

BS5837 Tree Survey & Arboricultural Impact Assessment

Site: Red Roofs & Court Royal, Church Hill Road, Surbiton,
KT6 4UG

Ref: TCL-WGH-RRCR AIAU [2021]

Prepared for: William George Homes

Prepared by: Tree Craft Ltd, Hillside Farm, Rushmore Hill,
Knockholt, Kent, TN14 7NL.

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TREE CRAFT

LTD.

ENVIRONMENTAL
ARBORICULTURE

EST 1990

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Summary

This tree survey report relates to a development proposal for two no. properties on the northern side of Church Hill Road, 'Red Roofs' and Court Royal'. The proposal is to remove the existing buildings and build a new single-building development comprising 24 flats.

This report provides information and advice on the likely impact of the development proposals on the affected trees, and, in accordance with British Standard 5837 (trees in relation to design, development, and construction) recommends appropriate measures to be taken in order to minimise the effect of development works on the trees.

The table below summarises the trees and hedges surveyed, their retention categories, and the numbers to be retained and removed:

	Total	Retained	Removed
Category C trees	8	3	5
Category C groups	2	1	1
Category U trees	6	6	0

Kingston Borough Council do not currently publish full Conservation Area or Tree Preservation Order information online; checks will therefore need to be undertaken prior to the commencement of any remedial works. It is the responsibility of any contractor working on these trees to carry out such checks.

While this information is correct at the time of writing, it presumes the reliability of the interactive mapping service and is subject to change without notice. It is therefore the responsibility of any contractor working on these trees to undertake their own statutory checks.

1. Introduction

- 1.1 Instruction: Tree Craft Ltd. have been instructed by Mr Oliver Leslie, of William George Homes, to carry out a tree survey and provide reports with regard to the development proposals outlined above.
- 1.2 Scope of the report: we are to survey, independently of the development proposals, all trees which may be affected by them, and:
 - Record relevant information about the trees, in order to inform the design process
 - Provide an arboricultural impact assessment evaluating direct and indirect effect of the development proposals on retained trees and any impact which retained trees will have on the development, as well as recommending appropriate mitigation and protection measures
- 1.3 Documents provided: the plans attached are derived from Ordnance Survey data for the existing site obtained by Tree Craft Ltd., and a proposed site layout/landscaping plan provided by Landarb Solutions in July 2021 .

2. Site assessment and observations

2.1 Site visit: A site visit and tree inspection was undertaken on Thursday 3rd December 2020. The weather was overcast and windy, with heavy rain. Deciduous trees were not in leaf at the time of the inspection.

2.2 Site description: The site currently comprises two semi-detached bungalows, with concrete driveways and a small grass area to the south-west, and rear gardens to the north-east. Church Hill Road lies immediately to the south-west of the two plots, which are surrounded in other directions by residential properties and, to the north-west, garage blocks.

3 – Tree survey

3.1 Tree survey and constraints: The results of the tree survey are shown in the tree survey plan and schedule (Appendix B) and the tree protection plan (Appendix C). The number of trees in each retention category can be seen in the summary table at the beginning of this report.

3.1.1. The below ground constraints are generally summarised as the root protection areas (RPA). The RPA is an area equivalent to a circle with a radius 12 times the diameter of the trees measured at 1.5 metres for single-stemmed trees. For trees with more than one stem, one of the two BS5837-approved calculation methods should be used where there are either 2 - 5 stems or 5 or more stems. In all cases, the stem diameter(s) should be measured in accordance with Annex C, and the RPA should be guided by Annex D of BS5837:2012.

3.1.2. The RPA is an area in which no ground works should be undertaken without due care in relation to the retained tree(s), in order to avoid soil compaction, changes in soil levels, or soil contamination, any of which could alter the tree(s) condition and/or stability. The shape of the RPA and its exact location will depend upon arboricultural considerations and ground conditions.

3.2 Retention categories: As stipulated in BS 5837, each tree has been allocated to one of four categories (A, B, C or U), which reflects its suitability as a material constraint on development. Whilst trees in categories 'A', 'B' and 'C' are all a material consideration in the development process, the retention of category 'C' trees, being of low quality or of only limited or short-term potential, will not normally be considered necessary where they impose a significant constraint on development. Furthermore, BS 5837 makes it clear that young trees, even those of good form and vitality, which have the potential to develop into quality specimens when mature "need not necessarily be a significant constraint on the site's potential".

BS5837:2012 sets out the methodology for surveying trees on potential development sites in order to identify them within a prioritised system of retention categories, as summarised below:

A Category	Trees of high quality and amenity value in such a condition at the time of the survey as to be able to make a significant amenity contribution for a minimum of 40 years.
B Category	Trees of moderate quality and amenity value in such a condition at the time of the survey as to make a significant amenity contribution for a minimum of 20 years.
C Category	Trees of low quality and amenity value in adequate condition at the time of the survey to make some amenity contribution for a minimum of 10 years, or young trees with a stem diameter less than 150 mm measured at 1.5 meters above ground level
U Category	Trees in such a condition that any existing value would be lost within 10 years. Such trees do not necessarily need to be removed as part of the project (unless for safety reasons) but do not impose any constraints on the project. For this reason, and in accordance with BS5837 practices, Category U trees, hedges, and groups are not marked with Root Protection Areas on the Tree Protection Plan.

Retention categories A, B and C are sub-divided into sub-categories 1 – 3, as summarised below:

Subcategory 1	Arboricultural value;
Subcategory 2	Landscaping value
Subcategory 3	Cultural and conservation value

The Root Protection Area (RPA) of each tree was determined using the calculation methods detailed in BS 5837: 2012 and plotted as a polygon which centres on the base of the stem. For groups, the RPAs have been calculated on the largest stem diameter with the group. For hedges, the RPAs have been extended to 1 metre beyond the crown spreads of the widest cardinal points. Where a tree crown extends beyond the RPA, allowance has been made to increase the extent of the RPA to include the canopy where relevant.

