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**29, ELM GROVE, BARNHAM, WEST SUSSEX**

**TREE SURVEY, ARBORICULTURAL IMPACT ASSESSMENT AND  
TREE CONSTRAINTS PLAN  
FOR  
HOUSE EXTENSION**

**On behalf of  
MR & MRS McMANUS**

**September 2018**

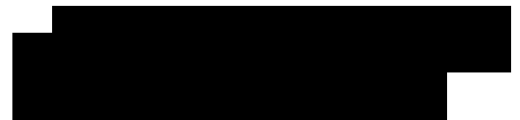
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**REF: 18.803**

**REV:**



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# APPOINTMENT

WH Landscape Consultancy Ltd (**WH**Landscape) has been appointed by Mr & Mrs McManus to conduct a Tree Survey and prepare an Arboricultural Impact Assessment and Tree Constraints Plan to support a planning application for the extension of their residential property at 29 Elm Grove, Barham , West Sussex, PO22 0HL.

**WH**Landscape has an established track record of carrying out Tree Surveys for development proposals using British Standard (BS) 5837:2012 *Trees in Relation to Design, Demolition and Construction – Recommendations*.

**This report has been prepared by:** Seb Macleod NC Hort/Arb. L6 Dip Arb. (Lantra Professional Tree Inspection)

**Checked by:** Will Harley BSc (Hons) CMLI

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# 1. INTRODUCTION

**1.1.** WHLandscape has been instructed by Mr & Mrs McManus to conduct a Tree Condition Survey, Arboricultural Impact Assessment and provide a Tree Constraints Plan (TCP) to support the planning proposal to develop their residential property. The survey is to outline any constraints the trees on site pose to the development process, measures required to protect those trees on site if they are to be retained and to put forward any management recommendations deemed necessary for those trees assessed including the removal of those trees considered as unworthy of retention. The report conforms to the guidance set out in BS 5837:2012 *Trees in Relation to Design, Demolition and Construction – Recommendations*.

**1.2** This initial arboricultural report will include a survey of the significant trees (those with stem diameter 150mm> measured at 1.5m above ground level), hedges, shrubs or groups of trees currently found on the site (outlined by the plan provided), as well as those on adjacent land that could impact on any proposed development. The quality and condition of these trees is to be assessed and categorised. Any management recommendations deemed necessary are to be put forward.

**1.3** The trees surveyed are to be categorised A, B or C for those to be considered for retention, or U for those unsuitable for retention. Further sub-categories of 1, 2 or 3 are given for those to be considered for retention, see Cascade chart for tree quality assessment in Fig.2 Table 1. Categorisation will be made in accordance with BS5837:2012 *Trees in relation to design, demolition and construction- Recommendations*.

**1.4** A Tree Constraints Plan (TCP), guided by the above and below ground constraints that the surveyed trees on site or adjacent land may pose to the development proposal, is to be provided. The constraints to be considered will include the Root Protection Areas (RPA) and Construction Exclusion Zones (CEZ) that trees will require during and post construction and the current ground clearance and spread that may affect the design proposal and construction access.

**1.5** The report is to include an Arboricultural Impact Assessment (AIA) to outline and mitigate the potentially adverse tree related impacts any design proposal poses and to support a planning application for the proposed development.

**1.6** The area of land to be assessed consists of a residential property and garden and with gravel driveway that is accessed by the adjacent highway, Elm Grove. The front of the north facing property mostly consists of a compacted gravel drive bordered by maintained privet hedge. Between the hedge and the front of the property and the highway is a 2m wide strip of maintained grass on which stands a small apple tree. The privet hedge extends along the western boundary into the rear garden which comprises grass bordered by shrubs, with a small bay tree and apple tree adjacent to the rear of the house.

**1.7** The design proposal is to extend the south-west corner of the current structure extending the footprint of the site as shown in the site plan (REF: 590-103) provided by James Wells Architects dated July 18.

**1.8** A site visit was undertaken on the 6<sup>th</sup> September 2018 by Seb Macleod in sunny conditions.

## **2. CONSTRAINTS TO PROPOSED DEVELOPMENT**

**2.1.1.** The trees surveyed on the site, and on adjacent land, represent above and below ground constraints to development. Above ground constraints include the size and nature of the branching canopy that can influence where structures/utilities can be placed, or that present a barrier to access during or after construction. Shade cast by individual trees can be beneficial or a nuisance and needs to be considered in the design brief, as well as the potential ultimate height and spread of any younger trees on site and the future impacts they may have. Below ground constraints are principally concerned with the Root Protection Area (RPA), or the rooting area, of an individual tree that must be maintained in its current condition (i.e. not excavated, compacted or re-graded) in order to ensure the physiological functioning of the tree during and after development. Roots that are 25mm or over must not be damaged, to ensure the future structural and physiological function of the tree. It is the default position that new buildings are not positioned within the RPA, or ground disturbed, materials stored, or vehicle/pedestrian traffic allowed. It is also the default position that construction access must be outside the RPA of any tree to be retained on site. Above and below ground constraints can be mitigated by felling, or pruning, if justified in the impact assessment. Incursion of works into the RPA of a tree to be retained can be facilitated by special construction techniques, if justified in the impact assessment.

