

Newport City Council

Aqueduct over Malpas Brook, Newport

Application for listed building consent: removal of access bridge

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1. Introduction

1.1 This document

This application for listed building consent (LBC) concerns the demolition of a non-original bridge structure which is, in part, connected to the Grade II listed ‘Aqueduct over Malpas Brook, Monmouthshire & Brecon Canal’ (hereafter referred to as the ‘Aqueduct’ and ‘Canal’), located in the north-western part of Newport, South Wales.

This document presents the history and heritage significance of the aqueduct, before describing the proposed intervention and assessing and justifying its heritage impact.

1.2 Project context

This LBC application forms part of a wider scheme of work associated with the proposed discontinuance of the Gwastad Mawr Flood Storage Reservoir, located to the north of Newport. Gwastad Mawr is a statutory reservoir under the Reservoirs Act 1975 and is designated as a high-risk reservoir by Natural Resources Wales (NRW). Newport City Council (NCC) is the owner and operator of the reservoir.

The proposed discontinuance is required to remove the reservoir from statutory control and to absolve NCC of its responsibilities as Undertaker under the Reservoirs Act 1975. This would reduce the inspection, maintenance and management requirements associated with the dam. It is understood that reducing NCC’s future operational obligations is a key driver for the scheme.

There are no records or operating procedures confirming the original purpose of the flood storage area. It is believed that the reservoir was designed to attenuate flood flows on Malpas Brook and provide flood protection to Crindau and the Barrack Hill area of Newport, approximately 1km downstream. The main dam forming the reservoir comprises a raised section of the Crumlin Arm of the Canal, with Malpas Brook historically passing beneath the canal through twin brick arch culverts.

To regulate downstream flows, a Sluice Gate structure and semi-circular overflow sections were later constructed upstream of the culverts and tied into the canal embankment, forming a reservoir upstream. During exceptionally high-water levels, the canal embankment acts as an auxiliary spillway. The concrete and steel Sluice Gate structure currently fixed into the Aqueduct forms part of this later flood-control and operational infrastructure and is now deemed redundant by NCC.

1.3 Methodology

The methodology used in producing this report is based on Welsh national legislation, policy and guidance, including the *Historic Environment (Wales) Act 2023*, *Planning Policy Wales*, *Technical Advice Note 24: The Historic Environment* (Welsh Government, 2026), and Cadw’s best-practice guidance *Managing Change to Listed Buildings in Wales* (2017), *Setting of Historic Assets in Wales* (2017, revised 2025), and *Conservation Principles for the Sustainable Management of the Historic Environment in Wales* (2011).

In line with this guidance, the following stages have been undertaken in this study:

- establish the scope of the study;
- collect and collate relevant documentary, cartographic and site-based evidence;
- characterise the heritage asset, with particular emphasis on identifying attributes that contribute to significance;
- assess significance in accordance with Cadw’s *Conservation Principles for the Sustainable Management of the Historic Environment in Wales*;
- identify and assess the impact of the proposed works on that significance.

2. Legislation and policy

2.1 Historic Environment (Wales) Act 2023

This Act forms part of a code of law relating to the historic environment of Wales. The Act consolidates and updates Wales's primary legislation for the protection of historic assets. It provides the statutory basis for both listed buildings and scheduled monuments, forming the core of the Welsh historic environment code.

Part 3 of the Act establishes the framework for the listing of buildings of special architectural or historic interest and governs the management of change through the LBC system. Consent is required for any works that would affect the character of a listed building, including demolition, alteration, or extension.

Local planning authorities administer the system, with powers shared in some instances with the Welsh Ministers. Unauthorised works constitute an offence, and the Act also provides powers for urgent works, compulsory purchase and enforcement.

2.2 Planning (Wales) Act 2015 & Planning Policy Wales (PPW)

Planning is a devolved matter in Wales. The Planning (Wales) Act 2015 underpins a plan-led system incorporating National Development Frameworks and Strategic Development Plans. It strengthens development management procedures, including pre-application requirements and enforcement mechanisms relevant to heritage planning.

Chapter 6 of the PPW emphasises the protection, conservation, enhancement, and sustainable management of the historic environment. It requires planning authorities to consider impacts on listed buildings, scheduled monuments, and their settings, ensuring proposals conserve historic significance and contribute to sustainable development. The PPW is currently being updated to reflect the 2023 Act but remains material to decision making.

Supporting guidance includes *Technical Advice Note (TAN) 24: The Historic Environment*, which outlines how decision-makers must assess significance, setting, impacts, and the requirements for Heritage Impact Assessments (HIAs) where relevant.

2.3 Cadw guidance & national advisory material

Cadw provides statutory and non-statutory guidance used by both local authorities and developers. Relevant documents include:

- *Managing Change to Listed Buildings in Wales* (2017)
- *Setting of Historic Assets in Wales* (2017, revised 2025)
- *Conservation Principles for the Sustainable Management of the Historic Environment in Wales* (2011)

These documents guide assessments of significance, setting, and proportional impacts, ensuring proposals affecting listed buildings or scheduled monuments are appropriately evidenced and mitigated.

Cadw also assesses planning applications relating to scheduled monuments where development may have a direct or visual impact within prescribed distances and height thresholds under the Town and Country Planning (Development Management Procedure) (Wales) (Amendment) Order 2016.

2.4 Local Development Plan

2.4.1 Overview

The adopted development plan for Newport is the *Newport Local Development Plan 2011-2026*, adopted by NCC in 2015. The plan provides the local planning policy framework for development within Newport and includes policies for the conservation and management of the natural, historic and built environment. NCC is also preparing a *Replacement Local Development Plan* covering the period 2021-36. This remains emerging

policy and should therefore be given weight only in accordance with its stage of preparation and consistency with national policy.

2.4.2 Policy SP9: conservation of the natural, historic and built environment

The *Local Development Plan* approach to the historic environment is set out in Policy SP9, which states:

“The conservation, enhancement and management of recognised sites within the natural, historic and built environment will be sought in all proposals.”

The supporting text explains that the policy seeks to protect and manage Newport’s historic environment, including listed buildings, conservation areas, scheduled monuments, historic parks and gardens, historic landscapes and other heritage assets. Development proposals affecting heritage assets should seek their protection, retention, safeguarding, conservation and enhancement. Where development affects a heritage asset or its setting, development should be of the highest quality.

