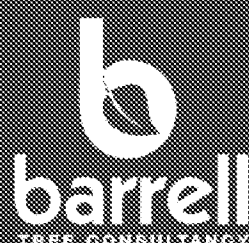




Arboricultural assessment & method statement

Phase 4 and central wetland at Toddington Lane, Littlehampton, West Sussex



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22nd February 2019 16267-AA-Wetlands-AN

Site location and report purpose

Site location



This aerial image is provided courtesy of Google. The yellow line indicates the approximate site boundary and is illustrative only.

Report purpose

This arboricultural assessment report provides sufficient information for the Local Planning Authority (LPA) to consider the effect of the proposed development on local character from a tree perspective. It is fully compliant with the BS 5837 advice relating to the planning application stage of the process and it meets national standard planning application validation requirements.

More specifically, the development proposal is to construct 44 new homes and create a new wetland area on the demolished nursery site at Toddington Lane, Littlehampton, West Sussex.

This report includes:

- A **Tree protection plan** illustrating tree locations, categories, the location of the proposed development, and the proposed tree protection measures.
- An **Arboricultural assessment** (section 1 of the report) providing an analysis of the tree issues to assist the LPA in assessing the impact on local character.
- An **Arboricultural method statement** (section 2 of the report) describing how retained trees will be protected and managed during the development activity.
- **Appendices** (**Appendix 1** – Local plan policy, background administrative information, and data collection; **Appendix 2** – Tree schedule and explanatory notes; and, **Appendix 3** – QR Codes for SGNs).
- A companion document to supplement the main report titled ***Manual for managing trees on development sites (Version 2.1)***, which provides explanations of how retained trees will be managed on site in the form of Site Guidance Notes (SGNs) covering the relevant issues.

1: Arboricultural assessment

1.1 Relevant background information

On 12th June 2018 I met with the LPA tree officer, Mr Mark Warwick, to discuss the likely arboricultural constraints and implications. It was agreed that in order to achieve the finished ground levels needed to meet the requirements of the alleviation scheme within the central wetland area, several B category and C category trees will require removal. In mitigation a comprehensive new tree planting scheme would be submitted by the project landscape architect as part of the wetland landscape scheme. The scheme has been carefully designed around the all the A category trees and the better quality B category trees to allow their retention within the new landscape.

It was also agreed that where trees will be felled to allow the levels changes, or due to their condition, the trunks will be relocated within the site to provide a deadwood habitat wherever possible.

To ensure the retained trees are adequately protected it was agreed that prior to the start of works, tree protection fencing will be checked by the project arboriculturist.

1.2 Table 1: Summary of trees affected and protected by the proposal

From my review of the constraints and the proposed layout, my assessment of the impact on trees, both during and after development, and those that need protection using special precautions, is summarised in Table 1:

	British Standard 5837 Category		
	A (High quality)	B (Moderate quality)	C (Low quality)
Remove	None	T6a, T7, T8, T9, T19, T20, T21	T10–T18, T22, T23, T24, T27, T55, T62, T64, T67–T77, T81, T83–T90, T92–T95, T160 G1–G6, G10 (part), G12, G14, G15, G16 H4, H5 (part), H8, H9, H10, H11 (part), H24, H24b
Prune	None	None	None
Protect using special precautions See Notes below	None	T65, T66, T102, T104	None
Post development considerations	None	None	None

T = Tree; H = Hedge; G = Group

Note on types of protection: All retained trees will be protected during development by using fencing, and only those requiring special precautions to limit the impact of encroachment are listed in Table 1.

Note on category U trees: Trees categorised as U (**T53, T73, T97, and T114**) are in such poor condition that they have been assessed as needing removal for management reasons irrespective of any development proposals. Removal of category U trees is a management decision and not caused by this proposal, so should not be considered a direct impact.

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1.3 The impact of tree removals on local character

Removal of B category T6a, T7, T8, T9, T19, T20, and T21: These trees are well within the old nursery site and not notable as skyline features from public viewpoints. They are neither of outstanding quality nor are they prominent within the wider landscape. Although their loss will have a short-term effect on the immediate local landscape, this will have little effect on the public amenity or character of the area due to their relative inaccessibility.

Removal of C category trees and hedges: These trees are located between the old nursery buildings (now demolished) and are a mixture of self-seeded adventitious species, planted ornamentals, and unmanaged hedgerows. They have very little potential to contribute to local character in the long-term. Their loss will be mitigated by the improvement of the landscape through new planting and through the increased public access to the significant mature trees from new public footpaths and roads.

1.4 The impact of tree pruning on local character

Other than pruning for normal maintenance, no trees will be pruned because of this development.

1.5 The impact of works in precautionary areas

New footpaths within the RPAs of T65, T66, T102, and T104: There will be encroachment into the RPAs these trees in the form of new no-dig surfacing. I have carefully reviewed the levels in these areas and it would be feasible to install custom designed no-dig specification surfacing without causing any significant disturbance to the RPA. From our previous experience at installing such surfacing (www.barrelltreecare.co.uk/case-studies/SurfacingNearTrees.pdf), I am confident that this can be implemented without any long term detrimental impact on tree health, with the detail to be agreed as part of a planning condition. This surfacing solution is within the advice set out in BS 5837 (8.6) and would be appropriate in this situation. In summary, if the guidance set out in SGN 9 *Installing/upgrading surfacing in RPAs* is observed, I believe that the proposed works can be implemented without any long term detrimental impact on tree health, and therefore local character.

NB. All new surfacing must be installed before any construction access to prevent damage to the RPA from the construction activity.

1.6 Post development considerations

If trees are retained or planted too close to occupied buildings and/or garden amenity space, it is sometimes claimed that they can cause excessive shade or anxiety, which interferes with the normal use of the property. In extreme cases, this can result in pressure from future owners to fell or severely prune, thus reducing the long-term contribution of the trees to local character. However, in our experience, these problems are extremely rare and there is very little evidence that such pressures ever result in any significant harm to the wider setting. Indeed, there is an increasing body of evidence that the benefits from trees close to occupied areas significantly outweigh any disadvantages caused by shade or anxiety. Furthermore, important trees can be protected using tree preservation orders, which come with an overarching presumption to retain protected trees unless the normal use of the property is harmed to a significant extent. To our knowledge, there is no published evidence to support that trees are being lost to the detriment of local character for these reasons. I have considered these concerns in my analysis for this site and in this case, there are no trees close enough to proposed occupied buildings where they are likely to interfere with their normal use.

