Elemental

Arboricultural Impact Assessment

1 Templewood Avenue, Hampstead, NW3 7UY

Report ref: 220402_AIA

Date 14/02/23

CONTENTS:

VERSION HISTORY:

DATE	REVISION	DETAIL
25/05/23	**Issue 2**	Additional info on tree removal, retention, and mitigation
11/10/23	**Issue 3**	Additional detail on construction working room and piling arrangements. Added root investigation plan.

EXECUTIVE SUMMARY

This report addresses the arboricultural impacts of proposed development 1 Templewood Avenue, Hampstead, London, NW3 7UY.

The proposal is to demolish the existing garage and construct a new dwelling on the site. 9 individual trees, and 4 groups of trees have been surveyed. The trees are of varying, but predominantly low, quality, with 1 high quality specimen.

The proposals are unlikely to have lasting detrimental effects on the tree stock: 3 trees and 2 groups to be removed, as well as partial removal of another group, but these trees are of limited merit, and their value can be replicated with new planting. There is minimal impact to retained trees, which can be adequately protected.

The proposal is considered acceptable in arboricultural terms, and likely compliant with relevant planning policy.

1. INTRODUCTION

1.1 Brief:

Elemental consulting have been appointed by Vabel Ltd to provide an arboricultural report in support of a planning application at 1 Templewood Avenue, Hampstead, London, NW3 7UY; hereafter referred to as 'the site'.

Fig 1. Site location

1.2 Scope:

Elemental have been instructed to assess the impact of development proposals on, the tree resource in accordance with BS 5837:2012 'Trees in Relation to Design, Development and Construction'.

1.3 Site and soil:

The site is the rear garden of a property within a low density residential area to the north Hampstead, and comprises the existing garden, which is at a higher level than the street, and the existing garage at street level.

A desktop study using the Cranfield University Soilscapes website revealed that the soils on the site are "Freely draining slightly acid loamy soils", with drainage described as "Freely draining".

No detailed soil investigation has been carried out and no samples have been taken.

1.4 Proposal:

The proposal is to demolish the existing garage and construct a new dwelling on the site.

1.5 Supplied documents:

For the purposes of carrying out the assessment, Elemental were provided with the following information:

- TEM_003 Soft Landscape Plan (stage 3)

1.6 Legal context:

There are several pieces of legislation with relevance to trees, the primary legislation being the Town and Country Planning Act 1990 (as amended) and the Forestry Act 1967.

The Forestry Act controls felling of trees in relation to volume of timber, subject to exemptions, including trees in gardens and felling permitted by full planning permission.

The Town and Country Planning Act involves protection of trees via Tree Preservation Orders or through being sited within a Conservation Area. Protected trees can only be removed or pruned if permission is granted either as part of a planning permission, or if a separate application is made to the Local Authority.

Trees may also be important for habitat and are particularly used by birds and bats. All species of bat and nesting birds are protected in the UK by The Wildlife and Countryside Act 1981 (as amended), extended by the Countryside and Rights of Way Act 2000. If the presence of a legally protected species is suspected whilst undertaking any tree work, the task should be halted immediately, and appropriate advice sought from a suitably qualified ecologist. Other legislation that may impact on trees includes:

• Natural Environment and Rural Communities Act 2006 (NERC Act)

• Conservation of Habitats and Species Regulations 2010 (as amended)

• Protection of Badgers Act 1992

• The Hedgerows Regulations 1997

1.7 Policy context

National - The National Planning Policy Framework (NPPF) 2021 makes specific reference to trees within paragraph 131, 174b and 180c:

> *131. Trees make an important contribution to the character and quality of urban environments, and can also help mitigate and adapt to climate change. Planning policies and decisions should ensure that new streets are tree-lined, that opportunities are taken to incorporate trees elsewhere in developments (such as parks and community orchards), that appropriate measures are in place to secure the long-term maintenance of newly-planted trees, and that existing trees are retained wherever possible. Applicants and local planning authorities should work with highways officers and tree officers to ensure that the right trees are planted in the right places, and solutions are found that are compatible with highways standards and the needs of different users.*
>
> *174. Planning policies and decisions should contribute to and enhance the natural and local environment by:*
>
> *b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;*
>
> *180. When determining planning applications, local planning authorities should apply the following principles:*
>
> *c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists;*

Regional – The London Plan principally addresses trees within Policy G7 Trees and Woodlands:

> *A London's urban forest and woodlands should be protected and maintained, and new trees and woodlands should be planted in appropriate locations in order to increase the extent of London's urban forest – the area of London under the canopy of trees.*
>
> *B In their Development Plans, boroughs should:*
>
> > *1) protect 'veteran' trees and ancient woodland where these are not already part of a protected site*

2) identify opportunities for tree planting in strategic locations.

