

MONAGHAN COUNTY COUNCIL ACTIVE TRAVEL SCHEME
BALLYALBANY & HORSESHOE BRIDGES, MONAGHAN TOWN
ARCHITECTURAL HERITAGE IMPACT ASSESSMENT

NOVEMBER 2023

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CONTENTS

EXECUTIVE SUMMARY

1. INTRODUCTION
2. SUMMARY OF THE PROPOSED DEVELOPMENT
3. ARCHITECTURAL HERITAGE CONSTRAINTS IN EXECUTION OF PROPOSED DEVELOPMENT OF A SECONDARY BRIDGE ATTACHED TO BALLYALBANY BRIDGE
4. ARCHITECTURAL HERITAGE CONSTRAINTS IN EXECUTION OF PROPOSED DEVELOPMENT OF A SECONDARY BRIDGE ATTACHED TO HORSESHOE BRIDGE
5. CONSERVATION STRATEGY
6. RELEVANT IMAGES

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EXECUTIVE SUMMARY

This architectural heritage impact assessment was prepared by Molloy & Associates Conservation Architects to assess architectural heritage constraints having the potential to influence a design for implementation of the Monaghan County Council Active Travel Scheme, where pedestrian/ cycle lane provisions are proposed to supplement two narrow, historic bridges in Monaghan Town; Ballyalbany and Horseshoe Bridges.

The subject assessment should be read in conjunction with drawings for each proposal by Atkins, the project designer, together with an Archaeological Impact Assessment by Archer Heritage Planning.

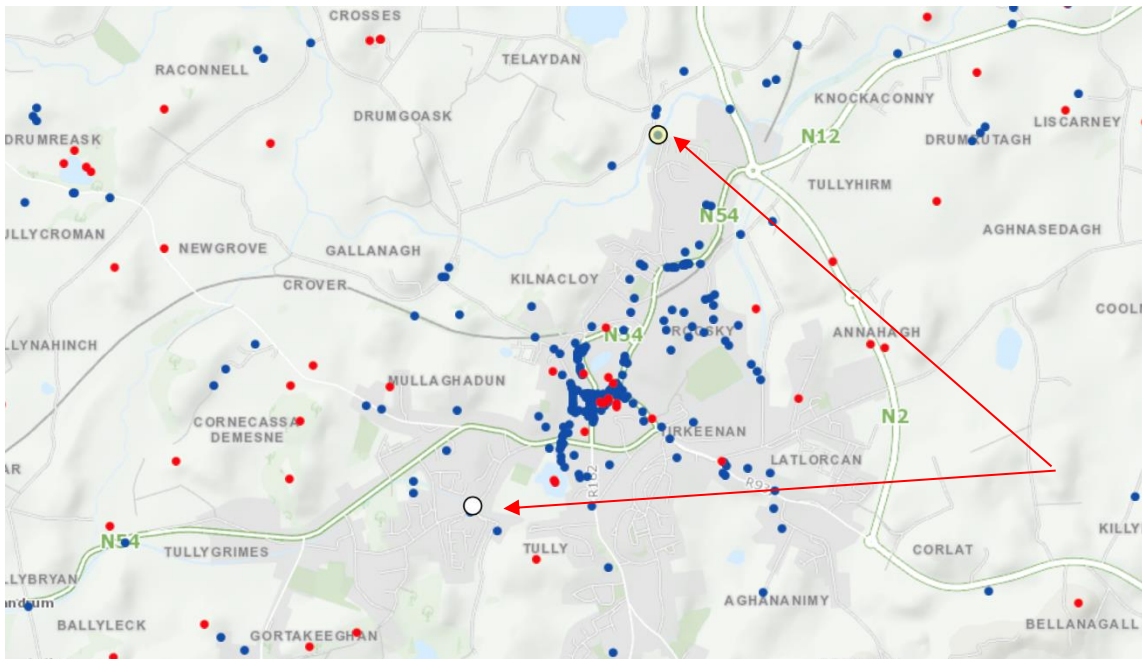


Fig 1: Extract from the NIAH indicating the position of the Ballyalbany (northern) and Horseshoe (southern) Bridges

By way of summary of the opinion below; both bridges, whilst of significant heritage interest and contributing to a wider urban character of heritage interest, have capacity to accommodate proposed secondary bridges as initially proposed.

Each bridge has heritage buildings in proximity. In response, the interventions have been designed to respect the character of these buildings and their enclosures, as interacting with a shared urban realm.

Following receipt of statutory consents and commencement of works, improved site access following clearance of works will enable a detailed survey of each structure to be carried out. Findings, which will be submitted with the Authority by way of qualification of the proposal, will inform a strategy for repair and conservation of vulnerable masonry of each bridge, together with improved presentation of their respective environs – all in order to visually enhance their heritage significance.

