PONTCYSYLLTE AQUEDUCT ACCESS IMPROVEMENTS

BS 5837: 2012 Arboricultural Impact Assessment

JUNE 24

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BS 5837: 2012 Arboricultural Impact Assessment

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This report dated June 24 has been prepared for Canal and River Trust (CRT, the "Client") in accordance with the terms and conditions of appointment (the "Appointment") between the Client and **Arcadis Consulting (UK) Limited** ("Arcadis") for the purposes specified in the Appointment. For avoidance of doubt, no other person(s) may use or rely upon this report or its contents, and Arcadis accepts no responsibility for any such use or reliance thereon by any other third party.

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1 Introduction

1.1 Overview

Arcadis Consulting (UK) Limited (Arcadis) has been commissioned by Canal and River Trust to undertake a Preliminary Arboricultural Survey and Impact Assessment Report in line with British Standard BS 5837: 2012 Trees in relation to design, demolition and construction – Recommendations (British Standards Institution, 2012), henceforth referred to as BS 5837: 2012 in support of proposed works.

The site is located in adjacent to the Pontcysyllte Aqueduct at Trevor Basin, Wrexham, centred on Ordnance Survey (OS) Grid Reference SJ 27060 42082 and centred around the post code LL20 7TY. The site is approximately 0.12 ha in area and is comprised of primarily stepped footpath on a steep slope, surrounded by broadleaved woodland with marginal scrub and grassland habitat. To the north of the site, the area is bordered by the village of Trevor.

An aerial screen shot illustrating the site location (red outline) is presented in Image 1.



Image 1 Site Boundary (red line). Imagery © 2024 Infoterra Ltd & Bluesky

1.2 Proposed Development

The proposed scheme aims to improve the existing access from Trevor Basin to the River Dee riverside walk. In addition, there will be the improvement of approx. 30m length of path and the creation of a new viewpoint near the river.

2 Methodology

2.1 Tree Survey Methodology

An Arboricultural Survey was undertaken by James Potts BSc (Hons) MArborA (Principal Arboriculturist) on 07 February 2024 in accordance with BS 5837:2012.

The survey was based on topographical survey, document reference: 2223-32 Trevor Basin (Survey Operations 2022)

Observations were conducted from ground level, utilising the “Visual Tree Assessment” (VTA) system as outlined in The Body Language of Trees, A Handbook for Failure Analysis Research for Amenity Trees No.4 (Mattheck and Breloer, 1994) with the aid of binoculars. Photographs of all accessible trees were taken and are provided in Appendix D.

2.2 Study Area

The study area included the site itself (redline boundary) and any trees considered to be within influencing distance of the site within an area up to 15 metres outside as displayed in Figure 1.

2.3 Individual trees

For the purposes of BS 5837: 2012, only trees with a stem diameter greater than 75mm, (measured at 1.5m above ground level), were included within the survey.

For reference, individual trees are identified with the letter T and an associated unique number on the Schedule of Trees and Tree Constraints Plan (TCP).

The stem diameter of the trees was recorded at 1.5m above ground level or following Annex C of BS5837:2012, using a rounded-down diameter tape and recorded in millimetres.

The height of trees was recorded in meters using a clinometer.

The maximum crown spread of each tree was measured from the centre of the trunk to the tips of the live lateral branches taken at four compass points (N-E-S-W) using a ground tape where safe and practical to do so. Crown spread measurements were recorded in metres.

Tree age was estimated from visual indicators (such as tree size and appearance of bark) which was taken as a provisional guide. Age estimates often need to be modified based on further information such as historical records and local knowledge.

If direct access to the tree was not possible, estimations from appropriate vantage points were taken, and any limitations or estimations are presented within the survey limitations section and noted in the associated schedules.

2.4 Groups of trees

Features that have been recorded as a group where they have been considered to form a cohesive arboricultural feature either aerodynamically (e.g. trees that provide companion shelter), visually (e.g. avenues or screens) or culturally, including for biodiversity (e.g. wood pasture).

Groups of trees were identified with the letter G and number on the associated schedules and plans.

Crown spread was assessed by measuring the largest crown spread on each compass point (N-E-S-W). Groups have been plotted using aerial imagery. The stem diameter of tree groups has been calculated as an average stem diameter of trees within a group. Heights are displayed as the maximum height of the tallest tree within the group or displayed as a range of heights where two or more distinct height layers have been identified. (i.e. understorey trees/large woody shrubs).

2.5 Categorisation

Trees surveyed have been categorised according to their quality and value in compliance with Table 1 Cascade chart for tree quality assessment of BS 5837: 2012. A glossary of survey terms can be found in

Appendix A - Explanation of Terms and the full cascade chart for tree categorisation is displayed in Table B2 of Appendix B.

2.6 Root Protection Area

The Root Protection Area (RPA) of a tree is described in section 3.7 of BS 5837: 2012 as the 'minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority. It should be recognised that the calculated RPA may not entirely encompass all of the tree's rooting material.

RPAs were calculated in accordance with Section 4.6.1 in BS: 5837:2012 using the measurement of the stem diameter at 1.5m above ground level or at ground level if the tree is multi-stemmed. The shape and size of an RPA can be amended in accordance with Section 4.6.3 of BS: 5837:2012.

Tree RPAs are recorded in the Schedule of Trees (Appendix B) and shown as a pink shaded area on the initial Tree Constraints Plan(and Tree Impact and Protection Plan as appropriate) and form the initial Construction Exclusion Zone (CEZ) to protect the trees within and adjoining the Site.

Where RPAs have been calculated for tree groups, hedgerows or woodlands, they have been represented as an offset (in meters) from the plotted canopy line of the feature in question when detailed in Appendix B: Schedule of Trees.

Where appropriate, RPAs have been adjusted to reflect on site restrictions to root growth such as watercourses, impermeable surfaces or retaining structures in accordance with Section 4.6.3 of BS 5837:2012

No soil assessment or above/below ground investigations into the true extent of a trees rooting area were undertaken as they are beyond the scope of this report.

2.7 Survey Limitations

Only trees with the potential to be affected by development within or adjacent to the site as determined by the survey boundary displayed in Image 1 have been included within this report. Any additional trees in the vicinity of the proposed scheme have been deemed to not be affected by the proposals and have not been included.

