Replacing concrete infrastructure with a sustainable steel solution

Bridging Case Study

Guardbridge Energy Centre

mabey bridge

Customer: University of St Andrews | **Solution:** Compact 200™

The Challenge

The Guardbridge Energy site has a long history of industrial use. First founded in 1855, the site has been converted from a distillery to a papermill and has more recently been acquired by the University of St Andrews. The principal objective of the project was to develop an energy centre as part of the University's strategic drive to become the UK's first energy carbon neutral university.

Following an initial scope of the area by contractors Vital Energi, it was established that the old concrete bridge was not sufficient enough to carry heavy loads and needed to be refurbished. However, after further assessment, Vital Energi realised that refurbishing the bridge would be expensive, and it was impossible to guarantee the amount of work required to achieve the required loading and fatigue specifications. It was decided that a replacement bridge would be the best option, but it needed to be a solution that was sustainable and caused minimal impact on the local environment due to the importance of protecting the river area.

The Solution

The original concrete bridge was no longer suitable for carrying the 40 tonne vehicles that would need to access the energy centre. Mabey Bridge was able to offer an alternative permanent solution to the concrete bridge and was able to ensure that it would withstand the immediate requirements of the construction project, as well as long-term access to the energy centre.

A 55 metre long one lane Compact 200™ was selected as the best option for the project due to its ability to be constructed quickly, safely and efficiently.

During the construction, some challenges were faced. One of those challenges was the location of the bridge. The original location (on top of the concrete bridge) had to be changed at the last minute because of potential access difficulties faced by vehicles turning onto the bridge. Working alongside Vital Energi, Mabey Bridge decided that a location running parallel to the old concrete bridge would be the most suitable location. Another challenged faced was protecting the Motray Water. Motray Water is a small river which flows into the River Eden near its mouth and is protected by the strict environmental rules by SEPA (Scottish Protection Agency). In order to ensure that the area was undisturbed, a cantilever launch was chosen.

The Result

The 55 metre long Compact 200™ was successfully installed and has been handed over from Vital Energi to the University of St Andrews. The new biomass plant was officially commissioned on 6th December 2016 and the bridge continues to provide vital access to the plant.

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