



**Ascent Housing Phase 3 – Site 36 (O’Hare Place)  
Arboricultural Impact Assessment  
Report Reference: TEP.3531.003  
Version 1.0  
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## Ascent Housing Phase 3 – Site 36 O'Hare Place

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## 1.0 INTRODUCTION

- 1.1 TEP has been commissioned by Ascent Housing to conduct an arboricultural survey of land near Novi Lane in Leek, Staffordshire. This report details the arboricultural impact of developing the site, subsequent mitigation recommendations and protective measures.
- 1.2 The survey was carried out in September 2012 by means of inspection from ground level by a qualified Arboricultural Consultant. Trees were assessed in accordance with *BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations*.
- 1.3 Under the British Standard the assessment of trees is made objectively. The categorisation method identifies the quality and value of the existing tree stock.
- 1.4 A topographical survey was used to record the position of trees and vegetation (Ref: SSL:14722:200:1:1). Where the age distribution and species mix of tree cover was relatively uniform, trees were plotted as groups. For the purposes of this report it is assumed that the detail on the drawing is accurate. Where trees were not shown on the topographical survey TEP’s surveyor estimated their locations (see Drawing 1 for details).
- 1.5 A total of 3 individual trees (T1-T3), 5 groups of trees (G1-G5) and 2 hedges (H1-H2) were surveyed and mapped (refer to Drawing 1). All arboricultural information recorded during the survey is presented at Appendix 1.
- 1.6 This report provides the results of the survey and includes the following:
  - A schedule of all trees located on, or within influencing distance of the proposed development site (Appendix 1);
  - An assessment based on *BS 5837:2012*, of trees in terms of their potential value within any future development. On the basis of this assessment trees have been categorised into one of four categories: A, B, C or U (Appendices 1 & 2);
  - An assessment, based on *BS 5837:2012*, of the requirement for protection of trees during the construction phase (Section 5);
  - Advice on removal, retention and management of trees (Sections 4 & 6);
  - A Tree Constraints Plan detailing tree quality categories, canopy spreads and Root Protection Areas (**RPA**) for all trees surveyed (Drawing 1); and
  - A Tree Removal and Protection Plan detailing the development proposals, trees to be retained and removed, tree protection fencing alignment and any requirement for additional protection (Drawing 2).

## **2.0 THE SITE AND SURROUNDINGS**

- 2.1 The site is at the junction of Novi Lane and Abbott’s Road in Leek, Staffordshire. It is the site of former social housing blocks that have recently been demolished.
- 2.2 At the time of survey, the buildings had already been demolished, leaving a relatively flat and level open area, which was secured with hoarding on all sides.
- 2.3 Access to the site is from Abbott’s Road.
- 2.4 Weather conditions during the survey were fine.
- 2.5 Most trees that were recorded are on adjacent land but within influencing distance of the site. In most cases, inspection of trees was restricted by location and access restrictions. These were surveyed insofar as was possible from accessible areas of the site and from the public highway.

### **Development Proposals**

- 2.6 The proposed development comprises social housing totalling 22 apartment units in buildings fronting Novi Lane and Abbott’s Road. Access will be from Abbott’s Road with a parking area to the rear of the new buildings and associated landscaped areas along the boundary.
- 2.7 Detail of the proposals is shown on Drawing 2 and is based on the proposed site plan (Ref: 1376-L03) supplied by John McCall Architects.

## **3.0 STATUTORY PROTECTION AND GUIDANCE**

### **National Planning Policy Framework (NPPF)**

- 3.1 The NPPF assumes protection of all ancient woodland and veteran trees unless it can be clearly demonstrated that the need for, or benefits of, development outweigh the loss. Ancient woodland is defined as an area which has been wooded continuously since at least 1600 AD and a veteran as a tree of exceptional value for wildlife, in the landscape, or culturally because of its great age, size or condition
- 3.2 On this site there are no ancient woodland or veteran trees.

### **Tree Preservation Orders & Conservation Area Designations**

- 3.3 Local authorities reserve the right to create Tree Preservation Orders (TPO) to protect the amenity value conferred to a location by a tree or group of trees. Where a TPO is in force, lopping, topping, felling, uprooting or wilful damage caused to a tree is prohibited and such actions may be prosecuted and incur an unlimited fine. Works to TPO protected trees must only be undertaken with the written consent of the local authority.
- 3.4 Staffordshire Moorlands District Council confirmed that no trees on the site were subject to Tree Preservation Orders or Conservation Area status.

### **Protected Species – Bats**

- 3.5 Mature trees often contain cavities, crevices and hollows which are a potential habitat for roosting bats. Bats are afforded protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), as well as under Schedule 2 of the Conservation of Species and Habitats Regulations 2010, and as such causing damage to a bat roost constitutes an offence.
- 3.6 A preliminary ground level appraisal of the wildlife habitat value of each tree was undertaken as part of the arboricultural survey. No trees were noted as having features suitable to support roosting bats.
- 3.7 Should the presence of a bat roost be suspected whilst undertaking works on any other trees and groups on site, operations must be halted until a licensed bat handler or ecologist can provide advice.

### **Protected Species - Birds**

- 3.8 Trees are a potential habitat for nesting birds, which (as well as their nests and eggs) are protected under the *Wildlife and Countryside Act 1981* (as amended). This makes it an offence to intentionally or recklessly, damage or destroy an active birds nest or any part thereof.
- 3.9 Due to the suitability of the trees within the survey boundary for nesting birds, all tree work should ideally be undertaken outside the bird nesting season (British bird nesting season: March to August inclusive).
- 3.10 If this is not possible then a detailed inspection of each tree should be undertaken by a qualified ecologist immediately prior to the arboricultural works. Should an active nest be found (being built, containing eggs or chicks), any work likely to affect the nest must be halted until the nest becomes inactive.

