PLANNING DESIGN ENVIRONMENT



Land off Southern end of Long Lane, Chapel-en-le-Frith
Arboricultural Impact Assessment: Outline Application

Report Ref: TEP.3788.001
June 2013

Genesis Centre
Birchwood Science Park
Warrington
WA3 7BH

T: 01925 844004
F: 01925 844002
E: tep@tep.uk.com
W: www.tep.uk.com

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Prepared by:
Natasha Seaward
Arboricultural Consultant

TEP
Genesis Centre
Birchwood Science Park
Warrington
WA3 7BH

for

Seddon Homes Ltd.
3 Cinnamon Park
Crab Lane
Warrington
Cheshire
WA2 0XP

Written:	Checked:	Approved:
NJS	IKW	JGS

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Drawing 1: Tree Constraints Plan: D3788.001

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1.0 INTRODUCTION

1.1 TEP has been commissioned by Seddon Homes Ltd. to conduct an arboricultural survey of a site off the Southern end of Long Lane in Chapel-en-le-Frith. This report details the arboricultural constraints to development of the aforementioned site and likely impacts to the tree stock from development for residential use.

1.2 The current application is for outline planning permission. As such, this report principally deals with deliverability of residential development on the site in relation to trees and identifies any anticipated arboricultural constraints and opportunities.

1.3 The survey was carried out in February 2013 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.*

1.4 Under the British Standard the assessment of trees is made objectively. The categorisation method identifies the quality and value of the existing tree stock.

1.5 A topographical survey was used to record the position of trees and vegetation (PDP Surveys Ltd, Reference: 1711/1). 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.

1.6 A total of 21 individual trees (T1-T21) and 14 groups of trees (G1-G14) were surveyed and mapped (refer to Drawing 1). All arboricultural information recorded during the survey is presented at Appendix 1.

1.7 This report provides the results of the survey and includes the following:

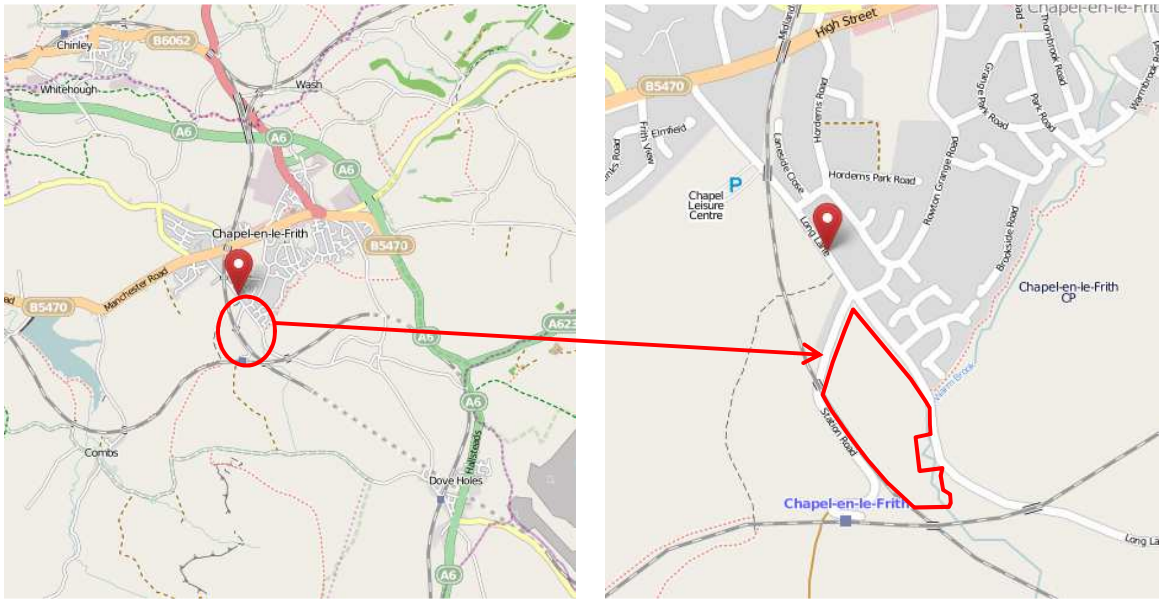
- A schedule of all trees located on, or within influencing distance of the proposed development site (Appendix 1);
- An assessment based on *BS 5837:2012*, of trees in terms of their potential value within any future development. On the basis of this assessment trees have been categorised into one of four categories: A, B, C or U (Appendices 1 & 2);
- Advice on removal, retention and management of trees (Sections 5 & 6); and
- A Tree Constraints Plan detailing tree quality categories, canopy spreads and Root Protection Areas (**RPA**) for all trees surveyed (Drawing 1)

2.0 THE SITE AND SURROUNDINGS

2.1 The site is situated off Long Lane in Chapel-en-le-Frith, Derbyshire.

2.2 The survey area comprises pastoral farmland with undulations throughout. At the time of the survey, the land was water-logged in areas, notably around the field boundaries.

