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ARBORICULTURAL SURVEY

Kivesborough
Littlehampton Road
Ferring
West Sussex
BN12 6PN

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on behalf of

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arboriculture . ecology . landscape

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1 INTRODUCTION

1.1 Instruction

1.1.1 PJC Consultancy has been instructed by ECE Architecture to provide an initial arboricultural survey of Kivesborough, Littlehampton Road, Ferring, West Sussex. The survey is to be undertaken in accordance with BS5837: 2012 'Trees in relation to design, demolition and construction – Recommendations' and the planning policies of Arun District Council.

1.2 Survey objectives

1.2.1 This survey has been undertaken with the following objectives:

- To survey all trees within and adjacent to the site with trunk diameters of 75mm or more at a height of 1.5m.
- To assess the quality and value of the existing tree stock in terms of arboricultural, landscape, historical/conservation, or public amenity value.
- To provide information relating to planning constraints that may restrict works to trees at the site.
- To provide an assessment of the material constraints posed by the existing tree stock on potential future developments at the site.
- To aid the design process, ensuring prospective developments integrate appropriately with the existing tree stock, to maximise the potential of the proposed development site.

1.3 Contents of report

1.3.1 This report includes the following:

- A summary of the existing tree stock and notable arboricultural features.
- Tree constraints plan in accordance with BS5837: 2012.
- Tree survey schedule containing the relevant measurements and information for each tree or tree group as required in BS5837: 2012.

1.4 Documents and information provided

1.4.1 The following documents were used to aid the preparation of this report:

- Topographical Survey

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2 SURVEY METHODOLOGY

2.1 Tree survey information

2.1.1 The following information was recorded in the tree survey schedule for each individual tree (average dimensions are recorded for groups):

- Tree reference number. (T=tree, G=group, H=hedgerow, W=woodland block).
- Species (common and scientific name).
- Overall tree height (m).
- Stem diameter (mm) per stem or average diameter for multi-stemmed trees with six or more stems.
- Branch spread (m) measured to the four cardinal points.
- Existing height (m) above ground level of lowest significant branch and direction of growth (for individual trees only).
- Existing height (m) above ground level of canopy.
- Age class (young, semi mature, early mature, mature, over mature or veteran).
- Physiological condition (good, fair, poor).
- Structural condition (good, fair, poor).
- Comments (general description of tree(s) including any notable features).
- Preliminary management recommendations (prescriptions for tree management processes based on the current land use and not related to the prospective development).
- Tree categorisation (see below).
- Root protection area (m^2).
- Root protection radius (m).

2.2 Tree categorisation

2.2.1 The condition and value of each tree was evaluated based on the current land use. Each tree or tree group has been awarded either category A, B, C or U and a subcategory of either 1,2 or 3 or a combination of the subcategories.

2.2.2 Tree categorisation summary:

- A – Trees of good condition and high arboricultural, landscape or conservation value. Must have a potential life span in excess of forty years.
- B – Trees of moderate condition, with minor defects or sub-optimal form but are still of modest arboricultural, landscape or conservation value. Must have a potential life span in excess of twenty years.
- C – Unremarkable trees of poor condition or form with limited arboricultural, landscape or conservation value, or trees with a stem diameter under 150mm. Must have a potential life span in excess of ten years.
- U – Trees of such impaired condition that they cannot realistically be retained as living trees in the context of the current land use for more than ten years. These trees do not need to be removed if they are not dangerous and do not conflict with the proposed development, but should not be considered a constraint to development.

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2.2.3 Tree sub categorisation summary:

- 1 – Trees have mainly arboricultural value, e.g. trees of good condition, form and vitality or rare tree species.
- 2 – Trees have mainly landscape value, e.g. trees of landscape prominence, that serve to screen unsightly views or that are required for privacy. Also trees present in groups that attain higher collective rating that they would as individuals.
- 3 – Trees with mainly cultural value including conservation, e.g. commemorative trees, trees of historical significance or veteran trees.

2.2.4 Each tree can only be categorised as A, B or C but may comply with more than one subcategory. A cascade chart further explaining how tree categorisation is decided is included in Appendix 3.

