Arboricultural Impact Assessment

in Relation to Proposed Erection of 10no. Over-55s Bungalows at

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

Prepared by:

Bowland Tree Consultancy Ltd

May 2018

Control sheet

Project No.:	BTC1475
Site:	Land off Clitheroe Road, Barrow, Lancashire, BB7 9AQ
Client:	Reilly Developments
Agent for Client:	PWA Planning
Council:	Ribble Valley Borough Council
Survey Date:	22 November 2017
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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.

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APPENDICES

PLANS

1.0 INTRODUCTION

Terms of Reference

1.1 Bowland Tree Consultancy Ltd were instructed to:

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

Scope and Purpose of Report

1.2 By detailing foreseeable tree related issues this report is intended to assist the Local Planning Authority (LPA), in this case Ribble Valley Borough Council, in their review of the proposed development and, as such, should be supplied to them in support of the planning application to which it pertains. Essentially, the report provides an initial 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

1.3 Further to the instruction a tree survey was carried out on 22 November 2017, in accordance with the preceding disclaimer, and all tree data collected on site is set out in the attached tabulated Tree Survey Schedule (TSS) at Appendix One which, for ease of interpretation, should be read alongside the appended BS5837:2012 Table 1.

1.4 The survey identified eleven individual trees (prefixed ‘T’), seven groups of trees (prefixed ‘G’), two woodlands (prefixed ‘W’) and five hedges (prefixed ‘H’), which have been numbered accordingly on the appended Tree Impact Plan (TIP). The TIP, which details the existing site with an overlay of the proposed development, along with the readily definable tree constraints and projected impacts, is based on a topographical survey-based proposal plan, which was provided in electronic format by the project agent, PWA Planning. In turn, for the purpose of this report, it is presumed that the provided plan’s details are accurate.

1.5 The purpose of the TIP is to give an initial indication of the impacts that the proposed development is projected to have on trees, as well as to highlight areas where special construction and/or protection considerations may be necessary. It should subsequently be used by the LPA’s tree specialist to preliminarily assess if the proposed development can potentially be constructed in accordance with BS5837:2012 and, along with the information provided in this report, as a basis for the LPA to request further details regarding specific matters relating to trees at suitable stages in the planning process.

2.0 STATUTORY PROTECTION IN RESPECT OF TREES AND ASSOCIATED WILDLIFE

Tree Preservation Orders and Conservation Area Designations

2.1 The Town & 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 Ribble Valley Borough Council's website, the site does not stand within a CA. However, the website does not provide details of specific TPOs, and it is therefore essential that the presence of any such statutory tree protection be checked directly with the council's planning department prior to scheduling or carrying out any tree works that are not directly related to, and subsequently authorised in accordance with, the implementation of a detailed (i.e. full) planning permission.

Protected Species

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

2.4 All bat species and their roosts are protected under Schedule 5 of the Wildlife & Countryside Act (1981) (as amended) and under Schedule 2 of the Conservation of Habitats 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 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 actions 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. 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.

3.0 THE SITE AND THE SURROUNDINGS

3.1 The site under consideration is located in a residential area in the village of Barrow, Lancashire, approximately four kilometres south of the town on Clitheroe and within the administrational boundaries of Ribble Valley Borough Council. It is a rectangular plot of rough grassland, divided into two by a post and wire fence that runs north to south through

the middle of the field. It is bordered to the north by residential properties, to the east by a continuation of the field, which is not included in the red line development boundary, to the south by a young woodland, to the south-west by an ongoing new residential development, and to the west by a slight continuation of the field and a yard area containing a relatively large building that is evidently constructed from metal. There is currently no formal vehicular access to the site.

3.2 The topographical survey plan provided indicates that the site sits on a very slight south-west-facing slope, which rises by approximately four metres from the lowest point in its south-west corner to the highest point in the north-east corner.

4.0 THE TREE POPULATION

4.1 As noted previously, eleven individual trees, seven groups of trees, two woodlands and five hedges were surveyed for the purpose of this appraisal. They range from young to mature in age, with heights of up to 24 metres, maximum diametrical crown spreads of up to 28 metres, and stem diameters of up to approximately 1200 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.

4.2 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.

