

APPENDIX 1

TREE SURVEY METHODOLOGY AND SCHEDULE

BS5837:2012 TREE SURVEY SCHEDULE

LAND OFF FORD ROAD, ARUNDEL

PROJECT NO: O.2588- A

SURVEYOR: IH

DATE: 07/05/18

CLIENT: OAKFORD HOMES



INDIVIDUAL TREES

Ref	Species	Height (m)	No. of Stems	Est diam?	Calc. / Actual Stem Dia. (mm)	Crown radii (m) N-E-S-W	Avg. Canopy Height (m)	1st branch ht (m)	1st branch dir.	Life Stage	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m²	TPO
T1	Sycamore	15.0	1	#	330	3.00-6.00-5.00-3.00	4.0	4	E	SM	Offsite tree. Torn out branches / branch stubs, throughout canopy. Likely due to the historic failure of the large poplar near by. Asymmetric crown due to suppression from neighbouring trees.	Fair	Fair	20+	C2	3.9	49	No
T2	Sycamore	11.0	1	#	200	3.00-3.00-3.00-3.00	5.0	5	N	SM	Offsite tree. Tree is suppressed by the neighbouring poplar.	Fair	Fair	20+	C2	2.4	18	No
T3	Sycamore	11.0	1	#	200	3.00-3.00-3.00-3.00	5.0	5	N	SM	Offsite tree. Tree is suppressed by the neighbouring poplar, dense ivy throughout canopy.	Fair	Fair	20+	C2	2.4	18	No
T4	Hawthorn	7.0	1	#	180	2.00-2.00-2.00-2.00	2.0	2	E	M	Offsite tree. Leaning stem with Ivy throughout canopy.	Good	Fair	20+	B2	2.2	15	No
T5	Sycamore	16.0	2	#	530	6.00-5.00-4.00-4.00	5.0	3	W	M	Offsite tree. Asymmetric crown due to suppression from neighbouring trees that have been felled 3-4y ears prior to the survey date. Branch stubs low on main stem from historic crown lifting.	Good	Fair	20+	B2	6.4	127	No
T6	Hawthorn	8.0	1	#	400	3.00-3.00-3.00-3.00	2.0	2	W	M	Offsite tree, typical for species and age. Ivy throughout canopy.	Good	Good	20+	B2	4.8	72	No
T7	Poplar	11.0	1	-	1220	5.00-5.00-9.00-5.00	3.0	2	S	LM	Tree has historically lost its top, failing at approx 10m. 1 low limb is very over extended in a southerly direction toward the road to the South. RPA offset to reflect presence of deep ditch.	Fair	Poor	10+	C2	14.6	673	No
T8	English oak	17.0	1	-	1300	10.00-11.00-9.00-10.00	2.5	2.5	S	M	Mature oak, approaching ancient tree status due to large stem diameter	Good	Good	40+	A3	15	707	No

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GROUPS OF TREES

Ref	Species	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. Canopy Height (m)	Life Stage	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	TPO
G1	Sycamore	12-16	5	#	310	5	4.0	SM	Offsite Group. Growing from the bank of the brook. Some branch stubs and torn out branches throughout canopies of the more N trees. Likely due to historic crown raising over the access road and from impact by the failure of the large poplar near by.	Good	Good	20+	B2	3.7	No
G2	Lime	15-17	2	#	350	6	4.0	M	Offsite group. Typical for species and age.	Good	Fair	20+	B2	4.2	No
G3	Willow, sycamore, birch	6-11	10	#	300	3	2.0	EM	Group of trees at the NE corner of the site. Self sown pioneer trees that have established since the site was abandoned.	Good	Fair	20+	C2	3.6	No

METHODOLOGY

TREE SURVEY:

- The tree survey was carried out with reference to the methodology set out in BS5837:2012 'Trees in relation to design, demolition and construction – Recommendations'.
- Trees were surveyed individually or as groups where it was considered that they had grown together to form cohesive arboricultural features either aerodynamically (trees that provide companion shelter), visually (eg avenues or screens) or culturally (including for biodiversity). However, where it was considered that there was an arboricultural need to differentiate between attributes trees within groups/woodlands were also surveyed as individuals
- The full tree survey findings are recorded in the following tree survey schedule.
- Within the tree survey schedule, each surveyed **TREE (T)**, **GROUP (G)**, **HEDGEROW (H)**, **WOODLAND (W)** or **SHRUB MASS** on or adjacent to the site is given a reference number which refers to its position on the tree survey and constraints plan.
- **TREE SPECIES** are listed by common name.

