

KEY



Assessment Boundary

rev	date	description	by
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- masterplanning ■
 - environmental assessment ■
 - landscape design ■
 - urban design ■
 - ecology ■
 - architecture ■
 - arboriculture ■
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Cambridgeshire County Council

project
**Cambridge Biomedical Campus
 Cambridge**

drawing title
**ASSESSMENT BOUNDARY PLAN
 FIGURE 1**

scale
 1:25000 @ A3

drawn
 DS

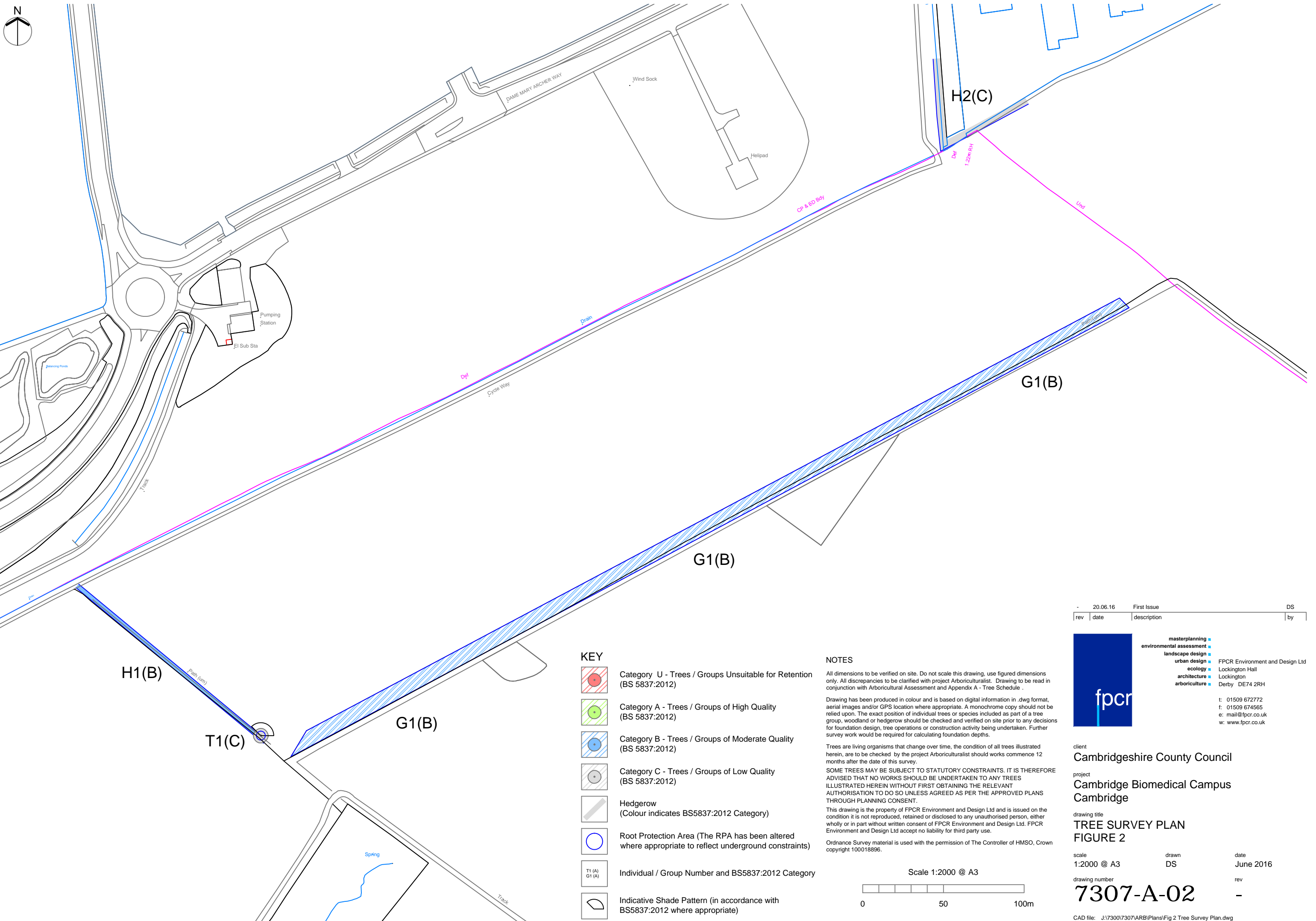
date
 Date 2016

drawing number
7307-A-01









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KEY

-  Category U - Trees / Groups Unsuitable for Retention (BS 5837:2012)
-  Category A - Trees / Groups of High Quality (BS 5837:2012)
-  Category B - Trees / Groups of Moderate Quality (BS 5837:2012)
-  Category C - Trees / Groups of Low Quality (BS 5837:2012)
-  Hedgerow (Colour indicates BS5837:2012 Category)
-  Root Protection Area (The RPA has been altered where appropriate to reflect underground constraints)
-  Individual / Group Number and BS5837:2012 Category
-  Indicative Shade Pattern (in accordance with BS5837:2012 where appropriate)

NOTES

All dimensions to be verified on site. Do not scale this drawing, use figured dimensions only. All discrepancies to be clarified with project Arboriculturalist. Drawing to be read in conjunction with Arboricultural Assessment and Appendix A - Tree Schedule.

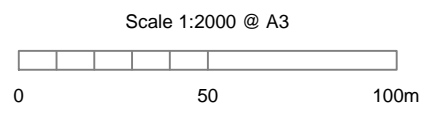
Drawing has been produced in colour and is based on digital information in .dwg format, aerial images and/or GPS location where appropriate. A monochrome copy should not be relied upon. The exact position of individual trees or species included as part of a tree group, woodland or hedgerow should be checked and verified on site prior to any decisions for foundation design, tree operations or construction activity being undertaken. Further survey work would be required for calculating foundation depths.