Figure 1: Site Location Plan



2.3 Weather conditions during the survey were snow.

2.4 Inspection of trees was restricted in some cases by dense vegetation. These trees were surveyed insofar as was possible from accessible areas of the site.

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. In this respect 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 High Peak Borough Council confirmed that no trees on or immediately adjacent to 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. Trees listed in Table 1 were noted as having features suitable for roosting bats.

Table 1: Trees suitable to support roosting bats

TEP Survey Reference	Suitable Feature/s
T4	Considerable cavities and dead wood
T17	Cavities and hollow stem

3.7 If any works are to be carried out to trees identified in Table 1 then a more detailed, aerial visual assessment and/or dusk and dawn surveys should be undertaken by a suitably experienced ecologist to determine the presence/absence of roosting bats prior to any tree works being undertaken.

3.8 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

3.9 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.

3.10 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).

3.11 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) then any work likely to affect the nest must be halted until the nest becomes inactive.

National House Building Council

3.12 This report has been written in accordance with, and to satisfy the requirement of *BS 5837:2012*.

3.13 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.

3.14 Any discrepancies in tree location or missing trees will require further discussion with a qualified Arboricultural Consultant.

4.0 TREE POPULATION

4.1 21 individual trees (T1-T21) and 14 groups of trees (G1-G14) 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 Individual trees and groups are of low to moderate quality and generally located around the field boundaries.

4.3 There are 8 moderate value individual trees (T3, T4, T5, T6, T7, T8, T9 and T10). These are middle-aged to mature sycamore, common ash, English oak and hawthorn trees. The majority of these trees have minor defects including small cavities, dead wood and leaning stems.

4.4 4 additional moderate value trees are located outside of the site boundary to the south east of the site (T15, T19, T20 and T21). These are middle-aged to mature common ash and common alder trees which are either in good or fair condition.

Figure 2: East facing view of T4 and T5



Figure 3: North west facing view of T7 (within G8)



Figure 4: North facing view of T15-T21 (off-site)



4.5 The majority of the remaining individual trees are of low value by virtue of either their young age or poor condition.

4.6 Several of the tree groups (G1, G4, G6 and G8) comprise intermittent linear boundary features containing young to middle-aged hawthorn trees. These are generally of low value as there are no individual trees of notable quality within the groups.

Figure 5: South facing view of G6



4.7 A number of tree groups (G2, G3, G5 and G9) have been planted around the north western site boundaries. These contain young to middle-aged trees with a good mix of species including common larch, beech, English oak, silver birch, horse chestnut and Scots pine. They create a useful screen between the site and the road and individual trees within the groups have the potential to increase in value as they mature.

Figure 6: South facing view of G5



4.8 Tree group G7 is the largest group of trees on site. It contains young to middle-aged hawthorn, holly, silver birch, beech, English oak and Scots pine trees. Individual trees are generally in good condition although the planting is particularly dense and may need to be thinned as the trees mature.

Figure 7: East facing view of G7



4.9 There are two further tree groups which have been recently planted (G12 and G13) comprising young beech, goat willow and silver birch. There are no significant defects to any of these trees although it is a densely planted group and some trees may require removal as they mature. It is considered to be of low value by virtue of the trees' young age.

Figure 8: East facing view of G12



4.10 There are no individual trees of high value.

4.11 Tree and group locations, their quality categories and canopy spreads are shown on Drawing 1.

5.0 DEVELOPMENT IMPACTS AND OPPORTUNITIES

5.1 This section gives an overview of the likely impact of development on trees and vice versa. It provides an assessment of the way in which trees on site would interact with development of the site but without reference to a specific layout proposal. Where appropriate, indicative or estimated conclusions are drawn to inform decisions regarding site viability.

Layout, Design and Development

5.2 The layout of the existing tree stock does not present a significant obstacle to development. The majority of trees on the site are confined to the site perimeter and internal boundaries. Accordingly, it should be possible to design around the majority of trees on the site.

5.3 Arboricultural constraint to development will be diminished where the layout takes advantage of the large open spaces that are currently enclosed by the tree groups comprising field boundaries and where individual trees can be specified for retention within gardens.

5.4 The internal boundaries make the site less suitable for any type of development that requires large unbroken and inflexible plots of land, such as industrial or commercial uses.

5.5 Some of the larger trees on the site will require an appropriate stand-off distance from any future development in order to avoid future conflicts as they reach and pass maturity.

