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ARBORICULTURAL IMPACT ASSESSMENT

ON A PROPOSED DEVELOPMENT AT

WATERFRONT SQUARE AT

NORMAN PLACE, READING

RG1 8QT

ON BEHALF OF

PACKAGED LIVING LIMITED

Author: Adam Whittingham

Our Ref: CW/11307-AIA

Date: 4 September 2026

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1. SUMMARY

1.1. Planning permission is sought for the demolition of an existing vacant building and erection of a residential-led development at the former Covea Insurance site at Norman Place in Reading.

1.2. Trees on and adjacent to the site have been surveyed and the arboricultural impacts of the development evaluated in accordance with current good practice.

1.3. None of the surveyed trees are subject to any statutory restrictions in the form of tree preservation order or conservation area controls. Their removal, retention and management are therefore a civil matter for owners/ occupiers of the site and the neighbouring landowners.

1.4. All of the existing 'moderate' and 'low quality' trees and soft landscaping within the site will be removed to accommodate the development and replaced with new landscaping, details of which are submitted with the planning application.

1.5. Two off-site trees to the west of the site are unaffected by the development.

1.6. Off-site trees adjacent to the eastern and northern site boundaries will be retained and pruned to accommodate site security fencing. Below ground there is unlikely to be any significant root activity within the site beyond the existing boundary retaining walls.

1.7. Initial pruning of the retained off-site trees, and periodic ongoing pruning post-development are civil matters for the Applicant, future owners/ occupiers of the site, and the neighbouring landowners.

1.8. Proposed works to widen the river towpath are to be included in a S278 agreement and the arboricultural impacts of the proposals have been assessed and considered in this report.

2. TERMS OF REFERENCE

2.1. Instruction

2.1.1. Cheshire Woodlands is instructed by Packaged Living to:

- Survey and prepare a schedule of trees to comply with the general requirements of BS5837[1].
- Annotate a topographical survey drawing and produce a tree survey plan.
- Appraise a development proposal in relation to trees and produce an Arboricultural Impact Assessment and Tree Protection Plan.

2.2. Limitations

2.2.1. This statement and associated documents are the copyright of Cheshire Woodlands Limited and there should be no transfer of rights to any third party without express written consent.

2.2.2. The purpose of the assessment is to collect data to inform the design of a development proposal in relation to trees.

2.2.3. Trees are assessed in sufficient detail to inform the current project. Appraisal of their structural condition is of a preliminary nature.

2.2.4. Trees are assessed from ground level without invasive investigation and are viewed from within the site or from areas with public access. Assessment may be restricted where site conditions limit access or where trees are wholly or partially off-site or obscured by vegetation. The disclosure of hidden defects cannot be expected.

[1] British Standard 5837:2012 Trees in relation to design, demolition and construction – Recommendations

2.2.5. Whilst the Tree Survey Schedule at Appendix 1 (the Schedule) is not a tree safety inspection record, the surveyor may record obvious defects when they are observed and considered to be potentially significant to safety.

2.2.6. The potential effects of trees on load-bearing soils beneath existing and proposed structures have not been considered and no soil samples have been taken.

3. INTRODUCTION

3.1. I am Adam Whittingham, arboricultural consultant with Cheshire Woodlands Limited and my area of expertise is arboriculture.

3.2. This assessment evaluates the effects of a development proposal on trees. The development comprises demolition of the former Covea Insurance building and construction of a residential-led development, access from Norman Place and associated car parking, infrastructure and landscaping as shown on the Tree Protection Plan at Appendix 2 (the Drawing).

3.3. Proposed works to widen an off-site towpath (Thames Path) sit outside the application red line boundary but form part of Section 278 works to be agreed with the LPA, therefore the arboricultural impacts of the proposals have been assessed and are considered in this report.

3.4. The following documents have been considered in my evaluation:

- Topographical Survey Drawing 60630BDLS-01 Revision A
- Landscape Proposals Ground Floor Plan A4012E-ASA-XX-00-DR-L-0200-P7
- Tree Survey Plan CW/11307-P-TS-2
- Preliminary Tree Survey Schedule CW/11307-SS-2

3.5. The comparative values of trees are considered broadly in line with the guidance of BS5837 and their removal, retention, protection and management are informed by this evaluation. See Appendix 3 for further guidance).

3.6. Technical terms used in this Statement are included in the Glossary of Terms at Appendix 5.

3.7. This Statement provides sufficient supporting information to enable the local planning authority (LPA) to determine the planning application insofar as it affects trees.

4. THE SITE

4.1. The site is an irregular-shaped, 0.54 hectare plot at the junction of Norman Place and Vastern Road in Reading. It comprises a vacant office building, hardstanding and hard and soft landscaping, bounded by Vastern Road to the south, the River Thames to the north, an office building to the east and a commercial/ residential property to the west.

4.2. The British Geological Survey – *Geology Viewer*[2] identifies the underlying soils as 'Langley Silt Member - Clay and silt'.

5. STATUTORY PROTECTION

5.1. An email enquiry with Reading Borough Council confirmed that trees on and adjacent to the site are not protected by a tree preservation order (TPO) and the site is not in a conservation area.

5.2. See Appendix 4 for further guidance on the statutory protection of trees, hedgerows and wildlife.

[2] Geology Viewer

6. SURVEY METHODOLOGY

6.1. The trees were surveyed on 1 December 2023 and our survey data are set out in the Schedule at appendix 1, and on the Drawing at appendix 2.

6.2. Stem diameters and canopy spreads were measured using a tape, and tree heights using a tape and clinometer. Estimated dimensions are identified in the Schedule.

6.3. The trees were assessed for 'visual prominence' and categorised broadly in accordance with Table 1 of BS5837. See Appendix 3 for further guidance.

6.4. During the survey, a brief assessment was carried out for obvious signs of wildlife habitat in trees on the site. No protected or exceptional habitats were identified and details were not recorded. See Appendix 4 for further guidance.

6.5. The topographical survey drawing overlaid with the proposed site plan is the base for the Drawing.

6.6. Below-ground arboricultural constraints are represented on the Drawing as Root Protection Areas (RPA), calculated and where appropriate, modified in accordance with section 4.6 and Table D.1 of BS5837. In this regard, the RPAs of trees T10 to T13, T15 and T23, and group G4 have been adjusted on an assumption that there is unlikely to be any significant root growth within the site beyond the existing boundary retaining walls, and that the trees are likely to have rooted asymmetrically off-site to the east and north sides.

6.7. Potential direct obstruction of sunlight by the retained 'moderate quality' B category trees is represented on the Drawing as illustrative shadow patterns, plotted in accordance with section 5.2.2 (Note 1) of BS5837. The shadow patterns do not materially affect the site.

7. THE TREES

7.1. We surveyed twenty-three individual trees (T1 to T23) and four groups of trees (G1 to G4).

7.2. T10 to T15, T19, T20, T22, T23 and G2 to G4 are off-site. T1 to T9, T16 to T18, T21 and G1 are within the site or on the boundaries.

7.3. T1, T7, T9, T19 and T20 are 'moderate quality' B category trees. T2 to T6, T8, T10 to T18, T21 to T23 and G1 to G4 are 'low quality'. See Appendix 3 for further guidance.

7.4. T7, T8, T19, T20, T22, T23 and G4 have 'moderate visual prominence'. T1 to T6, T9 to T18, T21 and groups G1 to G3 have 'low visual prominence'. See Appendix 3 for further guidance.

7.5. None of the surveyed trees are subject to any statutory restrictions in the form of TPO or conservation area controls and their removal, retention and management are either matters for the owner of the site, or civil matters between the site owner and the neighbouring landowners.

8. ARBORICULTURAL IMPACTS

8.1. BS5837 recommends that trees are evaluated and categorised as set out in Table 1, which also provides a summary of the impact of the development proposal on trees.