**2.1.2** The RPAs are calculated as per Section 4.6 of BS 5837:2012 and, where applicable, are recorded as an area of a nominal circle or a radius of that circle. The British Standard states the following:

- For single-stem trees, the RPA is calculated as an area equivalent to a circle with a radius 12 times the stem diameter.
- For trees with more than one stem, one of two calculation methods is to be used:
- For trees with two to five stems:

$$\sqrt{(stem\ diameter\ 1)^2 + (stem\ diameter\ 2)^2 \dots + (stem\ diameter\ 5)^2}$$

- For trees with more than five stems:

$$\sqrt{(mean\ stem\ diameter\ 1)^2 \times number\ of\ stems}$$

**2.1.3** In all cases, the stem diameters are measured in accordance with Annex C, and the RPA is determined from Annex D of BS 5837:2012. The RPA is capped at 707.0 metres squared (m<sup>2</sup>) or a 15m radius.

**2.1.4** Where trees are positioned close to adjacent areas of hard standing ground that is impervious to air and water where tree roots are unlikely to ingress then the RPA may be off set from the centre of the tree to reflect the areas where the roots are more likely to have established.

**2.1.5** RPAs for hedges will normally be set at a distance from the central base of the hedge calculated as half its average height.

## **2.2 OTHER CONSTRAINTS**

**2.2.1** The above ground area occupied by the crown of a tree, allowances for working space during development, the area of potential shade and debris cast by the tree and, if applicable, allowances for future growth of the trees, all pose potential constraints on the site. The extent of these constraints is determined by considering the suitability of the species and its characteristics, and the existing and future crown spread of the tree. A further consideration is that the crown could be modified by appropriate tree surgery. Site planning and development design will therefore give consideration to these issues in order to prevent future problems arising.

**2.2.2** Any remedial works on trees to improve safety or to facilitate construction must be undertaken in accordance with BS3998:2010 British Standard *Tree Work- Recommendations*. Work must be undertaken by qualified and experienced professionals.

**2.2.3** All services should be directed outside the retained trees' RPAs. However, where it is agreed that services can be located within an RPA, they must be hand-dug in accordance with the principles contained with National Joint Utilities Group (NJUG) Guidelines Vol. 4 in a position no closer than 4 times the stem circumference of the tree down to the required level. Small diameter roots should be neatly cut with clean secateurs, whilst roots over 25 millimetres (mm) in diameter and/or large root masses must be retained undamaged. Alternatively, if underground services are to run through the RPAs of trees to be retained specialist construction techniques, such as impact moling, could be employed to install any pipework at a depth greater than 60cm from ground level, where tree roots are unlikely to be found.

**2.2.4** No unplanned construction activity whatsoever must be allowed within the RPAs of trees to be retained. This includes storage of materials, unplanned routing of underground services or incursions by vehicles or site operatives unless specified by specialist protection measures.

**2.2.5** Mixing of cement, concrete, or the storage of fuels must not take place within 10.0m of the retained trees, nor in any location where a slope in the ground could lead to contamination of the RPA of any tree to be retained.

**2.2.6** Fires must not be lit in a position where flames could extend to within 10.0m of the foliage, branch framework or trunk of any tree to be retained.

**2.2.7** Landscape works undertaken within the RPAs must be done so as not to damage shallow roots and are to be agreed by the arboricultural consultant. Heavy mechanical cultivation of the soil must not be undertaken within the RPAs of trees to be retained.

**2.2.8** Changes in soil level should not be undertaken within the RPAs, unless otherwise agreed in writing with the Local Planning Authority (LPA), in order to ensure that the rooting system, including the delicate non-woody roots, are not inadvertently severed or the roots and rooting zone are not compromised by compaction.

**2.2.9** All soil storage must be outside the RPAs of all retained trees to ensure that any run-off of water or residue does not seep into their RPAs.

## **2.3 TREE PROTECTION MEASURES**

**2.3.1** Tree protection fencing directly around the retained trees RPAs will be required to form Construction Exclusion Zones (CEZ) to prevent construction activity within the RPAs of trees to be retained or to protect the crowns of trees to be retained. They must be constructed from weldmesh panels of at least a 2.0m height and securely fixed with wire or scaffold clamps fixed to a ridged framework. This framework must be constructed from horizontal and vertical scaffold tubes during the construction period in accordance with the requirements of BS 5837:2012 *Trees in Relation to Design, Demolition and Construction-Recommendations*. Examples of the design specification are shown in Fig 1.

**2.3.2** Where tree protection fencing falls outside the RPAs of the retained trees, robust high visibility plastic mesh barrier is recommended in place of the above-mentioned fencing; this will create a visual deterrent and signify the extents of the CEZ.

**2.3.3** The location of CEZ fencing will be determined when the final site layout is agreed. This will provide the minimum protection of the retained trees. Any surfacing within the RPA be it temporary or permanent, must be of a no-dig design in accordance with the principles of BS5837:2012 *Trees in relation to design, demolition and construction- Recommendations*.

**2.3.4** After the erection of the CEZ fencing, a minimum of 2 days' notice must be given to the LPA before any construction, including any ground work, starts on site. The CEZ fencing must be maintained and retained for the duration of the works or until such time as agreed in writing with the LPA.

**2.3.5** Services and drain runs must be kept outside the fenced RPA of the retained trees unless agreed in advance of construction.