5.6 Incorporating the existing tree groups that have been planted (G2, G3, G5, G7, G9, G12 and G13) would have the benefit of utilising this existing tree resource. With sound arboricultural management, trees within these groups have the potential to develop into mature trees of high quality.

5.7 A number of tree groups of low quality are not considered suitable for a residential development (G1, G4, G6 and G8). These groups are of low aesthetic value which would result in future pressure to remove the trees once the development is complete. There are also many gaps within these groups and consequently they do not currently constitute continuous boundary features.

5.8 Where sensitive design allows for the retention of most of the existing trees, there will be considerable scope within new gardens and urban landscaping to add arboricultural value to the site through new planting. This will be particularly valuable where trees with a large mature size can be incorporated.

Tree Quality Categorisation

5.9 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 2 (overleaf) presents a summary of the categories presented in the British Standard. The full table has been reproduced at Appendix 2.

5.10 Table 3 gives a summary of the relative proportion of tree features in each quality category. The categories are the result of objective assessment.

Table 2: Summary of *BS 5837:2012* tree quality categorisation criteria

Category A	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
Category 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
Category C	Trees of low value including those with very limited merit or impaired condition; trees offering transient or temporary landscape benefits
Category U	Trees with irremediable defects and anticipated early loss due to collapse; dead trees or those in immediate decline and those that threaten other trees

Table 3: Arboricultural implications of the proposed development

Category	A	B	C	U
Number of features	-	21	13	1

5.11 The site contains a large proportion of moderate quality trees (Category B). This is principally due to the large size and prominence of many individuals and the collective nature of younger planted belts. It will be desirable for any developer to retain a significant majority of these trees on this site within a suitable development context and with good prospects for long-term viability.

5.12 There are no veteran trees on the site although some of the mature ash have veteran characteristics such as increased habitat value due to branch failures, cavities and large stature. The effect of this is to increase the value of these trees.

5.13 The existing tree stock represents a significant asset to the site as a developable plot in that it provides suitable green infrastructure to enhance and compliment the built environment.

5.14 It would be possible to develop this site for residential use without significant tree loss. It is likely that a degree of tree removal would be proposed but these would principally comprise trees that were unsuitable for retention, or undesirable within a residential setting, rather than those that could not technically be kept.

Root Protection Areas

5.15 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.

5.16 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.

5.17 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.

5.18 On this site the majority of trees are growing in relatively homogeneous material. The only barrier to growth is likely to be the unnamed road along the western site boundary, affecting radial root growth around tree groups G2 and G9. Roots are unlikely to be absent in this area but where unfavourable conditions exist, growth will certainly be impeded.

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

Ground Contamination

5.20 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.

5.21 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

5.22 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 **RPAs** of trees to be retained.

5.23 Where the installation of services within the **RPAs** of trees to be retained is unavoidable, appropriate work 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.

Drainage & Storm Water Run-off Issues

5.24 Drainage and storm water run-off requires due consideration and construction requirements (e.g. permeable surfacing) to prevent excessive and/or polluted run-off into the rooting area of trees to be retained.

6.0 MANAGEMENT RECOMMENDATIONS

Tree Work

6.1 The tree surgery operations presented in Table 4 are recommended.

Table 4: Recommended Tree Surgery Works

Feature Ref:	Tree Work Description
G3	20% thin to include the selective removal of dead, dying or supressed trees
G5	20% thin to include the selective removal of dead, dying or supressed trees
G7	20% thin to include the selective removal of dead, dying or supressed trees

6.2 Trees within groups G12 and G13 have only recently been planted. It is considered likely these groups will require thinning once the trees have become more established. A review of the requirement for tree works on these groups is therefore recommended in 5 years.

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

Arboricultural Impact Assessment

6.4 An Arboricultural Impact Assessment (AIA) will be required to support any detailed planning application. This will identify, evaluate and possibly mitigate the impacts of developing land adjacent to the retained trees to satisfy planning approval. On-going consultation is recommended in order to address the constraints identified in this report during the design process and resolve conflicts early in the planning process.

6.5 It is anticipated that this site could support a residential development with no net loss of arboricultural value.

Mitigation Planting and Landscaping

6.6 Replacement tree planting will be required in the event that trees are lost. The extent of mitigation planting required will be determined at the detailed design stage in agreement with High Peak Borough Council.

6.7 Considerations should be given during design to the inclusion of larger tree species, capable of providing benefit beyond their immediate environment, (e.g. oak, lime etc.)

6.8 Native trees (appropriate to the High Peak) are recommended to be consistent with the vegetation of the area for the benefit of the local ecology.

Post Construction Tree Care

6.9 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.

