June 2024

Pontcysyllte Aqueduct Access Improvements

Design and Access Statement

Glandŵr Cymru
Canal & River Trust in Wales

Trevor Basin Access Improvements

Project Information

Project Details

Author:	Project Team	
Checker:	Ed Cardwell	
Approver:	Aydin Zorlutuna	
Report Reference:	10058635-AUK-XX-XX-RP-LA-0002	
Date:	June 2024	

Document Control

Doc Version	Comment	Date	Author	Checker	Approver
01	INITIAL DRAFT	APRIL 2024	Project Team	Ed Cardwell	Aydin Zorlutuna
02	DRAFT FINAL	MAY 2024	Project Team	Ed Cardwell	Aydin Zorlutuna
03	SECOND DRAFT FINAL	MAY 2024	Project Team	Ed Cardwell	Aydin Zorlutuna
04	FINAL	JUNE 2024	Project Team	Ed Cardwell	Aydin Zorlutuna

This report has been prepared for the Canal & River Trust in accordance with the terms and conditions of appointment.
Arcadis Consulting (UK) Ltd cannot accept any responsibility for any use of or reliance on the contents of this report by any third party.

Design and Access Statement

Contents

01 Introduction

1.1 Project Background 6
1.2 The Application 7
1.3 Purpose of this Document 7

02 Site Location and Context

2.1 Site Location 10
2.2 Heritage Context 11
2.3 Planning Context 13
2.4 Existing Connectivity, Access and Circulation 15
2.5 Site Images 16

03 Design Development

3.1 Vision 20
3.2 Concept Design 21
3.3 Consultation 26

04 Informing the Design

4.1 Topographical Survey & Contours Plan 30
4.2 Ecology 32
4.3 Archaeology 33
4.4 Heritage Context 34
4.5 Arboriculture 36
4.6 Landscape 37
4.7 Drainage 38
4.8 Analysis 39

05 Design Proposals

5.1 Developing the Design 42
5.2 Detailing the Design 43
5.3 Materials Palette 47
5.4 Green Infrastructure Statement 48
5.5 Summary of Proposals 49



01 Introduction

01 Introduction

1.1 Project Background

1.1.1 The Trevor Basin & Surrounding Area Masterplan

The journey began in 2017, when Arcadis (UK) Ltd were commissioned by the Canal & River Trust, Solutia UK Ltd, and Wrexham County Borough Council to develop proposals for the Trevor Basin Area. The objective was to formulate a viable and achievable masterplan for an expansive site covering approximately 74 hectares, incorporating the land surrounding Trevor Basin and the locally recognized 'Flexsys site' at Cefn-mawr. The primary focus of this masterplanning initiative centered on evaluating land use, fostering place-making enhancements, refining World Heritage Site (WHS) facilities, and establishing improved linkages within the masterplan area and with adjacent settlements, including Cefn-mawr, Trevor, and Froncysyllte. The subsequent Masterplan outlined the following specific aims and objectives that guided the planning process:

- Safeguard the World Heritage Site.
- Maximise economic & community benefits.
- Identify realistic options for brownfield regeneration.
- Minimise brownfield maintenance.
- Enhance visitor attractions and dwell time.
- Balance the needs of community, residents and visitor numbers.
- Improve accessibility.
- Promote the health and wellbeing of communities and visitors.
- Explore viability for extending canal / water space.
- Inform the emerging Wrexham County Borough Council Local Development Plan.

Extensive stakeholder and community engagement was undertaken as part of workshops during the masterplan. The priorities highlighted as part of this engagement included:

- the need to improve the sense of arrival at the WHS.
- issues relating to parking, access and movement both to and within the masterplan area.
- the importance of creating links with the wider area.
- consideration of income generating uses to benefit the local economy (for example waterside or camping uses, activity tourism, supporting infrastructure).
- the importance of encouraging visitor spend and increasing dwell time.
- emphasis on education opportunities within the WHS.

