



Arboricultural Implications Assessment

Proposed development at:

Land at Tiltwood East

Hophurst Lane

Crawley Down

Client: Robin Cook

Date: May 2023

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1. Introduction

1.1 Scope of report

- 1.1.1 This report assesses the arboricultural implications of the construction of a single dwelling at Land at Tiltwood East, Hophurst Lane; and details what actions need to be taken to prevent or minimise unacceptable damage to retained trees during the construction period.
- 1.1.2 The report has been drawn up to comply with the planning requirements of the Local Planning Authority ('LPA'), Mid Sussex District Council, which specify that an arboricultural implications assessment ('AIA'), arboricultural method statement ('AMS') and tree protection plan ('TPP') are submitted to accompany planning applications affecting sites where trees are present or are in the immediate vicinity; and in accordance with the recommendations of British Standard BS 5837: 2012, *Trees in relation to design, demolition and construction – Recommendations* ('BS 5837').
- 1.1.3 The AMS at **Section 3** of the report is designed to reflect the principles of the tree protection required for the proposed development but should not be read as a definitive engineering or construction statement for this site. If required, matters relating to the construction detail or engineering performance of any protective measures specified should be referred to a qualified architect or structural engineer, for further information and specification which may be necessary for their practical implementation in a manner that satisfactorily ensures their protective intention or function.

1.2 Site description and proposals

- 1.2.1 The site is a parcel of land North of Tiltwood House and south of Hophurst Lane that contains several large trees. Given its location and the tree species demographic, it is possible this land was once part of the formal gardens of Tiltwood House. Until recently the site has not been maintained for many years and had become overgrown with rhododendron, which was cleared under David Archer Associates instruction to allow for the various surveys to be undertaken.
- 1.2.2 The proposed development comprises a bespoke dwelling with associated parking area and gardens nestled in amongst the trees. From the outset, the dwelling has been designed to encompass the large Wellingtonia in the centre of the site. furthermore, the dwelling has been specifically designed to minimize any impact on the adjacent trees, as discussed in this report.

1.3 Tree survey

- 1.3.1 The trees on the site were surveyed by Rob Anderson Fdsc, Nd Arb, MArborA in December 2022. Their details are set out in the tree schedule at **Appendix 1** to this report.
- 1.3.2 The site contains five large mature specimen trees including Beech, Wellingtonia and Oaks. For many years it was overgrown by Rhododendron which was cleared as part of site maintenance and to allow for the various site surveys to be conducted. The result of the presence of rhododendron has resulted in there being no understory or herbaceous layers present.

1.4 Statutory protection

- 1.4.1 From information on the LPA's website, no trees within the site are shown to be the subject of a Tree Preservation Order ('TPO').
- 1.4.2 The site is not in a Conservation Area.

2. Arboricultural implications assessment (AIA)

2.1 Basis of assessment

- 2.1.1 The proposed development has been evolved through a design process in which we have advised on its arboricultural implications from the very beginning. The TPP at **Appendix 2** shows the finalized proposals overlaid onto the tree locations and constraints plan derived from the tree survey. The implications assessment below is based on this drawing.
- 2.1.2 The left-hand panel of the TPP shows the tree locations and constraints plan in relation to the existing site and identifies the trees which are to be removed as a result of the proposals, whilst the right-hand panel shows the protection measures required during the construction period for the trees which are to be retained. In the bottom right corner of the TPP is a detailed view of the proposals, showing the foundation pile locations and the drainage runs in relation to the RPAs of the retained trees.

2.2 Tree removals

- 2.2.1 The proposed development will result in the removal of the trees listed in *Table 1* below.
- 2.2.2 No pruning of the retained trees is required to permit construction of the proposed development.

Tree no.	Species	BS category	Work required	Reason for work
8	Indian Bean Tree	B	Fell tree and grind out stump	Within the proposed driveway footprint
11	Western Hemlock	C	Fell tree and grind out stump	Within the proposed building footprint
12	English Oak	B	Fell tree and grind out stump	Within the proposed building footprint

Table 1 – Tree removals

2.2.3 From the start of this project the priority has been preserving the large higher quality trees (trees 5, 6, 7 & 9), this coupled with the location of neighbouring properties limits the location of the proposed dwelling. The resulting position requires the removal of three moderate to low quality trees. The three trees are located within the site's interior and their removal will not make any significant impact on the site's appearance from external viewpoints or on the overall character of the area.

2.2.4 All other trees identified within the survey will be retained, including all those of higher categories, as they are either unaffected by the proposal, or can be successfully protected during the construction period, as shown on the TPP.

2.3 Works within root protection areas ('RPAs')

2.3.1 The vision of this project has always been to have a private property, nestled amongst the trees and at one with nature. David Archer Associates (DAA) has been working with the applicant from the project inception as it was clear from the start the works would be within the RPAs of trees. Following the tree survey in December 2022, DAA has been in constant contact with the design team to produce a layout that meets the design principles whilst having minimal impact on the retained trees.

2.4 Site preparations

2.4.1 Along the site frontage with the existing track, is a mound of soil around a parking area up to 75cm high (see brown hatching on viewport 1 of the TPP). This mound will be removed back down to the original soil levels to allow suitable access to the site. This work will be undertaken at the enabling work stage and can be conducted with an excavator using a no-tines grading bucket. A banksman will aid the operator to ensure the removal is to the existing soil level only.

2.4.2 The site had been left for many years with dense rhododendron bushes covering a large proportion of the site. These were removed as part of maintaining the site and to allow access to the site so the trees could be assessed. No further clearance works are proposed to enable to construction other than the removals listed in *Table 1*.

2.5 Structures within RPAs

- 2.5.1 The proposed dwelling is to be constructed within the RPAs of trees 5 and 7. To minimize the impact of this, the dwelling will be constructed using piles, with 36 of the 44 piles located in the RPAs. This method significantly decreases the disturbance to the soil down to an area of approximately 1.8m² spread out over 36 points. The beam of the building has been designed to give a minimum gap of 150mm from the existing soil level, to allow moisture to permeate under the building and gasses exchange to continue. (See viewport 3 of the TPP for pile locations).
- 2.5.2 A proposed bin/bike store and car barn is proposed on the outer edge of the RPA of tree 7. This is to be a lightweight structure with minimal foundations to minimize disturbance to the soil below.

