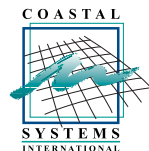


Roatan Cruise Port, Honduras

coastal engineering

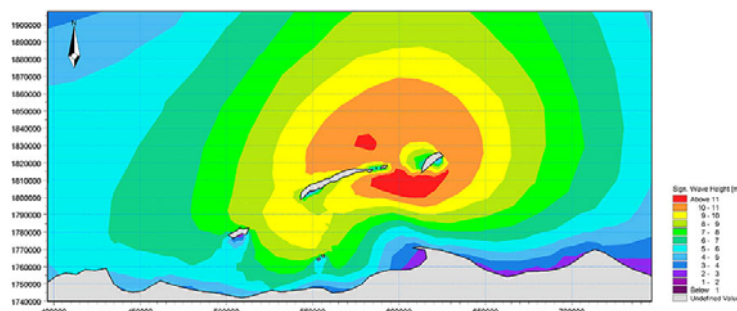


Central America has gained popularity as a cruise ship destination, and to meet the demand Royal Caribbean Cruises, Ltd., (RCCL) retained Coastal Systems to provide a design/build approach to expand the existing cruise ship terminal in Roatan, Honduras. Coastal Systems worked closely with architects and RCCL to prepare a master plan for the destination that incorporates passenger arrival improvements and retail/commercial development with adequate parking. The master plan includes a hotel and waterfront village development that will serve as a cruise ship destination port by day and offer a nightlife for local residents. A phased approach for the design and construction of the expansion area was prepared in conjunction with the approval process for environmental permits and submerged lands concessions. Phase II of the project will include the town center hotel, retail/commercial development and a marina.

Field investigations were conducted, including hydrographic surveys and marine resource mapping, to design the land reclamation project. A project impact minimization analysis was completed to address reef resources on the south side of the cruise ship pier, and a reclamation project designed at the north side of the pier. A mitigation plan was prepared for the anticipated reef impacts, which included the relocation of coral reef resources.

A coastal engineering analysis, which included design winds and waves, was completed to provide design storm surge and armor stone revetment criteria for the facility, as well as to

provide design conditions in future mooring analyses of expanded cruise ship berthing area. The coastal engineering analysis included numerical modeling with the DHI MIKE21 software to evaluate hurricane impacts to the area. The design-build approach allowed for the Phase I land reclamation project to begin in December 2006, only months after completion of the master plan. In addition, the shore protection revetment will be constructed using locally available armor stone.



Numerical Hurricane Model Simulation



Land Reclamation Under Construction

Client:	Royal Caribbean Cruises, Ltd.
Location:	Roatan, Honduras
Date of Completion:	2007 (Phase 1)
Construction Cost:	\$3,500,000 (Phase I)

