

ARBORICULTURAL IMPACT ASSESSMENT

Land at Gosford

February 2022



Barton Hyett Associates
Arboricultural Consultants

In association with

CSA
environmental

Summary table		
Site Name:	Land at Gosford	
Project reference:	C.2999	
Site Address:	Bicester Road, Kidlington, Oxfordshire	
Nearest Postcode:	OX5 2LL	
Central Grid reference:	SP 50236 12709	
Local Planning Authority:	Cherwell District Council	
Relevant planning policies:	Final adopted Local Plan 2011-2031; Policy ESD 10: Protection and Enhancement of Biodiversity and the Natural Environment, Policy ESD 13: Local Landscape Protection and Enhancement, Policy ESD 15: The Character of the Built and Historic Environment,	
Statutory Controls:	Tree Preservation Order	Conservation Area
	None	No
Soil Type: (Source: BGS online soils map © NERC 2020)	Superficial/Drift	Bedrock
	None recorded	Oxford Clay Formation And West Walton Formation (undifferentiated) - Mudstone.
Topographical Survey:	Greenhatch Group, 36516_T, 23/04/20	
Report author:	Paul Barton <i>MSc, BSc (Hons), MArborA, RCArborA</i>	
Date of issue:	22nd Feb 2022	

REPORT CONTENTS:

SECTION 1:	SUMMARY, SITE DETAILS & SURVEY FINDINGS
SECTION 2:	TREE SURVEY & CONSTRAINTS PLAN
SECTION 3:	COMBINED TREE RETENTION/REMOVAL & PROTECTION PLAN
SECTION 4:	TREE SURVEY SCHEDULE & SITE IMAGES
SECTION 5:	METHODOLOGY
SECTION 6:	DESIGN GUIDANCE AND GENERIC ADVICE
SECTION 7:	PRINCIPLES FOR TREE PROTECTION ON DEVELOPMENT SITES



1. INTRODUCTION

- 1.1. Barton Hyett Associates Ltd have been instructed by CSA Environmental on behalf of Barwood Developments to survey trees located on the land at Gosford ('the site') in accordance with the recommendations of British Standard 5837:2012 '*Trees in relation to design, demolition and construction - Recommendations*'
- 1.2. The scope of the instruction was to inspect trees relevant to a planning application at the site and provide written advice on how they inform feasibility and design options for the site. The tree survey was carried out in June 2020 and an arboricultural constraints and opportunities report provided to the design team.
- 1.3. The instruction also required an assessment of the potential impact (the Arboricultural Impact Assessment) of the proposed development on the site's arboricultural resource to be undertaken in order to inform the LPA to determine an outline planning application.

2. SITE DESCRIPTION

- 2.1. The site is located to the south of Kidlington which is within the district of Cherwell in the county of Oxfordshire. The city of Oxford is located approximately four and a half miles to the south.



Figure 1: aerial image (Google Maps) showing the site in its local context. Approximate site boundary shown in red.

- 2.2. The site is bordered by the A34 to the south-east, the Oxford Road to the south-west and Bicester Road to the north-west. Water Eaton Lane, a cul-de-sac serving residential properties is to the north-east of the site. The Water Eaton Park and Ride and the Oxford Parkway Railway Station are located to the south of the site across the A34, providing good public transport links for the site. The total area of the site is approximately 27.5 hectares.
- 2.3. The boundaries are defined by a mixture of highway buffer planting to the south, east and west, new planting within the cemetery to the north-west corner, remnants of an unmaintained hedgerow to the north and various hedgerows and trees on the borders of the residential properties to the north-east.
- 2.4. In the wider area, the land to the south and east of the site is predominately pasture and arable farmland. The area to the north and west of the site is mainly residential but also includes the Kidlington Cemetery.
- 2.5. The site is generally flat with few undulations. There is a mound bordering the southern extent of the eastern boundary which has been there for some time and has grassed over. At the time of the tree survey the two fields to the north were being grazed and the field to the south was recently been harvested for hay.
- 2.6. Access to the site is via the Bicester Road where a gate leads to further gated entrances to all three fields.

3. TREE SURVEY FINDINGS

- 3.1. A total of 19 trees and 32 groups of trees were surveyed. These are summarised in terms of their quality in accordance with the recommendations of BS5837 below, and shown in more detail on the Tree Survey and Constraints Plan (**Section 2**) and within the Tree Survey Schedule (**Section 4**).

	Total	A - High quality trees whose retention is most desirable.	B - Moderate quality trees whose retention is desirable.	C - Low quality trees which could be retained but should not significantly constrain the proposal.	U - Very poor quality trees that should be removed unless they have high conservation value.
Trees	19	-	4	13	2
Groups	32	-	5	27	-
Total	51	-	9	40	2

Table 1: summary of arboricultural features by retention category

4. KEY ARBORICULTURAL FEATURES

- 4.1. There are no high-quality trees within nor immediately adjacent to the site. However there are several willows within the southernmost internal field boundary, G30 and G32, that are considered to be 'emerging veterans'; these trees are old and exhibit some veteran characteristics such as crown deadwood and cavities.

I do not currently class them as true veterans, however, they have the potential to become veterans if managed correctly.

5. PROPOSED DEVELOPMENT

- 5.1. The development proposal is a residential development of 370 dwellings within a 9.9 hectare part of the site, concentrated in the northern half of the site. The residential site would include play areas and attenuation basins. The southern part of the site is proposed to contain allotments, a community club house, sports pitches and green open spaces.
- 5.2. New vehicle access points would be from Bicester Road on the west side and also a new road connection to an adjacent proposed development to the north.
- 5.3. The proposed development framework plan is shown within the indicative tree retention and removal plan in **Section 3**.

6. IMPACT ASSESSMENT

- 6.1. This assessment considers the effect of the proposed access to the Site (i.e. the non-reserved matters). It also considers the *potential* impacts of the Development Framework Plan (the reserved matters). However, a further assessment of the reserved matters details will be required at the detailed planning stage. An indicative tree retention and removal plan is included in **Section 3**.
- 6.2. With regard to both the non-reserved matters (access), it is anticipated that only the low quality group of ash and hawthorn in G2 will be removed in their entirety to implement the proposed access. The access drawings provided to me do not show required visibility splays but as the section of Bicester Road is straight with a 40 mph speed limit there doesn't appear to be a significant issue with needing to remove additional vegetation in order to clear sight lines from the new junction. The indicative tree retention and removal plan (TRR) shows G2 removed in its entirety which measures approximately 65m but it may be possible to remove less than this length.
- 6.3. Further south along Bicester Road a second access point to be used as an emergency access and pedestrian access point will also require the removal of a section of the roadside tree group G21 consisting of hawthorn.
- 6.4. These roadside removals will have a moderate impact on the local amenity value of the area. In contrast to these trees on the east side of Bicester Road, the line of poplars along the west side of the road will be unaffected so the main arboreal value of the streetscene will be maintained.
- 6.5. With regard to the reserved matters (internal site layout) the impacts to trees can only be assessed at a preliminary nature at this point as the detail of the internal site layout may be subject to some change in further iterations of the design. However, the development framework plan (DFP) currently shows that most internal and boundary vegetation can be retained within the proposed development except for small sections of groups/hedges that would need to be removed to facilitate new internal roads.
- 6.6. The DFP shows a proposed swale running along the east boundary and then turning west close to trees forming G32. This group includes three late-mature crack willow trees which, as mentioned in 4.1 are considered to be 'emerging veterans' so have some heritage and ecological value. The proposed swale and

pedestrian route would require the removal of smaller and younger willow, blackthorn and field maple trees from the east end of G32 but the late-mature willows would be retained. However, the details of the design in this area will need to be looked at further to ensure that these trees are not adversely impacted by potential ground level changes or new surfacing.