1.0 INTRODUCTION

1.1 Brief description of Ballyalbane Bridge

Ballyalbane Bridge, Ballyalbane, Monaghan, 1730 – 1770, crosses the Blackwater River and is included in the Record of Protected Structures, Appendix 2b of the Monaghan County Development Plan, reference 41400943.

It is also included in the NIAH, Reg. No. 41302007, having a regional rating with Architectural, Technical special interest, described as follows:

Two-arch limestone bridge, built c.1750, carrying road over Blackwater River. Walls of uncoursed rubble with uncapped parapets, segmental arches having punch-finished voussoirs and full-height V-shaped cutwaters on both elevations of central pier. Concrete skirting around base of cutwaters and abutments, rolled steel joist supporting water main punches through arch soffit which has remnants of roughcast render. Battered buttresses reinforcing wing walls on both sides of river. Additional segmental flood arch in wing wall to north-west, parapet over which, along with adjacent roadside wall leading around Presbyterian churchyard, has been rebuilt in stone and cement in recent years. Gently hump-backed bridge.

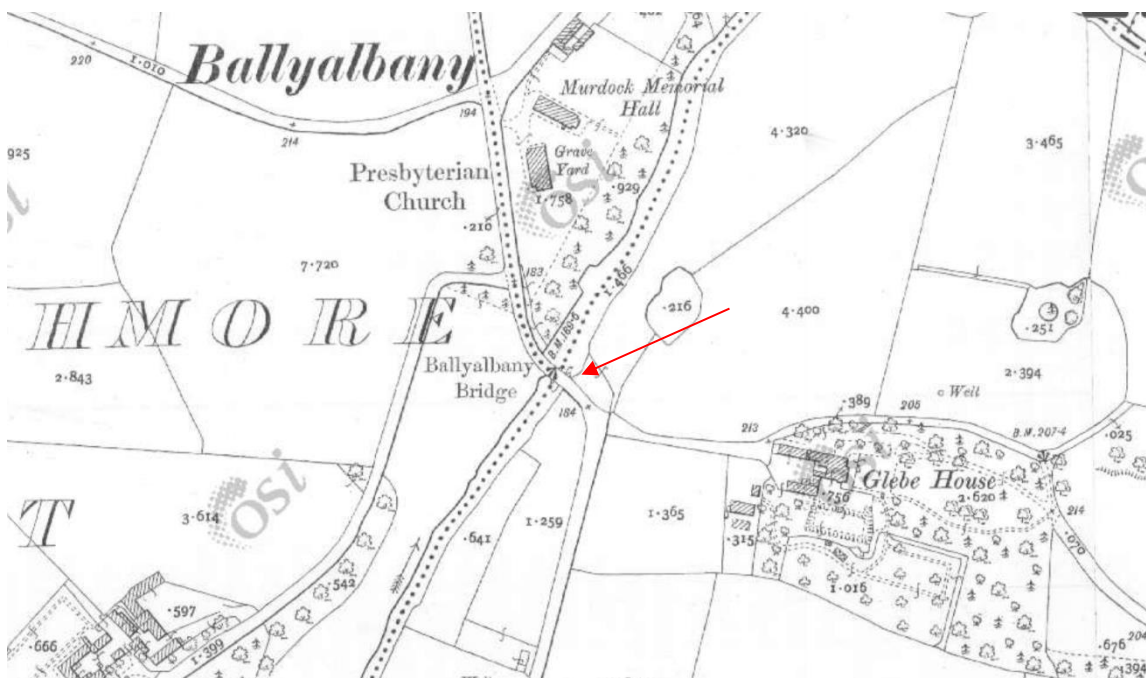


Fig 2: Extract from 1907 Ordnance Survey Man MN009-07 indicating the position of the Ballyalbane Bridge

It is appraised as follows:

One of the oldest masonry arch bridge structures in the local area, this crossing which carried one of the main roads from Dublin to Derry and Letterkenny retains its historic appearance despite mid- to late twentieth-century additions and alterations and nineteenth-century embellishments such as buttresses and cutwaters.

Its current condition is reasonably sound as evidenced from the carriageway, with undercroft not visible owing to dense overgrowth. A detailed survey of the arched building fabric is recommended following clearance of undergrowth.

