Arboricultural Impact Assessment

in Relation to Proposed Construction of Detached Residential Property with Garage & New Vehicular Access at

Land adjacent to Oak Leigh, Whiteacre Lane, Barrow, Lancashire, BB7 9NB

Prepared by:

Bowland Tree Consultancy Ltd

July 2016

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ARBORICULTURAL IMPACT ASSESSMENT	
Site:	Land adjacent to Oak Leigh, Whiteacre Lane, Barrow, Lancashire, BB7 9BN
Proposal:	Construction of detached residential property with new access from Whalley Road
Survey Dates:	30 June 2015 & 9 February 2016
Report Date:	12 July 2016
Prepared By:	Jennie Keighley MSc TechArborA
Report Ref:	BTC890 (Rev. B)
Agent for Client:	Avalon Town Planning

Introduction and Rationale. Bowland Tree Consultancy Ltd was instructed to carry out an appraisal of the potential for proposed construction works at the above site to impact upon trees and, in turn, to advise on appropriate protective measures for retained trees during the works, where appropriate, and on facilitation pruning and/or felling works, where identified as necessary. Further to this instruction I confirm that consulting arboriculturists, Kendall Rigg and Jennie Keighley, visited the site on 30 June 2015 and 9 February 2016, respectively, and carried out a survey of trees in accordance with BS5837:2012 - Trees in Relation to Design, Demolition and Construction – Recommendations, and our disclaimer at page 4.

In this respect I set out a brief overview of our observations, findings and recommendations below, along with comments on any issues raised. I also enclose a Tree Survey Schedule (TSS) detailing specific tree related information, and a Tree Impact Plan (TIP) showing the site under consideration with pertinent tree constraints detailed, along with an overlay of the proposal, and any necessary tree removals indicated. The TIP is based on the site proposal plan, as prepared by the project agents, Avalon Town Planning, and, for the purpose of this report, I presume the details of the plan supplied to be accurate.

The Site and the Proposal. The site under consideration is located to the south of the village of Barrow, approximately 4km south of the town of Clitheroe, within the administrational boundaries of Ribble Valley Borough Council (RVBC). It currently consists of a lawned garden belonging to Oak Leigh, a residential property immediately to the north. The garden has two raised vegetable planters and a shed to the north-east corner of the plot, and various trees close to and at its perimeters.

The site is bordered by Whalley Road to the west, by detached residential properties to the north and south, and by agricultural pastureland to the east. An existing vehicular access point, off Whalley Road to the north-west, extends to the existing property Oak Leigh, to the north. There is currently no vehicular access in to the garden in question. According to the topographical survey plan, there is a very gentle slope downwards of approximately 1m from north to south.

I am informed, by Avalon Town Planning, that the proposal is for the construction of a single detached residential property with a detached garage and a new vehicular access point from Whalley Road to the west (see TIP).

The Trees. Eighteen individual trees (prefixed 'T'), six groups of trees (prefixed 'G'), and four hedges (prefixed 'H') were surveyed in respect of the proposals and their associated potential to impact upon said vegetation, and the respective constraints of these items are plotted on the appended TIP.

The surveyed vegetation consists predominantly of native broadleaf tree species including Common Oak, Ash, and Silver Birch. The trees range from young to mature in age, and stand at heights of up to 18.5 metres, have maximum diametrical crown spreads of up to approximately 22 metres, and stem diameters of up to 1000 millimetres. Tree dimensions and other pertinent information such as structural defects and physiological deficiencies, along with recommendations for remedial management works, are included in the TSS attached.

The trees were appraised in accordance with BS5837:2012 Table 1 (appended) and, as detailed in Table A, overleaf, three trees were allocated high retention values of 'A', six trees and three groups were allocated moderate retention values of 'B', and five trees, two groups, and four hedges were allocated low retention values of 'C'. In addition, four trees and one group were considered unsuitable for retention ('U' category). With regard to Table A, it should be noted that tree quality and value is categorised within the existing context without taking into account any site development related issues, but that the recommendations for works take the proposal into consideration where there are clearly definable potential impacts upon trees.

