

**Eloy Ramos, P.E.**

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412-715-3265

**PROFESSIONAL SUMMARY**

The majority of Mr. Ramos engineering carrier was spent working for Soletache Bachy, a world leader in foundations and soil technologies. He is been involved in hundreds of geotechnical construction projects throughout United States, Puerto Rico and US Virgin Islands. Mr. Ramos has experience in all aspects of geotechnical construction including tunneling, slurry wall, secant piles, drilled shafts, CFA piles, micropiles, soil and rock anchors, retaining walls, slurry trench, compaction grouting, rock grouting, chemical and jet grouting and vibroflotation.

**EDUCATION**

Bachelor of Science, Civil Engineering  
Polytechnic University of Puerto Rico

Master of Engineering Management  
Polytechnic University of Puerto Rico

**PROFESSIONAL EXPERIENCE**

JPI Construction, LLC, Puerto Rico

- Manager, 2019 - present

Soletanche Bachy

Nicholson Construction Company, PA, USA a subsidiary of Soletanche Bachy

Soletanche Inc, Puerto Rico a subsidiary of Soletanche Bachy

- Senior Manager of Major Projects, 2013 – 2019
- Project Manager, 2005 - 2013
- Project Engineer, 2000 – 2005

**PUBLICATIONS, APPERANCES AND AWARDS**

- “Ground Freezing at Norris Cut Tunnel” – Pile Buck Magazine, July 2019
  - “Beneath Bicayne Bay”, Civil Engineering Magazine – American Society of Civil Engineers, January 2018
  - “Design-Build of watertight underground structures for tunneling in Miami, Florida”, Deep Foundation Institute, 2018
  - “A Dam Innovative Solution: Cutoff Walls and Pressure Grouting At Georgia’s Richland Creek Dam” - Association of State Dam Safety Officials, 2018
  - “Norris Cut Force Main Replacement Tunnel” – North American Tunneling 2018 Proceedings, Society for Mining, Metallurgic and Exploration, 2018
  - ” The Norris Cut Utility Relocation Project, Updating Aging Infrastructure for System Resiliency with Design-Build Methods” – Pipelines 2017 Proceedings, American Society of Civil Engineers, 2017
  
  - Speaker at the North American Tunneling Conference 2018, Washington DC, USA
  - Speaker at the DFI 43rd Annual Conference on Deep Foundations, 2018, Anaheim, CA, USA, (DFI)
  - Speaker at the Dam Safety 2018 Conference, Association of State Dam Safety Officials, Seattle WA, USA
  - Speaker at the ASCE Pipelines 2017 Conference, Phoenix AZ, USA
  - Speaker at the Florida Engineering Society Monthly Meeting, September 2016, Miami, FI, USA
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- Project of the Year for the Norris Cut Tunnel Project, 58<sup>th</sup> Annual Engineers Gala, Cuban American Society of Civil Engineers, Miami FL, USA
- Design Innovation of the Year for the Norris Cut Utility Relocation Project, New Civil Engineer Tunneling Festival 2016, London UK
- Project of the Year for the Norris Cut Tunnel Project, ASCE Florida Chapter Annual Meeting 2016

## KEY PROJECT EXPERIENCE

Over the course of his almost 20 years with Soletanche Bachy, Mr. Ramos has directly managed the following relevant and significant projects.