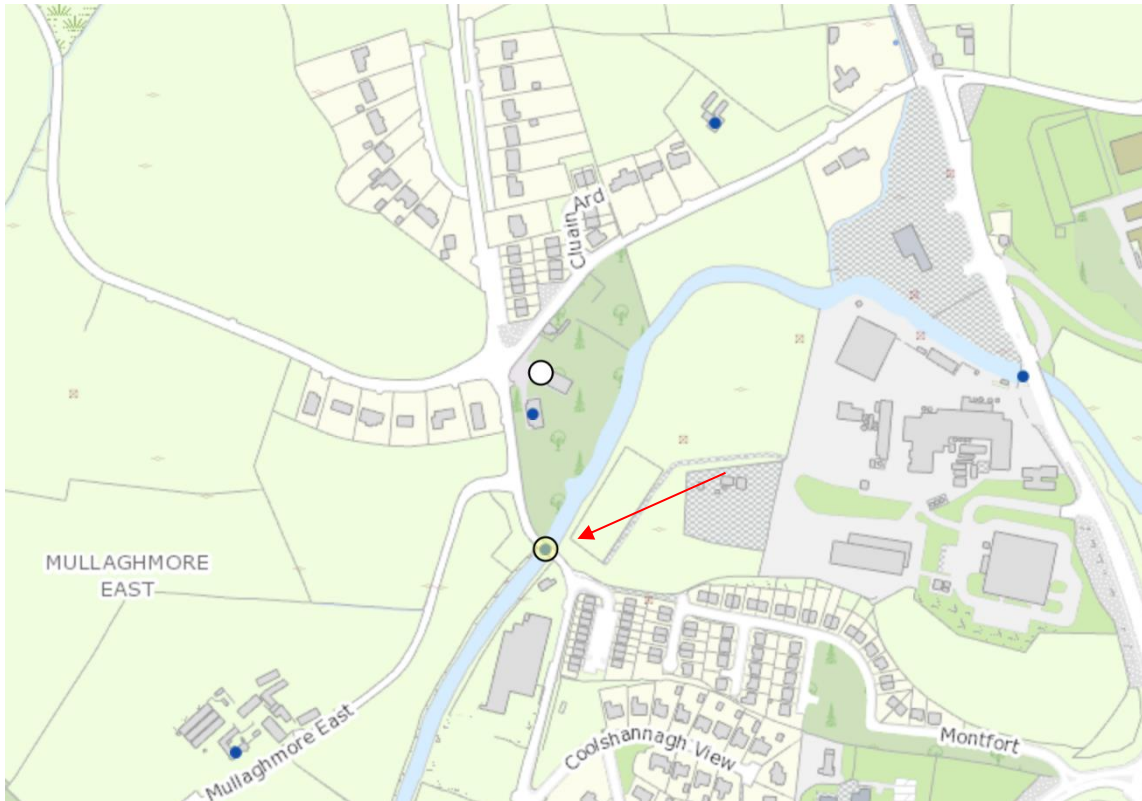


Fig 3: Extract from the NIAH indicating the position of the Ballyalbany Bridge in context with the adjoining protected church RPS 41400914 and hall grouping

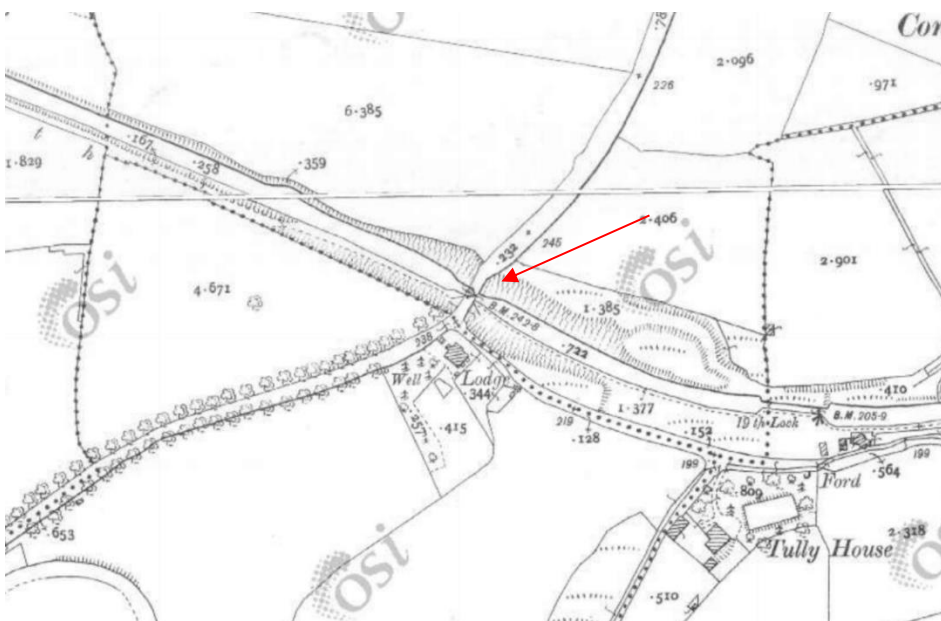


Fig 4: Extract from Ordnance Survey Sheet MN009-15, surveyed 1907, published 1909, indicating the position of the Horseshoe Bridge



Fig 5: Extract from the NIAH indicating the position of the Horseshoe Bridge in context with the adjoining Gate Lodge

1.2 Brief description of Horseshoe Bridge

Horseshoe Bridge, Monaghan, 1835 – 1845, crosses the Ulster Canal and is included in the Record of Protected Structures, Appendix 2b of the Monaghan County Development Plan, reference MNTC Local 18.

