



Arboricultural Report

Title: BS5837:2012 Development Site Tree Survey re
Plas Farm, Cilybebyll, Pontardawe, Neath Port
Talbot, SA8 3JQ.

Instructed by: Neil Price.

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Date: 20th March 2022

Contents

	Page
Instructions	2
Introduction	3
Tree Categorization	5
Tree Constraints Plan	6
Arboricultural Impact Assessment	8
Appendices	15

Arboricultural Report

BS5837:2012 Tree Survey re Plas Farm, Cilybebyll, Pontardawe, Neath Port Talbot, SA8 3JQ.

References:

- A. E mail reply dated 03/02/22 to GCA quotation dated 31/01/22.*
- B. BS5837:2012 – Trees in relation to design, demolition and construction – Recommendations*
- C. BS3998:2010 Tree work – Recommendations*
- D. BS8545:2014 Trees: from nursery to independence in the landscape - Recommendations*

1 Instructions

1.1 Background

It is proposed to convert two derelict farm buildings at Plas Farm, Cilybebyll, Pontardawe, SA8 3DR into holiday rental accommodation. As this planned development involves construction activity to a listed concrete building and a Dutch barn adjacent to and towards protected trees within a designated Conservation Area, a report on the site in accordance with British Standard 5837:2012 Trees in relation to design, demolition and construction - Recommendations, has been requested by the Local Planning Authority (LPA) in order to support the planning application for the project and to comply with Supplementary Planning Guidance.

1.2 Instructions

Accordingly, I have been instructed in writing (Ref A) by Neil Price, the agent acting on behalf of the owner of the property concerned, as follows:

- 1.2.1** Survey all trees relevant to the proposed development and plot the relevant trees by GPS on an OS base map.
- 1.2.2** Categorise trees for quality, retention and removal.
- 1.2.3** Produce a Tree Constraints Plan (TCP).
- 1.2.4** Produce an Arboricultural Impact Assessment (AIA).

- 1.2.5** Compile a BS5837:2012 development site arboricultural report re the above.
- 1.3** Following an initial site visit on 28/01/22 to formulate a quotation for necessary arboricultural consultancy, (Ref A), all trees which are relevant to the proposed development were plotted and surveyed on 15/03/22. Tree Numbers concerned are T1 – T3 inclusive involving a total of 3 mature trees which are relevant to this project for the purpose of Ref B.

2 Introduction

2.1 Background

I am an experienced Certified Arboricultural Technician qualified to Level 6 in Arboriculture (ABC Awards). I have gained the Technicians Certificate of the Arboricultural Association at distinction level and I also hold the Royal Forestry Society Certificate in Arboriculture again at distinction level. Furthermore, I am qualified in Professional Tree Inspection (Lantra), trained in practical visual tree assessment (VTA) and I am a registered licence holder for Quantified Tree Risk Assessment (QTRA). Lastly, I hold current full professional memberships of the Arboricultural Association (including the Utility Arboriculture Group), the Royal Forestry Society and the Forestry Industry Safety Accord (FISA).

2.2 Limitations

- 2.2.1** No climbing inspection was undertaken.
- 2.2.2** No soil or decay samples were taken. Soil data for the site has been obtained from the British Geological Survey.
- 2.2.3** No use was made of decay detection equipment.
- 2.2.4** The presence of any protected wildlife in the trees concerned remains the responsibility of the owner of the property on which the trees stand.
- 2.2.5** No enquiries have been made with Neath Port Talbot County Borough Council, the Local Planning Authority (LPA), to ascertain whether or not the trees concerned are the subject of a Tree Preservation Order (TPO) or lie within a Conservation Area. Preliminary evidence supplied to me by the site agent indicates that the site does lie within a designated Conservation Area and that the relevant trees are designated under a current TPO.

- 2.2.6** Trees and shrubs are dynamic living organisms whose health and condition can change rapidly. The health, condition and safety of trees in particular should be checked on a regular basis, preferably annually, in order to exercise a duty of care. Accordingly, the validity period of my recommendations relating to tree condition is 12 months from the date of inspection.

