Arboricultural impact appraisal and method statement

Kenley Campus, Victor Beamish Avenue, Caterham CR8 5FX

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barrell
TREE CONSULTANCY

1st June 2023

21174-AIA-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 impact appraisal 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 demolish some derelict buildings and construct eighty eight new dwellings at Kenley Campus, Victor Beamish Avenue, Caterham CR3 5FX.

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 impact appraisal** (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 Site Guidance Notes (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 SGNs covering the relevant issues.

1 Arboricultural impact assessment

1.1 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. Trees within the existing school (T49, T50, T51, G57, T143-T196) are outside the site boundary and unaffected by the proposals.

	British Standard 5837 Category		
	A (High quality)	**B (Moderate quality)**	**C (Low quality)**
Remove	None	T15, T32, T75, G76(part), T78, T87, T93, G119, G123	G2(part), G6(part), G13, G14, G19(part), G21(part), T22, T23, G27, T29, T30, T31, T33, G34, G35, G38(part), T39, G40, G73(part), G74, G79(part), G82, G85, G86, T88, G89, G91, T92, T94, G95, G96(part), T97, T99, T100, T101, T103, G109, G110(part), G111(part), T117, G118, G126, G133(part), T135, G137, G138
Prune	None	None	None
Protect using special precautions See Notes below	None	T18, G57, T65, T90, T120	T7, T67, G96, T98, T122, T188
Post development pressure to fell	None	T1, T18, G104	None

T = Tree; 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 RPA adjustment: Special precautions are only necessary where encroachment into RPAs occurs. Some of RPAs can be adjusted within the guidance set out in BS 5837, which is explained in more detail in 1.2 below.

Note on category U trees: Trees categorised as U (T10, T62, T63, T66, and T136) 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.

1.2 Insignificant encroachment into RPAs

Trees T65, T67, T90, G111, T120, and T142

There is minor encroachment into the nominal circular RPAs for these trees. However, BS 5837 (5.3.1) does allow for encroachment, and 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 for these trees. Our view is that the proposed works can

be implemented near these trees without any significant adverse impact on them, and therefore local character.

1.3 Considerations relating to ash dieback disease (ADD)

Trees G6, T9, T10, G14, T44, T47, T55, T56, T70, G71, T77, T113, T115, T122, T134, T135, and T136

We have noted advancing signs of ADD in most of the ash trees, and this is likely to progressively get worse, ultimately resulting in the trees having to be felled or severely pruned for safety reasons. It would be inappropriate for them to dictate significant site adjustments because they are unlikely to survive beyond the short term. The protective measures that we describe has taken this into account and will allow the trees shown for retention to be retained without any additional adverse impacts beyond the decline that will result from ADD.

1.4 The impact of tree removals on local character

Trees G2(part), G6(part), G13, G14, G19(part), G21(part), T22, T23, G27, T29, T30, T31, T33, G34, G35, G38(part), T39, G40, G73(part), G74, G79(part), G82, G85, G86, T88, G89, G91, T92, T94, G95, G96(part), T97, T99, T100, T101, T103, G109, G110(part), G111(part), T117, G118, G126, G133(part), T135, G137, and G138

These are all low-quality trees with very little potential to contribute to local character because of their poor condition and small size. They are insignificant in the wider setting and their loss will have no detrimental impact on local character.

Trees T15, T32, T75, G76(part), T78, T87, T93, G119, and G123

Most of the significant boundary tree cover is being retained, and none of the lost tree are prominent as skyline features 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.

1.5 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.

1.6 The impact of works in precautionary areas

Our assessment of the impact of encroachment into RPAs that will be managed by special precautions, is as follows:

Trees T7, T18, G57, T65, T67, T90, G96, T98, and T188

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 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.

Trees G104

There is a new wall to be installed to form the rear boundary to plots 2-10 that falls within the RPAs of these retained trees. The use of screw piles with an above ground beam 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.

Trees T120 and T122

These trees may be affected by the removal of existing surfacing and replacement with soft landscaping. 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.

1.7 Post development considerations

Trees T1, T18, G104

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.

In summary, we have considered the matters of overbearing relationships and daylight, and concluded that there are no trees close enough to the new buildings and their associated amenity space that are likely to interfere with their normal use.

1.8 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.

1.9 Unanticipated upgrading of existing services or installation of new services

Retained trees may be adversely affected by the installation of new services and / or the upgrading of existing services if that work encroaches into their RPAs. However, it is often difficult to know the detail of service locations until the construction is in progress, and sometimes encroachment into RPAs is unavoidable. Where possible, the default approach must be to use any existing service runs 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*.

1.10 Summary of impact on local character

Most of the significant boundary tree cover is being retained, and none of the lost trees are prominent as skyline features 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.

There is space for tree planting and a landscaping scheme will be feasible in response to an appropriate condition. The construction activity has the potential to adversely affect retained trees if proper 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 development proposal will have no detrimental impact on the contribution of trees to local character.

For these reasons, we conclude that the proposed development would not cause an unacceptable or adverse impact on the character and appearance of the area from a tree perspective.