2.4.3 Historic environment objectives

The *Local Development Plan* evidence base identifies the following objective for the historic environment:

“To preserve, enhance and realise the value of Newport’s heritage resources, through investment, interpretation and maximisation of those opportunities provided by the distinctive historic environment and archaeological assets.”

The evidence base further recognises the importance of protecting nationally and locally significant heritage assets, supporting the conservation and enhancement of historic buildings and structures, and securing the conservation and enhancement of archaeological remains and sensitive historic environments.

2.4.4 Emerging policy: conservation of the historic environment

As part of the emerging *Replacement Local Development Plan*, NCC is preparing updated development management policies, including policy material relating to the conservation of the historic environment. This emerging plan has not yet been adopted and does not replace the adopted *Local Development Plan*.

“All proposals will need to ensure the protection, conservation and/or enhancement of Newport’s rich historic environment, including listed and non-listed assets.”

The Aqueduct is a designated heritage asset and forms part of the historic infrastructure of the Canal. Consequently, proposals affecting the aqueduct, its fabric, associated features or its setting should be assessed with regard to the objectives of Policy SP9, specifically:

- the conservation of the significance of the designated heritage asset;
- the safeguarding and enhancement of the historic environment;
- the consideration of effects on the asset’s setting and associated structures; and
- ensuring that any intervention is appropriately designed and justified in heritage terms.

2.5 Monmouthshire & Brecon Canal Conservation Area

The Monmouthshire and Brecon Canal Conservation Area was designated in January 1998. It covers the surviving sections of the canal within Newport City Council’s administrative area, forming part of a wider network with two arms extending broadly north and north-east from Malpas, Newport. The conservation area includes Fourteen Locks, a Scheduled Ancient Monument on the Crumlin Arm, and 21 Grade II listed buildings. The canal is an important surviving historic structure and a prominent landscape feature, containing buildings and structures associated with Newport’s industrial history, as well as habitats and species of high nature conservation value.

3. Aqueduct over Malpas Brook

3.1 Setting and context

The Aqueduct over Malpas Brook is located to the north-west of Newport, South Wales. It carries the Monmouthshire & Brecon Canal across Malpas Brook, between the communities of Bettws and Shaftesbury. To the south of the Aqueduct the Canal forks to the south-west (towards Crumlin Wharf) and the north-east (towards Newport Old Town Dock).

Malpas Brook passes beneath the Aqueduct before flowing south-east towards the River Usk.

To the north of the aqueduct are areas of modern housing, to the south the site is the M4 Motorway.



Figure 1. South Wales, 2026 (Google Maps)



Figure 2. Newport, 2026 (Google Maps)

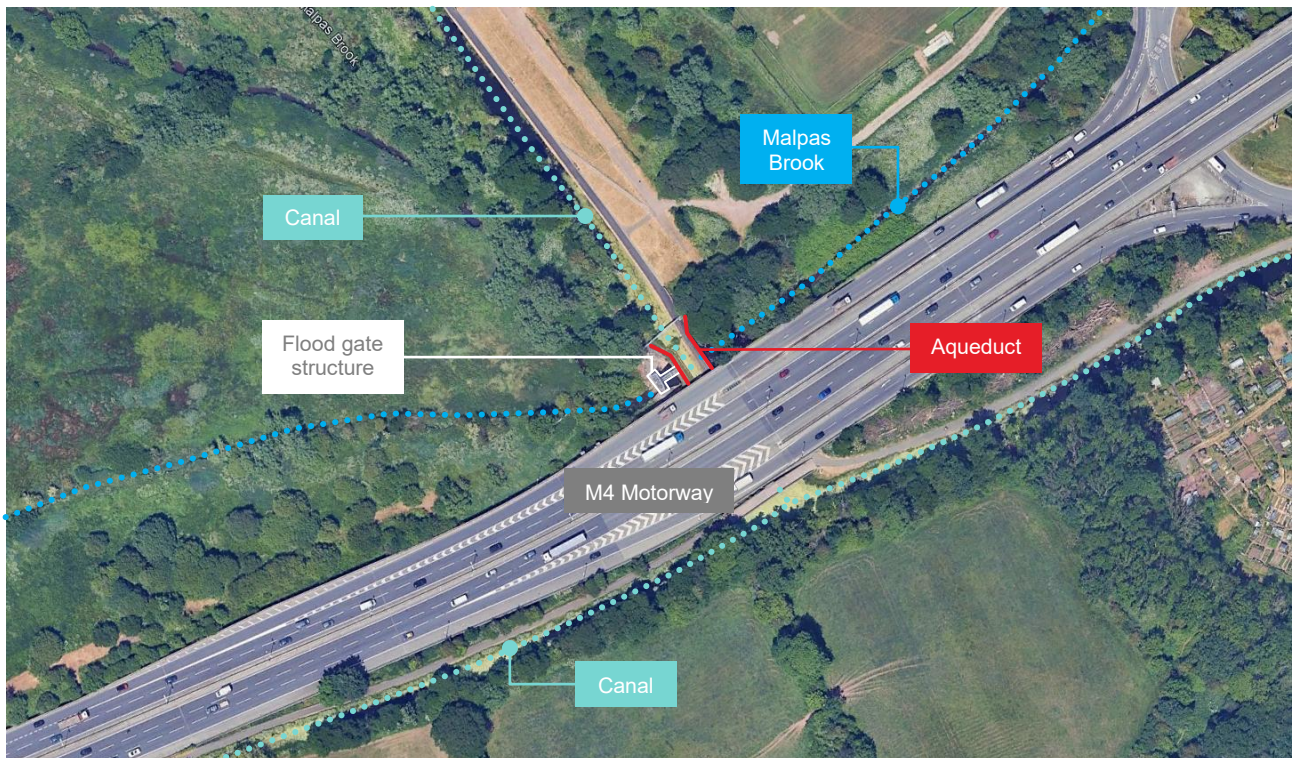


Figure 3. The Aqueduct and its surrounding context, 2026 (Google Maps)



Figure 4. The Aqueduct and its surrounding context, 1945 (Google Earth)

In Figure 4, dating from before the construction of the M4, we can see the relationship between the waterways more clearly. Figure 5 to Figure 9 illustrate how the immediate context of the aqueduct remained largely unchanged throughout its history until the construction of the motorway. With the exception of this large road, a setting of open rural fields remains relatively intact today (largely as shown in Figure 10), although suburban development has increasingly surrounded the site.



