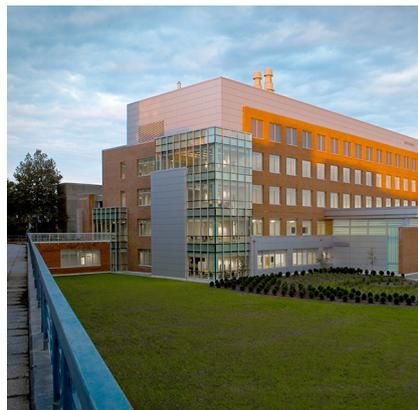


## LANGAN PHILADELPHIA & BIOTECH EXPERIENCE



Technical Excellence Practical Experience Client Responsiveness



## PENN MEDICINE NEW PATIENT PAVILION

Location: Philadelphia, PA  
Client: University of Pennsylvania Health System  
Architect: HDR Architecture, Foster+Partners  
Partner: L.F. Driscoll, Balfour Beatty, BR+A  
Services: Site/Civil, Geotechnical, Environmental, Surveying/Geospatial

### OVERVIEW

As part of the project team, known as PennFIRST, Langan is providing a multitude of services including site/civil and geotechnical engineering, environmental consulting, permitting and survey. In an effort to expand their rapidly growing network, Penn Medicine has assembled one of the first integrated project delivery (IPD) teams on the East Coast for the design and development of a new patient pavilion, located in Philadelphia's University City area. The new clinical facility will include approximately 500 new patient beds, 50 operating and procedure rooms, a relocated and expanded Emergency Department, 700 space substructure parking lot, and expanded healthcare delivery programs within the network.

Technical Excellence Practical Experience Client Responsiveness



## UNIVERSITY OF PENNSYLVANIA - PERRY WORLD HOUSE

Location: Philadelphia, PA  
Client: University of Pennsylvania  
Services: Environmental, Site/Civil, Geotechnical, Traffic & Transportation, Natural Resources & Permitting, Traditional Surveying

### OVERVIEW

The University of Pennsylvania (UPenn) expanded their Philadelphia campus with the addition of Perry World House, a gathering place for faculty and students from all twelve of UPenn's schools to engage with eminent international scholars and policymakers on pressing global issues of the 21st century. Construction included a partial demolition of the structure and a 7,200-SF addition to the existing historic portion of the building. Now complete, Perry World House includes classrooms, offices, lecture halls, and multipurpose spaces. Site improvements included a plaza, service court, and pedestrian walkways. Langan provided a variety of services on the project, including an environmental assessment, survey, site/civil, geotechnical and transportation engineering, and permitting.

Technical Excellence Practical Experience Client Responsiveness



## RUTGERS UNIVERSITY - NURSING AND SCIENCE BUILDING

Location: Camden, NJ  
Client: H2L2, a Nelson Company  
Architect: Perkins Eastman  
Services: Site/Civil, Geotechnical, Traditional Surveying

### OVERVIEW

Langan is providing engineering services for this world-class teaching and research facility located on the university's satellite Camden Campus. The new 100,000-SF building will include classrooms and lecture halls, conference rooms, and space for administrative faculty. Langan is providing site/civil engineering, geotechnical engineering, and surveying services on the project. We performed a geotechnical subsurface investigation for the proposed new school building in order to obtain subsurface data necessary to develop foundation, earthwork, and site and subgrade preparation recommendations. Langan's site/civil engineers have coordinated our design work with the project team and Rutgers University to finalize the site grading and finished floor elevations.

Technical Excellence Practical Experience Client Responsiveness



## SUNY BINGHAMTON - ACADEMIC BUILDING & RESEARCH GREENHOUSE

Location: Binghamton, NY  
Client: Dormitory Authority of the State of New York (DASNY), State University of New York (SUNY) Binghamton  
Architect: AECOM Ellerbe Becket  
Partner: LERA  
Services: Geotechnical

### OVERVIEW

The SUNY Binghamton campus underwent renovations that included two three-story office/classroom buildings, the expansion of a two-story greenhouse, and the construction of a pedestrian tunnel. The campus is located in the geologic region known as the Southern Tier, where subsurface conditions consist of thick glacial till deposits. Langan performed a subsurface investigation at the site and prepared geotechnical recommendations regarding the foundation system and slab design, subgrade bearing capacity, and soil excavation and stabilization methods.

