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# **Arboricultural Report BS 5837:2012 Tree Survey, Arboricultural Impact Assessment, Method Statement and Tree Protection Plan**



**Woodlands, Farm Drive, Purley, CR8 3LP**

**11<sup>th</sup> March 2024**

Charles Hurst *Cert Arb L6 (ABC)*

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## 1.0 Executive Summary and Project Brief

- 1.1 Charles Hurst has been instructed by the owners to provide an industry standard appraisal of trees to BS 5837:2012 Trees in relation to Design, Demolition and Construction – Recommendations, of the identified trees growing at Woodlands, Farm Drive, Purley, CR8 3LP and to prepare a report to include an Arboricultural Impact Assessment and Method Statement.
- 1.2 The report is required as part of the planning process towards the construction of a tree house in the rear garden.
- 1.3 A site visit was undertaken on 9<sup>th</sup> March 2024. The crowns and stems were inspected from the ground using the visual tree inspection method.
- 1.4 This report specifically relates to the arboricultural considerations of the project brief – construction of a tree house in the rear garden.
- 1.5 In accordance with BS 5837 recommendations, we surveyed and recorded the position of all possibly impacted trees within the rear garden with a stem diameter of 75mm or more, measured at 1.5 m above highest adjacent ground level. In the case of substantial tree/shrub groups, only individual trees with stems greater than 150mm are plotted. Woody shrub groups and hedges growing within and adjacent to the site are also recorded.
- 1.6 The appended Tree Schedule contains details of the surveyed trees. The Tree Constraints Plan presents the locations, crown spreads, root protection areas and BS categories of the surveyed trees.
- 1.7 The Arboricultural Method Statement has been produced (section 6) detailing preparations for works within and adjacent to the root protection areas (RPAs) to ensure the trees are adequately managed, protected and subsequently retained throughout the construction of the proposal.

## 2.0 Tree Survey Methodology

- 2.1 The survey was undertaken with the deciduous trees in dormancy and is shown at Appendix 1.
- 2.2 The British Standard requires trees affected by proposed development to be graded for quality according to Table 1 of the standard which is summarised at the beginning of the tree schedule at Appendix 1.
- 2.3 Trees are dynamic organisms, which are in a constant state of development and change. The comments and recommendations of this report will remain valid for a period of twelve months from its completion.
- 2.4 The Root Protection Area (RPA) for the trees are indicated on the Tree Constraints Plan. The RPAs represents the 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.
- 2.5 The RPA is shown as a circle of a given radius and may be modified in shape to maintain a similar total area depending on the proximity of surrounding obstacles.
- 2.6 For single stem trees, the RPA is calculated as an area equivalent to a circle with a radius 12 times the stem diameter.

### 3.0 Background

- 3.1 Site description: The site is broadly level close to the front and rear of the house, with numerous mature specimen trees and ornamental shrubs, the rear landscape then slopes gently down to the northern boundary of the garden to the proposed tree house location. The property is surrounded by mixed native species trees and shrubs in neighbouring gardens to the north, west and east.
- 3.2 The proposal: construction of a wooden tree house surrounding the stems two mature rear garden trees.

