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Horticultural, Arboricultural, Landscape Consultant & Contractors



Arboricultural and Planning Impact Assessment Report:

**Dannatt House, 5a Templewood Avenue,
Hampstead, London, NW3 7UY**

Report Date: 14th September 2020

Ref: WCEL/PEW/AIASR/0914:20



This report has been prepared as an assessment of the sub-scheme for the site that has been specifically prepared in consultation with WCEL, Structural Design Studio and Coppin Dockray Architecture & Design, which has been engineered for the site based on some possible constraints identified during site and should be read in conjunction with the existing extant scheme for the site.

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Arboricultural Report

Location: Dannatt House, 5a Templewood Av, Hampstead, NW3 7UY
Ref: WCEL/PEW/AIASR/0914:20
Client: Mr & Mrs Furman
Report Date: 14th September 2020 Rev 1: n/a
Date of Inspection: Thursday 23rd July 2020
Prepared by: Philip Wood BSc(Hons)LAM.

Please note that abbreviations introduced in [Square brackets] may be used throughout the report.

Instructions

Issued by – Sandra Coppin (Coppin Dockray Architecture & Design) on behalf of Client

TERMS OF REFERENCE – Wood Consulting Environmental Limited [WCEL] were previously instructed to survey the subject tree(s) within the grounds of the property, or in neighbouring property's close to the proposed development in order to assess their general condition, constraints they may pose to development, the potential impact that the changes on site may have on the tree(s) and identify recommendations (where appropriate) to safeguard or limit the impact on the health of the tree(s), providing a brief planning impact and integration statement for the construction of a slightly raised above ground garden store, which should be considered in conjunction with the existing extant scheme on the site and its already approved plans. The proposed works lift the existing paving located at the end corner of the garden under the location of the proposed garden store and then install a lightweight structure above the ground on micro piles with access via the location of the existing garden steps. Concerns had been raised regarding the condition and longevity of a couple of trees and pruning work has been consented by the LPA with a hope to stimulate the trees with a reduction in the crown to root ratio. A significant percentage of the proposed garden store will be located over the existing footprint of the paving already present in the garden. The garden store is modest in proportion compared with the garden and only sits over a very small percentage of the root protection area of the trees, with the structure being located above ground with a void space where oxygen exchange and rain water will be re-directed to aim to avoid impact to the trees. The site already has some built structures close to the tree. It is known that the property is within the Redington Frogna Conservation Area. Therefore, there are planning restrictions on pruning or removal of the trees including both branches and roots of the tree(s) without reference to the Local Planning Authority. The Local Authority give guidance related to development near trees and where there may be some tree related impact, the proposed development should be assessed by an arboricultural consultant to safeguard the long-term health and well-being of the trees on, or adjacent, to the site for the future sustainability of the local area. Also, where trees are affected or require removal by a proposed scheme the impact should be assessed in accordance with the current standard.

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Executive Summary

The proposal for the site which needs to be considered in relation to trees is to remove an area of the existing paving and construct a garden store which only sits over a very small percentage of the root protection area of the trees, with the structure being located above ground with a void space where oxygen exchange and rain water will be re-directed to aim to avoid impact to the trees. Planning permission has already been given for the main activities on the site and this is proposed as a minor addition to the overall scheme. WCEL has been working closely with the project team and provided feedback to reduce the potential impact to any trees with revised designs following the guidance provided within the already approved AIA report for the site. As can be seen from the submitted plans, the garden store will be positioned above ground level to avoid conflict with established tree roots. The garden store will be slightly elevated and carried on six micro piles as identified by the structural engineer which will avoid the need for new significant foundation excavation and a significant section of the structure sits over the former area of paving. This area under the extended studio will be permeable which will aid the availability of moisture precipitation and gaseous exchange and a rainwater diversion system will be installed from the roof to redirect the water back under the building. Concerns had been raised regarding the condition and longevity of a couple of trees and pruning work has been consented by the LPA to hope to stimulate the trees with a reduction in the crown to root ratio. The Silver Birches and Hawthorn tree are not considered to be worthy of the imposition of a tree preservation order but the clients wish to retain these trees and so it is considered that the slight above ground incursion into the RPA's should not be a barrier to implementation of the scheme proposed. The scheme is not considered likely to have a significantly detrimental impact on the long-term health of the retained protected trees or the broader amenity of the conservation area. There is a significant landscape planting approved for the site and this will feature a number of new trees to provide succession planting to enable further greening of the rear garden in the longer-term.

The proposed scheme does not require the removal of any trees. The proposed scheme is just within a very tiny percentage of the RPA of the retained trees, but predominantly only replaces the existing paving and these trees could be adequately protected during construction, subject to appropriate safeguards, tree protection measures and appropriate site-specific sensitive method statements for activities proposed within the root protection zone of any retained trees.

A site-specific assessment has been made which concludes it would be acceptable to construct the scheme and sufficiently protect the root systems of nearby trees. The trees on site should be relatively unaffected by the scheme, with the potential to improve the growing environment, if carried out sympathetically with appropriate tree protection measures and this would not result in a negative visual amenity impact to the street scene, nor significantly affecting the broader amenity of the conservation area there should be no material arboriculturally related planning reason to withholding planning consent. This should be subject to an appropriately worded condition being attached to any planning approval for the implementation of a landscape scheme with appropriate establishment maintenance schedule for any new soft landscape planting (if considered necessary).