2.6 Surfacing within RPAs

- 2.6.1 A proposed driveway and turning area are to be located within the RPA of tree 7. This will be constructed above the existing soil level with a cellular confinement system and topped with a permeable surface. This will allow the continual moisture and gaseous exchange to continue between the soil and air. A small amount of re-grading work is proposed on the edge of the existing surfacing to form a ramp to the new higher no-dig driveway level. This is a very small area within the RPA of T7 and is unlikely to have a significant detrimental impact on the tree.

2.7 Drainage

- 2.7.1 Drainage runs have been located to the south of the proposed dwelling to minimize the number of excavations within RPAs. The resulting design for both the foul and rainwater can be seen in viewport 3 of the TPP, which only results in a short run within the RPA for tree 5, with the rest being dog-legged around the RPAs of trees 7 & 9.
- 2.7.2 The location of input utilities have not been finalised, but there is sufficient room between the RPAs of trees 7 & 9 to allow the installation without trenching within RPAs.

2.8 Shading and Future Pressure to Prune.

- 2.8.1 From the outset, this dwelling was to be purposefully set amongst the trees including under the canopy of tree 5. It is accepted that the building will be partly shaded by the adjacent trees. Due to the proposed relationship with the surrounding trees, the future owner is very likely to be someone who will purchase the property because of this setting and therefore will accept the natural occurrences that come from living close to trees.

2.9 Arboricultural implications – summary

- 2.9.1 The trees within and adjacent to the site have been surveyed in accordance with BS 5837, and the implications of the proposal have been assessed in relation to its findings.
- 2.9.2 As assessed and detailed above, the proposal will therefore not have a significant detrimental impact on trees of importance to the amenity of the locality, or on the quality of the local landscape. Subject to the measures identified on the TPP and specified in the AMS below, all other trees identified within the survey are either unaffected by the proposal, or can be successfully protected during the construction period.
- 2.9.3 The implementation of these measures, and adherence to them during the construction period, can be satisfactorily ensured by means of an appropriate condition, on the grant of planning permission.
- 2.9.4 This report has been prepared on the basis of the details of the proposal provided to us at the time of its preparation. Should these be amended or revised at any stage during the planning process, the amended details should be referred to us to determine whether any of the findings of this report require revision in the light of the changes.

3. Arboricultural method statement (AMS)

3.1 Pre-start requirements, liaison & communication

- 3.1.1 Before any works of any description take place on the site, the applicant, landowner or promoter of the proposed development ('the developer') shall appoint a suitably qualified arboricultural consultant to act as the supervising arboriculturist for the project, in order to ensure that the specified tree protection measures are carried out during the entire construction process.
- 3.1.2 Before any works commence on site, the developer shall convene a pre-start meeting. This should be attended by the site manager, the groundwork contractor, and the supervising arboriculturist. The meeting will be led by the supervising arboriculturist, who will ensure that the sequence and methods of tree protection specified in this statement are fully explained and understood by all parties. Reporting procedures, arboricultural supervision requirements, and frequency of monitoring visits (as detailed in **Section 3.11** and *Table 2* of this AMS) will be discussed and agreed, and relevant contact details exchanged. Any modifications to this statement arising from this meeting will be recorded and the revisions circulated to all parties.
- 3.1.3 The developer shall inform the supervising arboriculturist if at any time during the construction process, the site manager is replaced. In this event, the supervising arboriculturist will, within 5 days, arrange a meeting with the new site manager to review all remaining or outstanding aspects of this method statement.

- 3.1.4 A copy of this method statement, together with the TPP, shall be given to all personnel who have control over works of any nature within the root protection areas (RPAs) of the trees which are to be retained. The developer will ensure that adequate instruction is given for the implementation of the protection measures outlined within this statement.

3.2 Order of tree protection.

- 3.2.1 Activities on the site should be conducted in the following order to best ensure the trees are protected throughout the whole construction process. Reference should also be made to section 3.11 regarding when arboricultural supervision is required.

- 1) Tree removals
- 2) Soil piles removed in a sensitive manner.
- 3) Ground protection and Tree protection fencing installed.
- 4) No-dig surfacing installed (if not the area will be covered with ground protection).
- 5) Foundation piles installed.
- 6) Drainage runs installed.
- 7) Building completed.
- 8) Finishing layer added to no-dig surfacing.
- 9) Tree protection fencing and ground protection removed.
- 10) Soft landscaping can be undertaken.

3.3 Tree removals and pruning

- 3.3.1 The trees listed in *Table 1* above shall be felled to ground level. Stumps shall be ground out to 450mm below ground level and not excavated (grubbed out).
- 3.3.2 No pruning of the retained trees is required to permit construction of the proposed development.
- 3.3.3 Tree felling will be carried out in accordance with British Standard BS 3998: 2010, *Tree work - Recommendations*.

3.4 Protective fencing

- 3.4.1 No vehicles of any kind shall enter the site, nor any works commence, until the root protection areas of the retained trees, as shown on the TPP, have been protected by the erection of protective fencing to the specification found in BS 5837, Section 6.2. The location of the fencing is denoted by the continuous bold purple lines on the TPP.

