# Arboricultural
# Impact Assessment

with

# Arboricultural Method Statement
# of
# Tree Protection Measures

## Brodie Avenue
## Mossley Hill
## Liverpool
## L19 7NB

**GODWINS ARBORICULTURAL LIMITED**
www.godwins.co.uk

# SUMMARY

Five individual trees were recorded. In accordance with *BS5837:2012 Trees in relation to design, demolition and construction* two individual trees were recorded as retention category 'B'; and three individual trees were recorded as retention category 'C'.

The trees were generally found to be in a good to fair condition and no trees were classified as retention category 'U' (unsuitable for retention).

No trees shall require removal to enable the construction of the proposed development.

No pruning works shall be required to enable the construction of the proposed development.

The retained trees will be protected to British Standard *BS5837:2012 Trees in relation to design, demolition and construction* to ensure that they remain in a healthy condition during and post development. The *Tree Protection Plan* to the rear of this report highlights the recommended tree protection measures.

Any arboricultural work undertaken should be done so by a competent arborist in line with British Standard *BS3998:2010 Tree Work*, and after permission has been granted to do so by the local planning authority.

# CONTENTS

# 1. Introduction

## 1.1. Project outline

1.1.1. This report has been produced in accordance with *British Standard BS5837: 2012 Trees in relation to design, demolition and construction* to achieve a harmonious and sustainable relationship where tree retention or planting is proposed in conjunction with nearby construction (site-based operations with the potential to affect existing trees).

## 1.2. Scope of this report

1.2.1. This report has been produced to comply with planning requirements where trees are to be considered as part of a proposed development. To achieve this, arboricultural constraints have been identified and a detailed plan (*Tree Constraints Plan*) has been produced showing the location, root protection areas and retention category of trees within the site.

1.2.2. In addition, this report provides an *Arboricultural Impact Assessment* that evaluates the direct and indirect effects of the proposed development, and where necessary makes recommendations for mitigation measures. This report also includes an *Arboricultural Method Statement of Tree Protection Measures* and a *Tree Protection Plan*, which demonstrate how the retained trees will be protected during construction, and where tree protection measures are to be implemented.

1.2.3. Recommendations for tree works within this report are specific to the construction of the proposed development. This report does not form part of a tree safety inspection or tree management strategy. To manage the safety and risk from trees it is advised that trees are inspected in detail for this purpose by an arboriculturist using a suitable risk management strategy.

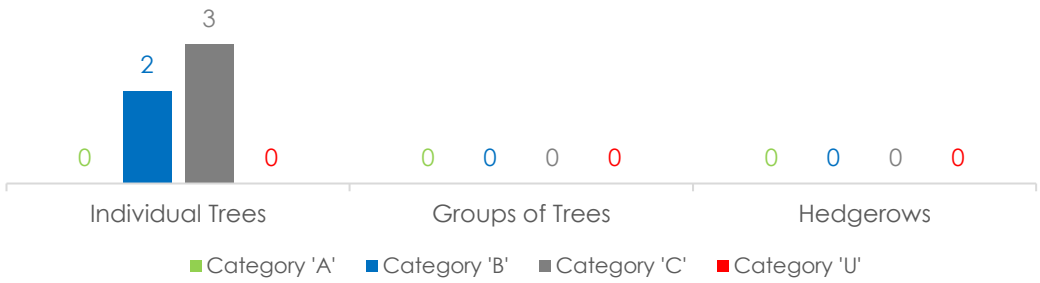
## 1.3. Data collection

1.3.1. A ground level inspection was undertaken by Godwins Arboricultural Limited on 4th June 2020. As recommended by *BS5837*, the position of all trees within the site with a stem diameter of 75 mm or more, measured at 1.5 m above highest adjacent ground level are recorded. The position of trees with an estimated stem diameter of 75 mm or more that overhang the site or are located beyond the site boundaries within a distance of up to 12 times their estimated stem diameter were also recorded. For individual trees the crown spread taken at four cardinal points; for tree groups the overall extent of the canopy was recorded.

1.3.2. Tree positions were plotted using a site location plan, aerial photography and on-site measurements, which is the basis for which the *Tree Constraints Plan* has been prepared.

