



MARK WELBY
CONSULTING ARBORISTS

Arboricultural Impact Assessment

Glen Cottage, Fullers Road, Rowledge, GU10 4LB

Reference: MW.21.0415.AIA
Client: Mr A Sherbrooke
Date: 30 January 2024



Mark Welby DipArb(RFS), TechCert(ArborA), FArborA
01730 239 492 | mark@mwelby.com | www.mwelby.com
M Welby Ltd, trading as Mark Welby Consulting Arborists
Hampshire, UK



Executive Summary

Trees are a consideration in this planning application for a new garage. Therefore, this report has been drafted to provide the information required to enable the local planning authority to meet the duty placed upon them by section 197 of the Town and Country Planning Act (as amended, 2021).

Included are a BS5837:2012 compliant tree survey, arboricultural impact assessment, and tree protection strategy that includes a method statement and tree protection plan.

Two trees are to be removed.

The existing log store will be demolished to ground level by hand. The new drive and garage building will then be constructed above existing levels using a combination of 'no-dig' surfacing and a floor founded on mini-piles.

Provided the protection strategy is implemented as outlined, I believe this application is of low arboricultural impact, and thus acceptable.

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1. Instructions and Terms of Reference

- 1.1. In January 2024, I was instructed by Mr A Sherbrooke to produce this report to accompany a planning application for a new garage at Glen Cottage, Fullers Road, Rowledge, GU10 4LB.
- 1.2. Following the recommendations of the British Standard¹, this report includes the necessary information to enable the local planning authority to meet the duty placed upon them by section 197 of the Town and Country Planning Act (as amended, 2021).
- 1.3. It demonstrates that the impact, both direct and indirect, of the proposal, has been assessed and where appropriate, mitigation, compensation and tree protection proposed.
- 1.4. Correct implementation of the tree protection specified within this report is critical for ensuring the retained trees are successfully protected throughout the construction process.
- 1.5. The assessment considers the impact of the proposal on the constraint presented by trees retained within the site, and those on adjacent land. Such impact can be caused directly through construction damage and indirectly from post-development resentment and pressure to detrimentally prune or remove the trees. The latter is often due to a poor juxtaposition between the proposal and the trees.
- 1.6. The root protection area (RPA) for each tree represents a minimum area in m² that shall be left undisturbed around each retained tree. This is initially represented by a circle but is fundamentally an area of rooting volume. This is often adjusted to account for constraints to root growth within the site (primarily highways and buildings). Recommendations are provided in the British Standard as to the protection of existing trees during the construction process. This is achieved by ensuring a tree protection strategy is implemented before any demolition or construction on site.

Documents Supplied

- Proposed: 23.1115 P.01 REV B Proposed Site layout.pdf
- Site survey: 21-058-01.pdf

Statutory Legislation

- 1.7. According to Waverley Borough Council's online service², there are no tree preservation orders on the site (checked at the time of writing), nor is the site within a conservation area.

¹BS5837:2012 Trees in relation to design, demolition and construction

² <https://maps.waverley.gov.uk/map/Aurora>

2. Tree Survey Scope & Methodology

- 2.1. Tree survey data can be found on the appended plan.
- 2.2. The tree survey has been carried out following the recommendations of The British Standard and the trees are assessed objectively and without reference to any site layout proposals. Categories are based on each tree's health and condition, together with an assessment of its life expectancy if its surroundings were to be unchanged.
- 2.3. The reference numbers of surveyed trees and groups of trees are shown on the tree reference plan, which is appended to this report and based on the supplied survey drawing. Stem locations within groups may be estimated, and indicative of canopy only.
- 2.4. The tree survey was carried out from ground level only, with the aid of binoculars as necessary, following the Visual Tree Assessment³ (VTA) method.
- 2.5. Where trees are located on neighbouring land, an estimated appraisal of their quality and dimensions has been made.
- 2.6. Where stems or branches are obscured by ivy or other materials a full assessment of those parts will not be possible.
- 2.7. Tree heights were measured with a clinometer or estimated in relation to those measured.
- 2.8. Trunk diameters are measured at 1.5m above ground level, where this is not possible, then Figure C.1 of the British Standard is followed.
- 2.9. Tree canopies were markedly asymmetrical, and were measured (or estimated by pacing) in four directions using a laser measure. Symmetrical canopies are measured in one direction only, with dimensions in the remaining directions assumed to be similar. For the canopies of groups of trees, the maximum radius for each compass point is measured (more complicated groups will have further notes taken and an accurate representation will be shown on the plan).
- 2.10. All estimated dimensions are noted in the data.

³ Mattheck, C. & Breloer, H., 1998. The Body Language of Trees: A Handbook for Failure Analysis. London: H.M.S.O.

3. Arboricultural Impact Assessment

Proposal

- 3.1. The plan is to replace the existing log store with a new garage and changes to the existing drive surface, as shown on the appended plan.

Tree Removals

- 3.2. Two yew trees are proposed for removal. They are listed on the appended plan and comprise two low-quality trees with limited wider landscape value.

Tree Surgery

- 3.3. There are no plans for any tree surgery work at this stage.

Construction Impact

- 3.4. The footprint of the garage and the parking surface encroaches into the RPA of oak #08. Therefore, a sensitive approach to construction is proposed to minimise the impact on the trees. This will be done via two distinct construction techniques:

- Using a no-dig type floor for the garage, ensuring it is built above ground on mini-piles that have been strategically located to avoid impact to roots greater than 25mm in diameter.
- Using a no-dig style surface. Typically called a cellular confinement system (CCS), this surface will be laid above ground to spread the load of the vehicles minimising compaction to the underlying root zone.

- 3.6. Both the above techniques are detailed in the British Standard and, if installed correctly as detailed in the following sections, can be successful.

- 3.7. The appended drawing by Harding Rose (23.1115 P.03 REV A Proposed Plans and Elevations.pdf) shows sections that indicate the proposal is above existing levels. Where fill is required to compensate for the drop in levels, this will be achieved using sandy well-drained soil to minimise impact on underlying roots.

Barrier Type

- 3.8. As the proposed construction work is comparatively 'low impact', the default British Standard tree protection specification seems somewhat onerous. Therefore, it is my opinion that an adequate level of protection can be provided with a lesser specification.

- 3.9. Alternative specifications can be found in [Appendix i](#). TPF 2 or TPF 3 are proposed.

Service & Utility Provisions

3.10. There is clearance to service the site from the main dwelling whilst avoiding all RPAs.

Summary

3.11. Provided the tree protection strategy is implemented as outlined in the following method statement, it is my opinion that this application is of **low** arboricultural impact, and thus acceptable.

