Report No: LTM0254.AIA.01

Date: 28/05/2021

Project: Land West of Challenge Way, Hanging Heaton, WF12

BS 5837:2012
Arboricultural Impact Assessment

Inspection Record.

Date of Inspection	Surveyor
16/11/2020	Brooks Ecology

ENVANCE LIMITED
Westminster House, 10 Westminster Road, Macclesfield, Cheshire, United Kingdom, SK10 1BX

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Revision	Date	Prepared by	Status
Final	28/05/2021	M. Lally	Complete

Contents

1.0 Introduction 4
2.0 Planning Policy. 6
3.0 Legislation 6
4.0 Survey Methodology 8
Veteran and Ancient Trees 9
5.0 Development Proposals 10
6.0 Impact Assessment 11
7.0 Mitigation Proposals 11
7.1 Compensatory Planting 11
7.2 Construction of hardstanding within RPA of G5 12
7.3 Access Facilitation Pruning. 12
8.0 Caveats and Limitations 13
Appendix One Tree Survey Data
Appendix Two Glossary of Terms
Appendix Three Cascade Chart
Appendix Four Plans
Appendix Five Cellular Confinement System

1.0 Introduction

1.0.1 The author of this report is Matthew Lally (MAborA) FdSc. Matthew is a professional member of the Arboricultural Association, The Consulting Arborist Society and an Associate member of the Institute of Chartered Foresters and is therefore required to uphold ethical standards laid out by these institutions.

1.0.2 This Arboricultural Assessment is prepared in relation to the proposed development at Land West of Challenge Way, Hanging Heaton, WF12.

An outline of the site boundary can be found in figure 1.

Figure 1. Assessment Boundary Plan

1.0.3 The tree survey & assessment of existing trees has been guided by the recommendations within British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction - Recommendations'. The recommendations set out a structured assessment methodology to assist in determining which trees would be deemed either as being suitable or unsuitable for retention.

1.0.4 British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction - Recommendations' includes guidance for considering the relationship between existing trees and how to integrate their needs into a successful development. A harmonious and sustainable relationship between any retained trees and new structure and/or hard surfaces is at the heart of the guidance.

1.0.5 The survey was carried out on 16/11/2020 by Brooks Ecology. Envance take no responsibility for the data and plans provided as the data has been provided by a third party source and has not been verified by an onsite visit.

1.0.6 Due to the size and nature of the site, it was decided that the survey methodology would include broadly grouping trees that share very similar characteristics. This method is in line with point 4.2.4 of BS 5837:2012 that states 'Trees forming groups should be identified and considered as groups where the arboriculturist determines that this is appropriate. It may be appropriate to assess the quality and value of trees as a whole, rather than individuals.'

1.0.7 British Standard 5837:2012 recommends the assessment of trees is made as objectively as possible, but the findings will always remain the opinions of the surveyor. The tree categorisation method identifies the quality and value of the existing tree stock, allowing informed decisions to be made concerning development design layout.

1.0.8 Table 1 provides a summary of the documents that have been made available by the client:

Table 1 – Documents made available by client.

Document Type	Reference No.	Author	Date
Tree Constrains Plan	DR-4880-01 TCP.dwg	Brooks Ecology	Feb 2020
Proposal	20520-301-04 Site Plan for Engineers.dwg	-	-

1.0.9 The supplied drawing included all tree and group positions. These have not been checked by Envance. Any dimensions regarding tree positions and protective fencing must be checked on site.

1.0.10 Weather conditions during the survey were dry and still.

1.0.11 Assessing the potential influence of trees upon load bearing soils, beneath existing and proposed structures resulting from water abstraction by trees or rehydration of shrinkable soils was not included in the contract brief and is therefore not considered in the report. The consultant cannot be held responsible for damage arising from such action.

1.0.12 Potentially hazardous trees are highlighted, and appropriate recommendations are made. However, this report is not a substitute for a full tree risk assessment or management plan which are specifically designed to minimise risk and liability associated with responsibility for trees.

2.0 Planning Policy.

2.1 National Planning Policy Framework (NPPF)

2.1.1 When determining planning applications, Local Planning Authority's (LPA) should apply the following principles:

- If significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternate site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused.
- Development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused unless there are wholly exceptional reasons, and a suitable compensation strategy exists.
- Development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity (paragraph 175).

2.1.2. The trees proposed for removal within this report is neither considered aged or veteran and therefore the principles for refusal within the NPPF would not be considered applicable.

3.0 Legislation

Statutory Considerations

3.0.1 A Tree Preservation Order (TPO) is an order made by a local planning authority to protect specific trees, groups of trees or woodlands in the interests of amenity. A TPO prohibits the:

- cutting down
- topping
- lopping
- uprooting
- willful damage
- willful destruction

of trees without the local planning authority's written consent. If consent is given, it can be subject to conditions which have to be followed. In the Secretary of State's view, cutting roots is also a prohibited activity and requires the authority's consent. Anyone found guilty of such an offence is liable and in serious cases, may result in prosecution and incur an unlimited fine.

3.0.2 It is understood following consultation with the Local Planning Authority's interactive map, Kirklees Council, that there are no Tree Preservation Orders or Conservation Area designations that would apply to any trees present on this site and therefore no statutory constraints would apply to the development in respect of trees. See below map.

