25 Dene Road, Northwood – 46470/APP/2021/2039

26th May 2022

TREE METHOD STATEMENT

1.0 Introduction

1.1 This Tree Method Statement (TMS) has been produced in response to planning condition 12 of the above planning permission.

1.2 The Tree Report submitted under the planning application is appended owing to it containing relevant information required under the planning condition.

1.3 Planning condition 12 requires:

No site clearance or construction work shall take place until the details have been submitted to, and approved in writing by, the Local Planning Authority with respect to:

1. A method statement outlining the sequence of development on the site including demolition, building works and tree protection measures.

2. Detailed drawings showing the position and type of fencing to protect the entire root areas/crown spread of trees, hedges and other vegetation to be retained shall be submitted-to the Local Planning Authority for approval. No site clearance works or development shall be commenced until these drawings have been approved and the fencing has been erected in accordance with the details approved. Unless otherwise agreed in writing by the Local Planning Authority such fencing should be a minimum height of 1.5 metres.

Thereafter, the development shall be implemented in accordance with the approved details. The fencing shall be retained in position until development is completed. The area within the approved protective fencing shall remain undisturbed during the course of the works and in particular in these areas:

2.a There shall be no changes in ground levels;

2.b No materials or plant shall be stored;

2.c No buildings or temporary buildings shall be erected or stationed.

2.d No materials or waste shall be burnt; and.

2.e No drain runs or other trenches shall be dug or otherwise created, without the prior written consent of the Local Planning Authority.

3.Where the arboricultural method statement recommends that the tree protection measures for a site will be monitored and supervised by an arboricultural consultant at key stages of the development, records of the site inspections / meetings shall be submitted to the Local Planning Authority.

1.4 Information to satisfy part 1 is found in this TMS and the Tree Report.

1.5 Detailed drawings to satisfy part 2 are found in the Tree Report.

1.6 The Aboricultural Method Statement (AMS) submitted in support of the planning application did not recommend monitoring and supervision by an arboricultural consultant.

2.0 Sequence of development (Part 1)

2.1 The sequence of the development of the site is as follows:

1. **Site set up** – erection of site hoarding and associated fencing, including tree protection measures identified in the
2. **Demolition** – demolition of existing property and outbuildings
3. **Sub-structure works:**

   Excavation/ Piled foundations/ Concrete floor/ Form concrete walls/ Podium, Drainage, Service routes
4. **Super-structure works:**

   Brickwork/ Concrete floors/ Roof construction/ Windows/ Internal fit out
5. **Externals:**

   External floor finishes and planting

2.2 Please read additional information at para. 6.4.1.3 and Appendices 3 – 6 in the appended Tree Report.

3.0 Detailed Drawings

3.1 The Tree Protection Plan *showing the position and type of fencing to protect the entire root areas/crown spread of trees, hedges and other vegetation to be retained* is found at Appendix 2 in the appended Tree Report.

3.2 The Tree Protection Plan satisfies the requirement of Part 2.

4.0 Monitoring & Supervision by an Arboricultural Consultant

4.1 The AMS is found at Appendix 2 of appended Tree Report. L

4.2 The AMS does not recommend the monitoring and supervision of construction works by an Arboricultural Consultant.

4.3 Instead, it identifies that it is essential within the scope of any contracts related to the development that the AMS is observed and adhered to.

4.4 It is recommended that the AMS forms part of the work schedule and that specifications are issued to the building contractor(s) and these must be used to form part of their contract.

5.0 Conclusion

5.1 The Information contained in this Tree Method Statement and appended Tree Report is sufficient to satisfy the relevant requirements of Planning Condition 12.

APPENDIX 1: Tree Report October 2020

25 Dene Road
Northwood
HA9 9EA

Phase II Arboricultural Impact Assessment (AIA)

23/06/2020
(Ref: 101 499)

Revised Oct. 2020
(Ref: 101 543)

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APPENDICES

Local Planning Authorities that have previously seen our standard report format are directed to Sections 4-7 that contain the key relevant information for this planning application.

1.0 INSTRUCTIONS & TERMS OF REFERENCE

1.1 INSTRUCTIONS

Arbol Euro Consulting Ltd. is instructed by to assess the on and off-site trees in regard to the proposed development. Sept. 2020 update: Further to an LPA Pre-App meeting the site layout has changed. See section 6.1.2. As part of the LPA validation process the original AIA Ref: 101 499) was submitted: this has now been revised as per the highlighted text section and the Tree Protection Plan.

NB This report does not seek to authorise any tree works (see Section 4.1).

Please be advised that this is a Development Control – and not a Building Control – focused document. In regard to the latter, this deals with foundation depth and design in relation to trees using NHBC/Zurich national guidance. For advice, consult with the local council Building Control Officer or an approved NHBC inspector in order to gain Full Plans Approval or a Completion Certificate. The latter are governed by the Building Act 1984 and Building Regulations 2010. As such the above Building Control issues are outside the remit of a Consulting Arborist.

Our tree reporting is in-line with BS:5837 (2012) and our tree survey assessments are consistent with the LANTRA professional tree inspector criteria. However, please be advised* that this AIA does not necessarily provide any guarantees that the associated Local Planning Authority will agree with the opinion of the Consulting Arborist or grant planning consent based on the content and findings of this AIA report.

* As per our Terms & Conditions.

1.2 PHASE 1, 2 & 3: ARBORICULTURAL IMPLICATION ASSESSMENTS (AIA) IN CONTEXT

1.2.1 Phase 1 (AIA1). The initial stage for trees within the development process is a survey of those trees that should be retained and those that may/should be removed. Retention trees are allocated Root Protection Areas (RPAs) that are then detailed on a Tree Constraints Plan (TCP). The RPAs provide for sufficient rooting (soil) volume to ensure that trees are successfully retained during and after the completed development. The TCP represents Phase 1 of an Arboricultural Implications Assessment (AIA1). It indicates a notional development footprint for any given site but moreover, it ***may affect the value of land*** earmarked for development. The AIA1 is ***only*** a baseline survey. It is not intended to represent, in isolation, the supporting information for an LPA* application: to obtain full planning permission.

* Local Planning Authority

1.2.2 Phase 2 (AIA2). The next stage is for 'site layout master planners' to factor the tree constraints into draft layout proposals. This draft is then referred to the consulting Arborist for further implication assessment, to arrive at a 'best fit' scheme, which achieves site proposal viability whilst allowing for the retention of appropriate trees. This layout review represents Phase 2 of an Arboricultural Implications Assessment (AIA2). Once it has been agreed, the consulting Arborist can then prepare a supporting report to accompany the planning application. This report should demonstrate that the trees have been properly considered such that the site layout is defensible in arboricultural terms, both at the application stage and also, if necessary, at Appeal. As the proposal develops, the AIA2 also involves the consulting Arborist working as part of the development team to secure discharge of any initial (frequently pre-commencement) tree related LPA planning conditions. These will need to be formally discharged to avoid any breach of Condition and/or enforcement action.

1.2.3 Phase 3 (AIA3). All the effort put into the pre-application phases (AIA12) to protect retention trees is likely to fail without effective site supervision. Arboricultural Implications Assessment (AIA3) covers the ***on-site project implementation***, including arranging (LPA) approved tree removal/ pruning, overseeing the installation of tree protection fencing, ground protection and any special engineering works through to periodic reporting on the retention of tree protection measures. Many if not all of the latter are usually specified as LPA planning conditions that need to be formally discharged. All personnel associated with the construction process must be familiar with the specified Tree Protection Plans (TPP) and Arboricultural Method Statements (AMS) that affect the site. The TPP and AMS should be retained on site at all times and they should be included in the site's Project Management Plan.

1.2.4 Phases 1–3 are in line with *BS 5837; 'Trees in relation to design, demolition and construction - Recommendations'* (2012).

1.3 TREES & BUILDING SUBSIDENCE/HEAVE ISSUES

Assessing the potential influence of trees upon load-bearing soils beneath existing and proposed structures, resulting from water abstraction by trees on shrinkable soils, was not included in the contract brief and is not, therefore, considered in any detail in this report. **Arbol EuroConsulting** cannot be held responsible for damage arising from soil shrinkage or heave issues related to the retention or removal of trees on site.

1.4 TREE SAFETY MATTERS AND TREE RISK ASSESSMENT

The BS:5837 tree survey is carried out in sufficient detail to gather data for and to inform the current project. Our appraisal of the structural integrity of trees on the site is of a preliminary nature and sufficient only to inform the current project. The tree assessment is carried out from ground level – as is appropriate for this type of survey - without invasive investigation. The disclosure of hidden tree defects cannot therefore be expected. Whilst the survey is not specifically commissioned to report on matters of tree safety, we report obvious visual defects that are significant in relation to the existing and proposed land use.
Lastly and to further clarify, this BS:5837 survey does not constitute a full *Visual Tree Assessment* (= TRAM* Level 2 - *Basis Assessment*) that would ordinarily be carried out for Tree Risk Assessment reporting. In effect, this BS:5837 survey equates to a TRAM Level 1 *Limited Visual Assessment*.

