

Arboricultural impact assessment and BS5837
survey of
38 Nichol road, Chandlers Ford, SO53 5AU

Carried out by Matthew Rowden on behalf of Peter Yeates
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3. Instruction

To assess trees on the site for any potential impact that the proposed development may have on them, and the constraints that the trees may pose on the proposals. This is in accordance with current legislation BS5837:2012, and to implement control measures and/or design alterations to the proposals where necessary.

4. Limitations

This survey is valid for 1 year, dependent on changing site conditions. I must be kept in direct supervision of the site at all times in regards to all arboricultural matters in order for the findings in this report to remain valid. I have not been presented with a services plan.

5. Site details

The site is a residential suburban property located off Nichol road in Chandlers Ford.

6. Legal restrictions

The site is covered by woodland TPO ref: 58H, covering all species. There is also a blanket TPO (ref: 244:E), covering a red oak (not present or misidentified), a sweet chestnut (not present or misidentified), a handkerchief tree (present), and a snake bark maple (not present or misidentified).

7. Proposals

The proposal is to demolish the bungalow and the garage on the property and erect a new structure that will be a single storey property with a loft bedroom area. The garage will be replaced with another garage. The footprint of the building will be extended 1-2m South and 2m East, with the old footings being removed, and new footings installed for the structures.

New driveway access is to be installed, with space for three car parking spaces to the West aspect of the structure.

8. Drawings and documents

The client has provided detailed drawings and documents for the purposes of this assessment. For ease of identification, the trees relevant to this report have been numbered as T1- T14 and grouped where applicable. They have been plotted on a tree protection plan obtained from Tony Blunn Architects Ltd to show how and where protection measures must be implemented.

9. Summary

The trees on the site present moderate constraints on the proposals. Tree protective fencing will be required, as will minimal invasive footings, and a no dig solution for the driveway access. The trees that have been recommended to be felled do not necessarily pose an issue with the proposals: rather, they are lower value specimens that are likely to have lost all amenity value within 5 years in conjunction with the build.

10. Findings (please see appendices 2 & 3 for specific details)

A. Identification of the constraints posed by the trees to developing the site under the current proposal.

T1, 2 and 6

- i. The proposed driveway access passes between the RPAs of trees 1 and 2, and the new footings will impinge on the RPAs of these trees.

Trees 3, 4, G5:

- ii. These trees occupy the footprint of the proposals and are incompatible with the build.

TG9, TG13:

- iii. The footprint of these trees blocks access for the demolition of the garage and they are low value specimens that can be transplanted if necessary.

T7, 8, 10, 11, 12, 14

- iv. No constraints posed.

B. Potential impacts of the proposal on the trees**T3, 4, G5, G9, G13**

- i. These trees will be felled.
- ii. These trees are poor specimens with a the potential to shade and block the gutters of the newly erected structures at maturity: the site can be greatly improved by felling them and replacing them with more appropriate specimens further away from the structures and driveway.

T1, T2, T6

- iii. Excavation would be necessary to install the driveway and footings in a conventional manner within the RPAs of these trees.
- iv. Severing the small fibrous roots throughout the top 600mm of soil will cause root death, loss of nutrient uptake, stress, and if enough of the functional root mass is killed, the trees may die.
- v. The rooting area of these trees is likely to be in the top 600mm of soil and very susceptible to compaction from vehicular movements. This can result in root death, loss of oxygen in the soil, reduced moisture percolation and diminished nutrient uptake, leading to stress and eventual strain.
- vi. Excavating up to over 1m deep and installing the hard standing or footings conventionally is unacceptable in this instance. Instead, ground protection and “no-dig” solutions must be utilised.

All remaining trees:

- vii. No impacts.

C. Potential impacts of trees on the current proposals

Trees 3, 4, G5, G9, G13:

- i. The impact is the loss of amenity of these trees to the site. Trees G5 and G9 could be transplanted so that their amenity isn't entirely lost from the site.

T1, T2, T6

- ii. These trees necessitate the installation of the driveway using a cellular confinement system that will be "no dig", and the footings for the main structure must be installed using a non invasive method, such as pile and beam foundations, ground screws or Grundomat® hand driven piles.

All remaining trees:

- iii. Tree protective fencing will be required to protect the trees on the site.

