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Arboricultural Impact Assessment of Proposed Development at



Barrow Brook Business Village, Hey Road,
Barrow, Clitheroe, Lancashire, BB7 9

Prepared by:

Bowland 
Tree Consultancy Ltd

February 2012

**ARBORICULTURAL IMPACT ASSESSMENT
BARROW BROOK BUSINESS VILLAGE**

Control sheet

Project No.: BTC268

Project Title: Arboricultural Impact Assessment at Barrow Brook Business Village

Agent: Avalon Town Planning Ltd

Local Authority: Ribble Valley Borough Council

Date of Survey: 25/11/11

Prepared by: Phill Harris BSc(Hons) HND CEnv MA ArborA MICFor Chartered Arboriculturist

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Contact Details

Bowland Tree Consultancy Ltd
21 Meadowside
Grindleton
Clitheroe
Lancashire
BB7 4RR

T: 01200 441117
E: info@bowlandtreeconsultancy.co.uk



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 in areas of ground vegetation, cannot therefore be expected. All obvious defects, however, are reported. 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 regards 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 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 first attempt to inform the site occupier of the issues and, if not possible, then inform the relevant Council. 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 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.

The potential influence of trees upon buildings or other structures resulting from the effects of their roots abstracting water from shrinkable load-bearing soils is not considered herein. The advice of a structural engineer should be sought with regard to appropriate foundation depths for new buildings with reference to NHBC Standards Chapter 4.2 (NHBC, 2008).

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**ARBORICULTURAL IMPACT ASSESSMENT
BARROW BROOK BUSINESS VILLAGE**

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1.0 INTRODUCTION

Terms of Reference

- 1.1 Bowland Tree Consultancy Ltd were commissioned by Avalon Town Planning, on behalf of their client, to:
- a) Survey, from ground level, all trees having reasonable potential to be adversely affected by or to affect the proposed site development;
 - b) Prepare a tabulated Tree Survey Schedule based on guidance specified in British Standard BS5837:2005 - Trees in Relation to Construction – Recommendations;
 - c) Evaluate the tree related impacts and potential design conflicts of the proposal;
 - d) Advise on removal, retention and management options for the trees in the current context and in the context of the proposed development;
 - e) Assess the tree protection measures required during the proposed development;
 - f) Annotate the site proposal plan to identify tree numbers, retention categories, crown spreads and Root Protection Areas to indicate tree related constraints, along with trees proposed for retention and for removal in order to produce a Tree Impact Plan; and
 - g) Produce an Arboricultural Impact Assessment (AIA) report outlining the main tree related issues and potential tree related impacts in relation to the development proposal and suitable mitigation and/or 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. Essentially, the report provides a preliminary analysis of the impacts that the proposed development would potentially have on trees and, in turn, the effects that any such impacts would potentially have on the visual amenity of the local landscape. It also offers guidance on suitable tree management and mitigation and appropriate tree protection measures in the context of the proposed development, together with enhancement of the remaining land under ownership.

Site Visit, Data Collection and Tree Impact Plan

- 1.3 Further to our instruction I confirm that I visited the site on 25 November 2011 and carried out an appraisal of trees, as detailed above and in accordance with the preceding disclaimer. 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 BS5837:2005 Table 1. Weather conditions during my survey were dry, cold and overcast, with a light wind.
- 1.4 During my survey I identified 27 individual trees (prefixed 'T'), 16 groups of trees (prefixed 'G'), two hedges (prefixed 'H') and one woodland area (prefixed 'W') and have numbered them accordingly on the appended Tree Impact Plan (TIP). The TIP is based on a topographical survey plan that was provided in electronic format by Avalon Town Planning and, for the purpose of this report, I presume the plan details to be accurate. The TIP details the existing site with the readily definable tree constraints and an overlay of the proposal, thereby allowing a preliminary appraisal of the development's potential impacts on trees (see section 6) and a subsequent evaluation of tree protection requirements, tree work needs and provisions for mitigation. The constraints relating to tree Root Protection Areas (RPAs) and their protection requirements are discussed in detail at paragraphs 7.1 and 7.2.

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 75mm 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. However, in situations where detailed planning permission has been granted and protected trees directly affect the implementation of the approved development, then it is permissible to carry out any works necessary to said trees in order to implement said development.
- 2.2 I am informed by Avalon Town Planning that there is a TPO covering trees at the site, but have not been provided with a copy of the document or informed as to the exact tree protected by the TPO. As such, the trees' statutory standing should be checked with the LPA, in this case Ribble Valley Borough Council, prior to scheduling or carrying out any tree works, with due consideration given to the specifics covered in paragraph 2.1 with regards any proposed or planned works.

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. 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. 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 subsequently 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 investigate prior to works continuing.

Felling Licences

- 2.5 Subject to certain exemptions the Forestry Act (1967) requires that a 'Felling Licence' be obtained to fell growing trees amounting to specific volumes of timber. Felling Licences are administered by the Forestry Commission and contravention of the associated controls can incur substantial penalties. However, I would note that a Felling Licence is not needed for the removal of trees immediately required for the purpose of carrying out a development authorised by detailed planning permission granted under the Act (1990).

3.0 COUNCIL POLICY IN RESPECT OF TREES AND DEVELOPMENT

- 3.1 The site stands within the administrative boundaries of Ribble Valley BC and, as such, our arboricultural appraisal considers the proposed site development against the relevant Council policies. The Ribble Valley BC District wide Local Plan (Ribble Valley BC, 1998) includes

only one Policy (below) specific to trees in relation to this site; 'Policy ENV13 - Landscape Protection'. Ribble Valley BC also have a Supplementary Planning Policy for Trees, of which paragraph 5.5 states that the "Local Authority will ensure that the right trees are maintained, protected and correctly managed".

POLICY ENV13 - LANDSCAPE PROTECTION

The Borough Council will refuse development proposals which harm important landscape features including traditional stone walls, ponds, characteristic herb rich meadows and pastures, woodlands, copses, hedgerows and individual trees other than in exceptional circumstances where satisfactory works of mitigation or enhancement would be achieved, including rebuilding, replanting and landscape management.

Reasoned Justification

It is important to protect the existing landscape features which add to the character of the Borough. The woodland coverage of the borough whether large woods, small groups, or individual trees, together with hedgerow coverage forms an important part of the landscape quality. In addition valuable ecological, recreational and economic functions arise from these features.