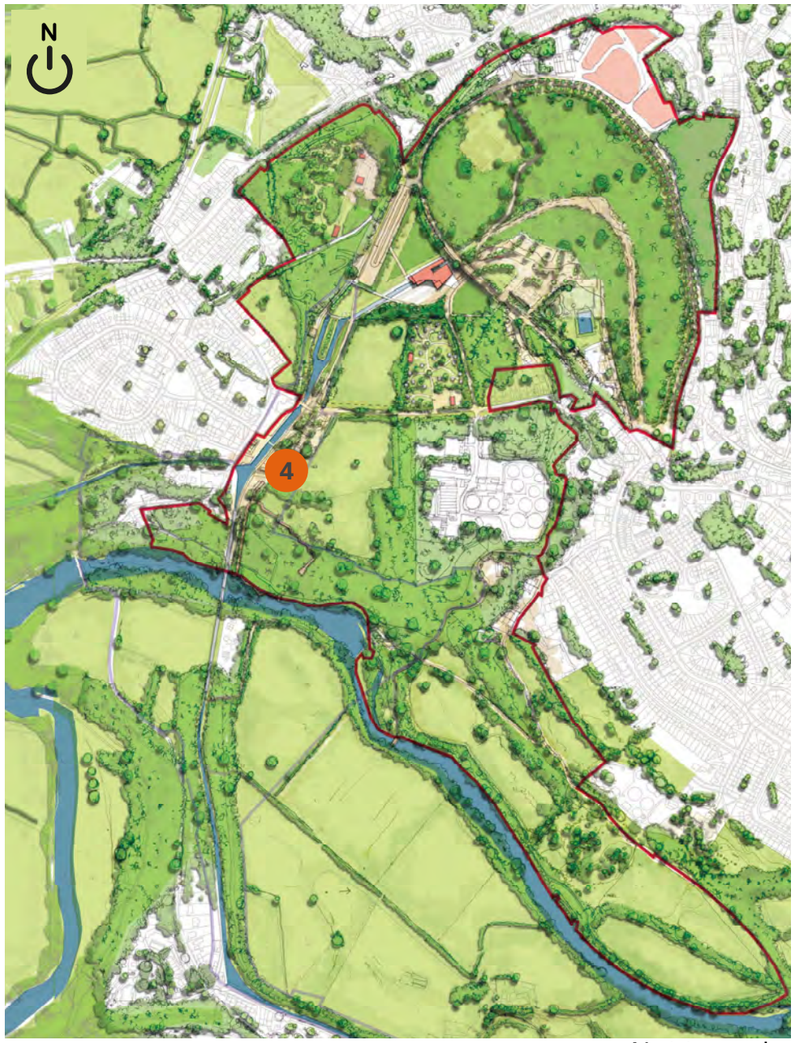
The masterplan took on board the findings and put forward the following eight elements:

1. Primary arrival area, car park and new Multi-Use Welcome Hub/ Event Space.
2. Rewilding' the former manufacturing site.
3. Creation of a Treetop Walk.
4. **Public realm improvements to the Basin Area** *(which includes the area of this application relating to access improvements around the Pontcysyllte Aqueduct area).*
5. Woodland activity area and education centre.
6. Developing a glamping/camping site.
7. Creation of a Dee River walk.
8. Creation of Development Plot.

As an integral component of the initial sub-projects, this project focuses on improving the stepped access alongside the Pontcysyllte Aqueduct, addressing in part item 4 of the masterplan. The overarching goal is to enhance the visitor experience at the World Heritage Site (WHS) by addressing current challenges related to the current irregular and inconsistent steps, restricted views, and weak links to surrounding pathways. This application seeks to improve the step access; improve links to existing pathways; create view points; agree a new step alignment that better respects the setting of the aqueduct; provide visitors with an enhanced experience of the aqueduct and the WHS.



Figure 01-1: Trevor Basin and Surrounding Area Masterplan, January 2021.



Not to scale

Figure 01-2: Extract from the Trevor Basin and Surrounding Area Masterplan (area outlined in red above). Number 4 shows the location of the Public realm improvements to the Basin Area, and includes Pontcysyllte Aqueduct Access Improvements (which is the subject of this application).

01 Introduction

1.2 The Application

This planning application seeks permission for the following works:

Improvements to public footpath below Pontcysyllte Aqueduct including realigned footpath; regrading to establish an appropriately graded route; new steps and landings; new railings and handrails; vegetation clearance; and hard and soft landscaping.

As part of the redevelopment of the site the following works are proposed:

- A new flight of realigned steps that better respects the heritage setting of the aqueduct, working with the existing contours and so minimising regrading, to improve and optimise accessibility between the aqueduct and the River Dee:
  - Each flight of steps will consist of 7no. 300mm treads and 170mm risers.
  - Step widths will vary (minimum 2000mm).
  - Landings will vary in length (minimum 1200mm).
- Regrading to establish appropriately graded route, optimising cut and fill.
- Handrails along steps.
- Retention of covered space beneath the aqueduct linking to existing footpath to the north west.
- Low-growing planting along the edges of the new steps and landings, to integrate the steps into the landspace.
- Retention and protection of the existing hedge line along the eastern edge of the path.
- Widened 'node' at the southern end of the path linking to the existing footpath to the south east.
- Railings to the edge of the River Dee bank.
- Minor vegetation clearance to improve views of the aqueduct from the west.
- Improved length of footpath from the bottom of the steps beneath the aqueduct and along the river to the west, giving access to a widened area providing views back to the aqueduct and ongoing access to the existing footpath to the west.

1.3 Purpose of this Document

This Design and Access Statement accompanies the application which has been jointly prepared by Arcadis and The Canal & River Trust (the "Applicant"). It supports a planning application which seeks consent for access improvements and a new stepped access adjacent to Pontcysyllte Aqueduct.

This Design & Access Statement (DAS) provides a comprehensive overview of the proposed project (Pontcysyllte Aqueduct Access Improvements), outlining design principles and access considerations, in support of a full planning application. With reference to previous studies including the "Trevor Basin Area Masterplan" the DAS sets out the project's objectives, contextual significance, and design proposals to support the established masterplan, local plan policy and respect the wider cultural and historical context within the WHS setting and designated buffer zone.

