Arboricultural Impact Assessment

in Relation to Proposed Residential Development at

Land off Wakefield Road, Pontefract, West Yorkshire, WF8 4HW

Prepared by:

Bowland Tree Consultancy Ltd

March 2020 (rev. A)

Control sheet

Project No.:	BTC1666
Site:	Land off Wakefield Road, Pontefract, West Yorkshire, WF8 4HW
Client:	Mr Duffy, Mr Duffy & Mr Davies
Council:	Wakefield Metropolitan District Council
Survey Dates:	1 & 5 November 2018
Surveyed by:	Ryan Gledhill FdSc MArborA
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Date of First Issue:	6 August 2019 (Revised 17 March 2020)
Status:	Revised Issue for Planning
Version No:	2

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DISCLAIMER

Survey Limitations: Unless otherwise stated all trees are surveyed from ground level using non-invasive techniques, in sufficient detail to gather data for and inform the design of the current project only. The disclosure of hidden crown and stem defects, in particular where they may be above a reachable height or where trees are ivy clad or located in areas of restrictive ground vegetation, cannot therefore be expected. Detailed tree safety appraisals are only carried out under specific written instructions. Comments upon evident tree safety relate to the condition of said tree at the time of the survey only. Unless otherwise stated all trees should be re-inspected annually in order to appraise their on-going mechanical integrity and physiological condition. It should, however, be recognised that tree condition is subject to change, for example due to the effects of disease, decay, high winds, development works, etc. Changes in land use or site conditions (e.g. development that increases access frequency) and the occurrence of severe weather incidents are also significant considerations with regard to tree structural integrity, and trees should therefore be re-assessed in the context of such changes and/or incidents and inspected at intervals relative to identified and varying site conditions and associated risks. For these reasons the tree assessment advice only remains valid for one year from the date that the trees were last inspected.

Where trees are located wholly or partially on neighbouring private third-party land then said land is not accessed and our inspection is therefore restricted to what can reasonably be seen from within the site. Stem diameters and other measurements of trees located on such land are estimated. Any subsequent comments and judgments made in respect of such trees are based on these restrictions and are our preliminary opinion only. Recommendations for works to neighbouring third-party trees are only made where a potential risk to persons and/or property has been identified during our survey or, if applicable, where permissible works are required to implement a proposed development. Where significant structural defects of third-party trees are identified and associated management works are considered essential to negate any risk of harm and/or damage then we will inform the relevant Council of the matter. Where a more detailed assessment is considered necessary then appropriate recommendations are set out in the Tree Survey Schedule.

Where tree stem locations are not included on the plan(s) provided then they are plotted by the arboriculturist at the time of the survey using, where appropriate and/or practicable, a combination of measurement triangulation and GPS co-ordination. Where this is not possible then locations are estimated. Restrictions in these respects are detailed in the report.

This document is intended as a guide to identify key tree related constraints to site development only, and the potential influence of trees upon existing or proposed buildings or other structures resulting from the effects of their roots abstracting water from shrinkable load-bearing soils is not considered herein. The tree survey information in its current form should not therefore be considered sufficient to determine appropriate foundation depths for new buildings. Accordingly, an updated survey, with reference to the current NHBC Standards Chapter 4.2 - Building Near Trees, must therefore be prepared for the specific purpose of informing suitable foundation depths subsequent to planning approval being granted. The advice of a structural engineer must also be sought with regard to appropriate foundation depths for new buildings.

Third Parties: Any disclosure of this document to a third party is subject to this disclaimer. The report was prepared by Bowland Tree Consultancy Ltd at the instruction of and for use by our client. This report does not in any way constitute advice to any third party who is able to access it by any means. Bowland Tree Consultancy Ltd excludes to the fullest extent lawfully permitted all liability whatsoever for any loss or damage arising from reliance on the contents of this report.

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APPENDICES

PLAN

1.0 INTRODUCTION

Terms of Reference

1.1 Bowland Tree Consultancy Ltd were instructed to:

a) Survey, as individuals or by group, all trees having reasonable potential to affect or to be adversely affected by the proposed development of the site under consideration;
b) Annotate the proposed site plan to produce a Tree Constraints Plan, identifying tree retention categories, crown spreads, Root Protection Areas, etc.;
c) Prepare a tabulated Tree Survey Schedule based on guidance specified BS5837:2012 - Trees in Relation to Design, Demolition and Construction – Recommendations;
d) Evaluate the potential tree related impacts and design conflicts of the proposals, based on the supplied development proposal plan(s);
e) Advise on removal, retention and management options for the trees in the current context and in the context of the proposed development;
f) Advise on suitable retained tree protection measures required during development; and
g) Produce an Arboricultural Impact Assessment report outlining the main tree related issues and reasonably foreseeable tree impacts in relation to the proposals and indicating suitable compensation and mitigation provisions and retained tree protection measures.

Scope and Purpose of Report

1.2 By detailing foreseeable tree related issues this report is intended to assist the Local Planning Authority (LPA), in this case Wakefield Metropolitan District Council, in their review of the proposed development and, as such, should be supplied to them in support of the planning application to which it pertains. Essentially, it provides an initial analysis of the impacts that the proposed development is projected to have on trees located within the site and, where practicable, on land immediately adjacent to its boundaries. It also offers guidance on suitable retained tree management and compensation for projected losses, along with advice on appropriate tree protection measures in accordance with current guidance in the context of the proposals.

Site Visit, Data Collection and Tree Plans

1.3 Further to the instruction it is confirmed that a tree survey was carried out on 1 and 5 November 2018, in accordance with the preceding disclaimer, and all tree data collected on site is set out in the attached tabulated Tree Survey Schedule (TSS) at Appendix One which, for ease of interpretation, should be read alongside the appended BS5837:2012 Table 1. The survey data was subsequently reviewed on 22 May 2019.

1.4 The survey identified 27 individual trees (prefixed ‘T’), 26 groups of trees (prefixed ‘G’), and one woodland (prefixed ‘W’), which have been numbered accordingly on the Tree Constraints Plan (TCP) and Tree Impact Plan (TIP), as appended. The TCP, which details the existing site with the readily definable tree constraints, is based on a supplied topographical survey plan, whilst the TIP, which also has an overlay of the site proposal plans, is based on the proposed development plan supplied. Both the topographical survey plan and the proposed site plan were provided in electronic format by the project client, Frontline Estates Ltd, and, for the purpose of this report, we presume the provided plans’ details to be accurate.

1.5 The purpose of the TCP is to give an initial indication of the constraints that the trees present to site development, and should subsequently be used by the LPA’s tree specialist to preliminarily assess if the proposed development is viable in accordance with BS5837:2012 and, along with the information provided in this report, as a basis for the LPA to request further details regarding specific matters relating to trees at suitable stages in the planning process.

2.0 STATUTORY PROTECTION IN RESPECT OF TREES AND ASSOCIATED WILDLIFE

Tree Preservation Orders and Conservation Area Designations

2.1 The Town and Country Planning Act (1990) (the Act) and associated Regulations empower Local Planning Authorities (LPAs) to protect trees in the interests of amenity by making Tree Preservation Orders (TPOs). The Act also affords protection for trees of over 75 mm diameter that stand within the curtilage of a Conservation Area (CA). Subject to certain exemptions, an application must be made to the LPA in question to carry out works upon or to remove trees that are subject to a TPO, whilst six weeks' notice of intention must be given to carry out works upon or to remove trees within a CA that are not protected by a TPO.

2.2 According to Wakefield Metropolitan District Council's website, the site does not stand within a CA. However, the council's website does not include details of their TPOs, and it is therefore essential that the presence of any such statutory TPO protection at the site be checked directly with their planning department prior to scheduling or carrying out any tree works that are not directly related to, and subsequently authorised in accordance with, the implementation of a detailed (i.e. full) planning permission.

Protected Species

2.3 Nesting birds are afforded statutory protection under the Wildlife & Countryside Act (1981) (as amended) and their potential presence should therefore be considered when clipping hedges, removing climbing plants and pruning and removing trees. The breeding period for woodlands runs from March to August inclusive. Hedges provide valuable nesting sites for many birds and clipping should therefore be avoided during March to July. Trees, hedges and ivy should be inspected for nests prior to pruning or removal and any work likely to destroy or disturb active nests should be avoided until the young have fledged.

2.4 All bat species and their roosts are protected under Schedule 5 of the Wildlife & Countryside Act (1981) (as amended) and under Schedule 2 of the Conservation of Habitats & Species Regulations 2010 (as amended). In this respect it should be noted that it is possible that unidentified bat habitat features may be located high up in tree crowns and all personnel carrying out tree works at the site should therefore be vigilant and mindful of the possibility that roosting bats may be present in trees with such features. If any bat roosts are subsequently identified then it is essential that works are halted immediately and that a suitably qualified and experienced ecologist investigates and advises on appropriate actions prior to works continuing.

2.5 In turn, any subsequent works carried out in relation to any protected species must be carried out under guidance from a suitably qualified and experienced ecologist and in strict accordance with the guidance provided in BS42020:2013 - Biodiversity – Code of Practice for Planning and Development and, with regard to bats, in strict accordance with BS8596:2015 - Surveying for Bats in Trees and Woodlands.

Felling Licences

2.6 Subject to certain exemptions the Forestry Act (1967) requires that a 'Felling Licence' be obtained to remove growing trees amounting to more than five cubic metres of timber in a calendar quarter. Felling Licences are administered by the Forestry Commission and contravention of the associated controls can incur substantial penalties.

2.7 A felling licence is, however, not required for the felling of trees immediately required for the purpose of carrying out development authorised by a full (i.e. detailed) planning permission granted under the Town and Country Planning Act 1990.

3.0 THE SITE AND THE SURROUNDINGS

3.1 The site under consideration, which is located in the town of Pontefract, within the administrational boundaries of Wakefield Metropolitan District Council, is brownfield in character and currently consisting of rough ground with a number of existing disused and derelict buildings, several shipping containers, and various individual trees and groups of trees.

3.2 According to the planning website of Wakefield Metropolitan District Council the site was previously granted outline planning permission for 22 residential dwellings, including the demolition of the existing building and the removal of commercial uses (application number 13/02705/OUT), in February 2014. In this respect it should be noted that a previous arboricultural report was supplied in support of the subsequently granted planning application, which highlighted the expected tree losses as a result of the proposed development.

3.3 The site is bordered to the north by the A645 Wakefield Road and the rear gardens of various neighbouring residential properties, to the east by various residential properties along the A639 Mill Hill Road, to the south by trees within the ownership of the clients and, beyond the trees, residential properties with gardens, and to the west by residential gardens and Wakefield Road Park (see TCP).

3.4 The topographical survey plan provided indicates that the site stands on steep north facing slope and, as such, the ground levels within the boundaries vary by up to approximately 15 metres, from the highest point to the south to the lowest point to the north, as per the existing ground levels shown on the TCP. To the west of the site there is a substantial slope, of which one section is near vertical, whilst to the east of the site there is a disused mineshaft entrance.

4.0 THE TREE POPULATION

4.1 As noted previously, a total of 27 individual trees, 26 groups of trees, and one woodland were surveyed for the purpose of this appraisal. They range from young to mature in age, with heights up to approximately 22 metres, maximum diametrical crown spreads up to approximately 13 metres, and stem diameters up to approximately 920 millimetres. Details regarding specific tree dimensions and other pertinent information, such as structural defects and physiological deficiencies, are included in the Tree Survey Schedule (TSS) at Appendix One.

4.2 The tree population on site is largely made up of closely grown, self-set trees and has evidently been subject to little or no past arboricultural management and, as a result, a substantial number of trees have developed small canopy to height ratios and/or attenuated form. As such, a substantial number of the trees on site are either of low quality or are considered unsuitable for long term retention.

