



**ARBORICULTURAL STATEMENT**  
**ON**  
**A PROPOSED DEVELOPMENT AT**  
**CROSS ROAD, CHORLTON M21 9DJ**

ON BEHALF OF  
SOUTHWAY HOUSING TRUST LIMITED

**Author:** Glyn Thomas  
**Our Ref:** CW/10084-AS-2  
**Date:** 19 January 2022 (Revised 27 May 2022)

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## **1. SUMMARY**

- 1.1.** Planning permission is sought for erection of a 29-unit residential building and associated works on the vacant car-park of the Chorlton Irish Club on Cross Road.
- 1.2.** Trees, shrubs and hedges on and adjacent to the site have been assessed and the arboricultural impacts of the development evaluated in accordance with current best practice.
- 1.3.** Implementation of the development will require the removal of some moderate and low quality trees and hedges, the loss of which will be mitigated by the provision of new trees and landscaping. A section of boundary hedge will be removed at the request of the neighbour and replaced with a new boundary wall.
- 1.4.** All of the high quality off-site trees will be retained, and details for their protection during construction are included with this report. Design, implementation and supervision of the recommended tree protection measures are key to avoiding construction damage to the retained trees and hedge, and to safeguarding their health and structural integrity.
- 1.5.** Minor initial pruning of the retained off-site trees is in accordance with current best practice. Periodic ongoing pruning of one of the off-site trees to maintain reasonable clearances from the new building will be a civil matter for the site owner and the neighbour. Future management of the off-site trees along the southern boundary should comprise no more than routine maintenance.
- 1.6.** The residual arboricultural, engineering and landscaping details can be resolved by planning condition.

## **2. TERMS OF REFERENCE**

### **2.1. Instruction**

#### **2.1.1.** Cheshire Woodlands is instructed by Southway Housing to:

- Survey and prepare a schedule of trees to comply with the general requirements of BS5837<sup>1</sup>
- Annotate a topographical survey drawing and produce a tree survey plan
- Appraise a development proposal in relation to trees and produce an arboricultural statement and tree protection plan

### **2.2. Limitations**

#### **2.2.1.** This statement and associated documents are the copyright of Cheshire Woodlands Limited and there should be no transfer of rights to any third party without express written consent.

#### **2.2.2.** The purpose of the assessment is to collect data to inform the design of a development proposal in relation to trees.

#### **2.2.3.** Trees are assessed in sufficient detail to inform the current project and appraisal of their structural condition is of a preliminary nature.

#### **2.2.4.** Trees are assessed from ground level without invasive investigation and are viewed from within the site or from areas with public access. Assessment may be restricted where site conditions limit access or where trees are wholly or partially off-site or obscured by vegetation. The disclosure of hidden defects cannot be expected.

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<sup>1</sup> British Standard 5837:2012 *Trees in relation to design, demolition and construction – Recommendations*

**2.2.5.** Whilst the Tree Survey Schedule at Appendix 1 (the Schedule) is not a tree safety inspection record, the surveyor may record obvious defects when they are observed and considered to be potentially significant to safety.

**2.2.6.** Data in the Schedule are time limited to one year, after which they should be reviewed.

**2.2.7.** The potential effects of trees on load-bearing soils beneath existing and proposed structures have not been considered and no soil samples have been taken.

### **3. INTRODUCTION**

**3.1.** I am Glyn Thomas, senior consultant with Cheshire Woodlands Limited and my area of expertise is arboriculture.

**3.2.** This assessment evaluates the effects of a development proposal on trees.

**3.3.** The development comprises erection of a 29-unit residential building with associated vehicle and cycle parking, refuse stores and landscaping as shown on the Tree Protection Plan at Appendix 2 (the Drawing).

**3.4.** The following documents have been considered in my evaluation:

- Topographical survey drawing RBS-20/2061/001
- Landscape general arrangement 227-LYR-XX-ZZ-DWG-L-1001 Revision 1
- Tree Survey Plan CW/10084-P-TS
- Preliminary Tree Survey Schedule CW/10084-SS

**3.5.** The comparative values of trees are considered broadly in line with the guidance of BS5837, and their removal, retention, protection and management are informed by this evaluation.

**3.6.** Technical terms used in this Statement are included in the Glossary of Terms.

- 3.7.** This Statement provides sufficient supporting information to enable the local planning authority (LPA) to determine the planning application insofar as it relates to trees.

#### **4. THE APPLICATION SITE**

- 4.1.** The site is a square-shaped 0.2 hectare vacant plot on the west side of Cross Road in Chorlton. It comprises part of the car park of the Chorlton Irish Club, bounded by Cross Road to the east, Beech Road Park to the south, The Irish Club and residential properties to the north and residential properties to the west.
- 4.2.** The British Geological Survey - *Geology of Britain Viewer*<sup>2</sup> identifies the underlying soils as 'Glaciofluvial Sheet Deposits, Devensian - Sand and Gravel'.
- 4.3.** Sands and Gravels are accumulations of rock fragments and mineral grains derived from the weathering and erosion of hard rocks by glacial and river action. Trees growing on free-draining sandy soils have a tendency to develop deep and diffuse rooting, are usually less reliant on roots growing within the upper horizons and are less sensitive to changes to the upper soils than trees growing on cohesive clay or alluvial soils.

#### **5. STATUTORY PROTECTION**

- 5.1.** An email enquiry with Manchester City Council confirmed that trees on and adjacent to the site are not protected by a tree preservation order (TPO) and the site is not in a conservation area.
- 5.2.** Trees on the site may be subject to the provisions of The Forestry Act<sup>3</sup>.
- 5.3.** See Appendix 4 for further guidance on the statutory protection of trees, hedgerows and wildlife.

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<sup>2</sup> Geology of Britain viewer

<sup>3</sup> *The Forestry Act 1967* (as amended)

## **6. SURVEY METHODOLOGY**

- 6.1.** I surveyed the trees on 1 October 2020 and my data are set out in the Schedule and on the Drawing.
- 6.2.** I measured stem diameters and canopy spreads using a tape and tree heights using a tape and clinometer. Where tree stem positions and dimensions are estimated this is identified in the Schedule and on the Drawing.
- 6.3.** I assessed the trees for 'visual prominence' and broadly categorised them in accordance with Table 1 of BS5837. See Appendix 3 for further guidance.
- 6.4.** During the survey, I carried out a brief assessment for obvious signs of wildlife habitat in trees and hedges on the site. No protected or exceptional habitats were identified and details were not recorded. See Appendix 4 for further guidance.
- 6.5.** The topographical survey overlaid with the proposed site plan is the base for the Drawing.
- 6.6.** Below-ground arboricultural constraints are represented on the Drawing as Root Protection Areas (RPA), calculated in accordance with section 4.6 and Table D.1 of BS5837.
- 6.7.** Potential direct obstruction of sunlight by trees is represented on the Drawing as illustrative shadow patterns, plotted in accordance with section 5.2.2 (Note 1) of BS5837.

## **7. THE TREES**

- 7.1.** I surveyed eight individual trees (T1 to T8), five tree groups (G1 to G5), three hedges (H1 to H3) and a group of shrubs (S1).
- 7.2.** T1, T5 to T8, G2, G5 and S1 are off-site. Of these, T1, T7, T8, G5 and S1 are unaffected by the development. T2 to T4, G1, G3, G4 and H1 to H3 are within the site or on the boundaries.

**7.3.** T1, T5, T6 and G2 are 'high quality' A category trees. T2, T3, G1 and G5 are 'moderate quality' B category. T4, T7, T8, G3 and G4 are 'low quality' C category. See Appendix 3 for further guidance.

**7.4.** T1 to T3, T5, T6, G1, G2 and G5 have high visual prominence. T4, T7, T8, G3, G4, H1 to H3 and S1 have moderate visual prominence. See Appendix 3 for further guidance.

## 8. ARBORICULTURAL IMPLICATIONS

**8.1.** BS5837 recommends that trees be evaluated and categorised as set out in Table 1, which also provides a summary of the impact of the development proposal on trees.

### 8.2. Table 1

|                                                                                                         | To be retained and protected                | To be removed for development                      | To be removed for other reasons |
|---------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------------------------------|---------------------------------|
| <b>Category A</b><br>High quality with life expectancy of at least 40 years                             | Trees T1, T5 and T6, and group G2           | None                                               | None                            |
| <b>Category B</b><br>Moderate quality with life expectancy of at least 20 years                         | Group G5                                    | Trees T2 and T3, and group G1                      | None                            |
| <b>Category C</b><br>Low quality with life expectancy of at least 10 years, or small young trees        | Trees T7 and T8                             | Tree T4, and groups G3 and G4                      | None                            |
| <b>Category U</b><br>Cannot be retained in the context of the current land-use for longer than 10 years | None                                        | None                                               | None                            |
| <b>Hedges and Shrubs</b>                                                                                | The northern half of hedge H1 and shrubs S1 | The southern half of hedge H1 and hedges H2 and H3 | None                            |

### **8.3. Trees and hedges to be removed**

**8.3.1.** T2, T3 and G1 (B category), T4, G3 and G4 (C category), and H2 and H3 will be removed to accommodate the development. The southern half of boundary hedge H1 will be removed at the request of the neighbour, and replaced with a new boundary wall.