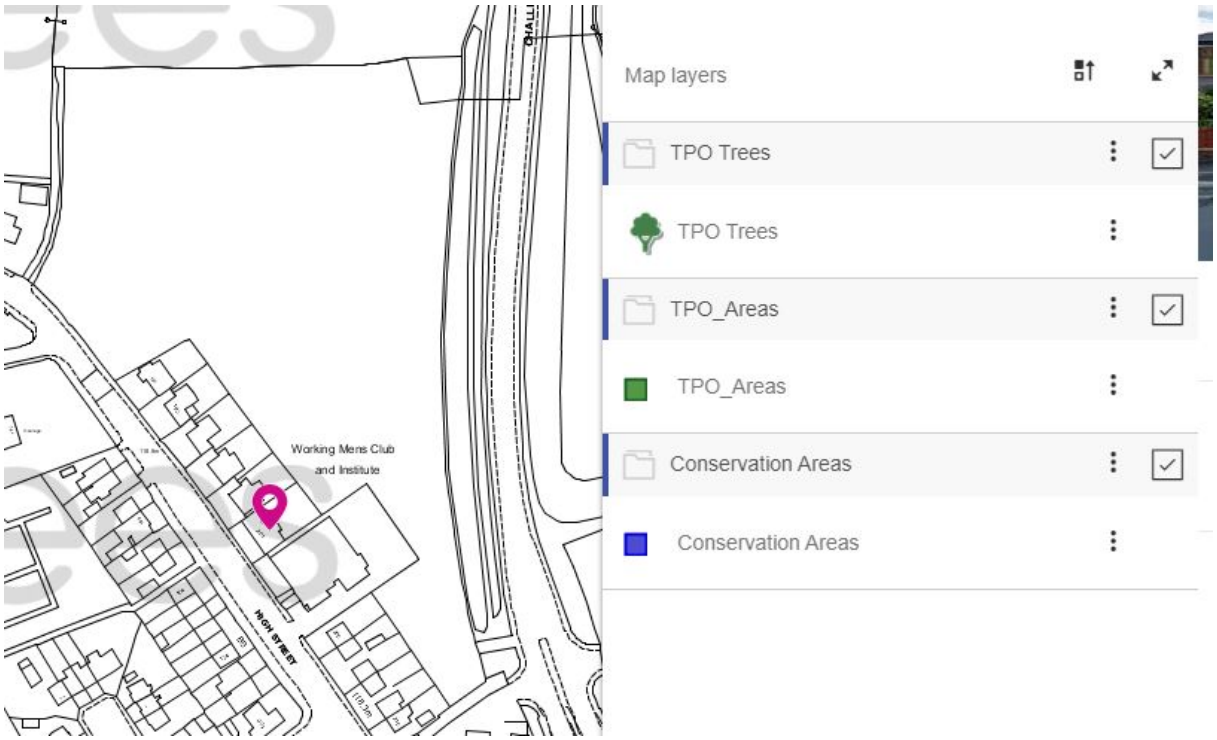


Figure 1. Screen shot of Kirklees council interactive map showing no tree preservation orders or conservation areas.

3.0.3 Felling Licence

3.0.4 Tree felling is also restricted under the Forestry Act 1967. Under this act, there is an exemption from the need for a felling licence for "Felling trees immediately required for the purpose of carrying out development authorised by planning permission (granted under the Town and Country Planning Act 1990) ..."

3.0.5 If full planning permission is granted, then any trees which require felling to implement the approved plans are exempt from this statutory protection. Outline planning permission does not provide an exemption to the regulations that control tree felling in the Forestry Act 1967.

4.0 Survey Methodology

4.0.1 The trees were surveyed in accordance with Chapter 4 of BS5837:2012. The tree metrics have been recorded in the tree schedule in appendix one. Where groups of trees and woodland groups have been recorded, average height, average crown spread and average diameter at breast height (DBH) are reported. Where access to the base of any trees was limited then measurements were estimated.

4.0.2 Trees have been assessed as individual trees (T), groups of trees (G), hedgerows (H) or woodland Groups (W) where it has been determined appropriate.

- The term group has been applied where trees form cohesive arboricultural features either aerodynamically, visually or culturally.
- For the purposes of this assessment, a hedgerow is described as any boundary line of trees or shrubs less than 5m wide at the base and are managed or have been managed under a regular pruning regime.
- For the purposes of this assessment, woodland is described as a habitat where ‘trees are the dominant plant form. The individual tree canopies generally overlap and interlink, often forming a more or less continuous canopy’.

4.0.3 All the trees were assessed using: a grading A to C (retention) and U (removal); condition and age class as defined in appendix two.

4.0.4 Where appropriate, canopy spread for each tree was recorded at four cardinal points in order to reproduce an accurate representation of the crown shape of the tree on the tree plan in appendix four.

4.0.5 The survey included all trees within the proposal area and trees near to the proposal.

Veteran and Ancient Trees

4.0.6 Veteran trees and Ancient Woodland are important components of the landscape, their importance can be for a number of reasons including that of their ecological, social, cultural and historic value.

4.0.7 Veteran Trees and Ancient Woodlands are material considerations within the planning process and their importance is specifically recognised within the National Planning Policy Framework (NPPF) 2019

4.0.8 Ancient Tree Guide No4 Published by the Woodland Trust and the Ancient Tree Forum states that:

'*An ancient tree is one that has passed beyond maturity and is old, or aged, in comparison with other trees of the same species. Its canopy may be small. It will probably have a very wide trunk relative to other trees of the same species and it is very likely that it will be hollow.'*

AND

'*Veteran is a term describing a tree with habitat features such as wounds or decay. The terms ancient and veteran have been used interchangeably in the past, however, it is important to know what the differences between them [are]. A veteran tree is a survivor that has developed some of the features found on an ancient tree, not necessarily as a consequence of time, but of its life or environment. Ancient veterans are ancient trees, not all veterans are old enough to be ancient. A veteran may be a young tree with a relatively small girth in contrast to an ancient tree but bearing the 'scars' of age such as decay in the trunk, branches or roots, fungal fruiting bodies, or dead wood. These veteran features will still provide wildlife habitat'.*

4.0.9 Different methodologies are available for the defining of Veteran & Ancient trees in the field. Lally Tree Management use RAVEN (Recognition of Ancient, Veteran and Notable Trees) allowing quick and easy assessments to be made, whilst trying to ensure these valuable assets to our environment do not go un-noticed.

