



Curriculum Vitae

Manuel E. Candelario Cosme, MSCE, PE
Geotechnical Engineer & Partner



Education:

2010-2013: **University of Puerto Rico at Mayagüez**

Master of Science degree in geotechnical engineering, Magna Cum Laude

Research: Development of isoperiod map of the city of Ponce, PR, with the determination of fundamental site periods.

2005-2010: **University of Puerto Rico at Mayagüez**

Bachelor's degree in civil engineering, Magna Cum Laude

Work Experience:

5/2012-present: **Jaca & Sierra Engineering, PSC**

Geotechnical Consultant/Partner: Secretary - Board of Directors, geotechnical consultant, project manager

6/2011-8/2011: **US Army Corps of Engineers** Research and Development Center, Vicksburg MS:

Masters Level Research: Assisted researchers in experimental procedures to develop blast mitigation techniques for underwater railway tunnels and provide guidance for their design and construction requirements.

6/2009-8/2009: **US Army Corps of Engineers** Research and Development Center, Vicksburg MS:

Undergraduate Research: Performed experimental procedures to calibrate and validate a numerical model for ultra-high-performance concrete.

Research Experience:

8/2011-5/2013: **University of Puerto Rico at Mayagüez**

Thesis Research: Developed an isoperiod map for the city of Ponce, PR, with the measurement of the fundamental site periods.

1/2010-5/2010: **University of Puerto Rico at Mayagüez**

Undergraduate Research: Performed laboratory procedures to determine the properties of a soil type destined for scale models that would be used to evaluate the topographic amplifications of seismic waves.

Notable Projects:

6/2012: **Landslide Stabilization and Road Restoration at PR-763, Cayey, PR**

Slope stability analysis for landslide remediation and road restoration.

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3/2013: Bechara Industrial Area, San Juan, PR

Project managing for the dewatering plan for the cofferdam at Río Puerto Nuevo. Installation of six (6) 40 ft deep monitoring wells with four (4) additional pumping sumps.

10/2013: Photovoltaic Solar Farm at Moca, PR

Geotechnical engineering and geophysical testing (electrical resistivity surveys) at a 200-acre solar farm.

11/2013: Photovoltaic Solar Farm at Quebradillas, PR

Geotechnical engineering and geophysical testing (electrical resistivity surveys) at a 200-acre solar farm.

7/2014: Punta Catalina Power Plants, Dominican Republic

Determination of shear wave velocity by means of downhole seismic test.

9/2014: Fuel Storage Tanks at Pockwood Pond, Tortola

Ground investigation by means of soil borings and geophysical testing (electrical resistivity tests and seismic refraction surveys).

4/2015: Monitoring Wells at Luis Muñoz Marín Airport, San Juan, PR

Project managing for construction of eleven (11) monitoring wells within the taxiway of Caribbean Airport Facilities at LMM Airport, San Juan, PR.

8/2015: Monitoring Wells at Former Alumina Facility at St. Croix, USVI

Project managing for construction of twenty-six (26) monitoring wells within former Alumina Facility (Hovenssa) at Renaissance, St. Croix, USVI.

8/2016: Louis E. Brown Development Phase III at St. Croix, USVI

Geotechnical engineering for phase III development of Louis E. Brown apartment complex in Paradise, St. Croix, USVI.

6/2017: Dominica Sport Complex

Geotechnical exploration for the construction of sport complex at Roseau, Dominica.

8/2017: Access Control Point at Fort Buchanan

Geotechnical engineering for the construction of the Access Control Point at US Army Fort Buchanan at Guaynabo, PR.

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1/2018: Sandals Beaches Resort

Geotechnical engineering and geophysical testing (electrical resistivity tests) for the construction of Sandals Beaches complex at Speightstown, Barbados.

2/2018: Barbados Water Authority Tank Sites

Geotechnical engineering and geophysical testing (electrical resistivity tests) for the upgrade of water production and distribution facilities at seven (7) sites across Barbados.

7/2018: Wharf Bulkhead Replacement for National Historic Site at Christiansted, St. Croix

Geotechnical engineering for the replacement of a damaged wharf bulkhead at Christiansted, St. Croix, USVI.

8/2018: Cruise Pier Expansion at St. John's Bay, Antigua, W.I.

Management of offshore drilling and geotechnical engineering to determine axial and lateral capacity of the pier piles and additional geotechnical recommendations for the project.

9/2018: American University of the Caribbean (AUC) Medicine School at St. Maarten

Geotechnical engineering for preliminary assessment of new West Campus Housing for the AUC Medicine School.

10/2018: AES Coal Fired Power Plant, Guayama, PR

Geotechnical engineering to address the "Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments". The exploration program was directed to obtain subsurface soil information to evaluate fault areas, seismic impact zones and unstable areas.

11/2018: Dominica Geothermal Development Company

Management of geotechnical drilling as well as field and laboratory testing for the evaluation of subsurface conditions for a 7MW Geothermal Plant at Dominica.

1/2019: Peter Island Resort, British Virgin Islands

Geotechnical engineering for the rehabilitation of the Peter Island Resort at the British Virgin Islands.

3/2019: US Army Reserve Center Training Building at Fort Buchanan, Guaynabo, PR

Geotechnical engineering for the construction of the proposed USARC training building at Fort Buchanan.

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4/2019: Cargo Warehouse at St. Croix Container Port, USVI

Geotechnical engineering for the cargo warehouse of the principal container port at St. Croix, USVI. The project entailed recommendations for deep foundations, ground improvement and liquefaction assessment.

