

# INSIDE K&A

ISSUE 01 January 2018

Khatib & Alami Newsletter



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Istanbul seismic  
readiness

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**REWRITING**  
a lost chapter in  
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## TANZANIA

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Tanzania future  
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# Welcome to K&A's Digital Age

Khatib & Alami has undertaken a Digital Transformation program reassuring its commitment to be among companies that make the change towards fusing technology across engineering and maintaining a leading edge not only in the consumption of technology, but also in the contribution of the latest technological advancements serving the A/E/P industry.

Virtual Reality (VR), Augmented Reality (AR), Drones, 3D Scanning and Printing, Building Information Modeling (BIM), Autonomous Equipment, Advanced Building Materials, Predictive Analytics, Collaboration Processes and Artificial Intelligence (AI) are bringing new perspectives enabling us to innovate, redefine experiences, and fortify our business. It is a global mega-trend that will have a huge impact on all; many of these changes are new technologies and innovative ways that optimize how we design, build and operate.

To sustain our advanced position in the global trend, we want to ensure the maximum utilization of such key-enabling technologies in a multidisciplinary way that will bring synergies, efficiency, productivity gains as well as new business line offerings with digital functionalities and innovative data-based services.

The Digital Transformation program will bring transformative outcomes that our clients will find advantageous in productivity, design and quality; keeping technological progress at the forefront.

**Najib Khatib, Ph.D.**  
**Chairman & CEO**



**ARCHITECTURE & PLANNING**

**INFRASTRUCTURE**

**PROGRAM MANAGEMENT SERVICES**

**ENERGY**

**GEOSPATIAL SYSTEMS**

**INTEGRATION**

**ARCHITECTURE & PLANNING**

**Buildings**

- Residential
- Commercial
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- Retail
- Healthcare
- Educational
- Special Facilities
- Sports & Recreation

**City & Regional Planning**

- Urban Planning & Design
- Sectorial & Regional Planning
- Landscape Architecture

**Interior Design & FF&E**

**INFRASTRUCTURE**

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# ISTANBUL

**DID YOU KNOW?**  
Istanbul is the only city in the world that straddles two continents: Asia and Europe.



**COUNTRY**  
Turkey



**CLIENT**  
Government of Turkey



**FEATURES**  
Expansion of Haydarpaşa Health Campus and Kartal Lutfi Kirdar Oncology Hospital

## Preparing hospitals to operate during earthquakes

Istanbul has a long history of earthquakes due to its seismic-prone location nearby the North Anatolian Fault. Taking into consideration that a major potential earthquake is highly possible to occur over the next years, an urgent need to improve Istanbul's readiness for potential earthquakes is today a priority.

With the aim of strengthening critical public facilities for earthquake resistance, and supporting measures for better enforcement of building codes and land use plans, the Government of Turkey represented by the Istanbul Project Coordination Unit (PCU) commissioned Khatib & Alami (K&A) in November

2017 - in joint venture with timA Engineering- the consultancy services for the design of two major hospitals in Istanbul: Haydarpaşa Health Campus and Kartal Lutfi Kirdar Oncology Hospital.

The core purpose of these two hospitals is to remain fully operational during and after earthquakes, meeting the national and international hospital regulations' requirements. While Haydarpaşa hospital is planned to be constructed within the existing hospital complex, Kartal Lutfi Kirdar hospital will be designed in a new plot according to the Ministry of Health requirements due to the hospital's insufficient current plot and considering the uninterrupted healthcare services. The hospital designs will include 1,070 beds for

Haydarpaşa and 200 beds for Kartal Lutfi Kirdar, allowing for a modular and extendable type of construction for future investments.

K&A and timA Engineering will be carrying out the designs of Haydarpaşa and Kartal Lutfi Kirdar for all architectural, interior and façade design, sustainable design, landscaping, structural, mechanical, electrical, operational and medico-technical planning, kitchen/laundry, Furniture, Fixture & Equipment (FF&E) -including medical equipment- fire protection, together with on-site and off-site infrastructural works. Preparing the drawings and defining the detailed bills of quantities will be included in the works' bidding documents.



## Enhancing Istanbul Seismic Readiness



**IN FOCUS**

This is the second project awarded to the Joint Venture between K&A and timA in Turkey after the construction supervision of Göztepe hospital in May 2014, paving the way for more successful projects in the Region.



*From left to right: Deputy Director, Mr. Yalçın Kaya representing PCU Director, Mr. Kazım Gökhan Elgin; timA Engineering Chairman of Board, Mr. Ali Ataç; and K&A Senior Director, Mr. Nabil Habli*



# Wazir Abad

## Drainage Canal to minimize flooding in Kabul

# KABUL



**DID YOU KNOW?**  
Kabul is elevated 1,750 m above sea level, and surrounded by high mountains.



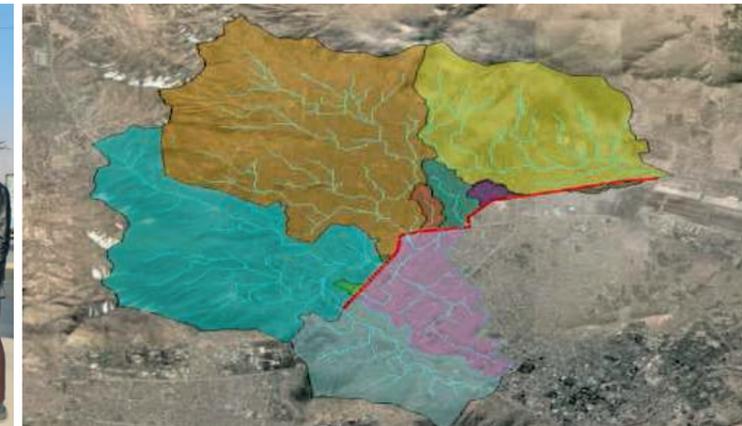
**COUNTRY**  
Afghanistan



**CLIENT**  
Kabul Municipality



**FEATURES**  
Redesign of 7 km canal length



### Hydraulic modeling for a complicated open channel in dense urban area where the canal is used to collect and convey storm and wastewater

Kabul, the capital city of Afghanistan, lacks a proper drainage system. When rainwater floods through its main roads, residents are faced with serious problems and vehicles are submerged by rainwater, causing traffic jams in the crowded city. To resolve the drainage issue and improve the city's environmental quality, as well as the urban transport efficiency, Kabul Municipality turned to Khatib & Alami (K&A) to construct a canal in Wazir Abad area.

Wazir Abad Drainage Canal is an existing earth channel in the middle of Kabul. The scope of the project includes the redesign of the 7 km canal length. This canal collects surface water and grey water from a huge water catchment area, exceeding 45 km<sup>2</sup>, and the generated flow is estimated at 34 m<sup>3</sup>/s. The existing conditions of the canal are not regular; the canal suffers from continuous flooding and lack of proper maintenance, and accumulation of sediments which minimize its section and efficiency.

To address this issue, K&A conducted hydrological studies estimating peak-flow and flood frequency analysis based on topographic surveys, geological

maps and site investigations. Hydraulic models were then developed using HecRas, in order to fix the adequate canal cross section which is capable to convey the 50-year flow and the grey water flow from the residential areas. The 4-month design works will cover topographic surveys, geotechnical investigations, providing access ramps, and other engineering works.

K&A coordinated closely with the client to address the community's needs in the design process and success of the project; especially that K&A is working in a new country with security risks and where hydrological data records are not available.

# RE WRITING A LOST CHAPTER IN KABUL HISTORY

KABUL



**DID YOU KNOW?**  
With an annual GDP growth rate of 8.78%, Kabul is the 5<sup>th</sup> fastest growing city in the world.



**COUNTRY**  
Afghanistan



**CLIENT**  
Ministry of Urban  
Development and Housing



**FEATURES**  
1.5 million m<sup>2</sup>  
built-up area

Rewriting a Lost Chapter in Kabul's History

## Darulaman Government Administrative Complex

Khatib & Alami (K&A) is undertaking a one-of-a-kind strategic development project with the Ministry of Urban Development and Housing (MUDH) in Afghanistan. The Darulaman Government Administrative Complex (GAC) aims to decentralize major governmental activities from the city center by creating a suitable environment that will provide better accessibility, security and ease of operations. Kabul will see in the next years a salient governmental hub and a vibrant district that helps re-write a lost chapter of the city's history and pins Afghanistan on the world map.



