Case History

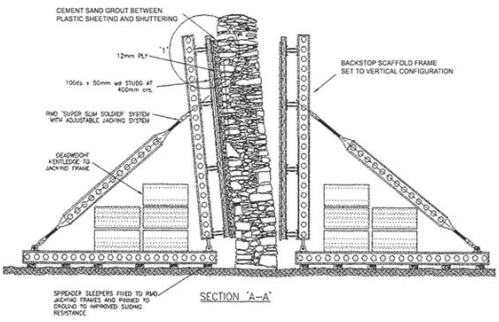
CINTEC™ REINFORCEMENT SYSTEMS

Cymer Abbey, Dollgellau , Wales

NAVE ARCADE STABILISATION WORKS

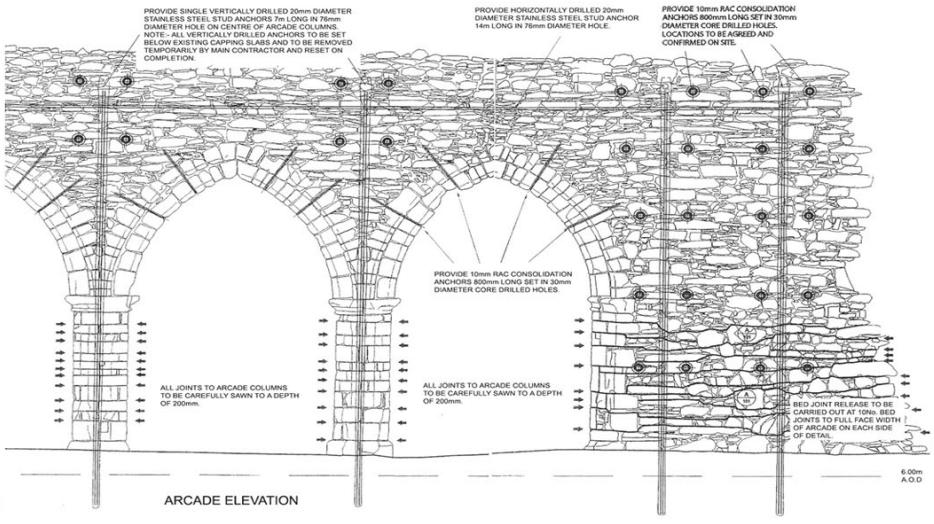
In the field of civil engineering, the method of structural stabilisation used at Cymer Abbey is unique. The Abbey was built in the 12th century, and from the onset suffered during this time of turbulence between the Welsh and invading Norman forces, there followed several centuries of stability until the dissoution of the monestaries around 1537. It was subsequently left to ruin up until present times.

Under the direction of CADW, structural engineers Mann Williams undertook inspection and monitoring of the abbey. This revealed progressive movement of the north arcade masonry which had become unstable to the point where propping was necessary to prevent collapse. For the long term it was decided to use Cintec structural reinforcements because in the words in Mann Williams *"The technique has been recently used successfully on a scheduled ancient monument, and has the advantage of retaining the largest proportion of the original structure in-situ. On completion of the works there is minimal evidence of the work having been implimented".*



Temporary support frames were positioned either side of the arcade wall (left). With plastic in place to protect the wall, a soft grout was injected beween the jacking frame and the masonry and left to set. Pressure was then slowly applied and the wall rotated into the vertical position. Open joints required the careful hand sawing of the original ashlar followed by repointing. 4No. 20mm diameter stainless steel Cintec stud anchors between 7 and 7.5m long were installed vertically into 76mm diameter holes centrally through the arcade columns and through the wall. A similar horizontal anchor 14m long was then installed horizontally along the arcades length. Finally, numerous small consolidation anchors and arch radial anchors completed the Cintec stabilisation. (See below)

Image revealing the extent of wall and column rotation prior to stabilisation



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