## **2.4. ARBORICULTURAL SUPERVISION**

**2.4.1** A suitably qualified arboriculturist must be retained during the development period to carry out the following:

- To inspect tree protection fencing once erected prior to construction or ground works starting on site.
- To advise of any issues at the request of the LPA, the property owner or contractor as necessary.

**2.4.2** The details of each visit are to be recorded in a site visit pro-forma, with copies circulated to the contractor, developer and the LPA Tree Officer.

### 3. TREE SURVEY

**3.1.1** This tree survey has been undertaken in accordance with BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations* in order to establish and record:

- The principle attributes of those trees on site of stem diameter over 150mm measured at 1.5m from ground level (such as, height, stem diameter, height of first branch break, crown spread, crown clearance).
- The Condition, Quality and Value of the trees on site.
- The retention value of those trees as categorised by BS5837:2012.
- The outline and range of Root Protection Areas (RPA) required for those trees to be retained on site and any other remedial works necessary to ensure a reasonable level of safety or to facilitate the development in accordance with conditions set out in BS5837:2012.

**3.1.2** The findings of the survey highlight which trees are of particular merit and should be marked as a material constraint in the planning process.

**3.1.3** The suitability of trees for inclusion in the proposed development is considered. Particular regard was given to their safe, useful life expectancy, and suitability in the site after development is completed.

**3.1.4** The Tree Survey was undertaken in accordance with Section 4 of BS 5837:2012, which grades trees into the following categories:

- A – Trees of high quality with an estimated remaining life expectancy of at least 40 years.
- B – Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.

- C – Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.
- U – Trees in such a condition that they cannot be realistically retained due to poor condition

Further subcategories are given as follows:

- Mainly arboricultural qualities (1).
- Mainly landscape qualities (2).
- Mainly cultural values, including conservation (3).

See Fig. 1 Table 1 Cascade chart for Tree Quality assessment

**3.1.5** The soil type is not assessed as shrinkable clay and the potential for indirect damage from trees on buildings or infrastructure by ground shrinkage or heave is not a constraint to be considered.

## **3.2 SURVEY LIMITATIONS**

**3.2.1** This survey was assessed from ground level using visual assessment techniques only. Physical assessment of suspected decay is limited to probing with metal rods or sounding with a hammer. No specialist decay equipment or internal investigation tools have been employed during the assessment. No soil samples have been taken in the course of this assessment.

**3.2.2** The observations and recommendations presented are based on the knowledge, qualifications and experience of the surveyor only.

**3.2.3** All dimensions are measured as far as reasonably practicable, with the plotting of tree locations dependent on the topological survey provided, or the available satellite coverage at the time of inspection. Stem diameter may have to be estimated if trees are on third party land, stems are inaccessible due to obstructions by undergrowth or estimated from best measurements available if the tree is ivy clad. The survey methodology follows that prescribed in BS 5837:2012 *Trees in Relation to Design, Demolition and Construction –Recommendations*.

**3.2.4** Trees are dynamic evolving organisms subject to a range of external influencing factors (particularly the weather) the consequences of which may not always be foreseeable under the scope of this survey.

**3.2.5** This survey will be valid for 12 months from the date of inspection and may become invalid in that period if any works are undertaken on or near to trees assessed in the survey. Such works include un-prescribed tree surgery, soil level changes, trenching etc.

**3.2.6** Under the terms of the Wildlife and Countryside Act 1981 (as amended), the Countryside Rights of Way Act 2000 and the Conservation of Habitats and Species Regulations 2010, it is an offence to disturb any protected species, including their habitat or resting place. It may, therefore, be necessary to obtain expert advice in this area prior to the commencement of any works. This is particularly relevant to nesting birds, bats and their roosts. Contractors must be reminded of their responsibilities and should contact the relevant authorities if any signs of bats are found. The nesting season for most birds runs from 1<sup>st</sup> March to 31<sup>st</sup> July. However, this can vary depending on the species and location. During these months, careful inspection must be made before any work commences and works must be postponed if active nests are found.

## **4. TREE SURVEY FINDINGS/RECOMMENDATIONS**

**4.1** Altogether 3 trees, 1 shrub and 4 hedgerows were included in the survey schedule. Some small trees and shrubs located in the rear of the garden were not included in the schedule as they are remote from the area to be developed and do not pose any constraint to it or they are too small included by the survey terms outlined in section 3.1.1.

**4.2** The trees included in the survey schedule are comprised of two small apple trees (T3 and T4), one in the rear garden and one on the highway verge. The small bay tree (T1) is close to the house and area to be developed. The small flowering current (T2) is located directly adjacent to the bay but on the opposite side to the area to be developed; it is marginal as to whether this tree needed to be included in the schedule. Of the privet hedges H2 and H3 are the most critical as they directly adjacent to the area to be developed.

**4.3** The trees and hedgerows were assessed as principally B or C grade retention category. No trees were assessed as A grade or U (unsuitable for retention).

**4.4** The site does not have any Tree Preservation Orders (TPO) relating to any trees on it, nor is it in a conservation area.

**4.5** The bay tree T1 is a small early mature example of the species, with an open upper crown and a lower crown which has been trimmed as a hedge, in order to maintain access on the paved area below between the base of the stems and the rear of the building. It stands within 2-3m of the area to be developed and could pose a constraint to the construction process. It is essentially a small, immature, non-native tree and a proposal to remove it would not represent any significant loss of arboricultural or amenity value to the site. However, it is understood that the paved area below is not to be disturbed during construction and is to be retained. Therefore the root system is unlikely to be disturbed by construction activity and will be protected by the paved area below facilitating the retention of this tree without any constraints to the proposal or its development.