4.0.10 **No Veteran Trees or Ancient Trees were identified on this site.**

5.0 Development Proposals

5.0.1 Overlaying the development plans & their associated infrastructure over the existing site plans has highlighted a number of areas where trees are in conflict with the proposal. This plan has been made available in appendix four and given the title 'Arboricultural Implications Plan'.

5.0.2 In order to fully assess the impact of the proposals an Impact Table has been created detailing each tree, which shows the proximity of the associated works to the tree.

5.0.3 The aforementioned data and plans are analysed to determine whether the development will have a detrimental impact on the health of each tree. Once this has been determined, remedial measures can be detailed to reduce the impact the proposals will have on the treescape.

5.0.4 Impact Table: -

Tree No.	Root Protection Area identified (m^2) in Table 2 of BS 5837:2012	Distance to Proposed Hard Standing (m)	Distance to Proposed Development (m)	Can the Tree/s be Successfully Retained	Retention Category
G1	18	3.60	0.00	1 x small section to be removed. Trees can be retained.	C1
T2	59	10.20	12.00	Yes	C1
T3	32	-	-	No	C1
T4	8	-	-	No	C1
G5	41	0.00	0.5	1 x small section to be removed. Remaining trees to remain as outlined in section 7.2	B2
G6	5	-	-	No	C2
G7	5	-	-	No	C2
G8	5	4.00	6.00	Yes	C2
G9	5	0.00	0.00	1 x Section to be removed. Remaining trees can be retained.	C2
G10	5	0.00	1.30	1 x small section to be removed. Remaining trees can be retained.	C2

6.0 Impact Assessment

6.1 To assess the implications of the Impact Table each tree can be categorised in the following way: -

	Trees to be Retained		Trees to be Removed	
	With No Impact	With detailed construction	Due to Condition	Due to Development
Category A	-	-	-	-
Category B	-	G5	-	G5 (1 x section)
Category C	T2, G1, G8, G9, G10,	-	-	T3, T4, G6, G7 G9 (1 x section) G10 (1 x section) G1 (1 section)
Category U	-	-	-	-

7.0 Mitigation Proposals

7.1 Compensatory Planting

7.1.1 Due to the loss of the trees identified in section 6.1 it is proposed that along with the general soft landscaping for the development, more substantial supplementary tree planting will support the application.

7.1.2 This will have a number of benefits for the development and the character of the area. These being: -

- Give a greater diversity of age class on the site, increasing sustainability.
- Give a greater diversity of species and therefore wildlife habitat.

7.1.3 The trees proposed are listed in the schedule below: -

Tree Species	Tree Size
Acer campestre	12-14 cm girth
Betula pendula	12-14 cm girth
Sorbus aucuparia	12-14 cm girth
Crataegus laevigata	12-14 cm girth
Crataegus monogyna 'Stricta'	12-14 cm girth
Crataegus crus-galli	12-14 cm girth
Malus tschonoskii	12-14 cm girth
Carpinus betulus 'Frans Fontaine'	12-14 cm girth

7.1.4 The extent of mitigation planting required will need to be confirmed in agreement with the Local Planning Authority once the development proposal is finalised. Requirements usually involve replacement of trees on a two for one basis. This is based on tree sizes of 12-14cm girth.

7.2 Construction of hardstanding within RPA of G5

7.2.1 As shown above, the Impact Table raises concern of the proximity of the car parking area to G5 and the effect the proposals would have on the Safe Useful Life Expectancy of the trees.

7.2.2 If ground levels remain the same, the detrimental effects the car parking area would have on this tree would be: -

- Compaction, resulting in oxygen depletion, caused from creating the access way.
- The loss of a permeable surface.

7.2.3 It is now possible with the use of a cellular confinement system to be able to create car park areas very close to trees without having a detrimental effect.

7.2.4 A cellular confinement system provides a load transfer mattress which prevents direct loads on tree roots and reduces the bearing pressure on subsoil's by stabilising aggregate surfaces against rutting under wheel loads.

7.2.5 A proposed methodology and cross-sectional diagram for the construction of the access way can be found in appendix five of this report. Should this be used for the construction of the car park area in the area effecting G5 then the proposals should not have a detrimental effect on the safe useful life expectancy of these trees.

7.3 Access Facilitation Pruning.

7.3.1 To facilitate access & to aid the building of several properties the pruning of G1 & G10 will be required.

7.3.2 If all pruning works are undertaken in line with British Standard 3998:2010 Tree Work – Recommendations then the Safe Useful Life Expectancy of the trees will not be adversely affected.

8.0 Caveats and Limitations

8.1 The report is for the sole use of the client and its reproduction or use by anyone else is forbidden unless written consent is given by the author.

8.2 This is an arboricultural report and as such no reliance should be given to comments relating to buildings, engineering, soils ecological or archaeological data. If either is commented upon within the report further professional advice should be sought.

8.3 This is not a Tree Risk Assessment. As such this report should not be taken to mean or imply that any of the inspected trees should be considered safe. A Tree Risk Assessment can be provided but would be subject to additional survey requirement and further fees.

8.4 Trees are growing dynamic structures. Whilst reasonable effort has been made to identify defects within the trees inspected, no guarantee can be given as to the absolute safety or otherwise of any individual tree. No tree is ever absolutely safe due to the unpredictable laws and forces of nature. As a result of this, natural failure of intact trees will occur; extreme climatic conditions can cause damage to even apparently healthy trees.

8.5 For the purposes of this survey all dimensions of trees and their associated parts are based on estimation unless otherwise stated.

8.6 Trees are living organisms whose health, condition and structure can change quickly and without warning. Therefore, the contents of this report are valid for a period of one year from the date of this survey.

