NUMBER ONE INDUSTRIAL ESTATE

CONSETT, DURHAM

ARBORICULTURAL IMPACT ASSESSMENT

AUGUST 2023

TEP
Genesis Centre
Birchwood Science Park
Warrington
WA3 7BH

Tel: 01925 844004
Email: tep@tep.uk.com
www.tep.uk.com

Offices in Warrington, Market Harborough, Gateshead, London and Cornwall

Document Control

Document Title	Arboricultural Impact Assessment
Prepared for	Northern Trust Company Ltd
Prepared by	The Environment Partnership (TEP) Ltd
Document Ref.	10024.001
Date	August 2023
Author	Heather Eilbeck
Checked	Robin Grimes
Approved	Jonathan Smith

Amendment History					
Version	Date	Modified by	Approved by	Reason(s) for issue	Status
0.1	02/08/2023	HEE	RMG	Checking	Draft
1.0	08/08/2023	HEE	JGS	Approval	Issue

1.0 Scope

1.1. TEP has been commissioned by Northern Trust Company Ltd to conduct an arboricultural survey of land at Number One Industrial Estate in Consett, Durham and to make an assessment in accordance with BS 5837:2012 Trees in relation to design, demolition and construction - Recommendations.

1.2. This report has been produced to support a planning application. It describes the findings of field and desktop surveys; the effects that granting planning permission would have on arboriculture; and measures that are and/or should be incorporated in the proposed development.

1.3. A judgement has been made in consideration of the survey findings, desktop search results and the nature of the proposed development that a full report style Arboricultural Impact Assessment (AIA) would not be proportionate. This document presents the content of an AIA in a condensed format, which is considered appropriate for relatively simple sites and/or development in relation to trees.

Survey

1.4. The survey was undertaken in July 2023 in accordance with BS 5837 by a qualified arboriculturist. The survey method is included at Appendix B.

1.5. A topographical survey was used to record the position of trees and vegetation (drawing reference: S22-446). Where trees were not shown on the topographical survey, their locations were estimated.

1.6. Trees on private land outside the application boundary, and at inaccessible locations were surveyed insofar as was practicable. Whilst reasonable effort has been made to ensure the accuracy and comprehensiveness of such records, it cannot be guaranteed.

Limitation

1.7. The proposed layout plans provided were not spatially referenced to British National Grid and have therefore been aligned manually using OS base mapping. Every effort has been made to ensure the accuracy of this report and associated plans, however this cannot be guaranteed.

1.8. This report relates to a specific development proposal and should not be interpreted as advice in any other circumstance.

1.9. This report constitutes a valid basis for the evaluation of impacts on trees resulting from the proposed development for a period not exceeding 2 years from the survey date. After this, it would be necessary to review baseline data and conclusions to ensure reliability.

1.10. Where the recommendations of this report have been followed, any future deterioration in tree condition shall not be attributable to the development.

Arboricultural Impact Assessment

2.0 Baseline

2.1. This drawing presents an overview of the existing trees within influencing distance of the proposed development. It also summarises the results of desktop searches for any designations, legal and regulatory restrictions or special status of relevance to arboriculture.

Application Site

2.2. The application site comprises two adjacent plots of land within the industrial estate, hereby named as Site A and Site B. Site A has no formal use at present and is an undeveloped plot of land. Site B has an existing building towards the north-east side, with the remaining ground comprising of amenity grass.

Survey results

2.3. 15 individual trees and 5 tree groups were recorded within influencing distance of the application site. Of these, 5 trees and 3 groups are within influencing distance of Site A and 10 trees and 2 groups are within influencing distance of Site B.

Site A

2.4. Tree cover on Site A is largely located to the east side and comprises mixed broadleaved species including common ash, common alder, white willow and hybrid black poplar.

2.5. The most significant tree is T11, a mature white willow that has had some previous branch failures. This failures are typical of the species and are not a symptom of ill-heath or deterioration in the trees overall quality.

2.6. Of the three groups within Site A, two comprise natural regeneration to the north-east of site (G4 and G5) and one comprises two compartments of tall, slender willow and poplar to the south-east (G3). There are also several trees within G3 that have been previously felled.

Site B

2.7. Tree cover on Site B is predominantly located on the eastern and southern edges, with the most dense area being group G1 to the east. Species on this Site include rowan, common ash, hornbeam, Norway maple and Scots pine.

2.8. The most significant tree is T9, a middle aged common ash with good form and no significant defects, other than some exposed surface roots. Several other individual trees are located within the boundary including tree T1, a Scots pine in close proximity to the existing building to the north-east; and amenity trees adjacent to the road (T2 to T8). One tree (T10) is a middle aged rowan with extensive dieback evident and is in poor condition because of this.