- 3.4.2 The protective fencing shall be at least 2.1m in height and comprise standard 'Heras' welded mesh fence panels mounted on rubber or concrete feet. The panels shall be fixed to each other with at least two anti-tamper clamps, installed so that they can only be removed from inside the fence.
- 3.4.3 The fencing shall be supported on the side closest to the retained trees by stabiliser struts braced to the ground at an angle of 45 degrees, and attached to a base plate secured to the ground with ground pins. Where the fencing is to be erected on retained hard surfacing or it is otherwise unfeasible to use ground pins, e.g. due to the presence of underground services, the stabiliser struts should be mounted on a block tray. Notices stating "*Tree Protection Zone – Keep Out*" will be attached with cable ties to every other panel.
- 3.4.4 No activity of any kind shall be undertaken behind the protective fencing; there shall be no topsoil stripping, no storage of materials, no access for vehicles or personnel, and no excavation or changes in soil level of any kind.
- 3.4.5 Areas for storing or mixing of fuels, oils or cement shall be agreed at the pre-start meeting. None of these areas shall be within the area behind the protective fencing, and where possible shall not be within 10m of any retained tree.
- 3.4.6 No fixtures of any nature shall be attached to the retained trees, and no fires shall be lit in any position where heat could affect their foliage or branches.
- 3.4.7 When the installation of the protective fencing is complete, the supervising arboriculturist shall be informed so that they may come and inspect it. If it complies with this statement, the supervising arboriculturist will record the fact.
- 3.4.8 Where tall plant or equipment may be passing or working close to the canopies of the retained trees, timber uprights shall be erected and fastened to the protective fencing to prevent accidental damage to branches. Cross members between the uprights shall be marked clearly with reflective tape to ensure high visibility.
- 3.4.9 If the protective fencing is accidentally damaged or knocked over, the damaged sections shall be immediately marked with high visibility tape or with mesh fencing. The damaged sections shall be replaced or repaired to the original specification within 48 hours. All events of this nature must be recorded and reported to the supervising arboriculturist.
- 3.4.10 The protective fencing will not be moved, dismantled or relocated without the prior approval of the supervising arboriculturist. When the construction period is complete the fencing may then be removed, but only after first informing the supervising arboriculturist of this intention.

3.5 Ground protection

- 3.5.1 Where the setting back of the protective fencing in order to provide construction working space results in unmade ground within the RPAs of retained trees being exposed to construction damage, temporary ground protection shall be put in place for the duration of the construction period, in the locations denoted by magenta hatching on the TPP. In order to protect the structure of the soil adjacent to the areas of construction, the ground protection should be capable of supporting any traffic, pedestrian or mechanical, entering or using the relevant areas without being distorted or causing compaction of underlying soil.
- 3.5.2 The ground protection shall comprise of proprietary inter-linked ground protection boards or 15mm (3/4") steel sheets placed on top of a compression-resistant layer (e.g. 150mm depth of woodchip), laid onto a geotextile membrane, to accommodate pedestrian-operated plant up to a gross weight of 2 tonnes.
- 3.5.3 The no-dig surfacing should be installed at the same time as the ground protection to protect the driveway area. The no-dig cellular confinement system will be installed in line with **Section 3.8** of this AMS, but with a sacrificial wearing layer so the cellular confinement system is not damaged by construction traffic. If the no-dig surfacing is not installed at this time the area will be covered with ground protection. At no point will any area inside the RPAs of the adjacent trees be left unprotected.
- 3.5.4 The ground protection shall be installed in the specified locations at the same time as the erection of the protective fencing, prior to any works commencing on the site. When its installation is complete, the supervising arboriculturist shall be informed so that they may come and inspect it. If it complies with this statement the supervising arboriculturist will record the fact.
- 3.5.5 If, during the course of construction operations, it becomes known that the specification of the installed ground protection in any location will be insufficient to accommodate the loadings to which it will unavoidably be subjected, it shall be replaced or upgraded to a more robust specification immediately, in accordance with BS 5837 recommendations and with the advice of the supervising arboriculturist, before any further works in the relevant area proceed.
- 3.5.6 The ground protection shall be retained in place for the duration of the construction operations, and shall not be removed until all works are completed, and all equipment and materials have been removed from the site.

3.6 Sensitive removal of soil piles

- 3.6.1 Where indicated on the plan, removal of the existing soil piles within RPAs of retained trees shall be undertaken in a sensitive manner. The works can be undertaken with an excavator using a no tines bucket located on either ground protection or the existing hard surfacing. The operator shall be aided by a banksman who will help ensure that the piles are only removed down to the existing soil level.
- 3.6.2 The soil from this work will not be piled in the RPAs of the retained trees.
- 3.6.3 Once the works have been completed the ground protection and tree protection fencing will be installed in this area as per the TPP.

3.7 Piled foundations

- 3.7.1 Where denoted by the bold orange circles on the TPP, initial excavations at the locations of the proposed concrete or helical piles shall be undertaken as follows. The first 750mm depth of each proposed pile location shall be excavated using hand tools or an air pick only, under on-site arboricultural supervision. Any roots encountered of less than 50mm diameter will be cleanly severed by the supervising arboriculturist using secateurs or a sharp saw, and the exposed cut ends kept covered by damp hessian.
- 3.7.2 If any roots of 50mm diameter and above are found, they shall initially be covered and protected by damp hessian. The supervising arboriculturist shall then decide if it is necessary to retain them. If not, then shall be cleanly severed as above. If removal of such roots is not feasible, but it is possible for the pile to be bored or drilled without severing them, they shall be wrapped and encased in clean sharp sand with a minimum thickness of 50mm, covered in polythene and retained. Alternatively, if it is not possible for the pile to be bored or drilled without severing them, then in consultation with the architect or structural engineer, the proposed pile location shall be adjusted to a location which avoids the root or roots concerned.
- 3.7.3 The piling rig used shall be of a sufficiently low operating height to be raised and operated beneath the canopies of retained trees without requiring them to be crown reduced or crown lifted. The piling rig shall be sited either outside the trees' RPAs, or on temporary ground protection of a sufficient strength and specification to bear its weight and loading.
- 3.7.4 If concrete piles are proposed, the faces of the initial 750mm excavation for each pile position shall be lined or sleeved with an impermeable polythene membrane, to prevent leaching of wet concrete into the soil around tree roots or contact with exposed root ends, before concrete is poured or pumped into the pile.
- 3.7.5 Within 750mm of the soil surface, any excavation or levelling required between the pile positions for installation or construction of spanning beams shall be undertaken using hand

tools or an air pick only, under on-site arboricultural supervision, with treatment of any roots encountered in accordance with the specifications above.

