Liftech
LIFTECH CONSULTANTS INC.

Selected Wharf Projects

Client	Year	Project Location and Description
APL Limited	2011	Port of Los Angeles, Pier 300: Calculated crane loads on wharf and analyzed the landside crane girders to justify larger capacity.
Global Rigging & Transport, LLC	2010	Georgia Ports Authority, Savannah, Georgia: Analyzed the wharf structure to verify it was capable of supporting skid system loads for moving a container crane across the wharf.
Global Rigging & Transport, LLC	2010	Port of New Orleans, New Orleans, Louisiana: Analyzed the wharf structure to verify it was capable of supporting skid system loads for moving a container crane across the wharf.
APL Limited	2010	Dutch Harbor, Alaska: Calculated crane loads on wharf for modified MES crane with articulating boom. Performed study to verify wharf adequate for crane loads, designed wharf modifications to stow crane on wharf.
TransDevelopment Group	2010	Port of Richmond, Berths RCH-7 and RCH-8, Richmond California: Designed wharf repairs and modifications for berthing, mooring, and offload for Ro-Ro operations.
Moffatt & Nichol Engineers	2010	Port of Long Beach, Pier E: Provided recommended crane loads for new wharf structure at Pier E to support cranes with a 120 ft rail gage, dual trolleys, tandem front lift, and single back lift.
New York Container Terminal	2010	Staten Island, New York: Analyzed the existing crane girder system. Using state-of-the-art methods, justified enough capacity that strengthening modifications were not required for NYCT to procure larger and heavier cranes.
McKay International Engineers	2009	Port of Long Beach, CUT/LBCT Wharf: Provided crane loads for new wharf design with 42 m rail gage handling tandem lift cranes.
Terminales Rio de la Plata	2009	Buenos Aires, Argentina: Provided crane load estimates for a ZPMC crane with outreach increased from 45 m to 50 m and increased height.
Yusen Terminals Inc.	2009	Port of Los Angeles, Berths 212–214: Provided estimated crane wheel loads for four new dockside container cranes capable of serving 22-wide vessels for the existing terminal in Terminal Island. The wheel load study justified increased girder and pile capacity eliminating the need to strengthen the wharf.
Port of Richmond	2009	Terminal 3, Richmond California: Designed Terminal 3 extension using ductile batter piling.
Manson Construction / Dutra Group Joint Venture	2009	McNear's Beach Park Pier, Marin, California: Designed repairs including seismic upgrades to portions of pier damaged by barge.
Horizon Lines	2008	Port of Guam, Berth F-6: Designed wharf modifications for stowing cranes modified and delivered from Los Angeles.
Yantian International Container Terminals Limited	2008	YICT West Port Terminal, China: Provided crane wharf load estimates for two configurations: 1) 41 t single lift cranes with 45 m outreach, 24.38 m gantry rail span, 33 m lift height, 2) 61 t twin lift cranes with a 48 m outreach, 30 m rail span, and 36 m lift height.
Moffat & Nichol Engineers	2008	Yusen Terminal, Tacoma, Washington: Provided crane loads for a tandem lift crane configuration capable of serving 24-wide vessels.

