HITHER GREEN GOLF COURSE, HITHER GREEN LANE, REDDITCH

ARBORICULTURAL IMPACT ASSESSMENT

A Report to: Barratt Homes

Report No: RT-MME-152753-02 Rev D

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REPORT VERIFICATION

This study has been undertaken in accordance with British Standard 5837:2012 "*Trees in Relation to Design, Demolition and Construction - Recommendations*".

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DISCLAIMER

The contents of this report are the responsibility of Middlemarch Environmental Ltd. It should be noted that, whilst every effort is made to meet the client's brief, no site investigation can ensure complete assessment or prediction of the natural environment.

Middlemarch Environmental Ltd accepts no responsibility or liability for any use that is made of this document other than by the client for the purposes for which it was originally commissioned and prepared.

VALIDITY OF DATA

The findings of this study are based upon the survey data produced as part of the Preliminary Arboricultural Assessment which is valid for a period of 12 months from the date of survey. If a planning application has not been submitted by this date, an updated site visit should be carried out by a suitably qualified and experienced arboriculturist to assess any changes to the trees and hedgerows on site to inform a review of the conclusions and recommendations made.

It should be noted that trees are dynamic living organisms that are subject to natural changes as they age or are influenced by changes in their environment. As such, following any significant meteorological event or changes in the growing environment of the trees they should be re-assessed by a suitably qualified and experienced arboriculturist.

This Arboricultural Impact Assessment has been produced following a review of a proposed development layout for the site based on data provided by the client. Should the development proposals change, this report will need to be updated to assess the impact of the amended development.

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1. INTRODUCTION

1.1 PROJECT BACKGROUND

Middlemarch Environmental Ltd were commissioned by Barratt Homes to undertake an Arboricultural Impact Assessment of trees and hedgerows as part of a planning application for residential development at Hither Green Golf Course, Hither Green Lane, Redditch. A survey of the trees and hedgerows on site and within influencing distance of the boundaries was undertaken on the 25th June 2020 and the 3rd July 2020 as part of a Preliminary Arboricultural Assessment (Report Reference: RT-MME-152753-01), which was completed to aid design and avoid unnecessary tree removal.

This Arboricultural Impact Assessment has been carried out in accordance with British Standard 5837:2012 *'Trees in Relation to Design, Demolition and Construction - Recommendations'* (hereafter referred to as BS5837). BS5837 sets out a structured assessment methodology to assist in determining which trees would be considered suitable or unsuitable for retention in the context of the proposed development.

The purpose of this report is to:

- Identify the potential impact of the proposed development upon the existing trees and hedgerows identified during the Preliminary Arboricultural Assessment in accordance with BS5837:2012 *"Trees in Relation to Design, Demolition and Construction - Recommendations"*.
- Provide a Tree Retention Plan that identifies the trees and hedgerows to be retained and incorporated into the proposed development including Root Protection Areas (RPA) for the retained trees. The Tree Retention Plan also identifies trees and hedgerows that are to be removed to facilitate the development proposals.
- Identify mitigation proposals to offset any tree or hedgerow loss as part of the development proposals.
- Identify all areas where specific working methods will be required to ensure protection to trees as part of an Arboricultural Method Statement.

1.2 SITE DESCRIPTION

The site under consideration, hereinafter referred to as the study area, is located at Hither Green Golf Course on Hither Green Lane in Redditch, Ordnance Survey Grid Reference SP 04443 69373. Tree cover across the site was generally found to be of good quality and is located throughout the site.

The location of the trees surveyed can be found on the Tree Survey Plan (C152753-01-01 Rev B), included in Section 10 of this report.

1.3 DEVELOPMENT PROPOSALS

The proposed development of the site includes the construction of a new residential housing development with associated hard and soft landscaping.

The proposed development has been designed so that safe and healthy existing trees are retained wherever possible and that those trees to be retained are not significantly impacted upon by the development.

1.4 DOCUMENTATION PROVIDED

This assessment is based upon the information provided by the client in addition to information collected by Middlemarch Environmental Ltd during the Preliminary Arboricultural Assessment. The documents and drawings considered are detailed within Table 1.1.

Author	Document	Drawing Number	Date
Urban Design	Proposed Site Layout	ME-24-21Z	Apr 2021
Travis Baker	Preliminary Drainage Strategy and Finished Floor Levels Pages 1, 2 & 3	21169-1-F, 21169-2-F & 21169-3-F	Jul 2021

Table 1.1: Documentation Provided

2. METHODOLOGY

2.1 DESK STUDY

Consultation with the Local Planning Authority was undertaken to identify if any of the trees present within or near the site are protected by Tree Preservation Orders (TPOs) or if the site is situated within a Conservation Area.

An online search using the Multi Agency Geographical Information for the Countryside (*MAGIC)* website for statutory conservation sites was also undertaken (where appropriate) to determine the presence of Ancient Woodland within 15.0 metres of the site boundary.

2.2 SURVEY SCOPE

To determine the status of the trees and hedgerows within the site, a full arboricultural survey has been undertaken, assessing the species and status of all trees and hedgerows present. This survey has been carried out in accordance with British Standard 5837:2012 '*Trees in Relation to Design, Demolition and Construction – Recommendations'*.

All trees and hedgerows have been assigned a unique reference number. Individual trees above 75 mm in diameter (at 1.5 m above ground level) have had their position plotted to the Tree Survey Plan. Trees, and hedgerows were visually assessed and a schedule prepared listing:

- Tree number,
- Species,
- Tree height,
- Stem diameter at 1.5 m above ground level (or in accordance with Annex C of BS5837:2012),
- Crown spread (cardinal points where necessary),
- Minimum crown clearance,
- Age class,
- Condition and;
- Preliminary management recommendations (where required).

Measurements for tree height, minimum crown clearance and crown spread were taken to an accuracy of 0.5 m. Stem diameter measurements were recorded to the nearest 10 mm. Any specific observations or management recommendations were also noted. All observations and measurements are included in Appendix A Tree Schedule.

Trees and hedgerows were assessed and assigned one of the following categories:

- **Category U:** Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.
- **Category A:** Trees of high quality with an estimated remaining life expectancy of at least 40 years.
- **Category B:** Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.
- **Category C:** Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm.

Categories A, B and C have further sub-categories with regards to the reasons for tree retention:

1: Mainly arboricultural qualities.
2: Mainly landscape qualities.
3: Mainly cultural values, including conservation.

N.B. Certain category U trees may possess existing or potential conservation value which make them desirable to preserve in the context of wildlife habitat (e.g. areas with limited public access).

2.3 ROOT PROTECTION AREA (RPA)

In order to avoid damage to the roots or rooting environment of retained trees, the RPA has been calculated for each of the Category A, B and C trees in accordance with section 4.6 of BS5837. This is a minimum area around a tree which is deemed to contain sufficient roots and rooting volume to maintain the tree's viability. Where groups of trees have been assessed, the Root Protection Area has been shown based on the maximum sized tree stem in each group and so may exceed the Root Protection Area required for some of the individual specimens within the group. Further detailed inspection of the individual trees forming a group may be required where development impacts upon individual trees forming the combined group.

Protection of the roots and soil structure within the RPA should be treated as a priority. These figures have been calculated utilising the formulas within Section 4.6 and Annex D of British Standard 5837:2012.

2.4 TREE SCHEDULE

Appendix A details the individual trees, groups, hedgerows, and woodlands found during the assessment and includes the relevant information for each at the time of inspection. General observations of any structural and physiological condition and the presence of any decay or physical defects have also been included. Preliminary management recommendations have also been recorded where appropriate.

2.5 HEDGEROWS

For the purposes of this assessment, a hedgerow is described as a line of trees or shrubs with canopies less than 5m wide which is regularly managed through pruning. Where trees are present within a hedgerow that are significantly different in character from the remainder, these have been identified and recorded separately. A tree survey in accordance with BS5837 does not assess hedgerows against the Hedgerow Regulations 1997 or from an ecological perspective.

2.6 ASSESSMENT LIMITATIONS

This survey has been undertaken in accordance with BS5837 recommendations only. Trees under 75mm in diameter and the specific location of species within a hedgerow have not been identified in accordance with the guidance. It may therefore be necessary during detailed design to undertake further assessment and accurate positioning of juvenile trees or woody species within hedgerows and tree groups to assist structural calculations for foundation design of structures in accordance with current building regulations and NHBC Chapter 4.2 *Building near Trees*.

The exact position of individual trees or species included as part of a tree group, hedgerow or woodland should be checked and verified on site prior to any decisions for foundation design, tree operations or construction activity being undertaken.

2.7 CONDITIONS OF TREE SURVEY

The survey was completed by a suitably qualified and experienced Arboriculturist from ground level only and from within the boundary of the site. Aerial tree inspections or the internal condition of the stem/s or branches was not undertaken at this stage. Evaluation of tree condition given within this assessment applies to the date of survey and cannot be assumed to remain unchanged. It may be necessary to review these within 12 months, in accordance with sound arboricultural practice.

2.8 TREE SURVEY PLAN

The Tree Survey Plan seeks to act as a design tool that shows potential opportunities for inclusion of the existing trees and hedgerows across the site as well as the above and below ground constraints which should be considered during the design process.

2.9 TREE RETENTION PLAN

The Tree Retention Plan identifies which trees and hedgerows are to be retained and incorporated as part of the site development and which are to be removed. The positions of trees and hedgerows and their current crown spread that are to be removed have been shown on the Tree Retention Plan with a dashed outline.

All survey data is based on a topographical survey where possible, supplied by the client. Where topographical information has not identified tree positions or Ordnance Survey mapping has been utilised, trees and hedgerows have been positioned using GPS and aerial photography to provide approximate

locations in relation to existing surrounding features. Further confirmation of tree and hedgerow locations through a topographical survey of the site is recommended to ensure future design accuracy.