**4.6** The flowering current T2 stands removed from the area to be developed on the opposite side of the bay tree T2. This shrub does not pose any constraint to the design proposal or the construction process.

**4.7** The privet hedge H2 and H3 border the area to be developed in the rear garden and H3 extends along the north-western boundary to meet with the highway in the northern corner of the site. A significant section of the face of the hedge H3 over the driveway area has died back in one localised area. While this could be the result of pest or disease, it is my suspicion that the previous occupier of the property (Mr and Mrs McManus have recently moved in) may have had a campervan or caravan parked for extended periods close to the hedge, causing deep shade and dieback. It is likely that with time the hedge will recover live growth.

**4.8** Both H2 and H3 stand within close proximity to the area to be developed and both potentially pose a constraint to the development if they are to be retained. However, as with T1, a paved area runs at the base of these hedges and it is understood that this paved area is to be retained undisturbed during construction. Therefore, the root system is unlikely to be disturbed by construction activity and will be protected by the paved area, allowing the retention of these hedges without any constraints to the proposal or its construction.

**4.9** The apple T3 is maintained at approximately 6m. It is located near the patio area on the opposite side of the garden to the area to be developed. It is therefore unlikely that this tree would pose any constraint to the proposed development or the construction process.

**4.10** The apple T4 and privet hedge H4 are located on the front boundary and are removed from the area to be developed. Providing there is no intention to dig any service runs in the driveway area, within proximity to the tree and hedge, then they pose no constraint to the proposed development or the construction process.

## 5. TREE SURVEY CONCLUSION

**5.1** The trees and hedges included in the schedule are largely of low quality from an arboricultural or amenity value point of view and do not pose any significant constraint to the design proposal or the construction process.

**5.2** Providing the paved areas at the base of T1, H2 and H3 is retained through the construction process, it is considered that the erection of a CEZ fencing during construction would not be necessary in this case.

**5.3** Due to the removed location of trees and hedges T2, T3, T4, H1 and H4 from the area to be developed, it is considered unnecessary to erect CEZ fencing during the construction process.

**5.4** Due to the low quality of the tree and hedges within close proximity to the design proposal and the retention of the paved area below, the provision of an Arboricultural Method Statement (AMS) to guide the protection of trees during the construction process is not necessary in this case.

## 6. ARBORICULTURAL IMPACT ASSESSMENT

**6.1** The calculated Root Protection Area (RPA) of trees that are marked for retention are highly sensitive. The ground within the RPA can be easily damaged by construction activity with potentially negative impacts for those trees concerned. The severance of roots within the RPA of a tree to be retained has the impact of reducing its physiological function in terms of its ability to store energy, as well as draw water and nutrients from the soil, to the effect that severe dysfunction or death of the tree can result. The removal of larger roots within the RPA can have the impact of reducing the structural integrity of the tree leaving it exposed to failure during adverse weather conditions. The wounding resulting from the severance of roots can offer tree pathogens entry points of infection which can cause dysfunction, loss of structural integrity or death. Roots require access to oxygen and water in order to respire, as well as provide the rest of the tree with water and nutrients. Compaction of the soil will reduce this function to the effect that severe dysfunction or premature death of the tree can result. Installation of a non-porous hard-standing area within the RPA of a tree will have the same impact as compaction of the soil. Contamination of the soil from substances such as cement, fuel or other chemical can have severe negative impacts on the physiological function of the root system in terms of its ability to store energy, as well as draw water and nutrients from the soil. This can lead to physiological dysfunction, loss of structural integrity or premature death of the tree.

**6.2** The stems and branching structure of trees are important to their physiological and structural function. The pruning of trees has the impact of reducing the ability of a tree to store energy and photosynthesise. This can lead to a loss of physiological function, expose the tree to pathogens and lead to decline or premature death. The wounding resulting from the removal of branches can offer tree pathogens entry points of infection. A tree can be unbalanced by excessive pruning on one side, which can leave it exposed to new stresses and lead to failure during adverse weather (the removal of adjacent trees can have the same effect). The inadvertent damage of the stem and branching structure that may be a consequence of construction activity has similar potentially negative impacts to pruning.

**6.3** As all trees and hedges are to be retained there are no negative arboricultural impacts resulting from the proposed development.

## 7. REFERENCES

British Standards Institute, 2012. *BS 5837:2012 – Trees in relation to design, demolition and construction. Recommendations*. Online: BSI.

British Standards Institute, 2010. *BS 3998:2010 – Trees work. Recommendations*. Online: BSI.

National Joint Utilities Group, 2007. NJUG vol.4 *Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees* [<http://streetworks.org.uk/wp-content/uploads/V4-Trees-Issue-2-16-11-2007.pdf>]

Derek Patch and Ben Holding – Arboricultural Advisory and Information Service, 2007. *Arboricultural Practice Note 12 – Through the Trees to Development*. Available through: The Arboricultural Association website: <<https://www.trees.org.uk/kentcotrees/Trees.org.uk>

# Appendix 1      Tree Survey Key and Survey Schedule

**Tree/Tag No:** Either cross referenced to diagram/map and prefixed by N or S if they are not tagged or relating to tag number present on tree. Individual trees will be denoted as T1, T2 etc. on plans or diagrams. Groups of trees too numerous to individually survey or groups comprising of mainly trees of a stem diameter less than 150mm will be denoted as G1, G2 or W1, W" etc. Hedgerows will also be shown as groups denoted as H1, H2 etc. Individual trees located in a group or hedgerow can still be assessed individually. Off-site trees denoted as OS.

