CINTEC

Pont Telpyn Bridge

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Pont Telpyn Bridge

Pont Telpyn bridge links the A525 at Rhewl with the B5429 and crosses the river Clywd. In 2008 during strengthening works the bridge suffered severe flood damage and was very near complete collapse, the only saving grace was that Cintec Archtec anchors were in the process of being installed , the installed anchors prevented the complete collapse of the bridge.

The east abutment appeared to be intact with no movement or cracking identified. The west abutment appeared to be intact at the upstream elevation. At the downstream elevation there was a large amount of dilatency of the masonry, with severe cracking and evidence of movement on both faces.

The movement of the road surface suggested that the arch barrel had rotated up to 4.5 degrees about the east springing. There was distortion of the arch barrel due to differential movement, resulting in a shear crack at the west upstream corner. The fact that this corner is lower than the adjacent arch barrel suggested that the abutment dropped vertically at this corner, followed by the adjacent arch barrel. Apart from this south west corner, the arch barrel was in reasonable condition.

The damage to the upstream spandrel and parapet was mainly limited to the large area of damage above the west abutment and a significant crack above the east abutment. Damage to the downstream spandrel and parapet was more widespread, with cracking through mortar joints almost throughout the length of the wall.

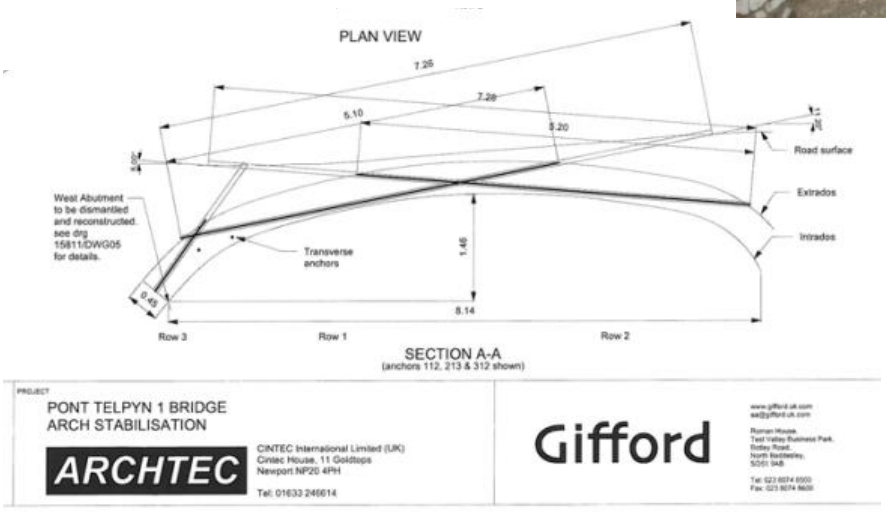
The road surface showed three main failures, indicating tension failure above the east abutment, compression failure above the west springing and shear failure to the west of the bridge.

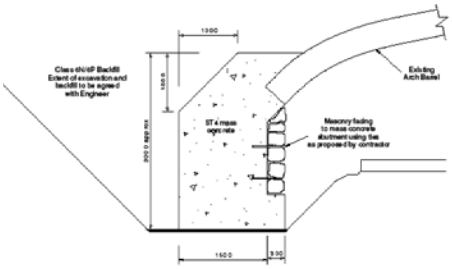
Pont Telpyn Bridge

A temporary channel was excavated, lined with gabions and stones to divert the river throughout the repair phase.

Cintec anchors were drilled and installed to stabilise the structure.

The arch was propped underneath and the parapet walls removed.





PROJECT
PONT TELPYN 1 BRIDGE
ARCH STABILISATION

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Gifford

Pont Telpyn Bridge

New foundations cast in concrete and new training walls built.

After the installation of the Cintec anchors to bring the bridge back to a 40 tonne capacity, the roadway was reconstructed to the original profile.

New culvert installed to act as a permanent flood relief system which was put to the test shortly after the project was completed.

The flood had caused the abutment to move which necessitated the complete removal of the abutment and providing a new foundation and concrete abutment, which was subsequently faced with stone.

New gabions were placed to protect the river bank and training walls constructed, faced with stone to match the structure.

Parapet walls rebuilt and all fencing, landscaping, river banks and hedges were reinstated.