C Development proposals should ensure that, wherever possible, existing trees of value are retained. If planning permission is granted that necessitates the removal of trees there should be adequate replacement based on the existing value of the benefits of the trees removed, determined by, for example, i-tree or CAVAT or another appropriate valuation system. The planting of additional trees should generally be included in new developments – particularly large-canopied species which provide a wider range of benefits because of the larger surface area of their canopy.

Trees are also referenced within Policy G5 Urban Greening.

Local - The Camden Local Plan covers trees primarily within Policy A3 Biodiversity:

…Trees and vegetation

The Council will protect, and seek to secure additional, trees and vegetation. We will:

j. resist the loss of trees and vegetation of significant amenity, historic, cultural or ecological value including proposals which may threaten the continued wellbeing of such trees and vegetation;

k. require trees and vegetation which are to be retained to be satisfactorily protected during the demolition and construction phase of development in line with BS5837:2012 'Trees in relation to Design, Demolition and Construction' and positively integrated as part of the site layout;

l. expect replacement trees or vegetation to be provided where the loss of significant trees or vegetation or harm to the wellbeing of these trees and vegetation has been justified in the context of the proposed development;

m. expect developments to incorporate additional trees and vegetation wherever possible.

The plan also references trees within Policy D1 Design and D2 Heritage, and trees are further covered within the SPD "Camden Planning Guidance Trees"

Neighbourhood – The Redington Frognal Neighbourhood Plan covers trees primarily within Policy BGI2 Tree Planting And Preservation:

i.Trees should be retained and incorporated in any development. Where felling is required, on grounds of safety or because it is an invasive species, supported by a suitably qualified expert, one or more trees should be planted in replacement, unless it can be demonstrated to the Council's satisfaction that replacement planting is not appropriate.

ii. For redevelopment, landscaping proposals should include tree planting, with species selected on the basis of local character, high biodiversity value and / or high value to insects.

iii. Development should protect trees that are important to biodiversity, rear garden tree corridors, local character and / or the Conservation Area.

iv. Development should seek opportunities to create, strengthen and restore tree lines and biodiversity corridors, reducing the incidents of breaks and the length of gaps.

v. Veteran trees must be fully protected during construction. The required minimum buffer zone for veteran trees is 15 times larger than the stem diameter of a veteran tree when measured 1.5 metres above ground level, or 5m from the edge of its canopy, if that's greater. Deadwood is to be retained where possible. Canopy reduction to will only be acceptable if the root system of a large maturing tree has substantial decay, making it potentially hazardous, or if it is proven to be causing subsidence. The tree root protection zone radius required for non-veteran trees is 12 times the stem diameter measured at breast height and capped at a radius of 15 metres.

Trees are also mentioned within policies BGI1, BGI3, SD 2, SD4, and UD1

1.8 Validity and Limitations:

This report is solely concerned with trees in relation to development. Although obvious structural defects and the condition of trees have been noted, it is beyond the scope of this report to evaluate the degree of risk posed by trees either in terms of safety to persons or damage to property.

Trees are living organisms. Their physiological and structural condition is not static and can change rapidly in response to a wide range of factors, including extreme weather conditions and development work. All findings of this report, including any management recommendations, are of an advisory nature only and are based on the current site use and conditions, any significant change to site conditions could affect the trees and invalidate these findings.

Consequently, the contents of this report should only be considered valid for a maximum period of 24 months from the date of this report, assuming no significant changes to the baseline conditions.

