



THE
ENVIRONMENT
PARTNERSHIP



LAND AT HALSNEAD PARK WHISTON ARBORICULTURAL IMPACT ASSESSMENT MARCH 2022

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Document Title	Arboricultural Impact Assessment
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Document Ref	7137.001

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Date	March 2022
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Amendment History					
Version	Date	Modified by	Check / Approved by	Reason(s) issue	Status
0.1	16/05/19	HEE	AAB	Checking	Draft
1.0	23/05/19	HEE	JGS	Approval	Superseded
2.0	25/06/19	HEE	JGS	Updated site layout and plan amendments	Superseded
3.0	13/08/19	HEE	JGS	Amended total unit number	Superseded
4.0	17/02/20	HEE	JGS	Updated layout and tree removals	Superseded
5.0	31/03/20	SD	VG	Updated with client information	Superseded
6.0	14/01/21	HEE	JGS	Updated survey data and site layout (rev H)	Superseded
7.0	10/03/22	HEE	TDP	Updated planning layout (Rev M) and external works/drainage plans, additional survey data added within Fox's Clump Woodland	Superseded
8.0	16/03/22	HEE	TDP	Inclusion of additional area of special excavation for drainage in close proximity to T12	Final

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Executive Summary

1. This report accompanies a planning application for the demolition of an existing farmhouse and associated buildings and the construction of 350 residential dwellings with associated roads, footways and landscaping on land at Halsnead Park in Whiston, Prescott. It details the arboricultural impact of construction works and subsequent mitigation measures.
2. Based on an objective assessment made in accordance with BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations, 7 Category A (high quality), 24 Category B (moderate quality) and 16 Category C (low quality) trees and groups are on or within influencing distance of the site. 5 hedges were also recorded but not assigned a quality category.
3. A site survey and desktop searches identified 6 features subject to Tree Preservation Order; no trees within a Conservation Area; no veteran trees and no ancient woodland within influencing distance of the application site.
4. An assessment of the bat roost potential of trees on site has been carried out by a qualified ecologist which found 1 sweet chestnut tree located on the south-western edge of woodland W1 with high bat roost potential. The full results and recommendations of the assessment can be found in the Bat Survey Appendix (ref: 6987.010) and the Updated Bat Survey Results Letter (ref: 6987.013).
5. 17 individual trees; 10 groups (in full or part) equating to circa 0.1364ha of canopy cover; and 2 hedgerows (in full) equating to circa 74m would be removed to facilitate the development proposals. It will be possible to retain all other trees throughout the construction in accordance with BS5837:2012.
6. Prior to commencement of any demolition or construction activities in close proximity to trees, it will be necessary to produce an Arboricultural Method Statement to detail the arrangement of tree protection measures and detail special construction methodology within Root Protection Areas. A Heads of Terms for the Method Statement is provided on Drawing 3.
7. 461 extra heavy standard or semi-mature standard trees; 10 smaller trees (leaders with laterals); 1,938m² of native tree whip planting; and 3,659 linear metres of hedgerow are proposed as replacement planting. The proposed planting therefore comprises more trees and hedgerow than would be removed and there would therefore be a permanent net gain in tree cover in the medium to long term and a net gain in hedgerow in the short to medium term. Species composition comprises mixed native and ornamental species and would increase tree and hedgerow distribution and connectivity across the site by the time planted trees and hedgerow become established.
8. This report constitutes a valid basis for the evaluation of impacts on trees resulting from the proposed development for a period not exceeding 2 years. After this, it may be necessary to review survey data and conclusions to ensure reliability. Where the recommendations of this report have been followed, any future deterioration in tree condition may not be attributed to the development.

1.0 Introduction

- 1.1 This document is submitted on behalf of:
- Taylor Wimpey UK Limited Gate House, Turnpike Road, High Wycombe, Buckinghamshire HP12 3NR (Buyer);
 - Gino Frederick Fantin & Dawn Sara Fantin of Cherry Tree Farm, Fox's Bank Lane, Whiston L35 3SS and CATHERINE SARAH JANE GRIFFIN of Moss House, Whixall, Whitchurch, Shropshire SY13 2PG (Seller);
 - Mrs K Mullin of Halsnead Farm, Fox's Bank Lane, Whiston L35 3SU (Seller);
 - Reynard Land Whiston Limited Reynard House, Altrincham Road, Wilmslow, Cheshire SK9 5ND (Promoter); and
 - Evo Living Limited 17 St Ann's Square, Manchester M2 7PW (Promoter).
- 1.2 The applicant is hereafter referred to as "Taylor Wimpey".
- 1.3 TEP has been commissioned by Taylor Wimpey to conduct an arboricultural survey of land at Land at Halsnead Park near Whiston, Prescot. This report details the arboricultural impact of developing the site, subsequent mitigation recommendations and protective measures.
- 1.4 The development area survey was carried out in October 2020 and February 2022 by means of inspection from ground level by a qualified Arboricultural Consultant. Trees were assessed in accordance with BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations.
- 1.5 Under the British Standard the assessment of trees is made objectively. The categorisation method identifies the quality and value of the existing tree stock.
- 1.6 Topographical surveys were used to record the position of trees and vegetation (drawing references: 7928/01, M/TWNW/18/018 and TWNW.TS.22). Where the age distribution and species mix of tree cover was relatively uniform, trees were plotted as groups. For the purposes of this report it is assumed that the detail on the drawing is accurate. A number of trees were not shown on the topographical surveys and their locations are estimated¹.
- 1.7 The nature of the soils on site was not assessed during the survey. The possibility of minor soil movement due to tree root activity cannot be discounted. Prior to the undertaking of foundation depth calculations any estimated tree locations should be resolved.

¹ Estimated feature locations are marked on Drawing 1

- 1.8 A total of 63 individual trees; 28 groups of trees; 1 woodland compartment; and 5 hedges were surveyed and mapped² within influencing distance of the site. Trees T4 to T8, T31 to T73 and group G43 are all situated within Fox's Clump Woodland (W1). These were recorded during the later survey to add detail in an area of anticipated development for a footpath. Trees across a larger area were surveyed however, only a selection are relevant to this application site (hereby referred to as 'the site') and discussed in this report, hence the reference numbers on Drawing 1 and within the survey data presented at Appendix A do not run sequentially.
- 1.9 This report provides the results of the survey and includes the following:
- A schedule of all trees located on, or within influencing distance of the proposed development site (Appendix A);
 - An assessment based on BS 5837:2012, of trees in terms of their potential value within any future development. On the basis of this assessment trees have been categorised into one of four categories: A, B, C or U (Appendices A & B);
 - An assessment, based on BS 5837:2012, of the requirement for protection of trees during the construction phase (Section 6);
 - Advice on removal, retention and management of trees (Sections 5 & 7);
 - A Tree Constraints Plan detailing tree quality categories, canopy spreads and Root Protection Areas (RPA) for all trees surveyed (Drawing 1);
 - A Tree Works Plan trees to be retained and removed and any related works (Drawing 2); and
 - An Arboricultural Method Statement Heads of Terms Plan detailing areas requiring special construction or mitigation methodology (Drawing 3).

² See Drawing 1: Tree Constraints Plan

2.0 The Site and Surroundings

- 2.1 The site is situated in Whiston, Merseyside, to the west of Fox's Bank Lane, south-west of Fox's Bank Cemetery and immediately north of the M62. It comprises a working agricultural farm with associated buildings and arable fields. The site is approximately 16.2ha in size and centred on grid reference SJ475899.

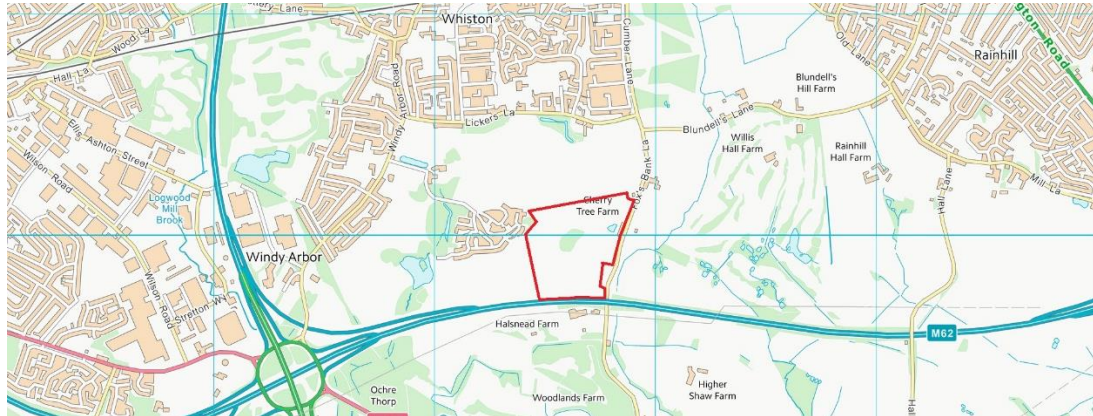


Figure 1 Site location and approximate boundary (OS Street View ® 1:10 000 scale)

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- 2.2 The survey area is primarily flat with occasional small inclines and some steeper ditches around the boundaries.
- 2.3 Weather conditions during the survey were overcast but dry.