4.3 In respect of the survey it should be noted that tree quality is categorised within the existing context without taking any site development proposals into account. However, recommendations for works included in the TSS take both current site usage into consideration and the proposed site development where there are definable development related issues with regard to specific trees.

4.4 Under the UK's planning system trees are a material consideration in the planning and development process. Nonetheless, only trees of a suitable quality and value should be considered a material constraint to development. In this respect the TSS includes a column ('Cat. Grade') listing the trees' respective retention values, where they are rated either 'A', 'B', 'C' or 'U', as per BS5837:2012 Table 1 (Appendix One). 'A' category trees are those considered to be of 'high quality' and, accordingly, the most suitable for retention, whilst 'B' category trees are those considered to be of 'moderate quality', and 'C' category trees are those considered to

be of 'low quality' with a correlated low retention value. In turn, 'U' category trees are those that are considered to be 'unsuitable for retention'.

4.5 As detailed in Table A, below, nine trees, three groups and one woodland were categorised as moderate quality (i.e. 'B' category), 11 trees and 17 groups were categorised as low quality (i.e. 'C' category), and seven trees and six groups were classed as unsuitable for retention (i.e. 'U' category) regardless of the development proposals.

Table A: BS5837-2012 Retention Categories of the Surveyed Trees, Groups & Woodlands

	Ret. Cats.	Tree/Group/Woodland Numbers	Totals
Those of a moderate or high quality that should be afforded appropriate consideration in the context of development	**'A'**	-	-
	'B'	T2, T4, T7, T8, T12, T13, T15, T19, T22, G19, *G24, *G25, *W1	*9 Trees* *3 Groups* *1 Woodland*
Those of a low quality that should not be considered a material constraint to development	**'C'**	T1, T3, T5, T6, T9, T14, T18, T23, T24, T25, T27, G1, G3, G4, G5, G6, G8, G10, G12, *G13, *G14, G15, G17, G18, G21, *G22, *G23, G26	*11 Trees* *17 Groups*
Those that should be removed for sound management reasons regardless of site proposals	**'U'**	T10, T11, T16, T17, T20, T21, *T26, G2, G7, G9, *G11, G16, G20	*7 Trees* *6 Groups*
			= 27 Trees, 26 Groups & 1 Woodland in Total

*Denotes groups that are evidently located partially or wholly on neighbouring third-party owned land

5.0 THE DEVELOPMENT PROPOSAL AND ITS PROJECTED ARBORICULTURAL IMPACTS

The Development Proposal

5.1 From the information provided to date by the project planning consultants, Addison Town Planning, it is understood that the application is for 22 residential dwellings with associated private outdoor amenity space, car parking provision, garages, and area of public open space, and an internal access road connecting to a single vehicular access/egress point from the northern boundary to the north-east the site, off the adjacent A645 Wakefield Road (see TIP).

Projected Arboricultural Losses Relating to the Development Proposals

Table B: Projected Arboricultural Impacts of Proposed Development & Other Tree Removal Proposals

	Ret. Cats.	Removals necessary to implement development	Removals recommended regardless of development	Total no. of removals
Those of a high quality that should be afforded appropriate consideration in the context of development	**'A'**	-	-	-
Those of a moderate quality that should be afforded appropriate consideration in the context of development	**'B'**	T7, T8, T12, T13, T15	-	*5 Trees*
Those of a low quality that should be afforded appropriate consideration in the context of development	**'C'**	T1, T3, T5, T6, T14, G1, G3, G4, G6, G8 (part), G10, G12, *G13 (part), *G14 (part), G15	-	*5 Trees* *7 Groups* *3 Part Groups*
Those that should be removed for sound management reasons regardless of plans	**'U'**	-	T10, T11, T16, T17, T20, T21, T26*, G2, G7, G9, *G11 (part), G16, G20	*7 Trees,* *5 groups* *1 Part Group*
Totals		*10 Trees* *7 Groups* *3 Part Groups*	*7 Trees,* *5 groups* *1 Part Group*	***= 17 Trees, 12 Groups, 4 Part Group in Total***

*Denotes groups that are evidently located partially or wholly on neighbouring third-party owned land, whereby it will be essential to protect any such third-party owned retained trees accordingly

5.2 From the information provided to date it is projected that, as detailed in Table B, above, construction of the development as proposed will require the removal of five moderate quality

(i.e. 'B' category) trees, five low quality (i.e. 'C' category) trees, seven low quality groups and parts of three further low quality groups. Additionally, as also detailed in Table B, seven trees and six groups are considered unsuitable for retention as they have relatively short projected remaining life expectancies of less than ten years due to the presence of substantial structural defects and/or significant physiological decline.

5.3 With regard to Table B it should be noted that the majority of the trees and groups that are proposed for removal are categorised as low quality or are considered unsuitable for retention regardless of the development proposal.

5.4 It should also be noted that the five moderate quality trees that are projected to require removal in order to construct the proposed development were proposed for removal in order to construct the previous development that was granted an outline planning approval during 2014.

5.5 In addition, many of the trees, including those of moderate quality, exhibit small canopy to height ratios and/or attenuated form as they have grown in relatively close proximity to other trees which, in turn, is projected to substantially reduce their prospects for successful long-term retention as individuals following the removal of neighbouring lower quality trees.

Special Design, Construction and Protection Considerations in Relation to Retained Trees

5.6 With regard to the projected tree impacts it is noted that the construction of proposed new hard surfaces, including part of the access road adjacent to plot 11, and parking bays and footpaths associated with plots 1 and 2, encroach partially within the RPAs of retained trees T2 and T4 and group G6, as detailed on the TIP. As such, it will subsequently be necessary to ensure that the trees under consideration are suitably protected in strict accordance with current government guidance through the use of special working and protection measures.

5.7 Nonetheless, it should be noted that such works are permissible under current government guidance (i.e. BS5837:2012) providing that they are planned and implemented whilst providing a suitable level of protection to the trees in question, such as through the use of appropriate hand-held tools, retaining existing ground levels within the tree's RPAs, and using designs that avoid localised ground compaction and root damage.

5.8 As such, it is essential that all works in relation to the installation of the new hard surfaces, as detailed above, are carried out in strict accordance with section 7.4 of BS5837:2012. Consequently, it is proposed that the part of roadway that extends into the RPA and the parking areas and footpaths associated with plots 1 and 2 are to be constructed using a 'no dig', permeable, three dimensional cellular confinement system (see appended manufacturer's brochure for cellular confinement system).

5.9 In turn, specific details regarding the construction of the hard surfaces that encroach within RPAs should be included in an Arboricultural Method Statement and on a Tree Protection Plan (see paragraphs 6.6 and 6.7).

Compensation for Projected Arboricultural Losses as Part of the Scheme's Landscaping

5.10 As detailed on the proposed site plan, it is projected that the site could accommodate a number of new trees, both within the boundaries of the private gardens and in areas between residential units, as a component of a landscaping scheme. In this respect it is understood that a landscape plan, prepared by FDA Landscapes, is to be supplied in support of the planning application under consideration. It is also understood that, as part of the landscape plan, extensive new tree planting is also to be proposed within the retained woodland area that stands within the client's blue line ownership boundary to the south. In turn, extensive new tree planting is projected to substantially improve the quality and long-term prospects of the woodland area.

5.11 Consequently, specific details regarding replacement tree planting, as part of a landscaping scheme, should be included in accordance with the guidance listed herein at paragraphs 7.5 and 7.6. Accordingly, the provision of and adherence to a detailed landscape proposal plan can be assured through the imposition of a suitably worded condition attached to a planning approval.

5.12 In turn, the landscape proposal plan should be prepared in strict accordance with any relevant government guidance, specifically BS8545:2014 - Trees: From Nursery to Independence in the Landscape – Recommendations, and section 5.6 and Table A.1 of BS5837:2012.

6.0 RECOMMENDATIONS FOR SUCCESSFUL TREE RETENTION IN THE CONTEXT OF DEVELOPMENT

Root Protection Areas and Construction Exclusion Zones

6.1 Adequate protection of the Root Protection Areas (RPAs) of retained trees during construction is essential if their long-term viability is to be assured. RPAs, which are calculated through a method provided in BS5837:2012, are ground areas that should be protected by temporary protective fencing as Construction Exclusion Zones (CEZs) throughout the development process, thereby keeping the trees' root zones free from disturbance. Consequently, the RPA distances, as detailed in the TSS (see 6.2) and on the TCP, give an idea of the on-site below-ground constraints in respect of tree roots and assist in planning for appropriate tree retention in relation to feasible development.

6.2 The TSS includes two columns listing the RPAs of the individually surveyed trees and, where applicable, the largest of the trees in any surveyed groups as overall areas in square metres and as radial distances. The RPAs are indicated as magenta coloured circles on the TCP.

6.3 With regard to CEZs the design, materials and construction of the fencing should be appropriate for the intensity and type of site construction works, should conform to at least section 6.2 of BS5837:2012, and should be secured by the imposition of a suitably worded planning condition. A default Temporary Protective Fencing Specification is included at Appendix Two.

Underground Utilities and Drainage

6.4 The installation of underground utilities in close proximity to trees can cause serious damage to their roots. As such, it is essential that utilities be routed outside RPAs unless there is no other available option. Where RPAs cannot be avoided then guidelines set out in the National Joint Utilities Group publication 'Volume 4: NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Issue 2) – Operatives Handbook' should be followed (e.g. trenches of a very limited width to be hand dug or the use of directional drilling).

6.5 To date, no service plan showing proposed service and/or drainage runs has been provided in respect of the development under consideration. Nonetheless, the proposed site plan provided indicates that, if correctly planned, there should be sufficient space to run the services and drainage outside the RPAs of retained trees. In turn, in order to ensure that this advice is adhered to, the provision of a service plan, with all service runs and drainage routed outside retained tree RPAs, can be conditioned to a planning approval.

Arboricultural Method Statement and Tree Protection Plan

6.6 Government guidance recommends that, where considered expedient by the LPA, an Arboricultural Method Statement (AMS) and a Tree Protection Plan (TPP) be prepared detailing special mitigation construction issues in relation to the development under consideration.

Essentially, the AMS and TPP describe and detail the procedures, working methods and protective measures to be used in relation to retained trees in order to ensure that they are adequately protected during the construction process.

6.7 In order to ensure that any such special working methods are followed, and that the retained trees are adequately protected throughout the development process, the production of and adherence to an AMS and a TPP in support of a subsequent reserved matters application, can be conditioned to a planning approval.

7.0 OTHER RECOMMENDATIONS

Non-Development Related Tree Works and Recommendations

7.1 Any general management pruning works for retained trees that are stated to be non-development related, as detailed in the TSS, are recommended in accordance with prudent arboricultural management and should therefore be carried out regardless of any site development proposals and potential changes in land usage. All tree works should be carried out in accordance with BS3998:2010 - Tree Work – Recommendations.

Tree Work Related Consents

7.2 No tree pruning or removal works should commence on site until necessary consents have been obtained from the LPA as part of a planning approval or in respect of any statutory tree protection (e.g. TPOs).

Arboricultural Contractors

7.3 All tree works should be carried out by suitably qualified and experienced arboricultural contractors carrying appropriate public liability insurance cover and be implemented to the minimum current CE and UK industry standards and in accordance with industry codes of practice. Only certificated personnel should, in accordance with The Control of Pesticides Regulations, apply any pesticides.

Contractors and Subsequently Identified Tree Defects

7.4 Tree contractors should be made aware that, should any significant tree defects become apparent during operations that would not have been immediately obvious to the surveyor, then such defects should be notified immediately to the client and subsequently confirmed to the consultant within five working days.

