JCA Architects

Assan Bridge, Assan, New Inn, Co. Cavan
(NIAH Reg. No. 40403301)

Architectural Heritage Impact Assessment (Amended for revised scheme)

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Introduction

The following report has been prepared by Jack Coughlan Architects to accompany proposals to carry out road widening works which will affect Assan Bridge, located near New Inn in County Cavan.

The bridge is included on the National Inventory of Architectural Heritage's survey for County Cavan with Registration Number 40403301. The structure is rated as being of Regional significance with Categories of Special Interest listed as Architectural and Technical.

The following report includes a written and photographic record of the bridge, a historical context, an assessment of its significance, and recommendations and mitigation measures to inform the proposed works.

This report has been carried out as a desktop study with photographs and proposal drawings provided by Malachy Walsh and Partners Engineers.

Historical Context

The bridge spans the River Blackwater which flows into Lough Ramor, where the L3005 crosses north/south over another provincial road. The bridge is clearly visible, and named, on the first edition Ordnance Survey map of c.1840 and is therefore of historical significance (Fig. 1). It is estimated by the National Inventory of Architectural Heritage to have been constructed c. 1800. It can be seen from this map that the road layouts are similar to that seen today.

Fig. 1: Extract from the first edition Ordnance Survey map, c. 1840. Note the bridge is included on this edition of the map and is named. The river can be seen to flow from the northeast at this time.

There had been little change by the time the next edition of the OS map was surveyed in c. 1900, with the road layout retained and the small farmstead located immediately northwest of the bridge still extant (Fig. 2). The dwelling house of this property can still be seen today, but is in very poor condition.

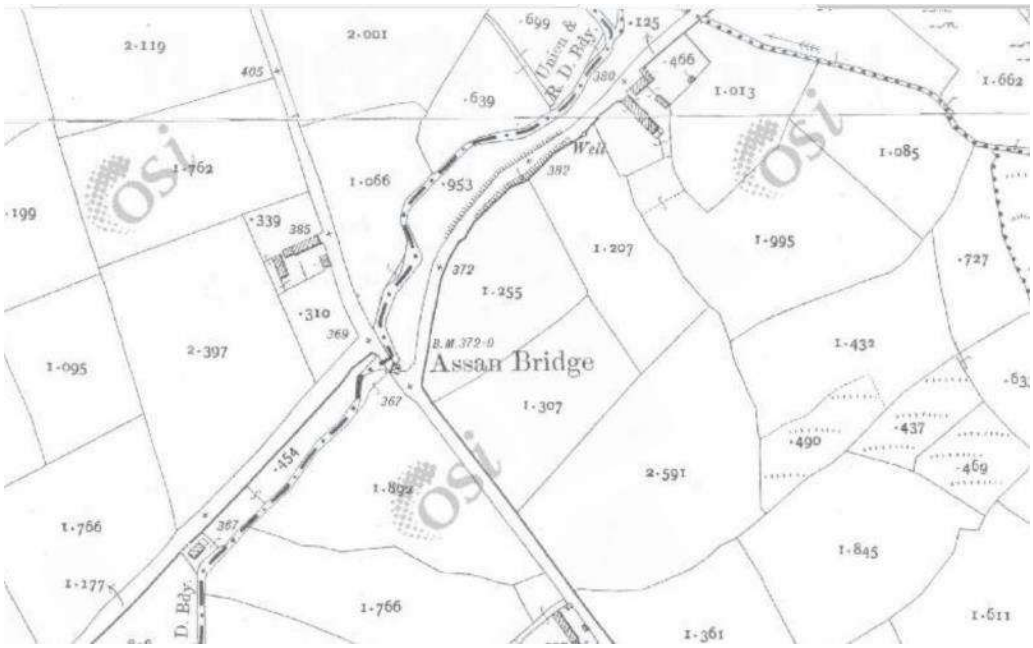

Fig. 2: Extract from c.1900 edition of Ordnance Survey map. Note that the course of the river has changed by this time and now flows towards the bridge from the side (northwest).

Record of the Existing Bridge

Assan Bridge is a triple-arch road bridge constructed of random rubblestone having shallow segmental arches. The piers, cutwaters, abutments and arch soffits are all constructed of rubblestone, while the voussoirs to the arches are of cut limestone. The bridge is designed with a slightly larger and higher central arch and the wing walls and parapets are also of rubblestone (having concrete capping).

