Arboricultural Impact Assessment

of Proposed Residential Development at

Land off Clitheroe Road, Barrow, Lancashire, BB7 9AQ

Prepared by:

Bowland Tree Consultancy Ltd

April 2016

Control sheet

Project No.:	BTC1056
Site:	Land off Clitheroe Road, Barrow, Lancashire, BB7 9AQ
Agent for Client:	PWA Planning
Council:	Ribble Valley Borough Council
Survey Date:	16 March 2016
Surveyor:	Kendall Rigg HND TechArborA
Report Prepared by:	Jennie Keighley MSc TechArborA & Kendall Rigg HND TechArborA
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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.

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

PLANS

1.0 INTRODUCTION

Terms of Reference

1.1 Bowland Tree Consultancy Ltd were instructed to:

a) Survey, either as individuals or by group, all trees having reasonable potential to affect or to be adversely affected by development of the site under consideration;
b) Prepare a tabulated Tree Survey Schedule based on guidance specified BS5837:2012 - Trees in Relation to Design, Demolition and Construction – Recommendations;
c) Evaluate the potential tree related impacts and design conflicts of the proposals;
d) Advise on removal, retention and management options for the trees in the current context and in the context of the proposed development;
e) Advise on suitable tree protection measures required during development;
f) Annotate the existing site plan to produce a Tree Impact Plan identifying tree retention categories, crown spreads, Root Protection Areas, projected tree related impacts, and other pertinent details; and
g) Prepare an Arboricultural Impact Assessment report outlining the main tree related issues and reasonably foreseeable tree related impacts in relation to the proposed development and indicating suitable 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 their review of the proposed development and, as such, should be supplied to them in support of the planning application to which it pertains.

1.3 Essentially, the report provides an analysis of the impacts that the proposed development is projected to have on trees located both within the site and, where practicable, on land immediately adjacent to its boundaries. It also offers guidance on suitable retained tree management and mitigation for projected losses, along with advice on appropriate tree protection measures in the context of the proposed development in accordance with current guidance.

Site Visit, Data Collection and Tree Plans

1.4 Further to our instruction we confirm that Kendall Rigg, consulting arboriculturist, carried out a tree survey on 16 March 2016. The survey was carried out 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 associated BS5837:2012 Table 1 (as appended).

1.5 The survey identified 29 individual trees (prefixed ‘T’), four groups of trees (prefixed ‘G’), and two hedges (prefixed ‘H’), which have been numbered accordingly on the Tree Impact Plan (TIP), as appended. The TIP shows the existing site with an overlay of the development proposals detailing pertinent tree constraints, associated tree impacts, retention proposals, and other pertinent information.

1.6 The plan is based on the site proposal plan that was provided in electronic format by the project agent, PWA Planning, and, for the purpose of this report, we presume the provided plan’s details to be accurate.

2.0 STATUTORY PROTECTION IN RESPECT OF TREES AND ASSOCIATED WILDLIFE

Tree Preservation Orders and Conservation Area Designations

2.1 The Town & 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 the Ribble Valley Borough Council website, the site does not stand within a CA, and their online TPO directory does not list any TPOs at the site in question. Nonetheless, although the website does not list any TPOs it would be prudent to contact the planning department at Ribble Valley Borough Council in order to check for the presence of any such statutory tree protection prior to carrying out any tree works that are not related directly to the implementation of a detailed (i.e. full) planning approval.

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 are protected under Schedule 5 of the Wildlife & Countryside Act (1981) (as amended) and under Schedule 2 of the Conservation of Habitats and 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 identified, then it is essential that works are halted immediately and that a suitably qualified and experienced ecologist investigates and advises on appropriate action(s) prior to works continuing.

Felling Licences

2.5 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.

2.6 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 planning permission granted under the Town and Country Planning Act 1990 or, as is the case under consideration, for the removal of trees located within the perimeters of a private residential garden.

