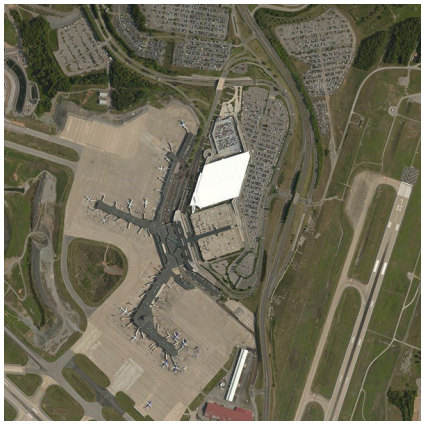
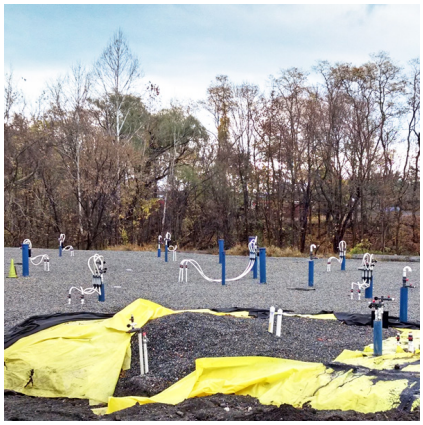
PROJECT SPOTLIGHT TOUR: LANGAN LEADER, NOVEMBER 2018





Learn more about Langan's involvement in our featured projects.

Nashville Airport Concourse D and Terminal Wings - Nashville, TN
Former Lagoon Remediation - NJ
Matrix Business Park - Newburgh, NY
Ellison Conservation Center for Wildlife Care - Saratoga, CA
Dubai Creek Harbour - Creek Gate Towers, Dubai, UAE
Rutgers University - Richard Weeks Hall of Engineering - Piscataway, NJ

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NASHVILLE AIRPORT CONCOURSE D AND TERMINAL WINGS

Location:	Nashville, TN
Client:	Metropolitan Nashville Airport Authority
Partner:	Hensel Phelps Construction Company, Magnusson Klemencic Associates, Logan-Patri Engineering
Services:	Geotechnical

OVERVIEW

Langan is assisting the Hensel Phelps design-build team with geotechnical design and construction aspects of the Nashville Airport Concourse D and Terminal Wings expansion project. The project includes construction of a new 43,000-SF Concourse D and South Terminal, the 36,500-SF North Terminal, and a new central utility plant. Because the site is located in a karst region, Langan completed a supplemental geotechnical investigation to further explore the depth and quality of the rock, the pinnacling nature of the rock surface, and to assess possible voids in the rock formation. Langan provided geotechnical recommendations and specifications for design of new shallow and deep foundations at the site including footings, drilled piers, micropiles, and tie-down anchors. Langan also provided recommendations for geotechnical-related aspects of the project such as earthwork, temporary shoring, and karst mitigation. Our engineering team is currently coordinating with the structural engineers and contractors to optimize the foundation systems and is providing on-site inspection of drilled pier load testing and installation.

FORMER LAGOON REMEDIATION

Location: NJ
Client: Confidential

OVERVIEW

A former lagoon used for dumping, this site is riddled with contamination, as well as an extremely complex glacial lithology. Langan designed and implemented a unique air sparing remedial strategy to realize concentration reductions in the main contaminant of concern (COC), benzene, as high as four orders of magnitude in only the first year of operation. Extensive pre-design pilot testing activities, in-situ air stripping mass-transfer modeling, and two-dimensional (2D) subsurface pneumatic modeling were essential in the design of the required air sparging system and resulted in a number of site-specific innovations to the well-known air sparging technology. One of these innovations includes a high permeability 3-foot cap, which provided a media for effective vapor collection and artificially lowered the site water table to reduce the potential for water entrainment within the system. The use of a vapor barrier overtop this high permeability cap also ensured the effective capture of contaminated vapors generated from the air sparging activities and not ambient air.

MATRIX BUSINESS PARK AT NEWBURGH

Location:	Newburgh, NY
Client:	Matrix Development Group
Services:	Site/Civil, Geotechnical, Traffic & Transportation, Surveying/Geospatial, Landscape Architecture, Natural Resources & Permitting

OVERVIEW

Matrix Development is developing a 69-acre property in the Hudson Valley near major highways Route 17, I-84, and I-87. The project includes a 565,320-SF multi-tenant distribution warehouse. The tenants are AmerisourceBergen, a Fortune 500 company and leading global pharmaceutical sourcing and distribution company, and Amscan, the largest designer, manufacturer and distributor of decorated party goods in the world. In addition to the standard site improvements associated with a warehouse development such as parking, utilities, loading, lighting, and landscaping; this project also included additional challenges such as a quarter-mile long winding driveway, steep slopes, excess of 500,000 cubic yards of earthwork, 120-foot grade change, and wetland permitting.

ELLISON CONSERVATION CENTER FOR WILDLIFE CARE

Location: Saratoga, CA
Client: Peninsula Humane Society
Partner: Griffin & Sons Construction, Inc.
Services: Geotechnical

OVERVIEW

The Conservation Center for Wildlife Care, operated by the Peninsula Humane Society and the Society for the Prevention of Cruelty to Animals (SPCA), is located on an approximately 170-acre site on the northeast side of Congress Springs Road (Highway 9). This property is within a geologically complex area, with landsliding and multiple traces of the San Andreas fault extending through the site. It is within the mapped Alquist-Priolo Earthquake Fault Zone. Unique geotechnical challenges are an extensive quarrying history and significant amounts of undocumented fill and presence of the San Andreas fault. Langan performed a geologic and geotechnical investigation, which included geologic mapping, laboratory testing, and slope stability analyses. Langan also provided geotechnical and geologic observation services during construction to repair portions of the main access road throughout the property.

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.

RUTGERS UNIVERSITY - RICHARD WEEKS HALL OF ENGINEERING

Location: Piscataway, NJ
Client: The S/L/A/M Collaborative
Services: Site/Civil, Geotechnical, Traffic & Transportation, Surveying/Geospatial, Environmental

OVERVIEW

Langan provided multiple engineering services for a new school of engineering building on Rutgers University's Busch Campus. The building serves as a gateway building for the engineering community, industry partners, and the public. The innovative building will include features such as collaborative work spaces, smart and flexible classrooms, living laboratories, technology integration, and a dedicated student space. Langan's scope of services included civil engineering, utility design, soil erosion and sediment control permitting, geotechnical engineering, environmental engineering, and surveying services. Langan designed a regional stormwater management system for the development, which will address stormwater management requirements for Weeks Hall and future projects.