3.8 Construction of hard surfaces (no dig)

- 3.8.1 Where denoted by blue honeycomb hatch on the TPP, the proposed driveway within the RPAs of retained trees shall be constructed to the specifications detailed below, in accordance with the recommendations of Section 7.4 of BS 5837.
- 3.8.2 Where possible, this construction should be undertaken prior to the commencement of any other construction works (other than the erection of protective fencing and installation of ground protection). If this is not feasible, the relevant area shall be protected from construction traffic, construction operations or soil compaction by suitable temporary ground protection, in accordance with the specifications earlier in this method statement, for the duration of the construction period up until the time when construction of the relevant areas is able to proceed.
- 3.8.3 The proposed driveway shall be clearly marked out before any associated work starts. Existing vegetation may be removed with hand tools or sprayed with an approved non-residual herbicide.
- 3.8.4 Any small hollows may be filled with clean sharp sand (not builders' sand) to a maximum depth of 100mm. A permeable geotextile membrane (such as 'Terram') shall be laid down prior to the installation of a cellular confinement system.
- 3.8.5 The ground shall be covered with a perforated cellular confinement system such as 'Geoweb' or 'Cellweb' with a minimum cell depth of 150mm for the driveway. The cellular confinement material shall be fixed in place over the required area using steel pins at its edges, before being backfilled with clean, no-fines angular aggregate (20mm-40mm).
- 3.8.6 Vehicles or machinery used in the process of depositing or spreading the aggregate backfill shall not travel over, or work from, unprotected ground within the RPA of any retained trees. Subject to the depth of the cellular confinement system being adequate to support the loadings, vehicles (such as dumpers or power barrows) may travel over the completed areas of the cellular confinement material, provided that these are filled to their full depth.
- 3.8.7 Edge supports of appropriate size and strength should be set above ground level and should be secured either with steel pins driven into the ground, or with concrete haunching laid on existing ground level on an impermeable polythene membrane. The outer edge of the supports may be banked up with clean topsoil.
- 3.8.8 A permeable geotextile membrane will then be laid on top of the cellular confinement system to prevent fines and other debris filling the air spaces in the aggregate. The wearing course or final surface shall be of a permeable and gas porous nature such as porous tarmac or concrete setts with sand jointing.

3.9 Underground services

- 3.9.1 Drainage runs have been designed and are shown on the TPP. Detailed drawings of proposed input services (gas, water, power and data) have not been produced at this stage of the planning process, thus any potential impacts between trees shown retained on the TPP and proposed services have not been identified. It is likely, however, that services connections to the proposed will be located within the strip between the RPAs adjacent to the drainage runs.
- 3.9.2 The short drainage run within the RPA of tree 5 shall and any other instances shall be undertaken under direct on-site arboricultural supervision. The first 750mm depth of the excavation (or the required depth if this is less than 750mm) shall be excavated using hand tools only, assisted with an airspade (a compressor-powered compressed air lance), if so required by the Local Planning Authority and/or supervising arboriculturist.
- 3.9.3 Any roots found with a diameter of less than 25mm shall be cleanly severed by the supervising arboriculturist. If any roots of 25mm diameter and above are found, they shall initially be covered and protected by damp hessian. The supervising arboriculturist shall then decide if it is necessary to retain them. If not, they shall be cleanly severed. If removal of such roots is not feasible, then they shall be wrapped with a 50:50 mixture of topsoil and clean sharp sand with a minimum thickness of 50mm, encased in polythene and retained spanning the trench.
- 3.9.4 Ducting, cables or pipes for the utilities shall then be threaded into the trench beneath the spanning roots. Backfilling of the trench shall be undertaken in 150mm layers, with clean topsoil only being used within the uppermost 400mm, each layer of backfill being compacted by foot pressure only. Excavator buckets or other mechanical plant will not be used to compact the backfill.

3.10 Landscaping

- 3.10.1 On completion of construction works, but prior to the commencement of any landscaping works within the protected area behind the protective fencing the developer shall arrange a meeting with the site manager, the supervising arboriculturist and the landscape contractor. The details of this part of the method statement shall be discussed in relation to the proposed landscape operations and a clear sequence of operations established.
- 3.10.2 Within the RPAs the following principles will be maintained:
- Existing ground levels shall not be substantially altered.
 - No plant or vehicles shall enter the RPA.
 - No fuels or chemicals shall be stored within any of these areas.

- Any excavation required for fence posts, log retaining walls or any other landscape structures shall be undertaken by hand, under direct arboricultural supervision. If roots are encountered then the position of the excavation shall be moved to a new location. If this is not possible then any roots with a diameter less than 25mm may be cut cleanly by hand. Any exposed roots shall be re-covered within 24hrs of excavation.
- No structure shall be fastened in any way to the trunks of the retained trees.
- No drainage or irrigation pipes shall be installed within the RPAs of the retained trees.
- Any unwanted vegetation shall be removed by hand.

3.11 Supervision & monitoring

- 3.11.1 At the start of the construction process the supervising arboriculturist shall visit the site on the occasions specified to inspect the tree protection measures (fencing and ground protection) as installed. If these measures comply with the specifications detailed in this method statement, statements of compliance shall be sent to the developer and copied to the LPA.
- 3.11.2 The supervising arboriculturist shall then visit the site on a regular basis, as agreed at the pre-start meeting, or when specifically required as set out in *Table 2* below, to ensure that the tree protection measures are kept in place and functioning as designed. Regular contact will be maintained with the site manager to determine any forthcoming operations that may make an impact on these tree protection measures and if arboricultural supervision is required. A record of all monitoring visits will be kept, and copies sent to the developer and the LPA following each visit.
- 3.11.3 The site manager shall give at least 72 hours' notice to the supervising arboriculturist of any operations, e.g. installation of underground services, building piling and no-dig surfacing., which may make an impact on the RPAs of the retained trees.
- 3.11.4 Any alterations or variations in drawings for the site that are in, or within, the RPAs of the retained trees shall be referred in the first instance to the supervising arboriculturist for advice. If these changes make any kind of impact on the retained trees the supervising arboriculturist shall suggest changes that will either avoid damage to the retained trees or offer solutions to minimize the impact. If required, the supervising arboriculturist will liaise with the LPA's tree officer to agree a way forward, since any alterations to the approved details may require the LPA's prior written agreement. Following these consultations, the supervising arboriculturist shall issue revisions to the TPP and/or this AMS that reflect the changes.