Figure 5. Monmouthshire Sheet XXVIII, 1886 (National Library of Scotland (NLS))

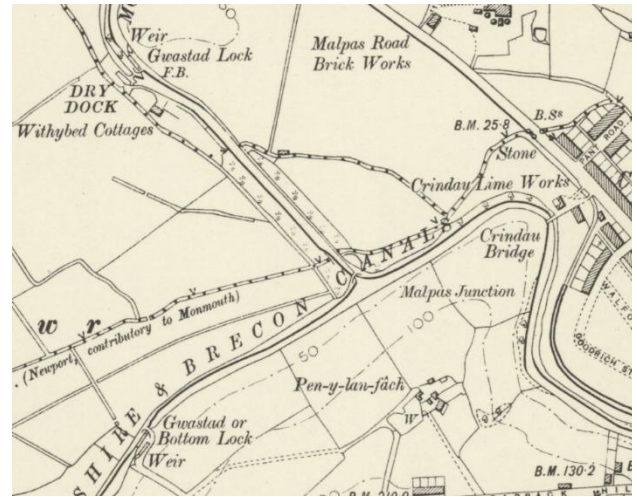


Figure 6. Monmouthshire Sheet XXVIII.SE. 1902 (NLS)

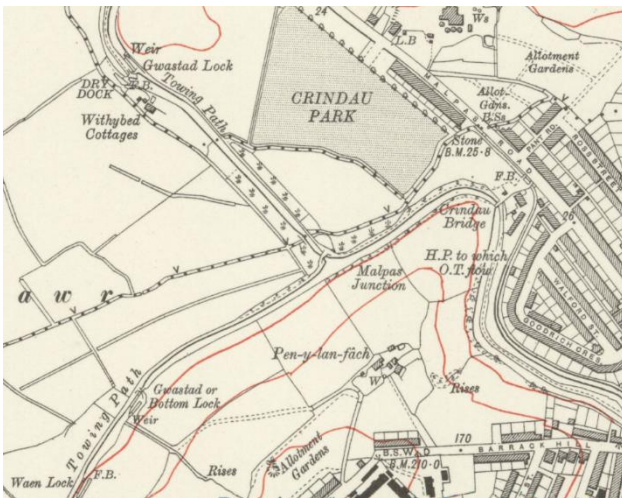


Figure 7. Monmouthshire Sheet XXVIII, 1922 (NLS)

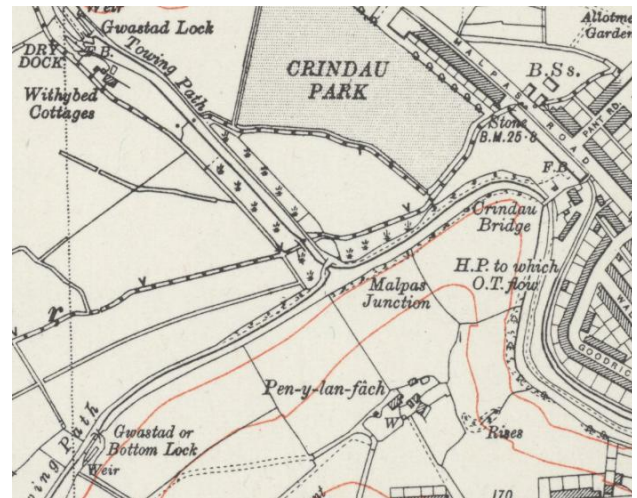


Figure 8. Monmouthshire Sheet XXVIII.SE, 1947 (NLS)

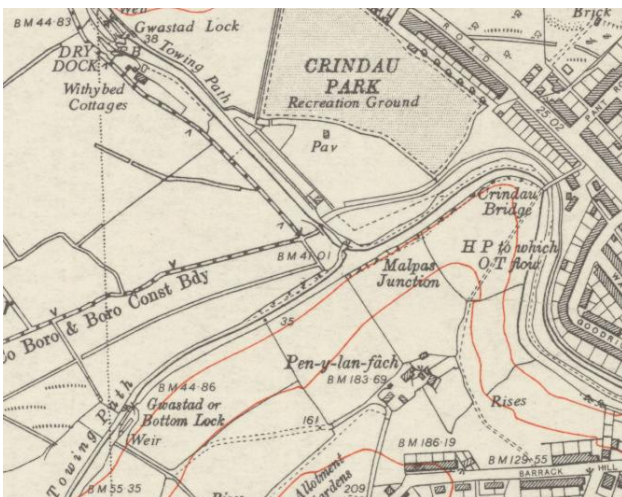


Figure 9. Monmouthshire Sheet XXVIII.SE, 1954 (NLS)



Figure 10. ST38NW-A, 1973 (NLS)

3.2 History

3.2.1 The Monmouthshire & Brecon Canal

The Monmouthshire Canal Navigation Company was established following an Act of Parliament in 1792 to improve transport between Newport and the coal and iron districts to the north.

The canal was designed by Thomas Dadford Jr. (c.1761-1801), a prominent canal engineer from a family closely associated with the development of Britain's inland waterways. Having previously worked on the Glamorganshire Canal, Neath Canal and Leominster Canal, Dadford was appointed engineer for the Monmouthshire Canal in 1792 and was responsible for surveying the route and overseeing its construction. In addition to the canal itself, he supervised the development of associated tramroads linking collieries, ironworks and quarries with the waterway, creating an integrated transport network designed to move raw materials efficiently to Newport.

The eastern branch of the canal opened in 1799 and connected Newport with Pontnewynydd, while a western branch extended towards Crumlin. Together, these routes formed a key component of the transport infrastructure that supported industrial expansion across south-east Wales.

The construction of the canal reflected Newport's emergence as one of the principal industrial ports of South Wales. During the eighteenth and nineteenth centuries, growing demand for coal and iron created a need for reliable transport links between inland industrial centres and coastal export facilities. The Monmouthshire Canal enabled large quantities of minerals to be moved to Newport's wharves, supporting the town's commercial expansion and strengthening its role within regional and international trade networks. Structures such as the Malpas Brook aqueduct therefore played an important role in facilitating the movement of goods that underpinned Newport's economic growth.