7.0 SUMMARY

7.1 Based on an objective assessment made in accordance with BS 5837:2012, there are 21 Category B, 13 Category C and 1 Category U tree features on or within influencing distance of the site.

7.2 The tree locations, their quality categories and Root Protection Areas are shown on Drawing 1 - Tree Constraints Plan.

7.3 Most of the trees are confined to the site perimeter and internal boundaries and as such arboricultural constraint to development will be diminished where the layout takes advantage of the large open spaces and where individual trees can be specified for retention within gardens and open space.

7.4 The viability of the site for a residential development is not significantly impeded by trees. Development of the site would be possible with low losses of moderate and high value trees. Likely tree removals would include those that were unsuitable for retention rather than those that could not be retained.

7.5 Mature trees should be retained with sufficient space to allow the natural ageing process to occur without conflict with buildings or other high value targets. This will require more detailed assessment at the detailed design stage.

7.6 Trees T4 and T17 were noted as having bat potential.

7.7 Root Protection Areas (RPA) will need to be defined as a Construction Exclusion Zone (CEZ) in an Arboricultural Impact Assessment and Tree Protection Plan as part of a detailed planning application. It is recommended that any proposed layout is subject to on-going arboricultural consultation in order to pre-empt future conflicts.

7.8 Replacement tree planting will be required as mitigation in the event of the loss of trees and associated habitats. The site provides good opportunities for new planting. This would best comprise a range of species including hedgerow trees, native and wildlife friendly garden trees as well as amenity greenspace.

APPENDIX 1

ARBORICULTURAL SURVEY DATA SHEETS

APPENDIX 1: Arboricultural Survey Data Sheets

Surveyor NJS
Date 12.02.13
Town Chapel en le Frith
Site Long Lane
Dwg Ref D3788.001

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	(*)
Trees																			
T1	Leyland cypress	7.0	250.0	1.0	2.0	2.0	2.0	2.0			Middle Age	Fair	90° bend in main stem. Wood piled up at base.	C,2	3.0	28.3		Medium	
T2	Leyland cypress	7.5	260.0	1.0	2.0	2.0	2.0	2.0			Middle Age	Good	Good form. Balanced crown. No significant visible defects.	B,1,2	3.1	30.6		Long	
T3	Sycamore	9.5	566.4	2.0	5.5	5.5	5.5	5.5	2.0	SW	Middle Age	Good	Bifurcate from base. Waterlogged ground to the north although no significant visible defects.	B,1	6.8	145.1		Long	
T4	Ash	13.0	700.0	1.0	6.0	6.0	6.0	6.0	3.0	W	Mature	Fair	Flared roots. Located at the bottom of a bank. Moderate amount of dead wood. Epicormic growth on branches. Bat potential.	B,1	8.4	221.7		Medium	
T5	Ash	13.5	520.0	1.0	6.0	6.0	5.0	5.0	3.0	SE	Mature	Fair	Hawthorn growing at base. Metal piled up immediately to south.	B,1	6.2	122.3		Medium	
T6	Ash	13.0	660.0	1.0	6.0	7.0	6.0	6.0	2.5	SW	Mature	Fair	Flared roots. Located along a field boundary with waterlogged ground immediately to the north.	B,1	7.9	197.1		Medium	
T7	Ash	9.0	500.0	1.0	7.0	7.0	6.0	8.0	3.0	N	Middle Age	Good	Exposed surface roots at the base. A minor amount of dead wood. 5° stem lean towards the north.	B,1	6.0	113.1		Long	
T8	English oak	9.5	763.2	2.0	7.0	7.0	8.0	8.0	2.5	S	Mature	Fair	Bifurcate from 1m. Cavity at base. Ganoderma on main stem.	B,2	9.2	263.5		Medium	
T9	Hawthorn	6.0	380.8	2.0	4.0	4.0	4.0	4.0			Mature	Fair	Bifurcate from base. Decay at base.	B,2	4.6	65.6		Medium	
T10	Hawthorn	6.0	367.4	6.0	4.0	6.0	4.0	5.0			Mature	Fair	Squat crown. Multi-stemmed at base. Decay at base.	B,2	4.4	61.1		Medium	
T11	Ash	7.5	300.0	1.0	4.0	1.0	4.0	4.0	3.0	N	Middle Age	Fair	Reduced vigour. Located in waterlogged ground. Imbalanced crown.	C,1	3.6	40.7		Medium	
T12	European lime	5.0	550.0	1.0	3.0	5.0	0.5	0.5			Middle Age	Poor	Tree has up-rooted but new shoots are growing from horizontal stem. Unsuitable for retention in a new development.	U	0.0	0.0			
T13	Hawthorn	3.5	120.0	1.0	1.0	1.0	1.0	1.0			Young	Fair	Tree located in waterlogged ground.	C,1	1.4	6.5		Long	
T14	Hawthorn	6.0	213.5	3.0	2.5	2.5	2.5	3.0			Middle Age	Fair	Typical multi-stemmed shrub-like form. In wooden fenceed enclosure with G13.	C,1	2.6	20.6		Medium	
T15	Ash	9.5	450.0	1.0	2.0	5.0	4.0	6.0	4.5	E	Middle Age	Fair	Survey restricted due to location of tree on third party land. Main stem bent towards the east. Imbalanced crown. Located on embankment.	B,1	5.4	91.6		Medium	
T16	Whitebeam	6.0	190.0	1.0	1.5	2.5	1.5	1.5	0.5	NE	Young	Good	Survey restricted due to location of tree on third party land. No significant visible defects. Located on embankment.	C,1	2.3	16.3		Long	