3.12. Should the council wish to see more onerous tree protection methods, this can be ensured via an appropriately worded planning condition and should not be the basis for a reason for refusal.

4. Arboricultural Method Statement

- 4.1. The tree protection on this site is subject to implementation as detailed in the following sections.
- 4.2. The recommendations of the British Standard have been applied where viable. Where deviations from the preferred approach are required, the impact on any retained trees is minimised through a combination of supervision from an arboriculturist and adherence to the associated method statement.
- 4.3. The strategy must be followed to avoid not only impact upon the trees but to adhere to any planning conditions, once permission is granted.
- 4.4. The information within this section must be passed to the site foreman and cascaded to all relevant personnel involved in the project.
- 4.5. Any questions about the content or its implementation shall be directed to **Mark Welby Consulting Arborists at 01730 239492** before action is taken.
- 4.6. A tree protection plan showing the types of tree protection and their locations is appended. It includes the tree survey data, existing site features and the approved construction. The plan must be read in conjunction with this method statement.

Phasing

- 4.7. It is essential that the following phasing is followed if trees are to be effectively protected throughout construction.

1	Tree removals
2	Installation of protection barriers & ground protection
3	Confirmation that tree protection barriers are installed to be sent to LPA
4	Demolition & site clearance phase
5	Installation of 'no-dig' style drive in RPAs: under arboricultural supervision
6	Installation of 'no-dig' garage floor in RPAs: under arboricultural supervision
7	Removal of tree protection barriers upon completion of work

Table 1: Timing of operations in relation to trees

- 4.9. The above has been drafted at the planning stage. Shall any of the protection measures prove incompatible with elements of the build program, contact the project arboriculturist to discuss options.

Pre-start Confirmation

4.10. The most important step in the tree protection process: confirmation that the tree protection barriers are in place must be forwarded to the LPA before any external work starts. This may be a photographic record sent via email.

Construction Exclusion Zone (CEZ)

4.11. The CEZ is a root-sensitive area where construction activities are to be excluded. The default method of doing so is through the installation of tree protection barriers. If construction access is required in the CEZ then ground protection can be used to facilitate this.

4.12. It is the responsibility of everyone engaged in the construction process to respect the tree protection measures and observe the necessary precautions within and adjacent to them.

4.13. Inside the exclusion zone, the following shall apply:

- No mechanical excavation whatsoever;
- No excavation by any other means without arboricultural site supervision;
- No hand digging without a written method statement having first been approved by the project arboriculturist;
- No lowering of levels for any purpose (except removal of grass sward using hand tools);
- No storage of plant or materials;
- No storage or handling of any chemical including cement washings;
- No vehicular access (unless ground protection is installed);
- No fire lighting.

4.14. In addition to the above, further precautions are necessary adjacent to trees:

- No substances injurious to tree health, including fuels, oil, bitumen, cement (including cement washings), builder's sand, concrete mixing and other chemicals shall be stored or used within or directly adjacent to the protection area of retained trees;
- No fire shall be lit such that flames come within 5m of tree foliage.

4.15. Variations from the above may be specified in the following sections of this method statement. This is only acceptable where detailed and will typically be subject to supervision by the arboriculturist.

Protection Barriers

4.16. Barriers must be fit to exclude construction activity and appropriate to the degree and proximity of work around the retained tree(s). Barriers shall be maintained to ensure that they remain rigid and complete.

4.17. See Appendix i for barrier specifications.

4.18. On this project, types TPF 2 or TPF 3 are to be used.

Ground Protection

4.19. If required to facilitate access within the CEZ (or as shown on the appended tree protection plan), ground protection is to be installed. If not already included on the tree protection plan, it must be approved in writing by the local planning authority before implementation. The ground protection must be capable of supporting the expected loads and avoiding rutting, compaction and damage to the soil: as advised in section 6.2.3 of the British Standard.



GP1: Tree protection barriers and scaffold ground protection



GP2: Tree protection barriers & trackmat ground protection

4.20. Stages of ground protection installation:

1. If required, dismantle barriers and re-erect them to protect any newly exposed CEZ not to be covered by ground protection;
2. Any shrubs, saplings or trees to be removed, are to be cut or ground out to just below ground level rather than grubbed or winched out, which can damage the roots of retained trees;
3. Lay woven geotextile over the existing ground surface by hand;
4. Cover the area with a compressible layer (200mm of woodchip, for example), using hand tools only;
5. Cover compressible layer with side butting scaffold boards, plywood boards of proprietary trackway/trackmats;
6. Confirm surface is acceptable for use with the project arboriculturist;
7. Area ready for construction access;
8. Any scaffolding required within the area will be erected with the uprights placed on spreader boards;

9. The boarding will be left in place until the construction works are finished.

4.21. A single thickness of boarding laid on the soil surface will provide sufficient protection for pedestrian loads. However, for wheeled or tracked construction traffic movements within the RPA, ground protection will involve the use of temporary geocell/cellular confinement systems, reinforced concrete slabs or track-board systems details of which are to be specified by the project engineer and approved for use by the project arboriculturist and local authority before construction commences.

4.22. Track-boards can be sourced from Trakmats Europe Ltd, 0845 6435388, www.trakmatseurope.com, or groundguards.com

4.23. There is to be no excavation within the ground protection area whatsoever. This includes the installation of services and associated utilities, without prior approval.

Site Induction

4.24. All site staff are to be briefed on the tree protection strategy for the site as part of the general site induction procedure. This can be carried out by the site manager once he has been briefed by the project arboriculturist.

4.25. In general, this will include the following:

1. Explanation of the purpose of the tree protection barriers and any ground protection
2. Explanation of the demolition procedures near trees
3. Explanation of the sensitive/supervised excavation areas
4. What to do if access is needed within a protected area for any reason
5. What to do if damage occurs to any tree protection barriers and how to contact the project arboriculturist if necessary.

Tree Surgery

4.26. Should any pruning work be required, the following must be adhered to once any requisite permissions are obtained.

4.27. All work will be carried out under BS3998⁴ industry best practice and in line with any works already agreed upon with the council.

4.28. The statutory protection^{5 6} will be adhered to. If further advice is required, particularly if bats are discovered during tree work, it will be obtained from Natural England or other competent persons and recommendations adhered to.

⁴ BS3998:2010- *Recommendations for Tree Work*. London: British Standards Institute

⁵ *Wildlife and Countryside Act*. (1981) London: HMSO.