1: Arboricultural assessment

1.7 New tree planting to enhance local character

To supplement retained trees and enhance local character, the project landscape architect has specified a comprehensive new tree planting scheme within the wider landscaping scheme. I understand that the final selection of species, size and location are flexible and open to amendment, as appropriate. All new trees will be specified and planted in accordance with the recommendations in BS 8545 (2014) *Trees: from nursery to independence in the landscape – Recommendations*. These new trees would have the potential to reach a significant height without excessive inconvenience and be sustainable into the long term, significantly improving the potential of the site to contribute to local character.

1.8 Compliance with local plan policy

These proposals comply with the relevant Arun District Council local plan policy ENV DM4 Protection of trees (Appendix A1.1).

1.9 Summary of impact on local character

Most of the trees to be lost because of this proposal are low category because of their poor condition or small size. Some moderate category trees will also be lost but their loss will have no long-term detrimental impact on the present character of the area. No high category trees will need to be removed. There is plenty of space for tree planting and a comprehensive new landscaping scheme is included as part of the proposal. The size of these new trees and their future growth will significantly enhance the contribution of this site to local character and more than compensate for the loss of existing trees. The matter of adverse impacts on retained trees due to post-development pressures to fell or prune has been considered and I concluded that no further trees will be affected.

The construction activity and proposed changes may affect further trees if appropriate protective measures are not taken. However, if adequate precautions to protect the retained trees are specified and implemented through the arboricultural method statement included in this report, the overall impact of the proposal on local character will be low and limited to the short term only. Indeed, the new sustainable planting proposals will increase the potential of the site to contribute to local character well beyond the short term.

For these reasons, I conclude that the proposed development would not cause an unacceptable or adverse impact on the long-term vitality of the retained trees, and therefore the character and appearance of the area. Furthermore, it fully aligns with the broad guidance set out in the National Planning Policy Framework and specifically complies with the Arun District Council local plan policy ENV DM4 Protection of trees, as reproduced in Appendix A1.1.

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2.1 Site Guidance Notes (SGNs)

This section of the report identifies which trees on this site will be protected and managed, and by what means. This site-specific summary is supplemented by more detailed explanations and descriptions of specific operations set out in the accompanying *Manual for managing trees on development sites*. That document is a compilation of 12 individual SGNs addressing the following tree protection and management issues that regularly arise in the construction phase of development:

- SGN 1 *Monitoring tree protection* (<https://www.barrelltreecare.co.uk/resources/technical-guidance/sgn01?stage=Stage>)
- SGN 2 *Fencing protected trees* (<https://www.barrelltreecare.co.uk/resources/technical-guidance/sgn02?stage=Stage>)
- SGN 3 *Ground protection* (<https://www.barrelltreecare.co.uk/resources/technical-guidance/sgn03?stage=Stage>)
- SGN 4 *Pollution control* (<https://www.barrelltreecare.co.uk/resources/technical-guidance/sgn04?stage=Stage>)
- SGN 5 *Site cranes & piling rigs* (<https://www.barrelltreecare.co.uk/resources/technical-guidance/sgn05?stage=Stage>)
- SGN 6 *Height restrictions* (<https://www.barrelltreecare.co.uk/resources/technical-guidance/sgn06?stage=Stage>)
- SGN 7 *Excavating in RPAs* (<https://www.barrelltreecare.co.uk/resources/technical-guidance/sgn07?stage=Stage>)
- SGN 8 *Removing surfacing and structures in RPAs* (<https://www.barrelltreecare.co.uk/resources/technical-guidance/sgn08?stage=Stage>)
- SGN 9 *Installing/upgrading surfacing in RPAs* (<https://www.barrelltreecare.co.uk/resources/technical-guidance/sgn09?stage=Stage>)
- SGN 10 *Installing structures in RPAs* (<https://www.barrelltreecare.co.uk/resources/technical-guidance/sgn10?stage=Stage>)
- SGN 11 *Installing services in RPAs* (<https://www.barrelltreecare.co.uk/resources/technical-guidance/sgn11?stage=Stage>)
- SGN 12 *Landscaping in RPAs* (<https://www.barrelltreecare.co.uk/resources/technical-guidance/sgn12?stage=Stage>)

NOTE: Each individual SGN can be downloaded by using the links above and the QR Code links in Appendix 3.

2.2 Identification of areas to be protected

The tree protection plan shows the areas where protective measures are necessary. The fencing location is shown by the heavy black dashed lines, with the construction exclusion zone behind as the lighter black diagonal hatch.

2.3 Arboricultural supervision

An arboricultural consultant will be appointed to advise on the tree management for the site and to attend:

- a pre-commencement meeting before any work starts;
- regular supervision visits to oversee the agreed tree protection, as agreed at the pre-commencement meeting; and

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- further supervision visits, as necessary, to oversee any unexpected works that could affect trees.

The detail of how the arboricultural supervision will be carried out is explained in SGN 1 *Monitoring tree protection* in the accompanying Manual.

2.4 Table 2: Summary of the site operations requiring arboricultural input

For this site, arboricultural input will be needed for the following operations:

Brief operation summary	Trees affected	Location of detailed explanations
Pre-commencement meeting: Meeting on site with all parties to agree protective measures, as described in SGN 1. <u>Will be carried out before any significant site works begin.</u>	All trees	SGN 1 <i>Monitoring tree protection</i>
Tree felling: Contractor will carry out agreed works as described in Appendix 2. <u>Will be completed before any significant site works begin.</u>	T6a, T7, T8, T9, T10–T18, T19, T20, T21, T22, T23, T24, T27, T53, T55, T62, T64, T67–T77, T81, T83–T90, T92–T95, T97, T114, T160 G1–G6, G10 (part), G12, G14, G15, G16 H4, H5 (part), H8, H9, H10, H11 (part), H24, H24b	Appendix 2
Installing fencing: Agreed tree protection measures will be installed and checked, as described in SGN 2. <u>Will be completed before any significant site works begin.</u>	Fencing all retained trees	Tree protection plan, SGN 2 <i>Fencing protected trees</i>
Pollution control near retained trees: Any pollution control measures identified during risk assessment will be installed as described in SGN 4. <u>Will be completed before any potential pollutants arrive on site.</u>	All trees	SGN 4 <i>Pollution control</i>
Regular arboricultural supervision: Provision will be made to carry out and record agreed arboricultural supervision, as described in SGN 1.	All trees	SGN 1 <i>Monitoring tree protection</i>
Installing/upgrading surfacing in RPAs: These operations will be carried out as described in the SGN 9.	T65, T66, T102, T104	SGN 9 <i>Installing/upgrading surfacing in RPAs</i>
Installing services in RPAs: These operations will be carried out with care, as described in SGN 11.	All trees	SGN 11 <i>Installing services in RPAs</i>
Landscaping in RPAs: These operations will be carried out with care, as described in SGN 12.	All trees	SGN 12 <i>Landscaping in RPAs</i>