2.3 Site Location

- 2.3.1** Plas Farm is a former working farm on the historic Plas Cilybebyll Estate, which has a recorded history back to the 14th century. The manor house was redeveloped during the Victorian period and has recently been converted - along with most of the redundant farm buildings - to holiday rental accommodation which is run by Swansea Valley Holiday Cottages. It is now proposed to convert the final two derelict farm buildings around the farmyard – a listed historic un-reinforced concrete building and an old Dutch-style barn – into holiday rental accommodation.
- 2.3.2** Cilybebyll is a small village and community in the Swansea Valley near to the town of Pontardawe which lies within the county borough of Neath Port Talbot in South Wales.

2.3.3 Site layout

- 2.3.3.1** The farm buildings are situated to the south east of the manor house and are laid out on a roughly level plot which is bisected by a stream. The existing farmhouse forms the base of a hollow square farmyard to the east of the stream, with the listed concrete building on its western side and the old Dutch barn to the east. The immediate site area is around 0.3ha.
- 2.3.3.2** To the east of the barn, the site slopes steeply upwards through a banked hedgerow to fields set aside for grazing livestock and coniferous plantations. Site layout is shown in the Tree Constraints Plan (TCP) which is appended to this report.

2.4 Tree Cover

- 2.4.1** The environs of Plas Farm are marked by the presence of mixed evergreen and deciduous trees of good quality with mature examples of oak, ash and birch with an understorey of natural regeneration, holly, rhododendron and scrub. The ash tree population around the site is displaying established signs of infection by Ash Dieback Disease – ADD (*Hymenoschyphus fraxineus*) with examples at varying stages of the disease between Class 1 and Class 4. The completion of a BS5837:2012 Trees and Development tree survey and report is required for the proposed development in order to comply with relevant Supplementary Planning Guidance and to minimise loss or damage to existing tree cover or harm to the character, appearance and amenity of the local area.

- 2.4.2** For the purposes of Ref B, T1 – oak, T2 – ash and T3 – oak, are relevant to the proposed development due to their proximal location to the redundant farm buildings concerned. Other mature trees located further away around the periphery of the farmyard and the old converted farm buildings are not relevant to the proposed development due to their location and constraints lying well-beyond the site of proposed construction activity. Relevant tree locations and site layout are shown on the Tree Constraints Plan (TCP) which shows the current situation and is appended to this report.

2.5 Tree Categorization

- 2.5.1** Trees are a material consideration in the UK planning system and the purpose of BS5837:2012 is to provide a tree survey and categorization in the context of the current land use independent of any specific proposals for development i.e. from the perspective of the trees themselves as they stand.
- 2.5.2** Tree categorization identifies the quality and value (in a non-fiscal sense) of the individual trees and groups of trees concerned on the site, which is then reflected in their retention category. Tree categorization and retention categories are explained in the BS5837:2012 Tree Quality Assessment Cascade Chart which is appended to this report.
- 2.5.3** The starting point is Category U which involves only those trees which have serious structural or physiological defects or the presence of major disease or decay such that they cannot realistically be retained in a safe manner in the short term. During my survey I inspected and categorized the relevant ash tree (T2) along the eastern bank of the stream as Category U by virtue of its current diseased condition and this tree merits removal on safety grounds prior to construction activity on the adjacent concrete building.
- 2.5.4** After identifying Category U trees the retention process then cascades down the chart to Category A (high quality) - where I have placed T1, the veteran oak to the south of the concrete building. Next, Category B (moderate quality) is considered – where I have placed the remaining oak, (T3). Finally, after Category B (moderate quality) has been considered, then Category C (low quality) is the final resting place by virtue of condition, size and form – which is where I have placed the scrub and natural regeneration to the south and east of the barn – which has a diameter @ 1.5m agl <75mm and is not relevant to the purposes of this survey under the terms Ref B.