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SSIT-Vietnam	2008	Cai Mep Terminal: Provided crane load estimates for new pier to support a newly purchased single hoist, tandem lift, rope trolley crane.
Port of Houston Authority	2008	Barbours Cut Terminal: Provided estimated crane loads for various crane configurations. The port used the estimated crane loads to select the appropriate wharf structure upgrade scheme to increase the allowable wheel loads for new larger capacity dockside cranes to serve larger vessels.
Manson Construction	2007	Cemex West Sacramento Import Terminal: Provided wharf design as part of design-build team for 550 ft long wharf for unloading cement from vessels.
Goteborg Hamn AB (GHAB)	2007	Port of Goteborg, Sweden: Provided crane wheel load estimates for two new Panamax cranes for the west quay. PHAB wanted to investigate a conventional crane design with twin trapezoidal boom, and a light-weight crane design with truss boom. PHAB used the wheel load estimates to determine if the wharf could support the new cranes.
Port of Houston Authority	2007	Bayport Terminal: Provided estimated design wheel loads, stowage pin loads, tie-down loads, and crane bumper stop loads for an extended wharf to support cranes serving 22-wide vessels.
Moffatt & Nichol Engineers	2007	Guam Kilo Wharf: Provided wheel load estimates to determine if the new wharf could accommodate a 50 ft gage rail-mounted dockside container crane.
Virginia Port Authority	2006	NIT North, Norfolk, Virginia: Provided wheel loads for two new tandem 40 cranes and modification of existing cranes. The port used the wheel load estimates to determine if the wharf could support the new and modified cranes.
AECOM USA, Inc.	2005	Port Freeport, Texas: Provided design wheel loads for cranes to service 22-container wide ships. The wheel loads were used by the port and the wharf designer to determine girder capacities of a new wharf.
ZPMC/DP World Vancouver	2004	Vancouver, Canada: Provided wheel load study of various 22-wide future cranes. The wheel load estimates were used by DP World Vancouver and the wharf designer to determine girder capacities of a new wharf.
Euromax Terminal	2004	Rotterdam, Netherlands: Predicted wheel loads for future jumbo quay cranes capable of serving Suezmax vessels.
TG Engineers	2004	Port of Guam: Design of two-berth wharf structure for the Guam Port Authority. Structure included a rail girder and supports for post-Panamax cranes.
Virginia Port Authority	2004	Newport News Marine Terminal, North Berths: Structural design to significantly improve the capacity of the existing stowage hardware that involved modifications of the existing hardware, new hardware, and improved integration with the existing wharf structure.

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APM Terminals	2004	Various terminals: Provided wheel load studies of various cranes to service 22-container wide ships. The wheel load estimates will be used by APMT to determine required crane girder capacities for new and existing wharves at various terminals.
Felixstowe Dock & Railway	2003	Felixstowe, England: Predicted wheel loads for placing a jumbo crane with a 120 ton, tandem twin-twenty spreader on a future wharf.
Virginia Port Authority	2003	Portsmouth Marine Terminal, Phases 1 through 4: Structural evaluation of the existing wharf capacity that resulted in a 35% increase in the calculated rated capacity of the existing wharf. Increasing the rated capacity eliminated the need to strengthen the existing wharf or to limit crane operations. Structural design of new stowage hardware and its integration with the existing wharf structure.
Modern Terminals	2002	Berth One, Kwai Chung, Hong Kong: Reviewed design load criteria on wharf design. Made design changes to increase the crane girder capacity. Design of curved rail. Reviewed design of switching system and frog to enable crane transfer between adjacent non-parallel wharves.
Port of Oakland	2001 – 2003	Berths 32–33: Structural design of the rehabilitation an existing 1,700 foot container wharf. The modifications included adding a new waterside crane girder and changing the crane rail gage to 100 ft.
Port of Oakland	1999 – 2000	Berths 57–59: Structural design of a new 3,600 foot container wharf, which uses 48 inch diameter cylinder piles and standard 24 inch prestressed piles in combination with cement deep soil mixing (CDSM). Liftech also developed a new ductile shear key design for use between wharf sections that is economical and easily repairable.
Marine Terminals Corporation	1999	Port of Los Angeles, Berths 121–126: Calculated wheel loads and provided recommendations on the acceptability of operating the ZPMC cranes on Berths 121 and 126. Investigate how much the outreach of the existing MHI cranes can be increased based on the allowable wheel loads of the berths.
Virginia International Terminals	1996	Norfolk, Virginia: Calculation of the ultimate wheel load capacity of the waterside and landside crane rail girders at all dockside wharves at Norfolk, Portsmouth, and Newport News. The calculated capacities were used by the Port to determine which existing cranes may be relocated to other wharves. Calculated the wheel loads of all the dockside container cranes at the port.
Port of Oakland	1994 – 1997	Port of Oakland: Conducted an extensive wharf and crane study to help the Port in their overall planning. Calculated the ultimate wheel load capacity of all crane rail girders, waterside and landside, at all dockside container wharves for current and future channel depths. Calculated the wheel loads of all the dockside container cranes at the port.

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Guam Port Authority	1993 – 1996	Port of Guam, Berths F3–F6: Structural design for replacement of an earthquake damaged container wharf consisting of tied back sheet piles and fill with a new concrete deck on pile structure.