New Tree Planting

7.5 All tree planting at the site should be carried out in accordance with BS8545:2014 Trees: from nursery to independence in the landscape – Recommendations, and in accordance with the guidance detailed in section 5.6 and Table A.1 of BS5837:2012.

Landscaping Within and Close to Retained Trees' RPAs

7.6 Any landscaping carried out within and close to retained trees' RPAs should be carried out in strict accordance with the guidance detailed in section 8 of BS5837:2012. As is the case with 7.5, above, a requirement for these works to conform with the current guidance detailed in BS5837:2012 can be conditioned to a planning approval.

Retained Tree Management

7.7 Any tree risk management appraisals and subsequent recommendations made in this report were based on observations and site circumstances at the time of the survey. Trees are dynamic living organisms whose structure is constantly changing and even those evidently in good condition can succumb to damage and/or stress.

7.8 In this respect, it should be noted that, under the Occupiers' Liability Act (1957 & 1984), site occupants have a duty of care to take reasonable steps to prevent or minimise the risk of personal injury and/or damage to property from any tree located within the curtilage of the land they occupy. In turn, it is accepted that these steps should normally include commissioning a qualified and experienced arboriculturist to survey their trees in order to identify any risk of harm to persons or damage to property that they may present and, where unacceptable risks are identified, taking suitable remedial action to negate those risks.

8.0 SUMMARY AND CONCLUSIONS

8.1 The site under consideration was previously granted outline planning permission for the construction of 22 dwellings.

8.2 Twenty-seven individual trees, 26 groups of trees, and one woodland were surveyed at the site under consideration in respect of a residential development proposal for 22 dwellings.

8.3 Nine trees, three groups and one woodland were categorised as moderate quality, 11 trees, and 17 groups were categorised as low quality, and seven trees, and six groups were classed as unsuitable for retention regardless of the development proposals.

8.4 An appraisal of the proposal documentation identified that construction of the development as proposed will require the removal of five moderate quality trees, five low quality trees, seven low quality groups, and part of three further low quality groups, as indicated on the Tree Impact Plan (TIP).

8.5 However, it should be noted that the majority of the trees and groups that are proposed for removal are categorised as low quality or are considered unsuitable for retention regardless of the development proposals, and that the moderate quality trees were proposed for removal in order to construct the previous development that was granted an outline planning approval.

8.6 Nonetheless, the site can evidently accommodate extensive new tree planting, both within the development area and within the woodland to the south. In this respect it is understood that a high quality landscaping scheme, with the inclusion of extensive new tree planting, is to be submitted in support of the application, the delivery of which can be guaranteed through the imposition of a suitably worded condition attached to a planning approval.

8.7 As also indicated on the TIP various sections of the proposed access road, several proposed car parking spaces, and parts of a proposed footpath encroach into the RPAs of a number of retained trees. However, current government guidance in this respect (i.e. BS5837: 2012) recommends that a 'no-dig' design should be used to avoid root loss and damage in cases such as this.

8.8 In order to ensure that any such special working methods are followed, and that the retained trees throughout the site are adequately protected throughout the development process, in strict accordance with current Government guidance and the recommendations included herein, the production of and adherence to a suitably detailed Arboricultural Method Statement and Tree Protection Plan can be conditioned to an outline planning approval.

8.9 In turn, it should also be noted that all site works discussed herein must also be carried out in strict accordance with specific advice and recommendations made by the project ecologist where applicable and, in turn, in accordance with current government guidance relating to biodiversity, wildlife and development.

REFERENCES

BS42020:2013 - Biodiversity – Code of Practice for Planning and Development. BSI British Standards, London.
BS8596:2015 - Surveying for Bats in Trees and Woodlands. BSI British Standards, London.
BS8545:2014 - Trees: From Nursery to Independence in the Landscape – Recommendations. BSI British Standards, London.
BS3998:2010 - Tree Work - Recommendations. BSI British Standards, London.
BS5837:2012 - Trees in Relation to Design, Demolition and Construction – Recommendations. BSI British Standards, London.
National House Building Council (2017). NHBC Standards Chapter 4.2 - Building Near Trees. NHBC, Amersham.
National Joint Utilities Group (2007). Volume 4: NJUG Guidelines For The Planning, Installation And Maintenance Of Utility Apparatus In Proximity To Trees (Issue 2) – Operatives Handbook.

TREE SURVEY SCHEDULE FOR ARBORICULTURAL IMPACT APPRAISAL			
Site:	Land off Wakefield Road, Pontefract, West Yorkshire, WF8 4HW	**Surveyors:**	Ryan Gledhill FdSc MArborA & Joseph Lambert FdSc MArborA
Clients:	Mr Duffy, Mr Duffy & Mr Davies	**Survey & Review Dates:**	1 & 5 November 2018 & 22 May 2019
		Job Ref:	BTC1666

No.	Species	Height	Stem Diam.	Branch Spread		Branch & Canopy Clearances	Life Stage	PC	General Observations and Comments	Management Recommendations	ERC	Cat. Grade	RPA (m²)	RPA Radius (m)
T1	Lombardy Poplar	22	900	N E S W	3.5 3.5 3.5 3.5	7-S 7	M	G	▪ Located atop narrow raised landscaped border area, evidently causing significant structural displacement due to insufficient growth space for size of tree. ▪ Dense ivy cover to a height of approximately 10m; inhibiting clear visual inspection.	▪ Remove tree in order to construct development as proposed.	10+	C1/2	366	10.8
T2	Sycamore	19	920#	N E S W	6.5 6.5 6.5 6.5	4-E 6	M	G	▪ Located on neighbouring land, unable to access. ▪ Stem bifurcates at a height of approximately 2m. ▪ Dense ivy cover to upper crown.	▪ Ensure protection of RPA throughout development using Temporary Protective Fencing to form a CEZ. ▪ Construct proposed parking areas, where within RPA, using 'no dig' methods and materials in accordance with BS5837: 2012.	20+	B1	383	11.04
T3	Common Walnut	12	360	N E S W	3.5 5 5 2.5	4-S 2	SM	G	▪ Stone rubble piled round base. ▪ Moderate stem lean east. ▪ Evident bark carving vandalism up lower stem to a height of 1.5m. ▪ Multi-stemmed from a height of approximately 4m. ▪ Biased canopy east.	▪ Remove tree in order to construct development as proposed.	10+	C1	59	4.32
T4	Common Ash	20	380	N E S W	3 5 3 3	10-S 7	EM	G	▪ Located approximately 0.5m from boundary fence. ▪ Significantly high canopy due to neighbouring suppression; subsequent high stem to canopy ratio.	▪ Retain tree in context of proposed development. ▪ Construct proposed parking areas, where within RPA, using 'no dig' methods and materials in accordance with BS5837: 2012.	20+	B1	65	4.56
T5	Goat Willow	8	260	N E S W	3 4 3 3	2-S 2	SM	G	▪ Slight stem lean north. ▪ Stem bifurcates at a height of approximately 2m. ▪ Slightly biased canopy east.	▪ Remove tree in order to construct development as proposed.	10+	C1	31	3.12

Headings and Abbreviations:

No. Allocated sequential reference number - Tree ('T'), Group ('G'), Woodland ('W') or Hedge ('H') reference number - refer to plan and to numbered tags where applicable
Species: Common name
Height: In metres, to nearest half metre – where possible approximately 80% are measured using an electronic clinometer and the remainder estimated against the measured trees. In the case of Groups and Woodlands the measurement listed is that of the highest tree
Stem Diam.: Stem diameter in millimetres, to nearest 10mm - measured and calculated as per Annex C of BS5837:2012. MS = multi-stemmed, TS = twin-stemmed
Branch Spread: Crown radius measured (or estimated where considered appropriate) from the four cardinal points (north, east, south and west) to give an accurate visual representation of the crown
Branch & Canopy Clearances: Existing height above ground level, in metres, of first significant branch and direction of growth (e.g. 2.5-N) and of canopy at lowest point – to inform on crown to height ratio, potential for shading, etc.
Life Stage: Estimated age class - Y = young, SM = semi-mature, EM = early-mature, M = mature, PM = post-mature
PC: Physiological Condition - a measure of the tree'(s)' overall vitality, i.e. D = Dead, MD = Moribund, P = Poor, M = Moderate, G = Good
General Observations and Comments: Comments relating to the tree'(s)' overall condition and any other pertinent factors including structural defects, current and potential direct structural damage, physiological decline, poor form, etc.
Management Recommendations: Either Preliminary or In Consideration of the Proposal - In the case of Arboricultural Constraints Surveys the recommended management works only take exiting site and tree circumstances and conditions into account and not proposed developments. Arboricultural Impact Assessment and Method Statement related Surveys take the proposed development into consideration with recommendations made accordingly. More than one option may be given if considered appropriate
ERC: Estimated Remaining Contribution - in years as per BS5837:2012 (i.e. <10, 10+, 20+, 40+)
Cat. Grade: Category Grading - tree retention value listed as U, A, B or C - in accordance with BS5837:2012 Table 1
RPA m²: Root Protection Area in m² - calculated area around the tree that must be appropriately protected throughout the development process in order avoid root damage
RPA Radius (m): Root Protection Area Radius - in metres measured from the centre of the stem to the line of tree protection
 # (Estimated Dimensions): Where trees are located off-site, or are inaccessible for any other reason, and accurate measurements or other information cannot be taken then the information provided is estimated and is duly suffixed with a "#" symbol

TREE SURVEY SCHEDULE FOR ARBORICULTURAL IMPACT APPRAISAL			
Site:	Land off Wakefield Road, Pontefract, West Yorkshire, WF8 4HW	**Surveyors:**	Ryan Gledhill FdSc MArborA & Joseph Lambert FdSc MArborA
Clients:	Mr Duffy, Mr Duffy & Mr Davies	**Survey & Review Dates:**	1 & 5 November 2018 & 22 May 2019
		Job Ref:	BTC1666

No.	Species	Height	Stem Diam.	Branch Spread		Branch & Canopy Clearances	Life Stage	PC	General Observations and Comments	Management Recommendations	ERC	Cat. Grade	RPA (m²)	RPA Radius (m)
T6	Weeping Ash	8	650#	N E S W	2.5 5 4 1	N/A 0	M	M	▪ Unable to access due to dense bramble ground cover. ▪ Dense ivy cover to upper crown. ▪ Moderate stem lean and associated biased canopy east. ▪ Signs suggesting tree was previously topped to a height of approximately 6m; unable to confirm as assessment was undertaken from substantial distance from tree.	▪ Remove tree in order to construct development as proposed.	10+	C1	191	7.8
T7	Monkey Puzzle	17	520#	N E S W	4 4 4 4	2-S 1	M	G	▪ Unable to access due to dense bramble ground cover. ▪ No significant visible defects.	▪ Remove tree in order to construct development as proposed.	20+	B1	122	6.24
T8	Sycamore	19	910	N E S W	5 5 3.5 8	5-W 5	M	G	▪ Located on steep slope. ▪ Ivy evidently previously severed and since died back leaving a moderately dense cover of ivy stems. ▪ Bifurcates at a height of approximately 6m.	▪ Remove tree in order to construct development as proposed.	20+	B1	375	10.92
T9	Common Lime	17	560	N E S W	4 4 4 5.5	2.5-W 4	M	G	▪ Located atop steep slope. ▪ Dense ivy cover to upper crown, inhibiting clear visual inspection. ▪ Biased canopy west. ▪ Branches protruding from ivy cover exhibit a significant reduction in vitality.	▪ Sever ivy around entire circumference of main stem. ▪ Retain tree in context of proposed development. ▪ Ensure protection of RPA throughout development using Temporary Protective Fencing to form a CEZ.	10+	C1	142	6.72
T10	Sycamore	6	380	N E S W	1 1 1 1	-	SM	D	▪ Tree is evidently dead.	▪ Remove tree.	<10	U	65	4.56
T11	Sycamore	8	350	N E S W	1 1 1 1	-	SM	D	▪ Tree is evidently dead.	▪ Remove tree.	<10	U	55	4.2
T12	Sycamore	22	840	N E S W	5 5 5 5	6-N 7	M	G	▪ Partially occluded basal cavity to approximately 100mm x 0.5m. ▪ Dense ivy cover to upper crown, inhibiting clear visual inspection	▪ Remove tree in order to construct development as proposed.	20+	B1	319	10.08
T13	Sycamore	17	640	N E S W	5 5 5 5	6-W 6	M	G	▪ Slight stem lean north. ▪ Dense ivy cover to upper crown, inhibiting clear visual inspection. ▪ Appears multi-stemmed from a height of approximately 6m but unable to confirm due to ivy cover.	▪ Remove tree in order to construct development as proposed.	20+	B1	185	7.68