This project represents a significant investment to increase acessibility within the vicinity of the Pontcysyllte Aqueduct with the aim of increasing visitor levels within the Trevor Basin Area and extending visits to the wider area.



Figure 01-3: View of the aqueduct



Figure 01-4: View of the existing stepped access and aqueduct



Figure 01-5: View of the towpath across the aqueduct



02 Site Location and Context

02 Site Location and Context

2.1 Site Location

The site is located within the Pontcysyllte Aqueduct and Canal World Heritage Site (WHS), approximately 8 miles south west of Wrexham. The site is situated to the east of Pontcysyllte Aqueduct and extends from Trevor Basin canal towpath to the River Dee. The current site consists of a steep wooded embankment and stepped access (which is currently in a state of poor repair) along the eastern side of the aqueduct.

The site is located near the villages of Trevor and Cefn-Mawr, centred at approximate National Grid Reference (NGR) SJ 27088 42182.

The site covers an area of approximately 0.1 hectares of sloping wooded land form that connects to surrounding path networks.



Figure 02-1: Site Location: Aerial view

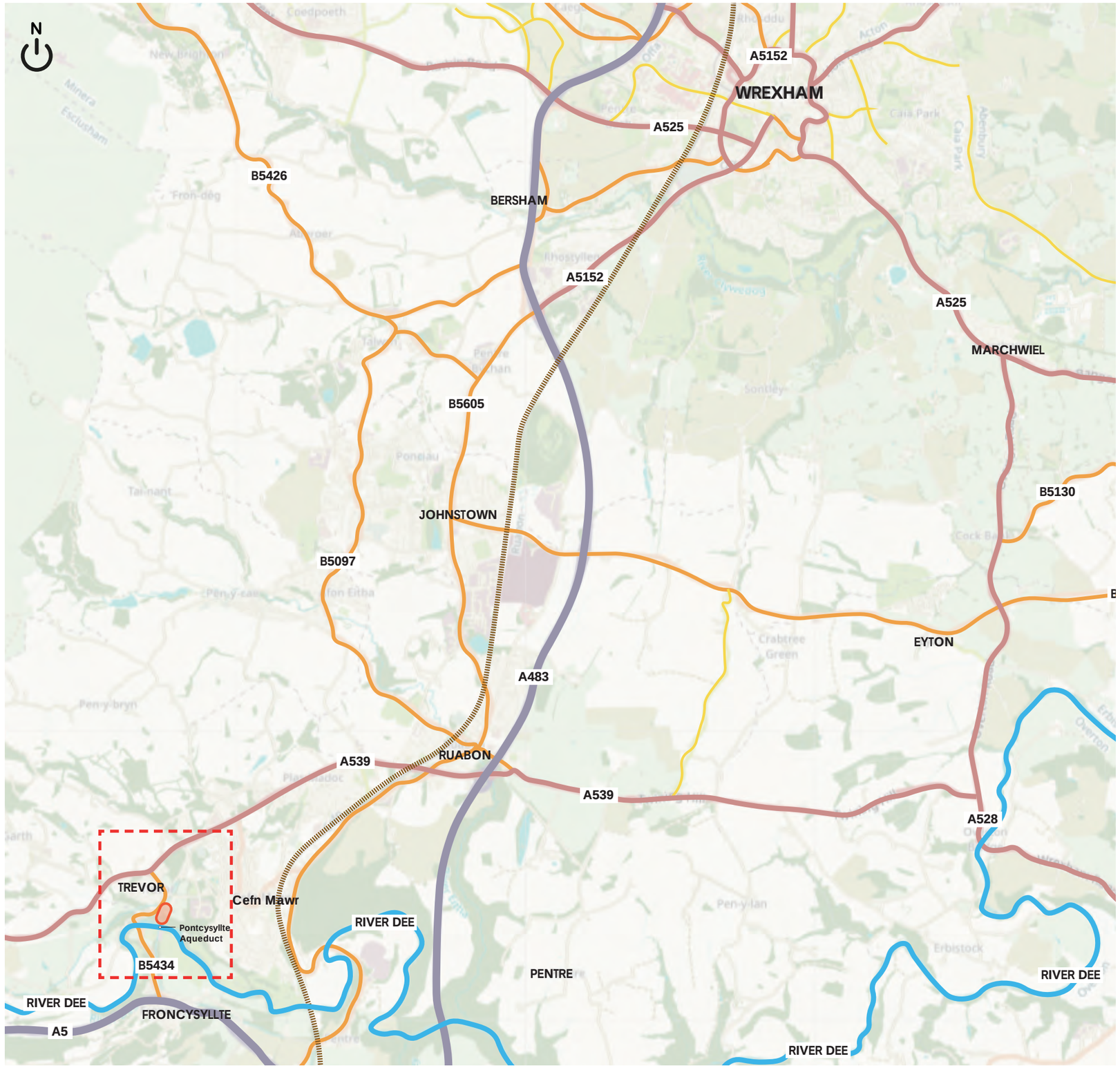


Figure 02-2: Site Location: Wider Context

Not to scale

2.2 Heritage Context

2.2.1 Pontcysyllte Aqueduct & Canal World Heritage Site

A World Heritage Site represents a location of Exceptional Universal Value for the entire human population. The designation of World Heritage Site status to the Pontcysyllte Aqueduct and Canal in June 2009 acknowledges that its value and significance are distinctly articulated through the integrity and authenticity of its features, as well as its broader landscape and cultural context.