8.2. Table 1

	To be retained	**To be removed For development**	**To be removed for other reasons**
Category A High quality with life expectancy of at least 40 years	None	None	None
Category B Moderate quality with life expectancy of at least 20 years	Trees T19 and T20.	Trees T1, T7 and T9.	None
Category C Low quality with life expectancy of at least 10 years, or small young trees	Trees T10 to T15, T22 and T23, and groups G2 to G4.	Trees T2 to T6, T8, T16 to T18 and T21, and group G1.	None
Category U Cannot be retained in the context of the current land-use for longer than 10 years	None	None	None
Hedges and Shrubs	None	None	None

8.3. Trees to be removed

8.3.1. T1, T7 and T9 (B category), T2 to T6, T8, T16 to T18, T21 and G1 (C category) will be removed to accommodate the development.

8.4. Trees to be retained

8.4.1. T19 and T20 (B category) are off-site and unaffected by the development.

8.4.2. The off-site C category trees T10 to T15, T22, T23 and G2 to G4 will be retained.

8.4.3. Physical protection for these trees during demolition and construction will be provided by security hoarding along the site boundaries.

8.4.4. The existing bitmac footpath identified by blue diagonal-hatching on the Drawing along the Thames Path to the north of the site will be retained to existing hardstanding as temporary ground protection during the demolition and construction operations.

8.4.5. Excavations required to widen the off-site Thames Path within the RPAs of trees T22, T23, and those in group G4 will be done by hand, using hand tools, under the supervision of a competent arboriculturist. Any roots greater than 25mm diameter identified during such excavations will be assessed by and, if appropriate, pruned under the guidance of the arboriculturist. The subsequent surfacing of these areas will also be done under supervision, as detailed in the Arboricultural Method Statement on the Drawing.

8.4.6. To ensure the sustainable long-term retention of the off-site trees, there should be no demolition or construction works extending into the construction exclusion zones (tree protection areas) identified by yellow block-hatching on the Drawing.

8.5. Initial pruning to accommodate the development

8.5.1. The off-site C category retained trees T10 to T15 and G2 to G4 will be pruned to remove or shorten low branches where they overhang the site, as detailed in the 'management' section of the Schedule, to accommodate the site boundary security hoarding.

8.5.2. In the absence of any statutory restrictions, in the form of TPO or conservation area controls, any such pruning work will be a civil matter between the Applicant and the neighbouring landowners.

8.6. Post development impacts

8.6.1. The proposed spatial relationship of the retained off-site trees with the development presents no major conflicts and their long-term, post-development management should comprise periodic ongoing pruning to maintain reasonable clearances from the new buildings and maintain the quality of the external amenity spaces.

8.6.2. Any such maintenance will be a civil matter between future owners/ occupiers of the site and the neighbouring landowners.

8.7. Mitigation

8.7.1. The arboricultural mitigation will comprise the provision of new trees and landscaping, details of which are submitted with the planning application.

8.7.2. The council's tree officer previously raised concerns regarding the crown lifting of three field maple trees proposed along the southern boundary. Planting semi-mature specimens of greater height and stem diameter than those originally proposed is considered a suitable means of mitigating the potential negative impacts associated with crown lifting smaller, less developed trees. Although this matter has been reviewed, a detailed resolution can be secured by the imposition of a suitably worded planning condition.

9. CONCLUSIONS

9.1. T1, T7 and T9 (B category) and T2 to T6, T8, T16 to T18, T21 and G1 (C category) will be removed to accommodate the development and replaced with new trees and soft landscaping, details of which are submitted with the planning application.

9.2. T19 and T20 (B category) are unaffected by the development and require no particular consideration.

9.3. The off-site C category trees T10 to T15, T22, T23 and G2 to G4 will be retained and pruned to remove or shorten low branches where they overhang the site.

9.4. There is unlikely to be any significant root growth within the site from the retained trees beyond the existing boundary retaining walls, and they are likely to have rooted asymmetrically off-site to the north and east.

9.5. The demolition and construction operations should be restricted to, and should not be allowed to extend beyond the application site boundaries.

9.6. The existing Thames Path bitmac hard surface identified by blue diagonal-hatching on the Drawing will be retained to existing hardstanding as temporary ground protection for the duration of the demolition and construction works.

9.7. All works associated with the widening of the Thames Path that affect the RPAs of trees T22, T23 and those in group G4 will be done carefully, under the supervision of a competent arboriculturist as detailed in the Arboricultural Method Statement on the Drawing.

9.8. Periodic ongoing pruning of the retained trees where they overhang the site will be a civil maintenance matter for future owners/ occupiers of the site and the neighbouring landowners.

10. RECOMMENDATIONS

10.1. All tree pruning and removal work should be implemented in accordance with the management recommendations in the Schedule.

10.2. Statutory protection of wildlife should be considered in the planning and implementation of the tree pruning and removal work.

10.3. All retained trees should be protected during demolition and construction in accordance with the Tree Protection Plan and Arboricultural Method Statement at Appendix 2.

10.4. Landscaping should be implemented in accordance with a scheme of work to be agreed with the LPA and in compliance with the Arboricultural Method Statement on the Drawing.

10.5. Foundation design should take into consideration the juxtaposition of existing and proposed trees and the nature of the load-bearing soil.

APPENDIX 1

TREE SURVEY SCHEDULE

PROJECT: NORMAN PLACE, READING
CLIENT: PACKAGED LIVING LIMITED
REF: CW/11307-SS-4
REVISIONS:

SURVEYED BY: GUY STEPHENS
DATE: 1 DECEMBER 2023
PAGE: 1

No.	Species	Age Range	Height (m)	Crown Spread (m)	Stem Dia. (mm)	Vitality	Comments	Management	Visual	Retention Category Existing	Retention Category Proposed	BS5837 RPA Radius (m)
T1	Lime	Y	10	9	350	N	• Part of landscape scheme to screen building • Greenspire variety	• Remove for development • Grub out or grind stump to a depth of 0.3m	1	B	U	N/A
T2	Hornbeam	Y	8	5.5	210	N	• Low levels screening value • Tight fork	• Remove for development • Grub out or grind stump to a depth of 0.3m	1	C	U	N/A
T3	Hornbeam	Y	8	6	200	N	• Low level screening value • Damaged surface roots	• Remove for development • Grub out or grind stump to a depth of 0.3m	1	C	U	N/A

The sole purpose of the survey is to collect data to inform the design of the current project in relation to trees
Whilst this is not a tree safety inspection record, the surveyor may record obvious defects when they are observed and considered to be significant to safety
Trees may be subject to legal controls, which should be investigated prior to any felling, pruning, or wilful damage

HEADINGS & ABBREVIATIONS

Age Range Y = young SM = semi-mature EM = early-mature M = mature PM = post-mature V = veteran
Stem Dia Stem diameter (measured in accordance with Figure C.1 of BS5837: 2012) (MS = multi-stemmed EST = estimated)
Crown Spread Maximum crown spread (EST = estimated)
Vitality A measure of physiological condition. N = normal range for the species and age R = reduced, P = poor, MD = moribund, D = dead
Visual (Visual Prominence) Broad indication of prominence in the landscape (1 = low up to 4 = very high) (G = contributes to a wider group)
Retention Category Existing Broadly in accordance with Table 1 of BS5837: 2012 (considers the merits of the tree or group in the context of the existing land-use)
Retention Category Proposed Broadly in accordance with Table 1 of BS5837: 2012 (considers the merits of the tree or group in the context of a development proposal)
BS5837 RPA Radius Calculated in accordance with Table D.1 of BS5837: 2012
Common Plant names Only common names are used in this schedule. For scientific names refer to Mitchell, A. 2001. *Collins Field Guide – Trees of Britain & Northern Europe*. Harper Collins, London. pp. 420.