Many alterations and repairs have been carried out to the bridge over the course of its history. Most notable and visually intrusive is the recent addition of the concrete pipe and embankment to the downriver side which has obscured the arch on the western side. Parts of the wing walls have also been reconstructed, and there are many areas of repair, rebuilding, repointing and refacing. Unfortunately many of these interventions are unsympathetic to the historic fabric of the bridge and include strap pointing with a cementitious mortar and the use of concrete.

In addition to these unsuitable repairs, many areas of the bridge are in poor repair and require attention. This damage has been caused by both collision and also weathering and the wear and tear of the river, including the washing out of the mortar at the base of the bridge piers and cutwaters.

Assessment of Significance

The National Inventory of Architectural Heritage includes this small bridge on the interim county survey for Co. Cavan and notes its technical and architectural significance. It is included on the first edition Ordnance Survey map and is therefore a structure which is approximately 200 years in age. Although altered and disfigured by the large concrete drain installed to the downstream elevation, it nonetheless retains much of its historical and architectural character and merits retention and a careful design of the necessary works and alterations.

Impact of the Proposed Works on the Existing Structure

Significant works are now proposed to realign the flow of the river, to replace the previous inappropriate interventions, and to provide a new bridge approximately 30m north of the existing bridge. The works are individually discussed below, in terms of their likely impacts on the historic bridge structure.

The chosen option (to rectify a number of issues currently posed by the bridge, particularly in regard to its unsuitability for HGVs and the poor condition of the original stone parapets) is Option 4, as set out in MWP's 'Assan Bridge Widening/Replacement Structural Options Report' for Cavan County Council, August 2022. This option proposes a new bridge to be constructed to the north of the existing bridge which negates the requirement for any major interventions to be carried out to the existing historic stone bridge.

The Historic Bridge Deck:

With the current proposal, Option 4, the widening of the existing bridge deck will not be required to allow for the safe movement of truck vehicular traffic at the current bridging point of the river and therefore the impacts on the historic bridge structure will be minimised. The L3545 will be realigned and moved to the northwest which will allow HGVs coming from the south or north to turn east onto the existing bridge. The river will be realigned. The existing bridge will undergo some alterations, including repair works, but will not be widened.

Removal of Pipe Extension:

The proposed removal of the pipe intervention is welcomed as this currently negatively impacts the aesthetic appreciation and setting of the bridge. The removal of this concrete element will form part of the proposed repair and restoration work of the historic bridge.

Parapet Walls:

The parapet walls will be retained but require repair works. They appear to be constructed of a mixture of rubble sandstone and limestone. Any loose blocks which require removal will be salvaged and reinstated as part of the repairs. Materials and coursing of stonework carried out as part of the repairs should reflect the original masonry patterns.

Existing Piers and Cutwaters to be Underpinned:

The existing piers with engaged cutwaters are exhibiting signs of movement with the loss of material because of scour action and may require intervention. This will be addressed using a concrete underpinning technique. These generally will not be visible and any stone loss at the base of the piers at the riverbed will be indented with similar stone and pointed up to help mitigate against any negative visual impacts. The work will result in positive physical impacts on the historic bridge.

Northeast River Wall:

This will be removed as part of the riverbed realignment. However, as noted above, the course of the river has changed since the construction of the bridge and this northeast wall comprises a later intervention carried out following the change in the river course. It is not of historical significance.

Recommendations

- Original coursing pattern is to be documented prior to any dismantling of loose material and used as a guide for relaying the stone in any required repairs. All pinning stones to be salvaged and reused. The stone is to be bedded with any dressed surfaces facing outwards as per original construction.

- Lime-based pointing mortars should be used.

- Stone of dismantled areas should be sorted and set aside for reuse in the reconstruction, especially to the most visible areas.

- Existing capping details should act as a guide for new capping details.

Photographic Record

Fig. 3: Upriver elevation of the bridge

Fig. 4: The three arches and cutwaters, upriver elevation of the bridge

Fig. 5: The course of the river has changed significantly, and the water now approaches the bridge from the side rather than straight on to the cutwaters.

Fig. 6: Upriver elevation of the bridge and wing wall, showing the course of the river as it approaches from northwest.

Fig. 7: Downriver elevation of the bridge, showing concrete pipe and embankment constructed to the westernmost arch of this elevation, obscuring original cut stone arch.

Fig. 8: Southernmost arch (as seen from downriver elevation) showing the soffit and pointing and render repairs.

Fig. 9: East parapet wall of bridge, with concrete wing wall to corner

Fig. 10: West parapet wall, showing collision damage to stonework

Fig. 11: Deck of bridge, view southeast (Google maps)