Wood Consulting

Caring for your environment & property **Environmental Limited**

Horticultural, Arboricultural, Landscape Consultant & Contractors

Arboricultural and Planning Impact Assessment Report: Recommendation Report:

32 Willoughby Road, Hampstead, London, NW3 1RU

Report Date: 13th February 2023

Ref: WCEL/PEW/AIASR/0213:23

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Front Garden with Neighbouring Trees: Wild Cherry (T4) & Weeping Willow (T5)

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Arboricultural Report

Location: 32 Willoughby Road, Hampstead, London, NW3 1RU
Client: Jameet Patel
Report Date: 13th February 2023 Ref: WCEL/PEW/AIASR/0213:23
Initial Inspection: 16th January 2023 Site Investigation: n/a
Prepared by: Philip Wood BSc(Hons)LAM.

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

Instructions
Issued by – Joe Wright of Joe Wright Architects Ltd on behalf of the Client

TERMS OF REFERENCE – Wood Consulting Environmental Limited [WCEL] were instructed to provide an Arboricultural Impact Assessment (AIA) and include details for safeguards to protect trees on and adjacent to the site. The survey of the subject tree(s) within the grounds of the property and in the neighbouring property close to the proposed development was carried out by WCEL. WCEL were commissioned 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 alterations to the building. The proposed works are: "Remodelling the internal layout of the existing building along with external maintenance work and construction of a basement extension under the existing building and associated lightwells". **All but two of the trees inspected and assessed are located in the adjoining gardens. There are only two very small trees and two palms within the rear garden which is bounded by fences and mature vegetation and shrubs. The main trees of significance are located in the front gardens of the properties either side of the site. There is also a pleached hedge in the rear garden of 34 Willoughby Road which is a relatively modern addition located in the neighbour's garden at a higher level than the rear garden of the application site. The majority of the planned works to the house are located within or under the building envelope, though the basement extension at the flank rear of the property does extend beyond the property but is still within the site and is relatively small, though this is still outside the Theoretical Root Protection Area [RPA] of the significant trees being retained, but parameters are required and discussed to minimise the impact to the trees, the property is also known to be within a Conservation Area and care has been taken to advise how to retain and protect the appropriate specimens.**

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.

Executive Summary

The main element of the proposal for the site which needs to be considered in relation to trees is remodelling the internal layout of the existing building along with external maintenance work and construction of a basement extension under the existing building and associated lightwells. The front garden is essentially paved with a very small narrow planted area at the front with some minor planting. The largest trees of note are located in the front gardens of the two neighbouring properties. There is only one small Japanese Maple tree located in the rear garden and it is located in a smaller planter bed at the rear, though there is a further small tree but this has been surveyed and is actually smaller than the required size to be included in the report. In addition to these specimens there are two small palms in the rear garden and one large Elderberry bush in the neighbour's garden, which are not technically trees and these have been noted on the plans will not restrict the proposed development and therefore not included in detail in this report. The front garden is relatively level rising slightly towards the front door of the property and the rear garden is predominantly at one level with a small step mid-way along it, there appears to be a level change beyond the boundary wall with 34 Willoughby Road which has caused some rotation of the wall from vertical. There is a group of relatively newly established pleached hornbeam trees forming a hedge which are located in the rear garden of the neighbouring property but with the level changes, the new nature of the trees and the presence of the boundary wall foundations the tree's Root Protection Areas [RPAs] are considered to be deflected by the obstructions or sufficiently far enough away from the proposed basement works.

The main trees outside of the site are located at different levels and are located behind the boundary retaining walls. The limited vegetation appears to have had limited pruning and maintenance of the shrubs, so though the garden appears to have some greenery, it is very limited or provided by the gardens beyond, none of the vegetation is of any significant amenity value regardless of the development. The roots of the trees in the front gardens of the neighbouring properties are at sufficient distance or the trees are subject to extensive crown management that any adventitious root development would be able to cope with some root disturbance at the distance reviewed, but even so safeguards are noted. Given the presence of trees being within a conservation area, Camden Council would require a formal AIA report for the trees on, and adjoining the site and the tree officer will require details of safeguards to protect the trees. Plans reviewed by WCEL indicate that the proposed basement could be achieved with no significant negative impact to the trees.

There is no intention to remove any of the actual trees either on or adjacent to the site, for the scheme. Alterations to mains services may need to be checked with watching brief arboricultural supervision, which will influence the way in which they are replaced or upgraded, if or when required. Tree protection measures have also been identified to provide protection to the specimens as part of the scheme to avoid conflict with any potential established tree roots during the development implementation, even where this is just for circulation space. None of the trees in the rear garden are considered worthy of a tree preservation order [TPO] and should not restrict the scheme. The proposed changes to the property, if implemented with the appropriate level of care and sensitivity, are not considered likely to have a significantly detrimental impact on the long-term health of the retained trees, on or adjoining the site, or to the broader amenity of the area.

A site-specific assessment has been made of the proposed scheme which concludes it should be acceptable to implement the scheme: with the construction of the new basement; main structure changes and associated landscaping, while sufficiently protecting the root system of the trees being retained. The trees on and adjacent to the site should be relatively unaffected by the scheme, if carried out sympathetically with appropriate tree protection measures and this would not result in a negative visual amenity impact, thus not substantially affecting the broader amenity of the conservation area. There should be no material arboriculturally related planning reason for withholding planning consent. This should be subject to an appropriately worded condition being attached to any planning approval (if considered necessary).

