Harworth Estates

Gateway 36, Phase 1

Arboricultural Method Statement – Plots 5, 6, 7, 8 and 1

October 2015

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Rev	Issue Status	Prepared / Date	Approved/Date
-	Draft	EC / 14.10.15	NJG / 14.10.15
-	Final	EC / 16.10.15	NJG / 16.10.15
A	Final	EC / 19.10.15	NJG / 19.10.15

CONTENTS

TABLES

FIGURES

APPENDICES

1.0 INTRODUCTION

1.1 This statement has been prepared by FPCR Environment and Design Limited on behalf of Harworth Estates to provide tree protection details in relation to the development of unit 5/6 which is subject of a current reserved matters application at Gateway 36, Phase 1, Barnsley (hereafter referred to as 'the site').

1.2 This document sets out the methodology for all proposed works that affect trees on the site and is intended to negate any requirement for a condition to be attached to the reserved matters approval. Compliance with this method statement, once approved by Barnsley Metropolitan Borough Council, will be a requirement of all relevant contractors associated with the development proposals.

1.3 Planning Condition:

No development or other operations being undertaken on site shall take place until the following documents in accordance with British Standard 5837:2012 Trees in relation to design, demolition and construction - Recommendations have been submitted to and approved in writing by the Local Planning Authority:

- *Tree Protection Plan (TPP)*
- *Arboricultural Method Statement (AMS)*

Was attached to the reserve matters approval of unit 2, 3 and 4 which are currently under construction and methods of tree protection during this phase of the development have been submitted in the form of an arboricultural method statement dated March 2015.

1.4 There is no tree cover within or adjacent to plots 7, 8 and 1 and therefore the proposed future development of these plots should not requiring further conditions in respects to tree protection.

2.0 TREE PROTECTION METHODOLOGY

2.1 Existing tree protection fencing agreed within the arboricultural method statement dated March 2015 will remain place until the completion of units 2, 3 and 4, and will only be removed in agreement with the project arboriculturalist.

2.2 Upon completion of units 2, 3 and 4, and as detailed in Figure 1 - Tree Protection Plan (6424-A-05), Phase 1 fencing will be removed. This operation can be carried out prior to soft landscaping works around the news units; this includes new planting; mulching grass sowing etc.

2.3 Phase 2 tree protection fencing for plot 5 / 6 will be installed, prior to the commencement of any site activity within the relevant portion of the site. Fencing will be strong and suitable for the location, type and proximity of construction activity and prevent access of machinery, plant or operative.

2.4 There is no tree cover within or adjacent to plots 7, 8 and 1 and therefore no specific tree protection measures are anticipated to be required during the development of these plots, as shown in Figure 1 - Tree Protection Plan (6424-A-05).

2.5 Where construction activity is likely to be high, fencing will comprise of Heras panel framework supported and secured in place by scaffold poles driven into the ground. Areas where construction activity is anticipated to be less intense, site hording and low intensity protection fencing will be used. Specifications for both high and low intensity fencing are indicated in Appendix B.

2.6 The position and specification for tree protection fencing will be determined on site in the presence of the project arboriculturalist.

2.7 Tree protection fencing and work exclusion zones will be clearly marked using appropriate signage an example of which has been included as Appendix C. No materials shall be stored or placed in any area fenced off and the ground levels within those areas shall not be altered.

2.8 Once the fencing has been completely installed the contractor responsible for the tree protection should seek written confirmation from the project arboriculturalist that the fencing has been installed in the correct position, and are to the required standard.

Removal of Protective Fencing

2.9 Upon completion of individual units tree protection fencing can be removed in agreement with the project arboriculturalist. This operation can be carried out prior to soft landscaping works around the news units; this includes new planting; mulching grass sowing etc.

2.10 The tree protection fencing will be removed carefully as to avoid causing root disturbance or leaving in situ any lengths of scaffold framework.