3.11.5 Where any operations carried out by the developer deviate substantially from this AMS, work must cease immediately and the LPA be informed in writing. A meeting will be convened between the developer, the supervising arboriculturist, the LPA tree officer and the site manager to determine the best method to mitigate any damage that may have occurred. Work shall not be recommenced until appropriate action has been agreed to the LPA's satisfaction.

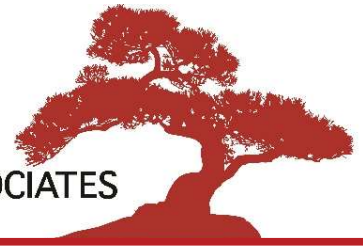
Visit no.	Trees affected/ relevant	Timing of visit	Function carried out
1	All	Following tree felling, erection of protective fencing and installation of ground protection.	To lead the pre-start meeting. To check protective fencing and ground protection have been installed in the correct locations and to the correct standard.
2	Trees 5 & 7	Immediately prior to commencement of the building piles being installed	To supervise the piles installation
3	Tree 5	During the excavation of drainage trench within RPA	To supervise the manual excavation of the drainage trench.
4	All	At agreed intervals during the construction phase.	To check the protective fencing & ground protection remain in place and that activities which would be harmful to trees are not being carried out.
5	All	At any other time which is sensitive in arboricultural terms.	To ensure retained trees are protected from development activities.

Table 2 - Timings of supervision and monitoring visits

Rob Anderson | Arboricultural consultant

Fdsc, Nd Arb, MArborA

May 2023



APPENDIX 1 – Tree Schedule

Notes for the Tree Schedule

This schedule is based on an inspection carried out by Rob Anderson on the 6th December 2022. Weather conditions at the time were dry and sunny. Deciduous trees were not in leaf.

The information contained in this schedule reflects the conditions of those specimens at the time of inspection. They were inspected from the ground only; they were not climbed and no internal investigations were undertaken, thus no guarantee may be given as to their structural integrity.

As trees are dynamic organisms and subject to continual change no dimensions expressed in this schedule may be relied upon for development purposes for more than 24 months from the date of survey. Estimated dimensions are marked 'est'.

1. **No:** Expressed in sequential order starting from number 1 – woodlands, groups & hedges are prefixed as W, G, & H respectively.
2. **Species:** The common name as given in "Collins Tree Guide", Johnson & More (2004).
3. **Height:** Estimated with the aid of a 'Disto' laser range finder and expressed in metres.
4. **Trunk Diameter:** Measured at 1.5m above ground level and expressed in millimetres to the nearest 10mm; where multiple stems are present they are measured individually and a cumulative total calculated in accordance with BS5837 (2012).
5. **Radial Crown Spread:** Distance in metres from the centre of the trunk to each cardinal point of the compass and rounded up to the nearest half metre.
6. **Crown Clearance:** Mean height from adjacent ground level to the lowest point of the crown.
7. **Height to First Branch:** Height, in metres, of the first significant branch (100mm) or to crown break from ground level.
8. **Life Stage:** Young, Semi mature, Mature, Veteran/Ancient.
9. **Physiology:** Health and condition of the tree in comparison to a typical specimen of species and age: Good, Average, Below Average, Poor, Dead.
10. **Structure:** The structural condition of the tree based on an assessment of any visible roots, trunk and crown, noting the presence of any defects or decay: Good, Moderate, Indifferent, Poor, Hazardous.
11. **Estimated Years:** Estimate of remaining contribution expressed in years <10, 10-20, 20-40, 40+.
12. **Comments:** Notes relating to health and condition, structure and form, estimated life expectancy and importance within the local landscape.
13. **Category:** - A rating given to individual trees based on Table 1 in the British Standard, BS 5837 (2012) "*Trees in relation to design, demolition and construction - Recommendations*".

Category 'U' - Trees in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboriculture management.

Category 'A' - Trees of high quality and value; in such a condition as to be able to make a substantial contribution (Normally a minimum of 40 years).

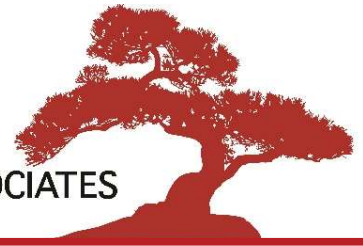
Category 'B' - Trees of moderate quality and value; those in such a condition as to make a significant contribution (Normally a minimum of 20 years).

Category 'C' - Trees of low quality and value; currently in adequate condition to remain until new planting could be established (Normally a minimum of 10 years), or young trees with a stem diameter below 150mm.

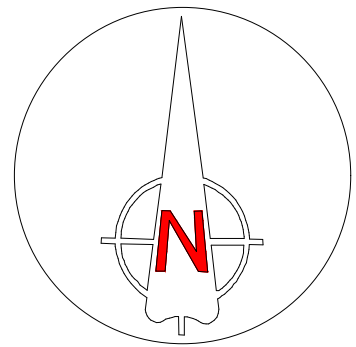
Sub-categories (where appropriate); 1 – Mainly arboricultural qualities: 2 – Mainly landscape qualities: 3 – Mainly cultural values, including conservation.

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clearance	Height to 1st Branch	Life Stage	Physiology	Structure	Est. Years	Comments	Category
1	Beech	17m	1030mm @1m	N10m E11m S11.5m W12m	5m	2m S	Mature	Good	Average	40+	Low crown break forming a typical wide spreading crown.	A (2)
2	Bird Cherry	14m	470mm	N4m NE9m SE10m S4m W8m	3m	3m	Mature	Good	Average	20-40	Plotted by eye on plan; swept stem to south with distorted crown shape.	B (2)
3	Silver Birch	13m	230mm 190mm	N4m E6.5m S0m W4m	6m	3m	Mature	Average	Average	10-20	Growing within 1m of neighbour T3, with crowns growing as one.	C (1)
4	Silver Birch	13m	230mm 310mm	N4m E6.5m S3m W1m	6m	3m	Mature	Average	Average	10-20	Growing within 1m of neighbour T2, with crowns growing as one.	C (1)
5	English Oak	25m	1460mm	N11m E10.5m S11.5m SW5m W15m	9m	3m	Over-mature	Average	Average	20-40	Linear historical wound on stem from ground level to crown break leading to the base of a dead central leader, likely to have resulted from lightning strike of central leader; two fungul fruiting bodies at about 1m height, one southeast side growing on seam between exposed wood and reaction wood, other between buttresses north side; evidence of branch failures; large low lateral branch to west measuring about 4/5 of stem diameter at that point.	B (23)
6	Western Hemlock	28m	820mm	N9m E9m S10m SW7m W7.5m NW6m	N15m E10m S15m W15m	10m	Mature	Good	Good	40+	Recent small excavations around base to install utility cover; no significant defects found at time of survey.	A (2)
7	Wellingtonia	32m	2260mm	N7.5m E9m S8m W7.5m	N10m E10m SE4m S10m W10m	15m	Mature	Good	Good	40+	No significant defects found at time of survey.	A (12)

