



JAMES BRUSH

Senior Project Engineer

ACADEMIC BACKGROUND

BA, LAS Physics, University of Illinois, Urbana IL, 1972

MS, Environmental Engineering in Civil Engineering, University of Illinois, Urbana IL, 1977

PROFESSIONAL REGISTRATIONS

Professional Engineer in six states: FL, TX, IL, IN, MS & AL

Grade A Water Treatment Plant Operator, Texas

Class A Water Treatment Plant Operator, Illinois

Class 4 Wastewater Treatment Plant Operator, Illinois

SPECIALIZED PROFESSIONAL COMPETENCE

During Mr. Brush's career in civil and environmental engineering, he has provided consulting and construction management and facilities engineering services to industry and government with emphasis in site development, utilities, mechanical, infrastructure, and civil design; remediation/contamination cleanup, groundwater monitoring; water/wastewater treatment facility and pipeline design, municipal and industrial, and plant start-up and operator training.

REPRESENTATIVE PROFESSIONAL EXPERIENCE

Senior Project Engineer, SWC, Key West and Miami, 2000-2008, 2013 to present

CIVIL ENGINEERING WORK

➤ **Wastewater Engineering and Construction Expert Witness, Theatre if the Sea, Islamorada, FL**

Reviewed court filings and permit materials for installation of wastewater system over- and underlying marine water intake to major marine life facility and participate in pre-administrative hearing deposition. Case was settled in favor of client, with installation of system to protect facility.

➤ **La Siesta Resort and Marina (bayside and oceanside), Islamorada, FL**

Provided civil engineering services. Work included site redevelopment layout and civil infrastructure, coordination of survey, geotechnical, study coordination, design, site layout, stormwater retention swales and exfiltration trenches, new roadways, paving, sanitary sewers, site drainage, site grading, Monroe County, Islamorada, and SFWMD stormwater permit applications, storm sewers, utilities, new marina and dock facilities, coordination with architect's new condominium plans with site civil infrastructure and site conditions.

➤ **Sunset Condo Gardens, Sunset Marina, Stock Island, Key West**

Provided architectural/engineering services to develop a recreation area for an existing condominium complex. Work including site development, civil infrastructure, coordination of survey and geotechnical work, design and site layout, stormwater retention, new roadway, fencing, walkways, paving, sanitary sewers, site drainage and grading, landscaping, mechanical, electrical, new swimming pool/spa, new beach area, tiki hut eatery, and bar-kitchen area, and a concrete block cabana building with bathhouse and storage facilities.

➤ **Parrotise Restaurant Conceptual Stormwater Management Plan, Little Torch Key**

Prepared conceptual drainage plan for conditional use application for expansion of restaurant to meet County and SFWMD standards, including all calculations and graphic presentations.

➤ **Key Deer Refuge Stormwater Plan, Big Pine Key**

Worked with SWC to prepare drainage plan for parking lot at Blue Hole on Key Deer Boulevard to meet County and SFWMD standards, including all calculations and graphic presentations.

➤ **Silverking Marina, Stock Island**

Developed site plan and stormwater management plan for marina, including all calculations and design features to meet County and South Florida Water Management District (SFWMD) permit requirements.

➤ **Key West Transfer Station, Stock Island, Monroe County, FL**

Design and process DEP environmental resource permit application for stormwater system, and provide all engineering services for preparation of solid waste transfer station permit renewal application.

CONTAMINATION-RELATED WORK

➤ **Bayview Inn, Conch Key, Monroe County, FL**

Provide engineering services associated with preparation of successful application for DEP determination of No Further Action with Conditions for underground storage tank leak.

➤ **Wild Bill's Gas Station, Grassy Key, City of Marathon, Monroe County, FL**

Design and implement an assessment methodology for a site containing a heavily leaking underground fuel storage tank, including installation of monitoring wells, collection of soil and groundwater samples, evaluation of testing results, and development of a site assessment report for the Florida Department of Environmental Protection (DEP).

➤ **Watermark Marina Site Development, Environmental Due Diligence Investigation, Islamorada, FL**

Provided civil engineering services. Work included site investigation geotechnical drilling, sampling and assessment/recommendation/cost evaluation report for the clean-up of soils and bay bottom sediment contaminated with boatyard boat bottom paint residues, site layout, coordination of survey, geotechnical study coordination, permitting, drainage, site grading, coordination of architect's plans and specifications for upgraded marina and dock facilities with site civil infrastructure.

➤ **City of Key West, Monroe County, FL**

Provide engineering review services for groundwater monitoring and reporting with DEP for remediation of underground fuel tank leak.