4.0 – Arboricultural Impact Assessment

4.1 Tree survey plan: The tree survey plan (Appendix B) is based on tree survey data recorded and plotted onto an Ordnance Survey plan of the current site layout, and shows the existing trees, numbered and categorised in accordance with BS 5837:2012.

4.1.1 The Tree Protection Plan (Appendix C) is based on the tree survey data overlaid onto the proposed layout plan and shows the extent of the RPAs of the retained trees. Below ground constraints are represented by the RPA. The above ground constraints arise from the current and ultimate height and spread of the trees. An assessment of the Tree Protection Plan has determined the likely impact of the development proposals on the trees and vice-versa.

4.2 Trees to be removed: the current proposal requires the removal of 4 no. Category C trees, T1-3, and T5, to facilitate the construction of hard surfacing around the new building, 1 no. Category C tree (T4) to achieve the landscaping design, and 1 no. small Category C group (G1). These trees are all of a low retention category owing to their relatively-poor amenity value and remaining useful life expectancy. Tree removals are detailed in the Tree Works Schedule, Appendix E.

4.3 Incursions within the RPAs of retained trees: the proposed construction works will result in incursions and excavations within the RPAs of 3 no. retained trees/groups, as detailed below.

Works	Trees and percentage of total RPAs affected
Construction of new cycle storage	G2 – southern section of RPA, 3.5%
Construction of hard surfacing around new building	T12 – south-eastern section of RPA, 4.7%
Construction of hard surfacing and of new building	T14 – eastern section of RPA, 35%

The incursion area for T14 is currently covered by the existing bungalow and its concrete driveway and access path, and has been for many years; it is therefore likely that the soil beneath will be compacted, and, consequently, that little rooting mass and very few, if any, major roots will be present in this area. Furthermore, a substantial and long-established boundary wall approximately 1 metre to the east of the base of this tree will be acting as a root barrier, further reducing the likelihood of significant roots and/or rooting mass in the incursion area. There will be no incursions outside of these existing features as a result of the project.

Due to its crown spread, the Root Protection Area of this tree has also been extended from the area produced by the 12 x stem diameter calculation (as stipulated by BS5837 and detailed in Sections 3.1 and 3.2). This is to ensure that the protected area extends to the edge

of the canopy, and means that the tree has been afforded a significantly larger Root Protection Area than would usually be the case based on its stem diameter. Provided, therefore, that the demolition (including the removal of the existing concrete driveway) and construction are carried out carefully and in accordance with procedures detailed within this report, the development can be completed without adverse effect on this tree.

The incursion into the Root Protection Area of T12 is extremely minor, by area, and at the outer edge of the RPA. Provided, therefore, that general protection measures stipulated within this report are observed, there should be no adverse impact on this tree as a result of the development proposal.

The incursion into the RPA of G2 is also very minor and similarly placed at the outer edge of the area. As the construction in this area will be limited to cycle storage, deep footings will not be necessary, meaning that ground disturbance can be minimised. The work must be undertaken using only hand tools when within the incursion area, and any major roots uncovered should be preserved or, if not possible, pruned neatly with sharp tools, minimising the size of the pruning wound; it is, however, unlikely that any major roots from G1 will be identified in this area. Provided these measures are adhered to, no detrimental effects on G1 are anticipated as a result of this incursion.

Proposed new planting will also result in incursions into the RPAs of G2 and T2. These are relatively minor in scope, and not closer than 3 metres from the main stems, so will not have any major impact on tree health provided that planting is undertaken with care, and major roots and cluster of minor roots encountered are preserved. New planting stock should also be of a sufficiently-small size that planting holes can be kept relatively small and shallow, to avoid major soil disturbance within the RPAs. Further details regarding planting within RPAs are included in Section 4.10.

4.4 Underground apparatus: information on proposed service routes was not available at the time of writing. However, it is extremely likely that these will be routed directly from existing supplies beneath Church Hill Road, to the south-west. Despite existing incursions into this RPA, as mentioned in 4.3 above, any such route should as a precaution avoid the RPA of T14. Provided that this measure is observed, no retained trees will be affected by the routing of services from beneath Church Hill Road. Any service routes which may infringe RPAs should be analysed by the Project Arboriculturist at the planning stage.

4.5 Site access arrangements and compound/storage area: site access for construction plant and vehicles is to be via existing entrances off Church Hill Road; some crown raising and reduction of T14 is necessary to ensure clearance for high vehicles entering the site, as detailed in 4.7, below.

The location for any site storage has yet to be determined, but should be located outside all RPAs, with sufficient clearance to avoid risk of soil contamination from fuels, cement, and any other damaging agents. Any such agents should also be stored safely on an impermeable base, with adequate contingency measures in the place to deal with any spillages, which should be contained immediately.

4.6 Crown shadow: shading by trees affects buildings and open spaces. This can be a problem where trees shade rooms to a building that require natural light. However, shading can also be desirable to reduce glare, solar heating or to provide cool place in the garden during hot weather. The shade cast by trees is therefore an important consideration in the design of the development.

4.6.1 Due to the position and orientation of the new building and the location of the retained trees, significant shading issues are not expected to be encountered.

4.7 Tree works: no tree safety works were identified as being necessary at the time of the survey. However, the crown of one mature tree in the neighbouring property to the west – T14 (tree of heaven) encroaches over the driveway and roof of the existing building and will need to be crown-lifted on its eastern side to approximately 8 metres, and crown reduced on the same side by approximately 3.5 metres, to facilitate demolition and construction works.

