

BS5837 Tree Survey
Land to the east of Coalbeach Lane
Surfleet
Lincolnshire
NGR TF262 289

Survey by
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 www.smasltd.com as recognised by 	Report prepared by: C Barker	Date Issued: 12 November 2014
	Reviewed by: KLB	Report Version: V1
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BS5837 Tree Survey, Land at Coalbeach Lane, Surfleet

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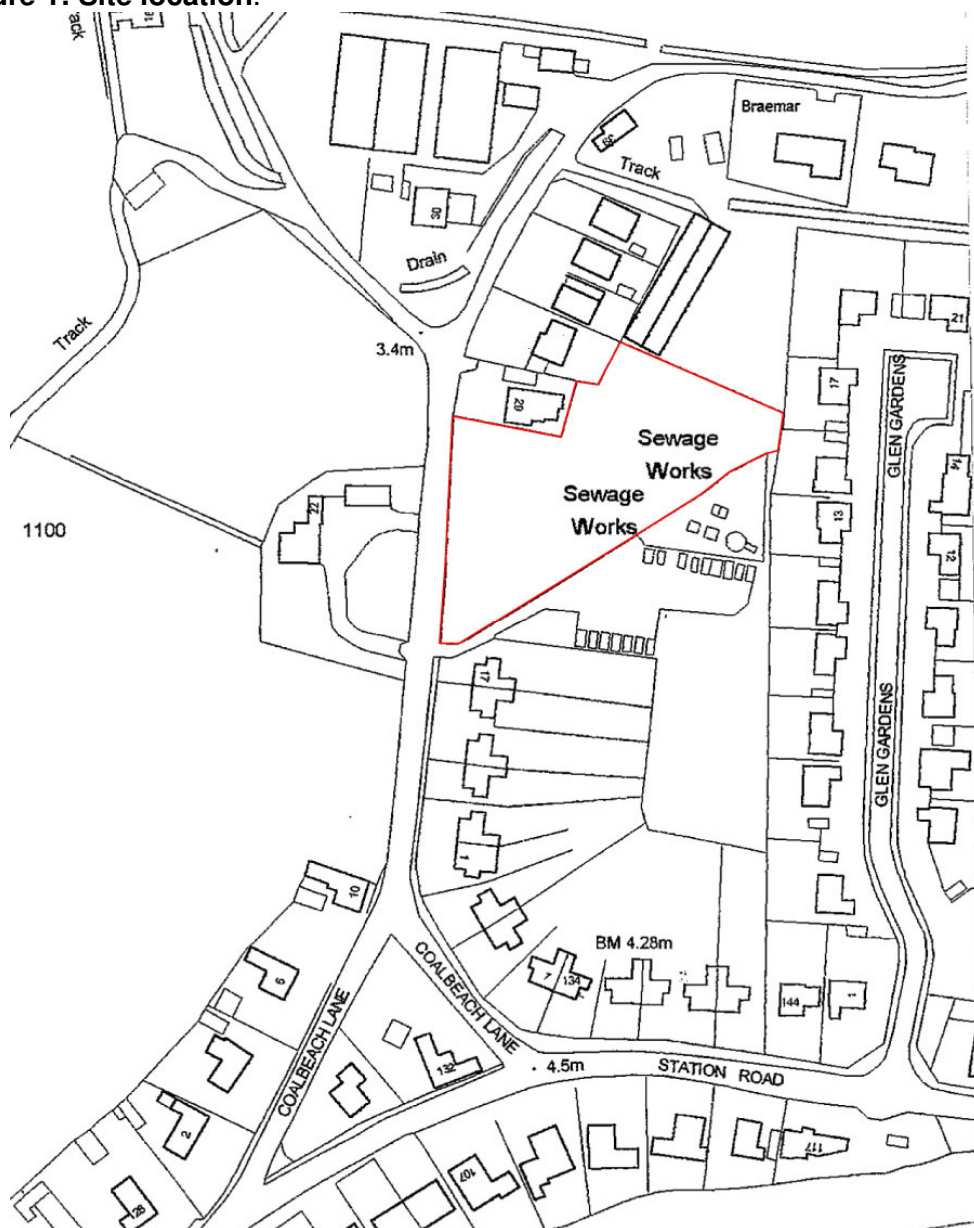
Introduction

1.1 Site Description and Location

The site surveyed comprises a roughly triangular parcel of grazing land located on Coalbeach Lane, Surfleet, Lincolnshire centred at NGR TF262 289. The land within the small field contains a number of large mature trees of considerable size and stature. The location of the site is shown on the plan within **Figure 1** and an aerial photograph has been provided within **Figure 2** to place the site in context.