Appendix One

Tree Survey Data

BS5837:2012
TREE SCHEDULE

DATE OF SURVEY: 16/11/2020 **JOB REFERENCE:** LTM0254.AIA.01 **SITE ADDRESS: Hanging Heaton**

Tree No.	Species	Stem Dia (mm)	RPA (m^2)	RPA Radius (m)	Height (m)	Age Class	Crown Spread (m) N	E	S	W	Crown Clearance (m)	Condition	Comments	Recommendations	Remaining Contribution	BS5837 Retention Category
G1	Cypress	200	18	2.4	8	EM	3.5	3.5	3.5	3.5	2	B	Approx. 30 trees, forming a hedge on neighbouring land. Located on bank to the south. Some trees located within domestic gardens. No significant risk features observed.	**No Action**	20+	**C1**
T2	Elder	360	59	4.32	7	M	4	4	4	4	2.5	B	Multi stemmed at ground level. Limited inspection due to no access.	**No Action**	20+	**C1**
T3	Hawthorn	265	32	3.18	9	EM	3	3	3	3	0	B	Multi stemmed at ground level with a balanced canopy. Covered in dense ivy, birds nest noted within canopy. Limited inspection.	**No Action**	20+	**C1**
T4	Sycamore	130	8	1.56	7	Y	3	3	3	3	2	B	Double stemmed at 1m with a balanced canopy. Located within dense bramble. Large stem wound to north.	**No Action**	20+	**C1**
G5	Mixed Species	300	41	3.6	14	Y to M	-	-	-	-	-	A	Woodland group located outside of site red line boundary. Broadleaf deciduous mix contains hazel, Norway maple, oak, hawthorn, rowan, birch, ash, cherry, field maple, common osier, apple and alder. Limited inspection. Good buffer between site and adjacent road B6128.	**No Action**	40+	**B2**

* = Average measurement ~ = Estimated measurement # = Position estimated on site

BS5837:2012
TREE SCHEDULE

DATE OF SURVEY: 16/11/2020 **JOB REFERENCE:** LTM0254.AIA.01 **SITE ADDRESS: Hanging Heaton**

Tree No.	Species	Stem Dia (mm)	RPA (m^2)	RPA Radius (m)	Height (m)	Age Class	Crown Spread (m) N	E	S	W	Crown Clearance (m)	Condition	Comments	Recommendations	Remaining Contribution	BS5837 Retention Category
G6	Mixed Species	100	5	1.2	6	Y to EM	-	-	-	-	-	B	Overgrown and dense boundary group. Contains hawthorn, elder and bramble. Limited inspection due to access issues from dense vegetation .	**No Action**	10+	**C2**
G7	Mixed Species	100	5	1.2	6	Y to EM	-	-	-	-	-	B	Overgrown and dense boundary group. Contains hawthorn, elder and bramble. Limited inspection due to access issues from dense vegetation .	**No Action**	10+	**C2**
G8	Mixed Species	100	5	1.2	6	Y to EM	-	-	-	-	-	B	Overgrown and dense boundary group. Contains hawthorn, elder and bramble. Limited inspection due to access issues from dense vegetation .	**No Action**	10+	**C2**
G9	Mixed Species	100	5	1.2	6	Y to EM	-	-	-	-	-	B	Overgrown and dense boundary group. Contains hawthorn, elder and bramble. Limited inspection due to access issues from dense vegetation .	**No Action**	10+	**C2**
G10	Mixed Species	100	5	1.2	6	Y to EM	-	-	-	-	-	B	Overgrown and dense boundary group. Contains hawthorn, elder and bramble. Limited inspection due to access issues from dense vegetation .	**No Action**	10+	**C2**

* = Average measurement ~ = Estimated measurement # = Position estimated on site

Appendix Two

Glossary of Terms

The following terms are concurrent with best Arboricultural practice and within the guidelines set by the International Society of Arboriculture (ISA), the Arboricultural Association (AA) and the British Standards Institute (BSI).

Age Range:

Age is site specific and categorised:

Young (Y)		Out-planted trees that have not yet established.
Semi-Mature	**(SM)**	Established trees up to 1/3 of expected height and crown.
Early Mature	**(EM)**	Between 1/3 and 2/3 of expected height and crown.
Mature	**(M)**	Between 2/3 and full expected height and crown.
Fully Mature	**(FM)**	Full expected height and crown.
Over Mature	**(OM)**	Crown beginning to break-up and decrease in size.
Senescent	**(S)**	Crown in advanced stage of break-up.

Height: Height is estimated and recorded in metres.

DBH: Diameter at Breast Height is measured at 1.5m and recorded in metres. Where a tree becomes multi-stemmed below 1.5m the highest possible diameter is measured and indicated. Alternatively, above 1.5m the diameter of each stem or an average diameter is measured and indicated.

Condition: Assessment of current physiological condition and structural morphology incorporating vigour and vitality and categorised:

A - Tree needing little, if any attention

B - Tree with minor, but rectifiable defects, or in the early stages of physiological stress

C - Tree with significant structural and physiological flaws and/or extremely stressed

D - Tree that is dead, biologically/physically moribund or dangerous.

Desirability to Retain – As Outlined in Table 1 of BS 5837:2005 (Trees in Relation to Construction - Recommendations)

Definition of Physiological & Morphological Terms

Adaptive Growth - The process whereby wood formation is influenced both in quantity and in quality by the action of gravitational force and mechanical stresses on the cambial zone.

Bifurcation – Forked or divided union.

Brown Rot - Form of decay where cellulose is degraded, while lignin is only modified.

Cankers- A localised area of dead bark and cambium on a stem or branch, caused by fungal or bacterial organisms, characterised by wound wood development on the periphery. This may be annual or perennial.

Cavity - An open wound, characterised by the presence of extensive decay and resulting in a hollow.

Chlorotic Leaf - Lacking in chlorophyll, typically yellow in colour.

Compartmentalisation - The physiological process that creates the chemical and mechanical boundaries that act to limit the spread of disease and decay organisms.