Table A: BS5837-2012 Retention Categories of the Surveyed Vegetation

	Ret. Cats.	Tree/Group/Hedge Numbers	Totals
Those of a high quality that should be afforded appropriate consideration in the context of development	**'A'**	T1, T10, T12	*3 Trees*
Those of a moderate quality that should be afforded appropriate consideration in the context of development	**'B'**	T3, T6, T7, T15, T16, T17 G3, G4, G5	*6 Trees* *3 Groups*
Those of a low quality that should be afforded appropriate consideration in the context of development	**'C'**	T4, T8, T13, T14, T18 G1, G6 H1, H2, H3, H4	*5 Trees* *2 Groups* *4 Hedges*
Those considered unsuitable for retention	**'U'**	T2, T5, T9, T11 G2	*4 Trees* *1 Group*
			= 18 Trees, 6 Groups & 4 Hedges in Total

The Proposal's Projected Impacts on Trees. As detailed in Table B, below, construction of the development as proposed is projected to require the removal of one moderate quality (i.e. 'B' category) tree, one low quality (i.e. 'C' category) tree, and a section of low quality hedge, expected to equate to a length of approximately 5m. Furthermore, as outlined previously, the removal of 'U' category trees T2, T5, T9, T11 and group G2 is recommended for reasons unrelated to the development proposal.

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

	Ret. Cats.	Removals necessary to implement development	Removals recommended regardless of development	Total no. of tree 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'**	T17	-	*1 Tree*
Those of a low quality that should be afforded appropriate consideration in the context of development	**'C'**	T8 part of H1	-	*1 Tree* *1 partial Hedge*
Those that should be removed for sound management reasons regardless of site plans	**'U'**	-	T2, T5, T9, T11 G2	*4 Trees* *1 Group*
Totals		*2 Trees* *1 partial Hedge*	*4 Trees* *1 Group*	***= 6 Trees, 1 Group & 1 partial Hedge***

However, it should be noted that moderate quality tree T17 is located internal to the site where it is largely hidden from public view, that low quality tree T8 is a minor component in what is a larger row of mature, retained roadside trees, and that only a small section of hedge H1 requires removal to form the access. In turn, the loss of these trees and hedge section is projected to have a negligible impact on visual amenity in the wider public landscape.

Mitigation for Projected Tree Losses. The proposed property has a sizeable garden area, particularly to the south, which can accommodate several new trees as part of site landscaping, which is projected to sufficiently mitigate for the necessary tree losses.

In turn, the provision of the new tree planting can be guaranteed through the imposition of a suitably worded landscape condition attached to a planning approval.

Tree Retention Recommendations. Adequate protection of retained trees' root protection areas (RPAs) 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 around trees that are to be kept free from major disturbance throughout development, usually through the installation of temporary protective fencing to form a Construction Exclusion Zone (CEZ). The TSS lists the RPAs of the individually surveyed trees as areas in square metres and as radial distances in metres from stem centres, whilst the RPAs are indicated in magenta on the TIP. Trees with RPAs requiring protection from the development works are indicated in the TSS. A Temporary Protective Fencing Specification is appended which gives details of the purpose and the type and construction of the default temporary protective fencing that should normally be used.

In respect of these matters the guidance recommends that the associated working methods and procedures be detailed in an Arboricultural Method Statement and on a Tree Protection Plan, which describe the timing, 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. The production of and adherence to an Arboricultural Method Statement and Tree Protection Plan should therefore be conditioned as part of a planning approval.

In addition to the points raised herein we would also emphasise the importance of ensuring that all relevant recommendations included under the General Recommendations section at page 3 be followed accordingly.

Summary and Conclusions. The construction of a detached residential property with a detached garage and new vehicular access from Whalley Road is proposed at the site under consideration.

As such, 18 individual trees, six groups of trees, and four hedges were surveyed in respect of the proposals and their associated potential to impact upon said vegetation.

Three trees have high retention values, six trees and three groups have moderate retention values, and five trees, two groups, and four hedges have low retention values. In addition, four trees and one group are considered unsuitable for retention.

From the information provided, our appraisal determined that construction of the development as proposed is projected to require the removal of one moderate retention value tree, one low retention value tree, and an approximately 5m length of a low retention value hedge. Nonetheless, the identified losses are projected to have a negligible impact upon the visual amenity of the local landscape and can be adequately mitigated for through new tree planting as part of site landscaping.

In turn, the existing trees that are to be retained can be adequately protected throughout the development in accordance with BS5837:2012, provided that various recommendations made herein are followed, in particular the provision of adequate protection of the trees' Root Protection Areas.

