

Wade's Bridge, Aberfeldy

Summary Notes from Inspection

July 2023



Simpson & Brown

1.0 BACKGROUND

Wade's Bridge, originally known as the Bridge of Tay, is a five arch masonry bridge built over the River Tay to the north-west of Aberfeldy, Perthshire. The bridge was designed by William Adam and erected by the order of Lieutenant General George Wade, in 1733. The bridge is Category A listed and is of significant historical and architectural importance. The bridge is owned by Perth & Kinross Council and is part of the public highway (B846) connecting Aberfeldy and Tummel Bridge.

Ewan Lawson, an accredited conservation architect from Simpson & Brown, and Steve Wood, an accredited conservation engineer from Narro Associates, visited the bridge on 24th May 2023, at the request of Neil Grieve, to carry out an initial visual inspection of the structure and provide support to the Aberfeldy Development Trust and Breadalbane Heritage Society in developing a project to repair and conserve the historic structure.

During our inspection the weather was dry but overcast. Work, involving heavy machinery, to resurface the road over the bridge was being undertaken at the time of our inspection. This work appeared to be limited to the removal and replacement of the top layers (approx 50 - 75mm) of bitumen only.

2.0 GENERAL CONDITION

Based on a very superficial inspection of the bridge, the masonry structure is generally in a good condition.

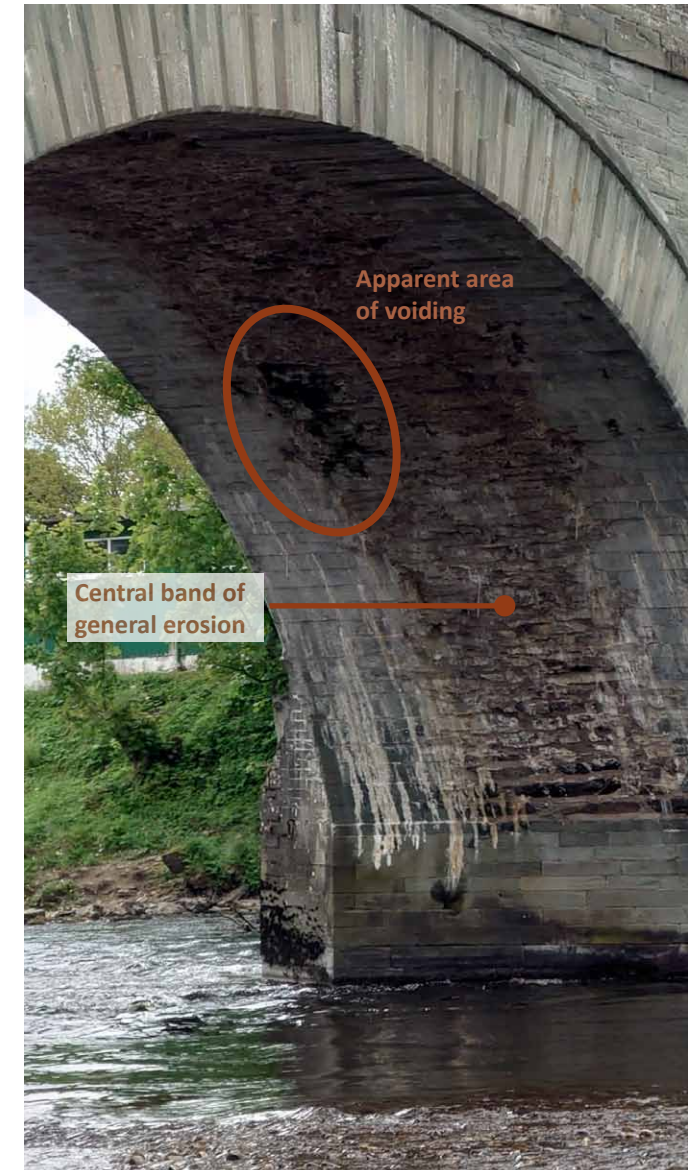
There were however areas of deterioration noted; particularly weathering/erosion to the masonry in the parapet walls above the road deck and failed or missing

mortar pointing on the inside faces of the parapet walls. Based on our observations and the 'unsolicited report' prepared by Bill Harvey in July 2022, the most likely cause of this road salts, and the inappropriate use of cement based mortar in recent repairs.

More significantly, on the underside of the main arch, there is a central band of erosion on the underside of the bridge and what appears to be a more substantial area of void towards the downstream side on the arch. The cause of this, and the potential implications for the structure, require further investigation. Previous experience however suggests that moisture penetrating the bridge deck is a likely cause.

Although the ongoing work by the local authority to resurface the road may reduce the amount of water penetrating into the structure going forward it is unlikely to prevent it all (especially at junctions with the parapet etc.) without proper detailing and waterproofing, which should be considered in any future repairs to the structure.