> * "Tree Risk Assessment Manual" (2nd edition) Dunster, Julian A., E. Thomas Smiley, Nelda Matheny, and Sharon Lilly (2017) International Society of Arboriculture

1.5 SITE OBSERVATIONS

This report has been based on my site observations and in light of my experience. This along with my qualifications are appended to this report.

1.6 CAVEATS

The author does not have formal qualifications in the areas of structural engineering or law. However, making comment on such matters from an arboricultural perspective is both within the normal scope of our instructions and also within the range of the author's experience. Notwithstanding this, specialist professional advice should be sought to clarify/confirm any observations on engineering or legal matters that this report may contain.

2.0 INTRODUCTION

2.1 THE ASSESSMENT METHODOLGY

The British Standard BS:5837 '*Trees in relation to design, demolition, construction - Recommendations*' (2012) provides "guidance on the principles to be applied to achieve a satisfactory juxtaposition of trees…….with structures". The Standard recommends that trees with categories A-C (where A is the highest quality) are a material consideration in the development process. Such trees may then become a constraint for a planning proposal. Category U trees are those that will not be expected to exist for long enough to justify their consideration in the planning process (i.e. no more than 10

years). Tree categories are used with the number 1, 2, or 3 to signify whether the category was made based on arboricultural, landscape or cultural (including conservation) values respectively. The tree categories are shown on plan by colour-coding:

Category A (green colour-coded): Good examples of their species with an estimated life expectancy of at least 40 years.

Category B (blue colour-coded): Not suitable for an 'A' category due to impaired condition or a tree lacking special 'A' qualities: with an estimated life expectancy of at least 20 years.

Category C (grey colour-coded): Unremarkable trees of very limited merit or with a significant impaired condition not warranting an 'A' or 'B' category: with an estimated life expectancy of at least 10 years. See young trees below.

Category U (red colour-coded): See above.

Reasonably young trees below 150mm stem diameter would normally be given a C category (if they satisfy the retention quality criteria). However, as they are small they could be replaced/transplanted and as such they should not be regarded as a significant constraint on a development.

2.2 ARBORICURAL IMPACT ASSESSMENT (AIA)

We have considered - with access permitting for 3rd party trees - the following BS:5837 (2012) recommendations:

1. Tree Categories (Quality Assessment).
2. Crown Spread measured to the four cardinal compass points for single specimens only.
3. Root Protection Areas (RPAs).
4. Tree Constraints.
5. Tree retention & protection - Tree Protection Plan (TPP) incorporating the Tree Constraints Plan & Construction Exclusion Zones (CEZs).

N.B. Trees and shrubs are living organisms whose health and condition can change rapidly, for this reason the BS 5837 grades along with any conclusions or tree management recommendations remain valid for a period of 12 months.

The specific tree report is documented in Section 7 of this report.

Refer to the Tree Protection Plan (TPP) incorporating the Tree Constraints Plan (TCP) for further detail.

3.0 GENERAL DATA

3.1 GENERAL

The three phases of an Arboricultural Implication Assessment were outlined in Section 1.1.1-1.1.4. In addition, during the development process for retention trees, there may be three and even four constraints to consider - Construction Exclusion Zone (CEZs):

- CEZ 1: Root Protection Area (see 3.1.1).
- CEZ 2: Tree Crown Protection (see 3.1.2).
- CEZ 3: Tree Dominance (see 3.1.3).
- CEZ 4: New Tree Planting Zone (see 3.1.4).

The above CEZ's are explained further below.

3.1.1 CEZ 1: ROOT PROTECTION AREA (RPA)

The RPA, calculated in m^2, should be protected before and during any demolition/construction works. This ensures the effective retention of trees by preventing physical damage to (a) roots and (b) their rooting environment (typical problems - soil compaction; soil level changes and soil capping that can impede gaseous exchange to living roots*). The RPA is based on a radial measure from the centre of the tree stem, which is calculated by multiplying the stem diameter by a factor of twelve. With the AIA1, the RPA is only shown indicatively on the preliminary Tree Constraints Plan (TCP), as its shape may be subject to amendment as the design progresses.

During the AIA2, the derived radial measure is converted by the consulting Arborist into the actual area to be protected, having due regard to prevailing site conditions and how these may have affected the tree(s).

The means of protecting the RPA will include the installation of Tree Protection Fencing prior to the start of any demolition or construction work on site, the prohibition of various harmful activities within the RPA (e.g. mechanical excavation, soil stripping & trenching, fire lighting, materials storage and creating excessive sealed surfacing), and may include the use of temporary ground protection and/or special engineering solutions where construction is proposed near to retention trees or within the RPA.

* Roots must have oxygen for survival, growth and effective functioning.

3.1.2 CEZ 2: TREE CROWN PROTECTION ZONE

This is the area above ground occupied by the tree crown (branches) and considers the required demolition/construction working space necessary for the development. The possibility of an acceptable quantum of pruning may be considered: subject to Council permission/consent (see Section 4.1.1).

Arising from the above, the means of protecting CEZ 2 is likely to include providing an adequate separation distance between retention trees and new buildings. This will relate to the CEZ 3: below.

3.1.3 CEZ 3: TREE DOMINANCE ZONE

This is the area above ground dominated by the tree in relation to issues of shading, seasonal debris and the safety apprehension by the site owner/occupier. This area is assessed by considering the height and spread of the tree (now and in the future) relative to the proposed buildings, cross-referenced with the intended end-use. As such, what is assessed is the likely psychological effect of the tree(s) on the end-user.

The purpose of identifying CEZ 3 is to protect trees from post-development pressure by the site's end-users, who may, if resentful of the trees, seek to procure excessive pruning treatments (i.e. the bad practice of topping & lopping) or even to have them removed. This is a common Local Planning Authority (LPA) concern, which may lead to application withdrawals, refusals and/or dismissed Appeals.

The means of protecting CEZ 3 is likely to include optimising the site layout and room type (especially in relation to new residential dwellings), such that any adverse impacts of trees are reduced to an acceptable minimum. The key principle is to ensure adequate separation distances between trees and new buildings: notably with habitable space & primary windows.

3.1.4 CEZ 4: NEW PLANTING ZONE

In some cases, it may be appropriate to identify and protect areas (see soil conservation below) intended for new landscape planting, which can fail to establish if the soil has been heavily compacted or contaminated during the demolition/construction process. The means of protecting CEZ 4 will either be by fencing prior to the start of construction/demolition works or by pre-planting soil remediation once construction has finished. Topsoil protection in areas destined for new planting is frequently an economic measure, saving on soil structure remediation and tree (failure) replacement costs.

NB Soil conservation is the process of protecting soil from degradation within a defined area. The physical, chemical and biological properties of a native soil can take hundreds of years to develop but can be destroyed in minutes (i.e. by demolition/construction traffic). Soil conservation is the most effective way to protect soil for future tree planting.

4.0 STATUTORY CONTROLS

4.1 PLANNING LEGISLATION (TREES)

4.1.1 STATUTORY TREE PROTECTION

Trees can be protected in law – via Tree Preservation Orders (TPOs) or by virtue of them growing in a Conservation Area (CA) – by the Government's Town & Country Planning Act 1990. (the Act). Trees may also be protected by Planning Conditions. If any of these apply, written LPA permission/consent is required before protected trees can be pruned or felled*. Contravention of the Act may carry a fine of up to £20,000 and a criminal record.

* Exceptions include those trees that are dead/hazardous or those that are causing an actionable nuisance to a third-party. In any event, evidence must be provided to defend the removal of such trees.

4.1.2 TREES ON/OFF SITE

We are advised by the client that the site is not within a CA and that none of the on-site trees are subject to any TPOs (exception - the recently TPO'd frontage Holm oak: T2 in section 6.2). However, if required and before any tree works are carried out, this should be double-checked with the LPA. If any statutory (tree) protection is confirmed then advance LPA permission/consent would be required.

4.2 WILDLIFE LEGISLATION

All wild birds are protected during the nesting season by the Wildlife and Countryside Act 1981 as amended by the Countryside and Rights of Way Act 2000. It is not a defence to claim that harm was accidental in the course of carrying out work. There is therefore an onus on the operative to check cracks, splits, cavities, loose bark etc. for the presence of birds prior to carrying out work. The bird nesting season is considered to run from March to August, but due to the vagaries of climate change, nesting birds can be found outside of this core period. Work can be carried out in the nesting season, subject to the above checks. Bats and their roosts are afforded the highest protection in UK and European Law. The above advice as for nesting birds should be followed and Natural England informed if bats are found. Particular attention should be paid to splits in branches, before reducing end weight by pruning, causing splits to close which can squash residing bats.