Operations Manager, Key Largo Wastewater Treatment District, 2008-2013

- Planned, organized, assigned, directed, and reviewed the work of 17 employees engaged in operation and maintenance of vacuum pump collection and force main pipeline system, advanced wastewater treatment plant, deep injection well/backup system, and sludge dewatering/disposal operations; Prepared reports, presentations, conducted workshops, training, scheduling, budgeting, risk management, and safety.
- Managed bid/award process and provided construction management for an \$18 million advanced wastewater treatment plant and deep injection well/backup system; reviewed progress of contractors work, change orders, developed punch lists, conducted progress meetings, maintained shop drawings/ submittals, record drawings, and RFI files; maintained equipment operation and maintenance manuals, assisted/coordinated in plant start-up and operation.

Industry and Environment, Florida and Texas, 1992-2008, 2013-present

President of engineering firm offering a wide range of civil and environmental engineering services to public- and private-sector clients.

- **Truman Annex Property Owners Association**
Stormwater drainage plans & new asphalt paving designs for parking areas, including stormwater exfiltration trenches.
- **Key West Golf Club Property Owners Association**
Design of storm sewer to mitigate drainage problem in condo residences at golf course.
- **Flood Proofing-Seaside Grocery & Deli- Key West**
Developed flood-proofing design, calculations, certifications and documents necessary to comply with Key West FEMA Coordinator Checklist, flood insurance company, and NFIP requirements that reduced flood insurance premiums for property owner.
- **Monroe County Emergency Management**
Conducted Operations Center (EOC) preliminary engineering design and prepared DCA/FEMA grant application for EOC in Marathon. Provided engineering services to MCEM for design and preparation of FEMA Pre-Disaster Mitigation (PDM) grant application for a new 20,000 square foot hurricane Category 5 EOC building, resulting in a grant award of \$4.2 million. Work included calculations, cost estimates, field survey and engineering assessment of the blueprints and design codes for the existing Marathon Government Center (MGC) used as a makeshift EOC /BOCC Room.
- **American Airlines**
 - Storm water drainage studies, SWPPPs, SPCCs, fuel spill facility response plans, permits, waste treatment facility designs, construction management, fuel spill plans and remediation for maintenance facilities at Miami International Airport (MIA), LAX, AFW, ORD, and JFK International Airports; Nashville, TN, El Paso, TX, San Diego and San Louis Obispo, CA, Tulsa, OK, Kansas City,

MO, St. Louis, MO, San Juan, Puerto Rico and Dallas Fort Worth, TX.

- Industrial waste treatment facilities at the American Airlines maintenance bases at Alliance Airport (AFW) & (DFW) in Fort Worth, Texas and at the base in Tulsa OK.
- **Tinker Air Force Base, Oklahoma City, OK**
Provided consulting/construction management services to the design/build contractor, NACC, the U.S. Army Corps of Engineers Tulsa District, U.S. Air Force Materiel Command (AFMC), Air Logistics Command (ALC) and USN TACAMO-NAS Patuxent River, MD. For this project he aided in design, construction management, start-up of a groundwater extraction well field, operation of treatment system for removal of aircraft maintenance waste solvents and heavy metals at the Soldier Creek/Building 3001 NPL site. EPA Superfund Project- longest drilled horizontal extraction well system in history for environmental cleanup and ground water remediation.
- **Union Pacific Railroad, Omaha, Nebraska**
Project Manager for storm water drainage and wastewater treatment facilities, pipeline design & construction management, and ground water assessments and clean-ups for fuel contaminated Texas Yards in Fort Worth, Palestine, Waco, Mesquite, and San Antonio. San Antonio cleanup addressed jointly groundwater remediation from Kelly Air Force Base. The work included facility SWPPP's, SPCC's, construction management, soil & water sampling and analyses, assessment and remediation reports, facility start-up, operation services & permits.
- **Bell Helicopter-Textron, Fort Worth & Grand Prairie, Texas**
Project manager for process and waste treatment facilities design, facilities engineering, construction management operations, and hazardous waste management for V-22 Tilt-Rotor Aircraft manufacturing facility– as consultant to KVG Gideon Toal Inc. Fort Worth, TX & Department of Navy, Southern Division, North Charleston SC, Naval Facilities Engineering Command (NAVFACENGCOM). In 2007- Provided facilities engineering assistance to Bell Helicopter- Textron Fort Worth TX for a new 40,000 SQ FT building at BHT #1 involving equipment selection cost-effective payback analysis using US Army Engineering and Support Center (Huntsville, AL) software ECONPACK version 3.1.2.
- **Marine Corps Logistics Base, Albany, Georgia**
Industrial Waste Treatment Facility Upgrade Construction Phase, Construction Management, Plant Start-up and OPS Training for the design/build contractor, NACC and USN, Southern Division, North Charleston SC, NAVFAC.
- **E-Systems (now Ratheon), Greenville, Texas**
Project manager for facilities projects involving wastewater and stormwater collection and treatment of aircraft maintenance, paint stripping and printed circuit board wastes; hazardous waste remediation, contaminated soil groundwater monitoring and treatment; The work included RCRA Part B permits, SWPPP's, & SPCC's, construction management, contamination cleanup, plant start-up, and operation services.