Trees are living organisms that change over time, the condition of all trees illustrated herein, are to be checked by the project Arboriculturalist should works commence 12 months after the date of this survey.

SOME TREES MAY BE SUBJECT TO STATUTORY CONSTRAINTS. IT IS THEREFORE ADVISED THAT NO WORKS SHOULD BE UNDERTAKEN TO ANY TREES ILLUSTRATED HEREIN WITHOUT FIRST OBTAINING THE RELEVANT AUTHORISATION TO DO SO UNLESS AGREED AS PER THE APPROVED PLANS THROUGH PLANNING CONSENT.

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rev	date	description	by
-	20.06.16	First Issue	DS



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**TREE SURVEY PLAN
 FIGURE 2**

scale
 1:2000 @ A3

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 June 2016

drawing number
7307-A-02

rev
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200m

- KEY**
- Tree/Group to be Retained
 - Tree/Group to be removed to facilitate the proposals
 - Category U - Unsuitable for retention on arboricultural grounds
 - Hedgerow Proposed to be Retained and Incorporated into the New Development
 - Hedgerow Proposed to be Removed to Facilitate the Development upon Approval of the Application
 - Root Protection Area (Shown for retained trees only)
 - Individual / Group Number and BS Category

NOTES

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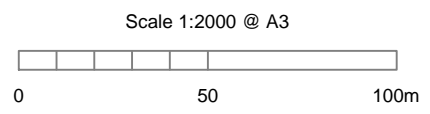
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-	20.06.16	First Issue	DS
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**TREE RETENTION PLAN
 FIGURE**

