

# APPLICATION TO DEMOLISH WATERLOO OR FLEET BRIDGE

DOCUMENT REF: B229/Planapp/PlnState

## PLANNING STATEMENT

### **1. Introduction**

Waterloo or Fleet bridge (HCC ref B229) carries the A30, High Street over the river Test in Stockbridge, Hampshire. The bridge is adjacent to residential and business premises in the busy high street.

Records of the bridge history show that the existing structure was built in 1948 and replaced the former brick arch structure. The existing structure consists of a single span corrugated steel troughing deck supported on mass concrete abutments, which has no historical significance (see drawing B229/11/01).

### **2. Reason for demolition**

An assessment of the capacity of the structure was carried out in 1994 by consultants. The conclusion was that the structure had a capacity of 40Tonnes. Since that time significant deterioration through corrosion has taken place in the troughing sections. Due to the very low headroom it is not considered possible to carry out maintenance or painting to extend the life of the structure.

Given the above, it is considered that it is necessary to construct a new structure that will not effect the character and appearance of the Conservation Area.

### **3. Replacement bridge**

The new bridge must not affect the character and appearance of the Conservation Area but must also be constructed within the constraints of the site and with disturbance to traffic as well as local residents kept to a minimum.

#### Site constraints

The existing bridge deck thickness is reasonably thin, with minimal fill except surfacing above the deck under the carriageway. Any significant increase in the deck thickness will require modification of the vertical alignment of High Street which would not be suitable due to the close proximity of the adjacent properties.

The existing headroom is low. The Environment Agency require that the flow area should not be less than existing, and it is not possible to widen. Also, it is undesirable to reduce the headroom when considering future inspection and maintenance.

Several options were considered for the replacement bridge.

**Remove fill and troughing, keep abutments. Provide new RC deck.**

Low headroom will mean that striking of temporary formwork will be difficult. It will therefore be necessary to provide permanent formwork such as Omnia planks. Due to the span at this location, temporary support may be required during casting (Maximum length of Omnia plank 3.75m). This will cause issues raised previously regarding available headroom for operatives and also obstructions within the river.

**Remove fill and troughing, keep abutments. Provide new steel beams and RC deck.**

Steel beams are generally recommended for structures with a span greater than 18m when they are economically viable. This can provide a more sleek, aesthetically pleasing design, but it is unlikely that many people will see the elevations of the structure. The low headroom and potentially high water levels will lead to a corrosion maintenance issue. Inspections and maintenance would be difficult. Galvanising is a possible option but is expensive and may not be economically viable for a bridge of this size. Greater construction depth will be needed and road levels may need to be raised.

**Remove entire bridge. Provide new precast box culvert**

This option is not likely to be viable at this location due to the height of the box section relative to the span required. To obtain the required span, excavation of the river bed would be significant which is unlikely to be approved by the Environment Agency or prove to be cost effective. (A 4m span box has internal a height of 2.5m). Alternatively using two units side by side to span the river would require less excavation, but would create a reduced flow capacity, which again is unlikely to be approved by the Environment Agency. (Two 2m span boxes would have a height of 1.0m, but would create a central pier of approximately 500mm width).

**Remove fill and troughing, keep abutments. Provide new precast prestressed beams.**

Standard bridge beams are available for spans between 3-14m and would eliminate the need for formwork and working within the river. The amount of insitu concrete required will be reduced which will save some time on site. A suitable crane will be required – discussion with a crane supplier will be necessary. Soffit level could be maintained if depth of beam is kept to a minimum. SBB S2 beams have depth 250mm with a requirement of 75mm topping.

This form of construction has been adopted because it avoids the need for extensive temporary works within the river and a relatively quick construction period. (See drawing B229/11/02)

**4. Method Statement for demolition and reconstruction**

**See separate document ref B229/Planapp/method**

## **5. Construction**

The works are planned to start on site in the summer of 2012 for a period of approximately 10 weeks.

The work will be carried out in two halves to allow cars to travel through the site but due to the narrowness of the available carriageway HGV's will be diverted. Access to the adjacent properties will be maintained at all times.

The contractor will be required to provide access for pedestrians through the site via a temporary footbridge at all times.