4.0 THE SITE AND THE SURROUNDINGS

- 4.1 The site is located within a mixed usage rural edge area in the village of Barrow, Lancashire, approximately 4 kilometres due south of the centre of Clitheroe, the Council's administrative town. It is roughly rectangular in shape and is bordered to the east by a field, to the south and west by residential properties with gardens, and to the north by the Ribble Valley Enterprise Park, a pond and a woodland copse (see Fig. 1, below).
- 4.2 The site consists of a field, with various trees standing both as groups and as individuals. Vehicular access is currently from a single point off Hey Road close to the centre of the northern boundary. Topography is evidently relatively level throughout. An established footpath runs along the western half of the northern boundary of the site and a desire-line footpath runs through the centre of the site in a north-south from the vehicular access point to the north to the properties to the south.



Fig 1: View of the northern site boundary seen from the western corner centre looking north

- 4.3 A detailed landscape character appraisal of the locality was not carried out as part of this assessment, although I did make a general appraisal of the visual amenity that the trees within the site confer in the locality based on their visual prominence and overall contribution to the landscape, as discussed in paragraph 5.1.

5.0 THE TREE POPULATION

- 5.1 As noted previously, 27 individual trees, 16 groups of trees, two hedges and one woodland copse were surveyed for the purpose of this appraisal, of which the majority are located within the site boundaries. As a whole, the larger trees within the site are partially visible from the footpath to the north and the vehicular access point and, as such, they confer a high visual amenity in the immediate local landscape. However, a substantial number of the trees under consideration are relatively young and/or small and are growing in groups, and therefore have little visual amenity value when considered as individuals.
- 5.2 The surveyed trees are very small to very large in size and consist of non-native and native deciduous and evergreen broadleaf species and deciduous and evergreen coniferous species including ash, common oak, holly, larch, and goat willow. The surveyed trees are in the young to post-mature age range, although a large percentage are young to semi-mature. They stand at heights of up to approximately 25.5 metres, have maximum diametrical crown spreads of up to approximately 25.5 metres and stem diameters of up to approximately 1050 millimetres.



Fig. 2: View of the north-western part of the site, looking west

- 5.3 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. In respect of the TSS 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 regards specific trees.
- 5.4 The TSS includes a column ('Cat. Grade') listing the trees' respective retention values, where they are rated either 'A', 'B', 'C' or 'R', as per BS5837:2005 Table 1 (Appendix One). 'A' category trees are those considered to be of 'high quality and value' and, accordingly, the most suitable for retention and 'B' category trees are those considered to be of 'moderate quality and value'. 'C' category trees are those considered to be of 'low quality and value' which, as stated in BS5837:2005 Table 1, *"will usually not be retained where they would pose a significant constraint on development"*. In turn, 'R' category trees are those that are in relatively poor condition whereby they should be removed for reasons of

sound arboricultural management regardless of any plans for the site.

- 5.5 As such, only those classed either 'A' or 'B' are of a quality and value whereby they may be considered as a potential material constraint in the development process and, in this respect, BS5837:2005 states that "*Certain* ['A' category] *trees are of such importance and sensitivity as to prevent development occurring or to substantially modify its design*". However, it should be noted that the guidance does not state that all trees identified as 'A' or 'B' category have to be retained at all costs. Rather, a more pragmatic approach should be taken whereby the retention values of such trees are considered against the merits of the planned land use changes and they are subsequently afforded appropriate weight in the context of such proposals, with suitable compensatory planting proffered for any necessary losses should this course of action be established to be acceptable.
- 5.6 As detailed in Table A (below) four trees, one group and the woodland copse were allocated high retention values of 'A', five trees and one group were allocated moderate retention values of 'B' and seven trees, 14 groups and one hedge were allocated low retention values of 'C'. In addition, 11 trees and one hedge were allocated 'R' categorisations due to short projected remaining safe life expectancies for various reasons including poor physiological and/or structural condition and a high probability of causing structural damage, and are therefore recommended for removal regardless of the proposal.

Table A: BS5837-2005 Retention Categories of the Surveyed Trees

	Ret. Cats.	Tree/Group/Hedge/Woodland Numbers	Totals
Trees, groups, hedges & woodlands of a moderate or high quality & value that should be afforded appropriate consideration in the context of development	'A'	T10, T11, T14, T17, G3, W1	4 Trees (15%) 1 Group (6.25%) 1 Woodland (100%)
	'B'	T1, T6, T8, T15, T18, G4	5 Trees (18.5%) 1 Group (6.25%)
Trees, groups, hedges & woodlands of a low quality & value that should not be considered a material constraint to development	'C'	T4, T5, T7, T16, T20, T23, T24, G1, G2, G3, G6, G7, G8, G9, G10, G11, G12, G13, G14, G15, G16, H2	7 Trees (26%) 14 Groups (87.5%) 1 Hedge (50%)
Trees, groups, hedges & woodlands that should be removed for sound management reasons regardless of site plans	'R'	T2, T3, T9, T12, T13, T19, T21, T22, T25, T26, T27, H1	11 Trees (40.5%) 1 Hedge (50%)
			= 17 Trees, 16 Groups, 2 Hedges & 1 Woodland in Total

6.0 THE DEVELOPMENT PROPOSAL AND ITS PROJECTED ARBORICULTURAL IMPACTS

- 6.1 I am informed by Avalon Town Planning that the proposal is to construct 80 new detached residential units of various sizes and a residential care-home at the site, all with associated parking and outdoor amenity space, with several of the residential units also having detached garages. Vehicular access is proposed from the existing point off Hey Road to the north, which is to connect to several proposed internal access roads. Two areas of public open space are proposed, with one for the site's north-western corner and one for its south-eastern corner, thereby incorporating the existing woodland copse.
- 6.2 In order to identify the impacts that the proposal would potentially have upon trees the tree survey and constraints information has been overlaid onto the proposal plan to produce a Tree Impact Plan (TIP) (appended at Plan One) detailing:
- The locations of the proposed residential units and the proposed care-home;
 - The locations of the areas of public open space;

- The routes of the proposed vehicular access roads;
- The trees proposed for retention, plus their respective pertinent information; and
- The trees proposed/recommended for removal.

