



Arboricultural assessment & method statement

Land north of Water Lane, Angmering, Littlehampton BN16 4EJ

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30th November 2021

21094-AA-CA

Site location and report purpose

Site location



This aerial image is supplied courtesy of Google. The yellow line shows 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 525 new dwellings on land north of Water Lane, Angmering, Littlehampton BN16 4EJ.

This report includes:

- A **Tree protection plan** illustrating tree locations, categories, the location of the proposed development, and the proposed tree protection measures.



Site location and report purpose

- 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** –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 3.0)***, which provides explanations of how retained trees will be managed on site in the form of Site Guidance Notes (SGNs) covering the relevant issues.

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1.1 Statutory designations and constraints

Ancient Woodland W95

Grooms Copse to the east of the site is a designated Ancient Woodland. As part of the design process, the Ancient Woodland boundary has been plotted onto the attached tree protection plan and in accordance with the Natural England and Forestry Commission standing advice <https://www.gov.uk/guidance/ancient-woodland-and-veteran-trees-protection-surveys-licences#avoid-impacts-reduce-mitigate-impacts-and-compensate-as-a-last-resort> it has been afforded a 15 m buffer. No construction activity will be permitted to take place within this 15 m buffer.

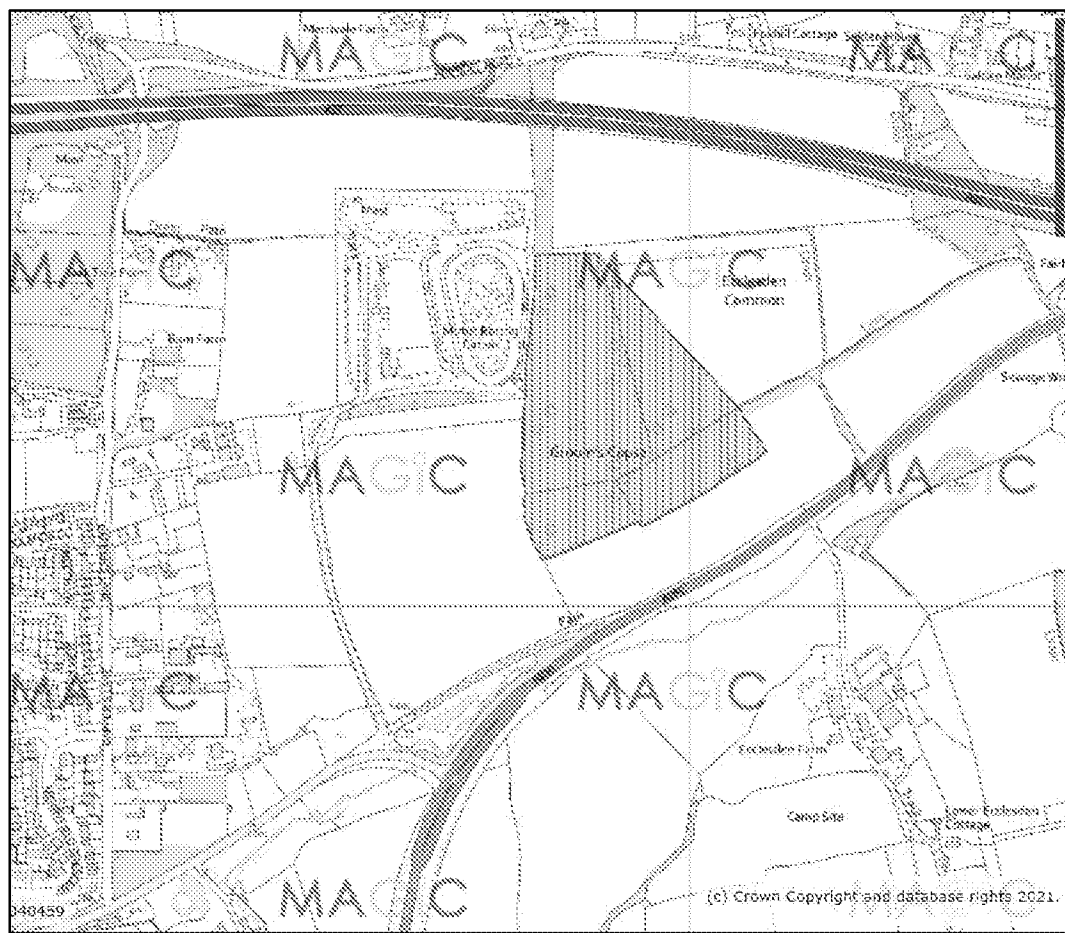


Image 1: Screenshot from www.magic.gov.uk showing the ancient woodland designation.