TREE SURVEY SCHEDULE FOR ARBORICULTURAL IMPACT APPRAISAL			
Site:	Land off Wakefield Road, Pontefract, West Yorkshire, WF8 4HW	**Survey & Review Dates:**	1 & 5 November 2018 & 22 May 2019
Clients:	Mr Duffy, Mr Duffy & Mr Davies	**Job Ref:**	BTC1666

No.	Species	Height	Stem Diam.	Branch Spread		Branch & Canopy Clearances	Life Stage	PC	General Observations and Comments	Management Recommendations	ERC	Cat. Grade	RPA (m²)	RPA Radius (m)
T14	Sycamore	20	660	N E S W	4 2.5 2.5 2.5	6-S 5	M	P	▪ Dense ivy cover to upper crown, inhibiting clear visual inspection. ▪ Stem trifurcates at a height of approximately 5m. ▪ Exhibiting poor canopy vigour and a significant reduction in vitality.	▪ Remove tree in order to construct development as proposed.	10+	C1	197	7.92
T15	Sycamore	17	600	N E S W	5 5 5 5	6-W 4	M	G	▪ Located in close proximity to adjacent garage. ▪ Slight stem lean south to a height of approximately 2m where it quickly corrects. ▪ Stem bifurcates at a height of approximately 8m.	▪ Remove tree in order to construct development as proposed.	20+	B1	163	7.2
T16	Common Ash	10	1x250 1x170 (ts)	N E S W	4 4 4 4	2-N 2	Y	M	▪ Growing out of a retaining concrete wall, evidently causing significant structural displacement. ▪ Stem bifurcates at base. ▪ Limited future growth potential.	▪ Inform tree owner of projected displacement to wall and subsequent need to remove tree.	<10	U	28	3
T17	Sycamore	16.5	490	N E S W	1 2.5 4.5 2	4-S 4	EM	G	▪ Moderate stem lean south. ▪ Severe basal decay indicative to a height of approximately 1.5m, predominantly concentrated to the tensile north stem side. ▪ High risk of full stem failure anon.	▪ Remove tree due to limited projected safe life expectancy.	<10	U	109	5.88
T18	Sycamore	16	2x400 1x250 (ts)	N E S W	5 5 5 5	2-S 5	EM	G	▪ Stem trifurcates at base. ▪ Growing in very close proximity to boundary wall and, although not in contact at time of survey, projected to rub during stem oscillation. ▪ Dense ivy cover to upper crown. ▪ West primary leader has a significant kink west at a height of 3.5m, increased risk of shear failure as energy accumulated from mass damping cannot be dissipated down the stem into the roots, instead it is trapped at the point of the stem kink and subsequently exerts substantial stresses on this area.	▪ Retain tree in context of proposed development. ▪ Ensure protection of RPA throughout development using Temporary Protective Fencing to form a CEZ.	10+	C1	173	7.42
T19	Sycamore	17	640	N E S W	5.5 5 5 4.5	3-S 3	M	G	▪ Stem kinks south at a height of 2.5m but corrects after a substantial 3m curvature.	▪ Retain tree in context of proposed development. ▪ Ensure protection of RPA throughout development using Temporary Protective Fencing to form a CEZ.	20+	B1	185	7.68

No.	Species	Height	Stem Diam.	Branch Spread		Branch & Canopy Clearances	Life Stage	PC	General Observations and Comments	Management Recommendations	ERC	Cat. Grade	RPA (m²)	RPA Radius (m)
T20	Common Ash	18	470	N E S W	3 3 3 3	12-S 15	M	P	▪ Moderately severe stem lean south. ▪ Dense ivy cover from base to upper crown, inhibiting clear visual inspection. ▪ Severe bark necrosis throughout stem, visible to a height of approximately 6m. ▪ Subsequent to bark necrosis, majority of visible stem has lost its bark which has exposed frequent deformations of wood bulging around significant depressions throughout length; projected to be resultant of *Pseudomonas savastanoi* pv. *fraxini* (bacterial canker of Ash). ▪ High stem to canopy ratio due to suppression and ivy cover. ▪ Increased risk of full stem failure.	▪ Remove tree due to limited projected safe life expectancy.	<10	U	100	5.64
T21	Sycamore	5	550	N E S W	1 1 18 1	-	M	D	▪ Evidently succumbed to full root plate failure. ▪ Now laying south, approximately 2.5m over footpath.	▪ Remove tree due to limited projected safe life expectancy.	<10	U	137	6.6
T22	Common Beech	18	520	N E S W	4 4 4 4	4-E 3	M	G	▪ Slender form and slightly attenuated crown due to neighbouring close spaced trees.	▪ Retain tree in context of proposed development. ▪ Ensure protection of RPA throughout development using Temporary Protective Fencing to form a CEZ.	20+	B1	122	6.24
T23	Common Ash	16	630	N E S W	4 4 6 4	3.5-W 3	M	M	▪ Dense ivy cover to upper crown, inhibiting clear visual inspection. ▪ Frequent instances of epicormic shoots along branches and a significant reduction in vitality; indicative of a moderate stage of progressive decline due to *Hymenoscyphus fraxineus* (Ash Dieback Disease).	▪ Located outside blue line boundary and therefore not projected to be impacted by proposed development (See TIP).	10+	C1	180	7.56
T24	Sycamore	12	260	N E S W	5 4 3 4	1-W 1	SM	G	▪ Moderate stem lean north. ▪ Located approximately 2m from south retaining wall. ▪ Frequent instances of bark damage throughout crown, indicative of animal damage caused by squirrels.	▪ Located outside blue line boundary and therefore not projected to be impacted by proposed development (See TIP).	10+	C1	31	3.12
T25	Sycamore	8	1x220 1x180 (ts)	N E S W	5 3 1 4	3-N 3	Y	G	▪ Stem bifurcates at base. ▪ Moderate stem lean north and associated biased canopy due to suppression from close spaced adjacent group.	▪ Located outside blue line boundary and therefore not projected to be impacted by proposed development (See TIP).	10+	C2	37	3.41

No.	Species	Height	Stem Diam.	Branch Spread		Branch & Canopy Clearances	Life Stage	PC	General Observations and Comments	Management Recommendations	ERC	Cat. Grade	RPA (m²)	RPA Radius (m)
T26	Sycamore	15	520	N E S W	5 5 5 5	3.5-S 3	EM	G	▪ Stem bifurcates at a height of approximately 4m. ▪ Union evidently included and exhibiting early stages of failure progression, exhibited by evident splitting of lateral branch bark ridge. ▪ Projected substantial failure within 10 years.	▪ Recommend tree owner remove tree due to limited projected safe life expectancy retaining standing stem at approximately 4m for habitat.	<10	U	122	6.24
T27	Wild Cherry	13	1x450 1x290 1x200 1x140 (ms)	N E S W	4 4 4 4	2.5-W 4	M	M	▪ Multi-stemmed from base. ▪ Dense ivy cover from base to upper crown, inhibiting a clear visual inspection. ▪ Significantly small photosynthetic area able to protrude from ivy foliage.	▪ Located outside blue line boundary and therefore not projected to be impacted by proposed development (See TIP).	10+	C1	157	7.06
G1	2no. Western Red Cedar	≤ 16	≤ 360	N E S W	≤ 3 ≤ 3 ≤ 3 ≤ 3	6-S ≥ 2	SM	M	▪ Close spaced group. ▪ Light to moderate ivy cover to upper crown. ▪ Frequent instances of browning foliage and signs of a moderate reduction in vitality.	▪ Remove group in order to construct development as proposed.	10+	C2	≤ 59	≤ 4.32
G2	2no. Sycamore	≤ 11	≤ 250	N E S W	≤ 3 ≤ 3 ≤ 3 ≤ 3	4-E ≥ 4	SM	G	▪ Moderate spaced group. ▪ Growing out of derelict building brickwork, evidently causing significant structural displacement. ▪ East tree has severely enveloped adjacent Heras fencing to a height of approximately 1m. ▪ Limited future growth potential.	▪ Remove group in order to construct development as proposed.	<10	U	≤ 28	≤ 3
G3	2no. Wild Cherry	≤ 10	≤ 580	N E S W	≤ 3 ≤ 5 ≤ 4 ≤ 5	2-S ≥ 4	EM	M	▪ Close spaced group. located on narrow raised landscaped border area with site rubble round stem bases. ▪ Dense ivy cover to upper crown. ▪ Frequent instances of deadwood to a diameter of approximately 120mm. ▪ Signs of a moderate reduction in vitality.	▪ Remove group in order to construct development as proposed.	10+	C2	≤ 152	≤ 6.96
G4	Sycamore, Wild Cherry, Ash, Oak	≤ 12	≤ 190	N E S W	≤ 3 ≤ 3 ≤ 3 ≤ 3	N/A ≥ 0	Y	M-G	▪ Close spaced group of young self-set trees. ▪ Predominantly multi-stemmed at base; indicative of previous clearance management undertaken and current group form is resultant of the subsequent regrowth.	▪ Remove group in order to construct development as proposed.	10+	C2	≤ 16	≤ 2.28
G5	Beech, Sycamore, Hawthorn, Holly	≤ 16	≤ 660#	N E S W	≤ 4 ≤ 4 ≤ 4 ≤ 4	2-W ≥ 2	Y-M	M-G	▪ Close spaced linear group. ▪ Group traverses fence line; unclear ownership. ▪ Majority of group located atop narrow raised landscaped border area running adjacent to previous site access track.	▪ Ensure protection of RPA throughout development using Temporary Protective Fencing to form a CEZ.	10+	C2	≤ 197	≤ 7.92