It is also included in the NIAH, Reg. No. 41303015, having a regional rating with Architectural, Technical special interest, described as follows:

Single-arch stone road over railway bridge, built c.1839, carrying Park Road which narrows at crossing, over Ulster Canal and towpath short distance west of nineteenth lock. Parapet walls of roughly squared rubble sandstone with heavy flat capping stones having rounded arrises and punch-finished surfaces. Parapets have large, curved splays to both ends of bridge where they are terminated by square piers having heavy pyramidal stone caps to north-east end or continue along roadside to south. Both elevations obscured by ivy and trees growing on embankments either side of disused canal.

It is appraised as follows:

This is a fine example of early to mid-nineteenth-century bridge building on the canal built to plans by Directors General of Inland Navigation engineer, John Killaly, although it is not clear who actually designed the bridge. The well executed structure stands as a functioning and gracefully tall element of a now disused canal scheme.

Its current condition is reasonably sound, however, as with the Ballyalbany Bridge, its undercroft and tow path is obscured by dense overgrowth. A detailed survey is recommended following clearance of undergrowth.

2.0 SUMMARY OF THE PROPOSED DEVELOPMENT

2.1 Project description

The works proposed to **Ballyalbany Bridge** will comprise of the following;

- Construction of a new pedestrian and cycle bridge on the east side of the existing Ballyalbany Bridge. The new bridge will directly abut the existing bridge. The new bridge will be joined to the existing bridge but will be supported independently via new piled abutments and new wingwalls.
- Construction of new embankments on approaches to new bridge.
- Construction of new timber post and rail fencing.
- Construction of new kerb lines for new footpaths and cycle lanes/tracks
- Provision of shared areas for pedestrians and cyclists.
- Provision of uncontrolled crossing points for pedestrians and cyclists.
- Planting of trees and other soft landscaping.
- Provision of new lighting.
- Construction of over-ride areas and narrowing of the existing Park Road / Coolshanagh Walk junction.
- Earthworks / excavations of existing roadways and verges, of existing roadway/footpaths, for service ducts and road crossings, etc.
- All associated Civil works with the above i.e., ducting, drainage, concreting, pavement works, tree felling, hedge removal etc.
- Repair and consolidation of existing bridge masonry, where necessary. The dismantled masonry will be reused as part of the proposed development.
- Partial taking down of boundary wall, parapet wall, buttress and cut-water.
- Extension of existing dry-span through new embankment.
- The proposed development consists of works to a Protected Structure and its curtilage.

The works proposed to **Horseshoe Bridge** will comprise of the following;

- Construction of a new pedestrian and cycle bridge on the west side of the existing Horseshoe Bridge. The new bridge will directly abut the existing bridge. The new bridge will be joined to the existing bridge but will be supported independently via new piled abutments and new wingwalls.
- Construction of new embankments on approaches to new bridge.
- Construction of new timber post and rail fencing.
- Construction of new kerb lines for new footpaths and cycle lanes/tracks.
- Provision of segregated cycling facilities.
- Provision of shared areas for pedestrians and cyclists.
- Provision of controlled crossing points for pedestrians and cyclists.
- Planting of trees and other soft landscaping.

- Provision of new lighting.
- Introduction of a traffic signals on Park Road on the north and south side of the existing bridge.
- Signalising of the existing Park Road / Mullaghmatt road junction.
- Earthworks / excavations of existing roadways and verges, of existing roadway/footpaths, for service ducts and road crossings, etc.
- All associated Civil works with the above i.e., ducting, drainage, concreting, pavement works, tree felling, hedge removal etc.
- Repair and consolidation of existing bridge masonry, where necessary.
- Provision of a clear zone to facilitate access to a private entrance on the south side of the existing bridge.
- The proposed development consists of works to a Protected Structure and its curtilage.

2.2 Outline schedule of localized conservation and repair of the protected structures

The precise condition of either bridge is not yet known in detail, but both are generally found to be sound. Given the extent of overgrowth in the vicinity, maintenance and repair of masonry is likely not to have been carried out in recent years. A consequence of any development within the vicinity of either historic bridge structure will therefore require a detailed structural and architectural condition assessment of building fabric by way of a proposed Principal Inspection, which will be carried out by Atkins close to commencement stage. Findings, when assessed, will inform a detailed schedule of repairs, categorized in order of priority, recommending a suite of interventions that might precede the installation of the secondary footbridge when the opportunity of high level scaffolds is presented.

An outline schedule of likely localised repairs is cited below:

2.2.1 Repair and consolidation of bridge masonry – general strategy

Stone repairs are considered as being locally required to each bridge following clearance of vegetation local to interventions to enable inspections, and prior to commencement of works.