Development Proposals

- 2.4 The proposed development includes the demolition of the existing farm buildings on Cherry Tree Farm and the construction of 350 residential dwellings and associated footways, access roads and soft landscaping. The proposals also include the construction of a new access road off Fox's Bank Lane, footways and areas of public open space.
- 2.5 Detail of the proposals is shown on Drawing 2 and is based on the Foxwood Garden Village Planning Layout (drawing reference: HALS-PLA-01-M).

3.0 Statutory Protection and Guidance

National Planning Policy Framework (NPPF)

- 3.1 The NPPF assumes protection of all ancient woodland and veteran trees unless there are wholly exceptional reasons and a suitable compensation strategy exists. In this respect ancient woodland is defined as an area which has been wooded continuously since at least 1600 AD and a veteran as a tree that because of its age, size and condition, is of exceptional biodiversity, cultural or heritage value.
- 3.2 There is no ancient woodland or veteran trees within influencing distance of the application site.

Tree Preservation Orders & Conservation Area Designations

- 3.3 Where it is considered expedient to do so, local authorities can create Tree Preservation Orders (TPO) to protect the amenity value conferred to a location by a tree or group of trees. Where a TPO is in force, lopping, topping, felling, uprooting or wilful damage caused to a tree is prohibited and such actions may be prosecuted and incur an unlimited fine. Works to TPO protected trees must only be undertaken with the written consent of the local authority.
- 3.4 Section 211 of The Town and Country Planning Act 1990 (TCPA) relates to the preservation of trees in Conservation Areas. Under Section 211 anyone proposing to remove, uproot or destroy any tree within a Conservation Area is required to give the local planning authority six weeks' prior notice (a "section 211 notice"). During this period the Council may consider serving a Tree Preservation Order to prevent the proposed work from being undertaken.
- 3.5 Exceptions from the requirement to give a Section 211 notice are set out in The Town and Country Planning (Tree Preservation) (England) Regulations 2012. A person does not have to give the local planning authority six weeks' prior notice for, amongst other reasons, work to trees so far as such work is necessary to implement a planning permission (other than an outline planning permission).
- 3.6 A check was undertaken with Knowsley Metropolitan Borough Council on 16th March 2022. The online mapping software confirmed that trees on or immediately adjacent to the site were subject to Tree Preservation Order. No trees are located within a Conservation Area.

Table 1 Features protected by TPO designation

Tree survey reference	TPO reference
W1 (inc.T4 to T8, T31 to T73 and G43)	Halsnead Park, Lickers Lane Tree Preservation Order No. 1 - 1964 (64/00001/TPO)

Protected Species – Bats

- 3.7 Mature trees often contain cavities, crevices and hollows, which are a potential habitat for roosting bats. Bats are afforded protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), as well as under Schedule 2 of the Conservation of Species and Habitats Regulations 2010, and as such causing damage to a bat roost constitutes an offence.
- 3.8 An assessment of the bat roost potential of trees on site has been carried out by a qualified ecologist who found 1 sweet chestnut tree located on the south-western edge of woodland W1 with high bat roost potential. The full results and recommendations of the assessment can be found in the Ecological Assessment Bat Survey Appendix (ref: 6987.010) and Updated Bat Survey Results Letter (ref: 6987.013).
- 3.9 If the presence of a bat roost is suspected whilst undertaking works on any trees on site, operations must be halted until a licensed bat handler or ecologist can provide advice.

Protected Species - Birds

- 3.10 Trees are a potential habitat for nesting birds, which (as well as their nests and eggs) are protected under the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to intentionally or recklessly, damage or destroy an active nest or any part thereof.
- 3.11 Due to the suitability of the trees within the survey boundary for nesting birds, all tree work should ideally be undertaken outside the bird nesting season (March to August, inclusive).
- 3.12 If this is not possible then a detailed inspection of each tree should be undertaken by a qualified ecologist immediately prior to the arboricultural works. Should an active nest be found (being built, containing eggs or chicks), any work likely to affect the nest must be halted until the nest becomes inactive.

4.0 Tree Population

- 4.1 63 individual trees; 28 groups of trees; 1 woodland compartment; and 5 hedges were recorded within influencing distance of the site. Trees T4 to T8, T31 to T73 and group G43 are all situated within Fox's Clump Woodland (W1). A schedule of all trees and groups in terms of species, condition, age, management recommendations and BS 5837:2012 quality categories is provided at Appendix A.
- 4.2 The site's agricultural usage means that tree cover is mainly confined to the fringes, with the exception of a small woodland copse at its centre. The majority of trees are broadleaved, native or naturalised species in fair to good health and are middle-aged to mature.
- 4.3 The most prominent trees are those forming Fox's Clump woodland (W1) in the middle of site. This is mixed age woodland, ranging from mature lapsed coppice stools to young saplings. The trees are overall in good condition and the species composition comprises native and naturalised broadleaf species included English oak, sycamore, English elm and sweet chestnut. It is slightly raised above the surrounding field and the topography within the woodland itself varies throughout. The understorey comprises small trees, bracken and bramble amongst other ground flora. The woodland provides landscape value and continuous habitat provision for local wildlife.



Figure 2 Fox's Clump woodland (W1) situated in the centre of site.

- 4.4 There are several tree groups situated on or adjacent to the site that enclose or are next to ponds, some of which are dry (G2, G5, G6 and G7). These groups comprise middle-aged to mature mixed broadleaf species including English oak, rowan and sycamore, the majority of which are in good condition. Group G2 is located on the western boundary of the site and provides screening to the adjacent Halsnead Park Caravan Park. Groups G5 and G6 groups and provide habitats for local wildlife in the agricultural landscape.



Figure 3 Group G6 surrounding an arid pond to north-east of site.

- 4.5 To the south of the site is a large, linear group of trees (G20) on a roadside bund between the site and the M62 which spans the entire southern boundary. This group comprises young to middle-aged trees with the youngest and most dense planting to the west of the group and gradually becoming more mature and less dense to the east. Species composition comprises English oak, sycamore, hawthorn, silver birch and rowan. There are some trees at the eastern end of the group that, due to their size and age likely existed prior to the roadside planting. The primary function of this group is to act as a screen between the site and the M62.



Figure 4 Eastern end of roadside group G20 between site and M62.

- 4.6 Immediately adjacent to the existing access track is a linear group of trees (G8) comprising 8 middle-aged English oak. All trees have been crown lifted over the access track with pruning wounds evident however, no other management is evident. These trees are in good condition and provide good amenity and landscape value.



Figure 5 Linear group of English oak (G8) adjacent to existing access track.

- 4.7 Located to the north-west of the farmhouse garden is a middle-aged weeping willow tree (T27). It is situated in close proximity to a sunken patio area surrounded by retaining walls which will likely have influenced the root growth of the tree. It has good form typical of the species and there is no evidence of previous management.

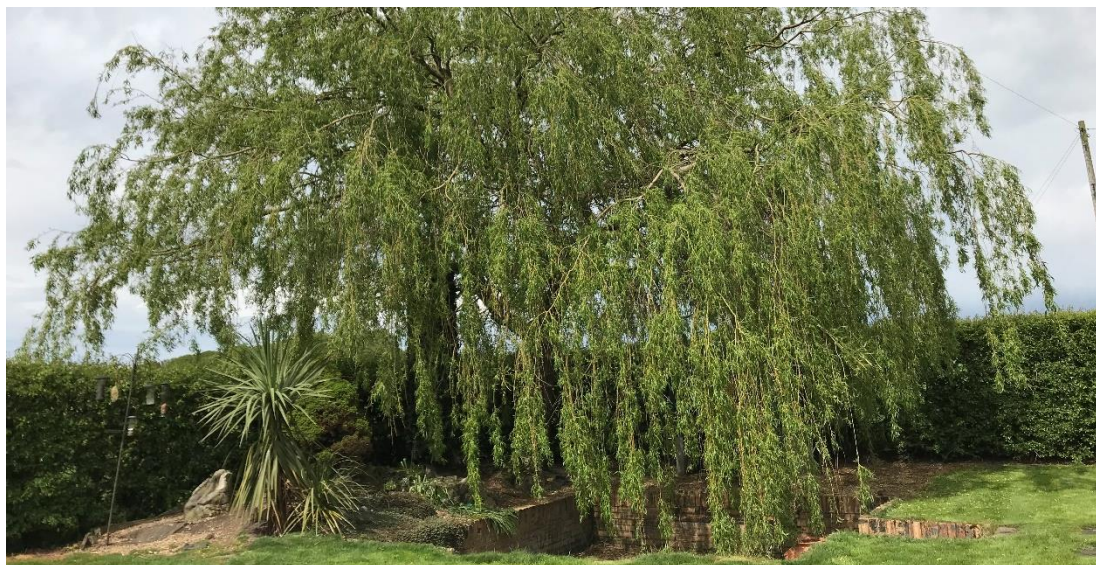


Figure 6 Weeping willow (T27) adjacent to sunken patio area with retaining walls.