No.	Species	Height	Stem Diam.	Branch Spread		Branch & Canopy Clearances	Life Stage	PC	General Observations and Comments	Management Recommendations	ERC	Cat. Grade	RPA (m²)	RPA Radius (m)
G6	3no. Sycamore	≤ 17	≤ 550#	N E S W	≤ 4 ≤ 4 ≤ 4 ≤ 4	4-S ≥ 2	EM	G	▪ Located on neighbouring land behind partially retaining boundary wall; Root Protection Area offset accordingly (see TCP). ▪ Moderate spaced group. ▪ Dense ivy cover to upper crowns of north and central trees.	▪ Ensure protection of RPA throughout development using Temporary Protective Fencing to form a CEZ. ▪ Construct proposed access road, where within RPA, using 'no dig' methods and materials in accordance with BS5837: 2012.	10+	C2	≤ 137	≤ 6.6
G7	1no. Goat Willow, 1no. Sycamore, 1no. Ash	≤ 14	≤ 320	N E S W	≤ 4 ≤ 4 ≤ 4 ≤ 4	1-S ≥ 2.5	SM	G	▪ Moderate spaced group. ▪ Growing out of partially collapsed brick boundary around and mine shaft. ▪ Limited future growth potential.	▪ Remove group due to limited potential future growth.	<10	U	≤ 46	≤ 3.84
G8	Sycamore, Wild Cherry, Holly, Hazel, Wych Elm, Common Whitebeam, Mitchell's Whitebeam	≤ 15	≤ 330	N E S W	≤ 4 ≤ 4 ≤ 4 ≤ 4	1-E ≥ 0	Y-SM	M-G	▪ Very close spaced group and subsequent significantly conflicting canopies. ▪ Frequent instances of debris and litter round stem bases. ▪ Unable to access full extents due to dense bramble ground cover.	▪ Remove northern section of group in order to construct development as proposed, to give 2m clearance to proposed new fence line to north ▪ Ensure protection of RPA of remainder of group throughout development using Temporary Protective Fencing to form a CEZ.	10+	C2	≤ 49	≤ 3.96
G9	6no. Sycamore, 1no. Beech	≤ 20	≤ 600	N E S W	≤ 5 ≤ 5 ≤ 5 ≤ 5	7-N ≥ 4	EM-M	P-M	▪ Frequent instances of basal bark damage throughout group. ▪ Beech tree exhibiting basal cavity to approximately 200mm x 4m. ▪ Bark necrosis up stems throughout group, where visible. ▪ Moderate to severe reductions in vitality. ▪ Limited projected life expectancy.	▪ Remove group due to limited projected safe life expectancy.	<10	U	≤ 163	≤ 7.2
G10	1no. Sycamore, 1no. Ash	≤ 20	≤ 650	N E S W	≤ 4.5 ≤ 6 ≤ 4 ≤ 4	6-E ≥ 5	M	M	▪ Close spaced group. ▪ Dense ivy cover to upper crown, inhibiting clear visual inspection. ▪ Sycamore has a basal cavity to approximately 200mm x 2.5m, but unable to see full extents. ▪ Canopies of both trees showing signs of a reduction in vitality.	▪ Remove group in order to construct development as proposed.	10+	C2	≤ 191	≤ 7.8

No.	Species	Height	Stem Diam.	Branch Spread		Branch & Canopy Clearances	Life Stage	PC	General Observations and Comments	Management Recommendations	ERC	Cat. Grade	RPA (m²)	RPA Radius (m)
G11	9no. Sycamore, 7no. Ash	≤ 20	≤ 580	N E S W	≤ 4 ≤ 4 ≤ 4 ≤ 4	4-S ≥ 4	EM	M-MD	▪ Close spaced group. ▪ A number of stems within this group are evidently located outside the redline ownership boundary. ▪ Located within heavily compacted vehicle access area, with hardstanding ground cover abutting stem bases. ▪ Frequent instances of severe stem damage and subsequent partially occluded cavities to approximately 400mm x 12m. ▪ Enveloping surrounding structures and debris. ▪ Three trees located to the east are located on a raised soft surface planting area which has evidently collapsed due to the structural displacement caused by incremental root growth. ▪ Significant to severe envelopment of surrounding debris and structures. ▪ Limited future growth potential and subsequent projected short remaining life expectancy.	▪ Remove trees in group that are within site in order to construct development as proposed. ▪ Ensure protection of RPAs of retained trees that are located on neighbouring land throughout development using Temporary Protective Fencing to form a CEZ.	<10	U	≤ 152	≤ 6.96
G12	2no. Sycamore	≤ 16	≤ 520	N E S W	≤ 6 ≤ 4 ≤ 4 ≤ 6.5	6-W ≥ 4	EM	M	▪ Close spaced group. ▪ Close proximity to adjacent garage. ▪ East tree evidently enveloping debris piled round stem base. ▪ West tree exhibits numerous instances of bark damage and partially occluded cavities to a diameter of approximately 300mm, to a height of 2m.	▪ Remove group in order to construct development as proposed.	10+	C2	≤ 122	≤ 6.24
G13	Sycamore, Ash, Elder	≤ 16	≤ 300	N E S W	≤ 3.5 ≤ 3.5 ≤ 3.5 ≤ 3.5	N/A ≥ 0	Y-SM	M-G	▪ Very close spaced group of self-set trees on soft surface area adjacent to hard standing site access. ▪ A number of stems within this group are evidently located outside the redline ownership boundary.	▪ Remove trees in group that are within site in order to construct development as proposed. ▪ Ensure protection of RPAs of retained trees that are located on neighbouring land throughout development using Temporary Protective Fencing to form a CEZ.	10+	C2	≤ 41	≤ 3.6

No.	Species	Height	Stem Diam.	Branch Spread		Branch & Canopy Clearances	Life Stage	PC	General Observations and Comments	Management Recommendations	ERC	Cat. Grade	RPA (m²)	RPA Radius (m)
G14	Ash, Sycamore, Whitebeam, Wild Cherry	≤ 18	≤ 620	N E S W	≤ 5 ≤ 4 ≤ 4 ≤ 5	1-N ≥ 2	Y-M	M-G	▪ Close spaced group. ▪ Group is partially located on sloped embankment adjacent to site access track. ▪ A substantial of stems within this group are evidently located outside the redline ownership boundary. ▪ South extents of group located atop an approximately 8-10m sheer drop, with evident primary, secondary and tertiary roots exposed down the cliff face. ▪ Debris and litter dumped throughout group. ▪ Dense ivy cover to upper crowns on majority of west group extents, inhibiting clear visual inspection. ▪ Frequent instances of bark damage and partially occluded cavities to a diameter of approximately 300mm where visible through ivy. ▪ Low quality of trees within group and potential for trees with exposed roots to fail	▪ Remove trees in group that are within site in order to construct development as proposed. ▪ Ensure protection of RPAs of retained trees that are located on neighbouring land throughout development using Temporary Protective Fencing to form a CEZ.	10+	C2	≤ 174	≤ 7.44
G15	Approx. 6no Sycamore, 1no. Wych Elm	≤ 18	≤ 630	N E S W	≤ 4 ≤ 5 ≤ 4 ≤ 4	4-E ≥ 1	SM-EM	M-G	▪ Moderate to close spaced group on steep embankment. ▪ Frequent instances of debris and litter piled around tree bases. ▪ Significantly lifted root architecture of trees, increasing in severity up the ascending embankment; sings indicative of possible unstable ground conditions.	▪ Remove group in order to construct development as proposed due to location on steep embankment and indicative unstable ground potentially leading to whole tree failures onto proposed development.	10+	C2	≤ 180	≤ 7.56
G16	2no. Sycamore	≤ 16	≤ 480	N E S W	≤ 4 ≤ 2 ≤ 4 ≤ 5	3.5-S ≥ 3	SM	P	▪ Fungal fruiting bodies of *Ganoderma australe* (white rot decay causing fungus) present on the stem base of the north tree. ▪ South tree has a partially occluded basal cavity to a diameter of approximately 400mm, exhibiting severe internal decay. ▪ Frequent instances of bark necrosis to a height of approximately 5m. ▪ Both tree exhibit signs of a significant reduction in vitality.	▪ Remove group due to limited projected safe life expectancy.	<10	U	≤ 104	≤ 5.76
G17	3no. Sycamore, 1no. Hawthorn	≤ 14	≤ 370	N E S W	≤ 3 ≤ 3 ≤ 3 ≤ 3	N/A ≥ 0	SM	G	▪ Moderate to close spaced group. ▪ Dense ivy cover to upper crown on west tree. ▪ Significant stem leans and kinking throughout group; projected to be due to groups location and subsequent exposure to wind during young growth.	▪ Retain group in context of proposed development. ▪ Ensure protection of RPA throughout development using Temporary Protective Fencing to form a CEZ.	10+	C2	≤ 62	≤ 4.44

No.	Species	Height	Stem Diam.	Branch Spread		Branch & Canopy Clearances	Life Stage	PC	General Observations and Comments	Management Recommendations	ERC	Cat. Grade	RPA (m²)	RPA Radius (m)
G18	Sycamore, Ash, Wych Elm	≤ 18	≤ 570	N E S W	≤ 4 ≤ 4 ≤ 4 ≤ 4	5-E ≥ 4	SM-EM	P-G	▪ Located atop and on steep sloped embankment. ▪ Majority of group have dense ivy cover to upper crown, inhibiting clear visual inspection. ▪ Frequent instances of bark damage and partially occluded cavities to approximately 400mm x 6m. ▪ Majority of group exhibiting signs of at least a moderate reduction in vitality.	▪ Retain group in context of proposed development. ▪ Ensure protection of RPA throughout development using Temporary Protective Fencing to form a CEZ.	10+	C2	≤ 147	≤ 6.84
G19	2no. Ash, 2no. Beech	≤ 16	≤ 1x400 1x350 1x300 (ms)	N E S W	≤ 2 ≤ 3 ≤ 5 ≤ 3	4-S ≥ 4	SM	G	▪ West beech tree bifurcates at base. ▪ East ash tree trifurcates at base. ▪ Biased canopies south from neighbouring suppression.	▪ Retain group in context of proposed development. ▪ Ensure protection of RPA throughout development using Temporary Protective Fencing to form a CEZ.	20+	B2	≤ 168	≤ 7.32
G20	3no. Sycamore	≤ 8	≤ 560	N E S W	≤ 4 ≤ 3 ≤ 3 ≤ 3	1.5-E ≥ 3	SM-EM	D	▪ All trees are evidently dead.	▪ Remove group.	<10	U	≤ 142	≤ 6.72
G21	Sycamore, Beech, Ash	≤ 20	≤ 610	N E S W	≤ 5 ≤ 5 ≤ 5 ≤ 5	5-S ≥ 10	SM-M	P-G	▪ Close spaced group. ▪ Dense ivy cover to upper crowns throughout group, inhibiting clear visual inspection. ▪ Frequent instances of basal bark damage, resulting in partially occluded cavities and barkless strips to approximately 500mm x 3m. ▪ Tall, slender forms due to close proximity and sheltering by adjacent trees. ▪ Numerous instances of significant damage to trees by several previously failed trees. ▪ Signs of a moderate reduction in vitality throughout group.	▪ Retain group in context of proposed development. ▪ Ensure protection of RPA throughout development using Temporary Protective Fencing to form a CEZ.	10+	C2	≤ 168	≤ 7.32
G22	Sycamore	≤ 14	≤ 300	N E S W	≤ 3 ≤ 3 ≤ 3 ≤ 3	2-S ≥ 3	Y-SM	G	▪ Close spaced self-set group. ▪ Group runs around periphery of an area densely covered in brambles. ▪ Group is predominantly young, with the more established trees located along the eastern extents.	▪ Located outside blue line boundary and therefore not projected to be impacted by proposed development (See TIP).	10+	C2	≤ 41	≤ 3.6
G23	3no. Goat Willow	≤ 13	≤ 240	N E S W	≤ 5 ≤ 4 ≤ 3 ≤ 4	2-N ≥ 2	SM	G	▪ Close spaced self-set group. ▪ Growing out of dense bramble understorey. ▪ Significantly conflicting canopies.	▪ Located outside blue line boundary and therefore not projected to be impacted by proposed development (See TIP).	10+	C2	≤ 26	≤ 2.88

TREE SURVEY SCHEDULE FOR ARBORICULTURAL IMPACT APPRAISAL			
Site:	Land off Wakefield Road, Pontefract, West Yorkshire, WF8 4HW	**Surveyors:**	Ryan Gledhill FdSc MArborA & Joseph Lambert FdSc MArborA
Clients:	Mr Duffy, Mr Duffy & Mr Davies	**Survey & Review Dates:**	1 & 5 November 2018 & 22 May 2019
		Job Ref:	BTC1666

