

Mabey Compact 200™ bridging brings rapid relief to disaster-hit communities

Bridging Case Study



Bohol Island Earthquake Emergency Bridging, Philippines

Customer: Department of Public Works and Highways | **Solution:** Mabey Compact 200™



The Challenge

The magnitude 7.2 Bohol Island Earthquake, which struck in October 2013, caused widespread destruction and hundreds of deaths. Tens of thousands of structures were damaged, with many completely destroyed.

The suffering of the people of Bohol Island was further compounded three weeks later when Typhoon Haiyan sent 40,000 people living in temporary shelters back into evacuation centres. The earthquake severely damaged or destroyed several bridges, hampering efforts to get relief to isolated communities in desperate need of help.



The Solution

The Mabey Compact 200™ (Mabey C200™) modular bridging system was used to replace five damaged or destroyed bridges on Bohol Island. The most severely affected was the Abatan Bridge that connects the capital city to the rest of the coast towns in the area.

The Abatan Bridge was a concrete pre-stressed superstructure built on four concrete piers in the river. Three of the five spans of the original bridge had been completely destroyed by the earthquake.

As the need to restore the bridge was so urgent, Mabey C200™ bridging was used for its ease of construction and rapid installation. However, the work to repair and rebuild the concrete piers and install the Mabey C200™ had to be done in the shadow of the approaching typhoon. To prevent lateral movement and swaying, extra H-pile blocks were welded to the side of the Mabey C200™ components being assembled.

Following removal of parts of the original bridge that were in the way, the piers were prepared with H-pile steel frame supports ready for launch of the Mabey bridge.

A four span Mabey C200™ configuration was chosen, with two long 16 bay central spans, each measuring 48.7m, and two shorter four bay spans measuring 12.1m connecting to the north and south abutments.

The Result

The Mabey C200™ modular bridges used on Bohol Island were from stock already held by the Department of Public Works and Highways. Mabey provided emergency response in the form of site engineers to assess damage and recommend bridge specifications, as well as extra components where needed to make full bridging sets.

Such was the speed of Mabey's responses, the H-pile and bridge components were delivered as soon as road access became passable. Within five days components had arrived on site, the assembly and installation was able to proceed immediately. Thanks to the rapid erection of the Mabey C200™ bridging, some of the bridges were able to be completed and made fully operational just 11 days after arriving on site. This period included the arrival of Typhoon Haiyan. To assist with the task, Mabey employed local engineers.

Mabey C200™ bridging was also used to address damage caused by landslides following the earthquake.

Following the excellent performance of the Mabey C200™ bridges the local government is considering for further projects to continue bridge replacement across the island.

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