Repairs will be based on a philosophy of minimal intervention. Deterioration in the stonework associated with normal patterns of weathering are considered to form part of the patina of age of the bridge and will not be repaired. Where this deterioration leaves the adjacent stone weakened and vulnerable to accelerated deterioration and loss of fabric, a repair will be undertaken. Cracked, chipped and missing sections of stone will be repaired. Where irons cramps are identified as causing cracking in the stone, these will be removed as part of the repair of that stone. Iron cramps that are identified in similar locations, where cracking has not yet occurred but is considered likely to occur, will also be removed.

The programme of stone repairs will be preceded (if applicable) by the local removal of past cement mortar repairs. This work will be carried out by a skilled stone mason, with previous experience of high-quality conservation work, using hand tools. The tools will be selected to be less than the width of the joints and will include small, pointed chisels, a fine quirk and hacksaws. A trial area of mortar removal will be carried out for review with the conservation architect at the

outset. The existing mortar is to be raked out to 1.5 times the depth of the joint. Vegetation in the joints will be raked out and the joint treated with biocide, as outlined below.

2.2.2 Cleaning of the stone

The biological soiling and atmospheric deposits on the surface are likely to be water soluble and the contractor will attempt to remove this soiling using water washing to the following specification – the limestone is to be washed using a neutral PH soap; the surface will be wetted with a persistent wet mist to allow solubilisation of the soiling deposits; sprays will be atomised from fine nozzles at least 300mm from the masonry surface/ intermittent/pulse washing may also be used, subject to the approval of a written methodology by the conservation architect. The aim of both the atomised spray and the pulse washing is to progressively soften soiling deposits without causing saturation or penetration of the stone surface. Stiff bristle brushes will be used to remove soiling and reduce the saturation period (note: steel wire brushes will not be used). Brushing will be carried out using no more effort than is required to remove loosely attached dry matter. Surfaces will be checked continuously to ensure no damage occurs. The operator will ensure that over-saturation of the stone surface does not occur during use of the water lance or any other part of the cleaning process. Only mains quality water will be used – the water will not deposit or cause stains. Prior to the commencement of cleaning work, the contractor will carry out a thorough inspection of the drainage system to ensure that it has sufficient capacity to contain the water run-off from the cleaning process. Where necessary, temporary catchments and gutters will be installed to remove excess amounts of water from the building. The contractor will submit a detailed method statement to cover this aspect of the work for approval by the conservation architect. A trial area of cleaning is to be carried out under review by the conservation architect before the work can proceed in full.

2.2.3 Removal of inappropriate repairs

Should funding permit, consideration will be given to the reversal of inappropriate, yet well intended, efforts at repair where pointing and masonry insertion methods do not align with the existing.

2.2.4 Consolidation of stone and lime mortar pointing

The stone used is a mix of limestone and granite. All elements will be inspected by the conservation architect and structural engineer following the erection of scaffolding. Stitch repairs will be carried out to any cracks or friable sections of masonry, based on the introduction of stainless steel helical bar reinforcement to be bedded in epoxy resin. Any biological growth will be removed, and the joints raked out to a sufficient depth to remove developed root systems. Well developed flowering plants to open joints, with root systems penetrating into the wall, will be treated with an appropriate biocide to kill the plant, and the remains will be removed using hand tools only, with as much of the root system removed from the wall as possible.

Stones showing evidence of delamination, where the stone was laid with the bedding plane vertically aligned, will be carefully cut out. The resulting gap will be filled with a matching stone, cut to size and with the bedding plane laid on the horizontal.

The open mortar joints are to be re-pointed using a lime based mortar. Include for raking out of loose mortar and material prior to re-pointing. Prior to the application of mortar, the stone work will be wet down with a fine water mist using a hand sprayer in the first instance. The lime mortar will be trowelled into the joints. The contractor will use small round stones and pins (i.e. long wedge shaped pieces of stone) to reduce the area of mortar in large joints. These infill pieces will be tapped into place by hand. Any displaced mortar from the joints will be carefully removed using a trowel. The contractor will carry out re-pointing to a trial section at high level for agreement with the conservation architect before re-pointing elsewhere.

The new re-pointing mortars to the rubble masonry will consist of a fine to medium grained lime-based mortar mix, formulated for stone rubble fabric in a moderately exposed location, in a moderate to severe environment. Sands will be local, and primarily consist of local limestone. The sand used will comply with current standards including BS 1200, BS 882, BS 1200: 1976, BS4551-1;1998, BS EN 998-2:2002, and the European normative references EN 1015-1. All works will be carried out complying with BS 7913:1998 Guide to the Principles of the Conservation of Historic Buildings. The proposed lime mortar will comprise a mix of 2.5 parts aggregate to 1 part NHL2 lime. The work is to be carried out by operatives skilled in the use of lime mortars. The relevant contractor will provide details of the proposed operatives who will carry out the lime mortar repairs together with evidence of their previous experience on similar projects to the satisfaction of the conservation architect. A trial sample will be carried out at the outset to facilitate agreement on the work methods and finish with the conservation architect.

