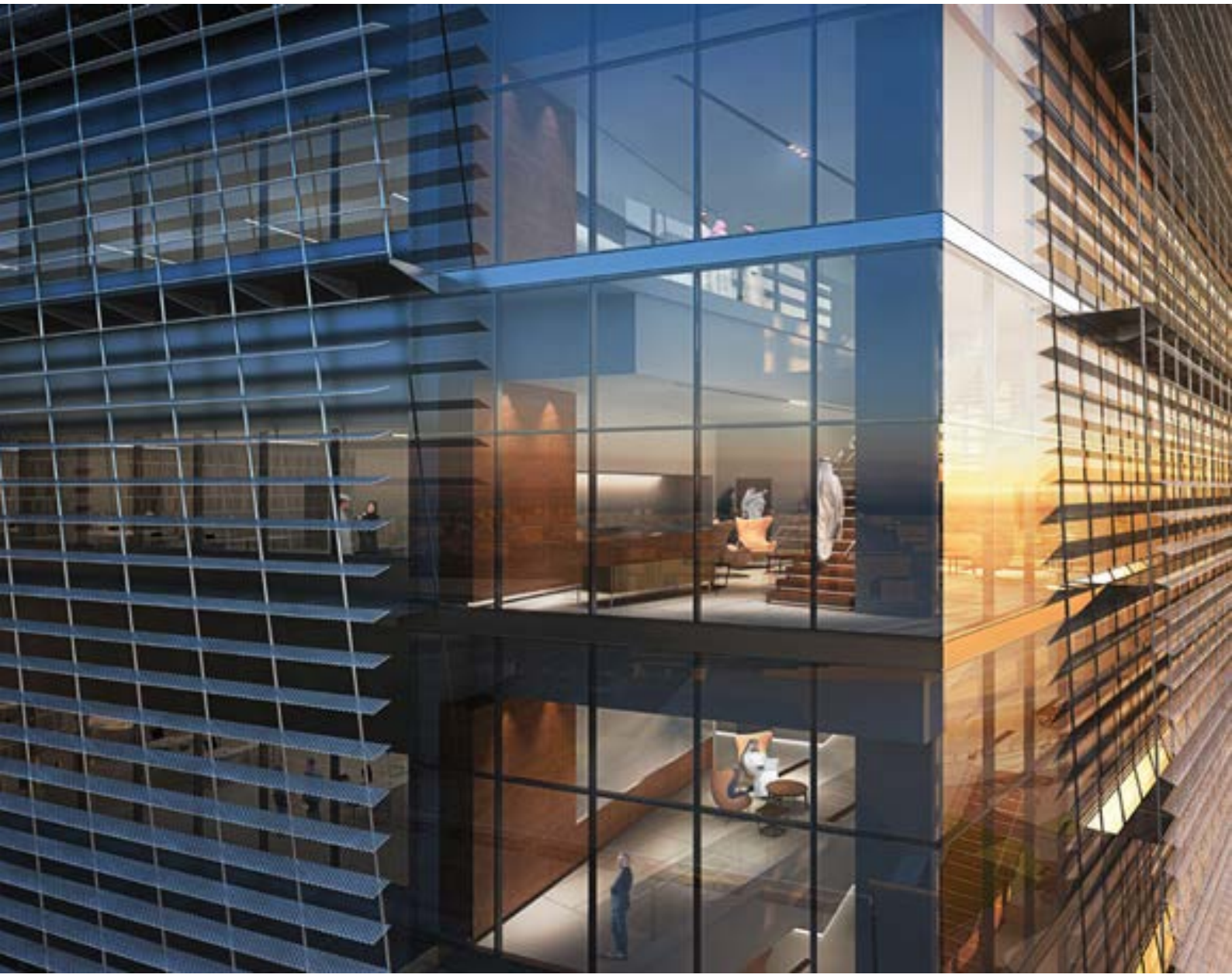
Riyadh, Saudi Arabia

King Saud Medical City

Date 2016
Area 758,000 sqm
Capacity 1,400 Beds
Client Ministry of Health

DAR renovated KSMC site layout adding to that tendering package design for all the new support buildings plus tower 4 & OPD. The main components of King Saud Medical City project were:

- Master Plan development
- Medical Tower 4 & OPD
- 500 Inpatient Beds
- 25 Imaging and Interventional modalities
- 120 Emergency Treatment Spaces
- 20 Surgery Theaters
- 2 Endoscopy Rooms
- 6 Skills Lab / Classrooms
- 20 Outpatient Clinics
- 80 Physician Offices
- Outpatient Clinic Building
- Staff Housing (200,000 sqm)
- Mosque (1000 sqm)
- Prosthetic Limbs Building (2000 sqm)
- Administrative Tower (14,000 sqm)
- Multi-floor Parking Building (39,000)
- DATA centers, Service & Utilities (55,000 sqm)
- Underground Parking (140,000 sqm)



Jeddah, Saudi Arabia

King Abdullah Medical Complex

Date 2017
Area 74,400 sqm
Capacity 900 Beds
Client Ministry of Health

There are three major components of the project:
1. Adaptation of model designs of five buildings and implementation of necessary modifications to these models suitable for the proposed site. These buildings are as follows:

- 100-bed clinic Dentistry center
- Housing Buildings
- Central Warehouses
- Regional Laboratory
- Kidney (Dialysis) Center for 40 chair capacity