2 Arboricultural method statement

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/assets/Uploads/SGN-1-Monitoring-V3.pdf)
- SGN 2 *Fencing protected trees* (https://www.barrelltreecare.co.uk/assets/Uploads/SGN-2-Fencing-V3.pdf)
- SGN 3 *Ground protection* (https://www.barrelltreecare.co.uk/assets/Uploads/SGN-3-Ground-Protection-V3.pdf)
- SGN 4 *Pollution control* (https://www.barrelltreecare.co.uk/assets/Uploads/SGN-4-Pollution-V3.pdf)
- SGN 5 *Site cranes & piling rigs* (https://www.barrelltreecare.co.uk/assets/Uploads/SGN-5-Cranes-Rigs-V3.pdf)
- SGN 6 *Height restrictions* (https://www.barrelltreecare.co.uk/assets/Uploads/SGN-6-Height-V3.pdf)
- SGN 7 *Excavating in RPAs* (https://www.barrelltreecare.co.uk/assets/Uploads/SGN-7-Excavation-in-RPAs-V3.pdf)
- SGN 8 *Removing surfacing and structures in RPAs* (https://www.barrelltreecare.co.uk/assets/Uploads/SGN-8-Removing-Surfaces-V3.pdf)
- SGN 9 *Installing/upgrading surfacing in RPAs* (https://www.barrelltreecare.co.uk/assets/Uploads/SGN-9-Installing-Surfacing-V3.pdf)
- SGN 10 *Installing structures in RPAs* (https://www.barrelltreecare.co.uk/assets/Uploads/SGN-10-Structures-V3.pdf)
- SGN 11 *Installing services in RPAs* (https://www.barrelltreecare.co.uk/assets/Uploads/SGN-11-Services-V3.pdf)
- SGN 12 *Landscaping in RPAs* (https://www.barrelltreecare.co.uk/assets/Uploads/SGN-12-Landscaping-V3.pdf)

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

- 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. Will be carried out before any significant site works begin.	All retained trees	SGN 1 *Monitoring tree protection*
Tree felling and pruning: Contractor will carry out agreed works as described in Appendix 2. Will be completed before any significant site works begin.	Fell trees as specified in Table 1	Appendix 2
Installing fencing: Agreed tree protection measures will be installed and checked, as described in SGN 2. Will be completed before any significant site works begin.	All retained trees	Tree protection plan, SGN 2 *Fencing protected trees protection*
Pollution control near retained trees: Any pollution control measures identified during risk assessment will be installed as described in SGN 4. Will be completed before any potential pollutants arrive on site.	All retained trees	SGN 4 *Pollution control*
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	SGN 5 *Site cranes & piling rigs*
Regular arboricultural supervision: Provision will be made to carry out and record agreed arboricultural supervision, as described in SGN 1.	All retained trees	SGN 1 *Monitoring tree protection*
Removing surfacing and structures in RPAs: These operations will be carried out as described in SGN 8.	T120, T122	SGN 8 *Removing surfacing and structures in RPAs*
Installing/upgrading surfacing in RPAs: These operations will be carried out as described in the SGN 9.	T7, T18, G57, T65, T67, T90, G96, T98, and T188	SGN 9 *Installing/upgrading surfacing in RPAs*
Installing services in RPAs: These operations will be carried out as described in SGN 11.	All retained trees	SGN 11 *Installing services in RPAs*
Landscaping in RPAs: These operations will be carried out as described in SGN 12.	All retained trees	SGN 12 *Landscaping in RPAs*
Removing tree protection: Protection can only be removed when there is no risk of damage to retained trees, as described in SGN 1.	All retained trees	SGN 1 *Monitoring tree protection*

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 requiring work approved by the LPA, but not referenced in the above explanations, for example the unexpected need to install services in RPAs, or landscaping in RPAs, 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 surfacing, the installation of new 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 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	1st June 2023; 21174-AIA-CA
Tree protection plan reference	21174-3
Instructing client	Progarm Limited
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 reference 360G-21067T-100.dwg, received by email on 4th October-2021 • Layout drawing reference 21125 Kenley Proposed Layout 3a, received by email on 19th May 2023
Report author and credentials	Chris Allder 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	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) *Trees in relation to design, demolition and construction – Recommendations*, https://shop.bsigroup.com/ProductDetail?pid=000000000030213642 • BS 8545 (2014) *Trees: from nursery to independence in the landscape – Recommendations*, https://shop.bsigroup.com/ProductDetail?pid=000000000030219672 • BS 3998 (2010) *Tree work – Recommendations*, BSI https://shop.bsigroup.com/ProductDetail?pid=000000000030089960 • *Trees in the Townscape: A Guide for Decision Makers*, published by the Trees & Design Action Group http://www.tdag.org.uk/ • *Trees in Hard Landscapes: A Guide for Delivery*, published by the Trees & Design Action Group www.tdag.org.uk/ • National Joint Utilities Group (2007) Volume 4, Issue 2: *Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees* http://streetworks.org.uk/wp-content/uploads/2016/09/V4-Trees-Issue-2-16-11-2007.pdf
BS 5837 compliance	This report is BS 5837 compliant. *BS 5837 (2012) Trees in relation to design, demolition and construction – Recommendations* is 10 years old. Since its publication, there have been significant advancements in technology and thinking, informed by a decade of practical experience of putting principles into practice. In the document