4.8 Protective fencing: Protective fencing shall be erected in the locations shown on the Tree Protection Plan (Appendix C) to provide construction exclusion zones within the RPAs of the retained trees on site. The fencing shall be 'fit for purpose' and preferably as prescribed in section 6.2 (Figure 2) of British Standard 5837: 2012 (e.g. metal welded mesh panels secured with scaffold poles), as illustrated on the copy extract (Appendix D).

4.8.1 The RPAs should be regarded as sacrosanct and the fencing should be installed prior to construction works, and plant and machinery arriving on site. The fencing should remain intact throughout the duration of the development and only be removed upon project completion. No access shall be permitted into the fenced areas during construction works. Access will be required for planting works during the landscaping phase of the project; this must be restricted to pedestrian access within the RPAs, and all planting within the RPAs must be carried out using hand tools only. Further planting guidance is included at Section 4.10.

4.8.2 The location for the protective fencing is shown by the black dotted line on the Tree Protection Plan. Fencing should be installed in these locations prior to any works commencing.

4.9 General protection measures for retained trees: It is important that measures for protection are in place throughout the development and for as long as a risk of damage remains. Particular care and planning is necessary with regard to the operation of construction vehicles and machinery to ensure all plant movements and operations will not impact on any retained trees.

4.9.1 During construction, no materials shall be stored or dumped and no vehicular or plant movement will be permitted within the designated exclusion zones (inside the protective fencing), in order to minimise the risk of damage to the trees from soil compaction. Where compaction has occurred advice should be sought from the Project Arboriculturist.

4.9.2 All cement mixing and washing points for equipment and vehicles and fuel storage areas shall be outside the designated exclusion zones. No discharge of potential contaminants shall occur within the RPA of a retained tree or where there is a risk of run off into the RPA.

4.9.3 Fires on site shall be avoided if possible. Where they are unavoidable, they shall be located far enough away from all trees and hedges to prevent any potential risk of damage to the trees.

4.10. Tree/shrub/wildflower planting: areas of proposed tree and shrub planting are marked on the Tree Protection Plan (Appendix C), and incursions as a result of this work discussed in Section 4.3. All cultivation and planting operations within the RPAs should be undertaken carefully by hand to avoid damage to the tree roots, and any major roots or clusters of minor roots encountered should be preserved. A rotavator must not be used within the RPAs. Care must also be taken to ensure that there are no significant changes to existing ground levels within the RPAs.

The proposed woodland wildflower planting beneath the tree canopies should be carried out with a minimum of soil disturbance, to prevent the large-scale loss of fibrous surface roots which would occur if this area was to be dug over. Many wildflower mixes can be scattered on the soil surface and raked over, with little to no digging needed; provided this approach is taken when planting wildflowers within the proposed area, this work will not have an adverse impact on the retained trees.

4.11 Impact on local amenity: The trees to be removed as part of the project are all of low retention value, due to their forms and/or sizes; their loss will also be mitigated by the replacement planting of higher-quality tree stock as part of the proposals.

Provided, therefore, that the recommendations in this report for the protection of the retained trees are followed, the project will not have any detrimental impact on the local amenity from an arboricultural perspective, or affect the health and/or longevity of the retained trees.

5.0 References

- British Standards Institution (2012) BS 5837: Trees in relation to design, demolition and construction – Recommendations
- National Joint Utilities Group 'Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees' (NJUG 10, Volume 4, 2007)
- British Standard 3998:2010 'Tree work – Recommendations'
- The Town and Country Planning Act 1990
- The Town and Country Planning (Tree Preservation) (England) Regulations 2012
- "The Body Language of Trees" by Claus Mattheck & Helge Breloer
- "Principles of Tree Hazard Assessment & Management" by David Lonsdale
- British Standard 5837: 2012 "Trees in Relation to Construction"
- British Standard BS3998: 2010 Tree Work – Recommendations

6.0 Caveats and limitations of report

The limitations detailed below apply to this report;

The survey and this report are concerned with the arboricultural aspects of the site only.

The survey is restricted to trees that may be affected by the proposed development, regardless of whether they are within or without the site boundaries.

It is based on a ground level tree assessment and examination of external features only – described as the ‘Visual Tree Assessment’ method expounded by Mattheck and Breloer (The Body Language of Trees, DoE booklet Research for Amenity Trees No. 4, 1994).

Only trees of significant stature that were included in the supplied topographical survey were surveyed. In general, trees with a stem diameter at 1.5m above ground level of less than 75mm have been excluded unless they have particular merit that warrants comment. In general, woody shrub species are not included.

No plant tissue samples were taken and no internal investigation of the trees was carried out. No soil samples were taken or soil analyses were carried out. The risk of tree-related subsidence to structures has not been assessed.

The tree survey recommendations are valid for one year.

No specific assessment of wildlife habitats has been carried out and this report does not consider these aspects.

The inspection of the trees for the purposes of assessing their condition and work requirements is made on the basis that they will be annually inspected in the future to identify any changes in condition and review the original recommendations. For these reasons, the tree assessment advice only remains valid for one year from the date that the trees were last inspected.

The arboricultural impact assessment has been based on the detailed site layout and design information provided by the client

It is assumed that foundations will be constructed in accordance with National House Building Council Standards 2011, Part 4.2 ‘Building Near Trees’

The health and condition of trees, as living organisms, may change rapidly, particularly as a result of unpredictable climatic events or human interference. The condition assessment of the trees is based on factors evident at time of inspection, and the inspector’s interpretation of these factors. Subsequent significant meteorological events or changes to the site (especially with regard to the soil) may affect the stability and conditions of the trees and therefore the validity of this report.