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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	(*)
T17	Ash	8.0	320.0	1.0	4.0	3.0	5.0	2.0	3.0	W	Middle Age	Poor	Survey restricted due to location of tree on third party land. Hollow stem - bat potential. Located on an embankment in waterlogged ground.	C,1	3.8	46.3		Short	
T18	Common alder	6.0	350.0	1.0	2.0	4.0	2.0	4.0	1.0	E	Middle Age	Poor	Survey restricted due to location of tree on third party land. Decay cavity and dead wood along southern aspect. Supressed by T19. Epicormic growth. Located on embankment in waterlogged ground.	C,1	4.2	55.4		Short	
T19	Ash	10.0	700.0	1.0	4.0	7.0	6.0	6.0	4.5	NW	Mature	Fair	Survey restricted due to location of tree on third party land. Flared roots. Broken and hung-up branches. Pruned. Located on embankment in waterlogged ground.	B,1	8.4	221.7		Medium	
T20	Common alder	9.0	490.0	1.0	1.0	6.0	5.0	6.0	1.0	W	Middle Age	Good	Survey restricted due to location of tree on third party land. Located on embankment. Growing as one feature with T21.	B,1	5.9	108.6		Medium	
T21	Common alder	9.0	550.0	1.0	6.0	1.0	6.0	5.0	3.5	N	Middle Age	Good	Survey restricted due to location of tree on third party land. Located on embankment. Growing as one feature with T20.	B,1	6.6	136.8		Medium	
Groups																			
G1	Hawthorn	3.0	50 - 200	30.0							Young to Middle Age	Fair	Intermittent group/defunct hedgerow. No significant visible defects. No notable individual trees.	C,2	Refer to Drawing	n/a		Long	
G2	Leyland cypress, common larch, beech, English oak, silver birch, horse chestnut	11.0	200 - 450	25.0							Middle Age	Good	Boundary group between road and stone wall at site perimeter. Attractive screening. Good species mix.	B,1,2	Refer to Drawing	n/a		Long	
G3	Leyland cypress, holly, ash, silver birch, hawthorn	10.0	150 - 350	15.0							Young to Middle Age	Good	Dense group located inside fenced enclosure. Some standing dead trees.	B,1,2	Refer to Drawing	n/a	20% thin of group to include the removal of dead, dying or supressed trees	Long	
G4	Hawthorn	4.5	200 - 300	5.0							Middle Age	Fair	Bark wounding/cracks/splits. Located in waterlogged ground.	C,2	Refer to Drawing	n/a		Medium	
G5	Common larch, sycamore, hawthorn, silver birch	10.5	150 - 350	30.0							Young to Middle Age	Good	Dense group located inside fenced enclosure. No significant visible defects.	B,1,2	Refer to Drawing	n/a	20% thin of group	Long	
G6	Hawthorn	6.0	50 - 300	20.0							Young to Middle Age	Fair	Intermittent group/defunct hedgerow. No significant visible defects. No notable individual trees. Several stumps from mature trees recently felled.	C,2	Refer to Drawing	n/a		Long	
G7	Hawthorn, holly, silver birch, beech, English oak, laurel, Scots pine	9.5	50 - 300	150.0							Young to Middle Age	Good	Plantation of trees enclosed by a fence. Provides a good screen between the site and the road. Mostly young trees with good vigour.	B,1,2	Refer to Drawing	n/a	20% thin of group	Long	