Appendix 1: Background administrative information and data collection

	Background administrative information
	Foreword, it states: "*Any user claiming compliance with this British Standard is expected to be able to justify any course of action that deviates from its recommendations*". This statement provides the opportunity for practitioners to claim compliance while moving best practice forward in the context of emerging technology, ideas, and experience. Although much of the BS 5837 content remains relevant and useful for managing trees in a planning context, there are now several aspects that are dated, and it is no longer appropriate to rigidly apply them to current planning submissions. Barrell Tree Consultancy (BTC) specialises in managing trees on development sites and retains a complete paper archive of every project it has carried out since starting business in 1980, with a digital data base listing those from 2004. In the decade since BS 5837 was published (April 2012), interrogation of the BTC archive confirms that we have been involved in a total of 3,884 projects, of which we estimate that about 3,845 were development related, and it is that depth of experience that informs the following statements on BS 5837 compliance. All BTC reports are prepared to be BS 5837 compliant and, although explanations are not explicitly required to claim compliance, the justifications for any deviations from its recommendations are set out below, referenced by the BS clause number: 1. **4.3 – soil assessment:** All BTC consultants have basic training relating to soil assessment and regularly deal with soil issues during their daily work, but none are soil specialists and BTC has no specialist investigation equipment for carrying out the type of soil assessment listed in this BS clause. In a modern development context, it is not for arboricultural consultants to demand or carry out professional soil investigations, and BTC does not do that. However, we will review soil information provided from appropriate specialists, if available, and incorporate that into our assessments. 2. **4.4.2.1 – tagging trees:** In some instances, it is not appropriate to tag trees, e.g., sensitive species, trees that are easily identified without a tag, inadequate access, project confidentiality, client instructions to the contrary, etc, and so although there will be a presumption to tag trees where feasible and appropriate, that may not be possible or necessary in every instance. 3. **4.4.2.5 *e*) – branch spread:** BTC only work from provided topographical surveys and where the branch spreads are shown correctly on those surveys, there is not normally any practical need to regurgitate that information in a schedule. Additionally, in closely spaced groups or in treacherous terrain, it is sometimes not safe or realistically possible to collect this data for every tree. For these reasons, BTC normally only collects crown spread data to the four cardinal points where the provided topographical survey is assessed as unreliable, or where a full canopy cover assessment is requested, and it is both safe and practically feasible to do so. 4. **4.4.2.5 *f*) – branch and canopy height:** In the absence of any definition of '*canopy*' or '*significant*' relating to branches in the *Terms and definitions* clause, and the lack of any practical guidance for reliably assessing these characteristics, BTC has adopted the following default

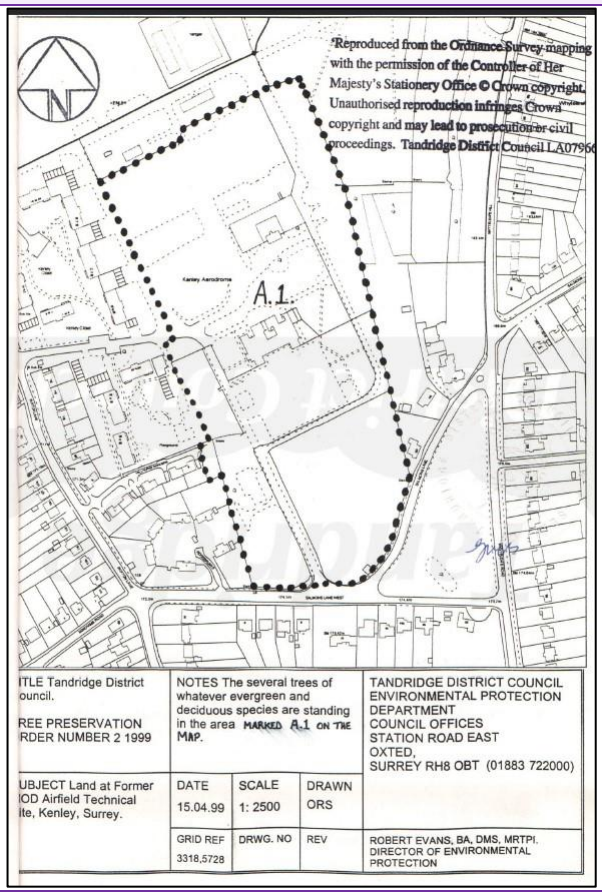
	Background administrative information
	position. We will only identify the height and orientation of branches where they have the potential to be damaged by vehicular access, i.e., below a height of 6 m, or where their removal would be beyond what the tree could tolerate during normal maintenance management, i.e., the branch removal would significantly adversely affect the health of the tree and potentially compromise its current safe useful life expectancy. 5. **4.4.2.5 *g*) – life stage:** BS 5387 offers examples, but no definitions of what those examples mean. In the absence of a specific BS 5837 recommendation, BTC has reviewed the concept of maturity in a planning context, taking maturity to be a simplistic indication of a tree's ability to cope with change and its potential for further growth. For the purposes of development site advice, BTC conceptualises useful life-stage descriptions as; **young** indicating a potential to significantly increase in size and a high ability to cope with change; **maturing** indicating some potential to increase in size and a medium ability to cope with change; and, **mature** indicating little potential to increase in size and low ability to cope with change. 6. **4.4.2.5 *i*) – estimated remaining contribution:** BTC accepts the category recommendations in Table 1 on the remaining contribution in the context of category, i.e., 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, and so this is also not listed separately in the schedule. 7. **4.5.4 – subcategories:** BTC adopts a presumption that all trees are subcategory 1 (Mainly arboricultural qualities) unless noted to the contrary, and so for conciseness and to avoid complication, the subcategory is not listed in the schedule unless it is 2 or 3. 8. **Table 2 and 4.4.2 – colour coding:** The colours included in this table take no account of the inability of some people to distinguish between red and green, which is not helpful to people suffering with this form of colour blindness. To address this discriminatory failing with the BS approach, BTC has adopted a more intuitively obvious regime of green and blue colours, which can be easily distinguished by colour-blind people, with the best category A and B trees (High and moderate quality) being green, and the lower category C and U trees (Low quality and unsuitable for retention) as blue. The differentiation between the two categories in each colour is provided by symbols rather than using different colours. This is clearly shown on the plan key, so there can be no doubt about what category a tree is, which is an intuitive approach to avoiding discrimination of colour-blind people. In any event, the tree category is now included next to each number, so there can be no question about the category and BS 5837 compliance. 9. **5.2.1 – RPAs:** This clause recommends that the RPAs for category A, B, and C trees are shown as the existing constraints on the plans used in the "*concept and design*", i.e., the tree constraints plan. However, the BS does not explicitly recommend that all those constraints are shown on the tree protection plan, which is logical because only category A (High