2.9. Group G1 is part of the western edge of a wider linear tree belt between sections of the industrial estate. This comprises entirely broadleaves including Norway maple, common beech, common ash, hybrid black poplar and pedunculate oak. This group, collectively with the wider tree belt, has screening and habitat value and is a significant arboricultural feature within an industrialised area.

2.10. Trees have been categorised in accordance with BS 5837 to describe their arboricultural, landscape or cultural qualities: A (high quality), B (moderate quality) C (low quality) and U (unsuitable for retention). The categorisation of tree quality allows a weighting to be given to each tree within the context of proposed development but is not prescriptive.

2.11. A Root Protection Area (RPA) has been calculated in accordance with BS 5837. This is based on each tree's stem diameter at 1.5 metres and has been adjusted where necessary to most accurately represent the likely spread of roots in consideration of prevailing conditions. The RPA represents the minimum area around each tree that must be left undisturbed to ensure its survival.

2.12. Feature locations, their quality categories, canopy spreads and root protection areas are shown opposite. All arboricultural information recorded during the survey is presented at Appendix A.

Desktop Searches

2.13. Durham County Council's online mapping system confirmed that no trees on or adjacent to the site are protected by Tree Preservation Order or within a Conservation Area.

2.14. Natural England's Ancient Woodland Inventory (Provisional) for England contains no records for the site.

2.15. There are no veteran trees which could be affected by development of the site.

2.16. The site is not within a Community Forest.

2.17. There are no mapped arboreal Habitats of Principal Importance (Hedgerow, Deciduous Woodland, Wood Pasture and Parkland, and Traditional Orchard) within influencing distance of the application site.

2.18. No assessment of the presence of protected species has been made during the production of this report. Features of possible interest that were observed incidentally during the tree survey are recorded in Appendix A.

2.19. Works to and around trees have the capacity to affect protected species, particularly including birds, bats, great crested newts, badgers, dormice, otters and water voles. Contractors should be familiar with the locations and sensitivities of any protected species that are present and take reasonable avoidance measures or comply with the requirements of any licence agreement in accordance with the advice of an ecologist.

KEY

[This drawing must be reproduced in colour]

- T1/G1 Trees and Groups
- Root Protection Area (RPA)
- Application Boundary - Site A
- Application Boundary - Site B
- # Approximate location (Feature not shown on supplied topographical survey)

Tree Quality Categorisation
(Based on BS 5837:2012 Trees in relation to design, demolition and construction - Recommendations)

- Category A (High quality)
- Category B (Moderate quality)
- Category C (Low quality)
- Category U (Unsuitable for retention)

NOTES:

This drawing should be read in conjunction with the respective Arboricultural Survey Data (Appendix A).

G1 and G4 form part of wider areas of unmapped tree cover.

Rev	Description	Drawn	Approved	Date

THE ENVIRONMENT PARTNERSHIP

Genesis Centre, Birchwood Science Park, Warrington WA3 7BH
Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

Project
Number One Industrial Estate, Consett, Durham

Title
Arboricultural Impact Assessment [BASELINE]

Drawing Number
D10024.001

Drawn	Checked	Approved	Scale	Date
HEE	RMG	JGS	1:1,000 @ A3	07/08/2023

Arboricultural Impact Assessment

3.0 Effects

3.1. In simple terms, the effects on arboriculture comprises an account of which existing trees would not be retained within the proposed development; what significance they have; and whether adverse effects would or can be mitigated or offset.

3.2. This drawing presents the results of an assessment in accordance with BS 5837, including a definitive account of which trees would be removed or pruned.

Proposed development

3.3. The proposed development consists two parcels of land that will be applied for under a single planning application and comprises:

3.3.1. Site A - Construction of two industrial blocks, separated into units internally, with associated parking.

3.3.2. Site B - Construction of one industrial block, separated into units internally; internal refurbishment of an existing industrial block and construction of new parking on the south side of the unit.

3.4. The proposed layout for both Sites are shown opposite and are based on drawings WJ-187-102 (no drawing revision) and WJ-187-0003 (Rev D).

Proposed tree works

3.5. A reasonable worst case assessment of the requirement to prune or remove trees has been made on the basis of BS 5837, the proposed construction methods, and professional judgement. The works listed below and illustrated opposite form part of the proposed development of both Site A and Site B, and would be permitted by the grant of planning consent:

3.5.1. Removal of Category A tree T9.

3.5.2. Removal of Category B trees T1; T5; T7; T8; and T11.

3.5.3. Removal of Category C trees T12; T13; and T14.

3.5.4. Removal of Category U trees T10 and T15.

3.5.5. Full removal of Category B group G2 equating to c. 0.019ha of canopy cover.

3.5.6. Partial removal of Category B group G1 equating to c. 0.019ha of canopy cover.

3.5.7. Full removal of Category C groups G3 and G5 equating to c. 0.039ha of canopy cover.

3.5.8. Crown reduction of trees within Category B group G1 by between circa 1.4m and 2.7m as annotated opposite.

3.6. In total, approximately 0.21ha of existing tree canopy cover would be removed to accommodate the proposed development.

