

# An emergency response followed by a permanent reconnection of the Banawang Bridge in five weeks

Bridging Case Study



## Quirino (Banawang) Bridge, Philippines

**m a b e y | b r i d g e**

an Acrow Company

**Customer:** Department of Public Works and Highways (DPWH) | **Solutions:** Compact 200™ and Delta™

## The Challenge

The Quirino Bridge is an important gateway for trade, travel and tourism in the northern province of Ilocos. It is located in an idyllic part of the Philippines, spanning the Abra de Vigan river and set against the beautiful, rugged Cordilleras mountains. Originally built during WW1, (and named Banawang Bridge at the time), the bridge survived bombing during WW2 but was incapacitated during the severe tropical storm Feriea in 2001. One of the original four spans was swept away by a flood, leaving one of the only access routes to a popular tourist location completely disconnected. Transport reverted to the pre-bridge days when boats ferried people and cargo across the river. Travel and commerce slowed down considerably, and prices of commodities sky-rocketed. Economy took a turn for the worse.

## The Solution

As an emergency solution, the route was quickly re-established within 20 days using a modular Compact 200™ bridge. This 'provisional' bridge remained in place until the permanent structure was installed – a pre-fabricated Delta™ bridge chosen by the Department of Public Works and Highways (DPWH), due to the speed at which it could be built before the start of the wet season. The Delta™ was manufactured to the same width as the other spans, so it had to be shipped downriver, hoisted up and built piece by piece in pre-assembled sections from the river below. The contractors were able to use the Compact 200™ as a support beam for the new span, overcoming several technical challenges during the installation. Mabey Bridge has extensive experience in providing bridge solutions in complex and remote applications, so Site Advisors were on hand to provide technical assistance and training throughout the process.

Once the new span was in position, the Compact 200™ was removed by delaunching – reversing the procedure that was used to install it. After dismantling, it was loaded into trucks and taken away for re-use.

## The Results

The steel deck units of the new Delta™ bridge have an anti-skid surface for safety; kerbs and handrails were also fitted to match as closely as possible to those of the original spans. Although the new Delta™ looks slightly smaller, it actually has a considerably greater load carrying capacity.

With the bridge now reinstated the tourist route was more accessible to travellers and the local community, allowing business and tourism to return to normal. The bridge had been closed for less than five weeks.

## Photos

Front cover: The finished Quirino Bridge with the new Delta™ span

This page top: Preparing the Compact 200™ (left) for the hoisting of the new Delta™ span (right)

This page bottom: Business and tourism returned to normal



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