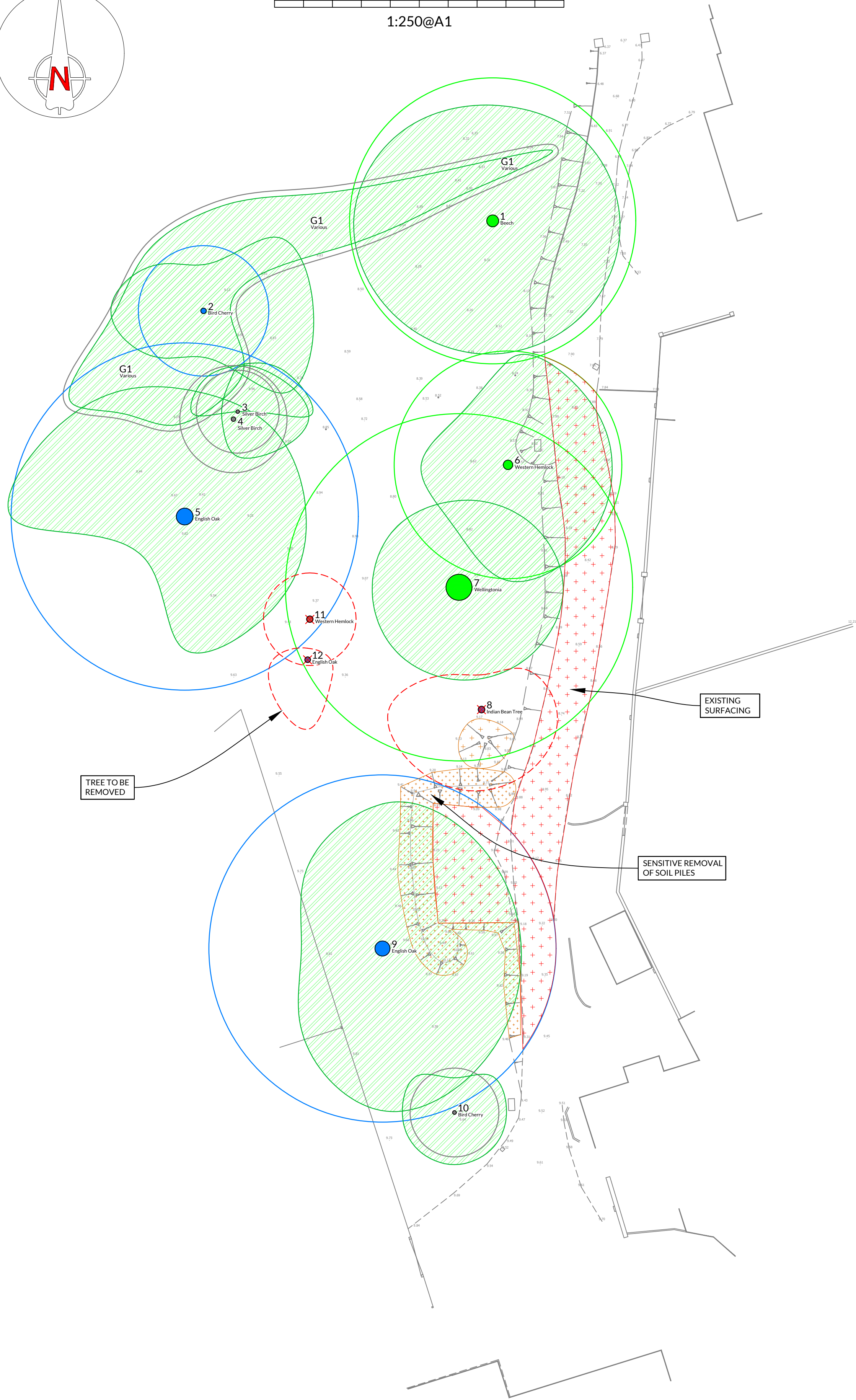
No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clearance	Height to 1st Branch	Life Stage	Physiology	Structure	Est. Years	Comments	Category
8	Indian Bean Tree	17m	580mm	N3m NE5m E6.5m S7m W8m	4m	4m	Mature	Average	Below average	20-40	One-sided crown inclined to south; congested crown.	B (2)
9	English Oak	20m	1300mm	N12.5m E12m S14m W7m	N5m E5m S3m W3m	2.5m	Mature	Below average	Average	20-40	Crown break at 2m forming 4 upright stems and two large laterals. Crown is a candelabra shape; large occluded pruning wounds on main stem; slightly sparsely foliated; has been pruned hard on west side.	B (2)
10	Bird Cherry	5m	320mm @1m	N3m E4.5m S4.5m W4.5m	2m	1m	Mature	Good	Average	10-20	Low crown break forming low spreading crown.	C (2)
11	Western Hemlock	28m	570mm	4m	19m	18m	Mature	Below average	Average	10-20	Stem bifurcates with tight fork at 18m; sparsely foliated.	C (1)
12	English Oak	18m	500mm	N1m E2m S6m W3m	8m	8m	Semi-mature	Average	Good	20-40	Branches on north side damaged by fallen tree.	B (2)
G1	Laurel, Holly and Hazel	5m	Avg 200mm	2m	0m	0m	Semi-mature	Good	Average	10-20	Area of understory plants; provides screening from road to the north.	C (2)