As such, the production of an Arboricultural Method Statement and a Tree Protection Plan cam be conditioned to a planning approval in order to ensure that suitable procedures, working methods and protective measures are correctly considered and implemented.

Jennie Keighley MSc TechArborA
Arboricultural Technician

GENERAL RECOMMENDATIONS

Non-Development Related Tree Works and Recommendations. 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 plans 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. 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.

Protected Species. Hedges, climbing plants, shrubs and trees should be inspected for birds' nests prior to any clipping, pruning or removal works, and any work likely to destroy or disturb active nests should be avoided until the young have fledged. All personnel carrying out tree works should also be vigilant of the possibility that roosting bats may be present in trees and, if any bat roosts are identified, then it is essential that works are halted immediately and that a suitably qualified and experienced ecologist investigate prior to works continuing.

Arboricultural Contractors. 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. 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. Where trees are removed in order to facilitate construction then new tree planting proposals should be included as part of the landscape design plan for the site. All tree planting should be carried out in accordance with BS 8545:2014 Trees: from Nursery to Independence in the Landscape – Recommendations.

Retained Tree Management. Any tree risk management appraisal and subsequent recommendations made in this report were based on observations and site circumstances at the time of our 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. In this respect we would note 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. 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.

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.

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.

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TREE SURVEY SCHEDULE & BS5837:2012 'TABLE 1'

TREE SURVEY SCHEDULE FOR ARBORICULTURAL IMPACT APPRAISAL		Surveyor:	Kendall Rigg HND TechArborA & Jennie Keighley MSc TechArborA	Page: 1 of 4
Site:	Land adjacent to Oak Leigh, Whalley Road, Barrow, BB7 9BN	Survey Date:	30 June 2015 and 9 February 2016	
Agent for Client:	Avalon Town Planning	Job Ref:	BTC890	

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	Common Oak	18	800#	N E S W	7.5 9 9 7.5	3-E 3.5	M	M	▪ Located on neighbouring land at northern end of hedge H1. ▪ Ivy up stem and into crown. ▪ Trifurcates at a height of approximately 3m. ▪ Light deadwood up to approximately 125mm diameter throughout crown.	▪ Located outside of development area and therefore not projected to be impacted.	40+	A1/2	290	9.6
T2	Ash	16	9x200 (ms)#	N E S W	4 5 5 5	0.1-E 0	EM	P	▪ Approximately 15 to 20 primary leaders arising from remnants of a heavily decayed stump. ▪ Decay progressing into base of new growth. ▪ Very limited future potential for growth.	▪ Remove due to limited future potential for growth.	<10	U	163	7.2
T3	Sycamore	15	1x280 1x170 (ts)	N E S W	3 7 3 2	2-E 2	EM	G	▪ Bifurcates at base. ▪ Moderate stem lean to east. ▪ Crown heavily suppressed to south due to presence of neighbouring tree.	▪ Retain in context of proposed development. ▪ Protect Root Protection Area (RPA) throughout development using Temporary Protective Fencing (specification appended) to form a Construction Exclusion Zone (CEZ).	20+	B2	49	3.93
T4	Common Oak	10	550	N E S W	4 7 4 3	3-E 3	M	M-P	▪ 250mm diameter primary branch on north side of stem at a height of approximately 1.8m has been reduced to an 800mm long stub. ▪ Old *Laetiporus sulphureus* (brown rot decay fungus) fruiting body has evidently detached from branch stub, with bracket base still visible on stub at a distance of 700mm from stem. ▪ Ivy up stem and into crown. ▪ 200mm diameter branch at a height of approximately 3m on east side of stem has a 1m x 125mm wide un-occluded wound leading down from an old wound towards main stem.	▪ Retain in context of proposed development. ▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ.	10+	C2	137	6.6
T5	Common Oak	4.5	1x300 1x110 (ts)	N E S W	1 0.1 0.1 3	1-NW 3	EM		▪ Main stem dead. ▪ One remaining living branch. ▪ Terminal state of decline.	▪ Remove due to short projected life expectancy.	<10	U	46	3.83

