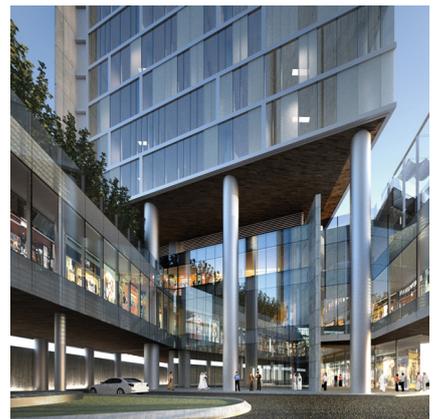


LANGAN INTERNATIONAL MIDDLE EAST QUALIFICATIONS



Technical Excellence Practical Experience Client Responsiveness

NEW JERSEY NEW YORK CONNECTICUT PENNSYLVANIA OHIO VIRGINIA GEORGIA FLORIDA TEXAS CALIFORNIA ARIZONA WEST VIRGINIA
ABU DHABI DUBAI GREECE LONDON QATAR TURKEY PANAMA



DUBAI CREEK HARBOUR - CREEK GATE TOWERS

Location: Dubai, UAE
Client: Emaar Properties
Architect: NORR
Services: Geotechnical

OVERVIEW

The goal of the new Dubai Creek Harbour development is to integrate a smart, green city, while building on cultural heritage. The 113-million-SF project will contain 9 different districts and is expected to take 30 years to build. The mixed-use development will include waterfront eco-resorts, a marina and yacht club, commercial and retail spaces, luxury residences, and educational amenities. Creek Gate Towers, two of the project's most anticipated residential buildings, will each rise 30-stories, house over 400 luxury apartments, and offer spectacular views of Dubai Creek Tower, a magnificent gravity-defying structure unparalleled in weight and strength. Langan reviewed previous geotechnical reports and developed a 3D geotechnical Finite Element Method (FEM) model of the towers' foundations, podiums and the surrounding soil and rock. Langan prepared a final report to summarize findings and results, which included interpretation of subsurface conditions, derivation of soil, rock and interface properties, description and assumptions of the FEM model, analysis results and calculated pile springs, recommendations for transient load analysis, and lateral load analysis results.

Technical Excellence Practical Experience Client Responsiveness



JEDDAH TOWER

Location: Jeddah, Kingdom of Saudi Arabia
Client: Jeddah Economic Company
Architect: Adrian Smith + Gordon Gill Architecture
Partner: Thornton Tomasetti, RWDI
Services: Geotechnical, Site/Civil, Traffic & Transportation

OVERVIEW

Rising 1,000 meters (3,280 feet) into the Arabian sky, the tower will eclipse the reigning tallest building by 173 meters (568 feet). The first phase of the Kingdom City comprises the Tower, a 65,000-square-meter retail mall, and a 3,000+ car underground garage. Langan's role has included the development and oversight of the site subsurface investigation, final design of the piles in collaboration with the design team, stormwater management and integration of the circulation and volume demands of the Tower and retail building into the traffic master plan for Jeddah's Kingdom City.

Technical Excellence Practical Experience Client Responsiveness



FOUR SEASONS BAHRAIN

Location: Bahrain Bay, Manama, Kingdom of Bahrain
Client: Signature Hotels Management Company S.P.C.
Architect: Skidmore, Owings & Merrill LLP
Services: Site/Civil, Geotechnical, Traffic & Transportation

OVERVIEW

Langan is providing site/civil engineering, transportation/parking services, and geotechnical peer review for the fast-tracked design of the iconic Four Seasons Hotel. The project consists of a 50-story, approximately 218-meter hotel tower with associated guest amenities, surface and basement level parking and outdoor facilities on a self-contained and reclaimed island in Bahrain Bay. The hotel is projected to be the tallest tower in the Kingdom of Bahrain.