No.	Species	Height	Stem Diam.	Branch Spread		Branch & Canopy Clearances	Life Stage	PC	General Observations and Comments	Management Recommendations	ERC	Cat. Grade	RPA (m²)	RPA Radius (m)
G24	2no. Sycamore	≤ 15	≤ 660	N E S W	≤ 7 ≤ 8 ≤ 3 ≤ 6	3-N ≥ 3	M	G	▪ Close spaced group. ▪ Dense ivy cover from base to upper crowns, inhibiting clear visual inspection. ▪ East tree bifurcates at a height of approximately 2m.	▪ Located outside blue line boundary and therefore not projected to be impacted by proposed development (See TIP).	20+	B2	≤ 197	≤ 7.92
G25	2no. Sycamore	≤ 17	≤ 830	N E S W	≤ 6 ≤ 6 ≤ 6 ≤ 4	4.5-N ≥ 4.5	M	G	▪ Loose spaced group. ▪ North tree exhibiting moderate instances of partially occluded and occluded cavities, to a diameter of approximately 150mm, on west stem side from historic branch failures, possibly due to close proximity to W1 and the subsequent branch shading. ▪ South tree has moderate ivy cover to upper crown; evidently severed at base but still retaining residual foliage cover.	▪ Located outside blue line boundary and therefore not projected to be impacted by proposed development (See TIP).	20+	B2	≤ 312	≤ 9.96
G26	1no. Copper Beech, 1no. Myrobalan Plum, 1no. Elder, 1no. Sycamore, 1no. Leyland Cypress	≤ 10	≤ 450#	N E S W	≤ 5 ≤ 5 ≤ 5 ≤ 5	N/A ≥ 0	Y-SM	G	▪ Very close spaced group. ▪ Moderately dense cherry laurel understorey. ▪ Unable to view from within site and subsequently assessed over roadside wall. ▪ Group's north canopy spread has evidently been pruned back off road.	▪ Remove group in order to construct development as proposed.	10+	C2	≤ 92	≤ 5.4
W1	Sycamore, Ash	≤ 21	≤ 670	N E S W	≤ 6 ≤ 6 ≤ 6 ≤ 6	3-E ≥ 4	SM-M	G	▪ Partly located outside blue line ownership boundary. ▪ Close spaced woodland group of little biodiversity. ▪ Tall, slender forms due to close proximity and sheltering by adjacent trees along north extents.	▪ Retain woodland where within blue line boundary in context of proposed development. ▪ Ensure protection of RPA of entire woodland throughout development using Temporary Protective Fencing to form a CEZ.	20+	B2	≤ 203	≤ 8.04

BS5837:2012 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 BS5837:2012 paragraph 4.5.7.*			Red
	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)	Green
Category B Those of moderate quality and value: those in such a condition as to make a significant contribution. A minimum of 20 years is suggested.	Trees that might be included in the high category, but are downgraded because of impaired condition. Examples include the presence of remediable defects including unsympathetic past management and minor storm damage	Trees present in numbers, usually as groups or woodlands, so they form distinct landscape features which attract a higher collective rating than they might as individuals. But which are not, individually, essential components of formal or semi-formal arboricultural features. For example, trees of moderate quality within an avenue that includes better, A category specimens. Or trees which are internal to the site, therefore individually having little visual impact on the wider locality	Trees with clearly identifiable conservation or other cultural benefits	Blue
Category C Those trees of low quality and value: currently in adequate condition to remain until new planting could be established - a minimum of 10 years is suggested - or young trees with a stem diameter below 150 mm	Trees not qualifying in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit	Trees with very limited conservation or other cultural benefits	Grey
	Note – Whilst C category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150mm should be considered for relocation			

- TEMPORARY PROTECTIVE FENCING SPECIFICATION -

Construction Exclusion Zones (CEZs), enclosed by **Temporary Protective Fencing**, as detailed below and to be agreed with the Local Planning Authority (LPA), shall:

1. be retained in place throughout the development process, as specified in the 'Temporary Protective Fencing Construction' section below and detailed in BS5837:2012 Figure 2 (overleaf);
2. be sited in the area(s) defined by the Root Protection Areas or, if applicable, the Construction Exclusion Zones, as detailed on the associated Tree Plan;
3. be erected prior to any construction, demolition or excavation works and remain in place for the duration of the project;
4. preclude any delivery of site accommodation and/or materials and/or plant machinery;
5. preclude all construction related activity, with the sole exception of specified arboricultural works and any other works to be carried out under supervision that have been agreed by all parties; and
6. preclude the storage of all development related materials and substances including fuels, oils, additives, cement and/or any other deleterious substance.

Any incursion into CEZs must be by prior arrangement, following consultation with the LPA.

Temporary Protective Fencing Construction

1. Temporary protective fencing panels shall be weldmesh "Heras" panels of at least 2.0 metres in height.
2. The panels shall butt together and be securely fixed to a scaffold framework, as per 3 to 5 below.
3. The scaffold framework shall comprise of upright poles of at least 3.0 metres in length driven no less than 0.6 metres into the ground at maximum 3.0 metre centres with horizontal and diagonal poles fixed to the uprights, as per 4 to 5 below.
4. The two horizontal rail poles shall be attached to the uprights at heights of 0.6 and 1.8 metres with 3 no. clamps to each joint.
5. The diagonal scaffold pole struts be clamped to the top rail of the scaffold framework at a 45º angle and extend back into the CEZ and clamped to a 0.7 metre length of scaffold tube that shall be driven no less than 0.5m into the ground.
6. No fixing shall be made to any tree and all possible precautions shall be taken to prevent damage to tree roots when locating posts.
7. A 600mm x 300mm warning sign reading "TREE PROTECTION AREA KEEP OUT" (see Figure 1, below) shall be fixed to every 10.0 metre length of protective fencing.
8. On completion and prior to any demolition or construction works, site preparation, excavation or delivery of plant and materials, the LPA shall inspect and approve the Temporary Protective Fencing.

Figure 1: CEZ Warning Sign

– TREE PROTECTION AREA –
KEEP OUT!

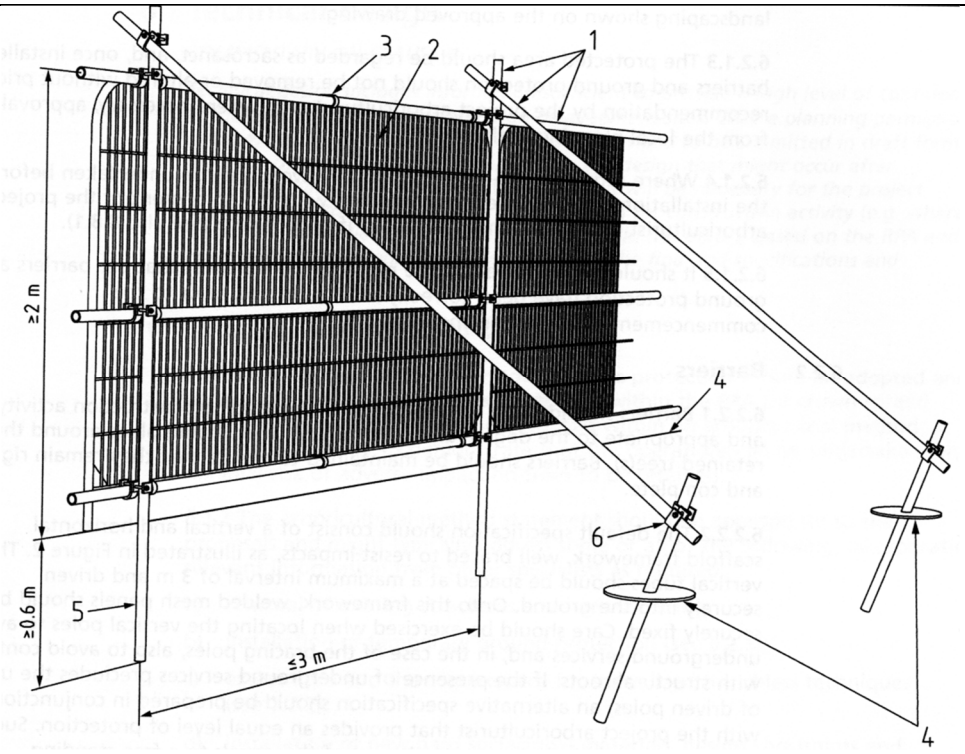
(TOWN & COUNTRY PLANNING ACT 1990)
THE TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR SUBJECTS OF A 'TREE PRESERVATION ORDER', THE CONTRAVENTION OF WHICH MAY LEAD TO CRIMINAL PROSECUTION

THE FOLLOWING MUST BE OBSERVED BY ALL PERSONNEL:

- **THE PROTECTIVE FENCING MUST NOT BE MOVED**
- **NO PERSON SHALL ENTER THE CONSTRUCTION EXCLUSION ZONE**
- **NO MACHINE, PLANT OR VEHICLES SHALL ENTER THE EXCLUSION ZONE**
- **NO MATERIALS SHALL BE STORED IN THE EXCLUSION ZONE**
- **NO SPOIL SHALL BE DEPOSITED IN THE EXCLUSION ZONE**
- **NO EXCAVATION SHALL OCCUR IN THE EXCLUSION ZONE**
- **NO FIRES SHALL BE LIT IN THE EXCLUSION ZONE**

ANY INCURSION INTO THE EXCLUSION ZONE MUST BE WITH THE WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY

Figure 2: BS5837:2012 Default specification for protective barrier



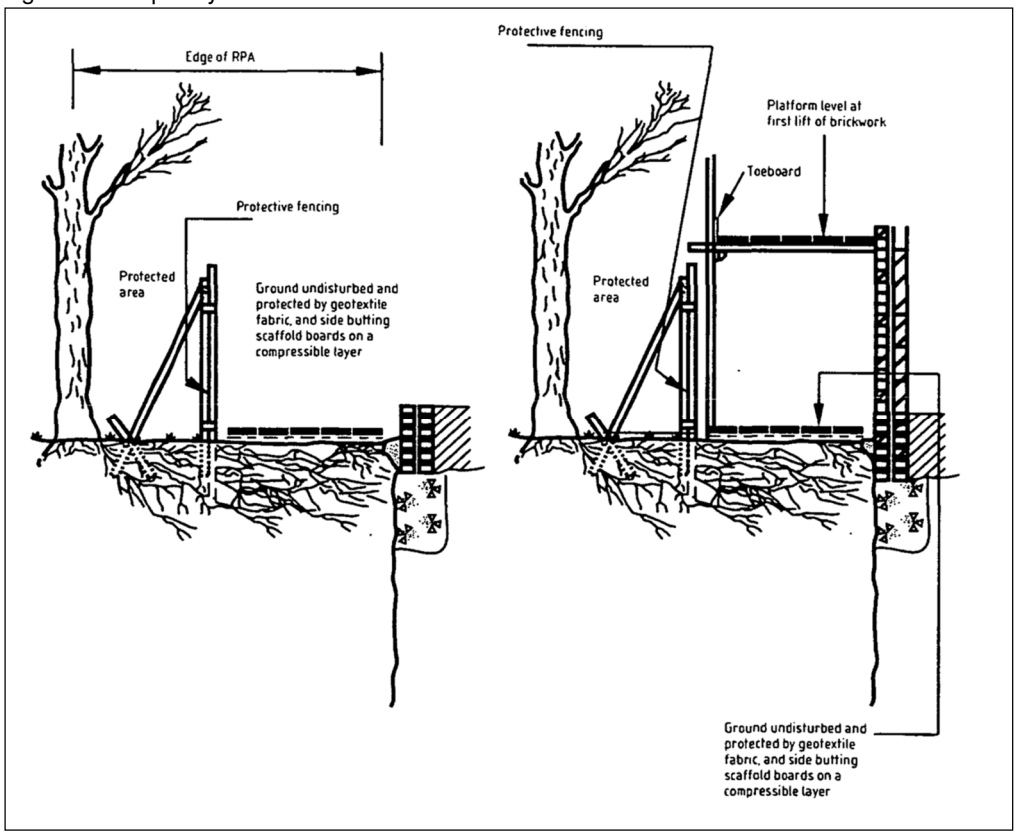
Key

1. Standard scaffold poles.
2. Heavy gauge 2 metre tall galvanised tube and welded mesh infill panels
3. Panels secured to uprights and cross members with wires ties
4. Ground level
5. Uprights driven into the ground until secure (minimum depth 0.6 metres)
6. Standard scaffold clamps