5.0 WILDLIFE HABITATS

A cursory assessment of wildlife habitat values of trees and hedgerows on the site was carried out during the survey. No protected or exceptional habitats were identified and details were not recorded. However, trees and hedgerows of most species provide valuable nesting sites for a wide range of birds and it is likely that nesting birds will be present on the site during the period March to September. We have not been made aware of the presence of roosting bats and have not identified any obvious signs of roost sites. However, this does not mean that roost sites are absent.

6.0 No. 25 Dene Road Northwood: TREE REPORT **(to be read in conjunction with the appended Tree Protection Plan and Tree Survey)**

6.1 THE PROPERTY AND THE DEVELOPMENT PROPOSAL

6.1.1 Site description: A large detached property with a detached garage. Property is accessed via a sloped (1 in 6) brick paved driveway that opens out to provide an expansive hard-standing area. Whilst on-site we noted that frontage trees had recently been removed. The rear garden is largely

laid to lawn with again a significant slope down to the rear boundary. See trees in section 6.2 below.

6.1.2 The proposal: Demolition of the existing property and detached garage. Erection of a two-storey building with habitable roof space to create eight two-bedroom self-contained flats with associated parking (13 bays) to the front of the property including private and communal amenity areas and landscaping. The frontage driveway would also be widened. Lastly, there would be (a) a frontage external bin store and (b) a rear bike store linked to the frontage car parking area via a footpath running up the western side of the proposed property. Parking 8-12 are amended as an additional space was required. Spaces 1&2 are centralised with the change in the building layout. The layout/orientation of the bin and bike store has also been changed.

The location and detail of the proposed development and the positioning and numbering of the trees can be found plotted on the Tree Protection Plan at Appendix 2. **NB** The original of this plan was produced in colour – a monochrome copy should not be relied upon.

6.2 TREES ON-SITE

6.2.1 Frontage: Both the lime T1 and Holm oak T2 have good crown form and provide significant public visual amenity. The silver birch also has good form. Correspondingly, these trees all merit a B grade. We understand that the boundary yew/cherry laurel hedge would be removed to facilitate the development: see revised driveway layout above.

6.2.2 Rear: Whilst the well-managed tall mixed species boundary hedge H1 provides a useful neighbourhood screen, the sycamore T4 has a poor lopped and topped low-grade crown.

6.3 TREES OFF-SITE

6.3.1 No. 27 Dene Road: The Wellingtonia T5 is a significant and impressive tree within the immediate locale and clearly merits an A-grade. The frontage pine T3 also has good (B-grade) *dominate* form in the sense that it suppresses the underlying field maple T8 with its very unbalanced crown.

6.4 IMPACT PROPOSAL ON TREES **(to be read in conjunction with the Tree Protection Plan - TPP - at Appendix 2 and the Arboricultural Method Statement at Appendix 3)**

6.4.1 Underground Utilities

The exact location of any **proposed/renewed** underground services is not known at this stage. However, a designated incoming utility zone has been marked-up on the attached TPP so these could be routed into site: importantly between the Root Protection Areas of T1 and T2. See section 6.5.

6.4.2 CEZ 1: Root Protection Areas (RPAs)

6.4.1.2 Footprint of the Proposed Build (flatted-block)

The northern-end section of H1 including the silver birch T6 would require removal to facilitate development. Beyond the removal of the latter tree/hedge section there would be no RPA incursion with any retention trees.

Renewed, widened frontage driveway and Turning-Head (for car parking bays 1 & 2): Taking into account the existing sloped frontage driveway and its sub-base that would be retained, there would a 12.5% RPA incursion (open ground) on the Holm oak T2. See light blue-hatched area on the appended TPP. Importantly, this is within the BS:5837 (2012) 20% limit for new permanent hard-standing over existing un-surfaced (RPA) ground. Please note, in terms of the turning-head (TH) this incursion would be a ***'worse-case scenario'*** as during the trial-dig (see below

and Appendix 6) no significant T2 rooting was found extending down-slope into this TH area. Importantly, with the renewed frontage driveway and to mitigate any T2 RPA disturbance, we would recommend that the ***existing*** sub-base of the ***sloped front driveway*** is ***retained*** and ***incorporated.*** See use of a Cellular Confinement System (CCS) in section 6.4.1.4. Lastly, to minimise any soil excavation for the widened driveway sloping retaining wall we would recommend that rebar pinned railway sleepers are used (c.f. a brick-wall with supporting piers).

* RPA of 209.2m² with incursion of 26.26m² = 12.5%

Turning-head (for car parking bays 1 & 2): As per the trial-dig (Appendix 6) along the location of the turning-head (TH) retaining wall, no significant Holm oak T2 roots (>2.5cm dia.) were found: (see eastern edge of the TH as marked by the garden fork in the photo below). Again to minimise any soil excavation for this retaining wall we would recommend that rebar pinned railway sleepers are used (c.f. a brick-wall with supporting piers).

There is no doubt however that fine ephemeral roots within the RPA of T2 would be lost with the installation of the TH. To mitigate for this fine tree-root loss we would recommend the following:

(1) Under the crown spread of T2 remove all the (competing) large shrubs (cherry laurel, *Viburnum*, privet, *Ceanothus* and *Euonymus).*
(2) Air Spade this area to incorporate Biochar* into the upper soil horizon (see green-shaded zone on the appended TPP).
(3) Add a 3-5cm deep layer of mulch/woodchip over this air-spaded area. **NB** Not against the root crown of T2.

* Biochar is a valuable soil amendment. It has gained much attention in recent years for its ability to boost soil fertility and microbiology and enhance soil structure. We would recommend https://www.bartlett.com/tips/biochar.cfm

The above would have the effect of improving the tree-rooting environment for T2.

Lastly and importantly, the TH would be laid with porous tarmac so that overtime fine fibrous roots from T2 would populate this area.

New Front Gated Entrance: The western pier would be within the RPA of Holm oak T2. However, at 6.0 metres away and judging from the results of the TH trial-dig, no significant T2 rooting would be expected within the pier foundation excavation. If found however, these could be cut back using a sharp handsaw producing a clean-cut surface that can readily occlude (close) and produce secondary rooting.

Frontage External Bin Store: There would be no RPA incursion with any retention trees.

Rear Bike Store: There would be no RPA incursion with the off-site tree T5.

Western Footpath (running up the side of the proposed property): A section of this footpath would run across the RPA of T7. Therefore, as with the extended frontage driveway, a CCS would be used to mitigate the RPA impact. See section 6.4.1.4 below. As a footpath, the depth of this CCS would only be required to be 75mm thick. As detailed below, a site specific installation Method Statement (MS) would be obtained from ProtectaWeb (Wrekin Products Ltd.) and the product installed in accordance with this MS.

6.4.1.3 Construction Activity

Site Access: For all demolition and construction vehicles this would be via the central frontage area: see notation on the appended TPP. Vehicular (car) traffic would use the existing access. See notation on the appended TPP.

Tree Protection Barriers (TPBs) plotted as single & dotted red lines on the appended TPP:

Main Construction: As per the appended Tree Protection Plan, if *temporary* staked and braced **TPB I*** is installed – to establish Construction Exclusion Zones (CEZ) at the front, side and rear - this would afford adequate RPA protection for all retention trees. See appendix 4. On no account would these CEZs be used for the storage/preparation of any construction/building materials.

Extended Frontage Driveway (see CCS below): With the main build complete, the above frontage **TPB I** *(above)* would be moved to create **TPB II**** and a CEZ adjacent to T2 during the aforementioned driveway installation. Again no account would this CEZ be

used for the storage/preparation of any construction/building materials. After the driveway construction **TPB II** would be removed.

Western Footpath (running up the side of the proposed property): With the main build complete, the **TPB I** *(above)* surrounding T7 would be moved to create **TPB II**** and a smaller CEZ during the footpath installation. Again on no account would this CEZ be used for the storage/preparation of any construction/building materials. After the footpath installation **TPB II** would be removed. **NB** In regard to **TB II**, due to restricted space for angular staking this TPB would be booted with sections ***clamped together*** so they cannot be moved.

Grounds Maintenance: The two frontage **TPB I** CEZs would require a gate to allow operative access for grass verge mowing during the build (growing season).

* TPB I Dotted red line
** TBP II Single solid red line

Storage of Machinery and/or Materials: There would be adequate space at the front and rear of the site. See notation on the appended TPP. **NB** The area of the proposed frontage Bin Store would be used for temporary storage with the latter constructed after the main build has been completed.

Temporary Site Office: This would be on the frontage: see notation on the appended TPP.

