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Tree Survey BS5837:2012

Client: Marc Dewing

Site: 52 Woodlands Way, Mildenhall, Bury St Edmunds, IP28 7JF

Scope: Arboricultural Survey to BS5837:2012
with Arboricultural Impact Assessment,
Arboricultural Method Statement &
Tree Protection Plan.



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1.0 Introduction

1.1 Instruction

Marc Dewing instructed S.P. Landscapes & Tree Contractors to undertake an arboricultural survey, in accordance with BS5837:2012, at 52 Woodlands way, Mildenhall, Bury St Edmunds, IP28 7JF. This survey will assess the general condition of the trees from the ground. The report has been revised on 21/7/23 by Ian Clarke after WSDC planning asked for more information regarding trees at the rear of the property. Arboricultural method statement and tree protection plan were added on 21/09/23 to satisfy a planning condition from WSDC.

1.2 Survey

The survey conducted, assessed the condition of the trees based on a visual inspection made at ground level. If further inspection of any specific tree is required, including the use of decay detection equipment, the recommendation to do so will be made clear in this report and noted on the tree schedule (appendix V). Any measurements written in the report are approximate. The data collected is in accordance with BS5837: 2012.

1.3 Report Limitations

This report is only concerned with the trees within the grounds of the proposed development. Trees are dynamic living organisms that are subject to constant external stresses and to biological and non-biological influences. The structure of a tree can change at any given time and should be assessed for risk regularly. A survey may need to be conducted more frequently depending on location and the surrounding population. The assessment of the tree(s) in this report may be considered valid for a period of twelve months.

1.4 Importance & Legal Framework

Trees are an important part of our urban landscape and can be taken for granted. They have important visual amenity value allowing their aesthetic beauty to break up and soften the surrounding built environment. Trees signal a change of seasons, producing flowers, fruit, and autumnal colours. Collectively they can produce massive quantities of oxygen, filter pollution and shelter us from wind and direct sunlight.

In recent years there has been an average of around six tree related deaths annually, which is a chance of 1 fatality per 10 million of the population. Compared with other daily risks such as industrial or traffic accidents, this figure is broadly acceptable and tolerable. These risks do increase slightly in highly populated urban areas with a high concentration of people close to trees.

However, there is an obligation of reasonable safety owed by a site owner or manager to both visitors and to those adjacent to the site under the Occupier's Liability Act 1957 and as revised

in 1984. The owner/manager of the land may be held liable for any physical harm to persons or property arising from an accident that was both reasonably foreseeable and reasonably preventable in that situation.

1.5 Qualification & Experience

This survey and report has been completed by Ian Clarke, who holds an ABC Level 4 Diploma in Arboriculture and based this report on site observations, continual professional development courses and knowledge gained over the last 12 years as a practicing arborist.

1.7 Survey Date & Data Collected

The tree(s) were surveyed at this site on Monday, 22nd of May 2023 & Tuesday 18th of July. The weather on the day was warm, dry & sunny with clear visibility on both days. The survey involved collected the following data:

- Tree Number and / or Group Reference;
- Species
- Height (in meters)
- Stem diameter (in mm measured at 1.5m above ground level);
- Crown radius along the four cardinal points (in metres)
- Crown clearance (in metres)
- Life stage
- Physiological Condition
- Structural Condition
- Management Recommendations; Pre-development, During development & Post development
- Remaining Contribution (in years)
- Retention Category
- Root Protection area (in m²)

2.0 Site Description

2.1 Overview

The site is rectangular in shape located on woodlands way in Mildenhall, it borders neighbouring properties on all sides apart from the front which is Woodlands way. The surrounding area is urban with a low density of housing within woodlands way. This is located on the Eastern side of Mildenhall, between the town centre and the A1065 not far from five ways roundabout.

2.2 Site Restrictions

At this stage, the data search undertaken identifies the trees surveyed on the property grounds to be under a Tree protection order (TPO) reference: TPO/1969/097 This is an area TPO meaning all trees at the time and new trees that are planted are protected by the order. This information was accessed by Ian Clarke on 26/05/23 utilising West Suffolk Council's interactive mapping service.

3.0 Observations & Tree Assessment

3.1 Property Grounds

The area surveyed had two trees and no groups within the property boundary that required surveying. Oak (*Quercus robur*) & Sycamore (*Acer pseudoplatanus*). The oak was located towards the front of the property alongside the footpath and a neighbouring property boundary with the Sycamore being in the rear of the property towards the Northern most boundary line.