In 1812, the canal network was further integrated through a connection with the Brecon and Abergavenny Canal at Pontymoile, creating a wider inland waterway system across south-east Wales. For this reason, the canal was henceforth known as the Monmouthshire & Brecon Canal.

3.2.2 The Aqueduct

The Aqueduct was constructed c.1795 as part of the eastern branch of the Monmouthshire Canal. It was designed to carry the canal across the valley of Malpas Brook. Although modest in scale compared to some of the larger canal structures in South Wales, it was an essential component of the transport network, allowing the uninterrupted passage of boats carrying coal, iron and other industrial goods.

3.2.3 Decline

The Monmouthshire & Brecon Canal remained important throughout the early nineteenth century, although its commercial significance gradually declined following the arrival of the railways.

Despite this decline, surviving structures such as the aqueduct over Malpas Brook continue to illustrate the scale of the transport infrastructure developed to serve Newport's industrial economy and the wider landscape of the South Wales coalfield.

3.2.4 M4 motorway

The setting of the aqueduct was altered significantly during the twentieth century with the construction of the M4 motorway through Newport. Opened in stages during the 1960s and 1970s to improve east-west road connections across South Wales, the motorway was routed through the urban area of Newport and now passes immediately adjacent to the aqueduct at Junction 26 (Malpas). The motorway bridge lies between the aqueduct and Malpas Junction of the canal, physically separating elements of the historic waterway network and introducing a dominant modern transport corridor into the landscape.

3.3 Description

3.3.1 Cadw list entry

The official description published by Cadw describes the aqueduct structure as follows.

“Rubble built aqueduct with splayed ends. Cement copings, with recent brick coping to east side. Two low segmental arches, with cutwater on upstream (W) side. The heads of the arches have been cemented over. West side has parapet at ground level: east side is higher, providing a protective wall alongside the towpath.”

3.3.2 Masonry structure

The Aqueduct is constructed predominately of coursed and uncoursed rubble stone masonry, with larger, more regularly shaped blocks employed to form the arches and dressings. It is formed of two low segmental arches separated by a central cutwater which projects beyond the face of the structure. See Figure 11.

The elevations are characterised by rubble masonry walls surmounted by cement coping. The western elevation incorporates a low parapet wall at ground level, while the eastern side rises higher to form a protective retaining wall associated with the adjacent towpath. The heads of the arches have been subject to cementitious repairs or overcoating, obscuring portions of the original masonry detailing.

The arch barrels spring from simple masonry abutments and retain a largely utilitarian character. The masonry exhibits variation in stone size and coursing, reflecting either phased construction or subsequent repair campaigns. Areas of vegetation growth are present, particularly around joints and the upper sections of the structure.

The Aqueduct has been altered by the insertion of modern infrastructure associated with later flood defence works. Upstream the reinforced concrete T-beam structure has been attached directly to the historic masonry, forming a connection between the aqueduct and the adjacent Sluice Gate structure. This intervention has resulted in the displacement and partial loss of historic masonry fabric. The junction appears to have been made using cementitious mortar.

3.3.3 Flood defence gate

The flood defence gate is a concrete and steel structure, with steel railings. The structure is utilitarian in nature. A concrete structure forms the bank of Malpas Brook and abuts the Aqueduct at ground level. See Figure 13.

3.3.4 Access bridge

The flood defence gate connects to the footpath of the Aqueduct via a concrete T-beam bridge which is fixed into the masonry of the listed structure. The concrete beam cuts into and bears directly onto the Aqueduct masonry. It is presumably mechanically anchored in place, although no records have been found which illustrate the design of this connection. Joints between the concrete and stonework are presumably filled with cementitious mortar, although again no records exist.

