



Bridge of the Month No48, December 2014 Okura River, New Zealand



This one is all about a new bridge crossing the Okura River, north of Auckland. The site is at the centre of the map [here](#).

I have been working for some time with a group of precasters led by [Duracrete](#) and others in New Zealand, developing a cheap and effective arch bridge capable of challenging the very tight costs of bridge building over there. They call it [Smart Arch](#). The team were introduced to the [FlexiArch](#) system by [Michael Khrapko](#), a concrete technology consultant. But it was too expensive to make. We developed a scheme for a faceted bridge made with sections of very high quality fibre reinforced concrete. These can be lifted into place even in rural New Zealand where cranes can be very limited. We have formed a collaboration with Fraser Geologics, who are licenced providers of [Stone Strong](#) retaining walls which fit in well with the rest of the bridge system.

The faceted layout shows well in this construction shot, as do the Stone Strong walls.



This Chinese bridge (built in 1250!) shows that facets are nothing new.



This is a steep road by European standards but land is both steep and expensive in and around Auckland. This bridge is for a developer opening up expensive building plats (or sections as they are called over there).



The finished bridge has a wall with a circular profile but the arch beneath has seven segments



The finished bridge looks well enough. There are many further developments in progress.



And to give an impression of speed, the arches were installed one day and this concrete saddle the next followed by fill the next day.



We intend to bring much of this technology back to the UK under the auspices of the Engineered Arch Company, which we set up last year. We will keep you abreast of developments, but if anyone has a pressing need for a quick, economical, robust bridge, let us know.