- 6.7. The DFP has been designed to provide appropriate buffers to trees and tree groups to enable their retention. Indeed, the DFP shows that in many places the existing tree cover would be strengthened with additional new planting. In particular there is opportunity to plant new trees along the west boundary near the roundabout junction and along the southeast boundary with the A34. Once successfully established this new tree planting will serve to filter views into the site and create a strong interface between the site and the countryside and infrastructure beyond.
- 6.8. In summary, the Development Framework Plan demonstrates that a sustainable relationship between the proposed development parcels and retained trees and hedges can be achieved and that an overall net gain in the arboricultural resource at the Site can be delivered.

7. TREE PROTECTION MEASURES

- 7.1. In order to implement the outline proposals as shown in the DFP linear tree protection fencing will be required to create construction exclusion zones around the retained trees. BS5837:2012 specifies a scaffold framework driven in to the ground with metal mesh panels affixed to them to construct a robust barrier. Alternative specifications for vertical barriers may be agreeable with the LPA provided they are also sufficiently robust and cannot be easily moved by construction workers.
- 7.2. The details of tree protection barriers and any construction methods required to protect trees will need to be clearly identified as part of a detailed arboricultural method statement at the reserved matters stage or by request of a specific planning condition.

8. HEADS OF TERMS FOR AN ARBORICULTURAL METHOD STATEMENT (AMS)

- 8.1. BS5837:2012 (Figure 1) recommends that detailed/technical design of tree protection and arboricultural methodologies should be resolved and finalised following on from the approval of the feasibility of a scheme by the Local Planning Authority.
- 8.2. Annex B and Table B.1 of BS5837:2012, an informative, advises that Arboricultural method Statement Heads of Terms are a sufficient level of information in order to deliver tree-related information into the planning system. The table also advises that a detailed Arboricultural Method Statement might reasonably be required as a 'reserved matter' or planning condition.
- 8.3. In relation to the site, it is anticipated that arboricultural working methods are likely to be quite straightforward. A brief summary of the principles of tree protection on development sites is included in **Section 7**.
- 8.4. A draft, 'Heads of Terms' for an Arboricultural Method Statement is set out below:
 - Project arboriculturist – schedule of monitoring and supervision to be agreed with the applicant and LPA

- Pre-commencement site meeting - to be attended by the project arboriculturist, client, site manager and other relevant parties. Project arboriculturist to ensure that all parties have copies of the tree protection plan and this report.
- Tree removals and facilitation pruning - as shown on the Tree Retention and Removal Plan (TRR)
- Erection of tree protection barriers and temporary ground protection as may be required as per the Tree Protection Plan (TPP)
- Site preparation and ground works - no access for any machinery within the fenced tree protection areas.
- Main construction phase - all tree protection measures shall remain in situ and intact for the duration of the construction phase
- Removal of tree protection barriers - only to occur following approval of site conditions by the project arboriculturist.
- Final landscaping including tree planting.