3.0 THE SITE AND THE SURROUNDINGS

3.1 The site under consideration is currently an area of pastureland located on the south-eastern boundary of the village of Barrow, Lancashire, within the administrational boundaries of Ribble Valley Borough Council. The south-western corner of the site is currently being utilised as a temporary construction and container storage area for the neighbouring development site to the south, with bunded topsoil to its northern and eastern boundaries.

3.2 The site is bordered to the north by pastureland, to the east by a young woodland and pastureland, to the south by a wooded copse and an ongoing residential development, and to the west by Whalley Road. There is currently a vehicular access point off Whalley Road at the south-west corner of the site. According to the topographical survey plan, the site levels vary only slightly with a gradual fall of less than 3 metres from north to south.

4.0 THE TREE POPULATION

4.1 As noted previously, a total of 29 individual trees, four groups of trees, and two hedges were surveyed for the purpose of this appraisal. The surveyed trees consist of a mix of deciduous broadleaf and evergreen coniferous species, including Ash, Alder, Cherry Laurel, Elder, Elm, Hawthorn, Oak, Poplar, and Cypress.

4.2 They range from young to post-mature in age, with heights of up to 30 metres, maximum diametrical crown spreads of up to 22 metres and stem diameters of up to approximately 1000 millimetres. Detailed tree dimensions and other pertinent information, such as structural defects and physiological deficiencies, are included in the Tree Survey Schedule (TSS) at Appendix One.

4.3 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 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'.

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

	Ret. Cats.	Tree/Group/Hedge Numbers	Totals
Those of a moderate or high quality that should be afforded appropriate consideration in the context of development	**'A'**	T20	*1 Tree*
	'B'	T16 G4	*1 Tree* *1 Group*
Those of a low quality that should not be considered a material constraint to development	**'C'**	T1, T2, T3, T4, T6, T7, T8, T11, T13, T14, T17, T18, T19, T21, T23, T24, T25, T28, G1, G2, G3, H1, H2	*18 Trees* *3 Groups* *2 Hedges*
Those that should be removed for sound management reasons regardless of site proposals	**'U'**	T5, T9, T10, T12, T15, T22, T26, T27, T29	*9 Trees*
			= 29 Trees, 4 Groups & 2 Hedges in Total

4.5 As detailed in Table A (previous page) one tree was categorised as high quality ('A'), one tree and one group were categorised as moderate quality ('B'), and eighteen trees, three groups, and two hedges were categorised low quality ('C'). Additionally, nine trees were categorised as 'U' quality (i.e. unsuitable for retention), although we would note that six of these trees are located on neighbouring third-party land (see paragraph 5.2).

5.0 THE DEVELOPMENT PROPOSAL AND ITS PROJECTED ARBORICULTURAL IMPACTS

5.1 We are informed, by the client's agent, PWA Planning, that the application is for the construction of nine detached residential properties, with a vehicular access off Whalley Road to the west, as detailed on the TIP.

Projected Arboricultural Losses Relating to the Proposal

5.2 As detailed in Table B, below, implementation of the proposed development as it stands is only projected to require the removal of part of one low quality (i.e. 'C' category) hedge which, in turn, is projected to have a negligible impact upon the visual amenity of the local landscape.

5.3 Additionally, nine ('U' category) trees are considered unsuitable for retention for reasons unrelated to the development proposals. However, six of the 'U' category trees are located on neighbouring land, and it will therefore be necessary to contact the neighbouring landowners in respect of the trees' condition and associated options for future management.

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'**	-	-	-
Those of a low quality that should be afforded appropriate consideration in the context of development	**'C'**	H1 (part)	-	*1 Partial Hedge*
Those that should be removed for sound management reasons regardless of plans	**'U'**	-	T5*, T9, T10*, T12*, T15*, T22*, T26, T27, T29*	*9 Trees*
Totals		*1 partial Hedge*	*9 Trees*	***= 9 Trees & 1 partial Hedge in Total***

*Denotes 'U' category trees that are located on neighbouring land, whereby it will be necessary to contact the tree owners in respect of their condition and future management

Mitigation for Projected Tree Losses as Part of Site Landscaping

5.4 We are informed, by PWA Planning, that the development proposal is to include new trees as part of its landscaping scheme, with trees to be planted in both front and rear gardens of proposed properties where suitable. In turn, the provision of new tree planting, as part of the development's landscaping, is projected to sufficiently mitigate for the projected losses.