- 4.8 Tree and group locations, their quality categories and canopy spreads are shown on Drawing 1.

Tree Quality Categorisation

- 4.9 Under BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations, trees and groups are objectively assigned a quality category to quantify their value within any future development. Table 2 below contains a summary of the categories presented in the British Standard. The full table has been reproduced at Appendix B. Table 3 highlights the number of each feature on within influencing distance of the site by BS 5837 categorisation.

Table 2 Summary of BS 5837 tree quality categorisation criteria.

Category A	Trees of high value including those that are particularly good examples of their species and/or those that have visual importance or significant conservation or other value
Category B	Trees of moderate value including those that do not qualify as Category A due to impaired condition and/or those that collectively have higher value than they would as individuals; also trees with material conservation or other value
Category C	Trees of low value including those with very limited merit or impaired condition; trees offering transient or temporary landscape benefits
Category U	Trees with irremediable defects and anticipated early loss due to collapse; dead trees or those in immediate decline and those with infectious pathogens that threaten other trees

Table 3 Number of feature by BS 5837 categorisation criteria.

Feature Type	Category A	Category B	Category C	Category U	Not categorised
Trees	8	31	20	4	-
Groups	0	15	13	0	-
Woodlands	1	0	0	0	-
Hedgerows	-	-	-	-	5
Total	9	46	33	4	5

5.0 Impacts of the Proposed Development

- 5.1 This section describes the number and quality of trees that would be removed in order to facilitate the development proposals, and those that can be retained. This is the result of an assessment based on the proposed site plan.
- 5.2 Hedgerows have not been afforded a quality value as they do not fall within the scope of BS 5837:2012.

Table 4 Arboricultural impacts by quality category³

	Category A	Category B	Category C	Category U	Hedge
Features that would be removed		T11, T27, T30, T40, T45, T54, T55, T62 (G5), (G6), G7, G8	T26, T28, T29, T53, T69 G10, G11, G12, G40, G41, (G43)	T38, T39, T49, T50	H7, H8
Total	0	10 (2)	10 (1)	4	2

(Features in brackets represent those that would be part removed and part retained)

- 5.3 If planning permission is granted with reference to this report, the removal of any feature not listed above and shown on Drawing 2 for removal would constitute a material amendment and may therefore require an application to vary the consent.
- 5.4 17 individual trees; 10 groups (in full or part) equating to circa 0.1364ha of canopy cover; and 2 hedgerows (in full) equating to circa 74m would be removed to facilitate the development proposals. There would also be 2 small trees (less than 70mm stem diameter at 1.5m) that would need to be removed to accommodate the proposals. All features proposed for removal are situated within the application boundary.
- 5.5 Removals are required to facilitate the construction and development of proposed access roads; new dwellings; new footpaths; and a new pond drainage pipe. The greatest arboricultural losses comprise the removal of c. 18 Category B trees (recorded as 8 individuals and 4 groups). The majority of these trees are middle-aged, with the exception of 1 mature alder within G7, and could be mitigated for in the medium to long term with replacement planting.

³ See Appendix 1, Arboricultural Survey Data for sub-categories

- 5.6 The construction of a footpath through Fox's Clump woodland (W1) will necessitate the removal of 5 Category B trees (T40, T45, T54, T55 and T62); 2 Category C trees and part of 1 group (T53, T69 and G43); and 4 Category U trees (T38, T39, T49 and T50). It will also necessitate the removal of 2 small understorey trees (less than 70mm stem diameter at 1.5m). The footpath will be constructed using above ground 'no-dig' construction, the methodology for which will be detailed within an Arboricultural Method Statement. The proposed footpath construction and associated tree removal will not significantly alter the size or quality of the woodland overall, with canopy enclosure over the footpath anticipated to take between 5 and 10 years.
- 5.7 The proposals will necessitate crown management, in the form of lifting or reduction, to the canopies of several trees and 1 hedge. 3 trees (T9, T10 and T44) and trees within 2 groups (G6 and G9) will need to be crown lifted to a minimum of 4m to ensure adequate clearance over proposed footpaths, seating areas and the proposed electricity sub-station. 1 tree (T46) and part of 1 group (G19) will need to be crown reduced by up to a maximum of 2m in order to accommodate a proposed pumping station and a footpath around the edge of Fox's Clump woodland. Part of 1 group (G19) will need to be crown reduced by circa 1m to allow clearance for construction scaffolding of the adjacent proposed dwelling. A small amount of trimming to H1 will also be required to accommodate the installation of a proposed cycle shed. The pruning works are all relatively minor and will not cause long term detriment to the condition, quality or longevity of the trees.
- 5.8 The removal of existing hardstanding adjacent to tree T10 and group G9 will require arboricultural supervision due to the proximity of the adjacent hardstanding to the trees. These trees are located at the top of a steep pond bank and the existing hard standing is kerbed and heavily used by plant and farming machinery. The root morphology of these trees is therefore expected to be abnormal. Roots are unlikely to be absent in all circumstances so an arboricultural watching brief is likely to be required to monitor and where possible minimise damage to tree roots. The proposed footpath in this area will also need to be constructed using above ground 'no-dig' construction due to encroaching within the existing verge south of the T10 where root growth is likely to have been optimised due to the preferable growing conditions.
- 5.9 The proposals necessitate root pruning to 1 tree (T9) and trees within 3 groups (G6, G13 and G14). T9, G6 and G13 are on-site trees and G14 is a third-party tree group in an adjacent garden. A small amount of root pruning will be required to facilitate the construction of a proposed electricity sub-station; 1 dwelling and the associated access drive; a footway around an access road; and a proposed foul water pipe. The trees are predominantly middle-aged, with the exception of some mature specimens within G6 and T9, and a small amount of root pruning will be tolerable due to their age and species and, provided the works are undertaken in a controlled manner, will not cause any detrimental effects on their condition, quality or longevity.

- 5.10 A pond drainage pipe is proposed to be installed that will link the pond within G6 to the pond immediately north-west of T10 and G9. This will replace the existing drainage pipe which is to be severed, capped and left in situ where it runs beneath G6. All severance works to this existing pipe will be completed outside of the canopy and RPA of G6. A second existing pipe is also located within G6, to the west of the one to be severed. The proposed replacement pipe cannot be routed to avoid tree loss, due to gradient levels, and cannot be routed as per the existing pipe route due to proposed drainage within the new access road. 2 trees within G6 would therefore be removed. Due to the proximity of the pipe to retained trees within G6, excavation of the trench should be completed under an arboricultural watching brief in order to monitor root loss and make on-site management recommendations for root pruning as appropriate.
- 5.11 A surface water pipe is proposed in close proximity to third party tree T12. An existing pipe is currently located as per the alignment shown on the Main Drainage Layout Plan (ref: TAY90 BET C 1001 to 1004, Rev E) and it is intended that this pipe will be utilised as surface water drainage from the proposed attenuation pond to the north-west. If the existing pipe cannot be utilised, it will be lined with a replacement pipe. It is not anticipated that any excavation will be required for drainage purposes in this area. Should this not be the case, a special trenchless excavation methodology to ensure this tree's retention will be required.
- 5.12 The methodology for supervised hardstanding removal, above ground 'no-dig' construction, root pruning, supervised excavation and phased tree protection measures should be detailed within an Arboricultural Method Statement. Further details on the format and content of this information is provided in Section 7 of this report and on Drawing 3.
- 5.13 Where planning permission is granted, the retention schedule shown above and on Drawings 2 and 3 would normally form a part of that permission. Any change to this schedule may therefore require an application to vary the consent.

6.0 Tree Protection Requirements

- 6.1 The following information sets out the primary considerations in determining the requirement for tree protective measures and in the assessment of development impact.

Root Protection Areas

- 6.2 As per BS 5837:2012, the Root Protection Area (RPA) is calculated using each tree's diameter at 1.5 metres⁴ and represents the minimum area around each tree that must be left undisturbed to ensure its survival.
- 6.3 Tree roots typically spread two times the width of the crown, although this figure may be significantly increased for certain species and where specific ground conditions are present. The majority of tree roots are found in the top 600mm of soil and most of the fine roots that absorb water and nutrients are found close to the surface.
- 6.4 The morphology of roots is influenced by past and present site conditions (including roads, buried structures and underground services), soil type, topography and drainage. This means that a tree's roots may not be uniform in extent and the RPA may not be a circular area centred on the tree stem.
- 6.5 On this site, likely barriers to root growth include historic ploughing, compaction from heavy farm machinery and areas of hardstanding comprising access tracks and the farm yard. The steep topography around the ponds may also act as a barrier to root growth. Roots are unlikely to be absent in all these areas but where unfavourable conditions exist, growth will certainly be impeded.
- 6.6 The RPA has been adjusted or offset where appropriate to most accurately represent the likely spread of roots for each individual tree⁵.