In order to facilitate a planning application to utilise the field to develop six residential houses, the Client has requested a BS5837 (2012) Tree Survey should be completed to assess the quality of the trees at the site and assess these in the context of potential development within the site. An inspection of the site and the immediate surrounding areas was carried out on 17th July 2014. A photographic record of the trees at the site is included within the report.

Figure 1: Site location.



1.2 Neighbouring Land Uses and Recent Site History

The site has been a small agricultural field used for the purposes of grazing for a very long time and residential houses within the village of Surfleet have surrounded the site area over this period leaving the small field isolated. There are houses to the north, east and west of the field and a small waste water treatment works to the south beyond which are more houses. The nearest open land comprises arable field to the west and an area of open parkland to the north west.

Figure 2: Site Contextual Aerial Photograph

Image copyright Microsoft Corporation 2014



The site lies within the area governed by South Holland District Council. Consultation with the Council confirms that two of the trees within the site area surveys are protected under the auspices of a Tree Preservation Order reference Surfleet TPO/017/10/1996. The field area does not lie within a designated Conservation Area.

In undertaking the tree survey the assessment has been carried out in accordance with the specifications contained within BS 5837 Trees in Relation to Design, Development and Construction (2012).

An inspection of the site and the immediate surrounding areas was completed in July 2014 by Christopher Barker, dipHort, CEnv, an experienced arboricultural consultant and licensed bat worker.

2. Tree Survey Appraisal Methodology

2.1 Survey Objectives

This tree survey has been carried out with the objective of:

- Identifying the individual tree species present at the site by means of visual inspection;
- To define the approximate age, condition and canopy spread of all individual mature and semi-mature trees identified and the value of these within the development context;
- To identify any trees that present a risk to existing or proposed foundations or other structures that may be constructed on the site and recommend action to remove this risk; and
- Recommend tree management / mitigation measures where appropriate.

The survey broadly assessed the condition and arboricultural value of the trees lying in or adjacent to the site area, paying particular attention to any mature individual trees present within or adjacent to the site area in order to prepare an assessment in accordance with BS 5837 Trees in Relation to Design, Development and Construction (2012).

2.2 Survey Methodology

The methodology set out below is a detailed summary of the suggested approach to tree assessment as described in British Standard 5837:2012. This report has applied the methodology to all significant individual trees or groups of trees present at or near to the site. No topographical plan of the site is available and therefore a plan obtained from 'Promap' annotated by the Architect has been used to prepare the Tree Location Plan within Section 3 of the report. The location of the trees has been measured on the site but the plan is only approximately to scale but should not be used to measure off distances. Trees below 15 cm trunk diameter were generally excluded from the survey.

2.3 Trees

Trees have been broadly assessed based on guidance set out within the British Standard BS 5837 (2012) Trees in Relation to Design, Development and Construction. This standard provides recommendations and guidance on the principles to be applied to achieve successful integration of development with trees, shrubs and hedgerows. Where development is to occur, the standard provides guidance on the approach needed to decide which trees are appropriate for retention, and the means for protecting these trees during the development (including demolition and construction work) and the means of incorporating trees into the developed landscape.

Trees on the site have been divided into one of four categories (based on the cascade chart for tree quality assessment). These are classed as A, B, C or U (Section 4 of BS 5837) within the table in Appendix 1. This gives an indication as to the tree's importance in relation to the site, the local landscape and, also, the value and quality of the existing trees on site. This assists informal decisions concerning which trees should be removed or retained should development occur. For a tree to qualify under any given category it should fall within the scope of that category's definition (see below). Categories A, B and C cover trees that should be a material consideration in the development process, each with three further sub-categories (i, ii, iii) which are intended to reflect arboricultural, landscape and cultural (nature conservation) values. Category U trees may have no significant landscape value but it is not presumed that there is any overriding need to remove these unless stated otherwise in the description and recommendations. They are for this reason not considered as being significant within the planning process. In assigning trees to the A, B or C categories, and the presence of any serious disease or tree-related hazard is taken into account. If the disease is considered fatal and/or irremediable, or likely to require sanitation for the protection of other trees it may be categorised as U with a recommendation for work or even removal, even if they are otherwise of considerable value.

Category (A): Trees whose retention is most desirable and are of high quality and value. These trees are considered to be in such a condition as to be able to make a lasting contribution (a minimum of 40 years) and may comprise:

- (i) Trees which are particularly good examples of their species especially rare or unusual, or essential components of groups or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue);
- (ii) Trees, or groups of trees 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 (e.g. avenues or other arboricultural features assessed as groups);
- (iii) Trees or groups of significant conservation, historical, commemorative or other value (e.g. Veteran or wood-pasture trees).