6.4.1.4 Cellular Confinement Systems (CCS)

A section of the proposed extended front driveway would be within the RPA of the Holm oak T2. See marked-up with black cross-hatched area on the appended TPP (**NB** It would not be practicable to have a thin CCS strip running up slope to the driveway entrance). This driveway section would therefore be installed using a minimal/no-dig CCS*. A site specific installation Method Statement (MS) would be obtained from ProtectaWeb (Wrekin Products Ltd.) and the product installed in accordance with this MS (**NB** As advised by Wrekin Products Ltd. the MS is free of charge)** https://www.wrekinproducts.com/protectaweb-tree-root-protection/ As mentioned above to mitigate RPA disturbance on T2 we would recommend that the sub-base of the existing driveway is *retained* and *incorporated* in the new proposed extended driveway.

* ProtectaWeb Tree Root Protection System: 150mm thick - see Appendix 6.
** Or other recognised and approved CCS.

Lastly, as the turning head is within the RPA of T2, porous tarmac would be used. See notation on the appended TPP.

6.4.2 CEZ 2: Tree Crown Protection Zones

Construction Vehicle Site Access (access facilitation pruning)

As this is an open site there would be no such issue with this proposal.

6.4.3 CEZ 3: Tree Dominance Zones

There are no large close-proximity trees. As such there would be no such issue with this proposal.

6.4.4 CEZ 4: New Tree/Hedge Planting Zone

See Benjemin Beth Projects Landscape Concept Plan (Drawing No. P754-00. Dated June 2020). The new rear hedge would be planted after the construction has been completed with the TPBs removed.

6.5 TREE PROTECTION DURING CONSTRUCTION

6.5.1 Tree Protection: The protection of retention trees is ***paramount*** to the granting of planning permission, the discharge of tree protection Planning Conditions, the design of the development and the future health, stability and success of the trees. It is widely recognised that mature trees add value to both land and property values.

6.5.2 The Root Protection Area (RPA): RPAs around retention trees should be maintained by the erection of a *temporary* tree protection barrier (TPB) as described at Appendix 4 to this report. Whilst it is crucial to note that this TPB should not be moved, one section (*only)* can be placed in a boot so it can be moved to allow for (pedestrian) access to the garden for maintenance activities (e.g. grass mowing). The position and extent for the TPB will normally concur with the radius/squared area of the RPA. This staked-off area shall be known as the **Construction Exclusion Zone** (CEZ). The integrity of the TPB to protect **CEZs** should be maintained for the duration of the entire development works. The **CEZs** are marked-up on the appended Tree Protection Plan.

6.6 ARBORICULTURAL METHOD STATEMENT

6.6.1 Purpose & Use

In consideration of the above issues, we have included an Arboricultural Method Statement (AMS) at Appendix 3, which details working methods in relation to trees. This AMS lays down the methodology for any demolition and/or construction works that may have an effect upon trees on and adjacent to this site. It is essential within the scope of any contracts - related to this development - that this AMS is observed and adhered to. It is recommended that this document forms part of the work schedule and that specifications are issued to the building contractor(s) and these should be used to form part of their contract.

6.6.2 Site Supervision

An individual – ideally the Site Agent - must be nominated to be responsible for all arboricultural matters on site (specific responsibilities in section 7 of the appended Arboricultural Method Statement). This person must:

- be present on site for the majority of the time;
- be aware of (a) the Tree Protection Plan and (b) the tree protection measures to be installed and maintained throughout the build;
- have the authority to stop any work that is causing, or has the potential to cause, harm to any retention trees;
- be responsible for ensuring that all site operatives are aware of their responsibilities toward on/off site trees and the consequences of the failure to observe these responsibilities;
- make immediate contact with the designated Consulting Arborist (contact number listed on the appended AMS) in the event of any tree related problems occurring, whether actual or potential.

6.6.3 AMS Adoption

If conflicts between any part of a tree and the build arise in the course of the development these can – and should be – resolved quickly and at little costs if a qualified and experienced Consulting Arborist is contacted promptly. Lack of such care will likely lead to the decline and even death of

affected trees: often with legal ramifications. The loss or damage to retention trees can spoil design, affect site sale ability and reflects badly on the construction and design personnel involved. Conversely, trees that have received careful handling during construction add considerably to the appeal and value of the finished development. **NB** Failure to comply with the requirements of the AMS may result in a breach of a condition notice(s) and/or the suspension of work on site.

7.0 CONCLUSIONS

7.1 DEVELOPMENT PROPOSAL & POTENTIAL IMPACT ON TREES

7.1.1 The development proposal would require the removal of the northern-end section of H1 including the silver birch T6 and the frontage boundary yew/cherry laurel hedge (see wildlife legislation/considerations in section 4.2 and 8.4). No tree pruning works would be required on any retention trees.

7.1.2 As plotted on the Tree Protection Plan at Appendix 2, with the implementation (in a timely manner) of the tree protection measures specified in this report there should be no CEZ 1 (RPA) impact on the retention trees.

7.1.3 There would be no CEZ 2 or CEZ 3 issues with this application.

7.1.4 CEZ 4: See Benjemin Beth Projects Landscape Concept Plan (Drawing No. P754-00. Dated June 2020).

7.1.5 See Arboricultural Method Statement at Appendix 3. Active random site monitoring by a Consulting Arborist throughout the development process is strongly recommended (AIA3: Phase 3).

7.1.6 Site Supervision Responsibilities: This would be an essential element during the proposed build to ensure effect tree protection. See section 6.0 in the appended in the Arboricultural Method Statement.

8.0 RECOMMENDATIONS

8.1 EXECUTION OF CONTRACT

It is recommended that the Architect specifies in writing to the building contractor that tree care conditions apply to the execution of the contract. Lack of care frequently results in the damage, decline and eventual death of trees. This can adversely affect design aims & site sale-ability, and reflects poorly on the contractors and design personnel involved. Trees that have been the recipients of careful handling during construction add considerably to the appeal and value of finished developments.

8.2 PROPOSED REVISIONS TO THE SCHEME

We advise that all proposed revisions in respect of external layout, orientation of primary windows, location of underground services, external surfacing and/or landscaping; having implications for retention trees should be referred to us for review.

8.3 TREE WORKS - BEST PRACTICE

Subject to LPA written permission/consent (if applicable - see section 4.1.2), all tree works must conform rigorously to *BS 3998 (2010)* 'Recommendations for Tree Work'* and as modified by research more recent.

All retention trees should be inspected annually by an Arboriculturist to assess the significance of any future physiological, morphological or environmental changes.

* Including any subsequent revisions.

8.4 WILDLIFE CONSIDERATIONS

Trees and hedgerows should be carefully inspected for birds' nests prior to tree pruning or removal and any work likely to destroy or disturb active nests should be avoided until the young birds have fledged, unless however, the trees pose an immediate danger (advice should be sought from the relevant wildlife authorities).

All personnel working with or in trees should be vigilant and mindful of the possible presence of roosting bats. A competent ecologist should investigate any indication that trees on the site are used as bat roosts.

8.5 OUTDOOR AMENITY SPACE

Design of outdoor amenity space should fully consider the locations of existing trees to be retained. Alterations of soil levels and cultivation of ground beneath trees (the RPA) can result in significant root loss or damage and altered drainage patterns, which could lead to a decline in tree health and possible (tree) structural instability. Removal of existing herbaceous vegetation, by hand or appropriate herbicide application* and addition of a thin layer (100-150mm) of sandy-loam topsoil will facilitate the establishment of grass or other vegetation beneath the canopies of existing trees, whilst avoiding unnecessary root disturbance.

* The selection & application of herbicides must be undertaken by a competent person in accordance with the Control of Substances Hazardous to Health (COSHH) regulations. Inappropriate use of herbicides can damage/ kill leaves, shoots, branches or whole trees.

8.5.1 In order to avoid mower/strimmer damage to the base on tree trunks (i.e. bark stripping), grass seed/turf ***should not*** be laid within a 0.5m (min.) radius around trees.

8.5.2 With respect to any hard/soft landscaping works, there should only be limited soil excavation/cultivation works (max. depth 150mm) within the retention tree RPAs.

9.0 OCCUPIERS LIABILITY ACTS

Attention is drawn to the provisions of the Occupiers liability Acts (England & Wales - 1957 & 1984), which place a responsibility upon landowners to ensure the safety of others entering their land whether by invitation or permission: inclusive of trespassers. There is a special responsibility to ensure the safety of children, who may be unaware of hazards. Annual inspections of trees by a competent person, or following storm events, together with implementation of any remedial tree work recommendations, should ensure compliance with the legislation regarding the above legislation.