5/2019: Visual Assessment of Landslides, West Puerto Rico

Site reconnaissance of twenty-seven (27) locations across the west side of Puerto Rico for the evaluation of various roadways affected by landslides during the passing of Hurricane María.

6/2019: Road Rehabilitation at El Yunque National Rain Forest, PR

Management of geotechnical drilling operations for the FEMA projects related to the storm damages on access roads to El Yunque rain forest.

8/2019: Hybrid Energy Plant at Anegada, British Virgin Islands

Geotechnical engineering for a hybrid renewable energy plant at Anegada Island funded by the British Virgin Island Electric Corporation.

11/2019: Long Bay Beach Resort at Tortola, British Virgin Islands

Geotechnical engineering for the construction of a beach resort at Tortola, BVI. The project entailed recommendations for deep foundations and ground improvement of underground cavities.

12/2019: Barbados Water Authority (BWA) Tank Sites

Geotechnical consultant overseeing site improvement methodologies for the grouting of underground cavities which are common in the limestone formations of Barbados.

12/2019: Parking and Transportation Center - Cyril E. King Int. Airport, St. Thomas, USVI

Geotechnical engineering for the multi-story parking structure of the CEK International Airport at St. Thomas, USVI.

1/2020: Abbvie Pharmaceutical, Barceloneta, PR

Geotechnical engineer in charge of geophysical testing by means of Electrical Resistivity tests to identify underground cavities at a retention pond in Abbvie Pharmaceutical.

1/2020: San Juan Cruise Piers, PR

Management of geotechnical drilling for the rehabilitation of Piers 4, Piers 11-13 and Panamerican Dock at San Juan, PR.

2/2020: Patillas Dam Rehabilitation, PR

Management of geotechnical drilling for the Federal Bureau of Reclamation (FBR) and Puerto Rico Electric Power Authority (PREPA) for the rehabilitation of the Patillas earth dam.

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5/2020: Reconstruction of the Pier at Customs Building, Red Hook, St. Thomas, USVI

Geotechnical consulting for the reconstruction of the pier within the Customs Building facilities at Red Hook, St. Thomas, USVI.

7/2020: Rockfall Hazard Assessment at Orange Cliff, St. Eustatius, Netherland Antilles

Geotechnical consulting for rockfall hazard mitigation at Orange Cliff, St. Eustatius, Netherland Antilles for the government of St. Eustatius.

3/2021: Rehabilitation of CEK International Airport at St. Thomas, USVI

Geotechnical engineering for the reconstruction of CEK airport main terminal building.

5/2021: Substation for the Water and Power Authority at US Virgin Islands

Geotechnical engineering for main station at St. Thomas and three substations at St. John, USVI.

7/2021: Punta Lima Wind Farm, Naguabo, PR

Geophysical testing consisting of Multi-channel Analysis of Surface Waves (MASW) for the reconstruction of thirteen wind turbines.

1/2022: USVI Medical Research and Training Center, St. Thomas

Geotechnical engineering for the construction of a new research center for the medicine school at St. Thomas, USVI.

4/2022: Warehouse 17, Bacardí Rum Distillery, Cataño, PR

Geotechnical engineering for the construction of a storage warehouse at Bacardí Rum Distillery.

5/2022: Bay Garden Condo at St. Croix, USVI

Geotechnical engineering for the mitigation of differential settlements at a condominium in St. Croix, US Virgin Islands.

6/2022: Charlotte Kimelman Cancer Institute, St. Thomas, USVI

Geotechnical engineering for the expansion of an existing hospital at St. Thomas, USVI.

7/2022: Gov. Juan F. Luis Hospital, St. Croix, USVI

Geotechnical engineering for the reconstruction of GJFL Hospital in St. Croix, USVI.

8/2022: Roy Schneider Regional Medical Center, St. Thomas, USVI

Geotechnical engineering for the expansion of existing hospital in St. Thomas, USVI.

8/2022: Gallows Bay Drainage Improvement, St. Croix, USVI

Geotechnical engineering for a government drainage improvement project at St. Croix, USVI.

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9/2022: Cruise Ship Pier Expansion at Little Bay, Montserrat

Management of offshore geotechnical drilling and laboratory testing for the main contractor in charge of the design of the extension for the cruise ship pier at Little Bay, Montserrat.

10/2022: Immigration and Customs Office at St. John's Bay, Antigua

Management of geotechnical drilling and laboratory testing for the main contractor in charge of the design of the Customs Office at Antigua, WI.

11/2022: Micropile Construction for Deaerator Tank at Bristol Myers Squibb Pharmaceutical

Design and construction of Micropile foundations for a Deaerator Tank at BMS, Manatí, PR.

11/2022: Solar Farm at Paraquita Bay, Tortola, British Virgin Islands

Geotechnical engineering for a renewable energy plant at Paraquita Bay, Tortola funded by the British Virgin Island Electric Corporation.

2/2023: Solar Farm at Astra Zeneca, Canóvanas, PR

Geotechnical engineering for the construction of a Solar Farm at Astra Zeneca Pharmaceutical.

3/2023: US Courthouse Annex Building, San Juan, PR

Geotechnical engineering for the construction of a seven-story building at San Juan, PR.

3/2023: Micropile Construction at Janssen Pharmaceutical, Gurabo, PR

Design and construction of micropile foundations for a cogeneration plant at Janssen.