Documents Supplied

Supplied prior to the site visit:

1.	Existing Site & Block Plans	Date: 14.12.21	Dwg No: 2104-01_PL_000	Rev: /
2.	Existing Ground Floor Plan	Date: 14.06.22	Dwg No: 2104-01_PL_001	Rev: E
3.	Existing First & Second Floor Plans	Date: 14.06.22	Dwg No: 2104-01_PL_002	Rev: F
4.	Existing Loft & Roof Plans	Date: 14.06.22	Dwg No: 2104-01_PL_003	Rev: E
5.	Existing Front & Side Elevations	Date: 12.05.22	Dwg No: 2104-01_PL_004	Rev: D
6.	Existing Sections AA & BB	Date: 14.06.22	Dwg No: 2104-01_PL_005	Rev: E
7.	Proposed Basement & Ground Floor Plan	Date: 13.07.22	Dwg No: 2104-01_PL_201	Rev: A
8.	Proposed First & Second Floor Plans	Date: 13.07.22	Dwg No: 2104-01_PL_202	Rev: A
9.	Proposed Front & Side Elevations	Date: 13.07.22	Dwg No: 2104-01_PL_204	Rev: A
10.	Proposed Sections AA & BB	Date: 13.07.22	Dwg No: 2104-01_PL_205	Rev: A
11.	Proposals for Pre-Application Advice	Date: 13.07.22	Dwg No: n/a	Rev: -

Supplied & subsequent to the site visit:

12.	n/a	Date: n/a	Dwg No: n/a	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 and adjacent sites close to the proposed development structure, 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 understood to be within a Conservation Area , though none of the trees are believed to be subject of a tree preservation order [TPO]. 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, 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 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 was not possible and some (if not all) measurements were estimated.

1.6 Discussions took place between the Surveyor and Client but 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, both as a radius of a circle, and as an area. The Theoretical Radial Root Protection Area is illustrated in **Pink** for retained trees & The Site Specific Assessed Theoretical Root Protection Area is illustrated in **Orange** in appendix A (*Where Applicable*).

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).

Specimens (Not Trees) Trachycarpus Palm & Cordyline Palm

3.0 Arboricultural Impact Assessment/Appraisal

3.1 The subject property is located on the eastern side of Willoughby Road, in the London Borough of Camden. However, the primary trees of interest are located within the front and rear garden areas of the site and the adjoining properties. There is no significant vegetation in the front or rear garden of 32 Willoughby Road, the main trees are in the front gardens of the adjoining properties. There is a group of Hornbeam trees forming a pleached hedge in the rear garden of 34 Willoughby Road growing relatively close to the boundary with the site, which was planted a few years ago, with a small sweet bay located at the bottom of the neighbours rear garden. All the other vegetation in the back garden of the site are shrubs, small palm trees or climbing plants. There is other vegetation in the adjoining rear garden of 30 Willoughby Road but this is either not an established tree or at sufficient distance not to be overly affected by the scheme. Trees of sufficient size have been surveyed in line with the British Standard and smaller specimens are not relevant to be surveyed as part of this AIA assessment, but may be mentioned for clarification. The property is located within the Hampstead Conservation Area and though none of the trees are believed to be subject of a tree preservation order [TPO]. There is limited vegetation in the existing rear garden, the plants that are present around the edge provide a verdant feel due to the enclosed nature and the texture provided by the shrubs. The front garden is almost completely fully paved and vegetation is provided by the small open ground planters.

3.2 **Tree Condition Assessment**:
The schedule in Appendix B lists the trees surveyed including relevant key observations and recommendations for tree works (where applicable).
Having inspected the trees, it is clear that the rear garden was landscaped many years ago, these plants have now become mature and overgrown.

There were 5 trees inspected and 1 group of 5 trees forming a hedge as well as a number of Palms and vegetation which are not actually trees inspected and assessed as part of the scheme: 1 Sweet Bay, 1 Loquat, 1 Japanese Maple, 1 Wild Cherry, 1 Weeping Willow, and 1 group of 5 Hornbeam trees of which all but the Loquat have been classified as BS5837 Category C with the Loquat classified as BS5837 Category U. With the exception of the Loquat (T2) and Japanese Maple (T3) all the trees are located in adjoining gardens and have significant boundary walls or obstructions between them and the areas of proposed development activity which greatly increase the chances of roots having been deflected out of the site, or at least to reduce the likely root activity on site, though the distances between the proposed basement and the trees is sufficiently great.

- The Pleached Hornbeam hedge (G1) is growing in the rear garden of 34 Willoughby Rd close to the boundary with the site, it has been regularly pruned in the past and is growing within a planter area in the neighbour's garden at a higher level compared to that of the site as can be seen from the rotational movement of the wall from the vertical. The specimen has

been pruned a number of times and is of limited amenity, and given the presence of the wall and the relatively young established nature of the hedge is located at sufficient distance from the proposed basement works. Looking at the trees they would have been planted as fairly mature specimens. The trees were clearly planted as a small garden design feature to provide screening between the gardens and has some interest at a garden scale, but are of little amenity to the broader conservation area. Though given their position behind the boundary wall within the neighbouring garden and being of limited established age means they could be retained without conflict.

- The Sweet Bay (T1) is growing in the corner of the rear garden of 34 Willoughby Rd close to the boundary with the site, it has been pruned in the past but hasn't not been pruned significantly in recent years. The trees crown is a bit straggly which is not uncommon for Sweet Bay trees. The specimen has been pruned a number of times and is of limited amenity, but is located well away from the proposed basement works. The tree is a small garden specimen and only has some interest at garden scale, with little amenity to the broader conservation area. The proposed works should not have any impact on the specimen.

- The Loquat (T2) is growing in a small raised planter in the rear northern corner of the garden adjacent to the boundary. The tree is a very small specimen and is not in good long-term health. The tree is a small garden specimen and only has some interest at garden scale, with little amenity to the broader conservation area. The proposed works should not have any impact on the specimen.

- The Japanese Maple (T3) is growing in a small raised planter in the rear southern corner of the garden adjacent to the boundary. The tree is a very small specimen with good vigour and an interesting feature. The tree is a small garden specimen and only has some interest at garden scale, with little amenity to the broader conservation area. The proposed works should not have any impact on the specimen.