**8.3.2.** The loss of T4, G3, G4, H2, H3 and part of H1 will not materially harm the amenity of the site or the surrounding area.

**8.3.3.** T2, T3 and G1 are unlikely to be sustainable in the long-term in the current context given the high likelihood of future direct damage to the existing brick boundary wall.

### **8.4. Trees to be retained**

**8.4.1.** The off-site trees and shrubs T1, T7, T8, G5 and S1 are unaffected by the development and require no particular consideration.

**8.4.2.** T5, T6 and G2 (A category), and the northern half of H1 will be retained and details for their protection during construction are included on the Drawing. The proposed protection methodology comprises:

- Erection of robust tree protection barriers to create construction exclusion zones around the retained trees and hedge;
- Installation of temporary ground protection to provide pedestrian construction access and working space within the RPA of T6;
- Retention of existing hard surfacing as temporary ground protection within the RPA of G2;
- Construction of new permanent hard surfaces within the RPAs of T5, T6 and G2; and
- Construction of sections of new boundary wall within the RPAs of T5 and T6.

**8.4.3.** The residual engineering details – as set out at paragraphs 10.6 to 10.9 below - can be resolved by the imposition of suitably worded planning conditions.

**8.4.4.** Design, implementation and supervision of the recommended protection methodology are critical to avoiding construction damage to the retained trees and safeguarding their future health and stability.

## **8.5. Pruning**

**8.5.1.** T5, T6 and G2 will be pruned, as detailed in the 'management' column of the Schedule, to provide working space during construction (T6 and G2), and increase ground clearances over the car-park (T5 and G2).

**8.5.2.** For T5, T6 and G2 the proposed pruning works are in accordance with BS3998<sup>4</sup> and acceptable in arboricultural terms.

**8.5.3.** Clipping of the northern part of H1 is routine hedge maintenance.

## **8.6. Post development impacts**

**8.6.1.** Periodic ongoing pruning of T6 will probably be required to maintain reasonable clearances from the new building. In the absence of any statutory restrictions (in the form of TPO or conservation area controls), future management of T6, where it overhangs the site, will be a civil matter between the site owner and the neighbour.

**8.6.2.** The proposed spatial relationship of T5 and G2 with the development presents no particular concerns, and their future management should comprise no more than routine arboricultural maintenance.

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<sup>4</sup> British Standard BS3998:2010 *Tree work - Recommendations*

## **8.7. Mitigation**

- 8.7.1.** The arboricultural mitigation will comprise the provision of new trees, shrubs and hedges as shown on the landscape general arrangement drawing submitted with the planning application.
- 8.7.2.** The residual landscaping details can either be included with the planning application or resolved by the imposition of a standard planning condition.

## **9. CONCLUSIONS**

- 9.1.** The off-site trees and shrubs T1, T7, T8, G5 and S1 are unaffected by the development.
- 9.2.** The B and C category trees T2 to T4, G1, G3 and G4, and hedges H2 and H3 will be removed to accommodate the development.
- 9.3.** The southern half of hedge H1 will be removed at the neighbour's request, and replaced with a new boundary wall.
- 9.4.** Removal of T4, G3, G4, H2, H3 and the southern half of H1 will not materially harm the amenity of the site or the surrounding area.
- 9.5.** The loss of T2, T3 and G1 will be mitigated by the provision of new trees and landscaping, including establishment of four replacement trees along the Cross Road boundary.
- 9.6.** The A category trees T5, T6 and G2 will be retained, together with the northern half of hedge H1, and a methodology for their protection during construction is included on the Drawing.
- 9.7.** Design, implementation and supervision of the recommended protection methodology are critical to avoiding construction damage to the trees and safeguarding their future health and stability.

- 9.8.** Initial pruning of T5, T6 and G2 is in accordance with BS3998. Clipping of H1 is routine hedge maintenance.
- 9.9.** Future management of T6 where it overhangs the site will be a civil matter for the site owner and the neighbour.
- 9.10.** Future management of T5 and G2 should comprise no more than routine arboricultural maintenance.
- 9.11.** The residual engineering, drainage, services and landscaping details can be resolved by planning condition.

## **10. RECOMMENDATIONS**

- 10.1.** No tree removal work should be carried out until the requisite consents have been obtained from the LPA as part of a detailed planning permission.
- 10.2.** All tree and hedge pruning and removal work should be implemented in accordance with the management recommendations in the Schedule. Pruning of T5, T6 and G2 should be implemented in accordance with BS3998.
- 10.3.** Statutory protection of wildlife should be taken into account in the planning and implementation of the tree and hedge pruning and removal work.
- 10.4.** T5, T6, G2 and the northern half of H1 should be protected during construction in accordance with the Tree Protection Plan and Arboricultural Method Statement at Appendix 2.
- 10.5.** The existing hard surfaces identified by blue diagonal-hatching on the Drawing should be retained as temporary ground protection for the duration of the construction operations.
- 10.6.** The blue diagonal-hatched temporary ground protection should be assessed by a structural engineer and a competent arboriculturist prior to commencement of the

development. Any strengthening, covering or re-inforcement of the existing hard surfaces recommended by the structural engineer should be implemented in accordance with an engineer-designed specification and method statement to be agreed with the LPA.

- 10.7.** The new permanent hard surfaces identified by orange cross-hatching on the Drawing should be installed to an engineer-designed construction specification and method statement to be agreed with the LPA and in accordance with section 7.4 of BS5837.
- 10.8.** The sections of new boundary wall between points G and H, and I and J on the Drawing should be constructed to an engineer-designed specification and method statement to be agreed with the LPA and in accordance with section 7.5 of BS5837.
- 10.9.** New underground services and drainage should be installed in accordance with a scheme of work to be agreed with the LPA and in accordance with BS5837 and NJUG Volume 4<sup>5</sup>.
- 10.10.** Landscaping should be implemented in accordance with a scheme of work to be agreed with the LPA, and the Arboricultural Method Statement on the Drawing.
- 10.11.** Foundation design should take into consideration the juxtaposition of existing and proposed trees and the nature of the load-bearing soil.

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<sup>5</sup> NJUG Volume 4. 2007. *NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees*. National Joint Utilities Group

## **APPENDIX 1**

## TREE SURVEY SCHEDULE



**PROJECT:** CHORLTON IRISH CLUB, HIGH LANE, CHORLTON  
**CLIENT:** SOUTHWAY HOUSING TRUST  
**REF:** CW/10084-SS-3

**SURVEYED BY:** G THOMAS  
**DATE:** 1 OCTOBER 2020  
**PAGE:** 1

### REVISIONS:

| No. | Species  | Age Range | Height (m) | Crown Spread (m) | Stem Dia. (mm) | Vitality | Comments                                                                                                                                                                                                      | Management | Visual | Retention Value Existing | Retention Value Proposed | BS5837 RPA Radius (m) |
|-----|----------|-----------|------------|------------------|----------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------|--------------------------|--------------------------|-----------------------|
| T1  | Sycamore | M         | 16         | 18 (EST)         | 700 (EST)      | N        | <ul style="list-style-type: none"> <li>Off-site</li> <li>1.5m ground clearance to site and could be raised to around 5m by removal of low lateral and sub-lateral branches of up to 150mm diameter</li> </ul> |            | 3      | A                        | A                        | 8.4 (EST)             |

Data in this schedule are time limited and subject to limitations described elsewhere.

### HEADINGS & ABBREVIATIONS

|                                    |                                                                                                                                                                                                      |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Age Range</b>                   | Y = young SM = semi-mature EM = early-mature M = mature PM = post-mature V = veteran                                                                                                                 |
| <b>Stem Dia</b>                    | Stem diameter (measured in accordance with Figure C.1 of BS5837: 2012) (MS = multi-stemmed EST = estimated)                                                                                          |
| <b>Crown Spread</b>                | Maximum crown spread (EST = estimated)                                                                                                                                                               |
| <b>Vitality</b>                    | A measure of physiological condition. N = normal range for the species and age R = reduced, P = poor, MD = moribund, D = dead                                                                        |
| <b>Visual (Visual Prominence)</b>  | Broad indication of prominence in the landscape (1 = low up to 4 = very high) (G = contributes to a wider group)                                                                                     |
| <b>Retention Category Existing</b> | Broadly in accordance with Table 1 of BS5837: 2012 (considers the merits of the tree or group in the context of the existing land-use)                                                               |
| <b>Retention Category Proposed</b> | Broadly in accordance with Table 1 of BS5837: 2012 (considers the merits of the tree or group in the context of a development proposal)                                                              |
| <b>BS5837 RPA Radius</b>           | Calculated in accordance with Table D.1 of BS5837: 2012                                                                                                                                              |
| <b>Common Plant names</b>          | Only common names are used in this schedule. For scientific names refer to Mitchell, A. 2001. <i>Collins Field Guide – Trees of Britain &amp; Northern Europe</i> . Harper Collins, London. pp. 420. |