### **National House Building Council**

- 3.11 This report has been written in accordance with, and to satisfy the requirement of *BS 5837:2012*. It principally addresses the issue of maintaining tree value and function through the development process. It is not intended as a basis for foundation depth calculations.
- 3.12 The nature of the soils on site was not assessed during the survey. The possibility of soil movement due to tree root activity cannot be discounted.
- 3.13 Prior to the undertaking of foundation depth calculations, the exact location of any approximately plotted trees would be required.
- 3.14 Any discrepancies with regards to tree location or missing trees will require further discussion with a qualified Arboricultural Consultant.

## 4.0 TREE POPULATION

- 4.1 3 individual trees (T1-T3) and 5 groups of trees (G1-G5) were recorded within influencing distance of the site. A schedule of all trees and groups in terms of species, condition, age management recommendations and *BS 5837:2012* quality categories is provided at Appendix 1.
- 4.2 The main area of relevant tree cover is to the south-east of the site. Most trees are in residential gardens and the grounds of a pub that share a boundary with the site. In some cases, these trees overhang the boundary and their roots are also likely to spread into the site.
- 4.3 There is one tree of note within the site boundary. It is T1, a downy birch. It has good form and makes a good contribution to the visual amenity of the site. Together with trees in group G4 it provides screening at the boundary.
- 4.4 Groups G2 and G3 comprise small and low quality self-set trees.
- 4.5 Group G1 comprises fruit trees in an adjacent garden. It is likely that some roots from these trees cross the boundary but the trees are sufficiently remote that these should not constrain or unduly influence operations.
- 4.6 Group G5 and trees T2 and T3 provide screening along the eastern boundary. Most of the trees in G5 are cypress species, planted to form a hedge. Trees T2 and T3 were recorded separately because T2 is larger than the surrounding trees and T3 is within the site boundary. The value of all trees in the grouping is principally realised in terms of screening. The dense hedge effect also provides potential for bird nesting.
- 4.7 Group G4 contains the bulk of the trees on third-party land in the south-eastern corner of the site, from which T1 has been recorded as the most notable tree. They also provide good screening and visual amenity to the surrounding area and are visible from the pub car park.
- 4.8 Hedges H1 and H2 are in ornamental borders within an adjacent pub car park. The small size of the individuals therein is such that neither hedge will influence operations within the site.
- 4.9 Tree and group locations, their quality categories and canopy spreads are shown on Drawing 1.

### Tree Quality Categorisation

- 4.10 Under *BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations* trees and groups are objectively assigned a quality category designed to quantify their value within any future development. Table 1 presents a summary of the categories presented in the British Standard. The full table has been reproduced at Appendix 2.

**Table 1: Summary of BS 5837:2012 tree quality categorisation criteria**

<b>Category A</b>	Trees of high value including those that are particularly good examples of their species and/or those that have visual importance or significant conservation or other value
<b>Category B</b>	Trees of moderate value including those that do not qualify as Category A due to impaired condition and/or those that collectively have higher value than they would as individuals; also trees with material conservation or other value
<b>Category C</b>	Trees of low value including those with very limited merit or impaired condition; trees offering transient or temporary landscape benefits
<b>Category U</b>	Trees with irremediable defects and anticipated early loss due to collapse; dead trees or those in immediate decline and those with infectious pathogens that threaten other trees

## 5.0 IMPACTS OF THE PROPOSED DEVELOPMENT

5.1 Table 2 lists the number and quality of trees that must be removed in order to facilitate the development proposals and those that can be retained. This is the result of an assessment based on the proposed site plan and discussions with the client regarding their application strategy.

**Table 2: Arboricultural impacts of the proposed development**

	Tree Quality Category				Hedge
	A	B	C	U	
<b>Trees, groups and hedges that can be retained</b>	T1	-	-	-	-
<b>Trees, groups and hedges that must be removed to facilitate the development</b>	-	-	T2; T3; G2; G3	-	-
<b>Trees located on third party land</b>	-	G4; G5	G1	-	H1; H2

See Appendix 1, Arboricultural Data Sheets for subcategories

5.2 2 individual trees and 2 tree groups (totalling 12 stems) must be removed to facilitate the development proposals.

- 5.3 All of these are trees of low value including self-set scrub and trees with significantly impaired form or future prospects. Most could technically be retained but would be unsuited to the new development. Removal and replacement is recommended in the interests of good arboricultural management.
- 5.4 T1, the only tree of note within the site, will be retained within a landscaped verge in the south-eastern corner.
- 5.5 The ownership of tree T2 is unclear. It is growing close to the boundary from beneath a dense hedge. It appears that the stem may originate on the adjacent land before immediately sweeping across the boundary towards the available light. The tree appears to be self-set and the adjacent landowner may be unaware of its existence. Nonetheless, they should be notified prior to undertaking tree works.
- 5.6 No hedgerow must be removed to facilitate the development proposals.
- 5.7 Fencing to protect the retained trees will be necessary. This will reduce the useable area for works and storage of materials during development.
- 5.8 Where planning permission is granted, the tree retention and removal schedule shown in Table 2 and Drawing 2 would normally form a part of that permission. Any requirement to fell trees that are shown for retention would therefore require an application to vary the consent and may cause a delay.