This grand multidisciplinary project is one of K&A's most strategic and holistic projects.

The governmental hub is located at the foothills of Darulaman Palace, "the dwelling-place of peace". The 1920s presidential palace that was left behind after political unrest is currently under renovation. The Darulaman GAC will touch Kabul's identity and help reimagine the nation's government renewal, modernization and its glorified past.

K&A made ample room for a close collaboration with the client and other consultants working in Kabul for the

definition of the project's guiding principles and success factors.

Spanning a site of 1 million m<sup>2</sup> with a 1.5 million m<sup>2</sup> built-up area, this grand multidisciplinary project is one of K&A's most strategic and holistic projects, as it involves rigorous efforts in master planning, architecture and building services, landscape design, transportation planning and infrastructure design (water and wastewater, irrigation, hydrology, power and telecommunication).

## GUIDING PRINCIPLES

- 
**Mixed-use governmental district**  
 Promote a 24-hour secure and lively mixed-use neighborhood where people work, live, and play
- 
**Integration with surrounding**  
 Preserve the existing urban fabric and interface with surrounding uses (Educational, Administrative, Commercial, Governmental, Residential & Planned Areas)
- 
**Sustainable development**  
 Encourage and promote sustainable design approaches to ensure the resilience of the complex and its adaptability to changing natural and man-made conditions
- 
**Clear identity of public realm**  
 Develop a generous and interconnected network of open spaces that can host a variety of activities for the Kabul population
- 
**Pedestrian-oriented**  
 Design the neighborhood at human scale, promote walkability and capitalize on the area's strategic positioning in terms of public transit

### Historic Significance

“  
**The Unfinished Project**  
 ”

The Dar ul-Aman Corridor is a symbol of Amanullah's unfinished vision for the modernization of Kabul and the larger Afghan society.

Mariam and Ashraf Ghani, in *Afghanistan: A Lexicon*, Hatje Cantz (2012)



“  
*The master plan has a strong and bold identity, it is a landmark development and it shows a statement of a civic center. It is cleverly designed and brilliant.*

*This is a legacy project, a once in a lifetime development, and it should expand to the rest of the city.*

**H.E. Sadat Naderi,**  
 Minister of Urban Development and Housing,  
 Afghanistan

# Dibba Al-Fujairah Municipality is Transforming

**Though its first enterprise GIS project, Dibba Al-Fujairah Municipality aspires to serve better the community**

Located in the North-East of the United Arab Emirates, Dibba Al-Fujairah is a major city in the Emirate of Fujairah and the Dibba region. It is considered to be the 2<sup>nd</sup> largest city in the Emirate of Fujairah with an area of 600 km<sup>2</sup>, and a population estimate of 29,301 (according to the 2015 census).

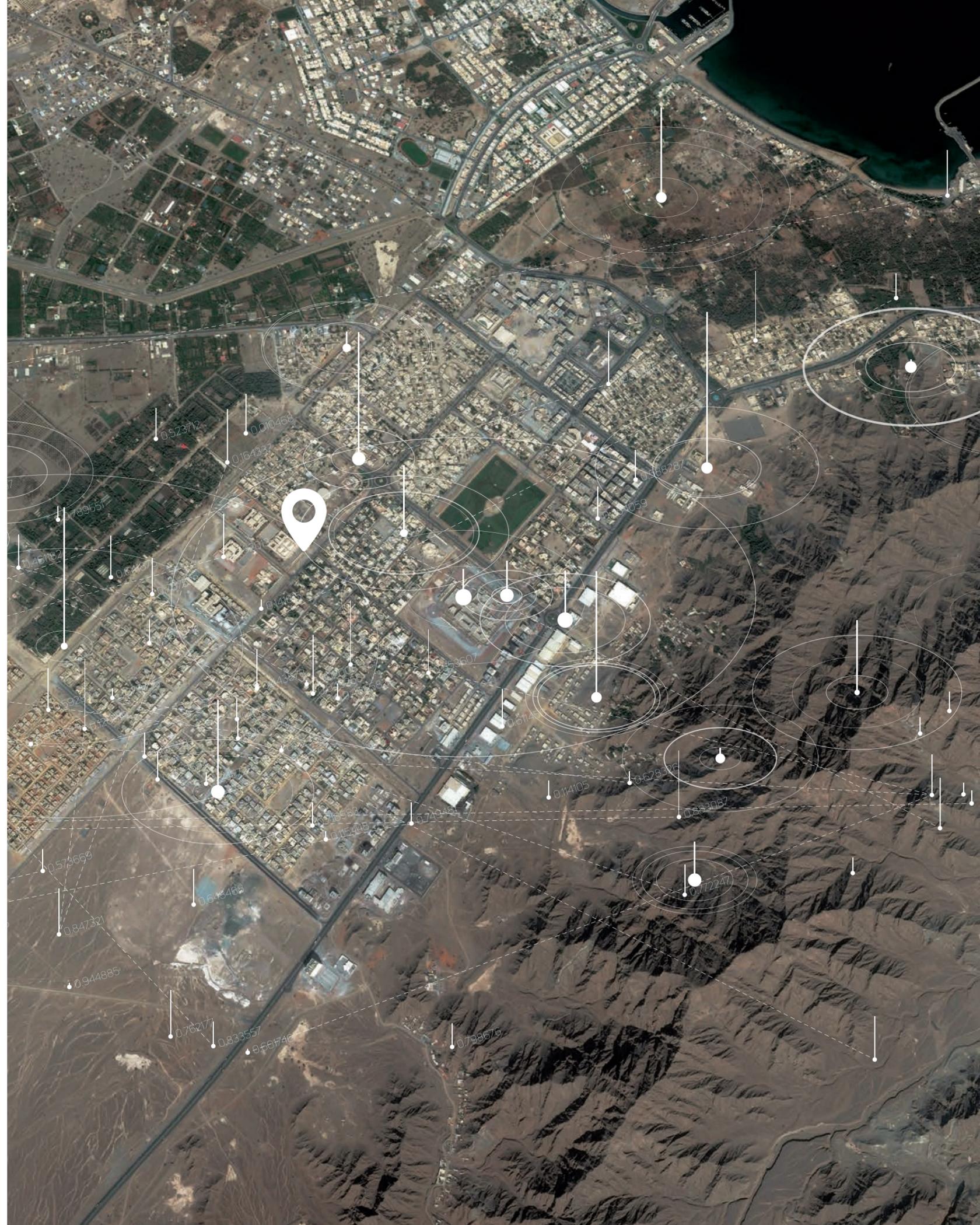
On 17 September 2017, Dibba Al-Fujairah Municipality partnered with Khatib & Alami (K&A) to launch its first Enterprise GIS project. K&A is playing a pivotal role in designing and implementing a world-class GIS data model across the Web following the international standards set by Esri and the US government to enhance the Municipality's business performance.

By creating a GIS-format basemap with data correction, loading and automation using Feature Manipulation Engine (FME), Dibba Municipality can now replace the existing AutoCAD Master Plan with the latest GIS tools and mapping products developed by K&A. FME model automation will ensure automatic and accurate database updates of collected data from different departments within Dibba's Municipality and other governmental entities.

The system includes developing a Web GIS Viewer taking advantage of the latest web technologies, supported by Esri's Portal for ArcGIS. This allows the system's easy integration with multiple governmental entities for data exchange and analysis. The survey team will be equipped with mobile devices, utilizing Esri Collector for ArcGIS to perform online and offline field data collection and health-related inspections.

Moreover, the GIS system will geo-enable the Dibba Municipality e-services and allow for seamless integration between the two systems. This will ensure automatic generation and certification of site plans and Milkiyat, utilizing the latest digital signature technologies.

Through this trend-setting project, K&A will help the Municipality digitally transform by automating its internal processes and workflows and reducing its paper-based transactions, while ensuring scalability and ease of future expansions, enhancements, and integrations.