5.5 In this respect, the provision of specific species, numbers, planting locations and post-planting management, in the form of a landscape plan, can be conditioned to a planning approval.

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 TIP 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 radial RPAs are indicated as magenta coloured circles on the TIP. 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

6.3 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).

6.4 In the case of the development under consideration we are informed, by PWA Planning, that the services can be joined to the existing services from Whalley Road to the west, and are therefore projected to be routed outside retained trees' RPAs.

Arboricultural Method Statement and Tree Protection Plan

6.5 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. 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.

6.6 In order to ensure that the retained trees are adequately protected throughout the development process, the production of and adherence to an AMS and TPP 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.

Retained Tree Management

7.6 Any tree risk management appraisals 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.

7.7 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.

8.0 SUMMARY AND CONCLUSIONS

8.1 Twenty-nine individual trees, four groups of trees, and two hedges were surveyed in respect of a proposal to construct nine residential properties at the site under consideration.

8.2 One surveyed tree was allocated a high retention value, one tree and one group were allocated moderate retention values, and eighteen trees, three groups and two hedges were allocated low retention values.

8.3 Additionally, nine trees were classed as unsuitable for retention regardless of development, although six of these are under third party ownership.

8.4 Our appraisal identified that construction of the development as proposed will require only the removal of part of one low quality hedge, which is projected to have a negligible impact on the local landscape.

8.5 Nonetheless, new tree planting is proposed as part of site landscaping, which is projected to more than adequately mitigate for the development-related hedge loss.

8.6 In turn, the provision of specific species, numbers, planting locations and post-planting management, in the form of a landscape plan, can be conditioned to a planning approval.

8.7 As a final point, in order to ensure successful existing tree preservation over the long-term, it is essential that the retained trees are protected in strict accordance with current Government guidance and the recommendations included herein.

8.8 Accordingly, the provision of and adherence to a suitably detailed Arboricultural Method Statement and Tree Protection Plan can be conditioned to a planning permission in order to ensure the protection of retained trees.

REFERENCES

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 (2008). 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.

APPENDICES

TREE SURVEY SCHEDULE FOR ARBORICULTURAL IMPACT APPRAISAL	
Site:	Land off Clitheroe Road, Barrow, Lancashire, BB7 9AQ
Agent for Client:	PWA Planning

Surveyor:	Kendall Rigg HND TechArborA
Survey Date:	16 March 2016
Job Ref:	BTC1056

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	Ash	9	2x200 1x175 (ms)	N E S W	3 3 3 3	0.3-W 1	SM	G	▪ Self-set. ▪ Growing in fence line. ▪ Trifurcates at a height of 0.3m.	▪ 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).	10+	C1	50	3.99
T2	Ash	10	220#	N E S W	4 2 3 4	3-W 3	SM	G	▪ Located on neighbouring land and therefore not inspected in detail. ▪ Crown previously heavily reduced to approximately 4m.	▪ RPA does not fall within red line boundary, therefore no action needed.	10+	C2	23	2.7
T3	Black Poplar	16	480#	N E S W	5 5 5 5	6-S 4	EM	G	▪ Located on neighbouring land and therefore not inspected in detail. ▪ Part of a larger linear group.	▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ.	10+	C2	104	5.76
T4	Hybrid Black Poplar	27	1000#	N E S W	9 9 9 9	3-S 3	M	G	▪ Located on neighbouring land and therefore not inspected in detail. ▪ Part of a larger linear group. ▪ Bifurcates at a height of approximately 3m.	▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ.	10+	C2	452	12
T5	Black Poplar	12	400#	N E S W	3 3 3 3	3-S 3	EM	P	▪ Located on neighbouring land and therefore not inspected in detail. ▪ Part of a larger linear group. ▪ Upper crown dieback. ▪ Short projected remaining life expectancy.	▪ Inform landowner of tree's condition, and advise that removal is recommended due to short projected life expectancy.	<10	U	72	4.8
T6	Hybrid Black Poplar	27	850#	N E S W	9 9 9 9	2-W 4	M	G	▪ Located on neighbouring land and therefore not inspected in detail. ▪ Part of a larger linear group. ▪ Bifurcates at a height of 2m.	▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ.	10+	C2	327	10.2