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TREE SURVEY SCHEDULE

CHESHIRE WOODLANDS

PROJECT: NORMAN PLACE, READING
CLIENT: PACKAGED LIVING LIMITED
REF: CW/11307-SS-4

SURVEYED BY: GUY STEPHENS
DATE: 1 DECEMBER 2023
PAGE: 2

No.	Species	Age Range	Height (m)	Crown Spread (m)	Stem Dia. (mm)	Vitality	Comments	Management	Visual	Retention Category Existing	Retention Category Proposed	BS5837 RPA Radius (m)
T4	Hornbeam	Y	8	8	260	N	• Low level screening value • Part of group • Soil level changes within RPA	• Remove for development • Grub out or grind stump to a depth of 0.3m	1	C	U	N/A
T5	Lime	Y	5	5	160	N	• Planted as part of landscape scheme • Minor cuts on stem to increase ground clearance • Greenspire variety	• Remove for development • Grub out or grind stump to a depth of 0.3m	1	C	U	N/A
T6	Lime	Y	5	6	210	N	• Crown to north and south obscuring lamp-post	• Remove for development • Grub out or grind stump to a depth of 0.3m	1	C	U	N/A
T7	Hornbeam	Y	12	9.5	250	N	• Part of group screening building • Crown bias to west	• Remove for development • Grub out or grind stump to a depth of 0.3m	2	B	U	N/A
T8	Hornbeam	Y	12	8.5	180 (EST)	N	• Part of group screening building • Crown biased to east • Restricted access	• Remove for development • Grub out or grind stump to a depth of 0.3m	2	C	U	N/A
T9	Rowan	SM	6	5.5	210	N	• Minor pruning to raise crown • Branches on south side encroaching on lamp-post	• Remove for development • Grub out or grind stump to a depth of 0.3m	1	B	U	N/A
T10	Field maple	Y	8	8	210	N	• Off-site • Restricted access. Partial assessment • Low level screening value • 1.5m ground clearance over site • First branch at 0.5m on east side	• Prune/clip on northwest side to obtain 3m ground clearance over site	1	C	C	2.4 (EST)
T11	Field maple	Y	12	8.5	250 (EST)	N	• Off-site • Restricted access. Partial assessment • 2.5m ground clearance over site • First branch at 0.5m on south side	• Prune/clip on northwest side to obtain 3m ground clearance over site	1	C	C	3.0 (EST)
T12	Field maple	Y	12	7	250 (EST)	N	• Off-site • Low level screening value • 1.5m ground clearance over site • First branch at 0.5m on south side	• Prune/clip on northwest side to obtain 3m ground clearance over site	1	C	C	3.0 (EST)

TREE SURVEY SCHEDULE

CHESHIRE WOODLANDS

PROJECT: NORMAN PLACE, READING
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DATE: 1 DECEMBER 2023
PAGE: 3

No.	Species	Age Range	Height (m)	Crown Spread (m)	Stem Dia. (mm)	Vitality	Comments	Management	Visual	Retention Category Existing	Retention Category Proposed	BS5837 RPA Radius (m)
T13	Field maple	Y	14	9	250 (EST)	N	• Off-site • Restricted access. Partial assessment • Low level screening value • 2.5m ground clearance over site • First branch at 1.5m on north side	• Prune/clip on northwest side to obtain 3m ground clearance over site	1	C	C	3.0 (EST)
T14	Birch	Y	8	4.5	200 (EST)	N	• Off-site • Restricted access. Partial assessment • Low level screening value • 6m ground clearance over site • First branch at 3m on south side		1	C	C	2.4 (EST)
T15	Birch	Y	8	4.5	200 (EST)	N	• Off-site • Restricted access. Partial assessment • Low level screening value • 6m ground clearance over site • First branch at 3m on south side		1	C	C	2.4 (EST)
T16	Norway maple	Y	12	5	(MS) 200 & 200 (EST)	N	• Twin stemmed from base • Restricted access	• Remove for development • Grub out or grind stump to a depth of 0.3m	1	C	U	N/A
T17	Goat willow	SM	16	10	(MS) 260 & 280	N	• Twin stemmed from base • Low level screening value	• Remove for development • Grub out or grind stump to a depth of 0.3m	1	C	U	N/A
T18	Goat willow	SM	15	9	(MS) 220, 200, 180, 160 & 190	N	• Multi stemmed from 0.5m • Encroaching over footpath on north side	• Remove for development Grub out or grind stump to a depth of 0.3m	1	C	U	N/A
T19	Lime	Y	14	10	300 (EST)	N	• Off-site • Restricted access. Partial assessment		2	B	B	3.6 (EST)

TREE SURVEY SCHEDULE

CHESHIRE WOODLANDS

PROJECT: NORMAN PLACE, READING
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REF: CW/11307-SS-4

SURVEYED BY: GUY STEPHENS
DATE: 1 DECEMBER 2023
PAGE: 4

No.	Species	Age Range	Height (m)	Crown Spread (m)	Stem Dia. (mm)	Vitality	Comments	Management	Visual	Retention Category Existing	Retention Category Proposed	BS5837 RPA Radius (m)
T20	Lime	SM	17	10.5	390	N	• Off-site • Bird-box fixed to stem • Crown blocking lamp post on east side		2	B	B	4.8
T21	Hornbeam	SM	8	8	280	N	• Low level screening value	• Remove for development • Grub out or grind stump to a depth of 0.3m	1	C	U	N/A
T22	Ash	Y	13	5	250 (EST)	N	• Off-site adjacent to river		2G	C	C	3.0 (EST)
T23	Ash	Y	15	7.5	(MS) 300 & 300 (EST)	N	• Off-site adjacent to river • Twin-stemmed from 1m • 2.5m ground clearance over site • First branch at 2m on north side	• Prune/clip on southwest side to obtain 3m ground clearance over site	2G	C	C	5.1 (EST)
G1	6 Dawyk beech	Y	6-7	2	90 - 120	N	• Avenue plantings	• Remove for development • Grub out or grind stumps to a depth of 0.3m	1	C	U	N/A
G2	3 Pear	Y	8	7.5	200 – 220 (EST)	N	• Off-site • Restricted access. Partial assessment • Low level screening value • 2m ground clearance over site • First branch at 2.5m on west side	• Prune/clip on northwest side to obtain 3m ground clearance over site	1	C	C	2.4 – 2.7 (EST)
G3	Norway maple	Y	8-9	9	100 – 200 (EST)	N	• Off-site • Restricted access. Partial assessment • 4m ground clearance over site • First branch at 2m on east side	• Prune/ clip on northwest side as close as is practicable to site boundary	1	C	C	1.2 – 2.4 (EST)
G4	7 Ash	SM	12-13	9	170 – 370	R	• Off-site linear group • Low screening value • 5m ground clearance over site • First branch at 2.5m on north side		2	C	C	2.1 – 4.5

APPENDIX 2

ARBORICULTURAL METHOD STATEMENT

From commencement of the development, the following methodology shall be implemented in the manner and sequence described below

SEQUENCE OF WORKS

1. Pre-commencement site meeting
2. Tree removal and pruning
3. Assessment of temporary ground protection
4. Demolition
5. Main construction phase
6. Landscaping works including the widening of Thames Path

1. PRE-COMMENCEMENT SITE MEETING

To outline working methods in relation to trees, a site meeting of the following shall take place prior to commencement of any demolition or construction activity:

- Client
- Demolition contractor
- Main contractor
- Site agent
- Project arboriculturist