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## TREE SURVEY SCHEDULE



**PROJECT:** CHORLTON IRISH CLUB, HIGH LANE, CHORLTON  
**CLIENT:** SOUTHWAY HOUSING TRUST  
**REF:** CW/10084-SS-3

**SURVEYED BY:** G THOMAS  
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| No. | Species        | Age Range | Height (m) | Crown Spread (m) | Stem Dia. (mm) | Vitality | Comments                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Management                                                                                                                                                                                                                                                                                                             | Visual | Retention Value Existing | Retention Value Proposed | BS5837 RPA Radius (m) |
|-----|----------------|-----------|------------|------------------|----------------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------|--------------------------|-----------------------|
| T2  | Sycamore       | EM        | 16         | 13               | 670            | N        | <ul style="list-style-type: none"> <li>Probably natural colonisation</li> <li>Dense basal shoots</li> <li>Ivy colonising stem and lower crown</li> <li>Abutting brick boundary wall which is displaced and cracked adjacent to base of stem</li> <li>Multi-stemmed from between 1 and 3m, probably stump regrowth</li> <li>2m ground clearance to site and could be raised to at least 5m by removal of low lateral and sub-lateral branches of up to 75mm diameter</li> </ul> | <ul style="list-style-type: none"> <li>Fell for development</li> <li>Grind stump to a depth of 0.3m</li> </ul>                                                                                                                                                                                                         | 3G     | B                        | U                        | N/A                   |
| T3  | Sycamore       | EM        | 12         | 10               | 640            | N        | <ul style="list-style-type: none"> <li>Probably natural colonisation</li> <li>Multi-stemmed from just above ground level, probably stump regrowth</li> <li>Abutting brick boundary wall, which is displaced adjacent to base of stem</li> <li>1.8m ground clearance to site and could be raised to 4m by removal of minor low lateral and sub-lateral branches</li> </ul>                                                                                                      | <ul style="list-style-type: none"> <li>Fell for development</li> <li>Grind stump to a depth of 0.3m</li> </ul>                                                                                                                                                                                                         | 3G     | B                        | U                        | N/A                   |
| T4  | Eucalyptus     | Y         | 5          | 2                | <150           | N        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <ul style="list-style-type: none"> <li>Remove for development</li> <li>Grub out stump</li> </ul>                                                                                                                                                                                                                       | 2      | C                        | U                        | N/A                   |
| T5  | Horse chestnut | M         | 18         | 15               | 990            | R        | <ul style="list-style-type: none"> <li>Off-site</li> <li>2.5m ground clearance to site and could be raised to at least 6m by removal of minor low lateral and sub-lateral branches of up to 75mm diameter</li> <li>Colonised by horse chestnut leaf minor</li> </ul>                                                                                                                                                                                                           | <ul style="list-style-type: none"> <li>Protect during development</li> <li>Prune on north side by removal of minor low lateral and sub-lateral branches of up to 75mm diameter to obtain 6m ground clearance over site</li> </ul>                                                                                      | 3G     | A                        | A                        | 12.0                  |
| T6  | Ash            | M         | 14         | 20 (EST)         | 700 (EST)      | N        | <ul style="list-style-type: none"> <li>Off-site</li> <li>2m ground clearance to site and could be raised to 8m by removal of one low lateral branch of 150mm diameter and selected sub-lateral branches of up to 75mm diameter</li> </ul>                                                                                                                                                                                                                                      | <ul style="list-style-type: none"> <li>Protect during development</li> <li>Prune on east side by removal of one low lateral branch of 150mm diameter and selected sub-lateral branches of up to 75mm diameter to obtain 8m ground clearance over site, and reduce radial crown spread over site by up to 3m</li> </ul> | 3      | A                        | B                        | 8.4 (EST)             |

## TREE SURVEY SCHEDULE



**PROJECT:** CHORLTON IRISH CLUB, HIGH LANE, CHORLTON  
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**DATE:** 1 OCTOBER 2020  
**PAGE:** 3

| No. | Species                    | Age Range | Height (m) | Crown Spread (m) | Stem Dia. (mm) | Vitality | Comments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Management                                                                                                                                                                                                                                                                | Visual | Retention Value Existing | Retention Value Proposed | BS5837 RPA Radius (m) |
|-----|----------------------------|-----------|------------|------------------|----------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------|--------------------------|-----------------------|
| T7  | Norway maple               | Y         | 5          | 3                | <150           | N        | <ul style="list-style-type: none"> <li>Off-site</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                           | 2G     | C                        | C                        | 1.8                   |
| T8  | Ornamental cherry          | M         | 7 (EST)    | 8 (EST)          | 400 (EST)      | N        | <ul style="list-style-type: none"> <li>Off-site</li> <li>Restricted access</li> <li>Crown on west side touching side elevation of building</li> <li>Close to rear corner of neighbouring dwelling</li> <li>Could be hard pruned back to the boundary</li> </ul>                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                           | 2G     | C                        | C                        | 4.8 (EST)             |
| G1  | Sycamore                   | SM        | ≤15        | 12               | 300 - 380      | N        | <ul style="list-style-type: none"> <li>Closely spaced linear group, probably natural colonisation</li> <li>Close to and abutting brick boundary wall with a high likelihood of future direct damage</li> <li>Multi-stemmed from ground level, probably stump regrowth</li> <li>Minor basal and epicormic growth</li> <li>1.8m ground clearance to site and could be raised to 6m by removal of minor low lateral and sub-lateral branches</li> <li>Northernmost tree colonised by ivy</li> <li>Would benefit from thinning</li> </ul> | <ul style="list-style-type: none"> <li>Fell for development</li> <li>Grind stumps to a depth of 0.3m</li> </ul>                                                                                                                                                           | 3G     | B                        | U                        | N/A                   |
| G2  | Sycamore<br>Horse chestnut | EM-M<br>M | ≤17        | ≤14 (EST)        | 350 - 790      | N        | <ul style="list-style-type: none"> <li>Off-site linear group</li> <li>Up to 6m crown overhang to site with ground clearance of between 1 and 6m, and could be raised to between 6 and 8m by removal or shortening of minor low lateral and sub-lateral branches of up to 150mm diameter</li> </ul>                                                                                                                                                                                                                                    | <ul style="list-style-type: none"> <li>Retain and protect during development</li> <li>Prune on north side by removal or shortening of minor low lateral and sub-lateral branches of up to 150mm diameter to obtain between 6 and 8m ground clearance over site</li> </ul> | 3G     | A                        | A                        | 4.2 – 9.6             |

## TREE SURVEY SCHEDULE



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| No. | Species                      | Age Range | Height (m) | Crown Spread (m) | Stem Dia. (mm)  | Vitality | Comments                                                                                                                                                                                                                                                                                                                                                                                                | Management                                                                                                                                                                                                                                                                                                                                                           | Visual | Retention Value Existing | Retention Value Proposed | BS5837 RPA Radius (m) |
|-----|------------------------------|-----------|------------|------------------|-----------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------|--------------------------|-----------------------|
| G3  | 2 Sycamore                   | SM        | 13         | 8                | 230 & 250       | N        | <ul style="list-style-type: none"> <li>Probably natural colonisation</li> <li>Closely spaced group</li> <li>Partially suppressed by T5 with crowns biased to east</li> <li>Easternmost tree colonised by dense ivy</li> <li>Crowns extend to ground level and could be raised to 5m by removal of basal and epicormic growth and low lateral and sub-lateral branches of up to 50mm diameter</li> </ul> | <ul style="list-style-type: none"> <li>Fell for development</li> <li>Grind stumps to a depth of 0.3m</li> </ul>                                                                                                                                                                                                                                                      | 2G     | C                        | U                        | N/A                   |
| G4  | 5 Norway maple               | Y         | 4-5        | ≤4               | <150            | N        |                                                                                                                                                                                                                                                                                                                                                                                                         | <ul style="list-style-type: none"> <li>Remove for development</li> <li>Grub out stumps</li> </ul>                                                                                                                                                                                                                                                                    | 2      | C                        | U                        | N/A                   |
| G5  | 1 Elm<br>1 Sycamore          | EM<br>SM  | ≤16 (EST)  | ≤10 (EST)        | 250 & 500 (EST) | N        | <ul style="list-style-type: none"> <li>Off-site</li> <li>Crown on south side extends up to boundary wall</li> <li>Both trees colonised by dense ivy</li> </ul>                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                      | 3G     | B                        | B                        | 3.0 & 6.0 (EST)       |
| H1  | Leyland cypress              | -         | 6          | -                | -               | N        | <ul style="list-style-type: none"> <li>Maintained party boundary hedge</li> <li>Would benefit from clipping to solid form</li> <li>Colonised by Russian vine at southern end</li> </ul>                                                                                                                                                                                                                 | <p><b>Southern half</b></p> <ul style="list-style-type: none"> <li>Remove for development (as shown on drawing CW/10084-P-TP-1) and grind stumps to a depth of 0.3m</li> </ul> <p><b>Northern half</b></p> <ul style="list-style-type: none"> <li>Retain and protect during development (as shown on drawing CW/10084-P-TP-1)</li> <li>Clip to solid form</li> </ul> | 2      | -                        | -                        | -                     |
| H2  | Hawthorn<br>Privet           | -         | ≤5         | -                | -               | N & R    | <ul style="list-style-type: none"> <li>Overgrown unmanaged boundary hedge</li> <li>Would benefit from management or removal and replacement</li> </ul>                                                                                                                                                                                                                                                  | <ul style="list-style-type: none"> <li>Remove for development</li> <li>Grind stumps and roots to a depth of 0.3m</li> </ul>                                                                                                                                                                                                                                          | 2      | -                        | -                        | -                     |
| H3  | Hawthorn<br>Privet<br>Cherry | -         | ≤5         | -                | -               | N & R    | <ul style="list-style-type: none"> <li>Unmanaged overgrown boundary hedge</li> <li>Would benefit from management or removal and replacement</li> </ul>                                                                                                                                                                                                                                                  | <ul style="list-style-type: none"> <li>Remove for development</li> <li>Grind stumps and roots to a depth of 0.3m</li> </ul>                                                                                                                                                                                                                                          | 2      | -                        | -                        | -                     |
| S1  | Cherry laurel                | -         | 4          | -                | -               | N        | <ul style="list-style-type: none"> <li>Off-site</li> </ul>                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                      | 2      | -                        | -                        | -                     |