⁶ *Conservation of Habitats and Species Regulations (2017)* London: HMSO.

- 4.29. The stumps of any trees removed from within the Construction Exclusion Zone or the RPAs of retained trees will be either cut flush to ground level and left in situ or ground out using a stump grinder. They will not be winched out.
- 4.30. All operations shall be carefully carried out to avoid damage to the trees being treated or neighbouring trees. No trees to be retained shall be used for anchorage or winching purposes.

Installation of Underground Services

- 4.31. Mechanical trenching for the installation of underground apparatus and drainage sewers any roots present and can change the local soil hydrology in a way that adversely affects the health of the tree. For this reason, particular care must be taken in the routeing and methods of installation of all underground apparatus. Wherever possible, apparatus must be routed outside RPAs. Where this is not possible, it is preferable to keep the apparatus together in common ducts. Inspection chambers shall be sited outside the RPA.
- 4.32. Where underground apparatus is to pass within the RPA, detailed plans showing the proposed routeing must be drawn up in conjunction with the project arboriculturist. In such cases, trenchless insertion methods shall be used: Microtunnelling, Surface-launched directional drilling, Pipe ramming or Impact moling (see BS5837:2012 Table 3), with entry and retrieval pits being sited outside the RPA. Provided that roots can be retained and protected, excavation using hand-held tools might be acceptable for shallow service runs. If this is the case, the following methodology must be followed:
- 4.33. Stages for installing services:
1. Contact project arboriculturist to hold pre-start site meeting and 'toolbox' talk before starting work.
 2. Remove just enough tree protection fencing to allow access to the area and facilitate trenching.
 3. Remove any surface vegetation or existing hard surfaces using hand tools.
 4. Using an air-pick excavate the trench, keeping to the minimum dimensions required.
 5. Roots occurring in clumps of 25 mm diameter and over are encountered they will be retained and kept damp by covering with hessian (re-wetted as required). If required, these shall be severed only following consultation with an arboriculturist; as such roots might be essential to the tree's health and stability.
 6. Feed in services.
 7. Backfill the trench with 200-300mm depth of excavated soil, or a mixture of excavated and imported topsoil to BS3882: 2015, firming down with heels.
 8. Repeat step 7 until the trench is filled.

9. Re-erect tree protection fencing as per the approved plan.
- 4.34. The method of excavation above, for trenching within RPAs, is using air excavation. This tool utilises compressed air to remove soil from around tree roots causing minimal damage and can be run off a typical site compressor. I can provide details of contractors supplying air excavation services if required.
- 4.35. Alternatively, trenchless technology, such as thrust boring can be used in some instances and is particularly effective as it can pass directly under the tree, at a depth which is likely to avoid almost all impact on the roots of the subject tree. As no access/thrust pits will be located within the RPAs of the subject trees, the need for arboricultural supervision is limited.
- 4.36. Reference can be made to NJUG Vol 4⁷ for guidance, but any approach must be approved by the project arboriculturist and brought to the attention of the local authority tree officer.

Fencepost/Hoarding Installation in RPA

- 4.37. Stages for installing wooden posts:

No plant machinery is to be used in the area for whatever reason

1. Remove TPF to allow access to the area. If working inside the tree's RPA, ground protection boarding must be used to avoid compaction and contamination of the root zone.
2. Dig postholes using hand tools, avoiding damage to the protective bark covering larger roots. Roots smaller than 25mm in diameter may be pruned back using either secateurs or a hand saw, leaving a clean cut.
3. Damage or severance of roots above 25mm diameter must be avoided. If roots of this size are discovered, the hole shall be relocated. If there are a large number of such roots it may be necessary to relocate the hole by half a fence panels length and adjust the fence panels accordingly.
4. Line holes with non-porous lining, for example, a durable polyethene bag.
5. Insert post and fill post-hole with concrete to just below ground level.
6. Trim polyethene to ground level and fill with clean topsoil.
7. Reinstall TPF as approved.

Installation of 'No-Dig' Geocell Surface

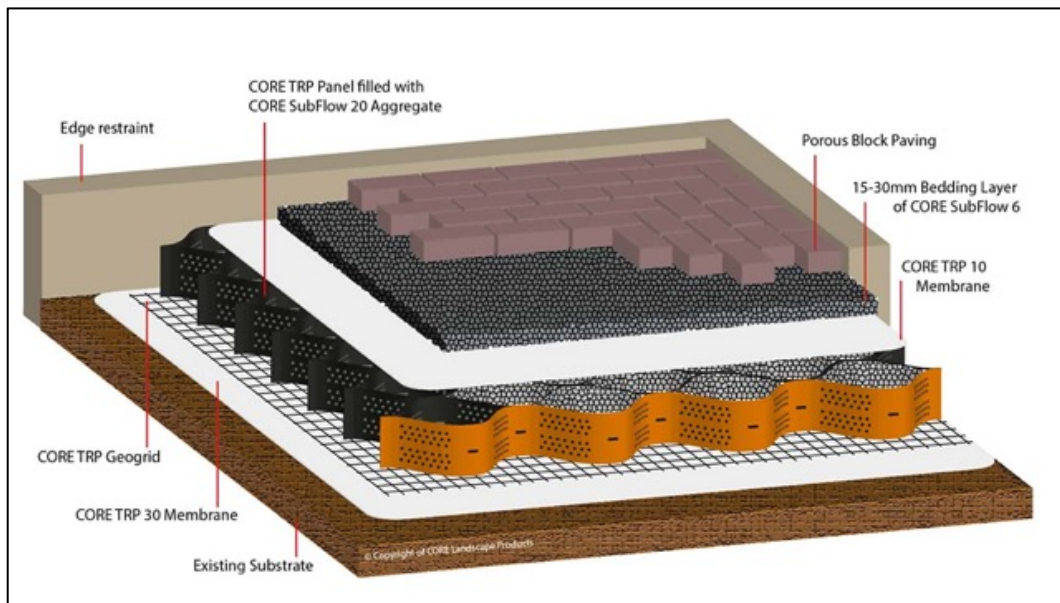
- 4.38. To ensure that tree roots, within the ground under this proposed surface, continue to survive during and after construction, a geocell/cellular confinement system (CCS) is proposed. The

⁷ National Joint Utilities Group. (2010). Volume 4: NJUG Guidelines For The Planning, Installation And Maintenance Of Utility Apparatus In Proximity To Trees (Issue 2) - Operatives Handbook. NJUG.

following is a guide to installation, not an engineering specification. It is critical that an engineer design this surface to ensure long-term durability.