**Species:** using common and scientific name.

## Measurement Conventions

1. Height, crown spread and crown clearance is recorded to the nearest half metre (crown spread is rounded up) for measurements up to 10m and to the nearest whole metre if over 10m.
2. Stem diameter is recorded in millimetres rounded to the nearest 10mm.
3. Any estimated dimensions (e.g. for inaccessible trees or those located on adjacent land) are suffixed with a "#".

Tree height measured using an electronic clinometer. Site conditions may render this technique impractical in which case an estimated height will be suffixed by "#".

**Stem Diameter:** normally measured at 1.5m from ground level or using techniques as stated in Annex C of BS5837:2012 *Trees in relation to design, demolition and construction – Recommendations*. If estimated denoted by #

Ivy clad trees will be noted as without removing the ivy a stem diameter will have to be estimated from best measurement available.

**Age Class:** Y= a young tree in first third of life cycle.

EM = an early mature tree in second third of life cycle.

M= a tree in the last third of its life cycle.

OM= a tree in decline due to age.

## Physiological Condition:

**Good**=tree appears to be in a satisfactory physiological condition showing no signs of poor health.

**Fair**=may be showing some minor signs of stress.

**Poor**= slightly compromised showing significant signs of stress i.e. crown retrenchment.

**V. Poor**= significantly compromised e.g. advanced retrenchment.

**Dead.**

## Structural Condition:

**Good**= tree appears to be in a satisfactory structural condition with no significant defects found.

**Fair**= some defects, but of low significance.

**Poor**= slightly compromised e.g. poor branch unions found or evidence of decay.

**V. Poor**= profoundly compromised and imminent failure likely.

**Estimated Remaining Contribution** Measured in years: <10, 10+, 20+, 40+

**Retention Category:** Denoted as U, A, B, C with sub-categories 1, 2, 3. as defined in Table 1 of BS5837:2012 *Trees in relation to design, demolition and construction – Recommendations*. (in Annex 1)

**Root Protection Area (RPA)** Radius given in m: Area given in M<sup>2</sup>.

# Appendix 1 B55837 Survey Schedule

Site: 29 Elm Grove, Barnham

Client: Mr and Mrs McManus

Date: 6<sup>th</sup> August 2018

| Tree /Tag no. | Species                                      | Tree Height (m) | Stem Diameter (mm) |     | Crown spread (m) |     |     |      | Height & Direction of 1 <sup>st</sup> Branch (m) |     | Min. Crown Clearance (m) |     |   |   | Life Stage                                                                                                                             | Physiological Condition                                                                                                                                                                                                      | Structural Condition<br>General Observations<br>Preliminary Management Recommendations | Estimated Contribution Remaining |     | Retention Category |  | RPA <sub>R</sub> (m) | RPA <sub>A</sub> (m <sup>2</sup> ) |
|---------------|----------------------------------------------|-----------------|--------------------|-----|------------------|-----|-----|------|--------------------------------------------------|-----|--------------------------|-----|---|---|----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------------------|-----|--------------------|--|----------------------|------------------------------------|
|               |                                              |                 | N                  | E   | S                | W   |     | N    | E                                                | S   | W                        |     |   |   |                                                                                                                                        |                                                                                                                                                                                                                              |                                                                                        |                                  |     |                    |  |                      |                                    |
| T1            | Bay<br><i>Laurus nobilis</i>                 | 6               | 110<br>75<br>80    | 2   | 2                | 2.5 | 2   | -    | 0                                                | 0   | 0                        | 0   | M | G | G                                                                                                                                      | Lower crown and stem clipped as a hedgerow<br>Hardstanding impervious ground between tree and adjacent building to the north<br>RPA and CEZ can be offset set at edge of adjacent hardstanding to the north                  | 20>                                                                                    | C1                               | 1.6 | 7.6                |  |                      |                                    |
| T2            | Flowering current<br><i>Ribes sanguineum</i> | 2.5             | 6x30               | 1.5 | 1.5              | 2   | 0.5 | 0    | 0                                                | 0   | 0                        | EM  | G | G | Small shrub not a constraint to proposal or construction activity due to location                                                      | 10>                                                                                                                                                                                                                          | C1                                                                                     | 1.7                              | 0.7 |                    |  |                      |                                    |
| H1            | Mixed hedgerow                               | 4               | -                  | -   | -                | -   | -   | -    | -                                                | -   | -                        | M   | G | G | Not affected by proposal                                                                                                               | 20>                                                                                                                                                                                                                          | C2                                                                                     | -                                | -   |                    |  |                      |                                    |
| H2            | Privet hedge<br><i>Ligustrum ovalifolium</i> | 3               | -                  | -   | -                | -   | -   | -    | -                                                | -   | -                        | M   | G | G | Maintained at 3m<br>CEZ could be set at the face of hedge on north side                                                                | 10>                                                                                                                                                                                                                          | C2                                                                                     | -                                | -   |                    |  |                      |                                    |
| H3            | Privet hedge<br><i>Ligustrum ovalifolium</i> | 2.5             | -                  | -   | -                | -   | -   | -    | -                                                | -   | -                        | M   | G | G | Maintained at 2.5m<br>Hardstanding impervious ground between hedge and building<br>RPA and CEZ can be offset at the edge of paved area | 10>                                                                                                                                                                                                                          | C2                                                                                     | -                                | -   |                    |  |                      |                                    |
| T3            | Apple Spp.<br><i>Malus</i> Spp.              | 6               | 220                | 3.5 | 2                | 3   | 3.5 | 1.5s | 2                                                | 2   | 1                        | 2   | M | G | G                                                                                                                                      | Not a constraint to proposal or construction activity due to location<br>Some dead sections on the face of the northern end of hedge on driveway side, could be result of excessive shading by a vehicle/caravan now removed | 20>                                                                                    | B1                               | 2.2 | 15.2               |  |                      |                                    |
| H4            | Privet hedge<br><i>Ligustrum ovalifolium</i> | 1.5             | -                  | -   | -                | -   | -   | -    | --                                               | -   | -                        | -   | M | G | G                                                                                                                                      | Not a constraint to proposal or construction activity due to location                                                                                                                                                        | 10>                                                                                    | C2                               | -   | -                  |  |                      |                                    |
| T4            | Apple Spp.<br><i>Malus</i> Spp.              | 4               | 190                | 2   | 2                | 2   | 2   | 1.5s | 2                                                | 1.5 | 1.5                      | 1.5 | M | F | G                                                                                                                                      | Thinly foliated<br>On Highway verge<br>Not a constraint to proposal or construction activity due to location                                                                                                                 | 10>                                                                                    | C1                               | 1.9 | 11.3               |  |                      |                                    |