General tree protection measures

2.11 This section details non-specific precautionary measures to be applied at all times.

2.12 All the retained trees will need to be adequately protected during works. Measures to protect these trees should follow the best practice principles set out in *BS5837: Trees in Relation to Construction Recommendations (2012).* These have been broadly summarised below.

2.13 No materials or soils are to be stored within the Root Protection Area of the retained trees.

2.14 Oil, bitumen, cement or other material that is potentially injurious to trees will not be stacked or discharged within 10m of a tree stem. No concrete mixing will be done within 10m of a tree. Allowance will be made for the slope of ground to prevent materials running towards the tree.

2.15 Wide or tall loads etc. should not come into contact with retained trees. Banks man should supervise transit of vehicles where they are in close proximity to retained trees.

2.16 No fires will be lit where flames are anticipated to extend to within 5m of tree foliage, branches or trunk, taking into consideration wind direction and size of fire.

2.17 Notice boards, telephone cables or other services will not be attached to any part of a retained tree.

2.18 No roots will be left uncovered if exposed during the removal of existing surface materials. They will be covered over as soon as possible to minimise the risk of drying out and dying.

3.0 MONITORING OF TREES DURING AND POST CONSTRUCTION

3.1 The project arboriculturalist will be responsible for the monitoring of all arboricultural works and signing off the tree protective fencing. A record of site visits will be maintained for inspection on site and copies can be forwarded to the developer / agent and to the local planning authority if requested.

Table 1: Timeline of Tree Protection Measures

Works required	Action	Approximate Timetable
Site Meeting	Identify position and specification for fencing with site operatives	Prior to construction works on plots 5 and 6
Install tree protective barriers	Erect fencing as shown in Figure 5 and to the specification shown in Appendix B	Prior to construction of unit 5 / 6
Sign off fencing by project arboriculturalist	Written confirmation from the project arboriculturalist that fencing has been positioned and erected satisfactorily	Immediately following completion of fencing installation and prior to commencement of works
Commence Work		
Removal of Phase 1 protective barrier	Remove phase 1 protective barrier as detailed within section 2 of this AMS	Upon completion of units 2, 3 and 4 prior to soft landscaping works
Removal of phase 2 protective barriers	As detailed within section 2 of this AMS	Upon completion of unit 5 / 6 prior to soft landscaping works and in agreement with the project arboriculturalist
Installation of protective fencing is not anticipated to be required for the construction of units 7, 8 and 1		

3.2 Key monitoring stages are summarised below:

- Meeting with the operatives on site to identify the position and specification of the protective fencing
- Signing off of the protective fencing immediately following completion and prior to the commencement of work.
- Removal of phase 1 tree protection barriers following the completion of units 2, 3 and 4, prior to soft landscaping works and in agreement with the site arboriculturalist.
- Removal of phase 2 tree protection barriers following the completion of unit 5 / 6, prior to soft landscaping works and in agreement with the site arboriculturalist.
- Issue a certificate of practical completion

3.3 It is also recommended that upon completion of the development an inspection of the retained tree cover should be undertaken by an experienced arboriculturalist to identify any potential risk to the public and to prepare a schedule of tree works, as recommended within section 8.8.3 of BS5837 Post Development Management of Existing Trees.

KEY

- Tree/Group to be Retained
- Tree/Group to be removed to facilitate the proposals
- Root Protection Area (Shown for retained trees only)
- T1 (A) TG1 (A) — Individual / Group Number and BS Category
- 6.0m — Line of Phase 1 Protection Fencing (and distance from tree or retained structure)
- 6.0m — Line of Phase 2 Protection Fencing (and distance from tree or retained structure)

Scale 1:2000 @ A3

0 50 100m

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 assessment may therefore be required where deemed necessary.