Category (B): Trees whose retention is considered desirable and are of moderate quality and value. These trees are considered to be in such a condition as to make a significant contribution (a minimum of 20 years) and may comprise:

- (i) Trees that might be included in the high category but because of their numbers or slightly impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage), are downgraded in favour of the best individuals;
- (ii) Trees present in numbers such that they form distinct landscape features and attract a higher collective rating than they would as individuals. Individually these trees are not essential components of formal or semi-formal arboricultural features, or trees situated mainly internally to the site and have little visual impact beyond the site;
- (iii) Trees with clearly identifiable conservation or other cultural benefits.

Category (C): Trees that could be retained and are considered to be of low quality and value. These trees are in an adequate condition to remain until new planting could be established (a minimum of ten years) or are young trees with a stem diameter below 150 mm and may comprise:

- (i) Trees not qualifying in higher categories;
- (ii) 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;
- (iii) Trees with very limited conservation or other cultural benefits.

Category (U): Trees that are considered to have no significant landscape value but it is not presumed that there is any overriding need to remove these unless stated otherwise in the description and recommendations. They are for this reason not considered as being significant within the planning process. These trees will be in such a condition that any existing value would be lost within 10 years and which should in the current context be ignored or removed for reasons of sound arboricultural management. Trees within this category are:

- (i) Trees that have a serious irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees;
- (ii) Trees that are dead or are showing signs of significant, immediate or irreversible overall decline;
- (iii) 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.

Species have been recorded by common and scientific name. Height has been estimated in metres and stem diameter measured in centimetres unless impractical, taken at a height of 1.5 m from the base of the tree.

In the assessment particular consideration has been given to:

- (a) The health, vigour and condition of each tree;

- (b) The presence of any structural defects in each tree and its life expectancy;
- (c) The size and form of each tree and its suitability within the context of the proposed scheme;
- (d) The location of each tree relative to existing site features, e.g. its value as a screen or as a skyline feature.

Age class is assessed according to the age class categories referred to in BS 5837.

YNG: Young trees age less than 1/3 life expectancy.

SM: Middle age trees 1/3 – 2/3 life expectancy.

M: Mature trees over 2/3 life expectancy.

OM: Over mature – declining or moribund trees of low vigour.

The overall condition of any individual tree, or group of trees, has been referred to using one of the definitions listed below. A more detailed description of condition has been noted in the Tree Schedule.

G **Good:** A sound tree or trees needing little, if any, attention

F **Fair:** A tree or trees with minor but rectifiable defects or in the early stages of stress, from which it may recover

P **Poor:** A tree or trees with major structural and physiological defects or stressed such that it would be very expensive and inappropriate to retain

D **Dead:** A tree or trees no longer alive. However, this could also apply to those trees that are dying and will be unlikely to recover, or are becoming or have become dangerous

Major defects or diseases and relevant observations have also been recorded. Dead wood has been defined as the following:

Twigs and small branch material	Up to 5 cm in diameter
Minor dead wood	5 cm to 10 cm in diameter
Major dead wood	10 cm in diameter and above

The survey was completed from ground level only. Aerial inspections were not undertaken. Evaluations of tree conditions given within this assessment apply to the date of survey and cannot be assumed to remain unchanged, and it may be necessary to review these within 24 months, in accordance with good arboricultural practice.

2.4 Site Plans & Tree schedules

The position of significant individual trees or groups of trees measured out on the site is shown on the Tree Location Plan **Figure 3**. This plan also shows and states the calculated RPA of each tree. **Figure 4** is a plan of the proposed development layout showing the position of the RPA's in relation to the proposed dwellings and the location of protective fencing to be erected during construction.

A summary table providing detailed information on the trees and tree groups is included in Appendix 1. Within the summary table maximum RPA's (m²) for estimated tree diameters have been included where appropriate, as well as a calculated corresponding radius of the circle for that RPA. The Root Protection Areas are formulated as described below and assist when designing layouts in relation to trees.

2.5 Root Protection Area (RPA)

Below ground constraints to development are represented by the root plate around a tree which needs protecting in order for the tree to be incorporated into a proposed scheme, without adverse harm to the tree or structural integrity of any proposed foundation structures.

This area is calculated according to the formula set out in BS 5837 (2012) clause 4.6.1.

Single Stem Trees:

$$\text{RPA (m}^2\text{)} = (\text{stem diameter (mm)} \times 12 / 1000)^2 \times 3.142$$

Multiple Stem Trees:

$$\text{RPA (m}^2\text{)} = (\text{combined stem diameters (mm)} \times 12 / 1000)^2 \times 3.142$$

This figure should be capped to 707 m², that is, equivalent to a circle with a radius of 15 m, or a square with approximately 26 m sides

Taken from BS5837 (2012) clause 4.6.1.

2.6 Potential For Protected Species

Potential bat roost locations are described within this report using the methodology as that recommended by the Bat Conservation Trust (BCT). Each tree of significant size assessed within this survey has also been assessed for the potential to provide roosts for bats and the table in Appendix 1 includes reference to this.