3.2 Trees

The site has several trees over 75mm in diameter and over 1.5m in height, these are recorded and categorised as either 'T' for **tree** or 'G' for **group**. A 'group' has been determined where there are several trees growing near one another, where the height and stem diameter are of a comparable size. The assessment showed a mixed quality of individual trees, categorised as either 'A,' 'B,' 'C' or 'U' (as shown in appendix V) which provides more of a collective arboricultural and landscape contribution. Further details on how the trees have been categorised can be found in appendix III. The site is of domestic use and the trees located within these grounds have, during their lifetime, had some minor works conducted in the form of branch removal and branch reduction.

4.0 Management Recommendations

4.1 Present Requirements

See appendix V.

4.2 Implementation of Works

All tree works should be conducted to BS 3998:2010, *recommendations for tree work*, as modified by more recent research. It is advisable to select a contractor from the local authority list and preferably one approved by the Arboricultural Association.

4.3 Statutory Wildlife Obligation

The Wildlife and Countryside Act 1981, as amended by the Countryside and Right of Way Act 2000, provides statutory protection to birds, bats and other species that inhabit trees. All tree work operations are covered by these provisions and advice from an ecologist must be obtained before undertaking any works that might constitute an offence. A risk assessment will be required prior to commencement of any tree work or felling to assess the likelihood of disturbing or endangering any protected wildlife or habitat.

4.4. Future consideration:

We recommend trees should be inspected on a regular basis by a qualified arborist and should not exceed 5 years from the last inspection.

5.0 Arboricultural Impact Assessment

5.1 Summary

I have assessed the impact of the proposal on the tree, by the extent of disturbance in the RPAs and the encroachment of any structures. This report considers the potential for trees to influence soil in such a way as to cause the proposed development, or other buildings, to suffer tree related subsidence or heave damage but does not attempt to quantify this. Operations conducted in the vicinity of the trees, either in the past or future, could affect their health and stability.

T1 – will require a crown reduction to prevent it impeding the proposed new structure.
T2 – will not require any works to facilitate the development.

5.2 Soil Assessment

Information from the Geology of Britain viewer (British Geological Survey, 2021) indicates that the bedrock geology local to the site is Zig Zag Chalk Formation. Local superficial deposits have been recorded as River Terrace Deposits, 1 - Sand and gravel. An assessment of the soil conditions within the site would be required to inform foundation construction and should be conducted by a qualified structural engineer.

5.3 Development Proposal

The proposed development is for an existing garage to remain and be built over by a further storey. The proposed extension will impede no further forward or sideways from the existing house. A rear extension will then protrude into a small part of the garden to create kitchen/ bedroom space.

5.4 Tree Work due to Development

T1 had previously been applied for a crown reduction and crown lift this was amended to allow a crown thin and the crown lift. This was in 2011 reference F/2011/0573/TPO.

T1 will require a crown reduction to allow the proposed structure to be built and I would recommend to crown reduce the rest of the tree along with a crown lift as the canopy is now exceptionally large and is beginning to hang low over the road which may lead to vehicle strikes for materials being delivered. Major deadwood has been seen within the crown and should be removed for the safety of the public and anyone who will be working on or visiting the site.

Recommended works for T1- Crown lift to 5 metres for vehicle access.

Crown reduction by 2m from the top and between 1-2m on the sides to match the shape, ensuring a minimum 1.5m gap to any proposed new structure.

Remove dead wood (major greater than 25mm).

T2 will not require any works to facilitate the development.

5.5 Soil Levels

The soil level is consistent across the garden.

5.6 Light & Shade

For the purpose of this Impact Assessment, a shade pattern has been shown on the Constraints Plan (appendix VI). An arc is shown on the plan, indicating the patterns shown of shadows created by the trees around midday in the summer. This is as recommended in BS5837:2012 (section 5.2.2) but actual shade patterns throughout the year will vary widely. If shading is likely to be a serious constraint, a more detailed analysis of shade pattern using appropriate software may be deemed necessary.

5.7 Protective Fencing

To avoid any impact or severe damage to the trees through soil compaction, root disturbance, stem and crown damage, protective fencing must be installed in the correct location which is to be discussed with the consulting arboriculturist and contractors. Protective fencing must be erected before any materials or machinery is brought onto site and before any construction (see appendix IV for guidance). Where the protective fencing cannot cover the entire RPA of the tree, ground compaction protection, suitable for the pedestrian/machinery being used, will need to be installed prior to work commencing.