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
-	14.10.15	12006-011A	EC
A	19.10.15	11462B-110E	EC

masterplanning
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ecology
architecture
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Harworth Estates

project
Rockingham
Barnsley

drawing title
TREE PROTECTION PLAN
FIGURE 1

scale	drawn	date

Appendix A - Tree Schedule

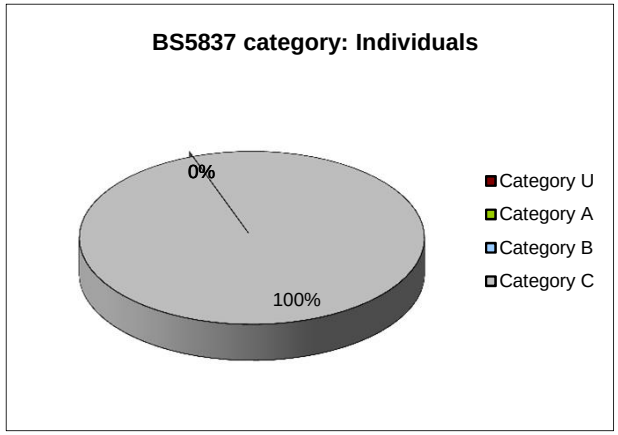
<table>
<tr><th>Measurements</th><th>Age Class</th><th>Overall Condition</th><th>Root Protection Area (RPA)</th></tr>
<tr><td>Height - estimated from ground level (m).</td><td>YNG: Young trees up to ten years of age.</td><td>G - Good: Trees with only a few minor defects and in good overall health needing little, if any attention.</td><td rowspan="5">• The RPA column gives the required area (m²).
• The RPA Radius column gives the radius (m) of an equivalent circle.
• The RPA is calculated using the formulae described in paragraph 4.6.1 of British Standard 5837: 2012 and is indicative of the required rooting area in order for a tree to be retained.</td></tr>
<tr><td>Stem Dia. - Diameter measured (mm) in accordance with Annex C of the BS5837.</td><td>SM: Semi-mature, trees less than 1/3 life expectancy.</td><td>F - Fair: Trees with minor, but rectifiable, defects or in the early stages of stress from which it may recover.</td></tr>
<tr><td>Crown - crown spread estimated radially from the main stem (m).</td><td>EM: Early mature, trees 1/3 – 2/3 life expectancy.</td><td>P - Poor: Trees with major structural and/or physiological defects such that it is unlikely the tree will recover in the long term.</td></tr>
<tr><td rowspan="2">Abbreviations
est - Estimated stem diameter
avg - Average stem diameter for multiple stems
upto - Group has a maximum stem diameter of</td><td>M: Mature trees, over 2/3 life expectancy.</td><td>D - Dead: Trees no longer alive. This could also apply to trees that are dying and unlikely to recover.</td></tr>
<tr><td>OM: Over mature, declining or moribund trees of low vigour.</td><td colspan="2" rowspan="2">In the assessment, of the BS category, particular consideration has been given to the following
• The health, vigour and condition of each tree
• The presence of any structural defects in each tree and its future life expectancy
• The size and form of each tree 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
• Life expectancy</td></tr>
<tr><td></td><td>V: Veteran, tree possessing certain attributes relating to veteran trees.</td></tr>
</table>

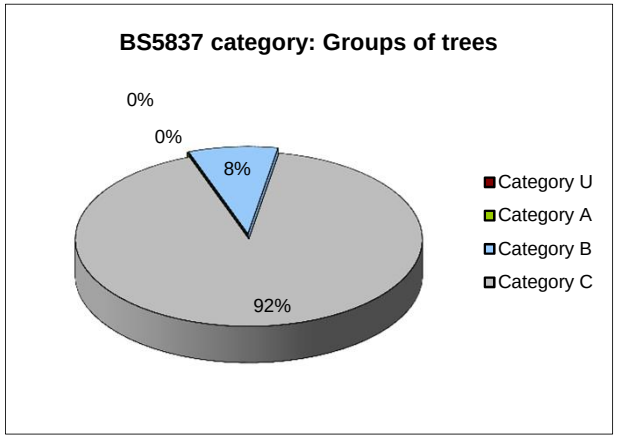
Structural Condition
The following has been considered when inspecting structural condition: • The presence of fungal fruiting bodies around the base of the tree or on the stem, as they could possibly indicate the presence of possible internal decay. • Soil cracks and any heaving of the soil around the 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. • Canker formations. • Loose or flaking bark. • Damage to roots. • Basal, stem or branch / limb cavities. • Crown die-back or abnormal foliage size and colour. • Any changes to the timing of normal leaf flush and leaf fall patterns.

