The installation process was straightforward, went to plan, and was quick.

Andrew Broad, General Works Manager, Dean & Dyball Civil Engineering
(Escot Estate FlexiArch Installation - two bridges)

The FlexiArch was chosen for the Newtownabbey cycle path project because of its aesthetic suitability, economic deployment, sustainable construction and consideration for environmental issues such as avoidance of disturbance to the river bed.

Neil Luxey, Rural Project Officer, Newtownabbey Borough Council
(National Cycle Path development on rural land - three bridges)

The procurement, delivery and erection of the pre cast units was extremely efficient. Merthyr Tydfil CBC and the general public have expressed extreme satisfaction with the completed structure.

Mark Robinson, Merthyr Tydfil County Borough Council
(River Taff Corridor Improvements - one bridge)

The flexi-arch system and installation process completely suited this location for replacement of an old arch bridge. There are definitely other locations within the county where this will be seriously considered as an appropriate solution for bridge replacement.

Mladen Dragojlovic, Gloucestershire County Council
(Country lane river crossing - bridge replacement)

FlexiArch customers include:
Bedfordshire Highways
Capita Symonds
DRD NI Roads Service
FP McCann Limited
Gloucestershire Highways
Herefordshire County Council
JN Bentley Limited
Lagan Construction Limited
Lancashire County Council
Merthyr Tydfil County Council
Newtownabbey Borough Council
North Lanarkshire Council
Shropshire County Council
Sligo County Council
South Gloucestershire County Council
SSE Renewables
Staffordshire County Council
Stuart Michael Associates

FlexiArch can be ordered from:
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E: info@macrete.com  www.macrete.com
FlexiArch specialist contact: Abhey Gupta
For further FlexiArch information, including photographic examples of installations, please visit our website.

FlexiArch allowed us to quickly erect the superstructure elements and to minimise working in the watercourse, which was badly e-coli contaminated. The new arch structure suited the rural environment and the heritage brick facework produced an attractive finished bridge.

John Gatheral, Lancashire County Council
**What is FlexiArch?**

FlexiArch is a modular precast concrete arch bridge system invented by Professor Adrian Long at Queen’s University Belfast. Commercial development is by Macrete.

**How does it work?**

The FlexiArch system replicates a stone masonry arch bridge but is precast. Individual tapered precast blocks are connected by a polymeric flexible membrane allowing the arch to form as it is lifted from the transporter.

**Where can I use it?**

FlexiArch can be used for any kind of new crossing or Highway bridge replacement for up to 20m span.

**How wide is it?**

Arch rings are made as 1m widths so any final width is possible.

**How does it arrive on site?**

The bridge arrives on site flatpacked on transporters. The components will include flexible arch rings springing blocks and spandrels which can be with or without decorative finish.

**What is the construction process?**

With foundations and footings constructed in advance, each arch ring is installed, usually in one session. The spandrels are fitted and secured. Typical time for installation is 4 to 6 hours. The arch is backfilled, levelled, and blacktopped. Spandrels are finished to environmental requirements.

**You say it is “sustainable”?**

FlexiArch is not internally reinforced. It is a compression structure, self supported by its own weight without the aid of mortar. With no rebar content, the possibility for internal corrosion, expansion, cracking or spalling is eliminated.

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**Flax Lane Road Bridge, Burscough, Lancashire**

Lancashire County Council have installed a FlexiArch crossing at Abbey Brook, Burscough as a replacement for a failed bridge. The new bridge which has a span of 8.3m and a width of 6m, crosses a fast moving water course which has the capacity to swell significantly following heavy rainfall.

The spandrels were faced with brick after installation. All the construction work was carried out by Lancashire County Commercial Group in conjunction with their Area South Design Team.

**Double Radius FlexiArch**

the new development of FlexiArch for rail and road

The limitations of a standard arch bridge relate to the usable through width as determined by its span and rise. While this is not significant to a bridge crossing over a brook or a limited width river, it is a stumbling block for a bridge required to pass over two lanes of highway, or two tracks of rail. The FlexiArch solution to this problem is the Double Radius FlexiArch (Flexi DR).

Span range is from 8m – 15m; capacity is Full Highway Loading; applications include road over rail, road over road and road over waterway. Installations will be commencing from winter 2011.

Please contact Abhey Gupta for further information.

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**FlexiArch jacked beneath existing service ducts**

A 4m span, 7m wide FlexiArch was installed beneath existing service ducts by Gloucestershire Highways as a replacement road over river bridge on South Cerney Road, south of Cirencester, known as Siddington House Bridge.

The existence of three steel service ducts prevented easy craning of arch rings on to their springing blocks, and instead, a system of jacking under the service ducts was employed.

Arch rings were lowered into the available central space between a pair of service ducts and then slid horizontally on greased blocks by use of a pair of hydraulic bottle jacks exerting force upon the lowest blocks of the arch ring.

A total of seven 1m width arch rings were placed in this way to form the basic arch of the bridge. Single piece spandrels were added - one to either side of the structure. The arch was then backfilled to road level and the spandrels clad with local stone to replicate the appearance of the original bridge.