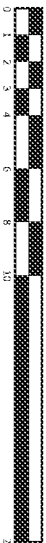
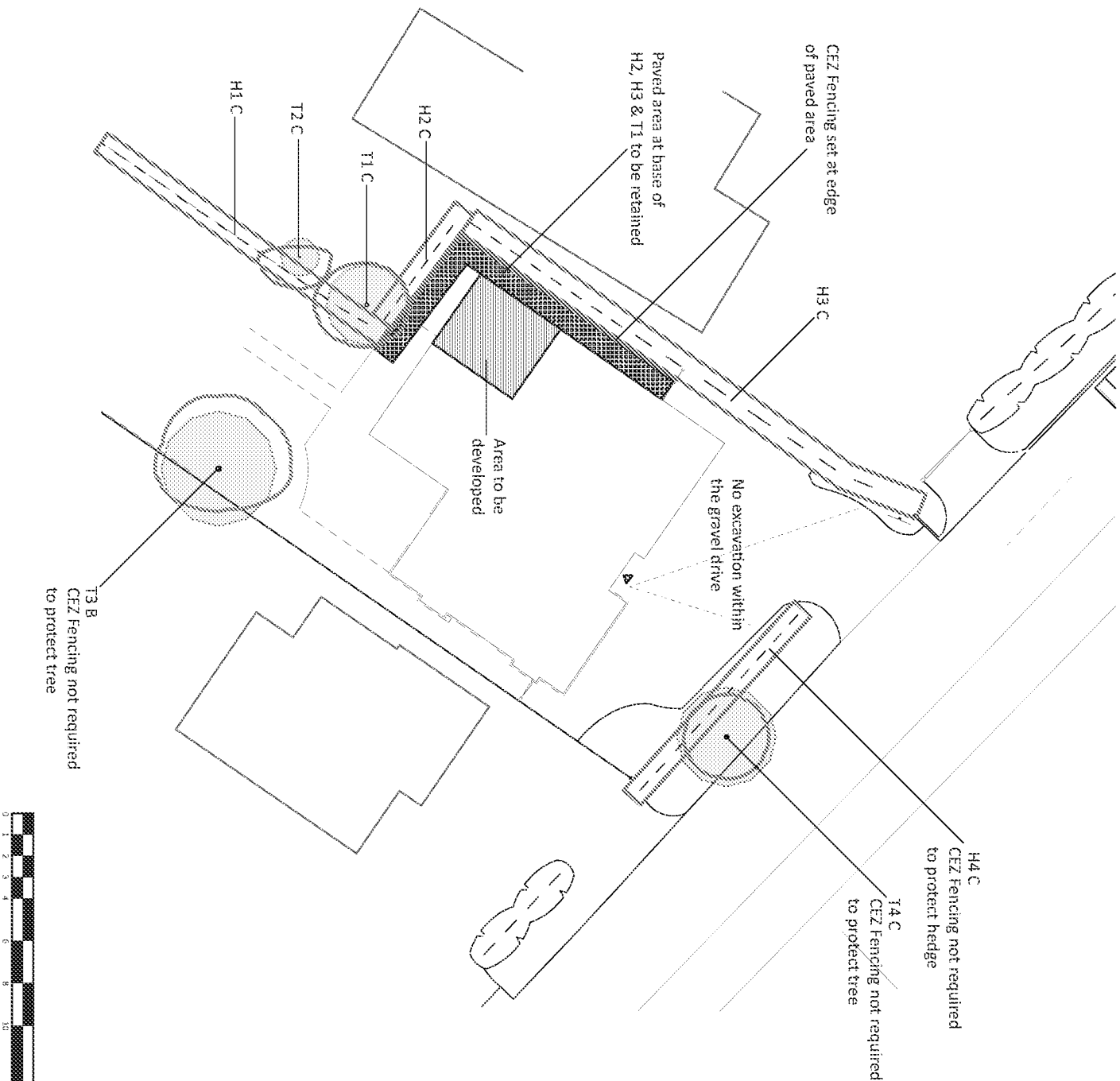
KEY