Ground Contamination

- 6.7 Storage areas for liquids such as fuels, oil or paint should not be located within 10m of any tree due to the risk of soil contamination caused by accidental spillage.
- 6.8 Particular care must be taken when working on or close to sloping ground to avoid unintentional runoff into the rooting area of retained trees.

Underground Utility Issues

- 6.9 A Main Drainage Layout Plan (ref: TAY90 BET C 1001 to 1004, Rev E) showing the detail and arrangement of drainage was used to inform the production of this assessment.
- 6.10 Where the installation of services within the Construction Exclusion Zone of retained trees is unavoidable, appropriate work methods will be required to ensure the safe long-term survival of those trees and should be detailed within an approved Arboricultural Method Statement (AMS).

⁴ Refer to Appendix A for RPA area calculations

⁵ See Drawing 1 for RPA shapes

Ground Level Changes

- 6.11 An external works plan showing the detail and arrangement of levels and retaining structures (ref: TAY 90 BET C 1401 to 1406, Rev C) was used to inform the production of this assessment.
- 6.12 A rise or reduction in soil level can have major implications on the longevity and health of the trees. Minor changes (up to 150mm) can be tolerated in some cases but is heavily dependent on tree species, condition and growing environment.
- 6.13 Existing ground levels within the Construction Exclusion Zone should be maintained unless otherwise stated within an approved AMS. The advice of a qualified Arboricultural Consultant should be sought if level changes are required that are not detailed within an AMS.

Drainage & Storm Water Run-off Issues

- 6.14 Drainage and storm water run-off requires due consideration to prevent excessive and/or polluted run-off into the rooting area of trees to be retained.
- 6.15 The maintenance of existing water bodies and hydrology patterns will also be required where this relationship is important to tree health.

7.0 Recommendations

Tree Work

- 7.1 No additional tree surgery works are recommended above and beyond the removals required to facilitate the development proposals.
- 7.2 All tree surgery work, including felling associated with the proposed development, should be carried out by a qualified contractor in accordance with British Standard 3998:2010 Tree work – Recommendations.
- 7.3 It is recommended that 1 tree (T63) within Fox's Clump woodland (W1) is inspected annually by qualified Arboriculturist in order to monitor the progression of decay and degradation within a basal wound from a previous stem failure and to monitor progression of an occluding vertical crack on one stem.

Tree Protection

- 7.4 Site-wide tree protection measures will be required during construction to deliver the tree retention schedule presented in this report. This will include phased temporary protective barrier fencing to demarcate a Construction Exclusion Zone (CEZ) around retained trees and changes to procedure where activities occur within their Root Protection Area.
- 7.5 This information is recommended to take the form of an Arboricultural Method Statement (AMS). The purpose of an AMS is to demonstrate that the proposed operations can be undertaken with minimal risk of adverse impact on trees to be retained. It should set the parameters within which construction will be undertaken and guide the actions of site operatives.
- 7.6 Construction methods presented in an AMS are likely to be the result of collaboration between an Arboricultural Consultant and other project specialists. This process may result in the use of non-conventional building techniques and those allowing more control over soil and root disturbance.
- 7.7 Protection measures in an AMS should be specified in accordance with BS 5837:2012 and include as a minimum:
 - A tree works schedule for tree removal or pruning works required to facilitate the layout proposal;
 - Detailed methods for the implementation of all proposed activities with the capacity to harm retained trees (e.g. the construction of foundations, hard landscaping and boundary treatments within the Root Protection Area and beneath the canopies of trees).
 - Details of general precautions that should be exercised during the construction phase to minimise impact on retained trees; and
 - Temporary protection measures for the satisfactory retention of trees during the demolition and construction phase.
- 7.8 A Heads of Terms for the AMS is provided on Drawing 3. The provision of an AMS should form a condition of planning consent.

Mitigation for the removal of trees

- 7.9 The National Planning Policy Framework (NPPF) is a material consideration in the planning process and promotes a presumption in favour of sustainable development. In terms of the natural environment, development should minimise impacts on biodiversity and provide a net gain in biodiversity where possible.
- 7.10 In respect of trees, a sustainable development will be one whereby the total number, value or function provided by trees is maintained or increased or where the long-term prospects of the existing tree stock can be substantially improved. Net gains in biodiversity may be demonstrated where the number of tree species, variety of tree ages or range of niche habitats can be increased. Native, old, large or dead trees are likely to have a relatively significant impact on a scheme's environmental credentials, as will the connectivity of trees, hedges and woodland.
- 7.11 17 individual trees; 10 groups (in full or part) equating to circa 0.1364ha of canopy cover; and 2 hedgerows (in full) equating to circa 74m would be removed to facilitate the development proposals. Mitigation for the loss of amenity and associated habitat may be required in the form of replacement tree planting.
- 7.12 New planting is proposed and detailed on the Planting Plan (ref: HAL1810_PP01.00, Rev L). This includes proposals for tree, hedgerow and shrub planting, as well as wildflower, bulb and tree whip planting.
- 7.13 461 extra heavy standard or semi-mature standard trees and 10 smaller trees (leaders with laterals) are proposed for planting and comprise a mixture of native and ornamental species of varying mature size. In addition to this, there is also 1,938m² of native tree whip planting proposed at a rate of 1 per 1m². The proposed planting therefore comprises more trees than would be removed. There would therefore be a permanent net gain in tree cover in the medium to long term.
- 7.14 3,659 linear metres of hedgerow planting is proposed, with 787m comprising mixed native species hedgerow. The remaining 2,872m of proposed hedgerow planting comprises a mixture of native and ornamental species that will be planted in sections of single species hedgerow. The hedgerow planting proposed comprises more hedgerow than would be removed and there would therefore be a permanent net gain in hedgerow across the site in the short to medium term.
- 7.15 The planting scheme includes a greater range of species than would be removed and therefore would enhance biodiversity in this respect.
- 7.16 The average mature size of tree species on the site would be unaffected by the proposed development and planting scheme.
- 7.17 The distribution and connectivity of tree and hedgerow cover would be improved by the proposed development and planting scheme by the time planting is middle-aged as existing tree and hedgerow cover is generally confined to the fringes, with the exception of W1, G5 and scattered trees within these groups, due to the site's current agricultural use.

- 7.18 Provision should be made for the maintenance of new planting in accordance with British Standard 8545:2014 Trees: from nursery to independence in the landscape - Recommendations, and replacement of failures for a period of at least 5 years.

Post Construction Tree Care

- 7.19 Hazard recommendations are based on observations at the time of survey. Trees are dynamic living organisms whose structure is constantly changing. Even those in good condition can suffer from damage or stress. Following site development, regular (annual or biennial) inspections of all retained trees should be undertaken by a qualified Arboricultural Consultant.

APPENDIX A: Arboricultural Survey Data

APPENDIX A: Arboricultural Survey Data Sheets



Surveyor Heather Eilbeck
Date 22/10/2020 & 14/02/2022
Town South Whiston
Site Halsnead Park
Dwg Ref D7137.001 & D7137.004

Ref	Species	Height	Stem Dia.	No. of stems/ individuals	Crown Spread North	Crown Spread South	Crown Spread East	Crown Spread West	Height of Lowest Branch	Direction of Lowest Branch	Maturity	Condition	Comments on form, condition, health and significant defects	BS5837 Tree Quality Assess.	Radius of RPA guide circle	BS5837 RPA Area	Management Recommendations	Estimated Remaining Contribution	TPO
		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)		Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,U (1,2,3)	(m)	(m2)		Long, Medium, Short	Y/N
Trees																			
T1	English oak	11.0	500	1.0	5.5	5.0	2.5	3.0	2.0	S	Middle Age	Fair	Epicormic growth throughout canopy and on stem, pruned on western side of canopy away from caravan park boundary, occluding wound on south side of lower stem, thick undergrowth around base, asymmetrical canopy.	B,1	6.0	113.1		Long	N
T2	Hybrid black poplar	17.0	864	2.0	7.0	11.0	7.0	7.0	1.5	N	Mature	Fair	Previously fallen large stem with 2 large side limbs now growing as stems, included union at attachment point of largest stem growth, barbed wire around stems, previously failed moderate limbs evident, minor deadwood.	B,1,2	10.4	337.8		Long	N
T3	English oak	10.0	710	1.0	5.0	5.0	5.0	4.0	2.0	SE	Mature	Good	Directly adjacent to boundary wall between site and caravan park, good form, ivy starting to grow up stem, minor epicormic growth, informal track to east, multi-stemmed at 2m, minor deadwood.	B,1,2	8.5	228.0		Long	N
T4	Sycamore	18.0	661	6.0	5.0	4.5	5.0	4.0	0.0	W	Mature	Good	Old coppice stool, located within W1, large multi-stem at base, stem unions with bark ridging, some previous limb failures of moderate size, major deadwood up to 120mm diameter in lower canopy.	A,1,2	7.9	197.9		Long	Y
T5	Sycamore	18.0	630	1.0	6.0	3.5	5.0	4.0	0.0	NE	Mature	Good	Large specimen, epicormic growth around base, located within W1, moderate deadwood up to 50mm diameter in lower canopy.	A,1,2	7.6	179.6		Long	Y
T6	Sycamore	18.0	870	4.0	6.0	6.0	5.0	4.0	0.0	NE	Mature	Good	Large multi-stem at base, old lapsed coppice stool, located within W1, epicormic growth at base, previous limb failures of moderate size, minor occluding wounds on western side of lower stem, moderate deadwood up to 50mm diameter in lower canopy, large included stem unions with bark ridging.	B,1,2	10.4	342.1		Long	Y