Crack - Longitudinal spilt in stem or branch, involving bark and/or underlying wood. These may be vertically and horizontally orientated.

Decay - Process of degradation of woody tissues by fungi and bacteria through decomposition of cellulose and lignin.

Deadwood - Deadwood is often present within the crown or on the stems of trees. In some instances, is may be an indication of ill health, however, it may also indicate natural growth processes. If a target is present beneath the tree, deadwood may fall and cause injury or damage and should be removed, otherwise deadwood can remain intact for conservation purposes (insects, fungi, birds etc.).

End Weight - The concentration of foliage at the distal ends of stems and deficient in secondary branches.

Girdling Root - Root which circles and constricts the stem or roots causing death of phloem and/or cambial tissue.

Hazard Beam - An upwardly curved branch in which strong internal stresses may occur without the compensatory formation of extra wood (longitudinal splitting may occur in some cases).

Included Bark Union - Pattern of development at branch junctions where bark is turned inward rather than pushed out. Potential weakness due to a lack of a woody union.

Ivy Growth - Ivy growth may ascend into the tree's crown, increasing wind resistance, concealing potential defects and reducing the tree's photosynthetic capacity. Ivy growth is often acceptable in woodland areas as a conservation benefit.

Live Crown Ratio - The relative proportion of photosynthetic mass (leaf area) to overall tree height.

Reaction Wood - Specialised secondary xylem, which develops in response to a lean or similar mechanical stress, attempting to restore the stem to the vertical.

Root Plate Lift - The physical movement of the rooting plate causing soils to shift and crack. May occur during adverse weather conditions. Trees may become unstable.

Structural Defect - Internal or external points of weakness, which reduce the stability of the tree.

Suppressed - Trees which are dominated by surrounding vegetation and whose crown development is restricted from above.

Topping - A highly disfiguring practise, likely to cause severe xylem dysfunction and decay in major structural parts of the wood.

White Rot - Form of decay where both cellulose and lignin are degraded.

Wound - Any injury, which induces a compartmentalisation response.

Wound wood - Wood with atypical anatomical features, formed in the vicinity of a wound and a term to describe the occluding tissues around a wound as opposed to the ambiguous term “callus.”

Woodland Structure - The vertical and horizontal arrangement of trees within a group or woodland i.e. Dominant - trees with a crown above the upper layer of the canopy, Co-dominant - trees that define the general upper edge of the canopy, Intermediate - trees that have been largely overgrown by others, Suppressed - trees that have been overgrown and occupy an under storey position and grow slowly, often severely asymmetrical.

Note*: The definitions described above, may not necessarily be included within the Arboricultural Survey Data.*