3.7. The most significant loss, in terms of arboricultural value, is the removal of high quality (Category A) tree T9; an ash tree with good form and no significant defects. Following this, the loss of five moderate quality (Category B) trees and two moderate quality tree groups in full (G2) or part (G1) is also significant, in terms of arboriculture and amenity value.

3.8. The loss of three low quality (Category C) trees and two groups in their entirety will result in a reduction of habitat and amenity bnenefits, although their low quality is largely a result of being self-set regeneration (G5) or densely spaced and slender trees (G4) with limited future potential.

3.9. The removal of two poor quality (Category U) trees, whilst currently both in poor condition and likely to succumb in the short term, is primarily as a result of the proposed development opposed to a foreseeable health and safety risk.

3.10. Trees within group G1 will need to be crown reduced to accommodate the proposed development. The pruning will be between approximately 1.4m and 2.7m as annotated opposite.

Effects on designated or protected features

3.11. Trees are a material consideration and the quality of trees, planning policies, and the presence of any special status or designation is likely to be considered by consenting authorities when determining a planning application.

3.12. The removal of trees, without mitigation, constitutes an adverse effect that is likely to be regarded by consenting authorities as contrary to the overarching environmental objective within national planning policy to protect and enhance the natural environment and biodiversity.

3.13. In consideration of the desktop search and survey results described previously, there are adverse effects that cannot be offset within the proposed development application boundaries.

3.14. It will be for the consenting authority to evaluate the proposed development, including any proposed off-setting measures, in consideration of all relevant local and national planning policies and guidance.

KEY

[This drawing must be reproduced in colour]

T1/G1 Trees and Groups

Root Protection Area (RPA)

Application Boundary - Site A

Application Boundary - Site B

\# Approximate location
(Feature not shown on supplied topographical survey)

Trees to be retained and protected

Category B
(Moderate quality)

Category C
(Low quality)

Proposed tree works

Trees to be removed
(Canopy outline denotes tree quality category)

Trees to be crown reduced as annotated
(Canopy outline denotes tree quality category)

NOTES:

This drawing should be read in conjunction with the respective Arboricultural Survey Data (Appendix A).

G1 and G4 form part of wider areas of unmapped tree cover.

Rev	Description	Drawn	Approved	Date

TEP | THE ENVIRONMENT PARTNERSHIP

Genesis Centre, Birchwood Science Park, Warrington WA3 7BH
Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

Project
Number One Industrial Estate, Consett, Durham

Title
Arboricultural Impact Assessment [EFFECTS]

Drawing Number
D10024.002

Drawn	Checked	Approved	Scale	Date
HEE	RMG	JGS	1:1,000 @ A3	07/08/2023

4.0 Mitigation

4.1. This drawing describes mitigation measures that are incorporated within the proposed development and would be secured by the grant of planning permission. It also outlines recommended measures, which are not proposed but which could be secured by planning condition or agreement and therefore relied upon to draw conclusions regarding overall effects in planning terms.

4.2. This information is presented in the format of a method statement, which describes actions to be completed by the site manager in chronological order.

Proposed measures

4.3. The site manager and all contractors must observe and implement everything in this section to avoid a breach of planning.

Pre-start

4.4. The site manager will read, understand and retain responsibility for implementing this document.

4.5. A copy of this document in colour and at A3 will be made available for inspection on site and introduced to all relevant contractors.

4.6. Arboriculturist and author of this document, Heather Eilbeck, can be contacted on 07767167503, if required to assist with the correct interpretation of this document and/or inspect tree works and tree protection measures.

4.7. An Arboricultural Contractor will be appointed to undertake tree works.

4.8. The alignment of temporary tree protection measures shown opposite will be marked out accurately.

4.9. Tree works shown on drawing D10024.002 will be completed in accordance with BS3998: 2010 Tree work - Recommendations.

4.10. Tree protection fencing will be installed as shown opposite as a **thick black line**.

4.11. Where a **thick blue line** is shown, it is assumed that there will **either** be site hoarding fencing installed **or** tree protection fencing.

4.12. The specification for tree protection fencing will be as per Appendix C.

4.13. The site manager will inspect and verify the correct installation of tree protection and maintain a photographic record.

4.14. Tree protection fencing will not be removed or realigned; and storage, excavation, level change, and access is prohibited within areas of tree protection except as described by this document or an approved Arboricultural Method Statement.