Technical Excellence Practical Experience Client Responsiveness



## LINCOLN CENTRE LIFE SCIENCES RESEARCH CAMPUS

Location: Foster City, California  
Client: BioMed Realty Trust, Inc.  
Architect: HOK  
Services: Geotechnical, Environmental, Earthquake/Seismic

### OVERVIEW

Located on the Peninsula, Lincoln Centre is a 595,000 SF biomedical and life sciences research campus redevelopment. The buildings of the former industrial park were demolished. The development now includes three office/laboratory buildings, three parking structures, and an amenities building. Langan performed a geotechnical investigation and site-specific seismic studies, updated the Phase I Environmental Site Assessment, conducted a Limited Environmental Site Characterization, and provided construction observation and analytical testing services.

Technical Excellence Practical Experience Client Responsiveness



## UNIVERSITY OF CONNECTICUT - INNOVATION PARTNERSHIP BUILDING

Location: Mansfield, CT  
Client: University of Connecticut  
Architect: Skidmore, Owings & Merrill  
Services: Site/Civil, Geotechnical, Landscape Architecture, Traditional Surveying

### OVERVIEW

The Innovation Partnership Building will be the first building within UCONN's North Campus technology park. Langan provided survey, geotechnical and civil engineering, and landscape architecture for this 115,000-SF project. Langan's site design minimized the impacts to the primarily wooded lot and reduced the views of parking along the roadway through grading and landscape design. Our stormwater management design implemented a low impact development approach that seeks to protect and minimize disruption to the existing natural resources and environmentally sensitive areas. The project was submitted for LEED Silver certification.

Technical Excellence Practical Experience Client Responsiveness



## RUTGERS UNIVERSITY - CENTER FOR INTEGRATIVE PROTEOMICS RESEARCH

Location: Piscataway, NJ  
Client: Rutgers University  
Architect: NK Architects  
Services: Site/Civil, Landscape Architecture

### OVERVIEW

Langan provided site/civil engineering design, permitting services, and landscape architecture for the Rutgers University Center for Integrative Proteomics Research (CIPR) on the Busch Campus. The CIPR project is intended to centralize the University's research and library facilities for protein studies. Langan's design responsibilities include site layout, grading and drainage, stormwater management, utility layout, soil erosion measures for steep slopes, sitework construction details, and construction specifications.

Technical Excellence Practical Experience Client Responsiveness



## NEW YORK UNIVERSITY - BIOENGINEERING INSTITUTE CENTER

Location: New York, NY  
Client: New York University  
Services: Geotechnical, Site/Civil, Environmental

### OVERVIEW

Langan provided geotechnical, environmental, site/civil, and permitting services for these new facilities. The project will progress in two phases. Phase I consists of the construction of an eleven-story, 170,000-SF building with a footprint of about 15,650 SF, including two basement levels. Phase II will include an adjacent eight-story building directly south of the Phase I site and will commence in 2016. A key challenge at this site was that the geology was very difficult, with varying bedrock from 20 feet to 65 feet below grade. This required the foundations to consist of a shallow mat foundation for the east half and a deep foundation for the west half of the site.

Technical Excellence Practical Experience Client Responsiveness



## SWARTHMORE COLLEGE - NPPR RESIDENCE HALL

Location: Swarthmore Borough, PA  
Client: Swarthmore College  
Architect: DIGSAU Architecture  
Services: Site/Civil, Geotechnical, Traditional Surveying

### OVERVIEW

In order to accommodate a rapidly growing student population, Swarthmore College added a 128-bed residence hall near its Palmer, Pittenger and Roberts residence-hall complex. Langan provided site/civil, survey, and geotechnical engineering services to facilitate designing, permitting, and constructing the new residence hall. The project was designed to minimize environmental impact by following the recommendations established in the college's sustainability framework. To meet the college's sustainability goals, Langan worked closely with the project landscape architect, Studio Bryan Haynes, to design the site to preserve trees, respect the ball fields adjacent to the resident-hall quadrant, provide outdoor space for student enjoyment, provide low-impact stormwater-management features, and conserve energy. Langan's experience with designing and permitting innovative stormwater management on tight urban sites was a key contribution to the success in the design and approval process for this project.