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Brief operation summary	Trees affected	Location of detailed explanations
Removing tree protection: <u>Protection can only be removed when there is no risk of damage to retained trees, as described in SGN 1.</u>	All trees	SGN 1 <i>Monitoring tree protection</i>

The operations summarised in this table, and supplemented by the more detailed explanations set out in the SGNs and the rest of this document, form the arboricultural method statement for this site. The Site Manager will ensure that its details and any agreed amendments are known and understood by all site personnel. Copies of the agreed documents will be available on site. All personnel who could have an impact on trees will be briefed on the specific tree protection requirements as part of the site induction procedures. This requirement will be written into the site management documentation.

If unanticipated issues arise on site not referenced in the above explanations, further guidance on how to manage them can be found in the accompanying Manual.

2.5 Construction method statement (heads of terms summary)

A construction method statement is a description of how operations that may affect trees will be carried out to minimise any adverse impact on them. The details of how the site will be managed are construction and contractual matters that can only be finalised once the post-consent detailed planning begins. For that reason, at this stage in the planning process, as explained in clause 5.5.6 of BS 5837, it is normally sufficient to list a heads of terms summary of the issues requiring more detailed consideration once consent is issued. On this site, those issues are likely to include:

1. Preparation of a written site management protocol for dealing with tree issues, to be incorporated into formal site management procedures, and to specifically include induction training for all operatives related to tree protection.
2. The order of work on site, including site clearance, the installation of protective measures, the phasing of successive work locations, the removal of existing structures/surfacing, the installation of new structures/surfacing, the removal of tree protection, and any necessary reinstatement.
3. Erection and maintenance of tree protection measures.
4. Who will be responsible for protecting the trees on site.
5. Detailed proposals for inspecting and supervising the tree protection.
6. How accidents and emergencies involving trees will be managed, including accidental damage to roots and their treatment.
7. The parking arrangements for workers and visitors.
8. A schedule of emergency contact numbers relating to trees.
9. Areas for loading and unloading of materials and storage of materials and plant.
10. Where site facilities will be located and when will they be installed.
11. How machinery and equipment (such as excavators, cranes and their loads, concrete pumps and piling rigs) will enter, move on, work on, and leave the site.
12. Pollution control to specifically consider chemical storage and wheel washing facilities in relation to trees.
13. Recycling and storage of waste in relation to trees.
14. Details of earthworks, grading and mounding and removal of spoil, including any planned lowering or raising of ground levels.
15. Precise services locations, including the method of excavation when near trees.



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16. Details of upgrading/removing/replacing existing surfacing and areas where this will happen, including detailed and precise cross-sections where no-dig surfacing is to be installed.
17. How post-construction impacts through compaction to soil near trees will be ameliorated.

Appendix 1: Local plan policy, background administrative information, and data collection

A1.1 Local plan policy

Arun District Council local plan policy ENV DM4 Protection of trees

Development will be permitted where it can be demonstrated that trees protected by a Tree Preservation Order(s), (TPO) identified as Ancient Woodland, in a Conservation Area or contributing to local amenity, will not be damaged or destroyed now and as they reach maturity, unless development:

- a. Would result in the removal of one or more trees in the interests of good arboricultural practice. This shall be demonstrated by the developer following the advice of a suitably qualified person which shall be guided by BS 5837 (2012). Details of any advice received having regard to BS 5837 (2012) shall be submitted, in writing, as part of a planning application; or
- b. Would enhance the survival and growth prospects of other protected trees;
- c. The benefits of the proposed development in a particular location outweigh the loss of trees or woodland, especially ancient woodland.

Where planning permission is granted in any of the above instances, conditions shall be used to ensure that, for any trees which are removed as part of a development, at least an equivalent number of a similar species and age (where practical) are planted on the proposed development site. Sufficient space for replacement trees to mature without causing future nuisance or damage shall be provided. The planting of new trees shall form an integral part of the design of any development scheme.

Proper provision must be made for the protection and management of trees or areas of woodland on-site when undertaking development. A management plan shall be provided as part of a planning application in accordance with BS 5837 (2012) in order to ensure that trees are adequately protected during development and appropriately maintained in the future. Conditions for the continued protection of trees on sites shall be included in any planning permission given.

Where there are existing trees on or adjacent to a development site, developers shall be required to provide:

- d. Land and tree surveys
- e. A tree constraints plan
- f. An arboricultural impact assessment to include a tree protection plan and arboricultural method statement

These will ensure that development is planned to take a comprehensive view of tree issues at an early stage in the design process and that development works do not have a negative impact on existing trees.

A1.2 Table 3: Background administrative information

	Background administrative information
Report date & reference	22 nd February 2019; 16267-AA-Wetlands-AN
Tree protection plan reference	BT8
Instructing client	Persimmon Homes Thames Valley
Instructions	Visit the site, assess the relevant trees, verify and update the earlier tree schedule data (WYG Tree Survey Report March 2015), prepare a revised and updated schedule of their details, describe the impact of the proposal on those trees and identify the tree protection issues in an arboricultural method statement with a tree protection plan, if appropriate.
Provided documents	Topographical survey, drawing number 141178,01,02,03, received by email on 27 th July 2016, previous tree survey plan, A089072-TCP-01 Rev A, received by email on 27 th July 2016, and layout drawing number 543_4_PL_100, received by email on 29 th January 2019
Report author and credentials	Alex Needs is a Chartered Forester (www.charteredforesters.org), and a Registered Consultant of the Arboricultural Association (www.trees.org.uk), and is fully qualified to undertake the assessments in this report (https://www.barrelltreecare.co.uk/who-we-are/).
Report limitations	We have not checked if there is any statutory protection on the trees because this can delay the production of the report. If any tree works are proposed before a planning consent is given, then the possible existence of any statutory protection must be checked with the LPA.