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

4.4 As detailed in Table A, below, one tree and one woodland were categorised as high quality (i.e. 'A' category), four trees, two groups and one woodland were categorised as moderate quality (i.e. 'B' category), four trees, four groups and the five hedges were categorised as low quality (i.e. 'C' category), and two trees and one group were categorised as unsuitable for retention ('U' category).

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

	Ret. Cats.	Tree/Group/Woodland/ Hedge Numbers	Totals
Those of a moderate or high quality that should be afforded appropriate consideration in the context of development	**'A'**	T2 W2	*1 Tree* *1 Woodland*
	'B'	T5, T6, T7, T8 G4, G7 W1	*4 Trees* *2 Groups* *1 Woodland*
Those of a low quality that should not be considered a material constraint to development	**'C'**	T1, T3, T4, T11 G2, G3, G5, G6 H1, H2, H3, H4, H5	*4 Trees* *4 Groups* *5 Hedges*
Those that should be removed for sound management reasons regardless of site proposals	**'U'**	T9, T10 G1	*2 Trees* *1 Group*
			= 11 Trees, 7 Groups, 2 Woodlands & 5 Hedges in Total

5.0 THE DEVELOPMENT PROPOSAL AND ITS PROJECTED ARBORICULTURAL IMPACTS

The Development Proposal

5.1 The supplied Proposed Site Layout plan (drawing no. 1218-PL03), as prepared by PWL Architecture, indicates that the planning application is for the construction of a ten-unit residential development comprising detached bungalows for the over-55s with associated outdoor amenity space and garages and/or off-street car parking (see TIP).

5.2 A vehicular access, with associated pedestrian footpaths, is proposed via the neighbouring new residential development to the south-west. In this respect it should be noted that the proposed plans provided show that a detached garage serving unit 15 of the neighbouring development, which was unbuilt at the time of the survey, is to be constructed in a position further east in order to facilitate the new access.

5.3 The proposal plans also detail five areas within the site that have been allocated for soft landscaping, with the inclusion of associated new tree planting.

Projected Arboricultural Losses Relating to the Proposal

5.4 As detailed in Table B, below, it is projected that construction of the development as proposed will require the removal of one tree from a low quality (i.e. 'C' category) group.

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'**	G3 (1no.)	-	*1 Tree from a Group*
Those that should be removed for sound management reasons regardless of plans	**'U'**	-	-	-
Totals		*1 Tree from a Group*	-	***= 1 Tree from a Group in Total***

Mitigation for Projected Tree Losses as Part of Site Landscaping

5.5 As shown on the Proposed Site Layout plan (drawing no. 1218-PL03), prepared by PWL Architecture, five areas within the site have been allocated for new tree planting as part of the development's landscaping scheme.

5.6 In turn, the provision of new trees within these areas is projected to more than adequately mitigate for the loss of the single low quality tree that is necessary to implement the development.

5.7 Accordingly, the provision of specific species, numbers, planting sizes, planting locations and details of post-planting management, in the form of a landscape plan, can be conditioned to a planning approval.

Special Materials and Working Methods for Proposed Construction within RPAs

5.8 As detailed on the TIP a proposed garage encroaches approximately 0.5% into the total calculated Root Protection Area (RPA) of moderate quality tree T6, which is located on neighbouring land. Nonetheless, in this respect it should be noted that section 7.5 of BS5837:2012 states that *"The insertion of specially engineered structures within RPAs may be justified if this enables the retention of a good quality tree that would otherwise be lost (usually categories A or B)",* and that *"Root damage can be minimised by using:*

- *piles, with site investigation used to determine their optimal location whilst avoiding damage to roots important for the stability of the tree, by means of hand tools or compressed air soil displacement, to a minimum depth of 600 mm; and*
- *beams, laid at or above ground level, and cantilevered as necessary to avoid tree roots identified by site investigation."*

5.9 In respect of the proposals under consideration, it is therefore essential that the north-west corner of the building where the RPA encroachment occurs, be designed and constructed in accordance with these requirements. In turn, the provision of a specification drawing detailing an appropriate foundation design can be conditioned to a planning approval.

5.10 As also shown on the TIP several areas of proposed hard surfacing encroach 1.5% and 8% respectively into the RPAs of retained high quality tree T2 and a retained low quality tree in group G2. Whilst encroachments into less than 20% of the unsurfaced area of an RPA is acceptable under the BS5837:2012 guidance, we would note that Section 7.4 of BS5837: 2012 recommends that, where the construction of hard surfaces cannot be avoided within RPAs, then a 'no-dig' design, such as a three-dimensional cellular confinement system, should be used to avoid root loss and damage due to ground excavation and/or compaction. In this respect a manufacturer's brochure detailing the design and construction of a typical 'no-dig' hard surface is included at Appendix Three for reference purposes.