10.0 REFERENCES

- *BS 5837; 2012 'Trees in relation to design, demolition and construction - Recommendations'* British Standards Institute, London
- *BS 3998; 2010 'Tree Work Recommendations'* British Standards Institute, London
- *'NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees' 2007* National Joint Utilities Group (NJUG) Volume No. 4: No. 1.
- Arboricultural Practice Note 12; 2007 – AAIS
- *'Availability of Sunshine' BRE - CP 75/75*
- *'Tree Roots in the Built Environment'* 2006 - Dept. for Communities & Local Government (DCLG).
- *'Up by Roots: healthy soils & trees in the built environment'* 2008 James Urban, International Society of Arboriculture.
- *'Arboriculture';* 1999 3rd edition R. Harris, J. Clarke & N. Matheny. Prentice Hall.
- *'Soil Management for Urban Trees'* 2014 International Society of Arboriculture, Best Management Practice series.

Russell Ball BSc. (Hons.), P.G. Dip. LM, CBiol., MRSB.
Technical Director: Arbol EuroConsulting Ltd.
Royal Society of Biology **Chartered Biologist**
International Society of Arboriculture **Certified Arborist** (ID: UI-1287A)
LANTRA Approved **Professional Tree Inspector** (Ref: HO00178227 504187)
International Society of Arboriculture **Qualified Tree Risk Assessor** (ID: 2148)

No. 1 Landford Close Rickmansworth WD3 1 NG
Mobile: 078844 26671
Email: russell@arboleuro.co.uk
http://www.arboleuro.co.uk/

APPENDIX 1

TREE SURVEY SCHEDULE
(see appended at end of report)
2 pages

APPENDIX 2

TREE CONSTRAINT AND PROTECTION PLANS

NB The original of this plan was produced in colour – a monochrome copy should not be relied upon.

(see appended to report)

APPENDIX 3

ARBORICULTURAL METHOD STATEMENT

5 pages

ARBORICULTURAL METHOD STATEMENT

Site: 25 Dene Road Northwood

To be read in conjunction with the Tree Report sections 6-8 and Tree Protection Plan at Appendix 2.

NB The original of this plan was produced in colour – a monochrome copy should not be relied upon.

This AMS lays down the methodology for any demolition and/or construction works that may have an effect upon trees on and adjacent to this site. It is essential within the scope of any contracts - related to this development - that this AMS is observed and adhered to. It is recommended that this document forms part of the work schedule and that specifications are issued to the building contractor(s) and these must be used to form part of their contract.

Consulting Arborist contact details: Russell Ball – mob. No. 078844 26671

SEQUENCE OF WORKS

From commencement of the subject development, the following methodology will be implemented in the manner and sequence described:

1. Pre-commencement site meeting.
2. Arboricultural removal works: with written LPA permission for any protected trees.
3. Erect *temporary* staked Tree Protection Barriers (**TPB I**) to establish the fenced-off Construction Exclusion Zones (CEZ): ***before*** any demolition and/or construction works begin on-site.
4. Main construction works.
5. Route underground services: not within the RPAs of any retention trees.
6. Site Supervision Responsibilities
7. Remove **TPB I** and re-install **TPB II** around T2 and T7.
8. Widened and Renewed Frontage Driveway with Turning-Head and new Footpath: Cellular Confinement System.
9. Remove **TPB II**.
10. Soil enhancement for T2

1. PRE-COMMENCEMENT SITE MEETING

To outline on-site working methods in relation to trees prior to any demolition and/or construction activity, a site meeting of the following shall take place:

- Client
- Architect/Planning Consultant
- Structural Engineer
- Main Contractor
- LPA Arboricultural Officer (*optional)*
- Consulting Arborist
- Site Agent

2. ARBORICULTURAL REMOVAL WORKS

1. Before the erection of the *temporary* Tree Protection Barriers (see below) remove the northern-end section of H1 including the silver birch T6 and the frontage boundary yew/cherry laurel hedge. We are advised by the client that the site is not within a Conservation Area and that none of the on-site trees are subject to any Tree Preservation Orders. However, before any tree works are carried out, this should be double-checked with the LPA. If any statutory (tree) protection is confirmed then advance LPA permission/consent will be required.
2. All possible efforts must be made to prevent damage to retained trees including potential root incursion or compaction caused by vehicle access. If required, temporary ground protection should be used to achieve the latter.
3. No fires or chip piling to occur within 5m of the drip line of any tree canopy or within 10m of any tree trunk: whichever is further.
4. All operatives must be equipped with and use personal protective equipment (PPE) in accordance with current Health & Safety Executive current directives and industry codes of practice.

3. ERECT *TEMPORARY* STAKED TREE PROTECTION BARRIERS (TPB) plotted as single solid & dotted red lines on the appended TPP:

1. Following completion of the tree works and prior to demolition and/or construction, the main contractor will erect the *temporary* staked and braced TPB as per the appended Tree Protection Plan (TPP) and *as described below*. See also the *'Tree Protection Barrier Specification'* at Appendix 4 of this report and Appendix MS(ii).

   Main Construction: As per the appended TPP, **TPB I** will establish Construction Exclusion Zones (CEZ) at the front, rear and side to afford RPA protection for all retention trees. On no account shall these CEZs be used for the storage/preparation of any construction/building materials.

   Extended Frontage Driveway (see CCS below): With the main build complete, the above frontage **TPB I** shall be moved to create **TPB II** and a CEZ adjacent to T2 during the aforementioned driveway installation. Again on no account shall this CEZ be used for the storage/preparation of any construction/building materials. After the driveway construction **TPB II** shall be removed (see section 9.0 below).

   Western Footpath (running up the side of the proposed property [see CCS below]): With the main build complete, the **TPB I** surrounding T7 shall be moved to create **TPB II**** and a smaller CEZ during the footpath installation. Again on no account shall this CEZ be used for the storage/preparation of any construction/building materials. **NB** In regard to **TB II**, due to restricted space for angular staking this TPB would be booted with sections ***clamped together*** so they cannot be moved. After the footpath installation **TPB II** shall be removed (see section 9.0 below).

   Grounds Maintenance: The two frontage **TPB I** CEZs will require a gate to allow operative access for grass verge mowing during the build (growing season).

2. Prior to commencement of any site demolition, construction, preparation, excavation or material deliveries, the Consulting Arborist will inspect installation of the TPB and the CEZs. Any damage occurring to the TPB during the demolition or construction phase will be made good by the main contractor.
3. Excavation will not occur at a distance of less than 300mm from the TPB.

4. MAIN CONSTRUCTION WORKS

1. There will be a *temporary* site office.
2. Before commencing work on site, all operatives must be briefed by the **Site Agent/Contract Manager** on the importance of protecting both on and off-site trees. The basis of this briefing will be the protection measures as set out on the Tree Protection Plan (TPP) including the position of staked **Tree Protection Barriers, Cellular Confinement System installation** and **Construction Exclusion Zones**. As such the TPP shall be clearly displayed on the wall of the site office. **NB** During the demolition and/or construction the **Site Agent/Contract Manager** will be responsible for all tree protection measures. See also ***Site Supervision Responsibilities*** below.
3. As the turning head is within the RPA of T2, ***porous tarmac*** shall be used. See notation on the appended TPP.
4. There must be no (a) storage of construction material/equipment or (b) preparation of noxious substances (e.g. cement) in any area designated as the Construction Exclusion Zone (CEZ) and enclosed by the TPB.
5. The area of the proposed frontage Bin Store shall be used for temporary storage with the latter constructed after the main build has been completed.

5. ROUTE UNDERGROUND SERVICES

1. With the main build complete these services runs will enter the property via the frontage *Designated Incoming Zone*: brown hatched on the appended TPP.

6. SITE SUPERVISION RESPONSIBILITIES

1. It will be the responsibility of the main contractor to ensure that any tree protection planning conditions attached to planning consent are adhered to at all times and that a monitoring regime in regards to tree protection is adopted on site.
2. The main contractor must assign tree protection monitoring duties to one or more individuals working at the site, who will be responsible for all tree protection monitoring and supervision (see the *Site Personnel Induction Form* at Appendix MS ii).
3. The individual(s) assigned tree protection monitoring duties must:
   - Be present on site for the majority of the time;
   - Be aware of (a) the Tree Protection Plan and (b) the tree protection measures to be installed and maintained throughout all phases of the development;
   - Be responsible for ensuring all tree protection measures are adhered to as detailed in the Arboricultural Impact Assessment (AIA) report and Arboricultural Method Statement (AMS);

- Ensure all site operatives without exception read and understand the tree protection and control measures detailed in the AMS;
- Keep on file all individual Site Personnel Induction Forms which must be signed by all site operatives (including sub contractors) indicating they have read and understood the control measures detailed within the AIA report and AMS;
- Maintain a written record of Tree Protection / Construction Exclusion Zone inspections, to be kept up to date by the person(s) who have been designated the inspection and monitoring duties;
- Have the authority to stop any work that is causing, or has the potential to cause, harm to any retention trees;
- Be responsible for ensuring that all site operatives including sub contractors are aware of their responsibilities toward on/off site trees and the consequences of the failure to observe these responsibilities;
- Make immediate contact with the Consulting Arboriculturist in the event of any tree related problems occurring, whether actual or potential. (Contact details including telephone number and email address are listed on the Title Page).