	Background administrative information
	quality), and category B (Moderate quality) trees can realistically be material constraints, with category C (Low quality) and category U (Unsuitable for retention) trees obviously unsuitable to be determinative of the final design. Although it is not a BS recommendation to include the RPAs of category C trees on the tree protection plan because they cannot be material constraints, it is sometimes helpful as an informative to be able to see them if category C are planned for retention to assess if that is feasible. For that reason, BTC tree protection plans show the RPAs of category C trees as a thin grey line rather than the thicker grey line denoting category A and B RPAs. 10. **5.2.2 Notes 1 and 2 – shading:** These notes offer general information on how shading can be assessed, which is presented in italics. The implications of the convention of using italics within the BS is set out in the Foreword as: "*Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.*" Our interpretation of that statement is that the application of Notes 1 and 2 is not part of the BS recommendations, and is not necessary for BS 5837 compliance. In our experience, the assessment of daylight issues is a specialist discipline and way beyond our expertise as arboriculturists, and so we would defer to an appropriate specialist, where any detailed guidance is required.

A1.2 Table 4: Data collection

	Data collection
Date of site visit	28th October 2021 and 22nd November 2021
People present during site visit	Chris Allder
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.
Statutory protection through Tree Preservation Orders and Conservation Areas	The site stands within Kenley Aerodrome Conservation Area, and is covered by an area TPO made in 1999, the plan is extracted below:

Appendix 1: Background administrative information and data collection

	Data collection
	
Tree location and numbering	Each tree, and group was inspected, and the numbering scheme is shown on the tree protection plan. Where significant trees were found on site that were not included on the provided land survey, their approximate positions are illustrated as a brown dot on the tree protection plan.
Crown spreads	We used some of the crown spreads shown on the provided land survey. Where the topo was unreliable the crown radial spreads were estimated to the nearest metre and represent our assessment of the viable crown dimensions that would be retainable after normal management. For clarification, the viable crown spread is the size of the main body of the crown, and not necessarily the furthest extent of odd branches that extend out beyond this core of the crown.
Recording of tree data	For each identified tree, and group the information collected was recorded on the tree schedule in Appendix 2 and the tree protection plan.
Calculation of RPAs	The RPAs were calculated as recommended in BS 5837, and the nominal RPA radius for each tree is listed in the tree schedule in Appendix 2. Where appropriate, RPAs for trees on the site were adjusted as recommended in BS 5837 and illustrated on the plan.

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.		
T1	Lime	15	45*	Mature	-	B	Small dry wound at base	-	5.4	92
G2	Field maple	8	27.5*	Maturing	-	C	Small trees, squirrel damage	Fell two stems	3.3	34
T3	Lime	20	77.1*	Mature	-	B	Epicormic, laterals pruned over road	-	9.3	269
T4	Lime	20	67.5*	Mature	-	B	Epicormic, laterals pruned over road	-	8.1	206
G6	Raywood ash	15	42.5*	Mature	-	C	Dieback, sparse, one tree recently topped	Fell two stems	5.1	82
T7	London plane	14	57.5*	Mature	-	C	Topped at 3 m, massaria infected deadwood	-	6.9	150
T8	London plane	15	45*	Mature	-	C	Twin stem at 3 m, massaria infected deadwood	-	5.4	92
T9	Raywood ash	14	25	Maturing	-	C	Dieback, poor	-	3.0	28
T10	Ash	16	60	Mature	-	U	Ivy clad, ash dieback, poor	Fell for management	7.2	163
G12	Field maple	15	65	Mature	-	B	Off site, ivy clad	-	7.8	191
G13	Field maple	4	20	Maturing	-	C	Small trees	Fell	2.4	18
G14	Raywood ash	14	40	Mature	-	C	Ash die back, poor	Fell	4.8	72
T15	London plane	16	60*	Mature	-	B	Topped at 3 m, multistem, massaria infected deadwood	Fell	7.2	163
G16	Sycamore, Lombardy poplar	20	90*	Mature	-	C	Twin stem, ivy, dense and upright form	-	10.8	366
T17	Sycamore	20	75*	Mature	-	A	-	-	9.0	254