The assessments contained within this report are informed by the author's personal knowledge and experience. Although this assessment follows the framework of the relevant British Standards and other best practice with the aim of being as objective as possible, there is an element of subjectivity inherent to the process. As such, a difference of opinion may occasionally arise with, for example the Local Planning Authority or Planning Inspector. ELEMENTAL cannot be held responsible for the consequences of such differences of opinion, and do not accept liability for any loss or damage arising from reliance on the content of this report.

1.9 Non-disclosure:

This report is provided for the express use of the client for the purpose of supporting a planning application for proposed development. The report, or any constituent part, may not be copied, used, or distributed for any other purpose without the author's explicit written consent.

2. METHOD

2.1 Desktop Survey:

A check of LPA records was undertaken via the council website and or telephone to establish if the site is within a Conservation Area, or if any Tree Preservation Orders apply.

A check of the DEFRA MAGIC mapping website was undertaken to establish if the site is within proximity to any ancient woodland, SSSI's or treed priority habitats such as wood-pasture or traditional orchard.

The Woodland Trust Ancient Tree Inventory website was consulted to assess the known presence of any ancient or veteran trees.

It is noted that the above sources are not comprehensive, and subject to surveyor judgement on the ground.

2.2 Tree Survey:

A tree Survey was undertaken in January 2023, a separate report details the findings.

The tree survey is used to deduce the constraints posed by trees above and below ground. Above ground constraints are generally derived from the current and ultimate size of the tree and its canopy but may also take into account particular species characteristics. Below ground constraints consist of root protection areas (RPAs), which are derived from the stem diameter measurement and defined within BS5837:2012 as:

"a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure should be treated as a priority".

2.3 Impact Assessment

The Impact Assessment has been carried out in line with the guidance framework in BS5837:2012. The BS states that "*the objective should be to achieve a harmonious relationship between trees and structures that can be sustained in the long term*." Although there is a presumption in favour of tree retention, and avoiding RPAs in particular, the BS states that where conflicts are identified "*the nature of and need for the proposed development should be set against the quality and values of affected trees*", that "*care should be taken to avoid misplaced tree retention; attempts to retain too many or unsuitable trees on a site can result in excessive pressure on the trees*" and that "*where there is an overriding justification for construction within the RPA, technical solutions might be available that prevent damage to the tree(s)*"

In that spirit, the constraints posed by trees have been weighed against the development proposals. Conflicts or opportunities, including those arising from the construction process, and those that may arise in the future have been evaluated individually, and the cumulative impacts to the tree stock as a whole is considered and expressed in terms of significance.

Table 2. Impact significance matrix

Value of asset/Impact magnitude	Minor	Moderate	Substantial	Major	Severe
Low	Insignificant	Negligible	Minor	Moderate	Substantial
Moderate	Negligible	Minor	Moderate	Substantial	Major
High	Minor	Moderate	Substantial	Major	Severe

Within this assessment, trees are only recommended for removal where the physical act of construction necessitates tree loss (ie the main stem of the tree is within the proposed footprint),

where the proximity of development is likely to have such impact to the tree that they cannot be safely retained with any confidence or where retention of the tree requires significant specialist techniques that are not justified by the value of the tree.

The principles of the mitigation hierarchy have been applied to the assessment, as has consideration of the site in terms of ecosystem services and the wider green infrastructure network. It is preferable to avoid impacts to trees, but where appropriate mitigation, compensation or enhancement measures have been proposed. A residual impact significance is expressed, subject to the implementation of these measures.

3. RESULTS

3.1 Desktop survey:

A search via London Borough of Camden's website did not clarify if any Tree Preservation Orders apply to any of the surveyed trees, but did reveal the site falls within the boundaries of the Redington Frognal Conservation Area.

The desktop survey revealed no ancient woodland or priority habitat designations, and none of the surveyed trees are identified as veteran according to the Ancient Tree Inventory.

3.2 Tree Survey:

The full survey data is contained within document ref: 220402_TCS, which should be read in conjunction with this report.

The survey identified 9 individual trees, and 4 groups of trees as being within influencing distance of the development site.

The trees are predominantly semi-mature to mature in age, and of low to moderate quality.