APPENDIX 1: Arboricultural Survey Data Sheets

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	(*)
G8	Hawthorn	7.0	50 - 300	30.0							Young to Middle Age	Varied	A moderate amount of dead wood and some dead/dying individual trees.	C,2	Refer to Drawing	n/a		Medium	
G9	Oak, hawthorn, silver birch, common larch	9.0	150 - 300	20.0							Young to Middle Age	Good	Attractive planting located between a road and a stone boundary wall. No significant visible defects. Some individual trees with a good form.	B,1,2	Refer to Drawing	n/a		Long	
G10	Hawthorn, goat willow, sycamore	12.0	50 - 300	50.0							Mixed Age	Good	Hawthorn strongly dominates. Provides useful screen from railway.	B,1,2	Refer to Drawing	n/a		Medium	
G11	Sycamore	12.5	200 - 400	10.0							Middle Age	Good	Dense group of sycamore trees within G10. Multi-stemmed from the ground.	B,2	Refer to Drawing	n/a		Long	
G12	Beech, goat willow, silver birch.	6.0	50 - 250	100.0							Young	Good	Recently planted group within a wooden post and rail fence. Beech strongly dominates. Dense group.	C,2	Refer to Drawing	n/a		Long	
G13	Beech, goat willow, silver birch.	6.0	50 - 250	100.0							Young	Good	Recently planted group within a wooden post and rail fence. Beech strongly dominates. Dense group.	C,2	Refer to Drawing	n/a		Long	
G14	Common alder, ash	13.0	150 - 300	10.0							Middle Age	Good	Trees located alongside a brook at the bottom of a bank. Considerably lower ground level then the remainder of the site.	B,2	Refer to Drawing	n/a		Long	

APPENDIX 2

SURVEY METHODOLOGY

APPENDIX 2: SURVEY METHOD

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.

Species The common name is given. The Latin name may also be given if further clarification is required.

Height Top height of tree recorded in metres.

Stem Diameter 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.

No. of Stems A count of stems arising below a height of 1.5 metres.

Crown Spread The N, S, E and W branch spreads are recorded in metres to provide a representative crown shape.

Height of Lowest Branch
Crown clearance above ground level recorded in metres.

Direction of Lowest Branch
The direction of growth of the first significant branch from the point of attachment.

Maturity

Young	Trees than can reasonably be relocated or replaced like for like, without undue cost;
Middle Age	Trees in the established growth stage of their life with the potential to continue increasing in size;
Mature	Trees that have reached their ultimate size, given their location and surroundings;

Condition **Good, Fair, Poor.** 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.

Veteran. 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.

Comments 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^2) 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.

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.

Long	> 40 years
Medium	20 – 40 years
Short	less than 20 years

APPENDIX 2: SURVEY METHOD

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

British Standards Institute 2012, p.9

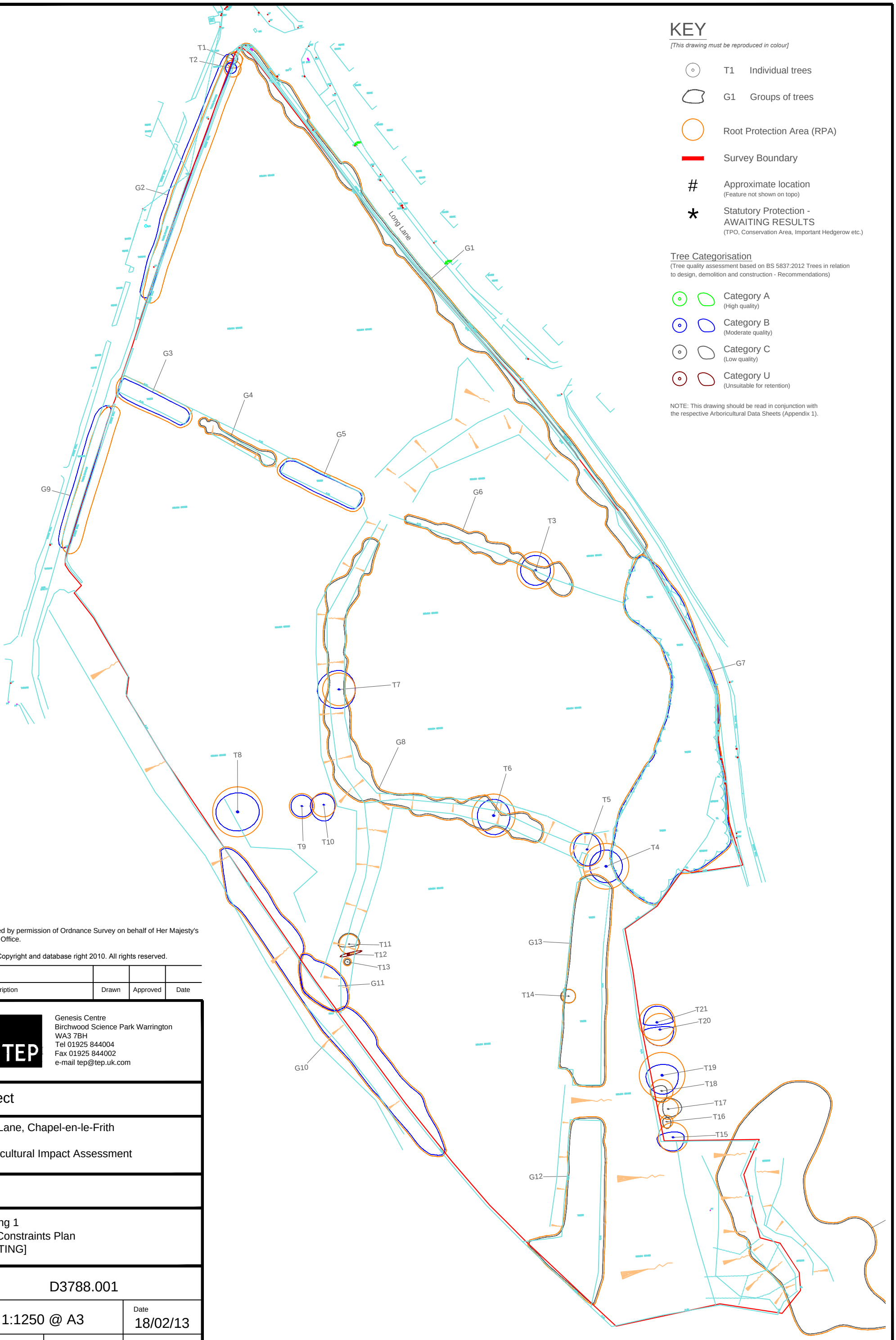
NOTES:

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 are 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
- Root Protection Area (RPA)
- Survey Boundary
- # Approximate location (Feature not shown on topo)
- * Statutory Protection - AWAITING RESULTS (TPO, Conservation Area, Important Hedgerow etc.)

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)

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

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

Project

Long Lane, Chapel-en-le-Frith
Site B
Arboricultural Impact Assessment

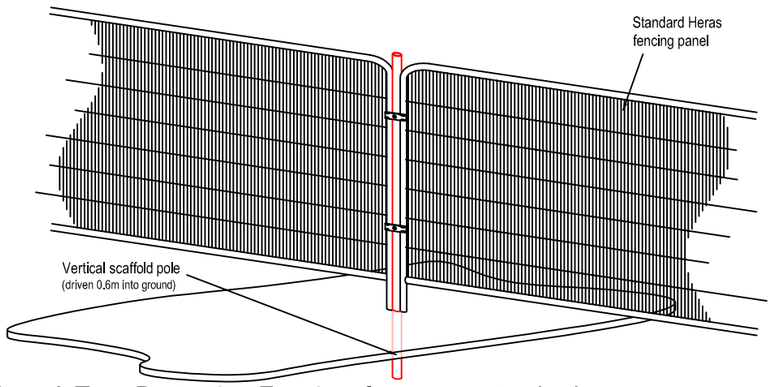
Title

Drawing 1
Tree Constraints Plan
[EXISTING]

Drwg No		
D3788.001		
Scale: 1:1250 @ A3		Date: 18/02/13
Drawn: NJS	Checked: IKW	Approved: JGS