The Pontcysyllte Aqueduct and Canal represent a cohesive collection of civil engineering marvels from the transformative era of transportation advancements in the British Industrial Revolution. Constructed between 1795 and 1808 by eminent figures in civil engineering, Thomas Telford and William Jessop, this canal facilitated waterborne transport from the English lowlands to the challenging topography of the Welsh uplands. Employing innovative techniques, the canal traversed two significant river valleys and the intervening ridge, becoming a testing ground for groundbreaking ideas that would resonate in global engineering practices.

In 2009, the site attained World Heritage status, a recognition reserved for locations of exceptional universal value meeting stringent selection criteria. Pontcysyllte Aqueduct and Canal fulfil three of these criteria:

- Criterion (i): The Pontcysyllte Aqueduct is a highly innovative monumental civil engineering structure, made using metal arches supported by high, slender masonry piers. It is the first great masterpiece of the civil engineer Thomas Telford and formed the basis of his outstanding international reputation. It bears witness to the production capacities of the British ironmaking industry, which were unique at that time.

- Criterion (ii): The intensive construction of canals in Great Britain, from the second half of the 18th century onwards, and that of the Pontcysyllte Canal in particular in a difficult region, bear witness to considerable technical interchanges and decisive progress in the design and construction of artificial waterways.

- Criterion (iv): The Pontcysyllte Canal and its civil engineering structures bear witness to a crucial stage in the development of heavy cargo transport in order to further the Industrial Revolution. They are outstanding representatives of its new technical and monumental possibilities.

Spanning the Dee Valley with nineteen cast iron spans at a towering height of 126 feet (38.4 meters), the aqueduct is internationally acknowledged as a waterways engineering masterpiece and an early exemplar of iron construction. The canal showcases the innovative engineering approaches that Britain pioneered during the Industrial Revolution, setting precedents for waterway, railway, and road construction worldwide.

The landscape intervention by engineers, navigating the Welsh upland topography, was characterised by a new scale and intensity. Described at its completion as a canal length featuring works more challenging than perhaps anywhere else within a comparable distance of canal navigation, it combined engineering prowess with sensitivity to its impact on the valued landscape. The site, in continuous use for two centuries, served various purposes, from transporting coal, iron, slate, limestone, and general goods to accommodating pleasure boats and facilitating water conveyance.

Pontcysyllte Aqueduct and Canal stand as remarkable monuments of the canal age in the United Kingdom, flourishing from the 1760s until the rise of locomotive railways in the 1830s. Canal construction reached its zenith during the "Canal Mania" after 1790, contributing significantly to the Industrial Revolution's economic growth, regional specialization, and urbanization. The name "Pontcysyllte," meaning "the bridge that connects," aptly describes how the canal majestically spans the tumultuous River Dee below. Designed by Thomas Telford and Williams Jessop and constructed by John Simpson (stonework) and William Hazledine (ironwork), the aqueduct, completed in 1805, stands as a testament to bold civil engineering solutions, featuring a cast iron trough suspended above the river by iron arched ribs supported on 18 hollowed masonry pillars.

2.2.2 World Heritage Site Issues and Pressures

The new WHS Management Plan identifies the following in relation to Trevor Basin and the surrounding area:

- The importance of protecting the Outstanding Universal Value of the WHS, its Buffer Zone and wider setting (including views and sense of arrival).
- The need for enhanced visitor facilities, including parking.
- The need to improve physical and non-physical accessibility and connectivity to the WHS.
- The need to ensure long-term sustainable access without erosion, damage or over-crowding.
- The importance of realising economic, social and cultural benefits.



Figure 02-3: Pontcysyllte Aqueduct

02 Site Location and Context

These key aims were a corner block in developing the improved access proposals detailed within this application.