The primary arboricultural features are trees T1 and T4, which have visual prominence from the sctreetscene, and T9 which has high arboricultural quality. The trees along the southern boundary (G1, T7, T8) have collective impact as a landscape feature.

Previous discussion with the tree officer noted that T7 was highly desirable to retain, given its significant potential contribution to the area in the future.

Some of these trees especially T4 and T8 are of reduced quality and/or present potential hazards that are likely to limit their long term retention in their current form.

Collectively the trees make moderate contribution to local canopy cover and associated Ecosystem services and they are not considered to form part of any formal Green Infrastructure network, but do make contribution to the local area.

Judged in the local context, the tree resource is considered to have high visual amenity value, moderate arboricultural quality, moderate Green Infrastructure value, moderate biodiversity value and moderate ecosystem services provision. The overall value of the resource is considered **moderate**. Taken into account with their location, the trees as a whole are considered to present moderate constraints to development, and the main constraints will be individual tree quality and visual impact.

3.3 Impact Assessment:

Table 3. Individual impact summary

Tree	Impact(s)	Outcome
T5, T6, T8, G2, G3(partial)	Within demolition/construction footprint	Remove
G4	Theoretical RPA encroachment - demolition/construction footprint & working room	Remove
T7, T9	Theoretical RPA encroachment - demolition/construction footprint	Retain
All	Indirect impacts	Retain

3.3.1 Tree removals:

3 trees, 2 groups and part of another group require removal to facilitate the proposal.

T5 and T6 are low quality Robinias, most likely arising as sucker growth. Neither tree makes significant contribution to the immediate setting of the site, nor the surrounding area and they do not have significant ecosystem services provision or 'other values'.

T8 is a moribund tree, with only 2 live branches noted at the time of survey, and should be considered for removal irrespective of development. The tree is clad in a mass of ivy which is likely of higher value, in terms of visual impact and biodiversity value, than the tree itself.

G2 is an indistinct outgrown laurel shrub/hedge of limited internal value. G3 is a low quality unmanaged boundary hedge group, of value mainly for screening purposes – the portion of the group closest to adjacent properties, and so of most screening value, can be retained.

G4 is a row of low quality lime trees managed as pollards. The trees occupy a very narrow strip along the rear boundary, and are within a few metres of the adjacent building – the trees are currently pollarded on a 2/3 year cycle to avoid contact with the building. They have limited visual appeal, significant future maintenance requirement and their retention is considered to present disproportionate constraints weighed against their value. It is notable that a decision notice from 2017 (Ref: 2017/2003/T) does not object to the felling of these trees.

The impact of tree loss is considered moderate.

3.3.2 Below ground:
The vast majority of retained trees are not in proximity to the proposals, and can be straightforwardly protected and retained. However there is encroachment into the theoretical RPA of T7 and T9 from the excavation required – it should be noted that the existing garage and other structures already occupy a significant portion of this area and trial pits have been excavated to ascertain root activity. The details of these trial pits are included with the tree root investigation report (ref: 819101TRI) which can be found at appendix 1.

The low root activity recorded in the trial pits indicate that previous ground disturbance has significantly reduced the extent of root activity in the area proposed for development. On this basis, the theoretical RPA is not considered to present an accurate indication of the root activity of these trees, and the proposal is not considered to be significantly detrimental to their health or safe retention.

No detail on services/utilities has been provided, but it is assumed this will follow along the site access, and there is not likely to be any new encroachment into RPAs.

The impact below ground is considered minor.

3.3.4 Above ground:
Generally the retained trees have good clearance from the existing buildings, and no significant pruning is anticipated.

The impact above ground is Nil.

3.3.5 Indirect:
There is a small risk of accidental collision, spills leakage etc.

The impact of indirect harm is considered negligible.

3.3.6 Construction working room:
The nature of the proposal involves limited working room outside of the piling footprint, likely to be pedestrian access only. The final proposal height is less than 2m above the current ground level at the NW end. The only retained trees with potential to be affected are T7 and T9, which have a canopy clearance of 5m and 6m respectively.

There is a minor risk of harm from construction working room.

3.3.7 Post development:
The post development relationship will not be substantially different to the current situation, but the proximity of the new dwelling may give rise to issues with perceived risk and leaf litter. Given the orientation and partially subterranean nature of the proposal, shade from trees will not be a significant concern.