During construction

4.15. Works will proceed in a careful and logical manner, to prevent accidental damage from cranes, booms and other plant/vehicles.

4.16. If major roots (>25mm diameter) are uncovered during construction, works liable to damage them will cease, they will be loosely covered, and arboricultural advice will be sought.

4.17. Following completion of all construction works and removal of vehicles, plant, compounds and materials, tree protection will be removed.

Recommended measures

4.18. The client, site manager and/or contractors should implement everything in this section; compliance may be specifically required by planning condition.

Planting

4.19. Approximately 0.21ha of existing tree canopy cover would be removed to accommodate the proposed development.

4.20. Due to limited space within the application boundaries available for new tree planting, development would give rise to a net adverse effect on trees unless off-site tree planting is provided.

4.21. It is estimated that 48 specimen trees would need to be planted to off-set the proposed removal of Category A and Category B trees by canopy area. This is based on an estimated average projected canopy diameter of 6m after 30 years (a reasonable time frame). It discounts the removal of the young self-set trees and those that are in very poor condition.

4.22. Opportunities exist within the soft landscaping of wider industrial estate to accommodate the recommended number of replacement trees but third party landowner consent would be required.

4.23. Provision should be made for the maintenance of new planting in accordance with BS 8545:2014 Trees: from nursery to independence in the landscape - Recommendations, and replacement of failures for a period of at least 5 years.

KEY

[This drawing must be reproduced in colour]

- T1/G1 Retained Trees and Groups
- Root Protection Area (RPA)
- Application Boundary - Site A
- Application Boundary - Site B
- # Approximate location (Feature not shown on supplied topographical survey)
- Tree Protection Fencing (c. 119m or 34 Heras Panels) (Must be installed prior to works commencement)
- Site Hoarding Fencing or Tree Protection Fencing (Must be installed prior to works commencement)

NOTES:

In order to achieve the fencing alignment shown opposite, some heras panels may require overlapping.

G1 and G4 form part of wider areas of unmapped tree cover.

Rev	Description	Drawn	Approved	Date

THE ENVIRONMENT PARTNERSHIP

Genesis Centre, Birchwood Science Park, Warrington WA3 7BH
Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

Project: Number One Industrial Estate, Consett, Durham

Title: Arboricultural Impact Assessment [MITIGATION]

Drawing Number: D10024.003

Drawn	Checked	Approved	Scale	Date
HEE	RMG	JGS	1:1,000 @ A3	07/08/2023

APPENDIX A: Arboricultural Data Sheets

APPENDIX A: Arboricultural Survey Data Sheets

Surveyor Alistair McGregor
Survey Date 04.07.2023
Site No.1 Industrial Estate, Durham
Drawing Ref D10024.001

Italicised Feature Ref: Inspection of this feature was restricted
Italicised Values: Feature value was estimated