Appendix 1: Local plan policy, background administrative information, and data collection

	Background administrative information
	This report does not consider ecological or archaeological issues, or any other matter beyond the assessment of the trees.
Technical references	In preparing the analysis in this report, we considered the guidance and advice in the following technical references: - Climate Change Act (2008) www.legislation.gov.uk/ukpga/2008/27/contents - Town and Country Planning Act 1990 www.legislation.gov.uk/ukpga/1990/8/contents - National Planning Policy Framework, published by the DCLG www.gov.uk/government/publications/national-planning-policy-framework---2 - BS 5837 (2012) <i>Trees in relation to design, demolition and construction – Recommendations</i>, BSI www.shop.bsigroup.com/ - BS 8545 (2014) <i>Trees: from nursery to independence in the landscape – Recommendations</i>, www.shop.bsigroup.com/ - BS 3998 (2010) <i>Tree work – Recommendations</i>, BSI www.shop.bsigroup.com/ <i>Trees in the Townscape: A Guide for Decision Makers</i>, published by the Trees & Design Action Group http://www.tdag.org.uk/ <i>Trees in Hard Landscapes: A Guide for Delivery</i>, published by the Trees & Design Action Group www.tdag.org.uk/ - National Joint Utilities Group (2007) Volume 4, Issue 2: <i>Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees</i> www.njug.org.uk/publications/

A1.2 Table 4: Data collection

	Data collection
Date of site visit	5 th , 7 th , and 12 th October 2016 and 12 th June 2018
People present during site visit	Alex Needs, accompanied on 5 th October 2016 by Jeremy Barrell and accompanied on 12 th June 2018 by Mark Warwick (Arun District Council)
Weather & visibility	Dull, still, and dry, with average visibility.
Limitations to observations	- The inspection of the trees for the purposes of assessing their condition and work requirements was made on the basis that they will be annually inspected in the future to identify any changes in condition and review the original recommendations. For these reasons, the tree assessment advice only remains valid for one year from the date that the trees were last inspected. - All observations were of a preliminary nature and did not involve any climbing or detailed investigation beyond what was visible from accessible points at ground level. - Observations of trees outside the site boundaries are confined to what was visible from within the site. - All dimensions were estimated unless otherwise indicated.
Tree Preservation Orders (TPOs), Conservation Areas, and tree categorisation	TPOs cannot always be reliably interpreted from the documentation to identify which trees are protected, especially as time passes and site conditions change from when they were originally made. It is common for TPO plans to be inaccurate and schedules often become out of date as trees die or are removed. Frequently, trees deteriorate and, although they may be



Appendix 1: Local plan policy, background administrative information, and data collection

	Data collection
	technically protected by the TPO, are in such poor condition or causing such unreasonable inconvenience that their suitability for retention becomes questionable. In a planning context, if poor trees are assessed as unsuitable for retention, then it would be inappropriate to show them as a material constraint in development planning. For these reasons, although TPOs do need to be considered, they do not form the primary basis for tree categorisation. Poor quality trees assessed as not worthy of retention will be shown as such, irrespective of whether they are protected or not. Similarly, good quality trees that are not protected will still be shown as material constraints. The same rationale will be applied to Conservation Areas.
Tree location and numbering	Each tree, hedge, and group, was inspected, and the numbering scheme is indicated on the tree protection plan. Where important trees were found on site that were not included on the provided plan, their approximate positions and canopy extents are indicated on the plan.
Recording of tree data	For each identified tree, hedge, and group, the information collected was recorded on the tree schedule in Appendix 2 and the tree protection plan.
Compliance of data collection with BS 5837	The data collection is fully compliant with the advice in subsection 4.4.2 of BS 5837. When collecting this information, specific consideration was given to any low branches that may influence future use, age class, physiological condition, structural condition, and remaining contribution. Where appropriate, crown spreads were also noted where they differed from those shown on the provided land survey.
Calculation of RPAs	Following the recommendations in Table D1 of BS 5837, the diameter of each tree was rounded up to the next 2.5cm increment, with the radius of a nominal circle and the resultant RPA taken directly from that table. This information is listed for each tree in the tree schedule in Appendix 2.



Appendix 2: Tree schedule and explanatory notes

NOTE: Colour annotation is A & B trees with green background; C & U trees with blue background; trees to be removed in red text.

Tree No	Species	Height (m)	Diameter (cm) @ 1.5m	Maturity	Low Branches	Category	Notes	Tree Works	RPA radius (m)	RPA area (m2)
All retained trees & hedges								Carry out safety check and lift over site to 3-4m as necessary.		
T6	Ash	12	78	Over mature	-	B	-	-	9.4	275
T6a	Sycamore	12	40 56	Over mature	-	B	-	Fell for development	8.3	214
T7	Sycamore	10	48	Mature	-	B	-	Fell for development	5.8	104
T8	Italian Alder	11	44	Young	-	B	-	Fell for development	5.3	88
T9	Italian Alder	11	40	Young	-	B	-	Fell for development	4.8	72
T10	Italian Alder	11	33	Young	-	C	-	Fell for development	4.0	49
T11	Pear	4	20	Young	-	C	-	Fell for development	2.4	18
T12	Pear	4	17	Young	-	C	-	Fell for development	2.0	13
T13	Pear	4	13	Young	-	C	-	Fell for development	1.6	8
T14	Pear	4.5	14	Young	-	C	-	Fell for development	1.7	9
T15	Pear	5.5	16	Young	-	C	-	Fell for development	1.9	12
T16	Pear	6	22	Young	-	C	-	Fell for development	2.6	22
T17	Pear	3	11	Young	-	C	-	Fell for development	1.3	5
T18	Hawthorn	5	12 15 13 12	Young	-	C	-	Fell for development	3.1	31
T19	Cherry Plum	4	15 16 16 12 17	Mature	-	B	-	Fell for development	4.1	53
T20	Field Maple	6	26	Young	-	B	-	Fell for development	3.1	31
T21	Field Maple	6	25	Young	-	B	-	Fell for development	3.0	28
T22	Sycamore	6	36	Young	-	C	-	Fell for development	4.3	59
T23	Corkscrew Willow	8	12 10 11 8	Young	-	C	-	Fell for development	2.5	19
T24	Narrow-leaved Ash	6	16	Young	-	C	-	Fell for development	1.9	12