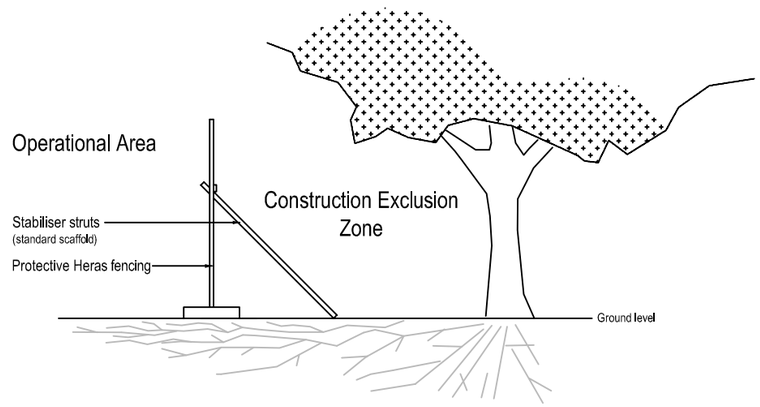
DRAWING 3

TEMPORARY TREE PROTECTION FENCING



Type A Tree Protection Fencing: for use as standard

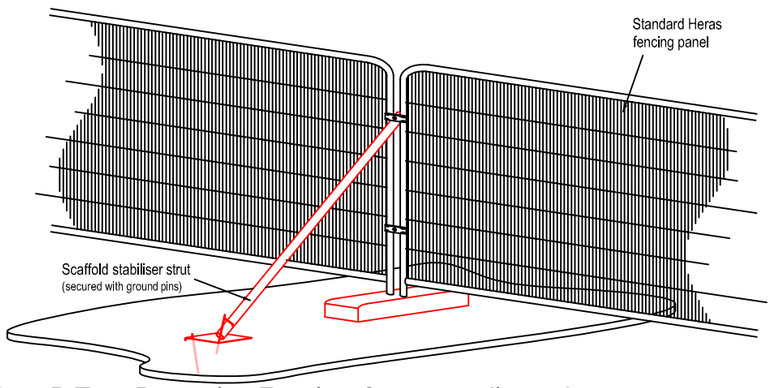
(see Tree Protection Plan for layout)





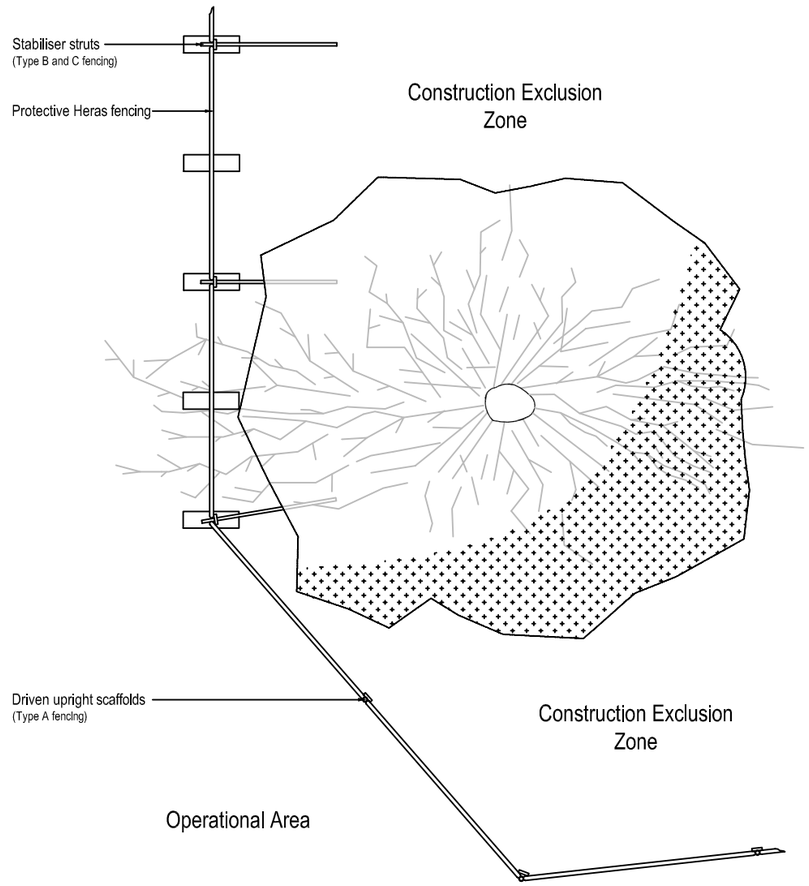
Tree Protection Notice to be attached to fencing 1.5m from the ground, facing out of the Construction Exclusion Zone and located at regular intervals along the fence line.

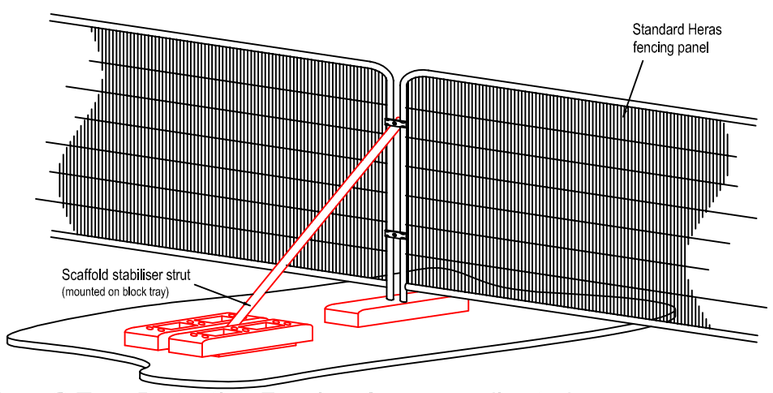
The notice must be at least A4 in size



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)

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

TEP Standard Detail

Title

Temporary Tree Protection Fencing
(Detail for tree protection around Construction Exclusion Zones)

Drwg No
D.TREE_FENCING.001

Scale	Date
NTS @ A3	30/04/12

Drawn	Checked	Approved
TDP	ROS	JGS