- The Wild Cherry (T4) is growing in the near the corner of the front garden of 34 Willoughby Rd approximately 1.5m from the boundary with the site, it has only had only minor pruning. It is a slender specimen which has had the upper branches reduced. The tree has grown very rapidly and will soon outgrow its very contained front garden location, especially given the presence of the neighbour's basement and lightwell. The specimen has some amenity given its front garden location. The tree is a self-set specimen and will require pruning regularly doing forward. The proposed works should not have any notable impact on the specimen.

- The Weeping Willow (T5) is a mature specimen that is growing in the front garden of 30 Willoughby Rd. The trees have been regularly pollarded for a considerable period of time which is normally to reduce

the level of influence the tree may be having on the soil moisture content to avoid structural damage to nearby buildings. The trees have reached a dominant size within the street and it appears to be being maintained at this size going forward. The species of tree is very resistant to being regularly heavily pruned. The crowns are at sufficient distance to the front elevation of the house so that there is no conflict with the existing structure or that of scheme post planning approval. The upper crown had no significant sub-lateral branches and is being pollarded to a scaffold frame. No pruning works are required to the tree directly for the implementation of the development proposal and the tree should not be excessively negatively impacted by the proposed basement.

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

3.3 At the point of inspection, the trees 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. There were no obvious extensive major cavities or areas of bacterial canker wounds near main trunk forks, which would greatly reduce the nutrient flow around the tree though the trees should continue to be regularly monitored once a year to identify any significant change in their condition.

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 garden design 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 main important tree(s) during the development proposal while maintaining the growing condition of the tree(s) in the longer term. The proposal is for remodelling the internal layout of the existing building along with external maintenance work and construction of a basement extension under the existing building including associated lightwells. The proposed changes to the fabric of the building for the main scheme are located well away from the main trees for retention and basic tree protection can be adequately provided, largely by protecting the area around the building with scaffolding and then protecting the hardstanding paved areas which are not being removed, where paving may be changed at a later stage then special careful working practices will be implemented. Plans reviewed by WCEL show any changes outside the building envelope at the front and to the rear flank of the house are sufficiently far enough away from the retained trees on, and adjacent, to the site.

The other items of development, such as the flank rear basement extension with its lightwell would all be outside the presence of the root system and RPZ of the

trees. The proposed scheme makes no significant influence on the tree to building relationship. No detail has been provided of any rear garden landscape scheme, however, there are no additional pruning or removal works required directly as part of this application. The other vegetation is small garden scale palms/plants/shrubs and climbers which have no significant amenity outside the site and therefore pose no restriction on development activity and landscaping. Some of the other pruning works recommended are subject to agreement of the owners of the trees and is for good general management and would require notification to the local planning authority.

The trees on and adjacent sites, are subject to conservation area protection status, but the main structural changes to the house and basement are at a suitable distance and as such should not hinder the application and should not warrant a negative arboriculturally related reason to object to the scheme.

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 site is relatively level with a slight gradient and step up rising towards front entrance of the house. The rear garden is level with a step up at the rear with established period boundary walls. There are no major changes of levels proposed, beyond the creation of the basement, though this will not change the overall level of the site at large. There is change of levels beyond the boundary walls and this means that the walls and their foundations will have deflected more of the roots away from the site. The distance between the neighbouring trees being proposed for retention and the area identified for development works for the extension and basement extension are all outside the theoretical radial RPAs of the retained trees.

Given the previous intervention and construction of raised planters and boundary walls there will be some deflection of the root systems of the trees, though the basement works will still be outside the RPAs of the trees on, and adjacent to, the site. There shall be no further level changes within the RPAs of the trees proposed for retention. If landscaping is required, which have not been viewed by WCEL are unlikely to be impactive on any trees, though changes within a garden are in line with normal practices associated with domestic gardening. The paving is non-permeable and this is not proposed to be altered, so this will not cause a reduction in the potential evapotranspiration and gaseous exchange potential within the Root Protection Zone (RPZ) of any of the retained

trees, especially taking account of little or no roots are likely to be present within the site from the neighbouring trees. This conforms to advice following the principles used on other projects within the borough and that of other local authorities.

From assessment of the site, the rear garden will remain unchanged, but the area closest to the rear outrigger of house would be over the proposed basement and would be outside the RPAs of the retained trees. No level changes can occur 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 **Foundation Design:**

The foundations for the basement envelope would be a mixture of clean cut, underpinned and contig augered piles and so the location of the basement envelope would predominantly be the position of any disturbance for foundations. In addition many of the trees surveyed in the neighbouring gardens are at a higher level and so it is likely that this combined with the depth of existing boundary wall foundation root activity will not be present and as such limiting any substantial impact on the retained trees, especially given the distances involved as the trees and there RPAs are at a sufficient distance away to cause any significant material harm, if foundation are excavated and installed with appropriate caution and sensitivity.

Given this type of approach is specified and shall be implemented sensitively this will reduce the impact of the proposal and minimise negative conflict.

3.7 **Crown to Building Relationship:**

The existing height of the crowns of all the trees are sufficiently high enough to allow pedestrian passage around the site, so, any pruning works noted in the schedule will be general maintenance, regardless of the proposal. The proposed changes to the main structure of the house have no impact on the crown to building relationship due to the distances involved and that there are no additional new large projecting extensions from the built form close to the retained trees. The pruning works recommended are considered appropriate for managing the future form of the trees regardless of the development.

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 due to the presence of new hard surfaces or where the construction activity, can affect the flow of surface water and moisture flow. However, the existing front garden surface is already impermeable so there will be no change to this relationship and in the rear garden the distance between the new basement and the trees should be sufficient as to not have a major impact on the longer-term available moisture for the trees on the adjoining land. All the trees proposed for retention are in neighbouring properties (bar the Loquat (T2) and Japanese Maple (T3)) and

should be unaffected by the proposed basement works and changes to the property. We consider the impact of the changes should be negligible and not a reason to refuse the scheme if carried out sensitively and under watching brief arboricultural supervision where appropriate.