7.0 Review

Completed by		
Name	Signed	Date
Anthony McCarthy		29.07.2021
Name	Signed	Date
R. Arnold		

Appendix A: Survey Methodology

- The trees on the site were originally surveyed without reference to site layout.
- The position of each tree was originally plotted using GPS onto the supplied topographical plan. Where the tree location did not match that marked on the topographical plan, precise measurements from reference points on site were used in conjunction with the GPS in order to gain an accurate location.
- Small trees with a stem diameter less than 75mm were not surveyed.
- Each individual tree has been given a tree identification number. Metal tags have not been used for this survey. The tree numbers associated with each tree are cross referenced within the schedule and plans at Appendices B-D.
- The tree species have been recorded with common names.
- All tree heights and canopy spreads have been measured using a laser rangefinder. Tree heights are given in metres.
- All stem diameters were measured at 1.5 metres above ground level using a diameter tape, and are given in millimetres.
- The canopy heights are given in metres and are a measure of the height of the main canopy above ground level.
- With regard to age class the following approximations have been used:

Young	Out-planted trees that have not yet established
Early Mature	Established trees up to 1/3 of expected height and crown
Semi-Mature	Early mature: Between 1/3 and 2/3 of expected height and crown
Mature	Between 2/3 and full expected height and crown
Fully Mature	Full expected height and crown
Over Mature	Crown beginning to break-up and decrease in size

- The structural condition of the trees has been assessed and is summarised as:

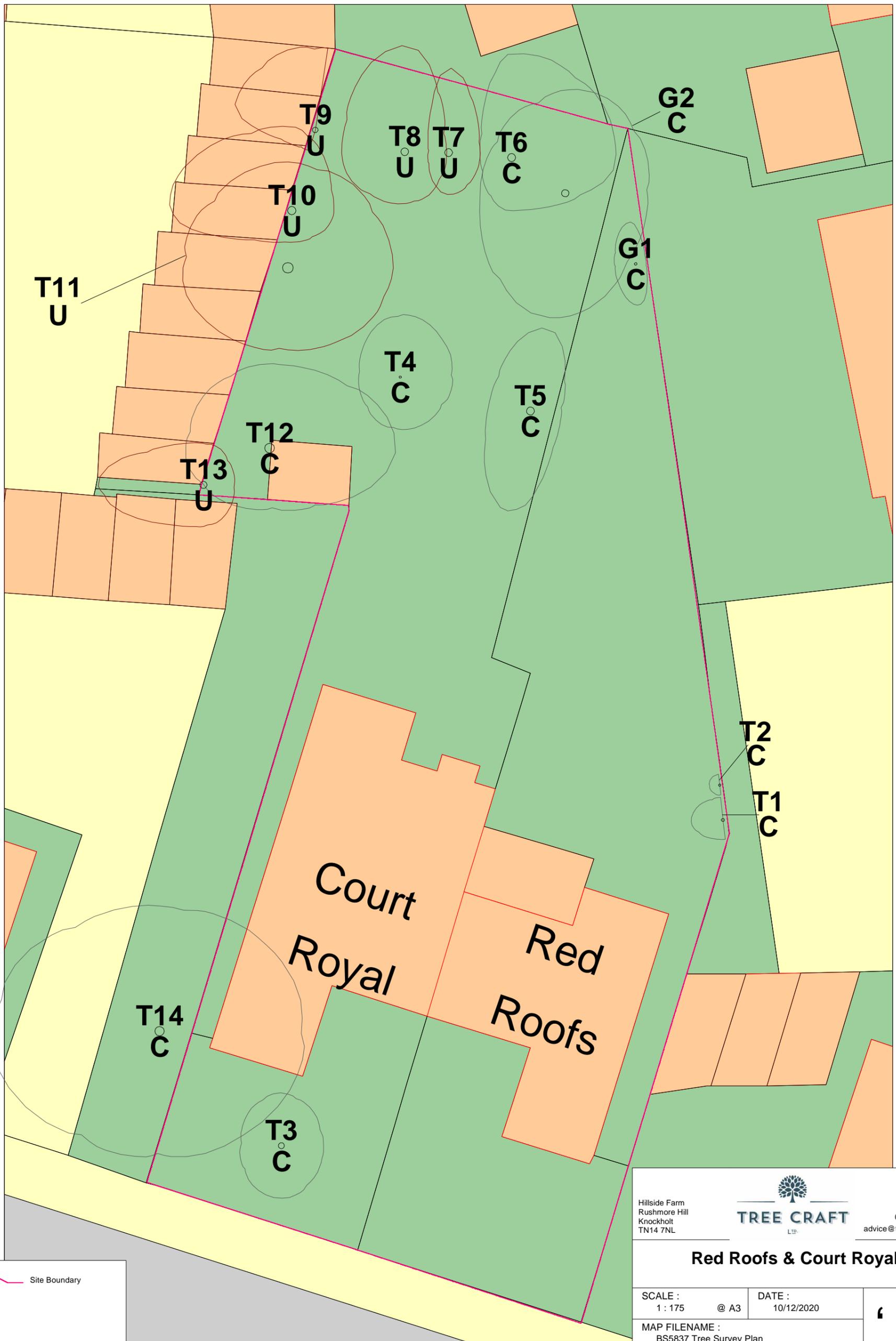
Good	No defects apparent
Fair	Minor defects, unlikely to require remedial work in the short-term
Poor	Major defects, likely requiring significant remedial work in the short-term

- The physiological condition has been recorded to provide an indication of the tree's general health and vitality. The trees have been described thus:

Good	Healthy and with no symptoms of significant disease.
Fair	Disease/stress present or vitality is slightly impaired.
Poor	Disease/stress present and vitality significantly impaired
Dead	