Documents Supplied

Sandra Coppin of Coppin Dockray Architecture & Design supplied the following documents subsequent to the site visit:

- | | | | |
|------------------------------------|------------------|--------------------|-------|
| 1. Existing Approved Site Plan | Date: 10/09/20 | Dwg No: 1803-EX-02 | Rev - |
| 2. Proposed Site Plan | Date: 10/09/20 | Dwg No: 1803-PL-30 | Rev - |
| 3. Proposed Garden Storage Plan | Date: 12/09/2020 | Dwg No: 1803-PL-31 | Rev - |
| 4. Proposed Garden Shed Elevations | Date: 12/09/2020 | Dwg No: 1803-PL-32 | Rev - |
| 5. Proposed Garden Storage Section | Date: 12/09/2020 | Dwg No: 1803-PL-33 | Rev - |

1.0 Scope of Survey

- 1.1 The survey is concerned with the arboricultural aspects of the site only.
- 1.2 This report is only meant to identify the trees requested for inspection within the confines of the site, or those of dangerous condition within falling distance of the site if in third party ownership and comment on their health, condition and management.
- 1.3 The planning status of the trees was not investigated in extensive detail, but the property is known to be located within the Redington Frogna Conservation Area. It is recommended that an enquiry would need to be made to the local Council as the Local Planning Authority [LPA] to confirm the tree(s) is (are) subject of a specific Tree Preservation Order before undertaking the recommendations, if uncertainty remains.
- 1.4 A qualified and trained Horticulturalist and Arboriculturist undertook the site visit and prepared the report. The contents of this report are based on this. Whilst reference may be made to built structures or soils, these are only opinions and confirmation should be obtained from a qualified expert in this specific fields as required.
- 1.5 Where reference to trees in third party properties, these trees were surveyed from within the subject property, therefore a detailed assessment not possible and some (if not all) measurements were estimated.
- 1.6 Discussions took place between the Surveyor and no other 3rd party.
- 1.7 The trees were inspected on the basis of the Visual Tree Assessment method expounded by Mattheck and Breleor (The body language of tree, DoE booklet Research for Amenity Trees No. 4, 1994).
- 1.8 The survey was undertaken in accord with British Standard 5837: 2012 Trees in relation to design, demolition and construction – recommendations (where applicable or required).
- 1.9 Pruning works will be required to be in accord with British Standard 3998:2010 (Tree work – Recommendations).





- 1.10 The client's attention is drawn to the National House Building Council Standards, 2007, chapter 4.2: Building near trees (NHBC) when considering tree replacement species or foundation design details.
- 1.11 The client's attention is drawn to the responsibilities under the Wildlife and Countryside Act (1981).

2.0 Survey Method

- 2.1 The survey was conducted from ground level with the aid of binoculars, where required.
- 2.2 No tissue samples were taken nor was any internal investigation of the subject trees undertaken.
- 2.3 No soil samples were taken.
- 2.4 The height of each subject tree was estimated or calculated by use of a clinometer.
- 2.5 The stem diameters were measured in line with the requirements set out in BS5837:2012 - Trees in relation to design, demolition and construction recommendations.
- 2.6 The crown spreads were measured with an electronic distometer or retractable tape measure. Where the crown radius was notably different in any direction this has been noted on the Tree Survey Plan (appendix A), or in the tree schedule (appendix B, if applicable).
- 2.7 The Root Protection Area [RPA] for each tree is included in the tree table in the already approved Extant Planning AIA: WCEL/PEW/AIA/1113:19 Rev1 Dated: 5th February 2020, both as a radius of a circle, and as an area. The Theoretical Radial Root Protection Area is illustrated in **Pink** & The Site Specific Assessed Theoretical Root Protection Area is illustrated in **Orange** in appendix A (*Where Applicable*) on the approved Extant AIA Tree Survey and Tree Protection Plan and are shown as a **Black** Dashed Line by the architects on the submitted plan.
- 2.8 All of the trees that were inspected during the site visit were detailed on the plan at Appendix A. Please note that the attached plan is for indicative purposes only, and that the trees are plotted at approximate positions based on the plan provided by the surveyor. The trees on this plan are categorised and shown in the following format: COLOUR CODING AND RATING OF TREES:
Category A – Trees of high quality with an estimated life expectancy of at least 40yrs. Colour = light **green** trunk outline on plan.
Category B – Trees of moderate quality with an estimated life expectancy of at least 20yrs. Colour = mid **blue** trunk outline on plan.











Category C – Trees of low quality with an estimated life expectancy of at least 10yrs. Colour = uncoloured/grey trunk outline on plan

Category U – Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10years. Colour = red trunk outline on plan.

The crowns of those trees that are proposed for removal, or trees where the crown spread is deemed insignificant in relation to the proposed development are not always shown on the appended plan; however, their stem locations may be marked for reference.

All references to tree rating are made in accordance with British Standard 5837:2012 Tree in relation to design, demolition and construction.

2.9 TREE PRUNING / REMOVAL: A list of all tree works that are required is included in the tree schedule at Appendix B. Pruning/removal has only been specified for the following reasons:

-  Where the works are required to reduce or limit the future risk posed by the tree(s).
-  Where works are required for safety reasons.
-  Where work is needed to mitigate a legal responsibility or duty.
-  Where work is required to improve tree form, or improve the longer-term health and management of the tree in its current surroundings.
-  Where works are considered appropriate to reduce or mitigate the impact of the tree(s) may or may be likely to have on property.
-  Where the trees are not required by the client and they are not considered worthy of the imposition of a Tree Preservation Order.

Where any tree work is needed, this work will be in accordance with British Standard 3998: 2010 (Tree Work – Recommendations).