Appendix 2: Tree schedule and explanatory notes

Tree No	Species	Height (m)	Diameter (cm) @ 1.5m	Maturity	Low Branches	Category	Notes	Tree Works	RPA radius (m)	RPA area (m2)
T26	Italian Alder	9	43	Mature	-	B	-	-	5.2	84
T27	Western Red Cedar	13	62	Mature	-	C	Crown die-back	Fell for development	7.4	174
T29	Western Red Cedar	12	42 25	Mature	-	C	-	-	5.9	108
T30	Western Red Cedar	10	47	Mature	-	C	-	-	5.6	100
T31	Western Red Cedar	10	36	Mature	-	C	-	-	4.3	59
T32	Western Red Cedar	10	22	Mature	-	C	-	-	2.6	22
T33	Western Red Cedar	10	39	Mature	-	C	-	-	4.7	69
T34	Leyland Cypress	11	25 36 28	Mature	-	C	-	-	6.2	122
T35	Leyland Cypress	11	55 22 25 28 27	Mature	-	C	-	-	9.0	256
T36	Hybrid Black Poplar	16	48 31 30 48	Mature	-	B	-	-	9.7	293
T37	Leyland Cypress	4	15	Mature	-	C	-	-	1.8	10
T38	Ash	7	26	Young	-	C	-	-	3.1	31
T39	Sycamore	7	19 16 16 15 13	Young	-	C	-	-	4.3	57
T40	Ash	7	30	Young	-	C	-	-	3.6	41
T41	Ash	6	20	Young	-	C	-	-	2.4	18
T42	Italian Alder	9	17 21 24	Young	-	C	-	-	4.3	59
T43	Goat Willow	9	25 28 30 32	Mature	-	B	-	-	6.9	151
T44	Ash	8	25	Young	-	C	-	-	3.0	28
T45	Ash	7	20	Young	-	C	-	-	2.4	18
T46	Ash	9	34	Young	-	B	-	-	4.1	52
T47	Silver Birch	6	38	Mature	-	B	-	-	4.6	65
T48	Silver Birch	6	14	Young	-	C	-	-	1.7	9
T49	Silver Birch	8	25	Young	-	B	-	-	3.0	28
T50	Silver Birch	9	44	Mature	-	B	-	-	5.3	88
T51	Silver Birch	10	55	Over mature	-	B	-	-	6.6	137
T52	Silver Birch	9	29	Young	-	B	-	-	3.5	38



Appendix 2: Tree schedule and explanatory notes

Tree No	Species	Height (m)	Diameter (cm) @ 1.5m	Maturity	Low Branches	Category	Notes	Tree Works	RPA radius (m)	RPA area (m2)
T53	Silver Birch	9	42	Young	-	B	-	Fell for management	5.0	80
T54	Ash	10	45	Mature	-	U	-	-	5.4	92
T55	Ash	10	39	Young	-	C	Will become vulnerable when adjacent tree lost	Fell for development	4.7	69
T56	Ash	10	41	Young	-	B	Will become vulnerable when adjacent tree lost	-	4.9	76
T57	Weeping Willow	10	48	Mature	-	B	-	-	5.8	104
T58	Weeping Willow	10	61	Mature	-	B	-	-	7.3	168
T59	Weeping Willow	10	72	Mature	-	B	-	-	8.6	235
T60	Weeping Willow	10	69	Mature	-	B	-	-	8.3	215
T61	Weeping Willow	10	56	Mature	-	B	-	-	6.7	142
T62	Snakebark Maple	7	19	Young	-	C	-	Fell for development	2.3	16
T63	Ash	16	79	Mature	-	B	Ivy clad	-	9.5	282
T64	Hawthorn	5	8 8 8 8 8	Young	-	C	-	Fell for development	2.2	15
T65	Weeping Willow	12	94	Over mature	-	B	-	-	11.3	400
T66	Weeping Willow	12	78	Mature	-	B	-	-	9.4	275
T67	Ash	11	41	Maturing	-	C	-	Fell for development	4.9	76
T68	Ash	8	40	Maturing	-	C	-	Fell for development	4.8	72
T69	Ash	12	33 45 37	Maturing	-	C	Will become vulnerable when adjacent tree lost	Fell for development	8.0	203
T70	Ash	11	36	Maturing	-	C	Will become vulnerable when adjacent tree lost	Fell for development	4.3	59
T71	Ash	12	27 21	Maturing	-	C	-	Fell for development	4.1	53
T72	Ash	11.5	25	Maturing	-	C	-	Fell for development	3.0	28
T73	Ash	11.5	30 40	Maturing	-	U	-	Fell for management	6.0	113
T74	Ash	10	24	Young	-	C	-	Fell for development	2.9	26
T75	Ash	10.5	54	Maturing	-	C	Will become vulnerable when adjacent tree lost	Fell for development	6.5	132