2. Connection and studies to be carried out for 2 existing buildings which are as follows:

- 500-bed hospital
- 400-bed pediatric hospital

3. Master planning of future proposed buildings, with respect to available ground space either in the form of separate buildings or one building. These buildings are as follows:

- Medical Rehabilitation Center
- Specialized medical clinics
- Training centers
- Specialized medical centers in the fields of (oncology, cardiac surgery, eyes & injuries)
- Multi-storey car parking building

Riyadh, Saudi Arabia

Women's Specialized Hospital

Date 2014
Area 15,000 sqm
Capacity 52 Beds
Client King Fahad Medical City

This facility is an extension of the existing Women's hospital. It not only comprises the following facilities but also creates a new entrance elevation to the Medical City complex:

- Operation rooms
- Delivery rooms
- Education center
- Consultants room
- Conference hall
- N.I.C.U
- Nursery
- Private rooms


WOMEN'S SPECIALIZED

Jeddah & Al Hassa, Saudi Arabia

Mental Health Hospital

Date 2016
Area 31,416 sqm
Capacity 53 Beds
Client MNGHA

These 53 bed identical facilities each at KAMC-Jeddah and KAMC-Al Hassa would provide unique mental health services to their region, for patients needing psychological assistance and addictive behaviors.

Flexible and Modular design approach in the inpatient buildings allows the users to make the best use of the facility in multiple configurations and classifications to suite their unique requirements.

The facility constitutes of 8 buildings aptly spaced to ensure control and security, while common bridge and underground services tunnel ensure effective flows and utility supplies and maintenance. Privacy and dignity of the patients is the hallmark of this design.

Jeddah, Saudi Arabia

Radiation Oncology Center

Date 2016
Area 3,722 sqm
Capacity 88 Beds
Client MNGHA

The facility is an extension of and would be connected to existing Princess Nora Oncology Center (PNOC), KAMC, Jeddah. It will provide improved radiation treatment facilities by installing latest and state of the art equipment. The key points are:

- 3 LINACs (Linear Accelerators)
- 1 MR-LINAC
- 1 Brachytherapy
- Support services

Riyadh, Saudi Arabia

Pediatric Cardiac and VIP Hospital

Date 2016
Area 38,950 sqm
Capacity 116 Beds
Client MNGHA

This is an extension of the existing cardiac center in KAMC-Riyadh designed to cater for the increasing demand for inpatient and outpatient facilities.

The composite building also includes a floor containing 18 VIP and 2 VIP beds served by secure and dedicated access through protocol reception in the basement.

This building is connected to the main cardiac hospital at first-floor through a connection bridge meeting at the first-floor connection between the main building and existing extension building.

The site would be developed to ensure maximum use of available parking space and undisturbed accessibility which also involves the relocation of existing bus station.

The roof gardens at roof of ground and first-floor provide nice views from the building for staff and patients and external children play area. This feature along with sophisticated facade design makes it a signature building in the facility.

Kayunga and Yumbe, Uganda

Kayunga and Yumbe Hospitals

Date 2016
Area 40,000 sqm
Capacity 400 Beds
Client Ministry of Health, Uganda

The project will evolve for the rehabilitation of existing facility and new construction of Kayunga and Yumbe Hospitals including, but not limited to, the following:

- Rehabilitation of existing wards, theaters, OPD and administration buildings.
- Construction of new buildings for OPD extension, emergency units, theatre extensions, new wards, staff houses as well as auxiliary facilities like kitchen, laundry, water supply and sewage systems and other waste management facilities.
- Supply and installation of medical and hospital furniture for all the different areas of the hospitals including ambulances, a minibus and multipurpose vehicle for each hospital.

Sialkot, Pakistan

Allama Iqbal Specialized Hospital

Date 2016
Area 28,306 sqm
Capacity 500 Beds
Client Infrastructure Development Authority Punjab

The hospital consists of the following components and departments:

- Radio-diagnostics and imaging
- Clinical Pathological Laboratories
- Outpatient department
- HDU
- CCU
- Cardiology ward
- Oncology ward
- Pediatric-Surgery ward
- Nephrology Ward
- Urology Ward
- Neurosurgery ward
- Orthopedic ward
- Burn Unit
- Plastic Surgery Ward
- Dermatology Ward
- Neurology Ward
- Private Rooms
- Library
- Auditorium
- CSSD (central sterile supply department)

The other facilities include the following:

- Internal access roads to Hospital Building
- Green Area, Landscape/Water Feature/ Monument
- Public, Staff and Emergency Parking Walk Ways


ALLAMA IQBAL HOSPITAL
PRIVATE CLINIC


ALLAMA IQBAL SPECIALIZED HOSPITAL

Makkah, Saudi Arabia

Umm Al Qura University

Area 685,980 sqm

Architecture has a powerful position in the message that an University or other educational institution can send to their staff, students and the outside world. Campus structures, individual specialist buildings within it and the spaces in between, all must be considered in developing the collegiate character of any education project.

There have been significant changes in the pattern of teaching, learning and the technologies that support it. We have been very much involved in these developments and continually incorporated them in the design of our buildings.

The university plays a prominent role in conducting academic research and field studies that lead to the direct development of the local community. These services include academic, health and technical activities necessary for the development of the university and the local community. The university is keen to further develop its international graduate training program, medical competencies and health services.