Tree Protection Categories

- A' Category
- B' Category
- C' Category
- V' Category

Other Plan Features

- Root Protection Area
- Tree Protection Fencing
- Development Area
- Paving



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Project:

25 Elm Grove

Client:

Marilyn McManus

Tree Constraints Plan

Agreement number:

ASP 2 (18/03)

Scale:

1:200 @ A3

Date:

Sept 18

Drawn by:

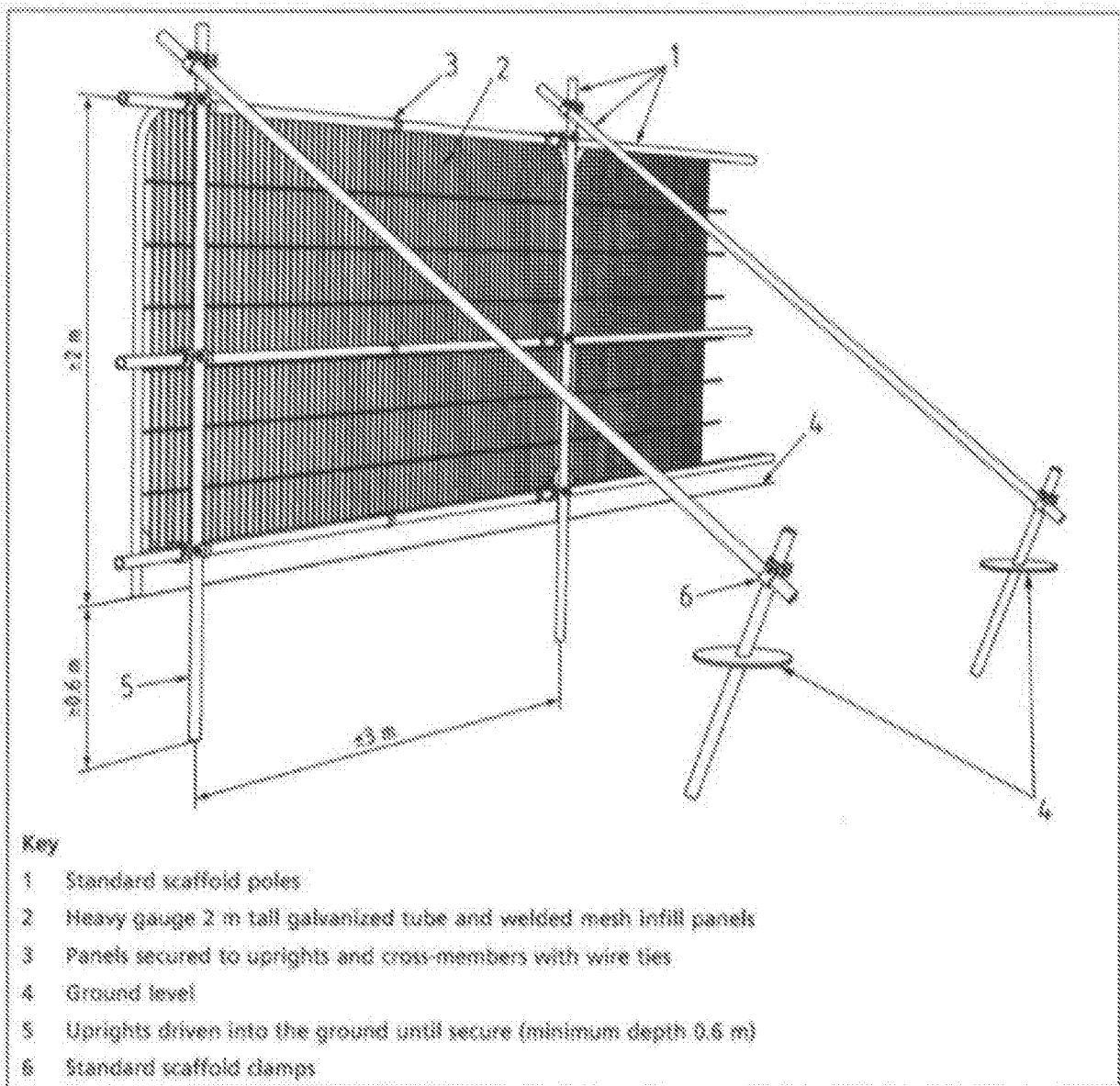
TA

Checked by:

WH

**FIG. 1**

**BS 5837 (2012) DEFAULT SPECIFICATION FOR PROTECTIVE BARRIER**



## BS 5837 (2012) ABOVE GROUND STABILISING SYSTEMS

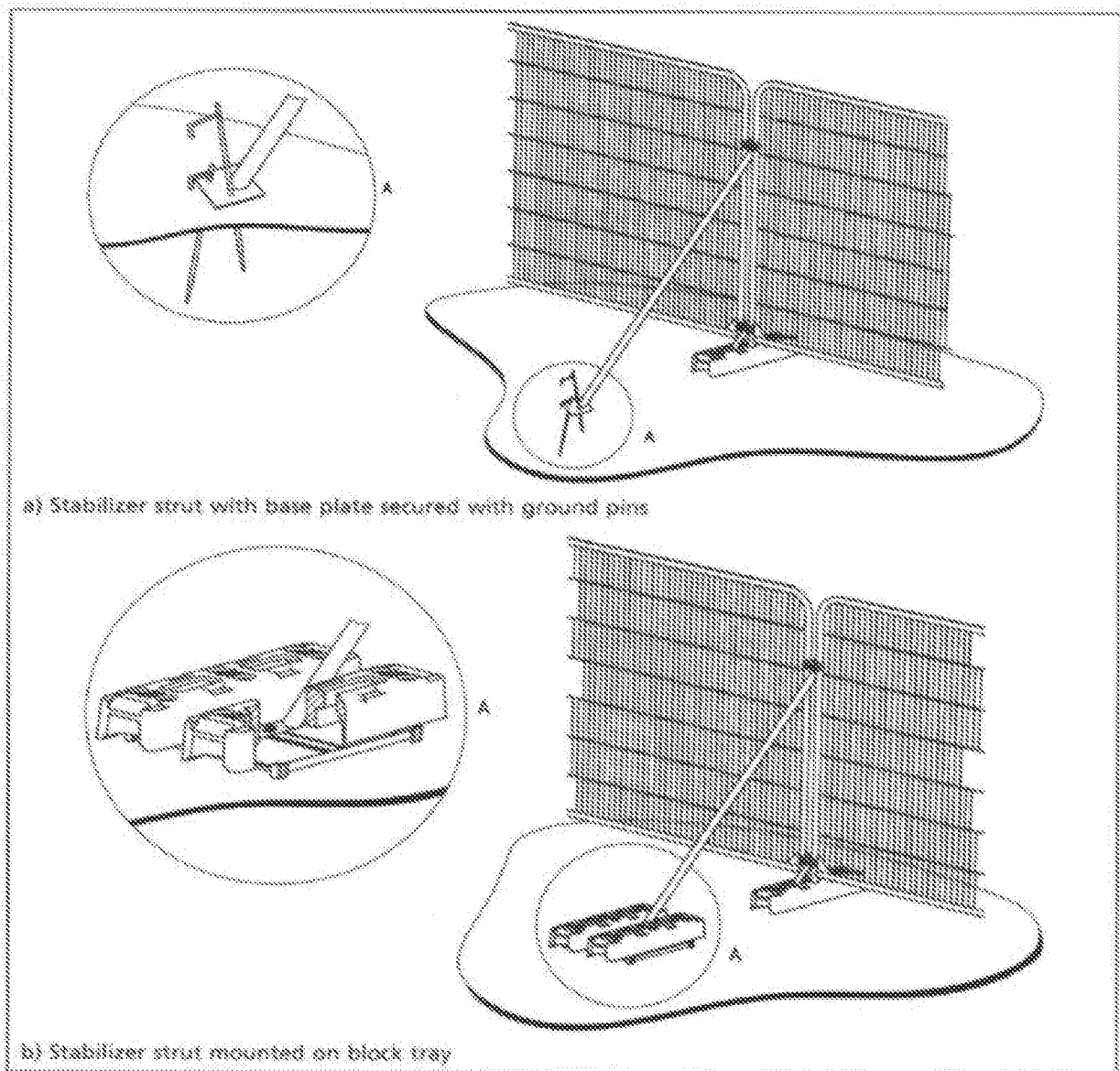


Fig 2.

Table 1 Cascade chart for tree quality assessment

| Category and definition                          | Criteria (including subcategories where appropriate)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Identification on plan                                                                                                                                                                                                                                             |                                                                                                                                                                                                      |             |
|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| <b>Trees unsuitable for retention (see Note)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                      |             |
| <b>Category U</b>                                | <ul style="list-style-type: none"><li>* Trees that have a serious, irreparable, structural defect, such that their early loss is expected due to collapse, including those that will become unsuitable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning)</li><li>* Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline</li><li>* 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</li></ul> <p><b>NOTE:</b> Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7</p> | See Table 2                                                                                                                                                                                                                                                        |                                                                                                                                                                                                      |             |
| <b>Trees to be considered for retention</b>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                      |             |
|                                                  | <b>1 Mainly arboreal/structural qualities</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>2 Mainly landscape qualities</b>                                                                                                                                                                                                                                | <b>3 Mainly cultural values, including conservation</b>                                                                                                                                              |             |
| <b>Category A</b>                                | 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 arboreal/cultural features (e.g. the dominant and/or principal trees within an avenue)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Trees, groups or woodlands of particular visual importance as arboreal/cultural and/or landscape features                                                                                                                                                          | Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood pasture)                                                                | See Table 2 |
| <b>Category B</b>                                | Trees of moderate quality with an estimated remaining life expectancy of at least 20 years                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individually, 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                                                                                                                                             | See Table 2 |
| <b>Category C</b>                                | Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 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 | See Table 2 |