



moffatt & nichol

PORTS AND MARINE FACILITIES



ABOUT US

Moffatt & Nichol is a leading global infrastructure advisor specializing in the planning and design of facilities that shape our rivers, harbors, and coastlines and an innovator in the transportation complexities associated with the movement of freight.

As one of the largest specialized maritime planning and engineering firms in the world, Moffatt & Nichol has played a vital role in the evolution of the modern port. Since the introduction of containerization, the company has continued to build a regional and international reputation for providing innovative solutions to support virtually any port, maritime, or freight transportation assignment, anywhere in the world. Clients have come to rely on our integrated services and project solutions today's rapidly evolving goods movement trends, environmental regulations, and sophisticated technologies. However, at Moffatt & Nichol we are constantly focused on what comes next, and that translates to sustainable solutions to prepare clients for a resilient tomorrow.

Moffatt & Nichol's area of expertise includes marine terminal planning and design, inland ports, intermodal rail, coastal engineering, dredging, ocean structures, marinas and financial advisory services. For more than 75 years, Moffatt & Nichol's exceptional level of innovation has become a comprehensive range of specialized port disciplines. The firm is able to integrate its unique capabilities and skills to meet specific project demands, from economics and financial analysis to planning, design and construction document preparation, and on to post-construction award services and program management. Our projects include container terminals, liquid bulk terminals, dry bulk terminals, oil and gas facilities, intermodal terminals, freight corridors, waterfront structures, cruise and ferry infrastructure, and naval and military waterfront facilities.

Moffatt & Nichol is one of the foremost marine planning and engineering firms in North America and consistently ranks among Engineering News-Record's top marine and port facility design firms.



2022-2024

ENR #1
TOP UNITED STATES
DESIGN FIRMS

MARINE & PORT
FACILITIES

MOFFATT & NICHOL

*Moffatt & Nichol's project portfolio includes more than **6,000** projects in over **80** countries. A truly global infrastructure advisory firm, we provide engineering and consulting services to clients in the marine terminal, transportation, energy, environmental, federal, and urban development markets around the world.*



EXPLORE 
SOLUTIONS

CONTAINER AND CARGO FACILITIES, AUTOMATION



MULTIMODAL CONNECTOR

GEORGIA PORT AUTHORITY | SAVANNAH, GA

The Port of Savannah among the busiest container ports in the U.S., and continued rail expansion is a key component to improved mobility for the transport of goods in the country. Moffatt & Nichol is serving as the program manager and engineer of record for the Georgia Port Authority's proposed Savannah International multimodal connector project.



GARDEN CITY TERMINAL PROGRAM MANAGEMENT

GEORGIA PORTS AUTHORITY | SAVANNAH, GA

The Georgia Ports Authority comprises both deepwater ports and inland terminals. As program manager, Moffatt & Nichol has performed feasibility studies, market analyses, cost analyses, and capital budgeting, and provided services for port planning, design, and on-call support for priority projects for the authority's numerous terminals.



MIDDLE HARBOR CONTAINER TERMINAL

PORT OF LONG BEACH | LONG BEACH, CA

The Middle Harbor redevelopment combined two aging terminals into one modern, fully automated container terminal with an annual capacity of more than 3 million TEUs. Its electric-powered cargo-handling equipment places it among the world's cleanest container terminals. Moffatt & Nichol provided program management services for planning, operational master planning, and design.



KHALIFA PORT AND INDUSTRIAL ZONE MASTER PLAN GATE

ABU DHABI PORTS COMPANY | ABU DHABI, UAE

Moffatt & Nichol performed a series of planning and engineering studies to complete an updated master plan and basis of design for a new container terminal as part of the multi-phased development of a new port facility that included both onshore and offshore facilities. Moffatt & Nichol also developed detailed design construction documents for the Phase 1 automated container terminal.



HAMAD PORT CONTAINER TERMINAL, PHASES 2 AND 3

STATE OF QATAR | DOHA, QATAR

Moffatt & Nichol, as part of the development team, provided master planning, detailed design, and construction phase services for Phase 2 and Phase 3 of a new fully automated terminal at Hamad Port. In addition to port and terminal planning, tasks included defining the automation strategy, preparing an operations plan, and creating a procurement strategy.



PORT OF SINGAPORE EMULATION SYSTEM

PORT OF SINGAPORE AUTHORITY, CORPORATION LIMITED | SINGAPORE

Moffatt & Nichol delivered a full emulation system to the Port of Singapore Authority (PSA) for testing the in-house terminal operating system and equipment control systems at a facility that is both automated and manned. With a throughput of 32 million TEUs per year, the Port of Singapore is one of the largest port complexes in the world.