3. STATUTORY PROTECTION

3.1 TREE PRESERVATION ORDER AND CONSERVATION AREA DESIGNATIONS

Following consultation with the Local Planning Authority, Redditch Borough Council, it is understood that Area Tree Preservation Order Redditch New Town No. 1 TPO (1965) applies to all trees present within the assessment area that are older than 54 years old and therefore, statutory constraints apply to the development in respect of trees. It is recommended that the local planning authority is contacted prior to undertaking any works to any trees on site in order to ascertain which trees are subject to the TPO. Additionally, it is understood that there are no Conservation Area designations that would apply to any trees present on, or in close proximity to the assessment site.

No works must be undertaken on the trees protected by Tree Preservation Order number Redditch New Town No. 1 TPO (1965) without prior permission from the Local Authority unless authorised as part of an approved planning application. Works include pruning, topping, lopping, uprooting or wilful damage or wilful destruction of these trees. Any proposed pruning works not currently approved will need to be fully specified and agreed within a future planning application. If works are not included within the planning application, a separate TPO application should be submitted to the Local Authority for permission to undertake any works (approximately an 8-week process).

Reference to the Multi Agency Geographical Information for the Countryside (MAGIC) website indicates that an area of ancient woodland has not been recorded within 15 metres of the survey area.

3.2 PROTECTED SPECIES

Bats
Mature trees often contain cavities, hollows, peeling bark or woodpecker holes which provide potential roosting locations for bats. Bats and the places they use for shelter or protection (i.e. roosts) receive European protection under The Conservation of Habitats and Species Regulations 2017 (Habitats Regulations 2017). They receive further legal protection under the Wildlife and Countryside Act (WCA) 1981, as amended. Consequently, causing damage to a bat roost constitutes an offence.

Generally, should the presence of a bat roost be suspected whilst completing works on any trees on site then an appropriately licensed bat worker should be consulted for advice.

Birds
Trees and hedgerows offer potential habitat for nesting birds which are protected under the Wildlife and Countryside Act WCA 1981 (as amended). Some species (listed in Schedule 1 of the WCA) are protected by special penalties. This legislation makes it an offence to intentionally or recklessly damage or destroy an active bird nest or part thereof.

As the trees on, and adjacent, to the site provide potential habitat for nesting birds all tree work should ideally be completed outside the nesting bird season (Generally March to September).

If this is not possible then the vegetation should be subject to a nesting bird inspection by a suitably experienced ecologist prior to commencement of works. If any active nests are identified then the vegetation, and a defined buffer zone, will need to remain in place until the young have naturally fledged.

4. RESULTS SUMMARY

4.1 PRELIMINARY ARBORICULTURAL ASSESSMENT

Forty-three individual trees, twenty-nine groups of trees, one woodland and four hedgerows were surveyed as part of the Preliminary Arboricultural Assessment. Trees assessed during the survey are listed as individual trees and groups of trees in the Tree Schedule (Appendix A) in accordance with BS5837:2012 recommendations. Table 4.1 provides a summary of the survey results in terms of categorisation.

BS5837:2012 Category	Tree/ Group/ Hedgerow/ Woodland Reference	Frequency			
		T	G	H	W
U	T14, T17, T18, T33.	4	0	0	0
A	T6, T11, T26, T27, T28, T29, T30, T35, T37, T39, T40, T41, T42.	13	0	0	0
B	T1, T2, T3, T4, T5, T8, T9, T10, T19, T20, T21, T34, T36, T43, G1, G4, G6, G11, G12, G14, G18, G19, G21, G22, G23, G26, W1.	14	12	0	1
C	T7, T12, T13, T15, T16, T22, T23, T24, T25, T31, T32, T38, G2, G3, G5, G7, G8, G9, G10, G13, G15, G16, G17, G20, G24, G25, G27, G28, G29, H1, H2, H3, H4.	12	17	4	0

Key:

T: Trees
G: Groups
H: Hedgerows
W: Woodlands

Table 4.1: Summary of Trees, Groups, Hedgerows and Woodlands in BS5837:2012 Categories

Tree cover was situated across the site defining the fairways for each fairway.

The highest value trees recorded during the survey were several English oak trees located across the site (T6, T11, T26, T28, T29, T30, T35, T37, T39, T40, T41 & T42) and the ash (T27) which was located in the southern portion of the site adjacent to the eastern boundary. These trees were typically in good condition and prominent within the site and as such, were assessed as high retention value.

Other arboreal features of note within the site include the silver maple (T1) located in the north-east corner of the site, the two ash trees (T2 & T3) located on the northern site boundary, the white poplar (T9) located adjacent to the northern boundary, the woodland (W1) located adjacent to the eastern boundary and the mixed species groups (G4, G6, G11, G12, G18, G19, G21, G22, G23 & G26) located across the site. These specimens were typically in fair condition, and many were prominent within the site. Many of the groups adjacent to the site boundaries provided screening from the roads and residential properties adjacent. As such, these specimens were assessed as moderate retention value.

Lower value arboricultural features recorded within the survey include the English oak (T7), the pear (T12), the ash (T16), the alder trees (T31 & T32), the mixed species groups (G2, G3, G7, G9, G13, G15, G17 & G24) and the hedgerows (H1, H2, H3 & H4). These specimens were typically in fair condition with many exhibiting defects which limited their likely future potential. However, the hedgerows and groups adjacent to the site boundaries provided screening from the roads and residential properties adjacent to the site. Nevertheless, these specimens were assessed as low retention value.

The apple (T14), the two white poplars (T17 & T18) and the cherry (T33) were considered unsuitable to retain in their current context (Retention Category U) due to structural defects which made their likely useful life expectancy less than ten years. It should be noted that the white poplar trees presented some safety concerns due to their size and proximity to the adjacent road and works should be undertaken irrespective of this planning application to ensure potential risk to road users is minimsed.

5. ARBORICULTURAL IMPACT ASSESSMENT

5.1 INTRODUCTION

This section of the report details the potential impacts that the proposed development may have upon the site's tree stock. The assessment has been based upon the documents detailed in Table 1.1 with reference to the results of the Preliminary Arboricultural Assessment. The location of the trees can be found on the Tree Survey Plan and a schedule of the trees (Appendix A) attached to this report.

5.2 IMPACTS FROM DEVELOPMENT LAYOUT

5.2.1 Tree Retention and Removal

The proposed development has been designed so that, where possible, existing trees are retained, however, to accommodate the proposed development, it will be necessary to remove a number of trees within the site.

The trees to be removed are detailed within Table 5.1 and are identified on the Tree Retention Plan, attached to this report. All trees, groups and hedgerows not featured within Table 5.1 are to be retained within the proposed development.

Tree/ Group/ Hedgerow/ Woodland Reference	Species	Retention Category	Reason for Removal
T12	Pear	C	Tree is situated within close proximity to proposed building.
T13	Lawson cypress	C	Tree is situated within footprint of proposed parking.
T14	Apple	U	Tree requires removal due to poor condition and location within footprint of proposed building.
T15	Grand fir	C	Tree requires removal due to location within footprint of proposed building.
T16	Ash	C	Tree requires removal due to location within footprint of proposed building.
T17	White poplar	U	Tree requires removal due to poor condition and health and safety risk due to location adjacent to proposed access road.
T18	White poplar	U	Tree requires removal due to poor condition and health and safety risk due to location adjacent to proposed access road.
T21	Silver birch	B	Tree requires removal due to location within footprint of proposed building and proposed parking.
T22	Norway maple	C	Tree requires removal due to proximity to proposed barrier and footpath.
T23	Silver birch	C	Tree requires removal due to location within footprint of proposed building.
T31	Alder	C	Tree requires removal due to proximity to proposed access road.
T32	Alder	C	Tree requires removal due to proximity to proposed access road.
T33	Cherry	U	Poor condition.
G2*	Mixed species	C	Group requires partial removal due to location within footprint of proposed building.
G4	Mixed species	B	Group requires removal due to location within footprint of and in close proximity to proposed buildings and proposed hard surfacing.
G5*	Leyland cypress	C	Group requires partial removal due to location within footprint of proposed building.

Table 5.1: Tree Removal (continues)

G7	Mixed species	C	Group requires removal due to location within footprint of and in close proximity to proposed buildings, proposed hard surfacing, and proposed soft landscaping.
G8	Wild cherry	C	Group requires removal due to location within footprint of and in close proximity to proposed buildings and landscaping of proposed gardens.
G9	Mixed species	C	Group requires removal due to location within footprint of proposed hard surfacing.
G10	Norway maple	C	Group requires removal due to location within footprint proposed buildings.
G12*	Mixed species	B	Group requires partial removal due to location within footprint of proposed footpath and proximity to proposed swale.
G13	Mixed species	C	Group requires removal due to location within footprint of proposed access road.
G14	Scots pine	B	Group requires removal due to location within footprint of and in close proximity to proposed buildings and hard surfacing.
G15*	Mixed species	C	Group requires partial removal due to location within footprint of and in close proximity to proposed buildings and hard surfacing.
G16	Scots pine	C	Group requires removal due to location within footprint of and in close proximity to proposed buildings and proposed access road.
G17*	Mixed species	C	Group requires partial removal due to location within footprint of and in close proximity to proposed hard landscaping and footpath.
G18	Mixed species	B	Group requires removal due to location within footprint of and in close proximity to proposed buildings, proposed landscaping and proposed access road.
G19*	Mixed species	B	Group requires partial removal due to location within footprint of and in close proximity to proposed footpath.
G22*	Mixed species	B	Group requires partial removal due to location within footprint of and in close proximity to proposed buildings, proposed access road/driveway, proposed drainage, proposed landscaping and footpath.
G23*	Mixed species	B	Group requires partial removal due to location within footprint of and in close proximity to proposed footpath and drainage.
G24*	Mixed species	C	Group requires partial removal due to location within footprint of and in close proximity to proposed footpath.
G25*	Mixed species	C	Group requires partial removal due to location within footprint of and in close proximity to proposed buildings, proposed access road/driveway, proposed landscaping and footpath.
G27	Mixed species	C	Group requires removal due to location within footprint of and in close proximity to proposed buildings, proposed access road/driveway and proposed landscaping.
G28	Mixed species	C	Group requires removal due to location within footprint of and in close proximity to proposed buildings, proposed access road/driveway and proposed landscaping.