2. TREE REMOVAL AND PRUNING

- All tree removal and pruning work shall be implemented in accordance with Tree Survey Schedule CW/11307-SS-4 and this drawing
- All reasonable care shall be taken to avoid damage to retained trees
- All tree removal and pruning works shall be carried out in compliance with British Standard 3998: 2010 Tree work - Recommendations

3. ASSESSMENT OF TEMPORARY GROUND PROTECTION

- The area of existing hardstanding identified by blue diagonal-hatching on this drawing shall be assessed by a structural engineer and the project arboriculturist to ensure it is fit for purpose to be retained as temporary ground protection for the duration of the demolition and construction operations
- Any temporary strengthening, covering or reinforcement of the existing hardstanding recommended by the structural engineer and project arboriculturist shall be installed to an engineer-designed specification and method statement to be agreed with the Local Planning Authority (LPA)

4. DEMOLITION

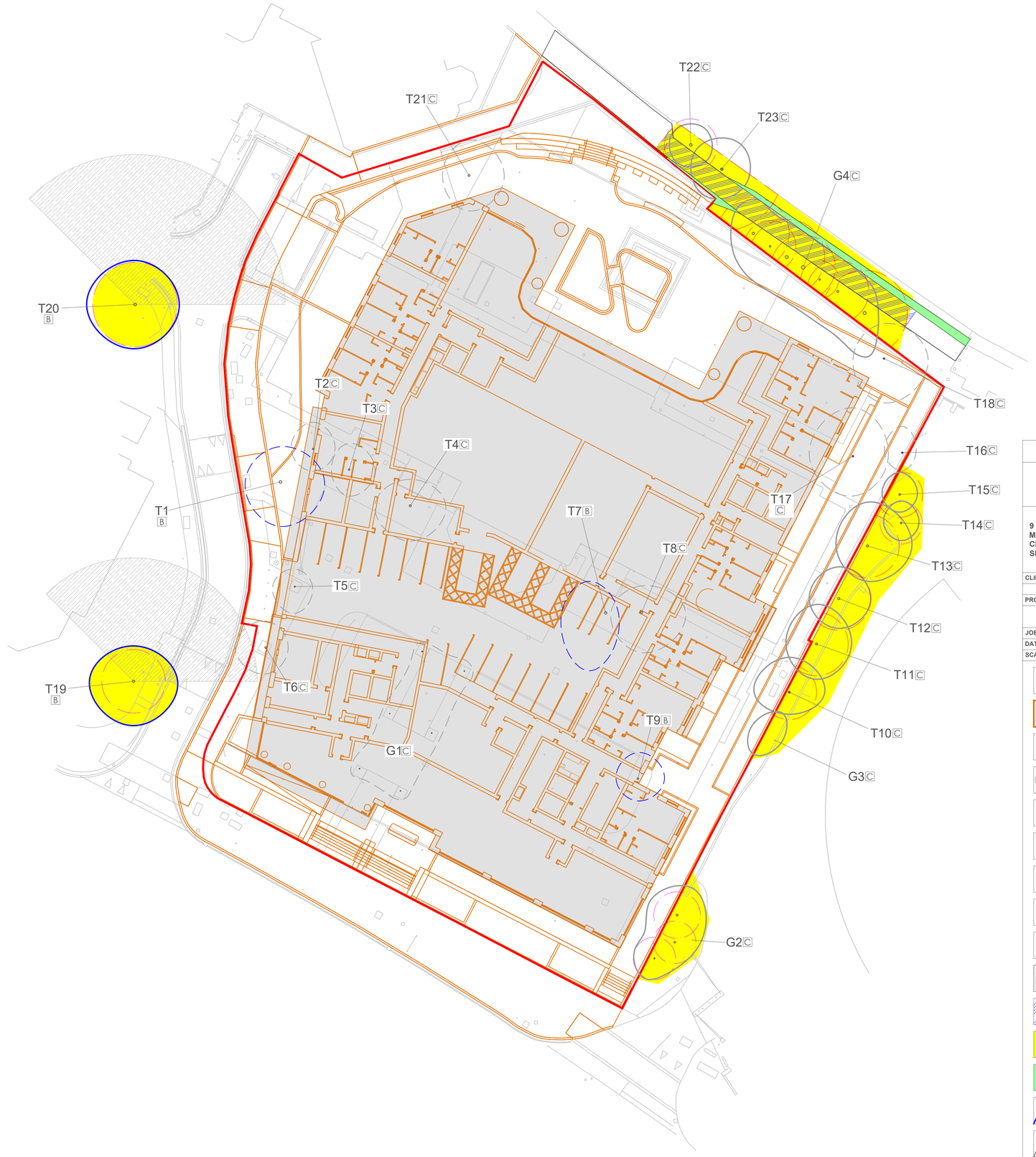
- Prior to commencing work on site, the demolition contractor shall produce a method statement, which will set out working methods in relation to the protection of retained trees
- Plant and machinery shall be of a size and design appropriate to operation within the constraints imposed by adjacent trees
- No fires shall be lit within 20m of any tree
- There shall be no storage of construction equipment, plant or materials within any area designated as a tree protection area on this drawing
- There shall be no raising or lowering of existing ground levels within any area designated as a tree protection area on this drawing
- Plant and equipment shall be neither stored nor refueled within 10m of any area designated as a tree protection area on this drawing
- The existing bitmac hard surface identified by blue diagonal-hatching as temporary ground protection on this drawing shall be retained to existing hardstanding for the duration of the demolition operations
- The integrity of the temporary ground protection shall be maintained for the duration of the demolition operations
- Any damage to the temporary ground protection during demolition operations shall be reported to the project arboriculturist and immediately made good by the main contractor
- Works to remove the northern boundary wall abutting the Thames Path shall be restricted to within the site and shall be carried out by hand, using hand-tools, under the supervision of a competent arboriculturist, and with no undue disturbance of the underlying soils or the existing hardstanding identified by blue diagonal-hatching on this drawing

5. MAIN CONSTRUCTION PHASE

- There shall be no storage of construction equipment, plant or materials within any area designated as a tree protection area on this drawing
- There shall be no raising or lowering of existing ground levels within any area designated as a tree protection area on this drawing
- No fires shall be lit within 20m of any retained tree
- The site agent shall supervise all deliveries by self-loading crane, with vehicles positioned in such a manner that retained trees are not at undue risk of damage
- There shall be no new excavation for the installation, renewal or repair of underground services within any area designated as a tree protection area on this drawing
- Site drainage and washings from concrete and mortar mixings shall be directed away from all tree protection areas
- The existing bitmac hard surface identified by blue diagonal-hatching as temporary ground protection on this drawing shall be retained to existing hardstanding for the duration of the construction operations
- The integrity of the temporary ground protection shall be maintained for the duration of the construction operations
- Any damage to the temporary ground protection during construction shall be reported to the project arboriculturist and immediately made good by the main contractor
- Works to reinstate the northern boundary wall abutting the Thames Path shall be restricted to within the site and shall be carried out by hand, using hand-tools, under the supervision of a competent arboriculturist, and with no undue disturbance of the underlying soils or the existing hardstanding identified by blue diagonal-hatching on this drawing
- The project arboriculturist shall visit the site monthly to assess the integrity of the tree protection
- The project arboriculturist shall complete a report to be sent to the site owner and main contractor following each visit. In this regard, the site owner will instruct the project arboriculturist prior to any works commencing on site