Trees are living organisms and as such their health and condition are naturally subject to change over time. Unforeseen future circumstances such as neglect, wilful damage or severe/extreme weather conditions may affect the future health and condition of the trees included in this report.

2.8 Arboricultural Impact Assessment

An AIA is a study undertaken by an arboriculturist, to identify, and evaluate the extent of direct and indirect impacts on existing trees that may arise as a result of the implementation of proposed development. The AIA may also include identification of mitigation measures which have been included within this report.

The Arboricultural Impact Assessment (AIA) was undertaken by James Potts, BSc (Hons) MArborA (Principal Arboriculturist) and Isabel Leggett BSc (Hons) (Graduate Arboriculturist and Ecologist), in March 2024 as a desk-based study based on the collected field data and design details provided on behalf of the Client. Table 1 provides the data sources used.

Table 1: Data Sources

Document / Plan Title and Author	Date	Information Type
10058635-AUK-XX-XX-DR-LA-0032-P1-General Arrangement 2 (Arcadis)	June 2024	Trevor Basin Steps General Arrangement Detail

2.9 Tree Constraints Check

The following constraints checks were undertaken for the site on 18 March 2024.

- A tree constraints check was performed using the Wrexham District Council planning portal map (Wrexham District Council 2024).
- Data Map Wales was used to search for areas of ancient woodland (DataMapWales 2024); and
- A check for catalogued Ancient and Veteran trees using the Woodland Trust Ancient Tree Inventory (Woodland Trust 2024).

The results of which are provided in Section 3 of this report.

3 Tree Survey Results

Full details of the survey data are presented within the Schedule of Trees in Appendix B and within Figure 1, the Tree Constraints Plan.

3.1 Tree Assessment and Categorisation

A total of 31 arboricultural features were recorded within the study area, these were recorded as 25 individual trees (T) and six groups of trees (G).

Each arboricultural feature was assigned to one of three categories, as listed in Table 2.

Table 2:Tree Categories Recorded

Tree Category	No. of Individual Trees	No. of Groups of Trees
Category A (trees of high quality)	1	0
Category B (trees of moderate quality)	13	1
Category C (trees of low quality)	11	5
Totals	**25**	**6**

3.2 Tree Species Diversity

A total of eight different individual tree species were recorded during the survey and are represented throughout the survey area. A summary of the species surveyed can be found within the tree schedules in Appendix B and also provided in Table 3. A number of mixed species arboricultural features were also recorded, the composition of which are presented in the accompanying survey schedule provided in Appendix B.

Table 3: Tree Species Recorded

Tree Species	Individual Trees	Tree Groups
Ash (*Fraxinus excelsior*)	4	0
Goat Willow *(Salix caprea)*	4	0
Hazel *(Corylus avellana)*	6	1
Pedunculate Oak *(Quercus robur)*	2	0
Sessile Oak *(Quercus petraea)*	2	0
Sycamore (*Acer pseudoplatanus*)	5	0
Wild Cherry (*Prunus avium*)	2	0
Mixed species Including: Ash (*Fraxinus excelsior*), Hazel *(Corylus avellana)*, Hawthorn *(Crataegus monogyna)*, Sycamore (*Acer pseudoplatanus*), Wild Cherry (*Prunus avium*)	0	5
Totals	**25**	**6**

3.3 Age Diversity

All arboricultural features surveyed within the study area were assessed to be within the Young to Mature age classifications set by BS 5837: 2012. as illustrated in Table 4.

Table 4: Age Diversity

Age Class	Trees	Groups
Young	0	1
Semi-mature	7	3
Early mature	8	2
Mature	10	0
Totals	**25**	**6**

3.4 Tree Constraints Check

It was confirmed by Wrexham District Council's interactive mapping system that no trees surveyed are subject to Tree Preservation Order.

It was confirmed by Wrexham District Council that the study area is within the Pontcysyllte Aqueduct Conservation Area, designated July 1998 and updated in July 2009.

3.5 Ancient Woodland

It was confirmed using the Data Maps Wales ancient woodland inventory that there are two designated ancient woodlands identified in the study area using online data sources listed in Section 2.11 These comprise Ancient Semi Natural Woodland (ID reference 34232) and Restored Ancient Woodland (ID Reference 37509). Full details are displayed in Table 5 below.

Table 5: Features surveyed within ancient woodland

Tree ID	Unique ID	Woodland Type	Species	Comments/Features
T9	37509	Restored Ancient Woodland	Sycamore *(Acer pseudoplatanus)*	Good form, even crown, no major defects.
T19	34232	Ancient Semi Natural Woodland	Sessile Oak *(Quercus petraea)*	High drawn form, minor deadwood, asymmetric to east.
T23	34232	Ancient Semi Natural Woodland	Hazel *(Corylus avellana)*	-
T24	34232	Ancient Semi Natural Woodland	Ash *(Fraxinus excelsior)*	-

Tree ID	Unique ID	Woodland Type	Species	Comments/Features
G2	37509	Restored Ancient Woodland	Mixed Species: Hazel (*Corylus avellana),* Hawthorn *(Crataegus monogyna)*	Small stand of mature hazel coppice forming edge of woodland. G2 sits on the boundary of the Restored Ancient Woodland but does not fall within the boundary extents. As such, it would be considered 'woodland edge planting' and will not be subject to the same level of protection under Planning Policy Wales (Welsh Government 2024) detailed in Section 7.
G3	37509	Restored Ancient Woodland	Mixed Species: Hazel (*Corylus avellana),* Hawthorn *(Crataegus monogyna)*	High ivy clad central tree with mature hazel coppice stools and Holly set further back in group. G3 sits on the boundary of the Restored Ancient Woodland but does not fall within the boundary extents. As such, it would be considered 'woodland edge planting' and will not be subject to the same level of protection under the Planning Policy Wales (Welsh Government 2024) detailed in Section 7.
G4	34232	Ancient Semi Natural Woodland	Hazel *(Corylus avellana)*	Mature hazel coppice group and semi mature ash.
G6	34232	Ancient Semi Natural Woodland	Mixed Species: Ash *(Fraxinus excelsior),* Hazel *(Corylus avellana),* Wild Cherry *(Prunus avium),* Sycamore (*Acer pseudoplatanus*)	Mixed regeneration and self set.