Technical Excellence Practical Experience Client Responsiveness



KING ABDULLAH FINANCIAL DISTRICT - AHLAMANA

Location: Riyadh, Kingdom of Saudi Arabia
Client: Riyadh Investment Company
Architect: Adrian Smith + Gordon Gill Architecture
Partner: Saudi Binladin Group, Thornton Tomasetti
Services: Geotechnical

OVERVIEW

Langan provided geotechnical engineering services for a mixed-use residential, office, and retail building located within the southern portion of the King Abdullah Financial District. Ahlamana consists of two structures, a 26-story (105 meter) residential tower and a 15-story (78 meter) office tower. Four basement levels are planned for about two-thirds of the parcel and a fifth basement level for the remainder of the parcel. The total footprint for the location is approximately 5,700 square meters. Langan's subsurface investigation observed significant rock fracturing during drilling. Additional services included calculations and recommendations for permanent control of groundwater, a seismic evaluation, backfill and compaction, and a site-specific investigation to better understand conditions at the site.

Technical Excellence Practical Experience Client Responsiveness



AL MARYAH CENTRAL

Location: Abu Dhabi, United Arab Emirates
Client: Gulf Related
Services: Geotechnical, Environmental, Traditional Surveying, Terrestrial Scanning/BIM

OVERVIEW

This new development on Al Maryah Island will encompass nearly 16 hectares of premier shopping and world class dining. It will seamlessly link to luxury hotels, The Galleria mall, and residential and commercial towers. Langan was retained to carry out full-scale geotechnical and environmental investigations. Langan provided geotechnical recommendations for foundation design, an environmental site investigation, an environmental impact assessment, and a construction environmental management plan. Based on the extensive physical survey data collected at the site and surrounding areas, Langan also developed a 3D Revit survey model.

Technical Excellence Practical Experience Client Responsiveness



AL HILAL BANK TOWER

Location: Al Maryah Island, Abu Dhabi, United Arab Emirates
Client: Al Hilal Bank
Architect: Goettsch Partners
Partner: DeSimone Consulting Engineers, Environmental Systems Design, Al Fara'a General Contracting Co.
Services: Geotechnical, Site/Civil, Traffic & Transportation

OVERVIEW

Langan provided geotechnical, site/civil, traffic engineering, and parking design services for the Al Hilal Bank Tower. The project includes development of a 24-story commercial tower with nearly 68,000 square meters of gross floor area and associated basement and above-ground car parking, landscaped park areas, and podium-level retail areas.

AWARDS

2015 Council on Tall Buildings and Urban Habitat Best Tall Building Finalist Award

Technical Excellence Practical Experience Client Responsiveness



ZAYED MILITARY HOSPITAL

Location: Abu Dhabi, United Arab Emirates
Client: Abu Dhabi Command of Military Works
Architect: Leo A Daly
Services: Site/Civil

OVERVIEW

The new hospital will be a teaching facility which will include 260 single-patient bedrooms and provide a variety of treatment services in cardiology, trauma, and burn care. The project campus also includes separate buildings for an outpatient clinic, a mosque, women's dormitory, 40-bed psychiatric center, military police facilities and a central utility plant. Langan assisted in the conceptual master planning through full design development. We provided design of the site earthwork, grading and drainage, stormwater management, an engineered site layout, roadway materials, regulatory signage, and the site-wide infrastructure.

Technical Excellence Practical Experience Client Responsiveness



HAZZA BIN ZAYED STADIUM

Location: Al Ain, Abu Dhabi, United Arab Emirates
Client: Broadway Malyan
Architect: Pattern Design Limited (Stadium Architect), Mark Habre & Associates (Architect of Record)
Partner: WSP, Thornton Tomasetti, Mott MacDonald, Hoare Lea
Services: Geotechnical, Site/Civil

OVERVIEW

As part of the UAE's 'Plan Al Ain 2030,' Langan provided engineering services for a new world-class 25,000-seat stadium to house the Al Ain Football Club (FC). Langan engineers provided a variety of services, including development of the subsurface investigation program, stormwater and sewer system design, and conceptual transportation design.

Technical Excellence Practical Experience Client Responsiveness



OQYANA WORLD FIRST

Location: Dubai, United Arab Emirates

Client: OQYANA

Services: Geotechnical

OVERVIEW

OQYANA World First consists of 20 man-made islands that together shape the Australian-continent portion of the World Islands reclaimed in Dubai in 2006. The proposed developments, currently in the early design development phase, will consist of luxury villas, hotels, and commercial buildings with marinas for yachts and private boats. The island edges will predominantly consist of beaches and quay walls.

