APPENDIX A. Explanation of Terms

Age Class

Young (Y) – Establishing tree that could be transplanted without specialist equipment.

Semi-mature (SM) – Fully established but has not reached its ultimate height and has significant growth potential.

Early-mature (EM) – A tree reaching its ultimate potential height, growth rate is slowing, will still increase in DBH.

Mature (M) – A mature specimen with limited potential for any significant increase in size.

Over Mature (OM) – A senescent or moribund specimen with a limited safe useful life expectancy.

Veteran (V) – A specimen of high value due to either its age, size, or ecological significance. Can be identified by the presence of specific characteristics.

Stem Diameter

The diameter of the stem measured in millimetres (mm) at a height of 1.5m above ground level

Crown Spread

Average measured in metres using a ground tape where possible

Physiological Condition

Good – Healthy tree with no signs of ill health and signs of good extension growth for species

Fair – Trees with signs of disease, minor defects and decreased life expectancy due to physical damage

Poor – Trees with significant disease, significantly reduced life expectancy and/or under major physiological stress

Dead – Dead tree or trees with over 70% crown dieback

Structural Condition

Good – Trees with no significant defects

Fair – Trees with remedial defects which require minor tree surgery works

Poor – Trees with remedial defects which require significant tree surgery works or felling

Dead – Trees which require felling

BS 5837 Retention Category

Each tree, group of trees or hedge is assigned to a retention category. Category A trees of high quality and amenity value. Category B trees of moderate quality and amenity value. Category C trees of low quality or amenity value. Category U trees of very low quality or requiring immediate removal due to health and safety concerns

British Standards BS 5837:2012 recommends that these categories may be further broken down into sub-categories A1 A2 A3 pertaining to Arboricultural, Landscape or Cultural values respectively.

APPENDIX B. Schedule of Trees

Client: **Canal and River Trust**
Survey date**: 07 February 2024**

Project: **Trevor Basin Steps**
Surveyor**: James Potts BSc (Hons) MArborA**

Table B1 Tree Schedule

Tree reference number	Species	Height (m)	Stem diameter (mm)	Branch spread (m)				Height of crown clearance (m)	RPA Radius (m)	RPA (m^2) (T) / RPA Offset (m) (G, H, W)	Age class	Physiological condition	Structural condition	Comments	Estimated remaining contribution (years)	Category grading
				N	E	S	W									
T1	Wild Cherry *(Prunus avium)*	14	725, 500	8	6	8	8	2	10.6	350.9	M	Good	Fair	Twin stem at 1.2m, compression fork, sloped at west side towards steps.	20+	B2
T2	Hazel *(Corylus avellana)*	9	100	5	4	4	4	2	3.2	31.7	M	Good	Good	Coppice stool with mature growth, off site behind bank and fenceline.	40+	B2
T3	Sycamore *(Acer pseudoplatanus)*	14	900	9.5	5	6	8.5	2.5	10.8	366.4	M	Fair	Fair	Minor lean to north, heavily ivy clad on main stem, stood behind cracked retaining wall.	40+	B2
T4	Sycamore *(Acer pseudoplatanus)*	17	850	5	8	8	7	5	10.2	326.9	M	Good	Good	Set back from retaining wall 3m down bank, twin stem, no major defects.	40+	B2
T5	Pedunculate Oak *(Quercus robur)*	15	350	6	4	4	5	6	4.2	55.4	SM	Good	Good	High, drawn crown, no major defects, next to retaining wall.	20+	C1
T6	Hazel *(Corylus avellana)*	6	75	3	2	2	3	2.5	2.2	15.3	SM	Fair	Fair	Grown next to retaining wall. Major coppice regrowth.	20+	C2
T7	Ash *(Fraxinus excelsior)*	15	530	3	3	3	4	5	6.4	127.1	SM	Fair	Good	Forks at 1.6, no major defects.	20+	C1
T8	Ash (*Fraxinus excelsior)*	16	550	3	4	4	4	4	6.6	136.8	SM	Fair	Fair	High, drawn form, ivy clad, thin crown, minor dieback, sign from candelabra form.	10+	C1
T9	Sycamore *(Acer pseudoplatanus)*	18	800	6.5	6.5	6.5	6.5	5	9.6	289.5	EM	Good	Good	Good form, even crown, no major defects.	40+	B1
T10	Sycamore *(Acer pseudoplatanus)*	18	775	7	7	7	7	7	9.3	271.7	EM	Good	Good	Stem ivy clad, good form and condition.	40+	B1
T11	Sycamore *(Acer pseudoplatanus)*	16	655	4	6	14	6	4	7.9	194.1	EM	Good	Good	Major lean to south. Twin stem with tight Union. Bark damage on east side.	20+	B1
T12	Ash *(Fraxinus excelsior)*	16	600	6	6	6	6	7	7.2	162.9	EM	Fair	Fair	Heavily ivy clad.	20+	C1
T13	Sessile Oak *(Quercus petraea)*	12	490	4	4	6	8	3	5.9	108.6	SM	Fair	Fair	Stem ivy clad, minor south lean.	40+	B2
T14	Goat Willow *(Salix caprea)*	0	510, 370	4	4	4	6	4	7.6	179.6	M	Fair	Fair	Minor tip dieback, ivy cladding.	20+	B2