Appendix 2: Tree schedule and explanatory notes

Tree No	Species	Height (m)	Diameter (cm) @ 1.5m	Maturity	Low Branches	Category	Notes	Tree Works	RPA radius (m)	RPA area (m2)
T76	Ash	7	25	Young	-	C	-	Fell for development	3.0	28
T77	Blue Atlas Cedar	3	30	Young	-	C	-	Fell for development	3.6	41
T78	Hornbeam	6	45	Young	-	B	-	-	5.4	92
T79	Hornbeam	6	45	Young	-	B	-	-	5.4	92
T80	Weeping Willow	12	44 34 43	Mature	-	B	Requires pruning for safe retention	-	8.4	224
T81	Weeping Willow	12	63	Mature	-	U	-	Fell for development	7.6	180
T82	Weeping Willow	13	56	Mature	-	C	Requires reduction for safe retention	-	6.7	142
T83	Weeping Willow	12	101	Over mature	-	C	Requires reduction for safe retention	Fell for development	12.1	461
T84	Leyland Cypress	16	53 16 15 19 32	Mature	-	C	-	Fell for development	8.2	211
T85	Leyland Cypress	10	23	Young	-	C	-	Fell for development	2.8	24
T86	Silver Birch	5	19	Young	-	C	-	Fell for development	2.3	16
T87	Silver Birch	6	21	Young	-	C	-	Fell for development	2.5	20
T88	Silver Birch	7	20	Young	-	C	-	Fell for development	2.4	18
T89	Silver Birch	9	25	Young	-	C	-	Fell for development	3.0	28
T90	Silver Birch	9	24	Young	-	C	-	Fell for development	2.9	26
T91	Silver Birch	10	35	Mature	-	B	-	-	4.2	55
T92	Silver Birch	10	37	Young	-	C	-	Fell for development	4.4	62
T93	Weeping Willow	12.5	75	Mature	-	C	Severe storm damage. Requires pruning for safe retention.	Fell for development	9.0	254
T94	Weeping Willow	13	48	Mature	-	C	Will become exposed due to loss or adjacent trees. Requires pruning for safe retention.	Fell for development	5.8	104
T95	Weeping Willow	14	62	Mature	-	C	Newly exposed. Requires pruning.	Fell for development	7.4	174



Appendix 2: Tree schedule and explanatory notes

Tree No	Species	Height (m)	Diameter (cm) @ 1.5m	Maturity	Low Branches	Category	Notes	Tree Works	RPA radius (m)	RPA area (m2)
T96	Weeping Willow	13	73	Mature	-	B	Marginal B. Will require pruning.	-	8.8	241
T97	Weeping Willow	11	71	Mature	-	U	-	Fell for management	8.5	228
T98	Weeping Willow	11	46	Mature	-	C	Requires severe pruning	-	5.5	96
T99	Weeping Willow	13	62	Mature	-	B	Marginal B. Will require pruning.	-	7.4	174
T100	Weeping Willow	12	75	Mature	-	B	Marginal B. Will require pruning.	-	9.0	254
T101	Weeping Willow	10	34	Mature	-	C	-	-	4.1	52
T102	Weeping Willow	11	76	Mature	-	B	Marginal B. Will require pruning.	-	9.1	261
T103	Silver Birch	8.5	54	Mature	-	B	-	-	6.5	132
T104	Caucasian Wingnut	14	98	Over mature	-	A	-	-	11.8	434
T105	Caucasian Wingnut	13	107	Over mature	-	A	-	-	12.8	518
T106	Caucasian Wingnut	14	80	Over mature	-	A	-	-	9.6	290
T107	Weeping Willow	12	58	Mature	-	C	-	-	7.0	152
T108	Weeping Willow	12	54	Mature	-	C	-	-	6.5	132
T109	Weeping Willow	12	58	Mature	-	C	-	-	7.0	152
T110	Weeping Willow	13	65	Mature	-	C	-	-	7.8	191
T111	Weeping Willow	12	55	Mature	-	C	-	-	6.6	137
T112	Weeping Willow	13	48	Mature	-	C	-	-	5.8	104
T113	Weeping Willow	14	77	Mature	-	B	Weak fork at 4m. Marginal B and will need pruning.	-	9.2	268
T114	Ash	10	52	Maturing	-	U	-	Fell for management	6.2	122
T115	Hornbeam	7	35	Young	-	A	-	-	4.2	55
T116	Ash	5.5	31	Young	-	A	-	-	3.7	43



Appendix 2: Tree schedule and explanatory notes

Tree No	Species	Height (m)	Diameter (cm) @ 1.5m	Maturity	Low Branches	Category	Notes	Tree Works	RPA radius (m)	RPA area (m2)
T117	Hornbeam	7	47	Young	-	A	-	-	5.6	100
T118	Ash	9	39	Young	-	A	-	-	4.7	69
T119	Hornbeam	7	39	Young	-	A	-	-	4.7	69
T120	Hornbeam	10	36	Young	-	B	-	-	4.3	59
T121	Hornbeam	10	42	Young	-	B	-	-	15.0	707
T122	Silver Birch	10	31	Young	-	C	-	-	3.7	43
T123	Silver Birch	9.5	31	Young	-	C	-	-	3.7	43
T124	Silver Birch	9.5	38	Young	-	B	-	-	4.6	65
T125	Silver Birch	9.5	31	Young	-	C	-	-	3.7	43
T126	Silver Birch	8.5	29	Young	-	B	-	-	3.5	38
T127	Silver Birch	8.5	14	Young	-	C	-	-	1.7	9
T128	Silver Birch	10.5	26	Young	-	C	-	-	3.1	31
T129	Silver Birch	10	15 15	Young	-	C	-	-	2.6	20
T130	Silver Birch	9	31	Young	-	B	-	-	3.7	43
T131	Silver Birch	10	16	Young	-	C	-	-	1.9	12
T132	Silver Birch	10.5	30	Young	-	U	-	-	3.6	41
T133	Silver Birch	11	30	Young	-	B	-	-	3.6	41
T134	Silver Birch	10	44	Mature	-	B	-	-	5.3	88
T135	Silver Birch	9.5	35	Mature	-	B	-	-	4.2	55
T136	Weeping Willow	12	71	Mature	-	B	Requires pruning for safe retention	-	8.5	228
T137	Weeping Willow	13	54	Mature	-	B	Requires pruning for safe retention	-	6.5	132
T138	Weeping Willow	13	75	Mature	-	B	Requires pruning for safe retention	-	9.0	254
T139	Weeping Willow	14	71	Mature	-	B	Requires pruning for safe retention	-	8.5	228
T140	Weeping Willow	14	59	Mature	-	B	Requires pruning for safe retention	-	7.1	157



Appendix 2: Tree schedule and explanatory notes

Tree No	Species	Height (m)	Diameter (cm) @ 1.5m	Maturity	Low Branches	Category	Notes	Tree Works	RPA radius (m)	RPA area (m2)
T141	Weeping Willow	13	50	Mature	-	B	Requires pruning for safe retention	-	6.0	113
T144	Horse Chestnut	8	38	Young	-	C	-	-	4.6	65
T145	Horse Chestnut	7	57	Young	-	B	-	-	6.8	147
T146	Horse Chestnut	6	43	Young	-	B	-	-	5.2	84
T146a	Horse Chestnut	5	40	Young	-	B	-	-	4.8	72
T160	Narrow-leaved Ash	5	15	Young	-	C	-	Fell for development	4.8	72

Tree No	Species	Height (m)	Diameter (cm) @ 1.5m	Maturity	Low Branches	Category	Notes	Tree Works	RPA radius (m)	RPA area (m2)
All retained trees & hedges								Carry out safety check and lift over site to 3-4m as necessary.		
G1	Mixed Broadleaves	5	10	Young	-	C	-	Fell for development	1.2	5
G2	Mixed Broadleaves	5	10	Young	-	C	-	Fell for development	1.2	5
G3	Mixed Broadleaves	12	30	Young	-	C	-	Fell for development	3.6	41
G4	Mixed Broadleaves	6	20	Maturing	-	C	-	Fell for development	2.4	18
G5	Italian Alder	6	18	Young	-	C	-	Fell for development	2.2	15
G6	Mixed Shrubs	2	5	Young	-	C	-	Fell for development	0.6	1
G8	Goat Willow & Crack Willow	10	30	Maturing	-	C	-	-	3.6	41
G9	Leland Cypress & Western Red Cedar	9	20	Young	-	C	-	-	2.4	18
G10	Mixed Shrubs	2	5	Young	-	C	-	Fell for development (part)	0.6	1
G11	Mixed Shrubs	3	5	Young	-	C	-	-	0.6	1



Appendix 2: Tree schedule and explanatory notes

Tree No	Species	Height (m)	Diameter (cm) @ 1.5m	Maturity	Low Branches	Category	Notes	Tree Works	RPA radius (m)	RPA area (m2)
G12	Mahonia & Portugal Laurel	2	10	Young	-	C	-	Fell for development	1.2	5
G13	Mixed Shrubs	4	15	Young	-	C	-	-	1.8	10
G14	Mixed Shrubs	2	5	Young	-	C	-	Fell for development	0.6	1
G15	Mixed Species	4	10	Young	-	C	-	Fell for development	1.2	5
G16	Mixed Broadleaves	4	15	Young	-	C	-	Fell for development	1.8	10

Tree No	Species	Height (m)	Diameter (cm) @ 1.5m	Maturity	Low Branches	Category	Notes	Tree Works	RPA radius (m)	RPA area (m2)
All retained trees & hedges								Carry out safety check and lift over site to 3-4m as necessary.		
H3	Hawthorn & Elder	6	15	Maturing	-	C	-	-	1.8	10
H4	Mixed Shrubs	6	15	Maturing	-	C	-	Fell for development	1.8	10
H5	Hawthorn	6	15	Maturing	-	C	-	Fell for development (part)	1.8	10
H6	Leyland Cypress	10	20	Mature	-	C	-	-	2.4	18
H7	Leyland Cypress	4	15	Maturing	-	C	-	-	1.8	10
H8	Privet	1	10	Maturing	-	C	-	Fell for development	1.2	5
H9	Euonymus	1	10	Maturing	-	C	-	Fell for development	1.2	5
H10	Hawthorn	2	20	Maturing	-	C	-	Fell for development	2.4	18
H11	Hawthorn	2	20	Maturing	-	C	-	Fell for development	2.4	18
H12	Hawthorn	2	20	Maturing	-	C	-	-	2.4	18
H13	Hawthorn	5	15	Maturing	-	C	Section removed	-	1.8	10
H14	Hawthorn	12	30	Maturing	-	C	-	-	3.6	41
H23	Leyland Cypress	12	20	Maturing	-	C	-	-	2.4	18
H24	Hawthorn	6	15	Maturing	-	C	-	Fell for development	1.8	10



Appendix 2: Tree schedule and explanatory notes

Tree No	Species	Height (m)	Diameter (cm) @ 1.5m	Maturity	Low Branches	Category	Notes	Tree Works	RPA radius (m)	RPA area (m2)
H24a	Hawthorn	4	15	Maturing	-	C	-	-	1.8	10
H24b	Hawthorn	4	15	Maturing	-	C	-	Fell for development	1.8	10
H29	Hawthorn	4	15	Maturing	-	C	-	-	1.8	10
H30	Hawthorn	4	15	Maturing	-	C	-	-	1.8	10

Appendix 2: Tree schedule and explanatory notes

Explanatory Notes

- **Abbreviations:**

G: Group
H: Hedge
T: Tree

- **Botanical tree names:**

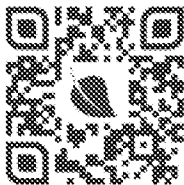
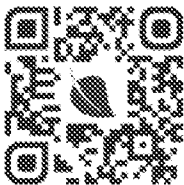
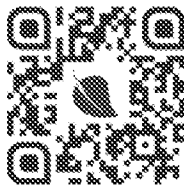
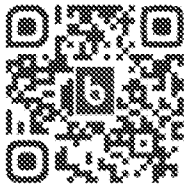
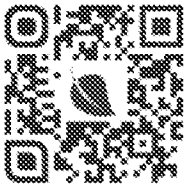
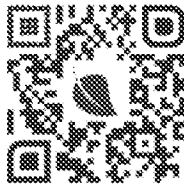
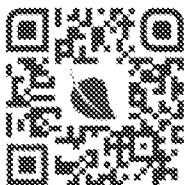
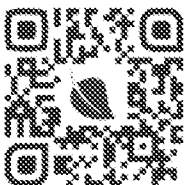
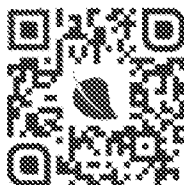
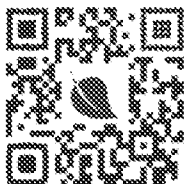
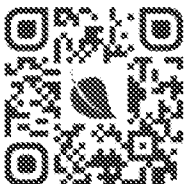
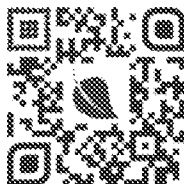
Ash	: <i>Fraxinus</i> sp
Birch	: <i>Betula pendula</i>
Blue Atlas cedar	: <i>Cedrus libani atlantica</i> Glauca Group
Caucasian wingnut	: <i>Pterocarya fraxinifolia</i>
Elder	: <i>Sambucus nigra</i>
Euonymus	: <i>Euonymus</i> sp
Field maple	: <i>Acer campestre</i>
Goat willow	: <i>Salix caprea</i>
Hawthorn	: <i>Crataegus monogyna</i>
Hornbeam	: <i>Carpinus betulus</i>
Horse chestnut	: <i>Aesculus hippocastanum</i>
Italian alder	: <i>Alnus cordata</i>
Leyland cypress	: <i>X Cuprocyparis leylandii</i>
Magnolia	: <i>Magnolia</i> sp
Pear	: <i>Pyrus</i> sp
Plum	: <i>Prunus</i> sp
Poplar	: <i>Populus</i> sp.
Portugal laurel	: <i>Prunus lusitanica</i>
Privet	: <i>Ligustrum vulgare</i>
Sycamore	: <i>Acer pseudoplatanus</i>
Western red cedar	: <i>Thuja plicata</i>
Weeping willow	: <i>Salix x chrysocoma</i>
Willow	: <i>Salix</i> sp