Technical Excellence Practical Experience Client Responsiveness



DAMAC HEIGHTS

Location: Dubai, United Arab Emirates
Client: Ramboll Middle East
Architect: Aedas Architects
Partner: Damac Heights
Services: Geotechnical

OVERVIEW

Located in the Dubai Marina, this 85-floor (420-meter tall) skyscraper will be the tallest tower in its vicinity. Langan's services included a geotechnical review of the enabling work for the development related to dewatering issues at the project site and movement of the diaphragm wall of the adjacent Diamond Tower. Based on our review of the various documents and conversations with our client, Langan concluded that the deflection of the Diamond Tower diaphragm wall was the direct result of an inadequate shoring design and lack of proper monitoring during excavation.

Technical Excellence Practical Experience Client Responsiveness



ALOFT CITY CENTRE HOTEL

Location: Deira, Dubai, United Arab Emirates
Client: Robert Bird Group
Partner: Laing O'Rourke
Services: Geotechnical

OVERVIEW

The Aloft City Centre is a new hotel developed by Majid Al Futtaim adjacent to the existing Deira City Centre Mall. Situated on the southern side of the mall, off Baniyas Road, the hotel will include a mix of standard rooms and suites, and will offer views to the Dubai Creek Gold and Yacht Club, Dubai Creek, and the skyline of Dubai. Langan provided full geotechnical engineering services on the project.

Technical Excellence Practical Experience Client Responsiveness



KING ABDULLAH FINANCIAL DISTRICT - AHLAMANA

Location: Riyadh, Kingdom of Saudi Arabia
Client: Riyadh Investment Company
Architect: Adrian Smith + Gordon Gill Architecture
Partner: Saudi Binladin Group, Thornton Tomasetti
Services: Geotechnical

OVERVIEW

Langan provided geotechnical engineering services for a mixed-use residential, office, and retail building located within the southern portion of the King Abdullah Financial District. Ahlamana consists of two structures, a 26-story (105 meter) residential tower and a 15-story (78 meter) office tower. Four basement levels are planned for about two-thirds of the parcel and a fifth basement level for the remainder of the parcel. The total footprint for the location is approximately 5,700 square meters. Langan's subsurface investigation observed significant rock fracturing during drilling. Additional services included calculations and recommendations for permanent control of groundwater, a seismic evaluation, backfill and compaction, and a site-specific investigation to better understand conditions at the site.

Technical Excellence Practical Experience Client Responsiveness



MUSEUM OF THE BUILT ENVIRONMENT

Location: Riyadh, Kingdom of Saudi Arabia
Architect: FXCollaborative
Partner: Thornton Tomasetti, DeSimone Consulting Engineers
Services: Site/Civil, Traffic & Transportation

OVERVIEW

This 31,580-square-meter museum will host permanent and temporary exhibitions that interpret the historical development of Arts and Architecture in the Arabian Peninsula and will educate visitors on the important role that social, economic, and environmental issues have played in the region. Langan's site/civil scope included schematic design that included review of the site survey, utilities, and design standards for grading and stormwater management for the site's plaza and open spaces. Langan's traffic engineering services included support for the museum's interior parking and exterior access/circulation.

Technical Excellence Practical Experience Client Responsiveness

NEW JERSEY NEW YORK CONNECTICUT PENNSYLVANIA OHIO VIRGINIA GEORGIA FLORIDA TEXAS CALIFORNIA ARIZONA WEST VIRGINIA
ABU DHABI DUBAI GREECE LONDON QATAR TURKEY PANAMA