6. LANDSCAPING WORKS INCLUDING THE WIDENING OF THAMES PATH

- Landscaping works including the widening of the Thames Path shall be implemented only following the main construction phase and in accordance with a scheme of work approved by the LPA
- There shall be no rotovation of ground within any area designated as a tree protection area or otherwise protected on this drawing
- Sandy topsoil may be spread within the tree protection areas to a depth of not more than 100mm. No other addition of soil or other material shall be carried out within any area designated as a tree protection area or otherwise protected on this drawing without prior consultation with the LPA
- No hard landscaping works or excavation for cables or any other services shall be carried out within the tree protection areas without the prior written consent of the LPA.
- Sections of new boundary wall or fence that extend into the root protection area of any retained tree will be constructed during the landscaping works
- New boundary walls or fences within the RPA of any retained tree shall be installed to engineer-designed construction specifications and method statements to be agreed with the LPA. The specifications shall comprise working engineering drawings and include details of existing ground levels, proposed final formation levels and proposed final surface levels at 1 metre centres
- The alignment of the sections of boundary wall or fence that extend into the root protection area of any retained tree shall be marked out on the ground by the project arboriculturist.
- Any pruning needed to accommodate new walls or fences shall be the minimum required to install the new walls or fences and shall be carried out in accordance with British Standard 3998:2010 Tree work - Recommendations
- In the installation of the new walls or fences there shall be no raising or lowering of existing ground other than to accommodate post-holes and foundations
- Post-holes and foundations shall be excavated by hand, using hand tools and under the supervisionof the project arboriculturist. All roots greater than 25mm diameter shall be retained with post-holes or foundations re-located if roots greater than 25mm diameter are encountered. Clumps of smaller roots (including fibrous roots) shall also be retained and worked around
- No fixing shall be made to any retained tree
- The areas of ground identified by light-green hatching on this drawing shall be excavated carefully by hand, using hand tools, under the supervision of a competent arboriculturist. Where roots greater than 25mm are encountered during such excavations, they shall be pruned back under the guidance of a competent arboriculturist. Following the excavations, the areas identified by light-green hatching on this drawing shall be surfaced in accordance with a scheme of work approved by the LPA and under the supervision of a competent arboriculturist



SCALE:	1:250
UNITS:	METRES

0 5 10

TREE PROTECTION PLAN

CHESHIRE WOODLANDS

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CLIENT	PACKAGED LIVING LIMITED
PROJECT	NORMAN PLACE READING
JOB REF	CW/11307-P-TP-2
DATE	4 SEPTEMBER 2026
SCALE	1:250 at A1

- SITE BOUNDARY
- PROPOSED BUILDING, HARD SURFACES AND HARD LANDSCAPING (DRAWING A4012E-ASA-XX-00-DR-L-0200 Rev 5)
- INDIVIDUAL TREE TO BE RETAINED
- GROUP OF TREES TO BE RETAINED
- TREE OR GROUP OF TREES TO BE REMOVED
- STEM POSITION APPROXIMATED
- BS 5837 RETENTION CATEGORY
- BS5837 ROOT PROTECTION AREA
- BS5837 MODIFIED ROOT PROTECTION AREA
- BS5837 SHADOW PATTERN (RETAINED CATEGORY 'B' TREES)
- TEMPORARY GROUND PROTECTION (EXISTING HARDSTANDING)
- TREE PROTECTION AREA
- SUPERVISED HAND EXCAVATION AND SURFACING (widening of Thames Path)
- BS5837 CATEGORY 'B' TREES
- BS5837 CATEGORY 'C' TREES

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APPENDIX 3

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Guidance Note - Visual Prominence and Tree Categorisation

Visual Prominence

A broad indication of visual contribution to the landscape. The evaluation considers:

- location
- public views
- landscape function
- tree size
- growth potential
- useful life expectancy

Visual prominence values are classified as follows:

(1) Low - visual contribution restricted to the site

(2) Moderate - visual contribution to the site and immediate surroundings

(3) High - visual contribution to the site, immediate surroundings and neighbourhood, estate or locale

(4) Very high - visual contribution to a conurbation, or trees of exceptional landscape value

Groups of trees are assessed as a single unit.

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Tree Categorisation

Broadly in accordance with section 4.5 and Table 1 of British Standard 5837:2012 Trees in relation to design, demolition and construction – Recommendations.

Trees or groups of trees are evaluated twice. Firstly, they are assessed and categorised in the pre-development context to provide a broad valuation of all of their attributes and their contribution to the amenity of the area. Secondly, they are similarly assessed and categorised in the context of a development proposal. The evaluations consider:

- useful life expectancy
- visual prominence (see above)
- landscape function
- numbers of other trees and their maturity (continuity for landscape, amenity, habitat)
- wildlife habitats (including continuity)
- safety
- conflicts with the built environment or other land-use
- cultural, historical or other value

Groups of trees are assessed and categorised as a single unit.

Pre-Development assessment

The tree or group of trees is assessed and placed into one of the following categories (A, B, C or U)

The valuation considers the benefits and disbenefits of retaining the tree or group of trees in the pre-development context

Any specific issues are noted in the tree survey schedule

(A) High quality - Trees the retention of which is most desirable and that have an estimated useful life expectancy of at least 40 years

Wholly appropriate and without significant conflict

(B) Moderate quality - Trees the retention of which is desirable and that have an estimated useful life expectancy of at least 20 years

Appropriate but not of highest value

(C) Low quality - Trees that could be retained and have an estimated useful life expectancy of at least 10 years

Ill-suited but could be retained with moderate conflicts

Trees of no particular merit

(U) Trees unsuitable for retention

Could not reasonably be retained for longer than 10 years

Post-Development assessment

The tree or group of trees is assessed and placed in one of the following categories (A, B, C or U)

The valuation considers the benefits and disbenefits of retaining the tree or group of trees in the context of a development proposal

Any specific issues are noted in the tree survey schedule.

(A) High quality - Trees the retention of which is most desirable and that have an estimated useful life expectancy of at least 40 years

Wholly appropriate and without significant conflict

(B) Moderate quality - Trees the retention of which is desirable and that have an estimated useful life expectancy of at least 20 years

Appropriate but not of highest value and/or having only minor conflicts

(C) Low quality - Trees which could be retained and have an estimated useful life expectancy of at least 10 years

Ill-suited but could be retained with moderate conflicts

Trees of no particular merit

(U) Trees for removal

Would need to be removed to accommodate the development proposal, or could not reasonably be retained for longer than 10 years

APPENDIX 4

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Guidance note - Statutory Controls

Trees and Hedges

Subject to specified exceptions, an application must be made to the local planning authority [LPA] to carry out work on or remove trees that are protected by a tree preservation order [TPO][1]

Six weeks' notice must be given to the LPA of intention to carry out work on or remove trees within a conservation area and not protected by a TPO[1]

LPA consent may be required to carry out work on or remove trees, shrubs and hedges that are affected by planning conditions

LPA consent may be required for the removal of hedgerows[2]

Your Council's planning department will advise whether or not any of the above controls apply to your trees, shrubs and hedges

Subject to specified exemptions, a licence may be required for the felling of growing trees[3]

Your nearest Forestry Commission or Natural Resources Wales office will advise whether you require a felling licence

Wildlife

[1] https://www.gov.uk/guidance/tree-preservation-orders-and-trees-in-conservation-areas
[2] https://www.gov.uk/guidance/countryside-hedgerows-regulation-and-management
[3] https://www.gov.uk/guidance/tree-felling-licence-when-you-need-to-apply

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Nesting birds and all species of bat are afforded statutory protection.[4] It is an offence to:

- disturb a nesting bird
- disturb a roosting bat or damage, destroy or block access to a bat roost
- intentionally kill, injure or take a bat
- sell, hire, barter or exchange a bat, dead or alive
- be in possession or control of a bat or anything derived from a bat

Your local Wildlife Trust or your Council's Ecologist will provide guidance on statutory controls relating to wildlife.