- The crown, main stem(s), and roots (where visible) of each tree or group were individually assessed.
- General comments have been made where appropriate.
- Estimated remaining contribution has been categorised as: less than 10 years, 10-20 years, 20-40 years or over 40 years, based upon an assessment of each tree or group's useful remaining life expectancy

Appendix B



Hillside Farm
Rushmore Hill
Knockholt
TN14 7NL



01732 641492
advice@treecraft.co.uk

Red Roofs & Court Royal

SCALE : 1 : 175 @ A3 DATE : 10/12/2020

MAP FILENAME : BS5837 Tree Survey Plan

Map data shown may contain Ordnance Survey © products supplied by Pear Technology Services Ltd; Email: info@peartechology.co.uk © Crown Copyright and database rights from date shown above Ordnance Survey © licence number 100023148

BS5837:2012 Tree Survey

Tree Craft Ltd
 Unit 16, Hillside Farm
 Rushmore Hill
 Knockholt
 Kent
 TN14 7NL
 consultancy@treecraft.co.uk

Client: William George Homes
 Project: Red Roofs & Court Royal, Church Hill Road, Surbiton KT6 4U
 Survey Date: 03/12/2020
 Surveyor: Anthony McCarthy



Tree and Tag No Species	Hght (m)	Stems		Crown		Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC	
		No	Ø (mm)	Spread (m)	Clear (m)							
G1												
Lawson cypress <i>Chamaecyparis lawsoniana</i>	3.5	1	110	N	2	0	Y	A: 5.5 R: 1.32	Good	C: Fair S: Fair B: Fair	No action :: No action Group of 2 no. young trees, suppressed on north-eastern sides by adjacent wall.	C.1 10 to 20 yrs
G2												
Lawson cypress <i>Chamaecyparis lawsoniana</i>	13	1	340	N	5	1	SM	A: 52.3 R: 4.08	Good	C: Fair S: Fair B: Fair	No action :: No action Group of 3 no. Lawson cypress. Southern tree in group semi-mature, with 2 no. young, northern trees forming one crown.	C.1 10 to 20 yrs
T1												
Fig <i>Ficus carica</i>	5	2	133 (Eq)	N	1	0	SM	A: 8 R: 1.59	Fair	C: Fair S: Fair B: Fair	No action :: No action North-eastern side of wall suppressed by adjacent wall. Co-dominant union in main stem at 0.3 metres.	C.1 10 to 20 yrs
T2												
Bay <i>Laurus nobilis</i>	4	1	120	N	0.5	0	SM	A: 6.5 R: 1.43	Good	C: Good S: Good B: Good	No action :: No action Maintained shrub, suppressed on north-eastern side by adjacent wall.	C.1 10 to 20 yrs

Age Classifications:	N Newly planted	EM Early Mature	Condition:	C Crown	Stems:	Ø Diameter
	Y Young	M Mature		S Stem		(Eq) Equivalent stem diameter using BS5837:2012 definition
	SM Semi-mature	OM Over Mature		B Basal area	ERC:	Estimated Remaining Contributio

Tree and Tag No Species	Hght (m)	Stems		Crown		Age	RP A (m ²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations		Cat ERC	
		No	Ø (mm)	Spread (m)	Clear (m)					Survey Comment			
T3													
Wild Cherry <i>Prunus avium</i>	5	1	280	N	2.5	2	M	A: 35.5 R: 3.36	Fair	C: Fair S: Fair B: Fair	No action :: No action ----- Gum deposits on northern side of main stem.	C.1 10 to 20 yrs	
T4													
Prunus sp.	6	1	105	N	3	1	Y	A: 5 R: 1.26	Good	C: Fair S: Fair B: Fair	No action :: No action ----- No significant visible defects.	C.1 10 to 20 yrs	
T5													
Smooth Japanese Maple <i>Acer palmatum</i>	8	5	392 (Eq)	N	4	2	M	A: 69.5 R: 4.7	Good	C: Good S: Fair B: Poor	No action :: No action ----- Multi-stemmed tree, with previous heavy pruning on eastern side crown. Weak fork unions at base, from 0-0.5 metres.	C.1 10 to 20 yrs	
T6													
Sycamore <i>Acer pseudoplatanus</i>	12	1	390	N	5	2	SM	A: 68.8 R: 4.67	Fair	C: Fair S: Fair B: Fair	No action :: No action ----- Crown heavily-reduced previously.	C.1 10 to 20 yrs	
T7													
Sycamore <i>Acer pseudoplatanus</i>	11	2	386 (Eq)	N	4	2.5	SM	A: 67.2 R: 4.62	Fair	C: Poor S: Poor B: Poor	No action :: No action ----- Crown heavily-reduced previously and suppressed by adjacent trees. Southern stem previously removed at base, leaving large wound from 0-0.5 metres.	U n/a	
T8													
Sycamore <i>Acer pseudoplatanus</i>	13	1	380	N	5	5	SM	A: 65.3 R: 4.55	Fair	C: Poor S: Poor B: Fair	No action :: No action ----- Crown heavily-reduced previously. Large bark wound on southern side of stem, from 0.2 to 2.5 metres.	U n/a	
Age Classifications:	N	Newly planted	EM	Early Mature	Condition:			C	Crown	Stems:	Ø	Diameter	
	Y	Young	M	Mature				S	Stem		(Eq)	Equivalent stem diameter using BS5837:2012 definition	
	SM	Semi-mature	OM	Over Mature				B	Basal area	ERC:		Estimated Remaining Contributio	