Projected Arboricultural Losses Relating to the Proposal

- 6.3 As detailed in Table B (below) construction of the proposed development will require the removal of two moderate value/quality ('B' category) trees, one low value/quality ('C' category) tree and six low value groups. In addition, ten of the surveyed trees and one of the hedges are 'R' category and are therefore recommended for removal in accordance with prudent arboricultural management and regardless of the site proposals.

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

	Ret. Cats.	Removals necessary to implement development	Removals recommended for non-development related reasons	Total number of tree removals
Trees, groups, hedges & woodlands of a moderate or high quality & value that should be afforded appropriate consideration in the context of the proposed development	'A'	-	-	-
	'B'	T1, T6	-	2 Trees
Trees, groups, hedges & woodlands of a low quality & value that should not be considered a material constraint to development	'C'	T7, G2, G5, G5, G7, G9, G16	-	1 Trees 6 Groups
Trees, groups, hedges & woodlands that should be removed for sound management reasons regardless of site plans	'R'	-	T2, T3, T9, T12, T13, T19, T21, T25, T26, T27, H1	10 Trees 1 Hedge
Totals		3 Trees 6 Groups 1 Part Group	10 Trees 1 Hedge	= 13 Trees, 6 Groups & 1 Hedge in Total

- 6.4 Nonetheless, although implementation of the proposal will require the removal of three trees and six groups the majority of the trees at the site, including all of those that are high value ('A' category), can be retained and incorporated into the landscape plans for the development. As such, the necessary tree losses are projected to have a relatively minor impact upon the visual amenity of the surrounding local landscape.

Mitigation for Projected Tree Losses as Part of Site Landscaping

- 6.5 Extensive new tree planting is to be included as part of the proposed development's associated landscape scheme. In consideration of the character of the surrounding local rural landscape it is my opinion that the scheme should include a substantial element of trees of locally native species such as holly, Scots pine, common oak and silver birch. The provision of locally native trees would have numerous benefits including maintaining local landscape heritage and conservation value and providing important habitat to a wider range of plants and animals than non-native species.
- 6.6 In my opinion a landscape scheme of this type would, in both visual and ecological terms, adequately mitigate for the projected tree losses that would be necessary to achieve site development. New tree planting is discussed further in paragraph 8.5 and specific tree planting requirements can be conditioned to a planning approval.

7.0 RECOMMENDATIONS FOR SUCCESSFUL TREE RETENTION IN THE CONTEXT OF DEVELOPMENT

Root Protection Areas and Construction Exclusion Zones

- 7.1 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 BS5837:2005, 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 7.2, below), 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. In certain situations, there is a limited degree of flexibility in the RPA and CEZ positioning.
- 7.2 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 regards CEZs the design, materials and construction of the fencing should be appropriate for the intensity and type of site construction works, should conform to section 9 of BS5837:2005 and should be agreed with the LPA. A temporary protective fencing specification is included at Appendix Two and the extents of the RPAs should dictate locations of the CEZs.

Underground Utilities

- 7.3 The installation of underground utilities in close proximity to trees can cause serious damage to their roots. As such, utilities should 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).

Arboricultural Method Statement and Tree Protection Plan

- 7.4 BS5837:2005 recommends that, where considered expedient, an AMS and a TPP be prepared detailing "*special mitigation construction*". Essentially, the AMS and TPP describe 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. Production of and adherence to an AMS and TPP can be conditioned to a planning approval if considered necessary.

8.0 OTHER RECOMMENDATIONS

Non-Development Related Tree Works and Recommendations

- 8.1 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 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

- 8.2 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 that may exist.

Arboricultural Contractors

- 8.3 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

- 8.4 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

- 8.5 All tree planting at the site should be carried out in accordance with BS4428:1989 - Code of Practice for General Landscape Operations, BS3936-1:1992, Nursery Stock – Part 1: Specification for Trees and Shrubs and BS4043:1989, Transplanting Root-Balled Trees where applicable.

Retained Tree Management

- 8.6 Any tree risk management appraisal and subsequent recommendations made in this report were based on observations and site circumstances at the time of my 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 I 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.

9.0 SUMMARY AND CONCLUSIONS

- 9.1 The site in question, which is currently a field with various trees, is located in a mixed usage rural edge area in the village of Barrow, Lancashire. 27 individual trees, 16 groups of trees, two hedges and one woodland were surveyed in respect of a proposal to construct 80 new residential units and a residential care-home.
- 9.2 Four trees, one group and the woodland were allocated high retention values, five trees and one group were allocated moderate retention values, and seven trees, 14 groups and one hedge were allocated low retention values. In addition, 11 trees and one hedge were recommended for removal regardless of the proposal.

- 9.3 As a whole, the trees confer a high visual amenity in the local landscape, although a substantial number are small and subsequently have limited individual visual value.
- 9.4 Implementation of the proposed development will require the removal of two moderate value trees, one low value tree and six low value groups. Nonetheless, all of the high value trees are to be retained and incorporated into the landscape plans for the development.
- 9.5 Overall, the necessary tree losses are projected to have a relatively minor impact upon the visual amenity of the local landscape, which can be adequately mitigated for through the implementation of a high quality landscape scheme incorporating extensive new tree planting with a substantial element of native species.

REFERENCES

- BS4428:1989 - Code of Practice for General Landscape Operations. BSI British Standards, London.
- BS3936-1:1992, Nursery Stock – Part 1: Specification for Trees and Shrubs. BSI British Standards, London.
- BS3998:2010 - Tree Work - Recommendations. BSI British Standards, London.
- BS4043:1989 - Transplanting Root-Balled Trees. BSI British Standards, London.
- BS5837:2005 - Trees in Relation to Construction – Recommendations. BSI, 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.
- Ribble Valley Borough Council (1998). Ribble Valley Borough Council Districtwide Local Plan.