scale
 1:2000 @ A3

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 September 2016

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7307-A-03

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A

CAD file: J:\7300\7307\ARB\Plans\Fig 3 Tree Retention Plan.dwg

Appendix A - Tree Schedule

Measurements	Age Class	Overall Condition	Root Protection Area (RPA)
Height - Measured using a digital laser clinometer (m)	YNG: Young trees up to ten years of age	G - Good: Trees with only a few minor defects and in good overall health needing little, if any attention	<ul style="list-style-type: none"> The RPA Radius column provides the extent of an equivalent circle from the centre of the stem (m). The RPA is calculated using the formulae described in paragraph 4.6.1 of British Standard 5837: 2012 and is indicative of the rooting area required for a tree to be successfully retained. Tree roots extend beyond the calculated RPA in many cases and where possible a greater distance should be protected. Where veteran trees have been identified the RPA has been calculated in accordance with Natural England guidance i.e. 15x the stem diameter, uncapped
Stem Dia. - Diameter measured (mm) in accordance with Annex C of the BS5837	SM: Semi-mature trees less than 1/3 life expectancy	F - Fair: Trees with minor rectifiable defects or in the early stages of stress from which it may recover	
Crown Radius - Measured using a digital laser clinometer radially from the main stem (m)	EM: Early mature trees 1/3 – 2/3 life expectancy	P - Poor: Trees with major structural and/or physiological defects such that it is unlikely the tree will recover in the long term	
Abbreviations est - Estimated stem diameter avg - Average stem diameter for multiple stems upto - Maximum stem diameter of a group	M: Mature trees over 2/3 life expectancy	D - Dead: This could also apply to trees in an advanced state of decline and unlikely to recover	
	OM: Over mature declining or moribund trees of low vigour	The BS category particular consideration has been given to the following <ul style="list-style-type: none"> The health, vigour and condition of each tree The presence of any structural defects in each tree/group and its future life expectancy The size and form of each tree/group and its suitability within the context of a proposed development The location of each tree relative to existing site features e.g. its screening value or landscape features Age class and life expectancy 	
	V: Veteran tree possessing certain attributes relating to veteran trees		

Structural Condition
The following is an example of considerations when inspecting structural condition: <ul style="list-style-type: none"> The presence of fungal fruiting bodies around the base of the tree or on the stem, as they could possibly indicate the presence of possible internal decay Soil cracks and any heaving of the soil around the base Any abrupt bends in branches and limbs resulting from past pruning Tight or weak 'V' shaped forks and co-dominant stems Hazard beam formations and other such biomechanical related defects (as described by Claus Mattheck, Body Language of Trees HMSO Research for Amenity Trees No. 4 1994) Cavities as a result of limb losses or past pruning Broken branches or storm damage Damage to roots Basal, stem or branch / limb cavities Crown die-back or abnormal foliage size and colour

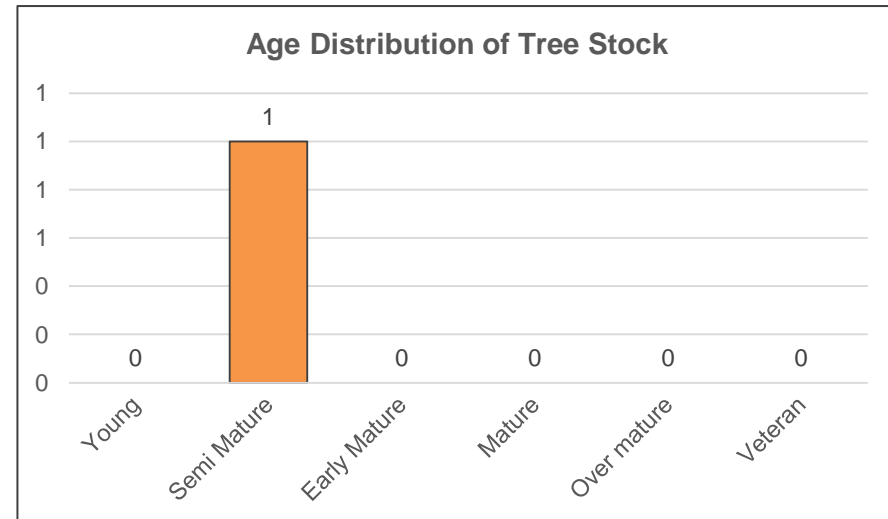
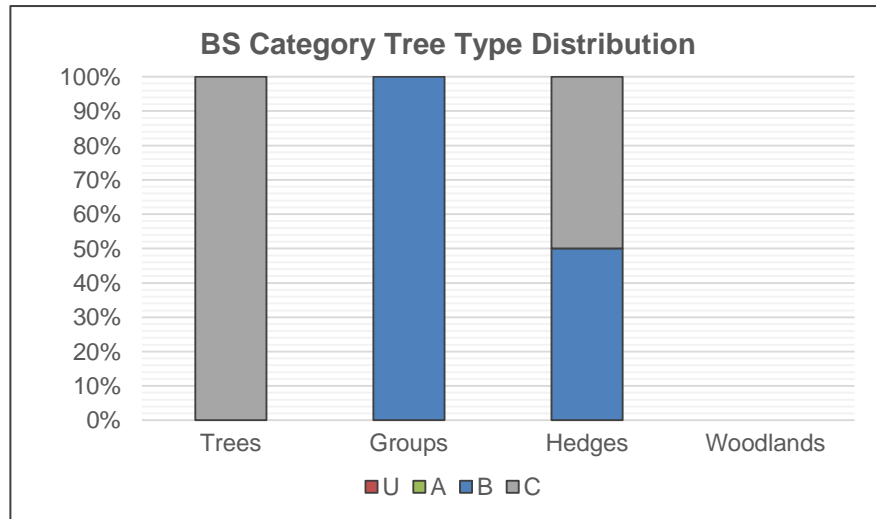
Quality Assessment of BS Category
Category U - Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.
Category A - Trees of high quality with an estimated remaining life expectancy of at least 40 years.
Category B - Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.
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.
Sub-categories: (i) - Mainly arboricultural value (ii) - Mainly landscape value (iii) - Mainly cultural or conservation value