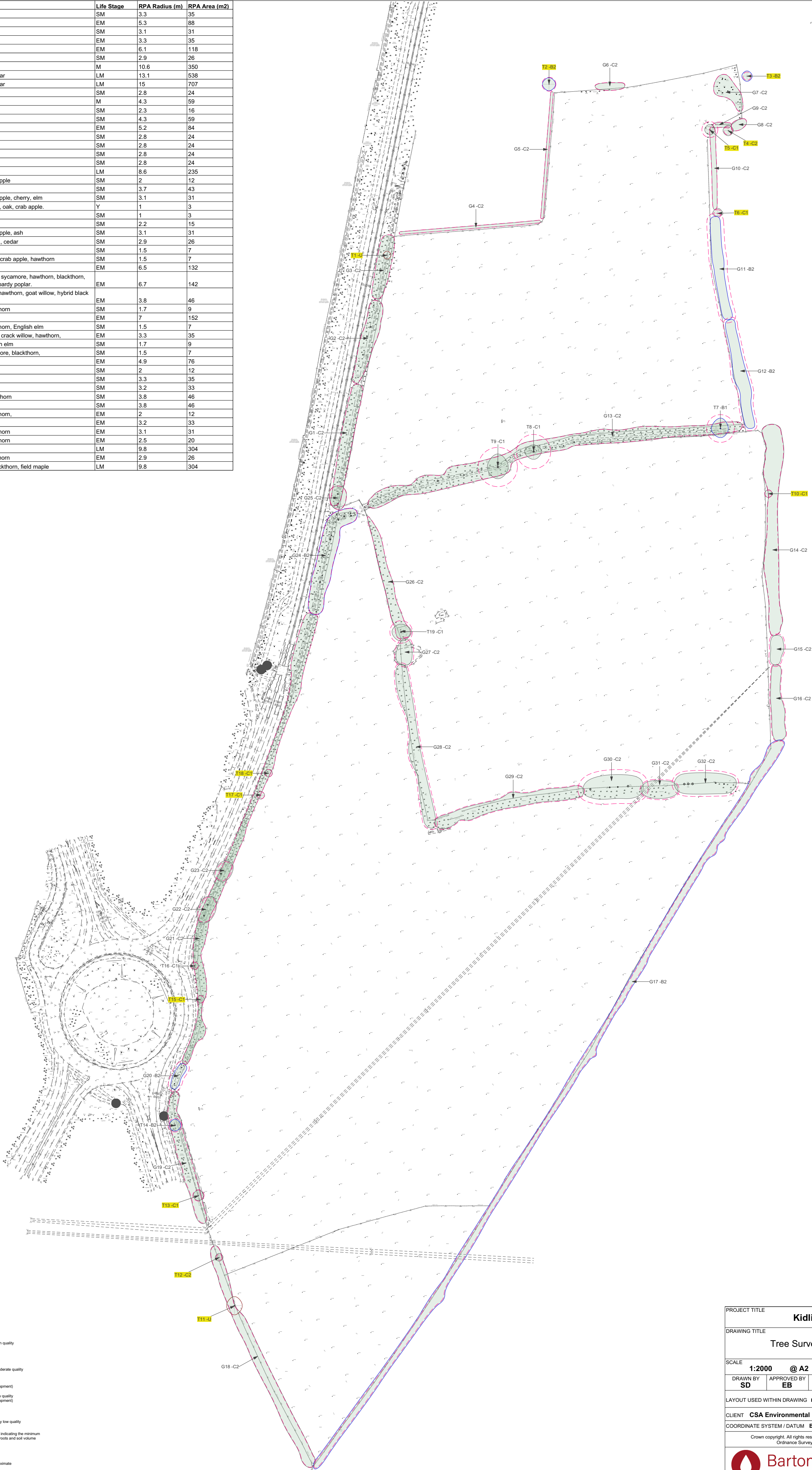
9. CONCLUSIONS AND RECOMMENDATIONS

- 9.1. Subject to the implementation of the advice contained within this report the draft proposed development is feasible from an arboricultural perspective as it would have only minor impacts on existing trees. The loss of a low number of low quality trees can be readily compensated for and the retained trees can be adequately protected during construction activities to sustain their health and longevity.
- 9.2. There is ample opportunity to enhance the overall arboricultural value of the site through new tree planting to strengthen the existing boundary vegetation and also within the new residential area. Tree planting proposals should seek to both increase overall canopy cover as well as broaden the diversity of tree species and include flowering trees attractive to pollinating insects.
- 9.3. At the reserved matters application stage a more detailed arboricultural impacts assessment and tree protection plan will need to be produced to provide more detail to the local planning authority. I recommend that the evolving design of the site is brought forward in consultation with an arboriculturist to ensure that trees are further considered in the design process.



Paul Barton
Director

Tree No	Ht (m)	Species	Life Stage	RPA Radius (m)	RPA Area (m2)
T1	11	English elm	SM	3.3	35
T2	13	English oak	EM	5.3	88
T3	8	Copper beech	SM	3.1	31
T4	12	Brewers spruce	EM	3.3	35
T5	12	Leyland Cypress	EM	6.1	118
T6	11	Ash	SM	2.9	26
T7	13	Ash	M	10.6	350
T8	13	Hybrid black poplar	LM	13.1	538
T9	13	Hybrid black poplar	LM	15	707
T10	10	Ash	SM	2.8	24
T11	11	Sycamore	M	4.3	59
T12	8	Common lime	SM	2.3	16
T13	9	Sycamore	SM	4.3	59
T14	11	Sycamore	EM	5.2	84
T15	10	Sycamore	SM	2.8	24
T16	10	Sycamore	SM	2.8	24
T17	10	Sycamore	SM	2.8	24
T18	9	Ash	SM	2.8	24
T19	12	Ash	LM	8.6	235
G1	4-5	Hawthorn, crab apple	SM	2	12
G2	12-14	Ash, hawthorn	SM	3.7	43
G3	3-8	Hawthorn, crab apple, cherry, elm	SM	3.1	31
G4	2-3	Hawthorn, cherry, oak, crab apple	Y	1	3
G5	2	Hawthorn	SM	1	3
G6	3-4	Blackthorn	SM	2.2	15
G7	3-5	Hawthorn, crab apple, ash	SM	3.1	31
G8	9-10	Ash, cherry, birch, cedar	SM	2.9	26
G9	3	Lawson cypress	SM	1.5	7
G10	3	Lawson cypress, crab apple, hawthorn	SM	1.5	7
G11	13-15	Leyland cypress	EM	6.5	132
G12	5-12	English oak, ash, sycamore, hawthorn, blackthorn, goat willow, Lombardy poplar	EM	6.7	142
G13	3-10	Blackthorn, ash, hawthorn, goat willow, hybrid black poplar	EM	3.8	46
G14	3-5	Hawthorn, blackthorn	SM	1.7	9
G15	12	Crack willow	EM	7	152
G16	3-4	Hawthorn, blackthorn, English elm	SM	1.5	7
G17	4-11	Field maple, ash, crack willow, hawthorn	EM	3.3	35
G18	3-7	Hawthorn, English elm	SM	1.7	9
G19	2-5	Hawthorn, sycamore, blackthorn	SM	1.5	7
G20	15	Lombardy poplar	EM	4.9	76
G21	3-5	Hawthorn	SM	2	12
G22	9-10	Ash	SM	3.3	35
G23	9	Ash, sycamore	SM	3.2	33
G24	4-14	Ash, cherry, hawthorn	SM	3.8	46
G25	9-11	Ash	SM	3.8	46
G26	3-5	Hawthorn, blackthorn	EM	2	12
G27	4-8	White willow	EM	3.2	33
G28	3-4	Hawthorn, blackthorn	EM	3.1	31
G29	3-4	Hawthorn, blackthorn	EM	2.5	20
G30	8-11	Crack willow	LM	9.8	304
G31	3-5	Blackthorn, hawthorn	EM	2.9	26
G32	7-10	Crack willow, blackthorn, field maple	LM	9.8	304



KEY

Category A - Tree - High quality
(Retention highly desirable)

Category A - Hedgerow, Group, Woodland - High quality
(Retention highly desirable)

Category B - Tree - Moderate quality
(Retention desirable)

Category B - Hedgerow, Group, Woodland - Moderate quality
(Retention desirable)

Category C - Tree - Low quality
(May be retained but should not constrain development)

Category C - Hedgerow, Group, Woodland - Low quality
(May be retained but should not constrain development)

Category U - Tree - Very low quality
(Mostly unsuitable for retention)

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(Mostly unsuitable for retention)

Root Protection Area (RPA) - Layout design tool indicating the minimum
area around a tree deemed to contain sufficient roots and soil volume
to maintain the tree's viability

Shrub mass/offsite tree/out of scope (OOS)

Tree not on topographic survey - location approximate

TS - 'Section 2'

Note: The original of this drawing was produced in colour – a monochrome copy should not be relied upon. This drawing should be interpreted with reference to the accompanying tree schedule and written advice

PROJECT TITLE

Kidlington (C.2999)

DRAWING TITLE

Tree Survey & Constraints Plan

SCALE

1:2000 @ A2

DRAWING NUMBER

BHA_761_01

DRAWN BY

SD

APPROVED BY

EB

REVISION

-

SHEET

-

DATE

30/06/2020

LAYOUT USED WITHIN DRAWING

n/a

CLIENT

CSA Environmental

COORDINATE SYSTEM / DATUM

British National Grid / Newlyn Datum (AOD)