## **APPENDIX 2**

ARBORICULTURAL METHOD STATEMENT

From commencement of the development, the following methodology shall be implemented in the manner and sequence described below

SEQUENCE OF WORKS

- Pre-commencement site meeting
- Tree and hedge removal and pruning
- Construction of new boundary wall
- Erection of Phase 1 'tree protection barriers'
- Installation of 'temporary ground protection'
- Assessment of existing hard surfaces
- Main construction phase
- Erection of Phase 2 'tree protection barriers'
- Construction of new hard surfaces within RPAs
- Removal of 'tree protection barriers' and 'temporary ground protection'
- Landscaping works

1. PRE-COMMENCEMENT SITE MEETING

To outline working methods in relation to trees, a site meeting of the following shall take place prior to commencement of any construction activity:

- Client
- Structural engineer
- Main contractor
- Site agent
- Project arboriculturist

Before the site meeting, existing incoming services and drainage shall be accurately located both on site and on a copy of this drawing

2. TREE AND HEDGE REMOVAL AND PRUNING

- All tree and hedge removal and pruning work shall be implemented in accordance with Tree Survey Schedule CW/10084-SS-3 and this drawing
- All reasonable care shall be taken to avoid damage to retained trees and hedges
- All tree stumps within any area designated as a 'tree protection area' or otherwise protected on this drawing shall be removed by mechanical stump grinder and shall not be excavated in their entirety by mechanical excavator
- All tree removal and pruning works shall be carried out in accordance with British Standard 3998: 2010 Tree work - Recommendations

3. ERECTION OF PHASE 1 TREE PROTECTION BARRIERS

- The main contractor shall erect the Phase 1 'tree protection barriers' as detailed on this drawing
- The 'project arboriculturist' shall inspect installation of the Phase 1 'tree protection barriers' prior to commencement of any construction works, site preparation, excavation or delivery of plant and materials

4. CONSTRUCTION OF NEW BOUNDARY WALL

- The main contractor shall construct the new boundary wall between points G and J on this drawing on completion of the tree and hedge removal and pruning works
- The sections of new boundary wall between points G and H, and I and J shall be built to an engineer-designed construction specification and method statement to be agreed with the Local Planning Authority (LPA) and in accordance with section 7.5 of British Standard 5837: 2012 Trees in relation to design, demolition and construction - Recommendations (BS5837)
- The specifications shall include detailed working drawings and details of existing ground levels, final formation levels and final ground levels
- Any excavation of ground within the Root Protection Areas (RPA) of retained trees T5 and T6 required to accommodate the agreed final formation levels, shall be carried out by hand, using hand tools, under the supervision of the 'project arboriculturist' and in accordance with section 7.2 of BS5837

5. INSTALLATION OF TEMPORARY GROUND PROTECTION

- The main contractor shall install 'temporary ground protection' in the area identified by blue block-hatching as detailed on this drawing
- The 'project arboriculturist' shall inspect installation of the 'temporary ground protection' prior to commencement of any construction works, site preparation, excavation or delivery of plant and materials

6. ASSESSMENT OF EXISTING HARD SURFACES

- The existing hard surfaces identified by blue diagonal-hatching on this drawing shall be assessed by a structural engineer and the 'project arboriculturist' to ensure they are fit for purpose to be retained as 'temporary ground protection' for the duration of the site construction operations
- Any temporary covering or re-inforcement of the existing hard surfaces recommended by the structural engineer shall be installed to an engineer-designed specification and method statement to be agreed with the LPA

7. MAIN CONSTRUCTION PHASE

- There shall be no storage of construction equipment, plant or materials within any area designated as a 'tree protection area' or otherwise protected on this drawing
- No fires shall be lit within 20m of any retained tree or hedge
- The site agent shall supervise all deliveries by self-loading crane, with vehicles positioned in such a manner that retained trees and hedges are not at undue risk of damage
- There shall be no excavation within 300mm of a 'tree protection barrier'
- There shall be no new excavation for the installation, renewal or repair of underground services within any area designated as a 'tree protection area' or otherwise protected on this drawing
- The integrity of the 'tree protection barriers' and 'temporary ground protection' shall be maintained for the duration of the main construction phase
- Any damage to 'tree protection barriers' or 'temporary ground protection' during the main construction phase shall be reported to the project arboriculturist and immediately made good by the main contractor
- Site drainage and washings from concrete and mortar mixings shall be directed away from all 'tree protection areas'
- The 'project arboriculturist' shall visit the site monthly to assess the integrity of the tree protection
- The 'project arboriculturist' shall complete a report to be sent to the site owner and main contractor following each visit. In this regard, the site owner will instruct the 'project arboriculturist' prior to any works commencing on site

8. ERECTION OF PHASE 2 TREE PROTECTION BARRIERS

- On completion of the main construction phase, the main contractor shall remove the sections of Phase 1 'tree protection barrier' between points A&B and D&E on this drawing, and immediately thereafter erect Phase 2 'tree protection barriers' between points A&C and D&F as detailed on this drawing
- The 'project arboriculturist' shall inspect installation of the Phase 2 'tree protection barriers' prior to commencement of any construction works, site preparation, excavation or delivery of plant and materials

9. CONSTRUCTION OF NEW HARD SURFACES WITHIN RPAS

- The areas of new hard surfacing identified by orange cross-hatching on this drawing shall be constructed over the existing ground without excavation other than the removal, by hand, using hand tools, under the supervision of the 'project arboriculturist' of either (i) surface vegetation and soil to agreed final formation levels, or (ii) existing hardstanding and sub-base aggregate layer, without excavation of the underlying soils. Any excavation of ground within the orange cross-hatched areas shall be carried out in accordance with section 7.2 of BS5837
- The new surfacing in the orange cross-hatched areas shall be constructed using the 'Cellweb' 3-dimensional cellular confinement system (or equivalent)
- All aggregates used in the construction shall be no-fines, crushed gritstone or sandstone. **Limestone shall not be used**
- The wearing surface shall be of a material agreed with the LPA
- The construction shall be to engineer-designed specifications and method statements to be agreed with the LPA, and in accordance with section 7.4 of BS5837. The specifications shall include details of existing and proposed ground levels, depth of construction, final formation levels and final surface levels
- Edge restraints shall be constructed from pressure treated timber boards secured to timber posts, or other means to be agreed with the LPA. In the installation of edge restraints, there shall be no excavation of ground other than as described at a. above
- Final surface levels adjacent to the 'reduced dig' sections of hard surfacing shall be dictated by final surface levels of the 'reduced-dig' section, and not vice-versa

10. REMOVAL OF TREE PROTECTION BARRIERS AND TEMPORARY GROUND PROTECTION

'Tree protection barriers' and 'temporary ground protection' shall be removed only on completion of construction works and in compliance with all relevant planning conditions

11. LANDSCAPING WORKS

- Landscaping works shall be implemented in accordance with a scheme approved by the LPA
- There shall be no rotation of ground within any area designated as a 'tree protection area' or otherwise protected on this drawing
- Sandy topsoil may be spread within the 'tree protection areas' to a depth of not more than 150mm to facilitate the establishment of new vegetation. No other addition of soil or other material shall be carried out within any area designated as a 'tree protection area' or otherwise protected on this drawing without prior consultation with the LPA
- No hard landscaping works or excavation for cables or any other service shall be carried out within the 'tree protection areas' without the prior written consent of the LPA. All such excavations shall be carried out in accordance with the guidance set out in National Joint Utilities Group Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Volume 4 2007)

TREE PROTECTION SPECIFICATION

Tree Protection Areas shall: -

- Be secured prior to commencement of any construction works, delivery of site accommodation or materials and shall remain intact for the duration of the construction works
- Preclude all construction activity with the exception of specified arboricultural works and such works as have been agreed by all parties and to be carried out under supervision
- Be protected by 'tree protection barriers' and other measures as specified on this drawing
- Preclude the storage or tipping of all materials and substances. Toxic substances such as fuels, oils, additives and cement shall not be stored within 5m of any area designated as a 'tree protection area' or otherwise protected on this drawing
- Any incursion into 'tree protection areas' must be by prior arrangement, following consultation with the Local Planning Authority (LPA)