Tree reference number	Species	Height (m)	Stem diameter (mm)	Branch spread (m)				Height of crown clearance (m)	RPA Radius (m)	RPA (m^2) (T) / RPA Offset (m) (G, H, W)	Age class	Physiological condition	Structural condition	Comments	Estimated remaining contribution (years)	Category grading
				N	E	S	W									
T15	Goat Willow *(Salix caprea)*	12	340, 260	3	3	4	3	3	5.1	82.9	EM	Fair	Poor	Major split branch in upper crown, major bark wounding in southern crown at 5m.	10+	C1
T16	Hazel *(Corylus avellana)*	8	145	3	2	4	3.5	2	4.3	57.1	M	Good	Good	Coppice stool with mature regrowth.	40+	B2
T17	Goat Willow *(Salix caprea)*	10	465, 4801	6	6	6	6	4	8.0	202.0	M	Good	Good	Major deadwood, light ivy cladding.	40+	B1
T18	Hazel *(Corylus avellana)*	8	150, 145, 135	3	3	3	3	2	3.0	27.9	M	Good	Good	Mature coppice stool.	40+	C1
T19	Sessile Oak *(Quercus petraea)*	18	660	8	6	6.5	4	10	7.9	197.1	EM	Good	Fair	High drawn form, minor deadwood, asymmetric to east.	40+	B1
T20	Wild Cherry *(Prunus avium)*	12	210, 300	4	4	4	4	5	4.4	60.7	EM	Good	Good	-	20+	C1
T21	Goat Willow *(Salix caprea)*	10	450	4	5	5	5	3	5.4	91.6	M	Fair	Fair	Ivy clad, minor south lean.	20+	B1
T22	Hazel *(Corylus avellana)*	4	75	2	2	2	2	1	2.2	15.3	SM	Fair	Fair	-	20+	C1
T23	Hazel *(Corylus avellana)*	4	75	2	2	2	2	1	2.2	15.3	SM	Fair	Fair	-	20+	C1
T24	Ash *(Fraxinus excelsior)*	4	120	1	1	1	1	1	1.4	6.5	EM	Fair	Fair	Young tree next to path.	20+	C1
T25	Pedunculate Oak *(Quercus robur)*	18	1140	8	10	9	8	3	13.7	587.9	M	Good	Good	Major broken branches, moderate deadwood, minor west lean.	40+	A2
G1	Mixed Species: Ash *(Fraxinus excelsior),* Hazel *(Corylus avellana),* Wild Cherry *(Prunus avium)*	6	75	1	1	1	1	2	0.9	1	Y	Fair	Fair	Young self set group lining east side of steps on bank.	40+	C1
G2	Mixed Species: Hazel *(Corylus avellana),* Hawthorn *(Crataegus monogyna)*	4	400	3	3	3	3	1	4.8	1.8	EM	Good	Good	Small stand of mature hazel coppice forming edge of woodland.	40+	B3