TIANJIN TERMINAL YARD CONSOLIDATION

TIANJIN PORT | TIANJIN, CHINA

Tianjin Port selected Moffatt & Nichol to support its consolidation of five large container terminals to improve overall efficiency and reduce traffic congestion inside and outside the terminal facilities at the largest port in northern China. Services provided included port and terminal planning, simulation, and a review of the design concept. The project increased efficiency, especially at the gate.

DRY BULK AND MATERIAL HANDLING



ADM SANTOS TECHNICAL STUDIES

ADM DO BRASIL LTDA | SAO PAULO, BRAZIL

ADM do Brasil upgraded its terminal in Santos to a higher operational capacity that better supports Brazil in the global grain market, establishing a benchmark for sustainable operations. Moffatt & Nichol helped ADM improve railroad discharging and supported equipment selection and automation design. The terminal will be one of the most modern and environmentally friendly railroad discharge operations in the country.



GUINEA BAUXITE TECHNICAL DUE DILIGENCE

GUINEA ALUMINA CORPORATION | BOKE, GUINEA

Guinea Alumina Corporation, a wholly owned subsidiary of Emirates Global Aluminium, developed a new mine in the Republic of Guinea, in West Africa and now exports metallurgical-grade bauxite, the ore from which aluminium is derived. Moffatt & Nichol, as part of an independent engineering team, reviewed and evaluated the project's port terminal and transshipment elements, notably technical studies and design.

COMMERCIAL



SELL-SIDE MARKET AND TECHNICAL DUE DILIGENCE

ORIENT OVERSEAS (INTERNATIONAL) LIMITED LTD.

Moffatt & Nichol has worked extensively with the Long Beach Container Terminal and acted as a technical and market advisor for the terminal's proposed sale, providing assessments of the asset's current market position, future growth, and required operational improvements and Capex to service growth expectations.



TERMINAL 46 CRUISE STUDY

PORT OF SEATTLE | SEATTLE, WA

The Port of Seattle is the gateway for the Pacific Northwest cruise market, the busiest on the West Coast. For the Terminal 46 cruise terminal redevelopment, Moffatt & Nichol provided commercial advisory support services to Ports America. The market study analyzed the cruise market's potential to support the redevelopment. Study results were incorporated into the project's modeling and design work.

WIND PORTS



NEW JERSEY WIND PORT

NEW JERSEY ECONOMIC DEVELOPMENT AUTHORITY | NEW JERSEY

The greenfield New Jersey Wind Port, the first such U.S. purpose-built facility, will import, stage, preassemble, and load out turbine, tower, and blade components for commercial-scale offshore wind installations. Moffatt & Nichol led design for the port's marshaling and manufacturing space, heavy-lift wharfs, and access to the federal navigation channel.



HEAVY LIFT WHARF FOR OFFSHORE WIND PORT

ALBANY PORT DISTRICT COMMISSION | ALBANY, NY

After performing a site investigation and preparing a 30 percent concept design to support permitting, Moffatt & Nichol provided final design services for the port's heavy-lift capable wharf, the country's first offshore-wind-tower-capable assembly site. The wharf is designed to service an 80-acre offshore wind marine terminal manufacturing development, capable of supporting up to 6,000 pounds per square foot.

LNG, OIL, AND GAS ENERGY



ST. JAMES TERMINAL

AMERICAS STYRENICS LLC | ST. JAMES, LA

The St. James Plant is a world-scale styrene facility and also one of the largest consumers of hydrocarbon feedstocks on the Lower Mississippi River. Moffatt & Nichol provided site layout options, structural analysis and design, mechanical equipment design, and electrical and instrumentation design for the new deep-draft dock.



GOLDEN PASS LNG TERMINAL

GOLDEN PASS LNG | PORT ARTHUR, TX

Moffatt & Nichol initially provided marine facilities design support to an engineering, procurement and construction contractor during the front end engineering and design stage of liquefied natural gas terminal and then provided marine design and oversight services during construction. The design incorporates two LNG berths in a dredged slip along the main waterway adjacent to the LNG terminal.



SABINE PASS LNG IMPORT TERMINAL

CHENIERE LNG TERMINALS, LLC | GULF OF MEXICO, U.S.

The Sabine Pass LNG terminal covers more than 1,000 acres along the Sabine Pass, bordering Texas and Louisiana. Moffatt & Nichol undertook a sedimentation study to evaluate options for minimizing disruptions caused by maintenance dredging operations for existing and future slips. The team developed hydrodynamic and sedimentation models, calibrated to match the historic sedimentation patterns and accumulation rates.