Phase 1 Tree Protection Barriers

- The Phase 1 'tree protection barriers' shall comprise 2.4m high, 1.2m wide, 18mm thick exterior grade softwood plywood boards (or oriental strand board)
- A timber framework shall be constructed comprising 3m long by 100mm by 100mm timber posts, concreted into 600mm deep, 200mm diameter augured holes at maximum 3.6m centres. Two horizontal cross rails, 100 x 50mm shall be securely fixed to each upright at 0.5m and 1.9m above ground level
- The fencing boards shall butt together and be securely fixed to the timber framework
- No fixing shall be made to any tree and all reasonable care shall be taken to avoid damage to tree roots when locating posts
- An A3 warning sign reading as per figure 1 shall be fixed to every 10m of Phase 1 'tree protection barrier'
- The 'project arboriculturist' shall direct erection of the Phase 1 'tree protection barriers'

Phase 2 Tree Protection Barriers

- The Phase 2 'tree protection barriers' shall comprise 2m high weldmesh 'Heras' type fencing
- The fencing panels shall butt together and be securely fixed to 2.7m x 100mm x 100mm timber posts, set or concreted into 600mm deep, 150mm diameter augured holes at 3.5m centres
- No fixing shall be made to any tree and all reasonable care shall be taken to avoid damage to tree roots when locating posts
- An A3 warning sign reading as per figure 1 shall be fixed to every 10m of Phase 2 'tree protection barrier'
- The 'project arboriculturist' shall direct erection of the Phase 2 'tree protection barriers'

Temporary Ground Protection

The areas of ground identified for 'temporary ground protection' on this drawing shall be either:

- retained to existing hardstanding for the duration of the demolition and construction operations (blue diagonal-hatched area), or
- covered by side-butting scaffold boards on top of a 100mm deep layer of wood chippings laid over a geotextile membrane, or supported on scaffold board bearers, which shall be fixed at 1m centres (pedestrian access only) (blue block-hatched area)

Fig.1

TREE PROTECTION AREA  
KEEP OUT!

ALL TREES ENCLOSED BY THIS FENCE ARE PROTECTED  
BY PLANNING CONDITIONS (TOWN AND COUNTRY PLANNING ACT 1990)

NON-COMPLIANCE WITH PLANNING CONTROLS MAY LEAD TO ENFORCEMENT PROCEEDINGS

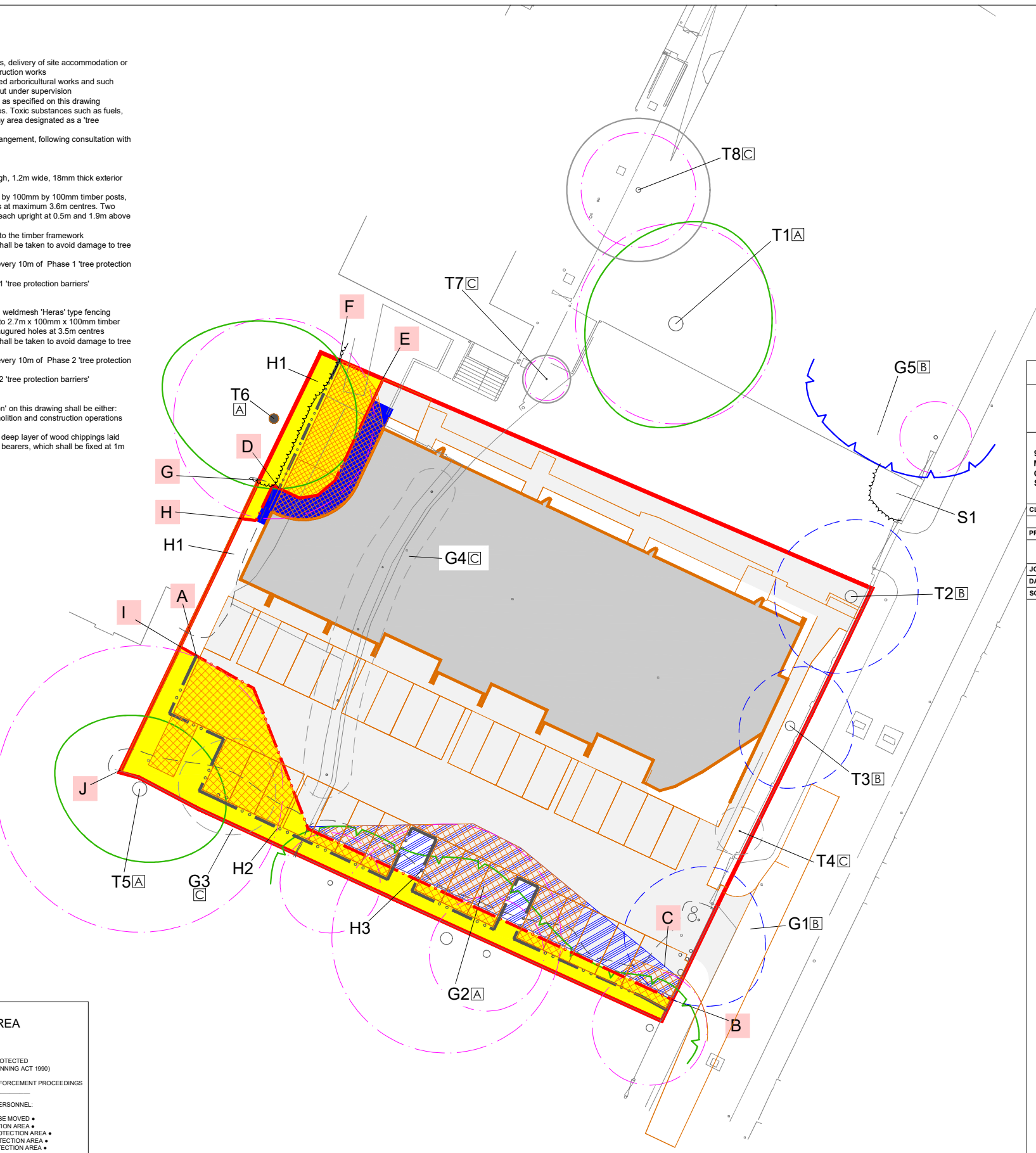
THE FOLLOWING MUST BE OBSERVED BY ALL PERSONNEL:

- THE TREE PROTECTION BARRIERS MUST NOT BE MOVED
- NO PERSON SHALL ENTER THE TREE PROTECTION AREA
- NO MACHINE OR PLANT SHALL ENTER THE TREE PROTECTION AREA
- NO MATERIAL SHALL BE STORED IN THE TREE PROTECTION AREA
- NO SPOIL SHALL BE DEPOSITED IN THE TREE PROTECTION AREA
- NO EXCAVATION SHALL OCCUR IN THE TREE PROTECTION AREA

ANY INCURSION INTO THE TREE PROTECTION AREA MUST BE  
WITH THE PRIOR WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY

SCALE: 1:200  
UNITS: METRES

0 5 10



TREE PROTECTION PLAN

**CHESHIRE  
WOODLANDS**

9 LOWE STREET  
MACCLESFIELD  
CHESHIRE  
SK11 7NJ

T. +44(0)1625 669668  
E. admin@cheshire-woodlands.co.uk  
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CLIENT

SOUTHWAY HOUSING TRUST

PROJECT

CHORLTON IRISH CLUB  
HIGH LANE  
CHORLTON

JOB REF

CW/10084-P-TP-2

DATE

27 MAY 2022

SCALE

1:200 at A1

PROPOSED BUILDING AND EXTERNAL HARD SURFACES  
(DRAWING 2274-YR-XX-ZZ-DWG-L-1001 Rev 1)

INDIVIDUAL TREE TO BE RETAINED

GROUP OF TREES TO BE RETAINED

HEDGE TO BE RETAINED

SHRUBS TO BE RETAINED

TREE, GROUP OF TREES OR HEDGE TO BE REMOVED

STEM POSITION APPROXIMATED

BS 5837 RETENTION VALUE

BS5837 ROOT PROTECTION AREA RADIUS

BS5837 SHADOW PATTERN

BS5837 CATEGORY 'A' TREES

BS5837 CATEGORY 'B' TREES

BS5837 CATEGORY 'C' TREES

TEMPORARY GROUND PROTECTION (EXISTING UNSURFACED  
GROUND) (BS5837)

TEMPORARY GROUND PROTECTION (EXISTING HARD  
SURFACE) (BS5837)

NEW HARD SURFACE WITHIN RPA (BS5837)

TREE PROTECTION AREA

PHASE 1 TREE PROTECTION BARRIER

PHASE 2 TREE PROTECTION BARRIER

## **APPENDIX 3**

## **Guidance Note - Visual Prominence and Tree Categorisation**

### **Visual Prominence**

A broad indication of visual contribution to the landscape. The evaluation considers:

- location
- public views
- landscape function
- tree size
- growth potential
- useful life expectancy

Visual prominence values are classified as follows:

- (1)** Low - visual contribution restricted to the site
- (2)** Moderate - visual contribution to the site and immediate surroundings
- (3)** High - visual contribution to the site, immediate surroundings and neighbourhood, estate or locale
- (4)** Very high - visual contribution to a conurbation, or trees of exceptional landscape value

Groups of trees are assessed as a single unit.

## **Tree Categorisation**

Broadly in accordance with section 4.5 and Table 1 of British Standard 5837:2012 Trees in relation to design, demolition and construction – Recommendations.