### Various Techniques

- Richland Creek Dam and Reservoir, Dallas, GA – Project Manager
    - Amount: \$12,537,400
    - Construction period: 3/14/2017 - 10/15/2018
    - **Description:** As part of this project, a seepage reduction barrier was required to be installed underneath the proposed earthen dam to address the permeable residual overburden soils, and partially weathered rock/rock. The solution provided was a combination of a 1,250-foot (381-m) long cutoff wall installed up to 95-feet (29-m) deep through the overburden and keyed into rock underlain by a double-row pressure-grouted curtain 2,100-feet (640-m) long installed up to 140-feet (42.7-m) deep through overburden and into the weathered rock formation.
  - Design-Build Services for the Replacement of the Existing 54-Inch Sanitary Sewer Force Main pipeline from the Central District Wastewater Treatment Plant to Fisher Island under Norris Cut Channel - Miami, FL – Project Manager
    - Amount: \$72,400,000
    - Construction Period: 01/23/14 – March 2017
    - **Description:** Design-Build contract to replace an existing force main from Virginia Key Central Wastewater Treatment Plant under the Biscayne Bay Norris Cut channel to Fisher Island. The project involved the replacement of an existing 54-inch sewer force main for a 60-inch replacement. In order to install the 5,300 feet of 60-inch internal diameter fiberglass reinforced polymer mortar pipe below the bottom of Biscayne Bay at Norris Cut, a tunnel boring machine (TBM) was launched from a 42-foot diameter and 89-foot deep secant pile shaft on Virginia Key and a nine and half foot diameter precast segmentally lined tunnel was constructed as the TBM bored towards a 28-foot diameter and 72-foot deep soil-cement mixed retrieval shaft on Fisher Island. The complex subsurface geotechnical conditions of South Florida made this project a challenging one requiring unique and many “world’s first” designs. Some of the ground techniques used: Tunneling, Secant Pile Walls, Soil mixing, permeation grouting, ground freezing and horizontal directional drilling.
  - World Trade Center– New York, NY – Vehicular Security Center 1&2 - Project Manager
    - Amount: \$50,000,000
    - Construction Period: 2010 - 2012
    - **Description:** This World Trade Center contract included the installation of the perimeter foundation and excavation work associated with the Vehicle Security Center and Parking Garage for the WTC Memorial and Museum. Phase 1 was performed in joint venture with a General Contractor and included the construction of 53,000 square feet of perimeter slurry walls and subsequent buttress wall bracing, the installation of 190 tiebacks with up to 27 strands, and the installation of a steel raker system during the excavation of approximately 75,000 cubic yards of soil from the site. Phase 2 included secant pile walls, tiebacks, micropiles, jet grouting, compaction grouting and permeation grouting.
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- Greenwich Street Corridor, New York, NY – Project Manager
  - Amount: \$6,200,000
  - Construction Period: October 2009 - February 2010
  - **Description:** This contract used top-down construction to build a box that braced the subway line. This formed the foundation for the future extension of Greenwich Street that bisected the World Trade Center site.  
The geotechnical work included 31 micropiles, 10 ¾" OD N80 casing & 1 #28 bar 75 ksi drilled under 12' headroom, approx 50' feet long including 10 foot rock socket. 20 micropiles in deep rock area, 10 ¾" OD N80 casing & 1 #28 bar 75 ksi drilled under 12' headroom, approx average 75 feet long including 10 foot rock socket. 42 micropiles in super column areas, 10 ¾" OD N80 casing & 1 #28 bar 75 ksi drilled with unrestricted headroom, approx 17 feet long including 10 foot rock socket. 71 rock tie downs in rock, 3" dia 150 ksi DCP bar drilled under 12' headroom, 45 feet long all in rock. 16 strand tie backs through soil to rock, avg. 12 strands DCP tendons drilled from various elevations, 15' headroom, ave 60 feet long. 13 bar tie backs through soil to rock, 3" dia 150 ksi DCP bar drilled from various elevations, 15' headroom, avg. 60 feet long. 34 bar rock anchors, 3" dia 150 ksi DCP bar drilled from various elevations, 15' headroom, ave 60 feet long.

### Piles

- 133 Greenwich Street Micropiles, New York, NY – Project Manager
    - Amount: \$2,000,000
    - Construction Period: December 2011 - February 2012
    - **Description:** 141 micropiles 13-5/8" diam, depth 60-ft avg, rock socket 12-ft to 16-ft for a hotel building.
  - Replacement of the 791 Bridge, San German, Puerto Rico – Project Manager
    - Amount: \$800,000
    - Construction Period: 2008 - 2009
    - **Description:** Project consisted in a bridge structure requiring 50 ft length drilled shaft with 6 ft rock socket. Excavation was made with the use of casing up to 20 ft due to the presence of sands and gravels and with the use of polymer slurry for the next 30 ft of excavation. The scope included an Osterberg cell test. The work also included the extension of the piles 10 feet up to the cap beam elevation.
  - Paradisus Coco Beach Time Share - Rio Grande, Puerto Rico – Project Manager
    - Amount: \$1,200,000
    - Construction Period: 10/30/2006 - 10/5/2007
    - **Description:** Augered cast in place piles project (800 each, 16-inch diameter average length 42-feet) for a hotel development project.
  - HR Retail Plaza – Hato Rey, Puerto Rico – Project Manager
    - Amount \$380,000
    - Construction Period: 2007
    - **Description:** Auger cast in place piles (83 each, 24-inch diameter, capacity 200-ton) for a parking garage building. The work included a static load test.
  - Sanchez Erazo School – Bayamon, Puerto Rico – Project Engineer
    - Amount: \$160,000
    - Construction Period: 2005
    - **Description:** Augered cast in place piles project (27 each, 2 feet diameter piles installation and testing program) for a three-story building.
  - Sala Sinfónica – San Juan, Puerto Rico – Project Engineer
    - Amount: \$1,200,000
    - Construction Period: 2005
    - **Description:** Augered cast in place piles project (455 each, 420mm diameter and 77 each 620mm piles installation) for a building extension.
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- Parque Forestal - Guaynabo, Puerto Rico – Project Engineer
  - Amount: \$150,000
  - Construction Period: 2004
  - **Description:** Augered cast in place piles project (25 each, 620mm piles installation) for a housing building development.
- Torres Cibeles – San Juan, Puerto Rico – Project Engineer
  - Amount: \$2,000,000
  - Construction Period: 2003
  - **Description:** Foundation system for apartment building tower consisting of 300 auger cast piles (2-foot diameter, average depth 55 feet) and 48 strip piles (2 foot by 9-foot, average depth 65 feet).