[4] https://www.gov.uk/topic/planning-development/protected-sites-species

APPENDIX 5

GLOSSARY OF ARBORICULTURAL TERMS

Abscission. The shedding of a leaf or other short-lived part of a woody plant, involving the formation of a corky layer across its base; in some tree species twigs can be shed in this way

Abiotic. Pertaining to non-living agents; e.g. environmental factors

Absorptive roots. Non-woody, short-lived roots, generally having a diameter of less than one millimetre, the primary function of which is uptake of water and nutrients

Access facilitation pruning. One off tree pruning operation, the nature and effects of which are without significant adverse impact on tree physiology or amenity value, which is directly necessary to provide access for operations on site

Adaptive growth. In tree biomechanics, the process whereby the rate of wood formation in the cambial zone, as well as wood quality, responds to gravity and other forces acting on the cambium. This helps to maintain a uniform distribution of mechanical stress

Adaptive roots. The adaptive growth of existing roots; or the production of new roots in response to damage, decay or altered mechanical loading

Adventitious shoots. Shoots that develop other than from apical, axillary or dormant buds; see also 'epicormic'

Anchorage. The system whereby a tree is fixed within the soil, involving cohesion between roots and soil and the development of a branched system of roots which withstands wind and gravitational forces transmitted from the aerial parts of the tree

Ancient tree. A tree that has passed beyond maturity and is old, or aged, in comparison with other trees of the same species. An ancient tree is one that has all or most of the following characteristics: a) biological, aesthetic or cultural interest, because of its great age; b) a growth stage that is described as ancient or post-mature; c) a chronological age that is old relative to others of the same species

Arboricultural Method Statement. Methodology for the implementation of any aspect of development that is within the root protection area, or has the potential to result in loss of or damage to a tree to be retained

Arboriculturist. Person who has, through relevant education, training and experience, gained expertise in the field of trees in relation to construction

Architecture. In a tree, a term describing the pattern of branching of the crown or root system

Axial. Aligned along the axis of the stem, branch or root

Axil. The place where a bud is borne between a leaf and its parent shoot

Bacteria. Microscopic single-celled organisms, many species of which break down dead organic matter, and some of which cause diseases in other organisms

Bark. A term usually applied to all the tissues of a woody plant lying outside the vascular cambium, thus including the phloem, cortex and periderm; occasionally applied only to the periderm or the phellem

Bark expansion crack. The pattern of axial strips of bark on smooth-barked trees that have grown faster than the adjacent bark. A growth response to stretching of the bark by expansion of the underlying xylem

Basidiomycotina (Basidiomycetes). One of the major taxonomic groups of fungi; their spores are borne on microscopic peg-like structures (basidia), which in many types are in turn borne on or within conspicuous fruit bodies, such as brackets or toadstools. Most of the principal decay fungi in standing trees are basidiomycetes

Bolling. A term sometimes used to describe pollard heads

Bottle-butt. A broadening of the stem base and buttresses of a tree, in excess of normal and sometimes denoting a growth response to weakening in that region, especially due to decay involving selective delignification

Bracing. The use of rods or cables to restrain the movement between parts of a tree

Branch:

- **Primary.** A **first order branch** arising from a stem
- **Lateral.** A **second order branch**, subordinate to a primary branch or stem and bearing sub-lateral branches
- **Sub-lateral.** A **third order branch**, subordinate to a lateral or primary branch, or stem and usually bearing only twigs

Branch bark ridge. The raised arc of bark tissues that forms within the acute angle between a branch and its parent stem

Branch-collar. A visible swelling formed at the base of a branch whose diameter growth has been disproportionately slow compared to that of the parent stem; a term sometimes applied also to the pattern of growth of the cells of the parent stem around the branch base

Brown-rot. A type of wood decay in which cellulose is degraded, while lignin is only modified

Buckling. An irreversible deformation of a structure subjected to a bending load

Buttress zone. The region at the base of a tree where the major lateral roots join the stem, with buttress-like formations on the upper side of the junctions

Canker. A persistent lesion formed by the death of bark and cambium due to colonisation by fungi or bacteria

Canopy species. Tree species that mature to form a closed woodland canopy

Cellulose. A carbohydrate consisting of glucose molecules joined end-to-end, so as to form long filaments; a principal constituent of plant cell walls

Chlorosis. The loss of green pigment from plant tissues, caused by mineral deficiency. Chlorotic (adj.)

Compartmentalisation. The confinement of disease, decay or other dysfunction within an anatomically discrete region of plant tissue, due to passive and/or active defences operating at the boundaries of the affected region

Competent person. A person who has training and experience relevant to the matter being addressed and an understanding of the requirements of the task being approached.

Compression fork. An acute angled fork that is mechanically optimised for the growth pressure that two or more adjacent stems exert on each other

Compression strength. The ability of a material or structure to resist failure when subjected to compressive loading; measurable in trees with special drilling devices

Compressive loading. Mechanical loading which exerts a positive pressure; the opposite to tensile loading

Condition. An indication of the physiological condition of the tree. Where the term 'condition' is used in a report, it should not be taken as an indication of the stability of the tree

Construction. Site based operations with the potential to affect existing trees

Construction exclusion zone. Area based on the Root Protection Area from which access is prohibited for the duration of the project

Crown/Canopy. The main foliage bearing section of the tree

Crown lifting. The removal of limbs and small branches to a specified height above ground level

Crown thinning. The removal of a proportion of secondary branch growth throughout the crown to produce an even density of foliage around a well-balanced branch structure

Crown reduction/shaping. A specified reduction in crown size whilst preserving, as far as possible, the natural tree shape

Crown reduction/thinning. Reduction of the canopy volume by thinning to remove dominant branches whilst preserving, as far as possible the natural tree shape

Deadwood. Dead branch wood

Incorporating extracts from Lonsdale, D. 1999. Principles of Tree Hazard Assessment. Her Majesty's Stationary Office, London

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Decurrent. In trees, a system of branching in which the crown is borne on a number of major widely-spreading limbs of similar size (cf. excurrent). In fungi with toadstools as fruit bodies, the description of gills which run some distance down the stem, rather than terminating abruptly

Decay. (of organic tissue) decomposition by fungi or bacteria

Defect. In relation to tree hazards, any feature of a tree which detracts from the uniform distribution of mechanical stress, or which makes the tree mechanically unsuited to its environment

Delamination. The separation of wood layers along their length, visible as longitudinal splitting

Desire-line footpath. A footpath that has been created by regular use rather than by design and construction

Dieback. The death of parts of a woody plant, starting at shoot-tips or root-tips

Disease. A malfunction in or destruction of tissues within a living organism, usually excluding mechanical damage; in trees, usually caused by pathogenic micro-organisms

Distal. In the direction away from the main body of a tree or subject organism (cf. proximal)

Dominance. In trees, the tendency for a leading shoot to grow faster or more vigorously than the lateral shoots; also the tendency of a tree to maintain a taller crown than its neighbours

Dormant bud. An axial bud which does not develop into a shoot until after the formation of two or more annual wood increments; many such buds persist through the life of a tree and develop only if stimulated to do so

Dysfunction. In woody tissues, the loss of physiological function, especially water conduction, in sapwood

DBH (Diameter at Breast Height). Stem diameter measured at a height of 1.5 metres (UK) or the nearest measurable point. Where measurement at a height of 1.5 metres is not possible, another height may be specified

Deadwood. Branch or stem wood bearing no live tissues. Retention of deadwood provides valuable habitat for a wide range of species and seldom represents a threat to the health of the tree. Removal of deadwood can result in the ingress of decay to otherwise sound tissues and climbing operations to access deadwood can cause significant damage to a tree. Removal of deadwood is generally recommended only where it represents an unacceptable level of hazard

Early-wood. The wood laid down around the time of the main flush of shoot growth in the early part of the growing season

Endophytes. Micro-organisms that live inside plant tissues without causing overt disease, but in some cases capable of causing disease if the tissues become physiologically stressed, for example by lack of moisture

Engineer-designed hard surfacing. Hard surfacing constructed within the 'Root protection area' of a tree, which will be designed by a structural or geotechnical; engineer in collaboration with an arboriculturist as set out in clause 7.4 of British Standard BS5837:2012. The purpose being to minimise the effects of the construction on the health of the tree.