The protective fencing required for the tree will be to stop vehicle strikes as the RPA is covered by concrete driveway or tarmac road and footpath it has not been shown on the drawings as it would be difficult to distinguish it from other lines. Heras fencing panels would be required to protect the tree while still providing access for construction.

5.8 Summary of Impact on Local Amenity

The impact on the local amenity will be Minimal with the tree to be retained, the works to crown lift the tree should prevent vehicle strikes, the works to reduce the tree will give space to the proposed structure and will give a good point to reduce back to in the future once the tree has regrown in those areas. Allowing the tree to maintain as much canopy as practicable while keeping a reasonable distance from the building.

5.9 Conclusion

T1 - Crown lift to 5 metres for vehicle access.

Crown reduction by 2m from the top and 1-2m on the sides to match the shape, ensuring a minimum 1.5m gap to any proposed new structure.

Remove dead wood (major greater than 25mm).

The works to crown lift the tree should prevent vehicle strikes, the works to reduce the tree will give space to the proposed structure and will give a good point to reduce back to in the future once the tree has regrown in those areas. Allowing the tree to maintain as much canopy as practicable while keeping a reasonable distance from the building.

T2 – should be protected from works with protective barriers as shown on the plans.

6.0 Arboricultural Method Statement

6.1 Scope of Works

The document provides a methodology for protection of trees during the construction of the proposed development and should be read in conjunction with the Tree Protection Plan (appendix VI). The impact appraisal in section 5 identifies the impact on trees and how that affects local character. Section 6 is an Arboricultural Method Statement, setting out the management and protection details that must be implemented to secure successful tree retention.

6.2 Protection requirement

The main features in the protection of the retained trees on this site are as follows:

- Erection of temporary protection barriers

A meeting between the site manager/main contractor and a consulting arborist must take place prior to construction work commencing so that the above protection measures set out in this document can be discussed and agreed.

6.3 Tree Protection Barriers

A Construction Exclusion Zone (CEZ) will be formed using temporary barriers, consisting of a 2m tall, welded mesh panel and supported on rubber or concrete feet. The panels are joined together using two anti-tamper couplers. Panels are supported on the inner side by stabilizers struts, which should normally be attached to a base plate. Barriers will be maintained throughout the duration of the works, ensuring that access is denied to the CEZ throughout the build process. These barriers will be placed as per the tree protection plan (Appendix VI). The protective fencing is shown as a redline on the attached plans T2 will have protection running around the outside of the RPA on the raised grass area in the rear garden. T1 will be protected by a panel running from the boundary fence to the boundary with the footpath just passing the trunk of the tree. All Barriers will be in place before any works start on construction or materials are brought on to site and shall be maintained and retained until the development is completed. Within the root protection areas, the existing ground level shall be neither raised nor lowered and no materials, temporary buildings, plant, machinery or surplus soil shall be placed or stored thereon.

6.4 Ground Protection

T1 has an RPA that covers most of the front driveway and footpath and road but as this is all hard standing and none of it is planned to be removed the protection is already there. The largest machine that will be going in to the rear garden is a 1.5-1.8T mini digger which is not excessive for the hardstanding that is currently in place on the property. No works are planned for the raised area of the rear garden and the Tree protection will also be in place.

6.5 Working in RPAs

There are no works planned to be undertaken within either RPA.

6.6 Access & Storage of Materials

The site access will be from the front of the property with pedestrian and mini digger access down the side of the property. Any machinery and materials used on site will be stored away from the RPAs.

7.0 Summary

7.1 Appraisal

The trees on site is located within the boundary line of the estate with T1 visible from public land. The tree is to be retained but to have crown reduction and lift works undertaken. T2 is in the rear garden and not visible from any public accessible places. The trees on site not only have good arboricultural value but Good ecological value as well for the local area. Any recommendations are made giving due regard to all the facts contained within this report and associated appendices.

7.2 Statement

Every endeavour has been made to present this report in a clear fashion, with accurate information, reasonable conclusions, and appropriate recommendations. The report will be reviewed and agreed before release by a second person within the company. This should ensure compliance with our quality standard. However, should you have any questions, problems or queries about this report please do not hesitate to contact us.