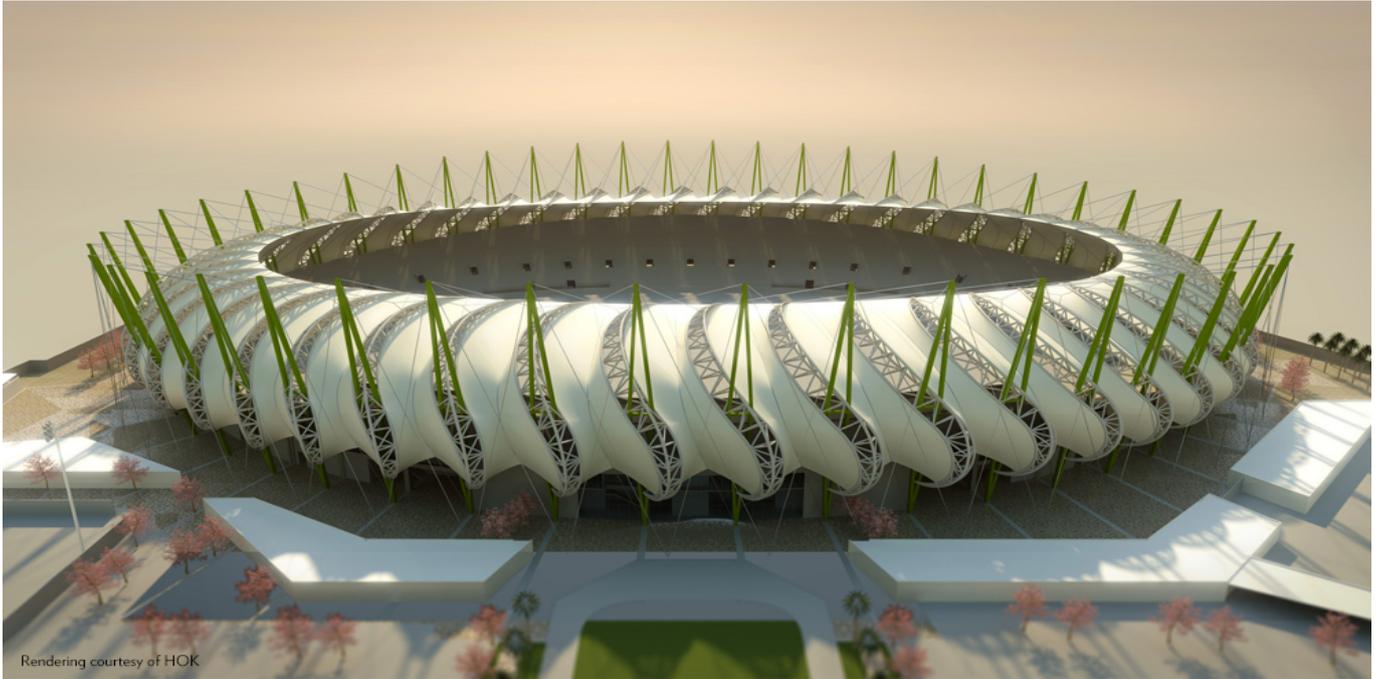
BASRAH SPORTS CITY

Location:	Basrah, Iraq
Client:	Iraqi Ministry of Youth and Sport
Architect:	HOK, RMC-Partners
Partner:	Abdullah Al-Jiburi, Thornton Tomasetti, WSP, Lloyd Engineering, Cini-Little
Services:	Site/Civil, Geotechnical, Earthquake/Seismic

OVERVIEW

Basrah Sports City is a multi-phase, multi-venue, mixed-use complex planned for the Iraqi port city of Basrah. Phase one of the project, with an estimated cost of approximately \$500 million US, features a 65,000-seat stadium and a 10,000-seat secondary stadium/practice facility each designed to international standards.

Technical Excellence Practical Experience Client Responsiveness



AL MENAA SPORTS COMPLEX

Location:	Al Menaa, Basrah, Iraq
Client:	Iraqi Ministry of Youth and Sport
Architect:	HOK
Partner:	Anwar Soura, Thornton Tomasetti, WSP
Services:	Geotechnical, Site/Civil, Traffic & Transportation

OVERVIEW

Commissioned by the Iraqi Ministry of Youth and Sport, the 30,000-seat soccer stadium, training fields, roads, plazas and parking are being constructed under a design-build contract. The wave and sail concept for the Al-Menaa stadium reflects the culture and heritage of Basrah, which has a rich nautical tradition as Iraq's port city. The total site area is about 100,000 square meters (24 acres).

Technical Excellence Practical Experience Client Responsiveness