4.39. Stages for Installation of the cellular confinement surface:

1. Contact project arboriculturist to hold pre-start site meeting, a 'toolbox' talk before starting work and provide supervision throughout the process;
2. Remove existing grass sward to 50mm with hand tools or turf stripper only;



ND1: CORE Tree Root Protection © Porous block paving

3. Agreed removal of shrubs, saplings or trees, within the protected areas of retained trees are to be cut or ground out to just below ground level rather than grubbed or winched out, which can damage the roots of retained trees;
4. Retain all original ground levels after vegetation removal. No further excavation whatsoever within RPAs;
5. Remove any existing hard surfaces (paving, tarmac etc.) Hand tools shall be used if possible. If machinery is required for this operation, it must be used only on existing surfaces or outside the protected areas and tree canopies (approval from the project arboriculturist must be sought before using machinery). The sub-base of existing surfaces or foundations shall be left in situ where possible to avoid unnecessary root disturbance and provide a base for the new surface;
6. Install a non-woven geotextile (such as Root-tex 30) directly over soil grade level (levelled where necessary, by non-compacted washed sand) and fix in place;
7. Lay the cellular system over the geotextile, which is secured open under tension during the infill process with steel staples or wooden pegs;

8. Install kerbs and edgings directly on top of the existing soil grade level. For light structures, a treated peg and board may be acceptable. For more substantial structures, railway sleepers, haunched concrete with road pins, drilled kerbstones, gabions or cast in situ kerbs will be appropriate;
 9. Fill the cellular system ensuring any machinery works only on already filled areas. Typical infill consists of no fines angular granular material 20-40mm, which will remain uncompacted;
 10. If required, cover with a non-woven geotextile (Root-tex 30 or similar).
 11. Install porous wearing surface.
- 4.40. Any variation to the above specification must meet the following design criteria for low-invasive surfaces to provide the conditions for continued tree survival and growth:
- Maintain oxygen diffusion through the new surface to the rooting area (5-12% by volume)
 - Maintain sufficient passage of water to the rooting area (12-40% by volume)
 - Avoid compaction by maintaining a soil structure sufficient to sustain root growth (soil bulk density below 1.4g/cc).
- 4.41. Site analysis of the soil type and its structural characteristics will be required before determining the specific depth of products to be adopted, for example, footpaths normally require a depth of 75mm and, 100mm to 200mm depths are used for residential driveways, while greater depths may be required for the passage of heavier traffic such as for construction access and delivery vehicles.
- 4.42. If ground levels are to be raised more than 150mm this shall be achieved by the use of a granular material, which does not inhibit vertical gaseous diffusion. For example, no-fines gravel, washed aggregate, structural soil (min. 20% sand content) or cobbles.
- 4.43. See <https://www.corelp.co.uk/core-tree-root-protection/> and <https://www.geosyn.co.uk/product/cellweb-tree-root-protection> for more information.

No-dig Garage Construction

4.44. The garage is to be built above ground. The only invasive work will be the installation of the supporting mini-piles.



NDS1: Example of no-dig foundation for single-storey structure. © Quickbase

4.45. The following methodology is for guidance and must be subject to professional design and installation. The design must then be approved by the project arboriculturist before it is implemented.

4.46. An indicative section of no-dig construction is shown on the appended plan.

4.47. Stages of construction:

1. Contact project arboriculturist to hold pre-start site meeting, a 'toolbox' talk before starting work and provide Arboricultural Clerk of Works (ACoW) supervision throughout the process.
2. Grass sward to be removed as necessary using hand tools or a turf stripper.
3. Excavation to establish sites free of roots >25mm diameter for piles. To be carried out by hand or with an air excavation tool.
4. Piles installed using mini-rig with very low ground pressure: rig must be approved for use by project arboriculturist.
5. Void form material installed.
6. Slab base cast onto void form material.
7. Void form material removed to create a void under the slab

8. The remaining construction must be built on the slab with no further excavation.

4.48. This specification must be designed to meet the following performance criteria:

- Construction will be above current ground (removal of grass sward/leaf litter by hand only).
- It will provide adequate resistance to applied loads, avoiding compaction of the soil.
- Provision will also be made for resistance to or tolerance of deformation by tree roots
- An allowance will be made for oxygen diffusion according to seasonal demand
- Water throughput to meet seasonal demand will also be possible (can be achieved by redirection of captured rainwater into hand-dug land drains)

4.49. Any supports (such as a pile and beam construction may require) will be sited around any significant root masses. Sensitive air excavation before design will identify ideal locations.

4.50. Such techniques, for example, pile and beam foundations, must be designed to cause minimal impact on the root system. This will include building above the current soil grade and using floating or cantilevered floors within the structure.

4.51. No plant machinery can be sited within the RPA. The use of back-acters or diggers to deposit construction materials within the area is acceptable, provided this can be achieved without causing damage to the canopy, and only under arboricultural supervision. The exception to this rule is when the use of piling rigs is required. In most cases, it will not be possible to site a normal-sized rig under the trees canopy and a 'mini-rig' will be required.

Demolition

4.52. All barriers and/or ground protection are to be installed as per the approved Tree Protection Plan before commencement on site.

4.53. Sensitive demolition must only occur under supervision from the project arboriculturist

4.54. Stages of demolition within tree protection areas;

1. No plant machinery is to be sited on any exposed rooting area or soft ground;
2. Buildings to be folded in on themselves, or pulled away from trees;
3. Removal of debris by hand or with plant machinery not located on any exposed rooting area;
4. The floor is to be broken up with a hand-held breaker and pieces removed by hand. The slab floor can be lifted carefully by machinery if appropriate;
5. Underlying ground levels are to be retained. No excavation is to occur;
6. Any exposed roots and surrounding newly exposed areas are to be covered with up to 100mm of topsoil, from elsewhere on site, or imported topsoil to BS3882. Soil may be placed in an area by plant but must be spread by hand;
7. Tree protection barriers are to be erected in the final position to protect any newly exposed soft ground (as advised by supervising arborist).