## 6.0 TREE PROTECTION REQUIREMENTS

### Root Protection Areas

- 6.1 As per *BS 5837:2012*, the **Root Protection Area (RPA)** is calculated using each tree’s diameter at 1.5 metres (refer to Appendix 1) and represents the minimum area around each tree that must be left undisturbed to ensure their survival.
- 6.2 Tree roots typically spread two times the width of the crown, although this figure may be significantly increased for certain species and where specific ground conditions are present. The majority of tree roots are found in the top 600 mm of soil and most of the fine roots that absorb water and nutrients are found in the top 100 mm.
- 6.3 The morphology of roots is influenced by past and present site conditions (the presence of roads, structures and underground services), soil type, topography and drainage. This means that a tree’s roots may not be uniform in their extent and the **RPA** may not be a circular area centred on the tree stem.
- 6.4 On this site most trees are growing in relatively homogenous ground. The only barriers to growth are likely to be a change in levels at the boundary adjacent to G4 and hard standing and gravel board around the hedges. Both of these will reduce or prevent root extension into the site. Roots are unlikely to be absent in all these areas but where unfavourable conditions exist, growth will certainly be impeded.

- 6.5 The **RPA** has been adjusted or offset to most accurately represent the likely spread of roots for each individual tree (refer to Drawing 1).

### **Protective Fencing and Exclusion Zones**

- 6.6 Temporary protective barrier fencing will be required to demarcate a **Construction Exclusion Zone (CEZ)** around retained trees. This must be put in place prior to the commencement of any development works; including bringing machinery or materials onto site, the erection of site huts, demolition or ground works.
- 6.7 The **CEZ** acts to protect both tree roots and branches. It is informed by the **RPA** and has been extended to incorporate canopy spread where appropriate.
- 6.8 Protective fencing alignment is shown on Drawing 2 and assumes that all trees identified for removal have been felled prior to installation.
- 6.9 The fencing must be fixed into the ground to withstand accidental impact from machinery and to ensure that a sufficient protective area is maintained. Details of recommended protective fencing are shown on Drawing 3.
- 6.10 A weatherproof notice prohibiting access into the **CEZ** must be fixed to each fencing panel. An example notice is shown on Drawing 3.
- 6.11 Any alteration to the fencing alignment to allow for approved activities must be made in agreement with the council’s Arboricultural Officer.
- 6.12 The protective fencing must not be removed until the physical construction phase has been completed and all vehicles have been removed from site, to the satisfaction of the council’s Arboricultural Officer.

### **Ground Contamination**

- 6.13 Storage areas for liquids such as fuels, oil or paint should not be located within 10m of any trees on or within proximity to the site due to the risk of soil contamination caused by accidental spillage.
- 6.14 Particular care must be taken when working on or close to sloping ground to avoid unintentional runoff into the rooting area of retained trees.

### **Underground Utility Issues**

- 6.15 No utility drawings were provided and no assessment has been made of the juxtaposition of tree roots and the likely location of new services. It has been presumed for the purposes of this report that all utilities will be installed outside of the **CEZ** shown on Drawing 2.

6.16 Where the installation of services within the **CEZ** of retained trees is unavoidable, appropriate working methods will be required to ensure the safe long-term survival of those trees. This process will require additional consultation with a qualified Arboricultural Consultant and is likely to be more expensive than conventional trench installation. Any such processes should be detailed in an Arboricultural Method Statement.

### Ground Level Changes

6.17 A rise or reduction in soil level can have major implications on the longevity and health of the trees. Minor increases (up to 100mm) can be tolerated in some cases but is heavily dependent on tree species, condition and growing environment.

6.18 Existing ground levels within the **CEZ** should be unchanged to ensure the survival of retained trees. The advice of a qualified Arboricultural Consultant should be sought if level changes are required within the **CEZ**.

### Drainage & Storm Water Run-off Issues

6.19 Excessive and/or polluted surface water run-off into the rooting area of retained trees should be prevented. This may require the use of special materials such as pervious surfacing products.

## 7.0 MANAGEMENT RECOMMENDATIONS

### Tree Work

7.1 In addition to the tree removals that are required to facilitate the development proposals, the tree surgery operations presented in Table 3 are also recommended in the interests of good arboricultural practise.

**Table 3: Recommended Tree Surgery Works**

Feature Reference	Tree Work Description
G5	Cut and manage as a hedge along the boundary line

7.2 All tree surgery work should be carried out by a qualified contractor in accordance with *BS 3998:2010 Tree work – Recommendations*.

### Pre-start Site Meeting

7.3 To reinforce the required tree protection measures and avoid the requirement for on-going arboricultural supervision, a pre-start meeting may be arranged between the Arboricultural Consultant, the contractor and possibly the council’s Arboricultural Officer.

7.4 During the meeting the alignment of protective fencing will be agreed and any technical or logistical issues discussed.

### **Mitigation for the removal of trees**

- 7.5 The National Planning Policy Framework (NPPF) is a material consideration in the planning process and promotes a presumption in favour of sustainable development. In terms of the natural environment, development should minimise impacts on biodiversity and provide a net gain in biodiversity where possible.
- 7.6 In respect of trees, a sustainable development will be one whereby the total number, value or function provided by trees is maintained or increased or where the long-term prospects of the existing tree stock can be substantially improved. Net gains in biodiversity may be demonstrated where the number of tree species, variety of tree ages or range of niche habitats can be increased. Native, old, large or dead trees are likely to have a relatively significant impact on a scheme's environmental credentials, as will the connectivity of trees, hedges and woodland.
- 7.7 Small trees and self-set scrub totalling 12 stems must be removed to facilitate the development proposals. Mitigation for their loss and associated habitat should be provided in the form of replacement tree planting.
- 7.8 New planting as part of the site's landscaping scheme will have the potential to adequately mitigate for the loss of low value trees, particularly where these are managed to maturity in the landscape.
- 7.9 New planting should include trees along the road frontage to provide amenity benefits to the public realm. These should be medium sized species at maturity and spreading forms should be avoided. New planting in the verge around T1 should focus on native and wildlife friendly species and should include at least one tree that will achieve a large mature stature.
- 7.10 It is the recommendation of this report that the level of tree loss can be mitigated by replacement tree planting within the available space. The proposed development will result in a net gain of long-term tree cover (estimated at 40 years post-construction and subject to appropriate species selection, tree quality and high establishment rates).