Tree and Tag No Species	Hght (m)	Stems		Crown		Age	RP A (m ²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC	
		No	Ø (mm)	Spread (m)	Clear (m)							
T9												
Sycamore <i>Acer pseudoplatanus</i>	10	1	260	N	4	4	SM	A: 30.6 R: 3.12	Fair	C: Poor S: Poor B: Poor	No action :: No action Crown form very poor, with heavy suppression on eastern and southern sides. Tree leaning/weighted to north-west, overhanging boundary and adjacent land. Main leader previously-removed at 1 metre, leaving large wound to ground level.	U n/a
T10												
Sycamore <i>Acer pseudoplatanus</i>	14	1	405	N	4	4	SM	A: 74.2 R: 4.85	Fair	C: Fair S: Poor B: Fair	No action :: No action Crown suppressed on eastern side and leaning/weighted to west, overhanging adjacent land. Large bark wound on eastern side of stem, from 0.5-1.5 metres.	U n/a
T11												
Sycamore <i>Acer pseudoplatanus</i>	14	2	505 (Eq)	N	5	4	M	A: 115.4 R: 6.06	Fair	C: Fair S: Poor B: Poor	No action :: No action Twin-stemmed tree, with codominant stems growing together from 0.5-1.5 metres. Large bark wound in north-eastern stem, from 0-2 metres.	U n/a
T12												
Sycamore <i>Acer pseudoplatanus</i>	14	1	340	N	4	7	SM	A: 52.3 R: 4.08	Fair	C: Fair S: Fair B: Poor	No action :: No action Twin-stemmed tree with co-dominant union at 0.5 metres. Light, temporary structure built around main stem on three sides.	C.1 10 to 20 yrs
T13												
Sycamore <i>Acer pseudoplatanus</i>	14	1	345	N	2	8	SM	A: 53.9 R: 4.14	Fair	C: Poor S: Poor B: Fair	No action :: No action Heavy lean to west, with suppression on eastern side of crown. Light, temporary structure 0.5 metres east of stem base. Boundary fence to west adapted around stem base.	U n/a
Age Classifications: N Newly planted EM Early Mature Condition: C Crown Stems: Ø Diameter Y Young M Mature S Stem (Eq) Equivalent stem diameter using BS5837:2012 definition SM Semi-mature OM Over Mature B Basal area ERC: Estimated Remaining Contributio												

Tree and Tag No Species	Hght (m)	Stems		Crown		Age	RP A (m ²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations		Cat ERC
		No	Ø (mm)	Spread (m)	Clear (m)					Survey Comment		
T14											Estimated Measurements	
Tree of Heaven <i>Ailanthus altissima</i>	12	1	450	N	6	8	M	A: 91.6 R: 5.39	Fair	C: Fair S: Fair B: Fair	Reduce lateral limbs :: By 3.5 metres Raise low canopy :: To 8.0m Tree on neighbouring property to west, with long, eastern branches overhanging Court Royal. Bark wound on south-western side of crown break, at 4 metres.	C.1 10 to 20 yrs

Age Classifications:	N	Newly planted	EM	Early Mature	Condition:	C	Crown	Stems:	Ø	Diameter
	Y	Young	M	Mature		S	Stem		(Eq)	Equivalent stem diameter using BS5837:2012 definition
	SM	Semi-mature	OM	Over Mature		B	Basal area	ERC:		Estimated Remaining Contributio