The contractor will provide the conservation architect (on request) with samples of the lime mortar for testing. The purpose is to ascertain that the specified mix has been followed – the correct naturally hydraulic lime has been used; the aggregate is as specified; the proportions of the mix are correct; and no cement or other non-specified additives have been used.

The contractor will undertake grouting and deep tamping of existing open and dry joints, and voids revealed during removal of the flowering plants and failed stones. The grouting material will be lime-based with a suspension aid (such as bentonite). It is important that the final strength of the grout will not exceed that of the stone rubble masonry, that it be similar in permeability, low in shrinkage and have a good flow rate for effective penetration.

2.2.5 Sequencing

The consolidation of the existing building fabric will take place in the first phase of the work. The cracks and structural weaknesses in the external walls will be repaired prior to the formation of new openings and/or demolitions. This is to ensure that the structural integrity of the retained fabric is optimised prior to more invasive work. The removal of cement pointing will take place to all façades that are to be retained, and will continue 1 metre beyond the line of the retained façade (i.e. into the sections of façade that are to be removed). The replacement of hard cement pointing with softer lime mortar will help the masonry to deal with minor settlement and vibration arising from the work. Allowance will be made for some additional lime mortar pointing at the end of the construction period, to identify and address any loss of fresh mortar arising from the work.

3.0 ARCHITECTURAL HERITAGE CONSIDERATIONS IN EXECUTION OF PROPOSED DEVELOPMENT OF A SECONDARY BRIDGE ATTACHED TO BALLYALBANY BRIDGE

3.1 Architectural heritage structures of interest in the vicinity

An ecclesial grouping comprising a church, hall, graveyard, gardens and walls is positioned to the north of Ballyalbany Bridge.

Following discussions with Monaghan County Council, Ballyalbany Presbyterian Church (NIAH Reg. No. 41302005), included in the RPS (Ref.No. 41400941) is deemed to extend to all ancillary structures. The church dates from 1785 – 1890, and has a Regional rating.

In proximity to the church, a second structure, the Murdock Memorial Hall, dating from 1880 – 1885 and also having a Regional rating (NIAH Reg. No. 41302004), is not specifically included in the RPS but forms part of its enclosure and is therefore protected by association.

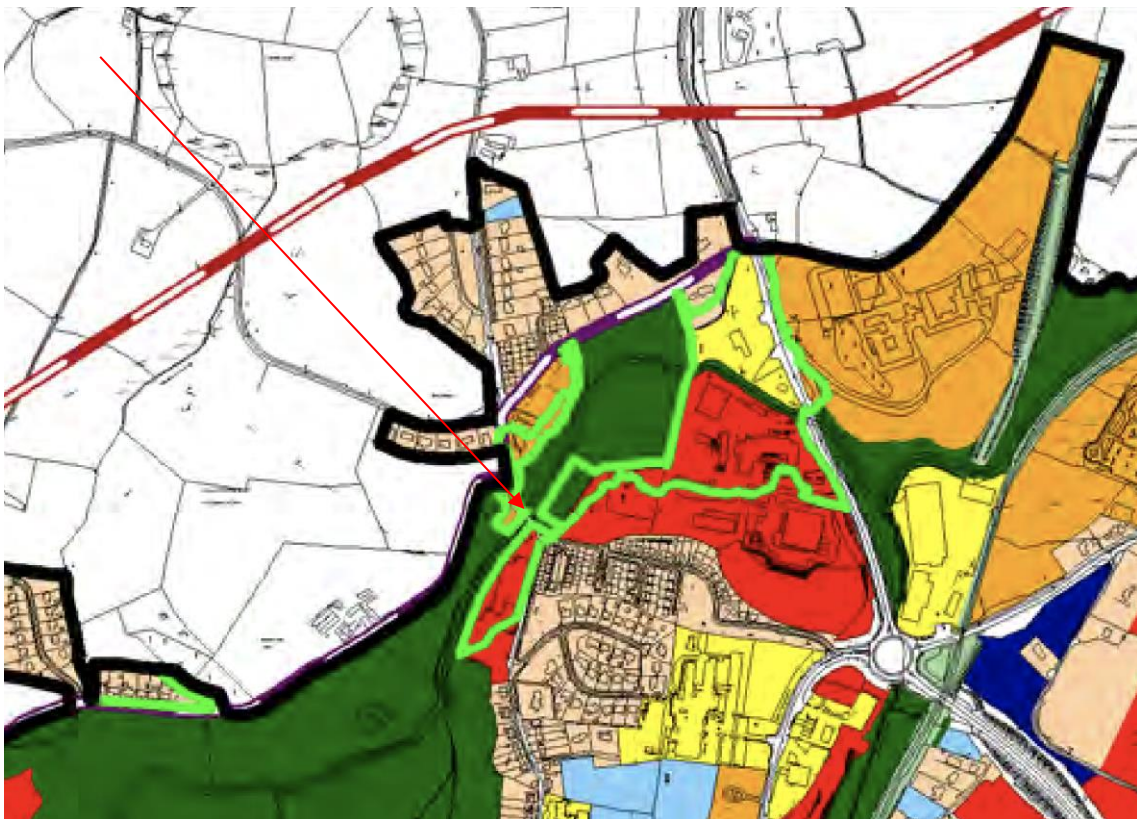


Fig 6: Extract from map MDP1 indicating applicable land zoning in the vicinity of Ballyalbany Bridge (Monaghan County Development Plan 2019-2025)