- 2.5.5** The accepted convention with tree categorization is that retention becomes more likely the higher the individual / group categorization. Therefore, Category A trees are almost always retained, Category B generally retained and Category C trees will usually not be retained where they impose a constraint to development. Even if Category C trees do remain then it is only until such time as new planting can be established – 10 years is the suggested figure.
- 2.5.6** The location of all relevant trees is shown in the Tree Constraint Plan (TCP) which is appended to this report and their category, condition and quality is laid out in the Tree Survey Schedule which is also appended to this report.
- 2.6** **New Building**
- The proposed development project involves construction activity to convert the redundant concrete building and old Dutch-style barn into holiday rental accommodation.
- 2.7** **Tree Survey**
- Trees situated around the farmyard adjacent to the two redundant farm buildings concerned - which are relevant to the design for the purposes of Ref B - were surveyed and their positions fixed by GPS. The Tree Survey Schedule and Tree Categorization for these three relevant trees (T1, T2 & T3) in accordance with Ref B are appended to this report in TreeMinder format.
- 2.8** **Tree Constraints Plan (TCP)**
- The above and below ground influences that the relevant trees identified have to the current situation and the proposed development were plotted following the tree survey on the TCP which is appended to this report.
- 2.8.1** **Above Ground Constraints**
- 2.8.1.1** The current and ultimate height of the trees has been taken into account where their position may cause obstruction of sunlight or shading to the development. Shading mainly applies to any trees on the south side of the development with their influence pertinent by a segment from due north west to due east. Shade cast mainly to the north by the existing tree cover is an issue for this development with the concrete building located to the north of the large veteran oak (T1) and the old barn to the north of the other oak (T2). However, both buildings are only partially shaded by the relevant trees - which lie in a wooded Conservation Area and this is not considered to be a significant constraint.

2.8.1.2 The spread of a tree can also be a constraint due to its size, dominance and movement in strong winds. For this reason, as well as in relation to shading, the spread and future branch growth of trees on the site have been taken into consideration as a potential constraint for the development. Spread is annotated on the TCP in ink to scale at the four cardinal points and is only relevant for this development in relation to T1 & T3 – with the moribund diseased T2 being removed and retained only as coppice for conservation value. However, in both cases, radial spread will not encroach on the building footprint or elevation of the new development due to the location of both trees, their existing canopy height and spread.

2.8.2 Below Ground Constraints

2.8.2.1 In order to avoid damage to the roots or rooting environment of trees, the Root Protection Area (RPA) has been plotted in ink in the form of a dodecagon on the TCP for each tree and marked by retention category. This represents a minimum area in m² which should be left undisturbed around each retained tree to ensure its survival and future contribution to the site.

2.8.2.2 However, ground conditions in and along the farmyard are characterised by the deep stream along the eastern side and the slope upwards away from the eastern side towards the banked hedgerow and fields/coniferous plantation behind it. Height difference between the hedgerow and ground level along the back (retained wall) of the barn is 2m-3m. Therefore, root morphology is extremely unlikely to penetrate down to below the compacted track along terraced level behind the barn to the east.

2.8.2.3 As a result, the only apparent minor RPA conflict with the proposed redevelopment of the old farm buildings involves the crossover of the northernmost segment of the RPA of the veteran oak – T1 with the southern end of the concrete building.

2.9 Soil Assessment

2.9.1 Soil type and plasticity (potential for shrinkage through drying).

I note from relevant British Geological Survey data that the soil profile for the site is a shallow, sand to sandy loam soil with medium amounts of organic matter and slightly impeded drainage above detrital superficial river deposits of sand, silt clay and gravel from sedimentary bedrock parent material of sandstone which was formed approximately 308 to 310 million years ago in the Carboniferous Period, when the local environment was dominated by rivers. Such soil has a low plasticity index and a pH of 7.

2.9.2 Subsidence Risk (Indirect Damage)

Tree related subsidence can only occur on highly shrinkable clay soils. The soil data from the British Geological Survey shows that local conditions are predominantly of low plasticity and as such there is only minor potential for shrink swell (significant changes in the volume of clay rich deposits that accompany changes in moisture content). The subsidence risk for trees on this site is, therefore, assessed as insignificant.

2.9.3 Heave

The removal of any trees on the site is unlikely to have any 'heave' effects on the new buildings (upward movement of soil levels due to excess moisture content and swelling of clay soils) for the following reasons:

2.9.3.1 The soil conditions, according to the British Geological Survey are predominantly low plasticity with minor shrink/swell potential.

2.9.3.2 Soil conditions as described by the British Geological Survey are sloped and relatively free draining to the local stream network which would inhibit the build-up of excessive levels of surface moisture.

3 Arboricultural Impact Assessment (AIA)

3.1 Presence of Tree Preservation Orders or Conservation Area Designation

The site lies within a designated Conservation Area. The relevant tree cover is also believed to be protected under designation by a current TPO.