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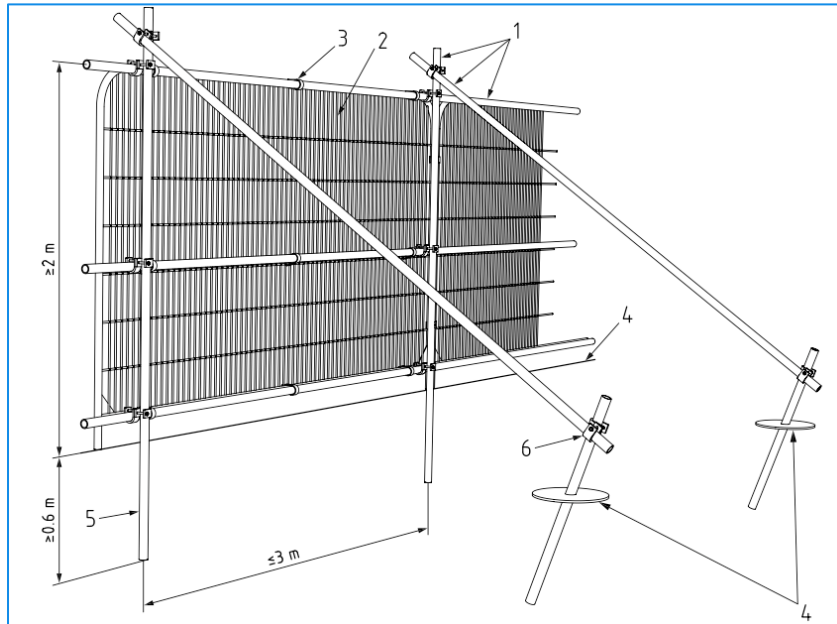


Appendices

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i.

Tree Protection Barriers



1 Standard scaffold poles

2 Heavy gauge 2 m tall galvanised tube and welded mesh infill panels

3 panels secured to uprights and cross members with wire-ties

4 ground level

5 uprights driven into the ground until secure (minimum depth 0.6 m)

6 Standard scaffold clamps

TPF1: Default specification for protective barrier (Fig 2 from BS5837:2012)



TPF 2: Alternative fencing option: scaffold uprights with backstay





TPF 3: Alternative fencing option: on boots with backstay



TPF 4: Plastic barrier for low intensity areas of construction



TPF 5: Chain-link for low intensity areas on large projects

ii.

Tree Categories Explained

BS5837:2012 Table 1 -Cascade chart for tree quality assessment			
Category and definition	Criteria (including subcategories where appropriate)		
Trees unsuitable for retention (see Note)			
<p>Category U</p> <p>Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years</p>	<p>*Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning)</p> <p>*Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline</p> <p>*Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality</p> <p><i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i></p>		
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation
Trees to be considered for retention			
<p>Category A</p> <p>Trees of high quality with an estimated remaining life expectancy of at least 40 years</p>	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)
<p>Category B</p> <p>Trees of moderate quality with an estimated remaining life expectancy of at least 20 years</p>	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value
<p>Category C</p> <p>Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm</p>	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value



iii.

Levels Plan

Plan on following page

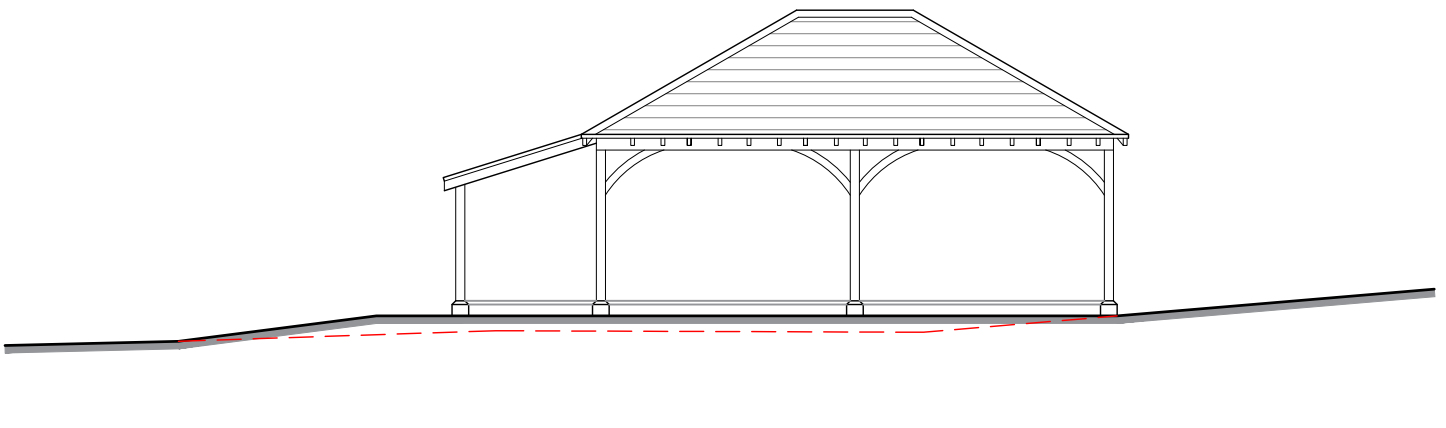
© This drawing is copyright.
 It is sent to you in confidence and must not be reproduced or disclosed to third parties without our prior permission.

Do not scale from this drawing, other than for Local Authority Planning purposes.

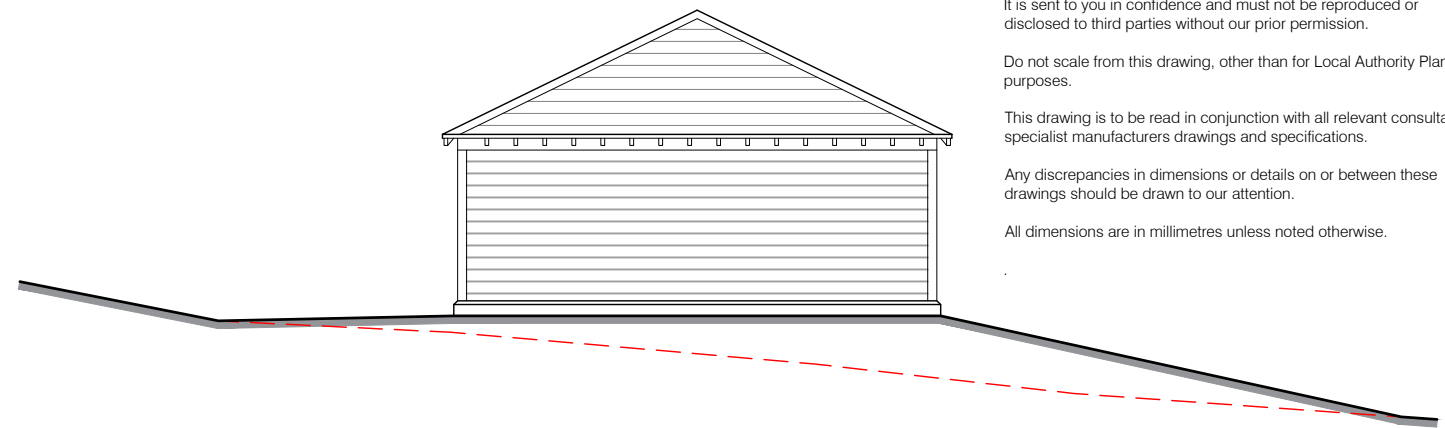
This drawing is to be read in conjunction with all relevant consultants, specialist manufacturers drawings and specifications.