4 Arboricultural Impact Assessment (AIA)

4.1 Potential Arboricultural Impacts

Development can have an adverse impact on trees and other woody vegetation within a site. This can result in: (1) immediate tree removal to facilitate the footprint of a new development; (2) potential future tree loss through the early decline of trees due to soil compaction; (3) root disturbance and damage within a tree's rooting area; and (4) canopy removal or damage due to plant movement. The AIA is used to appraise any direct and indirect effects of the proposed design and where necessary recommend mitigation.

This should include the effects of any tree loss required to implement the proposed development and any potentially damaging activities proposed in the vicinity of retained trees, including the demolition of existing structures, construction activities relating to the proposed development and its buildability.

The potential arboricultural impacts have been assessed using the design detail listed in Table 1. Tree removals, potential RPA and canopy incursions have been presented on the Figure 2: Tree Impacts and Protection Plan (TIPP). Potential RPA incursions are marked in yellow hatching, tree removals are shown in red hatching and the recommended fencing requirements are shown in black lines.

4.2 Tree Removal/Retention

Selective removal of self-set juvenile trees within the extents of G4 is anticipated in order to open space for a viewing area at the western end of the scheme. Tree removals in this area will be limited to individual stems <75mm DBH and a single hazel coppice stool. Overall the potential negative arboricultural impacts of these removals are considered negligible and should not be considered an obstacle for proposals.

No further tree removals are anticipated within the study area.

4.3 Potential Incursions within Root Protection Areas

Of the 31 arboricultural features to be retained within the study area, three will be subject to potential incursions within their calculated RPA as presented in Table 6 and displayed in yellow hatching in Figure 2: Tree Impact and Protection Plan.

Table 6: Potential Root Protection Area Incursions

Feature no.	Species	Incursion type and likely significance	RPA m^2	RPA incursion m^2	RPA incursion %	Grade
T10	Sycamore *(Acer pseudoplatanus)*	Excavation and soil regrading up to 500mm in order to facilitate the installation of new steps. Considered unlikely to significantly impact structural or physiological condition.	271.7	6.7	2.5	B1
G2	Mixed Species: Hazel (*Corylus avellana),* Hawthorn *(Crataegus monogyna)*	Excavation and soil regrading up to 300mm in order to facilitate the installation of new steps. Considered unlikely to significantly impact structural or physiological condition.	72.4	4.8	6.6	B3
		Excavation and soil regrading up to 400mm in order to facilitate the installation of new steps. Considered unlikely to significantly impact structural or physiological condition.	72.4	7.8	10.8	

Feature no.	Species	Incursion type and likely significance	RPA m^2	RPA incursion m^2	RPA incursion %	Grade
G3	Mixed Species: Hazel *(Corylus avellana),* Hawthorn *(Crataegus monogyna)*	Excavation and soil regrading up to 250mm in order to facilitate the installation of new steps. Considered unlikely to significantly impact structural or physiological condition.	18.1	0.7	4	C2

Proposed works will encroach inside the RPAs of two groups (G2 and G3) as well as within the RPA of one individual tree (T10) as displayed in Table 5 While these works are not anticipated to result in significant impacts to the affected trees, details for precautionary mitigation measures are provided in Section 5 of this report.

4.4 Facilitation Pruning

Two arboricultural features surveyed will require facilitation pruning as presented in Table 7 below. Recommended pruning works are in keeping with good arboricultural practice and are proposed to trees in fair to good vitality. As such, they are not considered to represent a significant arboricultural impact.

Table 7: Trees which may require pruning to facilitate proposed works

Tree No	Tree Species	Works	Grade
G2	Mixed Species: Hazel *(Corylus avellana),* Hawthorn *(Crataegus monogyna)*	Re-coppice existing stems back to existing bole at or near ground level to facilitate access for installation of new steps.	B3
G3	Mixed Species: Hazel *(Corylus avellana),* Hawthorn *(Crataegus monogyna)*	Re-coppice existing stems back to existing bole at or near ground level to facilitate access for installation of new steps.	C2

4.5 General Construction Impacts

Construction access, site works, and storage areas have the potential to directly or indirectly impact the stem, canopy or RPAs of the trees scheduled for retention which are located around the proposed works as displayed in Figure 2. In order to ensure that these features are successfully retained during the proposed works, temporary protective fencing will be required to demarcate a Construction Exclusion Zone (CEZ) around all retained trees as displayed don the Tree Impacts and Protection Plan.

The CEZ acts to protect both tree roots and branches and should be suitably protected with appropriate temporary fencing for the duration of the demolition and construction phases of the development; exact specifications for this will depend on the nature of the proposed development.

5 Mitigation

5.1 General Construction Mitigation

Site operations involving plant with booms, jibs and counterweights should be planned in advance to prevent contact with retained trees. All operations involving such plant in close proximity to trees should be conducted under the supervision of a banksman to ensure that adequate clearance from the retained trees is maintained.

All pruning and contracting works should be carried out by a competent qualified contractor in accordance with BS 3998:2010, Tree Work Recommendations.

Adequate allowance for the planning and implementation of site compounds and storage areas and the routing of services for the proposed scheme must be made to avoid encroachment with the RPA of, or prevent direct contact with, all retained trees on site.

5.2 RPA Incursions

Construction of the proposed steps within the RPA of trees within group G2, G3 and individual tree T10 should work with a minimum standoff of 1m from the stems of existing trees.

Excavation for the construction of the proposed steps within the RPAs of tree T10 and groups G2 and G3 are recommended to be completed following the below methodology:

- All excavation within RPAs of retained trees shall be carried out using hand-held/manual tools only. Ideally tools that utilise high-pressure gas to loosen soil aggregates (e.g., airspade) are recommended.
- Exposed roots (woody and fibrous) should be initially covered using hessian sheeting pegged in and kept damp and prevented from drying out. A geotextile permeable terram may be used on the tree side of any trenching to protect soil/root environment from desiccation or contamination.
- Where root pruning is found to be necessary, it must be completed by a suitably qualified arboricultural contractor. Roots must be cleanly severed using secateurs or a pruning saw.
- Any excavations requiring the installation of wet pour concrete footings/foundations or retaining walls within or adjacent to the RPAs of trees to be retained must be carefully lined with a non-permeable membrane in order to prevent chemical leeching into adjacent soils.

5.3 Ground Protection

Temporary ground protection will be required where pedestrians and machinery are working within the RPAs of trees to be retained, most notably around T10, G2 and G3. This should be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil. For example, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile membrane. Ground protection should remain in-situ throughout the duration of the proposed works and only be removed upon completion.

