



## GEOTECHNICAL ENGINEERING

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# FIRM PROFILE

# PWGC: SOLUTIONS FOR A CHANGING WORLD

## MEET PWGC

PWGC was founded more than 29 years ago by Paul Grosser, PhD, PE, PG, a thought leader who recognized the need for a multi-disciplined engineering and environmental consulting firm that offered a diverse range of services to meet market demand regionally and nationally. Based in Bohemia, NY, PWGC has offices in New York City, Albany, Syracuse, Connecticut and Washington.

PWGC serves the New York Metropolitan region and has established a strong reputation for innovative problem solving and providing quality services to municipal, educational, private, public and federal clients. The firm is dedicated to providing cost-effective and timely services that result in practical solutions for its clients.

PWGC has a multi-disciplined staff of more than 70 professionals, which includes recognized experts in the application of wastewater and water supply technologies. Its strength lies with these licensed professional engineers, geologists and hydrogeologists, LEED accredited professionals and environmental compliance specialists, which gives PWGC a wealth of experience key to helping bring your project from idea to reality.

## CHOOSE PWGC

Whether your objectives are planning, design and/or redevelopment, PWGC's solutions are innovative and economical. PWGC is committed to client goals and our dynamic team of professionals provide innovation and flexibility to deliver customized solutions to projects regardless of size, complexity or duration.

## THE PWGC DIFFERENCE

What sets us apart is our customized approach to each project, rapport with regulatory agencies and exceptional project management. This approach has cemented PWGC's industry reputation as a leader in engineering. PWGC's assets that translate into additional value for you:

- Strong working relationships with key regulatory sector players
- Specialists in regulatory requirements to facilitate quicker approvals
- Highly responsive to budget & time constraints to get your project on line faster
- Project and quality control monitoring to exceed your project needs
- More than 70 dedicated professionals to provide a wide array of services
- Strict adherence to environmental compliance standards

**Make PWGC quality environmental consulting and engineering solutions work for you.**



## PWGC QUICK FACTS

### Corporate

- Founded & Incorporated: 1990
- SAM/SBA Registered
- Small Business
- DUNS # 798730966
- Federal ID: 11-3612196

### Offices

- Bohemia, NY
- New York, NY
- Saratoga Springs, NY
- Syracuse, NY
- Seattle, WA
- Shelton, CT

### Qualifications

- LICENSES - Engineer, Geologist, LSP, NC, NY, NJ, PA, MD, IN, NH, MA, FL, WA
- LEED-AP
- Envision

### Service Codes

#### NAICS

- 562910 Environmental Remediation
- 541330 Engineering
- 541620 Environmental Consulting
- 562998 Waste Management Services
- 541370 GIS Base Mapping
- 237130 Green Services

#### SIC

- 8999 Environmental Services
- 8711 Engineering Services



# SUMMARY LIST OF SERVICES

## Environmental Services

- Contract Administration
- Petroleum & Chemical Spill Investigation & Remediation
- Remedial Alternative Assessment & Design
- Remedial Construction Management
- Property Transaction Services
  - Due Diligence, RI/FS, PCR
  - Brownfields Redevelopment—Investigation, Remediation, Program Management
  - Phase I, Phase II Environmental Site Assessments
  - NYC E-Designated Sites
  - NYC OER Program Management—Investigations, Remediation, Grant Application
  - Cost Estimating—Property Investigation & Remediation
- Environmental Audits—Assess Environmental Liability
- Environmental Assessment & Contaminant Source Evaluation
- Groundwater Investigation & Remediation
- Aquifer/Pumping Testing
- Risk-Based Approach Solutions
- Site Closure Reports
- UST/AST Management
- Air, Water, Soil & Soil Vapor Sampling/Monitoring Community Air Monitoring
- Environmental & Health Risk Assessment
- Radiological Investigation & Remediation Services
- Hazardous Waste Management
- Soil Management, Certified Clean Fill
- Storm Water Management
- Water Table Evaluation & Flood Mitigation
- Dewatering Design, Permitting & Compliance Sampling