Area for new Garden Store at rear corner of garden,
Above ground structure replaces existing shed and paving





3.0 Arboricultural Impact Assessment/Appraisal

3.1 The subject property is located on the North West side of Templewood Avenue in North West London, within the London Borough of Camden. However, the primary trees of interest, of varied health and amenity, are located within the front and rear garden and the adjoining land. The property is within the Redington Froggnal conservation area, but the trees are not believed to be subject to a TPO. The garden has a verdant, well planted feel with some paved areas and some existing structures located near to the trees. The existing paving and boundary wall have been in place for many decades and the new garden storage shed is designed to provide useable additional storage, given the limited size of the house for this growing family. There is a significant change of levels across the rear garden with a noticeable bank formed near the end of the garden where the proposed garden storage shed is to be located. Camden Council as LPA approved the main planning approval for the site and this is aimed at being a minor addition to the already approved works.

3.2 Tree Condition Assessment:


The restrictions and precautionary measures already proposed and approved in the extant AIA report for the main site development works, WCEL/PEW/AIA/1113:19 Rev1 Dated: 5th February 2020, will be followed and adhered to within this minor application. The date used in the extant scheme is used to form the basis of this assessment. The trees are well-established mature specimens of various broader amenity to the conservation area, though the Silver Birches (T5&T6) and Hawthorn (T8) are showing signs of significant stress during the summer months and appear to have declining condition and limited life expectancy. The crowns of the trees are very high and the trees had various degrees of pruning in the past with some additional pruning approved by the LPA which has now been carried out and there is no crown to structure issue present.

- 🌳 The Silver Birches (T5&T6) and Hawthorn (T8) are located in an area more central within the garden with area around the Birches being relatively flat and level. The specimens are mature trees with broad relatively unrestricted root protection areas stretching in what is assumed to be a symmetrical pattern within the existing garden. The specimens have had limited pruning in the past. There was no obvious staining or resin bleeding apparent at the time of inspection. The Birches have a very clean vertical dominant trunk, while the hawthorn has a more multi dominant branch structure, all of which are formed at a high level so there is no conflict with the storage structure proposed.
- 🌳 No significant pruning of the trees is required to the proposed development works identified in the planning application.
- 🌳 The Oak (T7) is located off site at a considerable distance in the garden beyond the rear boundary wall and is located beyond what appears to





be a small retaining wall. The higher surface level of the planter and adjoining garden will further restrict the likelihood of root activity within the site. The specimen is very mature tree and is of good vigour at the time of initial inspection. The specimen is a relatively stunted in form being broader than tall in crown branch structure. There are some large pieces of historic dead wood stubs in the crown which is common on specimens of this age. The tree was not closely inspected due to the significant distance between it and the boundary wall.

-  The crown of the tree is not near to the proposed structure and is sufficiently high. In addition, the tree would not have any direct conflict with the structure and roof of the proposed garden storage shed. It had good overall leaf cover when inspected similar to that expected for this type of species of tree.

The relevant details of the tree inspected have been included within the appended schedule.

- 3.3 At the point of inspection, the tree had no obvious fungal fruiting bodies visible from the ground inspection, which would normally help to identify trees of imminent hazard, which are factors that identify specific limits to a tree's appropriate retention in high foot fall areas or small contained garden situations. However, the Birches (T5&T6) and Hawthorn (T8) were showing signs of stress and a conservation areas notification was submitted for some pruning works, this was subsequently approved and the work has been carried out. The trees are not considered worthy of the imposition of a tree preservation order.

Regular inspections of the retained tree(s) by a suitably trained or experienced arboriculturalist should be carried out. Subsequent remedial works will ensure that trees are maintained in a suitable manner to exist in harmony with the new structures and its occupants for many years to come.

3.4 **The Proposal:**

The main emphasis of this assessment has been to consider the potential impact of the proposal and provide recommendations for safeguards to protect the tree during the development proposal while enhancing the growing condition of the tree in the longer term. The proposal for this area of the site which needs to be considered in relation to the trees is to remove an area of the existing paving and construct a garden store which only sits over a very small percentage of the root protection area of the trees, with the structure being located above ground with a void space where oxygen exchange and rain water will be re-directed to aim to avoid impact to the trees. This revised scheme is to be submitted to the LPA and this is the basis of this AIA report. The architect and structural engineer have confirmed that the new structure will be positioned above ground level avoid conflict with tree established tree roots and the foundation load will be carried on a number of micro piles.





The base of the store will be slightly elevated and carried from micro pile foundations that will be located as shown on the plan subject to careful trial inspections to confirm that there are no major structural or arterial feeding roots, though at this distance from the trees this is considered unlikely. This system will avoid the need for new significant foundation excavation and a significant section of the building sits over the former Yorkstone paving established on site. The area under the garden store will be permeable which will aid the availability of moisture precipitation and gaseous exchange and the rainwater down pipes will be deflected under the building as shown on the plans and elevations. The existing paving will be carefully removed to enable this to form part of the void area where the surface water run-off will be re-directed under the building. The soil area outside the extended studio is to remain at its existing level.

All new pathways and soft landscaping areas within the Root Protection Areas (RPAs) of the retained trees should be designed using no-dig, up and over construction and in close co-ordination with the retained arboriculturalist using porous materials (where appropriate or practical as to be indicated in the final landscape detailing). Where hard surfaces or foundations are to be emplaced or removed within the RPAs; site specific method statement(s) should be produced with direct input from the retained arboriculturalist and appropriately monitored with onsite supervision of the arboriculturalist for tree/tree root sensitive stages, where required or conditioned.