Appendix Summary

	Individual Trees	Totals	Tree Groups and Hedgerows	Totals
Category U		0		0
Category A		0		0
Category B		0	G1, H1	2
Category C		1	H2	1
		Total		Total
		1		3

BS Category Tree Type Distribution displays the proportion of trees assessed in each type to enable a better understanding of the category distribution.

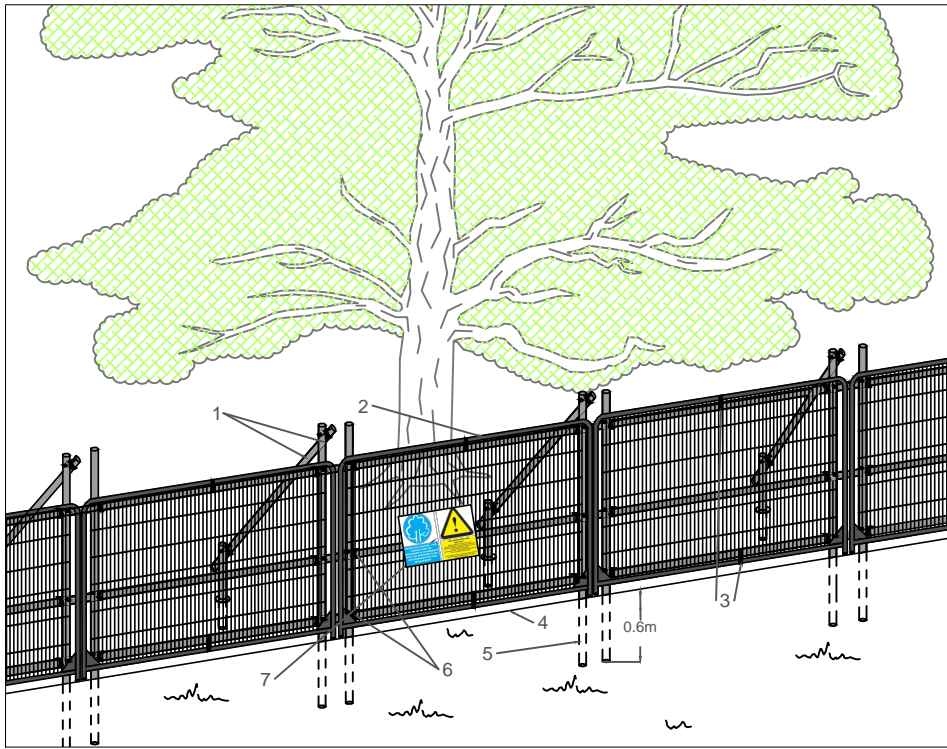
Age Distribution of Tree Stock shows the number of trees in each age category across the tree stock allowing assessment of their longevity to be made.



Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
INDIVIDUAL TREES										
T1	Ash Fraxinus excelsior	8	230	4.5	SM	F	No major defects were noted Typical crown form Low crown break	24	2.8	C (i)

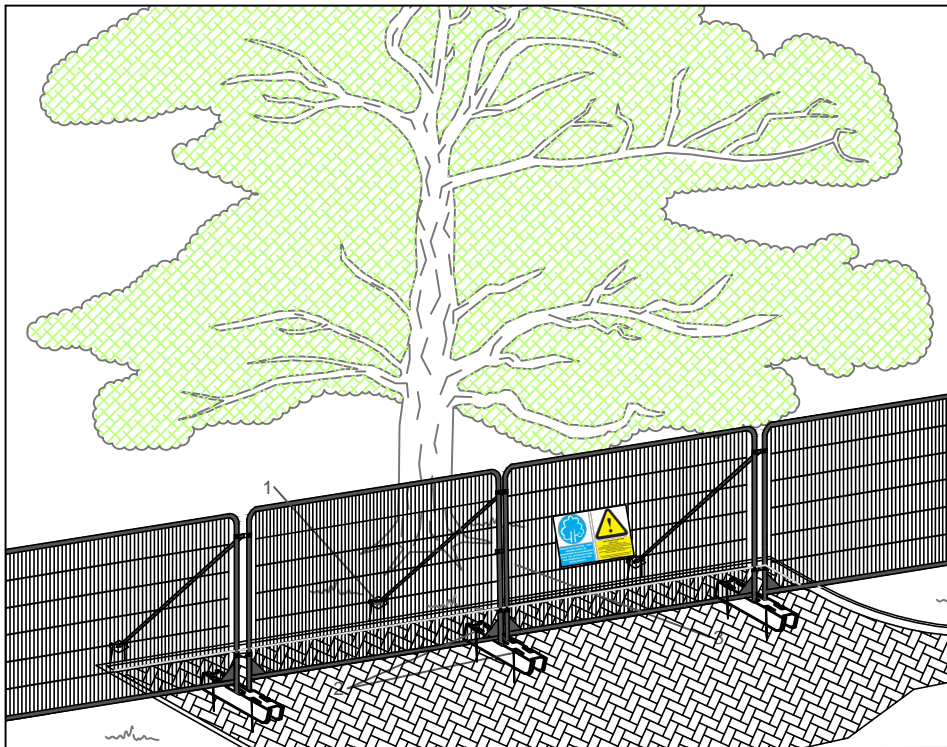
Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
GROUPS OF TREES										
G1	Ash Fraxinus excelsior Blackthorn Prunus spinosa Field Maple Acer campestre Hawthorn Crataegus monogyna Damson Prunus insititia Dogwood Cornus sanguinea	15	upto 330	4	Yng / SM / M	G	Dense ivy cover on main stem Dense undergrowth at the base Minor dead wood evident in the crown (<75mm) Outgrown hedgerow Pruning wounds noted Outgrown southern boundary hedgerow Maintained to the north of the crowns through flail mower	49	4.0	B (ii)

Hedge No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
HEDGEROWS										
H1	Ash Fraxinus excelsior Blackthorn Prunus spinosa Field Maple Acer campestre Hawthorn Crataegus monogyna Dogwood Cornus sanguinea	3	upto 80 50 70	1.5	SM	G	Maintained hedgerow Typical crown form Predominantly dogwood	6	1.4	B (ii)
H2	Elder Sambucus nigra Hawthorn Crataegus monogyna	6.5	110 120 80 60	2	EM / M	F	Outgrown hedgerow Typical crown form	17	2.3	C (ii)



Standard specification for protective barrier

1. Standard scaffold poles
2. Heavy gauge 2m tall galvanized tube and welded mesh infill panels
3. Panels secured to scaffold frame with wire ties
4. Ground level
5. Uprights driven into the ground until secure (min depth of 0.6m)
6. Standard scaffold clamps
7. Construction Exclusion Zone signs



Above ground stabilising systems

1. Stabiliser strut with base plate secured with ground pins
2. Feet blocks secured with ground pins
3. Construction Exclusion Zone signs

Protective Fencing to be positioned to the specified dimensions in accordance with Figure 3 Tree Retention Plan

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APPENDIX B PROTECTIVE FENCING SPECIFICATIONS

CAD file: S:\Arb resources\Basic Templates\Tree Protection\Appendix B - Protective Fencing A4.dwg