## Environmental Compliance/Management

- Air Quality—Title V Permitting, Air Emission Inventories, Tier II & TRI Reporting
- Articles XI & 12 Hazardous Materials Storage Compliance for Nassau & Suffolk Counties, NY
- Chemical/Petroleum Bulk Storage Tanks—Permitting, Audits, Regulatory/Environmental Compliance Management
- Facilities Contingency Plan Development/Management, including SPCC, SWPPP, FRP
- Compliance Review
- Regulatory Compliance Reporting
- FAR 139.321 Fire Safety Inspections
- Fuel Storage Facilities & Mobile Fuel Equipment

## Wastewater/Water Supply

- Water Supply/Wastewater—Systems, Planning, Design
- Groundwater Modeling
- Site/System/Feasibility Evaluation, Planning & Technical Assistance
- Water Conservation Plan Development

## Expert Counseling/Client Representation

- Expert Testimony, Support & Counsel

## Natural Resource Studies

- Wetlands Delineation, Permitting & Mitigation Design
- Threatened & Endangered Species Surveys
- Migratory Studies
- Ecological Studies
- Ecological Risk Assessments
- National Environmental Policy Act (NEPA) Studies
- Planning
- Watershed Analysis

## Energy/Sustainability Solutions

- Geothermal System Feasibility Analysis, Design, Permitting & Construction Management
- Renewable Energy Design for Solar & Wind
- Carbon Footprint Analysis, Profile & Management
- Alternative Fueling Station Planning & Design, Equipment Specification, Construction Observation, Permitting, Compliance & Facility Commissioning for Compressed Natural Gas, Hydrogen, Biodiesel & Ethanol-85
- Building Due Diligence & Energy Studies
- LEED Administration & Sustainable Design Practices
- High Performance Sustainable Buildings
- Energy Conservation & Energy Recovery Alternatives
- MEP/High Efficiency Equipment Solutions
- Power Generation, Cogeneration & Fuel Cells
- Energy Modeling, Utility Rebate Programs & Tax Incentives
- Green Legislation & ARRA Stimulus Grants
- GIS Based Modeling for Wind, Solar & Carbon Footprint Analysis

## Civil/General Engineering

- “Best Economic Alternatives” Evaluation
- Comprehensive Feasibility Studies
- Conservation Plan Development
- Construction Planning, Management, QA/QC
- Drainage Planning, Grading & Design
- Evaluation, Planning & Technical Assistance
- Facility Design & Condition Assessment
- Planning & Design
- Property Condition Report

## Geographical Information Systems/ Global Position Systems

- Data Collection & Conversion
- Infrastructure & Asset Management
- Wetlands & Endangered Species Delineation
- Digital Elevation Model Analysis
- Customized GIS Applications, GIS/CAD Integration
- Database Development, Conversions, Manual Digitizing
- Website development
- GPS Field Data Collection & Post-Processing
- Remote Sensing & Image Processing



# GEOTECHNICAL ENGINEERING



## INTRODUCTION TO GEOTECHNICAL ENGINEERING

PWGC offers a wide range of geotechnical engineering services to our clients on Long Island, New York City and the New York Tri-State area. We specialize in preliminary and design level investigations for residential, commercial municipal/infrastructure construction. Our professionally licensed and highly experienced engineers work to provide you with practical, cost-effective solutions that are tailored to your unique site and soil conditions. We work with expert contractors that are capable of performing geotechnical investigations for new construction or renovations utilizing conventional and specialized exploration equipment. We proudly offer services in the following:

- Subsurface investigations utilizing soil borings and test pits
- Recommendations on shallow and deep foundation design
- Knowledge of local, New York State and New York City Department of Buildings building codes and permitting
- Pavement design recommendations
- Design of permanent and temporary dewatering systems
- Slope stability analysis
- Retaining wall and bulkhead design
- Construction observation and monitoring