Riyadh, Saudi Arabia

Specialized Medical Centre

Date 2017
Area 70,900 sqm
Capacity 300 Beds
Client Specialized Medical Center

Design, medical equipment planning, testing and commissioning of a new Specialized Medical Centre hospital tower which comprises of 300 beds.

Scope of work includes complete design with construction architectural drawings (schematics & detailed internal layouts), construction MEP Design drawings, technical specifications and the bill of quantities for a hospital tower to be built on 9,600 sqm land at King Abdullah Road in Riyadh.

The new facility will contain:

- Specialist Clinics
- Emergency Department
- Obstetrics & Gynecology
- N.I.C.U.
- Laboratory
- Pharmacy
- Ancillary Services


المركز التخصصي الطبي
SPECIALIZED MEDICAL CENTER
SMC
PHARMACY

Riyadh, Saudi Arabia

Neuroscience, Cancer and Proton Therapy Centre

Date 2013
Area 50,000 sqm
Client KFMC, Riyadh

The Cancer Center consists of a 12-storey building. The Building is to be connected at the Basement & Ground Floors with additional upper-level connections with Neuroscience tower. It is located north of the existing Main Hospital. The Proposed Building is planned to include basements with extensive parking space for at least 400 cars. It includes Radiology/Oncology, Linear Accelerators, Treatment Planning, Anesthesia Recovery and Surgical suites.

Inpatient services include a Bone marrow transplant unit, Leukemia-Lymphoma and Neutropenia units. It has been planned as per international codes and standards.

This Cancer Centre has a special facility for proton therapy treatment having 5 Proton Gantries, 5 linear Accelerator Gantries, and Support services. The Proton Therapy has a separate entrance, lobby and drop off. It is connected to the rest of the complex at basement, ground and first level.

Section 03

Industrial and Commercial

420,000 sqm

Total projects area

200 m

Height of mixed-use towers

Having excellence and full command over the subject DAR Engineering carries out design from conceptual to the construction documents, in association with our Specialist International Partners.

Dammam, Saudi Arabia

Electrical Testing Laboratory

Date 2017
Area 6,900 sqm
Client GCC ETL

The GCC ETL is a unique and strategic national project. The administration building architecture and exterior design shall be a landmark to represent the company vision worldwide.

The building itself was to be designed in a way that allowed future expansion, and to have a fully independent controlled access system to its different departments, such as the office areas, training center, support areas or the masjid.

This was, in fact, the focal point of the current proposal, and it was developed to enable the required functional flows and the expansion of its main functions, such as the Training Center and Office Areas, for example.


GCC ELECTRICAL TESTING LABORATORY

Rabigh, Saudi Arabia

Kansai Paint Plant

Date 2017
Area 16,525 sqm
Client Kansai Paint

Jeddah, Saudi Arabia

Mixed-Use Development

Date 2013
Area 48,800 sqm
Client Sabban Group

DAR Engineering was approached by DWP for Engineering services of 122m high twin tower mixed-use development.

This building with 2 basement levels and 25 floors has a total built-up area of 48,800 sqm. It is located 3 km away from Jeddah Port on Medinah Road.

DAR Engineering's scope was to provide complete Mechanical, Electrical, Plumbing and Structural Design services from Concept Design to IFC package.

Riyadh, Saudi Arabia

DAR Engineering Head Office

Area 4,000 sqm
Client Alfanar Properties

Our ability to listen to the clients' requirements allows us to develop innovative solutions based on shared understanding of the project's specifics. With changing ways of work and organizational structures and with ever-improving technology, office environments are in a continuing state of development.

Offices that are well designed will accommodate this change and contribute to the success of the organization within them. We are sensitive to the different values of any organizations and will bring this to the briefing process for office buildings and fit-outs.