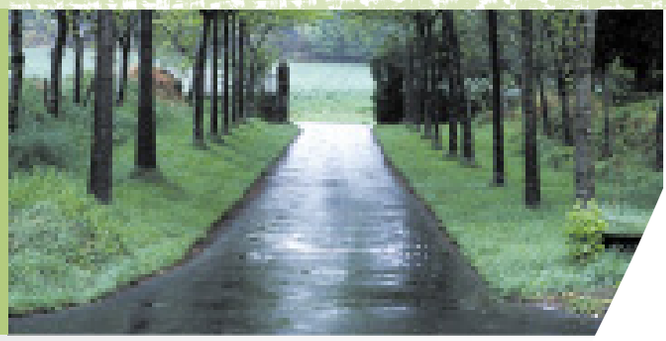
Temporary Ground Protection

1. Any necessary Temporary Ground Protection areas shall conform to Figure 3, below, unless otherwise agreed with the LPA.
2. The Ground Protection Area shall be left undisturbed and covered by a semi-permeable geotextile membrane which shall, in turn, be covered by a compressible layer consisting of a material such as woodchip.
3. Side-butting scaffold boards shall then be fitted to cover the Ground Protection Area.
4. On completion of installation, and prior to any demolition or construction works, site preparation, excavation or delivery of plant and materials, the Consulting Arboriculturist or the LPA Tree Officer, as agreed, shall inspect the Temporary Ground Protection.
5. The Temporary Ground Protection shall remain in place until completion of the project and only removed following receipt of written permission from the LPA.

Figure 3: Temporary Ground Protection – Recommended Construction



CellWeb TRP®



Tree Root Protection Guaranteed

Geosynthetics

www.geosyn.co.uk

CellWeb TRP® System

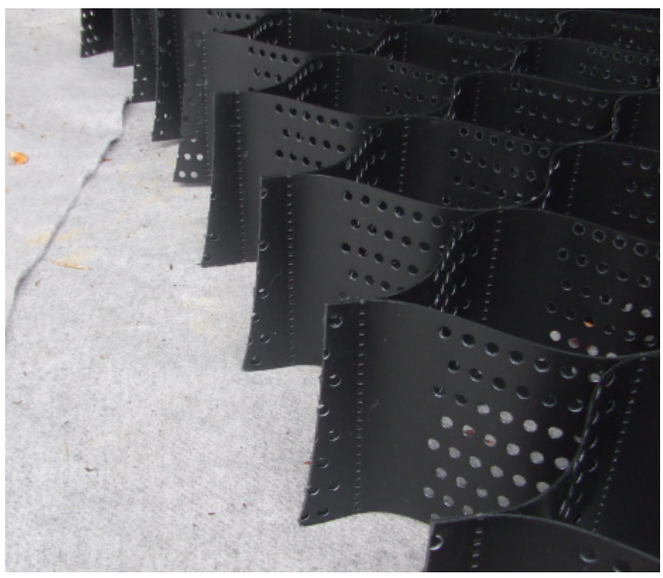
Tree Root Protection System



The Consquences Of Tree Root Damage During Construction

It is an offence to cut down, lop, uproot, top, wilfully damage or destroy a protected tree without authorisation. Trees can be protected under the Town and Country Planning Act 1990 and the Town and Country Planning (Trees) Regulations 1999. Trees are protected when they are the subject of Tree Preservation Orders (T.P.O) or within Conservation Areas, subject to certain exemptions. Retention and protection of trees on development sites is also secured through the use of planning conditions.

On a construction site all trees with a Tree Preservation Orders need to be managed in accordance with BS5837 2012 (Trees in relation to construction); failure to comply with these orders can be a costly affair as many parties have discovered.

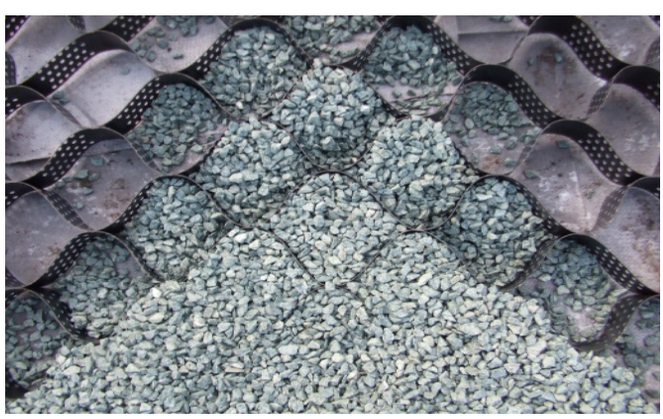


Fishponds, Ketton

There are two offences which apply equally to trees protected by Tree Preservation Orders and those within Conservation Areas:

- Firstly, anyone who cuts down, uproots or wilfully destroys a tree, or who lops, tops or wilfully damages it in a way that is likely to destroy it is liable, if convicted in the Magistrates Court, to pay a fine of up to £20,000. If the person is committed for trial in the Crown Court, they are liable on conviction to an unlimited fine. The Courts have held that it is not necessary for a tree to be obliterated for it to be "destroyed" for the purposes of the legislation. It is sufficient for the tree to have been rendered useless as an amenity.
- Secondly, anyone who carries out works on a tree that are not likely to destroy it is liable, if convicted in the Magistrates Court, to a fine of up to £2,500. In addition to directly carrying out unauthorised works on protected trees, it is an offence to cause or permit such works.

Developers and building contractors are often completely unaware that 'compaction of soils within the Root Protection Area (RPA)' constitutes wilful damage to the tree. When vehicular or pedestrian access within the RPA is necessary, either for the construction operation or final site access, the effects of this activity must be addressed and the ground must be protected. When tracked or wheeled traffic movements are involved, the ground protection system should be designed by an engineer and take into account the loading involved.



Shelton Road, Shewsbury

The Solution:

Geosynthetics CellWeb TRP® System



The Solution According to BS 5837:2012

"Appropriate sub-base options for new hard surfacing include three-dimensional cellular confinement systems ....."

(BS 5837 2012 section 7.4.2 Note 1)

The CellWeb TRP® Solution

CellWeb TRP® is the market leader in the United Kingdom and Ireland for tree root protection. CellWeb TRP® cellular confinement system protects tree roots from the damaging effects of compaction and desiccation, while creating a stable, load bearing surface for vehicular traffic. CellWeb TRP® complies with BS 5837:2012 and APN 12. It provides a no-dig solution, is tried and tested having been used successfully since 1998. It is the only tree root protection system which has been independently tested and it is the only tree root protection system which is guaranteed for 20 years. See page 6 for the full terms and conditions of the guarantee.

Fishponds, Ketton

Field Trials

Geosynthetics Limited are the only company in the UK and Ireland to carry out live, completely independent field tests on the performance of a 3 dimensional cellular confinement system when used in a no-dig tree root protection system application. The results prove that CellWeb TRP® significantly reduces the compaction of sub-soils within the root growth limiting parameters established by K D Coder, 'Soil damage from compaction'. University of Georgia. July 2000. A copy of the report is available upon request.

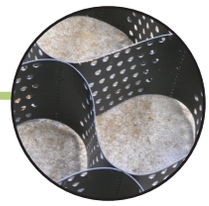
CellWeb TRP® Product Guarantee

Geosynthetics Limited prides itself on a providing a reliable, consistent service; including technical advice, on site support and installation guidance. Geosynthetics Limited provides a 20 year guarantee for the CellWeb TRP® tree root protection system. This guarantee gives the client, the tree officer and arboricultural consultant the confidence that the designed system will perform as intended without damaging the health of the tree.

See page 6 for the full terms and conditions of the guarantee.

CellWeb TRP® System

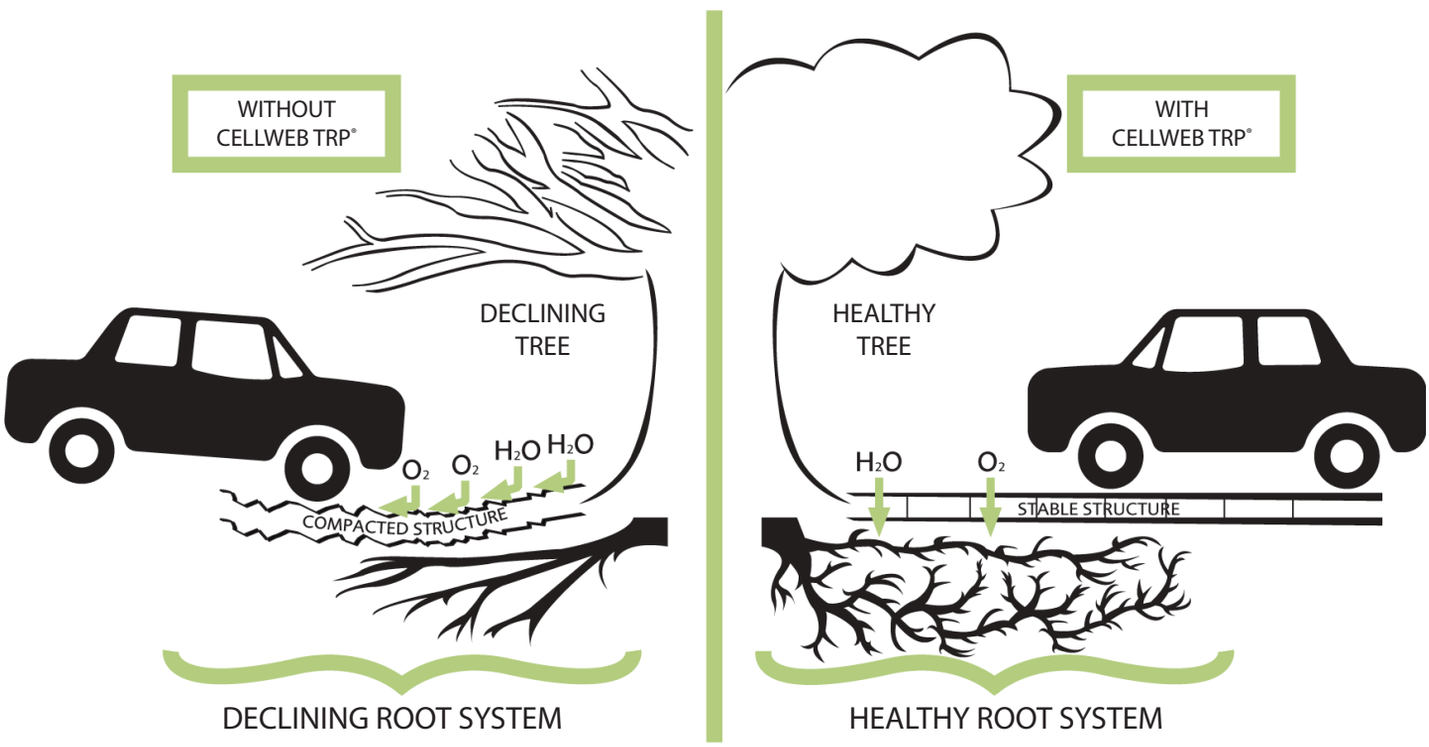
How the System Works



How CellWeb TRP® Works

CellWeb TRP® is a cellular confinement system that confines aggregate materials and makes them stronger, thus increasing the bearing capacity of the sub base materials. Research shows that CellWeb TRP® acts as a stiff raft to distribute wheel loads and reduce their magnitude at the base of the construction, thus maintaining the soil bulk density at levels that are suitable for tree root growth.

CellWeb TRP® is used around the world to provide cost effective hard surface construction over tree roots and is the system of choice for Tree Officers and Arboriculturists. For more information on this subject see CellWeb TRP® Fact Sheet No 1.



Water and Oxygen Transfer Through the CellWeb TRP® System

The CellWeb TRP® system is constructed using open aggregate infill and CellWeb TRP® has perforated cell walls. The pore spaces between the aggregate particles are greater than 0.1mm in diameter. This open structure is far more permeable than typical soils and allows the free movement of water and oxygen so that supplies to trees are maintained.

For more information on this subject see CellWeb TRP® Fact Sheet No 2.

CellWeb TRP® and Pollution

How CellWeb TRP® Deals With Catastrophic Oil Spills

How CellWeb TRP® Deals With Pollution

Where possible a permeable pavement system should always be constructed above the CellWeb TRP® system. The effective removal of pollution from runoff by permeable pavements is well known. Worldwide research has shown runoff that has passed through permeable pavements has low concentrations of pollutants.

Small spills of oil will be dealt with within the joints between the paving blocks and in the aggregate used within the system. However, large catastrophic spills are a different matter.

For more information on this subject see CellWeb TRP® Fact Sheet No 3.

Castle Gardens

Ambleside Lake District

Harcourt Aboretum

The Treetex® geotextile used in the CellWeb TRP® system has two functions. Treetex® separates the sub base aggregates from the soil beneath and it traps oil within its structure and allows it to degrade aerobically within the pavement construction. The structure, thickness and weight of Treetex® creates the perfect environment for this to happen. Most importantly tests prove that Treetex® will absorb 1.7 litres of oil per square metre, this is 4 times more effective than standard geotextiles.

Treetex® is an intrinsic part of the CellWeb TRP® system; and must be in conjunction with the CellWeb TRP® in order to guarantee the success of the system.

Please see page 6 for full details of the guarantee.

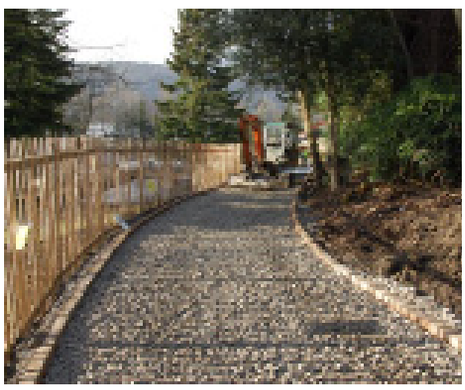
Geosynthetics CellWeb TRP® System:

A Proven No Dig Solution

Advice, Design and Product Selection

Geosynthetics Limited has been supplying the CellWeb TRP® system since 1998 and has vast experience in its application. No two contracts are the same and we understand the factors that need to be taken into account to specify the correct CellWeb TRP® product.

We provide a free consultation, design and advisory service to find the solution that is most cost effective and beneficial for your site. Our service includes product selection, engineering calculations, CAD drawings and full instructions to help you from project conception to completion.



Fallbarrow Park, Windermere: Prior to CellWeb TRP® Installation

Fallbarrow Park, Windermere: CellWeb TRP® Installation

Fallbarrow Park, Windermere: Completed CellWeb TRP® Installation

Final Surfacing

The benefits of the CellWeb TRP® system can only be maintained if a suitably porous final surface is selected. An ideal surfacing is the Golpla grass reinforcement and gravel retention system, a visually attractive surface that has the advantage of being fully porous. Alternatives include block paviors, porous asphalts and loose or bonded gravel.

Always Use CellWeb TRP®

The CellWeb TRP® system is the only research backed system of its kind in the UK with a 100% success rate. CellWeb TRP® has been specifically developed for the Tree Root Protection market. The system is supported by 15 years of data and thousands of installations making it the system of choice for the majority of Tree Officers and Arboriculturists in the UK.

CellWeb TRP® is uniquely identifiable. It is manufactured with a bright green panel on each side. When installed the green panels are laid adjacent, creating a green band across the construction.

Woodcock Hall, Yorkshire

Geosynthetics Limited

Fleming Road, Harrowbrook Industrial Estate
Hinckley, Leicestershire, LE10 3DU

Tel: 01455 617139 Fax: 01455 617140

Email: sales@geosyn.co.uk
Web: www.geosyn.co.uk

Please call **01455 617 139**

or email sales@geosyn.co.uk for more technical advice.

Visit our website www.geosyn.co.uk for further information.

Important: The original version of this plan was produced in colour, which is essential to the plan's interpretation and usability. As such, a monochrome copy should not be relied upon

KEY

T = Individual Tree
G = Group of Trees
W = Woodland

Please refer to associated Arboricultural Impact Assessment Report for specific details in respect of items below:

Tree Categorisations:

Those to be Considered for Retention:

Category 'A' Tree/Group/Woodland
Those of a High Quality with an Estimated Remaining Life Expectancy of at Least 40 Years

Category 'B' Tree/Group/Woodland
Those of a Moderate Quality with an Estimated Remaining Life Expectancy of at Least 20 Years

Category 'C' Tree/Group/Woodland
Those of Low Quality with an Estimated Remaining Life Expectancy of at Least 10 Years, or Young Trees

Those Considered Unsuitable for Retention:

Category 'U' Tree/Group/Woodland
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

Note: The stem location of trees T5 and T21, and the full extents of groups G3, G4, G5, G7, G8, G13, G14, G17, G21, G22 and G26, were not plotted on the topographical survey based site plan provided, and their locations were subsequently plotted by the arboricultural surveyor using GPS siting and estimation at the time of the survey. As such, the plotted location of the tree cannot therefore be considered to be wholly accurate

Root Protection Areas (RPAs):

RPAs
Area(s) of Ground Around Trees that Should be Protected Throughout Development Works with Protective Fencing to form a Construction Exclusion Zone - see Temporary Protective Fencing Specification

Project:
LAND OFF WAKEFIELD ROAD
PONTEFRACT
WEST YORKSHIRE
WF8 4HW

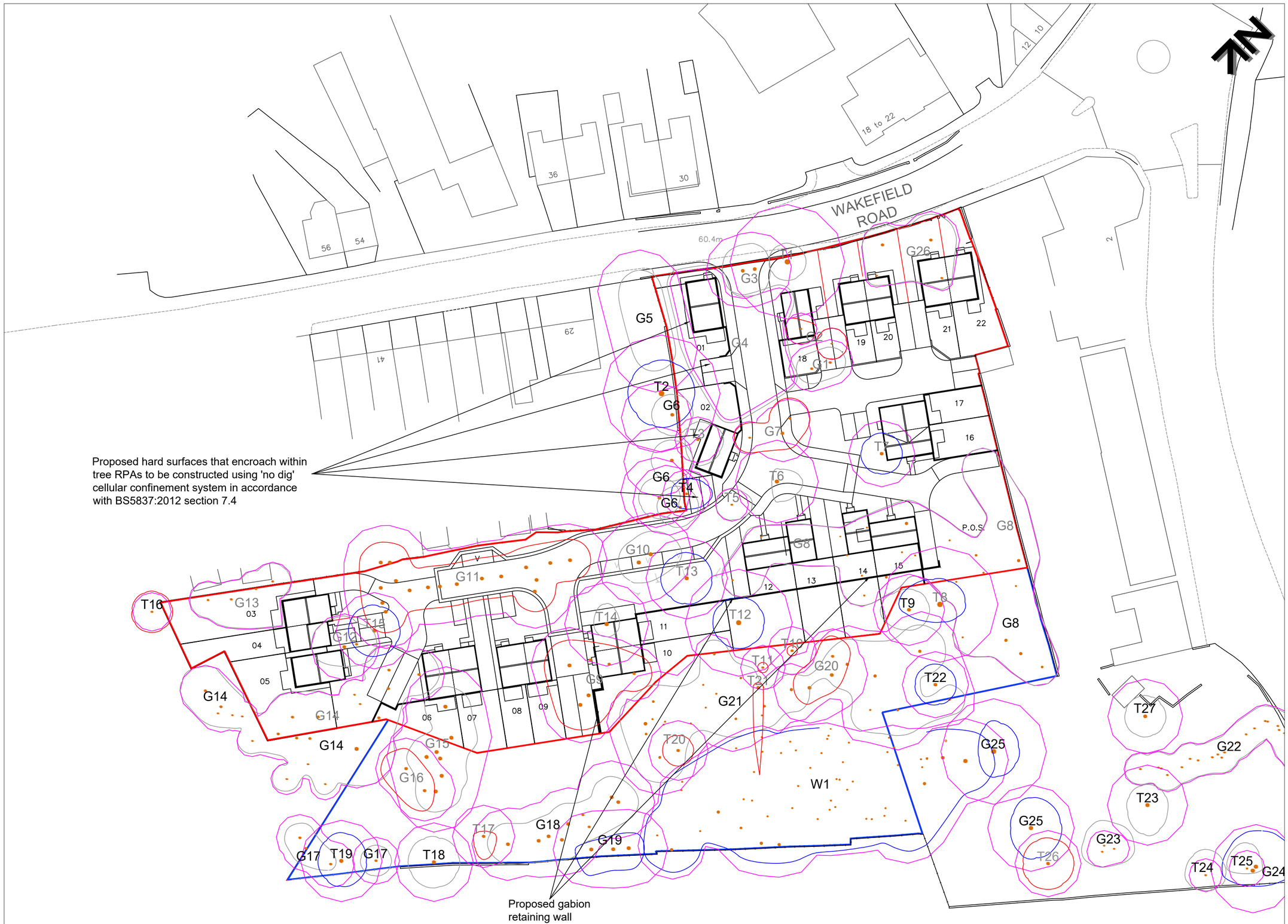
Client:
MR DUFFY, MR DUFFY, MR DAVIES

Title:
TREE CONSTRAINTS PLAN
in Relation to Proposed Residential Development

Scale:	1:500@A2
Date:	November 2018
Drawn by:	RG
Checked by:	JK

Bowland Tree Consultancy Ltd
e: info@bowlandtreeconsultancy.co.uk
t: 01772 437150

Ref: BTC1666-TCP Rev:



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Tree/Group/Woodland
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Category 'C'
Tree/Group/Woodland
Those of Low Quality with an Estimated Remaining Life Expectancy of at Least 10 Years, or Young Trees

Those Considered Unsuitable for Retention:

Category 'U'
Tree/Group/Woodland
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Note 1: The stem locations of trees T5 and T21, and the full extents of groups G3, G4, G5, G7, G8, G13, G14, G17, G21, G22 and G26, were not plotted on the topographical survey based site plan provided, and their locations were subsequently plotted by the arboricultural surveyor using GPS siting and estimation at the time of the survey. As such, the plotted location of the tree cannot therefore be considered to be wholly accurate
Note 2: Trees with their numbers detailed in grey are proposed for removal in the context of the proposed development

Root Protection Areas (RPAs):

RPAs
Area(s) of Ground Around Trees that Should be Protected Throughout Development Works with Protective Fencing to form a Construction Exclusion Zone - see Temporary Protective Fencing Specification

Project:
LAND OFF WAKEFIELD ROAD
PONTEFRACT
WEST YORKSHIRE
WF8 4HW

Clients:
MR DUFFY, MR DUFFY & MR DAVIES

Title:
TREE IMPACT PLAN
in Relation to Proposed Residential Development

Scale:	1:500@A2
Date:	March 2020
Drawn by:	JL
Checked by:	PH

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e: info@bowlandtreeconsultancy.co.uk
t: 01772 437150

Ref: BTC1666-TIP Rev: A