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Ref	Species	Height	Stem Dia.	No. of stems/ individuals	Crown Spread North	Crown Spread South	Crown Spread East	Crown Spread West	Height of Lowest Branch	Direction of Lowest Branch	Maturity	Condition	Comments on form, condition, health and significant defects	BS5837 Tree Quality Assess.	Radius of RPA guide circle	BS5837 RPA Area	Management Recommendations	Estimated Remaining Contribution	TPO
		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)		Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,U (1,2,3)	(m)	(m2)		Long, Medium, Short	Y/N
T7	Sycamore	18.0	820	1.0	7.0	7.0	5.0	6.0	0.0	W	Mature	Good	Located within W1, major deadwood up to 120mm diameter in lower canopy, bifurcate at 2m and again at 5m, included union at 2m with bark ridging.	B,1,2	9.8	304.2		Long	Y
T8	Sycamore	18.0	887	6.0	6.0	7.0	7.0	7.0	2.5	SE	Mature	Good	Located within W1, major deadwood up to 120mm diameter in lower canopy, old lapsed coppice stool, large multi-stem at base, included unions with bark ridging, located on slope leading down to the north.	A,1,2	10.6	355.7		Long	Y
T9	English oak	10.0	949	10.0	11.0	7.5	5.5	6.0	1.0	N	Mature	Good	Old coppice stool, large multi-stem at base, thick undergrowth surrounding base, located within G5, adjacent to pond, located on slope leading down to the west, minor occluded wounds on south side of eastern limbs, minor deadwood.	A,1,2	11.4	407.2		Long	N
T10	Sycamore	14.0	900	2.0	4.5	7.5	5.0	7.0	2.0	NE	Mature	Fair	Adjacent to pond, yard and between G9 and G10, bifurcate at base, large previous failure on north side of northern stem in central crown, included union with bark ridging, moderate dieback in canopy particularly on west side over pond, major deadwood up to 120mm diameter, canopy overhangs yard.	B,1,2	10.8	366.7		Medium	N
T11	English oak	9.0	390	1.0	5.0	5.0	4.5	4.0	0.0	S	Middle Age	Good	Adjacent to entrance gate, fence and boundary wall, within G11, telephone wires to east of canopy, previous pruning away from wires on east side of canopy, crown lifted to west over field.	B,1	4.7	68.8		Long	N
T12	English oak	11.0	730	1.0	7.0	7.0	7.0	7.0	2.0	S	Mature	Good	On slight raised bund, adjacent to road and viaduct under M62, multi-stemmed at 2m, third party tree, crown lifted previously, minor deadwood, squat and rounded canopy form.	A,1,2	8.8	241.1		Long	N
T18	English oak	9.0	802	3.0	6.0	8.0	6.0	5.0	1.0	W	Mature	Good	Multi-stemmed at 0.5m and 1m with further bifurcation in canopy, good form, hardstanding to west, tractor track to east, pruning stubs on lower stem, minor deadwood, squat form.	A,1,2	9.6	291.1		Long	N
T19	Goat willow	5.0	190	10.0	2.5	2.0	2.0	2.0	0.0	N	Middle Age	Good	Growing offsite in caravan park paved area.	C,1	2.3	16.3		Long	N

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		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)		Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,U (1,2,3)	(m)	(m2)		Long, Medium, Short	Y/N
T20	English oak	5.5	400	1.0	1.0	4.5	5.5	0.5	1.5	E	Middle Age	Fair	2 limbs remaining from previously felled stump, stump is approximately 2m in height, canopy asymmetrical to south-east.	C,1	4.8	72.4		Short	N
T26	Wild cherry	3.5	75	1.0	1.0	1.0	1.0	1.0	0.5	S	Young	Good	Young tree adjacent to bonfire area and informal track.	C,1	0.9	2.5		Medium	N
T27	Weeping willow	10.0	560	1.0	7.0	7.5	7.0	7.0	2.5	S	Middle Age	Good	Leans to south-east, adjacent to sunken patio area with retaining walls, no previous management evident, typical growth and form of species.	B,1,2	6.7	141.9		Long	N
T28	Irish yew	3.5	159	7.0	0.5	0.5	0.5	0.5	0.0	N	Middle Age	Good	Ornamental garden tree growing under canopy of T27, situated on top of a bund next to sunken patio area, multi-stemmed, tight unions.	C,1	1.9	11.4		Long	N
T29	Variegated holly	6.0	212	2.0	2.0	2.0	2.0	2.0	2.5	E	Middle Age	Good	Crown lifted in garden of farmhouse, bifurcate at 1.5m, slight kink in stem.	C,1	2.5	20.4		Long	N
T30	Copper beech	7.5	210	1.0	2.0	2.5	2.0	2.0	2.0	N	Middle Age	Good	On slope down to pond, adjacent to hardstanding area of farm.	B,1	2.5	20.0		Long	N
T31	Sycamore	18.0	780	9.0	6.5	8.0	8.0	8.0	0.0	E	Mature	Fair	Tree located within W1 on fairly steep northerly slope. Basally multi-stemmed, likely an old coppice stool. Crown lifted previously with some limb failures evident. Moderate deadwood in upper canopy.	B,1,2	9.4	275.2		Long	Y
T32	Sycamore	17.0	662	5.0	5.0	8.0	7.0	2.0	1.0	E	Mature	Fair	Tree located within W1 on fairly steep northerly slope. Basally multi-stemmed, likely an old coppice stool. Crown lifted previously with some limb failures evident and occasional branch socket cavities. Canopy heavily suppressed to west and biased to east due to proximity of adjacent tree. Moderate deadwood in upper canopy and occasional hangers.	B,1,2	7.9	198.2		Medium	Y
T33	Sycamore	11.0	318	6.0	2.0	5.5	2.5	6.5	1.0	S	Middle Age	Fair	Tree located within W1 on fairly steep northerly slope. Basally multi-stemmed, potentially coppiced previously. Crown lifted previously with some limb failures evident. Canopy heavily suppressed to east and biased to west due to proximity of adjacent tree. Some dieback evident with associated deadwood and smallest stem is dead.	C,2	3.8	45.9		Short	Y

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		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)		Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,U (1,2,3)	(m)	(m2)		Long, Medium, Short	Y/N
T34	Sycamore	10.0	220	2.0	1.0	6.0	7.0	1.0	2.5	SE	Middle Age	Fair	Tree located within W1 at top of fairly steep north-westerly slope. Bifurcate at c. 0.3m with wide union. Canopy heavily suppressed to west and north and biased to east, south-east and south due to proximity of adjacent tree.	C,2	2.6	21.9		Short	Y
T35	Sycamore	14.0	560	1.0	9.0	6.0	8.5	7.0	0.0	N	Middle Age	Fair	Tree located within W1 on fairly steep north-westerly slope. Bifurcate at c. 1.6m with wide union. Canopy suppressed to south-west by adjacent tree. Epicormic growth around base, some thick stems have been cut previously.	B,1,2	6.7	141.9		Long	Y
T36	Sycamore	13.0	353	3.0	10.0	7.5	6.0	5.0	3.5	E	Middle Age	Fair	Tree located within W1 on steep north-westerly slope. Basally trifurcate with northern and southern stems leaning in those directions. Canopy suppressed to east and west by adjacent trees, leading to narrow canopy biased to north and south. Spindly form.	C,1,2	4.2	56.5		Medium	Y
T37	Sycamore	19.0	545	2.0	7.5	7.5	8.0	3.0	3.0	NE	Middle Age	Fair	Tree located within W1 on steep north-westerly slope. Bifurcate at c. 1m. Canopy suppressed to west by adjacent tree. Tall and narrow form.	B,1,2	6.5	134.3		Long	Y
T38	Sycamore	2.0	140	1.0	0.5	1.0	1.0	0.5	1.0	SW	Middle Age	Poor	Remnant stump of snapped tree. Decaying significantly. Minor regrowth, but moribund.	U	0.0	0.0		Short	Y
T39	Sycamore	4.0	127	2.0	2.0	0.5	2.0	2.0	1.0	NE	Middle Age	Fair	Small tree that is bifurcate at c. 0.3m. Tops of stems have snapped with western stem dead and decaying. Suppressed by adjacent tree.	U	0.0	0.0		Short	Y
T40	Sycamore	19.0	430	2.0	4.0	5.0	8.0	5.5	0.0	E	Middle Age	Fair	Tree within W1 at top of steep north-easterly slope and south-westerly sloping shallow ground undulation. Bifurcate in mid canopy. Tall narrow form.	B,2	5.2	83.8		Long	Y
T41	Sycamore	19.0	622	8.0	8.0	2.0	10.0	7.0	7.0	NE	Middle Age	Fair	Tree within W1 at top of steep north-easterly slope and south-westerly sloping shallow ground undulation. Basally multi-stemmed with some tight unions. 2 small central stems on south side have both failed, with tallest of 2 decaying. Tall narrow form. Some dieback in upper canopy with associated moderate deadwood.	B,2	7.5	175.2		Medium	Y