Table 5.1 (cont'd): Tree Removal (continues)

G29*	Mixed species	C	Group requires partial removal due to location within footprint of and in close proximity to proposed buildings, proposed access road/driveway and proposed landscaping.
H1*	Mixed species	C	Hedgerow requires partial removal due to location within footprint of and close proximity to proposed fences, buildings, soft landscaping, and hard surfacing.
H2	Mixed species	C	Hedgerow requires removal due to location within footprint of and in close proximity to proposed buildings, proposed access road/driveway and proposed landscaping.
H3	Mixed species	C	Hedgerow requires removal due to location within footprint of and in close proximity to proposed buildings, proposed access road/driveway and proposed landscaping.
H4	Mixed species	C	Hedgerow requires removal due to location within footprint of and in close proximity to proposed buildings, proposed access road/driveway, footpath, and proposed landscaping.
W1*	Mixed species	B	Woodland requires partial removal due to location within footprint of and in close proximity to proposed buildings, footpath, and proposed landscaping.
Key *: Partial removal of trees within group or woodland. 00: Trees within group are to be translocated rather than removed.			

Table 5.1 (cont'd): Tree Removal

The proposed development will ensure the retention and incorporation of the key trees across the site, prioritising those considered high and moderate retention value where possible, alongside new tree planting as part of the wider landscape strategy. However, the proposed development will require the removal of thirteen trees, eleven groups and three hedgerows as well as the partial removal of eleven groups, a hedgerow and one woodland.

Three individual trees (T14, T17 & T18), identified for removal, were considered to be unsuitable for retention during the Preliminary Arboricultural Assessment and therefore the removal of these trees would be required, irrespective of the proposed development, due to their poor condition.

One individual tree identified for removal (T21) was considered to be of moderate retention value and as such, suitable new tree planting will be required to offer an adequate level of mitigation for its loss.

The remaining individual trees (see Table 5.1) proposed for removal were all considered to be of low retention value during the arboricultural survey of the site. Consequently, it is considered unlikely that their removal will have a significant impact on the visual amenity value of the site. However, new tree planting will be required to mitigate for any loss in visual amenity value that does result from their removal.

Three groups (G4, G14 & G18) identified for removal were considered to be of moderate retention value and as such, their removal has the potential to impact the visual amenity value of the site. Consequently, suitable new tree planting will be required to mitigate for any loss in visual amenity value that results from their removal. It is worth noting that these groups were situated away from the boundaries and did not contribute significantly to the screening of the site.

The remaining groups (see Table 5.1) that are to be removed were considered to be of low retention value during the Preliminary Arboricultural Assessment. Many of these groups were comprised of trees which were self-seeded with limited future potential and offered limited visual amenity value to the site. The proposed removal of these trees should be considered acceptable subject to the planting of new higher quality trees

more suited to the new development which will make a lasting contribution to the visual amenity value and canopy coverage of the site. It should be noted that the English oak trees within G27 were of a size and quality where they would be suitable for translocation rather than removal if space can be found on site to act as a nursery for them during the development works.

Four groups (G12, G19, G22 & G23) and one woodland (W1) identified for partial removal were considered to be of moderate retention value during the survey. It should be noted that only comparatively small sections of W1, G12, G19 and G23 are to be removed and it is considered unlikely that the proposed removal will significantly impact the overall form and quality of the groups and woodland. The sections of G23 that are to be removed are considerable portion of the group and it is considered that the overall form of the group may be impacted. Consequently, suitable new tree planting will be required to mitigate for any loss in visual amenity value that results from the partial removal of the groups and woodland.

The remaining groups (see Table 5.1) that are to be partially removed were considered to be of low retention value during the Preliminary Arboricultural Assessment. Many of these groups were comprised of trees which were self-seeded with limited future potential and offered limited visual amenity value to the site. Large portions of G15, G17 and G24 are to be removed and it is considered that will impact the overall form and visual amenity value of the groups. Comparatively small portions of G2, G5 and G29 are to be removed and it is considered that the removals are unlikely to significantly impact the overall form and visual amenity value of these groups. A comparatively large proportion of G25 will be removed with only a small strip of the group towards the boundary of the site and two small sections further within the site being retained and this will impact the form and visual amenity value of the group. The proposed partial removal of these groups should be considered acceptable subject to the planting of new higher quality trees more suited to the new development which will make a lasting contribution to the visual amenity value and canopy coverage of the site.

The four hedgerows (see Table 5.1) that are to be removed or partially removed were considered to be of low retention value during the Preliminary Arboricultural Assessment. The proposed removal of these hedgerows should be considered acceptable as new tree planting of higher quality trees more suited to the new development will make a lasting contribution to the visual amenity value and canopy coverage of the site.

5.2.2 Tree Pruning

Pruning of mature trees should only be undertaken where essential, to prevent open wounds that allow the ingress of decay and provide an opportunity for fungal spores to infect the tree. Pruning works should ideally be undertaken during the winter months when the tree is dormant or during the summer months when the tree is fully active. Autumn pruning (when fungal spores are abundant in the surrounding atmosphere) should be avoided if possible. Juvenile trees should be formatively pruned in their early years to reduce the presence of potential defects into maturity that would reduce their lifespan.

All tree pruning works should be detailed as part of an Arboricultural Method Statement and completed in accordance with the current best practice guidance set out within BS3998:2010 *"Tree Work – Recommendations"* by suitably competent, qualified, and insured arboricultural contractors. It is recommended that the extent of pruning required is then identified to contractors in a pre-commencement site meeting as part of the enabling works.

5.3 IMPACTS FROM DEMOLITION AND RELATED OPERATIONS

5.3.1 Building Demolition

There are no areas on site where the demolition of existing buildings is required within close proximity to retained trees. As such, no impact from this aspect of the development is considered likely.

5.3.2 Removal of Hard Surfaces

The removal of existing hardstanding within the RPAs of retained trees will require a precautionary approach to the works and should be detailed as part of an Arboricultural Method Statement prior to site occupation.

5.4 DIRECT IMPACTS FROM CONSTRUCTION

5.4.1 Works within RPAs

Some aspects of the proposed development will require works within the RPAs of retained trees as detailed within Table 5.2.

Tree/ Group/ Hedgerow/ Woodland Reference	Species	Retention Category	Proposed Works
T3	Ash	B	Installation of fence and soft landscaping.
T11	English oak	A	Installation of fence and soft landscaping. Construction of proposed building.
T19	White poplar	B	Soft landscaping.
T20	English oak	B	Soft landscaping.
T24	Goat willow	C	Installation of footpath.
T25	Goat willow	C	Installation of footpath.
T26	English oak	A	Installation of footpath and access road.
T27	Ash	A	Installation of footpath and access road.
T28	English oak	A	Installation of footpath.
T34	English oak	B	Construction of proposed buildings, installation of fence and soft landscaping.
T35	English oak	A	Construction of proposed buildings, installation of fence, construction of access road, installation of proposed parking and soft landscaping.
T36	Goat willow	B	Soft landscaping.
T37	English oak	A	Installation of fence, construction of access road and soft landscaping.
T38	Cherry	C	Installation of fence and soft landscaping.
T39	English oak	A	Soft landscaping.
T40	English oak	A	Construction of access road and soft landscaping.
T41	English oak	A	Construction of access road and soft landscaping.
T42	English oak	A	Construction of access road and soft landscaping.
T43	English oak	B	Soft landscaping.
G1	Silver maple	B	Soft landscaping and installation of fence.
G2	Mixed species	C	Installation of fence.
G5	Leyland cypress	C	Soft landscaping and installation of fence.
G6	Mixed species	B	Soft landscaping, construction of access road and installation of fence.
G11	Mixed species	B	Soft landscaping.
G12	Mixed species	B	Soft landscaping, installation of footpath, construction of new building, construction of access road and installation of fence.
G15	Mixed species	C	Soft landscaping and installation of fence.
G17	Mixed species	C	Soft landscaping and installation of footpath.
G19	Mixed species	B	Soft landscaping and installation of footpaths.
G22	Mixed species	B	Soft landscaping and installation of footpaths.
G25	Mixed species	C	Installation of fences and soft landscaping.
G26	Mixed species	B	Soft landscaping.
G29	Mixed species	C	Soft landscaping.
H1	Mixed species	C	Installation of fences and soft landscaping.

Table 5.2: Works in RPAs and Canopy Spreads (continues)

W1	Mixed species	B	Soft landscaping, installation of footpath, construction of access road and construction of substation.

Table 5.2 (cont'd): Works in RPAs and Canopy Spreads

It should be noted that the extent of RPAs affected by works to construct the new buildings are situated at the periphery of the RPAs and are comparatively small. As such, the works will be tolerated by the affected trees and that the affected trees are unlikely to be significantly impacted by the works.

The RPAs of numerous retained trees will be affected by new soft landscaping works. Subject to the works not requiring any significant excavation within the RPAs it is considered that they are unlikely to impact the health of the trees. Nevertheless, an appropriate methodology for the works should be devised as part of an Arboricultural Method Statement.

The installation of fences will be required in the RPAs of multiple retained trees. Due to the nature of fences as structures utilising posts, the below ground footprint of the fences will be less than their above ground footprint. As such, with the adoption of an appropriate methodology it is considered that the works are unlikely to significantly impact the trees.

The installation of several footpaths across the site will require works within the RPAs of multiple retained trees. The exact nature of the construction of the various footpaths was not known at the time of writing, however, it is considered that if they are formal footpaths utilising hard surfaces then they will need to be constructed according to a no dig methodology. If the footpaths are less formal and more like woodland tracks with wooden kerbs and bark chip, they will not require such a methodology but will still need an appropriate methodology devised as part of an Arboricultural Method Statement.

The construction of the proposed access roads and proposed parking will require works within the RPAs of multiple retained trees. The affected areas of the RPAs of T37, T40 and T41 are comparatively small and are situated at the peripheries of the RPAs and as such, it is considered that the works are unlikely to significantly impact the trees. The areas of the RPAs of the other affected trees and groups which will be affected by the works are considerable in size and as such, it is considered that a no dig methodology will be required.