Ref	Species	Height	Canopy Ground Clearance	Stem Diameter (or range)	No. of stems/ individuals	Crown Spread North	Crown Spread South	Crown Spread East	Crown Spread West	Lowest Branch Height	Lowest Branch Direction	Maturity	Condition	Comments on form, condition, health and significant defects	Management recommendations in current context	BS 5837 Quality Category	Estimated Remaining Contribution
		(m)	(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)	(N,S,E,W)	Young, Middle Age, Mature	Good, Fair, Poor, Veteran			A,B,C,U (1,2,3)	Long, Medium, Short, Very Short
Trees																	
T1	Scots pine	12.0	6.0	330	1	3.0	3.0	2.0	4.0	6.0	N	Middle Age	Good	Lower branches below 6m height dead due to suppression.		B ,1	Long
T2	Scots pine	10.0	7.0	330	1	2.0	4.0	2.0	3.0	7.0	SW	Middle Age	Fair	Towards top of bank. Deadwood branches to 6cm diameter and 3m length below 7m height. Dead central leader.		C ,1	Medium
T3	Norway maple	12.0	2.0	270	1	4.0	4.0	4.0	3.0	3.0	SW	Middle Age	Good	Bifurcate at height of 2.5m. Several large surface roots. Trunk growing around stake.		B ,1	Long
T4	Norway maple	10.0	2.0	200	1	5.0	4.0	2.0	2.0	2.0	S	Middle Age	Fair	At top of bank. SE lean to stem, possibly from historic partial root plate failure. Minor deadwood especially up eastern side.		C ,1	Long
T5	Norway maple	10.0	2.0	403	2	6.0	5.0	5.0	5.0	1.5	S	Middle Age	Good	At top of bank. Basally bifurcate. Several exposed surface roots, some growing down bank. Snapped out limb wound on north side.		B ,1	Long
T6	Norway maple	9.0	2.5	240	1	2.0	5.0	3.0	5.0	3.0	NW	Middle Age	Good	At top of bank, 1m from pavement. Suppressed canopy due to T5.		C ,1	Long
T7	Hornbeam	7.0	1.0	287	3	5.0	4.0	5.0	3.0	0.5	NE	Middle Age	Good	Towards top of slight bank. Bushy form. Some epicormic twigs from base. Stem growing round stake.		B ,1, 2	Long
T8	Hornbeam	8.0	2.0	290	1	5.0	5.0	4.0	5.0	2.0	W	Middle Age	Good	Midway up slight slope. Bushy form.		B ,1, 2	Long
T9	Common ash	11.0	1.5	370	1	5.0	5.0	5.0	5.0	2.5	S	Middle Age	Good	Good form. Several exposed surface roots.		A ,1	Long
T10	Rowan	5.0	2.0	173	3	3.0	3.0	1.0	2.0	1.5	NE	Middle Age	Poor	Extensive dieback. Extensive cavity in one leader. Flaking bark.		U	Very Short
T11	White willow	16.0	2.0	569	3	7.0	3.0	7.0	5.0	4.0	NW	Mature	Fair	Previously pruned up north-east leader. Previous limb tear outs on north-east and north-west leaders.		B ,1	Medium
T12	Common ash	16.0	2.0	508	3	3.0	6.0	6.0	6.0	3.0	SW	Middle Age	Fair	Basally trifurcate.		C ,1	Medium
T13	Common alder	10.0	2.0	430	1	3.0	7.0	5.0	6.0	0.5	S	Mature	Fair	Two large branches from base. Extensive deadwood.		C ,1	Medium
T14	Common alder	8.0	1.0	*360*	5	4.0	4.0	4.0	5.0	0.5	E	Middle Age	Good	Minor deadwood.		C ,1	Long
T15	Rowan	5.0	1.0	106	2	1.0	1.0	1.0	1.0	1.0	E	Young	Poor	Almost dead.		U	Very Short
Groups																	
G1	Norway maple, Common beech, Common ash, Hybrid black poplar, Pedunculate oak	8 to 12	1.0	60 to 290	*12*							Young to Middle Age	Good	Stems approximately 3m back from line of building. Densest bushes to west side. At base of bank.	Consider crown raising to western side.	B ,1	Long
G2	Norway maple, Whitebeam	5 to 7	1.5	170 to 260	7							Middle Age	Good	Close to top of bank, each about 1m from path.Stems each have mower wounds. Westernmost tree has areas of missing bark.		B ,1, 2	Long
G3	Hybrid black poplar, Willow species	12 to 20	4.0	130 to 530	*35*							Middle Age	Fair	Tall slender trees due to spacing. Moderate amount of twig deadwood and some small dead stems. Several trees previously felled. Many exposed surface roots. Many stems with epicormic growth.	Remove dead stems and significant deadwood.	C ,1, 2	Medium
G4	Common ash	10 to 13	3.5	200 to 380	4							Middle Age	Poor	Extensive dieback throughout group.		C ,1	Short
G5	Common alder	3 to 7	0.5	30 to 170	*30*							Young	Good	Natural regeneration.		C ,1, 3	Long

APPENDIX B: Survey Method

Limitation

Trees are dynamic living organisms with a constantly changing structure; even healthy trees can change or decline. Survey information is presented as being correct at the time of survey. Limitations to the reliability of the survey data are noted within Appendix A and the main report text.

Scope

All woody vegetation with a stem diameter exceeding 75mm is recorded. Below this threshold, vegetation may also be recorded at the discretion of the surveyor. The survey includes woody vegetation within a defined boundary, and on adjacent land where the characteristics, location or context of the tree mean that activity within the boundary could affect the tree, or be influenced by it. This is typically up to 15m outside the boundary.

Resolution

Vegetation is recorded as either an individual *Tree*, *Group* of trees, *Woodland*, or *Hedgerow*. This is done at the discretion of the surveyor to provide a useful resolution to the survey data, to differentiate between features with varying attributes and group those with common attributes, and collective value or function.

Typically, *Trees* are recorded where they are arranged separately; different from adjacent trees; or where the assessment would benefit from greater detail. *Groups* are coherent arboricultural features comprising trees with a collective form, function, history or management opportunities. *Woodland* is recorded where areas of tree cover have the qualities of a woodland habitat, including age and species structure, natural regeneration, and associated non-arboreal features. *Hedgerow* describes linear features largely comprising woody vegetation that are under, or could be returned to, regular hedgerow management. It should be noted that these terms are also used in other assessment types, sometimes with different definitions.

Tree locations

The location of trees is based on stem locations and canopy spreads taken from a topographical survey, where available. Where this information is not available, this is noted in Appendix A and locations should be regarded as approximate. Approximate locations are based on one or more of: GPS data captured during the survey; aerial photographs; and measurement from known points of reference. Approximate stem locations are typically accurate to within a few metres. Stem locations are shown for all *Trees*.