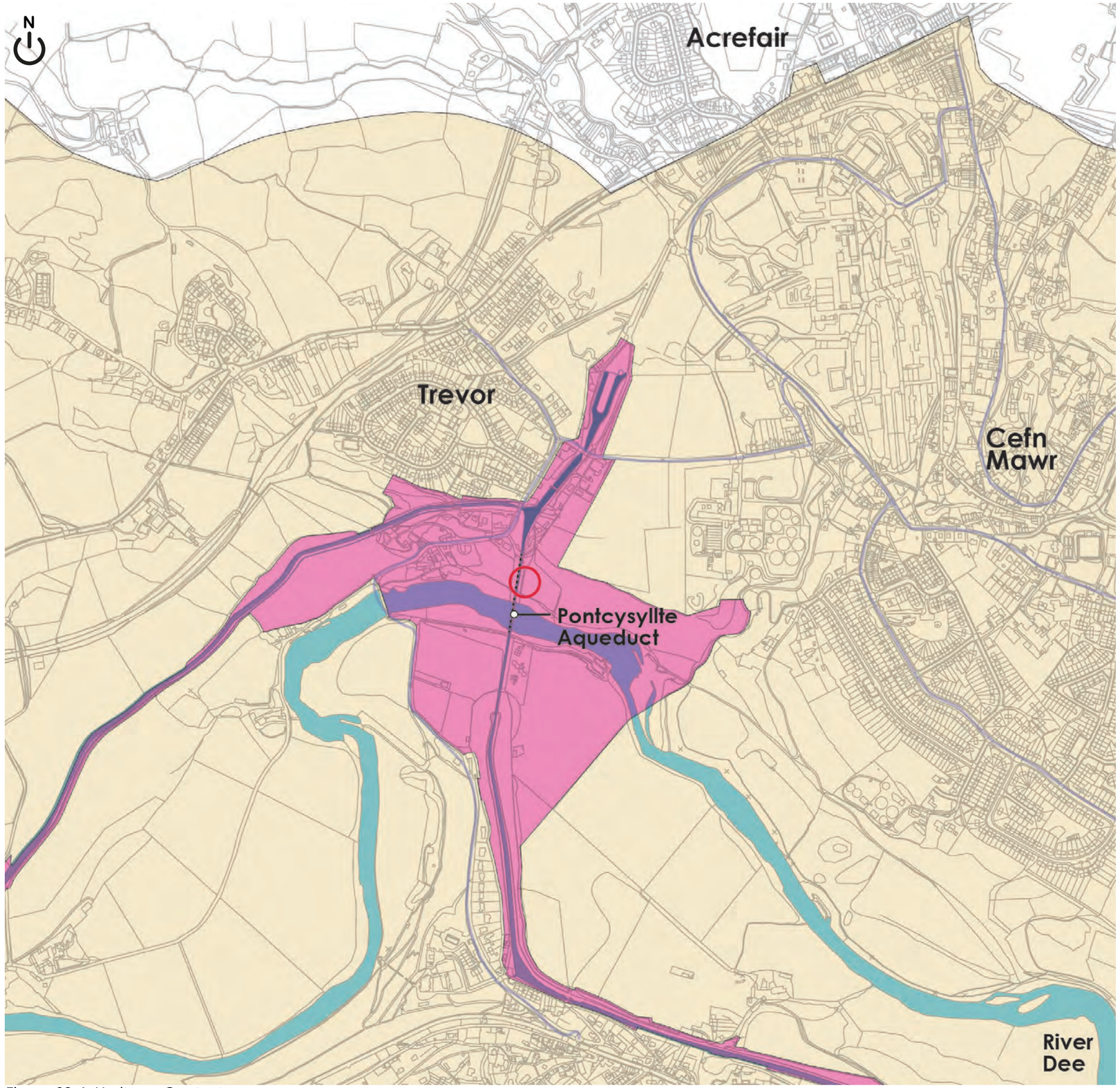


Figure 02-4: Heritage Context

Not to scale

2.3 Planning Context

Please refer to the accompanying Planning Statement (ref: 10058635-AUK-XX-XX-RP-TC-0001-01) which supports the application. This document considers the proposed development of Trevor Basin Steps against the relevant national and local planning policies.

The planning policy framework relevant to the determination of future planning applications is set out below.

At a national level, Planning Policy Wales (PPW) Edition 12 (Welsh Government, February 2024) provides relevant planning guidance informed by the Well Being Future Generations Act, together with Future Wales – The National Plan 2040 (February 2021), as well as supporting Technical Advice Notes (TANs). The content of national guidance must be taken into account by local planning authorities when deciding planning applications.

At the local level, planning policy is provided through the Wrexham Local Development Plan 2 (LDP) 2013 – 2028 (Adopted December 2023).

In addition to the Development Plan there are several material considerations. These are listed below:
Trevor Basin Masterplan (2020)
Local Planning Guidance Note 7 – Landscape and Development
Local Planning Guidance Note 17 – Trees and Development
Local Planning Guidance Note 32 - Biodiversity and Development
Local Planning Guidance Note 33 – Pontcysyllte Aqueduct and Canal World Heritage Site

Wrexham Local Development Plan

The LDP was Adopted on the 20th December 2023 and supersedes the Wrexham Unitary Development Plan (UDP) 1996–2011. Within the LDP the site is within the following allocations and designations:
The Trevor Basin Masterplan Area (Policy BE2);
The World Heritage Site (Policies SP15 and BE1);

- A Green Wedge (Policy SP6);
- A Conservation Area (Policy SP15)
- A Registered Historic Landscape Area (SP15);
- A Local Designated Site of Nature Conservation and
- Geological Importance (NE2);
- An Area of Outstanding Natural Beauty (SP14 and NE4);
- A Coal and Development High Risk Area (DM1); and
- An Article 4(2) Direction (SP15).