The affected areas of the RPAs of the trees in W1 affected by the works to construct the new substation are comparatively small and are situated at the peripheries of the RPAs and as such, it is considered that the works are unlikely to significantly impact the trees.

All works within the Root Protection Areas or beneath the canopy spreads of retained trees should be detailed as part of an Arboricultural Method Statement to ensure the method of construction is suitably considered.

5.4.2 Underground and Overhead Utilities

Wherever possible, common service trenches should be specified to minimise land take associated with underground service provision and facilitation access for future maintenance.

Proposed drainage is to be installed within the RPAs of multiple retained trees. The affected areas of the RPAs are all situated at the peripheries and affect comparatively small areas of the RPAs and as such, the works are unlikely to significantly impact the trees. Nevertheless, these works should be further considered as part of an Arboricultural Method Statement to ensure that there is no significant harm to retained trees.

5.4.3 Working Space

Sufficient working space around new buildings at a distance of approximately 2.5 m will be required across the site and will enter the RPAs of several retained trees (T11, T34, T35, T37, G1, G12, G22, G25 & W1). Suitable canopy, stem and ground protection measures will therefore be required to ensure any potential impact upon retained trees is mitigated. These mitigation measures should be included in an Arboricultural Method Statement following approval of the current planning application.

5.5 IMPACTS FROM CONSTRUCTION RELATED OPERATIONS

5.5.1 Site Access

It is understood that construction access to the site will be provided through the existing access point, and it may therefore be necessary to undertake access facilitation pruning works to low-hanging branches to minimise the potential for vehicular impact.

It will be necessary to ensure retained trees adjacent to the access route are protected from vehicular impact through the installation of tree protection barriers, prior to the commencement of the development.

5.5.2 Site Compound, Contractors Car Parking, Delivery and Storage of Materials

Material deliveries to the site will utilise the existing access point. Retained trees will be protected from harm by the prior installation of tree protection barriers and the completion of access facilitation pruning works (if required).
The site compound, contractor's parking, and areas for materials storage within the site should be confirmed as part of an Arboricultural Method Statement following approval of the current planning application.

5.6 POST-DEVELOPMENT IMPACTS

5.6.1 Shading

The shade from trees can be considered both a constraint and opportunity and therefore its effect upon the new development should be fully considered to ensure a harmonious and sustainable relationship can be achieved. When considering the position and orientation of new buildings in relation to existing trees, primary living areas should receive the largest proportion of natural sunlight. BRE guidelines recommends *"at least half of the garden or open space should receive at least two hours sunlight on March 21 (Spring Equinox)"*.

It is considered likely that some minor level of shading will occur on site due the proximity of some trees to some residential properties and their gardens. However, it is considered unlikely that this will result in significant conflict between the occupants of the properties and the trees.

5.6.2 Future Pressure for Removal

The layout of the proposed development is such that future pressure for tree removal is generally unlikely to occur.

5.6.3 Seasonal Nuisance

The sweeping up of leaves and cleaning of gutters, which may become blocked by falling leaves, is considered to be routine seasonal maintenance and as such, no notable conflict with the proposed development is considered likely to occur. Nonetheless, it may prove appropriate in certain areas to use gutter guards, or otherwise enclosed gutters, to minimise the potential for leaf fall to cause blockage and an ongoing nuisance.

6. SUMMARY OF IMPACTS

The proposed development of the site is unlikely to significantly impact the visual amenity of the local area as a result of the proposed tree removal as the trees proposed for removal are primarily those considered to have low retention value and their loss should be mitigated by the proposed tree planting in time. The proposed works are unlikely to impact significantly upon the long-term health of retained trees.

Whilst some works are to be undertaken within the RPAs of retained trees, the nature of those works are such that they can be completed without impacting significantly upon the trees subject to the adoption of appropriate working practices as detailed in a future Arboricultural Method Statement following approval of the current planning application.

7. MITIGATION AND PROTECTION

7.1 INTRODUCTION

This section of the report details the mitigation for the proposed tree loss, initial protection and avoidance measures suggested to prevent harm to the retained trees.

7.2 NEW TREE PLANTING

New tree planting will form an integral part of the proposed development, however, proposals for new tree planting should be appropriate for the future use of the site and not just aim to mitigate the proposed tree loss.

At the time of writing, full details of the proposed landscaping for the site were not available. However, as part of the development proposals, an adequate quantity of tree planting has been indicated on the Proposed Site Layout (Drawing Reference: ME-24-21Y). The purpose and function of the new tree planting should be carefully considered so that key objectives from a wildlife habitat and landscape perspective can also be achieved.

The landscaping scheme should consider the use of both native tree species (for their low maintenance requirements and nature conservation value) and ornamental species (for their contribution to urban design and amenity value). Species choices should be selected on the basis of their suitability for the final site use. Careful consideration should be given to the following: ultimate height and canopy spread, form, habit, density of crown, potential shading effect, colour, water demand, soil type and maintenance requirements in relation to both the built form of the new development and existing properties.

Through careful species selection, the landscape scheme shall reduce the risk of trees being removed in the future on the grounds of nuisance. Nuisance can be perceived in a number of ways and vary from person to person however most commonly, within the context of trees, low overhanging branches, excessive shading, seasonal leaf fall and the perception that trees close to buildings cause damage.

Tree planting should be avoided where they may obstruct overhead power lines or cables. Any underground apparatus should be ducted or otherwise protected at the time of construction to enable trees to be planted without resulting in future conflicts.

7.3 GENERAL TREE PROTECTION

7.3.1 Construction Exclusion Zone

To minimise the potential for harm to the root systems and canopies of retained trees during development construction exclusion zones will be required throughout the site. These are areas surrounding the trees' RPAs and canopies in which construction works, or related activities, will be avoided.

It is recommended that the exclusion zones are always afforded protection using tree protection barriers and/or ground protection (specified in accordance with BS5837:2012). No works that cause compaction of the soil or severance of tree roots, except when undertaken in accordance with the guidance provided within this document or detailed within a subsequent AMS, will be undertaken within any exclusion zone.

7.3.2 Tree Protection Barriers

The protective barriers should be erected following any tree removal or tree surgery works and prior to the commencement of any construction site works e.g. before any construction materials or machinery are brought on site or the stripping of soil commences.

The protective barriers are to be constructed in accordance with the specification detailed in BS5837:2012. Any variation to the specification of the protective barrier should be agreed with the Local Planning Authority Arboricultural Officer or included as part of an Arboricultural Method Statement following approval of the current planning application.

7.3.3 Ground Protection

Ground protection measures will likely need to be installed within the RPAs of multiple retained trees across the site to permit access for construction and to provide space for site activities. Suitable ground protection

measures should be detailed as part of an Arboricultural Method Statement following approval of the current planning application.

8. ARBORICULTURAL METHOD STATEMENT

An Arboricultural Method Statement will be required for the site as various aspects of the proposed development will need to be fully considered due to the presence of retained trees.

The purpose of an Arboricultural Method Statement is to ensure that all site operations can occur with minimal risk of adverse impact upon trees that are to be retained. The document will identify all areas where specific working methods will be required to ensure protection to trees. The document will also specify the location and extent of tree protection barriers and ground protection.

In relation to this development the Arboricultural Method Statement should address the following:

- Tree Surgery
- Site setup and logistics
- Works within Root Protection Areas
- Working space to construct new buildings
- Suitable site access, material storage contractor's car parking and site compound locations.
- Final protective barrier and ground protection locations and specifications.
- Phased approach to development works to ensure retained trees are not impacted through new access construction works.
- Extent of access facilitation pruning works to be undertaken.
- Pre-commencement site meeting.

9. REFERENCES AND BIBLIOGRAPHY

British Standards Institution. (2010). *British Standard 3998:2010, Tree Work - Recommendations.* British Standards Institution, London.

British Standards Institution. (2012). *British Standard 5837:2012, Trees in Relation to Design, Demolition and Construction – Recommendations.* British Standards Institution, London.

Middlemarch Environmental Ltd. (2020). *Report Number RT-MME-152753-01*. Preliminary Arboricultural Assessment.