Appendix C

Hillside Farm
Rushmore Hill
Knockholt
TN14 7NL



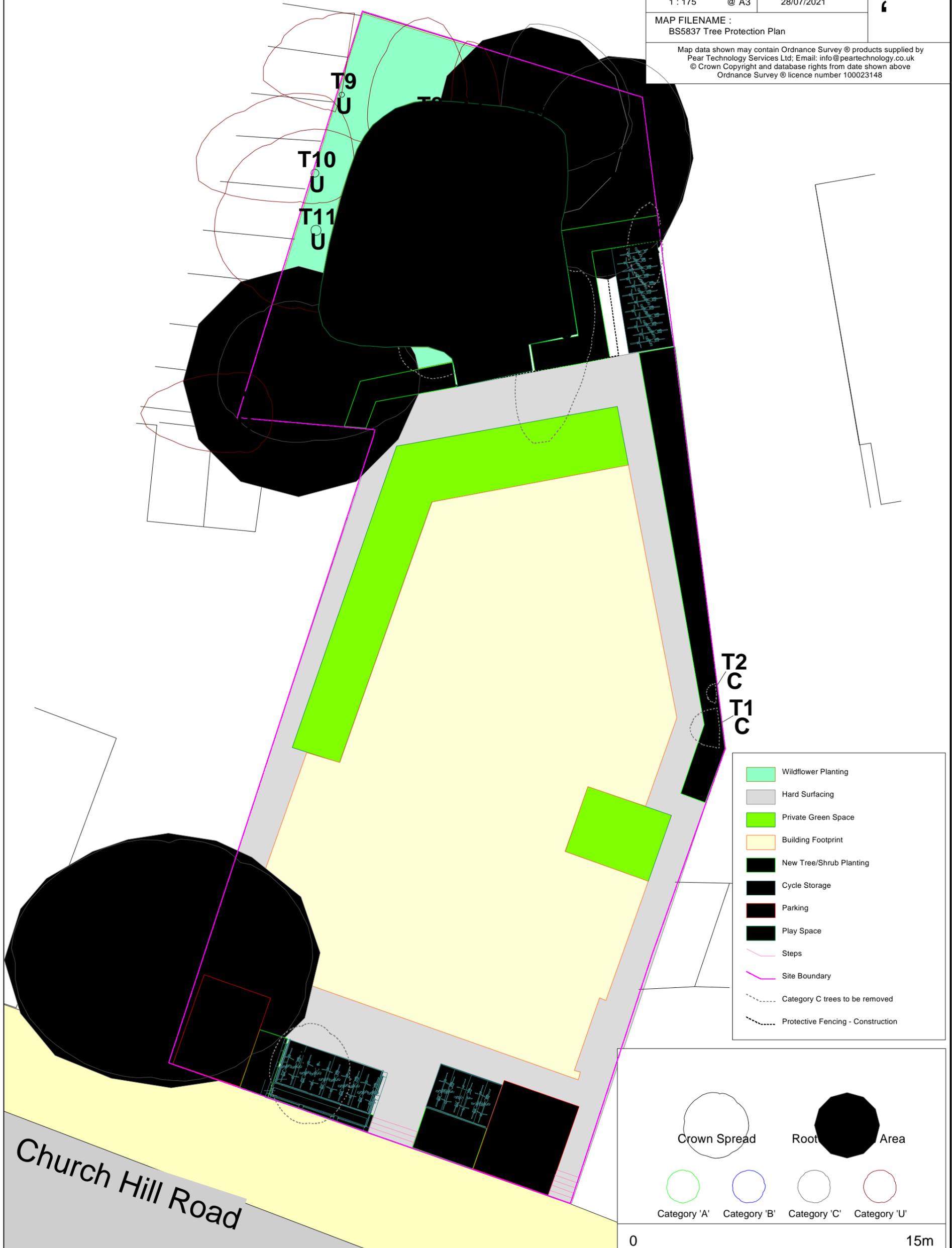
01732 641492
advice@treecraft.co.uk

Red Roofs & Court Royal

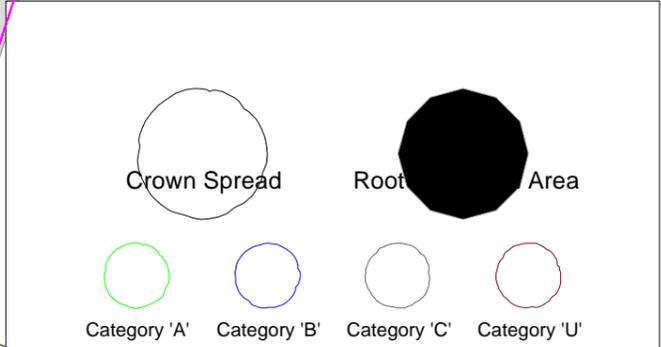
SCALE : 1 : 175 @ A3 DATE : 28/07/2021

MAP FILENAME : BS5837 Tree Protection Plan

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- Wildflower Planting
- Hard Surfacing
- Private Green Space
- Building Footprint
- New Tree/Shrub Planting
- Cycle Storage
- Parking
- Play Space
- Steps
- Site Boundary
- Category C trees to be removed
- Protective Fencing - Construction



