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MARINE CONSTRUCTION SERVICES

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FIRM PROFILE

PWGC: CLIENT DRIVEN SOLUTIONS

MEET PWGC

PWGC was founded 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, Syracuse, Saratoga Springs and Connecticut.

PWGC serves the Northeastern United States and has established an industry recognized reputation for innovative problem solving and providing quality services to municipal, educational, private, public and federal clients. We are dedicated to providing quality products and timely services that result in practical solutions for its clients.

PWGC has a multi-disciplined staff of more than 70 professionals. Our 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, redevelopment, remediation or resiliency, PWGC's services 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, a dedicated, responsive team, our rapport with regulatory agencies and our exceptional project management. PWGC's assets that translate into additional value for you include the following:

- 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
- Strong understanding environmental compliance standards

Make PWGC's 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
- Shelton, CT

Qualifications

- LICENSES - Engineer, Geologist, LSP, NC, NY, NJ, PA, MD, IN, NH, 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

- 87489905 Environmental Consulting
- 8711 Engineering Services



SUMMARY LIST OF SERVICES

SEQRA Consulting and Planning Services

- Administration of the SEQRA Process
- Type II Opinion Letters
- Coordinated Review
- Environmental Assessment Forms
- Scoping Documents
- Environmental Impact Statements
- Determinations of Significance
- Findings Statements
- Notices and Assistance with Resolutions
- Land Use and Zoning Assessments

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

Industrial Hygiene

- Asbestos Inspections and Testing
- Indoor Air Quality

- Legionnaire Insoections
- Lead/Mold Testing and Remedial Plans
- Noise Surveys

Expert Counseling/Client Representation

- Expert Testimony, Support & Counsel

Wastewater/Water Supply

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

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





**MARINE
CONSTRUCTION
SERVICES**

INTRODUCTION TO MARINE CONSTRUCTION SERVICES

Marine Construction Services

- Bulkheading Design (Steel and Vinyl Sheeting)
- Dock and Decking Design
- Shoreline Stabilization
- Resiliency Improvements
- Stormwater Modeling
- Facility Assessment
- Coastal Flooding Analysis



REHABILITATION OF LONG WHARF

CLIENT: VILLAGE OF SAG HARBOR

CONTACT: BETH KAMPER, VILLAGE CLERK

SITE: LONG WHARF, SAG HARBOR, NY

PRINCIPAL: JENNY LUND, PE, LEED GA, PROJECT MANAGER

PROJECT DESCRIPTION

PWGC served as the Engineer of Record for the reconstruction of Long Wharf for the Village of Sag Harbor. The reconstruction improved the aesthetics of the 3-acre public site and involved the installation of 1,200 linear feet of steel sheet-piling, hardwood decking and timber sub-structure, asphalt pavement, drainage improvements, handrail system and mega-yacht berths. The project was fully designed in-house by PWGC. Permits were obtained from the NYS Department of Environmental Conservation, US Army Corp. of Engineers and NY Department of State.



DOCK ASSESSMENT

CLIENT: VILLAGE OF SAG HARBOR

CONTACT: DEE YARDLEY, DPW SUPERINTENDENT

SITE: LONG WHARF, SAG HARBOR, NY

PRINCIPAL: JENNY LUND, PE, LEED GA, PROJECT MANAGER

PROJECT DESCRIPTION

PWGC provided consulting services in the form of a fixed and floating dock assessment for the Village of Sag Harbor Marina. The Village of Sag Harbor (Village) is a waterfront community that services seasonal and transient boat slip rentals. The Village's marina is made up of five (5) separate dock areas including Long Wharf, Marine Park, Dinghy Dock, A-Dock, and B-Dock. The marina suffered significant damage as a result of 2012's Superstorm Sandy, and a series of following Nor'easter storm events that followed, which had the potential to prevent the Village from opening the marina for the 2013 boating season.

PWGC's ROLE

PWGC evaluated the Village of Sag Harbor's five (5) fixed and floating docks to determine the storm-related damage. The project was broken down into the following tasks:

- Damage assessment of the fixed and floating docks
- Preparation of a cost estimate to repair the damage
- Prepare a set of construction bid documents including:
 - Construction plans
 - Construction specifications
- Assist in bid phase services including:
 - Pre-bid contractor walkthrough of docks
 - Attending bid opening
 - Reviewing bid packages and preparing a recommendation of award letter
- Perform construction administrative services during the construction phase of the project



PIER REHABILITATION

CLIENT: VILLAGE OF PORT JEFFERSON

CONTACT: ALISON LAPOINTE, SPECIAL VILAGE ATORNEY

SITE: HARBORFRONT PARK, PORT JEFFERSON, NY

PRINCIPAL: BRIAN HEFLICH, PE, LEED GA, PROJECT MANAGER

PROJECT DESCRIPTION

PWGC was retained by the Village of Port Jefferson (Village) to inspect the timber pier located at Harborfront Park following reports of the structure swaying while under a load. The Village has owned the 330-foot-long pier since taking ownership of the park in 2000. However, the pier structure is reputed to be approximately 80 years old. PWGC performed the inspection by thoroughly examining the pier's structural components. Following the inspection, PWGC prepared a report for the Village that noted observed deficiencies and recommended repairs to rehabilitate and strengthen the pier.