11. Conclusion

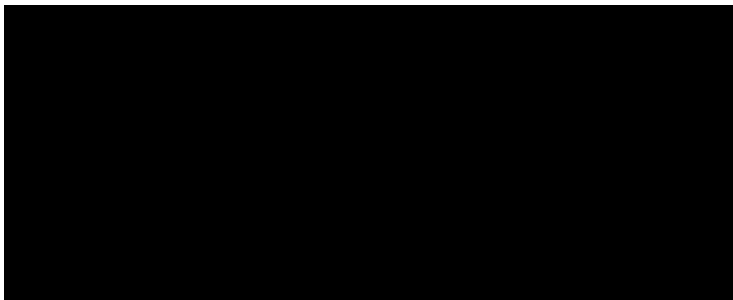
The constraints presented by the trees on the site are not insignificant. Spoil disposal and demolition is to be to the South aspect of the site using the existing pedestrian access, with zero impacts posed there. The issues for the arboricultural method statement to address are:

- i. Tree protective fencing, erection and signage.
- ii. Pile and beam, Grundomat® or ground screw footings.
- iii. Geo cellular membrane installation for the driveway.

12. Recommendations:

Follow the AMS (appendix 3 below). Do not deviate and seek arboricultural advice whenever necessary.

- i. Fell or transplant trees 3, 4, G5, G9, G13
- ii. Erect tree protective fencing.
- iii. Install driveway access following method statement.
- iv. Commence and fully complete build using the AMS for the footings.



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07/05/2024

13. References

- a. BS5837:2012 - Trees in relation to design, demolition and construction
- b. TDAG 2014
- c. Cutler & Richardson 1981, Kew root survey.

Appendix 1 - Tree protection plan (in DWG and PDF format)

Appendix 2 - Tree survey schedule

Appendix 3 - Arboricultural method statement.

Appendix 3

Arboricultural Method Statement for 38 Nichol road, Chandlers Ford, SO53 5AU

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1. Responsibilities

It is the responsibility of the site manager to respect the tree protection measures and observe the necessary precautions within and adjacent to them. Bonafide sub-contractors must be inducted by the site manager and the tree protection measures explained and enacted to the letter of this method statement.

As the arboriculturist appointed for this site, I must be present onsite prior to work commencing to ensure that my protection measures have been followed. I must be attend site whenever there are arboriculturally sensitive activities occurring, and must send regular supervision reports to Eastleigh LPA with site meetings arranged if the planning officer or handling team so wish.

In this instance, I believe that I will need to visit site to check the installation of the tree protective fencing, driveway, footings, and then final sign off.

2. COSHH

- a. A cement mixing area will be sited away from the CEZ and if necessary a protective bund installed to prevent contaminated washings or rainwater draining into the CEZ.
- b. These will be positioned on the existing hard standing where marked on the TPP.
- c. Fuels or any other chemicals must be stored outside of the construction exclusion zone (CEZ) on the road.

3. Contractor parking and site office

- a. Contractor parking will be on Nichol road and Woodlands close. No revisions to the highway for construction traffic will be necessary at this time.
- b. No site office necessary.