# KIGOMA TABORA

**DID YOU KNOW?**  
Distance between  
Kigoma & Tabora is  
355 km (220 miles).

# Delivering Tanzania Future Aspirations



**COUNTRY**  
Tanzania



**CLIENT**  
Tanzania Airport  
Authority (TAA)



**FEATURES**  
Kigoma airport's upgrade will increase the number of flights, improving the area's economy. Tabora airport's upgrade will encourage hunting trips, thus enhancing tourism in this area.

Airports have become much more than just terminals. Latest studies have shown that airports lead to strong economies by creating and facilitating jobs, and helping travelers accommodate their business and leisure needs.

With the rising demand for faster travel times and due to the increasing number of travelers, Khatib & Alami (K&A) acknowledges today the importance of a multidisciplinary approach to airports.

In May 2017, Tanzania Airports Authority (TAA) awarded K&A the Kigoma and Tabora Airports' Upgrade and Rehabilitation, in association with Advanced Engineering Solutions LTD Consulting (AES).

As a new entrant in Tanzania, K&A is entrusted with the consultancy services for the supervision of the Upgrade and Rehabilitation of Kigoma and Tabora Airports; the study of available drawings of works; the capacity building of the

counterpart staff; and the monitoring of defects.



TAA Procurement Officer, Ms. Margaret I. Mushi and Mr. Ziad Khatib (K&A)

## KIGOMA AIRPORT

Located within Kigoma-Ujiji municipality, 10 km from Kigoma town center, Kigoma airport operated by TAA has known many incidents in the past. While serving as a domestic and partially regional airport to/from Rwanda, Burundi and Democratic Republic of Congo, this airport lacked many essential components for a safe circulation of airplanes.

As a result, K&A is leading the

supervision of the new terminal building, new control tower, and the Meteorological (MET) Observatory Building. An extension of the apron, a new security fence, a new car park and an access road, and the supply and installation of new AGL and NAVAIDS will definitely increase the safety and smoothen the flow of air traffic. This upgrade will increase the number of flights, improving the area's economy.

## TABORA AIRPORT

Operated by TAA and located 8 km south of Tabora town, Tabora airport has two runways that were built between 1941 and 1942 by the Royal South African Air Force. Although it serves as a regional hub offering chartered flights for hunting areas and mining camps, the only airline flying from/to this airport is Air Tanzania, transferring passengers to Dar Essalam and Kigoma airport.

The construction of a terminal building

and a new MET Observatory Building, together with a car park and an access road will result in a better traffic flow and will encourage hunting trips, thus enhancing tourism in this area.

This project sees us bringing assistance to the Tanzania Airports Authority in particular and to the United Republic of Tanzania in general, with high quality standards and due consideration to the environmental protection provisions.

# Smart Social Planning with GIS

Second Implementation Plan for the Coordination and Provision of Public Services in Riyadh 2017



Spanning an area of 5,961 km<sup>2</sup>, Saudi capital Riyadh is booming with a current population of 6.5 million and expected to be 8.3 million. The Public Services' Sector in Riyadh is transforming to accommodate the urban growth and fulfill the vision 2030 objective to enhance the livability of the city of Riyadh. It also aims to enhance the National Transformation Program 2020 Key Performance Indicators (KPI) for the purpose of achieving a sustainable and balanced urban development and to improve the quality of life for its citizens.

Having conducted, eight years ago, a study on the Provision of Public Services in Riyadh for the Arriyadh Development Authority (ADA), Khatib & Alami (K&A) is updating the study following a "Smart" approach in services provision planning by developing an interactive model using advanced GIS tools and techniques. An electronic portal was designed and activated to connect relevant public authorities (services providers) in one platform and to allow continuous update of current and future public services.

## Delivering ADA's aim to improve the Level of Services (LOS) provision

ADA aims, through the "Second Implementation Plan for the Coordination and Provision of Public Services in Riyadh-2017", to improve the level of services in Riyadh, fill the existing gap and identify the future needs, capitalizing on the provision of public services as one of the most important urban indicators that reflect on the quality of life of city residents.

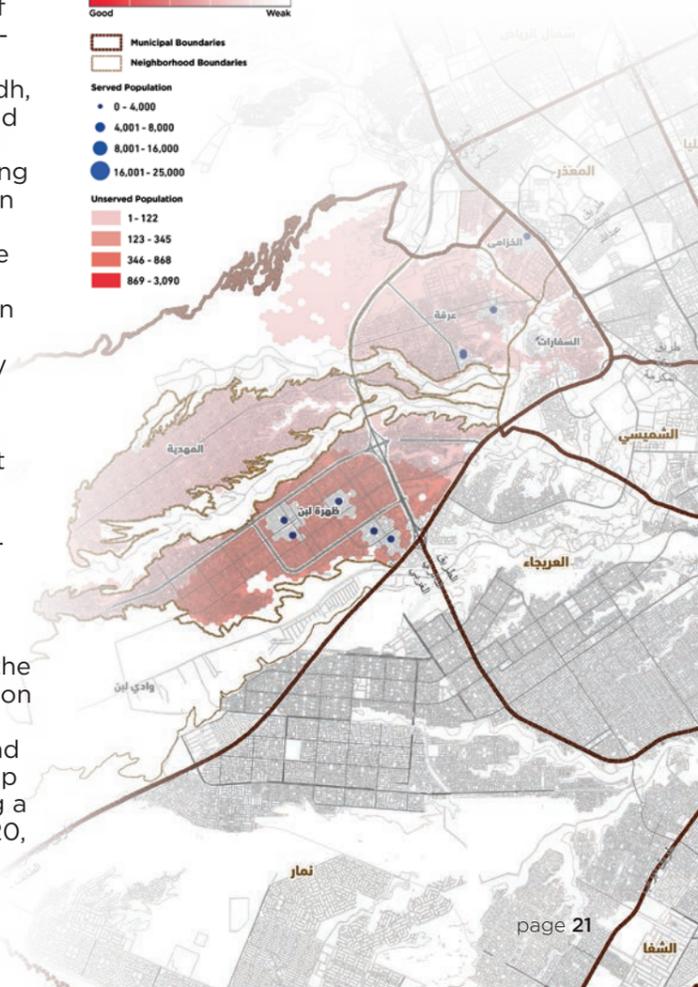
In the Second Implementation Plan, K&A designed for ADA, a joint portal for public service providers in Riyadh to continuously update the data, periodically monitor and follow-up on services implementation, and measure their consistency with the planning standards.

The portal will enable ADA measure the efficiency of public services distribution and allocate the services on three levels: neighborhood, municipality, and the city. It will also provide a road map for services implementation following a priority plan on a five-year basis (2020, 2025, 2030).

## A portal that sets the trend towards an E-Government

To achieve its most ambitious plan, K&A helped ADA establish a database at the city level, which includes spatial and descriptive data for public services-in terms of locations, distances, areas, number of floors, ownership-and any other information that helps the relevant authorities develop their future plans and set priorities. In addition, K&A built a Land Bank database and integrated it into the portal in an attempt to facilitate information sharing among relevant authorities about available lands -both private and public- that are owned by the services providers (Ministries) and the Amanat of Riyadh.

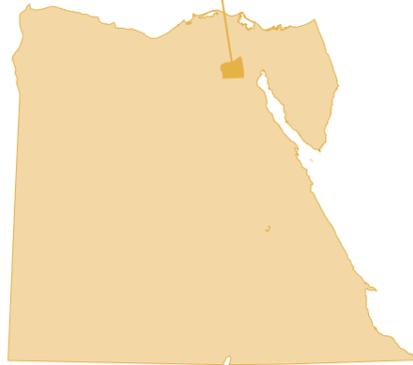
K&A assisted ADA in updating the planning standards as the main reference for lands planning and distribution of services locations in Riyadh city and recommended to establish the Land Registry Center for public services using the developed Land Bank Layer. The main objective of the Land Registry Center is to consolidate public services land plots (vacant and built) and their ownership status in an inventory which will facilitate land swapping among public authorities.



# CAIRO



**DID YOU KNOW?**  
10<sup>th</sup> of Ramadan is a city located on the Cairo-Ismailia desert highway, 46 km from Cairo. It is the largest industrial city in the Middle East with 1,625 factories and 153,000 workers.