Tree reference number	Species	Height (m)	Stem diameter (mm)	Branch spread (m)				Height of crown clearance (m)	RPA Radius (m)	RPA (m^2) (T) / RPA Offset (m) (G, H, W)	Age class	Physiological condition	Structural condition	Comments	Estimated remaining contribution (years)	Category grading
				N	E	S	W									
G3	Mixed Species: Hazel *(Corylus avellana)*, Hawthorn *(Crataegus monogyna)*	10	200	3	3	3	3	2	2.4	1	SM	Poor	Fair	High ivy clad central tree with mature hazel coppice stools and Holly set further back in group.	40+	C2
G4	Hazel *(Corylus avellana)*	7	300	3	3	3	3	1	3.6	1	EM	Fair	Fair	Mature hazel coppice group and semi mature ash.	40+	C2
G5	Mixed Species: Hazel *(Corylus avellana)*, Hawthorn *(Crataegus monogyna,* Wild Cherry *(Prunus avium)*	6	200	2	2	2	2	2	2.4	1	SM	Fair	Fair	Hazel coppice stools north of path.	20+	C2
G6	Mixed Species: Ash *(Fraxinus excelsior)*, Hazel *(Corylus avellana)*, Wild Cherry *(Prunus avium)*, Sycamore (*Acer pseudoplatanus*)	4	150	2	2	2	2	1	1.8	1	SM	Fair	Fair	Mixed regeneration and self set. Scattered group.	20+	C2

Table B2 Key to Categories

Trees unsuitable for retention				
Category and Definition	**Criteria (including subcategories where appropriate)**			**Identification on Plan**
Category U Those in such a condition that they cannot realistically be retained as a living tree in the context of the current land use for longer than 10 years.	• Trees that have a serious, irremediable structural defect such that their early loss is expected due to collapse, including those that will become unviable after removal of other U category trees (i.e. Where for whatever reason the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant immediate or irreversible overall decline. • Trees infected with pathogens of significance to the health and or safety of other trees nearby by or very low-quality trees suppressing adjacent trees of better quality.			Red
Trees to be considered for retention				
Category and Definition	**1. Mainly arboricultural values**	**2. Mainly landscape values**	**3. Mainly cultural values**	**Identification on Plan**
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are a particularly good example of their species, especially if rare or unusual, or essential components of groups or of formal or semi-formal arboricultural features.	Tree groups or woodlands of particular visual importance as arboricultural and/or landscape features.	Tree groups or woodlands of significant conservation historical, commemorative or other value	Green
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.	Trees that might be included in the high category but are downgraded because of impaired condition.	Trees present in numbers, usually as groups or woodlands such that they attract a higher collective rating than they might as individuals: or trees occurring as collectives but situated so as to make little visual contribution to the wider locality.	Trees with material conservation or other cultural benefits.	Blue
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.	Trees present in groups or woodlands but without this conferring on them significantly greater landscape value and/or trees offering low or only temporary/transient landscape benefits.	Trees with no material conservation or other cultural benefits.	Grey

APPENDIX C. Preliminary Tree Protection Measures

Overview

This Preliminary Arboricultural Method Statement (AMS) provides generic best practice measures to be adopted in order to protect retained trees during the development process. It has been prepared in order to inform the planning and the construction/ development process. Should a bespoke AMS be recommended by the suitably qualified arboriculturist, one should be drawn up in liaison with the contractor undertaking the works.

Protective Fencing

The purpose of this fencing is to provide protection to the RPAs of retained trees/groups and to protect trees and hedgerows prior to their translocation. The type of fencing used shall be appropriate to the level of adjacent construction activity and shall be agreed with the Local Authority tree officer. Weather-proof notices shall be attached to any protective fencing located adjacent to retained trees displaying the words "Construction Exclusion Zone" and listing restrictions which apply. All personnel must be made aware of these restrictions.