Any discrepancies in dimensions or details on or between these drawings should be drawn to our attention.

All dimensions are in millimetres unless noted otherwise.

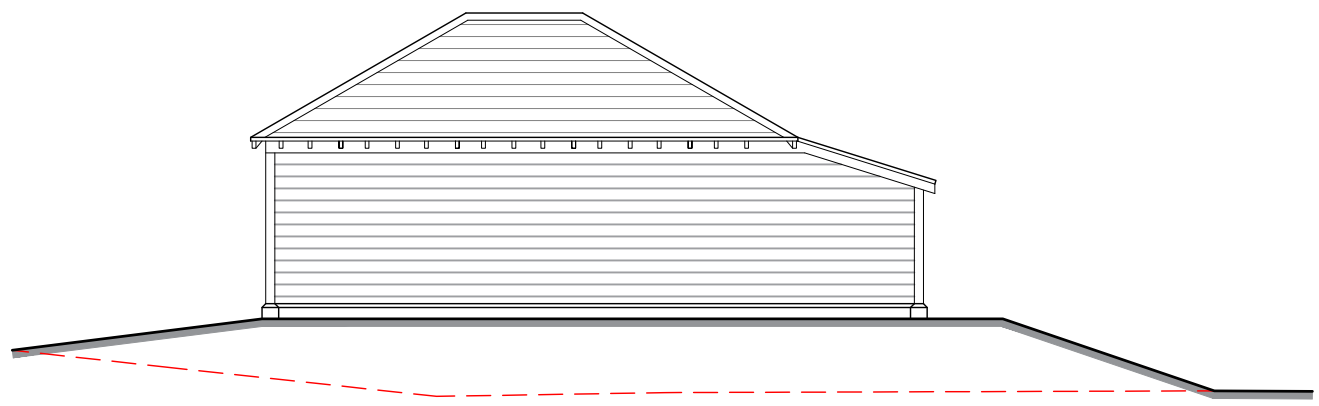


Proposed Carport and Store
 Front Elevation (North)

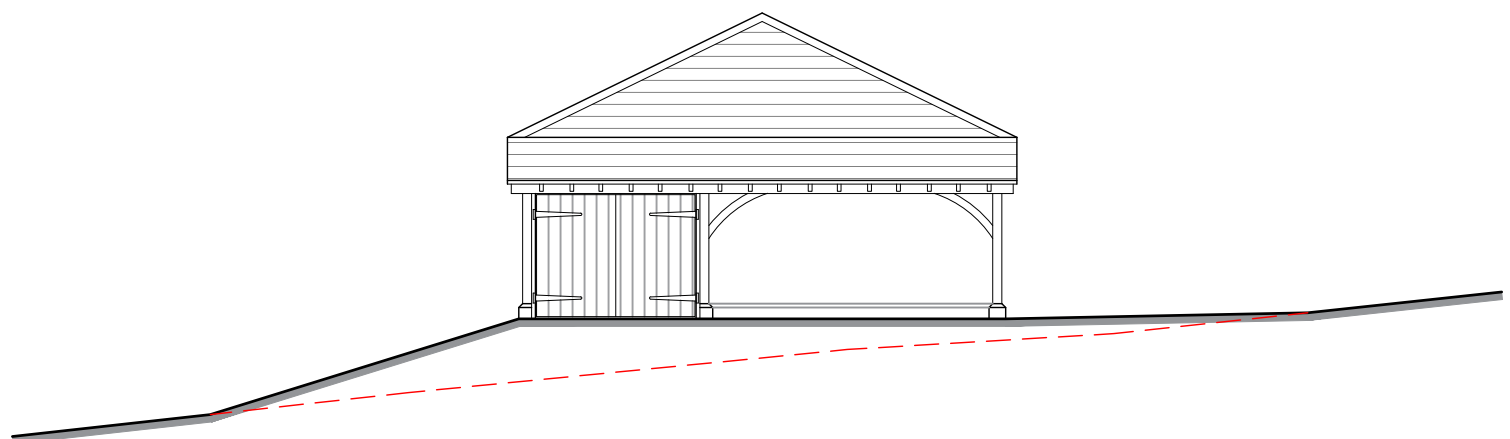


Proposed Carport and Store
 Side Elevation (West)

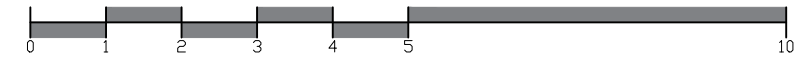
DATUM 100m



Proposed Carport and Store
 Rear Elevation (South)

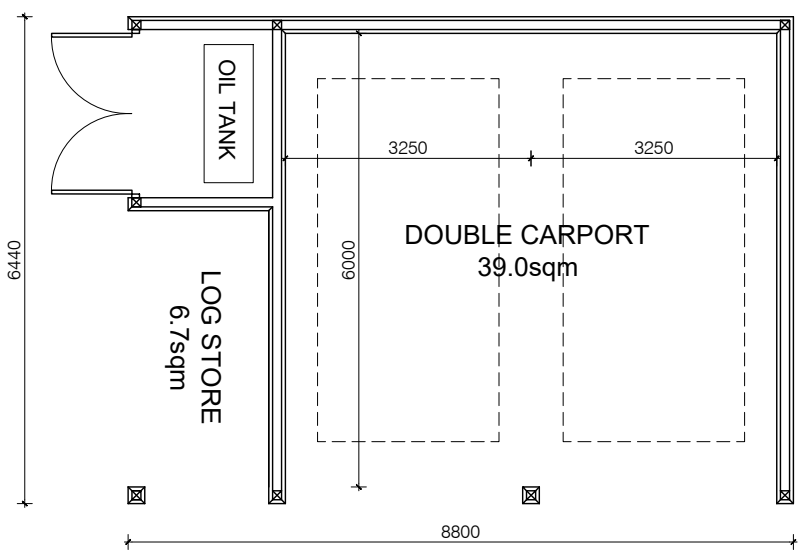


Proposed Carport and Store
 Side Elevation (East)