Technical Excellence   Practical Experience   Client Responsiveness



## PRINCETON UNIVERSITY - ANDLINGER CENTER

Location: Princeton, NJ  
Client: Princeton University  
Architect: Tod Williams Billie Tsien Architects  
Partner: Ballinger  
Services: Geotechnical

### OVERVIEW

Princeton University's 129,000-SF Andlinger Center for Energy and the Environment provides new research and development facilities to students and teachers studying renewable and sustainable energy, climate change, and numerous disciplines related to energy efficiency and social/environmental economics. Langan's geotechnical engineering services included conceptual design for the project's support of excavation (SOE) and underpinning systems, specifications for SOE and related earthwork, and review of foundation systems. We also provided consulting services during the design development and construction documentation phases. The building was designed to meet LEED Silver requirements.

Technical Excellence Practical Experience Client Responsiveness



## COLUMBIA UNIVERSITY - KNOX HALL GEOTHERMAL DESIGN

Location: New York, NY  
Client: Columbia University  
Architect: Helpern Architects  
Services: Geotechnical

### OVERVIEW

A geothermal heating and cooling system consisting of four 1,800-foot-deep standing column wells was selected for a 90-ton heating and cooling system in connection with renovations and improvements to Columbia University's Knox Hall.

Technical Excellence Practical Experience Client Responsiveness



## BIOTRIAL NORTH AMERICAN HEADQUARTERS

Location: Newark, NJ  
Client: Biotrial  
Architect: Francis Cauffman  
Partner: Buro Happold, Thornton Tomasetti  
Services: Geotechnical, Site/Civil, Traffic & Transportation, Landscape  
Architecture

### OVERVIEW

Langan is providing geotechnical, civil, environmental, traffic, and landscape architecture services to this France-based biotechnology and pharmaceutical company. The first phase of the project consists of a five-story, 70,000-SF glass building which features metal panels that rise on two sides of the building, symbolizing the nature of Biotrial's pharmaceutical testing mission. Phased site design construction plans include a screened-in service and parking area with underground stormwater storage, a public plaza at the front of the building that will carry the building pattern toward the public sidewalk, and a private volunteer garden that will provide a green resting area for building users.

Technical Excellence Practical Experience Client Responsiveness



## RUTGERS UNIVERSITY - BUSINESS SCHOOL

Location: Piscataway, NJ  
Client: Rutgers University  
Services: Site/Civil, Natural Resources & Permitting

### OVERVIEW

This 6-story building, designed to achieve LEED Silver certification, is the gateway feature to the master-planned Livingston Campus. The building provides more than two dozen teaching rooms and a 440-seat, theater-styled auditorium. Langan's stormwater management strategy incorporated several Best Management Practices such as a bioretention basin and a constructed stormwater wetland. Project challenges included the relocation of several active campus utility mains and the incorporation of a geothermal well field into the project's overall green initiative.

Technical Excellence Practical Experience Client Responsiveness



## TEMPLE UNIVERSITY ARAMARK STAR COMPLEX

Location: Philadelphia, PA  
Client: Temple University  
Services: Site/Civil, Surveying/Geospatial, Landscape Architecture

### OVERVIEW

The Temple University Aramark Student Recreation & Training Center (STAR) Complex sits on a four-acre site and includes an enclosed 60-yard football practice field, recreational facilities, a neighborhood recreational track, classroom space for the College of Public Health, green stormwater infrastructure, and a landscaped entry plaza. Langan provided site/civil engineering, landscape architecture, and survey services to facilitate the development. In addition to providing design and engineering services, Langan was responsible for securing land development permits from the Philadelphia Water Department and the Pennsylvania Department of Environmental Protection.

Technical Excellence Practical Experience Client Responsiveness



## COLUMBIA UNIVERSITY MANHATTANVILLE

Location: New York, NY  
Client: Columbia University  
Architect: Davis Brody Bond  
Partner: Lend Lease  
Services: Environmental

### OVERVIEW

Langan was retained to serve as the lead environmental engineer and consulting firm for the University's 17-acre Manhattanville campus development in West Harlem. The development and expansion is comprised of academic and research facilities, housing for graduate students, faculty, and other employees of Columbia University, as well as retail stores and open space areas.