#### 4.0 The Trees

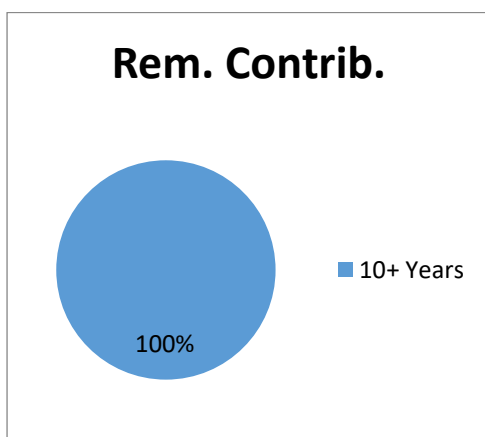
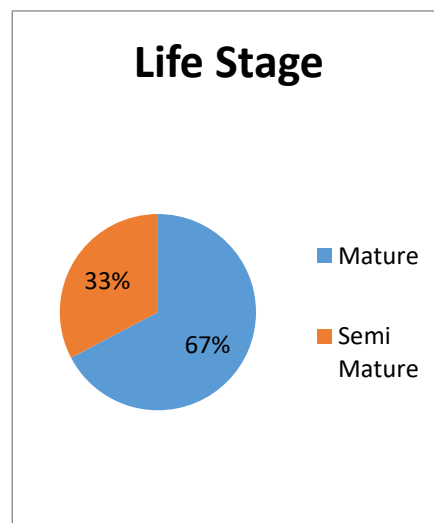
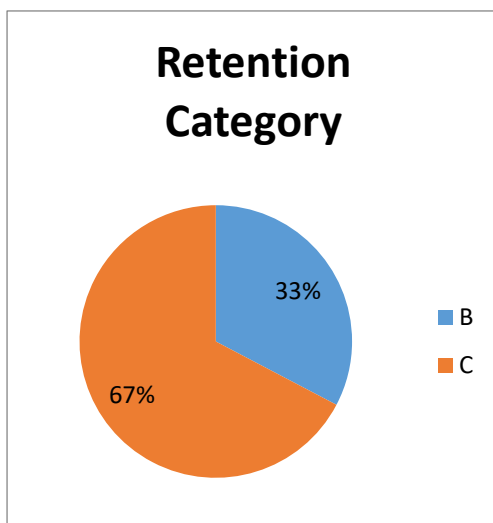
4.1 There are 9 immediate vicinity, on and off-site individual trees, or groups of trees/large shrubs identified as having the potential to be impacted by the proposal.

4.2 These trees have been categorised to reflect their quality and value (in a non-fiscal sense) allowing informed decisions to be made concerning their retention or removal in relation to the development.

4.3 The following table summarises the categories of trees:

Retention Category	No. trees
A	0
B	7
C	2
U	0
Total	9

4.4 Summary charts:



Common Name	No. trees
Horse chestnut	4
Laurel cherry	2
Mixed species	1
Sweet chestnut	1
Sycamore	1
Total	9

## 5.0 Arboricultural Impact Assessment

### 5.1 Constraints posed by existing trees

5.1.1 Above ground. BS5837 5.3.4 advises that a realistic assessment of the future growth of both tree house trees, and nearby trees should be made at the design stage, for both open spaces such as gardens, as well as buildings. The proposal should be designed to take into account the incremental stem growth of the existing trees it is being built around; it should also accommodate nearby trees' and shrubs' ultimate size and spread at full maturity, to minimise conflict between the construction and the nearby trees. Facilitation pruning will be necessary for T001 and T002 in the form of epicormic growth removal to a height of 6 metres above ground level to allow for the vertical clearance above the 4.6 metre high proposed tree house.

5.1.2 Below ground. The Root Protection Areas (RPAs) for each tree and group of trees have been calculated as recommended by BS5837:2012 Trees in relation to design, demolition and construction - Recommendations. The RPAs and individual radiuses are detailed within Appendix 1 Tree Schedule. RPAs are shown on the Tree Constraints Plan at Appendix 2 (initially as a circle) and indicate the 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.