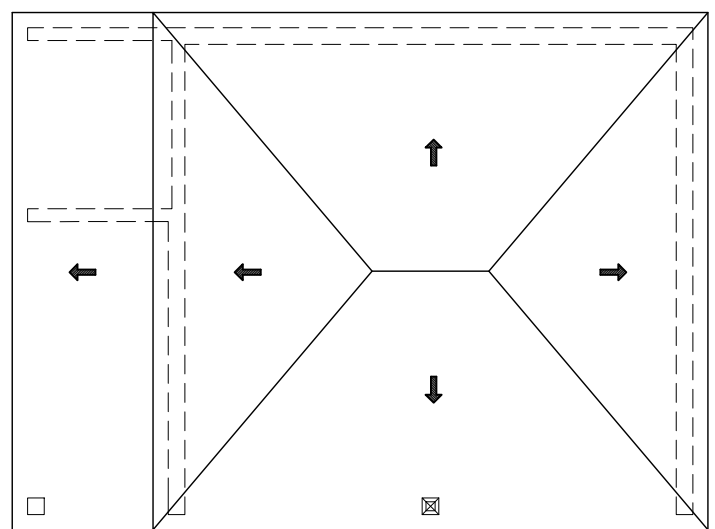


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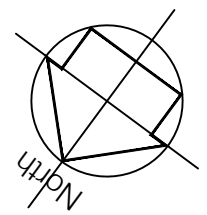
REV	DATE	DESCRIPTION	INITIAL	CHECKED
PLANNING				



Proposed Carport and Store
 Ground Floor Plan
 50.8 sqm



Proposed Carport and Store
 Roof Plan
 50.8 sqm



harding rose architects

CLIENT Mr A Sherbrooke
 PROJECT Glen Cottage, Kiln Lane, Rowledge
 TITLE Proposed Plans and Elevations

SCALE 1:100@A3	DATE <u>09.01.24</u>	P.03 A
DRAWN HB	PROJECT NO. <u>23.1115</u>	



iv.

Protection Plan

Plan on following page

BS5837 Tree Survey: Trees & Groups to be Retained

Ref	Species	Common Name	Height	Stem Diameter	Canopy NESW	Crown Clearance	Age Class	Observations	Tree Surgery	Est. Remaining Contribution	Date Surveyed	No.	BS Cat
06	Prunus avium	Wild Cherry	9m	400mm	4 N 4 E 4 S 4 W	1.5m	Mature	Becoming somewhat sparse. Limited wider landscape value.		10 Years	8/7/2021	1	C1
08	Quercus robur	Pedunculate Oak	16m	1200mm	9 N 9 E 9 S 9 W	2m	Mature	Good overall Physiological and Structural condition.		40 Years	8/7/2021	1	A1
12	Betula pendula	Silver Birch	12m	200mm; 200mm	4 N 4 E 4 S 3 W	1m	Mature	Fair overall Physiological and Structural condition. Limited long term value.		10 Years	8/7/2021	1	C1
13	Laburnum anagyroides	Common Laburnum	3m	100mm	1.5 N 1.5 E 1.5 S 1.5 W	1m	Mature	Tree of low quality and value.		10 Years	8/7/2021	1	C1
14	Salix fragilis	Crack Willow	14m	800mm	8 N 8 E 8 S 8 W	1m	Over-Mature	Group of two trees. Both partially collapsed.	Remove. Consider retaining lower stems for habitat.	0 Years	8/7/2021	2	U
15	Fagus sylvatica purpurea	Copper Beech	2m	100mm	1 N 1 E 1 S 1 W	1m	Early-Mature	Group of stems reduced to 1m. Now starting to regrow.		10 Years	8/7/2021	6	C2
16	Rhus sp.	Sumac	2.5m	100mm; 100mm; 100mm; 100mm	1 N 2.5 E 2.5 S 1 W	1m	Mature	Shrubby form		10 Years	8/7/2021	1	C1
17	Mixed species	Mixed species	6m	100mm		2m	Early-Mature	Boundary group comprising Hawthorn, plum, maple, elder.		10 Years	8/7/2021	1	C2
												Total	14

Survey by Mark Welby DipArb(RFS), TechCert(ArborA), FArbAr Arboricultural Association Registered Consultant www.mwelby.com

if denotes estimated dimension. Typically due to the tree being inaccessible. Where dimensions are not listed please refer to the plan graphics for an indicative representation (typically for groups)

Trees & Groups for Removal

Ref	Species	Common Name	Height	Stem Diameter	Canopy NESW	Crown Clearance	Age Class	Observations	Est. Remaining Contribution	Date Surveyed	No.	BS Cat	
09	Fagus sylvatica purpurea	Copper Beech	6m	200mm	3 N 3 E 3 S 3 W	1m	Semi-Mature	Young tree with the potential to develop if retained.	10 Years	8/7/2021	1	C1	
10	Taxus baccata	English Yew	8m	500mm	5 N 5 E 4 S 3 W	1m	Early-Mature	Fair overall Physiological and Structural condition. Understorey.	20 Years	8/7/2021	1	C2	
												Total	2

Construction Exclusion Zone

It is the responsibility of everyone engaged in the construction process to respect the tree protection measures and observe the necessary precautions within and adjacent to them.