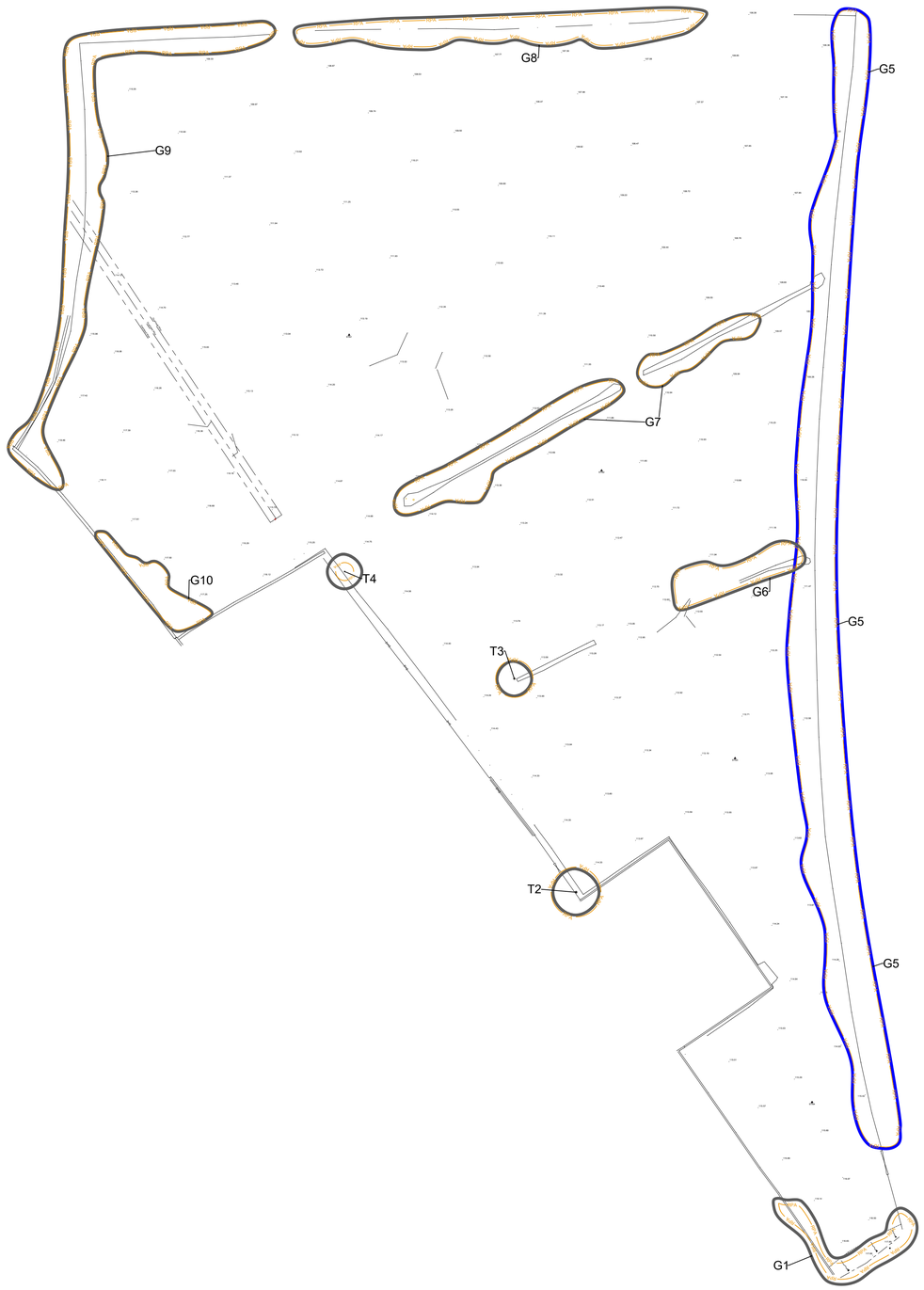
Appendix Three

Cascade Chart

Trees for removal			
Category and definition	**Criteria**		
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	o Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other U Category trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) o Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline. o Trees infected with pathogens of significance to the health and/or safety of other trees nearby) e.g. Dutch elm disease), or very low-quality trees suppressing adjacent trees of better quality. NOTE: *Category U trees can have existing or potential conservation value which might be desirable to preserve; see section 4.7.5*		
Trees to be considered for retention			
Category and definition	**Criteria and sub-categories**		
	1) Mainly arboricultural values	**2) Mainly landscape values**	**3) Mainly cultural values (including conservation)**
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 essential components of groups, or of 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-pastures)
Category B **Those 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 area	Trees with clearly identifiable conservation or other cultural benefits
Category C **Those of low quality** with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in the higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit.	Trees with no material conservation or other cultural value

Appendix Four

Plans



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Contractors must check all dimensions from site

This drawing is for use on this site only and should be used in conjunction with all relevant consultants drawings..

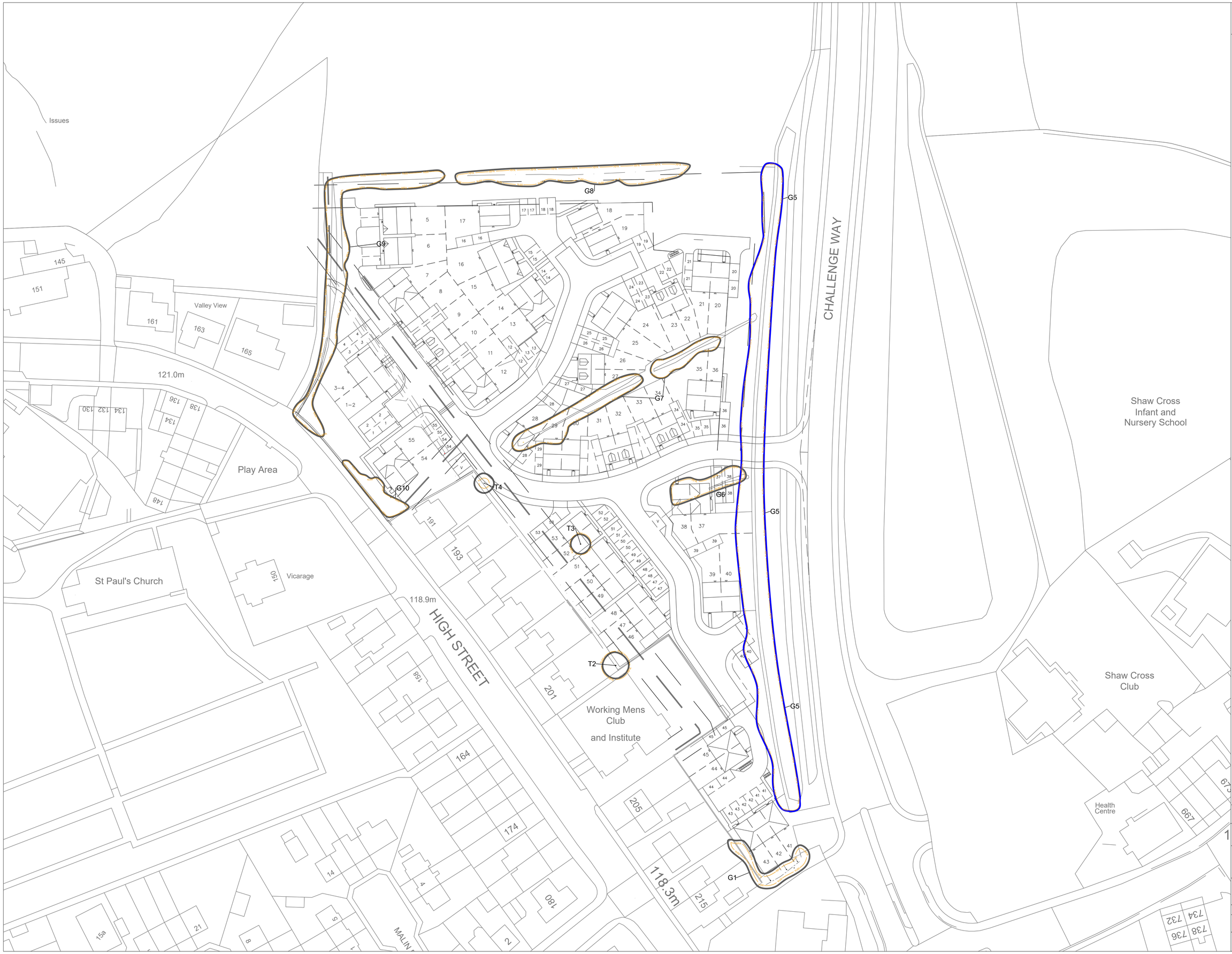
LEGEND

N

- Category A
- Category B
- Category C
- Category U
- Root Protection Area (RPA)
- # Position estimated on site

Scale: 1:500@A1	Date: 2705/2021
Job: LTM0254.AIA.01	
Address: Land West of Challenge Way, Hanging Heaton	
Client: Vistry Partnerships	
Drawing Number: LTM0254.TCPa.01	
Drawn by: Matthew Lally	

TREE CONSTRAINTS PLAN



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LEGEND

- Category A
- Category B
- Category C
- Category U
- Root Protection Area (RPA)

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Drawing Number: LTM0254.AIP.01	
Drawn by: Matthew Lally	

ARBORICULTURAL IMPLICATIONS PLAN

Appendix Five

Cellular Confinement System.

