

Liftech

LIFTECH CONSULTANTS INC.



Liebherr Crane Move Manila, Philippines

The goal: reposition a Liebherr Tango lightweight dockside crane.

The Liebherr Tango crane is light and flexible. Unlike typical dockside container cranes, the landside legs are pinned at the top. The crane loses stability when its landside legs are not supported by the gantry rail.

Liftech successfully designed a scheme to move the light crane safely on dock. The crane was supported on dolly assemblies at each corner and struts were placed between landside and water side legs. The crane was lifted off the rails and rolled back about 150 ft. The remaining two cranes were gantried into place, and the Liebherr crane was rolled back onto the rails.

The operation was completed in four days, two days ahead of schedule.

Reference:
International Container Terminal Services, Inc.
Manila Central, Philippines



Before



After

MES Crane Modification and Relocation Taiwan to Alaska

APL modified and relocated a late 1980's MES post-Panamax crane with articulating boom from their Kaohsiung, Taiwan, terminal to their Dutch Harbor, Alaska, terminal.

Liftech provided the structural design for modifications and relocation of the crane and reviewed the contractor's work. Crane modifications included changing the gage from 80 ft to 50 ft, adding ballast at waterside, modifying the tie-downs, and strengthening the crane structure to suit the conditions at Dutch Harbor.

Liftech also provided structural design for wharf modifications to accommodate the modified crane. Wharf upgrades included new stowage hardware, strengthening and replacing of two crane stops, and modifying and replacing tie-down hardware.

Reference:
APL Limited
USA



Paceco Cranes Relocation Oakland to Hawaii

Matson bought two used Paceco cranes from the Port of Oakland for their Sand Island facility. Rigging International transported them by barge to Sand Island. Liftech checked the cranes for the voyage forces, designed the reinforcing for the cranes and the tie-downs to the barge, and checked the barge structure for the voyage loads.

Reference:
Rigging International
Alameda, California



Coal Loader Crane Assembly and Transportation Los Angeles, California

The crane was designed by Krupp, built in Malaysia, and shipped in pieces to Los Angeles. Bickerton Iron Works was responsible for assembling the crane and transporting it from the assembly site to the LAXT terminal.

Liftech provided engineering assistance for the assembly of the crane and devised a scheme to connect two barges and roll the crane onto them.

The crane was supported on beams and dollies and rolled onto two 242 x 60 x 16 ft barges. The barges were connected with two hinged spacer beams and

two hinged braces. The flexible connection allowed the barges to move relative to each other in the vertical direction while minimizing the load transfer between them.

Reference:
Bickerton Iron Works
Torrance, California



Hitachi Crane Modification and Relocation Los Angeles to Guam

Horizon Lines and Matson Navigation purchased three Hitachi cranes located in Los Angeles, California, for relocation to Guam. The cranes were upgraded and strengthened for typhoon winds. Upgrades included a lift height increase of 8 feet, new drives and controls, diesel power, and new tie-downs.

Liftech provided the structural design for upgrade and relocation, assisted with bid evaluations, and reviewed the contractor's work.

Liftech also provided the design of the Guam wharf improvements in the crane stowage area.

References:

Horizon Lines, LLC
San Ramon, California

Matson Navigation Company
Oakland, California



Crane Modifications and Relocation Seattle, Washington, to Panama

APL needed two quay cranes quickly for their operation in Colon, Panama. Liftech helped them convert one crane and transfer both. The Paceco crane on the left in the picture above began life in 1982 at the Port of Oakland on 100 foot gage rails. Several years later, it was moved to Seattle. In 1994, Liftech designed a scheme to modify and move the crane to its current location in Panama.

The 100 foot gage was reduced to Panama's 75 foot gage by moving the lower landside legs toward the waterside. The overall depth of the portal beam was deepened from 4 feet to 8 feet with an inverted cap. The increased depth provided the required strength to transfer the load from the upper legs to the lower legs.

No major structural work was required above the portal beam. Thirty-six tons of new steel were added to modify the Paceco crane.

The modified crane was moved, along with a modified Star crane and two RTGs, to their new home in Panama. Liftech designed the seaweasting and voyage bracing for both cranes for Bickerton Iron Works.

Reference:
APL
Oakland, California



Crane Modifications and Relocation Port of Oakland, California

A new client at the Port of Oakland required post-Panamax cranes. The Port had two Hitachi Panamax cranes available at the client's berth and a Paceco Panamax low profile crane at another berth.

The two Hitachi cranes were raised 20 feet. The Paceco low profile crane was raised 32 feet, the gage was changed from 96 feet to 100 feet, the clearance between the legs was increased, the mechanical and electrical systems were upgraded, and the crane was moved to its new berth.

Reference:
Port of Oakland
Oakland, California



Relocation of a Liebherr Container Crane Buenos Aires Container Terminal, Argentina

Privatization of Buenos Aires's container terminals resulted in the relocation of River Plate Container Terminal, an Argentine stevedoring company, to new facilities within the harbor.

Liftech designed a scheme to relocate two Liebherr cranes and one Morris crane. Each fully erected crane was lifted with a 1000 ton capacity floating crane using a specially designed lifting truss.

Reference:
Terminales Rio de la Plata
Buenos Aires, Argentina



Crane Modification and Relocation Darwin, Australia

In response to Darwin Port Corporation's decision to relocate a 1980's IHI crane to a wharf with a different rail gage, Liftech designed a scheme to change the crane's gauge from 19.8 m to 25.3 m. The scheme involved extending the existing portal beams by five meters on the land side, relocating the landside legs, and removing the elevator track below the portal beam.

Liftech designed the lifting scheme and the lifting attachments, enabling the crane to be lifted with a floating crane and relocated.

Reference:
Robert Reid & Associates
Port Melbourne
Victoria, Australia



Kocks Crane Relocation Port of Oakland to Massachusetts Port Authority

Massachusetts Port Authority (Massport) purchased two Kocks low profile cranes from the Port of Oakland for capacity expansion of their Conley Terminal. The Oakland post-Panamax Kocks cranes were a near-perfect match for the Conley Terminal.

Low profile cranes, also known as shuttle boom cranes, are used where overall height is restricted because of aircraft clearance requirements. Because of their unique nature and limited demand, the cost of new low profile cranes is about 50% more than for a typical quay crane. Reuse of an existing crane is more attractive.

Liftech surveyed the condition of the cranes before the purchase and developed construction documents for modification and transport of the cranes from the Port of Oakland to Massport. We also provided bid review assistance and construction support services.

Structural modifications required for the Massport location were limited to minimal frame strengthening for higher storm winds, addition of a boom latch, installation of an 11.5 inch riser at the landside equalizer system, gantry bumper modifications, and gantry stowage pin modifications.

Liftech provided the procurement services to the Port of Oakland for the original Kocks crane purchase and assisted with the structural design of the cranes.

Client:
Fay, Spofford & Thorndike, Inc.
Burlington, Massachusetts



Crane Relocation Burnie, Australia

Liftech designed a lifting scheme and analyzed the crane structure for transporting a Paceco crane across a channel. The crane was lifted at four points using two shipboard derricks. It was secured outside the ship for transport.

Reference:
Robert Reid & Associates
Port Melbourne
Victoria, Australia