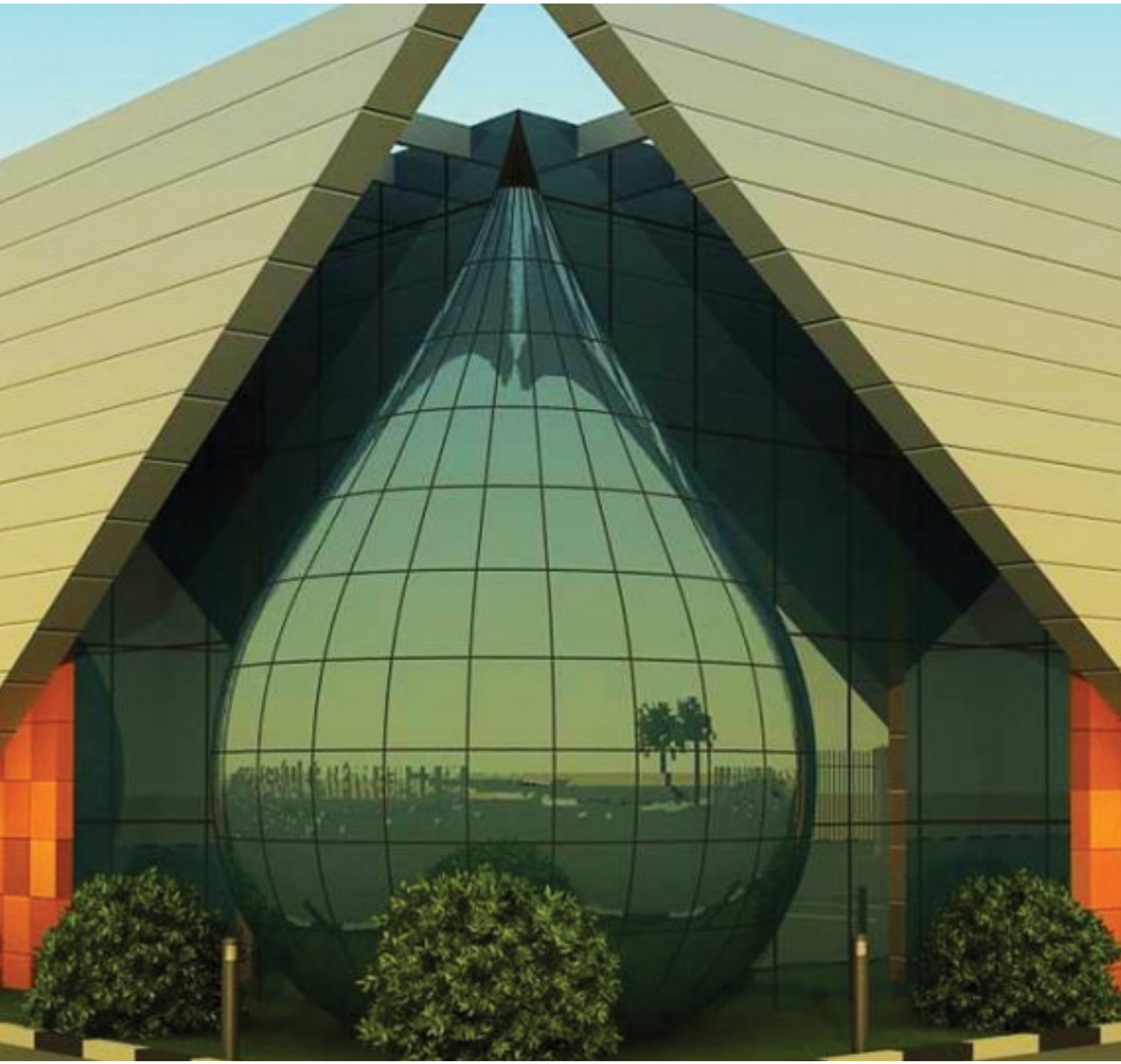
By considering both the individual and organizations unique structures, we created offices that enhance and encourage performance and encourage individuals within a stimulating environment. This facility with a built-up area of 4,000 square meters will provide DAR Engineering with state of the art design studios and offices. It will be our head office. Building Information Modeling (BIM) has been adopted for this facility.

Central Region, Saudi Arabia

Branch Offices for General Directorate of W&E

Area Over 19 Sites
Client General Directorate of Water & Electricity (Ministry of Water & Electricity)

DAR Engineering has been appointed by the General Directorate of Water & Electricity (Ministry of Water & Electricity) to develop Branch offices in 19 sites at various locations all over Riyadh region. Categorized into three models with respect to the number of employees accommodated, these offices have customer care helpdesks, public awareness seminar rooms and modern office and support facilities.



Riyadh, Saudi Arabia

Theger Villa

Date 2013
Area 3,200 sqm
Client Private

This 3,200 sqm private villa was designed to address client´s needs with TECTURAE acting as Design Architects and DAR Engineering responsible for the engineering.

Yanbu, Saudi Arabia

Royal Commision 110 MW Photovoltaic Manufacuring Facility

Area 25,000 sqm
Client Al-Afandi

Located in the Industrial city of Yanbu, this renewable energy project combines all stages of the PV solar panel manufacturing process within one facility, including water, cell and module manufacturing, streamlining production while competing on cost in the growing solar energy marketplace.

DAR in partnership with CI Design and AVID provided complete architectural, mechanical/process, electrical, plumbing (MEP) and civil/ structural design of the facility.

Al-Qassim, Saudi Arabia

Grain Silos Flour Mills Organization

Date 2010
Client: Grain Silos Flour Mills Organization

DAR Engineering was approached by the Grain Silos Flour Mills Organization to study the phenomenon of water ingress in the basement of main house and other facilities at the flour mills site and provide possible solution for the same.

The water ingress caused damage internally threatening the success of their operations, including potentially undermining the structure stability of the major tall concrete silos.

Central Region, Saudi Arabia

Warehouses for General Directorate of W&E

Area Over 3 sites
Client General Directorate of Water & Electricity (Ministry of Water & Electricity)

General Directorate of Water and Electricity wishes to execute new warehouses at various sites within the Central Region of the Kingdom. The existing warehouses were studied to avoid repetition of design flaws present in the existing warehouses. Special considerations to meet the directives set by the Ministry of Interior for such building types. These new warehouses had to have modern in facilities.

Section 04

Infra–structure

200+
Structural engineering projects

100+
Road and railway projects

As regional leaders in architectural design, we thrive in building engineering services, interior design, landscape design, infrastructure design, urban planning and green building design.

We have designed a number of mega-scale educational, leisure, commercial, hospitality, residential, labs, mixed-use development projects both in public and private sectors.

