

Memorandum

Project Title	Markievicz Bridge Repair Works	From	Kevin O’Riordan
Project No	224138	To	Sligo County Council c/o Michael Ryan
Subject	Scope Extents	Cc	n/a
Doc. No.	224138-PUNCH-XX-XX-FN-CS-0001 S4.P01	Date	07/03/2024

1. Introduction

PUNCH Consulting Engineers have been engaged by Sligo County Council to provide engineering consultancy services to facilitate repair works to Markievicz Bridge in Sligo Town. Our engagement includes Preliminary Stage, Detailed Design Stage including obtaining planning permission, Tender Stage, Construction Stage, and Handover Stage. Currently the project is at Detailed Design Stage and documents to support a planning application are being prepared.

Molloy & Associates Conservation Architects in their capacity as project Conservation Architect partnered with PUNCH Consulting Engineers, in preparation of an Architectural Heritage Impact Assessment (AHIA) for the current scope of works have advised there is an opportunity to carry out improvement works to the bridge. The additional improvement works recommended for consideration are as follows:

- Devegetation and repointing of the bridge (two options are presented)
- Architectural lighting to underside of the bridge arches.

This memo sets out relevant information on those improvement works so a direction can be provided to PUNCH on extent of scope for inclusion in the planning application.

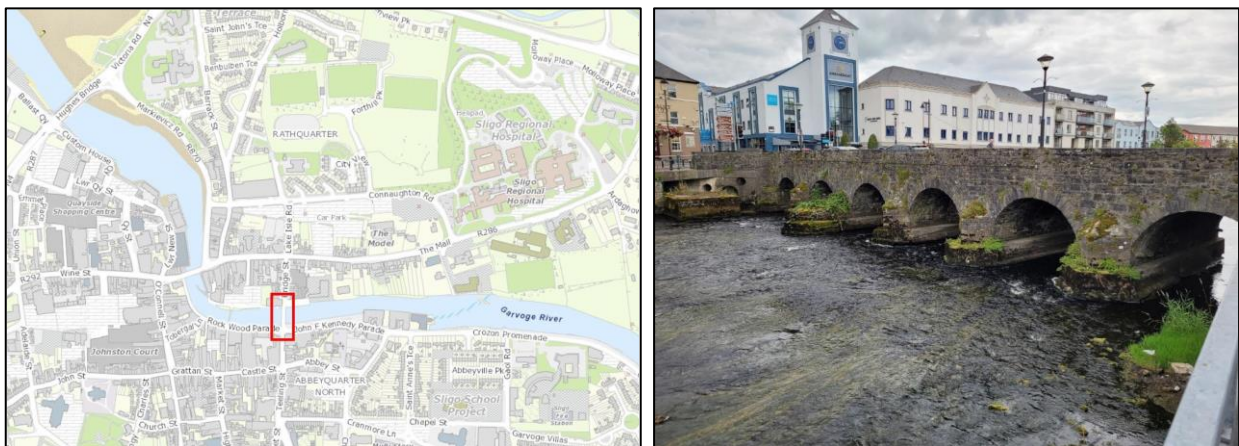


Figure 1. Location and upstream elevation of Markievicz Bridge, Sligo Town

2. Planning Application Context

The primary item in the context of route to planning approval is the location of the bridge site within and immediately adjacent to multiple Natura 2000 sites. This requires any works to be screened for an Appropriate Assessment (AA). Should the works be screened in for AA, the only possible way to obtain planning permission for the works is via a Section 177AE application to An Bord Pleanála.

The repair works discussed below in Section 3 have been screened in for Appropriate Assessment. As such planning approval will be sought via Section 177AE application to An Bord Pleanála.

3. Proposed Repair Works

PUNCH Consulting Engineers carried out a Detailed Structural Inspection of Markievicz Bridge in September 2022, in line with the Principal Inspection proforma of the Transport Infrastructure Ireland (TII) EIRSPAN Bridge Management System. This concluded significant damage to the bridge as a result of scour to the piers.

The channel bed has been eroded in the vicinity of the bridge as a result of contraction scour, causing a significant hydraulic jump at the upstream face of the bridge. The piers have also been undermined to varying degrees as a result of local scour. The extent of that scour is a cause of concern for the structural integrity of the bridge.

The proposed repairs focus on the pier footings and riverbed and will achieve the following two primary aims:

- 1) Reverse current and prevent future local scour effecting the structural integrity of the bridge by extending the pier footings further below ground level.
- 2) Reverse the current contraction scour and delay its recurrence by rehabilitating the channel bed in the vicinity of the bridge.

The construction methodology of the repair works includes the sequential dewatering of the river to allow dry access to the piers.

4. Current Position on Vegetation

TII publication AM-STR-06054 (February 2017) - 'EIRSPAN Bridge Management System Principal Inspection Manual' notes "The condition rating should not be influenced by lack of routine maintenance... However, if the lack of proper routine maintenance has led to damage to the structure, this may influence the condition rating." Minor vegetation growth not affecting structural condition is therefore not considered within condition ratings, while effect on structural condition caused by more advanced vegetation growth is considered in the condition ratings. That is to say the condition rating captures the current structural condition of the bridge component, rather than the presence of an item which has potential to affect the future structural condition of the bridge component.

