



## BRIDGE STRENGTHENING

Project involving the strengthening of five masonry arch bridges

**Client: Department of the Environment Northern Ireland, Craigavon**

### SUMMARY:

**Value:** €1.5 million

**Status:** Complete

### Services Provided:

Site Investigation

Detailed Design, Design Reports

Tender Documentation, Construction Supervision

### SCOPE OF PROJECT

The project involved the strengthening of five masonry arch bridges where a load assessment concluded that the bridges were not capable of sustaining the required axle load.

#### DESCRIPTION

Strengthening works were carried out on three twin span arch bridges, a four span arch bridge and a single arch culvert. The works carried out were:

##### Knock Bridge

Prior to strengthening the bridge was assessed as capable of carrying a restricted load of 13 tonnes gross vehicle weight. The works included grouting of masonry and guniting of a twin span bridge with spans of 5 m. The cost of the scheme was £60,000

##### Clare Bridge

Prior to strengthening the bridge was assessed as capable of carrying a restricted load of 13 tonnes gross vehicle weight. The works included underpinning of foundations, construction of an invert slab and concrete saddling of the twin span bridge with spans of 7.5 m. The cost of the scheme was £85,000

##### Hilltown Bridge

Prior to strengthening the bridge was assessed as capable of carrying a restricted load of 3 tonnes gross vehicle weight. The works included underpinning, construction of an invert slab, grouting of masonry and guniting of a twin span bridge. The cost of the scheme was £62,000

##### Derryleckagh Bridge

Prior to strengthening the bridge was assessed as capable of carrying a restricted load of 10 tonnes gross vehicle weight. The works included construction of an invert slab, construction of new wing wells, backing of arches with mass concrete and tying of spandrel walls to a four span arch bridge with spans of 5 m. The cost of the scheme was £190,000

##### Parapets

In the case of all the bridges above the existing masonry parapets were replaced with new parapets comprising a reinforced concrete wall clad with the existing stonework. All the reconstructed parapets were capable of sustaining group P2 parapet loading.