3.5 **Site Levels:**

The elevations and cross-sections currently provided show more clearly that the scheme is to be implemented by carefully raising the floor area of the store so that it enables a ventilation gap to be achieved under structure. The Yorkstone paving when removed will aid the creation of this void space. The structure is a lightweight system and is to be constructed above the existing ground level and does not require any lowering of the ground levels and this conforms with advice following the principles used on other garden studio projects within LB of Camden. As it is not proposed to lower the site levels and the existing hard surface is not fully permeable, removing the existing paving and replacing this with a void space or permeable granular fill will not cause a reduction in the potential evapotranspiration and gaseous exchange potential of the Root Protection Zone (RPZ).

From assessment of the site it is understood that the garden in this section of the site has a significant gradient change part way under the building, but the scheme does not require any notable change of gradient. This works in favour of the proposed scheme which shows the existing level will be unchanged. No level changes are planned within the root protection zone of any of the retained tree(s), unless otherwise discussed with WCEL and subsequently approved the LPA as assessed as part of this report.





3.6 **Bespoke Foundation Solution:**

The height of the building is determined by the proposal to raise the building above ground level to eliminate soil level changes. The proposed structure is to have a relatively low ceiling height to try to avoid the building be too tall and therefore will be able to achieve the required headroom without excavation.

The bespoke foundation solution being proposed is considered to be the most obvious way forward for the foundations of this style of building and we have had significant success on similar projects and consider this would be acceptable here, subject to the final design specification. The bespoke solution bridges between the piles and results in an extremely minor amount of excavation not dissimilar to the type of excavation required for fixing fenceposts in position, with a design based on the minimum number of foundation piles necessary. Further to our discussions with the architect the scheme has taken on board our points regarding making sure the area below the studio extension still enables the exchange of gases and moisture precipitation and so the proposal retains the porous nature of the surface below the building. As this type of approach is specified and shall be implemented sensitively this will reduce the impact of the proposal to a very minimal level, thus potentially improving the trees' growing environment, thus the scheme could be seen to enhance the current situation being seen on site in the longer term.

3.7 **Crown to Building Relationship:**

The existing height of the crown of the all the adjacent trees is such that the proposed structure would not require any additional pruning of the trees to achieve the proposal.

3.8 **Retention of Site Porosity and Moisture Distribution:**

There are often a number of elements of concern on such a site regarding the affect that the loss of captured precipitation from the roof structure would have. Given the slightly elevated nature of the structure and a proposed redirection of the surface water run-off under the building, we consider there will be little or no loss of porosity and gaseous exchange. We note that in line with our recommendations the rainfall from the roof is redirected down to the soil below using perforated drainage pipe system. The down pipes will be managed as part of the vertical fenestration/articulation of the building design at the rear, this means that the moisture and rainfall from the roof would not be more than a couple of metres from where it would have fallen when the current shed is in position and therefore we consider the impact of the new structure would be negligible and not a reason to refuse the scheme.

Improving the permeable surface below will maintain the relative status quo for the trees. Using a surface water dispersal system avoids the need for a soakaway, also by not discharging the rainfall to the mains drains this avoids extra loading to the sewer system, while avoiding the moisture being taken away from the trees.





3.9 **Proximity of New Building and Paving:**

The proposed new garden store is partially located over the existing paving which is within the RPA of Oak (T7) and Hawthorn (T8) and therefore the change of developed area within any tree RPA is marginal. Some safeguards will be required to protect the tree for construction works in, or near to the RPA. If this design solution is approved and precautions are taken, or conditioned, as part of the final design and planning process it is our view that it would be possible to achieve the garden store without undue impact. The established paving will be retained while the pile locations are prepared and ground protection boards will be put in position to protect any open soil areas while the foundation preparation and construction work is carried out.

3.10 **Services Routes and Drainage Connection:**

It is understood that the only required service will be a garden tap and electrical supply which are to dogleg off from the approved air-conditioning unit location. There is no proposed foul water drainage proposed as part of the scheme. Should any changes to the drainage connections be required this must be outside the RPA of the tree. As a design principle all connections will be to the existing services but any new services must not be introduced into the building without first being agreed with the retained arboricultural consultant.

The exact specification must be checked with the relevant expert, but the above principles or similar must be followed, if this differs significantly this must be checked with the arboricultural consultant employed by the client or the LPA tree officer. They must not be excavated into the soil profile below the level of any undisturbed soil on site unless approved by the arboricultural consultant or the LPA tree officer. Any proposed services and connection route should be indicated on the final plans.

3.11 **Assessment of Retained Tree's Root Protection Area:**

Section 4.6.3 of BS 5837: 2012 states that the Root Protection Area (RPA) of each tree should be assessed by an Arboriculturalist considering the likely morphology and disposition of the roots, when known to be influenced by past or existing site conditions.

Further to WCEL's site visit, the trees here discussed, should not be considered as a material constraint to the development in arboricultural terms, if works are undertaken with due care and subject to the above ground nature of the garden store and the construction detail is in accordance with that assessed. Therefore, in arboricultural terms, and subject to appropriate tree protection measures, where required, the scheme is considered acceptable as it should not have a significant negative impact on the specimens proposed for retention on the site and adjacent to the site. Currently, the only significant structure proposed within the theoretical RPA of the tree proposed for retention is the garden store which is significantly located over the position of the current





garden shed. There will be a small incursion into the theoretical RPA of the trees as part of the construction working area which is already protected to some degree by the Yorkstone paving/steps and with some additional measures should not have any significant negative effect on the retained trees. The Theoretical Radial Root Protection Area is illustrated in **Pink** & The Site Specific Assessed Theoretical Root Protection Area is illustrated in **Orange** in appendix A (*Where Applicable*) on the approved extant AIA Tree Survey and Tree Protection Plan of the main scheme and are shown as a **Black** Dashed Line by the architects on the submitted plans for this minor application.