Tree Preservation Order

Several trees within the site are subject to a TPO made by the LPA in November 2018. The tree schedule in Appendix 2 identifies which trees are protected, but in summary the following trees with Barrell numbers as shown on the tree protection plan are covered under this TPO: T12, T16, T18, T29, T30, G45, T46, T47, T48, T49, T50, T51, T52, T53, T54, T55, H56, G57, T58, T64, G97, T101, T105, T106, and G107.

1: Arboricultural assessment

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

From our review of the constraints and the proposed layout, our 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	T19, T122	G1(part), G2(part), G3(part), G4(part), T5, T6, G17, T20, G21, H24(part), H25(part), T39, G40, T41, G43, G87, T88, T89, G90, G91, G92, T93, T94, G96, G97, G98, G99, G102, G103, G104, G108, T111, H112(part), G114, G117, T121, G124, T125, G126(part), G127
Prune	None	None	None
Protect using special precautions See Notes below	T78, T106	T12, T18, T28, T31, T79, W95, T101, T105, G107	G7, T8, T9, T10, T11, T13, T14, T15, T16, T22, T27, T29, T30, T32, T33, T34, T35, T37, T38, G82, T100
Post development considerations	None	None	None

T = Tree; H = Hedge; G = Group; W: Woodland

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 RPA adjustment: Special precautions are only necessary where encroachment into RPAs occurs. If the extent of RPAs of trees on this site can be adjusted within the guidance set out in BS 5837, this is explained in more detail in 1.3 below.

Note on category U trees: Several of the trees on the site are categorised as U (T23, G26, T36 and T66), meaning that they are in such poor condition that they have been assessed as needing works for management reasons irrespective of any development proposals. Works to these trees is a management decision and not caused by this proposal, so should not be considered as a direct impact. Several category C trees (G67, G70, T71, T72, T74, G76, G84 and T116) are suffering from ash dieback and need management irrespective of the development proposals.

1.3 Insignificant encroachment into RPAs

Trees T22, T29, T31, T64, T101, and T105

For these trees, there is minor encroachment into their nominal circular RPAs. However, BS 5837 (5.3.1) if it can be demonstrated that any lost area can be compensated for elsewhere. In this situation, the encroachment is on the outer extent of the RPAs, and relatively small compared to the area that will be left undisturbed, and provision has been made to compensate for this elsewhere near the trees. In our experience, healthy trees can tolerate such minor incursions into their RPAs without any significant adverse impacts on health, and our view is that this will be the case on this site. In summary, if the guidance set out in Manual accompanying this report is observed, our view is that the proposed works can be implemented without any significant adverse impact on the trees, and therefore local character.



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1.4 The impact of tree removals on local character

Category B trees T19 and T122

These trees are well within the site and are only visible in glimpses from outside the site but not individually prominent. Neither of these trees are subject to a TPO, and there are significant retained trees that will buffer any loss to the extent that there will be no impact on local character.

Category C trees G1(part), G2(part), G3(part), G4(part), T5, T6, G17, T20, G21, H24(part), H25(part), T39, G40, T41, G43, G87, T88, T89, G90, G91, G92, T93, T94, G96, G97, G98, G99, G102, G103, G104, G108, T111, H112(part), G114, G117, T121, G124, T125, G126(part), and G127

Most of the significant boundary tree cover is being retained, and none of the lost trees are significant in the wider setting. Their loss will be noticeable in the immediate vicinity immediately after the development is completed, but the comprehensive new landscaping proposals will rapidly mitigate those losses and limit the impact on local character to the short term and in the immediate vicinity. There will be no adverse impact to local character in the wider setting in the long term. Trees G97 form the eastern end of TPO W7, but they are poor trees suffering decline due to the poor soils adjacent to the racetrack.