## Cairo Line 10<sup>th</sup> of Ramadan (Cairo LRT)



**COUNTRY**  
Egypt



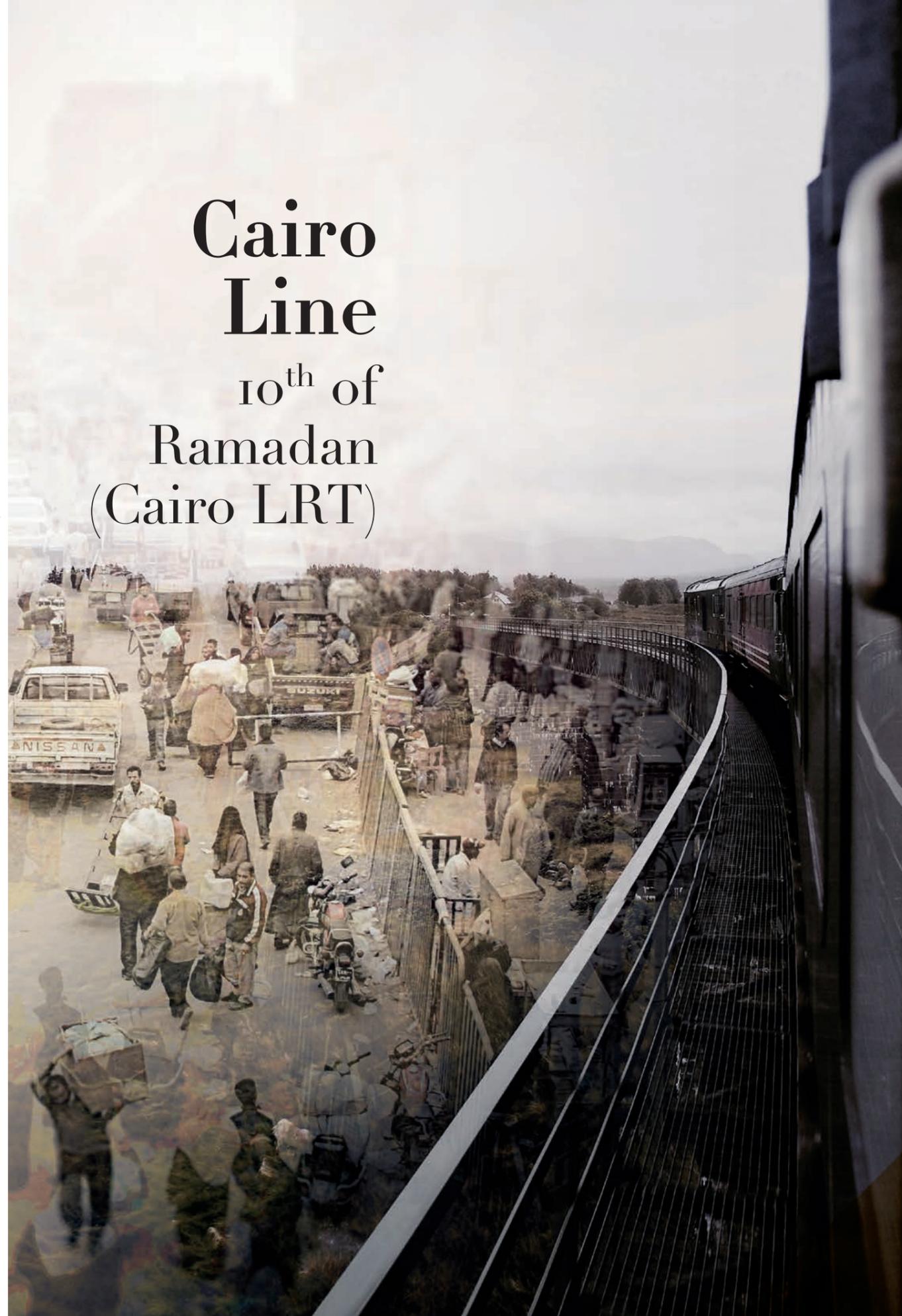
**CLIENT**  
The National Authority  
for Tunnels (NAT)



**FEATURES**  
The 67 km long Cairo LRT is expected to transport 340,000 passengers per day.

### A fast commuter railway connecting Cairo, 10<sup>th</sup> of Ramadan City and the New Administrative Capital

The National Authority for Tunnels (NAT), the client and owner of Cairo Metro & Commuter Railways, awarded on 28 August 2017, Khatib & Alami (K&A) as the lead of a joint venture with TPF Getinsa Euroestudios, the design review and the construction supervision of the 10<sup>th</sup> of Ramadan Railway. The first phase of the electrified train will be 67.00 km (58.7 km at grade, 4.2 km elevated via three bridges, and 4.1 km underground via four tunnels).



This Light Rail Transit (LRT) will be providing a commuter line between Metro Line 3's end (Adly Mansour in Salam City), Robaikey city, the industrial area in 10<sup>th</sup> of Ramadan, and Barlaman station in the New Administrative Capital. The project includes 11 stations and one depot. The LRT is expected to transport 340,000 passengers per day.

The construction cost will total \$1.25 billion, including \$739 million, funded by China Exim Bank. The project is expected to be completed and operated by July 2019.

As one of Egypt's most complex rail projects, Cairo LRT presents many challenges to K&A and the Chinese JV (AVIC and Crec): the introduction of the first 25 KV electrification systems in Egypt; a signaling system based on CBTC (converted to ETCS L2); the adoption of new technologies; and the necessity of onboarding specialized staff. With a pool of capabilities, and clever management of the project, K&A is fully geared to deliver this world-class project despite anticipated risks of financing caused by the investment type, the operation of the line shifting to a new computerized type, and the constructability issues caused by heavy traffic density in some areas.



**IN FOCUS**

This trailblazer project will be an economic spin-off for Egypt by creating job opportunities for the locals and transferring new technologies. Commercial projects will be implemented at the main stations to generate additional return on the entire project.



# Delivering Ambition beyond Open Skies

The new  
inaugurated  
MEA Training  
& Conferences  
Center reflects  
the Airlines'  
future vision.

Khatib & Alami (K&A) completed Lebanon's first flight simulator training center for the Middle East Aviation Academy near Beirut's airport. Now Middle East Airlines (MEA) pilots will be trained at the highest level of proficiency and have access to the latest technology in a center that implements the best practices to ensure the highest level of safety standards. After arduous efforts from a multidisciplinary team of experts in design and construction supervision, MEA Training & Conferences Center is a success.

Spanning a land of more than 13,755 m<sup>2</sup>, the new training center contains 4 airplanes' simulating systems of the A320 Airbus type and the A320 concept airplanes, training and maintenance-device rooms, classrooms, workshops, a library, a large lecture hall for 433 people, a conference room, a multi-purpose banquet hall, a hanged terrace and much more. K&A designed the training center to be flexible with a number of support spaces and business functions seamlessly integrated to meet the needs of trainees, trainers, and staff.

Through a complete revision of MEA's mission, functions and facilities, K&A embraced a technologically-advanced learning environment, improving training effectiveness and ensuring MEA passengers will be in good hands.





K&A's Executive Vice President, Mr. Samir Khatib and local authorities' representatives laying MEA Green Building's foundation stone

## MEA journey continues with Khatib & Alami

Post the success of MEA Training & Conferences Center, K&A was awarded another pivotal project, the first Green Building for MEA's head office. This new project is part of MEA's green corporate social responsibility programs to launch new initiatives supporting the environment and every sector that brightens the image of the beautiful country, Lebanon.

Under the High Patronage of H.E. Minister of Public Works and Transport, Mr. Youssef Finianos, the foundation stone of the MEA Green Building was laid on

Wednesday 11 October 2017 in the presence of K&A's Executive Vice President, Mr. Samir Khatib and local authorities' representatives.

K&A prepared the project's concept design and undertook the architectural and engineering studies, as well as the construction supervision.

The new Green Building will comply with the standards of renewable development. Some of the main features of this building include: water efficiency, energy conservation, materials recycling and resource efficiency, and indoor environmental quality.

The new building will include administrative offices, air management units, MEA data center, an information center, and dormitories for trainees and conference attendees.

# A Transparent Reflection to Co-Working Spaces



Khatib & Alami (K&A) designed the King Salman Humanitarian Aid & Relief Centre (KSHARC) in Saudi Arabia as a new work of architecture that employs simple, transparent, minimalist volumes set into the landscape; a design language that best reflects the Center's integrity in funding and coordinating international relief to crisis-afflicted communities.