It is considered that these issues will not give rise to pressure to fell or excessively prune the trees.

Post development impact is Minor.

3.3.8 Significance:
The value of the trees has previously been established as moderate, primarily derived from their individual quality and visual impact.

The primary impact is tree loss, with secondary impacts from encroachment into the RPA of retained trees.

The cumulative impact magnitude of the proposals are therefore considered to present moderate harm without taking into account mitigation measures.

3.3.9 Mitigation measures:
While tree loss itself cannot be directly mitigated, replacement planting can effectively mitigate the impacts of losses. A landscape proposal by SEED landscape design accompanies the application, and includes significant new planting with a "focus on native species and ecology". Green connections and corridors are maintained as part of the design.

With regard to retained trees, these can be effectively protected by standard Tree Protection Fencing. In the case of T4 and T7, this will need to be offset to allow for construction and working room. The encroachment into the RPA of these trees could be mitigated with a watching brief, with arboricultural supervision to monitor the excavation, and the working room area covered by ground guards or other similar ground protection measures. In both instances, the trees have sufficient alternative space for root activity, contiguous with their theoretical RPA, and no significant harm is anticipated from the works. There is also minor potential for the canopy of these trees to be affected by the requirement for clearance to allow installation of the piles – to avoid this, a mini piling rig will be used – typically these have operating dimensions of under 3m in height and do not require installation of a piling mat.

Indirect impacts can be completely avoided through appropriate use of protection measures and clearly defined areas for materials storage etc.

3.3.10 Residual impact:
Table 4. Residual Impact Summary

Tree	Impact summary	Mitigation	Residual impact significance
T5, T6, T8, G2, G3(partial)	Within demolition/construction footprint	Remove and replace	Minor/negligible.
G4	Theoretical RPA encroachment - demolition/construction footprint & working room	Remove and replace	Minor/negligible
T7, T9	Theoretical RPA encroachment - demolition/construction footprint	Tree protection/ground protection and arboricultural supervision	Negligible
All	Indirect impacts	Tree protection and appropriate working practices	Insignificant

Subject to appropriate mitigation I consider the residual impacts to be Minor in the short term, lowering to Negligible/Insignificant by the medium term as new planting establishes.

Should this be acceptable to the LPA it would be appropriate to secure full details via condition(s) attached to any permission.

4. Conclusion

4.1 Summary

The tree resource in the vicinity of the site is of low to moderate value in most respects, with a single high quality specimen, and are not considered to present significant constraints to development of the site.

The specific development proposals do not require loss of pruning of any of the primary arboricultural features, and minor impact to secondary features. Tree losses required are low to moderate quality trees of limited wider value, and can be compensated with new planting.

The proposals are compatible with the long-term retention of remaining trees.

Therefore, the impacts to trees are not considered noteworthy, presenting moderate harm, largely from the tree loss, and encroachment into the theoretical RPA. These impacts can be adequately mitigated with appropriate protective measures, sensitive work methods and appropriate new planting.

The residual impact is likely to be minor in terms of harm, lowering to negligible/insignificant by the medium term.

Accordingly, I conclude that the proposal has considered trees and, in that respect, can be undertaken in compliance with the requirements of The NPPF,

4.2 Recommended actions

An Arboricultural Method Statement and Tree Protection Plan is advised to detail protection measures and work processes in the vicinity of trees.

Where new landscaping is proposed, land identified for new planting should be protected from compaction and contamination during development or otherwise remediated prior to planting. New planting should take place after construction but prior to occupation. Planting should be designed and undertaken following guidance set out in BS8545:2014, with sufficient aftercare to ensure establishment.

4.3 References

British Standards Institution (BSI), BS5837:2012. Trees in relation to design, demolition, and construction – Recommendations. BSI

Department for Communities and Local Government (DCLG), 2018. National Planning Policy Framework (NPPF). DCLG

National House Building Council (NHBC) Standards, (2008). Chapter 4.2: Building Near Trees

National Joint Utilities Group (NJUG) Volume 4, Issue 2, (2007). NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees.