APPENDIX ONE:

TREE SURVEY SCHEDULE & BS5837:2005 - TABLE 1

TREE SURVEY SCHEDULE FOR ARBORICULTURAL IMPACT APPRAISAL

Site: Barrow Brook Business Village, Hey Road, Barrow, Citheroe, Lancashire, BB7 9

Agent for Client: Avalon Town Planning

Surveyor: Phill Harris - Chartered Arboriculturist

Assessment Date: 25 November 2011

Job Reference: BTC268

No.	Species	Height	Stem Diam.	Branch Spread	Height of C.C.	Age	PC	Comments on Condition, etc.	Management Recommendations	ERC	Cat. Grade	RPA (m ²)	RPA Radius (m)
T1	Ash	25.5	1050	N 10 E 13.5 S 14 W 12	1.5	PM	M	- Large number of heavily weighted secondary branches throughout crown, several of which have partially occluded bark cracks along their lengths. - Large amount of deadwood to approximately 200mm. - Number of previous secondary and tertiary branch failures leaving large stubs to 200mm diameter. - Large amount of adventitious growth to branches and several well established adventitious shoots to stem.	- Remove in order to construct development as proposed. - Grub out stump.	20-40	B1	498.82	12.6
T2	Sycamore	10	200	N 2 E 2 S 1 W 2	1	Y	G	- Growing out of stone retaining wall which forms bank of stream. - Projected to cause structural damage to bank. - Moderate basal curvature.	- Remove due to projected causation of structural damage. - Treat stump with suitable herbicide to prevent re-growth.	<10	R	18.1	2.4
T3	Ash	9	250 (ts)	N 2 E 2 S 4 W 3	2	SM	G	- Growing out of stone retaining wall which forms bank of stream. - Projected to cause structural damage to bank. - Moderate basal curvature. - Stem bifurcates into co-dominant primary branches at a height of approximately 1m with a very tight fork and an included bark union.	- Remove due to projected causation of structural damage. - Treat stump with suitable herbicide to prevent re-growth.	<10	R	19.64	2.5
T4	Ash	15.5	320	N 0 E 3 S 6 W 4	4	SM	G	Highly biased crown and moderate stem lean to south due to suppression by neighbouring tree(s).	Retain in context of proposal and protect RPA with CEZ throughout development process.	>40	C1	46.33	3.84
T5	Goat Willow	12	800 (ms)	N 6 E 4.5 S 6 W 4.5	2.5	M	G	- Located on neighbouring land and therefore not inspected in detail. - Stem divides into multiple sub-stems at a height of approximately 0.7m with included bark unions.	Protect RPA with CEZ throughout development process.	10-20	C1	201.09	8
T6	Ash	12	250	N 2.5 E 2.5 S 2.5 W 2.5	5	SM	G	No visible structural defects.	- Remove in order to construct development as proposed. - Grub out stump.	>40	B1/2	28.28	3

HEADINGS & ABBREVIATIONS

No. Common and botanical name in brackets where appropriate

Species: Common and botanical name in brackets where appropriate

Height: in metres - where possible approximately 60% 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.: in millimetres - measured or estimated at a height of approximately 1.5 metres above ground level or just above the root flare for multi-stemmed trees. MS = multi-stemmed, TS = twin-stemmed

Branch Spread: Crown radius measured for estimated where considered appropriate from the four cardinal points (north, east, south and west) to give an accurate visual representation of the crown

Height of CC: Height of crown clearance in metres - measured at lowest point above adjacent ground level - to inform on crown to height ratio, potential for shading, etc

Age: Estimated age class - Y = young, SM = semi-mature, M = mature, PM = post-mature

PC: Physiological Condition - a measure of the tree's overall condition and any other pertinent factors including structural defects, current and potential direct structural damage, physiological decline, poor form, etc

Comments on Condition, etc: Either Preliminary or In Consideration of the Proposal - In the case of Arboricultural Constraints Surveys the recommended management works only take existing 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

Management Recommendations: Estimated Remaining Contribution - in years as per BS5837:2005 (i.e. less than 10, 10-20, 20-40, more than 40)

ERC: Category Grading - tree retention value listed as R or A to C - broadly in line with BS5837:2005 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 to 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

TREE SURVEY SCHEDULE FOR ARBORICULTURAL IMPACT APPRAISAL

Site: Barrow Brook Business Village, Hey Road, Barrow, Citheroe, Lancashire, BB7 9

Agent for Client: Avalon Town Planning

Surveyor: Phill Harris – Chartered Arboriculturist

Assessment Date: 25 November 2011

Job Reference: BTC268

No.	Species	Height	Stem Diam.	Branch Spread	Height of CC	Age	PC	Comments on Condition, etc.	Management Recommendations	ERC	Calc. Grade	RPA (m ²)	RPA Radius (m)
T7	Ash	12	360 (ts)	N 5.5 E 4 S 0 W 4	0	SM	G	- Highly biased crown and moderate stem lean to north. - Stem bifurcates into co-dominant primary branches at a height of approximately 1m with a tight fork.	- Remove in order to construct development as proposed. - Grub out stump.	10-20	C1	40.72	3.6
T8	Ash	16.5	730	N 7.5 E 6 S 8 W 8	0.5	M	G	- Stem trifurcates into primary branches at a height of approximately 5m. - Moderate amount of adventitious growth throughout branches and to base. - Partially occluded cavity to primary branch with possible decay within.	Protect RPA with CEZ throughout development process.	20-40	B1	241.11	8.76
T9	Ash	16.5	790	N 7 E 7 S 5 W 5	0.5	M	MD	- Crown showing signs of a significant and evidently progressive reduction in vitality. - Large amount of deadwood and widespread dieback in crown. - Number of large cavities to stem, evidently resultant of previous failures, with likelihood of decay within. - Short projected remaining safe life expectancy.	- Remove due to poor structural and physiological condition. - Grub out stump.	<10	R	282.37	9.48
T10	Common Oak	13.5	710	N 6 E 7 S 7 W 5.5	0.5	M	G	- Stem trifurcates into primary branches at a height of approximately 5m. - Small amount of deadwood to approximately 30mm.	Retain in context of proposal and protect RPA with CEZ throughout development process.	>40	A1	228.08	8.52
T11	Common Oak	12	740	N 6 E 9.5 S 5.5 W 9	1.5	M	G	- Minor stem lean to east. - Several strips of response growth to bark of lower stem.	Retain in context of proposal and protect RPA with CEZ throughout development process.	>40	A1	247.76	8.88
T12	Common Oak	14.5	830	N 5 E 8.5 S 6 W 11.5	2.5	PM	MD	- Upper crown has died back and is now stag headed. - Has sustained up to five large diameter 400mm branch failures leaving large stubs. - Several large hanging branches in crown. - Very heavily weighted branch partially overhanging desire line tootpath.	- Remove due to poor structural and physiological condition. - Grub out stump.	<10	R	311.69	9.96

