

SHIP WAVE VISUALISATION - PORT OF HONG KONG

In some cases ship generated waves can seriously affect sailing vessels as well as loading/unloading operations at berths. In the Port of Hong Kong area as many as 800 ships can sail per hour during rush hours.

Our specialists developed an application to deal with a problem of spatial distribution of wave energy generated by vessel traffic. Various layouts with various properties and several anticipated traffic scenarios were tested. In each case an average wave spatial distribution for the assumed representative period was found.



Figure 1 Typical terminal berth traffic in Hong Kong

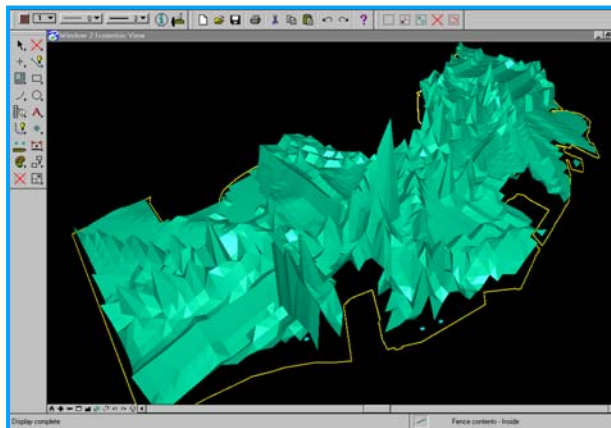


Figure 2 Bathymetry visualisation in port sector

The input to the program is bathymetry, port layout, reflecting properties of berths and breakwaters. Also information about ship movement (velocity, direction, position) must be known as well as ship properties (shape coefficient etc.) The application allows for visualization of ship generated wave fields.

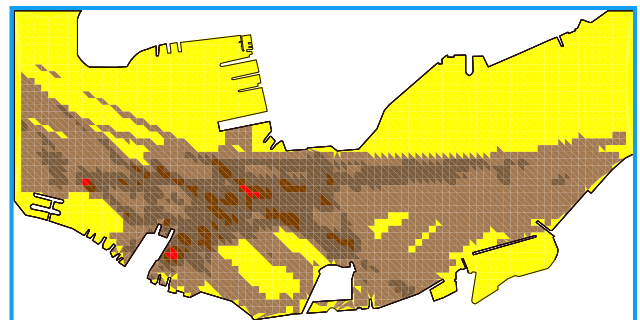
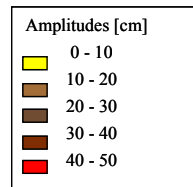


Figure 3 Ship generated wave field visualisation

Three projects were carried out for the region of Port of Hong Kong. In each case comparative analysis of various layouts were carried out in response to variable traffic patterns. In each case the optimal solution was indicated based on ship generated criterion.