3.2 Anticipated visual impacts

3.2.1. Visual impact for the bridge

The proposed secondary footbridge is positioned above the double arched arrangement, with guarding heights aligned

with the bridge capping, reflecting an intention to minimise visual impacts associated with the intervention, when viewed from the northeast of the Blackwater Riverbank. Masonry clad pilasters are proposed to terminate the new bridge deck.

Whilst the proposal is intended to have a presence within the public realm, it has been designed to be as unobtrusive as possible, to ensure that it does not disrupt established interrelationships between the bridge and various heritage buildings in the vicinity. In its design below the parapet line of the bridge, it retains the legibility of the bridge as a landmark of heritage significance.

The intervention is not likely to be visible from the southwest riverbank, with reduced impact as a consequence.



Fig 7: Applicable land zoning in the vicinity of Ballyalbaney Bridge (Monaghan County Development Plan 2019-2025)

3.2.2. Visual impact for historic structures in the vicinity

Owing to its position, the proposal is likely to be visible from the protected Ballyalbaney Presbyterian Church ecclesial building group. The deck levels on the new bridge will closely match those of the existing bridge. Notwithstanding a possible visual connection between the two, the intervention is at a distance from the historic enclosure and separated from it by a greenbelt of established mature trees, minimised alterations to historic settings.

It is proposed to remove a section of Ballyalbaney Graveyard to facilitate an access point onto the new embankment link and bridge. It is intended, using salvaged its masonry, to construct a section of wall at the end of the new embankment. Visual impact as a consequence is reduced.

3.3 Anticipated physical impacts

It is intended to remove upper sections of the existing pier cutwater and the buttress (on south east side) to adjoin the new bridge to the existing. Masonry will be salvaged for re-use in the design of pilasters and other repairs.

The proposed route will also require two perforations of the historic bridge walls. Each instance of perforation will be accurately recorded.

4.0 ARCHITECTURAL HERITAGE CONSIDERATIONS IN EXECUTION OF PROPOSED DEVELOPMENT OF A SECONDARY BRIDGE ATTACHED TO HORSESHOE BRIDGE

4.1 Architectural heritage structures of interest in the vicinity

A gate lodge, assumed to have formed part of the Tully House demesne, is positioned to the south of the Horseshoe Bridge. Whilst this structure is included in the NIAH (Ref.No.41303016), it does not singularly appear in the RPS, yet is included in the RPS description for Tully House in a 2010 planning application (ref. 1030803).

In light of this statutory anomaly, the building will be treated as a protected structure for the purposes of an architectural heritage impact assessment for the proposed development.

4.2 Anticipated visual impacts

4.2.1 Visual impact for the bridge

The proposed installation is positioned above the single arch and aligns in height with the bridge capping, making every effort to minimise visual change from the public realm. It appears that the bridge structure and flanking walls remain intact in this proposal, further minimizing visual impacts.



Fig 8: Extract from map MDP1 indicating applicable land zoning in the vicinity of Horseshoe Bridge (Monaghan County Development Plan 2019-2025)

4.2.2. Visual impact for historic structures in the vicinity

The enclosure to the gate lodge (NIAH Ref. No.41303016), opposing the immediate south east of the bridge, adjoins the public realm changes proposed by virtue of the development. In addition to the proposed alteration of flanking walls attached to the bridge junction, further changes arising from the installation of Traffic Signal Posts on the footpath to the north western boundary of the gate lodge, will alter the presently quiet composition of the house, yet will not affect its character to the extent where a direct, negative impact will arise.

The gate lodge's entrance opposes the proposed secondary bridge's junction with the road and will in turn generate a direct interaction between the two.

Tully House, and Tully Fort, both included on the RPS, (positioned 450m to the south east) are at a sufficient distance from the development to avoid incurring any impact.

The proposed development is positioned on the north gable of the bridge. Vistas due south from the enclosing built environment, not containing buildings of heritage interest, are not considered to be impacted in architectural heritage concerns, by the proposed development.



Fig 9: Applicable land zoning in the vicinity of Horseshoe Bridge (Monaghan County Development Plan 2019-2025)

4.3 Anticipated physical impacts

No removal of northwestern wing walls or parapets are proposed. Further, the new bridge will remain structurally independent of the existing. As a consequence, no physical impacts are intended to occur in respect of physical loss of the set piece.