It also meets the organization's vision for a workplace that drives efficiency, enhances the capability to fast adaptation to change, enables access to people, information and amenities, and provides a safe, healthy and secure working environment.

### An agile co-working environment that adds a sense of purposeful design

To accommodate an evolving economy, today's workforce is interactive, agile, connected and

cooperative. The increasing rapid impact of technology is changing the way organizations function, how their people work and the places where they do business.

Workplace designs are concepts that K&A is embracing with dedicated teams committed to future-casting their client's workplaces, shaping in turn their similar groups' requirements as well as divergent individual needs.

As the architect and lead consultant, K&A designed the Center with an open plan space concept rather than a traditional day-to-day desk or cubicle approach. This agile co-working space is flexible, requiring little if any, long-term commitment, in integrating new technologies. It fosters a sense of community and co-working neighborhood with layouts and areas specifically tailored towards encouraging conversation or privacy as needed.

**The governing concept is to move from the idea of the desk as an individual's workplace to an ethos of "the whole building is my workplace"**

The freedom for individuals to work anywhere within the building and be globally connected, compelled a top-of-the-line communication network. As such, employees have the flexibility to choose from a range of work settings, upon their task of the moment, the adequate type of space they want to perform from. The design of the workstation, the library, the concentration booths, the break rooms or even the dining hall maintains technology as the communication enabler.

The value of face-to-face communication and innovation comes from human interaction which is heartened by eliminating all physical barriers and partitions between departments. To the contrary, collaboration hubs and break rooms were introduced in adjacency to team neighborhoods for informal meetings and exchange of knowledge.

The strategy adopted by KSHARC for deep engagement with their clients and visitors required a security system that safely manages the journey of the building's population (insiders and outsiders) in a way where visitors are met at the lobby side, invited as authorized to access the shared business center and/or escorted to private meeting areas.



The generic layout applied all over the workstations areas maximizes the efficiency of the floor plate. A consistent and generic workplace design enables staff to adjust and move to different spaces within offices quickly while furniture stays in place reducing the time of shift and churn.

**Office design and fit-out need to focus less on demonstrating the organizational hierarchy and more on supporting and encouraging productive work.**

Middle Managers are sitting in the open plan environment in the same configuration of their staff, sharing the self-service photocopy rooms, pantries and service hubs. They make some 70% of the total organization's head count.

Only 30% of the identified employees requiring a certain level of confidentiality, were provided enclosed offices to maintain the policy mandated by the organization's management "no visual obstructions are allowed between any staff and subordinates".

100% of employees have daylit yet shaded workstation/office with individual control for desk and desk screen level, and over the indoor temperature and intensity of light for the group neighborhood.

The project is composed of two buildings, the Corporate and the Parking-Services Block. They are four-storey high covering around 37,750 m<sup>2</sup> of total built-up area. Both buildings have one common roof covered with photovoltaic

solar panels which also bridges above the landscaped pedestrian alley in between. The alley is another place for outdoor encounters in good weather.

The Corporate Block includes several iconic features. The façade typologies highlight the treated green-zinc and glazed façade which runs in different formats throughout the Corporate Block. The high-tech media system displays the Center's achievements in the open to public Entrance Hall. The skylit landscaped Atrium, which stands between the offices and the communal functions wings, acts like an encounter zone for visitors as well as for employees.

Both wings are connected to each other across the Atrium void via several bridges running on each of the three upper floors.

The interior of the Corporate Block is custom-built at every front prioritizing light, fresh air, comfort and inspiration. It introduces a variety of working setups for individuals, small and larger groups as well.

The plug and play operation mode is almost at all corners ranging from Head-Down focus booth, Head-to-Head, brainstorming and large formal meeting rooms. The Meet and Dine concept has a place there; the garden on top of the communal wing is a full floor dining hall with plenty of landscaping, day light and variety of seating styles to enable several usage scenarios such as recruitment interviews, coffee chat, lunch break, informal meetings, rehearsals and large groups' presentations.



# Holy City Standing on Solid Pillars

With over five decades of groundbreaking projects in Saudi Arabia, Khatib & Alami (K&A) has been at the forefront of realizing the Kingdom's future vision.

K&A has helped, for many years, Saudi Authorities design and engineer Makkah's expansion and renovation of civil, public services, and infrastructure projects to connect and accommodate the Holy City's pilgrims and Muslim believers in a good, safe and comfortable environment. We fulfilled that vision by forging long-term partnerships with governmental agencies and public and private sectors in developing mega housing projects, setting the right infrastructure and shifting transport and mass transit patterns. Recently, K&A has been awarded a Project Management Consultancy (PMC) contract to enable Saudi Arabia's Ministry of Finance (MoF) Project Management Organization to develop and improve related policies, and create a dynamic ecosystem for delivering efficient, effective and ongoing future projects with the greatest impact. PMC will support MoF to effectively deliver complex projects in line with Saudi Arabia's "Vision 2030".

Our global team of world-class program managers, architects, engineers, planners, scientists and IT specialists are confident to take on the complex challenges in setting the pillars of Makkah's future aspirations.



## STUDY

- Makkah Mass Rail Transit Project
- Haramain High-Speed Rail Project
- Public Bus Network Project

## DESIGN

- Makkah Mass Rail Transit Project
- Al Mashaaer Al Mugaddassah Metro Project
- Haramain High-Speed Rail Project
- Public Bus Network Project
- Bawabat Makkah Infrastructure Project



## MASTER PLAN

- Sharashif Mountain Development Project
- Al Fayhaa District Project



## CONSTRUCTION SUPERVISION

- Jabal Omar Development Phase I & III



## PROJECT MANAGEMENT

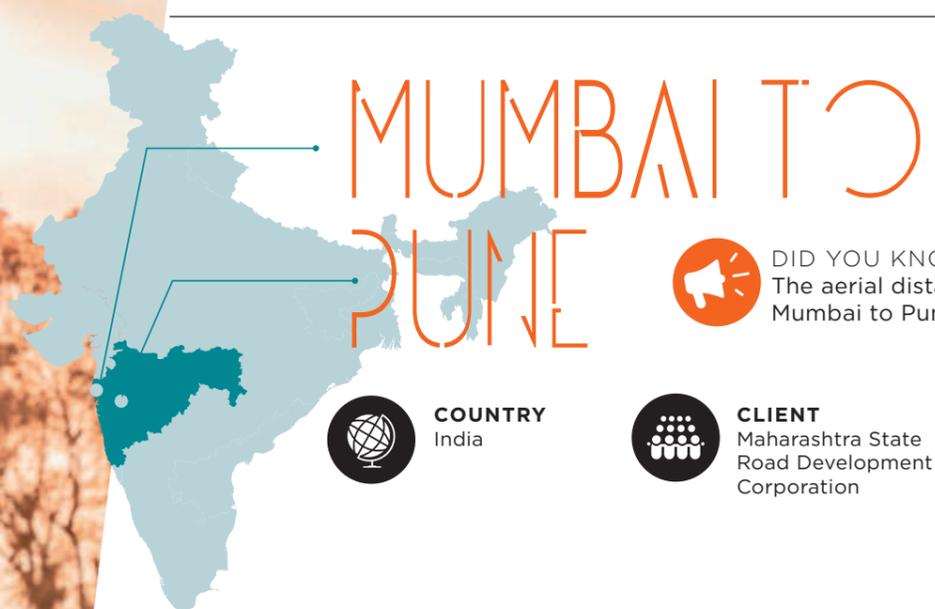
- Ministry of Finance Project Management Consultancy
- Jabal Omar Development Phase I & III
- Upgrading Project Performance Makkah Municipality





MUMBAI

PUNE



# MUMBAI TO PUNE



**DID YOU KNOW?**  
The aerial distance from Mumbai to Pune is 118 km.



**COUNTRY**  
India



**CLIENT**  
Maharashtra State Road Development Corporation



**FEATURES**  
Enhancing the living standards of 71 villages

## When Two Cities' Arteries Merge to Form One Continuous Urban Life

### 71 Rural villages, 71 Smart Communities

Times are changing along with the demand for innovative master plan solutions to accommodate such alterations. K&A is the catalyst of change, helping SPA to deliver its ambitious vision for 2036 by providing a regional master plan that is unique in character, environmentally, socially and economically sustainable, easily accessible from the Mumbai-Pune Expressway and hence an instigator for urban expansion and prosperity. Therefore a wide range of smart, state-of-the-art planning and intelligent infrastructure services such as land use plans of the entire area, detailed development plans with identified growth centers and road networks will be proposed to transform 71 rural villages into 71 smart communities.