3.2 Effect of New Building on the Amenity Value of Trees on or Near the Site

The proposed redevelopment of the redundant concrete farm building and old barn will require the removal of the diseased and moribund ash (T2) from the bank of the stream. This tree will be retained as a coppice stool along the stream bank for conservation purposes until it dies completely and lost amenity will be replaced in mitigation by 3 new riparian trees (alder/river birch) along the stream. Otherwise, the existing tree and shrub layer will not be adversely affected if construction activity follows the recommendations in this report.

3.3 Above and Below Ground Constraints

- 3.3.1 Above ground, the spread of the relevant protected tree cover is too far away from the buildings concerned to have any impact on the construction of the proposed extension.
- 3.3.2 No construction of foundations or installation of services should take place within the Root Protection Area (RPA) of any retained tree. 90% of tree roots are found in the top 600mm of soil and an undisturbed rooting environment is vital to the long term health & stability of the tree. The height difference between the root plates of T3 in the banked hedgerow and the upper retained level of the old barn is 2m – 3m. No significant lateral rooting is likely to be at this depth at a distance greater than 10m from the tree.
- 3.3.5 Neither of the retained boundary trees will present a significant below ground constraint to the proposed development. Any lateral rooting from T1 close to the new farmhouse would have been severed during its construction and then re-covered and permitted to re-grow along the top of the stream bank. Root morphology is less likely to favour the compacted surface conditions towards the old concrete building. With T3, root morphology is more likely to follow instead the line of the banked hedgerow and back into the field behind in order to maximize stability along the top of the slope. As a result the impact of the new build on the footprints of the concrete building and old barn on the retained trees will, in my professional opinion, be benign.

3.4 Construction Processes of the Proposed Development

- 3.4.1 Development processes that lead to soil compaction in tree rooting zones and severance or physical damage to tree roots can adversely affect long-term tree health and stability.
- 3.4.2 The redevelopment of the two farm buildings will be mainly benign to the relevant trees. However, construction processes could lead to unnecessary damage to the surrounding branching if not controlled properly on site during construction activity. Protective fencing (Appendix 5) sited around the RPA of T1 & T3 will be required to protect the trees from accidental impacts and collateral damage.
- 3.4.4 No access to the RPAs of any retained tree – except as outlined in any future Arboricultural Method Statement (AMS) - will be permitted before or during construction activity. This will also negate the risk of machinery causing damage to trunks and any low branches.

- 3.4.5** Tracked machinery where required inside the RPA's of the two retained trees can only be operated within the terms of an agreed AMS and must only travel / work from approved ground protection methods in accordance with Ref B which are appropriate to their size and weight. Ground protection is to be installed over existing hard surfacing around the southern end of the old concrete building to protect the underlying soil rooting environment of the veteran oak (T1) and also to prevent compaction under any scaffolding stand-off. Such ground protection required should be installed prior to commencement of all works.
- 3.4.6** Where any part of the existing concrete foundations of either building are scheduled for demolition and removal, care should be taken not to disturb tree roots from either of the adjacent relevant trees that might be present beneath them. Hand-held tools or appropriate machinery should be used – under arboricultural supervision – to remove the existing paved surface, working backwards over the area, so that any machinery used is not moving over the exposed ground.
- 3.4.7** Protective fencing between the existing retained trees and construction activities, (Appendix 5), ground protection methods and arboricultural site supervision whilst working close to the RPA's of retained trees throughout the duration of the development will mitigate against any unsustainable loss of major rooting from the nearest relevant tree.
- 3.4.6** Any tree work on this project should only be completed by suitably qualified, experienced, equipped and insured arborists in accordance with Ref C in order to preserve the existing canopy cover as far as is possible.
- 3.5 Modifications Proposed to Accommodate Trees**
- 3.5.1** Modifications to the design or location of the proposed development have not been considered during this AIA as it is not within my brief.
- 3.5.2** BS5837:2012 does allow an arboriculturist to offset a tree RPA by up to 20% in any one direction, where this can be justified by the root morphology of any open grown retained tree. This offset must be justified on a case by case basis taking into account the soil assessment and likely root morphology of the tree(s) in question. However, as this site is based upon existing tree cover where the trees are closely spaced and their root systems are in direct competition for anchorage, moisture and nutrients, RPA offset has not been considered.
- 3.6 Infrastructure Requirements**
- 3.6.1** The installation of services within the rooting zones of retained trees can have a major detrimental impact on their long-term survival leading to their unnecessary loss or root failure in high winds. No services are to be installed within the RPA of any relevant tree.

- 3.6.2** The only entrance to the proposed development around the Plas Farm farmyard will be off the roadway to the manor house across the northern bridge over the stream into the farmyard.
- 3.6.3** Undisclosed siting of above ground services, CCTV cameras, electrical sub-stations, refuse stores, lighting and other infrastructure requirements will lead to further unnecessary and damaging pruning of tree crowns or root loss during or post development. I have not been advised that there are any such developments planned to take place adjacent to or within the RPA of any relevant tree. If underground services require installation close to, under or through RPA's of relevant trees, then consideration should be given to the use of open structured crates such as Silva Cells.

3.7 Mitigating Tree Loss/New Plantings

- 3.7.1** My initial tree survey and categorization involves the loss of the existing moribund diseased ash tree (T2). The best two trees (T1 & T3) will be retained.
- 3.7.2** Poor tree loss coupled with the recommended replanting with suitable new stock will improve the safety and durability of the tree canopy, leaving a balance of better tree cover and increased amenity value for the planned new development. Furthermore, future sound arboricultural management will result in an increase in the long-term sustainability of tree cover on the site.
- 3.7.3** The new landscape scheme should seek to maximise the soft landscape space available to the new holiday accommodation for replacement planting to compensate for existing tree loss. In particular the removal of the large ash (T2) from the bank of the stream will free up sufficient room for replanting of 3 native riparian species to restore the balance and quality of tree cover lost in order to screen and soften the new development. Furthermore increased canopy levels in mitigation can be achieved on site by offset replanting in vacant space around the existing farmyard and old barn.

3.7.4 Tree Replacement

3.7.4.1 Tree Species

It is recommended that the following trees are considered for planting as replacements along the eastern bank of the stream:

Alnus glutinosa x 2 as a specimen riparian trees to replace the ash (T2).

Betula nigra as a specimen riparian tree to replace the ash (T2).

These species should also be considered for offset planting into available space around the farmyard and the old barn:-

Quercus robur ‘Koster’ & *Sorbus aucuparia* ‘Joseph Rock’.

3.7.4.2 Tree Stock Size

In order to deliver maximum visual impact, the replacement tree stock should be of advanced nursery stock size. With regard to current tree nursery industry standards, (Ref D), advanced nursery stock size falls between extra heavy standard and semi-mature trees and is defined by two accepted girth and overall height categories:

<u>Girth</u>	<u>Height</u>
(Measured at 1m above ground level (agl))	(agl)
16 - 18cm	4.0 - 4.5m
<i>OR</i>	
18 – 20cm	4.5 – 5.0m

The replacement tree stock specified at para 4.7.4.1 above for replanting on site shall conform with either of these two advanced nursery stock sizes. Where stock size is at odds with available space for tree pits, smaller stock size such as heavy standards or standard standards may be considered, albeit these reduced sizes will deliver reduced levels of visual impact.

3.7.4.3 Tree Replanting Timescale

- 3.7.4.3.1** The replacement stock specified should be planted during the first planting season (October – March) following the conclusion of all construction activity for the new infill dwelling.
- 3.7.4.3.2** Tree replanting shall take place following the conclusion of all construction activity in suitable pits prepared adequately in the gaps in the existing tree cover around the plot and elsewhere around the existing dwelling where offset. Positions approved for tree replanting are to be protected as far as possible in accordance with the provisions of Ref B during the construction phase of the project. The replanting positions will be remediated and any soil compaction alleviated following the same industry recommendations prior to planting following completion of all construction works.

- 3.7.4.3.3** Tree replanting shall be undertaken by suitably qualified, experienced and insured arborists in accordance with current industry standards and best practice, (Ref D).

3.7.4.4 Tree Pit Size

- 3.7.4.4.1** Root Available Soil volume (RASV) is the amount of soil available to tree roots due to its physical accessibility and suitable conditions of aeration, fertility and irrigation.
- 3.7.4.4.2** The target minimum RASV which should be provided for individually planted small to medium trees is 10 - 20 cubic metres.

3.7.4.5 Soils

- 3.7.4.5.1** Where possible, the existing topsoil on site which is extracted to achieve site levels for the new holiday accommodation should be reused in the proposed new tree pits following the conclusion of construction activity. During this time, the soil should remain loose tipped away from construction activity in order to avoid compaction and damage to the soil structure.
- 3.7.4.5.2** If there is no reusable planting soil, it may need to be imported with a specification dependent on local conditions and the soil assessment for this project.

3.7.4.6 Tree Replanting Aftercare and Survival

- 3.7.4.6.1** The provision of aftercare following tree replanting in relation to irrigation, formative pruning, routine assessment and maintenance should conform to the provisions contained in Ref D.
- 3.7.4.6.2** If the replacement trees be removed from their approved positions, die, or become severely damaged or seriously diseased all within 5 years of planting, they should be replaced by trees of similar size and species to that originally planted.

3.8 Proximity of Trees to Structure

- 3.8.1** The impacts of trees on the new development and vice versa and allowances for future growth have all been considered in this report. Tree size, future growth, light/shading, leaf and fruit nuisance etc., have received due attention in the TCP and are not considered to be an issue if my recommendations are followed. However, as retained and introduced trees respond differently in the future due to different light levels, a cyclical pruning regime may be required particularly for any trees retained close to the new development.
- 3.8.2** Where feasible, the minimum distances required by BS5837:2012 in relation to proximity of buildings should be exceeded to ensure tree survival and that the new development has a green and leafy feel to it in keeping with the locality.
- 3.8.3** Due to the current condition of the tree stock, the removal of poor quality and/or diseased trees followed by the development of the site will, in my opinion, decrease the existing tree safety risk significantly. Similarly, tree replacement will also contribute to tree risk management for the future.

3.9 Pre-Development Tree Work

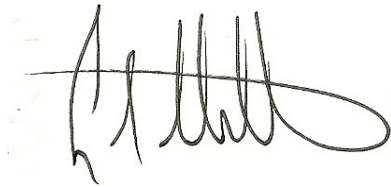
A list of recommended tree management work is included in the tree survey schedule which is appended to this report.

4.0 Final Design

- 4.1** Once the final design of the new development and associated tree removal and replanting are agreed, it will be necessary to re-visit the AIA in order to mitigate any residual arboricultural implications of the project. Thereafter, it is recommended that an Arboricultural Method Statement (AMS) is produced by an arboriculturist together with a Tree Protection Plan (TPP) and an arboricultural site supervision model in order to protect any retained trees through the construction phases of the new development and to protect and enhance the local environment.
- 4.2** In my professional opinion, current site layout means that significant lateral rooting from the adjacent protected relevant trees will not currently occupy ground beneath the old concrete building and old barn where the excavation of any new foundations and related construction activity for the new holiday accommodation will take place. Due to the fact that there will be no other impact closer to the tree root plates and to the layout of the existing farmyard, the overall impact on the trees will be benign if controlled by an appropriate Arboricultural Method Statement (AMS) produced by an arboriculturist together with a Tree Protection Plan (TPP) in order to protect the adjacent relevant trees through the construction phases of the new holiday accommodation.

5.0 Trees Subject to Statutory Controls

As the relevant trees concerned are growing within a designated Conservation Area and are offered further protection under a TPO, it will be necessary to consult the relevant Local Planning Authority responsible (Neath Port Talbot Council) before any tree works other than certain exemptions can be carried out. The relevant works outlined in this report are, in my professional opinion, necessary for the safe and reasonable management of the trees and should be acceptable to the Council concerned. However, site owners and occupiers should appreciate that they may take an alternative point of view and have the option to take different action under current planning legislation.



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20/03/2022

Appendices:

1. Glossary of BS5837:2012 terms
2. BS5837:2012 Tree Survey Schedule (TreeMinder Report pdf)
3. BS5837:2012 Tree Quality Cascade Chart
4. Tree Constraints Plan – Current Situation (pdf)
5. BS5837:2012 Protective fencing specification for retained trees.

Appendix 1

BS 5837 Glossary of Terms

A definition of arboricultural terms used in this report which are drawn from BS5837:2012 are as follows:

Arboricultural Method Statement (AMS). A methodology for the implementation of any aspect of development that has the potential to result in loss of or damage to any tree. The AMS is also likely to include details of an on-site tree protection monitoring regime.