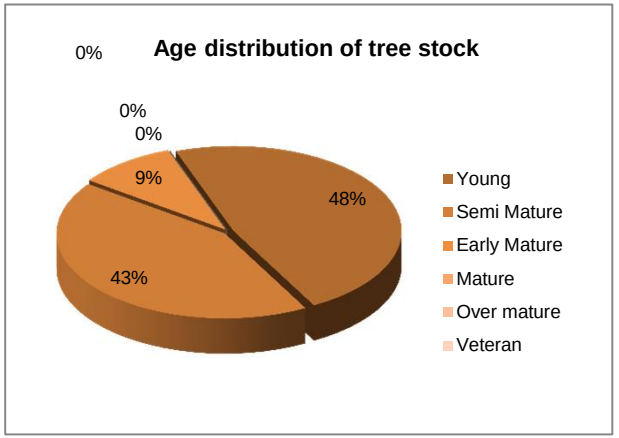
Quality Assessment of Retention Category
Category U - Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.
Category A - Trees of high quality with an estimated remaining life expectancy of at least 40 years.
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 A - Summary

	Individual Trees	Totals	Tree Groups and Hedgerows	Totals
Category U		0		0
Category A		0		0
Category B		0	TG4	1
Category C	T1, T2, T3	3	TG1, TG2, TG3, TG5, TG6, TG7, TG8, TG9, TG10, TG11, TG12	11
	Total	3	Total	12