The project is currently in early stages of development with surveys and data collection completed alongside the formation of a Geo-Database of the concerned area's existing conditions. K&A Bangalore Design Center in collaboration with K&A Beirut are at this time preparing for the next stage with the proposal of growth scenarios and master plan alternatives.

### Mumbai - Pune Expressway Sees Growth in Neighboring Villages

The development plan for 71 villages of Pavel and Khalapur Taluka of Raigad district along the 94 km Mumbai-Pune Expressway-II (MPEW) has been initiated by the Government of Maharashtra to equally ensure and enhance their development and living standards.

The aim of this project is to create a development that is vibrant, ecological, modern, inclusive and attractive to migrants, worldwide investments and economic endeavors as well as illustrate how a sustainable and eco-friendly approach to planning can create a wide-ranging, world-class and highly livable regional eco-system.

Khatib & Alami (K&A) was selected as the international consultant for the planning and development strategies of the project, by the Maharashtra State Road Development Corporation (MSRDC), a government appointed Planning Authority (SPA).

# Water Dispatch Center

A Digital Concept for Managing the Water Business

The Saline Water Conversion Corporation (SWCC) is a Saudi government corporation that owns, operates and maintains desalination production and transmission plants in the Kingdom. It is the largest desalinating sea water corporation responsible for 20% of worldwide desalinated water production. SWCC aspires to be a world pioneer in seawater desalination; for this purpose, it has actively engaged in deploying best industry facilities to support its corporate vision and embarked in the organizational and digital transformation, supporting the government's vision for sectorial reform.

## A 6-Month Mission: Made Possible

SWCC recognizes that most of the information of the SWCC plants and transmission system are scattered in different formats and in the various geographically dispersed locations across the Kingdom. For this purpose, it has already taken positive steps towards the reconciliation of its information systems to establish an integrated Water Management System (WMS) that focuses on cost, risk, performance, and water quality.

## A Future-Proof Water Dispatch Center: Building the Foundation of the Evolution of the Water Landscape

In light of this, K&A designed a full-fledged Riyadh-based Dispatch Center for SWCC; mobilizing a team of designers, architects, engineers, IT and GIS specialists. A 15-meter wide main screen and two 4-meter side screens of the latest laser technology were installed for an optimized real-time visualization. Six operators from SWCC will control the screens, managing live displays of over 400 GIS and PI Vision graphics and diagrams. Displays are designed in a hierarchal manner: one overview for each plant/pipeline, rolling down to view water production/transmission efficiency, storage level, water quality, cost and other key monitoring parameters. The center is operational since November 2017; K&A is providing additional training and handing over.

## A Trendsetting Utility Solution at OSIssoft EMEA Users Conference 2017 London

The SWCC's business case premiere was presented at the OSIssoft EMEA Users Conference 2017 in London jointly by the K&A/SWCC team. The paper highlighted how SWCC embarked in the Digital Transformation, building a solid PI Infrastructure tightly integrated with GIS, ERP, SCADA DCS and other enterprise applications such as the production scheduling and dispatch to optimize the overall cost of water production. It also presents the approach adopted by SWCC and its successful implementation while embarking on an ambitious business transformation exercise that coincides with strategic initiatives for unbundling and privatizing the water sector in the Kingdom.

K&A's Corporate Development Vice President, Mr. Karl Reynders

The dispatch center is built based on a Business Code; the objective is to centralize and optimize real-time information of SWCC dispersed resource base. A complex mission made possible by Khatib & Alami (K&A), putting forward innovative models of work and solutions that revolutionize the way geospatial systems' capabilities engage with SWCC operations. Dashboard, Displays and KPI's are built to quantify this ambition. PI of OSIssoft constitutes the corner stone in the overall Information System at SWCC and, together with state-of-the-art Esri's Geographical Information System (GIS) platform, it is facilitating further deployment of IT/OT applications to support best practice operation, maintenance and control of the Water Business.

## Browse the Past, Visualize the Present and Plan for the Future

K&A surpassed numerous challenges in building the system's architecture, such as: the sites' infrastructure installation and integration with different systems, tag data mapping from multiple plants, design and confirmation of more than 400 PI vision business screens from scratch for plants and transmission. The new WMS will enable SWCC to be a prime player in the Water Business by monitoring the real-time operation, planning and instructing the scheduling of production and transmission in the near future and reviewing the performance of past operations. Automatic controls will harness the WMS capabilities to schedule hourly productions based on fuel prices or sell water and electricity in the future.



**CLIENT**  
Ministry of Mines and  
Steel Development



**FEATURES**  
This cutting-edge GIS solution  
will improve the efficiency and  
effectiveness of the mineral  
sector's governance.

## IMPROVING **EASE-OF-DOING- BUSINESS** IN THE MINING SECTOR

### Integrated Automation and Interactive GIS Web Portal Enhances Business Operations.

Khatib & Alami (K&A) team has successfully completed a 9-month groundbreaking GIS project for the Ministry of Mines and Steel Development. The overall objective of the project is to increase provision of reliable information and knowledge to enhance the promotion of investment in the sector using technology-driven innovation which will, in turn, help increase the sector's GDP contribution significantly. This portal is designed for mining investors to perform business processes, such as online mining licenses and mineral titles applications, online payment of royalties and fees, database for revenue drive, and to block revenue leakages. It is credible, provides timely information and performs and responds to online queries, business intelligence/ analytics, reports and statistical data generation.



**DID YOU KNOW?**  
Nigeria has 195 identified sites that  
contain Gold Mineral, and 77 sites that  
contain a massive amount of Iron Ore.



## Nigeria: A Rising Giant

Often referred to as the “Giant of Africa” with its large population and economy, Nigeria is the most populous country in Africa and the seventh most populous country in the world. As of 2015, Nigeria is the world’s 20<sup>th</sup> largest economy, worth more than \$500 billion and \$1 trillion in terms of nominal GDP and purchasing power parity respectively. It overtook South Africa to become Africa’s largest economy in 2014. The 2013 debt-to-GDP ratio was 11 percent. Nigeria is considered to be an emerging market by the World Bank; it has been identified as a regional power on the African continent.

As a major step in consolidating “ease-of-doing-business” in the mining sector, the Nigerian Federal Government decided to develop an Integrated Automation and Interactive GIS Web Portal for the Ministry of Mines and Steel Development.

***This portal is a cutting-edge initiative that leverages technology for the innovation, efficiency and effectiveness of the mineral sector governance, making Nigeria a mining destination again.***

The project was successfully launched during the 2<sup>nd</sup> Annual Nigeria Mining Week which aims at sharing best practices and demonstrating the latest strategies in promoting the mining sector successfully. The Minister of Mines and Steel Development, Dr. Kayode Fayemi, who demonstrated some geological enquiries on the GIS web portal (portal.minesandsteel.gov.ng), during the inauguration, said the e-platform would aid the steady growth of the mining sector and contribute to the realization of the administration’s goal of diversifying the economy’s revenue base, creating jobs, and broadening the range of available economic opportunities to Nigerians.



## Turning Around Nigeria’s Mining Fortunes

K&A helped the Nigerian Ministry of Mines and Steel Development achieve its vision by building five GIS applications and conducting a Comprehensive Capacity Building Program for the Ministry and its affiliated agencies’ staff between Nigeria and Dubai. The Geo-Mining Portal Modules include the Geo-Mining Application, the Executive Dashboard, the Geo-Mining Investor Application, Cadastre units selection for License Granting system, the Geo-Mining Editor & Data Collection Modules, and the Comprehensive Capacity Building Program.

Among the multiple deliverables of the project, K&A has covered the Business Processes Re-engineering, the building of a GIS Web Portal with a Business Automation System, the Content Management System (CMS), the Geographic Information System (GIS), the Decision Support System, and the collaboration and upgrade of the ICT Infrastructure of the Ministry.