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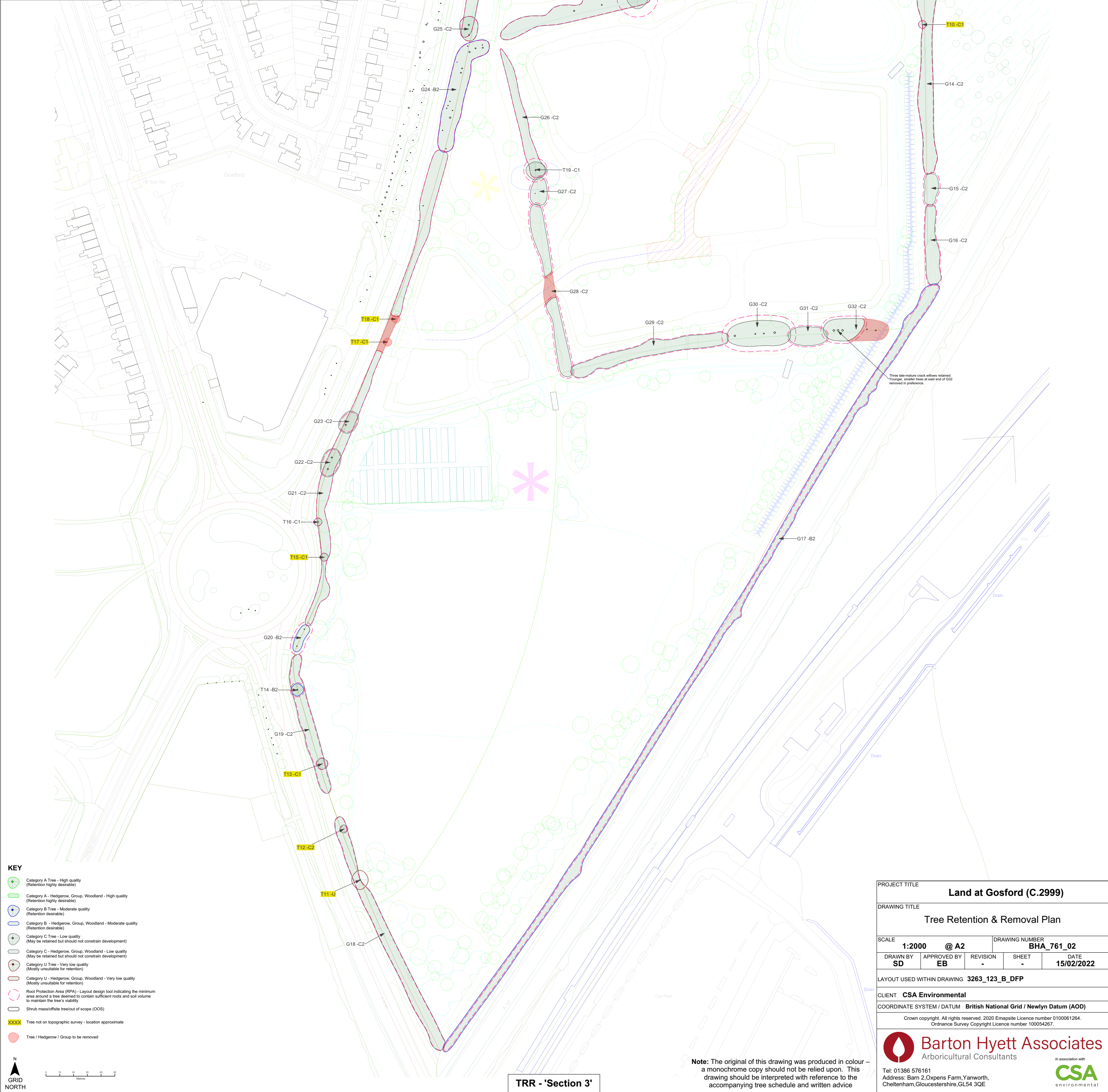
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CSA

environmental

Tree No	Ht (m)	Species	Life Stage	RPA Radius (m)	RPA Area (m2)
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G22	9-10	Ash	SM	3.3	35
G23	9	Ash, sycamore	SM	3.2	33
G24	4-14	Ash, cherry, hawthorn	SM	3.8	46
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PROJECT TITLE

Land at Gosford (C.2999)

DRAWING TITLE

Tree Retention & Removal Plan

SCALE

1:2000 @ A2

DRAWING NUMBER

BHA_761_02

DRAWN BY

SD

APPROVED BY

EB

REVISION

-

SHEET

-

DATE

15/02/2022

LAYOUT USED WITHIN DRAWING

3263_123_B_DFP

CLIENT

CSA Environmental

COORDINATE SYSTEM / DATUM

British National Grid / Newlyn Datum (AOD)

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Note: The original of this drawing was produced in colour – a monochrome copy should not be relied upon. This drawing should be interpreted with reference to the accompanying tree schedule and written advice

INDIVIDUAL TREES

Ref	Species	On / off site	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	Special importance	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m ²
T1	English elm	Off	11.0	2	-	280	3-3-3-3	-	-	-	SM	None	Dying elm with major deadwood within crown.	Poor	Poor	<10	U	3.3	35
T2	English oak	Off	13.0	1	#	440	5-5-5-5	5.0	3.5	S	EM	None	Ditch has been cleared to south side, potentially damaging roots. Bark wounds on limbs to south side.	Good	Fair	20+	B2	5.3	88
T3	Copper beech	On	8.0	1	#	260	4-4-4-4	3.0	-	-	SM	None	Attractive tree of good form. Canopy encroaches into site a maximum of 2m.	Good	Fair	20+	B2	3.1	31
T4	Brewers spruce	Off	12.0	2	#	280	4-4-4-4	3.0	3	N	EM	None	Attractive tree. Structural condition assumed.	Good	Fair	10+	C2	3.3	35
T5	Leyland Cypress	Off	12.0	6	-	510	4-4-4-4	2.0	-	-	EM	None	Multi-stemmed ree of average form. Canopy encroaches into site a maximum of 3m	Good	Fair	10+	C1	6.1	118
T6	Ash	Off	11.0	1	-	240	4-4-2-4	2.0	2	W	SM	None	Shaded to southern side by adjacent group.	Good	Fair	20+	C1	2.9	26
T7	Ash	On	13.0	1	#	880	8-6-7-7	2.0	4	N	M	None	Form usual for species. Tree is on northern side of a field edge ditch.	Good	Good	20+	B1	10.6	350
T8	Hybrid black poplar	On	13.0	1	-	1090	5-6-6-7	6.0	5	W	LM	None	Previous limb failure to south-western side. Stem covered in ivy extending into crown. Major crown deadwood. Compaction of rootplate by livestock, also bark damage evident. Cavity at base to southern side.	Fair	Poor	10+	C1	13.1	538
T9	Hybrid black poplar	On	13.0	1	-	1360	10-8-9-8	4.0	3	S	LM	None	Previous branch failure. Stem covered in ivy extending into crown. Compaction of rootplate by livestock, also superficial damage to the stem.	Fair	Fair	10+	C1	15.0	707
T10	Ash	Off	10.0	1	#	230	3-3-3-3	2.5	2	N	SM	None	Tree of average form for species, unable to assess if reds in behind ditch due to G14	Good	Fair	20+	C1	2.8	24
T11	Sycamore	Off	11.0	1	-	360	7-6-67-6	3.0	2.5	N	M	None	Dead tree	Dead	Dead	<10	U	4.3	59
T12	Common lime	Off	8.0	1	#	190	3-3-3-3	2.0	3	E	SM	None	Tree of average form within linear group of hawthorn.	Good	Fair	20+	C2	2.3	16
T13	Sycamore	Off	9.0	1	#	360	4-4-4-4	1.5	-	-	SM	None	Tree of average form within linear group of hawthorn. Ditch at edge of field.	Good	Fair	20+	C1	4.3	59