# 2. Arboricultural Constraints

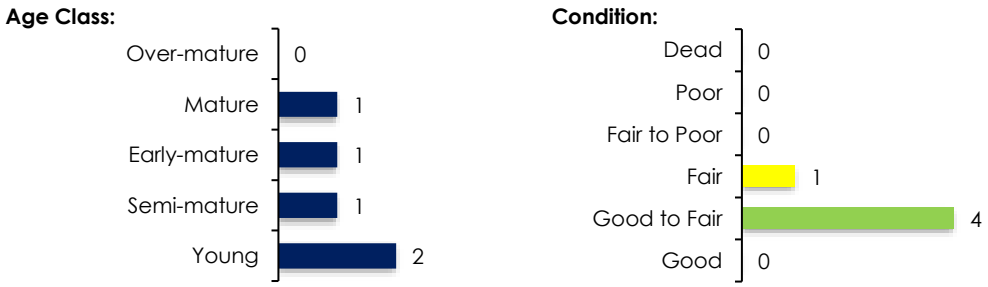
## 2.1. Tree retention categories




2.1.1. Five individual trees were recorded. In accordance with *BS5837:2012 Trees in relation to design, demolition and construction* two individual trees were recorded as retention category 'B'; and three individual trees were recorded as retention category 'C'.

2.1.2. The trees were generally found to be in a good to fair condition and no trees were classified as retention category 'U' (unsuitable for retention).

## 2.2. Tree age class and condition




2.2.1. Please see *Appendix 1* for the detailed list on existing species, age class, dimensions and condition of trees within the site, and *Appendix 2* for an explanation of retention category criteria. Tree locations can be seen on the *Tree Constraints Plan* at the rear of this report (*Drawing 1*).

2.2.2. The inspection of several trees was restricted as detailed at *Appendix 1*. However, sufficient tree related data was collected to fulfil the requirements detailed within the scope of this report.

## 2.3. Root Protection Areas

2.3.1. The tree Root Protection Area (RPA) is a layout design tool indicating the area around a tree that, along with the tree stem and branches, must be considered during development. The protection of the roots and soil structure within the RPA should be treated as a priority. The RPA of each tree or group is marked on the *Tree Constraints Plan* at the rear of this report.

## 2.4. Tree protection status

2.4.1. A statutory tree protection enquiry was made with Liverpool City Council on 11th June 2020. It is understood that the site does not contain any Tree Preservation Orders and that the site is not located within a Conservation Area. Please see *Appendix 5* for details obtained at:

*http://mapspublic.liverpool.gov.uk/MapThatPublic/Default.aspx*.

2.4.2. The trees are situated on the public highway/open space, as such these trees are under the ownership and management of the local authority. On this basis, it is essential that permission to undertake any pruning works or excavations within rooting areas are considered and approved by the local planning authority.

2.4.3. **It is essential that no works are undertaken to any trees within the site prior to consideration and consent of the proposed works under FULL planning approval only by the local planning authority, regardless of whether the trees are currently protected or not.**

# 3. Arboricultural Impact Assessment

## 3.1. The proposed development

3.1.1. The installation of a telecommunications mast and equipment cabinets are proposed. The proposed layout drawing can be seen within the *Tree Protection Plan* to the rear of this report. This drawing has been used to assess the potential direct and indirect arboricultural impacts.

3.1.2. Consideration was given at the design stage to positioning the proposed equipment to avoid the requirement for tree pruning works and to align the equipment with existing underground services, and thus minimise any potential RPA disturbance.

## 3.2. Proposed tree works and mitigation measures

3.2.1. No trees shall require removal to enable the construction of the proposed development.

3.2.2. No pruning works shall be required to enable the construction of the proposed development.

## 3.3. Site construction traffic and removal of existing equipment

3.3.1. To protect the adjacent trees from construction site traffic, including traffic during the removal of existing equipment, the trees should be protected by a temporary protective barrier (see *Section 4.1*), put in place prior to any construction activity. The barrier will ensure that the trees remain in a healthy condition during and after development.

# 4. Method Statement of Tree Protection Measures

## 4.1. Tree protection barriers

4.1.1. All trees that may be affected by construction activity should be protected by barriers before any materials or machinery are brought onto the site, and before the removal of existing equipment and installation of proposed equipment commences. Only when the installation phase is complete and the site machinery has been removed can the barriers be taken down.

4.1.2. Please see *Appendix 4* for suggested barrier construction detail. It is recommended that in this instance the protective barrier shown in *Figure 2* would be appropriate. The suggested location for protective fencing is shown on the *Tree Protection Plan* (*Drawing 2*).

4.1.3. All-weather notices stating "CONSTRUCTION EXCLUSION ZONE – NO ACCESS" should be fixed to the barriers to ensure that all construction personnel are aware and adhere to the limitations that apply to the protected area. No hardcore, rubble of soil from groundworks should be located within the protective barriers. No ground level changes (raising/lower of existing levels) are allowed within the CEZ.