Trees or groups of trees are evaluated twice. Firstly, they are assessed and categorised in the pre-development context to provide a broad valuation of all of their attributes and their contribution to the amenity of the area. Secondly, they are similarly assessed and categorised in the context of a development proposal. The evaluations consider:

- useful life expectancy
- visual prominence (see above)
- landscape function
- numbers of other trees and their maturity (continuity for landscape, amenity, habitat)
- wildlife habitats (including continuity)
- safety
- conflicts with the built environment or other land-use
- cultural, historical or other value

Groups of trees are assessed and categorised as a single unit.

## **Pre-Development assessment**

The tree or group of trees is assessed and placed into one of the following categories (A, B, C or U)

The valuation considers the benefits and disbenefits of retaining the tree or group of trees in the pre-development context

Any specific issues are noted in the tree survey schedule

**(A)** High quality - Trees the retention of which is most desirable and that have an estimated useful life expectancy of at least 40 years

Wholly appropriate and without significant conflict

**(B)** Moderate quality - Trees the retention of which is desirable and that have an estimated useful life expectancy of at least 20 years

Appropriate but not of highest value

**(C)** Low quality - Trees that could be retained and have an estimated useful life expectancy of at least 10 years

Ill-suited but could be retained with moderate conflicts

Trees of no particular merit

**(U)** Trees unsuitable for retention

Could not reasonably be retained for longer than 10 years

## **Post-Development assessment**

The tree or group of trees is assessed and placed in one of the following categories (A, B, C or U)

The valuation considers the benefits and disbenefits of retaining the tree or group of trees in the context of a development proposal

Any specific issues are noted in the tree survey schedule.

**(A)** High quality - Trees the retention of which is most desirable and that have an estimated useful life expectancy of at least 40 years

Wholly appropriate and without significant conflict

**(B)** Moderate quality - Trees the retention of which is desirable and that have an estimated useful life expectancy of at least 20 years

Appropriate but not of highest value and/or having only minor conflicts

**(C)** Low quality - Trees which could be retained and have an estimated useful life expectancy of at least 10 years

Ill-suited but could be retained with moderate conflicts

Trees of no particular merit

**(U)** Trees for removal

Would need to be removed to accommodate the development proposal, or could not reasonably be retained for longer than 10 years

## **APPENDIX 4**

## **Guidance note - Statutory Controls**

### **Trees and Hedges**

Subject to specified exceptions, an application must be made to the local planning authority [LPA] to carry out work on or remove trees that are protected by a tree preservation order [TPO]<sup>1</sup>

Six weeks' notice must be given to the LPA of intention to carry out work on or remove trees within a conservation area and not protected by a TPO<sup>1</sup>

LPA consent may be required to carry out work on or remove trees, shrubs and hedges that are affected by planning conditions

LPA consent may be required for the removal of hedgerows<sup>2</sup>

**Your Council's planning department will advise whether or not any of the above controls apply to your trees, shrubs and hedges**

Subject to specified exemptions, a licence may be required for the felling of growing trees<sup>3</sup>

**Your nearest Forestry Commission or Natural Resources Wales office will advise whether you require a felling licence**

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<sup>1</sup> <https://www.gov.uk/guidance/tree-preservation-orders-and-trees-in-conservation-areas>

<sup>2</sup> <https://www.gov.uk/guidance/countryside-hedgerows-regulation-and-management>

<sup>3</sup> <https://www.gov.uk/guidance/tree-felling-licence-when-you-need-to-apply>

## **Wildlife**

Nesting birds and all species of bat are afforded statutory protection.<sup>4</sup> It is an offence to:

- disturb a nesting bird
- disturb a roosting bat or damage, destroy or block access to a bat roost
- intentionally kill, injure or take a bat
- sell, hire, barter or exchange a bat, dead or alive
- be in possession or control of a bat or anything derived from a bat

**Your local Wildlife Trust or your Council's Ecologist will provide guidance on statutory controls relating to wildlife.**

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<sup>4</sup> <https://www.gov.uk/topic/planning-development/protected-sites-species>

## **APPENDIX 5**

# GLOSSARY OF ARBORICULTURAL TERMS

**Abscission.** The shedding of a leaf or other short-lived part of a woody plant, involving the formation of a corky layer across its base; in some tree species twigs can be shed in this way

**Abiotic.** Pertaining to non-living agents; e.g. environmental factors

**Absorptive roots.** Non-woody, short-lived roots, generally having a diameter of less than one millimetre, the primary function of which is uptake of water and nutrients

**Access facilitation pruning.** One off tree pruning operation, the nature and effects of which are without significant adverse impact on tree physiology or amenity value, which is directly necessary to provide access for operations on site

**Adaptive growth.** In tree biomechanics, the process whereby the rate of wood formation in the cambial zone, as well as wood quality, responds to gravity and other forces acting on the cambium. This helps to maintain a uniform distribution of mechanical stress

**Adaptive roots.** The adaptive growth of existing roots; or the production of new roots in response to damage, decay or altered mechanical loading

**Adventitious shoots.** Shoots that develop other than from apical, axillary or dormant buds; see also 'epicormic'

**Anchorage.** The system whereby a tree is fixed within the soil, involving cohesion between roots and soil and the development of a branched system of roots which withstands wind and gravitational forces transmitted from the aerial parts of the tree

**Ancient tree.** A tree that has passed beyond maturity and is old, or aged, in comparison with other trees of the same species. An ancient tree is one that has all or most of the following characteristics: a) biological, aesthetic or cultural interest, because of its great age; b) a growth stage that is described as ancient or post-mature; c) a chronological age that is old relative to others of the same species

**Arboricultural Method Statement.** Methodology for the implementation of any aspect of development that is within the root protection area, or has the potential to result in loss of or damage to a tree to be retained

**Arboriculturist.** Person who has, through relevant education, training and experience, gained expertise in the field of trees in relation to construction

**Architecture.** In a tree, a term describing the pattern of branching of the crown or root system

**Axial.** Aligned along the axis of the stem, branch or root

**Axil.** The place where a bud is borne between a leaf and its parent shoot

**Bacteria.** Microscopic single-celled organisms, many species of which break down dead organic matter, and some of which cause diseases in other organisms

**Bark.** A term usually applied to all the tissues of a woody plant lying outside the vascular cambium, thus including the phloem, cortex and periderm; occasionally applied only to the periderm or the phellem

**Bark expansion crack.** The pattern of axial strips of bark on smooth-barked trees that have grown faster than the adjacent bark. A growth response to stretching of the bark by expansion of the underlying xylem

**Basidiomycotina (Basidiomycetes).** One of the major taxonomic groups of fungi; their spores are borne on microscopic peg-like structures (basidia), which in many types are in turn borne on or within conspicuous fruit bodies, such as brackets or toadstools. Most of the principal decay fungi in standing trees are basidiomycetes

**Bolling.** A term sometimes used to describe pollard heads

**Bottle-butt.** A broadening of the stem base and buttresses of a tree, in excess of normal and sometimes denoting a growth response to weakening in that region, especially due to decay involving selective delignification

**Bracing.** The use of rods or cables to restrain the movement between parts of a tree

**Branch:**

- **Primary.** A **first order branch** arising from a stem
- **Lateral.** A **second order branch**, subordinate to a primary branch or stem and bearing sub-lateral branches
- **Sub-lateral.** A **third order branch**, subordinate to a lateral or primary branch, or stem and usually bearing only twigs

**Branch bark ridge.** The raised arc of bark tissues that forms within the acute angle between a branch and its parent stem

**Branch-collar.** A visible swelling formed at the base of a branch whose diameter growth has been disproportionately slow compared to that of the parent stem; a term sometimes applied also to the pattern of growth of the cells of the parent stem around the branch base

**Brown-rot.** A type of wood decay in which cellulose is degraded, while lignin is only modified

**Buckling.** An irreversible deformation of a structure subjected to a bending load

**Buttress zone.** The region at the base of a tree where the major lateral roots join the stem, with buttress-like formations on the upper side of the junctions

**Canker.** A persistent lesion formed by the death of bark and cambium due to colonisation by fungi or bacteria

**Canopy species.** Tree species that mature to form a closed woodland canopy

**Cellulose.** A carbohydrate consisting of glucose molecules joined end-to-end, so as to form long filaments; a principal constituent of plant cell walls

**Chlorosis.** The loss of green pigment from plant tissues, caused by mineral deficiency. Chlorotic (adj.)

**Compartmentalisation.** The confinement of disease, decay or other dysfunction within an anatomically discrete region of plant tissue, due to passive and/or active defences operating at the boundaries of the affected region

**Competent person.** A person who has training and experience relevant to the matter being addressed and an understanding of the requirements of the task being approached.