Camorino, Switzerland

Lugano-Bellinzona Railway Viaduct

Date 2017
Client CIPM
Scope Conceptual Design and Consultancy

Aveiro, Portugal

Aveiro Port Feeder Line Railway East Viaduct

Date 2010
Client REFER
Scope Conceptual Design, Final Construction Design, Technical Assistance

Aveiro, Portugal

Aveiro Port Feeder Line Railway West Viaduct

Date 2010
Client REFER
Scope Conceptual Design and Consultancy

Aveiro, Portugal

Pirâmides Railway Bridge

Date 2010
Client REFER
Scope Conceptual Design, Final Construction Design, Technical Assistance

Third Lisbon Crossing, Portugal

Road and Railway crossing the Tejo River

Date 2009
Client Coba
Scope Conceptual Design

Marão Highway, Portugal

Viaduct V3

Date 2016
Client Somague + MSF / EP
Scope Conceptual Design, Final Construction Design, Technical Assistance

Macao, China

Macao LRT

Date 2010
Client Lace
Scope Tender Design

Jeddah, Saudi Arabia

Tahliya Bridge and Underpass

Date 2013
Client HUTA
Scope Conceptual Design, Final Construction Design, Technical Assistance

Marão Highway, Portugal

Viaduct V1

Date 2016
Client Somague + MSF / EP
Scope Conceptual and Final Construction Design, Technical Assistance

Jeddah, Saudi Arabia

Old Makkah Road Bridge

Date 2010
Client HUTA
Scope Conceptual and Final Construction Design, Technical Assistance

Jeddah, Saudi Arabia

Majed-Sary Intersection Bridge

Date 2016
Client HUTA
Scope Conceptual Design, Final Construction Design, Technical Assistance

Mecca, Saudi Arabia

Jamarat Pedestrian Access Ramps

Date 2009
Client HUTA
Scope Conceptual and Final Construction Design

Viseu, Portugal

Pavia Park Pedestrian Bridge

Date 2007
Client NPK, Arquitectos Paisagistas Associados
Scope Conceptual Design, Final Construction Design, Technical Assistance

A 10 Highway, Portugal

Loureiro Viaduct

Date 2004
Client Brisa
Scope Conceptual Design, Final Construction Design, Technical Assistance

A2 Highway, Portugal

Barranco da Vinha Viaduct

Date 2003
Client Brisa
Scope Conceptual Design, Final Construction Design, Technical Assistance

Entre-os-Rios, Portugal

Bridge over the Douro River in Entre-os-Rios

Date 2003
Client JAE
Scope Conceptual and Final Construction Design, Technical Assistance

Santarém, Portugal

Salgueiro Maia Bridge over the Tejo River

Date 2000
Client JAE
Scope Conceptual and Final Construction Design, Technical Assistance

IC8 Highway, Portugal

Bridge over the Zêzere River

Date 1994
Client JAE
Scope Conceptual and Final Construction Design, Technical Assistance

Macao, China

Friendship Bridge over the South China Sea

Date 1994
Client GPP / Macao Government
Scope Conceptual Design, Final Construction Design, Technical Assistance

Viana do Castelo, Portugal

Viana do Castelo Bridge

Date 1994
Client JAE
Scope Conceptual Design, Final Construction Design, Technical Assistance

Crossing between Castro Marim (Portugal) and Ayamonte (Spain)

International Bridge over the Guadiana River

Date 1991
Client JAE
Scope Conceptual Design, Final Construction Design, Technical Assistance

Paita, Peru

Paita Port

Date 2014
Client CPTP
Scope Conceptual Design, Final Construction Design, Technical Assistance

Rabigh, Saudi Arabia

RPP2 Cooling Water Intake Structure

Date 2013
Client HUTA
Scope Conceptual Design, Final Construction Design, Technical Assistance

Sines, Portugal

Terminal XXI

Date 2011
Client CPTP
Scope Conceptual Design, Final Construction Design, Technical Assistance

Aveiro, Portugal

Ro-Ro Jetty

Date 2003
Client CPTP
Scope Conceptual and Final Construction Design, Technical Assistance

Aveiro, Portugal

Multipurpose Jetty

Date 2004
Client CPTP
Scope Conceptual Design, Final Construction Design, Technical Assistance

Chelas - Barreiro, Portugal

Study of the 3rd Crossing Passage over the Tagus River Chelas - Barreiro

Date 2004
Client EM3TT
Consultant Globalvia

South Side of Tagus, Portugal

Tramway of the South Side of the Tagus

Date 2002/2004
Client MST
Consultant Globalvia

Lisbon, Portugal - Madrid, Spain

High-speed Train - Axis Lisboa - Madrid

Date 2010/2011
Client RAVE/REFER
Consultant Globalvia

Lisbon, Portugal - Madrid, Spain

High-speed Train - Axis Lisboa - Madrid

Date 2011
Client Construction Consortium LGV
Consultant Globalvia

Aljustrel - Castro Verde, Portugal

A2 Highway, Aljustrel-Castro Verde

Date 1997
Client OesteRota
Consultant Globalvia
Scope Conceptual Design, Final Construction Design, Technical Assistance

Penafiel - Amarante, Portugal

A4 Highway, Penafiel-Amarante

Date 1994
Client Brisa
Consultant Globalvia
Scope Conceptual Design, Final Construction Design, Technical Assistance