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

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T7	Black Poplar	15	380#	N 4 E 4 S 4 W 4	3-S 3	EM	M/P	▪ Located on neighbouring land and therefore not inspected in detail. ▪ Part of a larger linear group.	▪ RPA does not fall within red line boundary, therefore no action needed.	10+	C2	65	4.56
T8	Hybrid Black Poplar	27	1000#	N 8 E 8 S 8 W 8	1.7-N 3	M	G	▪ Located on neighbouring land. ▪ Part of a larger linear group. ▪ Bifurcates at a height of 1.7m with a very tight fork. ▪ 125mm diameter cavity at a height of 1m on south side of stem.	▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ.	10+	C2	452	12
T9	Common Oak	9	470	N 2 E 4 S 3 W 4	2-SE 1	PM	MD	▪ *Ganoderma australe* (white rot decay fungus) at western base of stem. ▪ Extensive basal and stem decay with multiple cavities. ▪ Crown has significantly retrenched. ▪ Multiple bat roost potential cavities.	▪ Carry out bat survey(s) in accordance with BS8596:2015. ▪ Remove due to short projected life expectancy (note: action entirely dependent on results of bat survey).	<10	U	102	5.7
T10	Black Poplar	14	400#	N 3 E 3 S 3 W 3	3-S 3	EM	P	▪ Located on neighbouring land and therefore not inspected in detail. ▪ Part of a larger linear group. ▪ Mid and upper crown dieback. ▪ Short projected remaining life expectancy.	▪ Inform landowner of tree's condition, and advise that removal is recommended due to short projected life expectancy.	<10	U	72	4.8
T11	Hybrid Black Poplar	27	900#	N 11 E 11 S 11 W 11	5-S 4	M	G	▪ Located on neighbouring land and therefore not inspected in detail. ▪ Part of a larger linear group. ▪ Trifurcates at a height of approximately 5m.	▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ.	10+	C2	366	10.8
T12	Black Poplar	17	470#	N 6 E 6 S 6 W 6	3-S 3	EM	P	▪ Located on neighbouring land and therefore not inspected in detail. ▪ Part of a larger linear group. ▪ Mid and upper crown dieback. ▪ Short projected remaining life expectancy.	▪ Inform landowner of tree's condition, and advise that removal is recommended due to short projected life expectancy.	<10	U	102	5.7
T13	Hybrid Black Poplar	27	900#	N 9 E 9 S 9 W 9	5-S 4	M	G	▪ Located on neighbouring land and therefore not inspected in detail. ▪ Part of a larger linear group. ▪ Multiple primary leaders from a height of 6m.	▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ.	10+	C2	366	10.8
T14	Hybrid Black Poplar	27	1000#	N 10 E 10 S 6 W 6	4-S 4	M	G	▪ Located on neighbouring land and therefore not inspected in detail. ▪ Part of a larger linear group.	▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ.	10+	C2	452	12