5.4 Facilitation Pruning

Recommended facilitation pruning works are defined in Table 7 and should be reviewed by the project arboriculturist and contractor prior to the commencement of works.

All tree works must be carried out by a qualified contractor in accordance with BS 3998: 2010: Tree Work – Recommendations.

5.5 Further Work

Should any future proposed development require additional tree works or removals, they must be captured in an updated Arboricultural Impact Assessment covering all outline and detailed design revisions which must also be approved by the Local Planning Authority'.

6 Statutory Tree Protection and Guidance

6.1 The Town and Country Planning (Trees) (Amendment) (Wales) Regulations 2017

The Town and Country Planning (Trees) (Amendment) (Wales) Regulations 2017 make provision for, amongst other things, the form of Tree Preservation Orders (TPOs) and for applications for consent to carry out work on trees subject to an order. The order makes it an offence to cut down, uproot, prune, lop or damage the tree (including the roots) in question without first obtaining the Council's consent. A TPO can apply to a single tree, a group of trees or woodland. Anyone who wishes to fell or carry out work to a tree protected by a TPO must apply to the Council to obtain permission.

There are exemptions for statutory undertakers under the Town and Country Planning Regulations which include:

1 where the land on which the tree is situated is operational land of the statutory undertaker and the work is necessary; and
   1.1. in the interests of the safe operation of the undertaking;
   1.2. in connection with the inspection, repair or renewal of any sewers, mains, pipes, cables or other apparatus of the statutory undertaker;
   1.3. to enable the statutory undertaker to carry out development permitted by or under the Town and Country Planning (General Permitted Development) Order 1995. This is only where works are within an operational site and does not include works outside of operational sites.
2 where works are granted planning permission no additional specific permission in regard to works to TPOs is required.

6.2 Town and Country Planning Act 1990 (as amended).

Conservation Areas are protected under the Town and Country Planning Act 1990 (as amended). Where trees within a Conservation Area are not a TPO permission must also be obtained by the Local Planning Authority (LPA) under a Section 211 notice, which gives the LPA the opportunity to consider protecting a tree. The exception is when a tree is less than 7.5 cm in diameter, measures 1.5 m above ground or 10 cm if thinning to help the growth of other trees.

7 Trees and Planning

7.1 The Planning Process

LPAs in the UK have a statutory duty to consider both the protection and planting of trees when considering planning applications. The potential impact of development on all trees (including those not protected by a TPO or other statutory designation) is a material consideration in determining a planning application.

BS 5837 provides a framework which sets out how trees should be considered in the planning process and also explicitly applies to development where planning consent is not required.

BS 5837 recommends that a tree survey is undertaken to identify the quality and benefits of trees and the spatial constraints associated with them. This information is then used to produce a Tree Constraints Plan (TCP) illustrating the above and below ground constraints associated with trees RPA. The TCP is intended to be used to inform the design process and to identify those trees considered to be a constraint to development due to the quality and value (in a non-fiscal sense).

Following the production of the final scheme design, an Arboricultural Impact Assessment (AIA) is produced to identify the likely direct and indirect impacts of the proposed development, along with a Tree Protection Plan (TIPP) to identify trees to be removed and retained and to illustrate the protection of retained trees. An Arboricultural Method Statement (AMS) is also often required as a condition of planning consent to detail how sensitive operations are to be undertaken in close proximity to retained trees.

These documents and plans are considered the minimum requirement for arboricultural matters within a planning application and are intended to ensure both a long term sustainable and harmonious relationship between existing trees and the proposed development.

7.2 Planning Policy Wales 2024

Planning Policy Wales section 6.4.43 states:

“Ancient woodland, semi-natural woodlands, individual ancient, veteran and heritage trees and ancient hedgerows are irreplaceable natural resources, and have significant landscape, biodiversity and cultural value. Such trees, woodlands and hedgerows are to be afforded protection from development which would result in their loss or deterioration unless very exceptionally there are significant and clearly defined public benefits; this protection must prevent potentially damaging operations and their unnecessary loss139. In the case of a site recorded on the Ancient Woodland Inventory, authorities should consider the advice of NRW. Planning authorities should also have regard to the Ancient Tree Inventory, work to improve its completeness and use it to ensure the protection of trees and woodland and identify opportunities for more planting as part of the Green Infrastructure Assessment, particularly in terms of canopy cover.”

Where the LPA does not have a development plan or the development plan is out of date, the LPA should grant planning consent insofar as the development proposals do not breach Planning Policy Wales requirements.

The proposed works outlined are considered unlikely to impact the condition of the designated ancient woodlands overlapping the study area and no trees located within these ancient woodlands will be directly affected by proposals.

7.3 Local Planning Policy

The following relevant local planning policies are extracted from the Wrexham Borough Local Plan (Wrexham Borough 2013). The proposed works are in compliance with the local planning policies detailed below:

Policy SP15: Natural Environment
“Development will only be supported where it protects, conserves and enhances the natural environment including:
• Internationally protected Special Areas of Conservation, Special Protection Areas, and Ramsar Sites,
• Nationally protected Sites of Special Scientific Interest and National Nature Reserves;

• Protected Species and their habitat;
• The Clwydian Range and Dee Valley Area of Outstanding Natural Beauty including recognising the importance it has in contributing to the Outstanding Universal Value and setting of the Pontcysyllte Aqueduct and Canal World Heritage Site;
• Local Wildlife Sites including the strategic ecological network on Wrexham Industrial Estate and Regionally Important Geological Sites;
• Local Nature Reserves;
• Special Landscape Areas recognised for their outstanding local landscape character;
• natural landscape features such as trees, hedges and woodland and the green networks between them which contribute to the quality and diversity of the natural environment and play an important role in mitigating the impact of climate change;
• The quality of natural services including water, air and soils
• Developing and maintaining Green Infrastructure links; and
• Habitats and species of principal importance to Wales

Policy NE3: Trees, Woodland and Hedgerows
Development will only be permitted where it does not cause unacceptable harm to trees, woodlands and hedgerows of significant public amenity, natural or cultural heritage value or those that provide important ecosystem services including mitigating the effects of climate change. Development affecting all existing and new proposed woodlands should:
i) Support proposals which assist in the respectful and appropriate use and protection of woodlands and boundary edges,
ii) Promote sustainable management to deliver multiple benefits, and
iii) Support the relevant aims and objectives of the Wrexham Tree & Woodland Strategy 2016-2026 and all subsequent amendments.
Avoiding adverse or detrimental impact on trees, woodlands and hedgerows should be the primary objective of any proposal however, where adverse effects cannot justifiably be avoided and sustainable integration is not possible then adequate mitigation will be required. In such cases development should include proposals for the planting of new trees, woodlands, and hedgerows within the site, ensuring connectivity between proposed and existing green infrastructure.