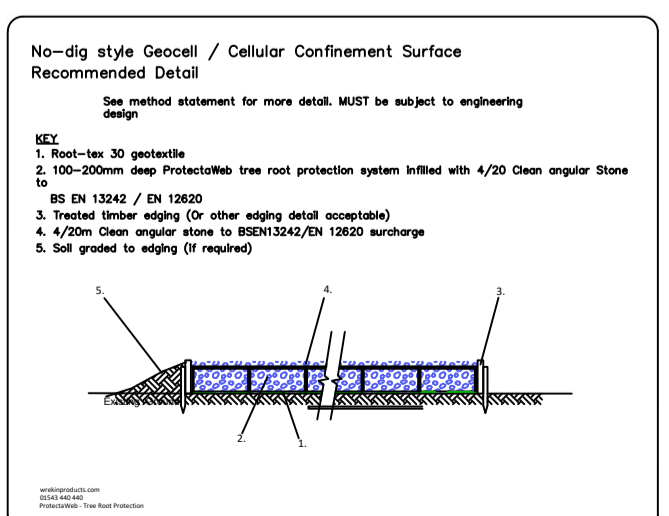
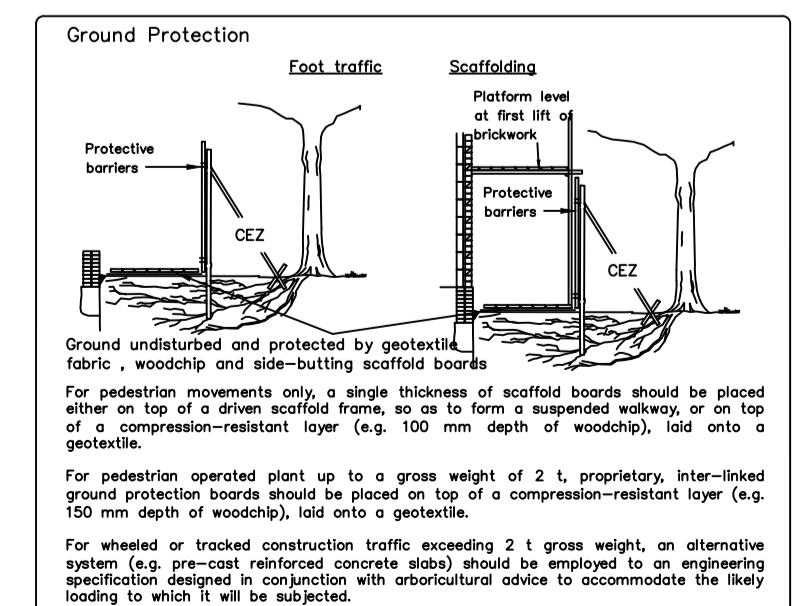
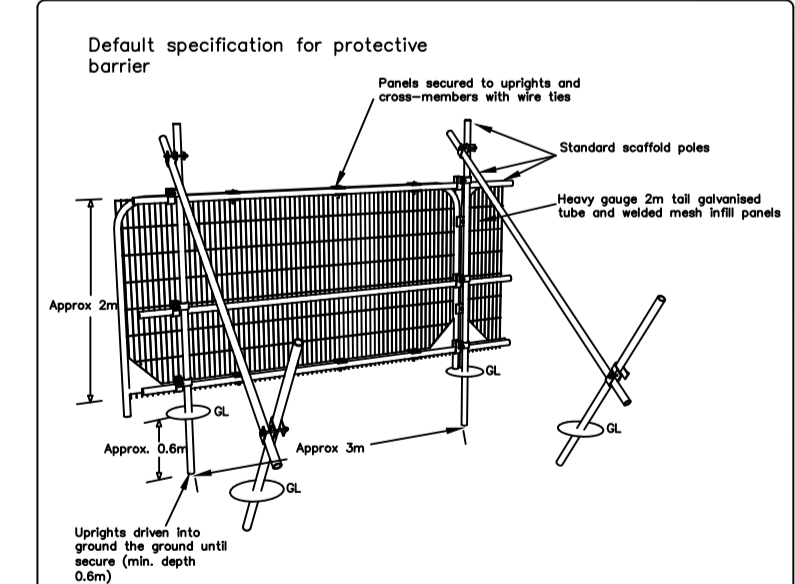
Inside the exclusion zone, the following shall apply:

- No mechanical excavation whatsoever;
- No excavation by any other means without arboricultural site supervision;
- No hand digging without a written method statement having first been approved by the project arboriculturalist;
- No lowering of levels for any purpose (except removal of grass sward using hand tools);
- No storage of plant or materials;
- No storage or handling of any chemical including cement washings;
- No vehicular access;
- No fire lighting.

In addition to the above, further precautions are necessary adjacent to trees:

- No substances injurious to tree health, including fuels, oil, bitumen, cement (including cement washings), builder's sand, concrete mixing and other chemicals shall be stored or used within or directly adjacent to the protection area of retained trees;
- No fire shall be lit such that flames come within 5m of tree foliage.

All weather signs shall be erected at reasonable intervals on the barriers. See example inset.



0 5 10m

Key

Number/category/species

Crown spread

Stem location & Category colour

Root protection area (RPA)

BS 5837:2012 Tree Quality Categories - Table 1

- Category A - High quality
- Category B - Moderate quality
- Category C - Low quality
- Category U - Unsuitable for retention

CEZ Construction Exclusion Zone (CEZ)

CEZ extent. To be protected with temporary protective barriers or ground protection to allow construction access. See insets and method statement for details.

Tree to be removed

Ground protection within RPAs. See method statement

No-dig surface to be laid above existing ground. See inset and method statement

Garage to be founded upon no-dig base constructed above existing ground level. See method statement

NOTES

This Tree Survey has been undertaken within the recommendations of British Standards 5837:2012 and current arboricultural best practice.

- The reference numbers of surveyed trees and groups of trees are shown. Stem locations within groups may be estimated, and indicative of canopy only
- The tree survey was carried out from ground level only, with the aid of binoculars as necessary, following the Visual Tree Assessment (VTA) method.
- Where trees are located on neighbouring land an estimated appraisal has been made of their quality and dimensions.
- Where stems or branches are obscured by ivy or other materials a full assessment of those parts will not be possible.
- Height dimensions are estimated and are given in metres.
- Trunk/stem diameters are measured in mm at 1.5 metres above ground level, unless otherwise stated. Where this is not possible, then Figure C1 of the British Standard is followed.
- Tree canopies, where markedly asymmetrical, were measured (or estimated by pacing) in four directions using a laser measure. Symmetrical canopies are measured in one direction only, with dimensions in the remaining directions assumed to be similar. For the canopies of groups of trees, the maximum radius for each compass point is measured (more complicated groups will have further notes taken and an accurate representation will be shown on the plan).

Base plan/site survey reference: 21-058-01.pdf

Statutory Tree Protection Tree Protection Orders: none found with online LPA search

Conservation Area: NO

Felling licence: Garden areas are exempt.

This plan has been drafted in colour. A monochrome version must not be relied upon

Date	Notes	Rev

Tree Protection

Glen Cottage, Fullers Road, Rowledge, GU10 4LB

Date: 30/01/2024 Scale: 1:200 @A1

DWG Ref: MW.21.0415.TPP

MARK WELBY CONSULTING ARBORISTS

Mark Welby DipArb(RFS), TechCert(ArborA), FArbAr Arboricultural Association Registered Consultant 01753 292 402 | mark@mwelby.com www.mwelby.com 4 Welby Lane | Hemel Hempstead, Herts | AL9 9JF