METHODOLOGY FOR THE CONSTRUCTION OF CAR PARKING

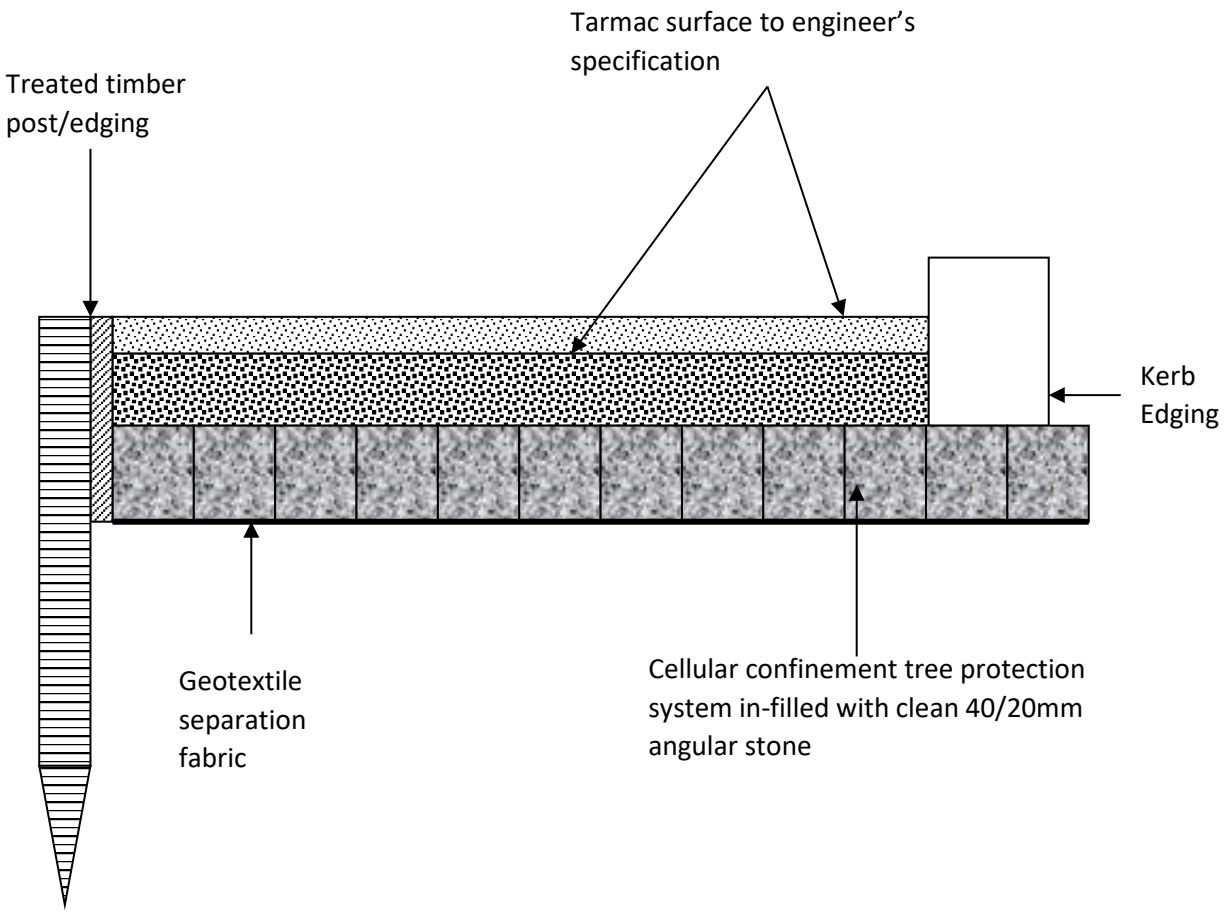
The following methodology supports the drawing indicating the construction of the proposed car parking. The methodology is prepared on the basis of the sequence of operations necessary to complete the construction of the car parking area with the minimum damage to the trees proposed for retention.

- Surface layer to be scraped off. This can be done either by hand or by very small machinery.
- Erect protective fencing to the edge of the construction area.
- Spread a sub grade material over the length of the car park to fill any small ruts.
- Construct edging using treated timber if required.
- Lay geotextile mat over smoothed area.
- Extend the Geoweb perforated tree root protection system over the area of the car park with sufficient overlap such that kerbs can be constructed on top of the Geoweb.
- Fill the voids within the Geoweb with reduced fines Type 1 material working into the site over the top of the Geoweb.
- Lay kerbs and surface over the Geoweb such that the construction binds itself together.
- Construct finished surface as required in line with guidance illustrations below.