4. The Construction Exclusion Zone fencing, ground protection and all signs must be maintained in position at all times and checked on a regular basis by the on site person(s) who have been designated that responsibility.
5. The main contractor will be responsible for contacting the Local Planning Authority and the Consulting Arboriculturist at any time issues are raised relating to the trees on site.
6. If at any time pruning works are required, permission must be sought from the Local Planning Authority first and then carried out in accordance with BS 3998:2010 Tree Work – Recommendations (As updated).
7. The main contractor will ensure the build sequence and phasing is appropriate to ensure that no damage occurs to the trees during the construction processes. Protective fences will remain in position and undisturbed until completion of ALL construction works on the site.
8. The main contractor will be responsible for ensuring all site operatives including sub-contractors do not carry out any process or operation that is likely to adversely impact upon any tree on site.

7. REMOVAL OF *TEMPORARY* TREE PROTECTION BARRIERS (TPB I) AND RE-INSTALL AS TBII AROUND T2 AND T7

1. **TPB I** will be removed only upon completion of the construction works with **TBP II** installed around T2 and T7 to create CEZs during the driveway and footpath CCS installation: see below.

8. WIDENED AND RENEWED FRONTAGE DRIVEWAY AND WITH TURNING-HEAD AND NEW SIDE FOOTPATH: 3D CELLULAR CONFINEMENT SYSTEM (CCS)

1. Install **TPB II** around T2 and T7 as per the appended Tree Protection Plan.
2. The widened driveway section shall be installed using a three-dimensional minimal/no-dig CCS to provide adequate vehicular load-bearing capacity. A site specific installation Method Statement (MS) should be obtained from ProtectaWeb* (Wrekin Products Ltd.) and the product installed in accordance with this MS (**NB** As advised by Wrekin Products Ltd. this MS is free of charge). See generic MS at Appendix 6. Contact: laura.perrett@wrekinproducts.com / roy.partington@wrekinproducts.com (tel. no. for Roy Partington: 07496 920 640). The project evaluation by a Wrekin Products Ltd Engineer will determine the correct size and product specification required at the site. As such the construction will be to an engineer designed specification. Lastly, and importantly, it is envisaged that the final top-surface for these bays would *porous* tarmac. **NB** The new CCS section will be laid over the existing ground without excavation other than the removal by hand of surface vegetation and minor (<100mm high) surface irregularities or loose soil to a depth of not more than 150mm.

* *Or a similar industry recognised CCS*

3. Importantly, in regard to the renewed frontage driveway to mitigate RPA disturbance on T2 the ***sub-base*** of the ***existing driveway*** shall be *retained* and *incorporated.*
4. **Western Footpath:** A section of this footpath runs across the RPA of T7. Therefore, as with the extended frontage driveway, a CCS shall be used to mitigate the RPA impact. See section 8.2 above. As a footpath, the depth of this CCS would only required to be 75cm thick.
5. In regard to the CCS due consideration will be given to the principles with the Communities and Local Government publication "Guidance on the Permeable Surfacing of Front Gardens" (2008) Product Code: 08 COMM 05532. ISBN: 978-1-4098-0485-7
6. The final finished surface will be of a porous material agreed with Local Planning Authority.
7. Edge restraints to the no-dig section of the CCS will be constructed from pressure treated timber boards secured to timber posts, or other means agreed with Local Planning Authority. In the installation of edge restraints, there will be no excavation of ground other than that described at (1.0) above. All timber will be treated in compliance with BS 4072 (Wood Preservation by Means of CCA Compositions).

8. **Importantly,** when CCS are used for driveways/paths this may increase final finished surface levels that should be accounted for: notably in respect to matching property (for example, damp-proof levels & overall building height) and garage access.
9. To repeat and reiterate, as the turning head is within the RPA of T2, ***porous tarmac*** shall be used. See notation on the appended TPP.

9. REMOVAL OF *TEMPORARY* TREE PROTECTION BARRIERS (TPB II)

1. **TPB II** will be removed only upon completion of the CCS.

10. SOIL ENHANCEMENT FOR T2

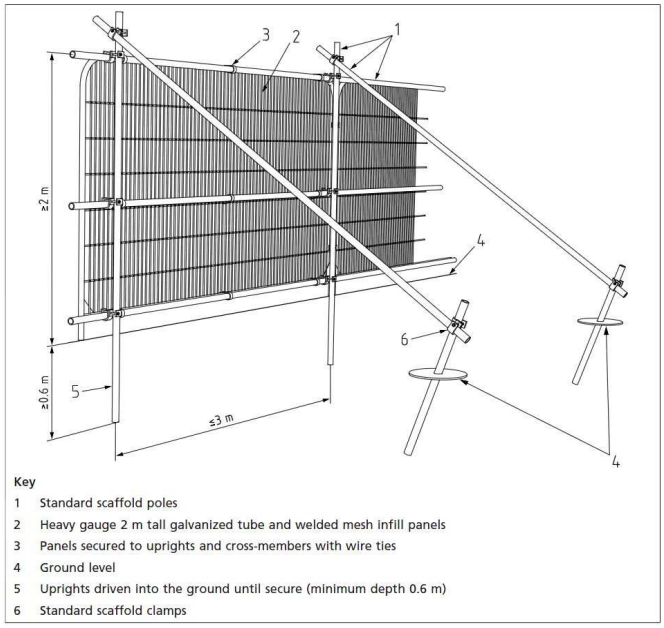
1. The following is recommended:

(1) Under the crown spread of T2 remove all the (competing) large shrubs (cherry laurel, *Viburnum*, privet, *Ceanothus* and *Euonymus).*
(2) Air Spade this area to incorporate Biochar* into the upper soil horizon (see green-shaded zone on the appended TPP).
(3) Add a 3-5cm deep layer of mulch/woodchip over this air-spaded area. **NB** Not against the root crown of T2.

The above would have the effect of improving the tree-rooting environment for T2. We recommend https://www.bartlett.com/tips/biochar.cfm

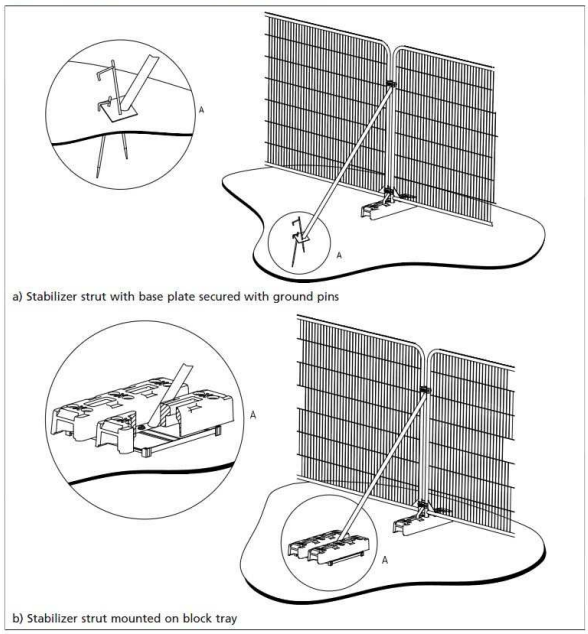
APPENDIX MS(i)

Figure 2 **Default specification for protective barrier**



Key
1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized 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

Figure 3 Examples of above-ground stabilizing systems



APPENDIX MS(ii)
Site Personnel Induction Form

Name:

Site Address:

Date:

Declaration	**Tick to Confirm**
I have read and understand the Arboricultural Method Statement and the requirements to be employed / actioned at the site regarding tree protection.	
I understand that all tree protection measures (fencing and ground protection) must not be moved or disturbed throughout the development project without prior agreement with the Consulting Arboriculturist.	
I understand that certain operations must only be undertaken under supervision of the Consulting Arboriculturist or a suitably qualified Arborist and/or must not be undertaken without their approval.	
I acknowledge that any concerns I have regarding the protection of trees at and adjacent to the development site will be brought to the attention of the Site Manager/Supervisor.	
I acknowledge that I must not cause direct or indirect damage to any on site or neighbouring tree, either above or below ground level during the course of my daily operational duties.	

Signed:……..