The DIMENSIONS taken are:

- **STEM-No.** Indicates the number of main stems (i.e. whether the trunk divides at or below 1.5m; (Used in the calculation of RPA.) "m-s" = Multi-stemmed.
- **DIAMETER** (in millimetres), obtained from the girth measured at approx.1.5m. For trees with 2 to 5 sub-stems, a notional figure is derived from the sum of their cross-sectional areas. For multi-stemmed trees the notional diameter may be estimated on the basis of the average stem size x the number of stems. (A notional diameter may be estimated where measurement is not possible.)
- **HEIGHT**, are measured in metres. They are recorded to the nearest half metre for dimensions up to 10m and to the nearest whole metre for dimensions over 10m.
- The **CROWN SPREAD** are taken at the four cardinal points to derive an accurate representation of the tree crown. They are recorded up to the nearest half metre for dimensions up to 10m and to up the nearest whole metre for dimensions over 10m.
- **CROWN CLEARANCES** are expressed both as existing height above ground level of first significant branch along with its direction of growth (eg 2.5m-N), and also in terms of the overall canopy. Measurements are recorded to the nearest half metre for dimensions up to 10m and to the nearest whole metre for dimensions over 10m.
- **ESTIMATES.** Where any measurement has had to be estimated, due to inaccessibility for example, this is indicated by a "#" suffix to the measurement as shown in the tree survey schedule.

LIFE STAGE is defined as follows:

- | | |
|----|---|
| Y | Young: normally stake dependent, establishing trees. Should be growing fast, usually primarily increasing in height more than spread, but as yet making limited impact upon the landscape. |
| SM | Semi-mature: Established young trees, normally of good vigour and still increasing in height, but beginning to spread laterally. Beginning to make an impact upon the local landscape & environment. Semi-Mature (still capable of being transplanted without preparation, up to 30cm girth and not yet sexually mature). |
| EM | Early-mature: Not yet having reached 75% of expected mature size. Established young trees, normally of good vigour and still increasing in height, but beginning to spread laterally. Beginning to make an impact upon the local landscape & environment. |
| M | Mature: Well-established trees, still growing with some vigour, but tending to fill out and increase spread. Bark may be beginning to crack & fissure. In the middle half of their safe, useful life expectancies. |
| LM | Late -Mature: In full maturity but possibly beyond mature and in a state of natural decline). Still retaining some vigour but any growth is slowing. |

PHYSIOLOGICAL CONDITION (HEALTH & VITALITY): Essentially a snapshot of the general health of the tree based upon its general appearance, its apparent vigour and the presence or absence of symptoms associated with poor health, physiological stress etc. (Fungal infections may be recorded here but decay giving rise to structural weakness would be recorded under 'Structural Condition' – see next parameter):

Good	no significant health issues.
Fair	indications of slight stress or minor disease (e.g. the presence of minor dieback/deadwood or of epicormic shoot growth)
Poor	Significant stress or disease noted; larger areas of dieback than above
Dead	(or Moribund)

STRUCTURAL CONDITION: Defects affecting the structural stability of the tree, including decay, significant dead wood, root-plate instability or significant damage to structural roots, weak forks (e.g. those where bark is included between the members) etc. etc. Classified as:

Good	No obvious structural defects: basically sound
Fair	Minor, potential or incipient defects
Poor	Significant defect(s) likely to lead to actual failure in the medium to long-term
Dead (or Moribund)	

REMAINING USEFUL LIFE EXPECTANCY: An estimate of the length of time in years that a tree might be expected to continue to make a useful contribution to the locality at an acceptable level of risk (based on an assumption of continued routine maintenance)

- less than 10 years
- 10+ years
- 20+ years
- 40+ years

QUALITY CATEGORY: Trees are classed as category **U, A, B or C**, based on criteria given in BS5837:2012; summary definitions as follow (see BS5837 for further details). Categories A, B and C are further characterised by the use of sub-categories, which attempt to identify what aspect of the tree is the main source of its perceived value:

(1) **arboricultural** qualities (2) **landscape** qualities and (3) **cultural, historic or ecological/conservation** qualities. Examples of these qualities for each of the three categories are given below, although these are indicative only.