### **Post Construction Tree Care**

- 7.11 Aftercare is vital to the survival of newly planted trees. Provision should be made for a minimum of two years maintenance of newly planted trees and include watering, formative pruning and the checking of tree ties and stakes.
- 7.12 Hazard recommendations are based on observations at the time of survey. Trees are dynamic living organisms whose structure is constantly changing. Even those in good condition can suffer from damage or stress. Following site development, regular (annual or biennial) inspections of all retained trees should be undertaken by a qualified Arboricultural Consultant.

## 8.0 SUMMARY

- 8.1 Based on an objective assessment made in accordance with *BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations*, there are 1 Category A, 2 Category B and 5 Category C trees and groups on or within influencing distance of the site. 2 hedges were also recorded.
- 8.2 2 individual trees and 2 tree groups (totalling 12 stems) must be removed to facilitate the development proposals.
- 8.3 The proposed tree removals constitute small, low value trees that comprise self-set scrub and individuals with compromised form or low future potential.
- 8.4 One tree must be removed that is growing across the boundary. The ownership of T2 is unclear and the adjacent landowner should be notified prior to felling works.
- 8.5 The only significant tree within the site (T1) will be retained within a landscaped verge.
- 8.6 At the time of the survey no trees within or immediately adjacent to the site were subject to Tree Preservation Orders or within a Conservation Area.
- 8.7 No trees were found to have features that may be suitable for bat roosting.
- 8.8 Protective barrier fencing will be required to demarcate a Construction Exclusion Zone (**CEZ**) around retained trees prior to the commencement of development. Fencing alignment is shown on Drawing 2 and details of the recommended Heras fencing are shown on Drawing 3. This will restrict movements on the site which should be considered early in the construction process.
- 8.9 A pre-start meeting between the site contractor, a qualified Arboricultural Consultant and the council’s Arboricultural Officer would allow any technical or logistical issues to be discussed.
- 8.10 Mitigation for the loss of trees in the form of replacement planting will be possible within the available space. New planting should include ornamental specimen trees along the roadside to provide maximum benefit to the public realm and native or wildlife-friendly trees in the south-eastern corner of the site.

**APPENDIX 1**

**ARBORICULTURAL SURVEY DATA SHEETS**

**APPENDIX 1: Arboricultural Survey Data Sheets**



Surveyor TP/RT  
 Date 2nd August 2012  
 Town Leek  
 Site 36 (O Hare Place)  
 Dwg Ref D3531.003

Ref	Species	Height	Stem Dia.	No. of stems/ individuals	Crown Spread North	Crown Spread South	Crown Spread East	Crown Spread West	Height of Lowest Branch	Direction of Lowest Branch	Maturity	Condition	Comments on form, condition, health and significant defects	BS5837 Tree Quality Assess.	Radius of RPA guide circle	BS5837 RPA Area	Management Recommendations	Estimated Remaining Contribution	TPO
		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)	(m)	Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,R (1,2,3)	(m)	(m2)		Long, Medium, Short	(*)
<b>Trees</b>																			
T1	Downy birch	12.0	470.0	1.0	5.0	5.5	6.0	5.0	2.5	W	Middle Age	Good	Mid-stem trifurcation; good form and potential; only tree of note within the site; visually forming part of grouping around boundary; attractive tree	A,1,2	5.6	99.9		Long	
T2	Ash	8.0	120.0	1.0	3.0	2.0	2.0	2.5	2.0	S	Middle Age	Good	Younger wolf tree growing from beneath hedgerow; probably on third-party land but bent stem leaning into site through fence	C,1	1.4	6.5	Remove lowest branch and cut fence wire to prevent future damage	Long	
T3	Swedish whitebeam	4.0	80.0	1.0	2.0	0.5	1.0	1.5	2.0	S	Young	Fair	Young tree with bifurcation mid-stem; suppressed form due to G5; by fence	C,1	1.0	2.9		Long	
<b>Groups</b>																			
G1	Apple	6.0	to 200	?					1.0		Middle Age	Fair	Trees in chicken run on adjacent land; apparently wet and bare ground but no access to third party land	C,1	Refer to Drawing	n/a		Long	
G2	Ash; sycamore	5.0	to 75	6.0					1.0		Young to Middle Age	Fair	Small boundary self-set trees; only sycamore in site, ash between fences on boundary	C,1	Refer to Drawing	n/a		Medium	
G3	Apple; ash	4.0	to 400	4.0					0.0		Young to Middle Age	Fair	Small trees at boundary with poor form	C,1	Refer to Drawing	n/a	Replace poor quality trees	Short	
G4	Ash; holly	10.0	to 200	10+					1.0		Middle Age	Fair	Trees on adjacent land; good screen; stems right up to boundary; generally raised ground level (higher than site by around 0.5m)	B,1,2	Refer to Drawing	n/a		Long	
G5	Cypress, hybrid poplar; sycamore	6.0	to 250	10+							Middle Age	Good	Boundary belt/hedge on third party land; good screening and high nesting potential for birds; larger poplar tree (c.500mm dia.) topped at 3m but sprouting from stump and may survive as low pollard; group overhangs site by up to 1.5m	B,2	Refer to Drawing	n/a	Manage as a hedge at boundary	Long	
<b>Hedges</b>																			
H1	Laurel; ash	2.5	0.0								Middle Age	Good	Shrub bed in pub car park; no roots into site		Refer to Drawing	n/a			
H2	Ash; laurel lonicera; mixed shrubs	2.5	0.0								Middle Age	Good	Shrub bed in pub car park; no roots into site		Refer to Drawing	n/a			