APPENDIX 4

TREE PROTECTION BARRIER SPECIFICATION
(1 page only)

TREE PROTECTION BARRIER SPECIFICATION

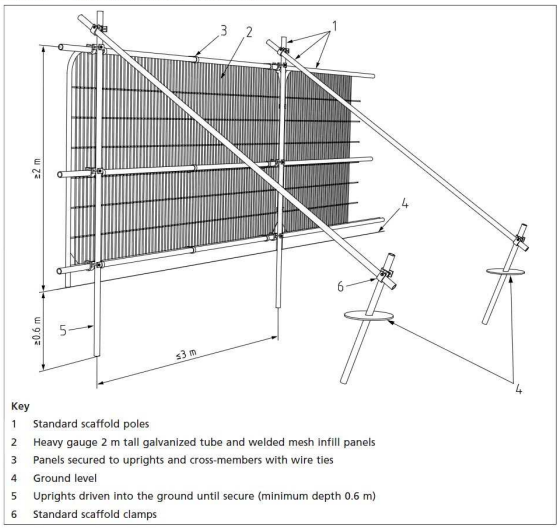
The Root Protection Area (RPA) and Construction Exclusion Zone (CEZ) enclosed by temporary protective fencing must:

1. Be erected prior to any site works, demolition or construction works, delivery of site accommodation or materials and must remain for the duration of the demolition/construction works. All-weather notices should be attached to the barriers with the following wording: **"CONSTRUCTION EXCLUSION ZONE – NO ACCESS"**
2. Be protected by temporary protective fencing and other measures as specified and as defined by area (m^2) on the drawings (Tree Protection Plan - TPP).
3. Preclude the storage or tipping of all materials and substances, in addition, toxic substances such as fuels, oils, additives, cement, or other deleterious substances within 5.0 metres of an exclusion zone.
4. Any incursion into the Root Protection Area (RPA) and Construction Exclusion Zone (CEZ) as indicated on the Tree Protection Plan (TPP) must be by prior arrangement, following consultation with the Local Planning Authority.

Protective Fencing Type:

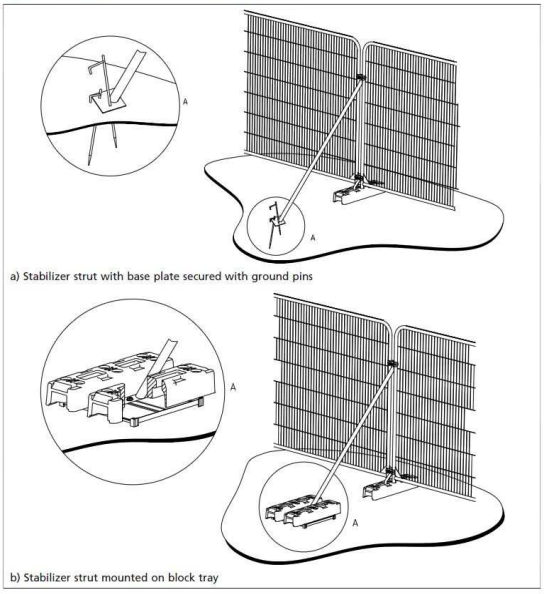
Temporary Tree Protection Barrier (Specification taken from BS:5837 -2012)

Figure 2 **Default specification for protective barrier**



Key
1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized 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

Figure 3 **Examples of above-ground stabilizing systems**



APPENDIX 5
WREKIN "PROTECTA WEB" INSTALLATION METHOD STATEMENT
(appended at end of document)

APPENDIX 6
TRIAL-DIG ADJACENT TO THE HOLM OAK T2
(appended at end of document)

APPENDIX 7
OUTLINE CIRRICULUM VITAE AND PROFESSIONAL EXPERIENCE

Russell Ball BSc. (Hons.), P.G. Dip. LM, CBiol., MSB.
Chartered Biologist

Qualifications

- BSc. (Hons.) Botany (Manchester University).
- Post Graduate Diploma: Landscape Management (Manchester University).
- Royal Society of Biology **Chartered Biologist** (since 1995).
- International Society of Arboriculture **Certified Arborist** No. UI 1287A (2017)
- *LANTRA* Approved **Professional Tree Inspector** (Ref: HO00178227 504187)
- International Society of Arboriculture **Qualified Tree Risk Assessor** (ID: 2148)

Professional Experience (1984-2012)

- Tree Works Contractor.
- Harrow Council: Assistant Tree Officer (Parks Dept.)
- London Tree Officers Association: Executive Officer.
- International Society of Arboriculture (European office): Senior Executive.
- Arbol Euro Consulting: Technical Director (**Madrid, Spain**).
- Harrow Council: Principal Tree Preservation (TPO) Officer. During my employ with Harrow Council I served on the Executive Committee of the *"London Tree Officers Association"*.
- Arbol Euro Consulting Ltd: Technical Director (**London, UK**).

Professional Memberships

- International Society of Arboriculture (ISA). President of the ISA UK/I Chapter (2010-2012).
- Arboricultural Association
- Consulting Arborist Society
- Royal Society of Biology
- Royal Horticultural Society (Chelsea Flower Show *Silver-Gilt* medal Winner: *Rainforest Belize* – 1996)

Contact Details

- Mobile: 078844 26671
- Email: russell@arboleuro.co.uk

HEADINGS & ABBREVIATIONS

TREE NO.	REFERENCE NUMBER. REFER TO PLAN OR NUMBERED TAGS WHERE APPLICABLE
SPECIES:	COMMON NAME (LATIN NAMES AVAILABLE ON REQUEST)
AGE RANGE/LIFE STAGE:	Y = YOUNG, SM = SEMI MATURE, EM = EARLY MATURE, M = MATURE, PM = POST MATURE
HEIGHT:	ESTIMATED AND RECORDED IN METRES. APPROXIMATELY 1 IN 10 TREES ARE MEASURED USING A CLINOMETER AND THE REMAINDER ESTIMATED AGAINST THE MEASURED TREES
CROWN SPREAD:	MAXIMUM CROWN RADIUS MEASURED TO THE FOUR CARDINAL COMPASS POINTS FOR SINGLE SPECIMENS ONLY (MEASUREMENT FOR TREE GROUPS - MAXIMUM RADIUS OF THE GROUP)
CROWN CLEARANCE &DIRECTION OF GROWTH:	HEIGHT IN METERS OF CROWN CLEARANCE ABOVE ADJACENT GROUND LEVEL (TO INFORM ON GROUND CLEARANCE, CROWN/STEM RATIO AND SHADING)
STEM DIA/MULTI-STEM DIA:	STEM DIAMETER - MEASURED AT APPROXIMATELY 1.5 METRES ABOVE GROUND LEVEL OR A COMBINATION OF STEMS FOR MULTI-STEMMED TREES
VITALITY:	A MEASURE OF PHYSIOLOGICAL CONDITION. D = DEAD, MD = MORIBUND, P = POOR, M = MODERATE, N = NORMAL
ESTIMATED REMAINING CONTRIBUTION:	RELATIVE USEFUL LIFE EXPECTANCY (YEARS)
BS 5837CATEGORY & SUB-CATEGORY GRADING:	A = HIGH QUALITY AND VALUE, B = MODERATE QUALITY AND VALUE, C = LOW QUALITY AND VALUE, U = UNSUITABLE FOR RETENTION: SUB-CATEGORY REFERS TO ARBORICULTURAL (1), LANDSCAPE (2) & CULTURAL/CONSERVATION VALUES (3).
BS 5837 RPA:	ROOT PROTECTION AREA - BS 5837 (2012) ANNEX D (THE RECOMMENDATIONS STATE THAT THE RPA SHOULD BE CAPPED AT 707 M^2)
BS 5837 RADIUS:	PROTECTIVE DISTANCE - RADIUS FROM THE CENTRE OF THE STEM TO THE LINE OF TREE PROTECTION (CONSTRUCTION EXCLUSION ZONE - CEZ) AND PROTECTIVE BARRIER

SITE:	25 Dene Road Northwood
CLIENT:	GAVACAN HOMES
BRIEF:	CARRY OUT A PHASE II ARBORICULTURAL IMPACT ASSESSMENT ON THE PROPOSED DEVELOPMENT AT THE ABOVE SITE.