TREE SURVEY SCHEDULE FOR ARBORICULTURAL IMPACT APPRAISAL

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Surveyor: Phill Harris – Chartered Arboriculturist

Assessment Date: 25 November 2011

Job Reference: BTC268

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No.	Species	Height	Stem Diam.	Branch Spread	Height of CC	Age	PC	Comments on Condition, etc.	Management Recommendations	ERC	Cat. Grade	RPA (m ²)	RPA Radius (m)
T13	Ash	22.5	1000	N 9.5 E 9.5 S 10 W 10	3.5	PM	P	- Large partially occluded basal cavity extending below very swollen stem base. - Sounding with nylon mallet to lower stem indicated presence of internal decay pockets. - Stem bifurcates into primary branches at a height of approximately 6m with cavity evidently present to top of union. - Large diameter (approx. 400mm) secondary branch has failed above this point leaving large decayed stub. - Large amount of adventitious growth through branch system.	- Remove due to poor structural and physiological condition. - Grub out stump.	<10	R	452.45	12
T14	Common Oak	16.5	1000	N 9.5 E 8 S 9.5 W 8.5	0.5	M	G	- Moderate amount of deadwood to approximately 100mm. - Minor past storm damage evident.	Retain in context of proposal and protect RPA with CEZ throughout development process.	>40	A1	452.45	12
T15	Common Alder	11.5	550	N 5.5 E 6.5 S 6.5 W 2	2	EM	M	- Slightly biased crown to east due to partial suppression by neighbouring tree T14. - Has previously sustained 150mm branch failure.	Retain in context of proposal and protect RPA with CEZ throughout development process.	>40	B1/2	136.87	6.6
T16	Ash	21	1150	N 9.5 E 13 S 12 W 10	3.5	PM	M	- Fibre buckling to bark on east side of lower stem. - Crown showing signs of a moderate reduction in vitality. - Large amount of deadwood to approximately 150mm. - Several previous secondary and tertiary branch failures. - Large amount of adventitious growth to stem and branches.	- Retain in context of proposal and protect RPA with CEZ throughout development process. - Reduce crown by approximately 50%.	10-20	C1	598.36	13.8
T17	Common Oak	12.5	720	N 4 E 6 S 6 W 6	1	M	G	Moderate amount of deadwood to approximately 100mm.	Retain in context of proposal and protect RPA with CEZ throughout development process.	>40	A1	234.55	8.64
T18	Common Oak	11.5	650	N 5 E 7.5 S 7.5 W 7	0.5	M	G	- Minor lower stem lean to east. - Small amount of deadwood to approximately 100mm diameter. - Has sustained a tertiary branch failure on north side of crown leaving a large tear wound to a secondary branch. - Minor past storm damage evident.	- Retain in context of proposal and protect RPA with CEZ throughout development process. - Prune to remove stubs and broken branches.	>40	B1	191.16	7.8
T19	Sycamore	16.5	1250 (ts)	N 8 E 9 S 8.5 W 7	3.5	M	M	- Stem bifurcates into co-dominant sub-stems at a height of approximately 0.7m with a tight fork. - Very large cavity to north-west side of stem base with extensive and evidently progressive decay within.	- Remove due to poor structural and physiological condition. - Grub out stump.	<10	R	490.94	12.5

TREE SURVEY SCHEDULE FOR ARBORICULTURAL IMPACT APPRAISAL

Site: Barrow Brook Business Village, Hey Road, Barrow, Cllitheroe, Lancashire, BB7 9

Agent for Client: Avalon Town Planning

Surveyor: Phill Harris – Chartered Arboriculturist

Assessment Date: 25 November 2011

Job Reference: BTC268

No.	Species	Height	Stem Diam.	Branch Spread	Height of CC	Age	PC	Comments on Condition, etc.	Management Recommendations	ERC	Cat. Grade	RPA (m²)	RPA Radius (m)
T20	Ash	17	820	N 8 E 9 S 6.5 W 9	4.5	M	M	- Evidently located on neighbouring land. - Crown showing signs of a moderate reduction in vitality. - Moderately large amount of deadwood to approximately 150mm. - Very heavily weighed primary branch to east, evidently with cavity to top at point of union. - Large amount of adventitious growth to stem and branches.	- Protect RPA with CEZ throughout development process. - Recommend to tree owner to prune to remove faulted branch, major dead wood and to achieve end weight reduction.	10-20	C1	304.23	9.84
T21	Ash	13	1000	N 4 E 4 S 5 W 6.5	1	PM	P	- Evidently located on neighbouring land. - Crown showing signs of a significant reduction in vitality. - Cankers throughout branch system. - Large cavity to east side of stem at a height of approximately 4m.	- Recommend tree owner to remove due to poor structural and physiological condition. - Treat stump with suitable herbicide to prevent re-growth.	<10	R	452.45	12
T22	Sycamore	11.5	490 (ts)	N 2 E 4 S 5 W 4	1.5	SM	G	- Stem bifurcates into co-dominant sub-stems at a height of approximately 0.2m with an acute included bark union. - Growing out of stone retaining wall which forms bank of stream. - Projected to cause structural damage to bank.	- Remove due to projected causation of structural damage. - Treat stump with suitable herbicide to prevent re-growth.	<10	R	75.44	4.9
T23	Hawthorn	6	300 (ms)	N 1 E 2 S 4 W 4	0.5	EM	G	- Growing out of stone retaining wall which forms bank of stream. - Projected to cause structural damage to bank. - Stem trifurcates into sub-stems at a height of approximately 0.3m with tight forks.	Retain in context of proposal and protect RPA with CEZ throughout development process.	10-20	C1	28.28	3
T24	Hawthorn	5	150 (ts)	N 2 E 2 S 2 W 1	0	SM	G	- Growing out of stone retaining wall which forms bank of stream. - Projected to cause structural damage to bank. - Stem bifurcates into sub-stems at a height of approximately 0.3m with tight forks.	Retain in context of proposal and protect RPA with CEZ throughout development process.	10-20	C1	7.07	1.5
T25	Ash	10.5	300	N 4 E 5 S 5.5 W 1	1	SM	G	- Growing out of stone retaining wall which forms bank of stream. - Projected to cause structural damage to bank. - Stem bifurcates into co-dominant sub-stems at a height of approximately 0.5m. - Moderate lower stem curvature.	- Remove due to projected causation of structural damage. - Treat stump with suitable herbicide to prevent re-growth.	<10	R	28.28	3
T26	Ash	8	260	N 3 E 4 S 4 W 4	0	SM	G	- Growing out of stone retaining wall which forms bank of stream. - Projected to cause structural damage to bank.	- Remove due to projected causation of structural damage. - Treat stump with suitable herbicide to prevent re-growth.	<10	R	30.59	3.12
T27	Ash	6.5	160	N 3.5 E 3.5 S 2.5 W 3	1	Y	G	- Growing out of stone retaining wall which forms bank of stream. - Projected to cause structural damage to bank.	- Remove due to projected causation of structural damage. - Treat stump with suitable herbicide to prevent re-growth.	<10	R	11.58	1.92