British Standards Institution (BSI), BS3998:2010. Tree work – Recommendations. BSI

National Tree Safety Group (NTSG), 2011. Common sense risk management of trees. Forestry Commission.

APPENDIX 1: ROOT INVESTIGATION REPORT

Tree Root Investigation Report

1 Templewood Avenue, Hampstead

Vabel Ltd

Elemental

Report ref: 819101TRI

Date: April 2019

CONTENTS:

APPENDICES:

REVISIONS:

DATE	REVISION	DETAIL
14/02/23	**Rev 1**	**Addendum - Additional Trial pit**

SUMMARY

Existing site features and conditions on site strongly suggest that root activity from surrounding trees will not conform to the theoretical circular Root Protection Area as set out in BS5837:2012. Root investigations were undertaken to determine activity and inform design choices for potential development of the site.

Four trial pits were excavated, and the root activity therein was generally minimal. Roots were not deemed to pose significant constraints to development.

1. INTRODUCTION

1.1 Brief: Elemental have been instructed by Vabel Ltd to assess the root activity of the tree resource at the rear of 1 Templewood Avenue, Hampstead, London; hereafter referred to as 'the site'. The investigations are intended to assess potential impacts to trees from - and inform the design layout of - future development of the site.

1.2 Site: The site is the rear garden of a residential property in Hampstead.

Site features, including changes in topography, existing structures and retaining walls are considered likely to have significantly influenced the growth pattern and direction of roots at this site, such that the theoretical, circular RPA (as set out in BS 5837:2012 section 4.6) is not accepted as being a reliable indicator of root spread.

1.3 Site location Plan:

2. METHOD

2.1 Trial Pits were excavated to the following specification:

excavate 1000mm length by 150-200mm width, the depth would vary according to the findings, excavation can cease as soon as significant roots are revealed, otherwise should aim to reach 750mm

The locations of trial pits are indicated on the plan at Appendix 1.

2.2 Excavation was undertaken by air spade, which uses a focused jet of compressed air to loosen soil without damaging roots. Soil was then carefully removed via shovel, and stored adjacent to the pits. Backfilling was undertaken immediately following inspection, using the soil excavated from the pit.

3. RESULTS

3.1 Trial Pit 1

Length x width x depth	1m x 0.3m x 0.8m
Location notes	Trial Pit located to assess root activity, primarily from T4 and G2. T4 is a large Robinia with a high degree of prominence within the streetscene. The pit was located at a distance of m from the stem of the tree. There is a retaining wall to the SE of the trees which is close enough to have a significant effect on root distribution.
Soil observations	Initial 200m loamy clay, then clay to 800mm
Roots <25mm	Minimal activity, isolated roots circa 5mm.
Roots >25mm	None
Implications	No Significant roots were present, therefore roots are not a constraint to development in this area

Images

3.2 Trial Pit 2

Length x width x depth	1m x 0.3m x 0.7m
Location notes	Trial Pit located to assess root activity, primarily from G4
Soil observations	Initial 200mm loamy clay, then clay to 700mm
Roots <25mm	Minimal activity, isolated roots of circa 5mm.
Roots >25mm	Single dead root at 650mm depth. Likely origin stump 1m from trench.
Implications	No Significant roots were present, and roots are not a constraint to development in this area

Images

3.3 Trial Pit 3

Length x width x depth	1m x 0.3m x 0.75mm
Location notes	Trial Pit located to assess root activity, primarily from G4 and T8. The pit was located at a distance of m from the stem of T8.
Soil observations	Initial 100mm loamy clay, then clay to 750mm
Roots <25mm	Minimal activity, occasional roots circa 5mm.
Roots >25mm	None
Implications	No Significant roots were present, and roots are not a constraint to development in this area

Images

3.4 Trial Pit 4

Length x width x depth	2m x 0.3 x 0.8m
Location notes	Trial Pit positioned to assess rooting activity of offsite tree - T8 which is a large, high quality Oak. The pit was located at a distance of m from the stem of the tree. There is a retaining wall to the NE of the tree which is close enough to have a significant effect on root distribution.
Soil observations	Evidence of historic disturbance - ceramic debris and adjacent foundation slab for shed. Otherwise loamy clay to 200mm and clay thereafter to 800mm
Roots <25mm	Significant fibrous roots within top 200mm with sporadic minor roots (<15mm) to 500mm. Very low activity from 500mm to pit base (800mm) although 1x 20mm root found at circa 790mm
Roots >25mm	None
Implications	There was a notable level of root activity within this trench, but the vast majority of this was fibrous feeding roots - the loss of a relatively small proportion of these roots would not have significant adverse impacts upon the tree, and could easily be mitigated. No roots of significant size were encountered.