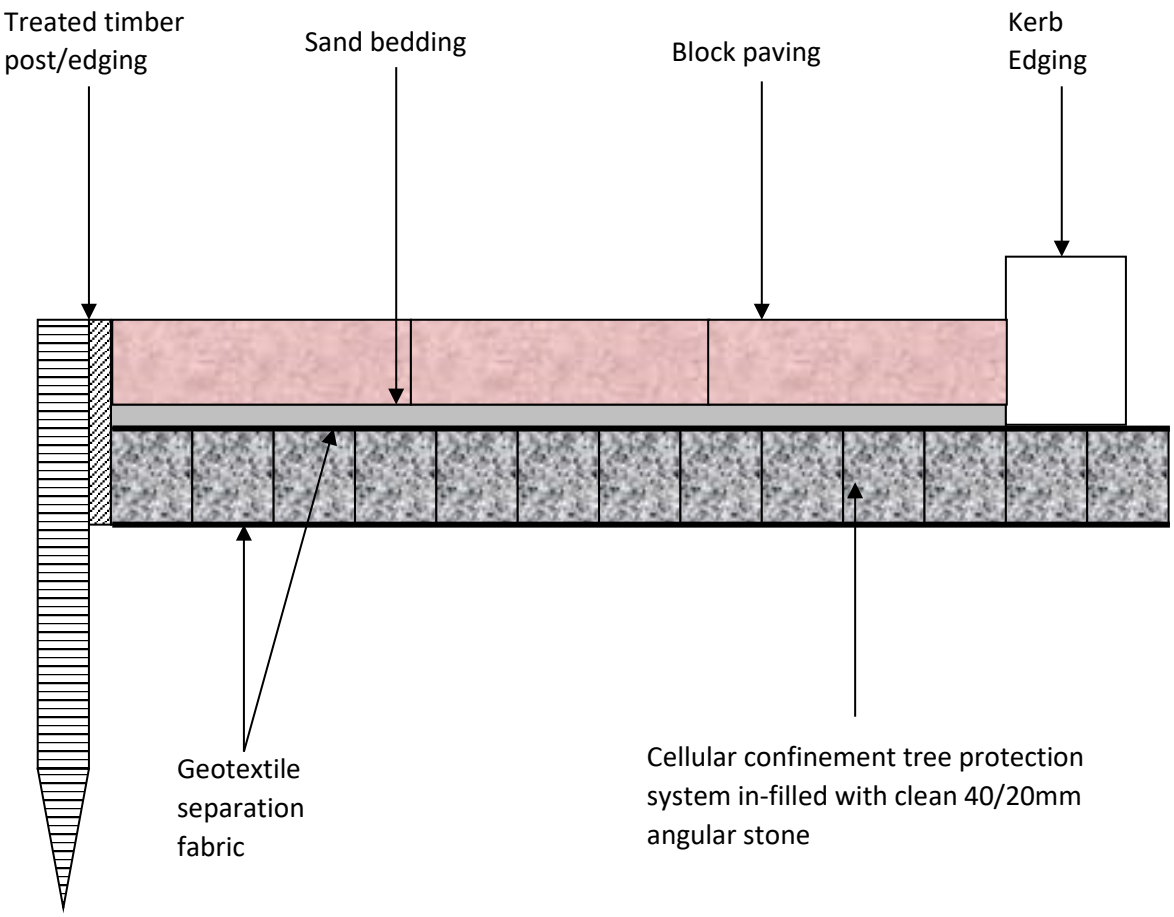
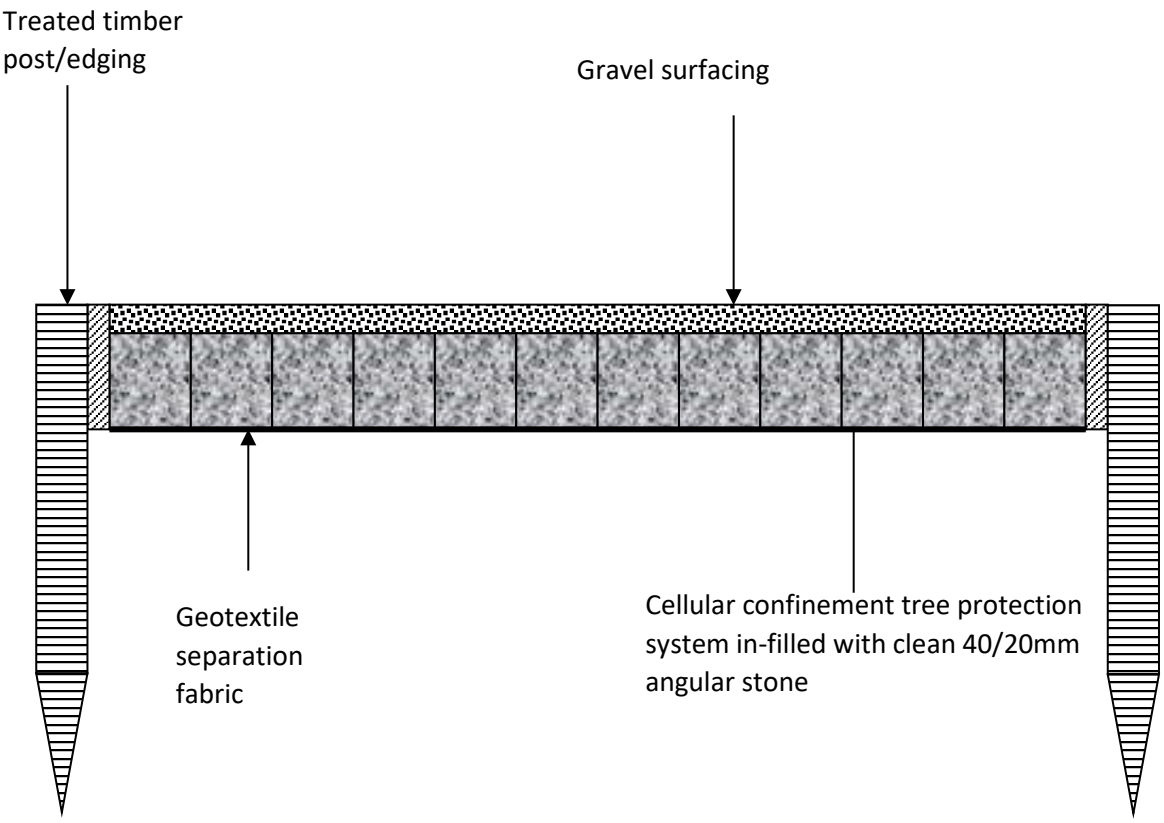
GEOWEB BASED CONSTRUCTION – (INDICATIVE ONLY)

Depth of confinement system variable according to use- refer to manufacturer.

Tarmac Surface



Block Paved Surface



Gravel Surface