4.1.4. Once the tree protection barriers have been installed, photographic evidence of the installed barriers must be taken and documented by a responsible and competent person (i.e. the site manager) prior to any construction activity.

## 4.2. Movement on site

4.2.1. Care must also be taken to prevent contamination within the RPAs from chemical spillages, including petrol, diesel and oils. Cement mixers and toxic materials should not be permitted close to trees. Materials that may contaminate soil e.g. concrete mixings and diesel oil should not be discharged within 15m of a retained tree, or in locations where it may run towards an RPA.

4.2.2. Construction materials and machinery must be stored outside of both the RPA and canopy of the retained trees. To avoid soil compaction, heavy machinery must not be operated within RPAs unless the RPA is currently located within a hard surface area (e.g. pavement or road).

Client: Waldon Telecom
Project No: AIA.13160
Issue: 01

Date Issued: 11th June 2020
Status: FINAL

Signed for on behalf of Godwins Arboricultural Limited:

*R Godwin*

Robert Godwin MSc MArborA.
Arboriculturist

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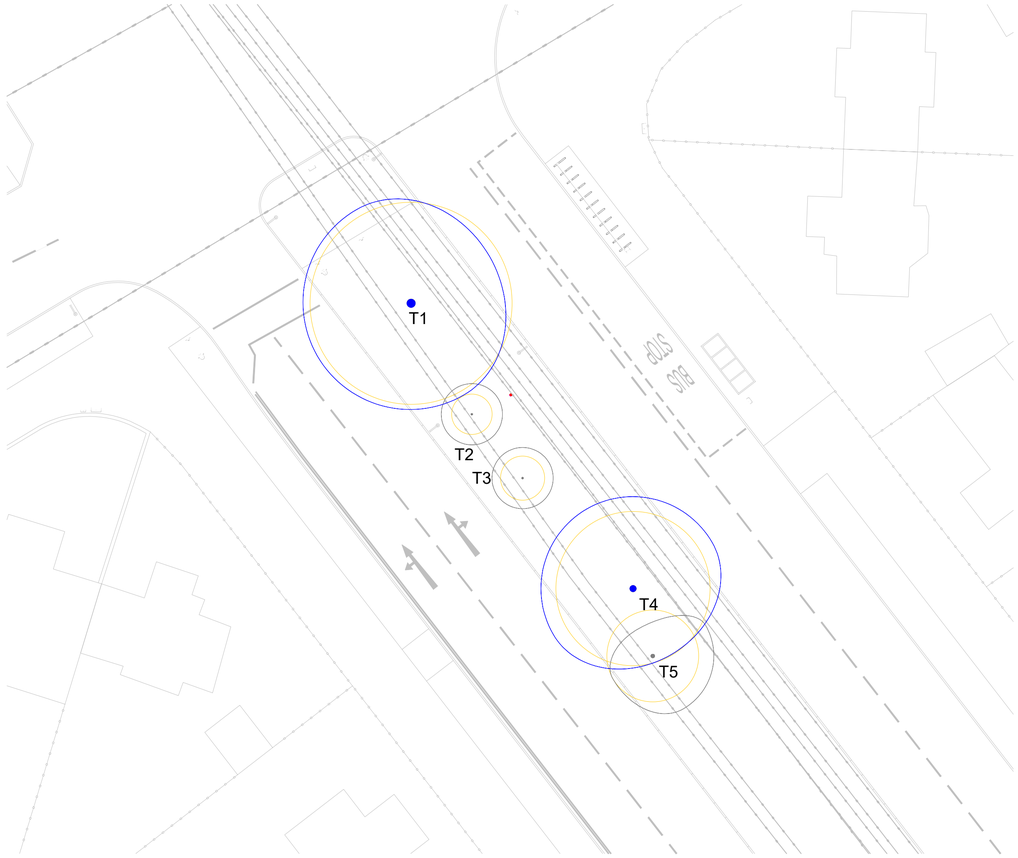
# Drawing 1. Tree Constraints Plan




| T | G | H | W | S |
|---|---|---|---|---|
| INDIVIDUAL TREE | GROUP OF TREES | HEDGEROW | WOODLAND GROUP | SHRUB |

**EXISTING LAYOUT**

## TREE QUALITY ASSESSMENT CATEGORY

| | |
|---|---|
| | **CATEGORY 'A'**<br>**HIGH QUALITY** |
| | **CATEGORY 'B'**<br>**MODERATE QUALITY** |
| | **CATEGORY 'C'**<br>**LOW QUALITY** |
| | **CATEGORY 'U'**<br>**UNSUITABLE FOR RETENTION** |

Based on British Standard 5837:2012 Table 1.
Please refer to Appendix 2 of the arboricultural report for more detailed category definitions.