The bridge's condition otherwise is not known. As with the recommendation for both bridges in section 2.2 above, an assumption is made given the extent of overgrowth in the vicinity, that maintenance and repair is likely not to have been carried out in recent years. A consequence of any development within the vicinity of the historic bridge structure will therefore require a detailed structural and architectural condition assessment of building fabric. Findings, when assessed, will inform a detailed schedule of repairs, categorized in order of priority, recommending a suite of interventions that might precede the installation of the secondary footbridge when the opportunity of high level scaffolds is presented.

4.4 Anticipated impact for the Ulster Canal and Environs SA5 Area Secondary Amenity

Table 6.6 of the Monaghan County Development Plan 2019-2025 'Areas of Secondary Amenity', SA5, designates the Ulster Canal and its Environs (ie embankments) as an Area of Secondary Amenity.

Chapter 6.17 Built Heritage and Architectural Conservation, section 6.17.1 Architectural Heritage, policy BHP 10 of the Plan states that ;

The Council aims to conserve the built fabric of the Ulster Canal, Great Northern Railway, historic mills and other industrial heritage structures throughout the county and planning permission will be required for their removal or alteration.

Given the intact survival of the Horseshoe Bridge and its towpath below and adjacent, together with the continued legibility of its formed embankments, however overgrown – the special feature of the bridge as a focal point of its wider waterway amenity is considered of immense architectural, historical and technical significance, even if appreciated from the road and not its embankments. The proposed secondary bridge structure, in its design, interaction and execution is limited to the functional provision of a secondary bridge, but will, where possible, carry out localised improvements to encompass conservation, repair and presentation opportunities to enhance and safeguard the continuance of the structure's special character.

The full visual impact of the proposal from the canal embankments will be carefully studied to ensure that changes arising from improved access to the canal amenity, are balanced with benefits for the conservation of the structure itself.

5.0 CONSERVATION STRATEGY

A Principal Inspection will be carried out by Atkins of each bridge prior to Construction Phase, intending to inspect the condition of each bridge component, identify and schedule defects and make recommendations in accordance with good conservation practice, for repairs, where needed.

When accessible, a full methodology for works, based on that summarized in section 2.2 above, will be presented.

6.0 RELEVANT IMAGES

6.1 Ballyalbany Bridge



Plate 1: *Vista due north*



Plate 2: *Vista due south*



Plate 3: *Rounded capping detail*



Plate 4: Differing pitched capping detail



Plate 5: Example of breached capping exposing vulnerable masonry



Plate 6: Section of unrepared wall, adjacent to poorly matched masonry infill panel



Plate 7: As above, in context

5.2 Horseshoe Bridge



Plate 8: Vista, due south toward gate lodge



Plate 9: As above



Plate 10: *As above, due southwest*



Plate 11: *View from Gate Lodge entrance*



Plate 12: *Detail of bridge wall*

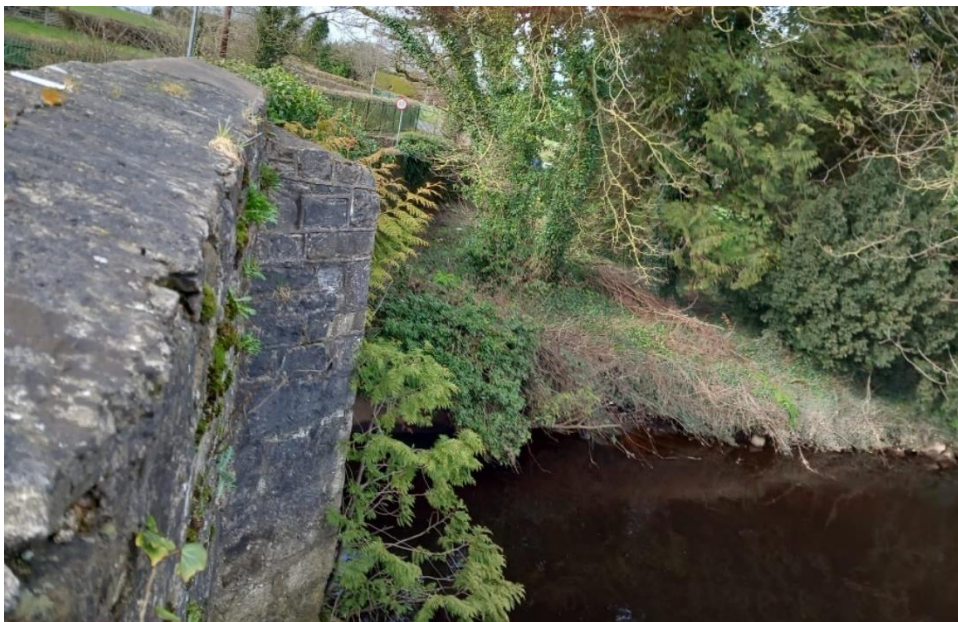


Plate 13: *Detail of buttress*



Plate 14: Aerial view of bridge in context with the historic building (to lower foreground)