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		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)		Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,U (1,2,3)	(m)	(m2)		Long, Medium, Short	Y/N
T42	Sycamore	19.0	781	3.0	7.5	7.0	11.0	6.0	4.0	NE	Mature	Fair	Tree within W1 at top of steep north-easterly slope and south-westerly sloping shallow ground undulation. Trifurcate at c. 1.5m with 2 primary stems and 1 smaller secondary stem. High canopy with some previous failures evident.	A,1,2	9.4	276.2		Long	Y
T43	Sycamore	17.0	410	1.0	4.0	4.5	2.5	4.0	0.0	E	Middle Age	Fair	Tree within W1. Stem leans to west. High canopy with some previous failures evident. Epicormic growth around base. Lowest limb is dead at base. Tall slender form.	B,2	4.9	76.0		Medium	Y
T44	Sycamore	15.0	631	2.0	8.0	7.0	4.0	7.0	0.2	SE	Middle Age	Fair	Tree at edge of W1 adjacent to small by bund. Basally bifurcate with epicormic growth around base. Stems lean to west slightly. Previous limb failures with occluding branch socket cavities evident. Bat potential. Moderate deadwood.	B,1,2	7.6	180.3		Medium	Y
T45	Sycamore	16.0	498	2.0	4.0	5.0	5.0	7.0	5.0	SW	Middle Age	Fair	Tree within W1. Bifurcate at c. 0.4m with tight and slightly included union. Tall slender form.	B,1,2	6.0	112.3		Medium	Y
T46	Sycamore	7.0	239	2.0	4.0	2.5	1.0	5.0	0.0	W	Middle Age	Fair	Tree at edge of W1 on small bund. Basally bifurcate. Stems lean to west with canopy biased in this direction. Western lower canopy failed.	C,2	2.9	25.7		Medium	Y
T47	Sycamore	9.0	150	1.0	1.0	1.0	1.0	1.0	0.5	E	Middle Age	Poor	Tree within W1. Leans to west. Very tall and slender firm for size. Suppressed by adjacent trees.	C,2	1.8	10.2		Short	Y
T48	Sycamore	6.0	186	4.0	4.0	1.5	2.5	4.0	0.0	SW	Middle Age	Fair	Basally multi-stemmed tree within W1. Slender firm. Suppressed by adjacent trees.	C,2	2.2	15.7		Short	Y
T49	Sycamore	17.0	259	4.0	2.0	2.5	2.5	2.5	0.0	SE	Middle Age	Poor	Tree within W1. Basally multi-stemmed. Eastern stem dying back at top. Very tall and slender form for size.	U	0.0	0.0		Short	Y
T50	Sycamore	3.0	220	1.0	1.5	1.5	1.5	2.5	0.0	W	Middle Age	Poor	Remnant stump of snapped tree with subsequent regrowth stems.	U	0.0	0.0		Short	Y
T51	Sycamore	4.0	75	1.0	1.0	1.5	1.5	1.5	1.0	E	Middle Age	Fair	Small tree within W1 with very slender form.	C,2	0.9	2.5		Short	Y
T52	Sycamore	4.0	75	1.0	1.5	1.0	1.0	1.0	1.0	W	Middle Age	Fair	Small tree within W1 with very slender form.	C,2	0.9	2.5		Short	Y
T53	Rowan	4.0	88	3.0	2.0	1.0	1.0	1.0	2.0	N	Middle Age	Fair	Small tree within W1 with very slender form.	C,2	1.1	3.5		Short	Y

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		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)		Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,U (1,2,3)	(m)	(m2)		Long, Medium, Short	Y/N
T54	Sycamore	18.0	300	1.0	6.5	2.5	2.0	3.5	0.0	N	Middle Age	Fair	Tree within W1. Bifurcate in mid canopy. Epicormic growth around base but canopy generally high. Minor deadwood In upper canopy. Tall slender form. Previous limb failures evident. Canopy biased to north.	B,1,2	3.6	40.7		Medium	Y
T55	Sycamore	18.0	290	1.0	4.0	2.5	2.0	2.0	0.0	N	Middle Age	Fair	Tree within W1. Epicormic growth around base but canopy generally high. Minor deadwood In upper canopy. Tall slender form. Previous limb failures evident. Canopy biased slightly to north.	B,1,2	3.5	38.0		Medium	Y
T56	Sycamore	18.0	600	1.0	6.5	6.5	5.0	6.0	2.0	S	Middle Age	Fair	Tree within W1. Bifurcate in mid canopy. Epicormic growth around base but canopy generally high. Minor deadwood In upper canopy. Tall slender form. Previous limb failures evident. Slightly sparse crown. Lowest limb dead.	B,1,2	7.2	162.9		Medium	Y
T57	Sycamore	18.0	603	4.0	7.0	5.5	3.5	5.0	3.5	W	Middle Age	Fair	Tree within W1. Multi-stemmed below 1.5m. Canopy fairly high and tree has overall tall and narrow form. Minor and moderate deadwood in canopy. Previous limb failures evident. Canopy biased slightly to north.	B,1,2	7.2	164.6		Long	Y
T58	Sycamore	19.0	833	6.0	7.0	9.0	7.0	9.0	0.0	W	Mature	Good	Tree within W1 with 4 primary stems and 2 smaller secondary stems. Basally multi-stemmed, likely a former coppice stool. Canopy high and tree has overall tall form with slender stems. Minor and moderate deadwood in canopy. Previous limb failures evident.	A,1,2	10.0	313.8		Long	Y
T59	Sycamore	19.0	624	2.0	4.5	6.0	6.0	3.5	0.0	E	Middle Age	Fair	Tree within W1. Bifurcate at 1.5m with further bifurcation of 1 stem immediately above this. Canopy very high and tree has overall tall form with slender stems. Minor and moderate deadwood in canopy. Previous limb failures evident. Epicormic growth around base.	B,1,2	7.5	176.3		Medium	Y

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		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)		Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,U (1,2,3)	(m)	(m2)		Long, Medium, Short	Y/N
T60	Sycamore	20.0	356	4.0	3.0	3.5	2.5	3.0	1.5	N	Middle Age	Fair	Tree within W1 with 1 primary stem and 3 smaller secondary stems. Bifurcate at c. 2m. Canopy high and tree has overall tall form with slender stems. Minor and moderate deadwood in canopy. Previous limb and stem failures evident. Epicormic growth around base. Regrowth stems from previous failures at base.	B,2	4.3	57.4		Medium	Y
T61	Sycamore	20.0	791	10.0	6.0	6.5	6.0	7.0	2.0	NE	Mature	Fair	Basally multi-stemmed tree within W1 with several primary stems and some smaller secondary stems. Canopy fairly high and tree has overall tall form with slender stems. Minor and moderate deadwood in canopy. Previous limb and stem failures evident. Some tight and included unions. Some minor tip dieback in places.	B,1,2	9.5	282.7		Long	Y
T62	Pedunculate oak	13.0	600	1.0	8.0	4.0	4.0	4.0	4.0	N	Middle Age	Poor	Tree within W1. Large previous stem failure evident on north-eastern side of mid canopy. Degradation of wound evident. Moderate and major deadwood in canopy. Canopy heavily biased to north and north-west. Large previous stem failure on south-west side with decay and stem hollowing evident. Branch socket cavities. Bat potential.	B,2,3	7.2	162.9	Acceptable to remain in current context, should this change reduce down to 4m standing deadwood. Stack arisings in surrounding woodland.	Medium	Y
T63	Sycamore	16.0	419	3.0	6.0	2.5	5.0	4.0	0.0	N	Middle Age	Fair	Basally multi-stemmed tree within W1. Epicormic growth around base. Canopy fairly high and tree has overall tall form with slender stems. Minor deadwood in canopy. Previous limb and stem failures evident. Appears to have been a failure previously at base on the north-eastern side with some degradation of wound evident. Vertical crack on one of the larger stems that appears to be occluding.	B,1,2	5.0	79.5	Annual inspection to monitor progression of decay and degradation in previous stem failure wound at base and to monitor vertical crack for any signs of further progression up stem.	Medium	Y
T64	Sycamore	8.0	140	1.0	3.0	1.5	4.0	0.5	2.0	N	Middle Age	Fair	Tree with W1. Suppressed to west by adjacent tree and canopy heavily biased to east and north-east. Dead limb stub on south side of lower canopy. Lowest limb dead. Sparse canopy.	C,2	1.7	8.9		Short	Y