The area of the site that crosses under the Aqueduct is also located within a Scheduled Ancient Monument (SAM) (SP15). The site is also located adjacent to an area along the River Dee that is designated as a Site of Special Scientific Interest (SSSI) (SP14 and NE1), a Special Area of Conservation (SAC) (SP14 and NE1) and a TAN15 Flood Zone (C2) (SP18 and DM1).

Planning Policy Wales (Edition 12)

PPW, first published in 2002, sets out the land use planning policies of the Welsh Government. The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental, and cultural well-being of Wales.

It covers the following themes in relation to delivery of sustainable development:

- Placemaking in Action
- Placemaking in Rural Areas
- Managing Settlement Form – Green Belts and Green
- Wedges
- Tourism
- Conserving and Enhancing the Historic Environment and its Assets
- World Heritage Sites
- Landscape
- Biodiversity and Ecological Networks
- Water and Flood Risk
- Capacity of Water Supply and Sewerage / Drainage
- Infrastructure
- Water Quality and Surface Water Flooding
- Sustainable Drainage Systems (SuDS) and Development
- Development and Flood Risk
- Land Contamination

The Planning Statement has demonstrated that the proposed development is supported by policies in the LDP and the National Plan 2040. The proposal development would provide a safer and more attractive route for visiting the Pontcysyllte Aqueduct and Canal World Heritage Site that would respect the area's historic setting and have no greater impact on designated conservation and nature areas than the existing footway. It would maintain the openness of the site's Green Wedge location outside settlement limits and would enhance the local green infrastructure network. The proposed development is also in accordance with material considerations including Trevor Basin Masterplan, Planning Policy Wales, and relevant local planning guidance.

Technical Advice Note (TAN) 5: Nature Conservation and Planning (2009)

TAN 5 provides guidance to local planning authorities in determining planning applications on how land use planning system should contribute to protected and enhanced biodiversity and geological conservation, read in conjunction with PPW.

TAN 5 sets out the following principles of positive planning for nature conservation:

- 'Integrate nature conservation in all planning decisions looking for development to deliver social, economic and environmental objectives over time.
- Ensure that the UK's international and national obligations for site, species and habitat protection are fully met in all planning decisions.
- Look for development to provide a net benefit for biodiversity conservation with no significant loss of habitats or populations of species, locally or nationally.
- Help to ensure that development does not damage, or restrict access to, or the study of, geological sites and features or impede the evolution of natural processes and systems especially on rivers and the coast.
- Plan to accommodate and reduce the effects of climate change by encouraging development that will reduce damaging emissions and energy consumption and that help habitats and species to respond to climate change.'

Technical Advice Note 12: Design

Alongside PPW, TAN 12 'Design' (2016) is the principal source of design guidance for Wales in providing a broad framework with which to steer design standards and principles at the local level, advocating those aspects of good design identified in PPW and presenting a series of guidelines to deliver these elements. It guidance also sets out objectives to achieve environmental sustainability, including efficient use and protection of natural resources, enhancing biodiversity and designing for change.

Technical Advice Note 15: Development, Flooding & Coastal Erosion

TAN 15 'Development, Flooding and Coastal Erosion' (2015) provides technical guidance to supplement PPW policies on flooding and a framework for assessing flood risk.
The document seeks to prevent exposure to flood risk by setting out locational preferences for new development. This includes allowing resilient development in undefended areas of relatively low risk (Zone 2). It requires development proposals for sites in Zone 2 to justify their location in land use

terms and to consider whether the potential consequences of a flooding event for the type of development proposed would be acceptable.

Future Wales: The National Plan 2040

Future Wales: The National Plan 2040, adopted in 2021, is a national framework for planning change and development in Wales over the next two decades. The development plan sets a strategy for addressing key national priorities through the planning system, by setting a direction for complimentary investment in infrastructure and development for the greater good of Wales and its people.

Below sets out Future Wales' policies that are relevant to the proposed development:

- Policy 1: Where Wales Will Grow
- Policy 8: Flooding
- Policy 9: Resilient Ecological Networks and Green
- Infrastructure
- Policy 12: Regional Connectivity
- Policy 20: National Growth Area – Wrexham and Deeside

Material Considerations

Trevor Basin Masterplan (2020)

Trevor Basin Masterplan was prepared by Arcadis in 2020 and endorsed by WCBC in November 2020. It sets out a preferred option for development of the Trevor Basin area that will improve facilities and linkages to surrounding areas, safeguarding the future of the WHS as a multifunctional visitor attraction.

The site of the proposed development is within the masterplan area. In the preferred option it is identified for works to enhance the public realm and for the creation of a walkway and viewing platform adjacent to the aqueduct. The masterplan references the desire to, 'to spread out the visitor experience and importantly, give people a view of the aqueduct itself', an objective of the proposal.

Local Planning Guidance Note 7 – Landscape & Development

The Local Planning Guide Note 7 – Landscape & Development, adopted in November 2003, sets out the landscape and development standards the Council will apply to new development. It amplifies WUDP (now LDP) policies and is to be considered a material consideration in determining planning applications.