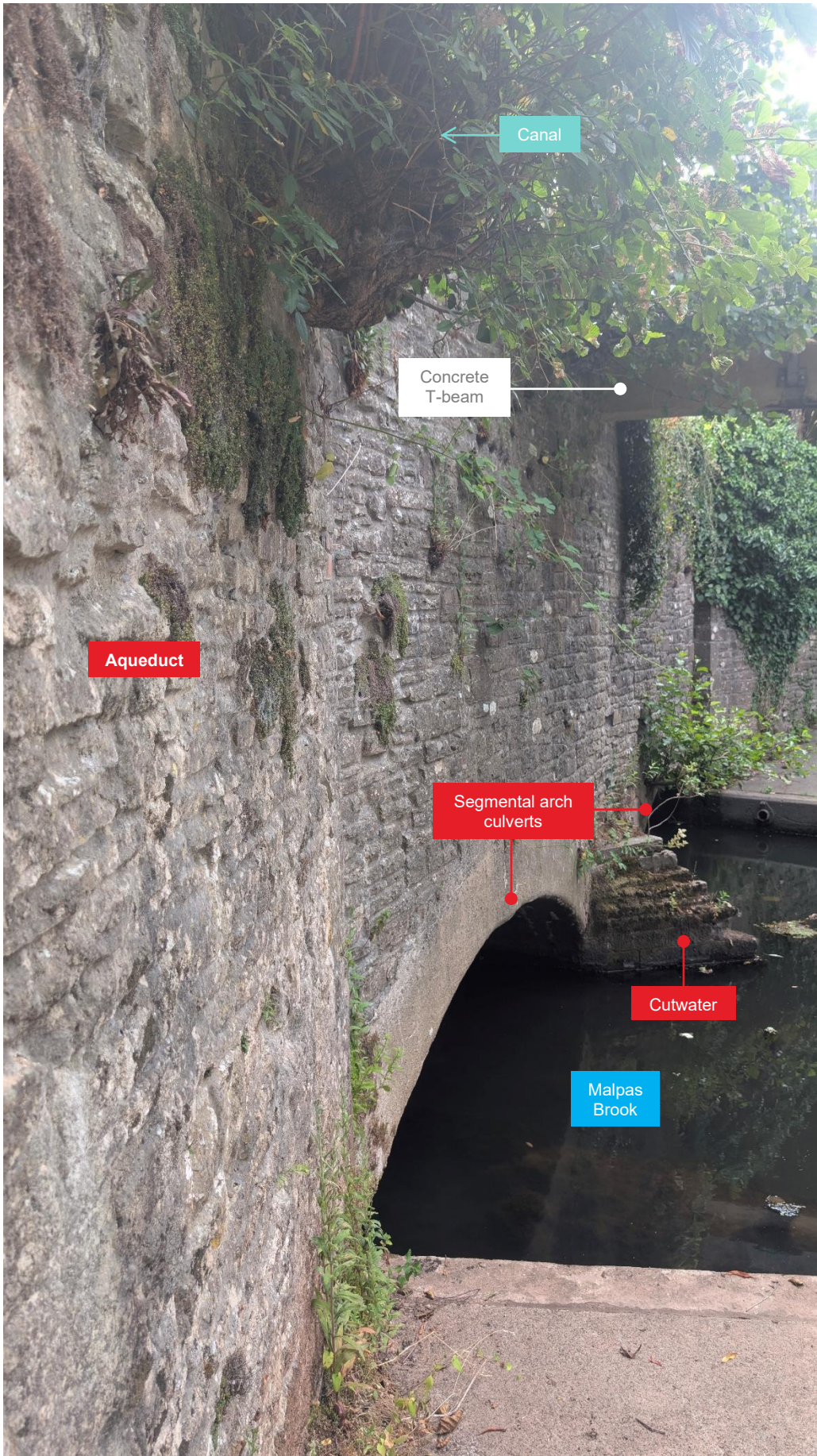


Figure 11. Aqueduct northern face, arches and cutwater, 2026



Figure 12. View looking West from the Aqueduct footpath

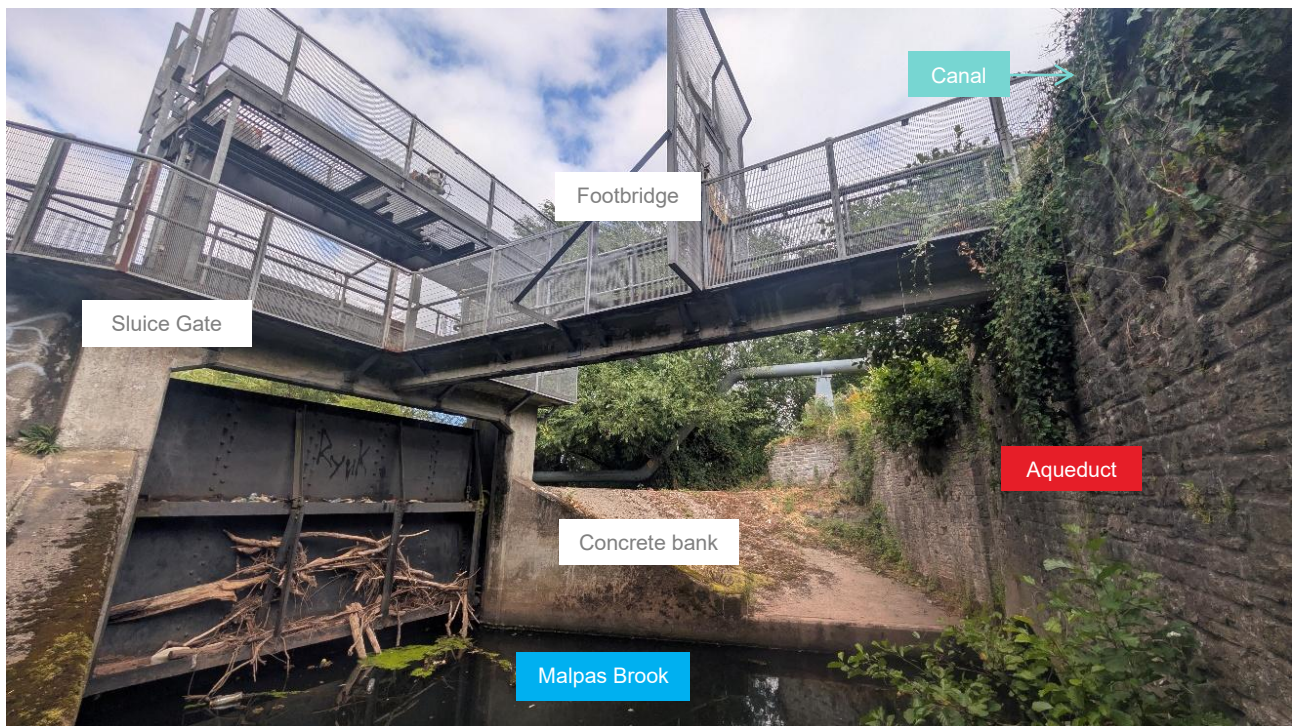


Figure 13. Sluice Gate, bridge and Aqueduct, 2026



Figure 14. T-beam bridge, 2026

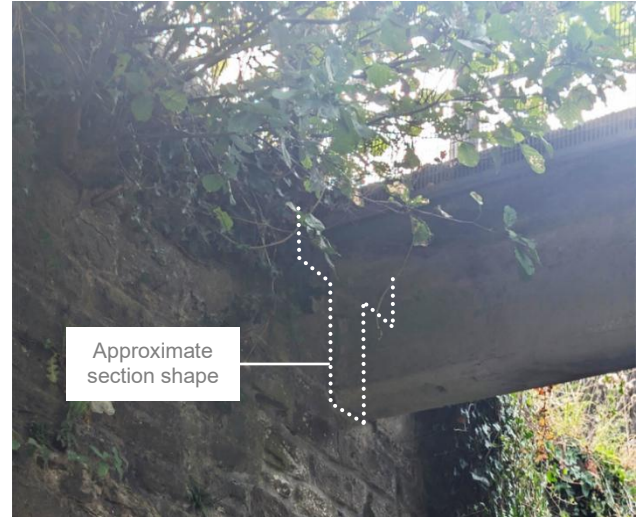


Figure 15. T-beam and connection to Aqueduct, 2026

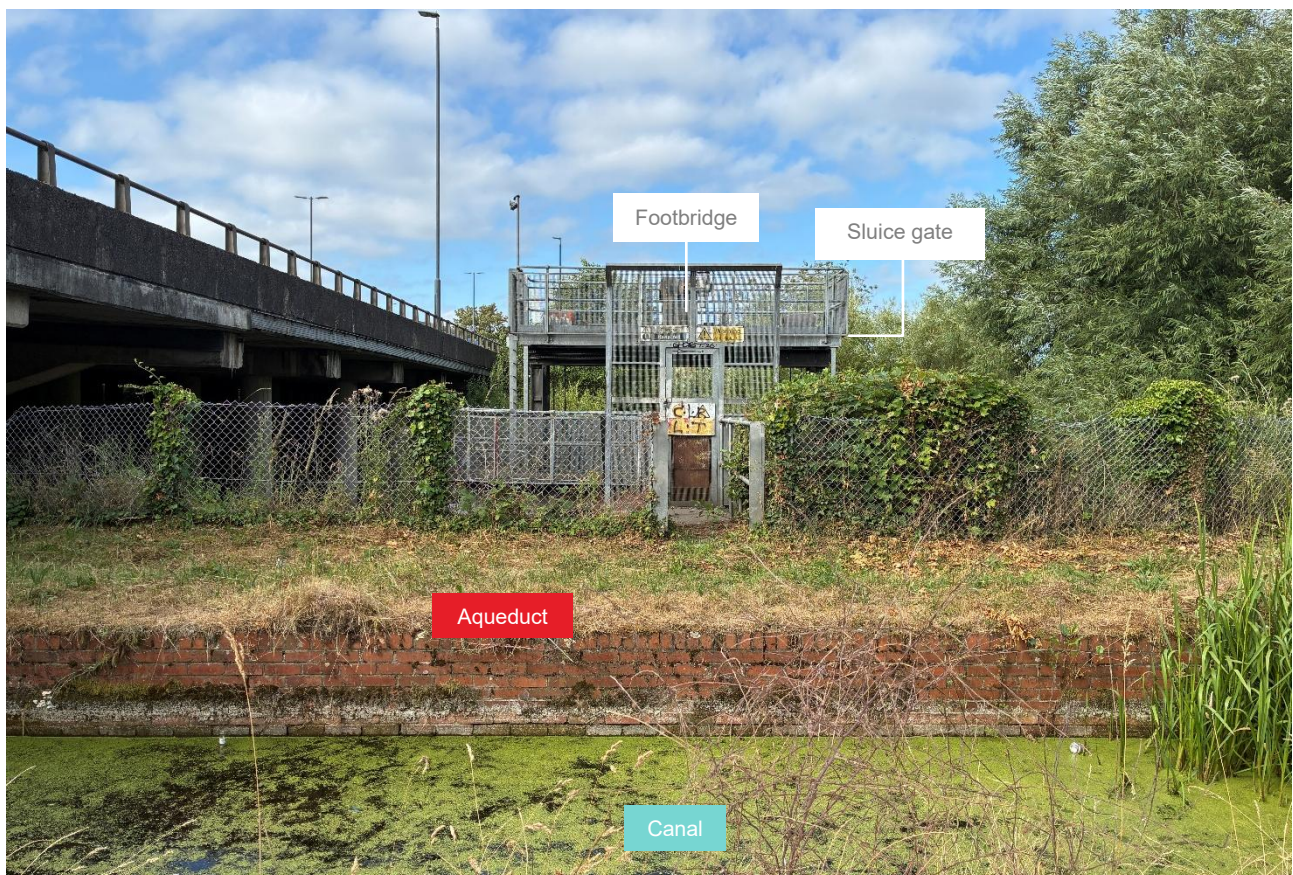


Figure 16. Footbridge (and Sluice Gate beyond) from top of Aqueduct, 2026

4. Heritage significance

4.1 Understanding significance and value

The significance of a heritage asset is the sum of the heritage values that allow its special architectural or historic interest to be understood. In accordance with Cadw's *Conservation Principles*, this assessment considers the evidential, historical, aesthetic and communal values of the Aqueduct, and identifies which elements of the asset are most sensitive to change.

4.2 Values

4.2.1 Evidential

The Aqueduct has **medium evidential value** as a surviving late eighteenth-century canal structure. It provides physical evidence for the construction and operation of the Canal, including the practical engineering required to carry a navigable waterway across the valley of Malpas Brook. Despite the loss of masonry caused by the floodgate bridge, the principal form and function of the structure remain legible.

The asset also contributes to understanding the wider canal system as an integrated piece of industrial infrastructure. Its relationship with Malpas Brook, the Canal, the towpath and the nearby junction help demonstrate how water management, navigation, haulage and movement were organised within the landscape.

4.2.2 Historical

The Aqueduct has **medium historical value** through its association with the Canal, and with Newport's development as an industrial port. Constructed in 1795 as part of the eastern branch of the Canal, it formed part of the infrastructure that enabled coal, iron and other industrial goods to move from the mineral-producing districts of Monmouthshire to Newport's wharves. The structure therefore helps to tell the story of Newport and south-east Wales in the late eighteenth and nineteenth centuries.