6.18 Strategic Policies SP5 and SP20 supports the creation, enhancement, protection and management of a network of green infrastructure and states that one of the ways that this will be achieved is by increased planting of trees and woodland. This policy is required to provide detailed guidance on considering proposals which have the potential to affect existing trees, woodland and hedgerows and to guide the integration of planting within new development. The purpose of the policy is to protect trees, woodlands and hedgerows with natural heritage, amenity value, or that provide important ecosystem services. It supports the aims and objectives of the Wrexham Tree and Woodland Strategy 2016 – 2016.

6.19 In accordance with the aims and objectives of the Wrexham Tree & Woodland Strategy, new development should ensure that existing trees, woodlands, traditional orchards and hedgerows of recognised value are conserved, enhanced and managed accordingly. The Council will expect that significant trees, woodlands, traditional orchards and hedgerows be retained, and protected alongside development proposals and accordingly are afforded appropriate allocation of space to promote and allow characteristic and unhindered natural development. Where possible, amenity trees and trees of large stature should be retained and incorporated within public open space.
6.20 Further guidance will be contained within SPG relating to 'Trees and Development'.

6.21 Ancient woodlands are irreplaceable habitats of high biodiversity value, providing historical and cultural links as well as recreational and educational benefits 88 and, as such will be protected from development and associated impacts that would have a detrimental impact upon the values and services provided.

6.22 Veteran, heritage, ancient trees and ancient hedgerows cannot be recreated and therefore developments will be expected to provide for their retention and longterm protection through the provision of maximum clearances from proposed development, adequate protective measures and management plans.

The Local Planning Authority will not approve development that presents an unacceptable level of risk to such trees and hedgerows and their associated habitats and species.

6.23 Where appropriate and in accordance with the Town & Country Planning Act 1990, Tree Preservation Orders will be served to protect important amenity trees from removal or harm."

8 Summary

A total of 31 arboricultural features were recorded within the study area, these were recorded as 25 individual trees (T) and six groups of trees (G).

Each arboricultural feature was assigned to one of three categories, as listed below:

- Category A features: one individual tree (T) has been identified as Category A (trees of high quality) as part of this survey;
- Category B features: 13 individual trees (T) and one group of trees (G) have been identified as Category B (trees of moderate quality) as part of this survey;
- Category C features: 11 individual trees (T) and five groups of trees (G) have been identified as Category C (trees of low quality) as part of this survey;

It was confirmed by the Wrexham District Council's interactive mapping system that no trees surveyed are subject to Tree Preservation Orders and no veteran trees were identified during the survey.

It was confirmed by the Wrexham District Council's interactive mapping system that the site is situated in and subject to the Pontcysyllte Aqueduct Conservation Area.

It was confirmed using the Data Maps Wales ancient woodland inventory that there are two designated ancient woodlands in the study area. These comprise Ancient Semi Natural Woodland (ID reference 34232) and Restored Ancient Woodland (ID Reference 37509).

No veteran trees were identified during the site survey.

Limited selective removal of self-set juvenile trees within the extents of G4 is anticipated in order to open space for a viewing area at the western end of the scheme..

Proposed works will encroach inside the RPAs of two groups (G2 and G3) as well as within the RPA of one individual tree (T10). Although these incursions are not expected to have a significant impact on the trees, mitigation measures outlined in Section 5 should be followed. Facilitation pruning will be required for two groups of trees (G2 and G3) to enable to the proposed works. The trees were assessed to have good vitality, and as such, required pruning is not believed to significantly impact the arboricultural features.

Any tree works must be carried out by a qualified contractor must be in accordance with BS 3998: 2010: Tree Work – Recommendations.

This document encloses details of Preliminary Tree Protection Measures (Appendix C) to be implemented on site prior to the commencement of demolition or construction works. A site specific Arboricultural Method Statement may be required by the Local Planning Authority prior to the commencement of works to protect any retained trees within and adjoining the site.

A copy of this report should be made available to the site managers and proposed arboricultural contractor to ensure site works comply with methodologies detailed within.

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9 References

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British Standards Institution (2012) BS 5837: 2012 Trees in relation to design, demolition and construction – Recommendations.