North of Portugal

A7 Highway

Date 2004
Client Norace
Consultant Globalvia
Scope Conceptual Design, Final Construction Design, Technical Assistance

Caldas da Raínha-Leiria, Portugal

A8 Highway Caldas da Raínha-Leiria

Date 2002
Client Autoestradas do Atlântico
Consultant Globalvia
Scope Conceptual Design, Final Construction Design, Technical Assistance

Costa da Prata, Portugal

Costa da Prata Highway

Date Data: 1997
Client Oesterota
Consultant Globalvia
Scope Conceptual Design, Final Construction Design, Technical Assistance

Louriçal - Quiaios, Portugal

A17 Highway, Louriçal A14 / Quiaios

Date 208
Client Lace
Consultant Globalvia
Scope Conceptual Design, Final Construction Design, Technical Assistance

Our projects

DAR Engineering has a fully integrated application environment across offices within the Kingdom and offshore.

Power and Energy

Electrical and Power Buildings

	Capacity
Yanbu Power & Desalination Plant III	2700 MW
Ras Al Khair CCPP & Desalination Plant	2700 MW
Hail Power Plant (Ext. II & III)	672 MW
Al Ruqi Power Plant	13.75 MW
Sharourah Power Plant	85 MW
PP13 Power Plant	1850 MW
PP14 Power Plant	1850 MW
New 380/33kV BSP S/S 9051 & 9052, Riyadh	380 kV
380/110/13.8kV BSP S/Ss in Waad Al Shammal, Arar, Tabarjal, Qurayyat and Al-Jouf	380 kV
Al Samer 380/110/13.8kV BSP S/S, Jeddah	380 kV
Six New Harmain (HHR) 380/110/33/13.8kV BSP	380 kV
New Jubail Residential 380/230/115kV BSP	380 kV
Ras Al Khair 380kV BSP	380 kV
Power Supply to Saudi Aramco Total Refining Petro Chemical Company (SATORP) in Jubail	110 kV
380kV underground cable works associated with interconnection of Makkah Central 380kV BSP	380 kV
380kV OHTL works associated with connection of Irqaa (9034)	380 kV
380kV Overhead Transmission line from Jizan Economic City / Jizan Refinery P/P Substation to Abha East 380 kV BSP	380 kV

Studies

	Type
Power System Studies for Ras Al Khair CCPP & Desalination Plant	Study
Technical Investigation for Eastern Power Plants Electrical Problems in SEC	Study
Power Quality Assessment & Grid Interconnection Studies	Study
Up gradation of Power Transmission System in Abqaiq Area in Saudi Aramco	Study

Healthcare and Education

Medical Cities

	NO of Beds
King Faisal Medical City, Asir, KSA	1,350
Prince Mohamed Medical City, Al-Jouf, KSA	1,350
King Saud Medical City	1,500
King Fahad Medical City	2,250
King Abdullah Medical Complex	1,225

Specialized Hospitals

	NO of Beds
Neuroscience Centre, KFMC, Riyadh	300
Cancer & Proton Therapy Center, KFMC, Riyadh	300
Cochlear Implant Center	N.A
Nuclear Medicine, 7 Tesla MRI Facility	N.A
Specialized Medical Center (SMC) Tower, Riyadh	300
Sulemania Health Center	100
New Cyclotron Facility, Riyadh	N.A
Al Moosa Specialist Hospital	235
Ambulatory Care Centre	10
Prince Salman Heart Center, Riyadh	115
Women's Specialized Hospital, Riyadh	76
Radiation Oncology, Jeddah	N.A
Mental Health Hospital, Jeddah	53
Long-term Care Center, Riyadh	390
Pediatric Cardiac & VIP Hospital, Riyadh	116
Mental Health Hospital, Al Ahsa	53
Polyclinic - King Abdullah Economic City	N.A
Long-term Care Center, Jeddah	390
Neonatal Intensive Care Unit (NICU), Dammam & Buraidah	1,500
Pediatric Growth & Behavior Disorder Center	20
Long-term Care Center, Al Ahsa	90
Psychiatric Nursing Home	200

Laboratories

	Area
Pesticide Analysis Laboratory	1,335 sqm
Research Laboratory & Consultant Offices, KFMC, Riyadh	40,000 sqm
Research Center, UQU, Makkah	CONF
Regional Office & Lab	40,194 sqm
PAFDA Laboratories	29,254 sqm

General & Teaching Hospitals

	NO of Beds
Teaching Hospital	500
Central Hospital, Dammam	n.a
Dr. Amin Al-Ali Hospital	150
Central Hospital, Qatif	-
Kayunga Hospital	TBD
Yumbe Hospital	TBD
Medical Tower, Arar	350
Al Sulyyil Hospital	200
South Gazzan Hospital	300
Kharj General Hospital	300
Prince Satam Hospital	500
Majmaa Hospital	300
King Abdul Aziz Hospital in Medina	500
Maternity Hospital in Medina	400
Afif General Hospital	200
Al Majarda Hospital	200
Najran Medical Tower	200
Hawiye hospital in Taif	200
Al Mahd hospital in Medina	200
Badr hospital in Medina	200
Al Qitaa Al Jabali Hospital in Gazzan	300
Tarba hospital in Holy Makkah	200
Al Qahmaa Walbark Hospital in Assir	300
Sharoura Hospital	300
Assir East Hospital	200
Raniya Hospital in Holy Makkah	200
Psychiatric Hospital in Al Baha	200
Maternity & Children Hospital in Mahayel Assir	200
Maternity & Children Hospital in Qurrayat	200
Zywec Hospital	380