Potential	Field Signs
Roost confirmed	Confirmed bat roost in tree. Field evidence past or current presence of bats confirmed by droppings, staining or flight.
High roost potential	Splits or cracks in major limbs which develop upwards, smooth surfaces around potential entry points, dense ivy covering, woodpecker / rot holes, significant lifting bark, Artificial bat boxes. Ancient or over mature trees where the canopy cannot be fully inspected from the ground.
Medium roost potential	Some splits in branches, dense ivy covering, and small cavities visible, dense epicormic growth. Flies may be present around a potential entry point.
Low roost potential	Splits may be present in minor branches, sparse ivy cover, and some loose bark evident. Young healthy trees with good visibility to the canopy top.
No roost potential	Tree with a negligible potential to support bat roosts (not supporting any of the above features).

3. Tree Survey Findings

3.1 Survey Details

The tree inspection took the form of a walkover inspection completed by Christopher Barker dipHort, CEnv. Each individual semi-mature or mature tree of significance within or close to the site survey area that could be impacted by any development proposals was identified, visually inspected and classified. The character of the trees at the site is shown in photographs contained within this section.

3.2 Mature and Semi-mature Trees

A total of five individual trees (T1 – T5) have been identified and assessed as part of the tree survey. The majority of these trees are large mature specimens of considerable landscape significance. The character of the trees at the property can be seen in the photographs below.

Trees T1 – T2 Coalbeach Lane Boundary

Walnut T1 is protected under TPO 017/10/1996. This is a veteran tree with a single trunk dividing into four trunks at 3m supporting a very large broad headed open balanced canopy. It has no obvious structural faults evident from ground level. This tree is of very high visual amenity value positioned along Coalbeach Lane in a highly visible position. The retention and protection of this tree within any development proposals should be a priority.

Ash T2 is a smaller tree with a single trunk positioned adjacent to the boundary close to T1. It has an openly ascending canopy but is not of high visual amenity value positioned within the boundary hedgerow. It is protected within scope of the RPA of T1 and can be retained. As it matures it may begin to crowd T1 but it will make an ideal replacement in the long term.



Walnut T1 on Coalbeach Lane (TPO)



Walnut T3 within site (TPO)



Walnut T1 and Ash T2 Coalbeach Lane



Walnut T4 on north boundary

Walnut T3 is also protected under TPO 017/10/1996. This is another veteran tree with a single trunk dividing into a coarsely branching large open canopy. It has no obvious structural faults evident from ground level. This tree is of very high visual amenity value positioned near the south boundary of the site area in full view of nearby houses. The retention and protection of this tree within any development proposals should be a priority.

Walnut T4 is not protected under TPO 017/10/1996. This is a veteran tree with a single trunk dividing into two leaders supporting a broad headed open balanced canopy. There is minor ivy growth on the trunk which should be removed and some minor regeneration at the base that should also be trimmed. This tree is of high visual amenity value positioned on the north boundary in a position highly visible from nearby houses. Part of the RPA of this tree will fall under a proposed access drive and ground protection measures will be required. The round protection measures are specified in section 4.3. The RPA and canopy extremities will need to be protected by fencing during any construction work.

Ash T5 is a large tree with two main trunks positioned within the adjacent garden. This is of high visual amenity value. Whilst the canopy extends over the site boundary it does so at sufficient height to pose no constraint to any development. The RPA is contained within the adjacent garden.