3.12 **Tree Protection Measures:**

Section 4.6.3 of BS 5837: 2012 states that the Root Protection Area (RPA) of each tree should be assessed by an Arboriculturalist considering the likely morphology and disposition of the roots, when known to be influenced by past or existing site conditions.

It can be seen from the plan in Appendix A that some tree protection measures will need to be provided to the retained trees for the construction phase. The existing studio and base slab of the garden shed is located within the RPA which will help protect the tree from compaction, but the tree will require some additional protective fencing or hoarding just to avoid damage to the tree's trunk. If implemented with appropriate care, this should not be sufficiently detrimental to withhold planning approval. In addition, some tree root ground protection measures to avoid any damage or compaction of the soil and roots below. If implemented with appropriate care, this should not be sufficiently detrimental to withhold planning approval.

Tree Protection Fencing:

The tree protection fencing (where required) will be erected prior to any commencement of works on site and where any soft stripping or internal works of the building is required in the close proximity of tree and removed only when all development activity is complete or unless agreed as part of a conditioned Arboricultural Method statement for the landscaping works. The protective fencing will be as that shown in BS5837 (See Appendix C)

The fence must be marked with a clear sign reading (or similar):

**"TREE PROTECTION FENCING
Construction Exclusion Zone – No Access, Do Not Move".**

Dismantling Protective Barriers: Protective barriers must only be completely removed when all machinery, and equipment has left site. A minimum of seven days notice should be given to the local planning authority prior to dismantling works begin.





Examples of Tree Protection from similar sites:



Tree Root Ground Protection:

Some of the proposed works will require access close to the RPAs/RPZs of retained tree and areas that would otherwise be protected with Tree Protection Fencing/Barriers. This is especially applicable for the garden store construction work. A percentage of the works, access for materials and/or preparation working area will be in the RPA of the retained trees so some form of significant tree root ground protection will still be required in select discrete areas. Though the garden store construction is relatively simple, its proximity and the need for some circulation/working space will open the potential for some conflict to occur while removing any existing structure/surfaces, and for construction to take place, inevitably some ground protection will be required to protect the RPA/RPZs of the tree. But, should there be any reason to disturb, excavate, remove or alter the location of the structures noted in Appendix A, the retained Arboricultural Consultants (WCEL) or the LPA's arboricultural officer must be contacted prior to any works be planned or implemented.





The Plan Dwg No: WCEL/PEW/TPP2/REV1 in Appendix A, identifies recommendations for tree root ground protection locations shown in Light Blue. This tree protection plan should be viewed in conjunction with the approved Tree Survey & Protection Plan Dwg No: WCEL/PEW/TSP1/REV3 of the extant scheme. These protection works are considered acceptable, but if the contractor considers them to be insufficient to protect the ground from compaction from the level and extent of activity or machinery, they are obliged to identify this to the project architect for review with the arboricultural consultant.

The ground protection is proposed from the start of preparation work until completion. On this site the work within or close to the RPZ of the retained tree: GP1 ground protection is considered sufficient and the locations requiring ground protection have been proposed on the plan.

Ground Protection GP1 - Ground Protection, temporary, light weight works/storage (Pedestrian Traffic, Light weight dumpers, mini diggers etc). The paved surface and open ground areas shown on the Tree Protection Plan in Appendix A will be over layered with a double layer of 12mm shuttering Ply, exterior grade weatherboard ply or OSB 3 to provide enhanced ground protection. This shall be a double layer laid with staggered joints with minimum overlap of 600mm, screwed or robustly fixed together to provide an even homogenous surface (subject to ongoing inspections by the site manager considers the need on safety grounds) where it is considered that the area may become slippery or a hazard, when wet, the upper surface can be replaced with a suitable anti-slip coated mesh style phenolic resin plywood sheet or similar and/or where it is considered insufficient for its purpose the ground protection will revert to the alternative concrete slab option, see following text.

The **Ground Protection to be spray marked** with a clear sign reading (or similar):

"RPZ – NO DIG"

"Ground Protection- NO DIG"

**"Construction Exclusion Zone –
No Excavations, No Mixing, No Chemicals"**





Examples of Ground Protection:



Where protection has been put in place within RPAs of retained trees on or adjoining the site (including retained hard surfaces as ground protection) these will become the Root Protection Zones [RPZs]. This ground protection/tree protection must still be treated as sensitive site zones. There can only be storage of clean lightweight materials, non-corrosive or hazardous liquids must still be kept away from the area(s) this includes corrosive powdered products, such as, cement, lime and plaster. Storage of cement, hydro-lime, plaster or similar powdered products is **not** acceptable.

Mixing of these materials is also unacceptable within the RPAs of retained trees. Caution must also be given to not storing any liquids, powdered products or materials on any surface with a gradient or fall that runs into the RPA of a retained tree or landscape area, as extreme weather conditions or spillages could result in contamination entering the RPZ. But, should there be any reason to disturb, excavate, remove or alter the ground protection or retained hard surfacing other than that agreed, or to alter the proposed hard landscaped area within the RPAs beyond that approved as part of the planning permission WCEL's arboricultural consultant must be contacted prior to any works being planned or implemented.





- 3.13 Reference should be made to the tree survey schedule in Appendix B for details of tree(s) on an individual basis.
- 3.14 Reference should be made to the indicative sketch plan of the tree protection fencing/barrier in accordance with BS5837 in Appendix C.