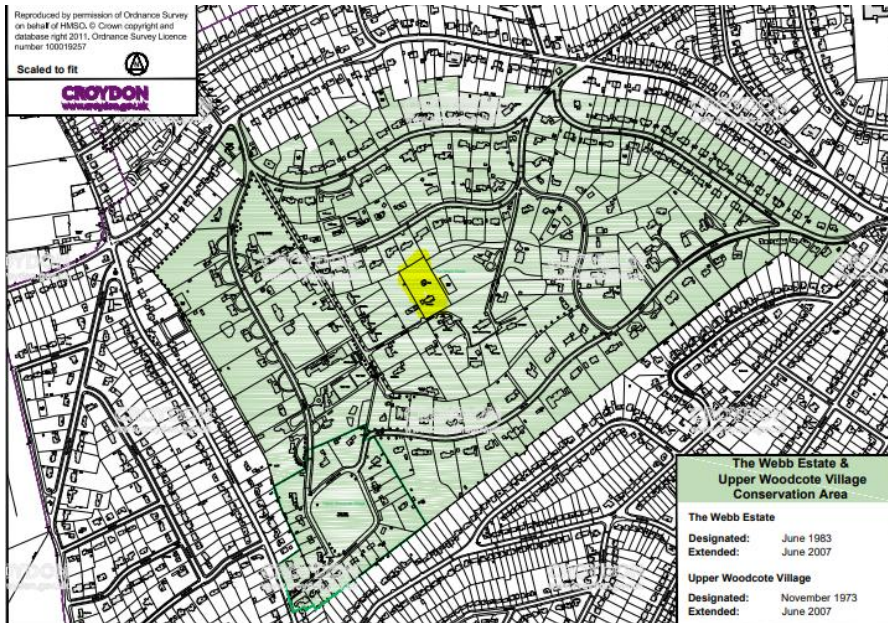
### 5.2 Proximity of structures to trees

5.2.1 Proposed development plans should consider the characteristics and condition of the retained trees, with due allowance and space for their future growth and maintenance requirements. The following factors should be taken into account during the design/plan stage: shading of buildings/open spaces, privacy and screening, direct damage (from root activity as well as wind forcing branches against buildings), pressure for removal by future occupiers and seasonal 'nuisance' from leaves/fruit/seeds/honeydew causing foreseeable conflicts to newly built structures.

### 5.3 Tree Preservation Order and Regulatory Protection

5.3.1 There are no tree preservation order (TPO) restrictions at this address, however the address does sit within the Webb Estate & Upper Woodcote Village Conservation Area as highlighted in the plan below, which means facilitation pruning required to support this proposal will require a Section 211 Notice for Works in

accordance with Town and Country Planning Act 1990 (as amended).



## 5.4 Summary

- 5.4.1 There are no direct tree losses as a result of this proposal.
- 5.4.2 Facilitation pruning will be necessary for T001 and T002 in the form of epicormic growth removal to a height of 6 metres above ground level to allow for the vertical clearance above the 4.6 metre high proposed tree house.
- 5.4.3 The area of the garden made available to the build contractor should, wherever possible, be restricted to the immediate vicinity of the proposed construction location and areas of existing hard standing; this will ensure minimal impact on all the trees within the gardens.

## 6.0 Arboricultural Method Statement

### 6.1 Works in the vicinity of the trees

- 6.1.1 The tree house's supporting structures and foundation concrete pads should be located away from roots and the holes should be excavated with hand tools. If tree roots are found during excavation, the location of the supporting posts should be relocated to accommodate the roots.

### 6.2 Avoiding Root, Crown and Stem Damage

- 6.2.1 It is anticipated that the tree house supporting posts will be installed manually into hand-dug holes. However, if construction vehicles such as a skid steer or tracked mechanical excavators



are to be used within the RPAs to lift and install the supporting posts/structure, temporary ground protection will be necessary.

- 6.2.2 The temporary ground protection should be capable of supporting the vehicles entering the RPAs without being distorted or causing compaction of underlying soil.
- 6.2.3 For pedestrian-operated plant up to a gross weight of 2 tonnes, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile membrane can be used.
- 6.2.4 For wheeled or tracked plant exceeding 2 tonnes gross weight, an alternative, proprietary track-board system is to be used to accommodate the loading to which it will be subjected.
- 6.2.5 The locations for temporary ground protection are shown on the tree protection plan at Annex 3.
- 6.2.6 The objective of temporary ground protection should be to avoid compaction of the soil which can arise from the single passage of a heavy vehicle, especially in wet conditions, so that tree root functions remain unimpaired.
- 6.2.7 Fires on site should be avoided if possible. Where they are unavoidable, they should not be lit in a position where heat could affect RPAs, foliage or branches.
- 6.2.8 Any materials whose accidental spillage would cause damage to a tree (e.g. concrete, paint or glue/solvents) should be stored and handled well away from the outer edge of the RPAs.