Note: This is NOT a health and safety classification; the classification does not take into account any requirement for remedial tree care or ongoing maintenance apart from that which may affect the trees' general suitability for retention.

U **UNSUITABLE:** Trees likely to prove to be unsuitable for retention for longer than 10 years should any significant increase in site usage arise as a result of development.

Dead or moribund trees; those at risk of collapse or in terminal decline; trees that will be left unstable by other essential works such as the removal of nearby category U trees; trees infected by pathogens that could materially affect other trees; low quality trees that are suppressing better specimens

(Category U trees may have conservation values that it might be desirable to preserve.

It may also include trees that should be removed irrespective of any development proposals.)

A **HIGH QUALITY:** Trees or groups whose retention should be given a particularly high priority within the design process. Normally with an expected useful life expectancy of at least 40 years.

1. *Notably fine specimens; rare or unusual specimens; essential component trees within groups, semi-formal or formal plantings (e.g. dominant trees within an avenue etc.)*
2. *Trees, groups or woodlands of particular visual importance as landscape features.*
3. *Trees, groups or woodlands of particular significance by virtue of their conservation, historical, commemorative or other value (e.g. veteran trees or wood pasture.)*

B **MODERATE QUALITY:** Trees or groups of some importance with a likely useful life expectancy in excess of 20 years. Their retention would be highly desirable; selective removal of certain individuals may be acceptable, but only after full consideration of all alternative courses of action.

1. *Fair quality but not exceptional; good specimens showing some impairment (e.g. remediable defects, minor storm damage or poor past management.)*
2. *Acceptable trees situated such as to have little visual impact within the wider locality. Also numbers of trees, perhaps in groups or woodlands, whose value as landscape features is greater collectively than would warrant as individuals (such that the selective removal of an individual would not impact greatly upon the trees' overall, collective value).*
3. *Trees, groups or woodlands with clearly identifiable conservation or other cultural benefits.*

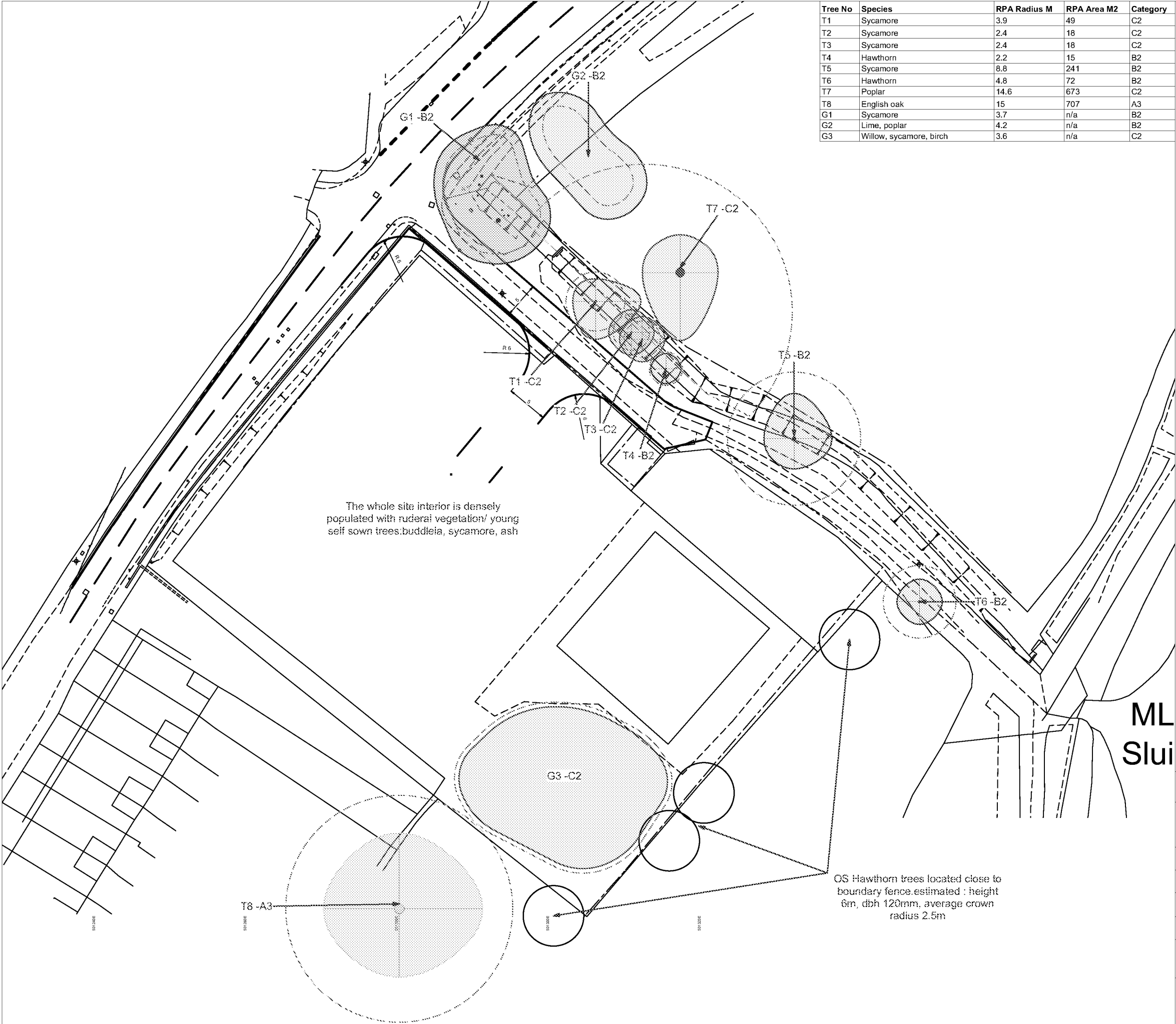
C **MINOR VALUE:** Trees or groups of rather low quality, although potentially capable of retention for at least approx. 10 years. Also small trees below 15cm diam.