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

The proposed reconfiguration of the internal elements of the house and basement are at sufficient distance away from the proposed retained trees and at a level that does not require major excavations within the RPZ, therefore the change of developed area is currently not considered likely to impact the trees based on the plans proposed. Part of the front garden could be considered within the RPZ of the neighbour's tree, subject to how the roots may have been deflected by exiting structures and services but at present no works are directly proposed in this area. If works are identified in this area some safeguards will be required as a precautionary excavation area, these safeguards are to protect the trees where they are being retained, this is for the duration of demolition, excavation and construction works. Also, cautious working practices, watching brief arboricultural supervision and basic safeguards would be required where any activity such as driveways, paths or steps are proposed or being replaced in, or near to, the RPA, if included in later landscaping details.

Ground protection boards will be needed to be put in position to protect any open soil areas while the preparation and construction work is carried out, also where soil or sub-base is identified which contain roots. There is extensive paving and hard landscaped structures relatively near to the trees, which will be retained during any internal work, demolition and soft-strip and will require protection before any basement excavation. If no root activity is identified then this protection will not require re-instatement, but if roots are identified then protection will be required until completion of the final landscaping works. Therefore, there are some non-permeable structures already present in the garden where paving is already present within the RPA of the trees. Any new surfaces need to be constructed above the existing true ground surface level to avoid root damage and the final surface layer should be as permeable as possible to allow for moisture precipitation to penetrate and gaseous exchange to occur if roots are identified during the initial excavation and surface removal.

3.10 **Services Routes and Drainage Connection:**

It is not considered that there will be a need for changes to the main service runs to the property, but there may be some changes to subsidiary electric cable for exterior lighting etc, within the front and rear gardens this would be located in armoured cable within the sub-base build up during reinstatement after the damp-proofing has been completed, these connections will be positioned to the centre of the site or subject to the assessment of root presence these may be orientated closer to the boundary if roots are not identified in the existing sub-base. Mains services and drainage outside the building envelope are to remain as current, which are already connected to the services in the public highway to the front of the site. Should any changes to these proposed drainage

connections be required this must be outside the RPA of the trees to avoid root damage. As a design principle all connections will be to the existing services but any new services or soakaways must be located at least 3m from the outside of the RPA of the proposed retained trees and must be subject to prior approval of the arboricultural consultant or LPA tree officer.

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 changes to services and the 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 visual assessment of the site, and based on the arboricultural consultant's visit to site, subject to careful arboricultural supervision as details elsewhere in the report this should not be considered as a material constraint to the development in arboricultural terms, if works are undertaken with due care and subject to appropriate landscaping, as detailed in this report.

Therefore, in arboricultural terms, and subject to appropriate tree protection measures detailed, the scheme is considered acceptable as it would not have a significant negative impact on the specimens proposed for retention.

Currently, there are no significant new garden outbuildings or garden room structures proposed within the theoretical RPA on the plans observed near the trees proposed for retention. There may be some minor incursion into theoretical RPA/RPZ of the neighbouring trees for circulation space during construction as part of the construction working area, though some tree protection fence/barrier is required to avoid storage of materials and construction sprawl and therefore this should not have any significant negative effect on the tree proposed for retention. Appendix A shows the Theoretical Radial RPAs (in **Pink** **or** **Grey**) (as applicable) of the retained tree and the site-specific Theoretical RPA is illustrated in **Orange** (where applicable).

3.12 **Arboricultural Method Statement for 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.

As noted within the report the trees are subject of conservation area protection; none are believed to be subject of a TPO, though all the trees are identified as worth retaining and as such measures must be put in place to avoid these specimens chosen for retention being accidently negatively affected, the requirement is also often an additional requirement of the WCC's arboricultural officer as part of the approval of similar schemes within the borough.

It can be seen from the plan in Appendix A that some tree protection measures will need to be provided for the neighbouring trees during construction development works though the all the main elements of the work are at a sufficient distance from neighbouring trees, but some caution is required in both the demolition, excavation, and re-instatement, as well as during the implementation of any final landscaping. The existing fencing/boundary are located within the RPAs of the trees which will help (in part) to protect the trunks of the trees located offsite, but the trees being retained and protected will still require some additional protective fencing or hoarding to avoid damage to the tree's trunk and root systems during development, before the final landscaping stage.

If implemented with appropriate care, and the safeguards required in this report, this scheme should not be sufficiently detrimental to withhold planning approval. In addition, some tree root ground protection measures are required during the final landscaping stage to avoid any damage or compaction of the soil, which is also standard good horticultural practice as well. 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 the tree(s) 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:

None of the main internal property or basement development works are within the RPAs/RPZs of the trees proposed for retention, though, some of the final landscape reinstatement or boundary wall repair works may require access close to the RPAs/RPZs of the retained trees and areas that would otherwise be protected with Tree Protection Fencing/Barriers at the latter stage of the development process. This is especially applicable for the landscape works. A percentage of the works, access for materials and/or preparation working area may require passage over, or within, the RPAs of the Weeping Willow (T5), so some form ground protection will still be required near the entrance path to the house. The main development works within the house and the rear garden are at a sufficient distance away, though, some circulation/working space accessing to and from the site along the side passage, though roots are considered to be unlikely within the site from the Wild Cherry (T4) so conflict shouldn't occur while preparing the site: such as demolition or surfaces removal, excavation and for construction to take place. Ground protection will be required to protect the RPA/RPZs as shown. 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/TSP1&TPP1/REV1 in Appendix A, identifies recommendations for tree root ground protection locations shown in Light Blue which are also for tree sensitive working areas. These protection works are considered acceptable, and must be implemented, 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 trees: 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 18mm shuttering Ply, exterior grade weatherboard ply [WBP] or OSB 3 to provide enhanced ground protection. This shall be a double layer laid with staggered joints with minimum overlap of 400mm, screwed or robustly fixed together to provide an even homogenous surface (subject to ongoing inspections by the site manger 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:	
	

Once in position, at the very start of the site set-up, this will be required to be inspected and signed off as approved by the WCEL arboricultural consultant, assuming this is acceptable, alternatively a notice or an instruction of improvements required will be issued and then the tree protection reinspected.