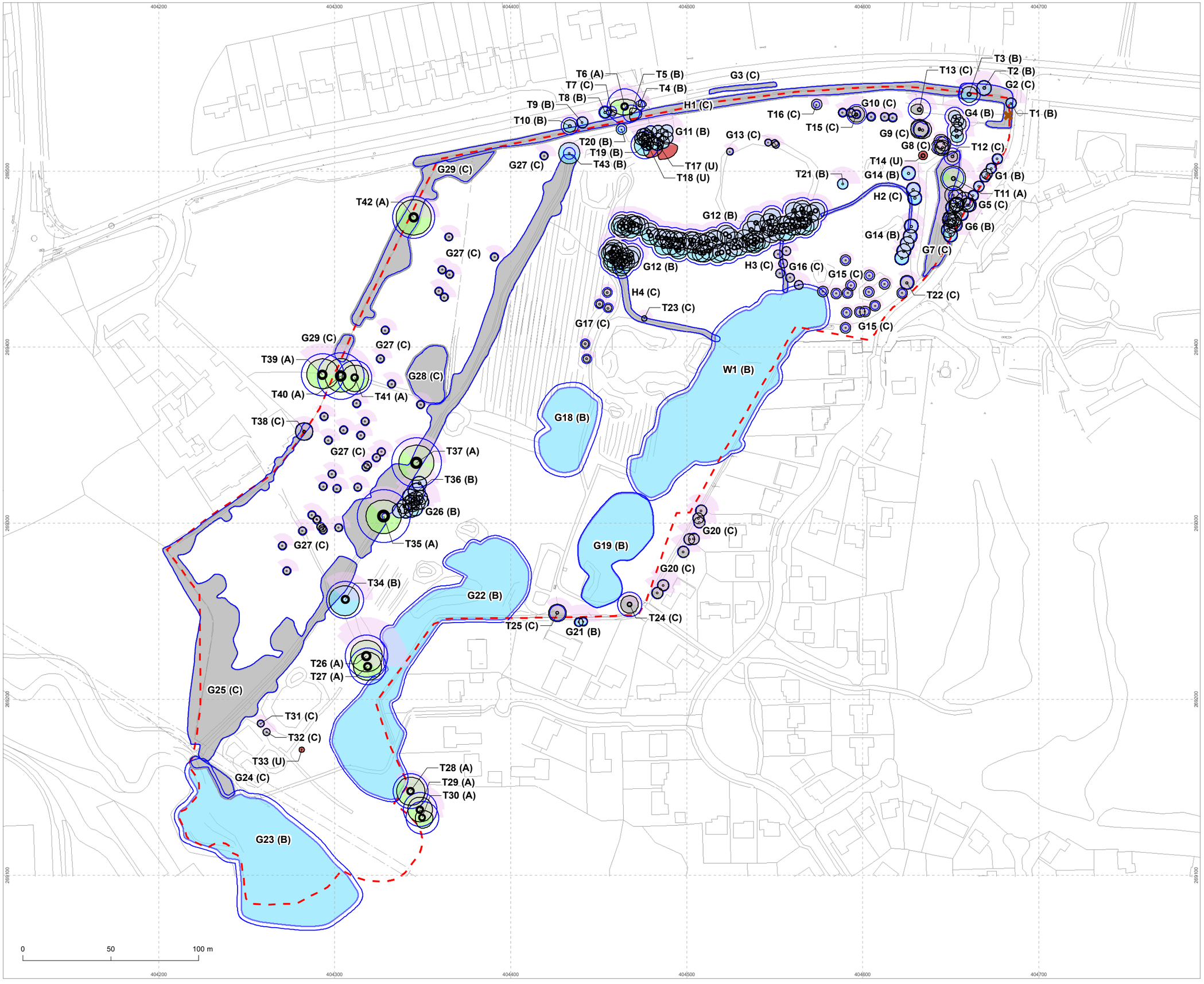
Littlefair P. (2011). *Site layout planning for daylight and sunlight: a guide to good practice* (BR 209). British Research Establishment, Watford.

10. DRAWINGS

Drawing Number C152753-01-01 Rev B – Tree Survey Plan

Drawing Number C152753-02-01 Rev D – Tree Retention Plan

Appendix A: Tree Schedule



C152753-01-01-RevB

Legend

- Tree location and stem diameter
- Dead tree
- Category A
- Category B
- Category C
- Category U
- Current canopy extent
- Root Protection Area
- Indicative tree shadow
- Site boundary

T - Tree
H - Hedgerow
G - Tree group
W - Woodland

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

NOTES
All dimensions to be verified on site. Do not scale this drawing, use figured dimensions only. All discrepancies to be clarified with Project Arboriculturalist. Drawing to be read in conjunction with Preliminary Arboricultural Assessment and Tree Schedule. Drawing has been produced in colour and is based on digital informaton in .dwg format, aerial images and/or GPS location where appropriate. A monochrome copy should not be relied upon. The exact position of individual trees or species included as part of a tree group, woodland or hedgerow should be checked and verified on site prior to any decisions for foundation design, tree operations or construction activity being undertaken. Further survey work would be required for calculating foundation depths.
Trees are living organisms that change over time, the condition of all trees illustrated herein, are to be checked by the Project Arboriculturalist should works commence 12 months after the date of this survey.
SOME TREES MAY BE SUBJECT TO STATUTORY CONSTRAINTS. IT IS THEREFORE ADVISED THAT NO WORKS SHOULD BE UNDERTAKEN TO ANY TREES ILLUSTRATED HEREIN WITHOUT FIRST OBTAINING THE RELEVANT AUTHORISATION TO DO SO UNLESS AGREED AS PER THE APPROVED PLANS THROUGH PLANNING CONSENT.

N

Project	Hither Green Golf Course, Hither Green Lane, Redditch
Drawing	Tree Survey Plan
Client	Barratt Homes
Drawing Number	C152753-01-01-RevB
Revision	Rev B
Scale @ A3	1:2,000
Date	September 2021
Approved By	SH
Drawn By	GT

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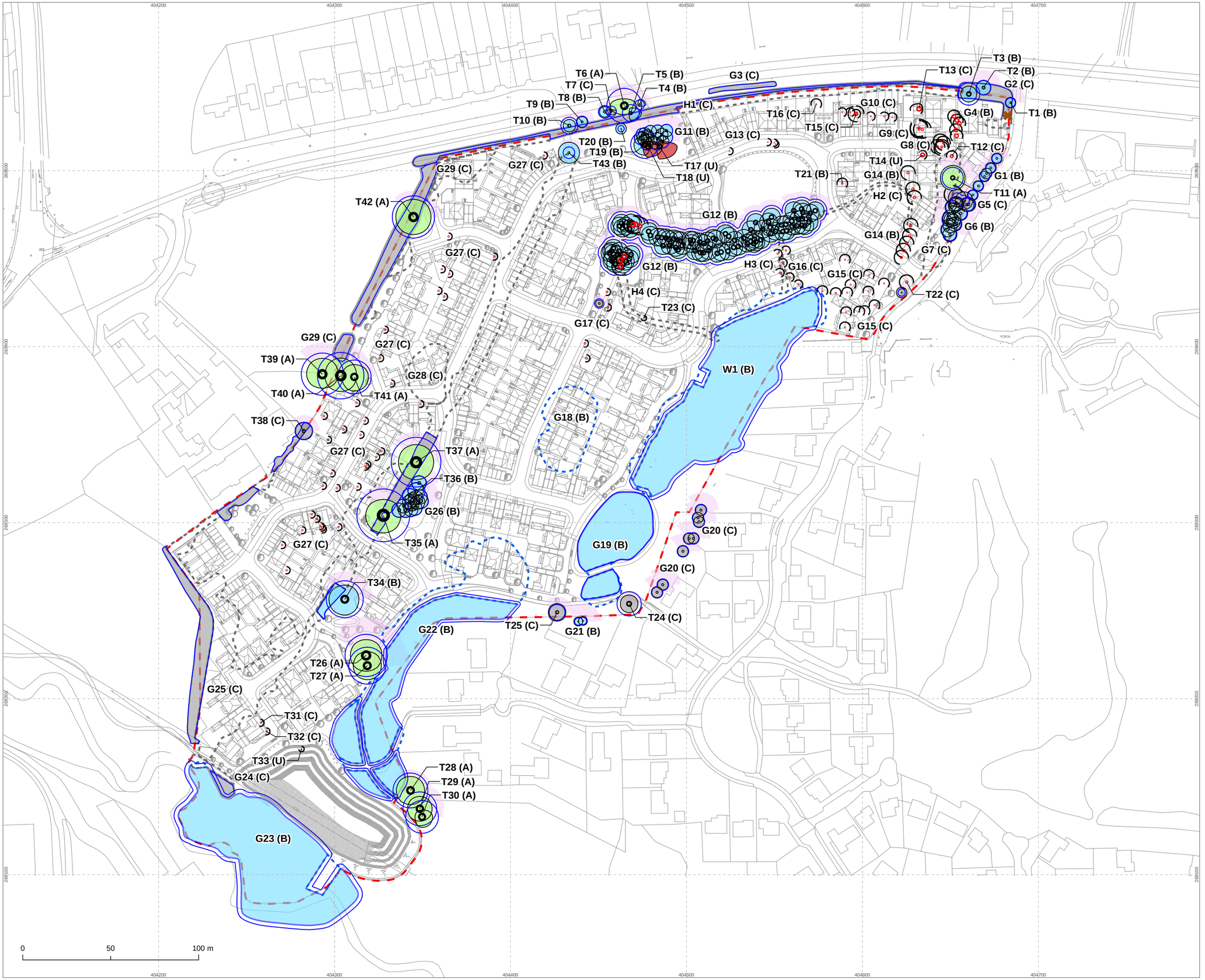

C152753-02-01-RevD

Legend

- Tree location and stem diameter
- Tree to be removed
- Dead tree
- Category A tree
- Category B tree
- Category C tree
- Category U tree
- Category B group to be removed
- Category C group to be removed
- Current canopy - tree to be removed
- Current canopy - tree to be retained
- Root Protection Area
- Indicative tree shadow
- Site boundary

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

N

NOTES

All dimensions to be verified on site. Do not scale this drawing, use figured dimensions only. All discrepancies to be clarified with Project Arboriculturalist. Drawing to be read in conjunction with Preliminary Arboricultural Assessment and Tree Schedule. Drawing has been produced in colour and is based on digital informaton in .dwg format, aerial images and/or GPS location where appropriate. A monochrome copy should not be relied upon. The exact position of individual trees or species included as part of a tree group, woodland or hedgerow should be checked and verified on site prior to any decisions for foundation design, tree operations or construction activity being undertaken. Further survey work would be required for calculating foundation depths.

Trees are living organisms that change over time, the condition of all trees illustrated herein, are to be checked by the Project Arboriculturalist should works commence 12 months after the date of this survey. SOME TREES MAY BE SUBJECT TO STATUTORY CONSTRAINTS. IT IS THEREFORE ADVISED THAT NO WORKS SHOULD BE UNDERTAKEN TO ANY TREES ILLUSTRATED HEREIN WITHOUT FIRST OBTAINING THE RELEVANT AUTHORISATION TO DO SO UNLESS AGREED AS PER THE APPROVED PLANS THROUGH PLANNING CONSENT.