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)
T15	Black Poplar	17	420#	N E S W	4 4 4 4	4-W 4	EM	P	▪ Located on neighbouring land and therefore not inspected in detail. ▪ Part of a larger linear group. ▪ Mid and upper crown dieback. ▪ Short projected remaining life expectancy.	▪ Inform landowner of tree's condition, and advise that removal is recommended due to short projected life expectancy.	<10	U	82	5.1
T16	Ash	16	710	N E S W	8 4 4 8	3-W 2	M	G	▪ Four primary leaders from a height of 3m to 5m. ▪ Crown heavily biased north-west due to presence of neighbouring trees. ▪ Multiple 75mm to 125mm diameter secondary branch loss wounds.	▪ Retain in context of proposed development. ▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ.	20+	B2	228	8.52
T17	Hybrid Black Poplar	26	550#	N E S W	8 8 8 8	4-W 4	EM	G	▪ Located on neighbouring land and therefore not inspected in detail. ▪ Part of a larger linear group. ▪ Bifurcates at a height of approximately 10m.	▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ.	10+	C2	137	6.6
T18	Black Poplar	20	500#	N E S W	8 8 8 8	4-E 4	M	M	▪ Located on neighbouring land and therefore not inspected in detail. ▪ Part of a larger linear group. ▪ Slight stem lean to north-east. ▪ Upper branch tip dieback.	▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ.	10+	C2	113	6
T19	Hybrid Black Poplar	27	900#	N E S W	8 8 8 8	4-W 4	M	G	▪ Located on neighbouring land and therefore not inspected in detail. ▪ Part of a larger linear group. ▪ Trifurcates at a height of approximately 15m.	▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ.	10+	C2	366	10.8
T20	Ash	14	950	N E S W	5 8 9 7	1-S 1	PM	P	▪ 2983mm stem girth, and is hence considered locally notable (>2500mm girth; from Lonsdale (2013) Ancient & Other Veteran Trees: Further Guidance on Management). ▪ Multiple veteran characteristics. ▪ 1m diameter cavity to south side of stem base. ▪ 100mm diameter decaying fungal bracket at north base of stem. ▪ Well established epicormic branches to base. ▪ Cavities extend up stem to a height of approximately 4m. ▪ Bifurcates at a height of approximately 4m. ▪ North-eastern primary leader has been lost approximately 1.5m above primary union. ▪ Small mammal nests to base, and birds' nests within central cavities. ▪ Bat roost potential.	▪ Retain in context of proposed development. ▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ. ▪ Carry out bat survey(s) in accordance with BS8596:2015.	10+	A1/2/3	408	11.4

TREE SURVEY SCHEDULE FOR ARBORICULTURAL IMPACT APPRAISAL	
Site:	Land off Clitheroe Road, Barrow, Lancashire, BB7 9AQ
Agent for Client:	PWA Planning

Surveyor:	Kendall Rigg HND TechArborA
Survey Date:	16 March 2016
Job Ref:	BTC1056

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)
T21	Hybrid Black Poplar	29	900#	N 8 E 8 S 8 W 8	3-W 4	M	G	▪ Located on neighbouring land and therefore not inspected in detail. ▪ Part of a larger linear group. ▪ Bifurcates at a height of approximately 7m.	▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ.	10+	C2	366	10.8
T22	Black Poplar	17	470#	N 7 E 7 S 7 W 7	4-W 4	M	P	▪ Located on neighbouring land and therefore not inspected in detail. ▪ Part of a larger linear group. ▪ Upper crown dieback. ▪ Short projected remaining life expectancy.	▪ Inform landowner of tree's condition, and advise that removal is recommended due to short projected life expectancy.	<10	U	102	5.7
T23	Hybrid Black Poplar	29	900#	N 9 E 9 S 9 W 9	5-N 4	M	G	▪ Located on neighbouring land and therefore not inspected in detail. ▪ Part of a larger linear group. ▪ Trifurcates at a height of approximately 20m.	▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ.	10+	C2	366	10.8
T24	Hybrid Black Poplar	27	650#	N 11 E 11 S 11 W 11	5-W 3	M	G	▪ Located on neighbouring land and therefore not inspected in detail. ▪ Part of a larger linear group. ▪ Slight stem lean to south-west. ▪ Crown biased to south-west due to presence of neighbouring tree.	▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ.	10+	C2	191	7.8
T25	Hybrid Black Poplar	29	900#	N 9 E 9 S 9 W 9	3-W 4	M	G	▪ Located on neighbouring land and therefore not inspected in detail. ▪ Part of a larger linear group. ▪ Located on the southern side of a culvert edge.	▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ.	10+	C2	366	10.8
T26	English Elm	9	1x250 1x230 1x200 1x130 (ms)	N 5 E 1 S 4 W 9	1-W 1	EM	M	▪ Partially failed root plate. ▪ Four primary leaders from a height of 1.2m. ▪ Crown very heavily biased to the west due to the partially failed root plate. ▪ Very limited future potential due to root plate failure.	▪ Remove due to limited potential for future growth.	<10	U	78	4.98
T27	Common Alder	8	600	N 1 E 1 S 4 W 4.5	3-W 2	PM	P	▪ 3m stem, which is evidently completely hollow with two secondary branches and one tertiary branch. ▪ Terminal state of decline. ▪ Bat roost potential.	▪ Carry out bat survey(s) in accordance with BS8596:2015. ▪ Remove due to short projected life expectancy (note: action entirely dependent on results of bat survey).	<10	U	163	7.2
T28	Hybrid Black Poplar	30	900#	N 9 E 9 S 9 W 9	6-E 7	M	G	▪ Located on neighbouring land and therefore not inspected in detail. ▪ Part of a larger linear group.	▪ Protect RPA throughout development using Temporary Protective Fencing to form a CEZ.	10+	C2	366	10.8