**ROOT PROTECTION AREA (RPA)**

The Root Protection Area (RPA) is a layout design tool highlighting the underground tree constraints. Along with the tree stem and branches the RPA must be considered prior to and during development.



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| PROJECT TITLE: | | |
|---|---|---|
| Brodie Avenue, Mossley Hill, Liverpool | | |
| **DRAWING TITLE:** | **SCALE:** | **ISSUE DATE:** |
| TREE CONSTRAINTS PLAN | 1:200 @ A1 | 11/06/20 |
| **DRAWING NUMBER:** | **REVISION:** | **DRAWN BY:** |
| TCP.13160 | .01 | RG |

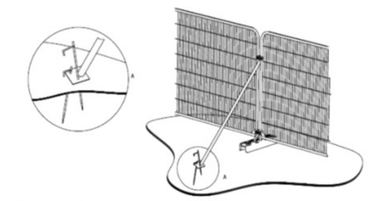
# Drawing 2. Tree Protection Plan

# TREE PROTECTION PHASES

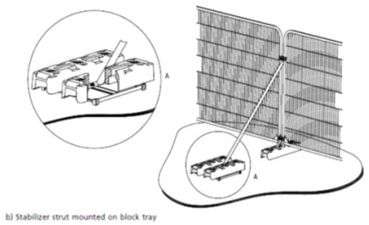
## PHASE 1:
## TREE WORKS

**No tree works required.**

## PHASE 2:
## TEMPORARY BARRIERS



a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

Example of temporary barrier. This system includes 2m tall welded mesh panels on rubber or concrete feet, secure enough to provide an adequate level of protection from cars, vans, pedestrians and manually operated plant. The panels should be supported on the inner side by stabilizer struts, which should normally be attached to a base plate secured with ground pins (Figure 2a). Where the fencing is to be erected on retained hard surfacing or it is otherwise unfeasible to use ground pins, the stabilizer struts should be mounted on a block tray (Figure 2b).

Care must also be taken to prevent contamination within the RPAs from chemical spillages, including petrol, diesel and oils. Cement mixers and toxic materials should not be permitted close to trees. Materials that may contaminate soil e.g. concrete mixings and diesel oil should not be discharged within 15m of a retained tree, or in locations where it may run towards an RPA.

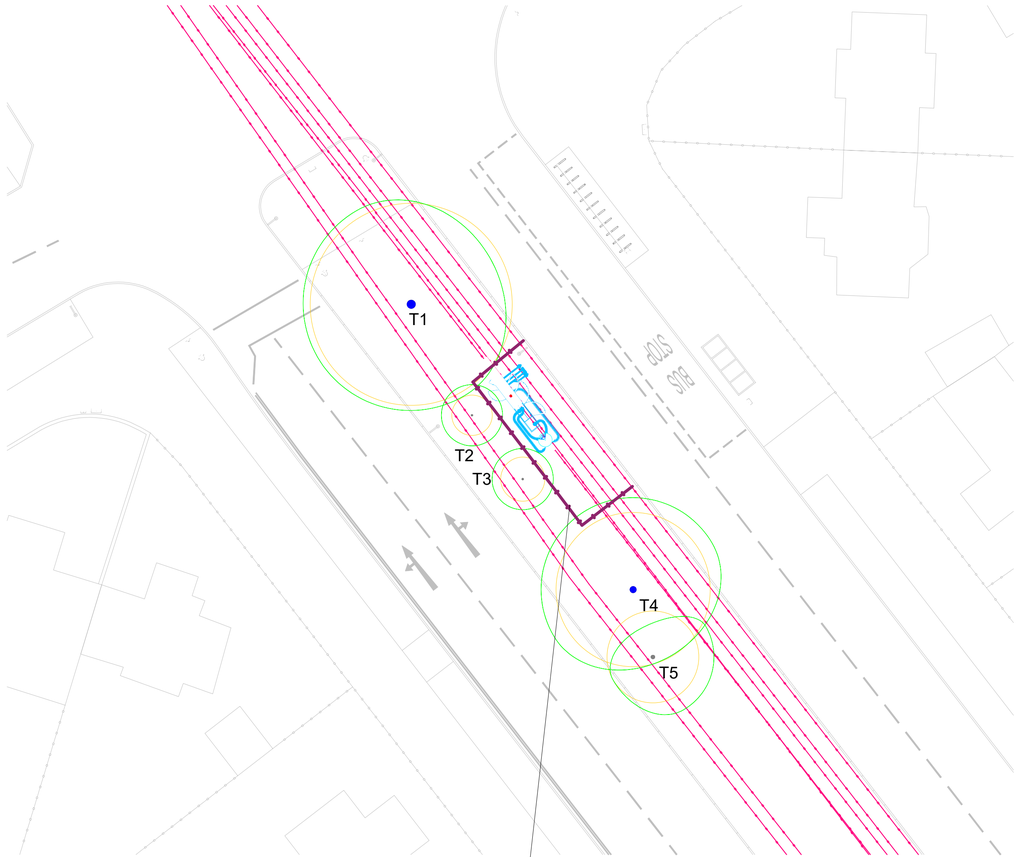
Construction materials and machinery must be stored outside of both the RPA and canopy of the retained trees. To avoid soil compaction, heavy machinery must not be operated within RPAs unless the RPA is currently located within a hard surface area (e.g. pavement or road).