The Aqueduct also has historical value through its association with Thomas Dadford Jr., engineer of the Canal. While the structure itself is modest, it belongs to a wider network of canal works, locks, aqueducts and tramroad connections which collectively demonstrate Dadford's role in creating a coordinated transport system for the Monmouthshire Canal Navigation Company.

4.2.3 Aesthetic

The aqueduct has **low aesthetic value**. It is a functional engineering structure rather than a consciously ornamental work, although its masonry construction, low arches, splayed ends and relationship with the brook give it a clear and legible canal-engineering character. Its aesthetic value lies in this robust utilitarian form, in the contrast between the masonry structure and the watercourse below, and in its contribution to the surviving character of the canal corridor.

This value has been reduced by later alteration and by the changed setting of the asset. The cemented arch heads, later coping, vegetation growth, fencing, operational steelwork and the presence of the M4 all detract from the significance of the Aqueduct. Although the essential form of the structure and its relationship with the brook remain legible, these elements all diminish its aesthetic value as part of a coherent historic canal landscape.

4.2.4 Communal

The Aqueduct has **low communal value**. The canal corridor now functions primarily as a recreational route and provides local amenity through walking, access to green space and engagement with Newport's historic transport landscape. The Aqueduct contributes to that experience by marking a surviving element of the former canal infrastructure and by helping make the industrial history of the area visible within a modern suburban and transport setting.

4.3 Summary of significance

Overall, the Aqueduct over Malpas Brook is considered to hold **medium heritage significance**. Its significance is principally derived from its evidential and historical values as a surviving component of the late eighteenth-century Canal, its role within the engineered transport network that served Newport's industrial economy, and its association with Thomas Dadford Jr. Its aesthetic and communal values are present but more limited, partly because of later alteration, the changed setting of the canal corridor and the visual intrusion of twentieth- and twenty-first-century infrastructure.