4.0 Conclusion:

- 4.1 This assessment is based on the information provided to date and may not cover all of the points that could be brought up by the LPA, however, having viewed the plans to date for the proposed scheme, based on the points reviewed and recommendations detailed below, we consider the scheme could be achieved with minimal disturbance or significant impact to the Birches (T5&T6), Oak (T7) and Hawthorn (T8) which are to be retained and protected during the development process if planning approval is given.
- 4.2 There are no trees proposed for removal, even though some of the specimens are showing signs of stress and are in decline, as such there should be no reason to warrant refusal of the scheme on detrimental tree impact grounds.
- 4.3 The raised nature of the garden store with redirection of the rainwater runoff deflected under the floor area of the store within the ventilation void retains the moisture supply, permeability and gaseous exchange capacity. This reduces the negative impact of the proposed garden store. The creation of the garden store enables an increase in useable storage space within the garden without increasing the footprint of the main area of the house.
- 4.4 Careful installation of a small number of pile foundations within the RPZ of the retained trees and shall be undertaken with due care, but no change to the foundation design would be permitted unless otherwise agreed. Subject to appropriate tree protection, where required, these foundation piles should not be considered as a material reason to refuse planning consent for the proposed scheme, subject to appropriate conditions being attached to any approval.
- 4.5 The removal, or breaking up, of the existing Yorkstone paving and introducing a new raised level suspended floor, with the soil level inside the RPA of the retained trees remaining as its existing level, will all be within the theoretical RPA so this will require sensitive working practices. It must be made clear within any contract documents that there will be no additional excavation below the garden store other than the discrete piles within the RPA/RPZ of the retained trees. Subject to appropriate precautionary measures and appropriately specified construction detail (including building materials) these works should be acceptable and not be considered as a material reason to refuse planning consent for the proposed scheme, subject to appropriate conditions being attached to any approval.





- 4.6 Use of as ground protection measures is a reasonable way of maintaining root protection for the retained trees for as long as possible, while maximising the available working room on site subject to the approval of this report by the LPA.
- 4.7 Subject to precautionary measures as detailed above including tree protection fencing and retention of the existing paving/steps, in front of the garden store entrance, as tree root ground protection for retained trees and as part of the landscape design, the proposal will not be excessively injurious to the trees being retained, to warrant negative tree related refusal.
- 4.8 There will be no appreciable post development pressure, and certainly none that would oblige the council to give consent to inappropriate tree works post development.
- 4.9 Site supervision was detailed in the extant scheme are this will continue as part of this minor application as outlined in this report (The location of the tree protection and precautionary supervised pile location exploration investigations). If the LPA approve the scheme subject to requiring further detail of the site supervision, more detail could be provided as part of a release of condition, detailing timing and scheduling.
- 4.10 Should the client obtain planning approval, subject to conditions, WCEL are the retained arboricultural consultants and should able to assist with further ongoing advice and monitoring, where required.

5.0 Recommendations:

- 5.1 It is advised where WCEL have recommended key important design features these have been observed within the most recent proposed plans which WCEL consider to be implementable, subject to normal planning restrictions. Key items highlighted and discussed should follow through to the construction level detail, these should continue to be on the plans and cross-sections as part of the planning process and highlighted to enable the specialist tree or landscape officer to see that the scheme has complied with WCEL's recommendations or guidance.

The Planning approval should not be withheld and site works should progress as follows to ensure the healthy retention of the trees:

- a. Tree works, in accordance with BS3998 (where required).
- b. Installation of all tree protection measures (where required).
- c. Construction.
- d. Hard & Soft landscaping





- 5.2 Site supervision – If directed by the LPA within their detailed planning condition requiring arboricultural supervision. An individual e.g. the Site Agent or WCEL's retained arboricultural consultant, must be nominated to be responsible for all arboricultural matters on site. This person must:
- a. Be present on the site throughout the project or at agreed times in any conditioned Arboricultural Method Statement (where applicable).
 - b. Be aware of the arboricultural responsibilities.
 - c. Have the authority to stop any work that is, or has the potential to cause harm to any tree.
 - d. Be responsible for ensuring that all site personnel are aware of their responsibilities towards trees on site and the consequences of the failure to observe those responsibilities.
 - e. Make immediate contact with the local authority and / or retained Arboriculturalist in the event of any related tree problems occurring whether actual or potential.
- 5.3 It is recommended, that to ensure a commitment from all parties to the healthy retention of the trees, that details are passed by the architect or agent to any contractors and sub-contractors working on site, so that the practical aspects of the above precautions are included in their method statements, and financial provision made for these.
- 5.4 As these elements of detail assessed can be achieved with the appropriate safeguards conditioned, WCEL consider that the planning approval should not be unnecessarily withheld, subject to any other planning constraints being addressed.

Report Date: 14th September 2020

Rev 1: n/a

Mr Philip E Wood *BSc(Hons) LAM*
Principal Consultant & Director
Wood Consulting Environmental Limited





Appendix A

Tree Survey & Tree Protection Plan (refer to pdf file):