The  
Rise  
of

# VERTICAL URBANISM

Tall structures have always fascinated mankind. There were monuments stretching well over 100 meters into the sky even before the age of industrialization. The past generation has seen a growth in skyscrapers and superstructures. Since the 20<sup>th</sup> century, the record for the tallest building has risen to 380 meters and above.

Dusit Hotel  
Dubai, UAE  
153 m

## Skylines to Rise Higher over the Next Decade

The invention of the elevator was a breakthrough in skyscraper construction; steel frame construction was the next revolutionary step towards high-rise architecture. Today’s tallest skyscrapers are innovative in every aspect, with sleek structures, new materials, daylighting, and ecofriendly architecture. They are designed and tested with new methods, such as wind and sound engineering, seismic and pressure analysis, environmental impact assessment, and concrete mix study. The result isn’t just taller structures, but an entirely new generation of buildings: super tall skyscrapers.

Half of the world lives in urban areas today, and with a rapidly growing world population, that figure is expected to rise to 70% for urban areas alone. Urban planning in the developed and developing world had set the path for more organized and more habitable cities. Over the years, Khatib & Alami (K&A) has greatly focused on demographics to deliver towers and skyscrapers, representing the embrace of a new synthesis: vertical urbanism.

In the 90s, K&A turned Dubai’s Sheikh Zayed road from sand to new heights, paving the way to the next generation of high-rise buildings and towers worldwide. At a time when the tallest skyscrapers used to contain mostly office spaces, our architects have pushed designs forward, beyond the floor-space concept, to also feature hotels, residential units, shopping centers, and restaurants. With buildings rising higher, opportunities have emerged, providing a diversity of real-estate options. Some of K&A’s high-rise landmarks are Damac by Paramount, Cayan and Torch Towers, and above all Rose Rayhaan, the third tallest hotel in the world.

# RAISING NEW HEIGHTS

**Al Tayer Tower**  
Dubai, UAE  
225 m

**Fairmont Hotel**  
Dubai, UAE  
153 m

**Tamkeen Tower**  
Riyadh, KSA  
258.5 m

**Cayan Tower**  
Dubai, UAE  
307 m

**Al Rajhi Residential Tower**  
Riyadh, KSA  
350 m

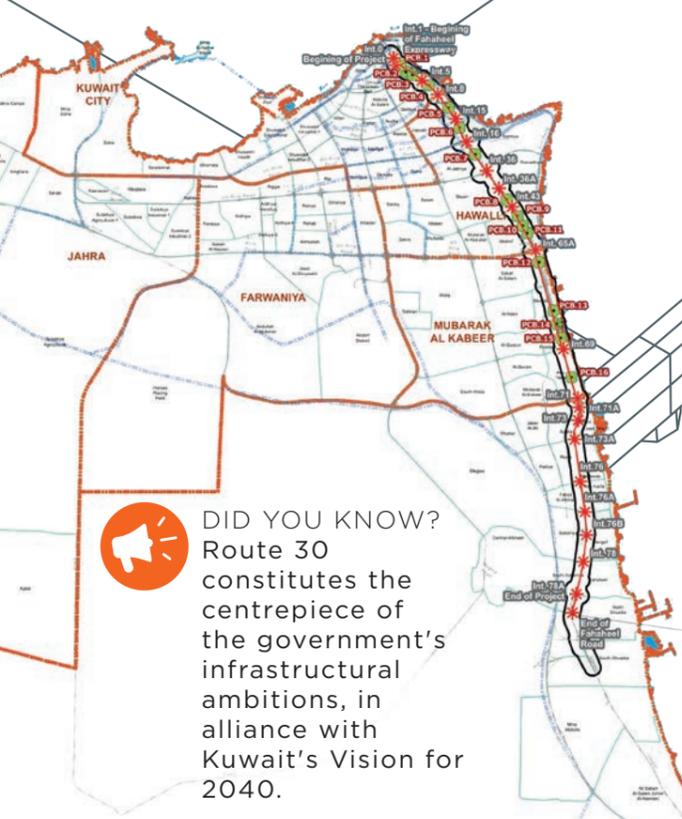
**Rose Rayhaan Hotel**  
Dubai, UAE  
333 m

**The Tower**  
Dubai, UAE  
242.6 m

## The Future of Super Tall Skyscrapers

Buildings like Burj Khalifa and the Shanghai Tower are often called vertical cities. Skyscrapers symbolize wealth and economic power; they reshape an entire city's skyline, and define its urban fabric. In 2020, the Kingdom Tower in Jeddah, Saudi Arabia, will open at an estimated height of 1,000 meters, replacing Burj Khalifa as the world's tallest building. Will the Kingdom Tower represent the outer limits of what man could design?

# KUWAIT CITY



**DID YOU KNOW?**  
Route 30 constitutes the centrepiece of the government's infrastructural ambitions, in alliance with Kuwait's Vision for 2040.



**COUNTRY**  
State of Kuwait



**CLIENT**  
Public Authority for Roads & Transportation (PART)



**FEATURES**  
A transformational study to improve traffic flow and quality of life.



## On Route to the Future

To meet the economic growth and the increasing traffic in Kuwait city, the Public Authority for Roads and Transportation (PART) has launched the study of upgrading Route 30 - Fahaheel Expressway. The project aims to identify a transportation master plan leading to the development of an effective solution that will assist in decongesting one of the most important link between Kuwait City and the Satellite Cities of Ahmadi, Fahaheel, Fintas and others.

For the next 2 years, Khatib & Alami (K&A), in association with Kuwait Technical Consulting Bureau (KTCB), will conduct the feasibility study and concept design for the improvement of Route 30 - Fahaheel Expressway.

The Route 30 project is PART's flagship project to link the satellite cities of Kuwait and transform them into well-connected transportation hubs.

Our most experienced specialists from transportation to structural, architecture, utilities and geotechnical sectors will propose the most feasible, functional, constructible and aesthetically pleasant solution to the urban context of the four governorates.

During the first phase, K&A will review Route 30 - Fahaheel's existing and potential conditions and explore many possibilities, encompassing transportation, urban design, environmental and economic development objectives, based on the actual Kuwait master plan.

Several options will be examined, including proposing an elevated viaduct in some sections aiming at favoring long distance trips over local trips with the main goal of shortening travel time between Kuwait city and Ahmadi, upgrading 22 interchanges and free flow interchanges, in addition to the upgrading of 19 pedestrian bridges. Directional ramps may be considered.

A multi-criteria analysis will be carried out and a feasibility study will be conducted to select the best option.

In the second phase, K&A will proceed with the concept design of roads and interchanges, structures and associated services, as well as with the utility diversions when required.

The success of this challenging study will further strengthen K&A's established relationship with PART, Kuwait Municipality, Ministry of Public Works, Ministry of Finance, Ministry of Electricity and Water Works and other involved stakeholders.

## A Winning Partnership

### Kahramaa wins the 2017 “Special Achievement in GIS” Award

We are proud to announce that our client, Qatar General Electricity & Water Corporation (Kahramaa), was the winner of the “Special Achievement in GIS” (SAG) Award at ESRI Users Conference 2017 in California. More than 30,000 users of Geographic Information System (GIS) worldwide from organizations and entities to institutions, ministries, and private companies participated in this award; only 150 winners from different countries, were chosen as the best GIS users.

As their long-term entrusted GIS consultant, K&A has helped

Kahramaa achieve excellence in GIS applications through the development of technologies and solutions, the application of best practices, the use of the latest GIS technology and spatial data in asset management, data integrity and systems integration. Using GIS applications, Kahramaa has succeeded in data exchange and integration between GIS and SCADA to monitor the electricity and water networks, allowing for network analysis and planning, as well as the introduction of missing GIS data by connecting with various state agencies.

The award is a new achievement for Kahramaa in the field of innovation and creativity, a key driver to corporate performance development and the company’s readiness to be a global benchmark in performance and technical innovation in the Electricity and Water sectors by 2030.

The Esri Conference is the world’s most important event in the field of Geographic Information System and an ideal platform for networking and exchanging experiences and knowledge of the latest technology in this field.