APPENDIX 2 – Tree Protection Plan



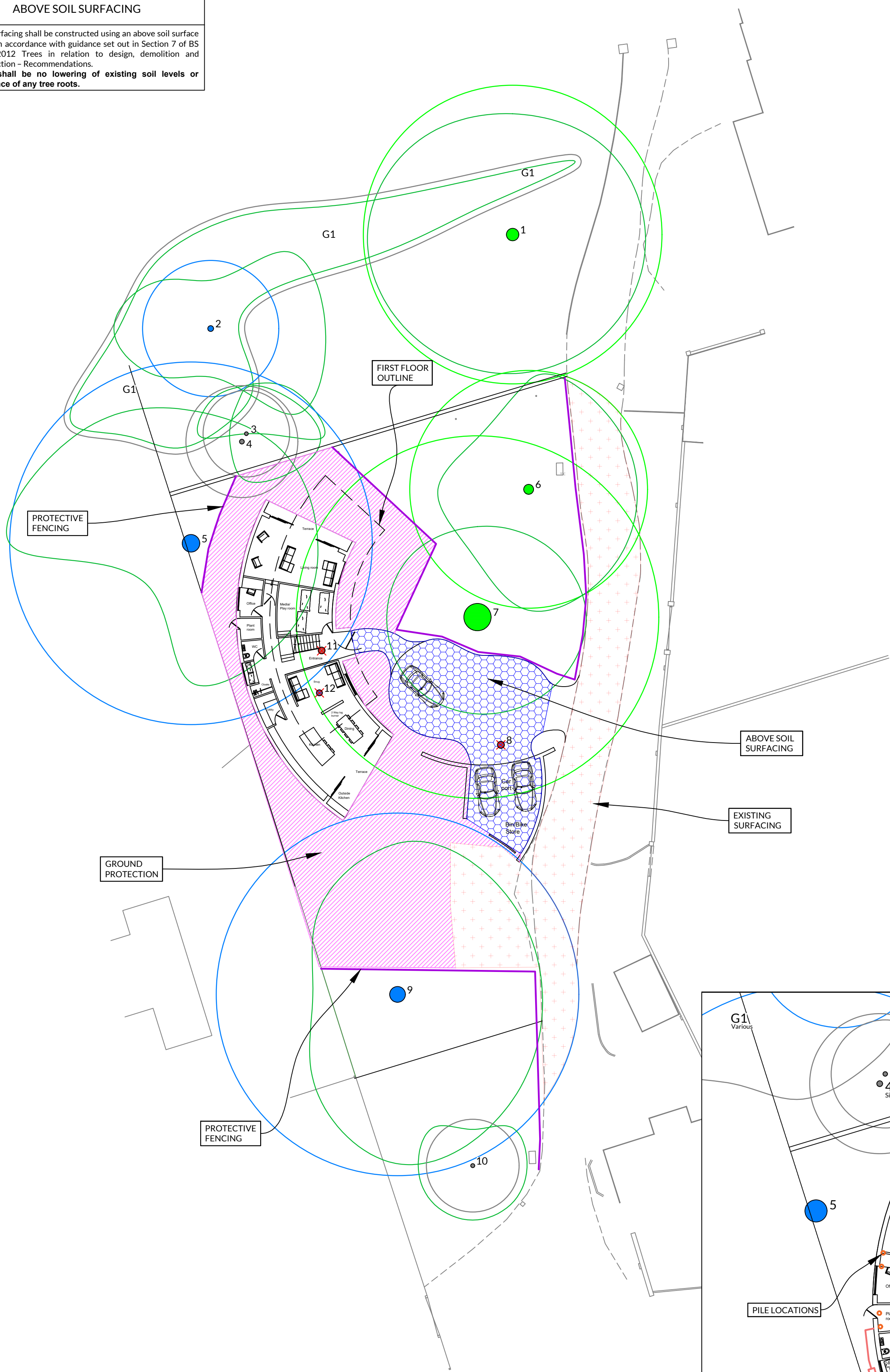
0m 5m 10m 15m 20m 25m
1:250@A1



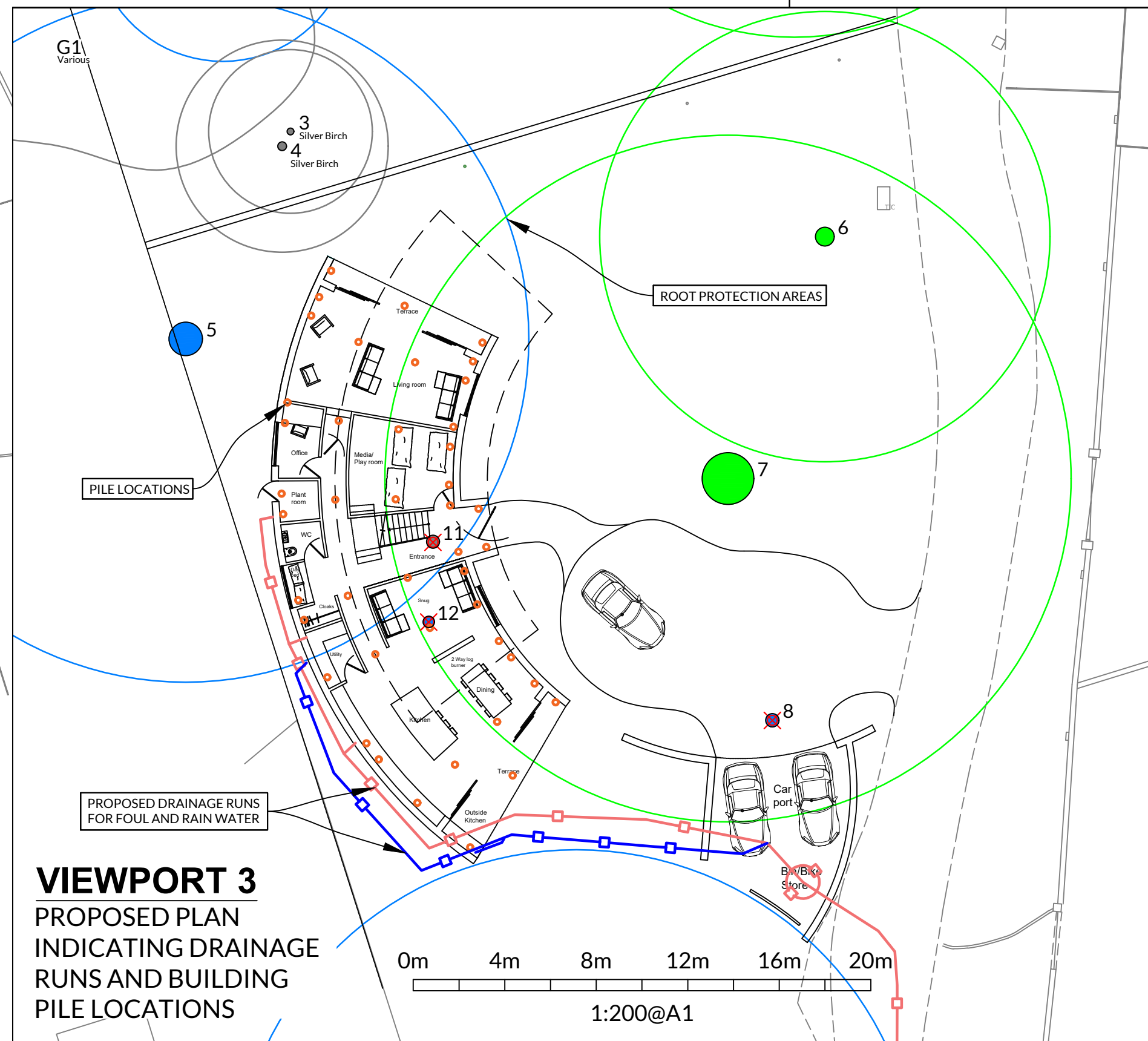
VIEWPORT 1
EXISTING SITE PLAN
INDICATING PROPOSED
TREE REMOVALS &
DEMOLITION

ABOVE SOIL SURFACING

Hard surfacing shall be constructed using an above soil surface design in accordance with guidance set out in Section 7 of BS 5837: 2012 Trees in relation to design, demolition and construction - Recommendations.
There shall be no lowering of existing soil levels or severance of any tree roots.



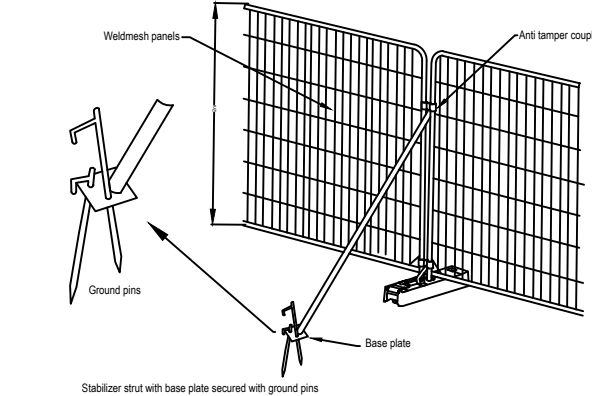
VIEWPORT 2
PROPOSED PLAN
INDICATING TREE
PROTECTION MEASURES



0m 4m 8m 12m 16m 20m
1:200@A1

PROTECTIVE FENCING

To comprise of 2m tall welded mesh panels on rubber or concrete feet. Panels are to be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The panels should be supported on the inner side by stabiliser struts, which should be attached to a base plate and secured with ground pins.



GROUND PROTECTION

To be installed prior to any construction works. For pedestrian-operated plant up to a gross weight of 2t, proprietary inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150mm depth of woodchip), laid onto a geotextile membrane.

DAVID ARCHER ASSOCIATES
ARBORICULTURE | ECOLOGY | LANDSCAPE

Project: **Land at Tiltwood East**
Hophurst Lane
Crawley Down

Client: **Robin Cook**

Drawing: **TREE PROTECTION PLAN**

Based on: **Proposed Site Plan**

Drawing No: **TPP 01**

Date: **May 2023**

Scale: **1:250 @ A1**
1:200 @ A1

Drawn: **RA**

Tree nos.	Category 'A' RPA:	Category 'B' RPA:	Category 'C' RPA:
1	Green circle	Blue circle	Red circle
Canopies of trees:	Green circle	Blue circle	Red circle
Trees to be removed:	Green circle	Blue circle	Red circle
Protective fencing:	Green line	Blue line	Red line
Above soil surfacing:	Green hatched	Blue hatched	Red hatched
Existing hard surfacing:	Green hatched	Blue hatched	Red hatched
Sensitive demolition:	Green hatched	Blue hatched	Red hatched

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SUPERVISED EXCAVATION - PILE & BEAM FOUNDATIONS