- **BS 5837 (2012) compliance:** From our analysis of the earlier WYB Tree Survey Report we believe that all data has been collected based on the recommendations set out in subsection 4.4 of BS 5837.
- **Tree inspections and site limitations:** Each tree was subjected to a quick visual check level of inspection. Where there is restricted access to the base of a tree, its attributes are assessed from the nearest point of access. Climbing inspections are not carried out during this level of inspection and, if heavy ivy is present, tree condition is assessed from what can be seen from the ground. A separate note is recorded if further investigation may be required to clarify its status.
- **Crown spreads:** Crown spread dimensions are not listed in the tree schedule because they are illustrated on the land survey base to all the plans in this document. Where crown spreads of significant trees on site are found to deviate from those shown on the provided land survey, we have noted it in the text of the report and annotated it on our plans.
- **Dimensions:** All dimensions are estimated unless otherwise indicated with an asterisk (*) after the figure.
- **Species:** Species identification is based on visual observations. Where there is some doubt over tree identity, sp is noted after the genus name to indicate that the species cannot be reliably identified at the time of the survey. Where there is more than one species in a group, only the most frequent are noted and not all the species present may be listed.
- **Height:** Height is estimated to provide a broad indication of the size of the tree.
- **Trunk diameter:** Trunk diameter is estimated or measured (with a diameter tape), at the discretion of the consultant, and recorded as advised in BS 5837 Table D1. Estimates may be made where access is restricted, direct measurement is prevented because of ivy on the trunk, or the tree is assessed as low quality. The point of measurement and the adjustments for stem variations are as advised in Figure C1 of BS 5837.

Appendix 2: Tree schedule and explanatory notes

- **Maturity:** In planning context, maturity provides a simplistic indication of a tree's ability to cope with change and its potential for further growth. For the purposes of this report, young indicates a potential to significantly increase in size and a high ability to cope with change, maturing indicates some potential to increase in size and a medium ability to cope with change, and mature indicates little potential to increase in size and limited ability to cope with change.
- **Low branches:** Any low branches that would not be feasible for removal during normal management and should be considered as a design constraint are noted here and explained in the notes.
- **Category:** Our assessment automatically considered tree physiological/structural condition (BS 5837, 4.4.2.5h), and so these are not listed separately in the schedule. Additionally, the category accounts for the remaining contribution (BS 5837, 4.4.2.5i) as greater than 40 years for A trees, greater than 20 years for B trees, at least 10 years for C trees and less than 10 years for U trees, so this is also not listed separately in the schedule. Category A, B and C trees are automatically listed as sub-category 1 unless otherwise stated.
- **Notes:** Only relevant features relating to physiological or structural condition and low branches that may help clarify the categorisation are recorded. If there are no notes, then the presumption should be that no relevant features were observed.
- **Tree works:** The recommended tree works are based on the quick visual check level of inspection and only intended to address significant hazards identified during that inspection. The following points should also be considered before carrying out any works:
 1. **Reporting during work operations:** In the context of the preliminary nature of the tree inspection, any defects that may affect tree safety discovered by the contractor when carrying out the work recommendations should be reported to the supervising officer. Modification to the schedule of works may be required because of these reports. The contractor should be specifically instructed on this point.
 2. **Implementation of works:** All tree works should be carried out to BS 3998 *Recommendations for Tree Work* as modified by more recent research. It is advisable to select a contractor from the local authority list and preferably one approved by the Arboricultural Association. Their Register of Contractors is available free from The Malthouse, Stroud Green, Standish, Stonehouse, Gloucestershire GL10 3DL; phone 01242 522152; website www.trees.org.uk.
 3. **Statutory wildlife obligations:** The Wildlife and Countryside Act 1981 as amended by the Countryside and Rights of Way Act 2000 provides statutory protection to birds, bats and other species that inhabit trees. All tree work operations are covered by these provisions and advice from an ecologist must be obtained before undertaking any works that might constitute an offence.
 4. **Stumps:** Stumps to be removed within the RPAs of retained trees should be ground out with a stump grinder to minimise any disturbance unless otherwise authorised by the supervising officer.
- **Future tree safety inspections:** Due to the time that may elapse between the original survey and the start of development, all trees should be re-inspected as part of the standard risk management process before any works start on site. Our assessment of the trees was carried out on the basis that a re-inspection would be carried out within a year of the assessment visit and our advice on tree condition must be reviewed annually from the date of that visit.

Appendix 3: QR Codes for SGNs (Scan with reader to download)

		
<i>SGN 1 Monitoring tree protection</i>	<i>SGN 2 Fencing protected trees</i>	<i>SGN 3 Ground protection</i>
		
<i>SGN 4 Pollution control</i>	<i>SGN 5 Site cranes & piling rigs</i>	<i>SGN 6 Height restrictions</i>
		
<i>SGN 7 Excavating in RPAs</i>	<i>SGN 8 Removing surfacing and structures in RPAs</i>	<i>SGN 9 Installing/upgrading surfacing in RPAs</i>
		
<i>SGN 10 Installing structures in RPAs</i>	<i>SGN 11 Installing services in RPAs</i>	<i>SGN 12 Landscaping in RPAs</i>

