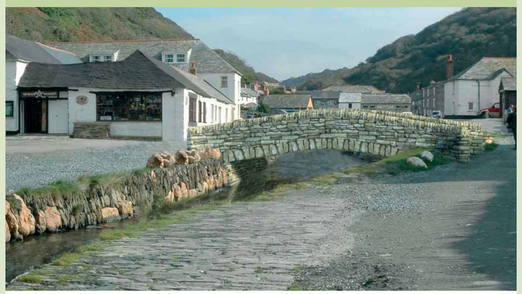
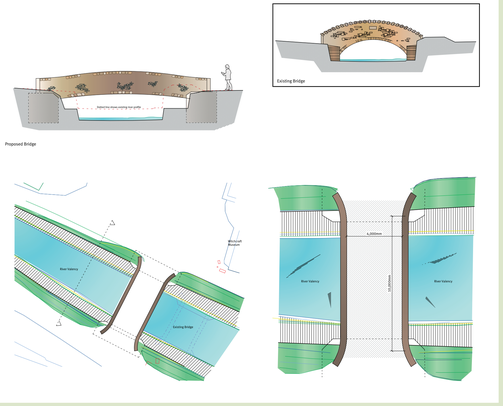
Boscastle - Valency flood defence scheme

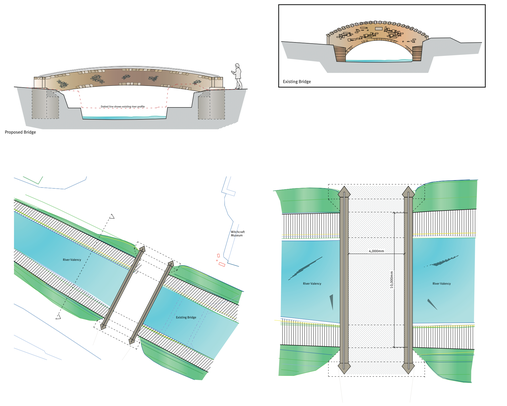
Option A





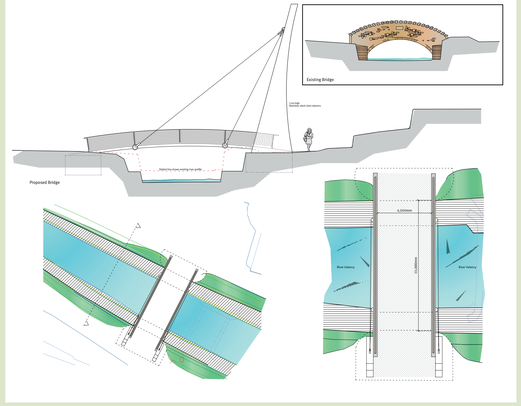
The first of the five bridge designs illustrated here is a traditional proposal constructed from local stone, some of which would be salvaged from the remains of the existing bridge. The profile of the bridge arch is flatter and very different from the existing bridge but this is needed to suit the wider 10 metre span of the new river channel. In other respects, many of the original bridge features have been reproduced. The height of the stone parapet walls are similar, the random rubble style and pointing of the stone is the same, and the gently curving ends of the bridge walls are being repeated. If this option is chosen one of the challenges will be to find experienced stonemasons who can work with traditional materials to the highest standards. Although the outward appearance will be traditional, the bridge structure will be engineered to modern standards to meet design loadings and specifications.

Option B



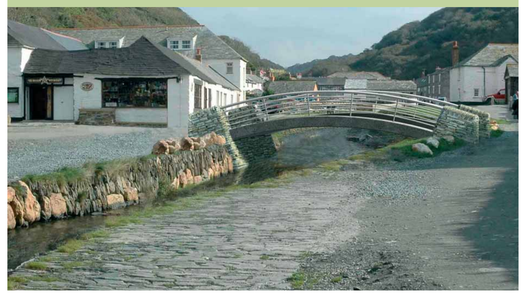
This design is very similar to the previous traditional solution but the parapet walls have been lowered and a simple tubular stainless steel handrail introduced. This ‘refinement’ has a number of benefits. The reduced height of parapet wall improves views from one side of the bridge to the other, up and down stream. The handrail itself provides extra stability and security for pedestrians, especially the elderly or infirm. Also by reducing the bulk of the bridge masonry a more slender design is achieved. The end pillars are detailed in natural stone on a 45 degree splay to the parapet walls. This not only provides a formal ‘stop end’ to the bridge structure, it also mirrors the detailing of the stone abutments below. As with the first option the detailing and construction of the stonework itself is vitally important and if possible much of the original stonework could be salvaged and re-introduced.

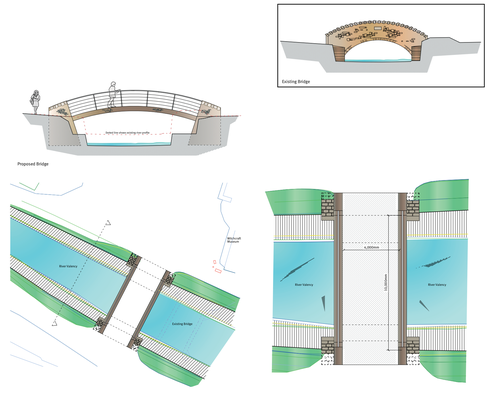
Option C



Of all the options this modern masted bridge design generated the most debate among the team. Two angled masts support the bridge deck with two strong tension cables either side. These cable supports will enable the structural engineers to reduce the thickness of the bridge deck to an absolute minimum producing a slender delicate bridge profile. The two mast supports are substantial structures in themselves and could either be constructed from white concrete (a number of local sub-contractors have the capability of manufacturing these) or high grade stainless steel - illustrated on the photo-montage. This design would certainly be a prominent architectural landmark and could perhaps be regarded as both a memorial to the 2004 flood disaster, and a suggestion that Boscastle is looking to the future and not the past.

Option D





The design illustrated here combines the rugged qualities of Cornish stone masonry with modern architectural detailing. Balusters and handrails in stainless steel support high tension cables at close centres to provide a safe and secure pedestrian barrier between the stone buttresses either end. The open handrail design is both practical and attractive. In terms of flood defence this approach offers far less resistance to extreme floodwater than the more conventional bridge designs. The structure is also more lightweight reducing the load on the bridge deck and simplifying its construction. In aesthetic terms the ‘open’ balustrade improves views from the bridge itself up and down stream and around Boscastle from either side. Of the five designs exhibited this option has the most pronounced arch and in this respect is perhaps closer to the arched profile of the original Lower Bridge.