Subject to the result of a more detailed inspection of the bridge, which should be undertaken by an accredited conservation architect and structural engineer, none of the defects identified in our initial assessment of the bridge require urgent or immediate attention but it would be advisable to properly assess and plan for repairs to be undertaken within the next five years to prevent and retard further deterioration of the structure.



Underside of main arch from upstream side of north bank showing areas of erosion and voiding.

3.0 DEVELOPING A PROJECT

We would recommend commissioning a conservation plan and comprehensive condition survey of the bridge as the first step for developing a project for Wade's Bridge.

Conservation plans identify the cultural and historic significance of a site and establish policies for their management and conservation. The conservation plan would combine archival research with an archaeological recording exercise to properly understand the structure, and then assess the significance of the structure and the threats posed to this significance. Please refer to Historic Environment Scotland's guidance notes on the preparation of conservation plans for more details (<https://www.historicenvironment.scot/media/2786/conservation-plans.pdf>).

Accompanying the conservation plan for Wade's Bridge would be a thorough assessment of the bridge's condition by a conservation accredited architect and structural engineer. Consideration should be given as to how best to conduct the survey to ensure the information obtained is accurate and, most importantly, useful. Images captured by a drone may provide sufficient background information about the condition of the bridge to provide general comments but a more detailed, tactile, survey from a specialist mobile elevated working platform (MEWP) may be necessary to properly assess the extent of deterioration and likely repairs. An inspection from a MEWP would probably require the closure of the bridge to vehicular and foot traffic during the inspection.

The condition survey would identify repairs to the bridge under three categories – 'urgent' repairs (which should be actioned within one year), 'necessary' repairs (to be rectified within five years), and, where appropriate, 'desirable' items of work. Budget costs for the repairs would be prepared by a quantity surveyor.

Once completed, the conservation plan and condition survey would provide those responsible for managing the maintenance and upkeep of the bridge (i.e. Perth & Kinross Council but ideally in partnership with local stakeholders such as Aberfeldy Development Trust and Breadalbane Heritage Society) with a strategy for undertaking future repairs and managing the conservation of the bridge. A considered plan of work can then be developed along with appropriate repair drawings and specifications.

The cost for the preparation of the initial reports is likely to be around £22,500 plus VAT, roughly broken down as follows:

- Conservation plan: £5,000 + VAT
- Archaeological recording: £4,500 + VAT
- Condition assessment and costed outline repair schedule:
 - Architect £6,000 + VAT
 - Structural engineer £5,000 + VAT
 - Quantity surveyor £2,000 + VAT

Costs for accessing the bridge for the survey (e.g. MEWP/drone etc.) are excluded.

The scope of the commission for the reports will

determine their actual costs and to some degree it should be possible to tailor the reports to suit a particular budget. Commissioning the reports separately, as funding becomes available, would also be feasible.



Inside face of downstream parapet wall showing eroded masonry, failed mortar pointing and inappropriate use of cement based mortar causing further deterioration to walls.