5a Templewood Av TPP2 Rev 1 Plan Sept 2020



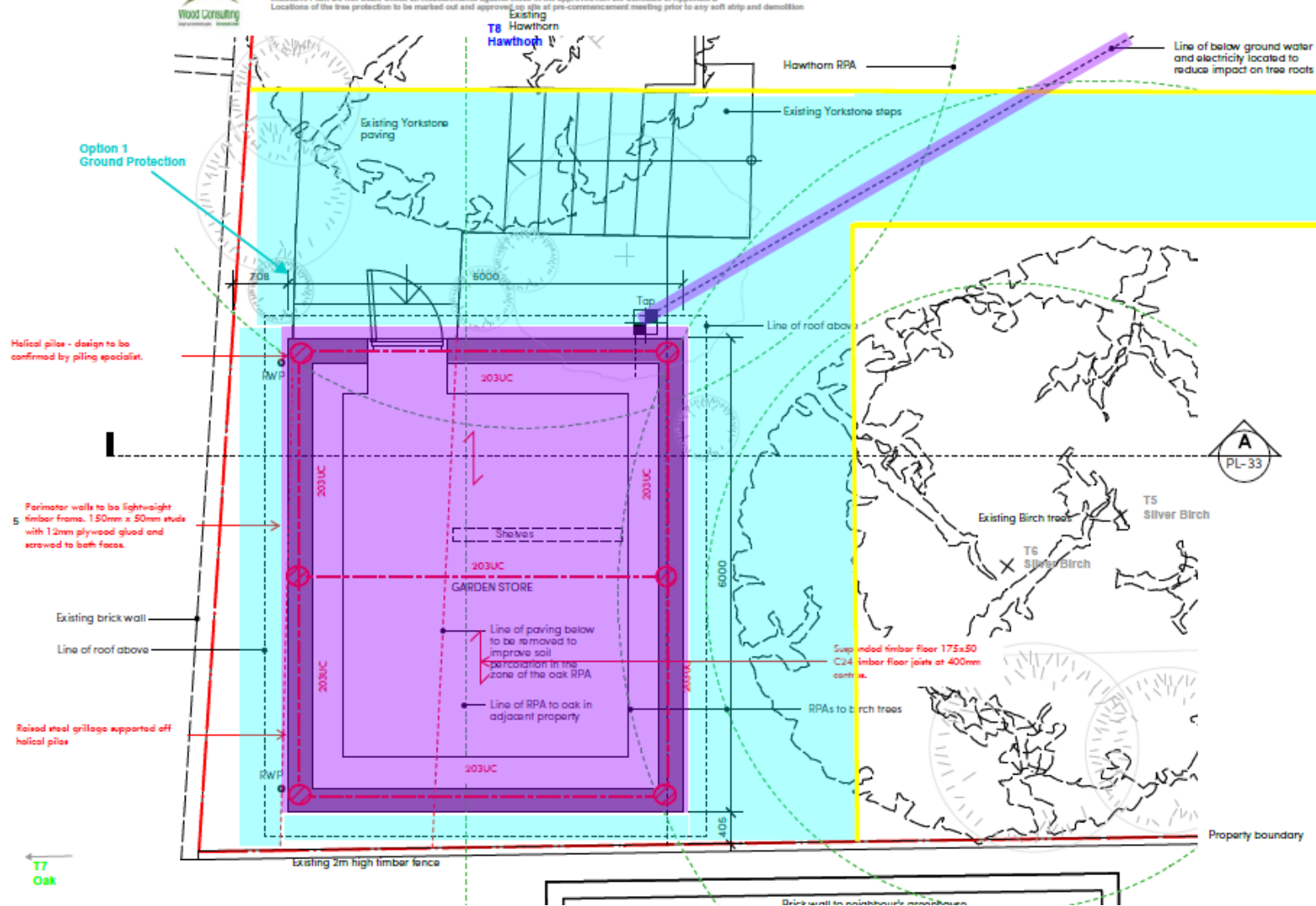


Theoretical and Site Specific Root Protection Area Shown as Dotted Line
Dwg No: WCEL/PEW/TPP2/Rev1 Date:14/09/2020 Annotated by Philip Wood
Indicative Plan: Do Not Scale Check all measurements against those in the approved AIA the Schedule in Appendix B
Locations of the tree protection to be marked out and approved on site at pre-commencement meeting prior to any soft strip and demolition

This tree protection plan should be viewed in conjunction with the approved Tree Survey & Protection Plan Dwg No: WCEL/PEW/TSP1/REV3 of the extent scheme

Theoretical and Site Specific Root Protection Area Shown as dotted Line
Dwg No: WCEL/PEW/TPP2/Rev1 Date: 14/09/2020 Annotated by Philip Wood

Locations of the tree protection to be marked out and approved on site at pre-commencement meeting prior to any soft strip and demolition



Notes

- © Coppitt Doolley Architecture & Design
- Do not scale from this drawing use figured dimensions only
- All dimensions are to be checked on site by the Contractor and such dimensions are to be their responsibility
- This drawing should not be used to calculate areas for the purposes of valuation
- Report any discrepancies, drawing errors and omissions to the Architect immediately
- All structural elements are to be designed by the Structural Engineer
- All work must comply with relevant British Standards and Building Regulations

----- Tree Root Protection Area (RPA)

SDS mark-up / sketch

Project No:	Project name:
219003	5A Templewood Avenue
Date:	Mark-up title:
10.09.20	Storage/Archive Room



T? Tree Number
/ Tree Protection Fence/Barrier
Tree Root Ground Protection
Precautionary Dig Area

Revisions

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Project Name
Dannat House, Templewood Avenue

Client





Appendix B

Tree Schedule





Tree No.	Tree species	Height (m)	Multi-stem? (Enter MS)	Trunk / stem count dia. (mm)	Radius of RPA if circle	RPA -Root Protection Area sq.m.	Branch spread				Height of first significant branch (m)	Height of Crown Clearance (m)	Age class	Comments / Recommendations	Estimated remaining contribution	Assessed BS 5837: 2012 Value category
							N	E	S	W						
T5	Silver Birch	13		460	5.52	95.74	5.5	5.0	3.5	5.5	3.0	4.0	O/M	Very mature specimen with sparse crown, may improve not that garden has been cleared of other significant vegetation. The specimen previously Ivy covered. Recommendations: No work required to facilitate development.	10-20	C
T6	Silver Birch	15		300	3.60	40.72	5.0	2.0	3.0	5.0	5.0	6.0	M	Very mature specimen with sparse crown, very slender trunk with high crown, some bark staining present. Recommendations: No work required to facilitate development.	10-20	C
T7	Oak (NT)	14		1250	15.0	706.95	8.5				5.0	5.0	M	Large old compact specimen with light peppered deadwood evenly through crown. Located moderate distance away from boundary in neighbouring garden. Recommendations: No works required to facilitate development, owner of tree should be advised to monitor specimen and monitor.	40+	A3
T8	Hawthorn	8.5	ms	390 140 220	5.63	99.59	4.5	5.5	4.5	5.5	2.0	5.0	O/M	Mature specimen previously competing crown with other vegetation now removed. Some deadwood throughout crown, very minimal lower crown density. Recommendations: No work required to facilitate development	10-20	C