Ash T5 near north east corner



T1, T2 and T3 from the east



Hedgerow on east boundary

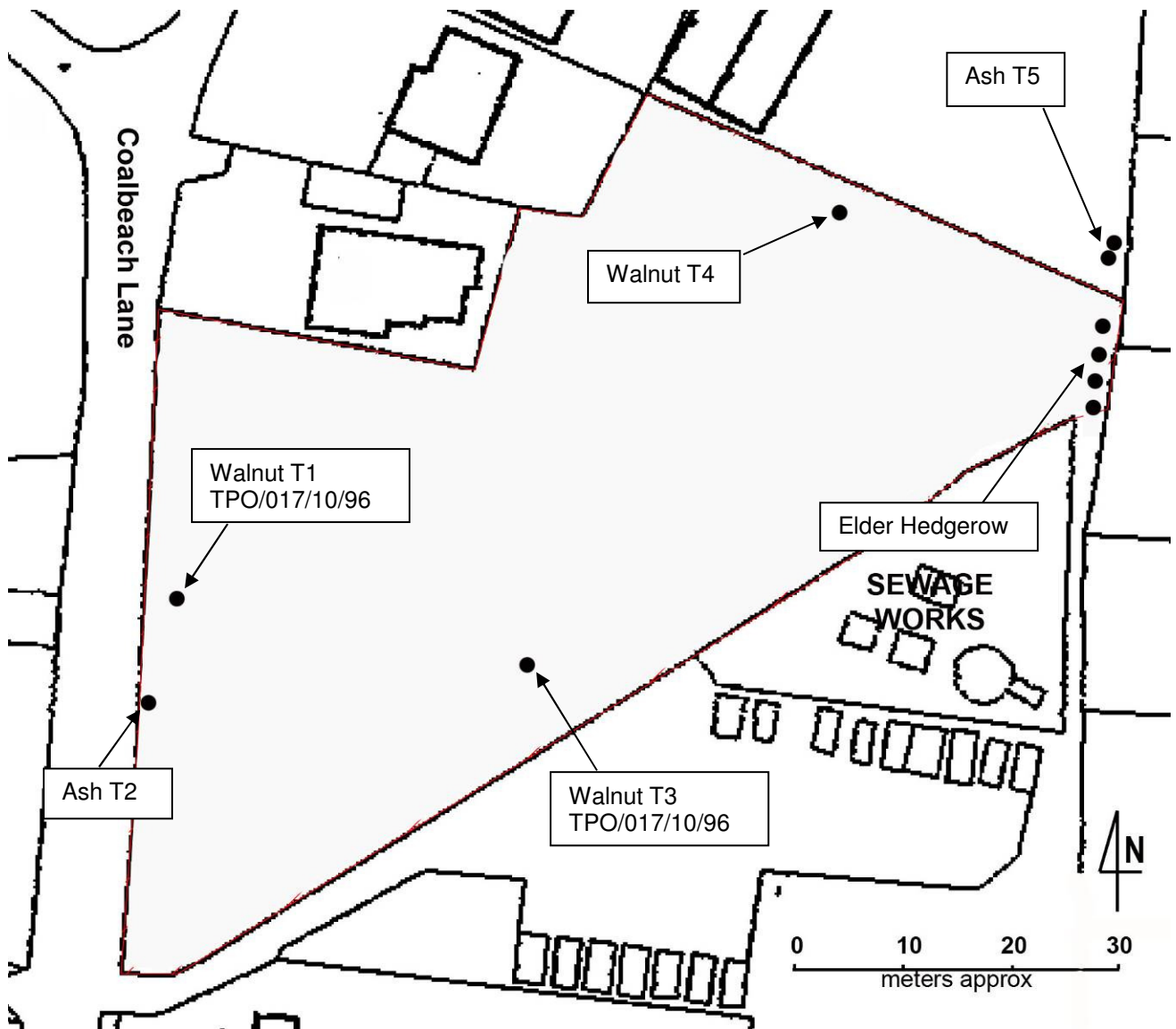


Figure 3 - Tree Location Plan



4. Tree Management

4.1 Arboricultural Assessment

An outline development proposal has been prepared for this site and an arboricultural impact assessment based on this has been prepared within the table below to summarise the impact and any work required to the trees.

Within the proposal, all of the significant mature trees and boundary trees presently on the site are being retained and therefore measures to ensure these are adequately protected from any construction and development activity will be required.

Tree	Category	Recommendation
Walnut T1	A1	RPA and canopy can be contained within a garden area and protected by fencing during any construction work. The canopy will not over shadow any proposed house.
Ash T2	C1	Small tree close to T1. No impact on the RPA or canopy of this tree will result from the proposed development.
Walnut T3	A1	RPA and canopy can be contained within a garden area and protected by fencing during any construction work. The canopy will not over shadow any proposed house but will have greatest impact on the proposed garage.
Walnut T4	A1	The majority of the RPA and all of the canopy can be contained within a garden area and protected by fencing during any construction work. The southern section (approximately 15%) will be under the proposed driveway to one property. A 'no-dig' construction method utilising ground protection geotextile will be require to construct this driveway. The canopy will not over shadow any proposed house.
Ash T5	B1	There will be no impact on the RPA or canopy of this tree and it will not over shadow any of the proposed houses.