2.3 Root protection areas

2.3.1 A root protection area represents a calculation of the minimum volume of rooting medium required to support a tree. It is a standardised calculation based on the stem diameter(s) measured at 1.5m and is not necessarily representative of the actual root spread or total rooting area of a tree. The formulas used to calculate root protection areas are shown below:

Table 1: Root protection area formulas

Number of stems	Root protection area formula
Single stemmed trees	$\frac{(\text{stem diameter (mm)} \times 12)^2 \times \pi}{1000}$
Trees with two to five stems	$\sqrt{(\text{stem diameter 1})^2 + (\text{stem diameter 2})^2 \ldots + (\text{stem diameter 5})^2}$
Trees with more than five stems	$\sqrt{(\text{mean stem diameter})^2 \times \text{number of stems}}$

2.3.2 The root protection areas are plotted onto the tree constraints plan in Appendix 1 and are recorded in the tree survey schedule in Appendix 2. These are represented as a circle on the plan (unless significant rooting constraints are present), and are colour coded depending on the category the tree has been awarded. Where existing site conditions/features are present that are deemed likely to have affected the root morphology, the root protection areas have been represented as a polygon of equivalent area.

2.3.3 The proposed layout should avoid level changes or the placement of new buildings and areas of hard standing within the root protection areas of retained trees. In certain situations, engineered solutions are available to allow construction within the root protection areas however further input from an arboriculturist should be sought regarding their site-specific viability before these methods are relied upon.

2.3.4 The disturbance of a tree's root system can result in crown dieback and even death of the tree. Roots are used to support the tree structurally as well as the absorption of moisture and nutrients from the soil. They also act as storage and transport for water and nutrients.

2.3.5 Direct damage such as root severance can lead to ill health, as can compaction of the soil by construction traffic, heavy plant and storage of materials. Changing the nature of the surface above the growing medium, (i.e. from porous to non-porous), can alter the resources available to the tree, which in turn can lead to its decline.

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2.3.6 The majority of root growth is usually found within the top 600mm of soil. As such, even a shallow disturbance within a root protection area can potentially have a significant impact on the tree.

2.3.7 The root protection areas must be left free from excavation and disturbance and protected from compaction or contamination during any proposed works. Any construction works within a root protection area required for the proposed development must be justifiable within an arboricultural impact assessment.

2.4 Limitations of survey

2.4.1 The survey methodology was restricted to a visual tree assessment from ground level. No tree climbing or invasive ground investigation was carried out for this report. Where existing site constraints are present such as ivy covered trees, a very dense under-storey, or where trees are located on third party land to which access was not granted, tree dimensions were estimated by eye as accurately as possible.

2.4.2 This survey represents a preliminary overview of the condition and value of trees at the site. It is not a detailed assessment of any individual tree and although preliminary management recommendations are included, this report will not be sufficient to be used as a detailed condition and safety survey.

2.4.3 The information and measurements in this report are representative of the date of the site visit. The tree survey data will need to be updated to reflect tree growth and changes in the condition of the trees after prolonged periods.

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3 SITE VISIT AND SURVEY FINDINGS

3.1 Site visit

3.1.1 A site visit was carried out on 8th August 2023. The weather conditions at the time were overcast with occasional rain. The visibility was adequate for visual tree inspection from ground level. Deciduous trees were in leaf.

3.2 Site layout

3.2.1 The site is on the south side of Liitlehampton Road, with a garden centre to west, paddock to the south and residential properties to the north and east. There is an existing single storey dwelling on the eastern part of the site, with the rest of the plot being laid to grass with a gravel drive and parking area.

3.3 Statutory tree protection

3.3.1 Arun District Council's online mapping tool was used on 9th August 2023 to check whether there are any tree preservation orders (TPOs) within the site. No TPOs were shown within or immediately adjacent to the site.

3.3.2 However, the online mapping tool can be updated at any time, therefore any persons proposing to undertake tree works should still check the status of the trees with the local planning authority prior to undertaking any tree works. Failure to adhere to the TPO legislation could lead to prosecution and if convicted a fine and criminal record. The crown of a tree and its roots are protected. The person carrying out the works, the person instructing the works and the Directors of that company are potentially liable. Failure to check whether tree/s are the subject of TPO/s could not be used as mitigation.