5.11 In turn, specific details regarding the construction of the hard surfaces, where they encroach within RPAs, should be discussed and established with a manufacturer of one of the products available on the marked and/or a specialist and experienced contractor.

5.12 Accordingly, in order to ensure adequate protection of retained trees, special materials and working methods for proposed construction within RPAs, including specially engineered foundations for buildings and 'no dig' hard surfaces, as aforementioned, should be included in a suitably detailed Arboricultural Method Statement and Tree Protection Plan, the provision of which and adherence to can be conditioned to a planning permission (see paragraphs 6.6 and 6.7 for further details regarding Arboricultural Method Statements and Tree Protection Plans).

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 RPAs of individually surveyed trees and, where applicable, the largest tree 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.

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

Underground Utilities and Drainage

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

6.5 A proposed service routing plan for the development under consideration, upon which to base an assessment of potential tree related impacts, has not been provided. However, the provision of a service plan, with all service runs routed outside retained tree RPAs, or where not possible, then with appropriate design and installation, can be conditioned to a planning approval.

Arboricultural Method Statement and Tree Protection Plan

6.6 Government guidance recommends that, where considered expedient by the LPA, an Arboricultural Method Statement (AMS) and a Tree Protection Plan (TPP) be prepared detailing special mitigation construction issues in relation to the development under consideration. Essentially, the AMS and TPP describe and detail the procedures, working methods and protective measures to be used in relation to retained trees in order to ensure that they are adequately protected during the construction process.

6.7 In order to ensure that any such special working methods are followed, and that the retained trees are adequately protected throughout the development process, the production of and adherence to an AMS and 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, and in accordance with the guidance detailed in section 5.6 and Table A.1 of BS5837:2012.

Landscaping Within and Close to Retained Trees' RPAs

7.6 All proposed landscaping to be carried out within and close to retained trees' RPAs should be carried out in strict accordance with the guidance detailed in section 8 of BS5837:2012.

Retained Tree Management

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

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

8.0 SUMMARY AND CONCLUSIONS

8.1 Eleven individual trees, seven groups of trees, two woodlands and five hedges were surveyed in respect of a proposal to construct ten detached, over-55s bungalows at the site under consideration.

8.2 One tree and one woodland were categorised as high quality, four trees, two groups and one woodland were categorised as moderate quality, four trees, four groups and the five hedges were categorised as low quality, and two trees and one group were categorised as unsuitable for retention.

8.3 An appraisal of the documentation provided to date identified that construction of the development as proposed will require the removal of one tree from a low quality group.

8.4 However, new tree planting is proposed as part of the development's landscaping, which is projected to more than adequately mitigate for the loss of the single low quality tree.

8.5 In turn, the provision of new tree planting as a component of the development, in accordance with a landscape proposal plan, can be conditioned to a planning approval.

8.6 In addition to the above it is also concluded that, 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.

8.7 In this respect it was identified that construction of a proposed garage encroaches a short distance (0.5%) into the calculated RPA of a moderate quality tree located on neighbouring. Nonetheless, this encroachment is permissible under current government guidance providing that the building is designed and constructed using specially engineered foundations in strict accordance with section 7.5 of BS5837:2012. Accordingly, a specification drawing detailing an appropriate foundation design can be conditioned to a planning approval.

8.8 The appraisal also identified that several areas of proposed hard surfacing encroach permissible distances into the RPAs of a high quality tree and a low quality tree. Nonetheless, these encroachments are permissible under current government guidance providing that the hard surface is designed and constructed using 'no-dig' methods and materials in accordance with BS5837: 2012. Consequently, a specification drawing detailing an appropriate 'no-dig' cellular confinement system design can be conditioned to a planning approval.

8.9 Accordingly, in order to ensure adequate protection of retained trees, these factors, including the construction of 'no dig' hard surfaces and specially engineered foundations for buildings, as aforementioned, should be included in a suitably detailed Arboricultural Method Statement and Tree Protection Plan, the provision of which and adherence to can be conditioned to a planning permission.

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.
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