Potentially retainable, but not of sufficient value to be regarded as a significant planning constraint.

1. *Unremarkable trees of very limited merit or of significantly impaired condition.*
2. *Trees offering only low or short-term landscape benefits; also secondary specimens within groups or woodlands whose loss would not significantly diminish their landscape value.*
Trees with extremely limited conservation or other cultural benefit.

APPENDIX 2

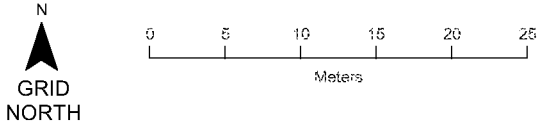
TREE SURVEY AND CONSTRAINTS PLAN



Tree No	Species	RPA Radius M	RPA Area M2	Category
T1	Sycamore	3.9	49	C2
T2	Sycamore	2.4	18	C2
T3	Sycamore	2.4	18	C2
T4	Hawthorn	2.2	15	B2
T5	Sycamore	8.8	241	B2
T6	Hawthorn	4.8	72	B2
T7	Poplar	14.6	673	C2
T8	English oak	15	707	A3
G1	Sycamore	3.7	n/a	B2
G2	Lime, poplar	4.2	n/a	B2
G3	Willow, sycamore, birch	3.6	n/a	C2

- KEY** BS 5837 : 2012 Categories
- Tree Category A - High Quality
 - A Category - Hedgerow, Group, Woodland
 - Tree Category B - Moderate Quality
 - B Category - Hedgerow, Group, Woodland
 - Tree Category C - Low Quality
 - C Category - Hedgerow, Group, Woodland
 - Tree Category U - Unsuitable for Retention
 - U Category - Hedgerow, Group, Woodland
 - Root Protection Area to BS 5837:2012
 - Shrub Mass / Offsite Tree / OOS (Out of scope)

Note: The original of this drawing was produced in colour - a monochrome copy should not be relied upon.