## PHASE 3:
## CONSTRUCTION
## INSTALLATION OF EQUIPMENT

Construction activity and/or excavations for the installation of the proposed equipment within RPAs must be undertaken by hand, down to a depth of 600mm, to establish the presence of roots. Any tree roots exposed within the RPA must be left as intact as careful digging with hand tools will allow. Areas that require hand digging within an RPA are identified with an magenta hatch on the adjacent plan.

During excavations roots smaller than 25mm diameter may be pruned back, making a clean cut with a suitable sharp tool (e.g. bypass secateurs or handsaw), except where they occur in clumps. Roots occurring in clumps or of 25mm diameter and over should be severed only following consultation with an arboriculturist; as such roots might be essential to the tree's health and stability.

Any roots exposed during excavations should immediately be wrapped or covered in damp hessian to prevent desiccation and to protect them from rapid temperature changes. Any wrapping should be removed prior to backfilling, which should take place as soon as possible. Prior to backfilling, retained roots should be surrounded with topsoil or un-compacted sharp sand (builders' sand should not be used because of its high salt content, which is toxic to tree roots), or other loose inert granular fill, before soil or other suitable material is replaced.




Protective barriers to be positioned at:
T1 - 6m from stem
T2 & T3 - 1m from stems
T4 - 5m from stem

| T | G | H | W | S |
|---|---|---|---|---|
| INDIVIDUAL TREE | GROUP OF TREES | HEDGEROW | WOODLAND GROUP | SHRUB |

| | |
|---|---|
| | **EXISTING LAYOUT** |
| | **EXISTING SERVICES** |
| | **EQUIPMENT PROPOSED** |

## PROPOSED TREE WORKS

| | |
|---|---|
| | **TREE PROPOSED FOR RETENTION** |
| | **TREE PROPOSED FOR PRUNING** |
| | **None** |
| | **TREE PROPOSED FOR REMOVAL (ARBORICULTURAL REASONS)** |
| | **None** |
| | **TREE PROPOSED FOR REMOVAL (TO ENABLE DEVELOPMENT)** |
| | **None** |

Please refer to Appendix 1 of the Arboricultural Impact Assessment for details on tree condition and proposed works.

| | |
|---|---|
| | **ROOT PROTECTION AREA (RPA)** |

The Root Protection Area (RPA) is a layout design tool highlighting the underground tree constraints. Along with the tree stem and branches the RPA must be considered prior to and during development.

## TREE PROTECTION MEASURES

| | |
|---|---|
| | **TEMPORARY PROTECTIVE BARRIER**<br>Refer to Appendix 4 of the Arboricultural Impact Assessment for specification details. |



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| | | |
|---|---|---|
| **PROJECT TITLE:** Brodie Avenue, Mossley Hill, Liverpool | | |
| **DRAWING TITLE:** TREE PROTECTION PLAN | **SCALE:** 1:200 @ A1 | **ISSUE DATE:** 11/06/20 |
| **DRAWING NUMBER:** TPP.13160 | **REVISION:** .01 | **DRAWN BY:** RG |