3.4 Findings

3.4.1 A total of 4 trees and 3 tree groups were surveyed. Their locations are shown on the tree constraints plan at Appendix 1 and details and measurements are shown in the tree survey schedule at Appendix 2.

3.4.2 A summary of their British Standard categorisation is shown at Table 2 below.

Table 2: Tree categorisation summary

Tree category	Individual tree	Tree group
A	-	-
B	-	-
C	3	3
U	1	-
Total	4	3

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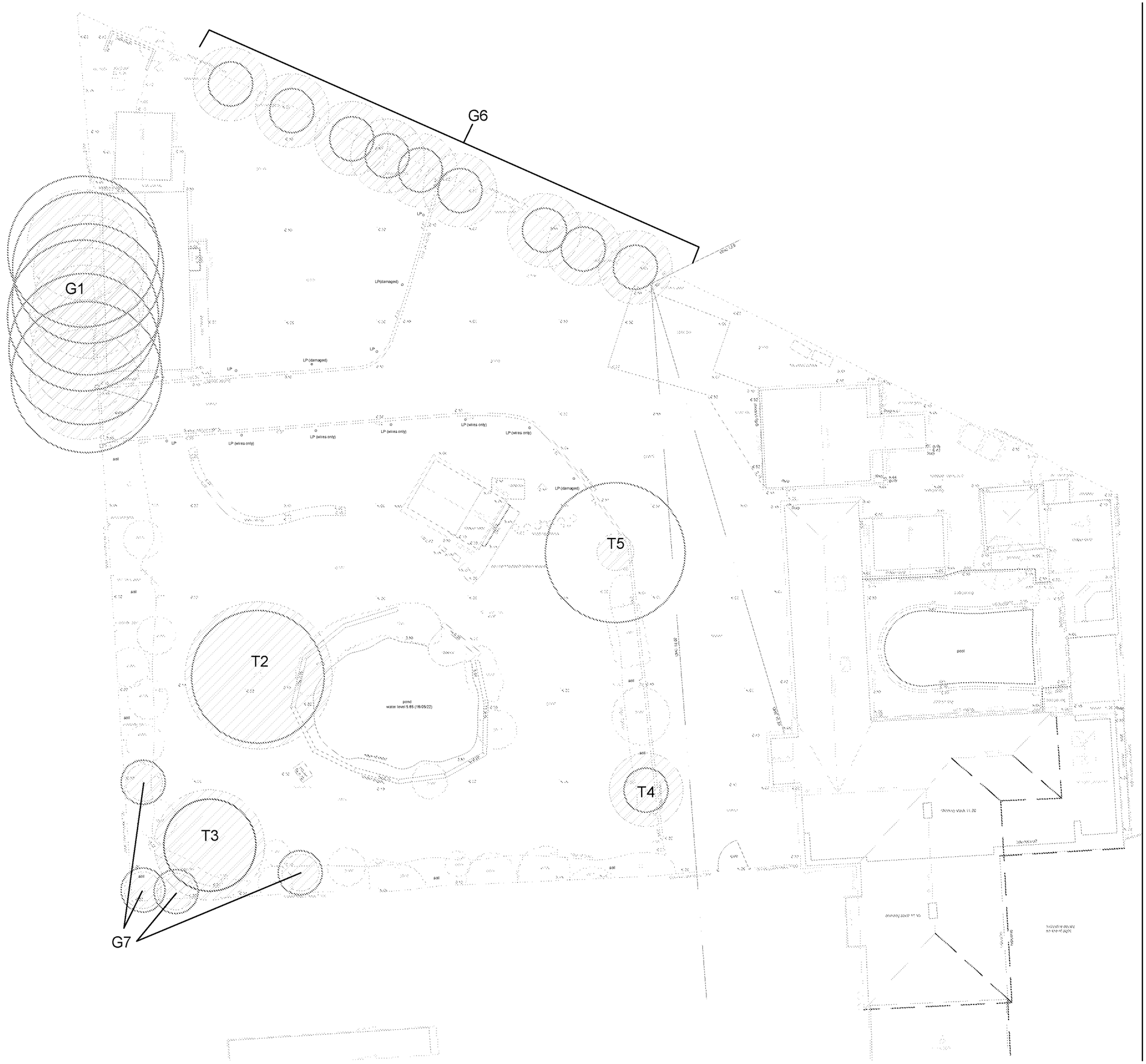
Appendix 1: Tree Constraints Plan



Key:

Root protection area for category C* tree

Root protection area for category U* tree

Tree canopy

* Tree categorised in accordance with BS 5837:2012 '*Trees in relation to design, demolition and construction - Recommendations*'.