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)
T18	Oak	17	80*	Mature	-	B	Leaning and one sided	-	9.6	290
G19	Sycamore	18	85*	Mature	-	C	Multiple pruning wounds	Fell one stem	10.2	327
T20	Oak	20	90	Mature	-	B	Off site, previous pruning	-	10.8	366
G21	Field maple	3	15	Maturing	-	C	Small trees	Fell two stems	1.8	10
T22	London plane	15	60*	Mature	-	C	Topped at 3 m, massaria infected deadwood	Fell	7.2	163
T23	Lime	20	87.5*	Mature	-	C	Significant limb failure at 2 m, multi stem, included bark union	Fell	10.5	346
T24	Wild cherry	16	87.5*	Mature	-	A	Notable	-	10.5	346
T25	Wild cherry	16	95*	Mature	-	A	Notable, large burr on stem	-	11.4	408
T26	Cotoneaster	5	20	Maturing	-	C	Small	-	2.4	18
G27	Wild cherry	10	25	Maturing	-	C	Small	Fell	3.0	28
T28	Purple plum	5	30	Mature	-	C	Small	-	3.6	41
T29	Cherry	9	65*	Mature	-	C	Multistem, poor	Fell	7.8	191
T30	Purple plum	5	45*	Mature	-	C	Small	Fell	5.4	92
T31	Cotoneaster	4	20	Mature	-	C	Small	Fell	2.4	18
T32	Wild cherry	14	77.5*	Mature	-	B	Notable, bark cracking, deadwood	Fell	9.3	272
T33	Norway maple	15	45*	Mature	-	C	Topped at 3 m, dense	Fell	5.4	92
G34	London plane	15	62.5*	Mature	-	C	Topped at 3 m, dense, massaria infected deadwood	Fell	7.5	177
G35	Field maple	5	40	Mature	-	C	Multistem at 1 m, dense, small	Fell	4.8	72
T36	London plane	18	77.5*	Mature	-	B	Multistem at 4 m	-	9.3	272
T37	Field maple	8	47.5*	Mature	-	B	Stunted, squat crown	-	5.7	102
G38	Field maple	7	30	Mature	-	C	Small, dense	Fell four stems	3.6	41
T39	Lime	18	60*	Mature	-	C	Multistem at 2 m, staining on stem, poor	Fell	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)
G40	Sycamore, cherry	16	40	Mature	-	C	Dense, slender	Fell	4.8	72
T41	Beech	20	120	Mature	-	B	Off site	-	14.4	651
T42	Sycamore	20	120	Mature	-	A	Off site	-	14.4	651
G43	Field maple	6	20	Maturing	-	C	Small trees	-	2.4	18
T44	Ash	20	85	Mature	-	C	Ash dieback, leaning	-	10.2	327
G45	Sycamore	10	20	Maturing	-	C	Multistem, poor	-	2.4	18
T46	Pine	25	75	Mature	-	B	Off site	-	9.0	254
T47	Ash	20	75*	Mature	-	C	Ash die back	-	9.0	254
T48	Elm	8	20	Maturing	-	C	Small	-	2.4	18
T49	Lime	15	55	Mature	-	C	Off site, multistem at 2 m	-	6.6	137
T50	Field maple	10	40	Mature	-	C	Off site multistem at 1 m	-	4.8	72
T51	Lime	20	85	Mature	-	B	Off site, twin stem at 3 m	-	10.2	327
G52	Sycamore, ash	10	20	Maturing	-	C	Small, multi stem	-	2.4	18
T53	Sycamore, ash	20	90	Mature	-	B	Off site, multistem at 4 m	-	10.8	366
T54	Sycamore	18	50	Mature	-	B	Slender, one sided	-	6.0	113
T55	Ash	18	60	Mature	-	C	Ash die back	-	7.2	163
G56	Ash	20	70	Mature	-	C	Ash die back	-	8.4	222
G57	Lime	18	70	Mature	-	B	Multistem at 3 m, tight forks	-	8.4	222
T58	Lime	16	55*	Mature	-	C	Multistem at 3 m, one sided, poor	-	6.6	137
T59	Lime	18	65*	Mature	-	C	Twin stem at 3 m, topped at 5 m, staining on stem	-	7.8	191
T60	Oak	20	77*	Mature	-	B	Deadwood, one sided	-	9.2	268
T61	Sycamore	20	95*	Mature	-	C	Multistem at 1 m	-	11.4	408
T62	Lime	12	45	Mature	-	U	Significant decay, moribund	Fell for management	5.4	92
T63	Lime	18	75	Mature	-	U	Poor, multistem at 2 m, decay, lost limbs	Fell for management	9.0	254