Ref	Species	On / off site	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	Special importance	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m²
T14	Sycamore	Off	11.0	1	#	430	4.5-4.5-4.5-4.5	2.0	2	SE	EM	None	Tree in close proximity to highway street light. Ditch at field edge.	Good	Fair	40+	B2	5.2	84
T15	Sycamore	Off	10.0	1	#	230	3-3-3-3	3.0	-	-	SM	None	Average form tree adjacent to highway.	Good	Fair	10+	C1	2.8	24
T16	Sycamore	Off	10.0	1	#	230	3-3-3-3	3.0	-	-	SM	None	Average form tree adjacent to highway.	Good	Fair	20+	C1	2.8	24
T17	Sycamore	Off	10.0	1	#	230	3-3-3-3	3.0	-	-	SM	None	Average form tree adjacent to highway.	Good	Fair	20+	C1	2.8	24
T18	Ash	Off	9.0	1	#	230	3-3-3-3	3.0	-	-	SM	None	Average form tree adjacent to highway.	Good	Fair	20+	C1	2.8	24
T19	Ash	On	12.0	1	-	720	6-8-7-7	3.0	3	N	LM	None	Fungal fruiting body of Inonotus hispidus at first fork. Compaction of rootplate by livestock. Major deadwood throughout crown.	Fair	Fair	10+	C1	8.6	235

GROUPS OF TREES

Ref	Species	On / off site	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. Canopy Height (m)	Life Stage	Special importance	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)
G1	Hawthorn, crab apple	Off	4-5	50	#	160.0	2	1.5	SM	None	Line of hawthorn behind post and rail fence. Majority planted as a hedegrow, now unmaintained. Canopies encroach into site a maximum of 3m.	Good	Fair	10+	C2	2.0
G2	Ash, hawthorn	Off	12-14	6	-	310.0	4	2.0	SM	None	Group of trees with line of hawthorn underneath adjacent to fence. Trees are on highway side of fence, no access due to low canopies and dense foliage of hawthorn, structure assumed. Canopies encroach into site a maximum of 7m. Compaction to east side by livestock.	Good	Fair	20+	C2	3.7

Ref	Species	On / off site	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. Canopy Height (m)	Life Stage	Special importance	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)
G3	Hawthorn, crab apple, cherry, elm	Off	3-8	30	#	260.0	3	2.0	SM	None	Group of trees adjacent to boundary fence, line of hawthorn continues from G1 and G2. Bramble lines the boundary preventing access, structure if the trees assumed. Canopies encroach onto site up to 3m. One dead elm stem. Compaction to east side by livestock.	Good	Fair	10+	C2	3.1
G4	Hawthorn, cherry, oak, crab apple.	Off	2-3	30	#	80.0	1	1.0	Y	None	Group of hawthorn planted adjacent to cemetery fence line, not maintained as a hedgerow. Standard trees planted at intervals along the line. Canopies encroach onto site less than 0.5m	Good	Fair	20+	C2	1.0
G5	Hawthorn	Off	2	30	#	80	1	1.0	SM	None	Linear group of hawthorn planted along fence line as per G4. Standard trees are not planted within this group, the are further from the fence line.	Good	Good	20+	C2	1.0
G6	Blackthorn	Off	3-4	9	-	180	2	1.5	SM	None	Linear group of blackthorn to the northern side of the fence. Canopies encroach onto site up to 3m. Compaction at base by livestock.	Good	Fair	10+	C2	2.2
G7	Hawthorn, crab apple, ash	On	3-5	11	-	260	3	1.5	SM	None	The ground around the trees has been compacted by livestock. Minor deadwood within several crowns. Bramble within southern extent of the group.	Good	Fair	10+	C2	3.1
G8	Ash, cherry, birch, cedar	Off	9-10	3	-	240	3	2.0	SM	None	Group of trees behind bramble and boundary fence. Average form.	Good	Fair	10+	C2	2.9
G9	Lawson cypress	Off	3	10	#	120	1.5	1.0	SM	None	Linear group of trees, potentially maintained as a boundary hedgerow to the south side. Dead stems to western end of the group under T5.	Good	Fair	10+	C2	1.5
G10	Lawson cypress, crab apple, hawthorn	Off	3	15	-	120	1.5	1.0	SM	None	Linear group of trees, potentially maintained as a boundary hedgerow to the east side. Dense bramble to the southern extent of the group. Ornamental trees to the rear of the group, one crab apple leaning to west into site.	Good	Fair	10+	C2	1.5
G11	Leyland cypress	Off	13-15	18	#	540	4	1.0	EM	None	Linear group of trees providing screen from adjacent land. Several smaller stems shaded by adjacent trees. Ditch to west of the trees. Encroaches into site up to 3.	Good	Fair	20+	B2	6.5

Ref	Species	On / off site	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. Canopy Height (m)	Life Stage	Special importance	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)
G12	English oak, ash, sycamore, hawthorn, blackthorn, goat willow, Lombardy poplar.	Off	5-12	25	#	560	5	2.0	EM	None	Ditch to western side of group. Trees are between two fence lines. Trees extend over site a maximum of 6m.	Good	Fair	20+	B2	6.7
G13	Blackthorn, ash, hawthorn, goat willow, hybrid black poplar	On	3-10	40	-	320	4	2.0	EM	None	Stems on both sides of the drainage ditch. Several dead stems within the group. Several trees collapsing to the western extent of the group.	Good	Fair	10+	C2	3.8
G14	Hawthorn, blackthorn	Off	3-5	50	#	140	2	1.0	SM	None	Between boundary fence and ditch. Several dead stems within group.	Good	Fair	10+	C2	1.7
G15	Crack willow	Off	12	2	-	580	6	2.0	EM	None	Multi-stemmed willow to rear of field edge ditch. Canopy extends into site up to 3m.	Good	Fair	10+	C2	7.0
G16	Hawthorn, blackthorn, English elm	Off	3-4	15	#	120	1	1.0	SM	None	Linear group of trees inline with boundary fence. Several stems of elm dead. Dense bramble at base.	Fair	Fair	10+	C2	1.5
G17	Field maple, ash, crack willow, hawthorn,	Off	4-11	100	-	280	4	1.0	EM	None	Linear group of trees between boundary fence and A34. Low canopies provide a dense screen from the road. Ash and willow to the north of the group. Gap where trees are pruned to 4m for clearance from overhead power lines,	Good	Fair	20+	B2	3.3
G18	Hawthorn, English elm	Off	3-7	50	-	140	2	1.0	SM	None	Linear group of trees on field boundary. Several elms are dead or dying.	Fair	Fair	10+	C2	1.7
G19	Hawthorn, sycamore, blackthorn,	Off	2-5	20	#	120	2	1.0	SM	None	Linear group of trees on field boundary. Dense bramble in places.	Good	Fair	10+	C2	1.5
G20	Lombardy poplar	Off	15	3	-	410	3	4.0	EM	None	Linear group behind boundary fence. Average form for species.	Good	Fair	20+	B2	4.9
G21	Hawthorn	Off	3-5	100	#	160	2	0.5	SM	None	Linear group adjacent to boundary fence.	Good	Fair	20+	C2	2.0
G22	Ash	Off	9-10	2	#	280	4	3.0	SM	None	Average form for species. Trees adjacent to highway.	Good	Fair	20+	C2	3.3
G23	Ash, sycamore	Off	9	2	#	270	4	3.0	SM	None	Average form for species. Trees adjacent to highway.	Good	Fair	20+	C2	3.2
G24	Ash, cherry, hawthorn	Off	4-14	38	#	320	4	1.0	SM	None	Linear group of trees adjacent to boundary fence. Ash are of tall and drawn up form due to close proximity. Cherry is spreading, hawthorn in between ash. Extending into site up to 4m.	Good	Fair	20+	B2	3.8