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 ON SITE SUPERVISION/MONITORING

Due to the need to protect the trees in the neighbouring properties adjacent to the rear garden boundary with 30 & 34 Willoughby Rd, along with the likely regular trafficking of builders and labourers as well as materials through the site, tree protection will still be installed even though there should be a sufficient distance away from the trees. This must be fixed into position, inspected and signed off as approved. In addition, the Camden tree officers generally require

a degree of monitoring and inspection by the retained WCEL arboricultural consultant, especially if there is a need to demolish the existing paved garden pathways and remove the sub-base below, to ensure that the design and preparation works, prior to and during their implementation, are not likely to have a negative impact to the neighbouring trees.

This requirement is to ensure that as little negative impact is achieved, as is practicably possible, which forms the basis of the assumptions regarding the damp-proofing and reinstatement landscaping acceptability of the impact to the adjoining trees.

The final construction detail of the size, depth and exact sequencing of the any excavation or basement preparation work will be agreed with the Client, Architect, and WCEL prior to implementation and appropriate adjustments made where these are considered by WCEL to conflict with the tree protection safeguards outlined in this report, including watching brief arboricultural supervision. WCEL will also be present to monitor the implementation of the ground works associated with implementation of the basement and any pathway preparation in the area detailed as site sensitive in the tree protection plan Dwg No: WCEL/PEW/TSP1&TPP1/REV1 in Appendix A.

Any area of foundation, surface structure, or obstacle in the front garden within the RPZs (site sensitive area) they will then have the surface structures and sub-base carefully removed/demolished, delicately removed by hand-held equipment and utilising extreme sensitivity and caution to avoid any unnecessary root damage to determine if there is any significant structural/arterial or feeding roots present. In these precautionary dig areas these sections will be highlighted so that the contractor is aware of those positions that require careful hand digging as detailed in Appendix A.

Where roots greater than 25mm in diameter are discovered, these must not be cut and they must be re-covered with soil and protected until WCEL's Arboricultural Consultant can determine if these can be pruned. Where they are considered acceptable to be pruned, they will be carefully and cleanly cut and the exposed end of the root protected with a layer of hessian and a barrier layer of DPM between the root and any fresh concrete proposed to be poured. Where roots of 50mm in diameter or more are found, these will not be cut and shall be hessian and plastic wrapped and an alternative scheme be prepared to avoid further excavation and root damage.

If significant numbers of smaller roots are identified before the required depth of the staff quarters roof excavations is achieved, the works will be stopped and an alternative less invasive design will be formulated. Any root pruning work must, and will, be supervised and monitored by WCEL as retained Arboricultural Consultants. Root pruning will only be carried out where there are no other possible alternatives available to avoid root pruning to achieve any approved scheme.

The client's representative/project manager has confirmed that they will ensure that WCEL Arboricultural watching brief supervision/monitoring is present at the appropriate periods during construction where the works are proposed within the RPA/RPZ of the retained protected trees.

It would therefore be deemed necessary for the retained arboriculturalist to visit the site at the following critical points:

- ***Commencement Meeting:***
  To provide sufficient understanding of the requirements of the AMS and to comply with the general requirement of the LPA arboricultural officer to provide appropriate protection to the retained trees adjacent to the site, and once a commencement date has been confirmed for works on site, a representative from the applicant will contact the LPA's arboricultural officer to arrange a pre-start site meeting with the main contract, architect and retained WCEL arboricultural consultant. A discussion has been had between WCEL Arb Consultant and client's representative agreeing a schedule of activities and compliance monitoring inspections to be carried out by WCEL. Once the main contractor has been appointed a commencement meeting will be undertaken with the project team discussing the implementation of the required tree protection measures and where they are put in place as part of the site set-up/site securing process they will then be inspected and signed off appropriately compliant. Baseline timings and frequencies are detailed below for approval of the LPA, and while awaiting the approval of this AMS as part of the planning approval, should there be any substantial variations to the AMS timeline these will be notified to LPA or LPA Arb Officer **Meeting with contractor scheduled for date: TBC (anticipated June 2023), subject to AMS report approval. Non-tree related conditions, contracts, awards and party wall agreements may vary this date.**

- ***Tree Protection & Tree Root Ground Protection Measures Compliance Monitoring Sign off Approval Site Visit (TPCM):***
  After erection of the tree protection fencing, retention of the ground protection paving and installation of additional tree root ground protection measures. A site note will be produced by WCEL's arboricultural consultant to confirm compliance in accordance with the tree protection, which **must be prior to the start of any substantive works on site including demolition** (incl soft stripping of buildings & landscape features) **and/or vegetation stripping, removal of large vegetation and underground cable removal/de-commissioning,** to ensure that the tree protection fencing and tree root ground protection measures are constructed to the correct specification at the required proximity to ensure the healthy retention of the tree(s). **Programmed for the week commencing TBC**

(anticipated June 2023), but slight variation in the programme may occur, should major variation in timing occur revised dates will be sent to the LPA's arboricultural officer.

Compliance Monitoring Site Visit:

In addition to the above, as discussed and usually required by the LPA's arboricultural officer, WCEL are to be commissioned to undertake an interim random unannounced inspection of the site. This will be undertaken after commencement of works on site and during construction (including landscaping) after approximately 4 weeks to ensure the arboricultural responsibilities are being fulfilled by the contractors/sub-contractors/developer & their representatives. If a breach is observed the contractor will be required to rectify this at their own cost and demonstrate that the tree protection measure is again appropriate and a further re-sign off approving the tree protection measures will be required by WCEL at the contractor's cost. After the initial demolition, excavation and construction works have commenced and if the site visit identifies breaches or failures of the tree protection during the Tree Protection Compliance Monitoring site visit additional TPCM site visits will be required at a period of up to 4-6 weeks after the previous site visit by WCEL. Periods between site visits will not be extended beyond 8-week intervals unless works are paused/stopped or abandoned on site.