TREE SURVEY SCHEDULE FOR ARBORICULTURAL IMPACT APPRAISAL

Site: Barrow Brook Business Village, Hey Road, Barrow, Citheroe, Lancashire, BB7 9
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Surveyor: Phill Harris – Chartered Arboriculturist
Assessment Date: 25 November 2011
Job Reference: BTC268

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No.	Species	Height	Stem Diam.	Branch Spread	Height of CC	Age	PC	Comments on Condition, etc.	Management Recommendations	ERC	Cat. Grade	RPA (m ²)	RPA Radius (m)
G1	4no Hawthorn	≤ 7	≤ 150	N ≤ 2 E ≤ 2 S ≤ 2 W ≤ 2	≥ 0	SM	G	■ Closely spaced group.	■ Retain in context of proposal and protect RPA with CEZ throughout development process.	10-20	C1	≤ 10.18	≤ 1.8
G2	2no Goat Willow	≤ 11.5	≤ 750 (ms)	N ≤ 6 E ≤ 4 S ≤ 7 W ≤ 6	≥ 0	M-PM	G	■ Both trees are multi-stemmed with included bark unions.	■ Remove in order to construct development as proposed. ■ Grub out stumps.	10-20	C1	≤ 176.74	≤ 7.5
G3	Sycamore, Ash	≤ 22	≤ 700	N ≤ 7 E ≤ 7 S ≤ 10 W ≤ 7	≥ 7	Y-M	G	■ Part of woodland belt located on neighbouring land to north. ■ Mainly made up of early-mature to mature Sycamore with some young Ash. ■ Closely spaced stems.	■ Retain in context of proposal and protect RPA with CEZ throughout development process.	>40	A1/2	≤ 221.7	≤ 8.4
G4	3no Ash	≤ 15.5	≤ 360 (ts)	N ≤ 5 E ≤ 6 S ≤ 6 W ≤ 5	≥ 0	SM	G	■ Very closely spaced group. ■ Stem of central tree bifurcates into co-dominant primary branches at a height of approximately 1.2m with a tight fork.	■ Retain in context of proposal and protect RPA with CEZ throughout development process.	>40	B1/2	≤ 40.72	≤ 3.6
G5	2no Sycamore, 1no Lime	≤ 15.5	≤ 370	N ≤ 5 E ≤ 6.5 S ≤ 5 W ≤ 5	≥ 0.5	SM	G	■ Very closely spaced group. ■ Lime is twin-stemmed from ground level with an acute included bark union. ■ All trees have stem leans and biased crowns.	■ Remove in order to construct development as proposed. ■ Grub out stumps.	10-20	C1/2	≤ 61.94	≤ 4.44
G6	Ash, Hawthorn	≤ 15	≤ 200	N ≤ 3 E ≤ 3 S ≤ 3 W ≤ 3	≥ 0	Y-SM	G	■ Loose group of mostly young regeneration.	■ Remove in order to construct development as proposed. ■ Grub out stumps.	>40	C1/2	≤ 18.1	≤ 2.4
G7	1no Ash, 1no Sycamore	≤ 16	≤ 500 (ms)	N ≤ 3 E ≤ 5.5 S ≤ 4 W ≤ 4	≥ 1	SM	G	■ Very closely spaced group of sm. ■ Ash has three stems arising from ground level with included bark unions. ■ Sycamore has a highly biased crown to south due to suppression by neighbouring tree(s).	■ Remove in order to construct development as proposed. ■ Grub out stumps.	10-20	C1/2	≤ 78.55	≤ 5
G8	Alder, Rowan	≤ 11	≤ 200	N ≤ 3.5 E ≤ 3.5 S ≤ 3.5 W ≤ 3.5	≥ 1	Y	G	■ Closely spaced group of young recently planted trees. ■ Many have stakes and ties present.	■ Retain in context of proposal and protect RPA with CEZ throughout development process. ■ Remove stakes and ties.	>40	C1/2	≤ 18.1	≤ 2.4