Our geotechnical reports provide vital information to be used by the owner, architect, design engineer or contractor. We provide evaluations on soil conditions, local history, foundation design parameters, settlement, groundwater levels, geotechnical hazards and seismic risk. These recommendations can save project design and planning time/costs by identifying unexpected soil conditions or hazards. We strive to work closely with the design team to meet project objectives and timeframes. PWGC's geotechnical capabilities are a strong compliment to the other engineering, environmental and geothermal services we offer.





**GEOTECHNICAL  
ENGINEERING EXPERIENCE**

# DELTA WELL & PUMP GEOTECHNICAL ENGINEERING

**CLIENT:** DELTA WELL & PUMP/NASSAU COUNTY DEPARTMENT OF PUBLIC WORKS/CAMERON ENGINEERING

**CONTACT:** CHRIS OKON (DELTA WELL & PUMP), MARK RAUBER (CAMERON ENGINEERING)

**SITE:** BARNES AVENUE, HEMPSTEAD NY

**PROJECT MANAGER:** BRIAN HEFLICH, PE, PROJECT MANAGER



## PROJECT DESCRIPTION

PWGC provided geotechnical engineering services for a proposed sanitary pump station and wastewater piping system in Hempstead NY. The proposed project involves construction, renovation, and other modifications to the sewer system in the Village of Hempstead necessary to improve the capacity of the wastewater collection system and eliminate sanitary sewer overflows in the Barnes Avenue area of Baldwin, located downstream. The objective of the geotechnical report was to analyze and evaluate subsurface conditions for the proposed pump station foundations at Weekes Park and 17,890 linear feet of force main piping.

## PWGC's ROLE

PWGC provided geotechnical engineering consulting services in collaboration with the design team based on provided preliminary design plans. The exploration effort consisted of 16 soil borings using a drill rig equipped with hollow stem augurs. A PWGC field engineer performed oversight of the drilling and characterized soil samples per the Uniform Soil Classification System (USCS). Collected samples were sent to a testing laboratory for sieve analysis.

The geotechnical report was written in compliance with New York State Building Code - Chapter 18 Foundation and Soils Investigations. The report included recommendations on the following: foundation type, bearing capacity of natural and compacted soils, liquefaction analysis, expected and total differential settlement and the effects of adjacent loads. Soil engineering properties, such as unit weight, internal friction angle, elastic modulus, seismic design parameters, were given and/or calculated as well. The report provided guidance on using the Marston's Formula for rigid pipeline design in trenches with respect to the encountered subsurface conditions.





# NORTHWELL HEALTH GEOTECHNICAL ENGINEERING

**CLIENT:** NORTHWELL HEALTH

**CONTACT:** MARK FRANKO

**SITE:** 1933 & 1963 UNION BOULEVARD, BAY SHORE NY

**PROJECT MANAGER:** BRIAN HEFLICH, PE, PROJECT MANAGER

## PROJECT DESCRIPTION

PWGC conducted a geotechnical investigation of the subsurface conditions at 1933 & 1963 Union Boulevard, Bay Shore NY. The client, Northwell Health, was proposing to renovate and expand two existing buildings that were formerly used as industrial buildings. Additionally, PWGC designed a temporary retaining wall that was utilized during the removal of an Underground Storage Tank (UST).

## PWGC's ROLE

PWGC provided geotechnical engineering services in collaboration with the design team based on the preliminary project plans. PWGC contracted with a local driller to conduct two (2) soil borings using hollow stem augurs and provided drilling oversight with logging of the explored conditions. An additional test hole was made with a post hole digger at a proposed footing location to confirm depth of shallow water table. PWGC prepared a geotechnical letter report presenting findings from the exploration, soil bearing capacity calculations and recommendations for foundation type with the presence of soft bog-like soils in high groundwater.