1.6 The impact of tree pruning on local character

Other than pruning for normal maintenance, no trees will be pruned because of this development and so there will be no impact on local character for that reason.

1.7 The impact of works in precautionary areas

Trees T12, T18, T28, T31, T78, T79, T101, T105, T106, and part of G107

There will be encroachment into the RPAs of these trees in the form of new no-dig surfacing. We have carefully reviewed the levels in these areas, which includes the existing main access road which will be removed and narrowed to new cycle/footpath, 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), we are 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 7 *Excavating in RPAs* and SGN 9 *Installing/upgrading surfacing in RPAs* is observed, we believe that the proposed works can be implemented without any long-term detrimental impact on tree health, and therefore local character. All new surfacing must be installed before any construction access to prevent damage to the RPA from the construction activity.

Part of W95

The existing bunds around the racetrack are to be removed along the western edge of the Ancient Woodland. They will need to be removed taking care not to overly disturb any roots that may have grown beneath them. In summary, if the guidance set out in SGN 8 *Removing surfacing and structures in RPAs* is observed, we believe that the proposed works can be implemented without any long-term detrimental impact on tree health, and therefore local character.

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Installing new fences

Any new fencing inside RPAs must have hand dug footings and any poured concrete must be prevented from contaminating the soil by using an impermeable hole liner. It is common to have to install such structures within RPAs and it can be done without any significant adverse impact on retained trees.

In summary, if the guidance set out in SGN 4 *Pollution control*, SGN 7 *Excavating in RPAs*, and SGN 10 *Installing structures in RPAs* is observed, we believe that the proposed works can be implemented without any long-term detrimental impact on tree health, and therefore local character.

1.8 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. We have considered these concerns in our 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.

1.9 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. We 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.

1.10 Unanticipated upgrading of existing services or installation of new services

All retained trees may be affected by the installation of new services or upgrading of existing services if not undertaken with careful planning and implementation guidance. However, it is often difficult to know the detail of services until the construction is in progress, and so this advice is precautionary at this stage. Where possible, it is proposed to use the existing services into the site and keep all new services outside RPAs. Where existing services within RPAs require upgrading, or new services must be installed in RPAs, great care must be taken to minimise any disturbance. Trenchless installation will be the preferred option, but if that is not feasible, any excavation must be carried out by hand according to the guidelines in SGN 11 *Installing services in RPAs*.



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1.11 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. Two moderate category trees will also be lost but they are well within the site and close to retained trees that will buffer the initial impact, and their loss will have no long-term detrimental impact on the present character of the area. The matter of adverse impacts on retained trees and woodland due to post-development pressures to fell or prune has been considered, and I concluded that no further trees will be affected. There is plenty of space for tree planting and a comprehensive new tree planting scheme using significant stock 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 construction activity 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 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, we 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.

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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. Precautionary areas are shown by a yellow fill.

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 and pruning: Contractor will carry out agreed works as described in Appendix 2. <u>Will be completed before any significant site works begin.</u>	See Table 1	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>	All retained trees and woodland	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 retained trees and woodland	SGN 4 <i>Pollution control</i>
Operation of site cranes and piling rigs: Provision will be made to prevent site cranes and piling rigs damaging trees, as described in SGN 5.	All retained trees and woodland	SGN 5 <i>Site cranes & piling rigs</i>
Regular arboricultural supervision: Provision will be made to carry out and record agreed arboricultural supervision, as described in SGN 1.	All retained trees and woodland	SGN 1 <i>Monitoring tree protection</i>
Excavating in RPAs: These operations will be carried out as described in SGN 7.	W95, T101	SGN 7 <i>Excavating in RPAs</i>
Removing surfacing and structures in RPAs: These operations will be carried out as described in SGN 8.	G7, T8, T9, T10, T11, T12, T13, T14, T15, T16, T18, T22, T27, T28, T29, T30, T31, T32, T33, T34, T35, T37, T38	SGN 8 <i>Removing surfacing and structures in RPAs</i>
Installing/upgrading surfacing in RPAs: These operations will be carried out as described in the SGN 9.	T78, T79, G82, T100, T101, T105, T106 G107	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 retained 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 retained 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.