## **APPENDIX 2**

### **SURVEY METHOD**

## APPENDIX 2: SURVEY METHOD

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The survey of trees is conducted from ground level only. The nature of the soils on site is not assessed.

Trees are dynamic living organisms with a constantly changing structure; even trees in good condition can suffer from damage or stress. The information recorded is presented as being correct at the time of survey.

The following features of each tree, group of trees or wood may have been recorded in the Arboricultural Survey Data Sheets at Appendix 1.

<b>Species</b>	The common name is given. The Latin name may also be given if further clarification is required.	
<b>Height</b>	Top height of tree recorded in metres.	
<b>Stem Diameter</b>	For single-stemmed trees the measurement is taken at 1.5 metres above ground level and recorded in millimetres. For multi-stemmed trees an average all stems measured at 1.5m above ground level is used. For tree groups a range from minimum to maximum diameters is provided based on measurements taken using one of the aforementioned methods.	
<b>No. of Stems</b>	A count of stems arising below a height of 1.5 metres.	
<b>Crown Spread</b>	The N, S, E and W branch spreads are recorded in metres to provide a representative crown shape.	
<b>Height of Lowest Branch</b>	Crown clearance above ground level recorded in metres.	
<b>Direction of Lowest Branch</b>	The direction of growth of the first significant branch from the point of attachment.	
<b>Maturity</b>	<b>Young</b>	Trees than can reasonably be relocated or replaced like for like, without undue cost;
	<b>Middle Age</b>	Trees in the established growth stage of their life with the potential to continue increasing in size;
	<b>Mature</b>	Trees that have reached their ultimate size, given their location and surroundings;
<b>Condition</b>	<b>Good, Fair, Poor.</b> An overall assessment of a tree's physiological and structural state in which factors that may increase its susceptibility to the effects of development are taken into account.  <b>Veteran.</b> Trees that are in such a condition as to significantly increase their biological, cultural or aesthetic value. This is characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned.	
<b>Comments</b>	A brief evaluation and description of the tree with comments on form, vitality, health and any significant defects or symptoms of ill-health.	

### BS 5837 Tree Quality Assessment

The tree quality assessment is based on Table 1 of BS 5837:2012 (See below). Four categories (A, B, C and U) are used to denote tree quality (A = High, B = Moderate, C = Low, U = Unsuitable for retention). Subcategories (1-3) denote the specific function value of the trees and the reasoning behind the allocation of a specific category (the subcategories may be used in combination but do not accumulate collective weight).

### Root Protection Area (RPA)

The RPA is allocated to ensure that a sufficient area is left undisturbed during development. It is provided as an area (m<sup>2</sup>) and as the radius of a circle (m) typically plotted from the centre of the stem.

The RPA is calculated using a mathematical equation included in BS 5837:2012 (Section 4.6 and Table D.1) and is based on a trees stem diameter. In some cases the RPA may need to be adapted to best reflect the likely area and position of roots required to ensure survival; this may be based on criteria such as the tree's condition, species, crown spread and any barriers to growth. Any alteration must be justifiable but is made at the Arboricultural Consultants discretion.

### Recommendations

Recommendations for arboricultural works, etc. are based on the **current** land use, and take into account the tree or group attributes without bias to the proposed development.

## APPENDIX 2: SURVEY METHOD

### Estimated Remaining

**Contribution** An estimation of the life expectancy as healthy functioning tree. This will be influenced by species and the condition of the tree at the time of survey.

<b>Long</b>	> 40 years
<b>Medium</b>	20 – 40 years
<b>Short</b>	less than 20 years

Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
<b>Trees unsuitable for retention (see Note)</b>				
<b>Category U</b> 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	<ul style="list-style-type: none"> <li>• 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)</li> <li>• Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline</li> <li>• 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</li> </ul> <p><i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i></p>			See Table 2
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
<b>Trees to be considered for retention</b>				
<b>Category A</b> 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
<b>Category B</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
<b>Category C</b> 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

British Standards Institute 2012, p.9

### NOTES:

All young trees are assessed as quality category 'C' but this does not preclude their retention within a development.






For hedges the height, canopy spread and number of stems is recorded but they not assigned a quality category.

