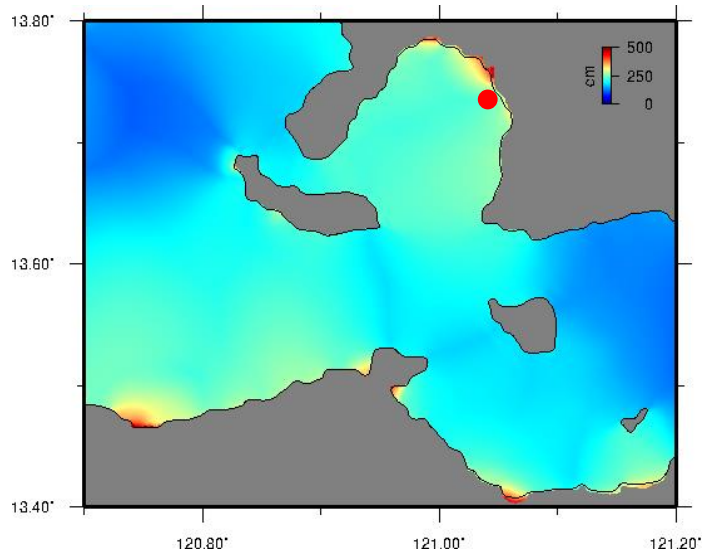
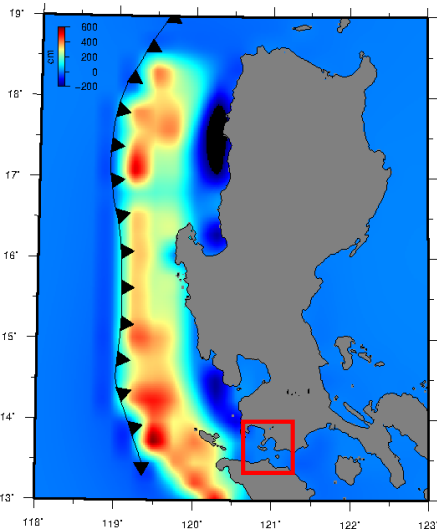


TSUNAMI HAZARD ANALYSIS FOR BATANGAS BAY, PHILIPPINES

BATANGAS BAY, PHILIPPINES



INFO:

Location: Batangas Bay, Philippines

Client: Ove Arup and Partners

Project Date: 2012

SCOPE OF WORK:

- Assessment of tsunami sources
- Literature review
- Hydrodynamic modelling of tsunami propagation and inundation
- Technical report

PROJECT DESCRIPTION:

We performed a hydrodynamic analysis of tsunami waves affecting a site in Batangas Bay, Philippines. The model considered subduction zone earthquakes located along the Manila Trench which ranged in magnitude from 8.4 to 9.0.

For the smaller events, modelled wave amplitudes were on the order of +/- 1 m. The presence of an unfavourably located high slip patch with twice the average co-seismic slip positioned on either a shallow or deep fault segment did not have an appreciable effect on the modelled wave heights.

Tsunami induced current speeds were modelled to be in the order of 0.5 m/s or less for the Mw 8.4 cases and up to 2 m/s for the MW 9 source.

Given the extreme tsunami and earthquake events of the past decade (i.e. Sumatra 2004 and Japan 2011), the possibility of a very large earthquake on the Manila Trench with a 25+ m slip asperity positioned at the entrance to the Verde Island Passage cannot be entirely ruled out. However such an event should be less likely to occur than a smaller earthquake at the same location.

We have shown that due to the relatively sheltered location of the study site within Batangas Bay, typically 'large' earthquakes of magnitude 8.4 with high slip patches located at the entrance to the Verde Island Passage would not produce a catastrophic tsunami.