8.0 Photos



Photo 1 overview of tree from the north.



Photo 2 Overview of tree from the South.



Photo 3 Closer view of tree and building.



Photo 4 view from the South over area of proposed new structure.



Photo 5 T2 at rear of the building on the northern boundary line.



Photo 6 T2 rear of the building showing overall context.

Appendix I Terms & Definitions

“Arboriculturist” – A person who has, through relevant education, training and experience, gained recognized qualifications and expertise in the field of trees in relation to construction.

“BS5837 Tree survey” – This should be undertaken by an arboriculturist and should record the information about trees on a site independently of and prior to a specific design for development. The results of the survey should be included in the preparation of a tree constraints plan, which should be used to assist with the site design.

“Tree categorization method” – This method is in accordance with the cascade chart. This will help identify the quality and value of the existing tree stock, allowing informed decisions to be made concerning which trees should be removed or retained should development occur.

“Tree constraints plan” – A scaled plan prepared by an arboriculturist. It is used as design tool showing the tree stem, identification number, below ground, below ground constraints (root protection area) and above ground constraints (crown spread).

“Root protection area (RPA)” – Indicated on the constraints plan containing sufficient rooting to ensure the survival of the tree, written in m². The size of which is based on the diameter of the trees trunk measured at 1.5m.

“Crown break” – The point where the crown develops from the main stem

“Bark necrosis” – Localised death of living tissue

“Minor dead wood” – Considered to be wood that is 10-50mm in diameter

“Major dead wood” – Considered to be wood that is 50mm plus in diameter

“Compartmentalize” – A natural defence process in a tree whereby chemical and physical boundaries are created that help to limit the spread of disease and decay.

Appendix II

Explanatory Notes

Measurements/estimates: All dimensions are estimates unless otherwise indicated. Measurements taken with a tape or clinometer are unmarked. Less reliable estimated dimensions are indicated with a '*'.

Species: The species identification is based on visual observations with the botanical name used. In some instances, it may be difficult to identify a tree quickly and accurately without further detailed investigations. Where there is some doubt of the precise species of tree the botanical name is followed by the abbreviation 'sp' if only the genus is known the name in order to avoid delay in the production of the report.

Diameter: These figures relate to 1.5m above ground level and are recorded in millimetres. If appropriate, diameter is measure with a diameter tape. '*' indicates trees where it was not possible to access the trunk to accurately measure it.

Height: Height measurement is approximate and in metres.

Spread: The maximum crown spread is visually estimated from the centre of the trunk to the tips of the live lateral branches.

Life stage: In this case Y= Young establishing tree, SM= Semi mature; an established tree but with growth to make before reaching its potential maximum size, EM= Early mature; a tree that is reaching its ultimate potential height, whose growth rate is slowing down but if healthy, will still increase its stem diameter and crown spread. M= Mature; a specimen with limited potential for significant increase in size, even if healthy.





Max Life expectancy: Age is based on research by the Botanist and Forester Alan Mitchell.

RPA Root protection area: Calculated according to British Standard 5837:2012.

Appendix III

British Standard 5837:2012 Quality Assessment

BS5837:2012 Table 1 – Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	<ul style="list-style-type: none"> Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality <p><i>NOTE</i> Category U trees can have existing or potential conservation value which it might be desirable to preserve; see [BS5837:2012] 4.5.7.</p>			
1 Mainly arboricultural qualities 2 Mainly landscape qualities 3 Mainly cultural values, including conservation				
Trees to be considered for retention				
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	
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	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	
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	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	