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Ref	Species	Height	Stem Dia.	No. of stems/ individuals	Crown Spread North	Crown Spread South	Crown Spread East	Crown Spread West	Height of Lowest Branch	Direction of Lowest Branch	Maturity	Condition	Comments on form, condition, health and significant defects	BS5837 Tree Quality Assess.	Radius of RPA guide circle	BS5837 RPA Area	Management Recommendations	Estimated Remaining Contribution	TPO
		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)		Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,U (1,2,3)	(m)	(m2)		Long, Medium, Short	Y/N
T65	Sycamore	16.0	466	4.0	6.5	4.0	7.0	6.0	2.0	NE	Middle Age	Fair	Basally multi-stemmed tree with tight and some included within W1. Tall form with slender stems. Minor deadwood in canopy. Previous limb and stem failures evident.	B,1,2	5.6	98.3		Long	Y
T66	Sycamore	16.0	791	10.0	6.0	6.0	6.5	4.5	1.5	NE	Mature	Fair	Basally multi-stemmed tree with tight and some included within W1. Tall form with slender stems. Minor and moderate deadwood in canopy. Previous limb and stem failures evident.	B,1,2	9.5	282.7		Long	Y
T67	Sycamore	15.0	641	3.0	6.0	6.0	5.0	6.0	2.0	W	Middle Age	Good	Tree at edge of W1. Bifurcate at c. 2m. Primary stem below this with a secondary epicormic stem that bifurcates at 1m. Minor deadwood in upper canopy. Tall slender form.	B,1,2	7.7	186.1		Long	Y
T68	Sycamore	12.0	490	1.0	5.5	5.5	6.0	6.5	1.0	W	Middle Age	Fair	Tree within W1. Multi-stemmed in mind canopy. Suppressed to east and from above by adjacent tree, causing asymmetrical growth that is biased to west. Minor limb failures previously.	B,1,2	5.9	108.6		Long	Y
T69	Elm species	5.0	76	2.0	2.0	1.5	1.5	2.0	2.0	W	Middle Age	Fair	Small tree within W1 with very slender form.	C,2	0.9	2.6		Short	Y
T70	Elm species	5.0	80	1.0	3.0	1.0	1.5	1.5	1.0	E	Middle Age	Fair	Small tree within W1 with very slender form.	C,2	1.0	2.9		Short	Y
T71	Sycamore	5.0	80	1.0	0.5	2.5	1.0	2.5	0.0	E	Middle Age	Fair	Small tree within W1 with very slender form. Dead lowest limb at eastern base.	C,2	1.0	2.9		Short	Y
T72	Sycamore	4.0	75	1.0	1.5	1.5	1.5	1.5	1.0	E	Middle Age	Fair	Small tree within W1 with very slender form.	C,2	0.9	2.5		Short	Y
T73	Sycamore	14.0	400	1.0	2.0	3.5	3.5	3.0	2.0	SE	Middle Age	Poor	Tree within W1. Tall slender form. Heavily burred stem with decaying basal wound on east side and degradation of stem wounds throughout. Lowest limb is dead. Previous failures with branch socket cavities and bat potential.	C,1,2	4.8	72.4		Short	Y
Groups																			
G1	Goat willow, English oak, Silver birch, Hazel, Crack willow, Sycamore, Hawthorn, Wych elm, Norway maple	12.0	100-400	c. 25							Middle Age	Good	Unmanaged group, multi-stems in group, included unions, thick undergrowth within group, boundary group, screening value.	B,2	Refer to Drawing	n/a		Long	N

APPENDIX A: Arboricultural Survey Data Sheets

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		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)		Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,U (1,2,3)	(m)	(m2)		Long, Medium, Short	Y/N
G2	English oak, Sycamore, Rowan, Goat willow, Wild cherry, Elder, Holly, Hawthorn	11.0	75-450	c. 40							Middle Age	Good	Fallen stems within group, group surrounds pond, thick shrub understory in places, unmanaged group, dense and closely spaced, informal track around edge.	B,2	Refer to Drawing	n/a		Long	N
G3	English oak	15.0	500-600	2.0							Middle Age	Good	Surveyed from vantage point due to access, located on far side of pond, unable to see base of trees due to access and thick undergrowth, previous pruning wounds on stems, canopies overhang small building on far side of pond.	B,1,2	Refer to Drawing	n/a		Long	N
G4	English oak	4.0	140, 207	2.0							Young	Good	Small trees adjacent to boundary wall between site and caravan park, thick undergrowth around trees, 1 multi-stemmed form.	C,1	Refer to Drawing	n/a		Long	N
G5	Alder, English oak, Rowan, Sycamore	8.0	100-350	c. 30							Middle Age	Good	Adjacent to W1, group surrounds pond, bracken and bramble understory, informal track around edge, lower limbs flailed.	B,2	Refer to Drawing	n/a		Long	N
G6	English oak, Alder, Sycamore, Elder	12.0	50-710	c. 25							Middle Age to Mature	Good	Surrounding pond, thick undergrowth within and surrounding areas of group, unmanaged, major deadwood up to 120mm diameter, adjacent to farm track, old farm equipment stored under canopies to east of group, leaning stems, some heavily ivy clad.	B,1,2	Refer to Drawing	n/a		Long	N
G7	Sycamore, Alder	12.0	370-690	4.0							Middle Age to Mature	Good	Located to the south-west of pond to the west of farm yard, previous limb failure in large alder and leans heavily to north east towards pond, adjacent to farm track, multi-stem sycamore in group with included stem union, canopies overhang farm track, 1 alder and 3 sycamore in group, predominantly in good condition with exception of alder which is in fair condition, lowest limb of alder runs south-west along ground up slope.	B,2	Refer to Drawing	n/a		Long	N
G8	English oak	11.0	190-430	8.0							Middle Age	Good	Adjacent to farm track and entrance gate, avenue of oak trees, previous pruning wounds with occlusion on stems, minor deadwood and dieback on central smallest oak tree, but group in predominantly good condition.	B,1,2	Refer to Drawing	n/a		Long	N

APPENDIX A: Arboricultural Survey Data Sheets

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		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)		Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,U (1,2,3)	(m)	(m2)		Long, Medium, Short	Y/N
G9	Sycamore	13.0	480, 530	2.0							Middle Age	Good	Adjacent to yard, pond and T10, canopies overhang yard, bifurcate at 2.5m, no deadwood or dieback currently.	B,1,2	Refer to Drawing	n/a		Long	N
G10	Hawthorn	4.0	75-120	c. 15							Middle Age	Good	Adjacent to yard gate, farm track and T10, growing under T10 canopy, multi-stemmed forms.	C,2	Refer to Drawing	n/a		Long	N
G11	Hazel, Hawthorn	5.0	75-100	c. 20							Middle Age	Good	Growing under canopy of T11, adjacent to entrance gate and fence.	C,2	Refer to Drawing	n/a		Long	N
G12	Rowan, Sycamore, Elder, English oak	3.5	50-120	c. 10							Middle Age	Fair	Located along boundary wall, unmanaged group of shrubs and small saplings, heavily ivy clad, some dead and moribund elder stems.	C,2	Refer to Drawing	n/a		Long	N
G13	Sycamore	9.0	649, 747	2.0							Middle Age to Mature	Good	Adjacent to road and boundary wall and fence, multi-stems at base, included stem unions, previous pruning roadside, epicormic growth around bases of trees, telephone wires to west, canopies overhang road.	B,1,2	Refer to Drawing	n/a		Long	N
G14	Silver birch	9.0	200, 220, 220	3.0							Middle Age	Good	Located within and adjacent to H1, northernmost tree in group is bifurcate at 1m, on boundary and within adjacent property garden, unable to see stem of southernmost tree in group due to H1, telephone wires to east of site.	B,1,2	Refer to Drawing	n/a		Long	N
G15	Goat willow	5.0	100-180	c. 20							Middle Age	Good	Located in adjacent property, surveyed from vantage point due to access and H1.	C,2	Refer to Drawing	n/a		Long	N
G16	Silver birch	8.0	150-280	4.0							Middle Age	Good	Located in adjacent property and H1, some trees in group lean to north-east, thick undergrowth around bases.	B,1,2	Refer to Drawing	n/a		Long	N
G17	Leyland cypress, Golden leyland cypress, Elder, Cherry laurel	7.0	100-250	c. 70							Middle Age	Fair	Located in adjacent property, boundary screening group, multi-stems with included unions, brown foliage on Leyland cypresses to south of group, some dead or moribund elder stems, cherry laurel located on east side of group within garden.	C,2	Refer to Drawing	n/a		Long	N
G18	Silver birch	10.0	250-400	3.0							Middle Age	Good	Located in adjacent property close to boundary, unable to fully see bases due to G17, surveyed from vantage point, no dieback or deadwood, single stem forms.	B,1,2	Refer to Drawing	n/a		Long	N