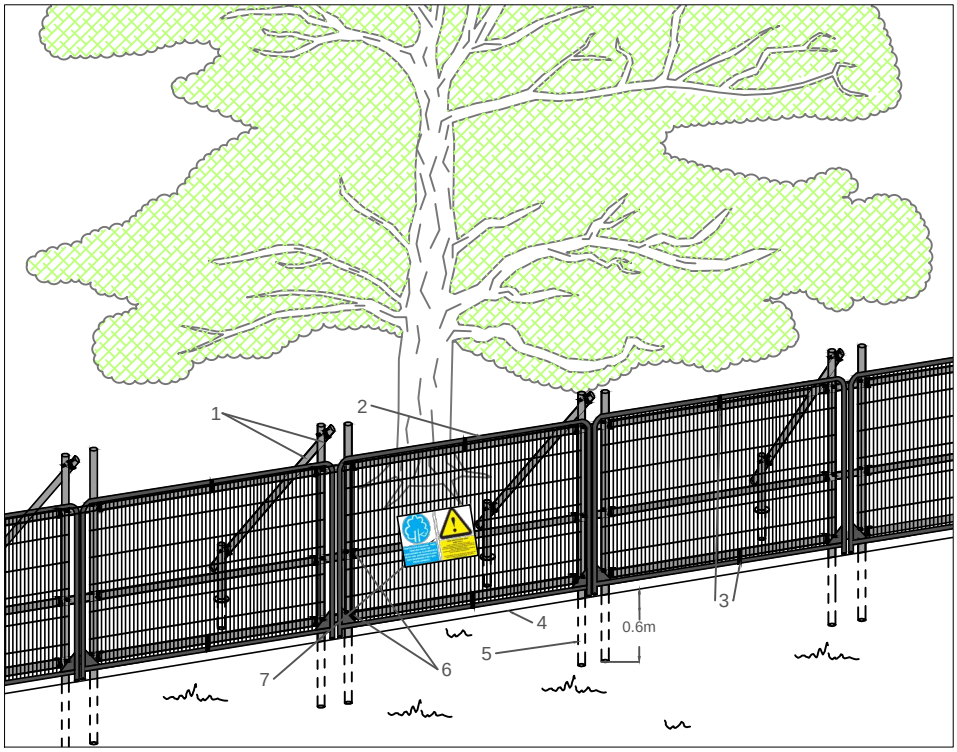


Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
INDIVIDUAL TREES										
T1	Goat Willow Salix caprea	5	170 120 100 100 70	3	EM	F	Situated next to existing access road Multi stemmed from base Crossing and rubbing branches with crown Wilting leaves noted at time of survey	31	3.1	C (i)
T2	Goat Willow Salix caprea	4	200 150 100	3	SM	F	Situated within field parcel Likely self seeded Multi stemmed from base Crossing and rubbing branches within crown	33	3.2	C (i)
T3	Silver Birch Betula pendula	9	260	2.5	SM	F	Adjacent to pond on bank Leaning stem to north east No major defect noted	31	3.1	C (i)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
GROUPS OF TREES										
TG1	Ash Fraxinus excelsior rack Willow Salix fragilis Goat Willow Salix caprea Hawthorn Crataegus monogyna	5	upto 200 200	3	SM	F	Unmaintained tree group Situated next to existing access road Broken branches noted likely as a result of vehicle damage Outgrown forms	36	3.4	C (ii)
TG2	Ash Fraxinus excelsior Goat Willow Salix caprea Hawthorn Crataegus monogyna Silver Birch Betula pendula Apple Malus domestica	6	upto 250	3	SM	F	Unmaintained tree group Close spacing between trees Interlocking crowns Over head lines above crowns Unmaintained forms	28	3.0	C (ii)
TG3	Ash Fraxinus excelsior Blackthorn Prunus spinosa English Oak Quercus robur Field Maple Acer campestre Goat Willow Salix caprea Hawthorn Crataegus monogyna Silver Birch Betula pendula Hazel Corylus avellana Mountain Ash Sorbus aucuparia	4	upto 200	2	SM	F	Planted tree group situated along field boundary Close spacing between trees Interlocking crowns Unmaintained forms	18	2.4	C (ii)

