LANGAN - STADIUM & ARENA

No other national consulting firm has been as consistent a performer as Langan when it comes to major sports facilities. The reasons why are numerous. First, our integrated 'ground and down' services - geotechnical, site/civil, environmental engineering - help streamline the pre-construction process. Second, the nature of our primary technical services make Langan an ideal teaming partner to architects, construction management firms, and structural engineers in the stadia/arena market. Next, our reach - 26 US offices and 7 overseas locations, makes Langan local in a lot of places. Also, our 3D laser scanning and modeling practice positions Langan to support renovation and expansion projects for existing facilities. And once a stadium or arena is up and running, Langan helps managers with our game day operations practice that improves traffic and parking logistics, which ultimately enhances the fan experience. Finally, the overarching reasons behind Langan's success in the sports design and operations world are twofold: responsiveness that is second to none and measurable value.

This web tour details Langan's stadia and arena projects around the world. We hope that after you see what we have done and can do, that you'll agree ... Putting Langan in your next team's line-up will increase your chances of not only winning the work, but also producing a project that sets the standard for excellence.

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CHASE CENTER

Location:	San Francisco, CA
Client:	Golden State Warriors
Architect:	Manica Architecture, Kendall/Heaton Associates
Partner:	Magnusson Klemencic Associates, Mortenson Clark Joint Venture
Services:	Environmental, Geotechnical, Earthquake/Seismic, Site/Civil

OVERVIEW

Chase Center, the new home of the Golden State Warriors, will provide seating for 18,000 fans and have a view deck and two public plazas, 580,000 SF of office/lab, event space, retail, restaurants, and underground parking. Some of our key services include coordinating regulatory approvals for removal of hazardous materials and soil management, modeling groundwater for design and dewatering during construction, and addressing poor soil conditions by recommending the most appropriate foundations, shoring systems, and construction methods.

LOS ANGELES CHARGERS TRAINING FACILITY

Location: Costa Mesa, CA
Client: Los Angeles Chargers (AG Spanos Companies)
Services: Geotechnical, Site/Civil, Surveying/Geospatial

OVERVIEW

Langan provided multi-discipline engineering services in support of the new Los Angeles Chargers NFL training facility and team headquarters in Costa Mesa, California. The project site is a 5-acre redevelopment parcel that required tenant and parking improvements with the construction of new practice fields. As part of the design phase, Langan provided grading and utilities design, land surveying, Storm Water Pollution Prevention Plan (SWPPP), and SWPPP monitoring/inspection. Geotechnical services included materials testing, observation and testing of earthwork, subgrades for shallow foundations and concrete flatwork, and deep foundations for both practice fields.

LOS ANGELES FOOTBALL CLUB - BANC OF CALIFORNIA STADIUM

Location: Los Angeles, CA
Client: Los Angeles Football Club
Services: Geotechnical, Site/Civil

OVERVIEW

Langan provided multidiscipline engineering services in support of the design and construction of the a new stadium for the Major League Soccer's Los Angeles Football Club. The 22,000-seat stadium and ancillary structure are being built on a 75-acre site adjacent to the landmark Los Angeles Memorial Coliseum and Exposition Park. During planning and entitlements, Langan performed a hydrology study, developed a preliminary grading plan, provided a utility supply assessment in support of an Environmental Impact Report Addendum, and completed a preliminary geotechnical investigation. During the design phase, we also performed a supplemental geotechnical investigation.

AVAYA STADIUM

Location:	San Jose, CA
Client:	Wolff Urban Development, LLC
Architect:	HOK
Services:	Geotechnical, Environmental, Earthquake/Seismic

OVERVIEW

Home to the Major League Soccer's San Jose Earthquakes, Avaya Stadium was built on the site of the FMC Corporation's Central Plant facility. The stadium features a European roof design that covers all 14,000 seats. Langan recommended shallow foundations for support of the stadium, providing significant cost savings compared to deep foundations. Our environmental team assisted with the Soil Management Plan, worked with the California Department of Toxic Substances Control to recycle concrete from the former FMC facility, evaluated potential vapor intrusion risks from residual volatile organic compounds, which demonstrated that a sub-slab vapor mitigation system was unnecessary, and prepared the site closure report.

AWARDS

2015 Phoenix Award for Excellence in Brownfield Development, US Environmental Protection Agency

LEVI'S STADIUM

Location:	Santa Clara, CA
Client:	San Francisco 49ers
Architect:	HNTB
Services:	Geotechnical, Earthquake/Seismic

OVERVIEW

The San Francisco 49ers Stadium is a 68,500-seat, open-air NFL stadium with an elevated pedestrian walkway at plaza level, retaining walls, interior and exterior concrete masonry unit walls, mechanical and electrical equipment pads, and three pedestrian bridges across the San Tomas Aquino Creek. Langan developed geotechnical, foundation, and seismic design criteria, including site-specific response spectra, for the project. We observed geotechnical aspects during the stadium's construction. Langan took a creative approach to solving issues as they arose and consulted on an alternative foundation system of more than 3,000 drilled displacement piles. This system proved to be cost-effective and was successfully completed within the aggressive construction schedule.

AWARDS

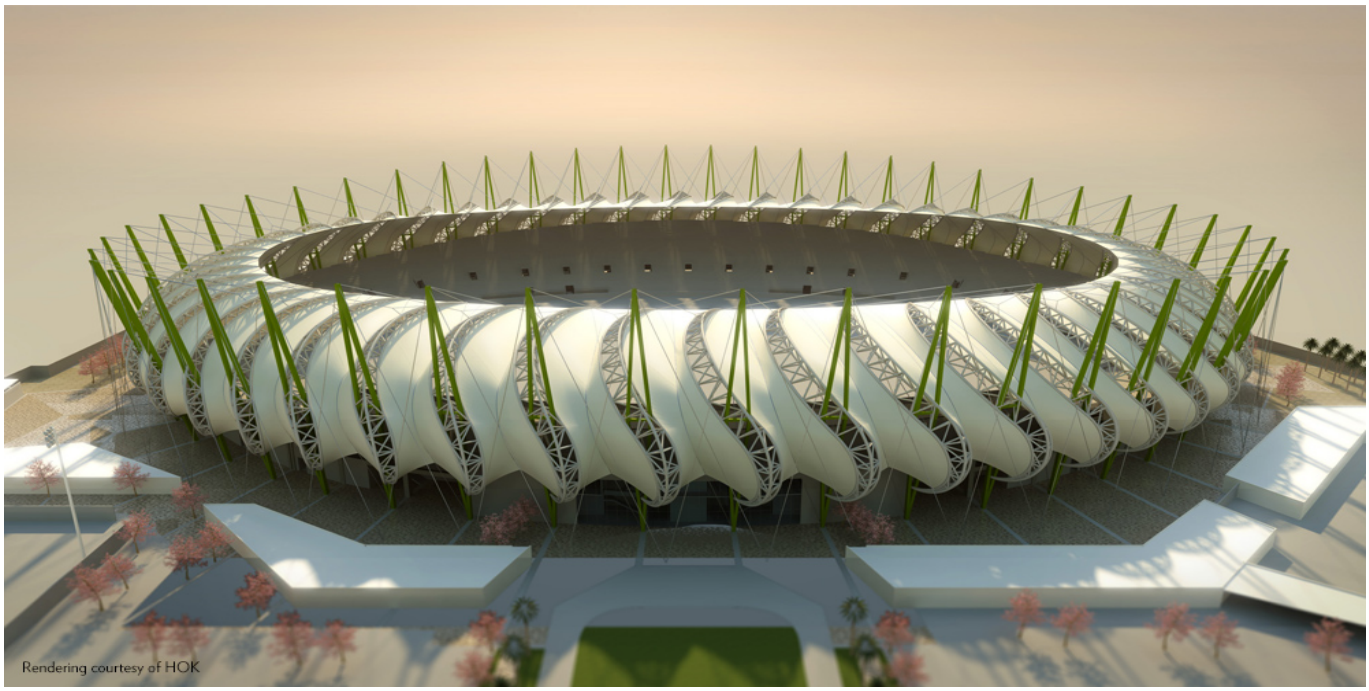
2016 American Council of Engineering Companies, Engineering Excellence Award

AT&T PARK

Location:	San Francisco, CA
Client:	San Francisco Giants
Architect:	HOK
Partner:	Thornton Tomasetti, Hunt Construction Group
Services:	Geotechnical, Earthquake/Seismic

OVERVIEW

Langan performed a geotechnical investigation and a probabilistic seismic hazard analysis for the AT&T Park baseball stadium. The stadium includes a playing field, seating area for 42,000 people, and stadium support facilities. The site, originally part of San Francisco Bay, was reclaimed by a series of fills that occurred between 1860 and the 1920s. Our engineers developed earthquake design criteria and participated in development of the environmental impact report. We also assisted with the structural evaluation of the existing 900-foot-long, 50-foot-high bulkhead retaining structure along China Basin Channel.



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).

RED BULL ARENA

Location: Harrison, NJ
Client: New York Red Bulls
Services: Traffic & Transportation

OVERVIEW

Langan provided transportation/parking management services prior to and during the inaugural season of play at the Red Bull Arena. Langan was called upon for a variety of traffic, parking, and pedestrian issues that needed to be addressed and coordinated between the New York Red Bulls (Major League Soccer) and various agencies and stakeholders. Tasks included an existing conditions assessment, which included a thorough review of all existing data on attendance and trends for Red Bulls events at Giants Stadium. Langan also prepared a Transportation and Parking Plan that documented recommendations regarding access, circulation, and parking for all modes of transportation.

METLIFE STADIUM

Location:	East Rutherford, NJ
Architect:	360 Architects, Ewing Cole
Partner:	Skanska USA, Thornton Tomasetti
Services:	Site/Civil, Geotechnical, Environmental, Traditional Surveying, Natural Resources & Permitting, Traffic & Transportation, Landscape Architecture

OVERVIEW

Home to the New York Giants and Jets, MetLife Stadium is an 82,000-seat, open-air stadium constructed within the Meadowlands Sports Complex. The project was challenged by poor subsurface conditions, numerous existing site utilities, proximity to the existing stadium and racetrack, and the need to construct the proposed stadium while operating the existing Giants Stadium and utility infrastructure that serves the Meadowlands Sports Complex. The expertise of several Langan disciplines was called upon to facilitate design and construction of the stadium and maintain the project schedule. Langan provided geotechnical, site/civil, environmental, traffic engineering, surveying, permitting, and landscape architecture services for MetLife Stadium - working with the owners, design-build contractor, and a diverse team of architects and designers.

MERCEDES-BENZ STADIUM

Location:	Atlanta, GA
Client:	Darden & Company
Architect:	HOK (360 Architecture), Goode Van Slyke Architecture, Stanley Beaman & Sears, tvsdesign
Partner:	ICON Venue Group
Services:	Geotechnical, Environmental