The document states that the Council wants to maintain the County Borough's diverse landscape character and settlement pattern, paying particular attention to special historic landscapes.

Local Planning Guidance Note 17 – Trees and Development

The Local Planning Guidance Note 17, adopted in September 2000 as a Supplementary Planning Document (SPD) for Wrexham, is a material consideration in determining planning applications that affect trees. The Planning Statement highlights in detail the paragraphs and tables relevant to the protection and benefit of trees, and how development should be designed, demolished and constructed sensitively.

Local Planning Guidance Note 32 – Biodiversity and Development

The Local Planning Guidance Note 32, adopted in March 2011 as a SPD for Wrexham, is a material consideration in determining planning applications that affect biodiversity and the natural environment.

The Note requires development to be design to conserve as much of the original habitat as possible and retain and protect wildlife corridors. It should seek to avoid damage to, or adverse effects upon, existing biodiversity (species and habitats) through appropriate site design and working methods.

Development should be as wildlife and habitat friendly as possible both during and following construction of the development and any adverse effects on biodiversity caused by a development should be mitigated. Where there would be no significant harm to species or habitat there may be potential opportunities to provide new benefits for wildlife, for example by habitat creation or enhancement.

A developer must demonstrate appropriate mitigation measures, to alleviate any adverse effects brought about by a development.

Local Planning Guidance Note 33 – Pontcysyllte Aqueduct and Canal World Heritage Site

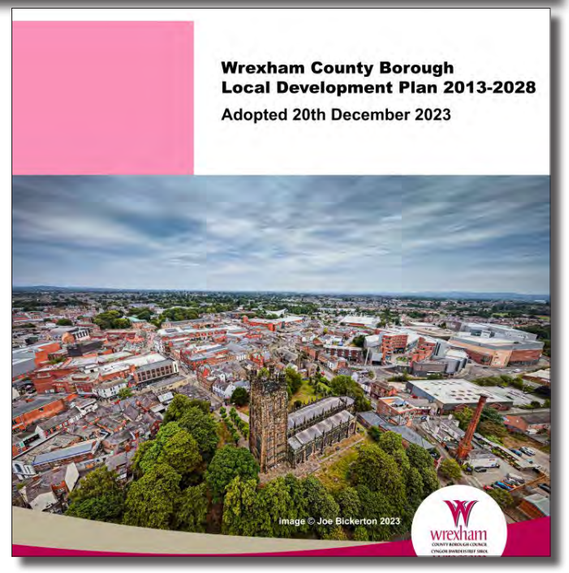
The Local Planning Guidance Note 33, adopted in June 2012 as a SPD for Wrexham and Denbighshire, is a material consideration in determining planning applications that affect Pontcysyllte Aqueduct and its setting as it is a WHS.

The Planning Statement highlights the international importance of World Heritage Sites and the recognition of the planning system to protect the Outstanding Universal Value of this site.

The site falls within the Pontcysyllte Aquaduct WHS boundary and it is expected that all development within this boundary must maintain openness, and siting of development and consideration of materials must be sensitive to the contribution of the surrounding landscape.







2.4 Existing Connectivity, Access and Circulation

2.4.1 Context

The site is located approximately 8 miles south-west of Wrexham city centre, Wales, near the villages of Trevor and Cefn-mawr centred at approximate National Grid Reference (NGR) SJ 27088 42182.

Figure 02-5 identifies the existing accessibility to the wider area including the communities of Cefn-mawr, Trevor and Froncysllte. It also details the routes which pass through the application site. One of the opportunities of these proposals is to connect to these routes to enhance the wider connectivity of the Trevor Basin area.

- National Cycle Route 85 is located to the north and west of the site, connecting Acrefair to Llangollen and communties further west. A section of the route is open between Trevor and Llantysilio via Llangollen alongside the Llangollen Canal. This is an enjoyable path, allowing users to appreciate the natural beauty and cultural richness of the North Wales landscape.
- A spur to the south of National Cycle Route 85 is Route 84. This route crosses the Dee and when completed the route will connect Rhyl to Oswestry via the Vale of Clwyd and the Llangollen Canal.
- There is a network of Public Rights of Way surrounding the site and also a route that runs directly through the site area.This is an existing footpath which links to the Ty Mawr Country Park, located to the east of the site as shown in Figure 02-5. As part of the scheme proposals detailed in this application, we are creating enhanced accessibility to this existing route.
- The closest railway station is just over 2 miles away at Ruabon, a combined rail and bus interchange, on the Shrewsbury to Chester Line. To reach the site from here by Public Transport involves a 20 minute journey (approximately) to the nearest bus stop on the A539 and a short walk to the site.
- The nearest bus stop from the site is Trevor Old Station on the A539 Llangollen Road, which is approximately a 400m walk. The bus service currently runs every 30 mins from Llangollen Monday to Sunday.

