



# DOCKBUILDING

## Dockbuilding

Our extensive menu of Dockbuilding Services includes:

- Construction and restoration of bulkheads, piers, docks, wharves and marinas, including pile driving
- Pile reinforcement and pile cap repairs and installation
- Concrete and structural repairs, including crack and spall repairs – both above and below water
- Underwater grouting and epoxy injection operations
- Installation and repairs of bracing and sheeting
- Installation of refuse and debris barriers
- Site clearance and excavation
- Custom design and fabrication

### Con Edison – Harlem River 3rd Avenue Bridge Submarine Cable Survey

Needing to conduct a survey of 20 submarine cables running along the floor of the Harlem River in five locations, Con Edison turned to MVN Associates to address both the operational and environmental challenges of the project.

Location of the cables required removal of more than 800 cubic yards of contaminated river mud to depths of more than 20 feet. This required custom-design and fabrication of a non-conductive dredging system for operation by divers near live cables. MVN designed a barge-mounted filtration system that safely decontaminated more than 7 million gallons of river water at a pace of more than 1,000 gallons per minute. Equally important as the successful operation of the equipment and project plan was MVN's ability to meet or exceed all environmental requirements of Con Edison, the New York State Department of Environmental Conservation and the Department of Environmental Protection.

### National Grid – Glenwood Landing Bulkhead

Water is essential to the operation of power plants yet also poses ongoing challenges for power generators, as bodies of water are by nature destructive. At the same time, power plants are 24/7 operations and challenges demand real-time solutions that do not interrupt those operations. When National Grid faced a failing bulkhead at its Glenwood Landing facility they turned to MVN Associates. MVN installed 600 linear feet of sheet pile bulkhead within 18 inches of the existing, failing structure. The custom-designed solution included a grouted tieback anchor system considering the existing structure and a custom enclosure to eliminate washout.



### Con Edison – Harlem River Gas Main Emergency Bulkhead Repair

MVN Associates was brought in by Con Edison to perform emergency bulkhead repairs to a failing bulkhead surrounding a 36-inch natural gas main. Recognizing the importance of avoiding service disruption for both the utility - requiring work to be done while the main remained operational - and an active Mass Transit Authority rail yard, as well as the need for safety while working near live gas in northern Manhattan, MVN custom-designed an appropriate project plan and construction technique. MVN repaired the bulkhead and enabled retirement of a gas main that had been in service for more than a century while providing Con Edison with the responsiveness and commitment to safety demanded of a public utility by both the public and regulators.

### Con Edison – Randal's Island Bridge Installation

When Con Edison required installation of a bridge over the Bronx Kill for new electrical conduits beneath an existing railroad bridge they turned to MVN Associates for the complicated project. MVN was charged with installing the conduit bridge beneath the trestles of an existing railroad bridge leading to the Hell Gate Bridge, including custom-development of construction techniques for sub-assembly and installation of the bridge in a low-clearance area.

MVN installed three banks of 12 conduits for the project. Equally important was coordination with both Con Edison and New York City engineers to enable transfer of ownership of the bridge from the utility to the city after completion of the work. MVN's familiarity with all parties proved highly conducive in ensuring on-time fulfillment of the project.



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# DIVING & MARINE SERVICES

## Diving & Marine Services

Our Commercial Diving services include:

- Underwater inspection, construction and repair
- Placement and repairs of outfall pipelines and submarine utility cables, including trenching, excavation and jetting
- De-watering of various structures
- Underwater structural concrete repairs
- Beach and waterfront erosion control systems
- Underwater drilling and blasting
- Vessel salvage operations, including lifting and spillage containment
- Hydrographic surveys
- Tide gate and cofferdam installation and repairs
- Above- and below-water inspections and surveys
- Color video and photography inspection and production services

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### **World Financial Center/Wagner Park – Battery Park City Authority**

MVN Associates will forever be tied to the World Financial Center, having lost all on-site equipment and materials on 9-11. Therefore, it was fitting that the Battery Park City Authority has turned to MVN to assist in the reconstruction of the center. As part of timber sheeting remediation efforts, MVN was called upon to install 1,900 linear feet of reinforced concrete wall under the World Financial Center. A custom-designed project plan included underwater excavation of more than 2,000 tons of rip rap stone and design, construction and implementation of a conveyance system able to pump concrete underwater for more than 700 feet. All work plans were designed to maximize productivity while minimizing disruption in one of the city's busiest locations. In addition, MVN designed and implemented the first combined renewable energy system, utilizing wind and solar power, in New York City.

The Battery Park City Authority also called on MVN to install 540 linear feet of reinforced concrete wall beneath the Wagner Park relieving platform at the southern end of Battery Park City. The project entailed the wall's installation and underwater excavation of more than 540 tons of rip rap stone within one of New York's most treasured parks.



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## Mechanical Services

Our expertise in Mechanical Services includes:

- Millwright services, including rotating equipment optimization, maintenance and repair employing OPTALIGN® smart by Ludeca Inc.
- Rigging
- Traveling Water Screen installation and maintenance
- Boiler repair and servicing
- Ship-to-shore oil and steam conveyance systems, maintenance and repairs



### Astoria Energy – Emergency Turbine Repair

When Astoria Energy experienced mechanical difficulties with a steam turbine generator, the plant faced reduced operational output and significant cost impacts. Astoria turned to MVN Associates to make emergency repairs within a rigidly defined window of opportunity to minimize plant downtime and lost revenues.