**Compression fork.** An acute angled fork that is mechanically optimised for the growth pressure that two or more adjacent stems exert on each other

**Compression strength.** The ability of a material or structure to resist failure when subjected to compressive loading; measurable in trees with special drilling devices

**Compressive loading.** Mechanical loading which exerts a positive pressure; the opposite to tensile loading

**Condition.** An indication of the physiological condition of the tree. Where the term 'condition' is used in a report, it should not be taken as an indication of the stability of the tree

**Construction.** Site based operations with the potential to affect existing trees

**Construction exclusion zone.** Area based on the Root Protection Area from which access is prohibited for the duration of the project

**Crown/Canopy.** The main foliage bearing section of the tree

**Crown lifting.** The removal of limbs and small branches to a specified height above ground level

**Crown thinning.** The removal of a proportion of secondary branch growth throughout the crown to produce an even density of foliage around a well-balanced branch structure

**Crown reduction/shaping.** A specified reduction in crown size whilst preserving, as far as possible, the natural tree shape

**Crown reduction/thinning.** Reduction of the canopy volume by thinning to remove dominant branches whilst preserving, as far as possible the natural tree shape

**Deadwood.** Dead branch wood

**Decurrent.** In trees, a system of branching in which the crown is borne on a number of major widely-spreading limbs of similar size (cf. excurrent). In fungi with toadstools as fruit bodies, the description of gills which run some distance down the stem, rather than terminating abruptly

**Decay.** (of organic tissue) decomposition by fungi or bacteria

**Defect.** In relation to tree hazards, any feature of a tree which detracts from the uniform distribution of mechanical stress, or which makes the tree mechanically unsuited to its environment

**Delamination.** The separation of wood layers along their length, visible as longitudinal splitting

**Desire-line footpath.** A footpath that has been created by regular use rather than by design and construction

**Dieback.** The death of parts of a woody plant, starting at shoot-tips or root-tips

**Disease.** A malfunction in or destruction of tissues within a living organism, usually excluding mechanical damage; in trees, usually caused by pathogenic micro-organisms

**Distal.** In the direction away from the main body of a tree or subject organism (cf. proximal)

**Dominance.** In trees, the tendency for a leading shoot to grow faster or more vigorously than the lateral shoots; also the tendency of a tree to maintain a taller crown than its neighbours

**Dormant bud.** An axial bud which does not develop into a shoot until after the formation of two or more annual wood increments; many such buds persist through the life of a tree and develop only if stimulated to do so

**Dysfunction.** In woody tissues, the loss of physiological function, especially water conduction, in sapwood

**DBH** (Diameter at Breast Height). Stem diameter measured at a height of 1.5 metres (UK) or the nearest measurable point. Where measurement at a height of 1.5 metres is not possible, another height may be specified

**Deadwood.** Branch or stem wood bearing no live tissues. Retention of deadwood provides valuable habitat for a wide range of species and seldom represents a threat to the health of the tree. Removal of deadwood can result in the ingress of decay to otherwise sound tissues and climbing operations to access deadwood can cause significant damage to a tree. Removal of deadwood is generally recommended only where it represents an unacceptable level of hazard

**Early-wood.** The wood laid down around the time of the main flush of shoot growth in the early part of the growing season

**Endophytes.** Micro-organisms that live inside plant tissues without causing overt disease, but in some cases capable of causing disease if the tissues become physiologically stressed, for example by lack of moisture

**Engineer-designed hard surfacing.** Hard surfacing constructed within the 'Root protection area' of a tree, which will be designed by a structural or geotechnical engineer in collaboration with an arboriculturist as set out in clause 7.4 of British Standard BS5837:2012. The purpose being to minimise the effects of the construction on the health of the tree.

**Epicormic shoot.** A shoot having developed from a dormant or adventitious bud and not having developed from a first year shoot

**Excrescence.** Any abnormal outgrowth on the surface of tree or other organism

**Excurrent.** In trees, a system of branching in which there is a well-defined central main stem, bearing branches which are limited in their length, diameter and secondary branching (cf. decurrent)

**Fastigate.** Having upright, often clustered branches

**Felling licence.** In the UK, a permit to fell trees in excess of a stipulated number of stems or volume of timber

**Fibre-buckling.** The kinking of wood fibres and failure of other xylem elements when exposed to compressive loading

**Field layer.** Herbs, ferns, grasses and sedges

**First-order branch.** A high order branch, usually arising from a stem

**Flush-cut.** A pruning cut which removes part of the branch bark ridge and or branch-collar

**Girdling root.** A root which circles and constricts the stem or roots possibly causing death of phloem and/or cambial tissue

**Ground layer.** Mosses, ivy, lichens and fungi

**Guying.** A form of artificial support with cables for trees with a temporarily inadequate anchorage

**Habit.** The overall growth characteristics, shape of the tree and branch structure

**Haloing.** Removing or pruning trees from around the crown of another (usually mature or post-mature) tree to prevent it becoming suppressed

**Hazard beam.** An upwardly curved part of a tree in which strong internal stresses may occur without being reduced by adaptive growth; prone to longitudinal splitting

**Heartwood/false-heartwood.** The dead central wood that has become dysfunctional as part of the aging processes and being distinct from the sapwood

**Heave.** A term mainly applicable to a shrinkable clay soil which expands due to re-wetting after the felling of a tree which was previously extracting moisture from the deeper layers; also the lifting of pavements and other structures by root diameter expansion; also the lifting of one side of a wind-rocked root-plate

**High canopy tree species.** Tree species having potential to contribute to the closed canopy of a mature woodland or forest

**Incipient failure.** In wood tissues, a mechanical failure which results only in deformation or cracking, and not in the fall or detachment of the affected part

**Included bark (ingrown bark).** Bark of adjacent parts of a tree (usually forks, acutely joined branches or basal flutes) which is in face-to-face contact

**Increment borer.** A hollow auger, which can be used for the extraction of wood cores for counting or measuring wood increments or for inspecting the condition of the wood

**Infection.** The establishment of a parasitic micro-organism in the tissues of a tree or other organism

**Internode.** The part of a stem between two nodes; not to be confused with a length of stem which bear nodes but no branches

**Laser Rangefinder.** A device that uses a laser beam to measure distance, angle, and height.

**Lateral branch:** A side branch

**Late-wood.** The wood laid down after the time of the first main flush of shoot growth. Usually denser than the early-wood

**Lever arm.** A mechanical term denoting the length of the lever represented by a structure that is free to move at one end, such as a tree or an individual branch

**Lesion.** Death or abnormal change in tissues, usually associated with disease or trauma

**Lignin.** The hard, cement-like constituent of wood cells; deposition of lignin within the matrix of cellulose microfibrils in the cell wall is termed Lignification

**Lions tailing.** A term applied to a branch of a tree that has few if any side-branches except at its end, and is thus liable to snap due to end-loading

**Loading.** A mechanical term describing the force acting on a structure from a particular source; e.g. the weight of the structure itself or wind pressure

**Loam.** A soil with roughly equal proportions of sand, silt, and clay

**Longitudinal.** Along the length (of a stem, root or branch)

**Lopping.** A term often used to describe the removal of large branches from a tree, but also used to describe other forms of cutting

**Marginal browning of leaves.** Death of a tissues to the margin or edge of the leaf

**Mature Heights** (approximate):

- **Low maturing** – less than 8 metres high
- **Moderately high maturing** – 8 – 12 metres high
- **High maturing** – greater than 12 metres high

**Microdrill.** An electronic rotating steel probe, which when inserted into woody tissue provides a measure of tissue density

**Minor deadwood.** Deadwood of a diameter less than 25mm and or unlikely to cause significant harm or damage upon impact with a target beneath the tree

**Mulch.** Material laid down over the rooting area of a tree or other plant to help conserve moisture; a mulch may consist of organic matter or a sheet of plastic or other artificial material

**Mycelium.** The body of a fungus, consisting of branched filaments (hyphae)

**Obvious defects.** Defects that are so apparent that most people, whether specialist or not, would recognise them on taking a general, but not necessarily close view of the tree

**Occluding tissues.** A general term for the roll of wood, cambium and bark that forms around a wound on a woody plant (cf. woundwood)

**Occlusion.** The process whereby a wound is progressively closed by the formation of new wood and bark around it

**Pathogen.** A micro-organism which causes disease in another organism

**Phloem.** Vascular tissue that distributes the products of photosynthesis (sugars) around the plant

**Photosynthesis.** The process whereby plants use light energy to split hydrogen from water molecules and combine it with carbon dioxide to form carbohydrates that are the basic building block for plant growth. Photosynthetic capacity is the plant's ability to produce carbohydrates

**Phytotoxic.** Toxic to plants

**Pollarding.** The removal of the tree canopy, back to the stem or primary branches, usually to a point just outside that of the previous cutting. Pollarding may involve the removal of the entire canopy in one operation, or may be phased over several years. The period of safe retention of trees having been pollarded varies with species and individuals. It is usually necessary to re-pollard on a regular basis, annually in the case of some species

**Primary branch.** A major branch, generally having a basal diameter greater than 0.25 x stem diameter

**Primary root zone.** The soil volume most likely to contain roots that are critical to the health and stability of the tree and normally defined by reference BS5837 (2012) Trees in Relation to design, demolition and construction

**Priority.** Works may be prioritised, 1. = high, 5. = low

**Probability.** A statistical measure of the likelihood that a particular event might occur

**Proximal.** In the direction towards from the main body of a tree or other living organism (cf. distal)

**Pruning.** The removal or cutting back of twigs or branches, sometimes applied to twigs or small branches only, but often used to describe most activities involving the cutting of trees or shrubs

**Radial.** In the plane or direction of the radius of a circular object such as a tree stem

**Rams-horn.** In connection with wounds on trees, a roll of occluding tissues which has a spiral structure as seen in cross-section

**Rays.** Strips of radially elongated parenchyma cells within wood and bark. The functions of rays include food storage, radial translocation and contributing to the strength of wood

**Reactive Growth/Reaction Wood.** Production of woody tissue in response to altered mechanical loading; often in response to internal defect or decay and associated strength loss (cf. adaptive growth)

**Removal of deadwood.** Unless otherwise specified, this refers to the removal of all accessible dead, dying and diseased branchwood and broken snags

**Removal of major deadwood.** The removal of, dead, dying and diseased branchwood above a specified size

**Respacing.** Selective removal of trees from a group or woodland to provide space and resources for the development of retained trees

**Residual wall.** The wall of non-decayed wood remaining following decay of internal stem, branch or root tissues

**Rhizomorph.** A root-like aggregation of fungal hyphae

**Rib.** A ridge of wood that has usually developed because of locally increased mechanical loading. Often associated with internal cracking in the wood of the stem, branch, or root.