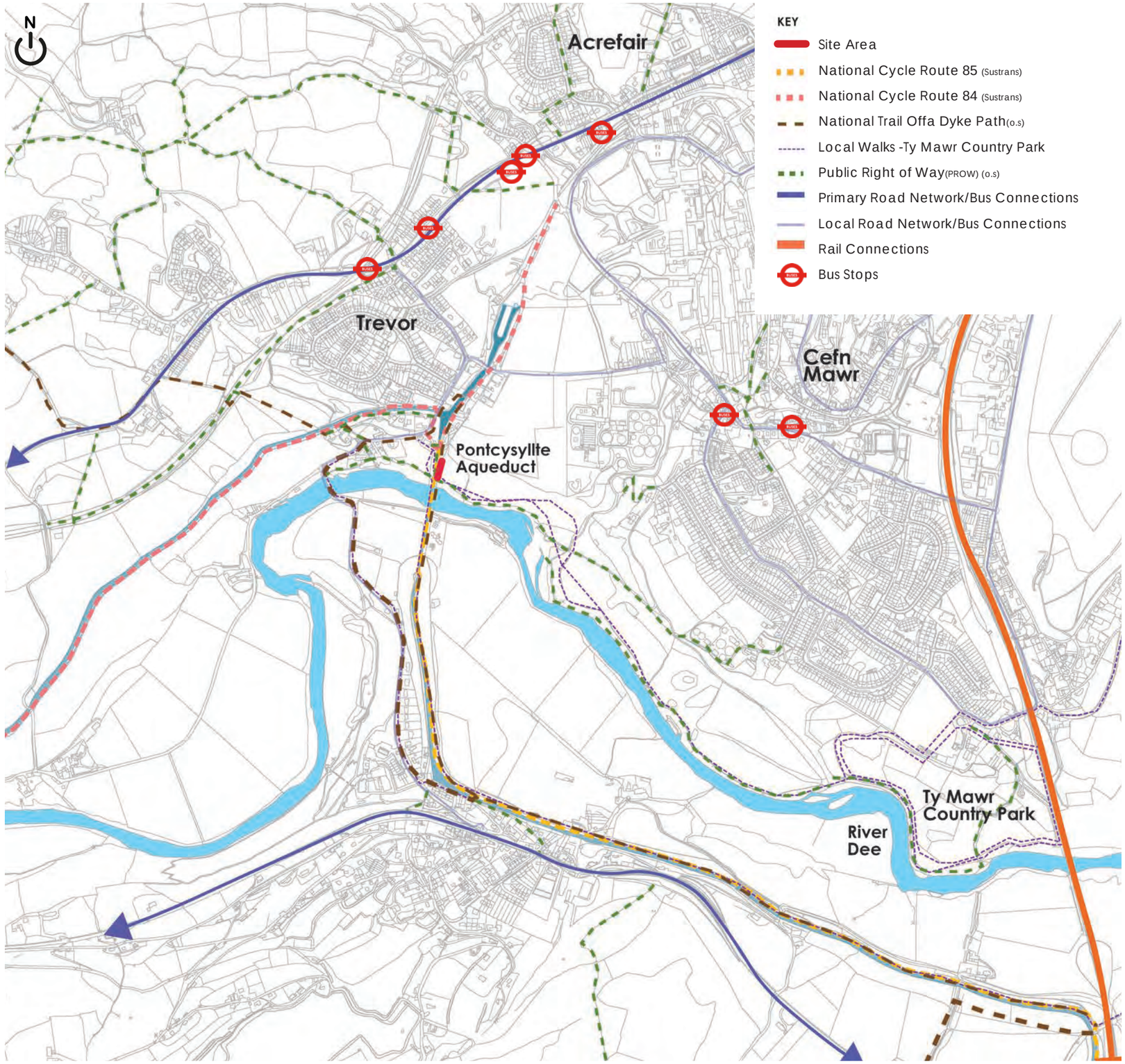


Figure 02-5: Access and Connectivity

Not to scale

2.5 Site Images



Figure 02-6: *View from Trevor Basin looking towards the top flight of steps. This area is is relatively good condition and has therefore been excluded from any proposed inprovements at this stage.*



Figure 02-7: *This image shows the existing stepped access on the upper flight of steps. These steps are included in this applicaiton, however they are potential future works as the existing steps (as shown) are in good condition.*



Figure 02-8: *The above image is of the top of the lower section of flights and it gives an indication of the uneven treads and risers plus the worn path to the left which indicates that the existing steps are not of sufficient width to allow users to pass each other easily.*



Figure 02-9: *This image shows how close the current path users come to the listed structure . During the concept design stages Cadw confirmed that they would prefer the new proposed stepped alignment to move users away from the aqueduct to reduce erosion and damage to the aqueduct.*



Figure 02-10: *This image at the end of the descent indicates the lack of restriction to users wishing to descend to the rivers edge and the breakwater piers at this point and also how close the path is to the existing structure, both of which Cadw would prefer to discourage.*



Figure 02-11: *The image above demonstrates the informality of the existing path running under the aqueduct to the west, plus gives an indication of the quality of the views to the aqueduct potentially available to users were this improved and a viewing area created.*

This page has been left deliberately blank