Epicormic shoot. A shoot having developed from a dormant or adventitious bud and not having developed from a first year shoot

Excrescence. Any abnormal outgrowth on the surface of tree or other organism

Excurrent. In trees, a system of branching in which there is a well-defined central main stem, bearing branches which are limited in their length, diameter and secondary branching (cf. decurrent)

Fastigiate. Having upright, often clustered branches

Felling licence. In the UK, a permit to fell trees in excess of a stipulated number of stems or volume of timber

Fibre-buckling. The kinking if wood fibres and failure of other xylem elements when exposed to compressive loading

Field layer. Herbs, ferns, grasses and sedges

First-order branch. A high order branch, usually arising from a stem

Flush-cut. A pruning cut which removes part of the branch bark ridge and or branch-collar

Girdling root. A root which circles and constricts the stem or roots possibly causing death of phloem and/or cambial tissue

Ground layer. Mosses, ivy, lichens and fungi

Guying. A form of artificial support with cables for trees with a temporarily inadequate anchorage

Habit. The overall growth characteristics, shape of the tree and branch structure

Haloing. Removing or pruning trees from around the crown of another (usually mature or post-mature) tree to prevent it becoming supressed

Hazard beam. An upwardly curved part of a tree in which strong internal stresses may occur without being reduced by adaptive growth; prone to longitudinal splitting

Heartwood/false-heartwood. The dead central wood that has become dysfunctional as part of the aging processes and being distinct from the sapwood

Heave. A term mainly applicable to a shrinkable clay soil which expands due to re-wetting after the felling of a tree which was previously extracting moisture from the deeper layers; also the lifting of pavements and other structures by root diameter expansion; also the lifting of one side of a wind-rocked root-plate

High canopy tree species. Tree species having potential to contribute to the closed canopy of a mature woodland or forest

Incipient failure. In wood tissues, a mechanical failure which results only in deformation or cracking, and not in the fall or detachment of the affected part

Included bark (ingrown bark). Bark of adjacent parts of a tree (usually forks, acutely joined branches or basal flutes) which is in face-to-face contact

Increment borer. A hollow auger, which can be used for the extraction of wood cores for counting or measuring wood increments or for inspecting the condition of the wood

Infection. The establishment of a parasitic micro-organism in the tissues of a tree or other organism

Internode. The part of a stem between two nodes; not to be confused with a length of stem which bear nodes but no branches

Laser Rangefinder. A device that uses a laser beam to measure distance, angle, and height.

Lateral branch: A side branch

Late-wood. The wood laid down after the time of the first main flush of shoot growth. Usually denser than the early-wood

Lever arm. A mechanical term denoting the length of the lever represented by a structure that is free to move at one end, such as a tree or an individual branch

Lesion. Death or abnormal change in tissues, usually associated with disease or trauma

Lignin. The hard, cement-like constituent of wood cells; deposition of lignin within the matrix of cellulose microfibrils in the cell wall is termed Lignification

Lions tailing. A term applied to a branch of a tree that has few if any side-branches except at its end, and is thus liable to snap due to end-loading

Loading. A mechanical term describing the force acting on a structure from a particular source; e.g. the weight of the structure itself or wind pressure

Loam. A soil with roughly equal proportions of sand, silt, and clay

Longitudinal. Along the length (of a stem, root or branch)

Lopping. A term often used to describe the removal of large branches from a tree, but also used to describe other forms of cutting

Marginal browning of leaves. Death of a tissues to the margin or edge of the leaf

Mature Heights (approximate)**:**

- **Low maturing –** less than 8 metres high
- **Moderately high maturing –** 8 – 12 metres high
- **High maturing –** greater than 12 metres high

Microdrill. An electronic rotating steel probe, which when inserted into woody tissue provides a measure of tissue density

Minor deadwood. Deadwood of a diameter less than 25mm and or unlikely to cause significant harm or damage upon impact with a target beneath the tree

Incorporating extracts from Lonsdale, D. 1999. Principles of Tree Hazard Assessment. Her Majesty's Stationary Office, London

Mulch. Material laid down over the rooting area of a tree or other plant to help conserve moisture; a mulch may consist of organic matter or a sheet of plastic or other artificial material

Mycelium. The body of a fungus, consisting of branched filaments (hyphae)

Obvious defects. Defects that are so apparent that most people, whether specialist or not, would recognise them on taking a general, but not necessarily close view of the tree

Occluding tissues. A general term for the roll of wood, cambium and bark that forms around a wound on a woody plant (cf. woundwood)

Occlusion. The process whereby a wound is progressively closed by the formation of new wood and bark around it

Pathogen. A micro-organism which causes disease in another organism

Phloem. Vascular tissue that distributes the products of photosynthesis (sugars) around the plant

Photosynthesis. The process whereby plants use light energy to split hydrogen from water molecules and combine it with carbon dioxide to form carbohydrates that are be basic building block for plant growth. Photosynthetic capacity is the plants ability to produce carbohydrates

Phytotoxic. Toxic to plants

Pollarding. The removal of the tree canopy, back to the stem or primary branches, usually to a point just outside that of the previous cutting. Pollarding may involve the removal of the entire canopy in one operation, or may be phased over several years. The period of safe retention of trees having been pollarded varies with species and individuals. It is usually necessary to re-pollard on a regular basis, annually in the case of some species

Primary branch. A major branch, generally having a basal diameter greater than 0.25 x stem diameter

Primary root zone. The soil volume most likely to contain roots that are critical to the health and stability of the tree and normally defined by reference BS5837 (2012) Trees in Relation to design, demolition and construction

Priority. Works may be prioritised, 1. = high, 5. = low

Probability. A statistical measure of the likelihood that a particular event might occur

Proximal. In the direction towards from the main body of a tree or other living organism (cf. distal)

Pruning. The removal or cutting back of twigs or branches, sometimes applied to twigs or small branches only, but often used to describe most activities involving the cutting of trees or shrubs

Radial. In the plane or direction of the radius of a circular object such as a tree stem

Rams-horn. In connection with wounds on trees, a roll of occluding tissues which has a spiral structure as seen in cross-section

Rays. Strips of radially elongated parenchyma cells within wood and bark. The functions of rays include food storage, radial translocation and contributing to the strength of wood

Reactive Growth/Reaction Wood. Production of woody tissue in response to altered mechanical loading; often in response to internal defect or decay and associated strength loss (cf. adaptive growth)

Removal of deadwood. Unless otherwise specified, this refers to the removal of all accessible dead, dying and diseased branchwood and broken snags

Removal of major deadwood. The removal of, dead, dying and diseased branchwood above a specified size

Respacing. Selective removal of trees from a group or woodland to provide space and resources for the development of retained trees

Residual wall. The wall of non-decayed wood remaining following decay of internal stem, branch or root tissues

Rhizomorph. A root-like aggregation of fungal hyphae

Rib. A ridge of wood that has usually developed because of locally increased mechanical loading. Often associated with internal cracking in the wood of the stem, branch, or root.