APPENDIX A: Arboricultural Survey Data Sheets

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		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)		Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,U (1,2,3)	(m)	(m2)		Long, Medium, Short	Y/N
G19	Alder, sycamore, ash, white willow, silver birch, purple Norway maple, golden Leyland cypress, rowan, elder	14.0	75-500	c. 40							Middle Age	Good	Third party trees, some heavily ivy clad trees in group, some adjacent to road with remainder situated in back garden, Witches broom (Taphrina betulina) in silver birch trees, 1 dead tree in group, bramble understorey.	B,1,2	Refer to Drawing	n/a		Long	N
G20	English oak, sycamore, hawthorn, silver birch, rowan	9.0	50-350	c. 200							Young to Middle Age	Good	Roadside bund group adjacent to M62, M62 situated to south of group, offsite trees, overgrown with bramble, densely populated group, bund gets gradually steeper to east, some gaps towards eastern end of group.	B,2	Refer to Drawing	n/a		Long	N
G28	English oak, crab apple	up to 5.5	140-210	2.0							Middle Age	Good	Self-set oak, trifurcate apple tree, located within adjacent caravan park garden offsite, adjacent to fence and paved area.	B,1	Refer to Drawing	n/a		Long	N
G29	English oak, elder, hawthorn, rowan, goat willow, downy birch	up to 10	50-200	c. 50							Young to Middle Age	Good	Overgrown group on far side of ditch, sporadically growing trees.	C,1,2	Refer to Drawing	n/a		Long	N
G39	Elder	up to 4.5	50-80	c. 5							Middle Age	Good	Multi-stems at bases, surrounding telegraph pole adjacent to track, small clump of elder.	C,1	Refer to Drawing	n/a		Medium	N
G40	Hawthorn, Cherry laurel, Elder	up to 5.5	75-120	c. 6							Middle Age	Good	Group sloping down towards pond to south nearest to farmhouse, on boundary between house and arable fields, section of outgrown hedgerow.	C,2	Refer to Drawing	n/a		Long	N
G41	Holly, damson, Lawson cypress, Hazel	up to 4.5	50-200	6.0							Young to Middle Age	Good	Maintained shrub bed, damson tree has been topped to accommodate power lines immediately above it.	C,2	Refer to Drawing	n/a		Medium	N
G42	Snowberry, Berberis	up to 3.5	50-70	c. 40							Middle Age	Good	Maintained group of boundary shrubs. Screening value.	C,2	Refer to Drawing	n/a		Medium	N
G43	Common hazel, Common hawthorn, English holly	up to 4	75-150	c. 15							Middle Age	Good	Linear group of hawthorn at woodland edge on or at bottom of small bund.	C,2	Refer to Drawing	n/a		Medium	Y
G44	Elder	up to 3	50-80	c. 10							Middle Age	Fair	Small cluster of elder on pond bank in dense bramble area.	C,2	Refer to Drawing	n/a		Short	N
Hedges																			
H1	Berberis, Rowan, Cotoneaster, Wych elm	3.0	75-120	N/A							Middle Age	Good	Boundary hedge along adjacent property boundary, slightly outgrown.		Refer to Drawing	n/a		Long	N
H5	Cherry laurel, hawthorn, cherry	up to 2	50-100	N/A							Middle Age	Good	Maintained boundary hedge.		Refer to Drawing	n/a		Long	N

APPENDIX A: Arboricultural Survey Data Sheets

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		(m)	(mm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)		Young, Middle Age, Mature	Good, Fair, Poor, Veteran		A,B,C,U (1,2,3)	(m)	(m2)		Long, Medium, Short	Y/N
H6	Leyland cypress, elder	up to 5	50-140	N/A							Middle Age	Good	Maintained boundary hedge that is slightly outgrown with recent growth.		Refer to Drawing	n/a		Long	N
H7	Hawthorn, holly, elder	up to 3.5	50-120	N/A							Middle Age	Good	Maintained boundary hedge that is slightly outgrown with recent growth.		Refer to Drawing	n/a		Long	N
H8	Beech	up to 3.5	70-140	c. 40							Middle Age	Good	Maintained boundary hedgerow that is slightly outgrown with recent growth.		Refer to Drawing	n/a		Long	N
Woods																			
W1	Sycamore, English oak, Goat willow, English elm, Sweet chestnut, Whitebeam, Holly, Rowan, Elder, Hawthorn	18.0	150-1000	c. 150							Mixed Age	Good	Many mature trees and old, lapsed coppice stools throughout woodland, many multi-stems in woodland group, included unions throughout of vary size, some with bark ridging, dry pond located to north-east of woodland, dead standing stems of varying size within woodland, understory of young to middle age trees of mixed species, mixed flora understory with thick areas of bracken, large deadwood in lower canopies of some trees within woodland up to 120mm diameter, trees within woodland mostly in good health and condition, informal track around woodland edge, flailed lower limbs adjacent to track.	A,1,2,3	Refer to Drawing	n/a		Long	Y

APPENDIX B: Survey Method

APPENDIX B: Survey Method

The survey of trees is conducted from ground level only. The nature of the soils on site is not assessed.

Trees are dynamic living organisms with a constantly changing structure; even trees in good condition can suffer from damage or stress. The information recorded is presented as being correct at the time of survey.

The following features of each tree, group of trees or wood may have been recorded in the Arboricultural Survey Data Sheets at Appendix 1.

Species	The common name is given. The Latin name may also be given if further clarification is required.	
Height	Top height of tree recorded in metres.	
Stem Diameter	For single-stemmed trees the measurement is taken at 1.5 metres above ground level and recorded in millimetres. For multi-stemmed trees an average all stems measured at 1.5m above ground level is used. For tree groups a range from minimum to maximum diameters is provided based on measurements taken using one of the aforementioned methods.	
No. of Stems	A count of stems arising below a height of 1.5 metres.	
Crown Spread	The N, S, E and W branch spreads are recorded in metres to provide a representative crown shape.	
Height of Lowest Branch	Crown clearance above ground level recorded in metres.	
Direction of Lowest Branch	The direction of growth of the first significant branch from the point of attachment.	
Maturity	Young	Trees that can reasonably be relocated or replaced like for like, without undue cost;
	Middle Age	Trees in the established growth stage of their life with the potential to continue increasing in size;
	Mature	Trees that have reached their ultimate size, given their location and surroundings;
Condition	Good, Fair, Poor. An overall assessment of a tree's physiological and structural state in which factors that may increase its susceptibility to the effects of development are taken into account. Veteran. Trees that are in such a condition as to significantly increase their biological, cultural or aesthetic value. This is characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned.	
Comments	A brief evaluation and description of the tree with comments on form, vitality, health and any significant defects or symptoms of ill-health.	

BS 5837 Tree Quality Assessment

The tree quality assessment is based on Table 1 of BS 5837:2012 (See below). Four categories (A, B, C and U) are used to denote tree quality (A= High, B = Moderate, C = Low, U= Unsuitable for retention). Subcategories (1-3) denote the specific function value of the trees and the reasoning behind the allocation of a specific category (the subcategories may be used in combination but do not accumulate collective weight).

Root Protection Area (RPA)

The RPA is allocated to ensure that a sufficient area is left undisturbed during development. It is provided as an area (m²) and as the radius of a circle (m) typically plotted from the centre of the stem.

The RPA is calculated using a mathematical equation included in BS 5837:2012 (Section 4.6 and Table D.1) and is based on a tree's stem diameter. In some cases the RPA may need to be adapted to best reflect the likely area and position of roots required to ensure survival; this may be based on criteria such as the tree's condition, species, crown spread and any barriers to growth. Any alteration must be justifiable but is made at the Arboricultural Consultants discretion.

Recommendations

Recommendations for arboricultural works, etc. are based on the **current** land use, and take into account the tree or group attributes without bias to the proposed development.

Estimated Remaining Contribution

An estimation of the life expectancy as healthy functioning tree. This will be influenced by species and the condition of the tree at the time of survey.

Long	> 40 years
Medium	20 – 40 years
Short	less than 20 years

APPENDIX B: Survey Method

Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those 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	- Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) - Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline - Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality <i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i>			See Table 2
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
Trees to be considered for retention				
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	See Table 2
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	See Table 2
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	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	See Table 2

British Standards Institute (2012) BS5837:2012 Trees in relation to design, demolition and construction – Recommendations.
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NOTES:

All young trees are assessed as quality category 'C' but this does not preclude their retention within a development.

For hedges the height, canopy spread and number of stems is recorded but they are not assigned a quality category.



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