Project	Hither Green Golf Course, Hither Green Lane, Redditch
Drawing	Tree Retention Plan
Client	Barratt Homes
Drawing Number: C152753-02-01-RevD	Revision: Rev D
Scale @ A3: 1:2,000	Date: April 2023
Approved By: SKH	Drawn By: JR

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Appendix A - Tree Schedule

<table>
<tr><th>Measurements</th><th>Age Class</th><th>Overall Condition</th><th>Root Protection Area (RPA)</th></tr>
<tr><td>Height - estimated from ground level (m).</td><td>YNG: Young trees up to ten years of age.</td><td>G - Good: Trees with only a few minor defects and in good overall health needing little, if any attention.</td><td rowspan="4">• The RPA column gives the required area (m²).
• The RPA Radius column gives the radius (m) of an equivalent circle.
• The RPA is calculated using the formulae described in paragraph 4.6.1 of British Standard 5837: 2012 and is indicative of the required rooting area in order for a tree to be retained.</td></tr>
<tr><td>Stem Dia. - Diameter measured (mm) in accordance with Annex C of the BS5837.</td><td>SM: Semi-mature, trees less than 1/3 life expectancy.</td><td>F - Fair: Trees with minor, but rectifiable, defects or in the early stages of stress from which it may recover.</td></tr>
<tr><td>Crown - crown spread estimated radially from the main stem (m).</td><td>EM: Early mature, trees 1/3 – 2/3 life expectancy.</td><td>P - Poor: Trees with major structural and/or physiological defects such that it is unlikely the tree will recover in the long term.</td></tr>
<tr><td rowspan="2">Abbreviations
Est - Estimated stem diameter
Avg - Average stem diameter
Max - Maximum stem diameter</td><td>M: Mature trees, over 2/3 life expectancy.</td><td>D - Dead: Trees no longer alive. This could also apply to trees that are dying and unlikely to recover.</td></tr>
<tr><td>OM: Over mature, declining or moribund trees of low vigour.</td><td colspan="2" rowspan="2">In the assessment, of the BS category, particular consideration has been given to the following
• The health, vigour and condition of each tree
• The presence of any structural defects in each tree and its future life expectancy
• The size and form of each tree and its suitability within the context of a proposed development
• The location of each tree relative to existing site features e.g. its screening value or landscape features
• Age class
• Life expectancy</td></tr>
<tr><td></td><td>V: Veteran, tree possessing certain attributes relating to veteran trees.</td></tr>
</table>

Structural Condition

The following has been considered when inspecting structural condition:
- The presence of fungal fruiting bodies around the base of the tree or on the stem, as they could possibly indicate the presence of possible internal decay.
- Soil cracks and any heaving of the soil around the base.
- Any abrupt bends in branches and limbs resulting from past pruning.
- Tight or weak 'V' shaped forks and co-dominant stems.
- Hazard beam formations and other such biomechanical related defects (as described by Claus Mattheck, Body Language of Trees HMSO Research for Amenity Trees No. 4 1994).
- Cavities as a result of limb losses or past pruning.
- Broken branches or storm damage.
- Canker formations.
- Loose or flaking bark.
- Damage to roots.
- Basal, stem or branch / limb cavities.
- Crown die-back or abnormal foliage size and colour.
- Any changes to the timing of normal leaf flush and leaf fall patterns.

Quality Assessment of Retention Category

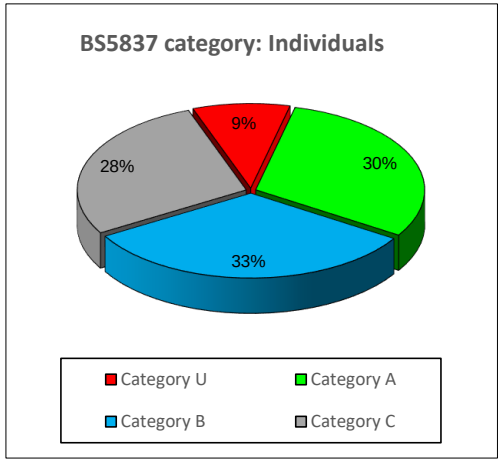
Category U - Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.

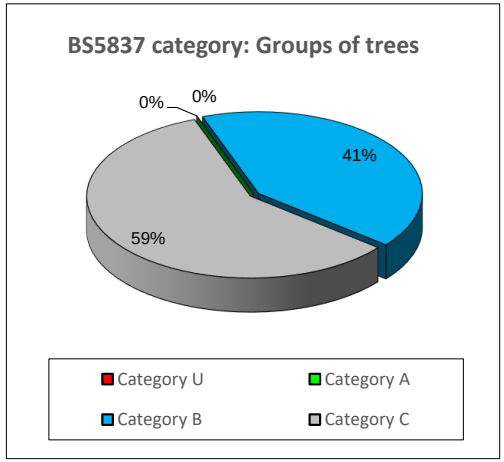
Category A - Trees of high quality with an estimated remaining life expectancy of at least 40 years.

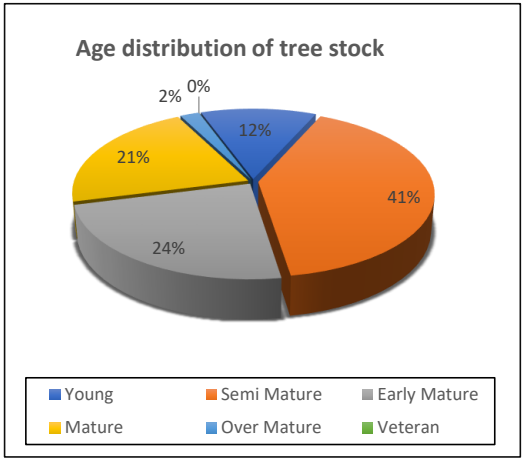
Category B - Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.

Category C - Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.

Sub-categories: (i) - Mainly arboricultural value
(ii) - Mainly landscape value
(iii) - Mainly cultural or conservation value







Appendix A - Summary

	Individual Trees	Totals	Tree Groups	Totals
Category U	T14, T17, T18, T33	4		0
Category A	T6, T11, T26, T27, T28, T29, T30, T35, T37, T39, T40, T41, T42	13		0
Category B	T1, T2, T3, T4, T5, T8, T9, T10, T19, T20, T21, T34, T36, T43	14	G1, G4, G6, G11, G12, G14, G18, G19, G21, G22, G23, G26	12
Category C	T7, T12, T13, T15, T16, T22, T23, T24, T25, T31, T32, T38	12	G2, G3, G5, G7, G8, G9, G10, G13, G15, G16, G17, G20, G24, G25, G27, G28, G29	17
	Total	43	**Total**	29

	Hedgerows	Totals	Woodlands	Totals
Category U		0		0
Category A		0		0
Category B		0	W1	1
Category C	H1, H2, H3, H4	4		0
	Total	4	**Total**	1

Tree No	Species	Height (m)	Crown Clearance (m)	No. of Stems	Stem Dia. (mm)	Crown Radius				Age Class	Structure	Vigour	RPA (m)	RPA Radius (m)	Cat	Comments
						N	E	S	W							
T1	Silver maple	9.0	3.0	2	170 110	3.0	3.0	3.0	3.0	SM	F	F	23	2.7	B 1	Branch stubs Included unions through crown Limited inspection due to access
T2	Ash	10.0	1.0	1	330	4.0	4.0	4.0	4.0	EM	F	G	55	4.2	B 1	Light ivy on stem Minor deadwood in crown No obvious defects observed
T3	Ash	11.0	1.0	3	340 240 300	4.5	4.5	4.5	4.5	EM	F	F	124	6.3	B 1	Limited inspection due to access Minor deadwood in crown No obvious defects observed
T4	English oak	7.0	1.3	1	220	3.0	3.5	1.0	1.0	SM	G	G	23	2.7	B 1	Limited inspection due to ivy Light ivy on stem Minor deadwood in crown
T5	English oak	8.0	1.0	1	380	3.0	6.0	4.0	1.0	SM	F	F	72	4.8	B 1	Heavy ivy on the stem Minor deadwood in crown
T6	English oak	13.0	4.0	1	820	4.0	7.0	5.0	8.0	M	G	G	308	9.9	A 1	Branch stubs Minor deadwood in crown Major deadwood in crown Open cavity at 5m above ground level to the north
T7	English oak	4.0	1.5	1	230	1.0	3.0	2.0	3.0	Y	F	F	28	3.0	C 1	Included unions through crown Old pruning wounds from crown lift Minor deadwood in crown
T8	English oak	6.0	2.0	1	300	3.0	3.0	3.0	3.0	SM	G	G	41	3.6	B 1	Light ivy on stem Minor deadwood in crown No obvious defects observed
T9	English oak	7.0	1.5	1	270	3.0	3.0	3.0	3.0	SM	F	G	34	3.3	B 1	Heavy ivy on the stem Branch stubs Minor deadwood in crown

Tree No	Species	Height (m)	Crown Clearance (m)	No. of Stems	Stem Dia. (mm)	Crown Radius				Age Class	Structure	Vigour	RPA (m)	RPA Radius (m)	Cat	Comments
						N	E	S	W							
T10	English oak	7.0		1	400	3.5	3.5	3.5	3.5	EM	G	G	72	4.8	B 1	Heavy ivy on the stem Minor deadwood in crown Limited inspection due to ivy
T11	English oak	13.0	3.0	1	490	7.0	7.0	7.0	7.0	M	G	G	113	6.0	A 1	Minor deadwood in crown Typical crown form No obvious defects observed
T12	Pear	6.0		1	400	3.0	3.0	3.0	3.0	M	P	F	72	4.8	C 1	Heavy ivy on the stem Branch stubs Leaning stem to the south
T13	Lawson cypress	10.0	2.0	1	520	3.0	2.0	3.0	5.0	M	P	G	124	6.3	C 1	Minor deadwood in crown Old pruning wounds from crown lift Stem leans excessively to the west from the base Stem is tight up against building
T14	Apple	3.0	1.0	1	470	2.5	2.5	2.5	2.5	M	P	F	102	5.7	U	Large vertical cavity observed to the north side from 0,5m to 2,5m Main leader lost in the past
T15	Grand fir	11.0	1.0	1	450	4.5	4.5	4.5	4.5	EM	P	F	92	5.4	C 1	Limited inspection due to access Top snapped out in the past leaving open wound
T16	Ash	7.0	0.0	1	150	3.0	3.0	3.0	3.0	SM	F	F	10	1.8	C 1	Typical crown form No obvious defects observed
T17	White poplar	13.0	1.0	1	500	3.0	10.0	7.0	1.5	M	P	G	113	6.0	U	Major deadwood in crown Minor deadwood in crown Root plate lifting, expected imminent failure, stem leans to the east by 25 degrees
T18	White poplar	16.0	2.0	1	640	3.0	8.0	6.0	3.0	M	P	F	191	7.8	U	Branch stubs Minor deadwood in crown Major deadwood in crown Large vertical split from ground level to 2,5m displaying decay
T19	White poplar	17.0	2.5	1	640	5.0	3.0	6.0	6.0	M	F	F	191	7.8	B 1	Branch stubs Major deadwood in crown Minor deadwood in crown
T20	English oak	7.0	0.0	1	130	3.0	3.0	3.0	3.0	SM	G	G	10	1.8	B 1	No obvious defects observed Typical crown form