More specifically, we clarify the following:

1. **Upgrading of the existing access drive, and installation of new pedestrian footpaths.** All new surfacing will be tree-friendly and carried out following the guidance in SGN 9 *Installing/upgrading surfacing in RPAs*. The existing surfacing will be kept as ground protection until the new no-dig surfacing is installed and any exposed RPA outside the fencing will be protected from disturbance until the new surfacing is in place.
2. **Services:** All services will be installed outside RPAs, but if for any reason it is agreed with the LPA that services can go within RPAs, this will be carried out following the guidance in SGN 11 *Installing services in RPAs*.
3. **SUDS:** Excavation for new SUDS swales and basins is largely outside RPAs, with the exception of minor encroachments into circular RPAs for T22 and 105. Existing vegetation inhabits the area within the RPA for T105 and there is unlikely to be any significant roots in this location. The areas affected for T22 and both small and at the edge of its RPA.
4. **Landscaping:** There will be landscaping towards the end of the build within the RPAs of retained trees, which will be inside the construction exclusion zone. This work will be carried out following the guidance in SGN 12 *Landscaping in RPAs*.

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 demolition, site clearance, the installation of protective measures, the phasing of successive work locations, the removal of existing



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- 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. Details of facilitation pruning and access into site. What size vehicles will be used under canopies and will large machinery be lifted over trees.
 8. The parking arrangements for workers and visitors.
 9. A schedule of emergency contact numbers relating to trees.
 10. Areas for loading and unloading of materials and storage of materials and plant.
 11. Where site facilities will be located and when will they be installed.
 12. 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.
 13. Pollution control to specifically consider chemical storage and wheel washing facilities in relation to trees.
 14. Recycling and storage of waste in relation to trees.
 15. Details of earthworks, grading and mounding and removal of spoil, including any planned lowering or raising of ground levels.
 16. Precise services locations, including the method of excavation when near trees.
 17. Crane location and zones of movement.
 18. 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.
 19. How and when any temporary surfacing will be laid and removed.
 20. How post-construction impacts through compaction to soil near trees will be ameliorated.

Appendix 1: Background administrative information and data collection

A1.1 Table 3: Background administrative information

	Background administrative information
Report date & reference	30 th November 2021; 21094-AA-CA
Tree protection plan reference	21094 - 1
Instructing client	Rydon Homes Ltd / Gleeson Land
Instructions	Visit the site, assess the relevant trees, prepare a 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.
Provided documents	• Topographical survey, drawing number CH/2106068/1 to 6, received by email on 9th July 2021 • Site Boundary, drawing number SK85, received by email on 21st May 2021 • Layout, drawing number 19271 – P101 (Site Layout)-BIND-19-11-21.dwg, received by email on 19th November 2021.
Report author and credentials	Chris Alder has taken and passed the LANTRA Professional Tree Inspection course (https://www.lantra.co.uk/awards/product/professional-tree-inspection), is a Chartered Forester (www.charteredforesters.org), and a Fellow 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	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 MHCLG 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.niug.org.uk/publications/