4. Restrictions within Construction exclusion zone

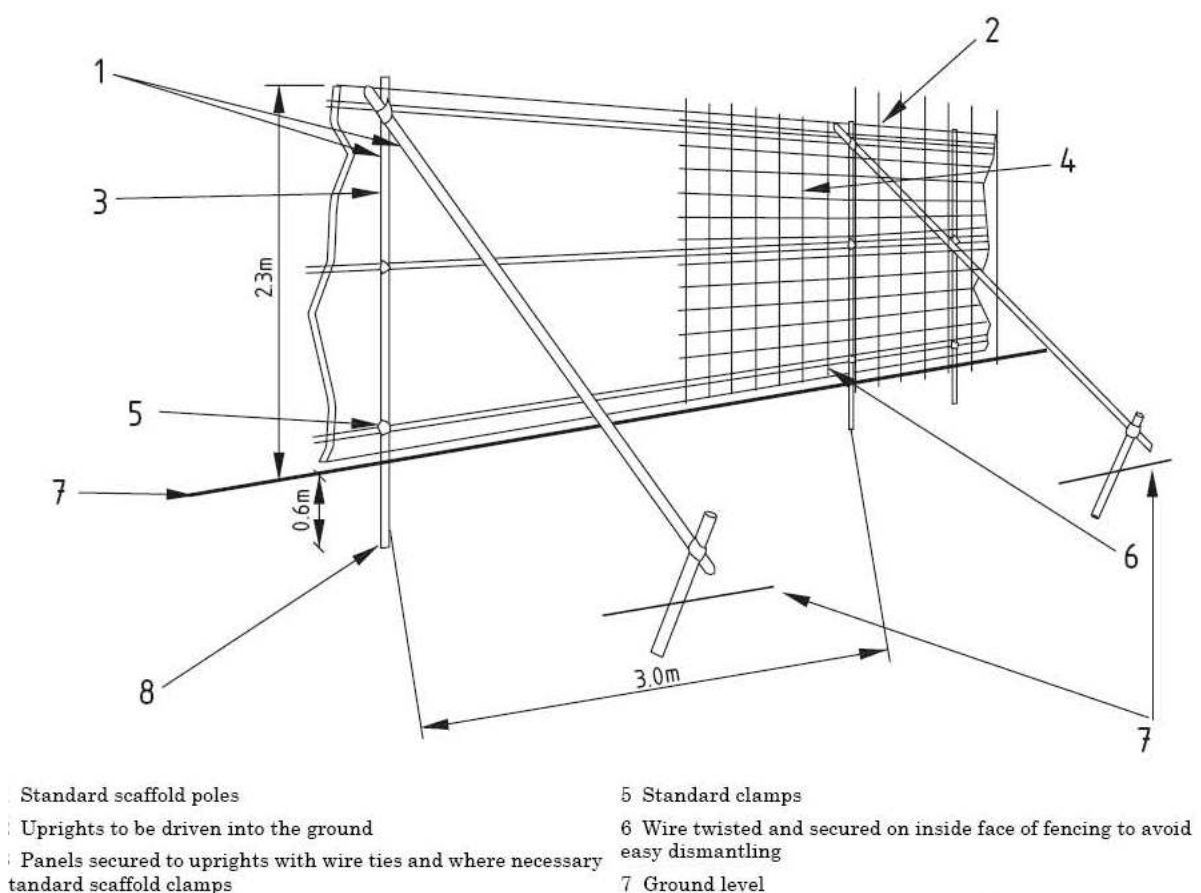
Inside the exclusion area of the CEZ, the following shall apply:

- a. No excavation by any means without arboricultural site supervision.
- b. No hand digging without a written method statement having first been approved by the developer's arboriculturist.
- c. No storage of plant or materials.
- d. No storage or handling of any chemicals.
- e. No vehicular access.
- f. No development activity.

5. Tree Protection Fencing

- a. The Tree Protection Plan (TPP) shows the position of the Tree Protection Fencing (TPF) that encircles the entire building area where the structures are to be built. Vertical banners must be erected and ground protection installed before any materials or machinery are brought onto site and before any demolition, development or stripping of soil commences.

- b. Once erected, barriers and ground protection will be regarded as sacrosanct, and will not be removed or altered without prior agreement of an arboriculturist and approval of the local planning authority.
- c. Barriers must be fit for the purpose of excluding constructive activity, and appropriate to the degree and proximity of work taking place around the retained tree. Attention must be paid to ensuring that barriers remain rigid and complete.
- d. Barriers will consist of a scaffold framework in accordance with Fig.1, comprising a vertical and horizontal framework, well braced to resist impacts, with vertical tubes spaced at a maximum interval of 3m. Onto this, weld mesh panels must be securely fixed with wire or scaffold clamps.
- e. Weld mesh panels on rubber or concrete feet are not resistant to impact and must not be used.
- f. The tree protective fencing must be erected prior to commencing any work on the site, and must remain in situ for the entire duration of the development, until all final work has been completed and the site has been signed off by the site arboriculturist.
- g. All weather notices must be fixed to the barriers with the words: 'Construction exclusion zone - Keep out' or similar (see above image).
- h. It is vital that these protection measures are in place before any construction work happens.



6. Driveway installation

- a. Tree roots are very shallow, the majority occupying the top 600mm deep layer of soil. With this in mind, the driveway cannot be laid in the traditional fashion of excavating to >500mm and compacting hardcore prior to applying the top surface. Instead, the following control measures must be implemented to ensure the trees are not constrained by the proposal and extensive root damage doesn't occur:
- b. The proposed area of excavation is for industrial machinery (up to a 3.5 ton excavator [a 100mm layer of cell web will only permit loading of 3.5 tons which may constrain the build]).
- c. This is a "no dig" solution, so there is no need to remove any top soil. Scrape off the top layer of turf and debris using hand tools.
- d. Install Treetex geotextile membrane up to the boundaries of the proposed access route and to act as a pollution barrier and a separation layer.
- e. Install a 60mm layer of clean angular stone (type 4/20mm) as a sub base, to level the area where possible. Often sand is used to level out hollows.
- f. Install 150mm layer of Cellweb® TRP up to the edges of the proposed extension area and working area, banking up the sides of the separation membrane with angular stone. Infill the TRP with clean angular stone, size 4/20mm. Commence roll out within the RPA as a no dig solution, as ground level can be adjusted more flexibly outside of the RPA.
- g. Overfill by 25mm with clean angular stone, size 4/20mm.