During detailed inspection, the vegetation on both elevations of the bridge was determined to be minor in nature and not affecting structural condition of any bridge component. As such it was not classified as damage, and consequently there is no associated proposed repair. Refer Figure 2 below of typical vegetation to bridge elevations.

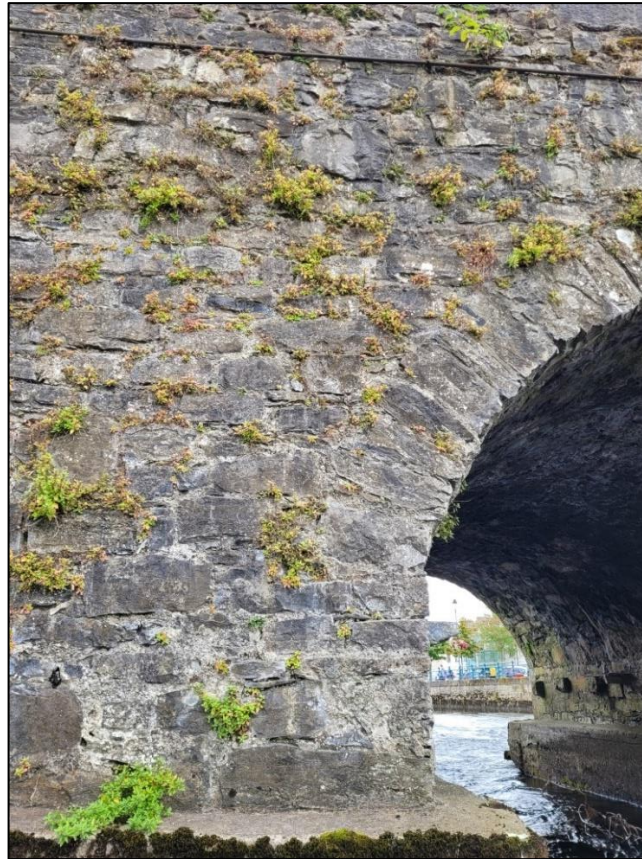


Figure 2. Typical minor growth vegetation to bridge elevation

5. Basis of Recommendation for Improvement Works

Given the time and cost associated with a Section 177AE planning application, we would recommend an increased scope of remedial works be undertaken on the bridge. Whilst seeking permission to carry out the 'main' in-stream repair works at the bridge, we believe this presents an opportunity to carry out further improvement works that will benefit and safeguard the long-term condition of the bridge into the future.

Mobilising and undertaking these Works now - under a single successful planning grant - would represent better value to Sligo County Council compared to the risk of having to seek a future planning application to address further potential remedial works at the bridge location in the next 5-10 years.

If Sligo County Council are in agreement, PUNCH Consulting Engineers would seek to reflect these further improvement works in the Section 177AE planning submission, so that they may be undertaken in tandem with the main scour remediation/mitigation and river bed rehabilitation works.

6. Improvement Works A - Devegetation

These improvement works are presented as two sub-options, see below Sections 6.1 and 6.2.

6.1 Devegetation Option 1 - Minimal Intervention

This option would see all vegetation removed and effected mortar joints repointed locally. It is conservatively assumed that this work, were it to be done at a later date outside of the current project, would be screened in for AA owing to the use of lime mortar directly above a receiving water within an SAC.

The works would be carried out by fully scaffolding the bridge elevations within the dewatered areas.

The below items are noted regarding inclusion of this option within the current scope:

- Estimated no effect on programme to lodgement of planning application.
- Estimated to increase professional fees by €2,500 ex. VAT.
- Estimated to increase Outline Construction Cost by €30,000 ex. VAT.

6.2 Devegetation Option 2 - Major Intervention

This option would see all vegetation removed, followed by steam or abrasive cleaning of all historic stone masonry on the bridge, followed by extensive mortar joint repointing as required. It is confidently assumed that this work, were it to be done at a later date outside of the current project, would be screened in for AA owing to the aerial debris of the steam cleaning and the extensive use of lime mortar above a receiving water course within an SAC.

The below items are noted regarding inclusion of this option within the current scope:

- Estimated to increase programme to lodgement of planning application by 1 month.
- Estimated to increase professional fees by €5,000 ex. VAT.
- Estimated to increase Outline Construction Cost by €60,000 ex. VAT.

7. Improvement Works B - Architectural lighting to underside of bridge arches

This option would see the addition of architectural lighting to the underside of the bridge arches. It is conservatively assumed that this work, were it to be done at a later date outside of the current project, would be screened in for AA. This is following a bats dusk emergence survey which although noted no bats were detected emerging from the bridge itself, confirmed bat activity in terms of commuting bats.

The below items are noted regarding inclusion of this option within the current scope:

- Estimated to increase programme to lodgement of planning application by 2 months.
- Estimated to increase professional fees by €5,000 ex. VAT.
- Estimated to increase the Outline Construction Cost by €10,000 ex. VAT.

8. Next Steps

PUNCH Consulting Engineers request client confirmation of extent of scope from current stage onward.