FERRY FACILITIES



NEW YORK CITYWIDE FERRY STUDY

NEW YORK CITY ECONOMIC DEVELOPMENT CORPORATION | NEW YORK, NY

To update New York's plans to enhance and expand the East River ferry service, Moffatt & Nichol evaluated over 50 potential ferry landing sites, addressing operational, navigational, and environmental concerns. Conceptual design and capital cost estimates were prepared, and a policy discussion developed to address vessel wake issues and mitigation strategies.



GOLDEN GATE FERRY TERMINAL IMPROVEMENTS

GOLDEN GATE BRIDGE HIGHWAY AND TRANSPORTATION DISTRICT | LARKSPUR, SAN FRANCISCO, AND SAUSALITO, CA

The Golden Gate Ferry is a commuter ferry service in the Bay Area of Northern California, with ferry terminals providing transit connections to major business and tourist hubs in the region. Moffatt & Nichol provided design and environmental and construction support services for improving all three Golden Gate ferry terminals located at Larkspur, San Francisco, and Sausalito. Our work included structural design, coastal engineering and resilience planning and design, NEPA/CEQA permitting, float motion analysis, and ensuring designs were ADA compliant.

CRUISE HOMEPORTS AND PORTS-OF-CALL



ANTIGUA CRUISE PIER

ANTIGUA & BARBUDA PORT AUTHORITY AND GLOBAL PORT HOLDINGS | ST. JOHN'S ANTIGUA AND BARBUDA

Antigua is one of the most popular destinations for Eastern Caribbean cruises, and cruise lines carry tourists to visit St. John's Bay year round. Moffatt & Nichol provided engineering services for the planning, design and construction of a new cruise ship pier to accommodate Oasis Class cruise ships. The pier is being delivered as a design-build project with Meridian Construction as the contractor and Moffatt & Nichol as the lead design engineer. Moffatt & Nichol completed initial planning and Met Ocean studies to develop design criteria for the pier.



CROWN BAY AND THE SUB BASE DISTRICT, 10-YEAR VISION PLAN

VIRGIN ISLANDS PORT AUTHORITY | CHARLOTTE AMALIE, ST. THOMAS | U.S. VIRGIN ISLANDS

The Virgin Islands Port Authority engaged Moffatt & Nichol to create a renewed vision plan for the area, post Hurricane Irma and Hurricane Maria. The vision plan and the associated feasibility assessment evaluated the expansion of cruise berths to meet future market opportunities and incorporated feedback generated from extensive interaction with the community and cruise guests, Crown Bay tenants, cruise lines, and others.



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ABOUT MOFFATT & NICHOL

In 1945, John G. Moffatt and Frank E. Nichol formed partnerships in California and Oregon to provide engineering and design services for infrastructure on the rapidly growing U.S. West Coast, focusing on harbor works and waterways, bridges, buildings, industrial facilities, military installations, and public works. Since then, the company has expanded services to include economics, planning, architecture, and construction management for coastal and water resource, energy, environmental, transportation, and urban improvement projects. We are proud to have served public and private clients for more than 75 years, with 80 percent of our business from repeat clients. Today, from offices in North America, Latin America, and Europe, we continue to provide leading-edge engineering and consulting services to clients in the marine terminal, transportation, energy, environmental, and urban development markets around the world.

SERVICES

Ports

- Container and Cargo Facilities
- Military Facilities
- LNG, Oil, and Gas Energy
- Ferry Facilities
- Cruise Homeports and Ports-of-Call
- Dry Bulk and Material Handling
- Offshore Wind Energy

Water

- Numerical Modeling
- Watersheds, Rivers, and Floodplains
- Piers, Marinas, Wharves, and Waterfronts
- Urban Planning and Redevelopment
- Coastal Structures and Shoreline Stabilization
- Dredging and Sediment Management
- Beaches, Inlets, and Estuaries
- Stormwater and Green Infrastructure

Transportation

- Rail and Intermodal
- Bridges and Grade Separations
- Roadway and Civil

Environment

- Environmental Assessment, Investigation, and Remediation
- Permitting, Biological Assessments, and Monitoring
- NEPA/SEPA and Environmental Studies
- Compensatory Mitigation
- Watershed, Stream, Wetland, and Ecosystem Planning and Restoration
- Living Shorelines
- Water, Noise, and Air Quality Assessments

Commercial

- Transportation/Intermodal Studies
- Grant Application Support
- Strategic Development Studies
- Alternative Use Studies
- M&A Due Diligence Support
- Lenders' Technical Advisory Services
- Market Studies and Competitive Analysis
- Benefit Cost Analysis
- Container, Dry Bulk, and Cruise Volume Forecasts
- Master Planning Support

Contact

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