# Appendix 1. Tree Schedule

| Tree No. | Species | Age | Stems at 1.5m | Stem Dia (mm) | Height (Crown Hgt) (m) | FSB (D) (m) | Branch Spread (m) | | | | Observations | Cond | Life Exp | Tree Works Required to Enable Development | Root Protection Area (RPA) | | Retention Category |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | N | E | S | W | | | | | Radius (m) | Area ($m^2$) | |
| T 1 | Prunus padus (Bird Cherry) | Mature | 1 | 550 | 9(4) | 1(S) | 7 | 6 | 7 | 7 | Asymmetrical crown. Multiple pruning wounds. Limited inspection - epicormic growth. | Good to Fair | 20+ | No action required. | 6.6 | 136.9 | B |
| T 2 | Malus sylvestris (Crab Apple) | Young | 1 | 110 | 6(2) | 2(S) | 2 | 2 | 2 | 2 | Balanced crown. Occasional pruning wounds. | Good to Fair | 40+ | No action required. | 1.3 | 5.5 | C |
| T 3 | Malus sylvestris (Crab Apple) | Young | 1 | 120 | 6(2) | 2(S) | 2 | 2 | 2 | 2 | Balanced crown. Occasional pruning wounds. | Good to Fair | 40+ | No action required. | 1.4 | 6.5 | C |
| T 4 | Prunus padus (Bird Cherry) | Early-mature | 1 | 420 | 9(3) | 2.5(S) | 6 | 6 | 5 | 6 | Asymmetrical crown. Occasional pruning wounds. Limited inspection - epicormic growth. | Good to Fair | 40+ | No action required. | 5.0 | 79.8 | B |
| T 5 | Prunus sp. (Cherry) | Semi-mature | 1 | 250 | 5(2) | 1.5(W) | 2 | 4 | 4 | 3 | Occasional pruning wounds. Crown suppressed by adjacent tree. | Fair | 20+ | No action required. | 3.0 | 28.3 | C |

# Appendix 2. Explanatory Notes

## A2.1. Tree statistics and measurements

| Survey record | Description |
|---|---|
| *Tree No.* | Unique tree reference number. (T) = Individual tree, (G) = Group of trees or woodland that form cohesive arboricultural features, (H) = Hedgerows and substantial internal or boundary hedges. |
| *Species* | Species listed by scientific name, with (common name). |
| *Age* | Life stage – Young, Semi-mature, Early-mature, Mature, Over-mature and Veteran. |
| *Stem Count* | Number of stems recorded at 1.5m above ground level. |
| *Stem Diameter* | Stem diameter recorded in millimetres at 1.5 meters above ground. Where the tree is multiple stemmed, each stem has been recorded. |
| *Height (Crown Height)* | Height of the tree in metres – to the closest 0.5m. Average canopy height in brackets, e.g. 10(3). |
| *First Significant Branch* | Existing height above ground level of first significant branch and direction of growth, e.g. 3(N) |
| *Branch Spread* | Branch spread, taken as a minimum at the four cardinal points – North, East, South and West. |
| *Observations* | General observations, particularly of structural and/or physiological condition (e.g. the presence of any decay, physical defect or historic pruning). |
| *Cond* | Condition of the tree recorded as Good, Good to Fair, Fair, Fair to Poor, Poor or Dead. |
| *Life Exp* | Life Expectancy - classed as less than 10 years, 10 plus years, 20 plus years, or more than 40 years. |
| *Tree Works Required to Enable Development* | Tree works specifically required to enable the proposed development, or to reduce significant risk of harm. The term 'No action required' does not mean that general post development arboricultural management works are not required. |
| *RPA Radius* | Radius of the root protection area, when plotted as a circle centred on the base of the stem. |
| *RPA Area* | Total area of RPA in metres squared, e.g. 100m$^2$. |
| *Retention Category* | See below – A2.2. |

## A2.2. Tree retention categories

| Retention category and definition | Criteria |
|---|---|
| ***U (marked in red on the Tree Constraints Plan) = trees for removal.*** | Trees 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. |
| ***A (marked green on the Tree Constraints Plan) = Trees of high quality*** | Trees of high quality with an estimated remaining life expectancy of at least 40 years. |
| ***B (marked in blue on the Tree Constraints Plan) = Trees of moderate quality*** | Trees of moderate quality with an estimated remaining life expectancy of at least 20 years. |
| ***C (marked in grey on the Tree Constraints Plan) = Trees of low quality*** | Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm. |

# Appendix 3. Report Limitations & General Guidelines

A3.1 Where the inspection of trees was limited (*see Appendix 1*), the 'Tree statistics and measurements' (*Appendix 2.1*) are estimated, and observations, condition and life expectancy are based on an inspection from the available vantage point.

A3.2 It is recommended that qualified and experienced companies are sought when appointing tree work contractors and they should be approved under the Arboricultural Association Approved Contractors scheme. It is essential that all appointed tree work contractors have adequate Public Liability, Products Liability and Employers Liability Insurance. All tree works must conform to the current BS 3998 *"Recommendations for Tree Work"*.