KEY: Tree No: Tree number (T= individual tree, G= group of trees, W= woodland); Crown = the leaf bearing part of the tree; Tree Species: Sp.= sub species or cultivar of main species; NT = Neighbours Tree (Tree on adjoining land); GL = Ground Level; AGL = Above Ground Level; DWS = Deadwood and Stubs; Diameter: MS = Multi-stemmed; N/S = Not Surveyed (unable to inspect/restricted visibility or access); Age class: Young (Y), Young Mature (Y/M), Middle Aged (MA) Semi Mature (S/M), Mature (M), Over mature (O/M), Veteran (V); Height (Ht): Measured in metres +/- 1; SULE: Estimated Safe Useful Life Expectancy, Tree can live longer than this value, but can pose a risk to persons or property; Condition: G – Good, M – Moderate, F – Fair, P – Poor, D - Dead

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Appendix C





BS 5837: 2012

Tree Protection Barrier/Fencing

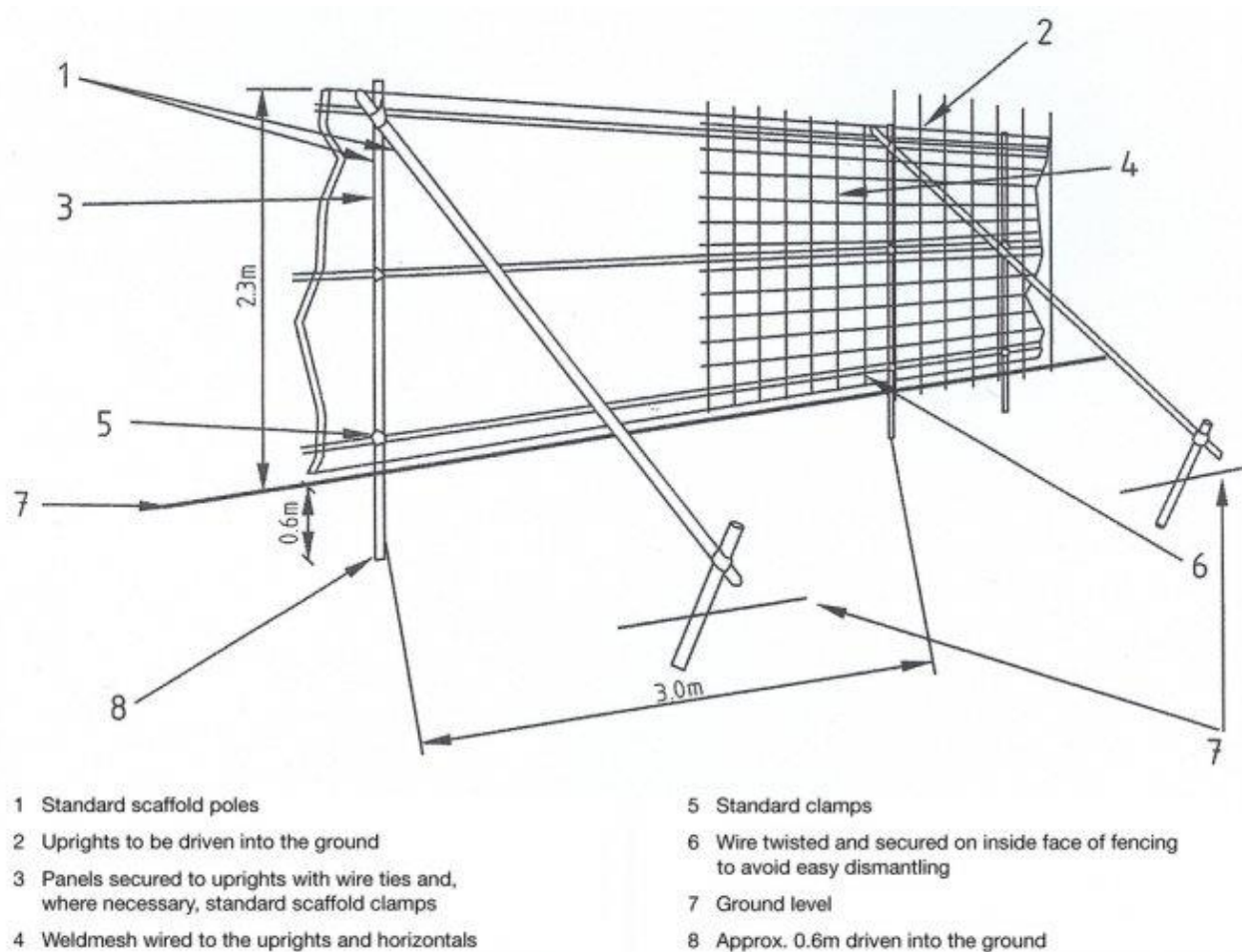


Figure 2. – Protective fencing for RPA





End of Report