SURVEYOR:	R. BALL
ASSESSMENT DATE:	16/01/2020
VIEWING CONDITIONS:	CLOUDY
JOB REFERENCE:	101 455

TREE HEDGE GROUP NO.	SPECIES (COMMON NAME)	AGE RANGE/ LIFE STAGE	HEIGHT (m)	RADIAL CROWN SPREAD (m) N	E	S	W	CROWN CLEARANCE & DIRECTION OF GROWTH (m)	STEM/ MULTI-STEM* DIA. (mm)	VITALITY	COMMENTS/STRUCTURAL MORPHOLOGY	PRELIMINARY MANAGEMENT	CATEGORY & SUB-CATEGORY GRADING BS 5837	BS 5837 RPA RADIUS (m)	BS 5837 RPA (m^2)
TI	Lime	EM	28+	5.5	5.5	5.5	5.5	2.5	630	N	Has been topped-out in past but retains good crown form and provides significant public visual amenity in the street-scene	None at Time of Survey (NATS)	B2	7.5	179.5
T2	Holm Oak	EM	18	3.5	3.5	5.5	3.5	3.5	680	N	Good crown form and provides significant public visual amenity in the street-scene	NATS	B2	8.1	209.1
T3	Black Pine *Off-site with no access to fully survey*	EM	29+	4.5	4.5	5.5	4.5	10.0	Est. 550	M	Good crown form	? See access	B2(?) See access	6.6	136.8
T4	Sycamore	EM	19	3.8	4	4	4	3.8	710	N	Heavily lopped and topped in past: average tree	NATS	C2	8.5	228.0
T5	Giant Sequoia	EM	26+	8	8	8	8	2.0	1250 (max.)	N	Impressive tree in the immediate locale (close building proximity is however noted)	? See access	A2(?) See access	1250	707.0
H1	Mixed hedge: Cherry Laurel, Yew & Holly	SM	5.5	1.7	1.7	1.7	1.7	-	Est. Av. 120 x 5	N	Well-managed and provides useful boundary screening	NATS	B2	3.2	32.5
T6	Silver Birch	SM	19	1.8	2	2	2	1.8	226	N	Good crown form	NATS	B2	2.7	23.1
T7	Lawson Cypress *Off-site with no access to fully survey*	SM	17	1.8	1.8	1.8	1.8	-	Est. 310	N	Good crown form	? See access	B2(?) See access	3.7	43.4

SITE:	25 Dene Road Northwood
CLIENT:	GAVACAN HOMES
BRIEF:	CARRY OUT A PHASE II ARBORICULTURAL IMPACT ASSESSMENT ON THE PROPOSED DEVELOPMENT AT THE ABOVE SITE.

SURVEYOR:	R. BALL
ASSESSMENT DATE:	16/01/2020
VIEWING CONDITIONS:	CLOUDY
JOB REFERENCE:	101 455

TREE HEDGE GROUP NO.	SPECIES (COMMON NAME)	AGE RANGE/ LIFE STAGE	HEIGHT (m)	RADIAL CROWN SPREAD (m) N	E	S	W	CROWN CLEARANCE & DIRECTION OF GROWTH (m)	STEM/ MULTI-STEM* DIA. (mm)	VITALITY	COMMENTS/STRUCTURAL MORPHOLOGY	PRELIMINARY MANAGEMENT	CATEGORY & SUB-CATEGORY GRADING BS 5837	BS 5837 RPA RADIUS (m)	BS 5837 RPA (m^2)
T8	Field Maple *Off-site with no access to fully survey*	EM	18	3	3	8	3	1.5	Est. 450	N	Heavily suppressed by T3 with almost prostrate crown form	? See access	C2(?) See access	5.4	91.6

Arbol EuroConsulting Ltd.

1 Landford Close Rickmansworth WD3 1NG
Mobile: 07884426671

25 Dene Road Northwood
Tree Constraint Plan

SCALE :	DATE :
1:200 @ A3	1/15/2020

MAP FILENAME : 101 455

N

The original of this drawing was produced in colour - a monochrome copy should not be relied upon

DENE ROAD

T1 B

T2 B

T3 B

T8 C

T6 B

T7 B

No.25

Yew Hedge

Cherry Laurel Hedge

H1 B

T4 C

T5 A

KEY

Root Protection Area (RPA)

Crown Spread

BS: 5837 Retention Grade

B

5m 10m 15m 20m

SCALE BAR

Arbol EuroConsulting Ltd.

1 Landford Close Rickmansworth WD3 1NG
Mobile: 07884426671

25 Dene Road Northwood
Tree Protection Plan

SCALE : 1:200 @ A3
DATE : 10/5/2020
MAP FILENAME : 101 543

N

DENE ROAD

DEMOLITION & CONSTUCTION TEMPORARY SITE ACCESS

Designated Incoming Undergound Utility Zone

T1 B
T2 B
T3 B
T4 C
T5 A
T7 B
T8 C
H1 B

CEZ

BioChar Treatment

Porous Tarmac

Existing vehicular access (sub-base) retained

Parking

8. 9. 10. 11. 12. 13.

7. 6. 5. 4. 3. 2. 1.

Grassed

Storage of Machinery and/or Materials and Temporary Site Office

Storage of Machinery and/or Materials

New Hedge

No.23a

THIS TREE PROTECTION PLAN MUST BE READ IN CONJUNCTION WITH THE ARBORICULTURAL METHOD STATEMENT THAT ACCOMPANIES THE TREE REPORT (IN APPENDIX 3)

KEY

- Root Protection Area (RPA)
- Crown Spread
- BS: 5837 Retention Grade
- Temporary Staked Tree Protection Barrier (TPB I)
- TPB II

CEZ = Construction Exclusion Zone

- RPA Incursion on T2
- Extended Drive: Cellular Confinement System

5m 10m 15m 20m

SCALE BAR

25 Dene Road
Northwood
HA9 9EA

Trial-Dig
(Ref. 101 499)

Date: 20/06/2020

Prepared by:
Russell Ball BSc. (Hons.), P.G. Dip. LM, CBiol., MRSB.

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International Society of Arboriculture *Qualified Tree Risk Assessor*

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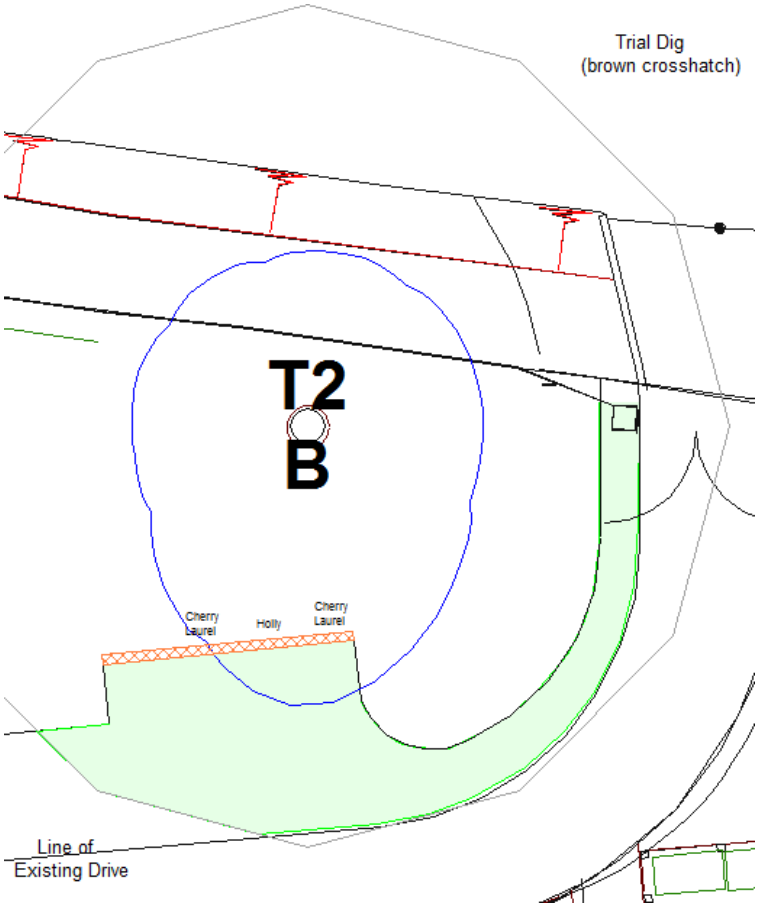
Trial-Dig

- **Objective of Trial-Dig:** To assess the presence of any significant tree rooting (>2.5cm dia.) from the Holm oak T2 in regard to the proposed turning-head (TH) retaining-wall for car parking bays 1 and 2. Rationale: This retaining-wall is within the Root Protection Area of T2.
- **Line of the Trial-Dig:** The edge of dig was approx. 4.2-4.5m away from the trunk centre of T2. See below.



- **Trial-Dig Method:**

  - The above trial-dig trench was dug to a depth of 60cm.
  - To avoid cutting/slicing through roots (i.e. by using a spade) only forks and hand trowels were used.
  - The dig was supervised by a suitably qualified Consulting Arborist.

- **Trial-Dig Results:**

  - No significant tree roots from T2 were found along the excavated (T2-side) of the 60cm deep trench. See photos 1-7.
  - Along the trench line woody roots from two cherry laurels and a holly were found: these were growing along this trench line and as such these roots were expected. The excavated roots from these shrubs have been left on the side of the trench and the trench left open should a site visit be required by the Hillingdon Council Tree Officer.
  - Importantly, the soil under the holly tree root crown (approx. 40cm wide) could not be excavated using hand-tools (see no. 6).

Photos of Trial-Dig Trench-Line

Photo No. 1 to show the initial excavation looking east to west

Note the cherry laurel woody root next to the Sounding Hammer with the holly rooting adjacent to the removed holly stem with the cherry laurel rooting further back along the trench line

Photo No. 2 to show dig in progress

Note the cherry laurel woody roots under and adjacent to the Sounding Hammer (removed cherry laurel roots on the soil surface)