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)
T64	Lime	20	72.5*	Mature	-	C	Multistem at 4 m, bark damage on stem	-	8.7	238
T65	Lime	20	80*	Mature	-	B	Twin stem at 3 m, dense crown	-	9.6	290
T66	Lime	4	60	Mature	-	U	Pollarded	Fell for management	7.2	163
T67	Lime	20	80*	Mature	-	C	Multistem at 4 m, stump and decay	-	9.6	290
T68	Lime	16	60*	Mature	-	B	One sided	-	7.2	163
G69	Lime	15	40	Maturing	-	B	Small trees	-	4.8	72
T70	Ash	12	30	Maturing	-	C	Ash dieback	-	3.6	41
G71	Ash, sycamore, Norway maple, elm	16	50	Mature	-	C	Off site, boundary trees	-	6.0	113
G72	Lime	15	45	Maturing	-	C	Poor form, included bark union	-	5.4	92
G73	Whitebeam	10	60	Mature	-	C	Poor	Fell one stem	7.2	163
G74	Oak, lime	8	25	Maturing	-	C	Small	Fell	3.0	28
T75	Lime	22	82.5*	Mature	-	B	Multistem at 3 m, included bark union	Fell	9.9	308
G76	Lime	18	60	Mature	-	B	Minor deadwood, tight forks	Fell one stem	7.2	163
T77	Ash	17	60	Mature	-	C	Ash dieback	-	7.2	163
T78	Deodar cedar	16	90*	Mature	-	B	Close to fenceline, multi stem leader	Fell	10.8	366
G79	Lime	10	45	Maturing	-	C	Multistem at 2 m, poor, tight forks, included bark unions	Fell one stem	5.4	92
T80	Goat willow	8	60*	Mature	-	C	Multistem	-	7.2	163
G81	Lime	8	50	Mature	-	C	Multistem at 2 m, tight forks, included bark unions	-	6.0	113
G82	Goat willow	6	40	Mature	-	C	Multistem	Fell	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)
T83	Norway maple	8	70	Mature	-	B	Off site	-	8.4	222
G84	Whitebeam	5	20	Mature	-	C	Small	-	2.4	18
G85	Lime, goat willow, hawthorn, ash, sycamore, oak	6	45*	Mature	-	C	Overgrown shrubs and small trees	Fell	5.4	92
G86	Goat willow, sycamore	10	40	Mature	-	C	Overgrown shrubs and small trees	Fell	4.8	72
T87	Lime	18	90*	Mature	-	B	Multistem at 2 m, tight forks	Fell	10.8	366
T88	Horse chestnut	3	20*	Young	-	C	Multistem	Fell	2.4	18
G89	Horse chestnut	8	40	Maturing	-	C	Poor form, bark loss, canker	Fell	4.8	72
T90	Cedar of Lebanon	14	105*	Mature	-	B	Twin stem at 2 m, deadwood	-	12.6	499
G91	Lime	15	45	Mature	-	C	All topped at 3 m, dense, staining	Fell	5.4	92
T92	Lime	15	65*	Mature	-	C	Topped at 3 m, decay, staining	Fell	7.8	191
T93	Lime	15	60*	Mature	-	B	Twin stem at 4 m, minor deadwood	Fell	7.2	163
T94	Lime	12	40	Maturing	-	C	Twin stem at 4 m, poor form	Fell	4.8	72
G95	Western red cedar	17	45	Mature	-	C	5no. trees, poor form	Fell	5.4	92
G96	Cypress	10	40	Mature	-	C	Dense, topped	Fell two stems	4.8	72
T97	Hawthorn	4	30	Mature	-	C	Suppressed	Fell	3.6	41
T98	Sycamore	10	60*	Mature	-	C	Multistem at base, poor	-	7.2	163
T99	Oak	5	40	Maturing	-	C	Small	Fell	4.8	72
T100	Whitebeam	5	40	Mature	-	C	Small tree	Fell	4.8	72
T101	Whitebeam	6	40	Mature	-	C	Small tree	Fell	4.8	72
T102	Lime	8	45*	Mature	-	C	Multistem at base, poor	-	5.4	92
T103	Raywood ash	4	40*	Maturing	-	C	Small poor	Fell	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)
G104	Lime	18	80	Mature	-	B	Highway trees, dense crowns, recent pruning	-	9.6	290
G105	Lime	20	90	Mature	-	B	Roadside trees, previously pruned, dense crowns, middle tree pollarded	-	10.8	366
T106	Lime	8	40	Mature	-	C	Poor	-	4.8	72
G107	Yew, oak, ash	14	40	Mature	-	C	Off site	-	4.8	72
G108	Oak	15	40*	Maturing	-	C	Slender, lost top	-	4.8	72
G109	Ash	18	80*	Mature	-	C	Ash dieback, multi stem	Fell	9.6	290
G110	London plane	16	50*	Maturing	-	C	Topped 4 m, massaria infected deadwood	Fell twelve stems	6.0	113
G111	Oak	10	30	Maturing	-	C	Damaged, topped	Fell two stems	3.6	41
T112	Cherry	12	40	Mature	-	C	Off site, slender	-	4.8	72
T113	Ash	16	75	Mature	-	C	Ash dieback, off site	-	9.0	254
T114	Field maple	10	60	Mature	-	B	Off site, ivy clad	-	7.2	163
T115	Ash	22	120	Mature	-	C	Off site, ash dieback	-	14.4	651
T116	Cherry	8	65	Mature	-	C	Off site	-	7.8	191
T117	London plane	16	77.5*	Mature	-	C	Topped at 3 m, massaria infected deadwood	Fell	9.3	272
G118	Oak	6	25	Maturing	-	C	Poor, damaged leaders	Fell	3.0	28
G119	Oak	15	45	Maturing	-	B	Slender, potential	Fell	5.4	92
T120	Lime	22	95*	Mature	-	B	Wound on stem, deadwood	-	11.4	408
T121	Lime	3	15	Young	-	C	Small tree	-	1.8	10
T122	Ash	10	40*	Maturing	-	C	Multistem, ash dieback, poor	-	4.8	72
G123	London plane	20	80*	Mature	-	B	Multistem at 3 m, deadwood	Fell	9.6	290
T124	Oak	18	75	Mature	-	A	Off site	-	9.0	254
T125	Field maple	8	45	Mature	-	C	Off site, recently topped	-	5.4	92
G126	Whitebeam	8	60	Mature	-	C	Poor, dense	Fell	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)
T127	Leyland cypress	12	50	Mature	-	C	Twin stem at 1 m, poor union	-	6.0	113
G128	Larch	15	35	Maturing	-	C	Small, slender	-	4.2	55
V129	Field maple	15	120*	Mature	-	A	Veteran, buffer 18 m. Multistem at 1.5 m, ivy, animal activity at base	-	15.0	707
T130	Field maple	10	75*	Mature	-	A	Notable, leaning	-	9.0	254
T131	Lime	18	60	Mature	-	B	-	-	7.2	163
G132	Whitebeam	10	50	Mature	-	C	Poor, dieback	-	6.0	113
G133	Scots pine	10	30	Maturing	-	C	Small trees	Fell two stems	3.6	41
T134	Raywood ash	15	50*	Mature	-	C	Ash dieback	-	6.0	113
T135	Raywood ash	13	40	Mature	-	C	Limb failures, ash dieback	Fell	4.8	72
T136	Raywood ash	10	40	Mature	-	U	Significant failure, poor	Fell for management	4.8	72
G137	Leyland cypress	12	50	Mature	-	C	Twin stem, poor form	Fell	6.0	113
G138	Raywood ash	15	35	Mature	-	C	Ash dieback	Fell	4.2	55
T139	Raywood ash	12	30	Maturing	-	C	Ash dieback, poor	-	3.6	41
G140	Lime	18	80*	Mature	-	B	Four trees, dense crowns along boundary	-	9.6	290
T141	Lime	20	60*	Mature	-	B	Roadside tree, dense crown	-	7.2	163
T142	Lime	14	70*	Mature	-	B	Roadside tree, dense crown, recently pruned	-	8.4	222
T143	Horse chestnut	14	40*	Maturing	-	C	Multi stem at 2 m, tight forks	-	4.8	72
T144	Horse chestnut	13	35*	Maturing	-	U	Phytophora infection	-	4.2	55
T145	Horse chestnut	14	45*	Maturing	-	C	Spiral stem, poor	-	5.4	92
T146	Lime	18	60*	Mature	-	B	Multi stem at 3 m, deadwood	-	7.2	163
T147	Horse chestnut	3	10*	Young	-	C	Small tree	-	1.2	5
T148	Horse chestnut	10	27.5*	Maturing	-	C	Twin stem at 2 m	-	3.3	34