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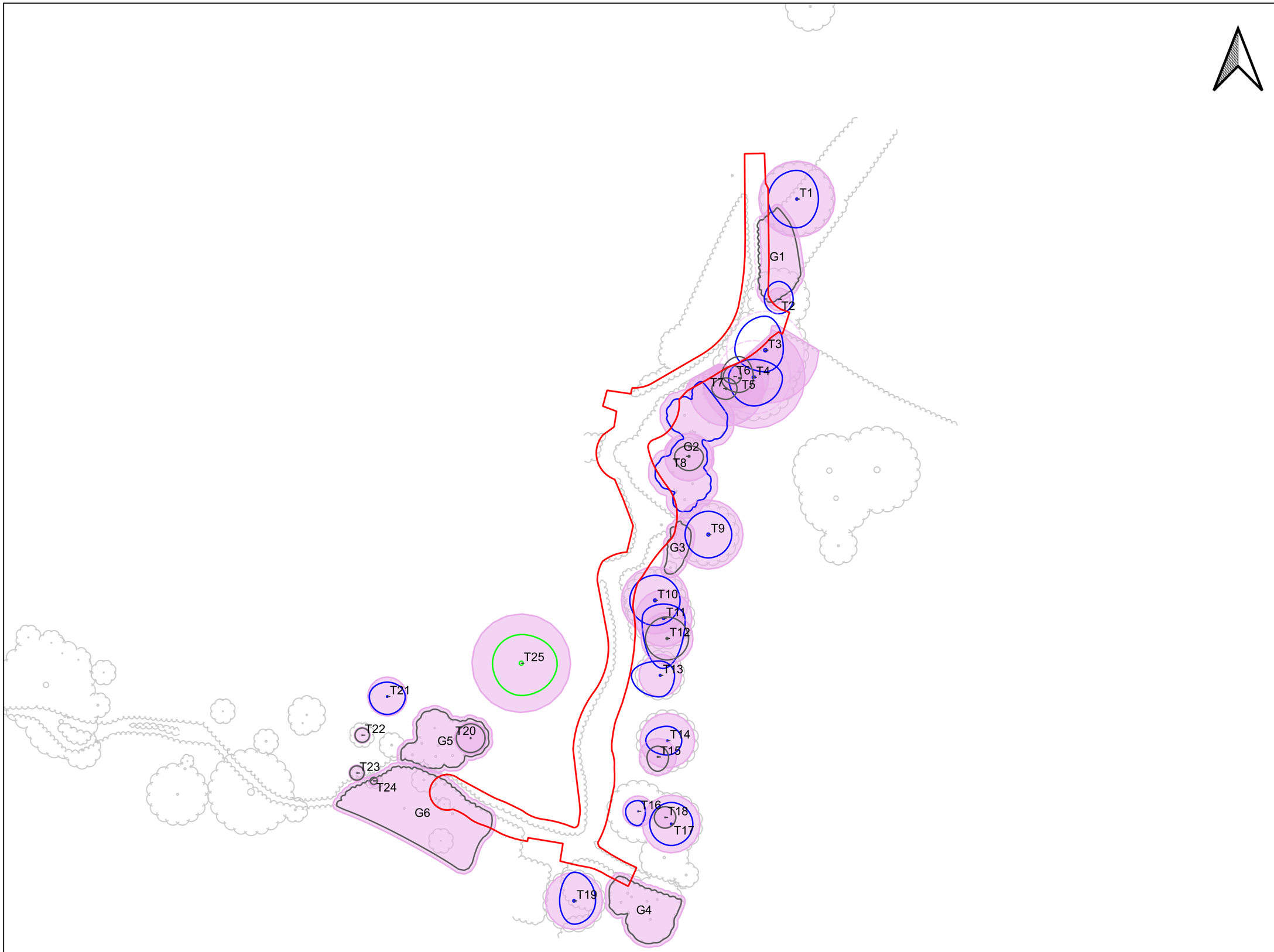
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FIGURE 1. Tree Constraints Plan



Legend:

- Site Boundary
- Survey Boundary
- Canopy extent of A Category Tree/Group
- Canopy extent of B Category Tree/Group
- Canopy extent of C Category Tree/Group
- BS 5837:2012 Root Protection Area (RPA) Adjusted for site constraints
- Indicative Calculated BS 5837:2012 Root Protection Area (RPA)

Key Plan:



Rev	Date	Description	Drawn	Check	Approv
P2	10/06/24	Updated site boundary	JP	JP	AA
P1	14/05/24	For information	IL	JP	BM

Client: Canal and River Trust

PROJECT: Pontcysyllte Aqueduct Access Improvements

ARCADIS Design & Consultancy for natural and built assets

Regestered office: Arcadis, 80 Fenchurch Street, London, EC3M 4BY

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FIGURE 1
TREE CONSTRAINTS PLAN

Designed:	JP	Date: 10/06/24	Signed:
Drawn:	IL	Date: 10/06/24	Signed:
Checked:	JP	Date: 10/06/24	Signed:
Approved:	BM	Date: 10/06/24	Signed:
Scale:	1:600	Datum:	AOD
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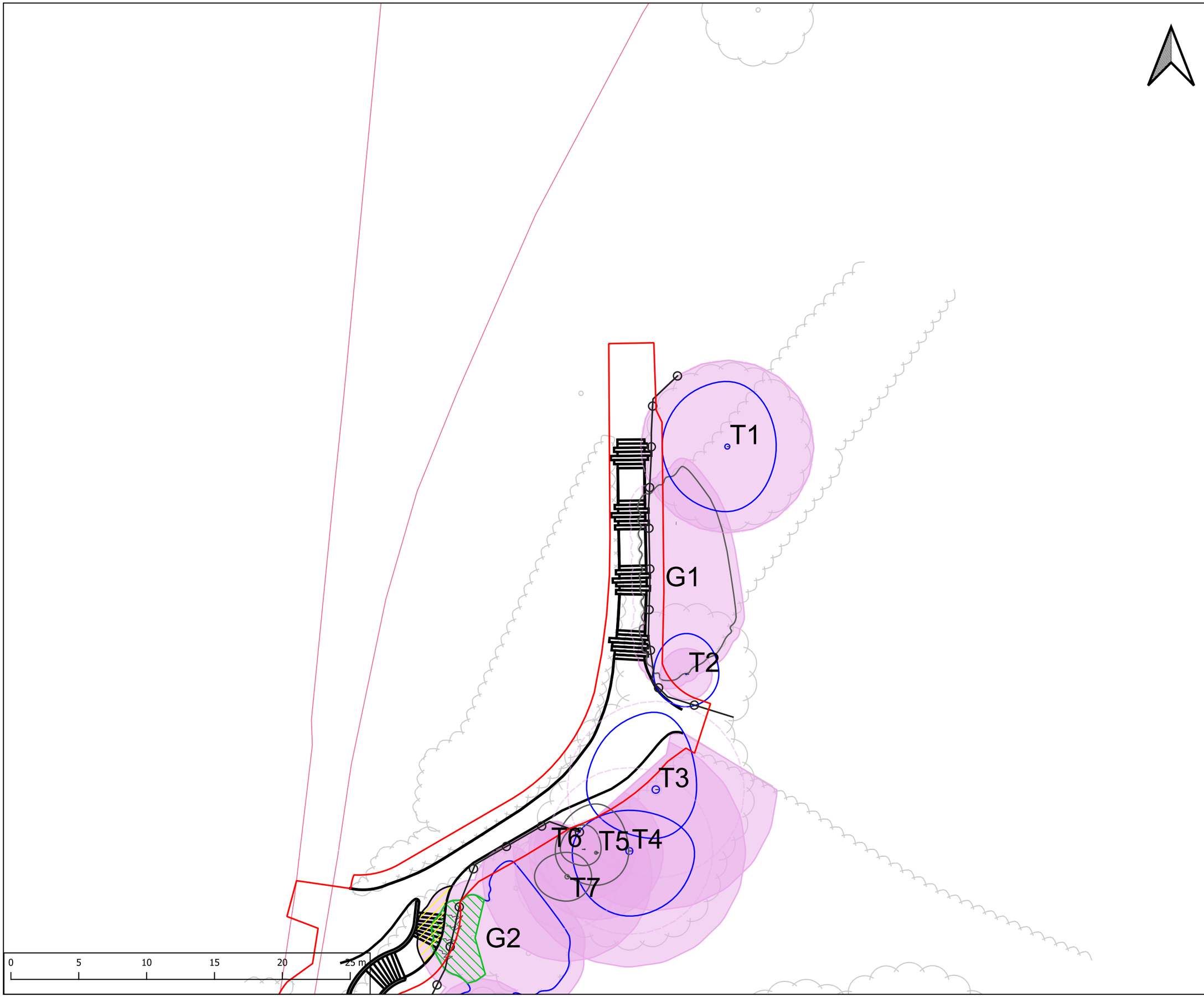
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Drawing Number:	Revision:
10058635-AUK-XX-XX-DR-ZZ-0001-P1 -TCP01	P02