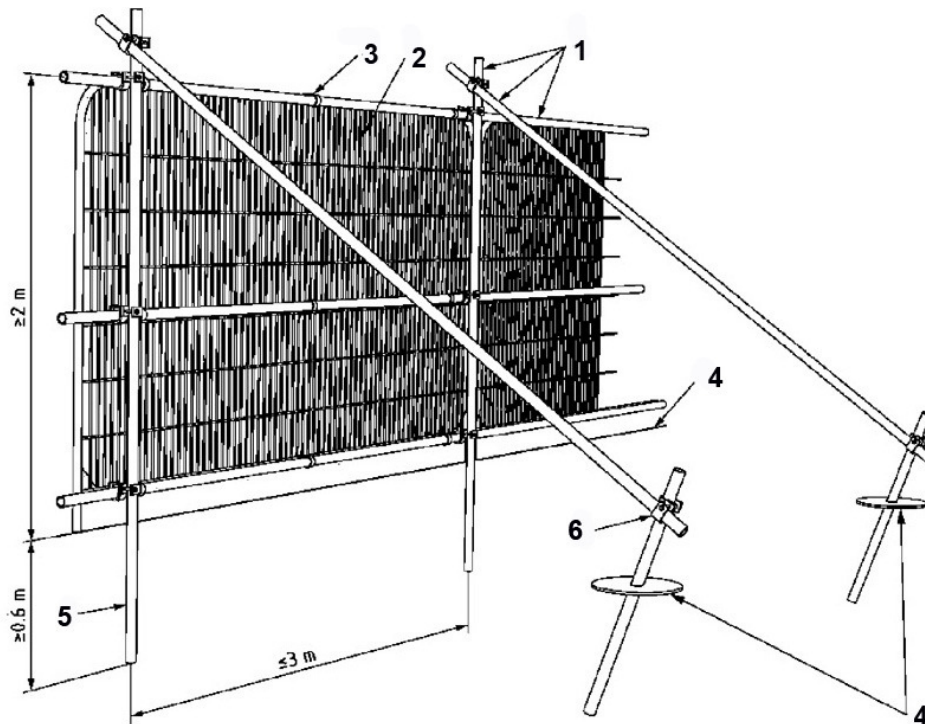
The proposed development will not require the removal of any of the mature or semi-mature trees within or adjacent to the site area. The proposed layout will only impact one of the trees by construction of a driveway over approximately 15% of the RPA.

4.2 General Recommendations

Any trees retained and incorporated within the proposed development will need to be adequately protected during any approved development works. As a general rule at this site, measures to protect trees should follow the best practice principles set out in BS5837: Trees in Relation to Design, Development and Construction (2012). Prior to any construction or development work proceeding, the RPA's of individual trees to be retained should be marked out using the distances provided in the table within Appendix 1. Marking out should be completed by a person with arboricultural or horticultural expertise as individual trees will have root zones that may be affected by local conditions and allowances will need to be made to accommodate this. The best practice principles have been broadly summarised below.

- All trees retained adjacent to the site should be protected by barriers or ground protection around the calculated Root Protection Area (RPA) and as indicated on any Tree Constraints Plan (TCP) that may be produced in association with the assessment.
- Any fencing required should be erected prior to commencement of construction and before demolition including erection of any temporary structures. Once set up fences should not be removed or altered without prior consultation with the arboricultural advisor.

- Arrangements should be made for an arboriculturist to supervise works and tree protection where trees are particularly vulnerable or sited close to access points.
- Pre-development works may be undertaken prior to the installation of fencing with the agreement of the local planning authority.



1. Standard scaffold poles
2. Heavy Gauge 2m tall galvanised tube and weld mesh infill panels
3. Panels secured to uprights and cross members with wire ties
4. Ground Level
5. Uprights driven into ground until secure (up to 0.6m)
6. Standard scaffold clamps

- All tree works should follow best practice procedures as set out in BS 3998 (2010). All trees should be maintained in good condition on site and be inspected annually (where overall condition requires) or every 2 years and after any major storm events, with safety a priority.
- Fencing should be clearly visible and suitable for the location, type and proximity of construction activity. It may be appropriate on some sites to use temporary site offices as components of the protection barriers.
- Where it has been agreed and shown on a Tree Protection Plan, construction access may take place within the RPA if suitable ground protection measures are in place (e.g. existing surfaced car park areas). In other areas this may comprise single scaffold boards over a compressible layer laid onto geo-textile materials for pedestrian movements. Vehicular movements over the RPA will require the calculation of expected loading and may require the use of proprietary protection systems.
- Once areas around trees have been protected by fencing, any works on the

remaining site area may be commenced providing activities do not impinge on protected areas. Notices should be placed on fencing to indicate that operations are not permitted within the fenced area.

- Wide or tall loads etc. should not come into contact with retained trees. Banksman should supervise transit of vehicles, jibs, booms etc. where this is in close proximity to retained trees.
- Oil, bitumen, cement or other material that is potentially injurious to trees should not be stacked or discharged within 10m of a tree bole. No concrete mixing should be done within 10m of a tree. Allowance should be made for the slope of ground to prevent materials running towards the tree.
- No fires will be lit where flames are anticipated to extend to within 5m of tree foliage, branches or trunk, taking into consideration wind direction and size of fire. Notice boards, telephone cables or other services should not be attached to any part of a retained tree.
- Where it is deemed necessary to operate a wide or tall load, plant bearing booms, jibs and counterweights or other such equipment, as part of construction works, and such equipment would have potential to cause injurious contact with crown material i.e. low branches and limbs, of retained trees within the RPA fencing, it is best advised that appropriate, but limited tree surgery, be carried out beforehand to remove any obvious problem branches. This is classed as 'Facilitation Pruning' within BS 5837 (2012). Any such pruning should be undertaken in accordance with a specification prepared by an arboriculturalist.
- It is advised that a Pre-Commencement Site Meeting is held with contractors who are responsible for operating machinery, as described above. To firstly highlight the potential for damage occurring to tree crowns and to ensure that extra care is applied when manoeuvring machinery during such operations within close proximity to retained trees to avoid any contact.
- In the event of having caused any such branch or limb damage to retained trees it is strongly recommended that suitable tree surgery be carried out, in accordance with BS 3998 (2010) Recommendations for Tree Work, to correct the damage, upon completion of development.
- All of the above precautionary measures should be applied to minimise the effect of any damage to long-term tree health and safety.