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		Surveyor:	Kendall Rigg HND TechArborA & Jennie Keighley MSc TechArborA	Page: 2 of 4
Site:	Land adjacent to Oak Leigh, Whalley Road, Barrow, BB7 9BN	Survey Date:	30 June 2015 and 9 February 2016	
Agent for Client:	Avalon Town Planning	Job Ref:	BTC890	

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	Common Oak	15	710	N E S W	7 8 5 4	3-S 4	M	M	▪ Slight stem lean west. ▪ Ivy up the stem and into crown. ▪ Bifurcates at a height of approximately 3m with a tight fork. ▪ Crown is suppressed to the south due to the presence of neighbouring trees.	▪ Retain in context of proposed development. ▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ.	20+	B2	228	8.52
T7	Horse Chestnut	13.5	1x300 1x120 (ts)	N E S W	4 5 5 4	2-W 2	EM	M	▪ Bifurcates at a height 0.5m with a very tight fork and included bark union. ▪ 400mm x 200mm necrotised bark region on the east side of main stem at a height of approximately 2.5m.	▪ Retain in context of proposed development. ▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ.	20+	B2	47	3.88
T8	Hawthorn	6	2x150 2x100 (ms)#	N E S W	3 3 3 3	0.1-E 0	M	G	▪ Growing in hedge H1. ▪ Multiple primary leaders from a height of 1m. ▪ Dense ivy up stem and into crown.	▪ Remove in order to construct development as proposed.	10+	C1	29	3.06
T9	Ash	18.5	1000	N E S W	4 11 6 6	3-E 5	M	P	▪ Deadwood throughout crown and several tertiary branches up to approximately 150mm in diameter already lost, including one found in hedge to south of stem with a detached and decaying fungal fruiting body of *Polyporus squamosus* (white rot decay fungus) nearby. ▪ Northern crown has been heavily suppressed due to previous presence of a neighbouring tree. ▪ Crown heavily biased to east. ▪ Widespread epicormic growth along primary and secondary branches. ▪ Evidently in a state of natural retrenchment.	▪ Remove due to short projected life expectancy and potential risk posed by proximity to public highway.	<10	U	452	12
T10	Common Oak	17	950#	N E S W	7 11 9 11	3-NE 3	M	G	▪ Ivy up the stem and into the crown. ▪ Bifurcates at a height of approximately 3m. ▪ Two primary lateral branches extend out 11m and over road. ▪ Light deadwood up to approximately 100mm diameter throughout crown.	▪ Retain in context of proposed development. ▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ.	40+	A1/2	408	11.4
T11	Ash	15	290	N E S W	2 2 2 6	2-N 3	SM	G	▪ Evidently self-set tree located within 150mm to north of Horse Chestnut tree G3a. ▪ Crown heavily biased over the road. ▪ Limited future potential for growth.	▪ Remove due to limited future potential for growth.	<10	U	38	3.48
T12	Common Oak	11	550	N E S W	4 7 9 7	4-NE 3	M	G	▪ Located on neighbouring land and therefore not inspected in detail. ▪ Multiple primary leaders from a height of approximately 4.5m.	▪ Retain in context of proposed development. ▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ.	40+	A1/2	137	6.6

TREE SURVEY SCHEDULE FOR ARBORICULTURAL IMPACT APPRAISAL		Surveyor:	Kendall Rigg HND TechArborA & Jennie Keighley MSc TechArborA	Page: 3 of 4
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Agent for Client:	Avalon Town Planning	Job Ref:	BTC890	