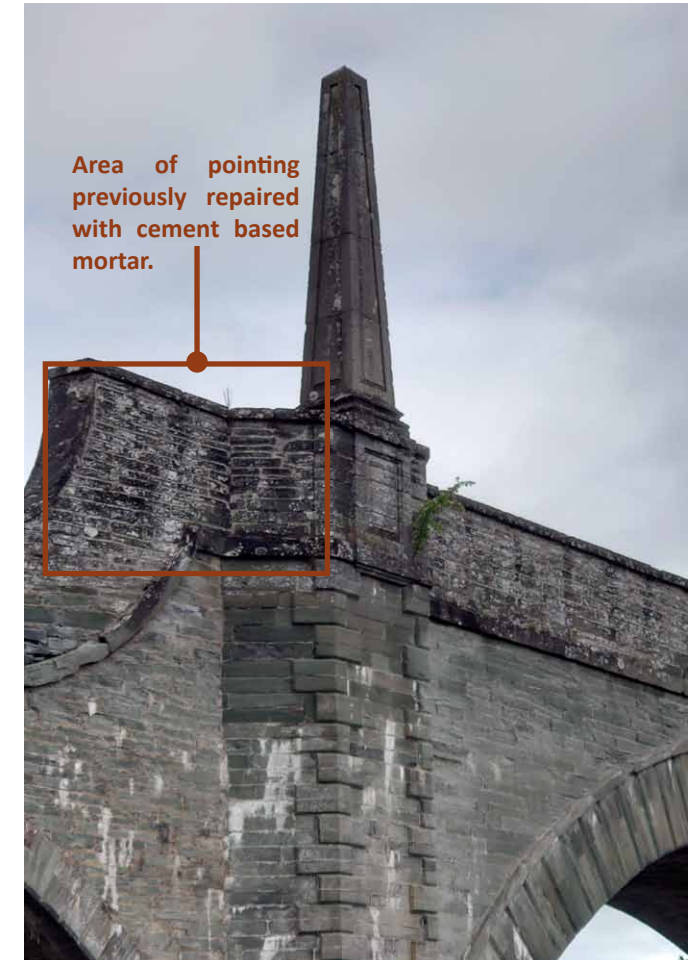
4.0 PROJECT PROGRAMME

During our discussions we talked about the tercentenary of the bridge in 2033. Completing a comprehensive repair project in time for this milestone would be fitting for a bridge of this significance. While 2033 may seem a long way off, in reality a project of this type can take a surprisingly long time to build momentum, get agreement from stakeholders and raise funds. Early engagement now with stakeholders will be vital to the project's success as will be the establishment of a structured group to manage and lead the project forward.

It is unlikely that Perth & Kinross Council, as the owners of the bridge, will have funds in place to finance the project in its entirety and therefore funding from external sources is likely to be required. Potential funding sources could include the Architectural Heritage Fund, Historic Environment Scotland's Historic Environment Grants programme; funding from local conservation trusts such as Perth & Kinross Building Preservation Trust; land developers' community grant schemes; and private donations.



Inside face of upstream parapet wall showing eroded masonry and failed mortar pointing.



Upstream elevation from north bank showing vegetation growth in failed mortar joints and inappropriate use of cement based mortar causing further deterioration to walls.

5.0 ABOUT SIMPSON & BROWN

Simpson & Brown is one of the United Kingdom's leading conservation architect practices, with a reputation for high quality new work. Based in Edinburgh, we undertake projects throughout the UK and abroad. We are known for our imaginative adaptation and creative re-purposing of historic buildings, often incorporating scholarly repair and restoration, and for our innovative, elegant and environmentally sound new buildings – often in the context of sensitive historic or landscape settings. Our aim is to improve the quality of the built environment through careful conservation work and well-mannered contextual design that is true to its time and place.

Simpson & Brown was formed as an architectural partnership in 1977. We have evolved into a multidisciplinary practice which now tackles a wide range of projects over many different sectors offering full architectural services, archaeology (Addyman Archaeology), architectural history, heritage consultancy, historic interior design, and master-planning services. We work for a wide variety of clients, including all the major heritage organisations, including the National Trust for Scotland, Historic Environment Scotland, English Heritage, as well as private individuals, local authorities, commercial developers and charitable trusts. Our projects have included extensive repairs to the bridge at Auchinleck House in Ayrshire, and the Roman and Knightslaw Bridges at Penicuik where similar repairs to those expected at Wade's Bridge were required.

6.0 REPORT LIMITATIONS

This summary note is based purely on a 'high level' visual inspection of the bridge on 24th May 2023 by Simpson & Brown and Narro Associates. Access to the structure was very limited. The inspection was from ground level only and those parts of the structure that are built in, covered up or otherwise inaccessible (including over water) have not been inspected.

No opening up, detailed investigation or testing has been carried out and it is therefore possible that some aspects of this summary note may have to be revised when further inspections, investigations and analysis are undertaken.

The report must not be used as a basis for work or as a replacement for a thorough inspection.



Downstream elevation from north bank.

Simpson & Brown is a trading name of Simpson & Brown LLP, a limited liability partnership, registered in Scotland No. SO307660.
The registered address is The Old Printworks, 77a Brunswick Street, Edinburgh EH7 5HS.

All rights in this work are reserved. No part of this work may be reproduced, stored or transmitted in any form or by any means (including without limitation by photocopying or placing on a website) without the prior permission in writing of Simpson & Brown except in accordance with the provisions of the Copyright, Designs and Patents Act 1988. Applications for permission to reproduce any part of this work should be addressed to Simpson & Brown.

Undertaking any unauthorised act in relation to this work may result in a civil claim for damages and/or criminal prosecution. Any materials used in this work which are subject to third party copyright have been reproduced under licence from the copyright owner except in the case of works of unknown authorship as defined by the Copyright, Designs and Patents Act 1988. Any person wishing to assert rights in relation to works which have been reproduced as works of unknown authorship should contact Simpson & Brown.

Simpson & Brown asserts its moral rights to be identified as the author of this work under the Copyright, Designs and Patents Act 1988.

© Simpson & Brown

Simpson & Brown

Architecture Heritage Consultancy Archaeology

Head Office : The Old Printworks, 77a Brunswick Street, Edinburgh, EH7 5HS

London Office: 70 Cowcross Street, London, EC1M 6EJ

Tel: 0131 555 4678 | admin@simpsonandbrown.co.uk | www.simpsonandbrown.co.uk