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)
T149	Horse chestnut	12	40*	Maturing	-	C	Multi stem, deadwood	-	4.8	72
T150	Horse chestnut	13	50*	Maturing	-	C	Bleeding canker	-	6.0	113
G151	Field maple	8	35	Mature	-	C	Poor, bark damage, low and dense crown	-	4.2	55
T152	Leyland cypress	14	60*	Maturing	-	C	Sparse crown, compacted soil	-	7.2	163
T153	Norway maple	18	75*	Mature	-	B	Dense crown from 3 m, multi stem	-	9.0	254
T154	Lime	20	70*	Mature	-	B	Upright, twin stem at 10 m	-	8.4	222
T155	Norway maple	18	80*	Mature	-	B	Multi stem from 3 m, surface roots	-	9.6	290
H156	Yew	2	15	Mature	-	C	Clipped hedge	-	1.8	10
T157	Deodar cedar	15	50*	Mature	-	B	Sparse crown	-	6.0	113
T158	Deodar cedar	16	65*	Mature	-	B	Twin stem at 1 m	-	7.8	191
T159	Cypress	14	40*	Maturing	-	C	Ornamental	-	4.8	72
T160	Leyland cypress	16	60*	Maturing	-	C	Low crown	-	7.2	163
T161	Lime	18	50*	Mature	-	B	One sided, companion tree at end of group	-	6.0	113
T162	Lime	20	60*	Mature	-	B	Leaning, multi stem at 3 m	-	7.2	163
T163	Lime	20	57.5*	Mature	-	C	Multi stem at 3 m, bark loss, poor, decay at fork	-	6.9	150
T164	Cappadocian maple	18	70*	Mature	-	B	Multi stem at 2 m, deadwood, tight forks	-	8.4	222
T165	Lime	20	55*	Mature	-	B	One sided, multi stem at 3 m	-	6.6	137
T166	Norway maple	16	55*	Mature	-	U	Cavity at base, decay at 3 m	-	6.6	137
T167	Cappadocian maple	17	60*	Mature	-	B	Squirrel damage, deadwood	-	7.2	163
T168	Norway maple	16	55*	Mature	-	B	Roots disrupting surfacing, deadwood	-	6.6	137