MVN safely removed an 85-ton rotor through the side of the housing building, working 30 feet above ground. Our trained team made necessary repairs to the turbine stator, including a complete stator rewind, and reinstalled the rotor after completing off-site repairs. The generator was returned to full service on time, minimizing the event's impact on plant production.

### Keyspan Energy – Ravenswood Power Plant

The magnitude of power generation is reflected in the size and cost of the equipment used for operation. The correct assembly and safe transport of that equipment is essential to both a power plant's operation and its cost-effectiveness. Keyspan trusted MVN Associates for assembly and transport of an 18-cell air-cooled condenser system and related components weighing 880 tons for the utility's Ravenswood Power Plant.

The project entailed sub-assembly of 18 air-cooled condenser cells, the main steam return elbow, manifold, ducts, risers and header piping and safe transport of this equipment by barge. Individual components of the project weighed in excess of 120 tons.



## Environment

We offer our clients a full menu of Environmental Services that enable them to meet increasingly rigid city, state and federal regulations and standards, often while enjoying cost savings, including:

- Remediation, both above and below water
- Intake and tunnel sediment, silt and debris removal
- Rip rap installation and restoration

MVN Associates has developed a unique 316(b) solution that provides the power generation industry full compliance at considerable savings with minimal operational disruption.

### Con Edison – Manufactured Gas Holding Tank Remediation

Once the marvels of a developing society hungry for gas for lighting and heating, manufactured gas holding tanks present the communities they once served with overwhelming environmental challenges when their days are past. When Con Edison moved to retire its manufactured gas plant in Astoria, they turned to MVN Associates for environmental expertise to remediate more than 8,000 tons of MGP waste.

MVN custom-designed remediation techniques for the project, including: deep pit excavation; on-site solidification using centrifuge technology; and development and application of safe work practices for use at heights of 50 feet that resulted in zero lost time accidents. Crews operated 24 hours per day to meet the project deadline and MVN coordinated efforts with both Con Edison and applicable regulatory agencies to ensure full compliance with all operational and environmental standards.

### Con Edison – Pole Replacement

When Con Edison was required to both remove and install transmission poles in two environmentally sensitive areas in Staten Island, the utility turned to MVN for a solution to the challenge. Due to the nature of the environment, the New York State Department of Environmental Conservation required the work be performed without heavy equipment and with minimal disturbance of the surrounding area.



MVN developed a solution utilizing a construction helicopter to relocate the poles into and out of the area, thereby resulting in minimal disturbance to the environment.

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# SPECIALTY WORK

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At MVN Associates we pride ourselves on innovation and creativity, with our expertise and experience across multiple disciplines enabling us to see solutions to challenges other less diverse companies do not.

Our ability to define and implement unique project plans and achieve success where others see impediments has enabled us to build a reputation as the company that never says, "It can't be done." With successes such as relocating the Concorde to the Intrepid Sea, Air & Space Museum, MVN Associates has become the partner to turn to when challenges seem beyond conquering.

### Concorde Relocation to the Intrepid Sea, Air & Space Museum

Just as the supersonic transport technology that gave birth to the Concorde was born in imagination and innovation, so too was the solution of transporting the plane from its temporary holding at JFK Airport to the Intrepid Sea, Air & Space Museum along Manhattan's West Side.

Facing challenges comprising harbor and estuary tides, weather, bridge heights and channel widths, MVN Associates designed and implemented a project plan employing multiple barges and tug boats working in unison to move the Concorde to its new home. Despite multiple challenges MVN completed delivery on time without incident.

### Nomadic Museum – Bianimale Foundation

Artist Gregory Colbert's extraordinary exhibit, Ashes and Snow, has touched millions with its portrayal of astounding symmetry between animals and humans. The housing of his work demanded innovation and creativity and MVN Associates was called upon to build a home for Colbert's New York City premiere that would do justice to the artist and his work.

Working with a cross-section of artists, engineers, architects and city authorities to ensure the artist's visions were met, MVN



erected a 700-foot museum made of 150 shipping containers, 30-inch diameter columns and a fabric roof on Pier 54 in Manhattan's West Side. In keeping with the tone of Colbert's work, MVN custom-designed methodologies to safely erect the museum out of non-traditional building materials such as columns and trusses made from recyclable cardboard. In addition, a lack of on-site space required sub-assembly of various components on MVN property and transport via barge.

### NRG – Arthur Kill

Section 316(b) of the Clean Water Act presents the power generation industry with significant challenges, both environmental and financial. MVN Associates has developed and achieved excellent results with our unique and innovative Smart Screen™ traveling water screen technology that offers power plants much lower costs, significantly shorter downtime for installation and greater efficiency than other 316(b) compliance options.

The effectiveness of the Smart Screen™ technology is being demonstrated at the NRG power plant on the Arthur Kill in Staten Island, where the plant has seen a significant increase in 316(b) screening effectiveness. MVN integrated its Smart Screen™ technology into the plant's existing control systems for full control and monitoring and performed system evaluations to allow for modifications and optimization. As a single-source solution for NRG, through our partnership with Atlas Manufacturing Company MVN is handling all aspects of design and construction, including engineering, mechanical, diving and electrical.



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