A written site note of each visit will be sent the Local Planning Authority as required as an auditable record of the site visit, noting observations, recommendations, action points with time frames and proof of resolution of action points (where appropriate or required) and copied to the architect/client's representative/developer. Any issues relating to tree protection would subsequently be addressed immediately for significant breaches and within 5 days for minor breaches of this AMS specification and recommendations.

Arboricultural Monitoring Site Visit:

As there could be a potential to undertake possible excavations close to or within the RPZ of the retained trees where mains services connections, for the paving removal, sub-base excavation, damp-proofing and landscaping paving reinstatement work in the front garden, these will be monitored by WCEL as detailed within this AMS at the point of the excavation or grading works within the site sensitive area noted in the tree protection plan Dwg No: WCEL/PEW/TSP1&TPP1/REV1 in Appendix A. However, should there be any need to undertake any additional work as part of the landscaping etc then these will be arboriculturally supervised. Any soil disturbance/level changes, paving/brick wall removal or foundation investigation/excavations). **All significant demolition, excavation and soil grading activity *shall be arboriculturally watching brief monitored at all times and also if any become needed during the project as it progresses*.**

As required by the LPA as part of the tree protection AMS, and once a commencement date has been confirmed for works on site, a representative from the applicant will contact the relevant officer from the local planning authority to invite them to a commencement site meeting. During this meeting any additional future requirements for site supervision will be agreed.

If the LPA's arboricultural officer is unable to, or unwilling to, attend then a written site note would be produced outlining the main points discussed at the commencement meeting. The timing of arboricultural supervision and the frequency of future tree protection compliance monitoring site visits (incl. site notes to be submitted to the LPA arb officer) will be noted so that LPA arboricultural officer can confirm the acceptability of these measures if not agreed it will defer to compliance monitoring required in this AMS condition. **This is scheduled for (June 2023) at which point approximate timing and dates will be agreed.**

Activity: ↓	Date: →	Week Start:	Week Start:	Week Start:	Week Start:	Week Start:	Week Start:	Week Start:	Week Start:	Week Start:
Commence Meeting	TBC Early June 2023									
Tree Protection Measures Sign Off & SN		TBC Mid June 2023								
TPCM Site Visit & SN			TBC July 2023	TBC Aug 2023	TBC Sept 2023	TBC Oct 2023	TBC Nov 2023	TBC Dec 2023	TBC Jan 2024	TBC Feb 2024
Paving Removal Sub-base Excavation Monitoring								TBC(If required) 2023		

Dates may vary subject to progress of works and sensitivity of works on site, variations to predicted program of supervision will be notified if they vary significantly. Dates may vary between TPCM site visits but will be extended beyond those shown if the programme continues or runs over. TPCM site visits will continue at the frequencies noted above until the final completion of the project and if breaches are noted in tree protection measures site visit frequency will always revert to a maximum frequency between visits of every 4 weeks until the completion and sign off of the project, or a date to be agreed in advance by the LPA arboricultural officer for which point they are content with TPCM site visits and monitoring to finish on the site.

3.14 OTHER TREE PROTECTION PRECAUTIONS

- No fires will be lit on site within 20 metres of any tree to be retained.
- No fuels, oils or substances damaging to the tree(s) shall be spilled, poured on site without the appropriate safety bunding or site-specific environmental safety safeguard measures, but never within retained tree RPAs on or adjacent to the site. Visual checks of compliance should be made by the site manager every day.
- No storage of any materials within the root protections zone.

3.15 Reference should be made to the tree survey schedule in Appendix B for details of tree(s) on an individual basis.

3.16 Reference should be made to the indicative sketch plan of the tree protection fencing/barrier in accordance with BS5837 in Appendix C.

Trees at end of garden in raised planters
Loquat (T2) & Japanese Maple (T3)

Fairly recently planted pleached hornbeam hedge (G1) in Neighbouring Garden

Rear Garden of site with Elderberry Bush in Neighbour's Garden

4.0 Conclusion:

4.1 This assessment is based on the information provided to date, having viewed the plans for the proposed scheme. We consider the scheme for the remodelling the internal layout of the existing building along with external maintenance work and construction of a basement extension including associated lightwell could be achieved with minimal disturbance or significant impact to the trees proposed for retention on the site or neighbouring adjoining land which are to be retained and protected during the development process if planning approval is given. This is subject to carefully monitored tree protection measures. All the trees surveyed are to be protected especially as, all but two are in 3rd party ownership, as such, subject to appropriate protection we consider that there should be no planning related arboricultural reason to warrant refusal of the scheme on detrimental tree impact grounds.

4.2 The vegetation on site proposed for removal is only a relatively small plants, palms, shrubs and climbing plants to enable some relandscaping works and the rear section of the basement extension. This vegetation is inconsequential, with very limited longevity and has no significant amenity outside the garden, as such there should be no reason to warrant refusal of the scheme on detrimental tree/vegetation impact grounds.

4.3 Though a final garden design scheme has not been reviewed by WCEL, the final reinstatement and garden design is believed to be similar to that of the existing garden, with the main terrace positioned over the rear basement and can be done sensitively and carefully implemented so will not change the permeability and gaseous exchange on site as the terrace is already impermeable. This balanced approach avoids the potential negative impact of any changed of paving.

4.4 Should there be a need to alter the levels of the paving, during the final reinstatement landscaping or at a later date this could be removed, replaced or constructed in a like for like location as the existing and this can be achieved without impact to the trees, if carried out sensitively. Subject to appropriate tree protection, where required, 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 lifting up, of existing pathway, terrace, edging, sub-base and potentially reinstating the surface near to or inside the RPA of the retained neighbours' trees must remain at its existing level, some of which will be within or near to the theoretical RPZ, so this will require sensitive working practices. It must be made clear within any contract documents that there will be no additional excavation below or beyond the sub-base of the front garden hardstanding within the RPA/RPZ of the retained trees unless agreed by WCEL or the LPA Tree Officer. 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 ground protection measures is a reasonable way of maintaining root protection for the retained trees for a timely period where required, while maximising the available working room on site, subject to the LPA approval of this report.

4.7 Subject to precautionary measures as detailed above including tree protection fencing, the proposal will not be excessively injurious to the trees being retained to warrant tree related refusal.

4.8 Given the distance between the trees and the main structure of the building, including the new basement extension, there will be no appreciable post development pressure, and certainly none that would oblige the council to give consent to inappropriate tree works post construction. Some pruning works are recommended for the retained trees and this should be discussed with owner of the tree and implemented subject to an appropriate conservation area pruning notification.

4.9 Due to the relatively limited tree related conflict basic site supervision and monitoring is detailed in this report. This has in line with that normally required by Camden's arboricultural officers and subject to the LPA approval in line with a compliance condition requiring the implementation of the tree protection measures required.

4.10 Should the client obtain planning approval, subject to a compliance condition, WCEL would still be available to assist with further ongoing advice and monitoring, where required, subject to a separate fee proposal.

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. Relevant Demolition, Excavation, Damp-proofing and 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.

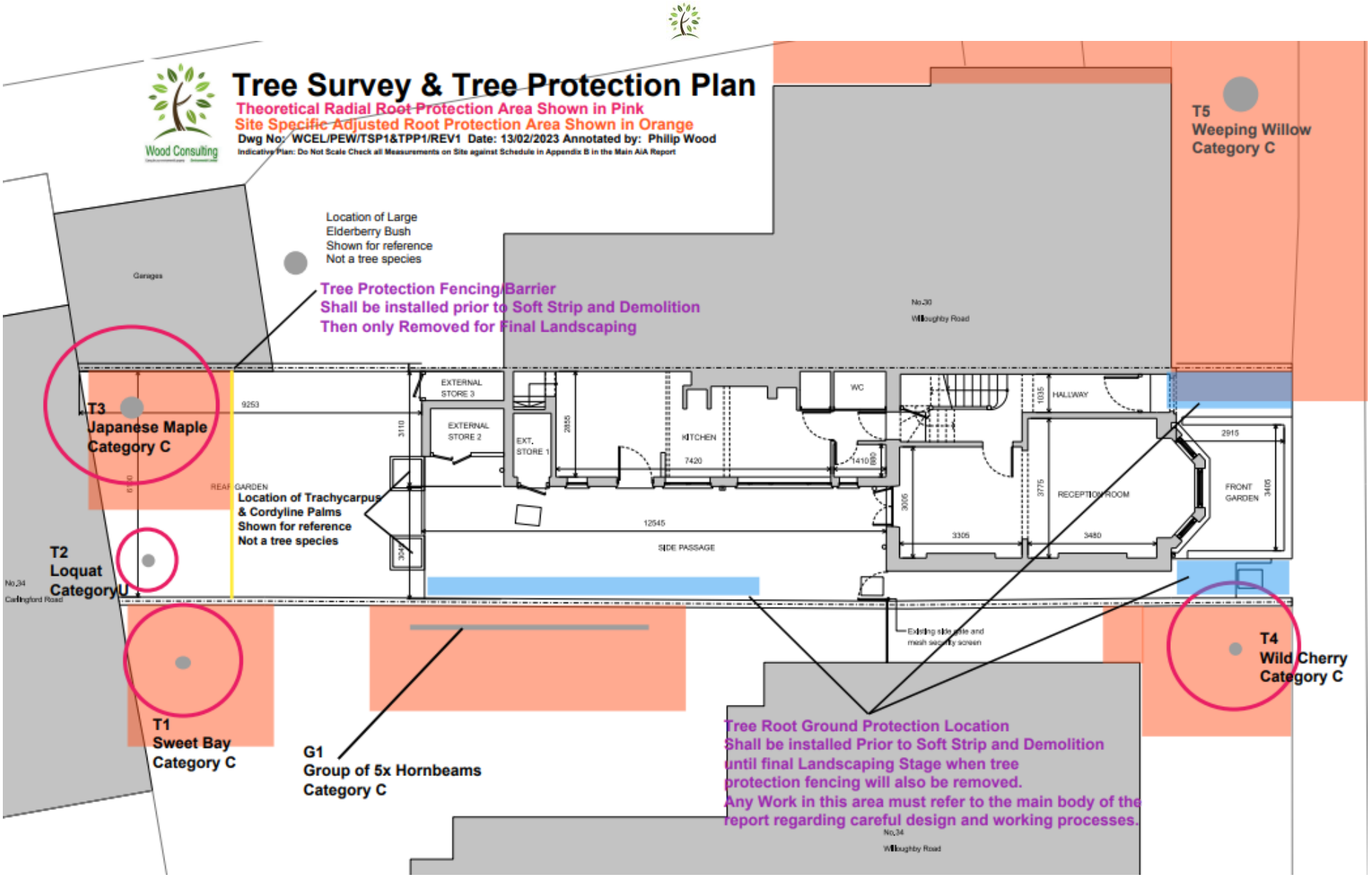
Report Date: 13th February 2023 Rev 1: n/a

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):