No.	Species	Height	Stem Diam.	Branch Spread	Height of CC	Age	PC	Comments on Condition, etc.	Management Recommendations	ERC	Cat. Grade	RPA (m ²)	RPA Radius (m)
G9	Ash	≤ 8	≤ 130	N ≤ 2 E ≤ 2 S ≤ 2 W ≤ 2	≥ 0.5	Y	G	Very closely spaced group of young regeneration.	- Remove in order to construct development as proposed. - Grub out stumps.	>40	C1/2	≤ 7.65	≤ 1.56
G10	Alder, Rowan, Ash	≤ 11	≤ 200	N ≤ 3.5 E ≤ 3.5 S ≤ 3.5 W ≤ 3.5	≥ 1	Y	G	- Closely spaced group of young recently planted trees with many having stakes and ties present. - Large amount of very young Ash regeneration within.	Retain in context of proposal and protect RPA with CEZ throughout development process.	>40	C1/2	≤ 18.1	≤ 2.4
G11	Common Alder	≤ 10.5	≤ 200	N ≤ 3 E ≤ 3 S ≤ 3 W ≤ 3	≥ 1	Y	G	- Loose group of young recently planted trees. - Located on neighbouring land.	Retain in context of proposal and protect RPA with CEZ throughout development process.	>40	C1/2	≤ 18.1	≤ 2.4
G12	4no. Goat Willow	≤ 11	≤ 400 (ms)	N ≤ 5 E ≤ 5 S ≤ 5 W ≤ 5	≥ 0.5	EM	G	- Located on neighbouring land. - All trees are multi-stemmed with included bark unions.	Retain in context of proposal and protect RPA with CEZ throughout development process.	>40	C1/2	≤ 50.27	≤ 4
G13	3no. Hawthorn	≤ 6	≤ 300 (ms)	N ≤ 3 E ≤ 3 S ≤ 3.5 W ≤ 3	≥ 0	EM	G	- Located on stream bank. - All trees are multi-stemmed.	Retain in context of proposal and protect RPA with CEZ throughout development process.	10-20	C1/2	≤ 28.28	≤ 3
G14	4no. Hawthorn	≤ 6	≤ 300 (ms)	N ≤ 2 E ≤ 2 S ≤ 2.5 W ≤ 2	≥ 0	SM-M	G	- Loose group located on stream bank. - All trees are multi-stemmed with included bark unions.	Retain in context of proposal and protect RPA with CEZ throughout development process.	10-20	C1/2	≤ 28.28	≤ 3
G15	2no. Hawthorn	≤ 5.5	≤ 200 (ms)	N ≤ 1 E ≤ 2 S ≤ 2.5 W ≤ 2	≥ 0.5	SM	G	- Loose group located on stream bank. - All trees are multi-stemmed with included bark unions.	Retain in context of proposal and protect RPA with CEZ throughout development process.	10-20	C1/2	≤ 12.57	≤ 2
G16	approx. 10no. Goat Willow	≤ 5	≤ 200 (ms)	N ≤ 2.5 E ≤ 2.5 S ≤ 2.5 W ≤ 2.5	≥ 0	Y	G	Very closely spaced group of multi-stemmed trees.	- Remove in order to construct development as proposed. - Grub out stumps.	>40	C1/2	≤ 12.57	≤ 2
H1	Hawthorn, Elder, Ash	≤ 9	≤ 350 (ms)	N ≤ 4 E ≤ 4 S ≤ 4 W ≤ 4	≥ 0	PM	M	- Overgrown hedge mainly consisting of Hawthorn but with substantial number of Elder and several young Ash also present. - Number of large spaces between plants in places. - Many showing signs of a significant reduction in vitality.	- Remove due to poor physiological condition. - Grub out stumps.	<10	R	≤ 38.49	≤ 3.5

TREE SURVEY SCHEDULE FOR ARBORICULTURAL IMPACT APPRAISAL

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Surveyor: Phill Harris – Chartered Arboriculturist
 Assessment Date: 25 November 2011
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No.	Species	Height	Stem Diam.	Branch Spread	Height of CC	Age	PC	Comments on Condition, etc.	Management Recommendations	ERC	Calc. Grade	RPA (m ²)	RPA Radius (m)
H2	Hawthorn	≤ 9	≤ 400 (ms)	N ≤ 4 E ≤ 4 S ≤ 4 W ≤ 4	≥ 0	PM	M	- Overgrown hedge. - Number of large spaces between plants in places. - Number of plants showing signs of a significant reduction in vitality.	Retain in context of proposal and protect RPA with CEZ throughout development process.	10-20	C1	≤ 50.27	≤ 4
W1	Common Oak, Beech, Larch, Silver Birch, Rowan, Hazel, Field Maple, Scots Pine, Holly, Ash	≤ 17.5	≤ 400	N ≤ 4 E ≤ 4 S ≤ 4 W ≤ 4	≥ 0	Y-SM	G	- Very closely spaced woodland belt with large number of young trees within. - Silvicultural thinning works would be beneficial to woodland structure.	- Retain in context of proposal and protect RPA with CEZ throughout development process. - Thin by 30%. - Carry out intermittent felling works of individual trees along northern boundary, in particular in areas closest to proposed properties, in order to de-formalise the currently straight woodland edge.	>40	A1/2	≤ 72.39	≤ 4.8

BS5837:2005 Table 1 – Cascade Chart for Tree Quality Assessment

Trees for removal				
Category and definition		Criteria		Identification on plan
Category B Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management	- Trees that have serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unstable after removal of other R category trees such as 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, for example Dutch Elm Disease, or very low quality trees suppressing adjacent trees of better quality Note – Habitat reinstatement may be appropriate. For example R category tree used as a bat roost: installation of bat box in nearby tree.			Dark Red
Trees to be considered for retention				
Category and definition		Category – Subcategories		Identification on plan
		1. Mainly arboricultural values	2. Mainly landscape values	3. Mainly cultural values, including conservation
Category A Those of high quality and value: in such a condition as to be able to make a substantial contribution. A minimum of 40 years is suggested.	Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal Arboricultural features for example the dominant and/or principal trees within an avenue	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, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance for example avenues or other arboricultural features assessed as groups	Trees, groups or woodlands or significant conservation, historical, commemorative or other value for example veteran trees or wood-pasture
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 not qualifying in higher categories	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	Light Green
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 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		Mid Blue
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				
Grey				

APPENDIX TWO:

**TEMPORARY PROTECTIVE FENCING &
GROUND PROTECTION SPECIFICATION**



- TEMPORARY PROTECTIVE FENCING & GROUND PROTECTION 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 protected throughout the development process, as specified in the 'Temporary Protective Fencing Construction' section below and detailed in BS5837:2005 Fig. 2 (overleaf) and, if applicable, as defined by area on the Tree Protection Plan (TPP);
2. be erected prior to any construction, demolition or excavation works and remain in place for the duration of the project;
3. preclude any delivery of site accommodation and/or materials and/or plant machinery;
4. 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
5. 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 of at least 2.1 metres in height and, in agreement with the LPA, be either weldmesh "Heras" panels or 18mm thick exterior grade plywood boards.
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 45° 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 Fig. 1, overleaf) 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 Arborist shall inspect the Temporary Protective Fencing.