4.3 Ground Protection for Walnut T4

Figure 4 shows the location of the proposed driveway to plot No 5 where the driveway will require a ground protection geotextile to be placed as part of a 'no-dig' construction method to protect the existing RPA of Walnut T4.

To ensure that these root plates are protected and not impacted by the proposed car parking area it will be necessary to utilise a semi-rigid geotextile construction to raise the ground levels.

There are a number of systems available to provide ground reinforcement that will enable a gravel or block paviour driveway to grass to be constructed without excavation of the ground. This document contains the specification for the Groundgridz rigid geotextile system (separate **Appendix 2**). The exemplar specification provided below for the 'Groundgridz'- ground reinforcement geotextile grid is one of a number of similar geotextile grid systems that can be utilised with almost identical specifications. The geotextile is manufactured from 100% recycled polyolefin and the reinforcement grids provide a heavy-duty reinforcement system for grass,

gravel and block paving stabilisation.

This type of surface helps to reduce the risk of potholes, rutting, compaction or surface vegetation damage. The ground grids system design provides a strong structure that is easy and quick to install, and suitable for a wide range of applications including paths, driveways, car parking areas and access routes.

The ground reinforcement grids can withstand up to 350 tonnes per sq/m. and enhance surface water flow, which as a result, can save a lot of the time and money involved in drainage installation.

- Dimensions: 330mm x 330mm x 40mm (Supplied assembled 990mm x 990mm)
- Wall thickness: 3mm
- Wall height: 40mm
- Weight per tile: 0.57kg
- Weight per m²: 5.13kg
- Material: 100% recycled polyolefin
- Compressive strength: Up to 12t axle load in accordance with DIN 1072
- Loadbearing capacity: Up to 320 tonne per square metre
- Natural stability: Temperature range -50°C up to 90°C
- Dimensional changes: Approx. 0.5 % (at a standard temperature +20°C up to 80°C)
- Humidity absorption: 0.01 %
- Environmental compatibility: Harmless, groundwater neutral, weather proof & UV resistant
- Solubility: Resistant against acid and leaching, alcohol, oil and petrol



Within the details and data sheets the Surveyor for the supplier states;

“CORE Root Protector (CRP) has a seam strength and tensile strength test certificate which is indicated on the specification sheet page 4 which is far in excess of the Terram / Cellweb alternative. The main difference between our system and the Terram system is that ours is made of HDPE with clear drainage holes rather than a geotextile membrane. HDPE is far stronger allowing you to use a lesser depth whilst achieving greater strength and unlike geotextile

membrane the cell walls will not become clogged over time and suffer any loss of lateral permeability."

The suppliers of the product have rigorously tested it and have calculated that use of the produce increases resistance to ground pressure by a factor of X5. In effect using a 50mm CRP + infill and 50mm of granular cover material as the top surface is the equivalent of using 300mm of standard gravel product. The specific load bearing capacity of the ground needs to be assessed on site to confirm that the CRP specified is sufficient to reduce the loads anticipated. However, firstly it should be noted that in the event that 50mm CRP is insufficient, increasing this to the 100mm depth CRP is easily done and this significantly increases the ground protection. I have initially specified the 50mm product in this instance based on my own initial assessment of the ground conditions on which the product is to be placed.

Construction Method Statement

This rigid geotextile can be laid onto the existing ground surface and require no excavation except for the removal of the top 50mm of grass cover. The porosity of the product allows free movement of air and water through the soil whilst providing a strong reinforcement barrier that spreads loading effectively to significantly reduce compaction in the underlying soil.

The existing ground is to be cleared of any obstructions without any significant disturbance to existing ground levels or any shallow roots. The surface is then to be protected by placing a Treetex T300 Ground Separation Membrane (or similar) across the area on which the ground reinforcement system is to be laid. This membrane is also porous and will allow water and oxygen to pass through into the underlying ground.

The edging of the driveway closest to the Walnut tree is to be defined by using a treated hard wood timber plank affixed using stakes to minimise ground impact and the Treetex membrane will be lapped up to this.