OVERVIEW

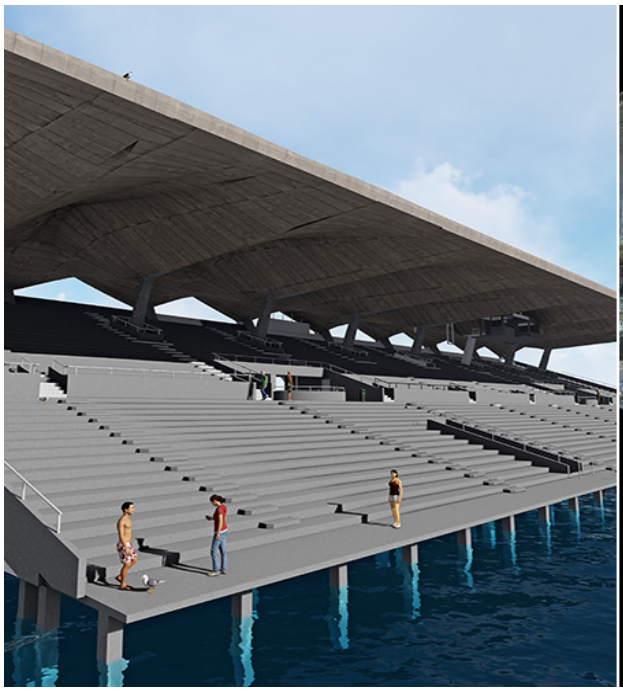
Langan was retained as the environmental and geotechnical engineer of record for Mercedes-Benz Stadium, home of the Atlanta Falcons. The 1.8-million-SF multi-purpose, 71,000-seat retractable roof stadium opened for the 2017 NFL Season. As the geotechnical and environmental consultant on the project, Langan continued its role throughout construction by providing asbestos abatement oversight, monitoring and testing of excavated soils to comply with the environmental soils management plan, underground storage tank closure management, storage tank closure assessments, vibration monitoring within the Marta Tunnel structure and geotechnical oversight of various foundation and ground improvement systems.

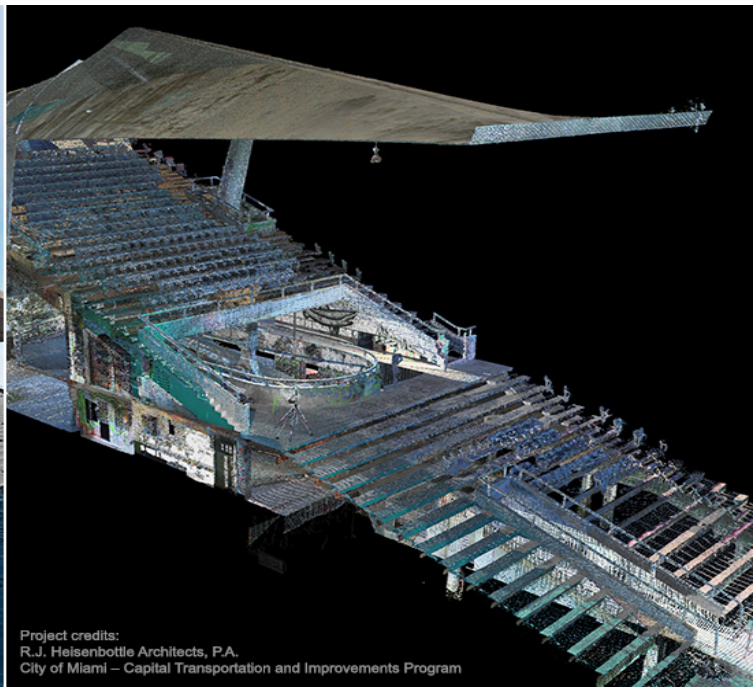
BASRAH SPORTS CITY

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.





MIAMI MARINE STADIUM

Location:	Key Biscayne, FL
Client:	City of Miami - Capital Transportation and Improvements Program
Architect:	R.J. Heisenbottle Architects, P.A.
Services:	Terrestrial Scanning/BIM

OVERVIEW

Built in 1963, Miami Marine Stadium is a 6,500-seat stadium that was intended for hosting water sports, concerts, and boxing matches. The building hosted its last event in 1990 and was condemned in 1992. In 2008, the †Friends of Miami Marine Stadium† began an initiative to restore the historic structure. Langan provided 3D laser scanning services to support the restoration effort, and in 2016 the stadium hosted the Miami Boat Show.