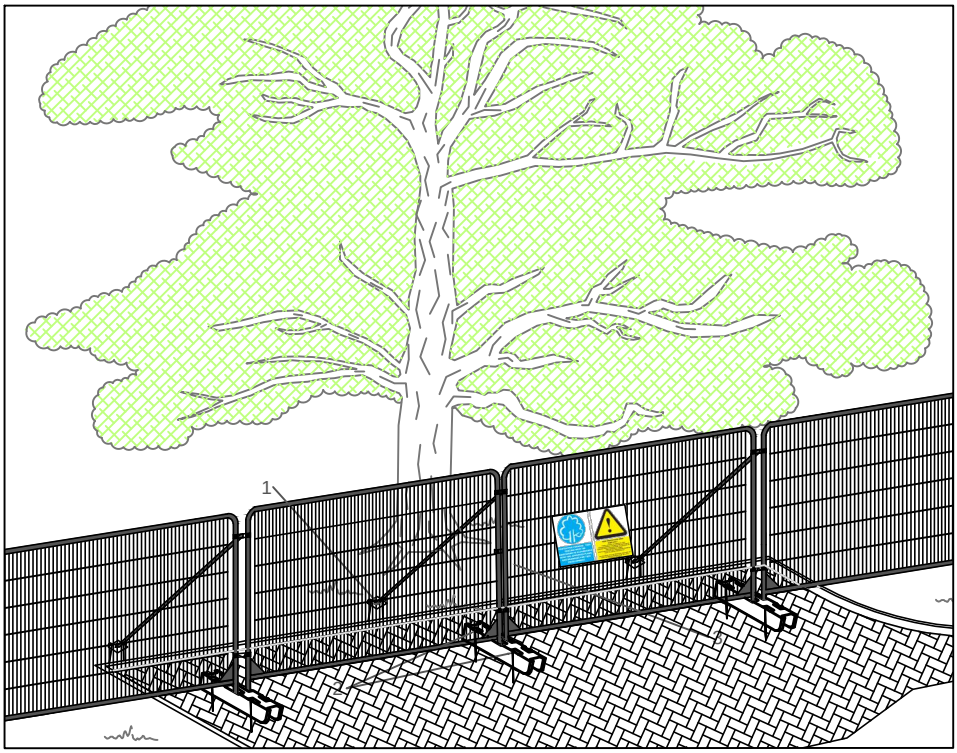
Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
TG4	Scots Pine Pinus sylvestris Ash Fraxinus excelsior Crack Willow Salix fragilis English Oak Quercus robur Field Maple Acer campestre Goat Willow Salix caprea Hawthorn Crataegus monogyna Silver Birch Betula pendula Aspen Populus tremula Hazel Corylus avellana White Willow Salix alba	6	upto 200	2	SM	F	Planted tree group situated along field boundary Close spacing between trees Interlocking crowns Unmaintained forms	18	2.4	B (ii)
TG5	Goat Willow Salix caprea Hawthorn Crataegus monogyna Silver Birch Betula pendula"	4	upto 6x 50	3	SM	F	Sporadic self seeded tree group around area of disused land Unmaintained forms	7	1.5	C (ii)
TG6	Goat Willow Salix caprea Silver Birch Betula pendula	5	upto 250 250	4	EM	F	Sporadic self seeded tree group Unmaintained forms Larger goat willow displayed twin stemmed form with an included union	57	4.2	C (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
TG7	Alder Alnus glutinosa Goat Willow Salix caprea Silver Birch Betula pendula English Oak Quercus robur	5	140 70 50	2	Yng	P	Self seeded in amongst the planted trees Dense with Alder saplings Multi-stemmed forms	12	2.0	C (i)
TG8	Crack Willow Salix fragilis Silver Birch Betula pendula	5	7x 50	3	Yng	P	Multi-stemmed at the base Dense basal suckers on the willow One birch	8	1.6	C (i)
TG9	3x Goat Willow Salix caprea 5x English Oak Quercus robur	3	70	1	Yng	P	Appear to be planted oak Sporadic group	2	0.8	C (i)
TG10	Aspen Populus tremula Field Maple Acer campestre Silver Birch Betula pendula English Oak Quercus robur	5 - 8	upto 240	1 - 2	Yng	P	Most stems only 100mm diameter One dead specimen Dense with Aspen saplings	26	2.9	C (i)
TG11	Aspen Populus tremula Field Maple Acer campestre Silver Birch Betula pendula English Oak Quercus robur Alder Alnus glutinosa Goat Willow Salix caprea	5	100	1	Yng	P	Wet ground within group Dense with Aspen saplings	5	1.2	C (i)
TG12	Alder Alnus glutinosa Goat Willow Salix caprea Silver Birch Betula pendula	4	60	0.5	Yng	P	Small group adjacent to end of pond Dense with Alder saplings	2	0.7	C (i)



Standard Specification for High Intensity Protection Fencing

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



Standard Specification for Low Intensity Protection Fencing

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

masterplanning
environmental assessment
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APPENDIX B
PROTECTIVE FENCING SPECIFICATIONS

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

PROTECTIVE FENCING. THIS FENCING MUST BE MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND DRAWINGS FOR THIS DEVELOPMENT.

TREE PROTECTION AREA

KEEP OUT !

(TOWN & COUNTRY PLANNING ACT 1990)
TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR ARE THE SUBJECTS OF A TREE PRESERVATION ORDER.
CONTRAVENTION OF A TREE PRESERVATION ORDER MAY LEAD TO CRIMINAL PROSECUTION

ANY INCURSION INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY