



Arboricultural assessment & method statement

Hampshire Fire and Rescue Headquarters, Leigh Road, Eastleigh, Hampshire SO50 9SJ

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6th July 2022

22082-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 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 for new training infrastructure at Hampshire Fire and Rescue Headquarters, Leigh Road, Eastleigh, Hampshire SO50 9SJ.

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.

1 Arboricultural 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:

	British Standard 5837 Category		
	A (High quality)	B (Moderate quality)	C (Low quality)
Remove	None	None	G11
Prune	None	None	None
Protect using special precautions See Notes below	None	None	None
Post development pressure to fell	None	None	None

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.

1.2 The impact of tree removals on local character

Trees G11

This is a group of small low-quality regeneration and scrub with very little potential to contribute to local character because of their small size. The trees within this scrubby area are insignificant in the wider setting and their loss will have no detrimental impact on local character.

1.3 The impact of tree pruning on local character

No trees will be pruned because of this development and so there will be no impact on local character for that reason.

1.4 The impact of works in precautionary areas

All the RPAs of retained trees will be protected and there will be no encroachment during the development activity.

1.5 Post development considerations

Our assessment is that there will be no adverse impacts on retained trees once the development is completed and occupied.

1.6 New tree planting to enhance local character

New tree planting is feasible as a means of supplementing retained trees and enhancing local character, which could include heavy-standard or semi-mature specimens. The final selection of species, size, and location, would be matters to be agreed with the LPA through a planning condition. 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*. Our preliminary assessment is that there is sufficient space for new trees to be planted in locations where they will have the potential to reach a significant height without excessive inconvenience



1 Arboricultural assessment

and be sustainable into the long term, significantly improving the potential of the site to contribute to local character.

1.7 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*.

1.8 Summary of impact on local character

This proposal will result in the loss of one group that are all low quality because of their poor condition or small size. All the significant boundary tree cover will remain intact, and no further trees will be removed. 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.

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

2 Arboricultural method statement

- 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 retained 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>	Fell G11	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	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	SGN 4 <i>Pollution control</i>
Regular arboricultural supervision: Provision will be made to carry out and record agreed arboricultural supervision, as described in SGN 1.	All retained trees	SGN 1 <i>Monitoring tree protection</i>
Installing services in RPAs: These operations will be carried out 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 as described in SGN 12.	All retained trees	SGN 12 <i>Landscaping in RPAs</i>
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 retained trees	SGN 1 <i>Monitoring tree protection</i>

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

If unanticipated issues arise on site 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.

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2.5 Construction method statement (heads of terms summary)

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

1. Preparation of a written site management protocol for dealing with tree issues, to be incorporated into formal site management procedures, and to specifically include induction training for all operatives related to tree protection.
2. The order of work on site, including site clearance, the installation of protective measures, the phasing of successive work locations, the removal of 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. 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	6 th July 2022; 22082-AIA-CA
Tree protection plan reference	22082-1
Instructing client	Morgan Sindall PLC
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 841EL001A, received by email on 25 th May 2022, and layout drawing reference 1387-SK040 (A), received by email on 1 st July 2022.
Report author and credentials	Chris Alder 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) <i>Trees in relation to design, demolition and construction – Recommendations</i>, https://shop.bsigroup.com/ProductDetail?pid=000000000030213642 • BS 8545 (2014) <i>Trees: from nursery to independence in the landscape – Recommendations</i>, https://shop.bsigroup.com/ProductDetail?pid=000000000030219672 • BS 3998 (2010) <i>Tree work – Recommendations</i>, BSI https://shop.bsigroup.com/ProductDetail?pid=000000000030089960 • <i>Trees in the Townscape: A Guide for Decision Makers</i>, published by the Trees & Design Action Group http://www.tdag.org.uk/ • <i>Trees in Hard Landscapes: A Guide for Delivery</i>, published by the Trees & Design Action Group www.tdag.org.uk/ • National Joint Utilities Group (2007) Volume 4, Issue 2: <i>Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees</i> www.njug.org.uk/publications/
BS 5837 compliance	This report is BS 5837 compliant. <i>BS 5837 (2012) Trees in relation to design, demolition and construction – Recommendations</i> 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 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

Appendix 1: Background administrative information and data collection

Background administrative information
<i>recommendations</i>". 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: 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 and incorporate that into our assessments. 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 possible, that may not be possible or necessary in every instance. 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, it is sometimes not safe or realistically possible to collect this data for every tree. For these reasons, BTC only collects crown spread data to the four cardinal points where the provided topographical survey is assessed as unreliable, and it is both safe and practically necessary to do so. 4.4.2.5 f) – branch and canopy height: In the absence of any definition of 'canopy' or 'significant' relating to branches in the <i>Terms and definitions</i> clause, and the lack of any practical guidance for reliably assessing these characteristics, BTC has adopted the following default 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

Appendix 1: Background administrative information and data collection

	Background administrative information
	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 5387 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 – 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 from of colour blindness. To address this discriminatory failing, 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. 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 "<i>concept and design</i>", 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 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

Appendix 1: Background administrative information and data collection

	Background administrative information
	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: <i>“Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.”</i> 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	24 th May 2022
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. - All dimensions were estimated unless otherwise indicated.
Statutory protection through Tree Preservation Orders and Conservation Areas	We have checked the Eastleigh Borough Council interactive mapping system, and can confirm that at the time of this report being issued there was no statutory protection on the trees.
Tree location and numbering	Each tree and group was inspected, and the numbering scheme is shown on the tree protection plan. None of the trees were included on the land survey, and their approximate positions are illustrated as a brown dot on the tree protection plan.
Crown spreads	None of the trees were plotted on the topographical survey, and so these have been estimated according to the guidance in BS 5827, i.e., to the four cardinal compass points, and an approximate extrapolation illustrated on the tree protection plan as the green outline. These radial spreads are 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.

Appendix 1: Background administrative information and data collection

	Data collection
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) @ 1.5 m	Maturity	Low Branches	Category	Notes	Tree Works	RPA Radius (m)	RPA Area (m ²)
All retained trees & hedges								Carry out safety check and lift over site to 3-4 m as necessary.		
G1	Leyland Cypress	12	45	Mature	Ground	C	Overgrown boundary hedge, multiple stems, dense crowns		5.4	92
T2	Horse chestnut	12	40	Maturing	1 w	C	One sided and suppressed, in amongst cypress		4.8	72
T3	Horse chestnut	12	42.5*	Maturing	2 e	C	Canker throughout, multi stem at 3 m		5.1	82
T4	Horse chestnut	12	35*	Maturing	2 e	C	Multi stem at 3 m, in amongst cypress		4.2	55
G5	Leyland Cypress	12	45	Maturing		C	Dense group forming extension to G1, small crowns		5.4	92
T6	Horse chestnut	8	25*	Maturing		C	Multi stem at 2 m, suppressed		3	28
T7	Cherry	9	27.5	Maturing		C	Multi stem at base, suppressed		3.3	34
T8	Red horse chestnut	8	25	Maturing	1 e	C	Poor, suppressed		3	28
G9	Alder	12	30*	Maturing		C	Slender, on raised, narrow embankment		3.6	41
G10	Laurel, buddleia, field maple	3	20	Maturing		C	Low shrubs along boundary		2.4	18
G11	Buddleia, goat willow, alder, ash	3	10	Young		C	Dense small trees and shrubs	Fell	1.2	5

Appendix 2: Tree schedule and explanatory notes

Explanatory Notes

- **Abbreviations:**

G: Group

T: Tree

- **Botanical tree names:**

Alder	: <i>Alnus glutinosa</i>
Ash	: <i>Fraxinus excelsior</i>
Buddleia	: <i>Buddleia</i> sp
Cherry	: <i>Prunus</i> sp
Field maple	: <i>Acer campestre</i>
Goat willow	: <i>Salix caprea</i>
Horse chestnut	: <i>Aesculus hippocastanum</i>
Laurel	: <i>Prunus laurocerasus</i>
Leyland cypress	: <i>X Cuprocypris leylandii</i>
Red horse chestnut	: <i>Aesculus carnea</i>

- **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:** The default is to use the crown spread dimensions shown on the land survey, unless there are obvious anomalies. If spreads 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. The final choice of the most appropriate way to record crown spread is at the discretion of the consultant.
- **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.
- **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.
- **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.



Appendix 2: Tree schedule and explanatory notes

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



Field House Fordingbridge Business Park Fordingbridge Hampshire SP6 1BD
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Tree protection plan
Location of trees, categorisation & protection/management proposals

Hampshire Fire and Rescue Headquarters, Leigh Road,
Eastleigh, Hampshire SO50 9SJ

Barrell Plan Ref: 22082-1



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- BS category C Trees of low quality
- BS category U Trees unsuitable for retention
- Trees to be removed
- Proposed layout
- Estimated tree positions not included on original land survey and/or adjusted crown spreads
- Protective barrier/fencing
- Construction exclusion zone (CEZ)
- Root protection area (RPA) boundaries for category C trees

Attention LPA Tree Officer - if you would like a 'to scale' printed version of this plan please contact us on 01425 651470 or email 'enquiries@barrelltreecare.co.uk'



Tree No	Species	Category	RPA Radius	Tree Works
All retained trees				Carry out safety check and lift over site to 3-4 m as necessary.
G1	Leyland Cypress	C	5.4	
T2	Horse chestnut	C	4.8	
T3	Horse chestnut	C	5.1	
T4	Horse chestnut	C	4.2	
G5	Leyland Cypress	C	5.4	
T6	Horse chestnut	C	3	
T7	Cherry	C	3.3	
T8	Red horse chestnut	C	3	
G9	Alder	C	3.6	
G10	Laurel, buddleia, field maple	C	2.4	
G11	Buddleia, goat willow, alder, ash	C	1.2	Fell

SGN 1 *Monitoring tree protection*



Always:

- ✓ have a pre-commencement meeting with the tree consultant before development starts
- ✓ use the tree consultant to regularly check that protection remains fit for purpose
- ✓ use the tree consultant to supervise work in RPAs
- ✓ keep a written record of supervision



SGN 2 *Fencing protected trees*



Always:

- ✓ install protection before development starts
- ✓ make sure protection is fit for purpose, i.e. it prevents damage to trees and soil
- ✓ keep protection in place until there is no risk to trees
- ✓ get written permission to move or remove any protection



SGN 4 *Pollution control*



Always:

- ✓ keep toxic products away from RPAs



SGN 11 *Installing services in RPAs*



Always:

- ✓ use the tree consultant to supervise work in RPAs
- ✓ select the least damaging option when installing services, so prioritise trenchless, over broken trench over continuous trench
- ✓ hand-dig trenches if trenchless is not feasible



SGN 12 *Landscaping in RPAs*



Always:

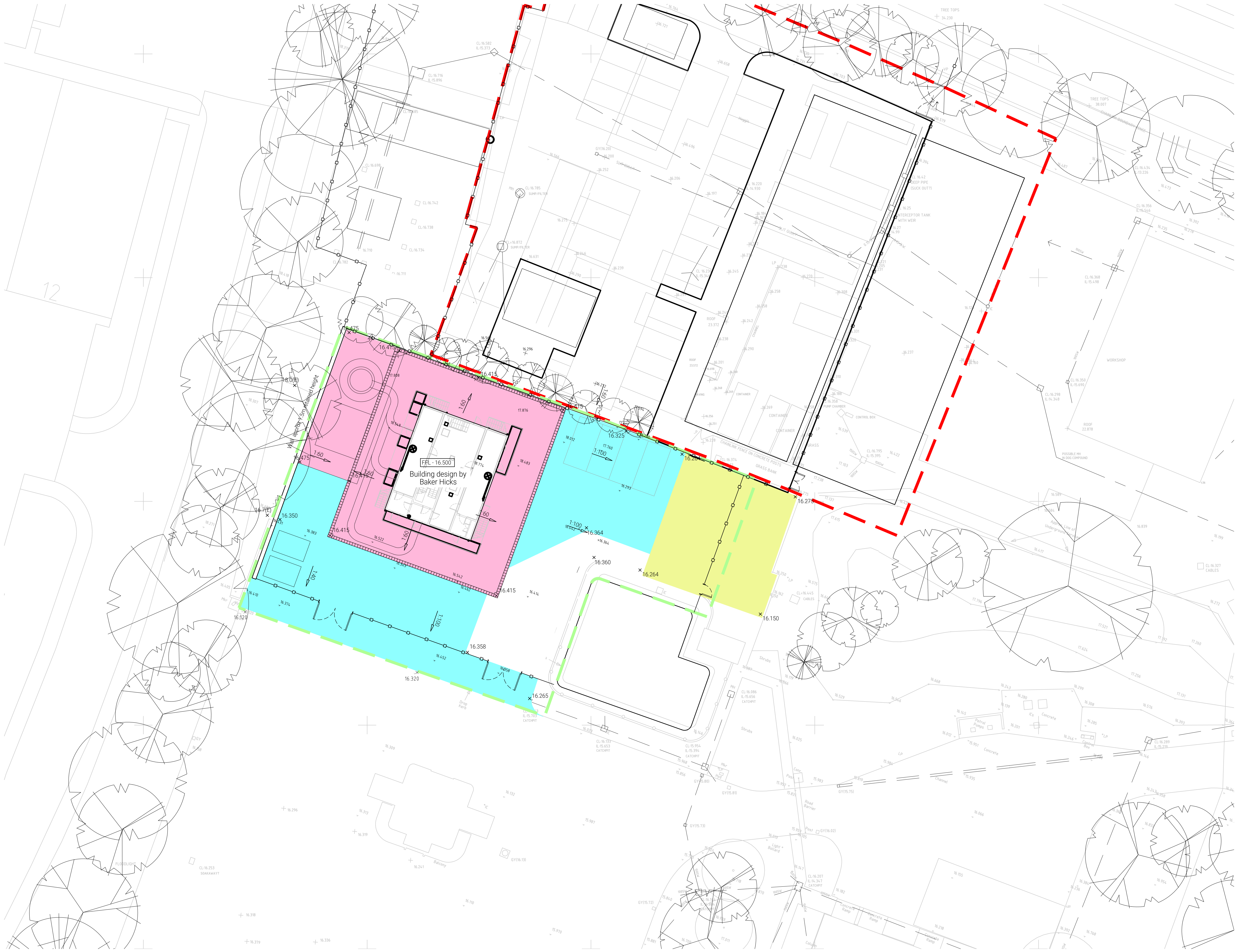
- ✓ use the tree consultant to supervise work in RPAs
- ✓ avoid raising ground levels within 1m of the trunks of retained trees



How to use plan

More detailed guidance on each Site Guidance Note (SGN) can be found in a printed hard copy compilation of all the SGNs, **Manual for Managing Trees On Development Sites version 2.1**, issued to the Site Manager at the pre-commencement site meeting (**Note:** This should be retained on site throughout the duration of works). Additionally, an electronic pdf compilation of all the SGNs, was submitted with this drawing to the local planning authority and the client. Alternatively, a pdf of each SGN can be downloaded by:

1. clicking the image links in the electronic pdf version of this plan;
2. holding a mobile phone QR (Quick Response) code reader over the QR code in the paper version of this plan; or,
3. visiting our website at <https://www.barrelltreecare.co.uk/resources/technical-guidance>



- Notes:
1. This drawing is to be read in conjunction with all of the relevant architects, engineers and specialist sub-contractor drawings and specifications.
 2. Any discrepancies between the engineers and the architects drawings to be referred to the architect before proceeding. Drawings must not be scaled.

P1
Rev. Date Drawn Description



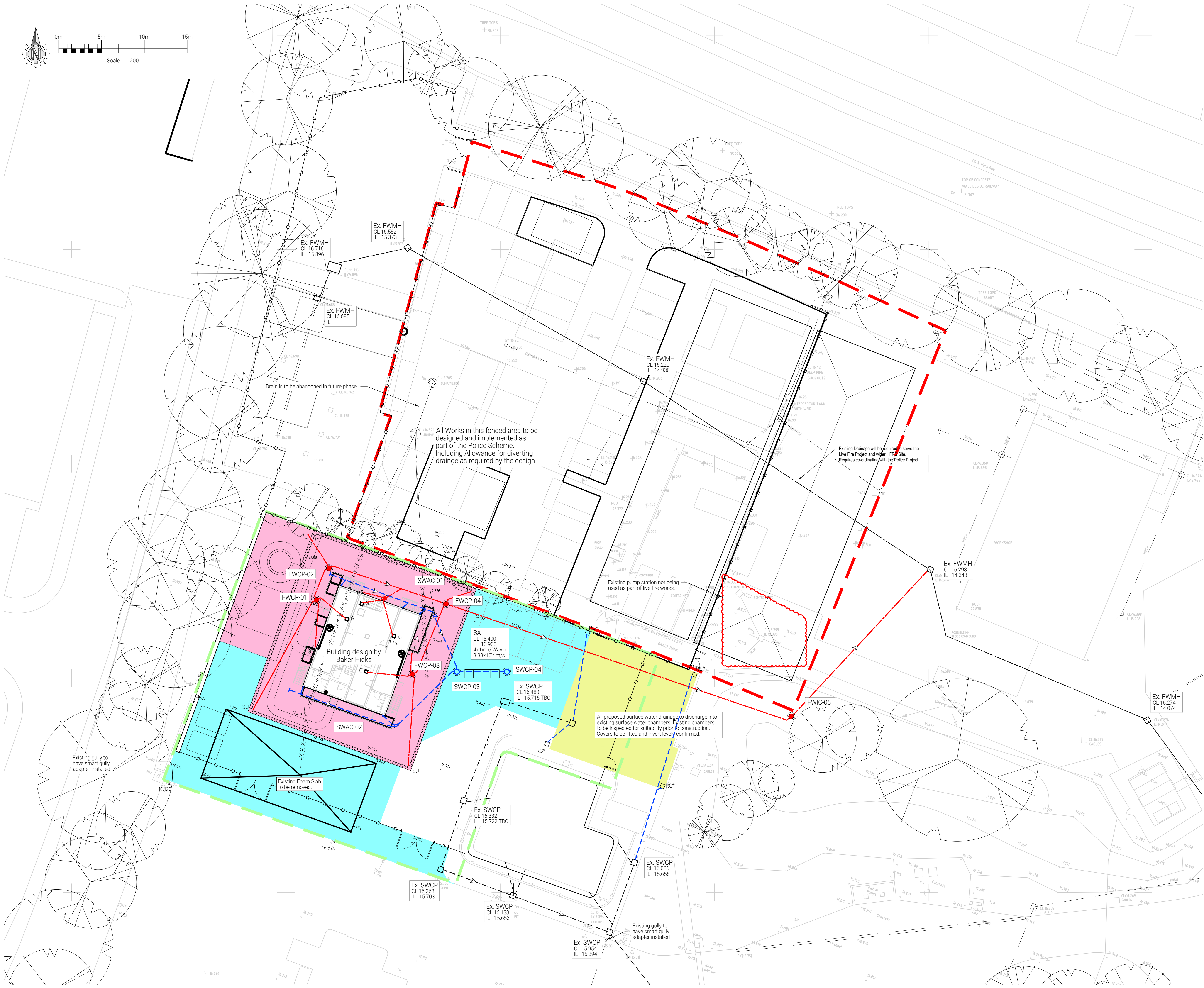
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Client
Hampshire Fire and Rescue Service
Project Title
Eastleigh Live Fire Training Area
Drawing Title
Externals Levels Plan

Drawing Status
Preliminary

Originator No.	Rev by	Chk by	Scale
114174	MC	MJR	1:200 @ A1

PROJECT ORIGINATOR ZONE LEVEL TYPE ROLE NO.	Revision
114174-CAL-XX-XX-DR-D-0015	P1



Notes:

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2. Any discrepancies between the engineers and the architects drawings to be referred to the architect before proceeding. Drawings must not be scaled.

Foul Water Manhole Schedule		
Manhole No.	Cover Level (m)	Invert Level (m)
FWCP-01	16.480	15.715 + Sump
FWCP-02	16.480	15.680 + Sump
FWCP-03	16.480	15.715 + Sump
FWCP-04	16.465	15.485 + Sump
FWIC-05	16.605	14.785

Surface Water Manhole Schedule		
Manhole No.	Cover Level (m)	Invert Level (m)
SWAC-01	16.460	15.920
SWAC-02	16.480	15.945
SWAC-03	16.400	13.900+sump
SWAC-04	16.400	15.900+sump

Drainage Legend

- Existing Private SW Sewer (& Manhole)
- Existing Private FW Sewer (& Manhole)
- Proposed SW Sewer (& Manhole)
- Proposed FW Sewer (& Manhole)
- SU--- Drainage Channel (with Sump Unit)
- ××××× Pipeline to be Removed / Abandoned
- Site Boundary
- Wavin Cellular Soakaway
- RG* 450 Road Gully with 'Smart Sponge' adapter

P3 12.07.22 Updated to revised site plan Soakaway Added
P2 29.01.21 Updated for revised site plan
P1 22.01.21 Drawn
Rev Date Description



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Client
Hampshire Fire & Rescue Service

Project Title
Eastleigh Live Fire Training Area

Drawing Title
Outline Drainage Plan

Drawing Status
Stage 1

Originator No.	Rev by	Chk by	Scale
114174	MC	MJR	1:200 @ A1

PROJECT (ORIGINATOR) ZONE (LEVEL) TYPE (ROLE) NO.	Revision
114174-CAL-XX-XX-DR-D-0010	P3

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Distribution:

Key:

[illegible]