Where indicated by the bold orange circles, initial excavations at the locations of the proposed concrete or helical piles shall be undertaken as follows. The first 750mm depth of each proposed pile location shall be excavated using hand tools or an air pick only, under on-site arboricultural supervision. Any roots encountered of less than 50mm diameter will be cleanly severed by the arboricultural supervisor using secateurs or a sharp saw, and the exposed cut ends kept covered by damp hessian.

If any roots of 50mm diameter and above are found, they shall initially be covered and protected by damp hessian. The arboricultural supervisor shall then decide if it is necessary to retain them. If not, then shall be cleanly severed as above. If removal of such roots is not feasible, but it is possible for the pile to be bored or drilled without severing them, they shall be wrapped and encased in clean sharp sand with a minimum thickness of 50mm, covered in polythene and retained. Alternatively, if it is not possible for the pile to be bored or drilled without severing them, then in consultation with the architect or structural engineer, the proposed pile location shall be adjusted to a location which avoids the root or roots concerned.

The piling rig used shall be of a sufficiently low operating height to be raised and operated beneath the canopies of retained trees without requiring them to be crown reduced or crown lifted. The piling rig shall be sited either outside the trees' RPAs, or on temporary ground protection of a sufficient strength and specification to bear its weight and loading.

If concrete piles are proposed, the faces of the initial 750mm excavation for each pile position shall be lined with an impermeable polythene membrane, to prevent leaching of wet concrete into the soil around tree roots or contact with exposed root ends, before concrete is poured or pumped into the pile. The spanning ground beam between the installed piles shall be formed or cast above existing ground level, to avoid trench excavation within the RPAs of the retained trees.