PROJECT TITLE

Ford Road, Arundel (O.2588)

DRAWING TITLE

Tree Survey & Constraints Plan

SCALE

1:500 @ A3

DRAWING NUMBER

BHA_363_01

DRAWN BY

AD

APPROVED BY

IH

REVISION

-

SHEET

-

DATE

21/01/2019

CLIENT

Oakford Homes

COORDINATE SYSTEM / DATUM

British National Grid / Newlyn Datum (AOD)

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 Barton Hyett Associates
Arboricultural Consultants

Tel: 01386 576161
Address: Office 5E, Deer Park Business Centre,
Eckington, Pershore, Worcestershire, WR10 3DN

APPENDIX 3

TREE PRESERVATION ORDER

FIRST SCHEDULE

TREES SPECIFIED INDIVIDUALLY
(encircled in black on the map)

No. on Map	Description	Situation
T.1.	Ash	Land north east and south east of Gasholder Station, Ford Road, Arundel, West Sussex.

TREES SPECIFIED BY REFERENCES TO AN AREA
(within a dotted black line on the map)

No. on Map	Description	Situation
	- None -	

GROUPS OF TREES
(within a broken black line on the map)

No. on Map	Description	Situation
G.1.	3 Lombardy Poplar 2 White Poplar	Land north east and south east of Gasholder Station, Ford Road, Arundel, West Sussex.
G.2.	5 Lombardy Poplar 5 White Poplar	
G.3.	7 White Poplar 17 Sycamore 7 Thorn 1 Holly	
G.4.	3 Poplar 4 Lime 4 Sycamore	

WOODLANDS
(within a continuous black line on the map)