A3.3 Godwin's Arboricultural Ltd will not accept liability for works undertaken by third party companies. All necessary checks must be made by the appointed tree work contractor prior to undertaking any works to ensure that no statutory tree protection measures or relevant laws are contravened.

A3.4 The validity, accuracy and findings of this report are directly related to the accuracy of the information made available prior to and during the inspection process. No checking of independent third party data will be undertaken. Godwin's Arboricultural Ltd will not be responsible for the recommendations within this report where essential data are not made available, or are inaccurate.

A3.5 The assessment and works recommendations relate to conditions found at the time of our inspection. Any significant alteration to the site post our site inspection but pre submission for planning that may affect the trees present, or have a bearing on the planning implications (including level changes, hydrological changes, storms, extreme climatic events or site works) will necessitate a re-assessment of the trees and the site.

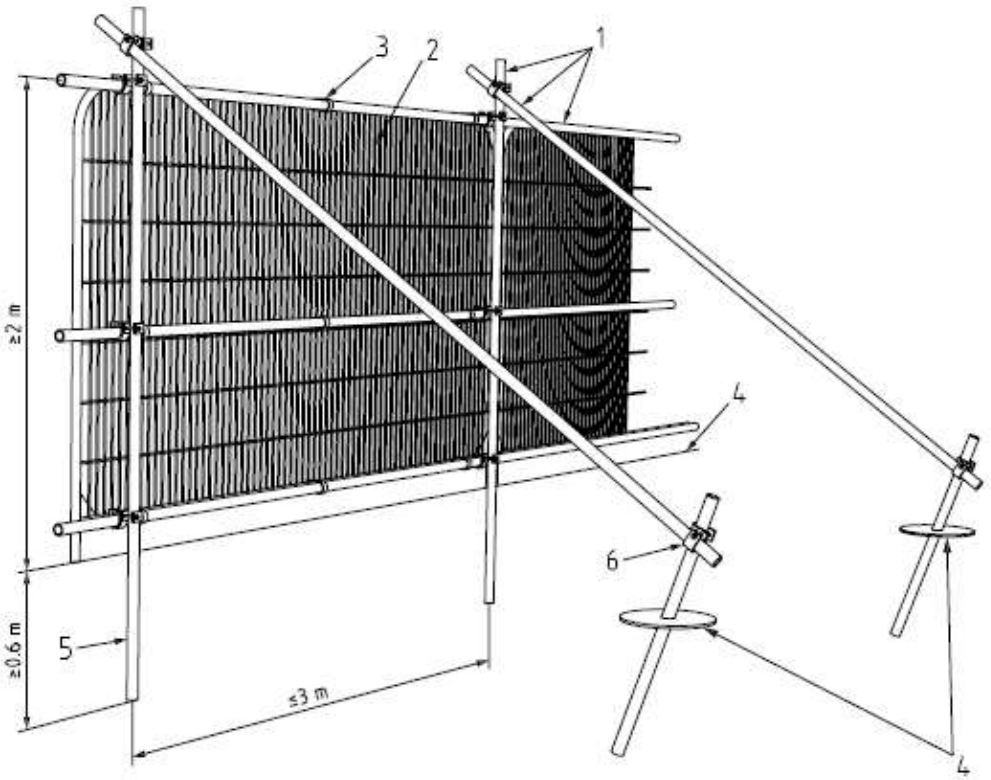
A3.6 This report has been carried out in order to inform the planning process, and not to assess the potential hazards and risks posed by trees. Where clear and obvious hazards have been observed to accessible trees, these have been addressed in the works recommendations. Where inspections were limited by restrictions such as stem ivy, understory vegetation, limited access, epicormic growth or being located on adjacent land, any form of tree condition assessment was restricted. A full assessment of the levels of risk posed by trees can only be informed by considering site use together with assessing any hazards present within a tree.

A3.7 Trees are dynamic structures that continue to develop and decline; in addition, changes in site use are likely to occur during and as a result from the proposed development. On this basis, regular tree risk assessments are advised.

A3.8 Godwin's Arboricultural Ltd plans are to scale whenever possible but care should be taken when measuring from a plan without first checking the original data.

# Appendix 4. Protective Barrier Construction

A4.1 The default specification for protective barriers should consist of a vertical and horizontal scaffold framework, well braced to resist impacts, as illustrated below. The vertical tubes should be spaced at a *maximum* interval of 3 m and driven securely into the ground. Onto this framework, welded mesh panels should be securely fixed. Care should be exercised when locating the vertical poles to avoid underground services and, in the case of the bracing poles, also to avoid contact with structural roots.