Tree No	Species	Height (m)	Crown Clearance (m)	No. of Stems	Stem Dia. (mm)	Crown Radius				Age Class	Structure	Vigour	RPA (m)	RPA Radius (m)	Cat	Comments
						N	E	S	W							
T21	Silver birch	10.0	1.0	1	250	3.0	3.0	3.0	3.0	SM	G	G	28	3.0	B 1	Maiden form
T22	Norway maple	7.0	1.0	2	130 250	4.0	4.0	4.0	4.0	SM	P	F	41	3.6	C 1	Minor deadwood in crown Twin stems from the base
T23	Silver birch	5.0	0.0	1	120	1.5	1.5	1.5	1.5	SM	G	G	7	1.5	C 1	Typical crown form No obvious defects observed
T24	Goat willow	7.0	2.0	4	310 300 290 210	5.0	5.0	5.0	5.0	M	F	G	150	6.9	C 1	Branch stubs Branch socket cavity Included unions through crown Old pruning wounds from crown lift Minor deadwood in crown Lapsed coppice
T25	Goat willow	9.0	1.0	8	370	5.0	5.0	5.0	5.0	EM	F	F	64	4.5	C 1	Branch stubs Included unions through crown Minor deadwood in crown Typical crown form Old pruning wounds from crown lift
T26	English oak	22.0	3.5	1	980	9.0	9.0	9.0	9.0	M	G	G	452	12.0	A 1	Branch stubs Major deadwood in crown Minor deadwood in crown Epicormic growth in crown Typical crown form Old pruning wounds from crown lift
T27	Ash	24.0	3.0	1	870	8.0	8.0	8.0	8.0	M	F	G	346	10.5	A 1	Branch stubs Epicormic growth on main stem Epicormic growth in crown Major deadwood in crown Minor deadwood in crown Branch socket cavity Old pruning wounds from crown lift Typical crown form Large lateral roots with extensive cavities and visible decay
T28	English oak	12.0	2.0	1	820	8.0	8.0	8.0	8.0	M	G	G	308	9.9	A 1	Branch stubs Major deadwood in crown Minor deadwood in crown Old pruning wounds from crown lift No obvious defects observed Typical crown form

Tree No	Species	Height (m)	Crown Clearance (m)	No. of Stems	Stem Dia. (mm)	Crown Radius				Age Class	Structure	Vigour	RPA (m)	RPA Radius (m)	Cat	Comments
						N	E	S	W							
T29	English oak	14.0	2.0	1	790	7.0	7.0	7.0	7.0	M	G	G	290	9.6	A 1	Branch stubs Minor deadwood in crown Major deadwood in crown Old pruning wounds from crown lift Typical crown form No obvious defects observed
T30	English oak	12.0	2.0	1	770	4.0	6.0	6.0	4.0	M	G	G	272	9.3	A 1	Limited inspection due to ivy Heavy ivy on the stem Branch stubs Major deadwood in crown Minor deadwood in crown Old pruning wounds from crown lift Typical crown form
T31	Alder	5.0	2.0	1	130	2.0	2.0	2.0	2.0	Y	P	F	10	1.8	C 1	Branch stubs Old pruning wounds from crown lift Typical crown form Bark wound on stem with exposed heartwood
T32	Alder	6.0	1.5	1	160	2.0	2.0	2.0	2.0	SM	F	G	14	2.1	C 1	Epicormic growth on main stem Branch stubs Old pruning wounds from crown lift Typical crown form
T33	Cherry	5.0	2.0	1	140	1.5	1.5	1.5	1.5	SM	P	F	10	1.8	U	Branch stubs Old pruning wounds from crown lift Typical crown form Bark wound on stem with exposed heartwood and visible decay
T34	English oak	16.0	3.0	1	870	8.0	8.0	9.0	9.0	M	F	G	346	10.5	B 1	Branch stubs Included unions through crown Minor deadwood in crown Old pruning wounds from crown lift Typical crown form Epicormic growth on main stem Cavity on north side of base going approximately 30cm into the stem and 1m up stem Hollow between buttress roots on south side of stem

Tree No	Species	Height (m)	Crown Clearance (m)	No. of Stems	Stem Dia. (mm)	Crown Radius				Age Class	Structure	Vigour	RPA (m)	RPA Radius (m)	Cat	Comments
						N	E	S	W							
T35	English oak	17.0	3.0	1	1500	9.0	10.0	10.0	10.0	OM	G	G	707	15.0	A 1	Branch stubs Included unions through crown Epicormic growth in crown Minor deadwood in crown Major deadwood in crown Typical crown form Old pruning wounds from crown lift Vegetation restricted inspection of stem
T36	Goat willow	11.0	3.0	1	400	5.0	4.0	2.0	5.0	EM	F	G	72	4.8	B 1	Branch stubs Included unions through crown Minor deadwood in crown Typical crown form
T37	English oak	17.0	2.5	1	1160	10.0	10.0	10.0	10.0	OM	F	G	625	14.1	A 1	Typical crown form Major deadwood in crown Branch stubs Branch socket cavity Epicormic growth in crown Included unions through crown No obvious defects observed Old pruning wounds from crown lift Tear wounds Large dead branch with missing bark at 3m on West side of stem Cavity on south side of base however unable to determine extent due to vegetation Remains of Ganoderma fungal fruiting body on east side of base Hazard inspection
T38	Cherry	9.0	0.0	1	400	5.0	5.0	5.0	5.0	M	F	F	72	4.8	C 1	Limited inspection due to access Minor deadwood in crown Typical crown form Branch stubs Vegetation restricted inspection Estimated dimensions due to limited inspection

Tree No	Species	Height (m)	Crown Clearance (m)	No. of Stems	Stem Dia. (mm)	Crown Radius				Age Class	Structure	Vigour	RPA (m)	RPA Radius (m)	Cat	Comments
						N	E	S	W							
T39	English oak	18.0	2.0	1	1000	9.0	9.0	8.0	9.0	M	G	G	452	12.0	A 1	Major deadwood in crown Minor deadwood in crown Limited inspection due to access Limited inspection due to ivy Ivy restricts inspection stem Light ivy on stem Heavy ivy in the crown Branch stubs Old pruning wounds from crown lift Typical crown form
T40	English oak	18.0	1.0	1	1100	10.0	9.0	9.0	9.0	M	F	G	547	13.2	A 1	Fungi present Branch stubs Major deadwood in crown Minor deadwood in crown Limited inspection due to ivy Heavy ivy on the stem Heavy ivy in the crown Typical crown form Old pruning wounds from crown lift Branch socket cavity Large hanging branches in crown Ganoderma fruiting bodies on Northside of base No cavity spotted but possibly internal Hazard assessment
T41	English oak	12.0	2.0	1	800	7.0	8.0	8.0	7.0	M	G	F	290	9.6	A 1	Branch stubs Branch socket cavity Major deadwood in crown Minor deadwood in crown Old pruning wounds from crown lift Typical crown form Bird box on stem Large dead branch at 3m on north side of stem
T42	English oak	15.0	1.0	1	1000	10.0	10.0	10.0	10.0	M	G	G	452	12.0	A 1	Branch socket cavity Branch stubs Included unions through crown Major deadwood in crown Minor deadwood in crown Typical crown form Old pruning wounds from crown lift Vegetation restricted inspection

Tree No	Species	Height (m)	Crown Clearance (m)	No. of Stems	Stem Dia. (mm)	Crown Radius				Age Class	Structure	Vigour	RPA (m)	RPA Radius (m)	Cat	Comments
						N	E	S	W							
T43	English oak	8.0	0.0	2	200 180	6.0	6.0	6.0	6.0	SM	F	G	34	3.3	B 1	Branch stubs Minor deadwood in crown Typical crown form No obvious defects observed Included unions through crown