Education

	Area
College of Medicine	117,449 sqm
College of Nursing	55,844 sqm
College of Dentistry	80,057 sqm
College of Pharmacy	49,591 sqm
College of Public Health & Health Informatics (PHHI)	65,043 sqm
College of Applied Medical Sciences	60,235 sqm
Research Centre	39,000 sqm
Central Library	17,100 sqm
Conference & ExhibitionCenter	19,400 sqm
Veterinary Teaching Hospital	55,167 sqm
Teaching Hospital, Sialkot	415,40 sqm
Hail Science Center	40,000 sqm

Industrial and Commercial

General Projects

	Area
Paint Production Plant	6,500 sqm
DAR Head Office	4,000 sqm
Central Services Building, KFMC, Riyadh	12,000 sqm
Recreation & Restaurant Building, Alfanar Labour camp	8,600 sqm
Office Building for GDWE	31,500 sqm
Office Building for CEO of King Fahad Medical City (KFMC)	14,600 sqm
KFMC Basement Renovation	21,000 sqm
Ceramic factory, Alfanar industrial city, Riyadh, KSA	60,000 sqm
Grain Silos & Flour Mills, Al Qassim, KSA	22,000 sqm
Riyadh Metro Project ORANGE LINE 3	181,700 sqm
Central Region Telecommunication Control Centre, KSA	3000 sqm
Kansai Paint Plant	16 525 sqm
110 MW Photovoltaic Manufacturing Facility	55,000 sqm
CM services for industrial assembly complex and its administrative building	34,600 sqm
PM services for regional office & warehouse development at Khamees Mushait	6,000 sqm
Project management consulting services for Alfanar's labour camp	60,000 sqm
PM consultancy services for Alfanar Properties development projects	

Residential

	Area
Hajr Housing Compound	30,000 sqm
Border Guards Housing Compound	42,200 sqm
Student Apartments Alteration	80,937 sqm
Private Villas, Riyadh	423 sqm
Al Yasmeen Villas	429 sqm
Thager Villa	3,200 sqm
Private Villa, Dubai	CONF
Private Villa, London	CONF
Staff Housing at Al Madina Hospital	CONF
Staff Residence at King Abdul Aziz Medical Complex	CONF
Housing design for staff at Al Majmah Medical Complex	CONF
Housing for staff at Mahd Al Thahab Medical Complex	CONF
Staff Housing at Al Sulayl Medical Complex	CONF
Staff Residence at Jazan Medical Complex	CONF
Housing design for staff at Al Kharaj Medical Complex	CONF
Housing for staff at Prince Sattam Medical Complex	CONF
Staff Residence at Al Badr Medical Complex	CONF
Staff Housing Al Majarda Medical Complex	CONF
Housing design for staff at Al Jabali Medical Complex	CONF
Staff Residence at Afif Medical Complex	CONF
Housing for staff at Rania Medical Complex	CONF
Housing design for staff at East Asser Medical Complex	

Mixed-use

	Area
Mixed-use Development, Medina Road Jeddah	75,000 sqm

Infrastructure

General Projects

	Type
Lugano-Bellinzona Railway Viaduct	Viaduct
Aveiro Port Feeder Line / Railway East Viaduct	Viaduct
Aveiro Port Feeder Line / Railway West Viaduct	Viaduct
Pirâmides Railway Bridge	Bridge
Road and Railway Crossing over the Tejo River	Bridge
Macao LRT	Bridge
Tahliya Bridge and Underpass	Bridge
Viaduct V1	Viaduct
Old Makkah Road Bridge	Bridge
Majed-Sary Intersection Bridge	Bridge
Jamarat Pedestrian Access Ramps	Bridge
Pavia Park Pedestrian Bridge	Bridge
Loureiro Viaduct	Viaduct
Barranco da Vinha Viaduct	Viaduct
Bridge over the Douro River in Entre-os-Rios	Bridge
Salgueiro Maia Bridge over the Tejo river	Bridge
Bridge over the Zêzere River	Bridge
Friendship Bridge over the South China Sea	Bridge
Viana do Castelo Bridge	Bridge
International Bridge over the Guadiana River	Bridge
Paita Port	Marine Works
RPP2 Cooling Water Intake Structure Port	Marine Works
Terminal XXI	Marine Works
Ro-Ro Jetty	Marine Works
Multipurpose Jetty	Marine Works
Study of the 3rd Crossing Passage over the Tagus River Chelas – Barreiro	Bridge
Tramway of the South Side of the Tagus	Tramway
High-speed Train - Axis Lisboa – Madrid	Tramway
A2 Highway, Aljustrel-Castro Verde	Highway
A4 Highway, Penafiel-Amarante	Highway
A7 Highway	Highway
A8 Highway Caldas da Raínha-Leiria	Highway
Costa da Prata Highway	Highway
A17 Highway, Louriçal / A14 / Quiaios	Highway