Ref	Species	On / off site	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. Canopy Height (m)	Life Stage	Special importance	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)
G25	Ash	Off	9-11	2	#	320	4	1.0	SM	None	Tree to north of group covered in ivy extending into canopy. Trees of average form.	Good	Fair	20+	C2	3.8
G26	Hawthorn, blackthorn,	On	3-5	50	-	160	2	1.0	EM	None	Linear group of trees at field boundary. Compaction of rootplate caused by livestock	Good	Fair	10+	C2	2.0
G27	White willow	On	4-8	2	-	270	2	2.0	EM	None	One tree to the south has slumped and is regrowing. Compaction of rootplate by livestock.	Good	Fair	10+	C2	3.2
G28	Hawthorn, blackthorn	On	3-4	2	-	260	2	2.0	EM	None	Linear group of trees at field boundary. Several stems dead or dying. Compaction of rootplate by livestock.	Good	Fair	10+	C2	3.1
G29	Hawthorn, blackthorn	On	3-4	50	-	210	2	1.0	EM	None	Linear group of trees at field boundary. Several stems dead or dying. Compaction of rootplate by livestock.	Good	Fair	10+	C2	2.5
G30	Crack willow	On	8-11	5	-	820	6	1.0	LM	Emerging veteran	Group of willows that have suffered failure and are regrowing. Hazard beams and cavities are indicators of emerging veteran tree.	Good	Poor	10+	C2	9.8
G31	Blackthorn, hawthorn	On	3-5	20	-	240	2	1.0	EM	None	Trees have been pruned to provide clearance from overhead power lines. Ongoing maintenance will be required.	Fair	Fair	10+	C2	2.9
G32	Crack willow, blackthorn, field maple	On	7-10	6	-	820	8	1.0	LM	Emerging veteran	Group of willows that have suffered failure and are regrowing. Hazard beams and cavities are indicators of emerging veteran trees. Blackthorn and field maple are also within the group growing between the willow.	Good	Poor	10+	C2	9.8



IMAGE 1: Looking to the south-east across a grazed field to G1, a mixed boundary group that creates a buffer between the site and Bicester Road. The gated access to the field is to the left of the image.



IMAGE 2: T8, hybrid black poplar within field boundary group of G13. T8 has sustained large limb failure and has a cavity at the base.



IMAGE 3: Looking east along G13 an internal field boundary. G1 is in the background of the photograph with tall Lombardy poplars to the rear which are located on the western side of the Bicester Road.



IMAGE 4: G24, Ash on the western boundary of the site adjacent to Bicester Road. To the left of the image G21 stretches southwards continuing the buffer between the site and Bicester Road.



IMAGE 5: Looking north along G28, an internal field boundary. There are several dead elms within this group, to the southern extent. The group has several gaps within the line.



IMAGE 6: G32, crack willow forming a group on the southernmost internal field boundary. These trees are classed as emerging veterans due to the features they are exhibiting such as cavities and crown deadwood.

- 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 (e.g. 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 and / or 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.
- STEM DIAMETER (measured 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 (measured in metres), recorded to the nearest half metre for dimensions up to 10m and to the nearest whole metre for dimensions over 10m.
- The CROWN SPREAD, taken at the four cardinal points to derive an accurate representation of the tree crown, 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 (e.g. 2.5m-N), and also in terms of the overall crown e.g. the average height of the crown above ground level. 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 and 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 and 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 and 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.
- A Ancient: A tree that has passed beyond maturity and is old/aged compared with other trees of the same species. Typically having a very wide trunk and a small canopy.

PHYSIOLOGICAL CONDITION (HEALTH & VITALITY):

Essentially a snapshot of the general health of the tree based upon its general appearance, it's 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. 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).

ESTIMATED REMAINING CONTRIBUTION:

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

SPECIAL IMPORTANCE:

Trees that are particularly notable as high value trees such as ancient trees/woodland or veteran trees. Such trees may be regarded as the principal arboricultural features of a site and pose a significant constraint to potential development.

An *ancient* tree is one that has passed beyond maturity and is very old compared with other trees of the same species. Very few trees reach the ancient life-stage.

Veteran trees are often very old but not necessarily so; they may be regarded as ‘survivors’ that have developed some of the characteristic features of an ancient tree but have not necessarily lived as long. All ancient trees are veterans but not all veteran trees are ancient.

An ancient woodland is an area that has been wooded continuously since at least 1600 AD. It includes ancient semi-natural woodland (ASNW), plantations on ancient woodland sites (PAWS) and ancient replanted woodland (ARW)

QUALITY CATEGORY:

Trees are classed as category U, A, B or C, based on criteria given in BS5837:2012; summary definitions as follows (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, These are:

- (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.

CATEGORY 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.

- A1: 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.).
- A2: Trees, groups or woodlands of particular visual importance as landscape features.
- A3: Trees, groups or woodlands of particular significance by virtue of their conservation, historical, commemorative or other value (e.g. veteran trees or wood pasture.)

CATEGORY B: MODERATE QUALITY:

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

- B1: Fair quality but not exceptional; good specimens showing some impairment (e.g. remediable defects, minor storm damage or poor past management.)
- B2: 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).
- B3: Trees, groups or woodlands with clearly identifiable conservation or other cultural benefits.

CATEGORY C: LOW QUALITY:

Trees or groups of rather low quality, although potentially capable of retention for at least approx. 10 years. Also small trees with stems below 15cm diameter.

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

- C1: Unremarkable trees of very limited merit or of significantly impaired condition.
- C2: 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.
- C3: Trees with extremely limited conservation or other cultural benefit.

CATEGORY U:

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.

E.g. 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. This category may also include trees that should be removed irrespective of any development proposals.)

ROOT PROTECTION AREA (RPA):

These are normally represented as a circle centred on the base of each tree stem with a radius of 12 times stem diameter, measured at 1.5m above ground level. The shape of the RPA may be altered where site conditions dictate that there are sound reasons to do so.

VETERAN OR ANCIENT TREE BUFFER (VTB/ATB)

In line with the Standing Advice produced by the Forestry Commission and Natural England this is a buffer zone (in metres) around an ancient or veteran tree that should be at least 15 times larger than the diameter of the tree. The buffer zone should be 5m from the edge of the tree’s canopy if that area is larger than 15 times the tree’s stem diameter.

ANCIENT WOODLAND BUFFER (FOR ASNW, PAWS OR ARW)

In line with the Standing Advice produced by the Forestry Commission and Natural England this is a buffer zone of at least 15 metres to avoid root damage. Where assessment shows other impacts are likely to extend beyond this distance, a larger buffer zone may be required.

THE IMPORTANCE OF TREES

Wider benefits:

There is a growing body of evidence that trees bring a wide range of benefits to the places people live.