Technical Excellence Practical Experience Client Responsiveness



## NOVARTIS PHARMACEUTICALS - EAST CAMPUS

Location: East Hanover, NJ  
Client: Novartis Pharmaceutical Corporation  
Architect: Gensler  
Services: Site/Civil, Geotechnical, Environmental, Landscape  
Architecture

### OVERVIEW

The East Hanover Campus of Novartis Pharmaceuticals is made up of office buildings, laboratories, storage facilities, dining facilities and recreational facilities. Over the past 5 years Novartis has redeveloped the eastern portion of their campus. Improvements include new office buildings, a parking garage, landscaping of a promenade and environmental remediation. Langan provided services throughout this redevelopment process in association with the construction of two 29,430-SF office buildings and a 61,700-SF parking garage, including site/civil, geotechnical, and environmental engineering. Langan site/civil engineering services included site demolition, grading, drainage, erosion and sediment, utilities and construction details to support the building projects and the east campus landscape enhancement project. Geotechnical services included conducting subsurface investigations including borings and test pits, a geotechnical report and design support for the preparation of foundation documents for three new buildings and site improvement.

Technical Excellence Practical Experience Client Responsiveness



## RIVERWALK TOWERS

Location: Philadelphia, PA  
Client: PMC Property Group  
Architect: Gensler  
Services: Site/Civil, Geotechnical, Traffic & Transportation,  
Surveying/Geospatial, Landscape Architecture

### OVERVIEW

Located along the Schuylkill River, the Riverwalk Towers are two separate mixed-use that will include residential and retail space, along with a landscaped plaza and on-site parking. The 3.5-acre site had several constraints that needed to be considered with the design, including its location in the 100-year floodplain area of the FEMA map, active CSX rail lines along the western boundary, an overhead Septa bridge crossing through the parcel, and a PWD easement for an existing brick overflow sewer. Langan provided multiple services including survey, site/civil engineering, geotechnical engineering, traffic and transportation engineering, and permitting for the redevelopment.

Technical Excellence Practical Experience Client Responsiveness



## RACE STREET PIER

Location: Philadelphia, PA  
Client: Delaware River Waterfront Corporation, James Corner Field  
Operations  
Partner: CHPlanning, VJ Associates  
Services: Waterfront & Marine, Site/Civil, Geotechnical, Traditional  
Surveying

### OVERVIEW

Race Street Pier is one of the first public spaces to be designed and built by the Delaware River Waterfront Corporation as part of the new Civic Vision for the Central Delaware Riverfront. Pier 11 was identified as an early action park site and the project was faced with an aggressive schedule, as required by the City.

Technical Excellence Practical Experience Client Responsiveness



## NORTHXNORTHWEST

Location: Philadelphia, PA

Client: Forest City Residential

Services: Geotechnical, Traffic & Transportation, Environmental,  
Traditional Surveying

### OVERVIEW

Langan provided geotechnical, traffic and environmental engineering, survey and construction oversight services for the development of this new, 16-story apartment building with 270 units - a 434,000 SF expansion to the existing Museum Towers apartment building located in the Logan Square neighborhood of Philadelphia. The new construction also included a four level parking garage and two rows of townhome structures in addition to improvements to the neighboring Matthais Baldwin Park and signalization upgrades at the two intersections along Spring Garden Street.

Technical Excellence Practical Experience Client Responsiveness



## BARTRAM'S MILE

Location: Philadelphia, PA  
Client: City of Philadelphia Parks & Recreation Department  
Architect: Andropogon Associates  
Services: Environmental, Site/Civil, Geotechnical, Traffic & Transportation, Surveying/Geospatial

### OVERVIEW

Langan helped the City of Philadelphia transform a one-mile stretch of vacant river frontage along the western banks of the tidal Schuylkill through the extension of the Schuylkill River Trail and the creation of new parks and an innovative neighborhood stormwater management system. Langan was responsible for the conceptual design of the stormwater system; permitting; geotechnical investigation; and final design of all elements of the project, including trail design, traffic engineering, and complete streets design.

Technical Excellence Practical Experience Client Responsiveness