### 6.3 Deliveries & Temporary Site Storage

- 6.3.1 Storage and any welfare facilities will be always located outside of the RPAs.
- 6.3.2 Deliveries are anticipated to take place to the front of the property on the driveway.

## 7.0 Conclusions

- 7.1 This method statement provides detail of the measures and steps required to retain the trees throughout and post development.
- 7.2 If the recommendations in this report are adhered to, it is probable that all trees will be effectively retained.
- 7.3 This report includes information on only the trees that were inspected and the condition they were observed in at the time of the survey. The

condition of the trees can change; findings from this report remain valid for the purposes of the development for no longer than 12 months from the date of the survey.

- 7.4 No guarantees can be given for the structural integrity of the surveyed trees as a full hazard assessment has not been made. Inaccessible trees will have best estimates made about location, physical dimensions, and characteristics.
- 7.5 Further guidance regarding trees and the law, with specific regard to responsibilities of tree owners, can be found at this link:  
<https://ntsgroup.org.uk/wp-content/uploads/2016/06/FCMS024.pdf>

## Appendix 1 Tree Schedule

<ul style="list-style-type: none"> <li>a. Tree no. Sequential reference number</li> <li>b. Species by common name</li> <li>c. Structure – tree, shrub, hedge.</li> <li>d. Height given in metres</li> <li>e. Measurements <ul style="list-style-type: none"> <li>a. Stem diameter in millimetres measured at 1.5 metres above ground level</li> <li>b. Branch spread taken at the four cardinal points</li> <li>c. Crown break – height above ground level of first significant branch and direction of growth. Crown clearance – height above ground level of canopy</li> <li>d. Life stage – young, semi-mature, early mature, mature, over-mature</li> </ul> </li> <li>f. General observations – physiology and presence of any decay or physical defect</li> <li>g. Estimated remaining contribution, in years (&lt;10, 10+, 20+, 40+).</li> <li>h. Category based on BS5837:2012 Table 1</li> <li>i. RPA radius and area</li> <li>j. General observations pre, during and after construction</li> </ul>	<p>Category U: Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.</p> <p>Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning).</p> <p>Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline.</p> <p>Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low-quality trees suppressing adjacent trees of better quality.</p> <p>Category A: Trees of high quality with an estimated life expectancy of at least 40 years.</p> <p>1 Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)</p> <p>2 Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features.</p> <p>3 Trees with, material conservation, historical, commemorative, or other values (e.g. veteran trees or wood-pasture)</p> <p>Category B: Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.</p> <p>1 Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees the special quality necessary to merit the category A designation.</p> <p>2 Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality.</p> <p>3 Trees with material conservation or other cultural value.</p> <p>Category C: Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.</p> <p>1 Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.</p> <p>2 Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits.</p> <p>3 Trees with no material conservation or other cultural value.</p>
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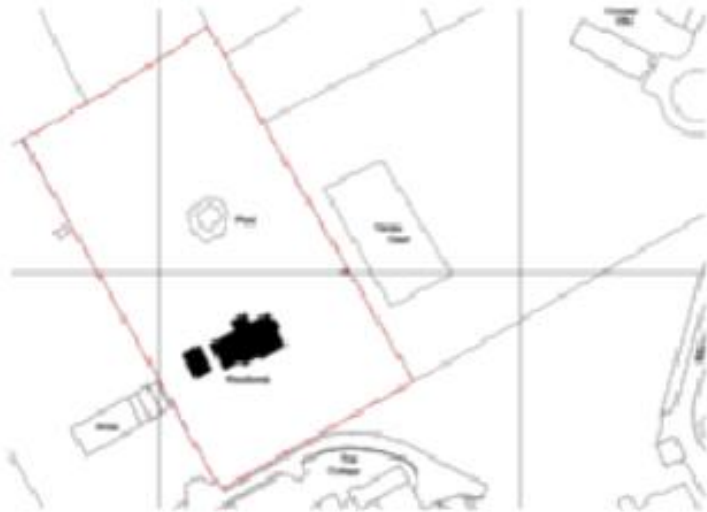
Ref.	Species	Structure	Num. Stems	Stem diameter(s) (mm)	Life Stage	Measurements	General Observations	Retention Category	RPA
T001	Horse chestnut ( <i>Aesculus hippocastanum</i> )	Tree	1	470	Semi Mature	Height (m): 20 Stem Diam(mm): 470 Spread (m): 2N, 3E, 4S, 3W Crown Clearance (m): 6 Lowest Branch (m): 8(S) Life Stage: Semi Mature Rem. Contrib.: 20+ Years	Fair overall Physiological and Structural condition. Tree in dormancy with normal crown density and twigs and buds. Recommendations before proposal start: 1. Epicormic removal to 6m. 2. Dead wood (greater than 25mm).	B2	Radius: 5.6m. Area: 99 sq m.
T002	Horse chestnut ( <i>Aesculus hippocastanum</i> )	Tree	1	480	Semi Mature	Height (m): 20 Stem Diam(mm): 480 Spread (m): 2N, 2E, 7S, 5W Crown Clearance (m): 5 Lowest Branch (m): 6(S) Life Stage: Semi Mature Rem. Contrib.: 20+ Years	Fair overall Physiological and Structural condition. Tree in dormancy with normal crown density and twigs and buds. Recommendations before proposal start: 1. Epicormic removal to 6m. 2. Dead wood (greater than 25mm).	B2	Radius: 5.8m. Area: 106 sq m.
T003	Sycamore ( <i>Acer pseudoplatanus</i> )	Tree	1	510	Semi Mature	Height (m): 21 Stem Diam(mm): 510 Spread (m): 3N, 5E, 4S, 6W Crown Clearance (m): 9 Lowest Branch (m): 8(S) Life Stage: Semi Mature Rem. Contrib.: 20+ Years	Fair overall Physiological and Structural condition. Several historic stem branches removed with normal occlusion. Tree in dormancy with normal crown density and twigs and buds.	B2	Radius: 6.1m. Area: 117 sq m.