During construction, the removal of an underground storage tank (UST) necessitated soil and groundwater remediation. To aid in the remediation effort, PWGC was retained to design a temporary soldier pile wall to facilitate groundwater sample collection at the water table. PWGC engineers successfully designed the retaining wall to be stable in conditions with loose, saturated soils abutting the existing building's foundation footings. Design calculations included, embedment depth for soldier piles, lagging thickness, foundation load surcharge, basal heave analysis and hydraulic failure.



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# BAY RIDGE TOYOTA GEOTECHNICAL ENGINEERING

**CLIENT:** REDCOM DESIGN & CONSTRUCTION LLC

**CONTACT:** JOHN MALARBE

**SITE:** BAY RIDGE TOYOTA, AUDI

**PROJECT MANAGER:** BRIAN HEFLICH, PE, PROJECT MANAGER

## PROJECT DESCRIPTION

PWGC provided geotechnical engineering services, specifically, drilling oversight and authoring of two geotechnical reports for the renovation of a Toyota/Audi automobile dealership located at 6640 64th St., Brooklyn, N.Y. The services provided were based upon related discussions with REDCOM representatives. Each dealership was approximately 30,000 SF in footprint area.

## PWGC's ROLE

PWGC provided geotechnical engineering consulting services in collaboration with the design team based on provided preliminary design plans. The proposed work would increase the footprints of the existing dealerships and included adding basement and rooftop levels.

The field services included the coordinating the drilling layout/schedule with the daily operation of both car dealerships as well as oversight of the drilling and characterization and logging of the soil samples. Overall, 15 soil borings were completed using the mud rotary drilling technique. Two geotechnical reports were prepared with descriptions of local geology, depth to groundwater, subsurface conditions, seismic hazard characterization and recommendations on foundation type, soil design parameters. The field investigation effort and geotechnical reports were completed in accordance with the 2014 New York City Building Codes.



# JOHN HUMMEL AND ASSOCIATES GEOTECHNICAL ENGINEERING SERVICES

**CLIENT:** JOHN HUMMEL AND ASSOCIATES CUSTOM BUILDERS

**CONTACT:** TOM FANTINI

**SITE:** 3 WEST END ROAD, "GREY GARDENS"

**PROJECT MANAGER:** BRIAN HEFLICH, PE, PROJECT MANAGER



## PROJECT DESCRIPTION

PWGC served as the geotechnical engineer for the proposed basement addition to the residential structure at 3 West End Road, East Hampton, NY, aka "Grey Gardens". The proposed improvement called for the installation of new reinforced concrete basement added to the existing, 3-story residence.

## PWGC's ROLE

PWGC provided geotechnical engineering consulting services in collaboration with the design team and contractor. PWGC designed an exploration program to aid in design of the proposed basement to be constructed within a shallow groundwater table.

The field services included the retaining the drilling subcontractor, designing the exploration program, overseeing drilling work, soil sample collection and characterization. A geotechnical report was prepared with descriptions of local geology, depth to groundwater, subsurface conditions, seismic hazard characterization and recommendations on foundation type and soil design parameters. PWGC's report was critical in aiding the project team in designing the foundation mat slab to resist hydrostatic forces and prevent future excessive settlements. PWGC provided recommendations and specifications on helical anchors for accessory structures.



# GP KEYSTAND GEOTECHNICAL ENGINEERING SERVICES

**CLIENT:** GP KEYSTAND LLC

**CONTACT:** SEN ZHANG

**SITE:** 31-19 37<sup>TH</sup> AVENUE

**PROJECT MANAGER:** BRIAN HEFLICH, PE, PROJECT MANAGER

## PROJECT DESCRIPTION

PWGC served as the geotechnical engineer for GP Keystand LLC's redevelopment of 31-19 37th Avenue in Long Island City NY. The proposed structure was a 6-story, 4,000 SF mixed-use commercial/residential building. The geotechnical fieldwork was performed inside the existing structure before it was demolished.