If necessary, the ground shall be levelled by applying a thin layer of coarse sand, by hand, to create a suitable even level surface on which to lay the 2m x 3m geotextile panels. The geotextile protection system should be laid in place and fixed with the retaining pegs across the entire area of the driveway where highlighted and edged in orange within **Figure 4** in order to protect the existing root systems of the mature tree and provide surface continuity across the driveway.

Once in place, the geotextile is to be carefully in-filled using a mixture of sand and 10mm gravel which should be carefully spread across the surface and into the grid structure of the geotextile. This should be watered to 'bed-in' the mixture. If block paving is the final surfacing this can be constructed on a sand bed laid over the geotextile and gravel.

The optimum time period over which to undertake work within the root protection area of these trees is during the winter period when the trees are dormant.

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Appendix 1: BS5837 Tree Schedule

Key:	Measurements	Age – Class	Overall Condition	BS 5837 2005 : Cascade Chart for Quality Assessment/Retention Category	Symbols:
	MS – Multi-stemmed	YNG-MAT-Young Mature	G – Good	A – High	< = less than
	Ht - Height in metres	SM – Semi-mature	F – Fair	B – Moderate	~ = approximately
	Stem – Stem Diameter at 1.5m in mm	Mat – Mature	P – Poor	C – Low	> = greater than
	Crown – Crown spread in metres	OM – Over mature	D – Dead	R – Trees for Removal	
	TD - Trunk division (height in metres)	Est Yrs – estimate of years remaining (>40 years; 20 –40 years; <20 years)		Sub-categories: 1 = mainly arboricultural values 2 = mainly landscape values 3 = mainly cultural values.	

RPA = Root protection area (equivalent to a circle with a radius 12 x the stem diameter for single stem trees and 10 x the basal diameter for trees with more than one stem arising below 1.5m above ground level).

Tree No	Species	Ht (m)	Stem Diam mm@ 1.5m	Canopy Spread (m)	Height of Crown Clearance	Age Class	Est yrs	Overall Condition	Structural condition	Recommendations	BS 5837 Category	RPA Radius (m)
T1	Walnut <i>Juglans nigra</i>	21	1110	N-10 S-8 E-9 W-10	3	M	20 - 40	G	TPO 017/10/1996. Veteran tree with a single trunk dividing into four trunks at 3m supporting a very large broad headed open balanced canopy. Moderate roost potential. No structural faults evident from ground level.	This tree is of very high visual amenity value positioned along Coalbeach Lane in a highly visible position. It is protected by a TPO. The RPA and canopy extremities will need to be protected by fencing during any construction work.	A1	13.3
T2	Ash <i>Fraxinus excelsior</i>	12	250	N-5 S-5 E-5 W-5	1	SM	10	G	Single trunk positioned adjacent to the boundary close to T1 with an openly ascending canopy. Low roost potential. No structural faults evident from ground level.	This tree is not of high visual amenity value positioned within the boundary hedgerow. It is protected within scope of the RPA of T1.	C1	3.0
T3	Walnut <i>Juglans nigra</i>	20	770	N-10 S-9 E-9 W-8	2	M	20 - 40	G	TPO 017/10/1996. Veteran tree with a single trunk coarsely dividing into a broad headed balanced canopy at 5m agl. Moderate roost potential. No structural faults evident from ground level.	This tree is of very high visual amenity value positioned near the south boundary of the site area in a highly visible position. It is protected by a TPO. The RPA and canopy extremities will need to be protected by fencing during any construction work.	A1	9.2

Tree No	Species	Ht (m)	Stem Diam mm@ 1.5m	Canopy Spread (m)	Height of Crown Clearance	Age Class	Est yrs	Overall Condition	Structural condition	Recommendations	BS 5837 Category	RPA Radius (m)
T4	Walnut <i>Juglans nigra</i>	20	810	N-7 S-7 E-6 W-6	1	M	20 - 40	G	Veteran tree with a single trunk dividing into two leaders supporting a broad headed open balanced canopy. Minor ivy growth on the trunk. Minor regeneration at the base. Moderate roost potential. No structural faults evident from ground level.	This tree is of high visual amenity value positioned on the north boundary in a position highly visible from nearby houses. Part of the RPA will fall under a proposed access drive and ground protection measures will be required. The RPA and canopy extremities will need to be protected by fencing during any construction work.	A1	9.7
T5	Ash <i>Fraxinus excelsior</i>	18	310 / 290	N-6 S-6 E-6 W-7	5	M	20+	G	Two trunks from 0.5m agl supporting a high broad headed canopy that over hangs the site boundary at height. Low roost potential. No structural faults evident from ground level.	This tree is of high visual amenity value positioned near the boundary within an adjacent garden. The RPA does not extend into the site. The canopy poses no constraint.	B1	3.1