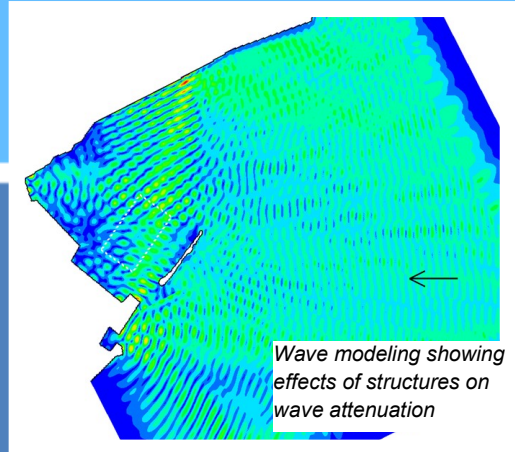




PROJECT DESCRIPTION

Coldwater Consulting undertook an assessment of wave conditions and wave agitation at the marina of the Pointe Claire Yacht Club on Lac St-Louis just west of Montreal. The study was commissioned by the yacht club to examine existing conditions at the marina and to provide recommendations on future works to reduce wave agitation in the marina.

The first stage of the study involved site investigations and the development of a wave hindcast—a prediction of wave conditions at the site based on the orientation of the site relative to the lake, and on prevailing winds.

Offshore wave conditions from the wave hindcast were used to drive a finite difference wave agitation model. The Hyper model was used for this study—a proprietary wave transformation model developed by Coldwater Consulting that is particularly well-suited to modelling harbours and marinas. The model takes into account the following processes:

- wave refraction (transformation of the waves over the uneven lake bed),
- wave diffraction (scattering of waves),
- reflection (the bouncing of waves off reflective surfaces such as marina walls and bulkheads), and
- the transmission (and partial reflection) of waves through floating breakwaters.

The Hyper model was used to re-create existing conditions and then to examine the effectiveness of various alternatives at reducing wave agitation. The study showed that a large proportion of the wave disturbance in the basin was coming from a recently constructed bulkhead (seawall) immediately to the east of the property, which was seen to reflect waves into the marina. Recommendations were provided for remedies to the problem along with preliminary cost estimates.

CLIENT

Pointe Claire Yacht Club

LOCATION

Pointe Claire, QC

DATE

2007