

Providing temporary and permanent bridging in support of major hydropower project

Bridging Case Study



Lom Pangar Hydro-Electric Dam, Cameroon

Customer: Electricity Development Corporation (EDC) | Solution: Mabey Compact 200™



The Challenge

Cameroon is a country that is 95% dependent on hydropower for its electricity, and where more than half of the population does not have access to electricity at all. In 2011, the World Bank gave the country a US\$100 million loan to progress the development of the Lom Pangar Hydropower Project (LPHP). To support the project, there was a need for a new bridge across the River Lom to allow construction traffic to access the dam site. However, with no existing bridge in place, the immediate challenge was to provide access across the river for construction traffic, while allowing abutments and piers to be created for a permanent new bridge. The China International Water & Electricity Corporation (CWE) turned to Mabey to provide the solution – two temporary bridges to be replaced by a permanent one once preparation work was completed.

The Solution

Two 8-bay Mabey Compact 200™ (Mabey C200™) bridges were chosen for the temporary crossing due to speed and ease of installation, and also the load capacity they provided. Conveniently, the local government held stock of Mabey C200™ bridging which was transferred to the control of the Electricity Development Corporation of Cameroon and the principal contractor CWE, while some components were reused from another delauched bridge elsewhere on the river.

The temporary bridges, installed in 2012 and built on causeways across the river allowed construction traffic to cross whilst the civil works for the main bridge were under construction. Timing was critical as the entire project needed to be completed before the arrival of the rainy season when the river swells dramatically. Also, with construction of the dam underway, the plan was to complete the new bridge and, once open for traffic, to remove the smaller bridges, thus allowing dam construction traffic to continue crossing without interruption. Once the temporary bridges were in place, work started on the permanent bridge which, like the temporary bridges, was constructed of a mixture of new and existing stock. The permanent bridge was a Mabey C200™, 3-span, 141 metre bridge with a width of 4.2 metres and a load capacity of HS25-44. A work force of five Chinese technicians and 10 Cameroon workers were employed on the installation.

Once the permanent new bridge was completed, the temporary bridges were delauched, inspected and placed into storage for future use. The Mabey Site Advisor overseeing the project also gave recommendations of how these bridges could be used elsewhere in the region.

At the same time the construction causeways were removed to allow the river to revert to its correct width and to prevent flooding and environmental damage to the local area.

The Result

The construction of the Lom Pangar Hydropower Dam was able to continue uninterrupted across the temporary bridges as the permanent bridge was being installed. The heavy load capacity, matched by ease of installation, made the Mabey C200™ the ideal bridging solution and the work was completed within the required timeframe.

Components unused in the permanent bridge have been returned to stock, ready to be reused whenever the next project requires.



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