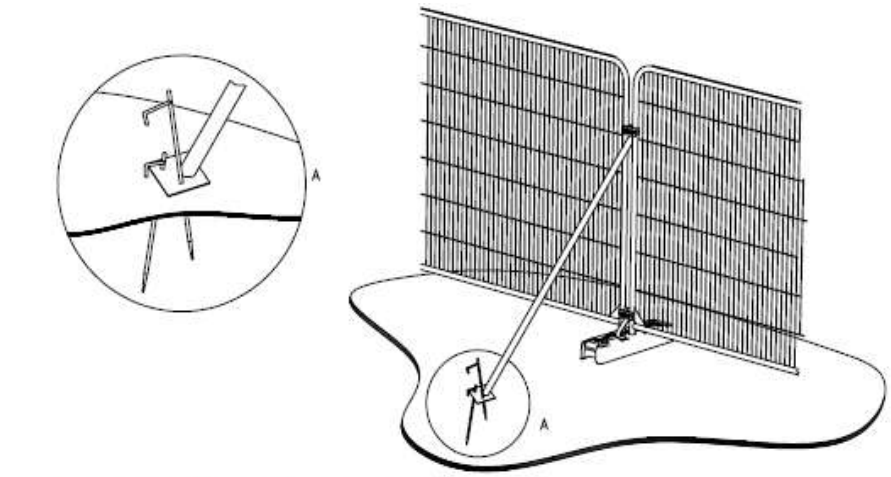



**Key**

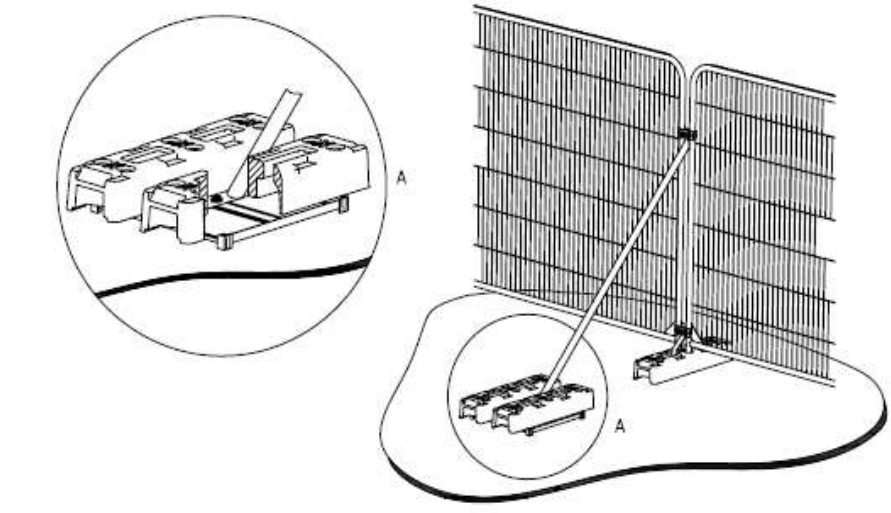
1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

Figure 1. Default protective fencing barrier as detailed in *BS 5837: 2012*.

A4.2 Where the site circumstances and associated risk of damaging incursion into the RPA do not necessitate the default level of protection, an alternative specification may be adopted. This system includes 2 m tall welded mesh panels on rubber or concrete feet, secure enough to provide an adequate level of protection from cars, vans, pedestrians and manually operated plant. In such cases, the fence panels should be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The distance between the fence couplers should be at least 1 m and should be uniform throughout the fence. The panels should be supported on the inner side by stabilizer struts, which should normally be attached to a base plate secured with ground pins (Figure 2a). Where the fencing is to be erected on retained hard surfacing or it is otherwise unfeasible to use ground pins, e.g. due to the presence of underground services, the stabilizer struts should be mounted on a block tray (Figure 2b).




a) Stabilizer strut with base plate secured with ground pins




b) Stabilizer strut mounted on block tray

Figure 2. Examples of above-ground stabilizing systems

# Appendix 5. Statutory Tree Protection Enquiry Results


Property Search
SHOW LAYERS
Boundaries
Background Mapping
TPOs & ConsAreas
Tree Preservation Orders
Conservation Areas
LAMBLE ROAD
RIDGE AVENUE
19
© Crown copyright and database rights 2019 Ordnance Survey 100018351

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