Church Hill Road

0 15m

APPENDIX F – PROTECTIVE FENCING

Figure 2 Default specification for protective barrier

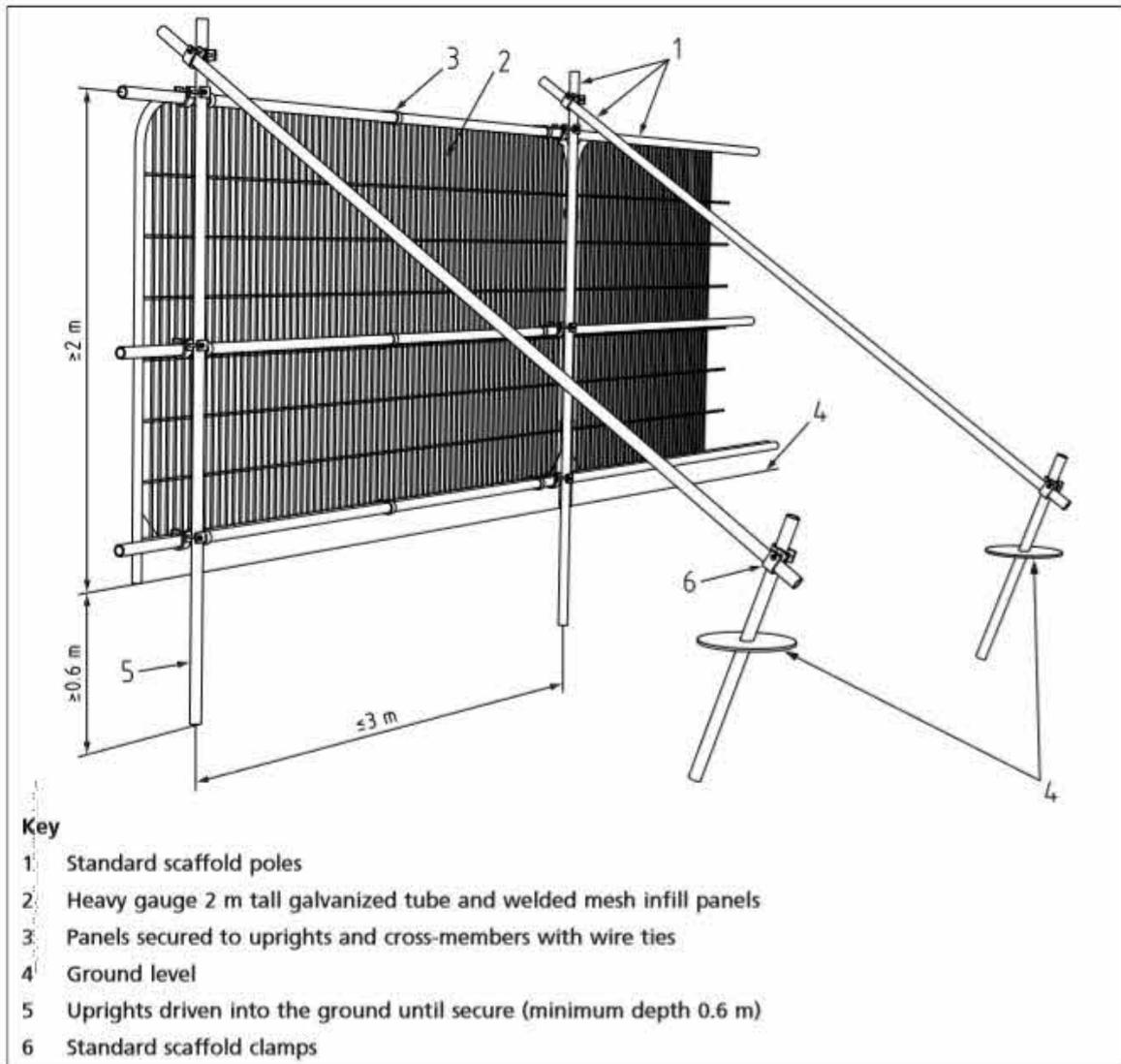
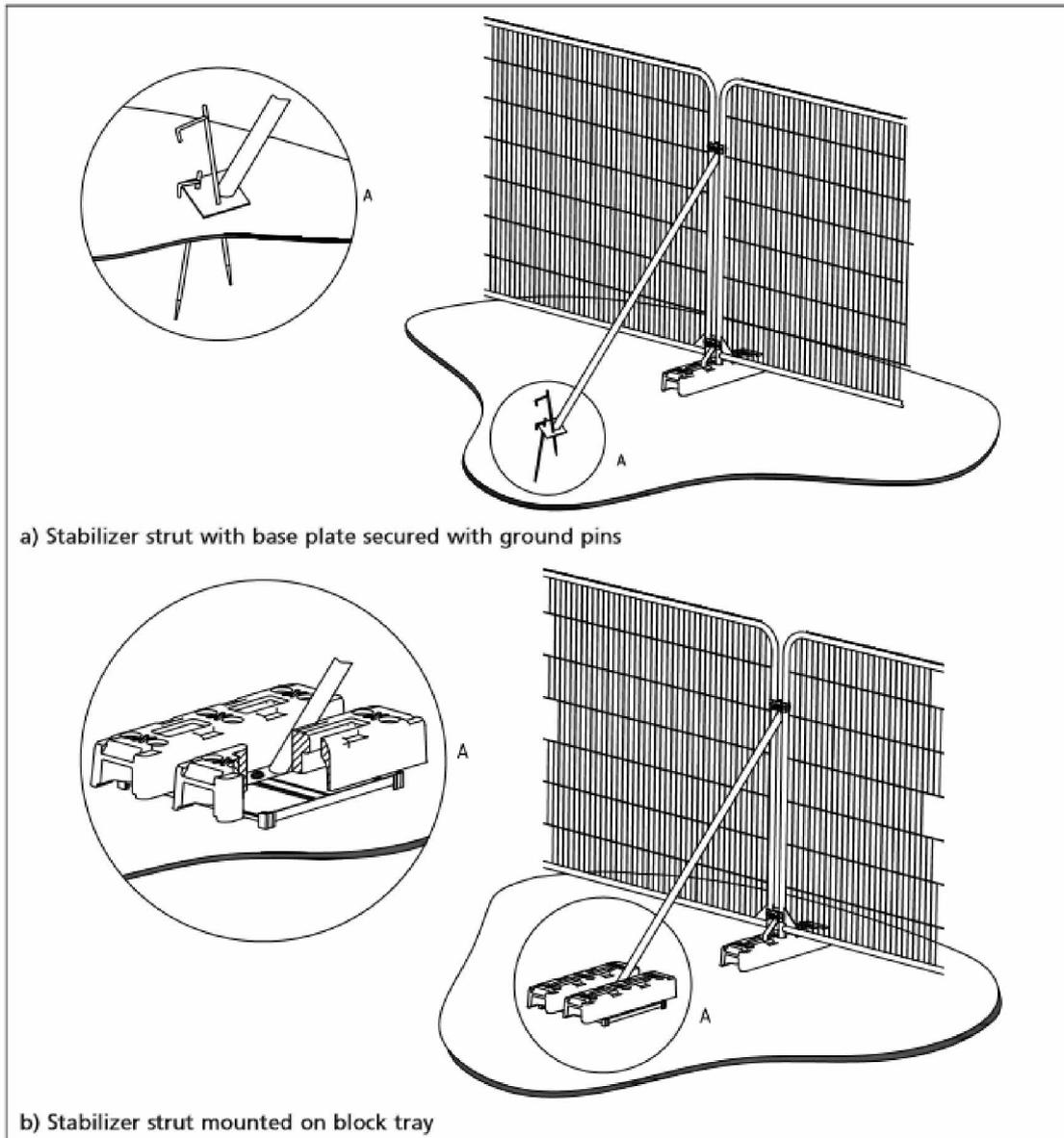


Figure 3 Examples of above-ground stabilizing systems



Appendix E – Tree Works Schedule

Tree No	Species	Proposed Works	Reason
T1	Fig	Fell, and remove stump.	To accommodate new hard surfacing around building.
T2	Bay	Fell, and remove stump.	To accommodate new hard surfacing around building.
T3	Wild cherry	Fell, and remove stump.	To accommodate new hard surfacing and cycle storage.
T4	Prunus sp.	Fell, and remove stump.	To accommodate landscape design.
T5	Japanese maple	Fell, and remove stump.	To accommodate new hard surfacing and landscape design.
T14	Tree of heaven	Raise eastern side of crown to 8 metres, and reduce eastern side of crown by 3.5 metres	To accommodate demolition, construction, and site traffic
G1	2 no. Lawson cypress	Fell, and remove stumps.	To accommodate new cycle storage.