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)
T169	Cappadocian maple	17	60*	Mature	-	B	Multi stem at 3 m, deadwood, bark inclusion	-	7.2	163
T170	Norway maple	18	60*	Mature	-	B	Twin stem at 2 m, deadwood	-	7.2	163
T171	Cappadocian maple	17	65*	Mature	-	B	Twin stem at 2 m, previously reduced	-	7.8	191
T172	Norway maple	18	85*	Mature	-	U	Multi stem at 2 m, decay column	-	10.2	327
T173	Cappadocian maple	16	50*	Mature	-	C	Multi stem at 3 m, poor form	-	6.0	113
T174	Norway maple	18	60*	Mature	-	B	Multi stem at 3 m	-	7.2	163
T175	Cappadocian maple	18	60*	Mature	-	B	Multi stem at 3 m, deadwood	-	7.2	163
T176	Norway maple	18	60*	Mature	-	C	Significant wounding on stem	-	7.2	163
T177	Norway maple	18	55*	Mature	-	U	Leaning, necrotic bark, poor	-	6.6	137
T178	Cappadocian maple	18	65*	Mature	-	B	Multi stem from 2 m	-	7.8	191
T179	Norway maple	18	70*	Mature	-	B	Lean, deadwood	-	8.4	222
T180	Cappadocian maple	18	60*	Mature	-	B	Multistem at 3 m	-	7.2	163
G181	Hawthorn	5	40*	Mature	-	C	Small trees	-	4.8	72
T182	Lime	20	70*	Mature	-	B	Dead crown, deadwood	-	8.4	222
T183	Leyland cypress	15	67.5	Mature	-	C	Multi stem	-	8.1	206
T184	Lime	14	70	Mature	-	U	Significant decay and decline	-	8.4	222
T185	Horse chestnut	8	30*	Mature	-	C	Small tree	-	3.6	41
T186	Lime	12	45	Maturing	-	C	Small tree, one sided	-	5.4	92
T187	Lime	18	60	Mature	-	U	Significant decay at fork	-	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)
T188	Lime	18	70*	Maturing	-	C	One sided, previously reduced at 3 m, poor	-	8.4	222
T189	Lime	18	40	Mature	-	C	Slender, twin stem at 4 m, poor	-	4.8	72
T190	Lime	20	80*	Mature	-	B	Off site street tree, previously reduced at 10 m, deadwood	-	9.6	290
T191	Lime	20	70*	Mature	-	B	Off site street tree, twin stem at 3 m, previously reduced	-	8.4	222
T193	Lime	12	45*	Mature	-	C	Off site street tree, conflict with overhead lines, twin stem	-	5.4	92
T194	Lime	18	70*	Mature	-	B	Off site street tree, twin stem a 2 m, previously reduced at 4 m	-	8.4	222
T195	Lime	18	65*	Mature	-	B	Off site street tree, multi stem at 6 m, dense, deadwood	-	7.8	191
T196	Lime	15	50*	Mature	-	B	Off site street tree, previously reduced at 8 m, deadwood	-	6.0	113

Appendix 2: Tree schedule and explanatory notes

Explanatory Notes

- **Abbreviations:**
  - G: Group
  - T: Tree
  - V: Veteran tree

- **Botanical tree names:**

Ash	: *Fraxinus excelsior*
Beech	: *Fagus sylvatica*
Cappadocian maple	: *Acer cappadocicum*
Cedar of Lebanon	: *Cedrus libani*
Cherry	: *Prunus* sp
Cotoneaster	: *Cotoneaster* sp
Cypress	: *Cupressus* sp
Deodar cedar	: *Cedrus deodara*
Elm	: *Ulmus* sp
Field maple	: *Acer campestre*
Goat willow	: *Salix caprea*
Hawthorn	: *Crataegus monogyna*
Horse chestnut	: *Aesculus hippocastanum*
Larch	: *Larix* sp
Leyland cypress	: *X Cuprocyparis leylandii*
Lime	: *Tilia* sp
Lombardy poplar	: *Populus nigra* 'Italica'
London plane	: *Platanus* x *hispanica*
Norway maple	: *Acer platanoides*
Oak	: *Quercus robur*
Pine	: *Pinus* sp
Purple plum	: *Prunus cerasifera* 'Nigra'/'Pissardii'
Raywood ash	: *Fraxinus angustifolia* 'Raywood'
Scots pine	: *Pinus sylvestris*
Sycamore	: *Acer pseudoplatanus*
Western red cedar	: *Thuja plicata*
Whitebeam	: *Sorbus aria*
Wild cherry	: *Prunus avium*
Yew	: *Taxus baccata*

- **BS 5837 (2012) compliance:** All data has been collected based on the recommendations set out in subsection 4.4 of BS 5837.
- **Tree checks 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:** We used some of the crown spreads shown on the provided land survey. Where the topo was unreliable the crown radial spreads were estimated to the nearest metre and represent our assessment of the viable crown dimensions that would be retainable after normal management. For clarification, the viable crown spread is the size of the main body of the crown, and not necessarily the furthest extent of odd branches that extend out beyond this core of the crown.
- **Dimensions:** All dimensions are estimated unless otherwise indicated with an asterix (*) 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.

Appendix 2: Tree schedule and explanatory notes

- **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. 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.
- **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, 4.4.2.5*h*), and so these are not listed separately in the schedule. Additionally, the category accounts for the remaining contribution (BS 5837, 4.4.2.5*i*) 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.
- **RPAs:** The RPAs were calculated as recommended in BS 5837, and the nominal RPA radius for each tree listed, irrespective of any modifying factors. Where appropriate, RPAs for trees on the site may have been adjusted as recommended in BS 5837 and illustrated on the plan.
- **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)

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

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