**Ring-barking** (girdling). The removal of a ring of bark and phloem around the circumference of a stem or branch, normally resulting in an inability to transport photosynthetic assimilates

below the area of damage. Almost inevitably results in the eventual death of the affected stem or branch above the damage

**Ripewood.** The older central wood of those tree species in which sapwood gradually ages without being converted to heartwood

**Root-buttresses.** A buttress-like formation at the transition between roots and stems

**Root-collar.** The transitional area between the stem/s and roots

**Root-collar examination.** Excavation of surfacing and soils around the root-collar to assess the structural integrity of roots and/or stem

**Root protection area (RPA).** Layout design tool indicating a national minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability and where the protection of the roots and soil structure is treated as a priority

**Root zone.** Area of soils containing absorptive roots of the tree/s described. The **Primary** root zone is that which we consider of primary importance to the physiological well-being of the tree

**Saprophytic fungi.** Fungi that live on dead or decomposing matter (in the tree) as opposed to functional, living tissues

**Sap-run.** Liquid running down a stem, branch, or root buttress and providing a food source or other habitat resource. Originating from phloem or xylem death or infections, or water that has accumulated in or run through decaying material.

**Sapwood.** Living xylem tissues

**Safety factor.** The ratio of the maximum stress that a structural part of a tree can withstand to the maximum stress experienced under normal conditions

**Screef.** To clear surface vegetation (commonly up to a depth of around 20mm)

**Secondary branch.** A branch, generally having a basal diameter of less than 0.25 x stem diameter

**Selective delignification.** A kind of wood decay (white-rot) in which lignin is degraded faster than cellulose

**Senescence.** The condition or process of deterioration with age.

**Service.** Any above- or below-ground structure or apparatus required for utility provision e.g. drainage, gas supplies, ground source heat pumps, CCTV and satellite communications

**Shedding.** In woody plants, the normal abscission, rotting off or sloughing of leaves, floral parts, twigs, fine roots and bark scales

**Shoot.** The elongating region of a stem or branch

**Shrub species.** Woody perennial species forming the lowest level of woody plants in a woodland and not normally considered to be trees

**Silviculture.** The practice of controlling the establishment, growth, composition, health, and quality of forests to meet diverse needs and values

**Silvicultural thinning.** Removal of selected trees to favour the development of retained specimens to achieve a management objective

**Single-up.** Removal of stems from a multi-stemmed tree with the aim of developing a tree with a single stem.

**Simultaneous white-rot.** A kind of wood decay in which lignin and cellulose are degraded at about the same rate

**Snag.** In woody plants, a portion of a cut or broken stem, branch or root which extends beyond any growing-point or dormant bud; a snag usually tends to die back to the nearest growing point

**Soft-rot.** A kind of wood decay in which a fungus degrades cellulose within the cell walls, without any general degradation of the wall as a whole

**Soil auger.** A hand-held steel auger 60mm diameter auger used for extracting soil samples.

**Soil horizons.** A layer parallel to the soil surface, whose physical characteristics differ from the layers above and beneath:

- O) Organic matter - Litter layer of plant residues
- A) Surface soil - Layer of mineral soil with accumulation of organic matter
- B) Subsoil - This layer accumulates mineral and organic compounds.
- C) Parent rock - Layer of large unbroken rocks
- R) Bedrock - Partially weathered bedrock at the base of the soil profile

**Soil sample.** A sample of soil extracted for the purpose of either field or laboratory testing to determine mineral, chemical or structural composition, and or moisture content and shrinkability.

**Sounding hammer.** A small plastic or nylon hammer used for assessing the audible signs of decay, cracks and other features in trees

**Spores.** Propagules of fungi and many other life-forms; most spores are microscopic and dispersed in air or water

**Sporophore.** The spore bearing structure of fungi

**Sprouts.** Adventitious shoot growth erupting from beneath the bark

**Squirrel damage.** Stripping of the bark from stems or branches by squirrels. This can result in the death of branches or even entire trees

**Stem/s.** Principle above-ground structural component(s) of a tree that supports its branches

**Stem taper.** The downward tapering of a tree stem out into the flare of the root buttresses

**Stress.** In plant physiology, a condition under which one or more physiological functions are not operating within their optimum range, for example due to lack of water, inadequate nutrition or extremes of temperature

**Stress.** In mechanics, the application of a force to an object

**Strain.** In mechanics, the distortion of an object caused by a stress

**Stringy white-rot.** The kind of wood decay produced by selective delignification

**Storm.** A layer of tissue which supports the fruit bodies of some types of fungi, mainly ascomycetes

**Structural roots.** Roots, generally having a diameter greater than ten millimetres, and contributing significantly to the structural support and stability of the tree

**Structure.** Manufactured object, such as a building, carriageway, path, wall, service run, and built or excavated earthwork

**Subsidence.** In relation to soil or structures resting in or on soil, a sinking due to shrinkage when certain types of clay soil dry out, sometimes due to extraction of moisture by tree roots

**Subsidence.** In relation to branches of trees, a term that can be used to describe a progressive downward bending due to increasing weight

**Taper.** In stems and branches, the degree of change in girth along a given length

**Target canker.** A kind of perennial canker, containing concentric rings of dead occluding tissues

**Targets.** In tree risk assessment (with slight misuse of normal meaning) persons or property or other things of value which might be harmed by mechanical failure of the tree or by objects falling from it

**Terminal xylem.** The last layers of xylem cells produced at the end of the growing season

**Topping.** In arboriculture, the removal of the crown of a tree, or of a major proportion of it

**Torsional stress.** Mechanical stress applied by a twisting force

**Translocation.** In plant physiology, the movement of water and dissolved materials through the body of the plant

**Transpiration.** The evaporation of moisture from the surface of a plant, especially via the stomata of leaves; it exerts a suction which draws water up from the roots and through the intervening xylem cells

**Tree Protection Plan.** Scale drawing, informed by descriptive text where necessary, based upon the finalised proposals, showing trees for retention and illustrating the tree and landscape protection measures

**Tree Risk Assessment.** An assessment and description of the risks and where appropriate the values associated with a tree or trees. The primary risk being considered is that from falling trees. Other risks, such as damage to infrastructure, interruption of service and building subsidence may also be considered

- Walkover – A general view of the tree population considered in the context of the adjacent land-use to identify trees that present significantly elevated risks
- Drive-by - A general view of the tree population from a moving vehicle and considered in the context of the adjacent land-use to identify trees that present significantly elevated risks
- Individual – the assessment of risks from a single tree considered in the context of the adjacent land-use to identify trees that present significantly elevated risks

**Understorey.** This layer consists of younger individuals of the dominant trees, together with smaller trees and shrubs which are adapted to grow under lower light conditions

**Understorey tree species.** Tree species not having potential to attain a size at which they can contribute to the closed high canopy of a woodland

**Vascular cambium.** Sometimes described simply as 'cambium'. Layer of dividing cells producing xylem (woody) tissue internally and phloem (bark) tissue externally

**Vascular dysfunction.** Dysfunction of water conducting cells

**Vascular wilt.** A type of plant disease in which water-conducting cells become dysfunctional

**Vessels.** Water-conducting cells in plants, usually wide and long for hydraulic efficiency; generally not present in coniferous trees

**Veteran tree.** A tree that has the physical characteristics of an ancient tree but is not ancient in years, compared with others of the same species

**Vigour.** The expression of carbohydrate expenditure to growth (in trees)

**Vitality.** A measure of physiological condition. N = within normal range for species and age, R = reduced from the normal range for the species and age, P = poor

**Volunteer trees.** Trees arising from natural colonisation rather than having been planted

**Weeping lesion.** Exudations from a lesion in plant tissue

**Wet flush.** Where water from underground flows out onto the surface to create an area of saturated ground, rather than a well-defined channel

**White-rot.** A range of kinds of wood decay in which lignin, usually together with cellulose and other wood constituents, is degraded

**Wind exposure.** The degree to which a tree or other object is exposed to wind, both in terms of duration and velocity

**Wind pressure.** The force exerted by a wind on a particular object

**Windthrow.** The blowing over of a tree at its roots

**Wound dressing.** A general term for sealants and other materials used to cover wounds in the hope of protecting them against desiccation and infection; only of proven value against fresh wound parasites

**Woundwood.** Wood with atypical anatomical features, formed in the vicinity of a wound

**Xylem.** Secondary xylem; the main structurally supporting and water-conducting element of trees (refined definition specific to this case)