4.4 Sensitivity to change

The elements most sensitive to change are the historic masonry fabric elements of the Aqueduct, its relationship with Malpas Brook, and its legibility as part of Canal. Change affecting these elements would have the greatest potential to harm significance.

By contrast, the Sluice Gate structures are later additions which detract from the heritage values of the Aqueduct. They have obscured the legibility of the Aqueduct by introducing considerable visual clutter and disturbing the legibility of the original engineering structure. Removing these elements would present an opportunity to improve the setting of the Aqueduct and reinforce its heritage values and significance.

5. Proposals

5.1 Background

Arup was commissioned by NCC to undertake the detailed design of discontinuance works for Gwastad Mawr Flood Storage Reservoir. Following a Section 10 Inspection under the Reservoirs Act 1975 in 2016, a Measure in the Interest of Safety required a formal flood study to be undertaken. These measures are legally enforceable by Natural Resources Wales. That study identified a need either to increase overflow capacity and freeboard, improve the reinforced grass auxiliary spillway, or develop an alternative preferred solution to address the high-risk nature of the reservoir. It was ultimately decided to discontinue the reservoir rather than complete extensive remedial works to bring it up to the required standard.

The proposed option includes the removal of existing steel and concrete structures associated with the operation of the reservoir and flood management system, including the bridge structure, sluice gate, 2no. flood gates and associated mechanical operating equipment located upstream of the aqueduct.

The existing structures are attached to, and positioned immediately adjacent to, the Aqueduct and comprise later additions to the historic canal structure. The works are intended to remove these operational elements while minimising any intervention to the Aqueduct itself.

5.2 Details

The footbridge structure, together with all associated mechanical equipment, support brackets, gates and ancillary components, will be dismantled and removed from site.

Figure 17 indicates the elements to be removed. With the exception of the footbridge, these components are not connected to the Aqueduct and do not form part of this application.

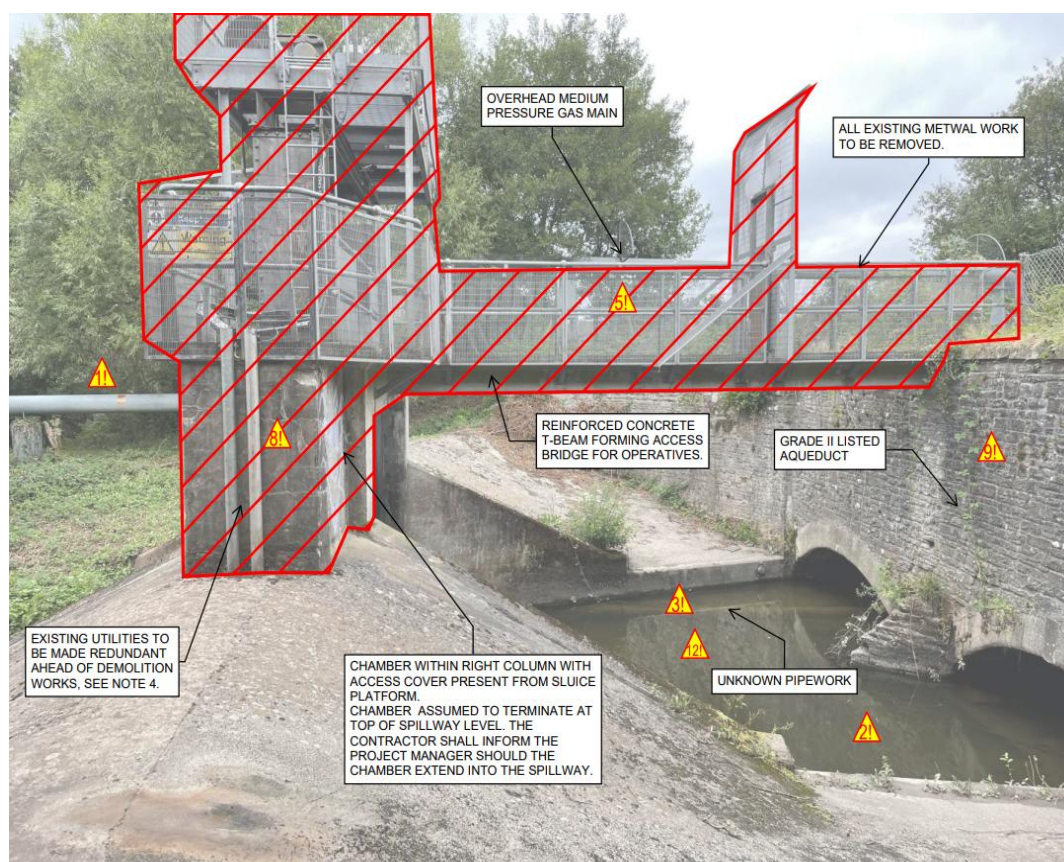


Figure 17. View of structure to be demolished, with aqueduct to the right

The existing concrete T-beam fixed into the Aqueduct will be cut flat and flush with the face of the historic structure, leaving the embedded portion of the T-beam in situ within the Aqueduct structure. Cutting will be carried out using low vibration (non-percussive) methods to minimise damage to the masonry and achieve a neat finish on the retained portion. This portion will project no more than 25mm beyond the masonry face. See Figure 18.

Suitable protection will be installed around the beam to avoid cutting elements contacting the historic stonework, and to protect it from any temporary works. Scaffolding will be installed so that no ties need to be drilled into the Aqueduct stonework. The Aqueduct will be cleaned down to remove any residual dust, etc. caused by the cutting operation.

Detailed visual surveys will be carried out before and after the cutting works, to establish the extend of any disturbance to the historic fabric. Any damage attributable to the works would be repaired, and the retained structure would be left free from demolition-induced cracking, exposed reinforcement, loose concrete, redundant brackets and unsafe surfaces. If any pointing is required, it will be carried out using lime mortar to match the existing mortar in that location. More significant disturbance (or other significant observations) will be reported immediately to the Newport City Council conservation officer.

The exposed face of the reinforced concrete will be treated with a concrete mortar repair to prevent further deterioration, including corrosion of the reinforcement bars. All connecting elements, including the handrail stanchions and bridge deck, will be removed, and holes filled as appropriate to avoid undue water penetration, etc. A chicken wire fence (as existing) will be installed across the existing opening to close the area off to the public. The contractor may be required to refix some posts behind the aqueduct wall.