Groups, *Woodland* and *Hedges* are principally described in terms of their canopy outline, although stem locations may also be shown. Individual tree canopy outlines are projected on Drawings based on measurements taken as described below (see Crown Spread). *Groups*, *Woodland* and *Hedges* canopy outlines are projected based on the same hierarchy of source data as stem locations.

Tree survey

The survey is conducted from ground level by an arboriculturist, taking account of the tree, and its context. The nature of the soil is not assessed. Non-invasive assessment tools may be used as appropriate, including hypsometer, measuring tape, probe and nylon mallet.

The following attributes are recorded for each feature (see Arboricultural Survey Data Sheets at Appendix A):

Reference Number	A unique code per feature, typically but not necessarily a chronological sequence, in the form T*n* for *Trees*; G*n* for *Groups*; W*n* for *Woodlands*; and H*n* for *Hedgerows*
Species	The common name is given. All species are listed for *Groups*, *Woodland* and *Hedgerows*. The Latin name may also be given if further clarification is required.
Height	Top height recorded in metres, or the range for *Groups*, *Woodland* and *Hedgerows*
Canopy Ground Clearance	The height of the canopy above ground level in metres
Stem Diameter	A measurement taken at 1.5 metres above ground level, or the nearest representative point below, in millimetres. For multi-stemmed trees a single figure is calculated according to BS5837 4.6. For *Groups*, *Woodland* and *Hedgerows,* the range of diameters

No. of Stems / Individuals	The number of stems arising below a height of 1.5 metres, or for *Groups*, *Woodland* and *Hedgerows* an estimate or count of the number of trees
Crown Spread	Radial branch spread in metres at cardinal points (N, S, E, W) from the location of the *Tree* stem at ground level (for *Groups*, *Woodland* and *Hedgerows*, see *Tree Locations*)
Lowest Branch Height	The height of the first significant branch at the point of attachment (*Trees* only)
Lowest Branch Direction	The direction of growth of the first significant branch from the point of attachment (*Trees* only)
Maturity	Classification describing age relative to the species, and size and growth potential, in order to inform management decisions • ***Young*** means small and/or recently planted and could be relocated, or replaced on a like for like basis • ***Middle Age*** means established and independent, within the growth stage of life, and with potential to continue increasing in height and/or spread • ***Mature*** means having reached ultimate height and/or spread, given the location and surroundings; further increases will be slow or limited • ***Mixed Age*** (*Groups*, *Woodland* and *Hedgerows* only) means comprising all three maturity classes
Condition	An overall assessment of a feature's physiological and structural state, informing longevity and quality categorisation, and supported by *Comments* • ***Good*** condition means with vitality and resilience commensurate with species and age, and without significant defects or pathogens • ***Fair*** condition means with tolerable reduction of vitality and resilience, and/or remediable or tolerable defects and/or pathogens • ***Poor*** condition means with declining or significant loss of vitality and resilience, and/or significant and irremediable defects and/or pathogens • ***Dead*** condition means without photosynthetic or metabolic capacity, or moribund and in imminent terminal decline • ***Mixed*** (*Groups* and *Woodland*) means comprising more than one condition class • ***Veteran*** means trees of exceptional value, meeting recognised criteria including age, size and characteristics. Classification is partly informed by the sustained presence of structural defects, physiological decline, and pathogens, and their contribution to biodiversity. Undesirable characteristics in ordinary trees may be desirable in veteran trees, therefore *Veteran* can be understood as a superlative *Condition* that supersedes other categories (excluding *Dead*).
Comments	A description of all significant characteristics of the feature and its context that are not described by other attribute fields; including observations to support the classification of *Condition*, *Quality Category* and *Estimated Remaining Contribution* as appropriate
Management Recommendations	Recommendations for arboricultural works based on the current land use, in the interests of good arboricultural practice. These are incidental to the primary survey purpose, and not a comprehensive schedule in pursuit of any particular objective.
BS 5837 Quality Category	Tree quality assessment based on Table 1 of BS 5837:2012 (see below) comprising quality categories **A**, **B**, **C** and **U** and sub-categories **1**, **2** and **3**
Estimated Remaining Contribution	A forecast of the durability of the feature in its current form and context, and therefore the reliance that can be placed on any benefits or functions it provides. This is influenced by *Species* and *Condition*, and is not necessarily a forecast of life expectancy. • **Long** means more than 40 years • **Medium** means 20 to 40 years • **Short** means 10 to 20 years • **Very Short** means less than 10 years

Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees 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 category U trees (e.g. 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, and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality *NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.*			See Table 2
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**	
Trees to be considered for retention				
Category A **Trees of high quality** with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	See Table 2
Category B **Trees of moderate quality** with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing 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 value	See Table 2
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 150 mm	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 collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	See Table 2

Table 1: Extract from **British Standards Institution (2012)** *BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations*, page 9

Note on Root Protection Areas:

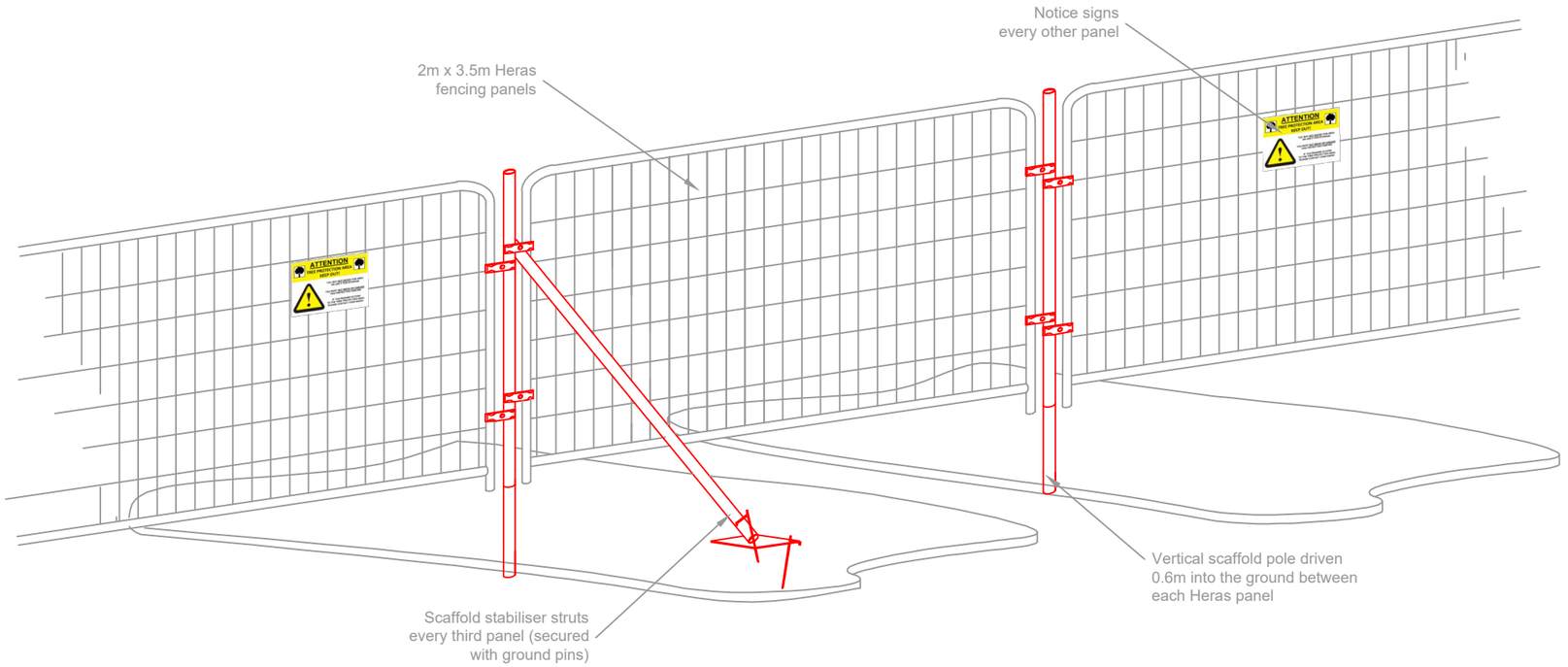
Data is captured during the survey to inform the design of Root Protection Areas (RPA). These are a design tool, representing the area around a tree in which restrictions to some activities may be required to avoid significant harm, particularly to roots and soil. The RPA is a function of *Stem Diameter*, and additional considerations including management history, barriers to root growth, topography, ground conditions and tree characteristics. These factors are combined by an arboriculturist to produce a buffer zone for each feature from which the exclusion of construction activities would ensure the continued reliability of the survey data at Appendix A, including *Condition*, BS 5837 *Quality Category* and *Estimated Remaining Contribution*.

For *Trees*, RPA is defined as a circle with a radius 12 times the *Stem Diameter*, which may be modified to reflect the considerations above.

For *Groups* and *Woodland* RPA is based on the size and location of peripheral constituent trees, and presented as an offset from the canopy edge giving equivalent or greater protection to all trees of any size, or modified to reflect significant variation in constituent tree sizes and/or the considerations above.

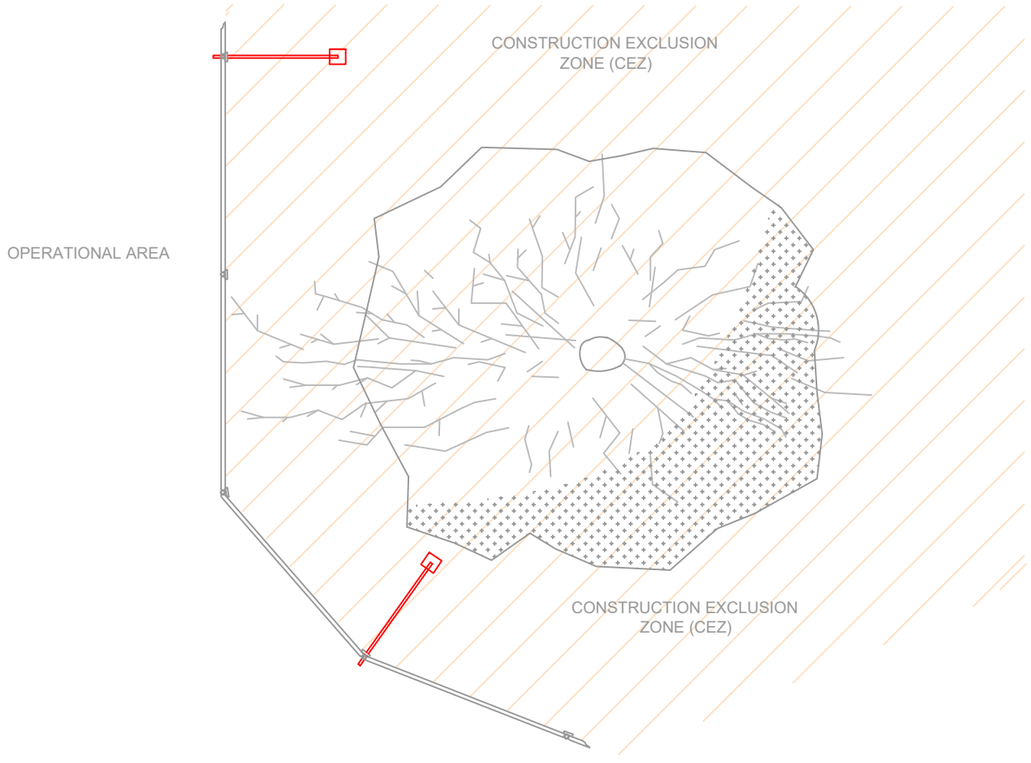
For Hedgerow, no RPA is shown. Typically, hedgerow requires a smaller stand-off than trees due to reduced crown dimensions. Any stand-off should include sufficient space for access and ongoing management and should therefore normally be based on the canopy spread rather than root spread.

APPENDIX C: Specification Drawings



Per 3No. Heras panels (10.5m)	
Component	Quantity
2m x 3.5m Standard Heras panels	3
3m Galvenised steel scaffold pole	3
Heras fecurity fence clip	12
Heras stabilising support bar	1
Stabilising pin	2
Tree protection notice	2

Notes:



Rev	Description	Drawn	Approved	Date

THE ENVIRONMENT PARTNERSHIP

Genesis Centre, Birchwood Science Park, Warrington WA3 7BH
Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

Project

Title
Temporary tree protection fencing for use on soft surfaces

Drawing Number
TEP.ARB.FEN.001

Drawn	Checked	Approved	Scale	Date
TDP	RMG	JGS	(not to scale) @ A3	08/07/2019

ATTENTION

TREE PROTECTION AREA
KEEP OUT!

YOU MAY NOT ENTER THIS AREA OR USE IT FOR STORAGE

YOU MUST NOT MOVE OR DAMAGE THIS PROTECTION FENCING

IF YOU REQUIRE ACCESS TO THE TREE PROTECTION AREA PLEASE CONTACT 01925 844004

THE ENVIRONMENT PARTNERSHIP

HEAD OFFICE

Genesis Centre
Birchwood Science Park
Warrington
WA3 7BH

Tel: 01925 844004
Email: tep@tep.uk.com

MARKET HARBOROUGH

No. 1 The Chambers
Bowden Business Village
Market Harborough
Leicestershire
LE16 7SA

Tel: 01858 383120
Email: mh@tep.uk.com

GATESHEAD

Office 26, Gateshead
International Business Centre
Mulgrave Terrace
Gateshead
NE8 1AN

Tel: 0191 605 3340
Email: gateshead@tep.uk.com

LONDON

8 Trintiy Street
London
SE1 1DB

Tel: 020 3096 6050
Email: london@tep.uk.com

CORNWALL

4 Park Noweth
Churchtown
Helston
Cornwall
TR12 7BW
Tel: 01326 240081
Email: cornwall@tep.uk.com