## PWGC's ROLE

PWGC provided geotechnical engineering consulting services in collaboration with the design team based on provided preliminary design plans. PWGC designed a drilling program based on NYC Building Code requirements and site constraints from low-height interior spaces of the existing structure.

The field services included the retaining the drilling subcontractor, overseeing drilling work, soil sample collection and characterization. A geotechnical report was prepared with descriptions of local geology, depth to groundwater, subsurface conditions, seismic hazard characterization and recommendations on foundation type and soil design parameters. PWGC filled out and submitted the NYCDOB TR1 and TR4 forms as a member of the design team.



# NYC DEPARTMENT OF PARKS AND RECREATION GEOTECHNICAL INVESTIGATION

**CLIENT:** NYC DEPARTMENT OF PARKS AND RECREATION

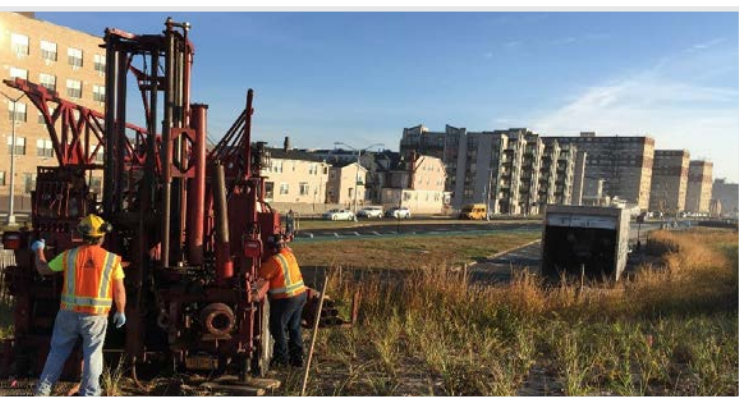
**CONTACT:** KYLIE MURPHY

**SITE:** SHOREFRONT PARKWAY

**PROJECT MANAGER:** BRIAN HEFLICH, PE, PROJECT MANAGER

## PROJECT DESCRIPTION

PWGC served as the geotechnical engineer for the NYC Department of Parks and Recreation for their installation of a 45' high flagpole located along Shorefront Parkway in Queens. The fieldwork for the project entailed designing the subsurface exploratory program in coordination with NYC Park's contract layout plan and oversight of the drilling contractor during soil boring advancement. Following the field exploration, PWGC prepared a geotechnical report which included recommendations for the design and construction of the flagpole foundation as well as structural properties of the in-situ soil.



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# CACTUS HOLDINGS GEOTECHNICAL ENGINEERING SERVICES

**CLIENT:** CACTUS HOLDINGS INC.

**CONTACT:** JOSH AGUS

**SITE:** 44-44 COLLEGE POINT BOULEVARD

**PROJECT MANAGER:** BRIAN HEFLICH, PE, PROJECT MANAGER

## PROJECT DESCRIPTION

PWGC served as the geotechnical engineer Cactus Holding Inc.'s redevelopment of two (2) properties in Flushing NY. The proposed structures were varied between 5 to 12 stories and were over 50,000 SF in area.

## PWGC's ROLE

PWGC provided geotechnical engineering consulting services in collaboration with the design team and owner based on preliminary conceptual plans. PWGC designed a preliminary drilling program to perform and initial exploration of the subsurface conditions.

The field services included the retaining the drilling subcontractor, overseeing drilling work, soil sample collection and characterization. Overall, 2x 100' deep borings and 4x 50' borings were conducted.

A geotechnical letter report was prepared with descriptions of local geology, depth to groundwater, subsurface conditions, seismic hazard characterization and recommendations on foundation type and soil design parameters. Construction recommendations were provided as well, such as pre-construction surveys and vibration monitoring programs for the surrounding adjacent properties.