Ring-barking (girdling)**.** The removal of a ring of bark and phloem around the circumference of a stem or branch, normally resulting in an inability to transport photosynthetic assimilates below the area of damage. Almost inevitably results in the eventual death of the affected stem or branch above the damage

Ripewood. The older central wood of those tree species in which sapwood gradually ages without being converted to heartwood

Root-buttresses. A buttress-like formation at the transition between roots and stems

Root-collar. The transitional area between the stem/s and roots

Root-collar examination. Excavation of surfacing and soils around the root-collar to assess the structural integrity of roots and/or stem

Root protection area (RPA). Layout design tool indicating a national 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 is treated as a priority

Root zone. Area of soils containing absorptive roots of the tree/s described. The **Primary** root zone is that which we consider of primary importance to the physiological well-being of the tree

Saprophytic fungi. Fungi that live on dead or decomposing matter (in the tree) as opposed to functional, living tissues

Sapwood. Living xylem tissues

Safety factor. The ratio of the maximum stress that a structural part of a tree can withstand to the maximum stress experienced under normal conditions

Screef. To clear surface vegetation (commonly up to a depth of around 20mm)

Secondary branch. A branch, generally having a basal diameter of less than 0.25 x stem diameter

Selective delignification. A kind of wood decay (white-rot) in which lignin is degraded faster than cellulose

Senescence. The condition or process of deterioration with age.

Service. Any above- or below-ground structure or apparatus required for utility provision e.g. drainage, gas supplies, ground source heat pumps, CCTV and satellite communications

Shedding. In woody plants, the normal abscission, rotting off or sloughing of leaves, floral parts, twigs, fine roots and bark scales

Shoot. The elongating region of a stem or branch

Shrub species. Woody perennial species forming the lowest level of woody plants in a woodland and not normally considered to be trees

Silviculture. The practice of controlling the establishment, growth, composition, health, and quality of forests to meet diverse needs and values

Silvicultural thinning. Removal of selected trees to favour the development of retained specimens to achieve a management objective

Single-up. Removal of stems from a multi-stemmed tree with the aim of developing a tree with a single stem.

Simultaneous white-rot. A kind of wood decay in which lignin and cellulose are degraded at about the same rate

Snag. In woody plants, a portion of a cut or broken stem, branch or root which extends beyond any growing-point or dormant bud; a snag usually tends to die back to the nearest growing point

Soft-rot. A kind of wood decay in which a fungus degrades cellulose within the cell walls, without any general degradation of the wall as a whole

Soil auger. A hand-held steel auger 60mm diameter auger used for extracting soil samples.

Soil horizons. A layer parallel to the soil surface, whose physical characteristics differ from the layers above and beneath:

- **O)** Organic matter - Litter layer of plant residues
- **A)** Surface soil - Layer of mineral soil with accumulation of organic matter
- **B)** Subsoil - This layer accumulates mineral and organic compounds.
- **C)** Parent rock - Layer of large unbroken rocks
- **R)** Bedrock - Partially weathered bedrock at the base of the soil profile

Incorporating extracts from Lonsdale, D. 1999. Principles of Tree Hazard Assessment. Her Majesty's Stationary Office, London

Soil sample. A sample of soil extracted for the purpose of either field or laboratory testing to determine mineral, chemical or structural composition, and or moisture content and shrinkability.

Sounding hammer. A small plastic or nylon hammer used for assessing the audible signs of decay, cracks and other features in trees

Spores. Propagules of fungi and many other life-forms; most spores are microscopic and dispersed in air or water

Sporophore. The spore bearing structure of fungi

Sprouts. Adventitious shoot growth erupting from beneath the bark

Squirrel damage. Stripping of the bark from stems or branches by squirrels. This can result in the death of branches or even entire trees

Stem/s. Principle above-ground structural component(s) of a tree that supports its branches

Stem taper. The downward tapering of a tree stem out into the flare of the root buttresses

Stress. In plant physiology, a condition under which one or more physiological functions are not operating within their optimum range, for example due to lack of water, inadequate nutrition or extremes of temperature

Stress. In mechanics, the application of a force to an object

Strain. In mechanics, the distortion of an object caused by a stress

Stringy white-rot. The kind of wood decay produced by selective delignification

Storm. A layer of tissue which supports the fruit bodies of some types of fungi, mainly ascomycetes

Structural roots. Roots, generally having a diameter greater than ten millimetres, and contributing significantly to the structural support and stability of the tree

Structure. Manufactured object, such as a building, carriageway, path, wall, service run, and built or excavated earthwork

Subsidence. In relation to soil or structures resting in or on soil, a sinking due to shrinkage when certain types of clay soil dry out, sometimes due to extraction of moisture by tree roots

Subsidence. In relation to branches of trees, a term that can be used to describe a progressive downward bending due to increasing weight

Taper. In stems and branches, the degree of change in girth along a given length

Target canker. A kind of perennial canker, containing concentric rings of dead occluding tissues

Targets. In tree risk assessment (with slight misuse of normal meaning) persons or property or other things of value which might be harmed by mechanical failure of the tree or by objects falling from it

Terminal xylem. The last layers of xylem cells produced at the end of the growing season

Topping. In arboriculture, the removal of the crown of a tree, or of a major proportion of it

Torsional stress. Mechanical stress applied by a twisting force

Translocation. In plant physiology, the movement of water and dissolved materials through the body of the plant

Transpiration. The evaporation of moisture from the surface of a plant, especially via the stomata of leaves; it exerts a suction which draws water up from the roots and through the intervening xylem cells

Tree Protection Plan. Scale drawing, informed by descriptive text where necessary, based upon the finalised proposals, showing trees for retention and illustrating the tree and landscape protection measures

Tree Risk Assessment. An assessment and description of the risks and where appropriate the values associated with a tree or trees. The primary risk being considered is that from falling trees. Other risks, such as damage to infrastructure, interruption of service and building subsidence may also be considered

- Walkover – A general view of the tree population considered in the context of the adjacent land-use to identify trees that present significantly elevated risks
- Drive-by - A general view of the tree population from a moving vehicle and considered in the context of the adjacent land-use to identify trees that present significantly elevated risks
- Individual – the assessment of risks from a single tree considered in the context of the adjacent land-use to identify trees that present significantly elevated risks

Understorey. This layer consists of younger individuals of the dominant trees, together with smaller trees and shrubs which are adapted to grow under lower light conditions

Understorey tree species. Tree species not having potential to attain a size at which they can contribute to the closed high canopy of a woodland

Vascular cambium. Sometimes described simply as 'cambium'. Layer of dividing cells producing xylem (woody) tissue internally and phloem (bark) tissue externally

Vascular dysfunction. Dysfunction of water conducting cells

Vascular wilt. A type of plant disease in which water-conducting cells become dysfunctional

Vessels. Water-conducting cells in plants, usually wide and long for hydraulic efficiency; generally not present in coniferous trees

Veteran tree. A tree that has the physical characteristics of an ancient tree but is not ancient in years, compared with others of the same species

Vigour. The expression of carbohydrate expenditure to growth (in trees)

Vitality. A measure of physiological condition. N = within normal range for species and age, R = reduced from the normal range for the species and age, P = poor

Volunteer trees. Trees arising from natural colonisation rather than having been planted

Weeping lesion. Exudations from a lesion in plant tissue

Wet flush. Where water from underground flows out onto the surface to create an area of saturated ground, rather than a well-defined channel

White-rot. A range of kinds of wood decay in which lignin, usually together with cellulose and other wood constituents, is degraded

Wind exposure. The degree to which a tree or other object is exposed to wind, both in terms of duration and velocity

Wind pressure. The force exerted by a wind on a particular object

Windthrow. The blowing over of a tree at its roots

Wound dressing. A general term for sealants and other materials used to cover wounds in the hope of protecting them against desiccation and infection; only of proven value against fresh wound parasites

Woundwood. Wood with atypical anatomical features, formed in the vicinity of a wound

Xylem. Secondary xylem; the main structurally supporting and water-conducting element of trees (refined definition specific to this case)

Incorporating extracts from Lonsdale, D. 1999. Principles of Tree Hazard Assessment. Her Majesty's Stationary Office, London