No. on Map	Description	Situation
	- None -	

APPENDIX 4

COMBINED TREE RETENTION/REMOVAL AND PROTECTION PLAN

CONSTRUCTION EXCLUSION ZONE - NO ENTRY

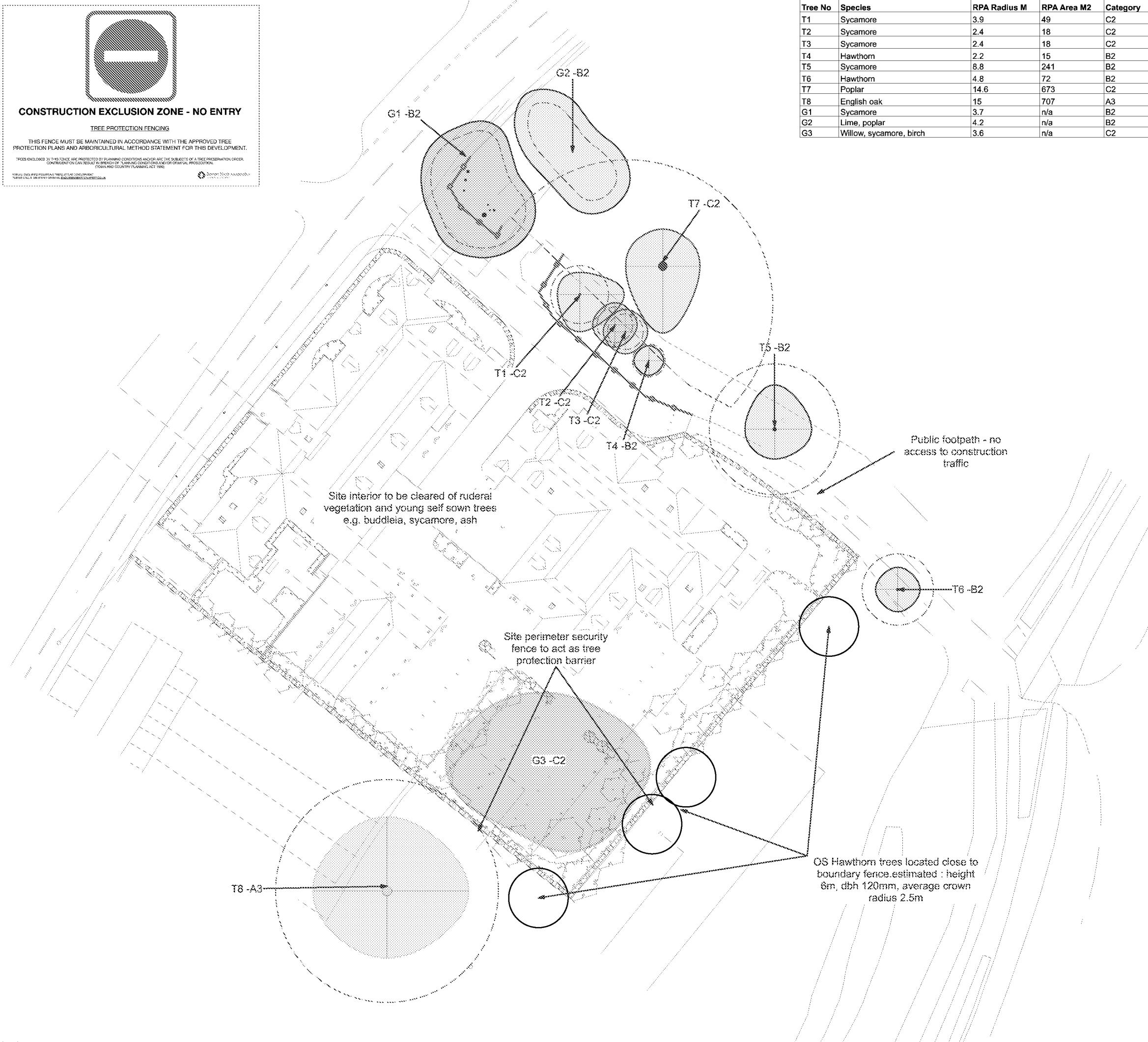
TREE PROTECTION FENCING

THIS FENCE MUST BE MAINTAINED IN ACCORDANCE WITH THE APPROVED TREE PROTECTION PLANS AND ARBORICULTURAL METHOD STATEMENT FOR THIS DEVELOPMENT.

Trees enclosed by this fence are protected by planning conditions and/or are the subjects of a tree preservation order. Contravention can result in breach of planning conditions and/or criminal prosecution. (Town and Country Planning Act 1990)

Don't Stop

Don't Stop



Tree No	Species	RPA Radius M	RPA Area M2	Category
T1	Sycamore	3.9	49	C2
T2	Sycamore	2.4	18	C2
T3	Sycamore	2.4	18	C2
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KEY

BS 5837 : 2012 Categories

Tree Category A - High Quality

A Category - Hedgerow, Group, Woodland

Tree Category B - Moderate Quality

B Category - Hedgerow, Group, Woodland

Tree Category C - Low Quality

C Category - Hedgerow, Group, Woodland

Tree Category U - Unsuitable for Retention

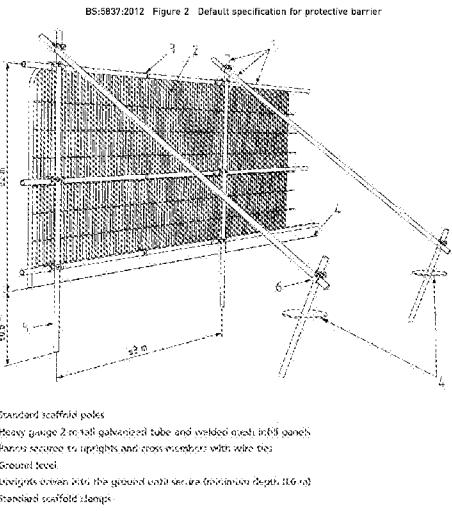
U Category - Hedgerow, Group, Woodland

Root Protection Area to BS 5837:2012

Shrub Mass / Offsite Tree / OOS (Out of scope)

Tree / Hedgerow to be Removed

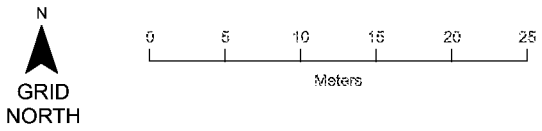
Tree Protection Barrier to BS 5837:2012



For more details refer to BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations' p.20

Tree Protection Barrier - Barrier to be erected prior to the commencement of works on site and not to be altered or removed until works are complete (cross check with specific requirements of any relevant planning conditions)

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PROJECT TITLE

Ford Road, Arundel (O.2588)

DRAWING TITLE

Tree Retention/Removal & Protection Plan

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DRAWN BY

SD

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CLIENT

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COORDINATE SYSTEM / DATUM

British National Grid / Newlyn Datum (AOD)

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Barton Hyett Associates

Arboricultural Consultants

Tel: 01386 576161
Address: Office 5E, Deer Park Business Centre,
Eckington, Pershore, Worcestershire, WR10 3DN