**DRAWING 1**

**TREE CONSTRAINTS PLAN**






**KEY**

*[This drawing must be reproduced in colour]*

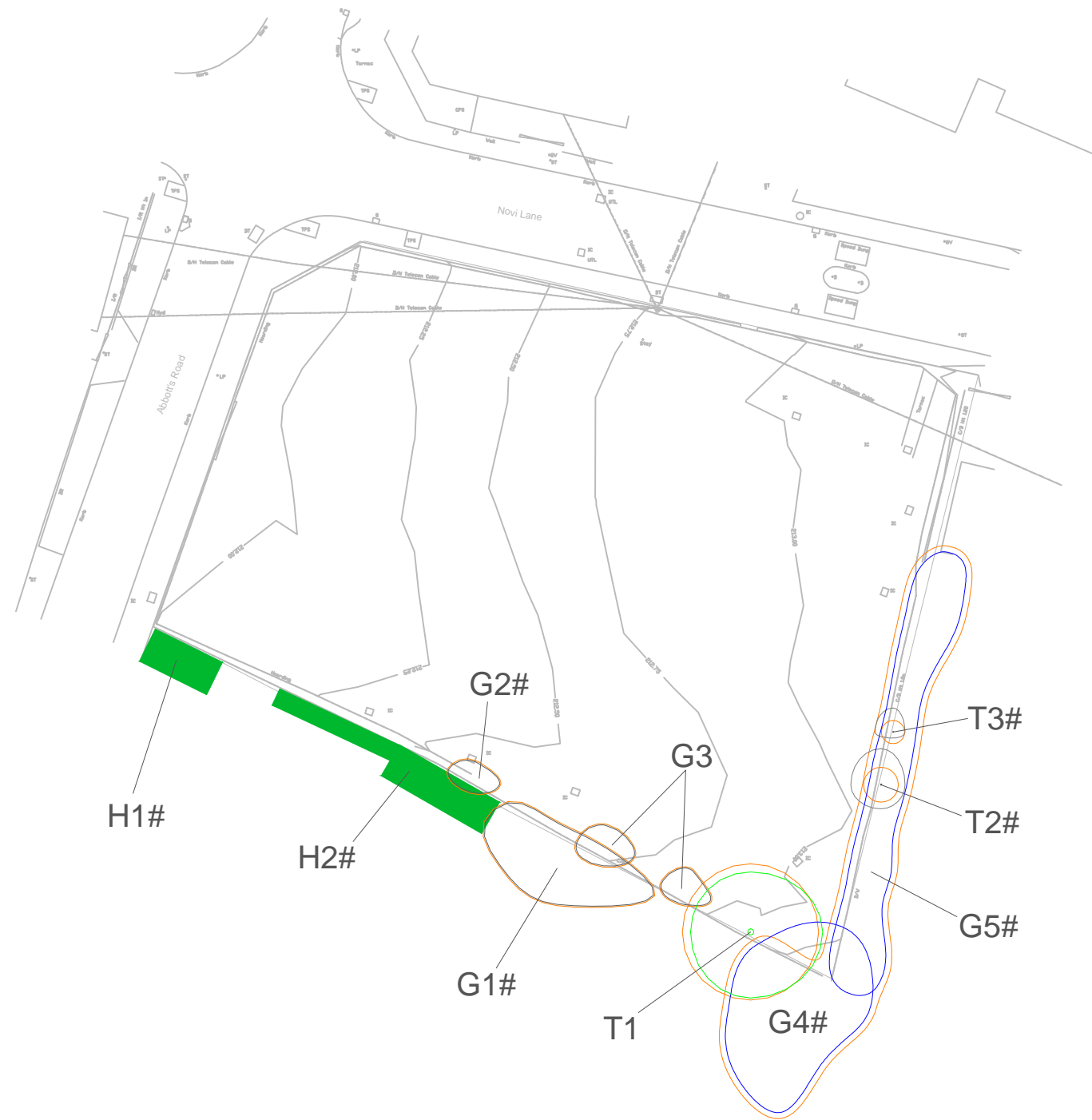
-  T1 Individual trees
-  G1 Groups of trees
-  H1 Hedgerow
-  Root Protection Area (RPA)
-  # Approximate location  
(Feature not shown on topo)

**Tree Categorisation**

(Tree quality assessment 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)
-  Hedgerow  
(Not categorised)

NOTE: This drawing should be read in conjunction with the respective Arboricultural Data Sheets (Appendix 1).



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Rev	Description	Drawn	Approved	Date

	Genesis Centre Birchwood Science Park Warrington WA3 7BH Tel 01925 844004 Fax 01925 844002 e-mail tep@tep.uk.com

**Project**

Ascent Housing  
 Arboricultural Impact Assessment  
**O Hare Place | Site 36**

**Title**

Tree Constraints Plan  
 [EXISTING]

Drwg No **D3531.003**

Scale <b>1:500 @ A3</b>	Date <b>08/08/12</b>
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Drawn <b>TDP</b>	Checked <b>RNT</b>	Approved <b>JGS</b>
------------------	--------------------	---------------------

**DRAWING 2**

**TREE REMOVAL AND PROTECTION PLAN**





**KEY**

*[This drawing must be reproduced in colour]*

-  T1 Individual trees
-  G1 Groups of trees
-  H1 Hedgerow
-  Survey Boundary
-  # Approximate location  
(Feature not shown on top)
-  Tree Protection Fencing  
(Must be installed prior to works commencement)

**Trees to be retained**

(Tree quality assessment 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  
(Trees with existing or potential conservation value)

**Trees to be removed**

(Tree quality assessment based on BS 5837:2012 Trees in relation to design, demolition and construction - Recommendations)

-  Category C  
(Low quality)

NOTE: This drawing should be read in conjunction with the respective Arboricultural Data Sheets (Appendix 1).



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Rev	Description	Drawn	Approved	Date



Genesis Centre  
 Birchwood Science Park Warrington  
 WA3 7BH  
 Tel 01925 844004  
 Fax 01925 844002  
 e-mail tep@tep.uk.com

**Project**

Ascent Housing  
 Arboricultural Impact Assessment  
**O Hare Place | Site 36**

**Title**

Tree Removal and Protection Plan  
 [PROPOSED]

Drwg No **D3531.013**

Scale **1:500 @ A3** Date **11/11/12**

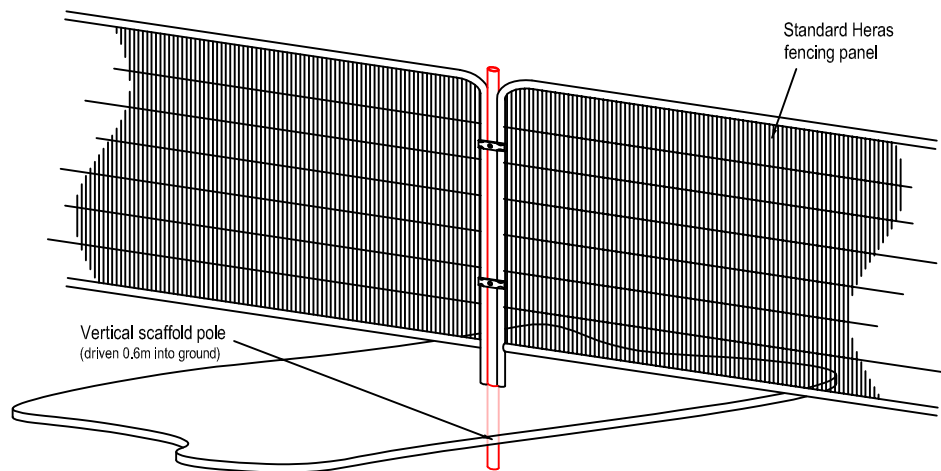
Drawn **TDP** Checked **RNT** Approved **JGS**



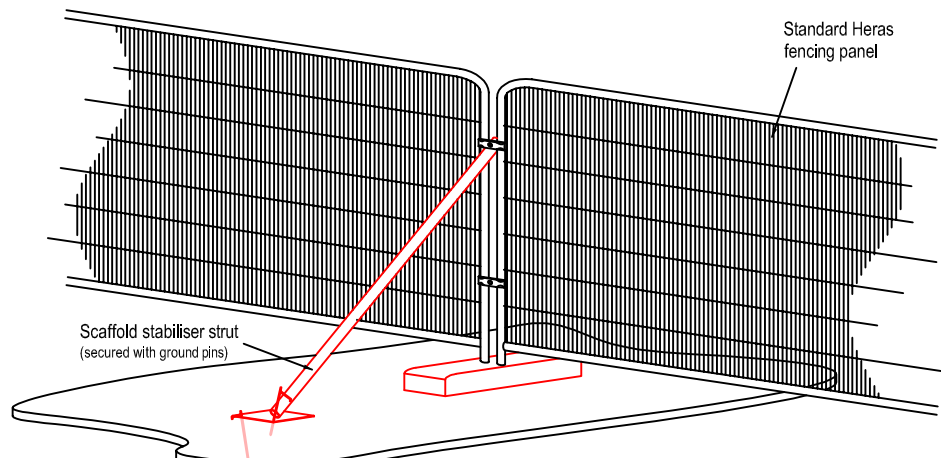
H1# H2# G2# G1# G3 T1 G4# G5# T2# T3#

**DRAWING 3**

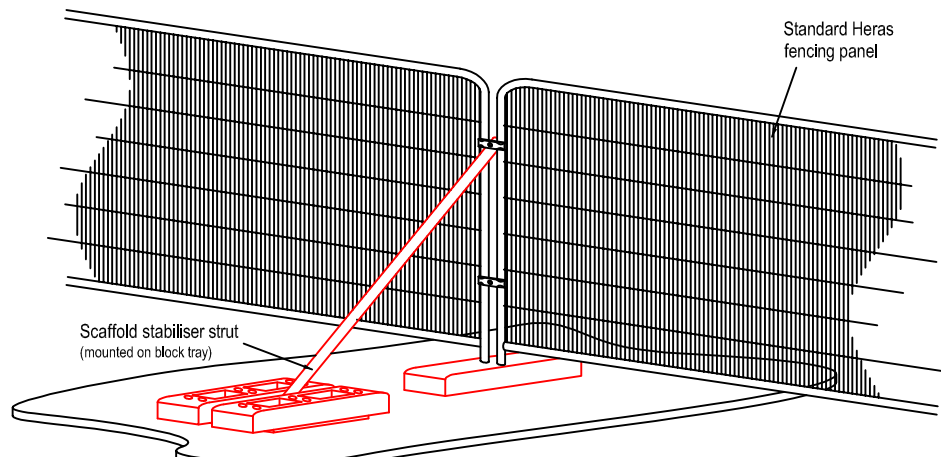
**TEMPORARY TREE PROTECTION FENCING**



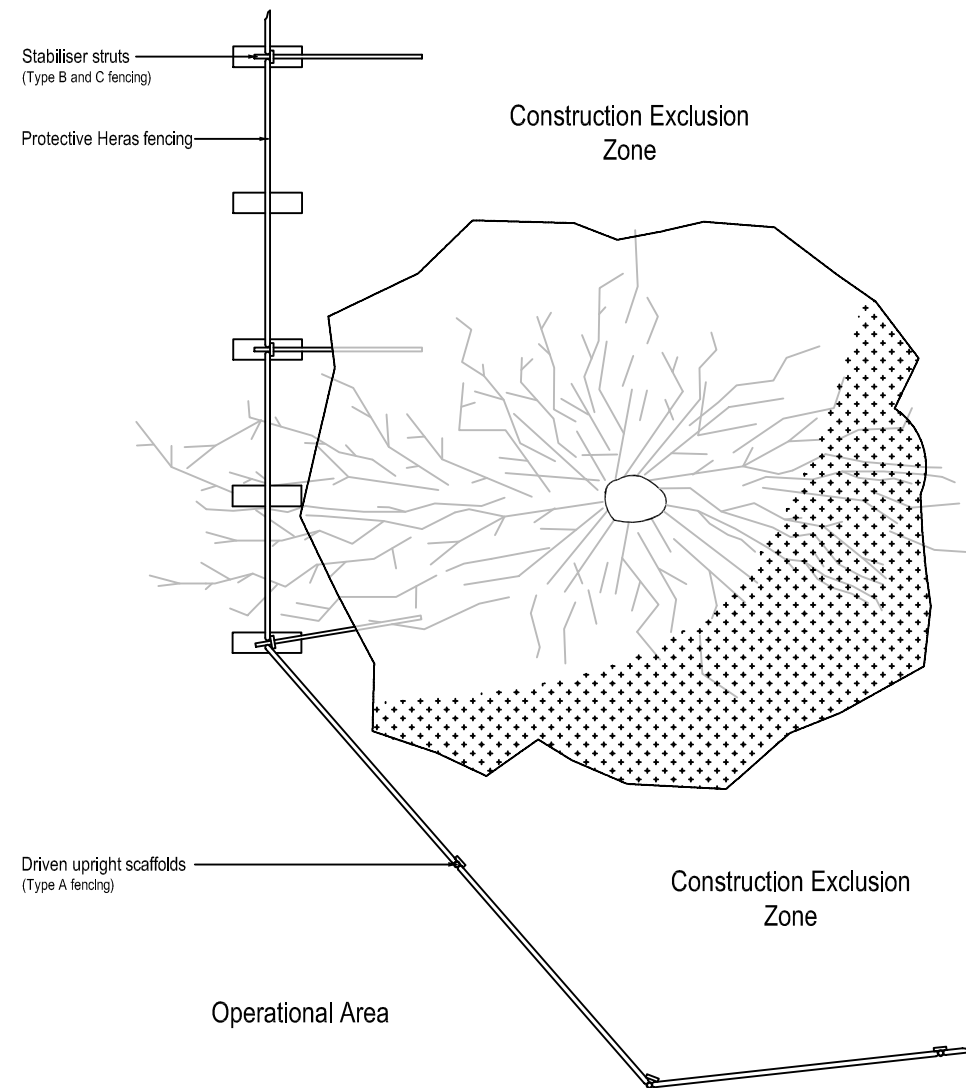
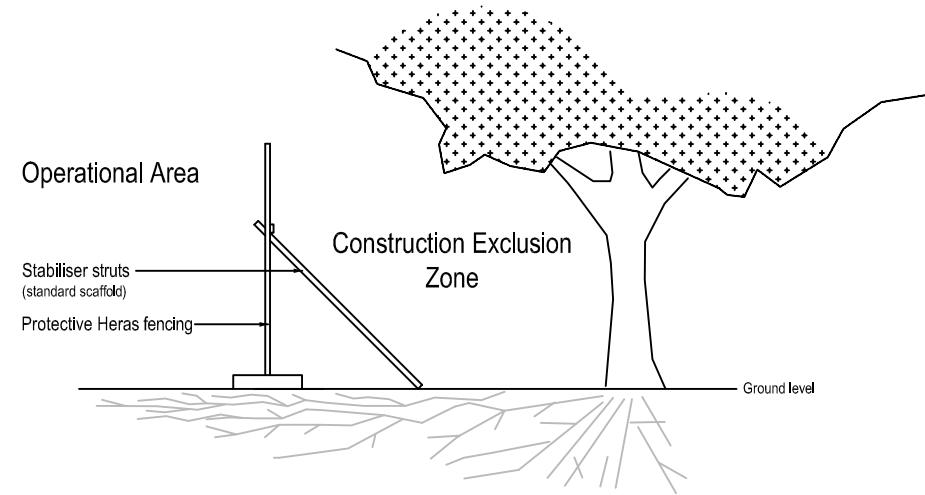
**Type A Tree Protection Fencing: for use as standard**  
(see Tree Protection Plan for layout)



**Type B Tree Protection Fencing: for use as directed**  
(e.g. where Type A would cause unacceptable damage to roots or underground services)



**Type C Tree Protection Fencing: for use as directed**  
(e.g. on hard surfaces)



**PROTECTIVE FENCING. THIS FENCING MUST BE MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND DRAWINGS FOR THIS DEVELOPMENT.**

**TREE PROTECTION AREA KEEP OUT!**  
(TOWN & COUNTRY PLANNING ACT 1990)  
TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR ARE THE SUBJECTS OF A TREE PRESERVATION ORDER.  
CONTRAVENTION OF A TREE PRESERVATION ORDER MAY LEAD TO CRIMINAL PROSECUTION  
ANY INCURSION INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY

Tree Protection Notice to be attached to fencing 1.5m from the ground, facing out of the Construction Exclusion Zone and located at regular intervals along the fence line.

The notice must be at least A4 in size

Rev	Description	Drawn	Approved	Date
 Genesis Centre Birchwood Science Park Warrington WA3 7BH Tel 01925 844004 Fax 01925 844002 e-mail tep@tep.uk.com				
<b>Project</b>				
TEP Standard Detail				
<b>Title</b>				
Temporary Tree Protection Fencing (Detail for tree protection around Construction Exclusion Zones)				
Drwg No <b>D.TREE_FENCING.001</b>				
Scale <b>NTS @ A3</b>			Date <b>30/04/12</b>	
Drawn <b>TDP</b>	Checked <b>ROS</b>	Approved <b>JGS</b>		