T004	Sweet chestnut ( <i>Castanea sativa</i> )	Tree	1	420	Semi Mature	Height (m): 19 Stem Diam(mm): 420 Spread (m): 4N, 6E, 5S, 4W Crown Clearance (m): 2 Lowest Branch (m): 2(E) Life Stage: Semi Mature Rem. Contrib.: 20+ Years	Fair overall Physiological and Structural condition. Tree in dormancy with normal crown density and twigs and buds.	B2	Radius: 5.0m. Area: 79 sq m.
T005	Horse chestnut ( <i>Aesculus hippocastanum</i> )	Tree	1	360	Semi Mature	Height (m): 17 Stem Diam(mm): 360 Spread (m): 0N, 6E, 6S, 6W Crown Clearance (m): 3.5 Lowest Branch (m): 4(S) Life Stage: Semi Mature Rem. Contrib.: 20+ Years	Fair overall Physiological and Structural condition. Tree in dormancy with normal crown density and twigs and buds.	B2	Radius: 4.3m. Area: 58 sq m.
T006	Horse chestnut ( <i>Aesculus hippocastanum</i> )	Tree	1	410	Semi Mature	Height (m): 17 Stem Diam(mm): 410 Spread (m): 3N, 3E, 3S, 3W Crown Clearance (m): 3.5 Lowest Branch (m): 3.5(S) Life Stage: Semi Mature Rem. Contrib.: 20+ Years	Fair overall Physiological and Structural condition. Tree in dormancy with normal crown density and twigs and buds.	B2	Radius: 4.9m. Area: 75 sq m.
G001	Horse chestnut x10 ( <i>Aesculus hippocastanum</i> )	Trees	10	500	Semi Mature	Height (m): 20 11 stems, avg.(mm): 500 Spread (m): 6N, 3E, 3S, 3W Crown Clearance (m): 5 Lowest Branch (m): 4.5(S) Life Stage: Semi Mature Rem. Contrib.: 20+ Years	Fair overall Physiological and Structural condition. Trees in dormancy with normal crown density and twigs and buds.	B2	Area: 332 sq m.

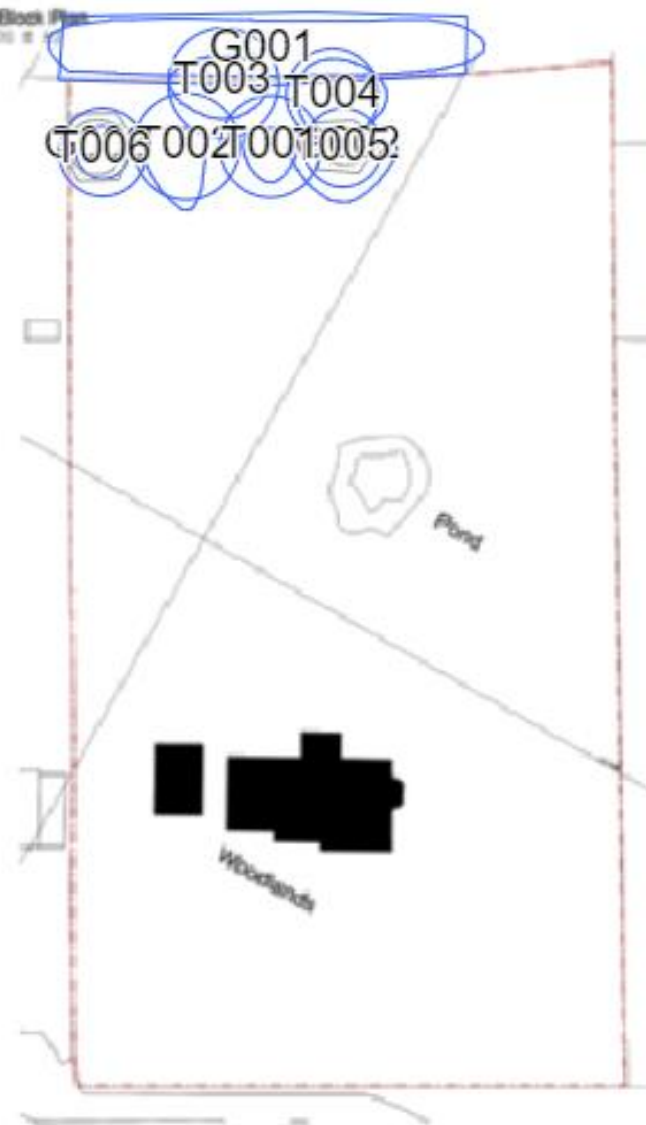
G002	Laurel cherry x20 <i>(Prunus laurocerasus)</i>	Shrub	20	200	Mature	Height (m): 3 20 stems, avg.(mm): 20 Spread (m): 1N, 1E, 1S, 1W Crown Clearance (m): 0 Lowest Branch (m): 0.5(S) Life Stage: Mature Rem. Contrib.: 10+ Years	Fair overall Physiological and Structural condition.	C2	Area: 33 sq m.
G003	Laurel cherry x15 <i>(Prunus laurocerasus)</i>	Group	15	200	Mature	Height (m): 3 15 stems, avg.(mm): 20 Spread (m): 1N, 1E, 1S, 1W Crown Clearance (m): 0 Lowest Branch (m): 0.5(S) Life Stage: Mature Rem. Contrib.: 10+ Years	Fair overall Physiological and Structural condition.	C2	Area: 47 sq m.

Appendix 2 Tree Constraints Plans

Existing Site Location Plan  
Scale 1:1250 @ A3



Existing Block Plan  
Scale 1:1250 @ A3



Notes: The Client undertakes no responsibility for the verification of all dimensions on this plan and shall be deemed to have accepted the accuracy of the information shown on this drawing. The Designer shall not be responsible for any errors or omissions in the drawing. The Client shall be responsible for any errors or omissions in the drawing. The Client shall be responsible for any errors or omissions in the drawing. The Client shall be responsible for any errors or omissions in the drawing. Any images shown are for illustrative purposes only.

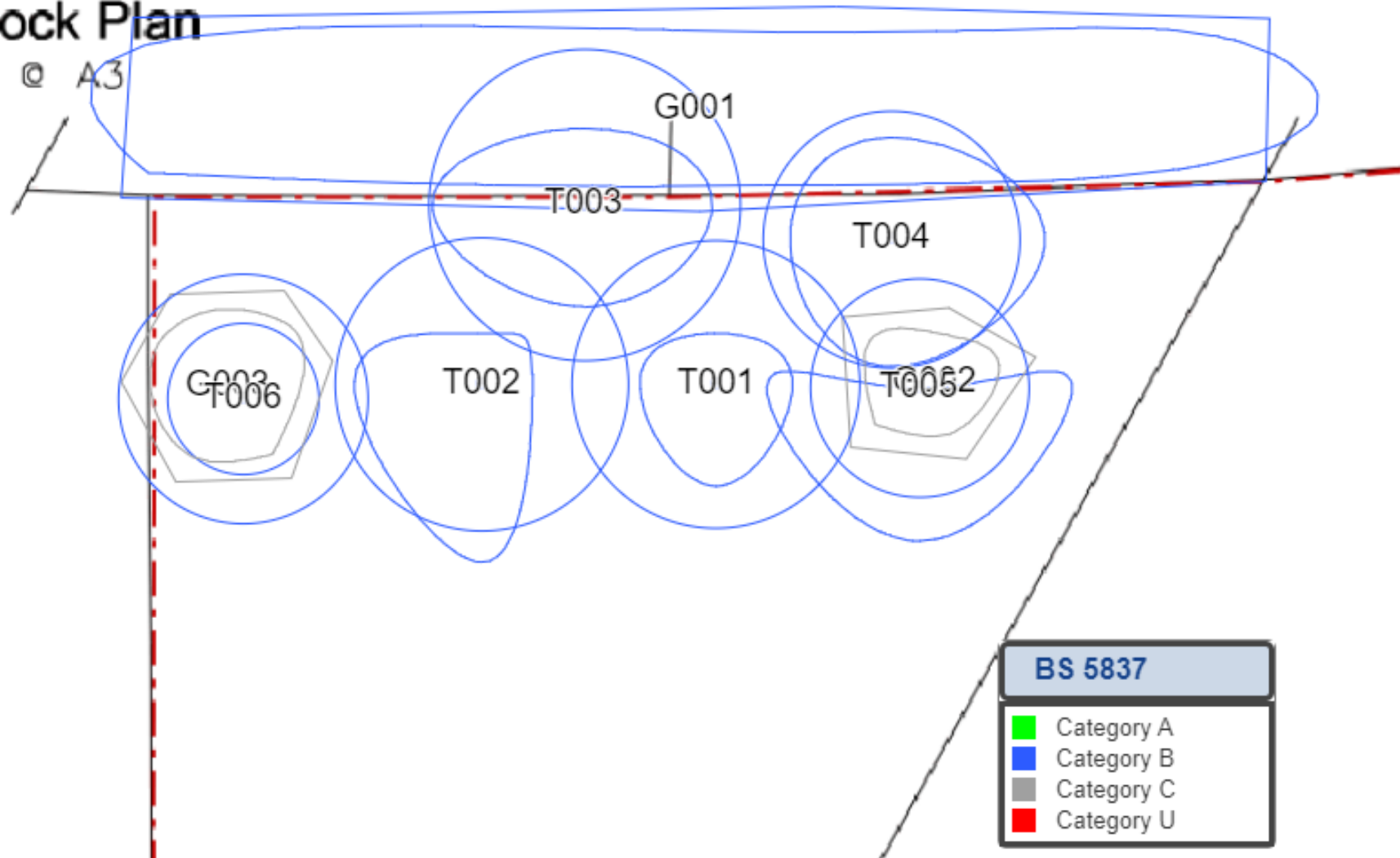
Revision: 1 / 15/2012 - 15/04/12 12:00:00

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Author: TTB@A3 Planning	Date: 15/04/12	Revision: 000	50degrees.co.uk	
Extension + refurbishment of ground floor				

Appendix 2 Tree Constraints Plan

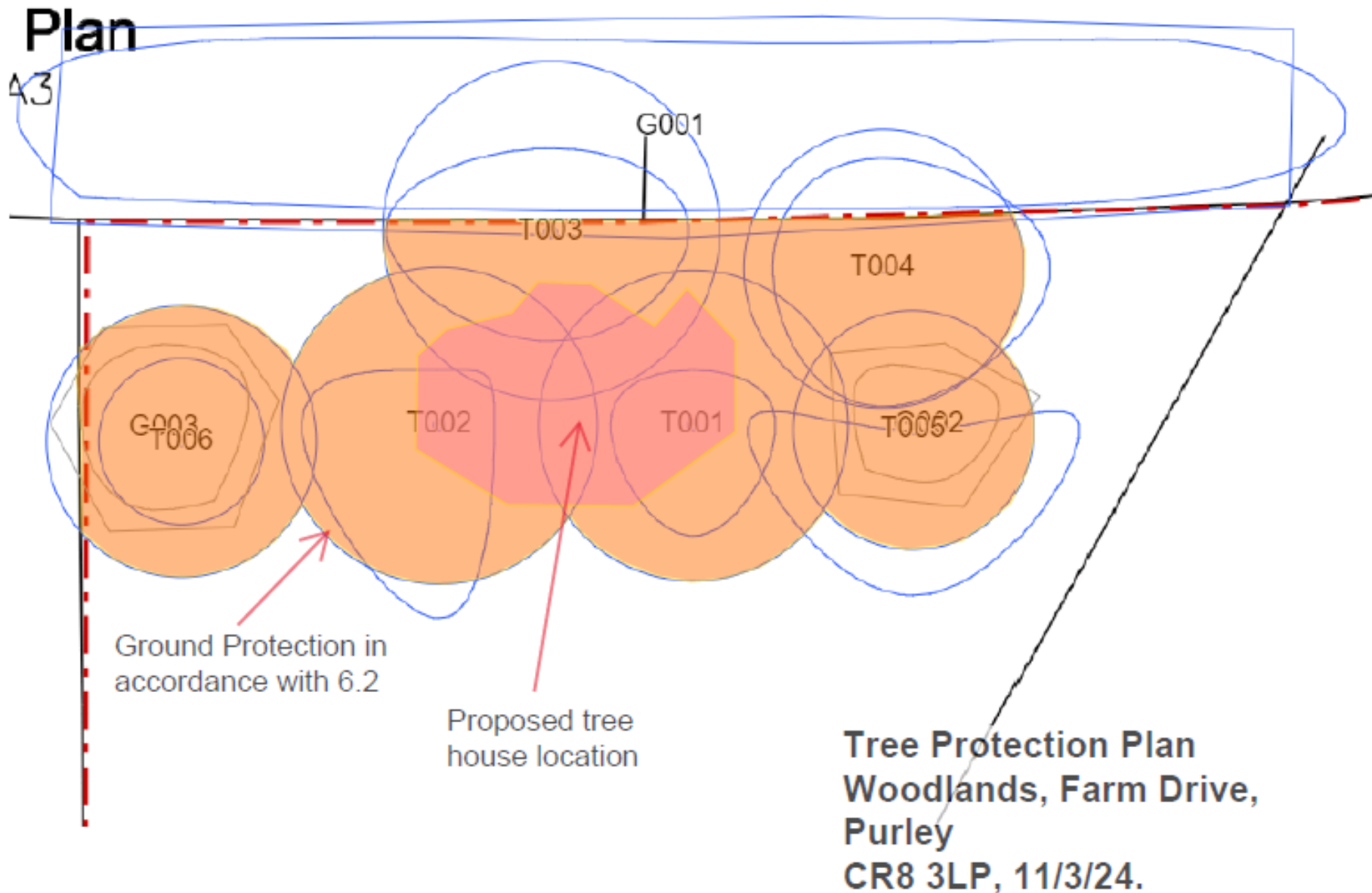
# Existing Block Plan

Scale 1:500 @ A3





Appendix 3 Tree Protection Plan



## Appendix 4 Site Photographs



Surveyed Trees



Area of proposed tree house

Appendix 5 Proposed design drawings – Cheeky Monkey Treehouses Ltd