TREE SURVEY SCHEDULE FOR ARBORICULTURAL IMPACT APPRAISAL	
Site:	Land off Clitheroe Road, Barrow, Lancashire, BB7 9AQ
Agent for Client:	PWA Planning

Surveyor:	Kendall Rigg HND TechArborA
Survey Date:	16 March 2016
Job Ref:	BTC1056

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)
T29	Common Alder	17	300#	N 1 E 1 S 1 W 1	N/A N/A	EM	D	▪ Located on neighbouring land and therefore not inspected in detail. ▪ Part of a larger woodland group. ▪ Dead.	▪ Inform landowner of tree's condition, and advise that removal is recommended, as tree is dead.	<10	U	41	3.6
G1	2no. Leyland Cypress	≤ 6	≤ 350#	N ≤ 3 E ≤ 3 S ≤ 3 W ≤ 3	0.1-W ≥ 0	SM	G	▪ Located on neighbouring land and therefore not inspected in detail. ▪ Closely spaced group.	▪ Protect RPAs throughout development using Temporary Protective Fencing to form a CEZ.	10+	C2	≤ 55	≤ 4.2
G2	2no. Common Alder	≤ 17	≤ 330#	N ≤ 2 E ≤ 2 S ≤ 2 W ≤ 5	6-W ≥ 5	SM	M	▪ Located on neighbouring land and therefore not inspected in detail. ▪ Closely spaced group.	▪ Protect RPAs throughout development using Temporary Protective Fencing to form a CEZ.	10+	C2	≤ 49	≤ 3.96
G3	4no. Common Alder	≤ 17	≤ 300#	N ≤ 3 E ≤ 2 S ≤ 4 W ≤ 7	4-W ≥ 3	SM	G	▪ Located on neighbouring land and therefore not inspected in detail. ▪ Closely spaced linear group.	▪ Protect RPAs throughout development using Temporary Protective Fencing to form a CEZ.	10+	C2	≤ 41	≤ 3.6
G4	10no. Common Alder	≤ 18	≤ 1x350 2x200 1x130 (ms)#	N ≤ 7 E ≤ 7 S ≤ 7 W ≤ 7	1-W ≥ 0	EM	G	▪ Located on neighbouring land and therefore not inspected in detail. ▪ Part of a larger woodland group. ▪ Located approximately 3m beyond stock fence to south of stream.	▪ Protect RPAs throughout development using Temporary Protective Fencing to form a CEZ.	20+	B2	≤ 99	≤ 5.62
H1	Hawthorn, Cherry Laurel, Leyland Cypress	≤ 3	≤ 9x50 (ms)#	≤ 3 wide	N/A 0	M	G	▪ Managed boundary hedge.	▪ Remove western section (to road frontage) in order to construct proposed access with sufficient visibility splay. ▪ Ensure protection of remainder of hedge throughout development.	10+	C2	N/A	≤ 1
H2	Elder, Hawthorn, Ash	≤ 6	≤ 6x75 (ms)#	≤ 5 wide	N/A 0	M	G	▪ Outgrown boundary hedge. ▪ Previously managed. ▪ Stock fencing and barb wire within hedge line.	▪ Ensure protection throughout development.	10+	C2	N/A	≤ 2.2

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!