FLAC Note

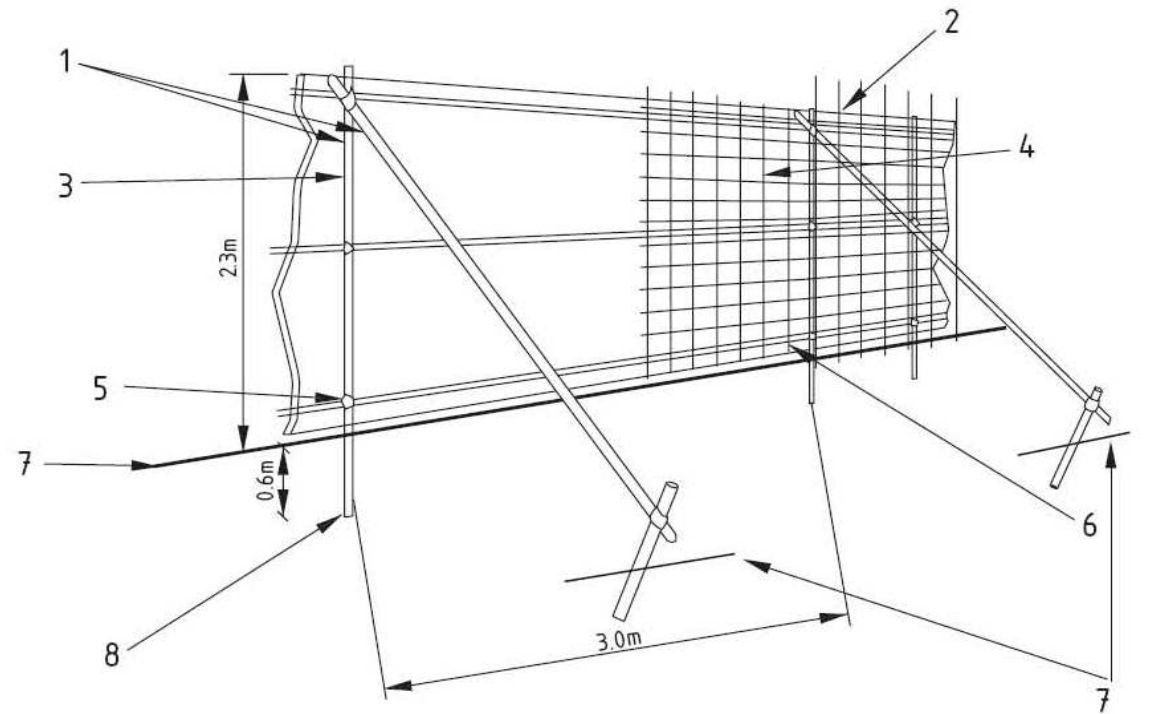
The original contents of the column *Identification on plan* have been replaced by FLAC in the version above; spot colours to RGB codes given in BS5837:2012 Table 2

Appendix IV protective fence diagram

BS5837:2012 Protective Fencing Diagram

The default specification should consist of a vertical and horizontal scaffold framework, well braced to resist impacts, as illustrated on the right. The vertical tubes should be spaced at a maximum interval of 3m and driven securely into the ground. Onto this framework, welded mesh panels should be securely fixed.

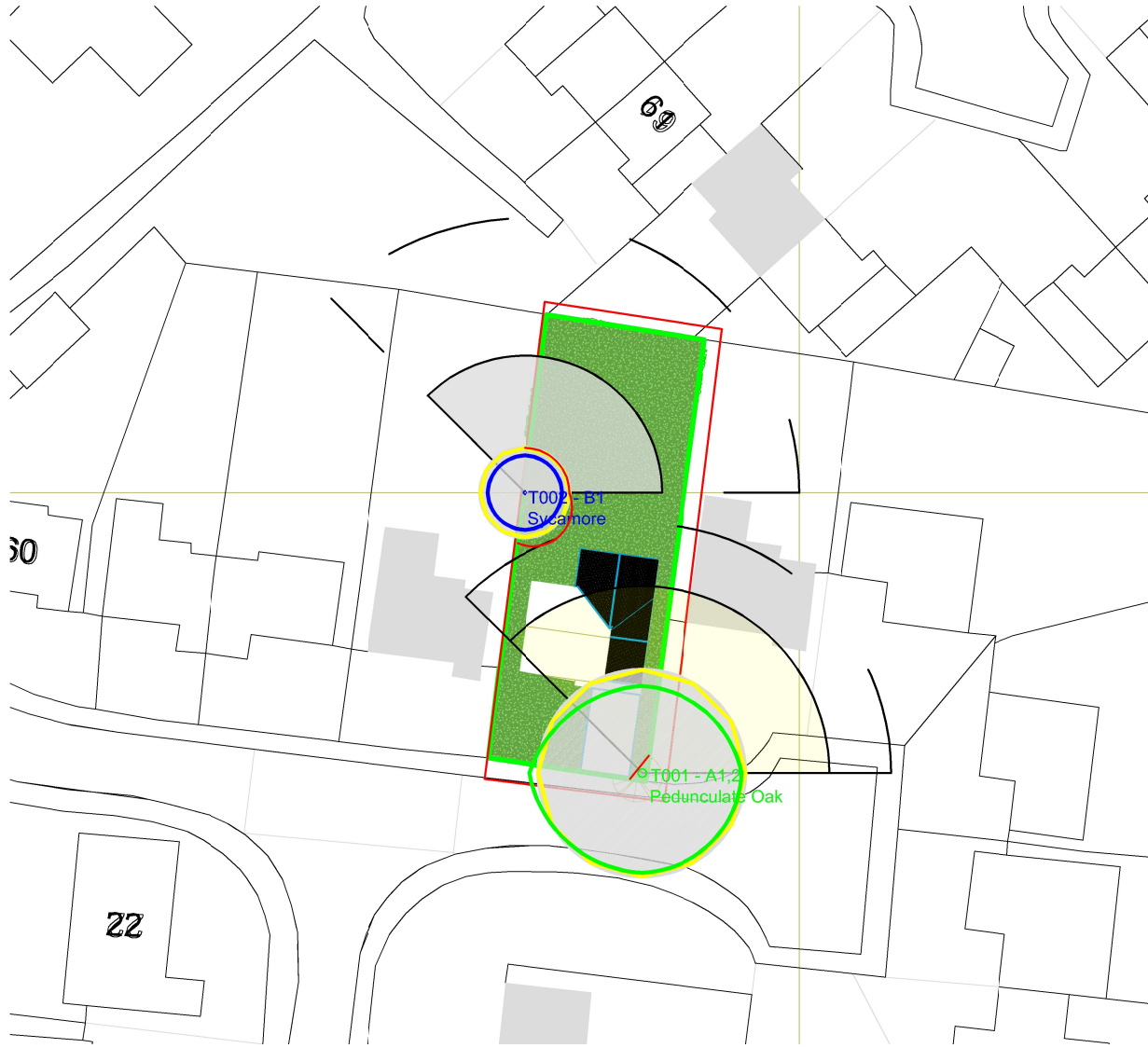
Where driving the stakes in to the ground is not advised Rubber feet weighed down with sandbags at the end of the supporting 'leg' would make a desirable alternative.



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

Appendix V Tree Schedule

Ref.	Species	Height (m)	Stem diameter(s) (mm)	Crown Spread (m)				Crown Clearance (m)	Life Stage	General Observations	Recommendations	Rem. Contrib.	Retention Category	RPA
				North	South	East	West							
T001	Pedunculate Oak (<i>Quercus robur</i>)	15	690	7	8	8	9	3	Early Mature	<p>Root plate has had previous works with a concrete driveway being installed a long time ago. Stem has historical pruning wounds with good occlusion. Crown breaks at approx. 4m above ground level and has good form and vitality. Crown is beginning to hang low over the road and lamp post. Crown was last reduced in 2011. Major Deadwood present throughout the crown.</p>	<p>Pre construction: Crown lift to 5 metres for vehicle access. Crown reduction by 2m from the top and 1-2m on the sides to match the shape, ensuring a minimum 1.5m gap to any proposed new structure. Dead wood (major greater than 25mm).</p> <p>During construction: Protect trees with protective barriers - as shown on plans.</p> <p>Post construction: No action required.</p>	50+ Years	A1,2	Radius: 8.3m. Area: 216 sq m.
T002	Sycamore (<i>Acer pseudoplatanus</i>)	11	300	3	3	3	3	4		<p>Root plate not showing signs of disturbance. Stem has historical pruning wounds with good occlusion. Crown breaks at approx. 3m above ground level and has good form and vitality. Tree is located on the boundary line.</p>	<p>Pre construction: No action required.</p> <p>During construction: Protect trees with protective barriers - as shown on plans.</p> <p>Post construction: No action required.</p>	20+ Years	B1	Radius: 3.6m. Area: 41 sq m.



-  Existing.
-  Proposed.
-  1800mm timber fence.
-  Grass.
-  Gravel.

 Key
1 : 50

 Site Plan-Proposed
1 : 200

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Note:
The contractor is to check and verify all dimensions and drainage routes (unless otherwise specified) on site before starting work and report any omissions or errors.

This drawing is to be read in conjunction with all relevant consultants and specialists drawings.

No.	Description	Date

52 Woodlands Way

Site Plan-Proposed

Project number WW01

Date 05/04/2023

Drawn by WS

Checked by WJS

A1-01

Scale As indicated