Appendix 1: Background administrative information and data collection

A1.2 Table 4: Data collection

	Data collection
Date of site visit	9 th June 2021
People present during site visit	Chris Alder
Weather & visibility	Clear, still, and dry with good 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 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, woodland and group was inspected, and the numbering scheme is shown 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 shown on the plan.
Recording of tree data	For each identified tree, hedge, woodland 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 2.5 cm 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 3-4 m as necessary.		
G1	Goat willow, grey willow, sycamore, hawthorn, hazel	4	30	Mature	-	C	Scrub and small trees	Fell part	3.6	41
G2	Hawthorn, blackthorn, oak	3	20	Mature	-	C	Scrub and small trees	Fell part	2.4	18
G3	Hawthorn, hazel, blackthorn, sycamore, goat willow, ash, bramble	4	25	Mature	-	C	Scrub and small trees	Fell part	3.0	28
G4	Goat willow, ash, oak, elm, hazel	5	30	Mature	-	C	Scrub and small trees	Fell part	3.6	41
T5	Oak	6	25	Maturing	-	C	Small, low vigour	Fell	3.0	28
T6	Oak	6	30	Maturing	-	C	Small, low vigour	Fell	3.6	41
G7	Leyland cypress	14	45	Mature	-	C	Overgrown hedge	-	5.4	92
T8	Hawthorn	5	30	Mature	-	C	Suppressed	-	3.6	41
T9	Oak	8	45	Mature	-	C	Significant deadwood, poor	-	5.4	92
T10	Hawthorn	6	50	Mature	-	C	Multi stem at 1m, low vigour	-	6.0	113
T11	Hawthorn	3	20	Mature	-	C	Suppressed	-	2.4	18
T12	Oak	12	92.5*	Mature	-	B	TPO T1, minor deadwood, ditch	-	11.1	387
T13	Oak	10	40	Mature	-	C	In decline, low vigour, poor	-	4.8	72
T14	Leyland cypress	16	60	Mature	-	C	End of hedge, overgrown	-	7.2	163
T15	Oak	8	40	Mature	-	C	Two stems, low vigour	-	4.8	72



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)
T16	Oak	14	70*	Mature	-	C	TPO T2, limb failures, deadwood	-	8.4	222
G17	Oak	10	60	Maturing	-	C	Four stems, poor	Fell	7.2	163
T18	Oak	12	52.5*	Mature	-	B	TPO T3, low vigour, deadwood	-	6.3	125
T19	Oak	10	50	Mature	-	B	Squat, low crown	Fell	6.0	113
T20	Oak	6	20	Maturing	-	C	Small trees	Fell	2.4	18
G21	Ash	10	30	Maturing	-	C	Ash dieback, poor multi stem	Fell	3.6	41
T22	Oak	14	70	Mature	-	C	Multi stem, in decline, poor	-	8.4	222
T23	Ash	12	60	Mature	-	U	Multi stem, significant decay, ash dieback	Fell for management	7.2	163
H24	Field maple, hawthorn, blackthorn, hazel	3	15	Mature	-	C	Field and roadside hedge	Fell parts	1.8	10
H25	Field maple, hawthorn, blackthorn, hazel	3	20	Mature	-	C	Field and roadside hedge	Fell parts	2.4	18
G26	Ash	8	35	Mature	-	U	Dead	Advisory - manage for habitat	4.2	55
T27	Hawthorn	6	40	Mature	-	C	Multi stem, low vigour	-	4.8	72
T28	Oak	10	40*	Mature	-	B	Deadwood	-	4.8	72
T29	Oak	11	70*	Mature	-	C	TPO T4, decline, dieback, poor	-	8.4	222
T30	Oak	9	45	Mature	-	C	TPO T5, decline, dieback, poor	-	5.4	92
T31	Oak	16	85	Mature	-	B	Ivy clad, deadwood	-	10.2	327
T32	Hawthorn	6	20	Mature	-	C	Suppressed, small	-	2.4	18
T33	Oak	10	50	Mature	-	C	In decline, sparse foliage	-	6.0	113
T34	Oak	10	50	Mature	-	C	In decline, sparse foliage	-	6.0	113
T35	Oak	10	45*	Mature	-	C	In decline, sparse foliage	-	5.4	92



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)
T36	Oak	8	35	Mature	-	U	In advanced decline	Advisory - manage for habitat	4.2	55
T37	Oak	10	50	Mature	-	C	In decline, sparse foliage	-	6.0	113
T38	Oak	10	50	Mature	-	C	In decline, sparse foliage	-	6.0	113
T39	Goat willow	8	50	Mature	-	C	Multi stem	Fell	6.0	113
G40	Field maple, elm	6	20	Maturing	-	C	Small trees	Fell	2.4	18
G41	Leyland cypress	15	50	Mature	-	C	Poor, in decline	Fell	6.0	113
T42	Hawthorn	4	35	Mature	-	C	Small	-	4.2	55
G43	Leyland cypress	15	45	Mature	-	C	Poor, in decline	Fell	5.4	92
G44	Elm	4	20	Mature	-	C	Overgrown hedge	-	2.4	18
G45	Plum	8	40	Mature	-	C	Part of TPO W8, small trees	-	4.8	72
T46	Oak	12	45	Mature	-	B	Part of TPO W8, off site	-	5.4	92
T47	Oak	14	60	Mature	-	B	Part of TPO W8, off site	-	7.2	163
T48	Ash	12	40	Maturing	-	C	Part of TPO W8, off site, ash dieback	-	4.8	72
T49	Oak	8	60	Mature	-	C	Part of TPO W8, off site, stunted	-	7.2	163
T50	Oak	14	65	Mature	-	B	Part of TPO W8, off site	-	7.8	191
T51	Field maple	10	45	Mature	-	B	Part of TPO W8, off site	-	5.4	92
T52	Oak	14	75	Mature	-	A	Part of TPO W8, off site	-	9.0	254
T53	Oak	14	70	Mature	-	A	Part of TPO W8, off site	-	8.4	222
T54	Oak	14	75	Mature	-	B	Part of TPO W8, off site, thinning crown	-	9.0	254
T55	Oak	12	40	Mature	-	C	Part of TPO W8, off site, thinning crown	-	4.8	72
H56	Hawthorn, blackthorn	3	15	Mature	-	C	Part of TPO W8, field hedge	-	1.8	10
G57	Oak	10	30	Mature	-	C	Part of TPO W8, small clump	-	3.6	41
T58	Oak	14	65	Mature	-	B	Part of TPO W8, off site	-	7.8	191
G59	Ash	12	45	Mature	-	C	Off site, poor, ash dieback	-	5.4	92



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)
T60	Oak	10	40	Mature	-	C	Off site	-	4.8	72
T61	Field maple	10	40	Mature	-	B	Multi stem, off site	-	4.8	72
T62	Field maple	10	60	Mature	-	B	Multi stem, off site	-	7.2	163
T63	Ash	12	50	Mature	-	C	Ivy clad, multi stem	-	6.0	113
T64	Oak	16	130	Mature	-	A	TPO T9, notable tree, minor deadwood	-	15.0	707
T65	Goat willow	4	30	Mature	-	C	Small, poor	-	3.6	41
T66	Ash	4	20	Maturing	-	U	Ash dieback, poor	Advisory - manage for habitat	2.4	18
G67	Ash	15	60	Mature	-	C	Ash dieback, poor	Advisory - manage for habitat	7.2	163
T68	Oak	16	90	Mature	-	A	Ivy clad	-	10.8	366
H69	Elm, hawthorn	2	20	Mature	-	C	Scrub and small trees	-	2.4	18
G70	Ash	8	25	Mature	-	C	Ash dieback	Advisory - manage for habitat	3.0	28
T71	Ash	12	70	Mature	-	C	Ash dieback	Advisory - manage for habitat	8.4	222
T72	Ash	10	35	Mature	-	C	Ash dieback	Advisory - manage for habitat	4.2	55
T73	Wild cherry	5	20	Maturing	-	C	Small	-	2.4	18
T74	Ash	12	40	Mature	-	C	Ash dieback	Advisory - manage for habitat	4.8	72
T75	Oak	12	50	Mature	-	A	-	-	6.0	113
G76	Ash	8	20	Maturing	-	C	Ash dieback	Advisory - manage for habitat	2.4	18
T77	Oak	12	110	Mature	-	C	Topped and one sided	-	13.2	547
T78	Oak	25	130	Mature	-	A	Dieback	-	15.0	707
T79	Oak	18	110	Mature	-	B	One sided	-	13.2	547