Some *Economic* benefits of trees include:

- Trees can increase property values
- As trees grow larger, the lift they give to property values grows proportionately
- They can improve the environmental performance of buildings by reducing heating and cooling costs, thereby cutting bills
- Mature landscapes with trees can be worth more as development sites
- Trees create a positive perception of a place for potential property buyers
- Urban trees improve the health of local populations, reducing healthcare costs

Some *Social* benefits of trees include:

- Trees help create a sense of place and local identity
- They benefit communities by increasing pride in the local area
- They can create focal points and landmarks
- They have a positive impact on people's physical and mental health
- They can have a positive impact on crime reduction

Some *Environmental* benefits of trees include:

- Urban trees reduce the 'urban heat island effect' of localised temperature extremes
- They provide shade, making streets and buildings cooler in summer
- They help remove dust and particulates from the air
- They help to reduce traffic noise by absorbing and deflecting sound
- They help to reduce wind speeds
- By providing food and shelter for wildlife they help increase biodiversity
- They can reduce the effects of flash flooding by slowing the rate at which rainfall reaches the ground
- They can help remediate contaminated soil

On new development sites:

Trees bring many benefits to new development. Where retained successfully they can form important and sustainable elements of green infrastructure, contribute to urban cooling and reduce energy demands in buildings. Their importance is acknowledged in relation to adaptation to the effects of climate change. Other benefits brought by trees include:

- increasing property values;
- visual amenity
- softening, complementing and adding maturity to built form
- displaying seasonal change
- increasing wildlife opportunities in built-up areas
- contributing to screening and shade
- reducing wind speed and turbulence

NATIONAL PLANNING POLICY

The National Planning Policy Framework 2021 (NPPF paragraph 180) states that, when determining planning applications, local planning authorities should apply the following principle:

c) 'development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists.'

In this respect the following definitions apply:

'Ancient woodland: An area that has been wooded continuously since at least 1600 AD. It includes ancient semi-natural woodland and plantations on ancient woodland sites (PAWS)', and

'Ancient or veteran tree: A tree which, because of its age, size and condition, is of exceptional biodiversity, cultural or heritage value. All ancient trees are veteran trees. Not all veteran trees are old enough to be ancient, but are old relative to other trees of the same species. Very few trees of any species reach the ancient life-stage.'

Note: Further information from the National Planning Policy Guidance Suite and Standing Advice is provided in the design guidance section.

Other paragraphs of the NPPF 2021 of relevance to this report are:

Paragraph 131: *'Trees make an important contribution to the character and quality of urban environments, and can also help mitigate and adapt to climate change. Planning policies and decisions should ensure that new streets are tree-lined, that opportunities are taken to incorporate trees elsewhere in developments (such as parks and community orchards), that appropriate measures are in place to secure the long-term maintenance of newly-planted trees, and that existing trees are retained wherever possible. Applicants and local planning authorities should work with highways officers and tree officers to ensure that the right trees are planted in the right places, and solutions are found that are compatible with highways standards and the needs of different users.'*

Paragraph 174: *'Planning policies and decisions should contribute to and enhance the natural and local environment by:*

b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland.'

STATUTORY CONTROLS

Statutory tree protection

Works to trees which are covered by Tree Preservation Orders (TPOs) or are within a Conservation Area (CA) require permission or consent from the Local Planning Authority. Where information is available on any Statutory designations such as this they are identified within the summary table in Section 1 and on the Tree Survey and Constraints Plan at Section 2.

Notwithstanding specific exceptions and in general terms, a TPO prevents the cutting down, uprooting, topping, lopping, wilful damage or wilful destruction of protected trees or woodlands without the prior written consent of the LPA.

Penalties for contravention of a TPO tend to reflect the extent of damage caused but can, in the event of a tree being destroyed, result in a fine of up to £20,000 if convicted in a Magistrates' Court, or an unlimited fine if the matter is determined by the Crown Court.

Similarly, and again notwithstanding specific exceptions, it is an offence to carry out any works to a tree in a Conservation Area with a trunk diameter greater than 75mm diameter at 1.5 height without having first provided the LPA with 6 weeks written notification of intent to carry out the works.

On many non-residential sites (excluding specific exemptions) there is also a statutory restriction relating to tree felling that relates to quantities of timber that can be removed within set time periods. In basic

terms, it is an offence to remove more than 5 cubic metres of timber in any one calendar quarter without having first obtained a felling licence from the Forestry Commission.

Any proposed tree works that are planned to be carried out on site must be carried out in accordance with the statutory controls outlined. Therefore, we recommend that a further check is made with the LPA before any tree works are carried out.

Statutory Wildlife Protection

Although preliminary visual checks from ground level of likely wildlife habitats are made at the time of surveying, detailed ecological assessments of wildlife habitats are not made by the arboriculturist and fall outside of the scope for this report.

Trees which contain holes, splits, cracks and cavities could potentially provide a habitat for protected species such as bats in addition to birds and small mammals. It is advised that in some instances specialist ecological advice may be required. This may result in tree works being carried out following a detailed climbing inspection to the tree to ensure that protected species or their nests/roosts are not disturbed. If any are found, the site manager, site owner or consulting arboriculturist should be informed and appropriate action taken as recommended by the appointed Ecologist or the relevant Statutory Nature Conservation Organisation (SNCO): Natural England, Scottish Natural Heritage or Natural Resources Wales.

It is advised that tree/hedgerow works are carried out with the understanding that birds will generally nest in trees, hedges and shrubs between March and August. This time period only provides an indication of likely nesting times and as such diligence is required when undertaking tree works at all times.

Irrespective of the time of year and other than any actions approved under General Licence, it is an offence to intentionally kill, injure or take any wild bird or to intentionally take, damage or destroy the nest or eggs of any wild bird. Ideally, tree operations should be avoided during the likely bird nesting period. However, any tree works should always only be carried out following a preliminary visual check of the vegetation.

For information, the Wildlife and Countryside Act 1981 (as amended), The Countryside and Rights of Way Act 2000 (as amended) and the Conservation of Habitat and Species Regulations 2010, form the basis of the statutory legislation for flora and fauna in England and Wales. A different legislative framework applies in Scotland and Northern Ireland.

Any proposed tree works that are planned to be carried out on site must be carried out in accordance with any relevant statutory controls, outlined above.

DESIGN GUIDANCE

Approach

The approach adopts the guidelines set out in the British Standard BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations. The process is broken down to coordinate with the key elements within both the RIBA Plan of Work (2013) and British Standard 5837:2012 as set out in the table below:

Information Stage	RIBA Stage	BS5837:2012
Stage A – Tree Survey	2: Concept	4: Feasibility
Stage B – Arboricultural Impact Assessment	3: Developed design	5: Proposals
Stage C – Arboricultural Method Statement	4: Technical design	6: Technical Design
Stage D – Arboricultural Site Supervision	5: Construction	7: Demolition and construction

A hierarchical approach is adopted in order to achieve optimum use of the site and location of built structures. This is set out below:

Avoid

The starting point of Site layout design should be to avoid the RPA of retained trees and provide suitable clearance from above ground constraints [tree canopies]. Where possible building lines should be at least 2m outside the RPA to provide working space for construction. However, protection measures can be taken if such clearance is not achievable.