City of Key West, Monroe County, FL, 1999-2008

Provided civil engineering project management, permitting, design and construction phase services for docks, pier extensions, marina dredging plan, bay bottom dredge sediment sampling, pollutant characterization, marina restroom facilities, pump-out systems, fueling facilities, new boat ramp, marina operation and maintenance manual, fueling system assessment, marina stormwater management plans, sovereign submerged land leases.

➤ City Marina at Garrison Bight Ramp Extension, Fuel Dock, and Sewage Pump Out System

Provided professional engineering to the City Port Authority for the design and acquisition of US Army Corps Engineers and Florida Department of Environmental Protection (DEP) Permits for a ramp extension, fueling facilities, and boat sewage pump out & pipeline system. Work included developing a site plan, system layout, evaluation of vendor performance claims, design calculations, plans and specifications, bidding and construction services.

➤ City of Key West Ferry Terminal Pier Extension

Provided professional engineering to the City Port Authority for design and acquisition of US Army Corps Engineers and DEP permits for the extension of the Ferry Terminal Pier at the site of the historic Trumbo Havana Pier. Work included design, plans and specifications for extending an existing concrete pier to add additional slips for ferry future service, including bay bottom contaminant testing & dredging plan. FDEP and USACE permits issued. Key West Bight Ferry Terminal provides facilities for ferries that serve Ft. Myers, Marco Island, Miami, and Caribbean.

➤ Ferry Terminal Phase II Security Access Ramp

Prepared documents requested by USACE, FDEP, USN, MCEM, USDHS, regarding pier extension, ferry terminal operation, submerged land lease issues, security access & monitoring. Prepared additional required documents such as Marina Operation & Management Plan, Pump-out System Assessment Report, Fueling System Assessment Report, Oil Spill Contingency Plan, SWPPP, SPCC; Clean Marina Application; Report on South Florida marina operation methodologies for comparison to be implemented by Port Authority. Permits issued.

➤ Garrison Bight Marina Stormwater Pollution Prevention Plan (SWPPP)

Assisted the Marina and Port Authority on the development of the Marina's SWPPP.

➤ Garrison Bight Mooring Field Dinghy Dock Restroom Facility

Provided professional engineering services to the Port Authority for the design, specifications, bidding, construction-phase services for a new restroom facility that serves Mooring Field tenants. Work included civil engineering, site layout, new sanitary sewer, force main, water, electrical utilities, and permits.

➤ Key West Public Safety Facilities Building

Design of a backup entrance/exit for fire trucks, just in case of blocked main access point on Roosevelt Blvd. The project involved design of 30' wide x 80' long concrete access

driveway bridge was across a mangrove lagoon; as well as, lagoon contaminant testing/dredging plan, fish ladder, fish hatchery, public environmental educational signs, trimming mangrove prop roots, silt removal, cleanup of trash, removal of exotics, and planting indigenous (native) plants in new landscape area. The existing property contains City fire and police stations and an adjacent area wetland-mangrove lagoon that provides fish habitat, stormwater runoff retention and treatment. Acquired DEP, SFWMD, and USACE environmental permits.

Environmental Research Lab, Institute for Environmental Studies, Heavy Metals Task Force, University of Illinois at Champaign-Urbana

Research assistant for identification and investigation of environmental problems and solutions. Conducted anaerobic filter pilot plant study for removal of heavy metals and organics from Enfield, CT landfill leachate, soil testing from zinc smelter plant site; studies of toxic effects of applying Chicago Sanitary District sludge to farmland. Conducted atomic absorption spectroscopy, gas chromatography, nuclear magnetic resonance studies, sample preparation and wet chemistry analysis.

PUBLICATIONS

Heavy Metal Removal from Sanitary Landfill Leachate by Anaerobic Filter, 32nd Purdue Industrial Wastewater Conference, 1977.

Heavy Metal Removal with Completely Mixed Anaerobic Filter, Water Pollution Control Federation Journal. 1979.

Jet Maintenance Waste Treatment in the Jet Age, Paper presented at Texas Water Pollution Control Association Conference, June 3-5, 1992, Dallas, Texas.

ECO-Diving 101, Dive Travel Magazine, July/August 1997, Santa Cruz, CA.

PROFESSIONAL REGISTRATIONS & ASSOCIATIONS

Florida PE license No. 48504

Professional Engineer in six states—FL, TX, IL, IN, MS & AL

Grade A Water Treatment Plant Operator, Texas

Class A Water Treatment Plant Operator, Illinois

Class 4 Wastewater Treatment Plant Operator, Illinois

American Society of Civil Engineers (ASCE) No. 420707

Cuban American Association of Civil Engineers (CAACA), Miami-Key West-Havana Chapter

Member, United States Power Squadrons, No. E134585

PADI Certified Dive Master No. 98273

NOAA Team Ocean Volunteer, Florida Keys National Marine Sanctuary, boat operator, 1999-2009