PWGC prepared design plans and a cost estimate - \$150,000 - for the proposed repairs and played an active role in the bidding phase by working closely with the Village in soliciting and reviewing contractor bids. During construction, PWGC performed weekly site inspections as the Village's agent for construction oversight and reviewed contractor submittals and payment requests.

PWGC's ROLE

The project was broken down into the tasks below:

- Assessed the structural components of the timber pier
- Recommended and designed rehabilitative repairs
- Prepared construction bid documents including:
 - Construction plans
 - Construction specifications
 - Preliminary cost estimate
- Assisted in bid phase services including:
 - Pre-bid contractor walkthrough of pier
 - Attend bid opening
 - Reviewing bid packages and preparing an award recommendation letter
- Performed oversight and delivered administrative services during the construction phase



GEOTECHNICAL ENGINEERING SERVICES

CLIENT: VILLAGE OF FREEPORT

CONTACT: KEITH MUCHNICK

SITE: FREEPORT, NY

PRINCIPAL: BRIAN HEFLICH, PE, LEED GA, PROJECT MANAGER

PROJECT DESCRIPTION

This project consists of design and construction of the long-term and permanent flood protection for the Freeport Electric Power Plant 2 (PP2) infrastructure. PP2 is located in the Village of Freeport and is located on a peninsula of land adjacent to Freeport Creek and Stadium Park Canal. Freeport Electric, the Village of Freeport's power utility, owns and maintains power generation and distribution infrastructure throughout the Village. PP2 is one of two of Freeport Electric's power plants and is the primary power generating facility for approximately 43,000 residents and 1,800 businesses in Freeport.

PP2 is highly vulnerable to coastal surges due to its location at the southern edge of the Industrial Park peninsula. During Superstorm Sandy and Hurricane Irene, floodwaters reached the control center door. The large volume of water from Superstorm Sandy's surge shifted fuel tanks on their bases, despite being bolted down.

PWGC conducted a geotechnical soil investigation at PP2 in August 2018 as part of the initial site assessment. Soil samples were collected using split spoon sampler tubes driven by a 140-pound hammer. Standard Penetration Test (SPT) results were recorded to characterize the in-situ soil's structural properties. This investigation utilized samples from geotechnical soil borings to determine groundwater levels and the soil's composition and structural properties. The boring locations were carefully coordinated with the power plant facility to avoid hitting subsurface utilities.

The soil boring logs were analyzed to determine the depths of groundwater at various locations across the site. This data aided the buoyancy control design of the proposed stormwater pump stations and the placement of the pump stations. The soil boring logs were analyzed to determine the stratification of the soils found at the site. This information was vital in determining the bottom elevation of the permanent sheet pile flood wall. The bottom of the flood wall is designed to penetrate the impermeable peat/clay layer located between 10 and 15 feet below grade surface, preventing the flow net of groundwater under the flood walls.

The project involved the design and construction of the following flood hazard risk reduction measures, each measure designed by PWGC:

1. Installation of approximately 1,300 linear feet of flood wall constructed of vinyl sheet piles.
2. Construction of approximately 90 linear feet of an aluminum plank flood walls near the site's entrance with concrete footings and removable aluminum A-frame mullions;
3. Installation of a new in-line check valve within the existing 36-inch storm water pipe;
4. Installation of sound wall gap protection made of aluminum active flood planks at the bottom of the existing sound wall;
5. Construction of two (2) new duplex stormwater pump stations;
6. Construction of a new below grade emergency sewer pump station and two (2) sewer gate valves.

The implementation of these measures at Freeport Power Plant No. 2 will significantly reduce risk of facility damage due to water intrusion or inundation from sudden heavy rainstorms, extreme tidal conditions, tropical storms, and hurricanes. In addition, the risk of contamination from onsite leaking oil tanks will be significantly reduced. Further, plant facilities such as structures, machinery, gas compressors, on-site generators, control houses, and transformers will attain higher levels of service and customer reliability with the added flood protection.



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COASTAL EROSION ASSESSMENT

CLIENT: PRIVATE RESIDENCE

SITE: ORIENT, NY

PRINCIPAL: BRIAN HEFLICH, PE, LEED GA, PROJECT MANAGER

PROJECT DESCRIPTION

PWGC provided consulting services on behalf of the owner of a private residence in Orient, N.Y. that was experiencing erosion damage to the property's bluff, the condition of which was threatened by the hard shoreline armoring structures constructed at neighboring residences. PWGC authored a technical report addressed to the Town of Southold Trustees that documented the bluff's condition, assessed future erosion processes, and explained how our client's bluff had been made vulnerable based on their neighbors' actions. PWGC coordinated efforts that involved bringing together the client's attorney, the Town Trustees, neighboring homeowners, and their contractors to settle potential issues.

PWGC's ROLE

PWGC provided the following services throughout the course of this project:

- Site visits to inspect the erosional condition of the bluffs
- Assessed current and future impacts to the bluff's erosion from natural and manmade sources
- Researched Town publications concerning shoreline armoring and construction policies
- Estimated cost to construct hard and soft shoreline armoring solutions
- Preparation of a letter report advocating for protection of the client's property



BULKHEAD DESIGN AND ENGINEERING

CLIENT: VARIOUS MUNICIPAL AND PRIVATE CLIENTS

CONTACT: VARIOUS CONTACTS

SITE: VARIOUS WATERFRONT SITES, LONG ISLAND, NY

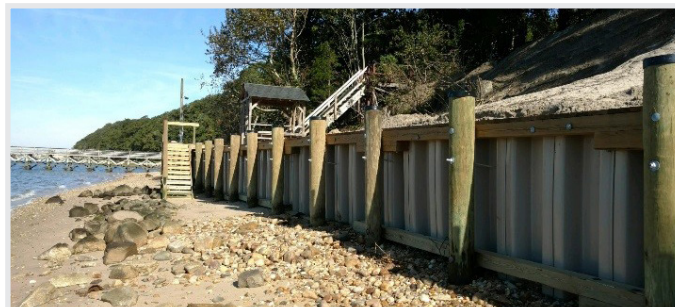
PRINCIPAL: PAUL K. BOYCE, PE, PG, PRESIDENT/CEO

PROJECT DESCRIPTION

PWGC played a key role in the following bulkhead project design and development:

- On behalf of JML Construction PWGC designed and performed construction oversight and conducted all regulatory processing for 900 linear feet of vinyl, and recessed vinyl bulkhead along the Great South Bay in Islip, with an additional 450 linear feet of boat basin.
- In Babylon Town, PWGC engineered the replacement of 200 Linear feet of bulkhead along the Great South Bay and Strongs Creek. We designed and oversaw the replacement of a non-functioning boardwalk with an environmentally friendly sunlight-infiltrating boardwalk.
- On behalf of Inlet Seafood in Montauk, PWGC designed and oversaw the replacement of 200 linear feet of commercial marina bulkhead and dredging of Inlet's boat basin. As part of the project, PWGC recommended the replacement of various marina piles and expedited NYSDEC bulkhead maintenance permits designs and dredging permits.
- PWGC engineered the replacement of 300 linear feet of sheeting on a Navy bulkhead to prevent further erosion due to bore holes in Remsenberg, NY.
- At the Sayville Yacht Club in Blue Point, NY PWGC engineered the bulkhead repair and erosion control measures as well as a large-scale marina dredging effort.
- On behalf of the Bluepoint Community Association PWGC designed and engineered the replacement of a failing bulkhead and dredging of the marina.

For the above-mentioned projects, PWGC played an active role in the design, engineering and construction oversight of varied bulkheading requirements associated with the developments that utilized steel, timber and vinyl elements. The range of our expertise includes multiple successful projects for public and private interests for fresh and saltwater applications. Our geological knowledge and experience helps our clients to make the right decisions regarding the selection of the appropriate design and materials to maximize aesthetics and resiliency.



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DOCK DESIGN

CLIENT: MANCINI MUI ARCHITECTS & CONSTRUCTION

CONTACT: MARK MANCINI, AIA

SITE: ST. JAMES, NY

PRINCIPAL: BRIAN HEFLICH, PE, LEED GA, PROJECT MANAGER

PROJECT DESCRIPTION

PWGC provided engineering services for the design of dolphin pile clusters and a floating dock at a private residence in Saint James, N.Y. that is located on Stony Brook Harbor. The Town of Smithtown, which has zoning jurisdiction of the site, required that the floating dock be supported over the harbor bottom during low tide. Working with a local contractor, PWGC designed a chock system supported by dolphin pile clusters that supported the floating dock off of Stony Brook Harbor's bottom at low tide.

PWGC's ROLE

PWGC designed elements of the pile clusters and chock system for the floating dock. The design covered the following items:

- Layout and orientation of dolphin pile clusters
- Sizing and embedment of dolphin piles
- Dolphin wire wrap and thru bolt connections
- Timber chocks with bolt connections