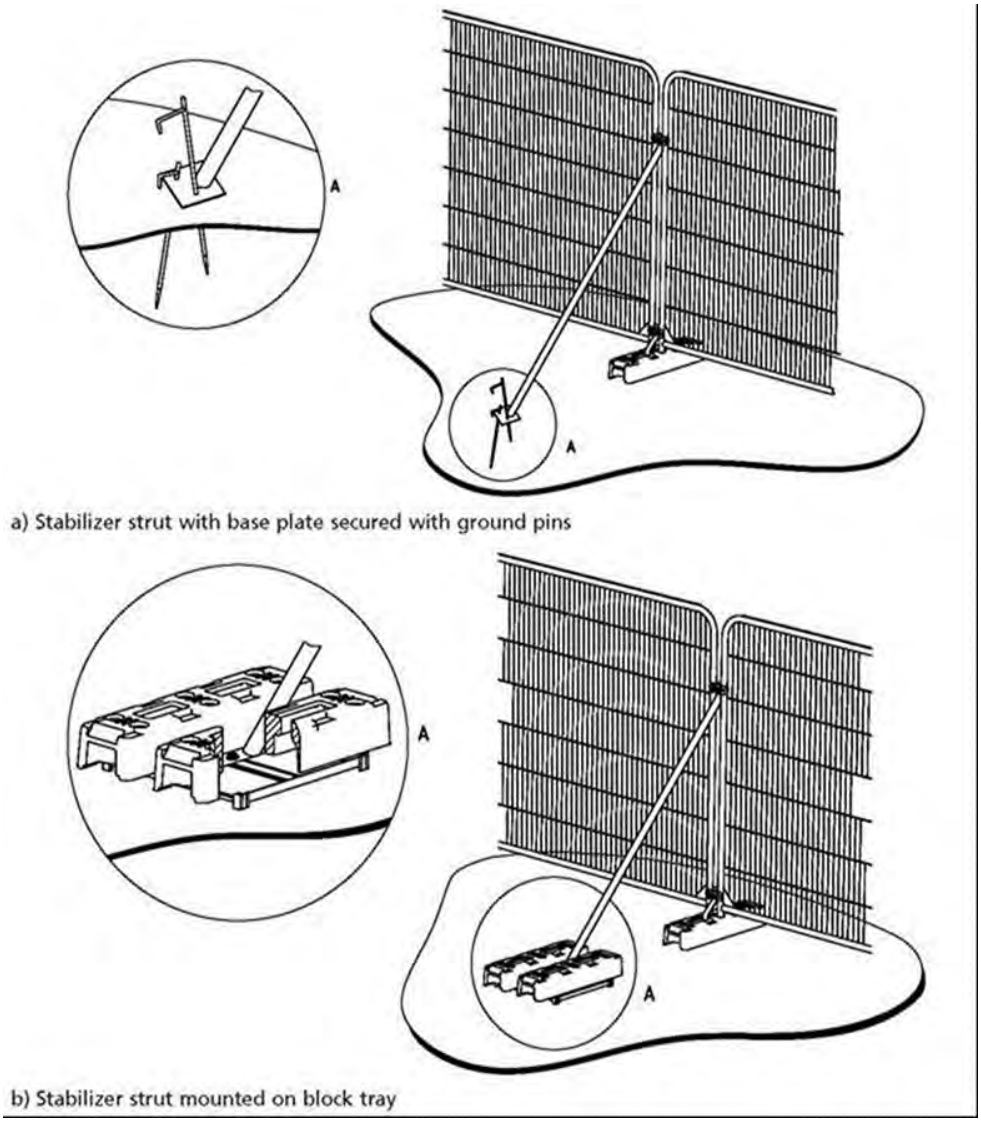


Figure C1 Tree protection fencing specification (extract from BS 5837: 2012)

Construction Exclusion Zone (CEZ)

The Construction Exclusion Zone (CEZ) is the area identified by a suitably qualified arboriculturist as the area to be protected during development, from site clearance and construction work through the use of barriers and/or ground protection to ensure the successful long-term retention of a tree. Fencing or ground protection shall not be taken down or relocated at any time without prior agreement and/or site supervision as recommended by the arboriculturist.