Mitigate

Where intrusion within the RPA is unavoidable then its impact on the tree can be mitigated by specialist measures:

Foundations that avoid trenching e.g. screw piles, suspended floor slabs or casting at ground level for lightweight structures such as bin and cycle stores.

Limited use may be made for parking, drives or hard surfaces within the root protection areas, subject to advice from a qualified arboriculturist. Cellular confinement systems that enable hard surfaces to be built above existing soil levels are acceptable methods subject to site-specific soil conditions.

Service runs that cannot be routed outside the RPA(s) can be installed by, for example, thrust boring, directional drilling, air excavation or hand digging. These operations often require supervision by the project arboriculturist.

Compensate

Replacement planting can ensure the continuity of tree cover where tree removal is unavoidable or desirable. Off-site provision may be considered in some circumstances but this will require negotiation with the local planning authority.

Considerations:

For proposed residential developments, consideration must be given to numerous factors future tree growth and orientation.

Tree constraints

Root Protection Areas:

With reference to BS5837:2012, a root protection area (RPA) is defined as “a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree’s viability, and where the protection of the roots and soil structure should be treated as a priority”. **“The default position [when considering design layout in relation to RPAs] should be that structures are located outside the RPAs of trees to be retained”.**

BS5837:2012 states (4.6.2) that, “where pre-existing site conditions or other factors indicate that rooting has occurred asymmetrically, a polygon of equivalent area should be produced.” The BS goes on to state that, “modifications to the shape of the RPA should reflect a soundly based arboricultural assessment of likely root distribution,” and that any deviation from the original circular plot should take into account:

- Morphology and disposition of roots;
- topography and drainage;

- soil type and structure;
- the likely tolerance of the tree to root damage/disturbance.

Additional buffer zones beyond the RPA:

The following text is taken from the Standing Advice produced by the Forestry Commission and Natural England as included in the National Planning Policy Guidance:

‘A buffer zone’s purpose is to protect ancient woodland and individual ancient or veteran trees. The size and type of buffer zone should vary depending on the scale, type and impact of the development’.

Ancient woodland buffer:

‘For ancient woodlands, you should have a buffer zone of at least 15 metres to avoid root damage. Where assessment shows other impacts are likely to extend beyond this distance, you’re likely to need a larger buffer zone. For example, the effect of air pollution from development that results in a significant increase in traffic’.

Ancient and veteran tree buffer:

‘A buffer zone around an ancient or veteran tree should be at least 15 times larger than the diameter of the tree. The buffer zone should be 5m from the edge of the tree’s canopy if that area is larger than 15 times the tree’s diameter’.

Above ground:

Above ground constraints posed by trees describe the capacity for trees to have an overbearing or dominating effect on new developments; usually post occupancy. Typical above ground constraints include a number or combination of inconveniences including shading, branch spread, movement of trees during strong winds and so on. If not adequately considered, above ground constraints can lead to repeated requests to fell or heavily prune retained and protected trees.

Shade:

Adverse shading and blocked views from windows raise concerns for incoming residents, which may lead to pressure to fell or remove trees in the future. Wherever possible it is advisable to arrange fenestration away from tree canopies to lessen the conflict, or increase window size to accommodate ambient light. Conversely, appropriate designed development can use existing or new trees to create necessary and welcome shade and screening.

As part of the adopted approach the above considerations and constraints are assessed cumulatively in order to provide clear and site-specific advice on the areas of a site most suitable for the location of development.

Dependent on the site and nature of the proposed development, the Tree Survey and Constraints Plans may show the following:

Recommended Developable area - an advisory area defined in order to minimise arboricultural impacts using standard approaches to construction. Restricting proposed development to this area will limit the risk of harm to retained trees and of the Local Planning Authority objecting to the proposed development. It may be possible to propose development outside of this area but specific ‘low impact’ construction techniques may be needed recommended.

Recommended Buffer to development - similar to the Recommended Developable Area but defined as a line marking a suitable buffer to retained trees. More commonly used on large sites or sites where the presence of trees is localised.

Tree Opportunities

Depending on the scale of developments existing trees can often provide opportunities to enhance the existing arboricultural resource of a site by bringing it into good management or by putting in place remedial measures e.g. soil amelioration.

Appropriately designed new tree planting is extremely important in maintaining healthy and sustainable tree populations. For the reasons highlighted, new trees can bring many benefits to new developments. It is critical to the establishment of new tree planting that the locations, species and specification of new trees is appropriate. Subsequently the sourcing of high-quality stock, suitable planting and the provision of post planting maintenance are essential to allow new trees to establish and to allow them to mature.

HOW TREE DAMAGE CAN OCCUR

Above the ground

Damage can occur as a result of knocks and scuffs, breakages of branches and/or tree trunks. This is often but not always associated with machine operations, groundworks excavations, tele handlers, high sided vehicles and crane use. Other forms of above ground damage include fixings to trunk and unauthorised cutting back of branches. Wounds will harm a tree's health and shorten its life by letting in disease-causing organisms.

Below the ground

It is often not appreciated that the majority of most tree roots are generally located within the top 600mm of the ground. On this basis it needs to be understood that damage to roots can occur in three ways:

- Root severance can occur as a result of, for example, soil stripping during site clearance or excavations.
- Root dieback and death can result from compaction of the soil. Compaction can occur as a result of vehicle weight, weight of stored materials or increased pedestrian access. Compaction crushes out soil pore space and prevents tree respiration from occurring (respiration requires gas exchange between the ground and the atmosphere). Compacted soil is denser and therefore inhibits/prevents any further new root growth.
- Pollution of the soil with chemicals such as oil or cement washings can destroy the soil environment, making it inhospitable for the tree cause causing it stress.

The effects of these impacts can be disfiguring to a tree's appearance and also weaken a tree making it more liable to attack by pest and diseases. In addition, root damage or death results in corresponding decline above the ground with dieback occurring within the tree crown.

The effects of damage to trees generally take some time to become fully apparent. In many cases, damaged trees decline slowly after the completion of a new development, until they eventually need to be removed due to ill health.

Tree protection barriers and load distributing 'no-dig' paths are specified in order to prevent soil compaction from taking place.

GENERAL SITE RULES FOR TREE PROTECTION

Do not independently carry out any activity that is at odds with the site scheme of tree protection. This is contained within an approved Arboricultural Method Statement (AMS) and accompanying Tree Protection Plan.

In simple terms: do not carry out any work within any Construction Exclusion Zone (CEZ) without prior liaison with the Project Arboriculturist and written authorisation from the Local Planning Authority.

Within the CEZ:

- No mixing of cement
- No soil/turf stripping, raising/lowering of ground levels (unless advised), deposit or excavation of soil or rubble
- No excavations for services or installation of services
- No storage of materials, machinery fuel, chemicals or other materials of any other description
- No parking/use of tracked or wheeled machinery
- No siting of temporary structures including hard standing areas, portaloos, site huts
- No lighting of fires or disposal of liquids
- Fires on site should be avoided if possible. Where they are unavoidable, they must not be lit in a position where heat could damage foliage or branches. Fires must be a minimum of 20m from the trunk of any retained tree or the centre line of any hedgerow to be retained
- No signs, cables, fixtures or fittings of any other description shall be attached to any part of a retained tree