Tree survey schedule contained within the arboricultural report ref. PJC/6399/23-01 contains further information for each tree.

This drawing should be viewed in colour.

Tree numbers suffixed with PA indicate the tree position is approximate.

Scale (m)
0 1 2 3 4 5 6 7 8 9 10

Drawing no: PJC/6399/23/A **Rev:** - **Sheet number:** 1 of 1

Client and site:
ECE Architecture

Kivesborough
Littlehampton Road
Ferring

Drawing title: Tree Constraints Plan

Date drawn: 10/08/2023

Scale: 1:200 at A3

Drawn by: NB **Checked by:** PD

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Appendix 2: Tree Survey Schedule

Site: Kivesborough, Littlehampton Road, Ferring

Survey date: 08/08/2023

Surveyor: Nick Betts

Tree Survey Schedule

Tree ref.	Species	Height (m)	Stem diameter (mm)	Branch spread (m)	Crown clearance (m)	Age class	Physiological condition	Structural condition	Comments	Preliminary management recommendation	Category grading	Root Protection Area (m^2)	Root Protection Radius (m)
G1	Monterey cypress, (Cupressus macrocarpa)	18	340	N: 3 E: 3 S: 3 W: 3	Crown: 6 Branch: 6	Mature	Fair	Fair	Previous unsympathetic pruning, minor dieback in crowns present	No action at date of survey required	C2	52.3	4.1
T2	Apple, (Malus spp.)	6	300	N: 4 E: 4 S: 4 W: 4	Crown: 1 Branch: 1	Mature	Fair	Fair	No major visible defects	No action at date of survey required	C1	40.7	3.6
T3	Prunus spp.	5	210	N: 3 E: 3 S: 3 W: 3	Crown: 2 Branch: 2	Mature	Fair	Poor	Basal decay	Fell	U	20.0	2.5
T4	Apple, (Malus spp.)	3	100	N: 2 E: 2 S: 2 W: 2	Crown: 1 Branch: 1	Semi mature	Fair	Fair	No major visible defects	No action at date of survey required	C1	4.5	1.2
T5	New Zealand cabbage tree, (Cordyline australis)	5	320	N: 1 E: 1 S: 1 W: 1	Crown: 2 Branch: 2	Mature	Fair	Fair	No major visible defects	No action at date of survey required	C1	46.3	3.8
G6	Apple, (Malus spp.) Plum, (Prunus domestica)	3	100	N: 2 E: 2 S: 2 W: 2	Crown: 1 Branch: 1	Semi mature	Fair	Fair	No major visible defects	No action at date of survey required	C1	4.5	1.2

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Tree Survey Schedule

Tree ref.	Species	Height (m)	Stem diameter (mm)	Branch spread (m)	Crown clearance (m)	Age class	Physiological condition	Structural condition	Comments	Preliminary management recommendation	Category grading	Root Protection Area (m^2)	Root Protection Radius (m)
G7	New Zealand cabbage tree, (Cordyline australis)	3	100	N: 1 E: 1 S: 1 W: 1	Crown: 2 Branch: 2	Semi mature	Fair	Fair	No major visible defects	No action at date of survey required	C2	4.5	1.2

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Appendix 3: Cascade Chart for Tree Quality Assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of their current land use for longer than 10 years.	• 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 the removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning). • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline. • Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality. Note Category U trees can have existing or potential conservation value which it might be desirable to preserve.			Red
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
Trees to be considered for retention				
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years.	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue).	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features.	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood--pasture).	Green
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remedial defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation.	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality.	Trees with material conservation or other cultural value.	Blue
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits.	Trees with no material conservation or other cultural value.	Grey

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