All areas excluded by protective tree fencing shall be treated as CEZs, and the following restrictions shall apply:

- No construction activity must occur within these areas.
- No works on trees unless agreed by a suitably qualified arboriculturist.
- No alterations of ground levels or conditions.
- No chemicals or cement washings.
- No excavation.
- No temporary structures*
- No storage of soil, rubble or other materials.
- No vehicles or machinery to be used or parked without appropriate ground protection measures as per BS5837 recommendations. This will require the use of a proprietary system of reinforced concrete slabs/steel road plates on a compressible layer, or side butting scaffold boards/ 18mm plywood sheets on a compressible layer. The type of ground protection used shall be appropriate for the likely loading applied.
- No fixtures (lighting, signs etc.) to be attached to trees.
- No fires within 10 metres of the canopies of any tree or hedgerow.

*Site huts, provided they are of the “Jack Leg” type, can be sited to act as ground protection for the duration of the construction.

Temporary Ground Protection

New temporary ground protection should be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil. The ground protection might comprise one of the following:

- For pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g.100 mm depth of woodchip), laid onto a geotextile membrane;
- For pedestrian-operated plant up to a gross weight of 2 t, proprietary, 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;
- For wheeled or tracked construction traffic exceeding 2 t gross weight, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.

New Permanent Surfacing Within RPAs

Any new surfacing is within the RPAs shall occur above ground level without soil stripping. New surfaces shall be constructed on a cellular confinement to prevent localised compaction of the rooting medium post development. Porous geotextile membranes shall be used both above and below the cellular confinement system to prevent mixing of materials with the binding layer or the soil. The new surface needs to be permeable to air and water (resin bound gravel or similar is recommended). This is to allow roots to respire without there being a build-up of carbon dioxide, and to ensure the roots continue to receive the moisture and oxygen they require to function. Traditional kerbing requires excavation to install and will therefore not be suitable within the root protection areas of retained trees. As an alternative, haunched kerbing, treated timber edging, aluminium L-shaped edging, galvanised metal edging or no fixed edging shall be used.

Construction of the new surface will require access into the construction exclusion zone defined by the temporary ground protection. The ground protection shall not be removed until new surface is installed. The root protection areas should not be left exposed during construction.

General Canopy Protection

Since the canopies of retained trees may be in close proximity to areas of plant operation, the following restrictions will apply:

- All plant will be sited outside the defined RPAs of retained trees / groups, and the appointed contractor will ensure all relevant personnel shall be made aware of the location of branches and the need to avoid causing damage to them.
- Prior to the implementation of lifting operations, a representative from the equipment supply company shall visit the site and ensure all operations can be completed without causing damage to retained trees. A lifting plan will be prepared and submitted for approval prior to all lifting operations. The lifting plan will make provision for the potential for damage of retained trees.
- All lifting operations will be completed under the close direction of a qualified banksman, who will be briefed by the appointed contractor as to the need to avoid damage the stems and branches of retained trees.
- Should additional tree removal or pruning be required the Local Authority Tree Officer shall be contacted and the scope of works agreed in writing.

Hazardous Materials

Any mixing of cement-based materials is to take place outside the RPAs of all trees. Provision shall be made to ensure that the mixing area is contained so that no water runoff enters the RPAs of any trees. All mixers and barrows shall be cleaned within this dedicated mixing area.

All other chemicals hazardous to tree health, including petrol and diesel, are to be stored in suitable containers as specified by the Control of Substances Hazardous to Health (COSHH) Regulations (2002) (Ref 4), and kept away from the RPAs.

Example of Protective Fencing Signs





APPENDIX D. Photographs

Tree No.	Description	Photograph
T1	Category B Wild Cherry *(Prunus avium)*	
T2	Category B Hazel *(Corylus avellana)*	

T3	Category B Sycamore (*Acer pseudoplatanus)*	
T4	Category B Sycamore *(Acer pseudoplatanus)*	

T9	Category B Sycamore *(Acer pseudoplatanus)*	
T10	Category B Sycamore *(Acer pseudoplatanus)*	

T11	Category B Sycamore *(Acer pseudoplatanus)*	
T13	Category B Sessile Oak *(Quercus petraea)*	

T14	Category B Goat Willow *(Salix caprea)*	
T16	Category B Hazel *(Corylus avellana)*	

T17	Category B Goat Willow *(Salix caprea)*	
T21	Category B Goat Willow *(Salix caprea)*	

T25	Category A Pedunculate Oak (Quercus robur)	
G2	Category B mixed species group	

G6	Category C mixed species group	

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