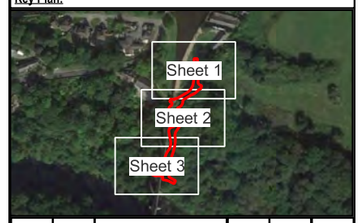
FIGURE 2. Tree Impact and Protection Plan



Legend:

- Site Boundary
- Survey Boundary
- Canopy extent of A Category Tree/Group
- Canopy extent of B Category Tree/Group
- Canopy extent of C Category Tree/Group
- BS 5837:2012 Root Protection Area (RPA)
- Indicative Calculated BS 5837:2012 Root Protection Area (RPA)
- Root Protection Area Incursions
- Tree Pruning to Facilitate Works
- Tree Protection Fencing

Key Plan:



Rev	Date	Description	Drawn	Check	Approv
P2	10/06/24	Updated site boundary	JP	JP	AA
P1	14/05/24	For information	IL	JP	BM

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FIGURE 2
TREE IMPACTS AND PROTECTION PLAN
SHEET 1 OF 3

Designed:	JP	Date: 10/06/24	Signed:
Drawn:	IL	Date: 10/06/24	Signed:
Checked:	JP	Date: 10/06/24	Signed:
Approved:	BM	Date: 10/06/24	Signed:
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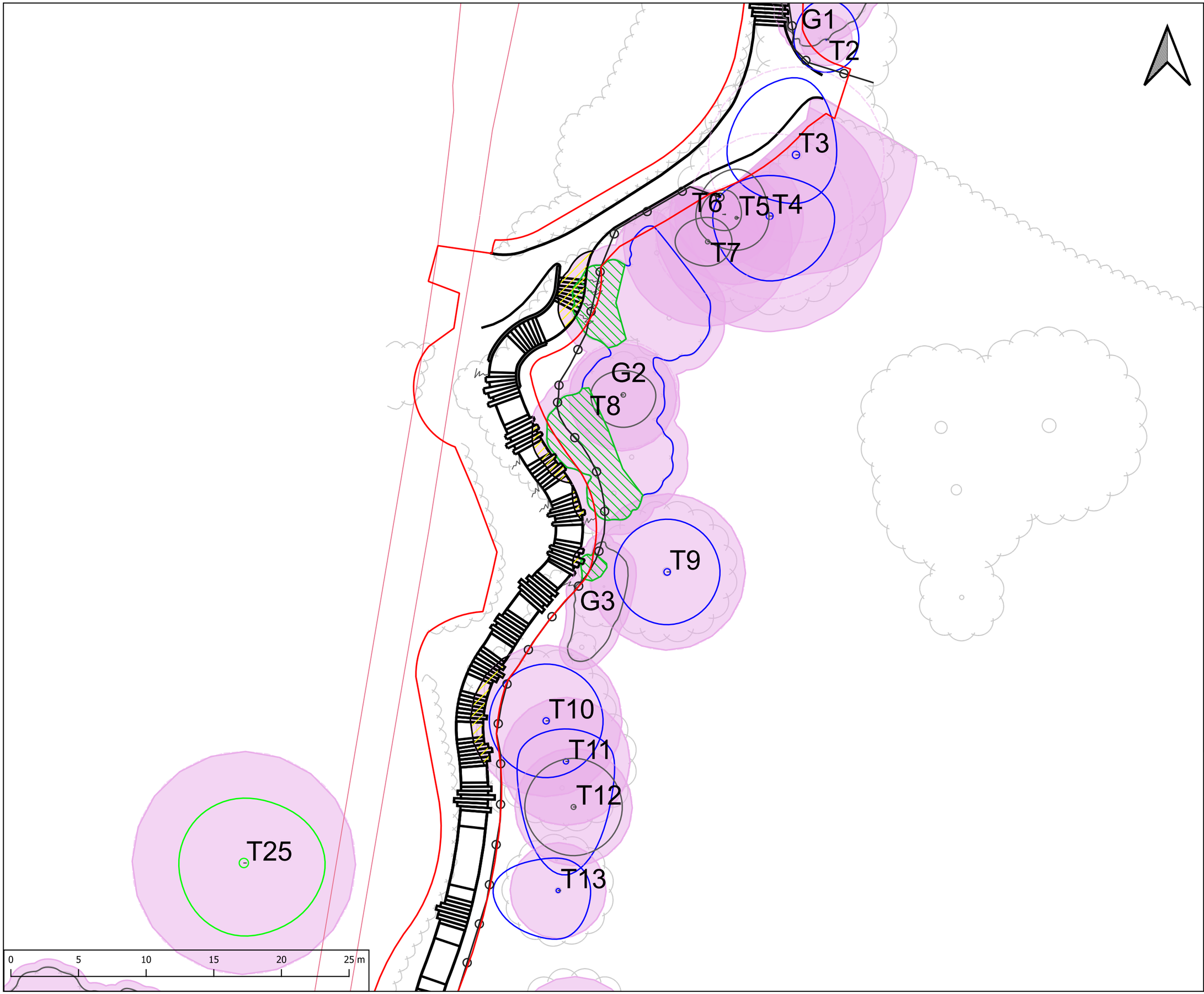
Suitability Description:

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Drawing Number: 10058635-AUK-XX-XX-DR-ZZ-0002-P1-TIPP01