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)
T13	Horse Chestnut	4.5	1x120 2x30 1x20 (ms)	N E S W	2 2 1 2	0.2-W 1	Y	G	▪ Bifurcates at a height 0.3m with a very tight fork.	▪ Retain in context of proposed development. ▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ.	10+	C1	8	1.55
T14	Silver Birch	16.5	350	N E S W	5 5 5 5	2-S 2	EM	P	▪ Lower crown dieback. ▪ Leaf size is visibly reduced when compared to neighbouring trees of the same species and age. ▪ Overall crown vitality is poor. ▪ Progressive state of decline.	▪ Retain in context of proposed development. ▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ.	10+	C1	55	4.2
T15	Silver Birch	16	300	N E S W	2 3 3 3	2-SW 3	EM	G	▪ Slight to moderate stem lean to the south-west. ▪ Stem corrects at a height of approximately 3m. ▪ Ivy up stem.	▪ Retain in context of proposed development. ▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ.	20+	B2	41	3.6
T16	Silver Birch	16	1x220 1x200 (ts)	N E S W	4 3 3 4	3-W 2	EM	G	▪ Bifurcates at base. ▪ Northern primary leader has a moderate stem lean to north-west due to presence of neighbouring stem.	▪ Retain in context of proposed development. ▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ.	20+	B2	40	3.57
T17	Common Lime	9	350	N E S W	6 6 6 6	2-W 1	EM	G	▪ Seven secondary branches at a height of 2m with very tight forks and included bark unions. ▪ Main stem bifurcates at a height of 2.5m with a tight fork and acute included bark union.	▪ Remove in order to construct development as proposed.	20+	B1	55	4.2
T18	Copper Beech	14	400	N E S W	6 6 6 6	3-S 2	EM	G	▪ Stem in contact with end of a 1.3m high stone and mortar wall. ▪ Limited future potential for growth without causing structural damage to the wall.	▪ Retain in context of proposed development. ▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ.	10+	C1	72	4.80
G1	2no. Ash	≤ 6	≤ 90	N E S W	≤ 1 ≤ 1 ≤ 1 ≤ 1	2-E ≥ 2	Y	G	▪ Very closely spaced group of self-set trees. ▪ Growing 500mm apart approximately 1.2m from tree T5.	▪ Retain in context of proposed development. ▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ.	10+	C2	≤ 4	≤ 1.08
G2	2no. Ash	≤ 16	≤ 270	N E S W	≤ 4 ≤ 2 ≤ 4 ≤ 5	3.5-S ≥ 3	SM	G	▪ Closely spaced group with stems 2m apart. ▪ Growing in hedge H1 ▪ Both trees have slight to moderate stem leans to the west with crowns heavily biased over the road. ▪ Limited future potential for growth.	▪ Remove due to limited future potential for growth.	<10	U	≤ 33	≤ 3.24

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No.	Species	Height	Stem Diam.	Branch Spread		Branch & Canopy Clearances	Life Stage	PC	General Observations and Comments	Management Recommendations	ERC	Cat. Grade	RPA (m^2)	RPA Radius (m)
G3	2no. Horse Chestnut	≤ 14	≤ 1x290 2x170 (ms)	N E S W	≤ 4 ≤ 5 ≤ 4 ≤ 5	0.3-E ≥ 2	EM	G	▪ Closely spaced group. ▪ Northern tree trifurcates at a height of 0.3m with very tight forks. ▪ Ash tree T11 growing within 150mm of base of stem of tree G3a.	▪ Retain in context of proposed development. ▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ.	20+	B2	≤ 64	≤ 4.52
G4	3no. Ash, 2no. Sycamore, 1no. Alder, 1no. Field Maple, 1no. Pissards Plum, 1no. Goat Willow, 1no. Swamp Cypress	≤ 14	≤ 6x150 (ms)#	N E S W	≤ 6 ≤ 3 ≤ 5 ≤ 4	0.1-N ≥ 0	Y-SM	G	▪ Closely to very closely spaced group. ▪ A mixture of trees planted as a shelterbelt / screen, with self-set trees growing within.	▪ Retain in context of proposed development. ▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ.	20+	B2	≤ 61	≤ 4.41
G5	7no. Silver Birch. 3no. Goat Willow, 1no. Beech, 1no. Purple Maple	≤ 18	≤ 560	N E S W	≤ 6 ≤ 4 ≤ 8 ≤ 6	0.1-N ≥ 0	Y- EM	G	▪ Closely to very closely spaced group. ▪ A mixture of trees planted as a shelterbelt / screen, with self-set trees growing within.	▪ Retain in context of proposed development. ▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ.	20+	B2	≤ 142	≤ 6.72
G6	7no. Common Oak, 1no. Alder, 1no. Beech	≤ 6	≤ 140	N E S W	≤ 2.5 ≤ 2.5 ≤ 2.5 ≤ 2.5	0.1-W ≥ 0	Y	G	▪ Very closely spaced linear group.	▪ Retain in context of proposed development. ▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ.	10+	C2	≤ 142	≤ 6.72
H1	Privet, Holly, Hawthorn, Sycamore, Ash	≤ 3	≤ 6x35 (ms)#	≤ 2 wide		01-E ≥ 0	EM	G	▪ Unmanaged boundary hedge.	▪ Remove an approximately 5m length in order to construct access as proposed. ▪ Ensure protection of remainder of hedge throughout development.	10+	C2	N/A	≤ 1.03
H2	Beech	≤ 2	≤ 6x20 (ms)#	≤ 1.5 wide		0.1-S ≥ 0	SM	G	▪ Located on neighbouring land and therefore not inspected in detail. ▪ Managed boundary hedge.	▪ Retain in context of proposed development. ▪ Ensure protection throughout development.	10+	C2	N/A	≤ 0.59
H3	5no. Beech	≤ 2.5	≤ 50	≤ 2 wide		0.1-W ≥ 0	Y	G	▪ Short unmanaged hedge approximately 9m long.	▪ Retain in context of proposed development. ▪ Ensure protection throughout development.	10+	C2	N/A	≤ 0.6
H4	Beech	≤ 3	≤ 125	≤ 2 wide		0.1-S ≥ 0	EM	G	▪ Managed boundary hedge.	▪ Retain in context of proposed development. ▪ Ensure protection throughout development.	10+	C2	N/A	≤ 1.5

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 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 Consulting Arboriculturist shall inspect the Temporary Protective Fencing.

Figure 1: CEZ Warning Sign

– TREE PROTECTION AREA –
KEEP OUT!

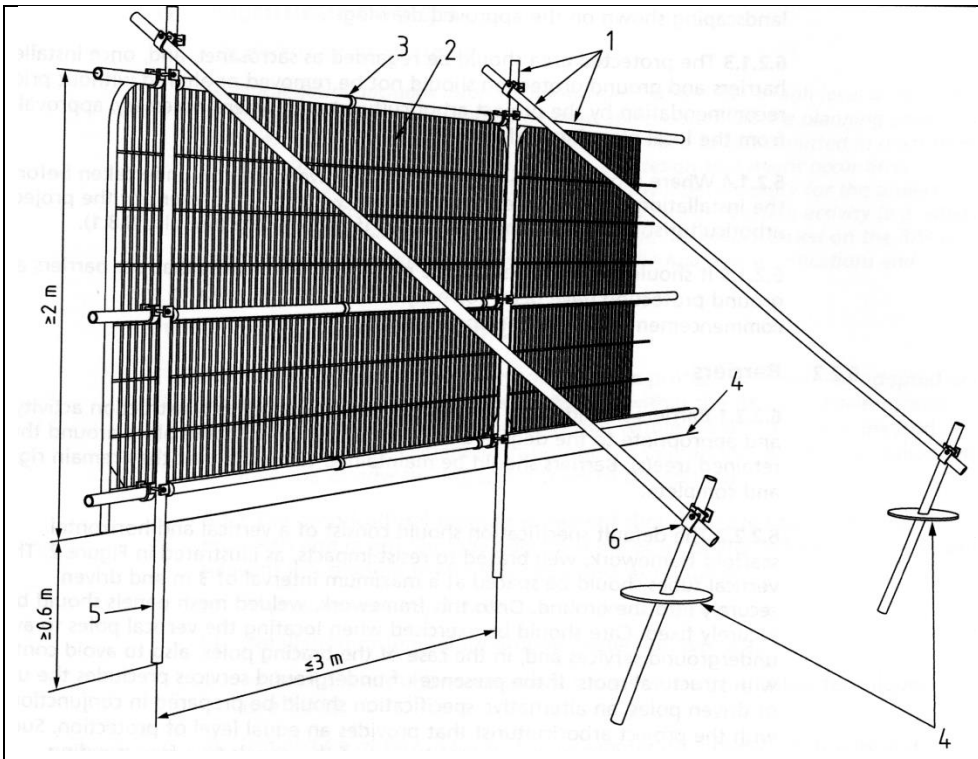
(TOWN & COUNTRY PLANNING ACT 1990)
THE TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR SUBJECTS OF A 'TREE PRESERVATION ORDER', THE CONTRAVENTION OF WHICH MAY LEAD TO CRIMINAL PROSECUTION

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

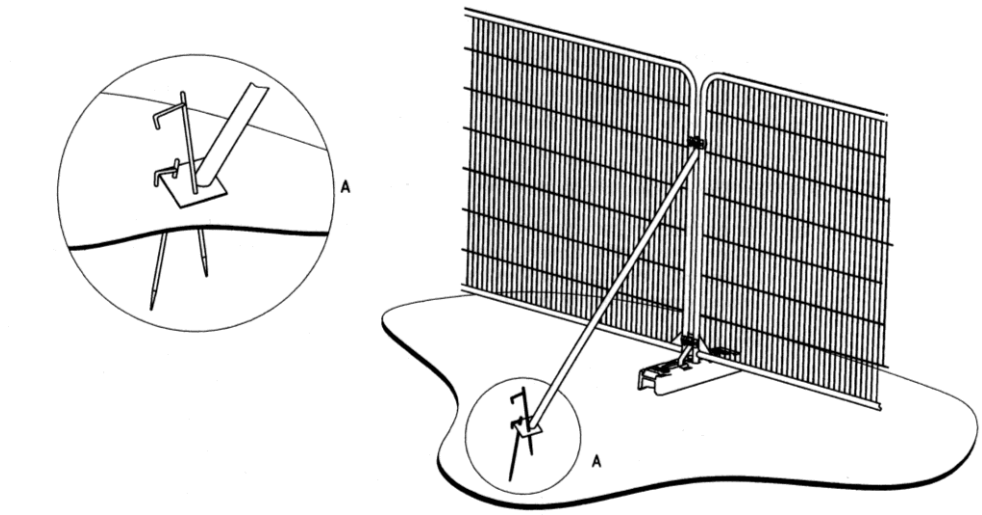
Figure 2: BS5837:2012 Default specification for protective barrier



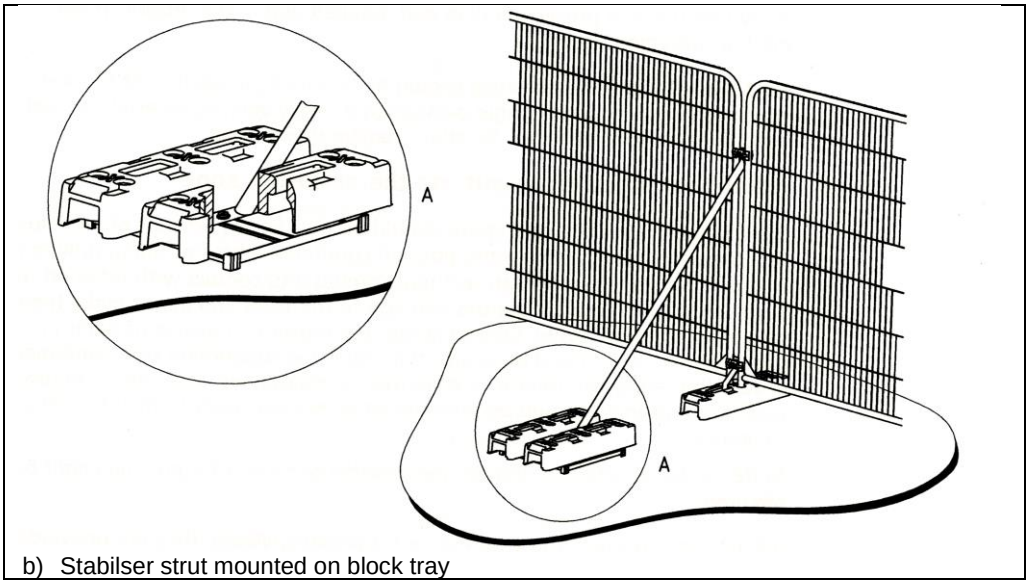
Key

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

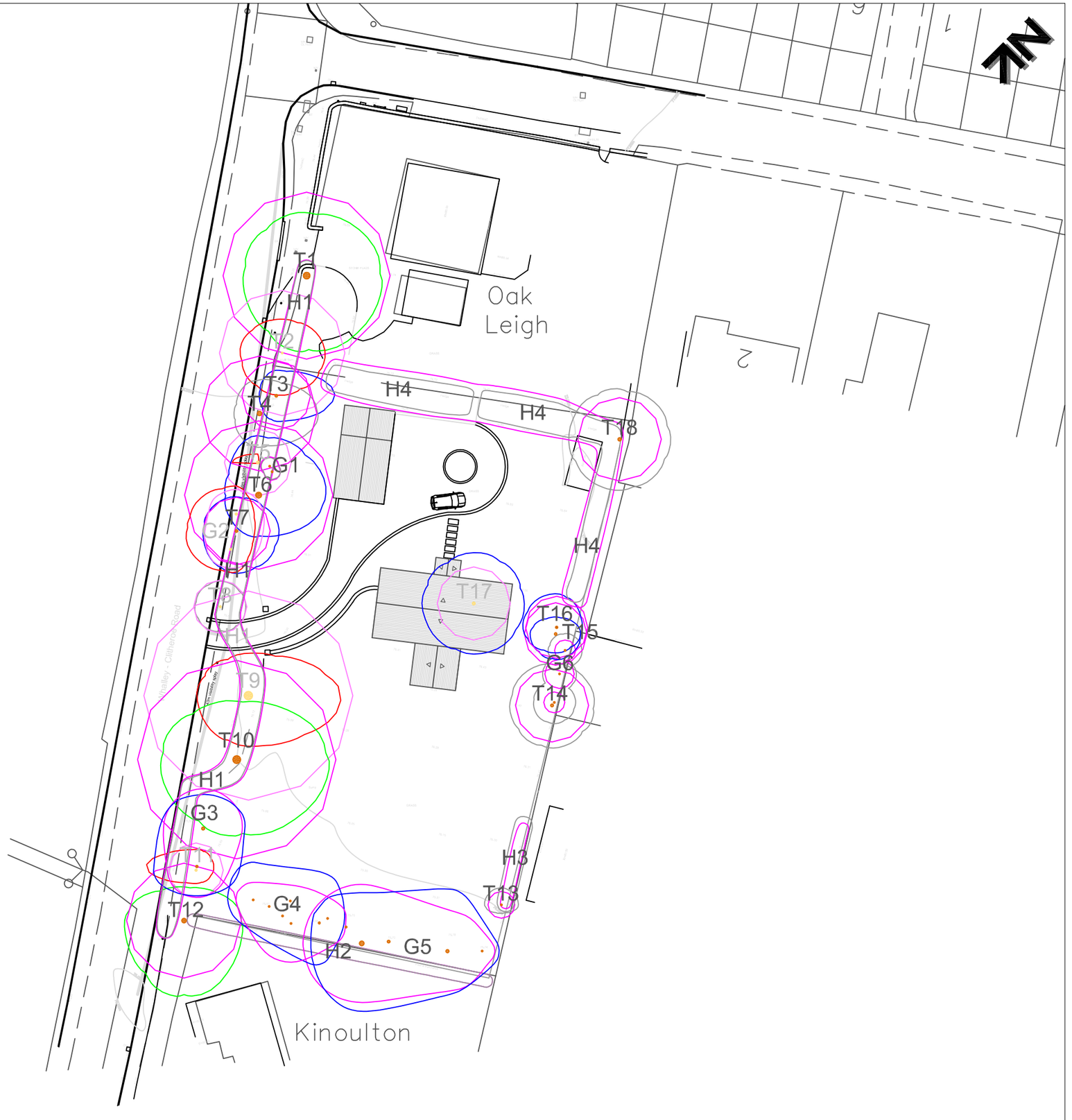
Figure 3: BS5837:2012 Examples of above-ground stabilising systems



a) Stabilser strut with base plate secured with ground pins



b) Stabilser strut mounted on block tray



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
H = Hedge

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/Hedge
Those of a High Quality with an Estimated Remaining Life Expectancy of at Least 40 Years

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

Category 'C' Tree/Group/Hedge
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/Hedge
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 1: The locations of tree T18, and groups G2 and G3 were not included on the site plan provided, and their locations were subsequently plotted by the arboricultural surveyor at the time of the survey using GPS siting and measurement from site features where possible. As such, the plotted locations of this tree and these groups cannot therefore be considered to be wholly accurate
Note 2: Trees with their identification numbers labelled in grey are recommended for removal in the context of the 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 ADJACENT TO OAK LEIGH
WHALLEY ROAD
BARROW
LANCASHIRE
BB7 9BN

Agent for Client:
AVALON TOWN PLANNING

Title:
TREE IMPACT PLAN
In Relation to Proposed Construction of Detached Residential Property with Garage and New Vehicular Access

Scale:	1:500@A3
Date:	May 2016
Drawn by:	JK
Checked by:	PH

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Ref: BTC890-TIP Rev: A