Our clients

A

ABB
Abengoa Energía
AECC
Al Alamia Tech CPRN Al Arrab Contracting Al Mashariq
Al Babtain Contracting Co. Alfanar
Al Gihaz Co. Lts Al Haider Co.
Al Harbi Trading Co. Al Jazira
Al Hokair Group, KSA
Al Khafji Joint Operations
Al Mashariq
Al Najim
Al Ojaimi
Al Osais Contracting
Al Saleem Corporation Al Sharif Group
Al Toukhi Co. (TIT) Al Turki
Al-Afandi Group, KSA
Al-Babtain Power & Telecommunication Co.
Alfanar
Al-Kifah Holding Company
Al-Rashid Group, KSA
Alstom
Al-Tuwairqi
Arab Fund
Asas Contracting
Azzam Contracting

B

BADEA
Bechtel
BEMCO Capital Lights CEPCO

C

Chevron
CME Al Arabia
COGELEX Contraco
Consultants Selection Committee

D

Delta Co. Ctd
Doosan
DWP (Design Worldwide Partnership), Bangkok, Thailand

E

Economic Cities Authority
EPCC
Empresarios Agrupados

G

GACA
Gama
General Directorate of Health Affairs, Eastern Region, KSA
General Directorate of Water & Electricity, KSA
General Electric (GE), USA
Government of Punjab, Energy Department
GPIC
Grain Silos & Flour Mills, KSA
GS Engineering

H

Hajr Electricity Production Company, KSA
Healthcare Infrastructure Development & Management Company (HIDMC), Pakistan
HKS, USA
Hyundai

I

IDOM Ingeniería y Consultoría, S.A., Spain
Infrastructure Development Authority Punjab (IDAP)
ISCOSA - Siemens

J

JANA
Jeddah Municipality
JGC
Joadah Consult Ltd., Uganda

K

Kansai Paint, Japan
KAUST, KSA
KEC International Limited
KFW
Khafji Joint Operations Jing
King Abdullah Medical City, Makkah
King Abdullah University of Science and Technology
King Fahad Medical City (KFMC), KSA
King Fahad Military Medical City (KFMMC), KSA
King Faisal Medical City
King Faisal University (KFU), KSA
Kuwait Fund

L

Larsen & Tourbo

M

M. R. Al Khathlan for Contracting Najm Al-Jazira
Ma'Aden - Saudi Arabian Mining Company
Marafiq
MEEDCO
Ministry of Defense, KSA
Ministry of Health, KSA
Ministry of Health, Pakistan
Ministry of Health, Uganda
Ministry of Higher Education, KSA
Ministry of National Guard - Health Affair (MNGHA), KSA
Ministry of Water & Electricity Mohammad Al-Ojaimi Est.
Moll Arabia
Mustang

N

NATEL
National Contracting Co.
National Grid

P

Pell Frischmann, UK
Petro Rabigh, KSA

Q

Qatar General Electricity & Water Corporation (Kahramaa), Qatar Raissy Co.

R

Royal Commission for Jubail & Yanbu (RCJY), KSA

S

Sabia
SABIC, KSA
Saline Water Conversion Corporation
Samsung
Saudi Aramco
Saudi Binladen Group
Saudi Chevron
Saudi Electricity Company
Saudi Food & Drug Authority
Saudi Fund for Development
Saudi Railways Organization
Saudi Services for Electro Mechanical Works Co. Ltd SEPCO III
SEPCO
Sepgoiii - Electric Power Construction Corporation
Sharqawi
Siemens
Sojitz Co.
Ssem
STICCO (Saudi Alterais)

T

Tareg Al-Jafari
Tasnec
Tatweer Building Company
Trading & Development Partnership
ThyssenKrupp Saudi Arabia Contracting Ltd

U

Umm Al Qura University, KSA
United Nations Global Marketplace
Utopian Consulting LLC

W

WESCOSA
World Bank

Contacts

Full service offices in Saudi Arabia, Egypt, India, Pakistan and Europe.

SAUDI ARABIA • RIYADH
DAR ENGINEERING
P.O Box 87236, Riyadh
11642 King Fahd Road,
Tamkeen Tower,
Floor 28 and 29
Saudi Arabia

T +966 11 494 5354
F +966 11 494 5456
E dar@dar-engineering.com

SAUDI ARABIA • JEDDAH
DAR ENGINEERING
PO Box 15203,
Jeddah 21422
Saudi Arabia

T +966 12 693 3655
F +966 12 265 4418
E dar@dar-engineering.com

SAUDI ARABIA • DAMMAM
DAR ENGINEERING
PO Box 13103,
Dammam 31493
Kingdom of Saudi Arabia

T +966 13 858 8911
F +966 13 858 8944
E dar@dar-engineering.com

PAKISTAN • LAHORE
Offices 21 and 22,
2nd Floor Park Lane Tower
172 - Tufail Road
Lahore Cantt.,
Pakistan

T +924 236 622 338
E dar@dar-engineering.com

INDIA • CHENNAI
GEE GEE Universal
N°2, 4th Floor,
MC. Nicholas Road,
Chetpet, Chennai 600 031
India

T +914 466 797 000
E dar@dar-engineering.com

PORTUGAL • LISBON
Av. Ilha da Madeira,
Bloco 35K-4A
1400-203 Lisbon
Portugal

T +351 211 521 177
E dar@dar-engineering.com

EGYPT • CAIRO
181, El Oruoba Street
Nozha, Cairo,
Egypt

T +202 22 662 903
E dar@dar-engineering.com

www.dar-engineering.com