### **Vibroflotation**

- 1490 Dumont Avenue – Brooklyn, NY – Project Manager
    - Amount: \$600,000
    - Construction Period: 07/20/09 - 09/07/09
    - **Description:** Project consisted of the construction of 450 vibro-compacting points to improve the ground bearing pressure of an approximate 30,000 square foot print of a building to be founded over loose sands.
  - JW Marriott, Rio Grande, Puerto Rico – Project Manager
    - Amount: \$4,000,000
    - Construction Period: 2008 - 2009
    - **Description:** Project consisted of the construction of a new JW Marriot Hotel. Due to the presence of liquefiable soils (loose sand) and highly compressible material (peat) a system including 198,480 linear feet of vibro-replacement stone columns were installed to diminish the liquefaction potential as well as drain the existing oversaturated peat.
  - Rio Blanco Off Stream-Stream Dam & Reservoir - Naguabo, Puerto Rico – Project Manager
    - Amount: \$7,000,000
    - Construction Period: 2005 - 2006
    - **Description:** Project consisted of construction of 100,000 linear meters of vibro stone/gravel/sand columns, 1.1m diameter, for an earth dam project.
  - Paradisus Coco Beach - Rio Grande, Puerto Rico – Project Engineer
    - Amount: \$400,000
    - Construction Period: 2005
    - **Description:** Project consisted of construction of 410 stone columns, 0.90m diameter, 9m depth for a three-story time share villas complex as part of a hotel development.
  - Yatchhaven, St. Thomas, US Virgin Islands – Engineer
    - Amount: \$3,000,000
    - Construction Period: March 2005 - June 2005
    - **Description:** Over 3400 Dry Bottom Feed (Vibro Displacement) Stone Columns to a maximum depth of 30 feet to prevent liquefaction of soil under a new yacht harbor. Achieve increased CPT tip resistance in compactable layers. Limit static and seismic settlements (estimated from CPT data) for footing loads up to 6000 psf.
  - Bristol - San Juan, Puerto Rico – Project Manager
    - Amount: \$250,000
    - Construction Period: 2004
    - **Description:** Project consisted of construction of 300 vibro-stone columns, 1m diameter for a building construction.
  - Aqua – San Juan, Puerto Rico – Project Engineer
    - Amount: \$100,000
    - Construction Period: 2003
    - **Description:** Project consisted of construction of 200 vibro-stone columns, 1m diameter for a building construction.
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- Access Ramp to Sector Bechara from PR-22 – San Juan, Puerto Rico – Project Engineer
  - Amount: \$311,000
  - Construction Period: 2002
  - **Description:** Project consisted of construction of 80 vibro stone columns, 1m diameter for the soil improvement of an embankment on a bridge construction project
- Paradisus Coco Beach - Rio Grande, Puerto Rico – QA / QC Engineer
  - Amount: \$5,000,000
  - Construction Period: 2001
  - **Description:** Project consisted of construction of 8,000 stone columns, 0.90m diameter, 30-foot depth for a hotel development.

### **Secant Pile Wall**

- Morrow Park City Apartments, Pittsburgh – Project Manager
  - Amount: \$3,500,000
  - Construction Period: July 20014 - September 2014
  - **Description:** Design and construction of 28,000 square feet of permanent secant pile wall for support of excavation and permanent foundation of an apartment complex including a two stories underground garage. The secant pile wall consists of 274 primary piles 36 inch diameter, 30 feet deep, drilled using augercast pile technique and 274 reinforced secondary piles 36 inch diameter 35 feet deep drilled with segmental casing technique. The scope also included the installation and removal of a temporary bracing system.