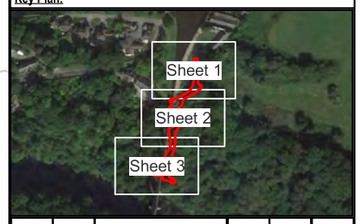
Revision: P02



Legend:

- Site Boundary
- Survey Boundary
- Canopy extent of A Category Tree/Group
- Canopy extent of B Category Tree/Group
- Canopy extent of C Category Tree/Group
- BS 5837:2012 Root Protection Area (RPA)
- Indicative Calculated BS 5837:2012 Root Protection Area (RPA)
- Root Protection Area Incursions
- Tree Pruning to Facilitate Works
- Tree Protection Fencing

Key Plan:



Rev	Date	Description	Drawn	Check	Approv
P2	10/06/24	Updated site boundary	JP	JP	AA
P1	14/05/24	For information	IL	JP	BM

Client: Canal and River Trust

PROJECT:
Pontcysyllte Aqueduct Access Improvements

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FIGURE 2
TREE IMPACTS AND PROTECTION PLAN
SHEET 2 OF 3

Designed:	JP	Date: 10/06/24	Signed:
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Checked:	JP	Date: 10/06/24	Signed:
Approved:	BM	Date: 10/06/24	Signed:
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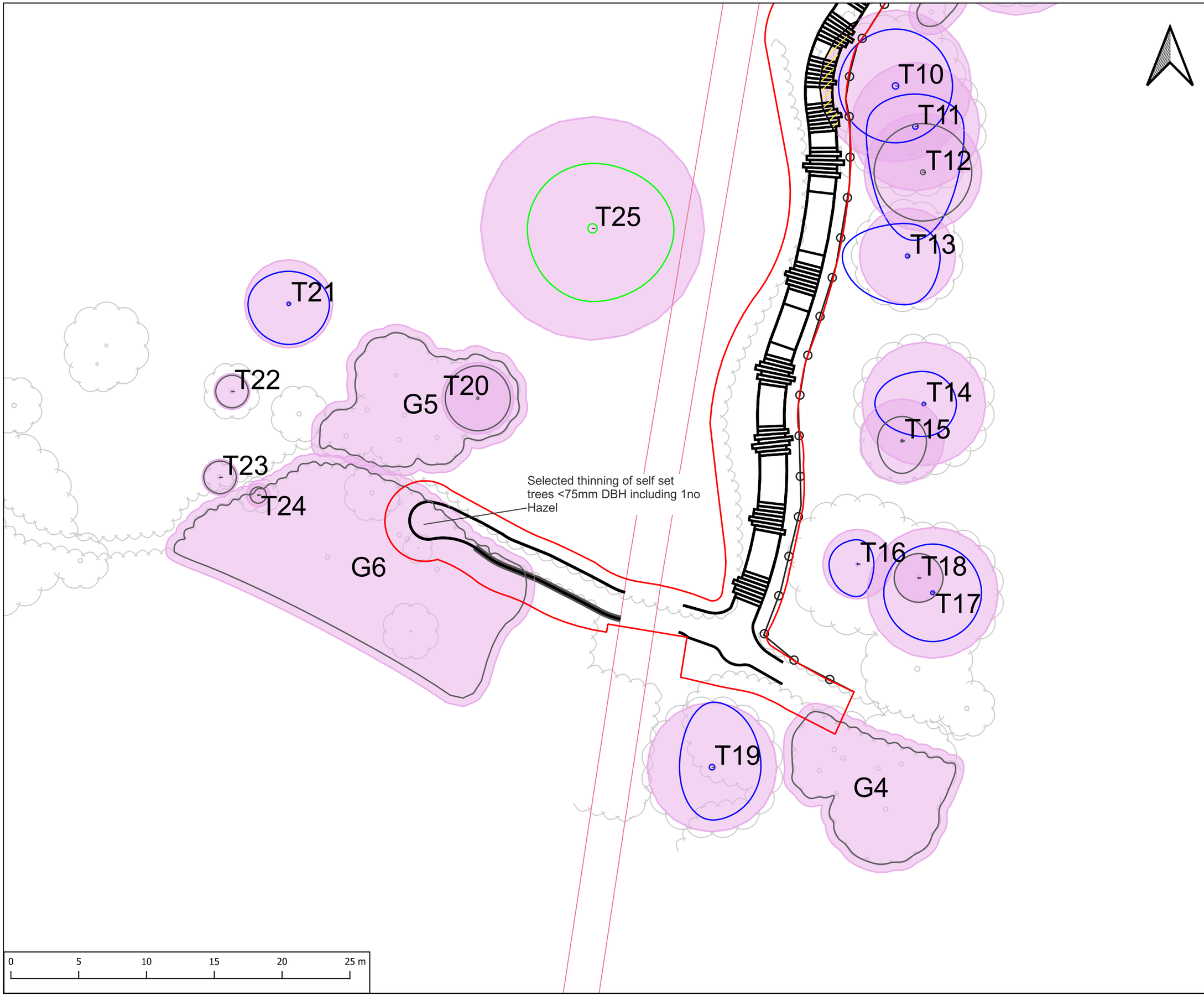
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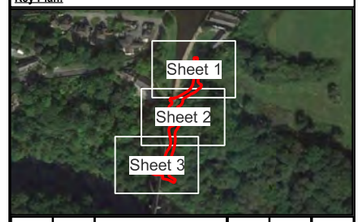
Revision: P02



Legend:

- Site Boundary
- Survey Boundary
- Canopy extent of A Category Tree/Group
- Canopy extent of B Category Tree/Group
- Canopy extent of C Category Tree/Group
- BS 5837:2012 Root Protection Area (RPA)
- Indicative Calculated BS 5837:2012 Root Protection Area (RPA)
- Root Protection Area Incursions
- Tree Pruning to Facilitate Works
- Tree Protection Fencing

Key Plan:



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FIGURE 2
TREE IMPACTS AND PROTECTION PLAN
SHEET 3 OF 3

Designed:	JP	Date: 10/06/24	Signed:
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Checked:	JP	Date: 10/06/24	Signed:
Approved:	BM	Date: 10/06/24	Signed:
Scale:	1:250	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	00	Project Number:	10058635

Suitability Description:

FOR INFORMATION

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Drawing Number: 10058635-AUK-XX-XX-DR-ZZ-0002-P1-TIPP01

Revision: P02