## Empowering Smart Utilities with Schneider Electric

Following the acquisition of Invensys and the Wonderware software suite by Schneider Electric in 2014, Khatib & Alami (K&A) Energy & Utilities Systems Integration sector was quick to leverage its platinum business partnership status with Schneider Electric to address a major business need for some of K&A’s clients using the Wonderware Skelta BPM (Business Process Management) solution. With that, K&A was able to implement two main solutions for electronic clearance management (Notice of Intent (NOI), No Objection Certificates (NOC)) as well as an online portal for the management of contractors’ as-built network submittals and reengineering of the utility’s associated business processes.

As leaders in the systems integration market in the Energy & Utilities industry, K&A E&U wishes to capitalize on the success of these project-based solutions by turning

them into products built on top of a modular solution framework that can be configured and sold to our existing and potential client base. This endeavour was kicked-off through a meeting held at our offices in Dubai with our Chairman/CEO, Dr. Najib Khatib, and two representatives of Schneider Electric - Mr. Ratheesh Kumar, Sales Director Skelta BPM, and Mr. Rajesh Kumar Balakrishnan, Sr. Channel Sales Manager (EMEA) - as well as three representatives from K&A E&U Systems Integration- Mr. Bilal A. Hassan, Associate & Sr. Director, Mr. Wissam Bakhsh, Solutions & Products Manager, and Mr. Walid Abou Chacra, Electricity Segment Manager.

Following this successful meeting, the parties agreed to work on a joint product development plan to address the niche, yet key, space related to the geospatial enablement and integration of the Energy & Utilities Business Process Management and GIS offerings. K&A aims to increase its share of this market through this new initiative and to further strengthen its partnership with Schneider Electric on a regional and global scale.

*From left to right: Schneider Electric: Sr. Channel Sales Manager (EMEA), Mr. Rajesh Kumar Balakrishnan and Sales Director Skelta BPM, Mr. Ratheesh Kumar  
K&A: Chairman & CEO, Dr. Najib Khatib; Associate & Sr. Director, Mr. Bilal Abou El Hassan; Solutions & Products Manager, Mr. Wissam Bakhsh; and Electricity Segment Manager, Mr. Walid Abou Chacra*



## Founding the Next Generation of Givers

In October 2017, Khatib & Alami’s Co-founder and Chairman Emeritus, Dr. Zuheir Alami was honored the Creative Engineer Award, during the “Hassib Sabbagh & Said Khoury Engineering Award” that was launched by Consolidated Contractors Company (CCC) to commemorate his longtime achievements and contribution to the engineering fields.

In addition to the award, Dr. Alami received the sum of 20,000 USD that he donated to Birzeit University Scholarship Program to support academic excellence and aid outstanding engineering students. Senior Manager of K&A’s Palestine office, Engineer Bassam Jawhary received the award on his behalf.

Yet another celebrated Certificate of Honor and Distinction was presented by the General Union of Palestinian Engineers (GUPE) to Dr. Alami for his boundless generosity, good deeds and significant contributions to the betterment of Palestine. Mr. Mahmoud Abdel Aziz, former Manager of K&A’s Palestine office, received the certificate on his behalf.



## Safety Achievement Checked

### K&A celebrates 10 million safe worked man-hours

Khatib & Alami (K&A) celebrated 10 million safe man-hours with no Lost Time to Injuries (LTIs) achieved in November 2017 during the development of Yas Island Golf Course residential development (ANSAM) where K&A was the project’s lead design and construction supervision consultant.

K&A marked this milestone in an award ceremony celebration, where the project team received certificates of appreciation for their valuable contribution towards Health, Safety and Environment (HSE). Two certificates were presented to K&A, one from the client ALDAR Properties PJSC, and another from the PMC, M/s. EllisDon in

the presence of Senior Manager of Quality & HSE-Gulf, Mr. Nik Rowley. This achievement is a testament of K&A Supervision Team’s commitment towards a safe and healthful work environment at ANSAM phase 1 project.



*K&A’s Health, Safety & Environmental Engineer – Gulf, Mr. Mohammad Khair*

## A Successful Quality and Organizational Transition

As part of our vision to exceed clients’ expectation and deliver quality excellence, Khatib & Alami (K&A) - Beirut is proud to announce its successful transition from ISO 9001:2008 to ISO 9001:2015 Quality Management System (QMS).

The transformative shift between 2008 and 2015 revision of ISO 9001 will have a significant impact on K&A’s adoption of risk-based thinking and the effectiveness and flexibility of our business as a whole.

The certification was granted at a time when K&A has forged ahead with high technology and procedures, strengthened its risk mitigation strategy, and improved stakeholders’ engagement.



*K&A’s Quality Manager, Ms. Rania Knio*

# Experiencing GIS Technology in One Fun Day

Esri Lebanon doubled the celebration this November as 2017 marked its 10<sup>th</sup> anniversary. Around 150 attendees gathered on 21 November 2017 at Gefinor Rotana Hotel. On the agenda were a series of user stories from the Lebanese Red Cross who presented their “ClinicGo” Mobile app to Rafic Hariri High School GIS-based storymaps on the Lebanese Republic Presidents.

In “Massirat Watan”, the audience had the chance to learn from Mr. Nadim Saaid on how he used mapping and GIS to track the path of travelers of this initiative across Lebanon’s four borders. Furthermore,

UNICEF WAP Platform (WASH Assessment Platform) was rolled out during one of the sessions; WAP is a collaborative GIS and a live web-based prioritization and targeting approach for WASH response to Informal Settlements.

Another trendsetting case study at the GIS Day was “Empowering Municipalities”: Geo Apps developed for municipality staff use, featuring a wide range of General, Touristic, Property, Billboards, Tax and Survey Maps and Apps.

Six technical sessions were delivered by Esri, K&A and Esri Lebanon teams. Hands-

on Learning Lab, attended by more than 20 students, was a great opportunity to learn more about ArcGIS® software and Esri® solutions.



*From left to right: Geospatial Systems Integration Senior Director, Ms. Manal El Sayed and Esri Lebanon Manager, Ms. Gretta Kelzi*

# Al Azizyah Jewel Unlocks Housing Opportunities

To respond to the rising demand for new homes in Saudi Arabia, Khatib & Alami (K&A) signed on 18 May 2017 “Al Azizyah Jewel” contract agreement with Pulse Properties Co. to design a housing project that is in line with the Ministry of Housing’s strategy to encourage private developers’ investments in residential projects. As the main consultant for Al Azizyah Jewel, K&A will

propose the redistribution of master plan residential units and services; assess the existing infrastructure and traffic networks; and design the residential town housing units. The project consists of 1,270 town house units with its related services: schools, mosques, retail stores, commercial strip, gardens, electrical station, and much more.



*From left to right: Mr. Mazen Kanaan (K&A), Mr. Abdullah Al Harbi (Pulse), Mr. Jihad Mohtadi (K&A), Mr. Wassim Abdo (K&A), Mr. Waleed Mahmoud (Pulse Managing Director) and Mr. Sami AlBatniji (K&A)*



On behalf of the site teams at the Ministry of Defense Engineering Services (MODES), the Head of Engineering Section, Brigadier Ahmad Sulaiman Alabadi, presented an award to K&A’s Oman team in appreciation of the great



work and arduous efforts in completing MODES Armed Forces Hospital extension in Al Khoud, Sultanate of Oman.

The project consists of the design and construction of a specialty unit adjacent to the

# A Special Recognition in Oman

Radiology unit in the Armed Forces Hospital. The expansion will increase the number of inpatient beds within the facility from 251 to 370 beds. The building is scheduled to be operating by mid-2018.

#### **LEVANT**

Lebanon  
Palestine  
Syria  
Iraq  
Jordan

#### **GULF**

Kingdom of Saudi Arabia  
United Arab Emirates  
Oman  
Bahrain  
Qatar  
State of Kuwait

#### **NORTH AFRICA**

Algeria  
Egypt  
Libya  
Morocco  
Sudan

#### **SUB-SAHARAN AFRICA**

Ethiopia  
Gabon  
Sierra Leone

#### **EUROPE**

Belgium

#### **CENTRAL ASIA**

Afghanistan  
India  
Kazakhstan

[www.khatibalami.com](http://www.khatibalami.com)