### **Slurry Wall**

- OARS Shaft 3 – Columbus, OH – Project Manager
    - Amount: \$ 13,108,492
    - Construction Period: 2010 - 2012
    - **Description:** Three diaphragm wall shafts for tunnel access. Excavation of diaphragm walls was performed using a hydraulic clamshell and Hydrofraise to depths of 107'-115' below ground surface (80'-94' below groundwater table). The shafts were constructed through ground conditions of saturated clays, silts, sands, gravels, cobbles, boulders, weathered rock and hard rock. Grouting around the three shafts in the rock formation. Construction of a cutter soil mixed wall at one shaft. Jet grouting of the annular space between the cutter soil mixed wall and one shaft.
  - North Shore Connector - Pittsburgh, PA - Project Manager
    - Amount: \$5,400,000
    - Construction Period: 12/11/2007 - 10/5/2008
    - **Description:** 37,000 square feet of diaphragm wall for a cut and cover section of a metro line. Wall thickness 3 feet, average excavation depth 60 feet, rock excavation, 8 feet completed using a combination of drilling and chiseling. Another section of the wall was also constructed by CSM soil mixing to 60 feet depth.  
20,000 square feet of cement-bentonite wall for another cut and cover section of the same metro line. Wall thickness 32 inch, average excavation depth 40 feet, rock excavation 3 feet by means of chiseling.
  - Conservatorio de Musica – Santurce, Puerto Rico – Project Manager
    - Amount: \$ 1,800,000
    - Construction Period: 02/16/06 - 06/08/06
    - **Description:** 17,500 square feet diaphragm wall for the support of excavation of an underground parking garage on an historic building. Wall thickness 2 feet, excavation depth 50-90 feet, polymer was used as excavation slurry. Included the construction of 42 tiebacks and struts installation. Ground water table at 8-10 feet below ground surface.
  - Ciudadela de Santurce – San Juan Puerto Rico – Engineer
    - Amount: \$16,000,000
    - Construction Period: 2005
    - **Description:** Diaphragm wall and deep foundations contract (110,000 square foot of 2 foot thick diaphragm wall with 225 temporary tie-back anchors including the construction of 100 each 36-inch diameter piles. Testing program included PDA, Statnamic and Static Load test).
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- World War II Memorial – Washington, DC – Project Engineer
  - Amount: \$2,300,000
  - Construction Period: 2001 - 2002
  - **Description:** 40,920 square foot diaphragm wall, 30-inch-thick and average depth of 35 feet, 3 feet of rock excavation.

### **Slurry Trench**

- New Jersey Turnpike – Interchange 6 to 9 Widening Program – Project Manager
  - Amount: \$563,170
  - Construction Period: 2010
  - **Description:** Slurry trench project consisting of the construction of 81,477 square feet of a soil-bentonite cutoff wall to create 2 catch basins to for storm water management.
- Rio Blanco Off-Stream Dam & Reservoir – Naguabo, Puerto Rico – Project Manager
  - Amount: \$2,000,000
  - Construction Period: 2006
  - **Description:** Slurry trench project consisting of the construction of 155,000 square feet of a soil-bentonite cutoff wall for a dam. Wall thickness 6 feet, average depth 53 feet. Excavation with the use of a long reach excavator.

### **Tiebacks**

- Colinas del Bosque – Bayamon, Puerto Rico – Project Engineer
  - Amount: \$650,000
  - Construction Period: 2003
  - **Description:** Tieback anchors consisting of the installation of 70 tendon anchors, 8 inches diameter, 42m long for a retaining wall on a housing development project.

### **Compaction Grouting**

- CSX Riverline Stabilization – Albany, NY – Project Manager
    - Amount: \$2,870,000
    - Construction Period: March 2013 – July 2013
    - **Description:** The CSX River Stabilization project consist of up to eight sites of generally cross-valley embankments that range from 25-ft to 60-ft tall. The project involved the construction of compaction grouting along approximately 3,200 linear feet of rail track consisting of approximately 33,570 linear feet of drilling and approximately 3,150 cubic yards. The work was required due to settlement of the existing embankments that support the active track. The goal was to underpin the existing embankments and provide vertical support.
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