Construction Exclusion Zone (CEZ). An area based on the RPA (in m²), of retained trees identified by an arboriculturist, to be protected during development including demolition and construction work, by the use of barriers and/or ground protection fit for purpose to ensure the successful long term retention of the tree.

Crown. That part of a tree which is composed of the branches and foliage

Crown lifting. An arboricultural operation which involves the removal of lower branches to a given height above ground level to achieve safe passage of vehicles / pedestrians or clear lines of sight / daylight. It is achieved either by the removal of whole branches, or by the removal of only those parts which extend below the desired clear height.

Crown reduction. Operation that results in an overall reduction in the height and/or spread of the crown by means of a general shortening of twigs and/or branches to strong growth points, (natural targets), whilst retaining the main framework of the crown.

Root Protection Area (RPA). A layout design tool indicating the area surrounding a tree that contains sufficient rooting volume to ensure the survival of the tree, shown in plan form. The area is equivalent to a circle with a radius 12 times the diameter of the tree measured at 1.5m agl. This is a minimum area which should be left undisturbed around each retained tree.

Stem. Principal above ground structural component of a tree that supports the branches (trunk).

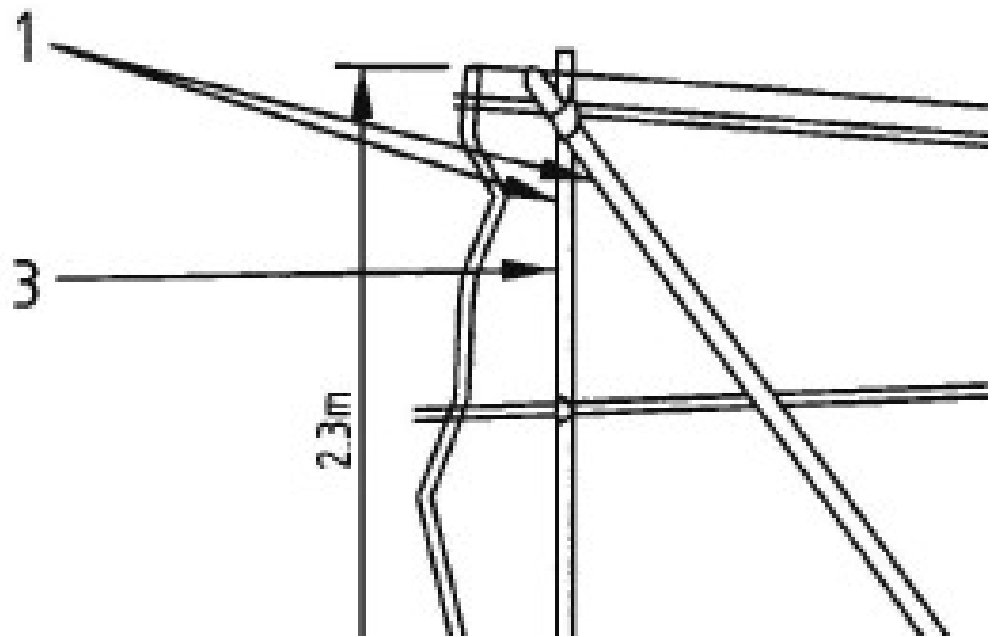
Tree Protection Plan (TPP). A scale drawing prepared by an arboriculturist showing the finalized layout proposals, tree retention and tree and landscape protection measures detailed within the AMS which can be shown graphically.

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 unsuitable 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 <i>NOTE: Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i>			See Table 2
Trees to be considered for retention				
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	1 Mainly arboricultural qualities 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)	2 Mainly landscape qualities Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	3 Mainly cultural values, including conservation Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	See Table 2
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation			See Table 2
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories			See Table 2
		Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	

Appendix 5

Default Protective Barrier (BS5837:2012)



1. Standard scaffold poles
2. Uprights to be driven into ground
3. Panels secured to uprights with wire ties and where necessary standard scaffold clamps
4. Heras panels wired to uprights and horizontals
5. Standard clamps
6. Wire twisted and secured on inside face of fencing to avoid easy dismantling
7. Ground level
8. Approximately 0.6m driven into the ground