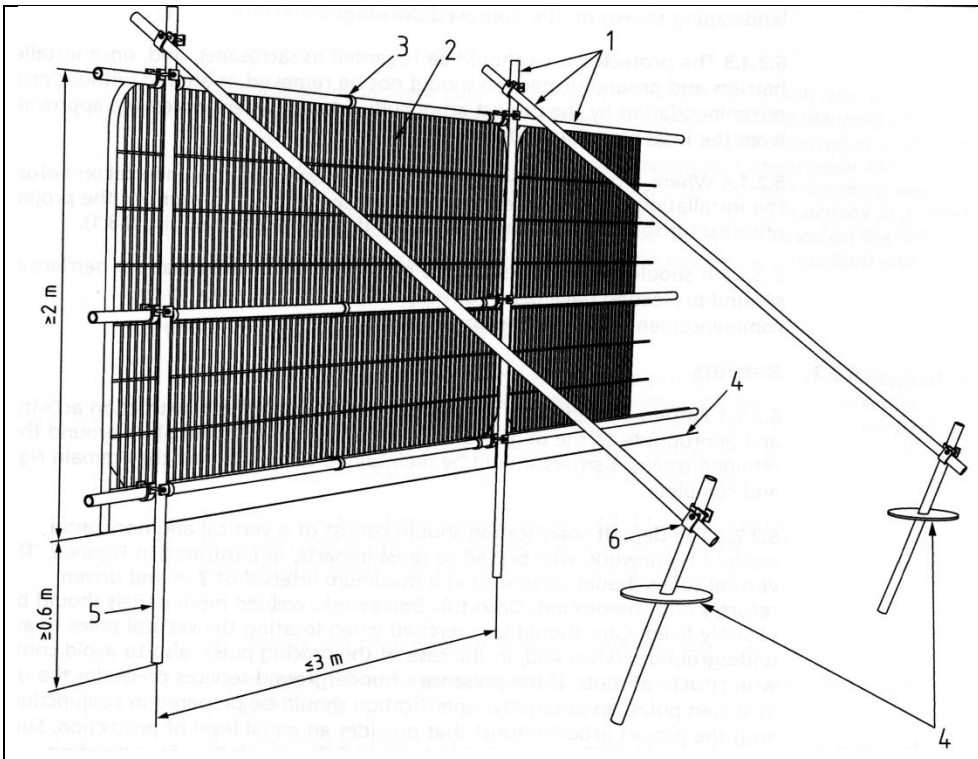
(TOWN & COUNTRY PLANNING ACT 1990)
THE TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR SUBJECTS OF A 'TREE PRESERVATION ORDER', THE CONTRAVENTION OF WHICH MAY LEAD TO CRIMINAL PROSECUTION

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

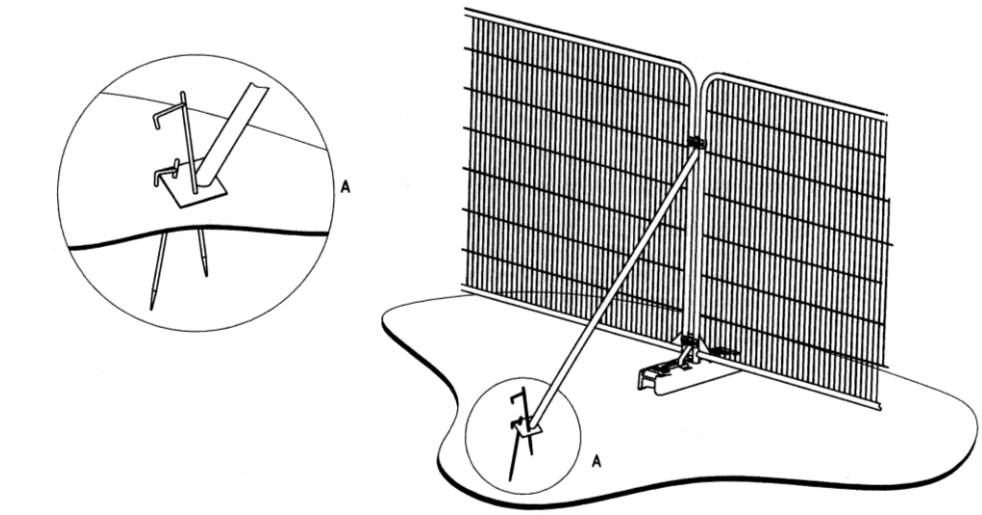
Figure 2: BS5837:2012 Default specification for protective barrier