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 (m ²)
G80	Hazel, ash, hawthorn, field maple, oak	8	35	Maturing	-	B	Amenity planting	-	4.2	55
H81	Field maple, hawthorn, blackthorn	3	15	Mature	-	C	Boundary with A27	-	1.8	10
G82	Oak, ash, elm, Lombardy poplar	10	30	Maturing	-	C	Small woodland	-	3.6	41
T83	Oak	12	45	Mature	-	B	Off site	-	5.4	92
G84	Ash	10	35	Mature	-	C	Ash dieback, two stems, poor	Advisory - manage for habitat	4.2	55
T85	Oak	12	65	Mature	-	B	Off site		7.8	191
T86	Ash	12	60	Mature	-	C	Off site, ash dieback		7.2	163
G87	Monterey pine	8	30	Maturing	-	C	Small trees	Fell	3.6	41
T88	Monterey pine	6	30	Maturing	-	C	Small trees	Fell	3.6	41
T89	Alder	4	20	Maturing	-	C	Small trees	Fell	2.4	18
G90	Monterey pine	6	35	Maturing	-	C	Small trees	Fell	4.2	55
G91	Willow, hawthorn, blackthorn	4	20	Maturing	-	C	Small trees and scrub	Fell	2.4	18
G92	Goat willow	6	60	Mature	-	C	Multi stem	Fell	7.2	163
T93	Goat willow	7	35	Mature	-	C	Multi stem, leaning	Fell	4.2	55
T94	Goat willow	8	40	Mature	-	C	Multi stem	Fell	4.8	72
W95	Oak, ash, hazel, elm	25	100	Mature	-	A	Ancient woodland	-	12.0	452
G96	Ash, elm, goat willow	4	20	Maturing	-	C	Steep bank, scattered small trees	Fell	2.4	18
G97	Field maple, ash, oak	10	35	Maturing	-	C	Part of TPO W7, adjacent to yard, contaminated soil, poor trees	Fell	4.2	55
G98	Oak, horse chestnut, Monterey pine, holm oak	3	15	Young	-	C	Small trees	Fell	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)
G99	Hawthorn, blackthorn, elm, goat willow	4	20	Mature	-	C	Small trees and scrub	Fell	2.4	18
T100	Monterey pine	8	42*	Maturing	-	C	Small	-	5.0	80
T101	Oak	16	80	Mature	-	B	TPO T6, ivy clad, deadwood	-	9.6	290
G102	Elm, hawthorn	6	20	Maturing	-	C	Small trees	Fell	2.4	18
G103	Elm, Monterey pine	5	20	Maturing	-	C	Small trees	Fell	2.4	18
G104	Elm, ash	10	40	Mature	-	C	Poor, ash dieback	Fell	4.8	72
T105	Oak	15	130	Mature	-	B	Part of TPO W7, deadwood, dieback	-	15.0	707
T106	Oak	15	75	Mature	-	A	Part of TPO W7	-	9.0	254
G107	Oak, ash, goat willow, field maple	15	80	Mature	-	B	Part of TPO W7, dense, linear group	-	9.6	290
G108	Goat willow, hawthorn	4	20	Maturing	-	C	Small, scattered trees along boundary	Fell	2.4	18
G109	Elm, hawthorn	4	20	Maturing	-	C	Overgrown hedge	-	2.4	18
H110	Elm, hawthorn, blackthorn, oak	3	20	Mature	-	C	Field hedge	-	2.4	18
T111	Ash	12	70	Mature	-	C	Multi stem, sparse crown	Fell	8.4	222
H112	Field maple, blackthorn, hawthorn, elm	5	35	Mature	-	C	Overgrown hedge along road	Fell part	4.2	55
G113	Norway spruce	5	20	Maturing	-	C	Small trees	-	2.4	18
G114	Elder, willow, elm	3	20	Maturing	-	C	Off site, scrub	Fell	2.4	18
T115	Sycamore	10	45	Maturing	-	B	Twin stem at 3 m	-	5.4	92
T116	Ash	8	50	Mature	-	C	Ash dieback, poor	Advisory - manage for habitat	6.0	113
G117	Goat willow	6	40	Mature	-	C	Multi stem	Fell	4.8	72
T118	Sycamore	15	60	Mature	-	C	One sided, poor	-	7.2	163



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)
T119	Oak	17	70*	Mature	-	B	Ivy clad	-	8.4	222
T120	Sycamore	10	35	Maturing	-	C	Twin stem, small	Fell	4.2	55
T121	Ash	16	45*	Mature	-	C	Dieback, ivy clad	Fell	5.4	92
T122	Sycamore	15	67.5	Mature	-	B	Multi stem	Fell	8.1	206
G123	Sycamore	15	40	Mature	-	B	Linear group	-	4.8	72
G124	Sycamore, ash, goat willow	5	20	Maturing	-	C	Small trees	Fell	2.4	18
T125	Ash	12	35	Maturing	-	C	Poor, ash dieback, limb failures	Fell	4.2	55
G126	Ash, elm	14	40	Mature	-	C	Ash dieback, poor	Fell part	4.8	72
G127	Elm, hawthorn	8	20	Maturing	-	C	Small trees	Fell	2.4	18
T128	Sycamore	16	40	Maturing	-	C	Twin stem at 3 m	-	4.8	72
G129	Elm, holly, ash	10	20	Maturing	-	C	Dense, small trees	-	2.4	18