Temporary Ground Protection

1. Any necessary Temporary Ground Protection shall conform to Figure 3 of BS5837:2005 (see overleaf).
2. The Ground Protection Area shall be left undisturbed and covered by a semi-permeable geotextile membrane which shall, in turn, be covered by a compressible layer consisting of a material such as woodchip.
3. Side-butting scaffold boards shall then be fitted to cover the Ground Protection Area.
4. Prior to any demolition or construction works, site preparation, excavation or delivery of plant and materials, the Arboricultural Consultant shall inspect the Temporary Ground Protection.
5. The Temporary Ground Protection shall remain in place until completion of the project and only removed following receipt of written permission from the LPA.

– CONSTRUCTION EXCLUSION ZONE – 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

Fig. 1: CEZ Warning Sign

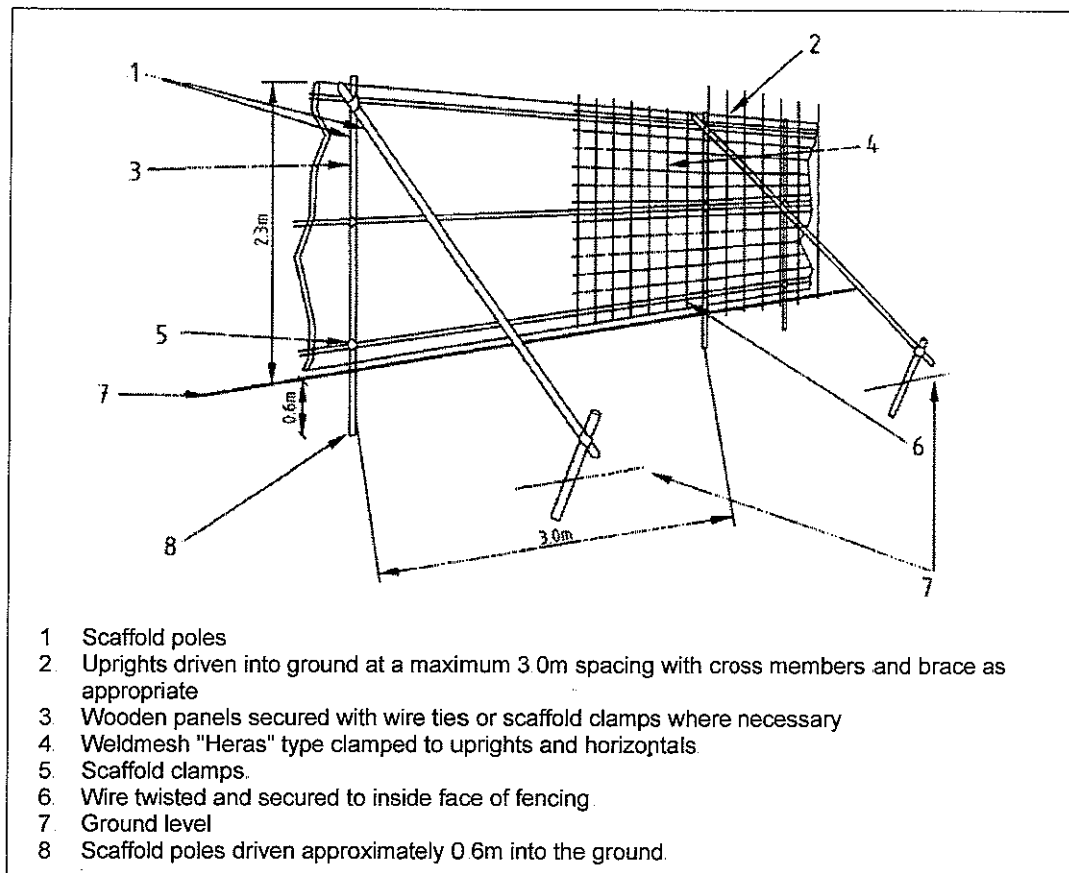


Fig. 2: BS5837:2005 Temporary Protective Fencing – Recommended Construction

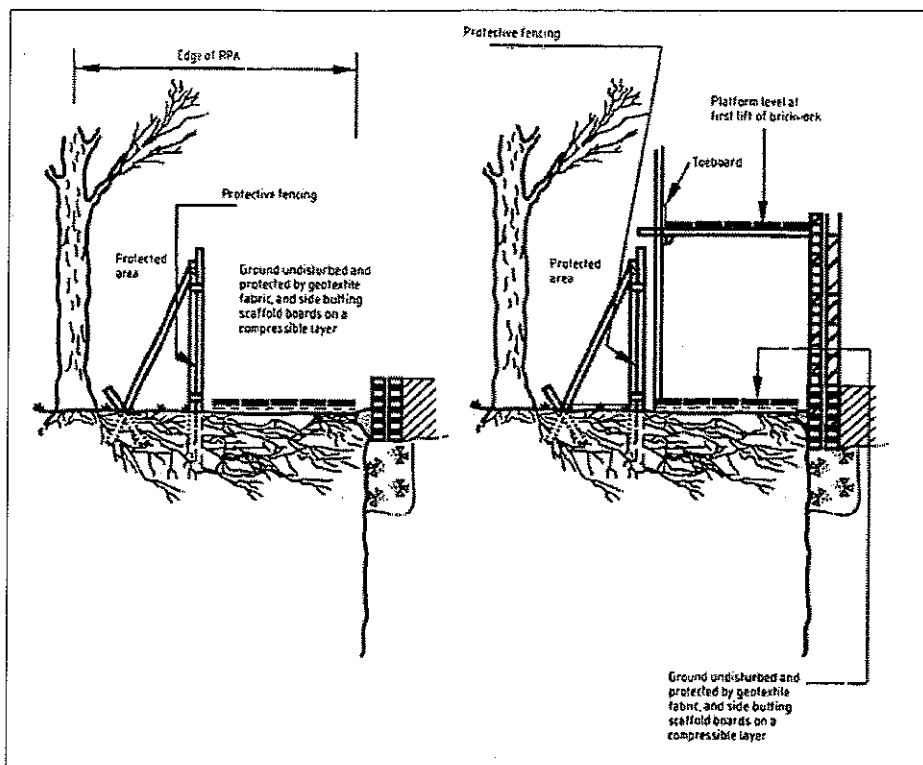


Fig. 3: BS5837:2005 Temporary Ground Protection – Recommended Construction