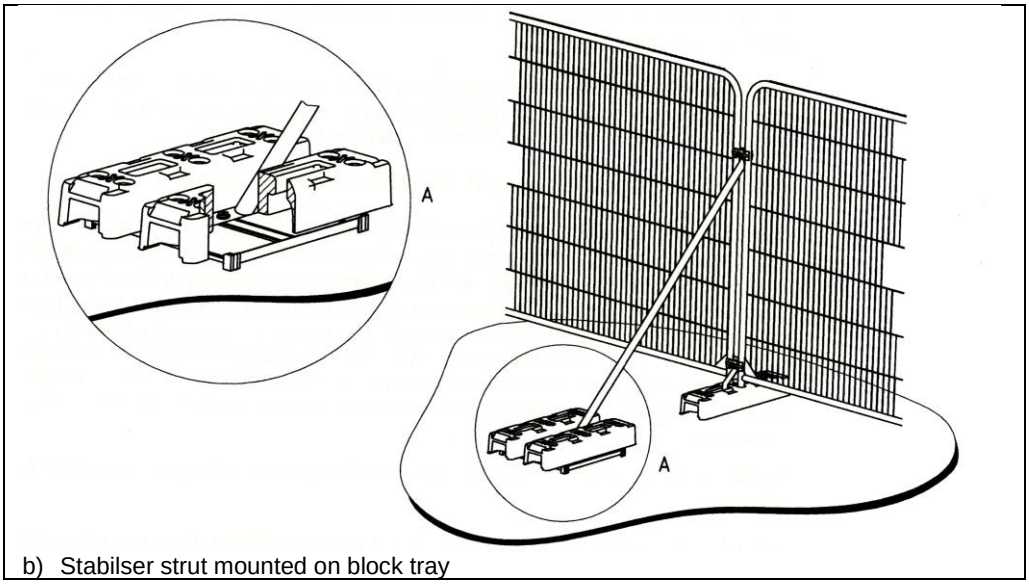
Key

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

Remove hedge H1 at road frontage in order to construct proposed access with sufficient visibility splay

Trees T5, T10, T12 and T15 located on neighbouring land, and therefor only to be removed as part of prudent arboricultural management with consent of neighbouring landowner(s)

Trees T22 and T29 only to be removed as part of prudent arboricultural management with consent of neighbouring landowner(s)

T1 G1 H1 T2 T3 T4 T5 T6 T7 T8 T9 T10 T11 T12 T13 H2 T14 T15 T16 T17 T18 T19 T20 T21 T22 T23 T24 H2 G2 T25 T26 T27 T29 G3 T28 G4

CLITHEROE ROAD

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 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 trees T2 to T8, T10 to T15, T17 to T19, and T28, groups G1 to G4, and hedge H2, were not included on the topographical site plan provided, and were subsequently plotted by the arboricultural surveyor at the time of the survey using GPS siting and measurement triangulation from existing land features. As such, the locations of these trees cannot be considered entirely 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 OFF CLITHEROE ROAD
BARROW
LANCASHIRE
BB7 9AQ

Agent for Client:
PWA PLANNING

Title:
TREE IMPACT PLAN
in Relation to Proposed Construction of Nine Detached Residential Properties

Scale:	1:250@A1
Date:	April 2016
Drawn by:	JK
Checked by:	PH

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Ref: BTC1056-TIP Rev: