

the complete construction service



"Arch bridges are highly durable structures requiring low levels of maintenance compared to other bridge forms."

Donegan



Introducing the new Macrete 'FlexiArch'

Many bridges built of modern materials, such as steel-reinforced concrete require extensive repair after being in service for a relatively short period of their design life.

As a consequence, many modern bridges are unable to meet current loading standards without costly strengthening work.

The development of a flat-pack concrete arch system that has no main steel reinforcement and can be lifted into the arch form without the need for centering has solved this problem

The non-reinforced flexible arch system available in spans from 4 -10 metres, provides a highly durable and cost-effective arch structure.

First FlexiArch system installed

The first flexiarch bridge was installed in Ireland in September 2007.

The Bridge comprised 9 x 1 metre wide flexible arch units and 2 Spandrel Units which, when installed, formed a 4 metre span x 1.4 metres high.

**CIVIL ENGINEERING
and Tunnelling Contractors**

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'Flat Pack' system



Flexible arch system during lifting



Flexible arch system during lifting



Arch system positioned on tapered seating units

The FlexiArch System

The arch is constructed from and transported in the form of a "flat pack" using a polymer grid reinforcement to carry the self weight during lifting but behaves as an unreinforced masonry arch once in place.

Construction Materials

The advancements in composite material technology and the ability of the polymer in this system to be sufficiently strong yet flexible is one of the keys to the success of the FlexiArch.

Highly Stable

During stability tests the arch was monitored for vertical and horizontal deflections and for strain on the voussoir joints and it proved to be highly stable under backfill operations.

"The flexible arch system is suitable for the widening or strengthening of an existing arch or as a new sustainable form of construction."

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For further information or a quotation please contact the Estimating Department on 0161 495 7300.

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