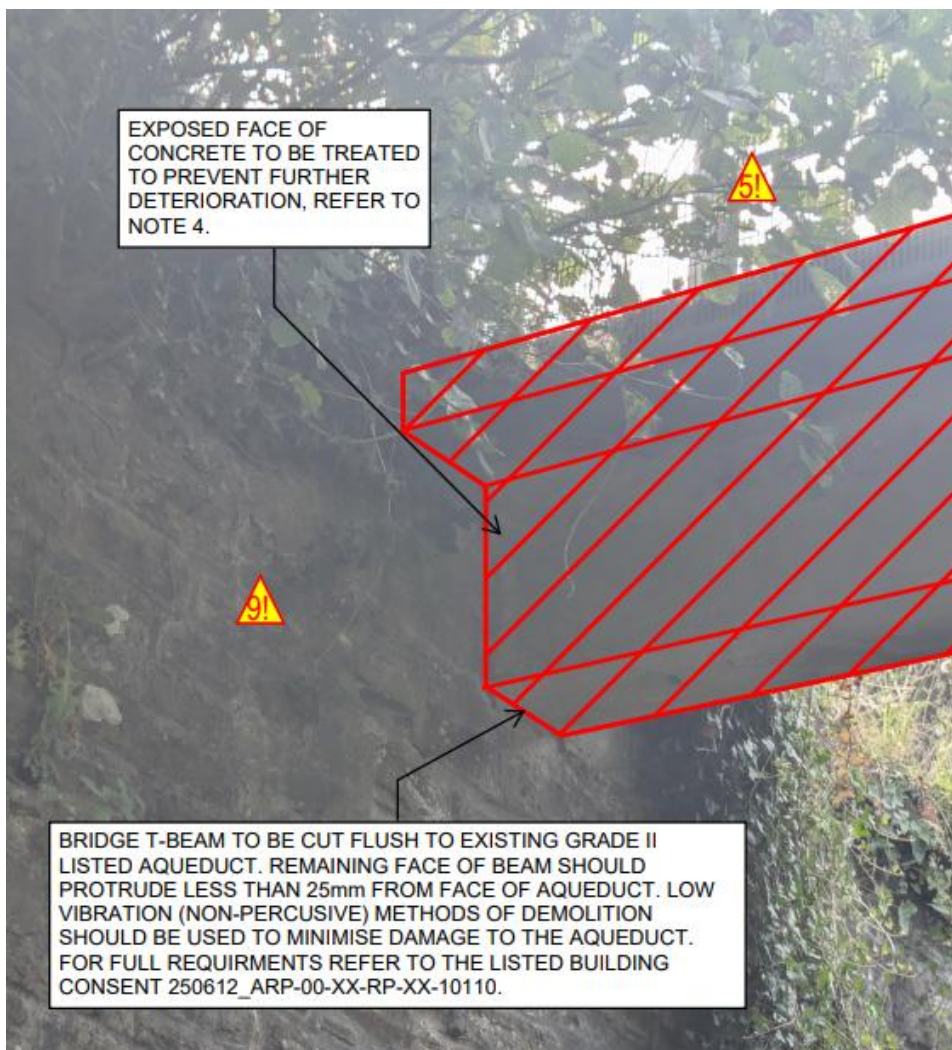


Figure 18. T-beam demolition proposal

6. Heritage impact and justification

As noted in chapter 4, the significance of the Aqueduct is principally derived from its historic masonry fabric, its legibility as a surviving component of the Canal, and its relationship with Malpas Brook and the wider canal corridor. The assessment therefore focuses on whether the proposed removal of the later flood-control infrastructure would affect those aspects of significance.

The twentieth-century flood-control infrastructure is a later addition which detracts from the special architectural or historic interest of the Aqueduct. Its removal would not result in the loss of significant historic fabric. In heritage terms, the removal of these later elements would have a beneficial effect by reducing visual and operational clutter around the aqueduct, improving the legibility of the historic masonry structure and allowing the asset to be more readily understood as part of the wider historic canal infrastructure in Wales.

The principal potential adverse impact arises from the operative access bridge, which is seated on the upstream wall of the Aqueduct. LBC is required because this element physically bears upon, and is very likely to be fixed into, the historic masonry fabric. As the precise nature of this connection is not fully understood, complete removal of the concrete T-beam from the masonry would require intrusive works to the listed fabric. This would come with a risk of localised loss of stonework, disturbance of mortar joints, vibration-related cracking or damage to the structural integrity of the aqueduct.

The beam will be cut flush with the face of the aqueduct, with any remaining projection limited to no more than 25mm beyond the masonry face. This approach avoids unnecessary intervention into the listed fabric and reduces the likelihood of physical damage to the masonry. The use of low-vibration, non-percussive techniques, careful sequencing and avoidance of direct contact with the historic masonry wherever possible would further reduce the risk of accidental damage during dismantling.

The mitigation would be supported by pre-start and post-completion condition surveys of retained structures, including photographic and video recording of existing condition. Any damage attributable to the works would be repaired, and the retained structure would be left free from demolition-induced cracking, exposed reinforcement, loose concrete, redundant brackets and unsafe surfaces. These measures provide an appropriate framework for identifying, managing and, where necessary, remedying any construction-related effects upon the listed aqueduct.

Following mitigation, the residual harm would be very low. It would be limited to the retention of a small remnant of later concrete at the point where the T-beam connects with the aqueduct. This would represent a minor visual and fabric-related intervention, but it is preferable to the greater harm that could arise from attempting to extract the embedded element from the historic masonry. The harm is therefore considered proportionate and permissible because it is limited in extent, has been minimised through a careful methodology, avoids direct intervention into significant historic fabric, and is outweighed by the heritage benefit of removing later infrastructure that detracts from the appreciation and legibility of the listed aqueduct.

On this basis, the proposals would sustain the significance of the Aqueduct and should be capable of being supported in heritage terms, subject to the detailed demolition methodology incorporating the protection, recording and repair measures identified above.

The wider scheme would also reduce NCC's statutory inspection, maintenance and operational obligations, lower whole-life costs, and reduce carbon associated with future reservoir management. Flood modelling indicates that removing the gate and sluice is likely to reduce downstream flood extent, supporting flood resilience for key infrastructure. These benefits further justify the limited and carefully managed heritage impact of removing the later operational infrastructure.