Appendix 2: Tree schedule and explanatory notes

Explanatory Notes

- **Abbreviations:**

G: Group
H: Hedge
T: Tree
W: Woodland

- **Botanical tree names:**

Alder	: <i>Alnus glutinosa</i>
Ash	: <i>Fraxinus excelsior</i>
Blackthorn	: <i>Prunus spinosa</i>
Bramble	: <i>Rubus fruticosus</i>
Elm	: <i>Ulmus</i> sp
Field maple	: <i>Acer campestre</i>
Goat willow	: <i>Salix caprea</i>
Grey willow	: <i>Salix cinerea</i>
Hawthorn	: <i>Crataegus monogyna</i>
Hazel	: <i>Corylus avellana</i>
Holm oak	: <i>Quercus ilex</i>
Horse chestnut	: <i>Aesculus hippocastanum</i>
Leyland cypress	: <i>X Cuprocyparis leylandii</i>
Lombardy poplar	: <i>Populus nigra</i> 'Italica'
Monterey pine	: <i>Pinus radiata</i>
Norway spruce	: <i>Picea abies</i>
Oak	: <i>Quercus robur</i>
Plum	: <i>Prunus</i> sp
Sycamore	: <i>Acer pseudoplatanus</i>
Wild cherry	: <i>Prunus avium</i>
Willow	: <i>Salix</i> sp

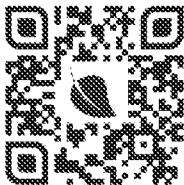
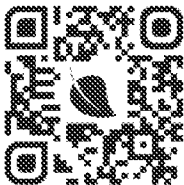
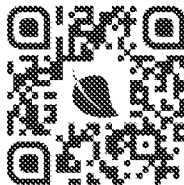
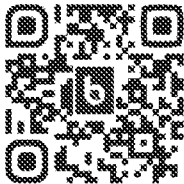
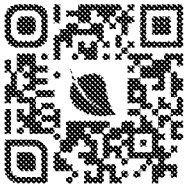
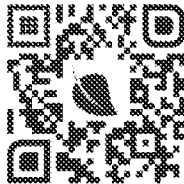
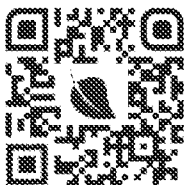
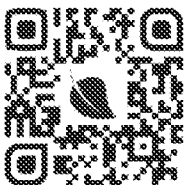
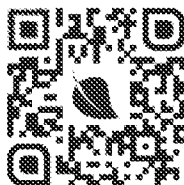
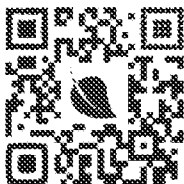
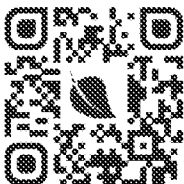
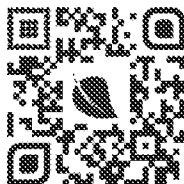
- **BS 5837 (2012) compliance:** All data has been collected based on the recommendations set out in subsection 4.4 of BS 5837.
- **Tree inspections and site limitations:** Each tree was subjected to a quick visual check level of inspection. Where there is restricted access to the base of a tree, its 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:** Where crown spread dimensions on the land survey are checked on site and found to be reliable, they are used as shown on the original survey plan. Where they are found to be unreliable, they are estimated to the four compass points, listed in the schedule, and shown on our plan. All crown spreads are estimated to the viable branch extent, i.e., the spread that would be sustainable if the tree was under a normal garden management pruning regime.
- **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 is normally rounded up and recorded in 2.5 cm increments 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. Individual diameters for multiple stems are recorded in the notes, with the calculated cumulative diameter recorded in the diameter column.



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>