32 Willoughby Rd TSP1 TPP1 Plan Feb 2023



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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						
G1	Pleached Hornbeam (NT)	4.0	MS	5 Each @ 100	1.20	4.52	1.0	0.5	1.0	0.5	1.5	FG	Y	Group of relatively recently planted bleached trees forming a hedge. Located adjacent to the boundary in the neighbour's garden growing at a higher level behind existing old brick boundary wall. Recommendations: NWR for Development.	10-20	C
T1	Sweet Bay (NT)	4.0	MS	4 + Equal to 100	1.20	4.52	1.0	1.0	0.5	1.0	2.5	2.5	Y/M	Regularly trimmed specimen at end of neighbour's garden with 4 main stems. Tree of little boarder amenity. Recommendations: NWR for development.	10-20	C
T2	Loquat	3.0	MS	2 60 40	n/a	n/a	1.5	0.5	0.5	0.5	1.5	1.5	Y	Poor quality small specimen not really worthy of surveying but included for reference, trunk diseased and cankered. Recommendations: NWR for development.	<10	U
T3	Japanese Maple	3.5		150	1.80	10.18	2.5	1.5	1.0	1.5	1.5	2.0	Y/M	Small specimen with growth lean having developed small dense crown, located in small brick planter at end of garden. Recommendations: NWR for development.	10-20	C

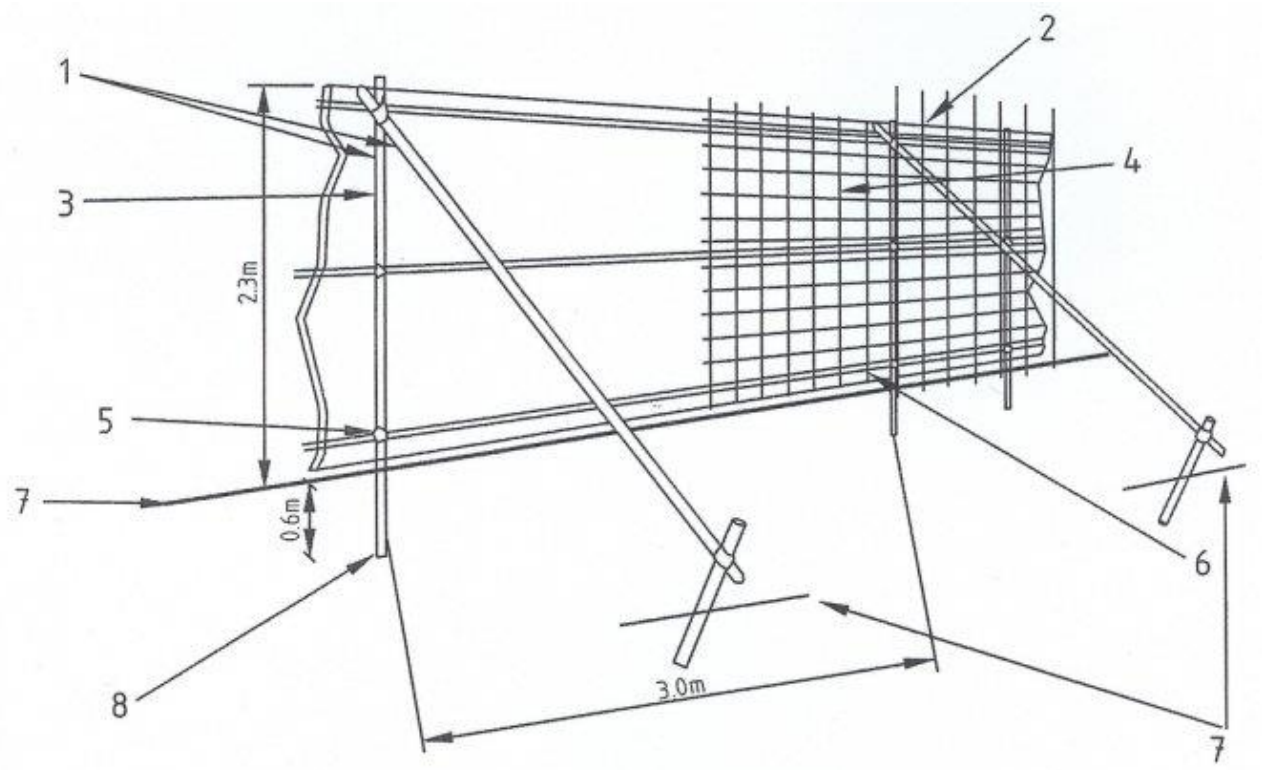
Tree No.	Tree species	Height (m)	Multi-stem? (Enter MS)	Trunk / stem count dia. (mm)	Radius of RPA if circle	RPA -Root Protection Area sq.m.	Branch spread				Height of first significant branch (m)	Height of Crown Clearance (m)	Age class	Comments / Recommendations	Estimated remaining contribution	Assessed BS 5837: 2012 Value category
							N	E	S	W						
T4	Wild Cherry (NT)	8.0		180 est	2.16	14.66	2.5				1.8	2.0	Y/M	Tall very slender specimen growing in neighbours garden, tree has been tipped out and reduced in height and spread due to conflict with neighbours own building. Young vigorous tree. Recommendations: NWR for development, though may require some minor branch trimming or pulling back to facilitate scaffolding around building.	10-20	C
T5	Weeping Willow (NT)	10		680 Est	8.16	25.64	3.0				3.0	n/a	M	Heavily pollarded specimen of limited amenity value due to extensive regular pruning. Tree is likely to be on this pruning regime for subsidence prevention. Willow trees are extremely tolerant of root disturbance, therefore any minor root pruning required in the front garden of 32 Willoughby Road will have minimal impact if any roots are present. Some Ivy present covering main trunk. Recommendations: NWR for 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; CRBOP= Crown Reduce Back to Old Pruning Points. DWS = Deadwood & 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

Appendix C

BS 5837: 2012

Tree Protection Barrier/Fencing



1 Standard scaffold poles
2 Uprights to be driven into the ground
3 Panels secured to uprights with wire ties and, where necessary, standard scaffold clamps
4 Weldmesh wired to the uprights and horizontals
5 Standard clamps
6 Wire twisted and secured on inside face of fencing to avoid easy dismantling
7 Ground level
8 Approx. 0.6m driven into the ground

Figure 2. – Protective fencing for RPA

End of AIA Report