Tree No	Species	Height (m)	Crown Clearance (m)	No. of Stems	Stem Dia. (mm)	Crown Radius				Age Class	Structure	Vigour	RPA (m)	RPA Radius (m)	Cat	Comments
						N	E	S	W							
G1	Silver maple	7.0	2.0	-	220	3.0	3.0	3.0	3.0	SM	F	F	23	2.7	B 2	Included unions in crowns Branch stubs observed Minor deadwood in crowns
G2	Ash English oak Cotoneaster Silver maple Hawthorn Elder Privet	6.0	0.0	-	100	1.5	1.5	1.5	1.5	SM EM M	F	G	5	1.2	C 2	Typical crown forms Self seeded trees present Conjoined canopy Ash dieback observed
G3	Blackthorn Hawthorn Ash	5.0	0.0	-	120	1.5	1.5	1.5	1.5	EM SM	F	F	7	1.5	C 2	Heavy ivy on stems Conjoined canopy Outgrown hedgerow section
G4	Pear Lawson cypress Scots pine	10.0	1.0	-	450	3.5	3.5	3.5	3.5	M EM	F	F	92	5.4	B 2	Conjoined canopy Branch stubs observed Included unions in crowns Old pruning wounds from crown lift Scots pine has sparse canopy
G5	Leyland cypress	9.0	0.0	-	240	5.0	5.0	5.0	5.0	EM	F	G	28	3.0	C 2	Typical crown forms No obvious defects
G6	English oak Ash Blackthorn Silver maple Scots pine Lawson cypress	12.0	2.0	-	300	4.0	4.0	4.0	4.0	SM	F	G	41	3.6	B 2	Conjoined canopy Branch stubs observed Minor deadwood in crowns Included unions in crowns
G7	Hawthorn Damson Spindle	5.0	0.5	-	140	2.5	2.5	2.5	2.5	Y SM	F,P	F	10	1.8	C 2	Typical crown forms Conjoined canopy
G8	Wild cherry	6.0	1.5	-	230	4.0	4.0	4.0	4.0	SM	P	P	28	3.0	C 2	Minor deadwood in crowns Branch stubs observed Conjoined canopy Dead trees present
G9	Goat willow Silver birch Grand fir	7.0	0.0	-	300	5.0	5.0	5.0	5.0	EM SM Y	F	F	41	3.6	C 2	Conjoined canopy Branch stubs observed Minor deadwood in crowns Typical crown forms
G10	Norway maple	6.0	1.0	-	170	2.5	2.5	2.5	2.5	SM	F	G	14	2.1	C 2	No obvious defects Typical crown forms
G11	Norway maple White poplar Ash	10.0	1.5	-	300	3.5	3.5	3.5	3.5	SM EM	F	G	41	3.6	B 2	Dead trees present Conjoined canopy Minor deadwood in crowns

Tree No	Species	Height (m)	Crown Clearance (m)	No. of Stems	Stem Dia. (mm)	Crown Radius				Age Class	Structure	Vigour	RPA (m)	RPA Radius (m)	Cat	Comments
						N	E	S	W							
G12	Ash White poplar Whitebeam Cherry Silver birch Norway maple English oak Sycamore Field maple European lime Goat willow Crack willow	10.0	0.0	-	550	5.0	5.0	5.0	5.0	M SM EM	G	G	137	6.6	B 2	Branch stubs observed Conjoined canopy Minor deadwood in crowns Self seeded trees present Tear wounds Typical crown forms
G13	Hawthorn Goat willow	5.0	0.0	-	150	2.0	2.0	2.0	2.0	EM Y	F	F	10	1.8	C 2	Typical crown forms Self seeded trees present Minor deadwood in crowns
G14	Scots pine	8.0	1.0	-	280	4.0	4.0	4.0	4.0	SM	F	G	41	3.6	B 2	Minor deadwood in crowns Typical crown forms
G15	Scots pine Austrian pine Silver birch Crack willow Cherry Norway maple	5.0	0.0	-	170	3.0	3.0	3.0	3.0	SM	F	G	14	2.1	C 2	Self seeded trees present Branch stubs observed Minor deadwood in crowns Sporadic trees
G16	Scots pine	7.0	0.0	-	190	2.5	2.5	2.5	2.5	SM	G	G	18	2.4	C 2	Minor deadwood in crowns Typical crown forms No obvious defects
G17	Silver birch Cherry Horse chestnut Scots pine	5.0	1.0	-	210	2.0	2.0	2.0	2.0	SM	F	F	23	2.7	C 2	Branch stubs observed Typical crown forms No obvious defects
G18	Silver birch Alder Ash Whitebeam Rowan	13.0	2.0	-	470	3.0	3.0	3.0	3.0	Y SM	G,F	G,F	102	5.7	B 2	Branch stubs observed Minor deadwood in crowns Major deadwood in crowns Included unions in crowns Conjoined canopy Branch socket cavities Typical crown forms Old pruning wounds from crown lift

Tree No	Species	Height (m)	Crown Clearance (m)	No. of Stems	Stem Dia. (mm)	Crown Radius				Age Class	Structure	Vigour	RPA (m)	RPA Radius (m)	Cat	Comments
						N	E	S	W							
G19	Ash Crack willow Swedish whitebeam Field maple Silver birch Norway maple Alder White willow	17.0	2.0	-	350	4.0	4.0	4.0	4.0	SM EM	F	F	55	4.2	B 2	Conjoined canopy Branch stubs observed Branch socket cavities Included unions in crowns Minor deadwood in crowns Typical crown forms Old pruning wounds from crown lift
G20	Silver birch Cherry Atlas cedar Leyland cypress Goat willow Scots pine	10.0	2.0	-	270	3.0	3.0	3.0	3.0	SM	F	F	34	3.3	C 2	Off site but overhangs study area Sparse in areas Branch stubs observed Typical crown forms Limited inspection due to access Off site by 1m Estimated dimensions due to limited inspection
G21	English oak Norway maple Norway maple 'Crimson King'	10.0	2.0	-	170	2.5	2.5	2.5	2.5	SM	F	F	14	2.1	B 2	Off site but overhangs study area Conjoined canopy Limited inspection due to access Typical crown forms
G22	White willow Whitebeam Beech Ash Silver birch Crack willow Norway maple Goat willow Field maple Rowan European lime Norway spruce Hawthorn Aspen Blackthorn	25.0	0.0	-	620	6.0	6.0	6.0	6.0	EM SM	G,F	G,F	177	7.5	B 2	Conjoined canopy Branch stubs observed Branch socket cavities Light ivy on stems Minor deadwood in crowns Major deadwood in crowns Limited inspection due to ivy Included unions in crowns

Tree No	Species	Height (m)	Crown Clearance (m)	No. of Stems	Stem Dia. (mm)	Crown Radius				Age Class	Structure	Vigour	RPA (m)	RPA Radius (m)	Cat	Comments
						N	E	S	W							
G23	English oak Elder Silver birch Hawthorn Ash Field maple	19.0	0.0	-	700	6.0	6.0	6.0	6.0	SM EM M	G,F,P	G,F,P	222	8.4	B 2	Conjoined canopy Sparse in areas Branch stubs observed Dead trees present Heavy ivy on stems Ivy restricts inspection of stems Included unions in crowns Light ivy on stems Light ivy in crowns Heavy ivy in crowns Hard surfaces in RPA Limited inspection due to ivy Minor deadwood in crowns Major deadwood in crowns Provides screening Typical crown forms Self seeded trees present
G24	Ash Elder Alder Hawthorn Crack willow Hazel	8.0	0.0	-	200	3.0	3.0	3.0	3.0	Y SM EM	F	F	18	2.4	C 2	Sparse in areas Branch stubs observed Hard surfaces in RPA Included unions in crowns Minor deadwood in crowns Typical crown forms Self seeded trees present
G25	English oak Hawthorn Hazel Blackthorn Elder Ash Silver birch Sycamore Cherry Horse chestnut	8.0	0.0	-	250	3.0	3.0	3.0	3.0	SM Y EM	F	F	28	3.0	C 2	Conjoined canopy Sparse in areas Branch stubs observed Included unions in crowns Heavy ivy on stems Light ivy in crowns Ivy restricts inspection of stems Minor deadwood in crowns Self seeded trees present Old pruning wounds from crown lift Typical crown forms
G26	Swedish whitebeam Ash Silver birch	11.0	2.0	-	350	4.0	4.0	4.0	4.0	SM	F	F,G	55	4.2	B 2	Conjoined canopy Included unions in crowns Branch stubs observed Minor deadwood in crowns Old pruning wounds from crown lift Typical crown forms
G27	English oak Hawthorn	7.0	0.0	-	180	2.0	2.0	2.0	2.0	SM Y	G,F	G,F	18	2.4	C 2	Branch stubs observed No obvious defects Typical crown forms Group consists of sporadic trees across field

Tree No	Species	Height (m)	Crown Clearance (m)	No. of Stems	Stem Dia. (mm)	Crown Radius				Age Class	Structure	Vigour	RPA (m)	RPA Radius (m)	Cat	Comments
						N	E	S	W							
G28	Hawthorn Blackthorn English oak	6.0	0.0	-	100	2.0	2.0	2.0	2.0	SM	F	F	5	1.2	C 2	Conjoined canopy Self seeded trees present Typical crown forms No obvious defects Vegetation restricted inspection
G29	Ash Blackthorn Elder Hawthorn Hazel English oak	8.0	0.0	-	180	3.0	3.0	3.0	3.0	SM Y EM	F	F	18	2.4	C 2	Conjoined canopy Heavy ivy in crowns Heavy ivy on stems Included unions in crowns Ivy restricts inspection of stems Minor deadwood in crowns Provides screening Typical crown forms Self seeded trees present

Tree No	Species	Height (m)	Crown Clearance (m)	No. of Stems	Stem Dia. (mm)	Crown Radius				Age Class	Structure	Vigour	RPA (m)	RPA Radius (m)	Cat	Comments
						N	E	S	W							
H1	Hawthorn Ash	5.0	0.0	-	120	3.0	3.0	3.0	3.0	M	F	F	7	1.5	C 2	Outgrown hedgerow Provides screening Ash dieback observed
H2	Hawthorn Hazel Field maple Blackthorn	2.5	0.0	-	100	1.5	1.5	1.5	1.5	EM	F	G	5	1.2	C 2	Outgrown hedgerow
H3	Blackthorn Hawthorn	3.0	0.0	-	100	1.5	1.5	1.5	1.5	EM	F	F	5	1.2	C 2	Outgrown hedgerow Unmanaged
H4	Blackthorn Hawthorn	2.0	0.0	-	80	1.0	1.0	1.0	1.0	Y	F	G	5	1.2	C 2	Sparse in areas Managed

Tree No	Species	Height (m)	Crown Clearance (m)	No. of Stems	Stem Dia. (mm)	Crown Radius				Age Class	Structure	Vigour	RPA (m)	RPA Radius (m)	Cat	Comments
						N	E	S	W							
W1	Norway maple Field maple Swedish whitebeam Ash Hawthorn Silver birch Leyland cypress White poplar White willow	15.0	1.0	-	490	4.0	4.0	4.0	4.0	SM EM Y M	G	G	113	6.0	B 2,3	Conjoined canopy Branch stubs observed Branch socket cavities Dead trees present Ivy restricts inspection of stems Self seeded trees present Tear wounds