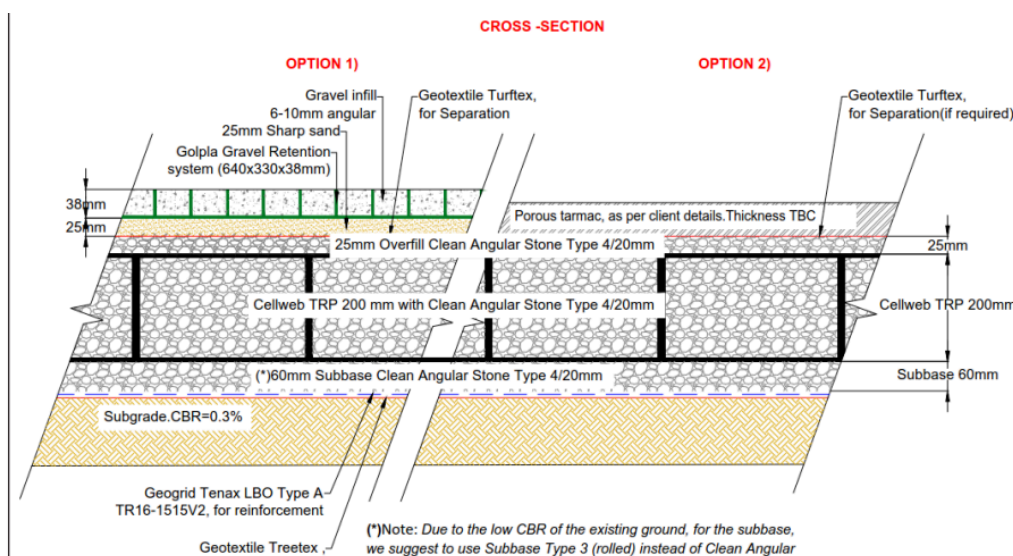


Fig.1

7. Foundations are normally constructed by excavating up to a 3m deep trench with infill of ballast, sharp sand and concrete. Due to the aforementioned rooting area of trees in the top 600mm of soil, this is not permissible, so alternatives must be used instead using this MS:

Ground screw foundations

- a. The ground screws are to be installed with an excavator mounted auger, drilling a 40mm hole to a depth of up to 2m.
- b. The screws must then be wound in using the excavator, to create a hole of 100mm diameter.
- c. The 200mm flange at the top of the screws may then be attached to a U bolt to allow the remainder of the steel frame to be reacted on top of the screws as a floating raft. From here, the brickwork may then be built up.
- d. Install 100mm layer of woodchip, and spreader boards to adequately distribute pedestrian loads.
- e. Within this protected area, highlight the areas where the piles need to go, referring to the architects plans, and remove the ground protection in these areas, retaining it as a work area surrounding the future pile holes.
- f. Bore the holes using an auger, ensuring that the plant used does not exceed the load limit of the ground protection (1 ton).
- g. Remove the subsequent spoil.
- h. Install ground screws, raising the property level so that the top of the piles is higher than the original ground level, and leaves an air gap of >200mm.
- i. Install beams across the top of the screws, at which point the construction of the super-structure may continue.
- j. Raise the ground level on the exterior of the super structure with 200mm of sharp angular stone, size 4/20mm.

Pile and beam foundations

- k. Install a 60mm layer of clean angular stone (type 4/20mm) as a sub base.
- l. Install 100mm layer of Cellweb® TRP (geo-textile membrane), infilled with clean angular stone, size 4/20mm.
- m. Within this protected area, highlight the areas where the piles need to go, referring to the architects plans, and remove the ground protection in these areas, retaining it as a work area surrounding the future pile holes.
- n. Bore the holes using an auger, ensuring that the plant used does not exceed the load limit of the ground protection (3.5 tons).
- o. Remove the subsequent spoil.
- p. Install membranes in the resultant pile holes to prevent concrete run off along the rest of the tree rooting area.
- q. Install piles, raising the property level so that the top of the piles is higher than the original ground level, and leaves an air gap of >200mm.
- r. Install beams across the top of the piles, at which point the construction of the super-structure may continue.
- s. Raise the ground level on the exterior of the super structure with 200mm of sharp angular stone, size 4/20mm.