Images

4. CONCLUSIONS

4.1 The site investigations show that there is little significant root activity across the site, despite generally favourable conditions within the trial pits and significant constraints to root activity from retaining walls. Pits 1-3 inclusive had no significant living roots, with the only root over 25mm encountered being dead and originating from a nearby stump.

Trial Pit 4 had a notable level of fibrous root activity from the offsite Oak T8, but although two roots were encountered in the 10-25mm range, no roots were discovered over 25mm. Although the level of fibrous rooting was notable, it is not considered to qualify as a "clump" as in BS5837:2012 section 7.2.3, and there is a significant volume of soil available contiguous with the RPA of the tree - it is therefore considered that minor encroachment into the RPA of the tree is theoretically feasible.

Given what is known about oak root patterns it is possible that roots are present at greater depth, but based on the root activity and soil quality within the trial pit it is considered these would not be of importance.

It is therefore apparent that a reasonable scale of development can be accommodated within the site without significant detrimental impact to tree roots.

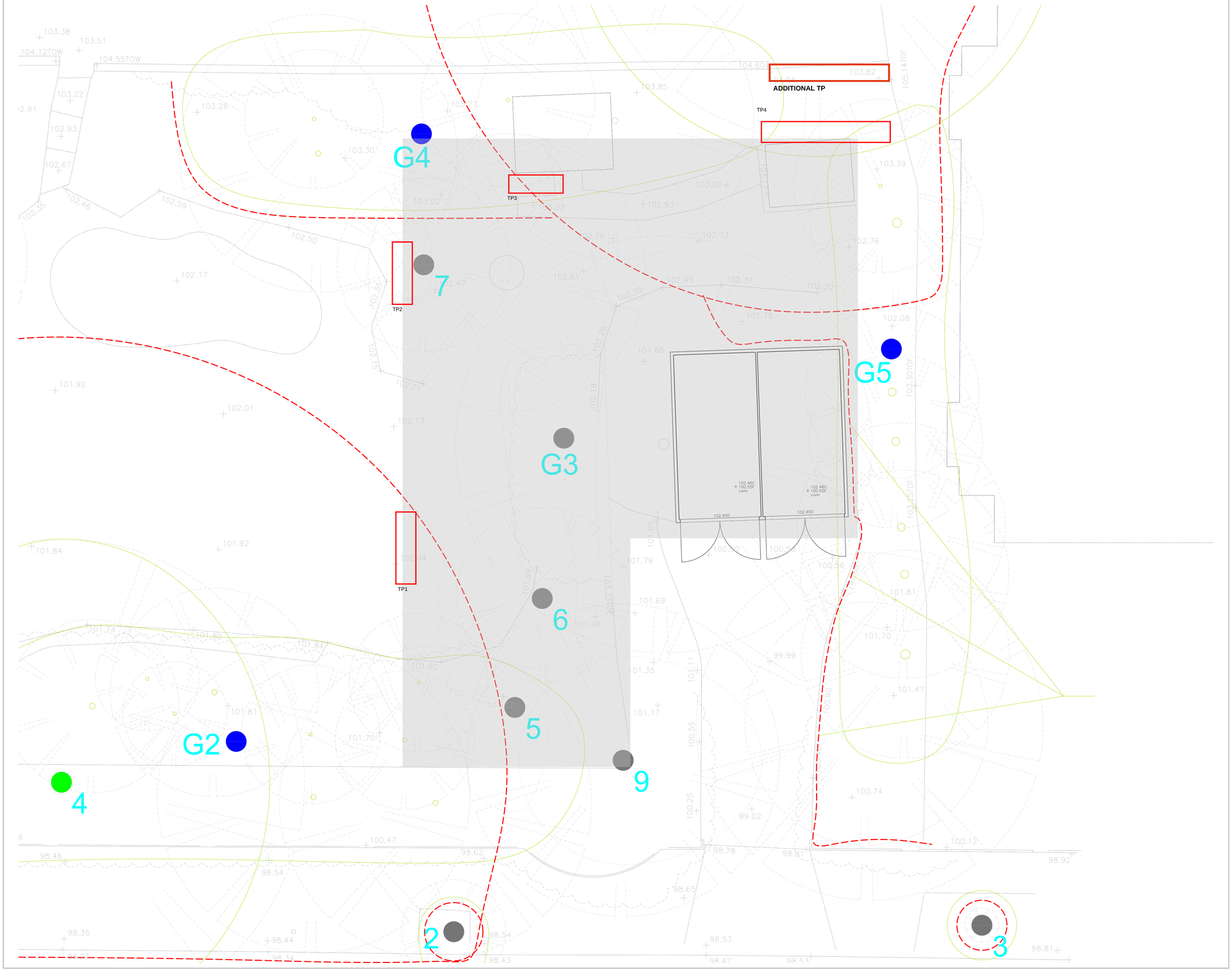
Addendum:

Additional Trial Pit

During design planning, the NE edge of the proposal was moved closer to the adjacent boundary, and the offsite oak. As such, the results of pit 4 cannot be relied on, and it is necessary to excavate a further trench, just inside the boundary line.

Length x width x depth	2m x 0.3m x 0.9m
Location notes	Trial Pit located along NW boundary. To the west is an existing boundary wall, considered effective barrier to roots due to depth of foundation (per borehole investigation). The pit was located at a distance of approx 3m from the stem of the offsite oak tree. Soil conditions (heavy clay) prevented deeper excavation, also likely to impede significant root growth.
Soil observations	Initial 2500m loamy clay, then clay to 900mm. Significant rubble and building debris. Considerable evidence of historic disturbance. Large brickwork mass at northern end.
Roots <25mm	Minor fibrous roots encountered within top 400mm soil. Sporadic minor roots (<10mm) from 400mm to 600mm. Very low activity from 600mm to pit base (900mm) although 1x 10mm root found at circa 550mm at northern end.
Roots >25mm	1 encountered at the base of the centre of the pit. The root splits into 3 but is 30mm across at its thickest point. Another root measuring 15mm was found 300mm to the west, also at the base of the pit.
Implications	Few significant roots were present, and overall root activity is much less than would ordinarily be expected within this distance of a large tree. It is likely that historic disturbance has led to the tree preferentially rooting elsewhere, and therefore significant root loss and/or resultant harm to the tree is not likely if development is undertaken in this area.
Images	

Appendix 1
Trial pit location plan



General Notes

Do not scale from this drawing. All dimensions are in mm unless otherwise stated. All dimensions, levels, sizes, positions and locations of particulars as indicated on drawings are to be verified by the contractor on site prior to engaging in works.

This drawing may incorporate information from other professionals. Vabel LTD cannot accept responsibility for the integrity and accuracy of such information. The specification is to be read in conjunction with the plans/section details and other associated structural details as may be provided. Any discrepancies to be reported to the architect/surveyor/engineer or responsible person/s immediately

All works shall conform to the current edition of the building regulations and other statutory requirements. All materials and workmanship shall conform with the relevant British Standard specifications and codes of practice. If this drawing forms part of an application for planning permission, it shall not be used for any other purpose without the express permission of Vabel LTD.

The contractor is responsible for ensuring compliance with the CDM regulations and appropriate health and safety on site precautions. The client / building owner must obtain any necessary party wall agreements prior to engaging in works on site.

Project North

Keyplan

Rev	Date	Reason For Issue	Chk
IN01	31.03.18	Issued for Information	TD

Consultants

Consultant Name 01
Consultant Name 02
Consultant Name 03
Consultant Name 04

KEY

Proposed footprint of development

Tree Root Protection Area for suggested retention trees

Note* Refer to 1705_01_002 for full tree classification

VABEL
LONDON

531 Highgate Studios
53-79 Highgate Road, London NW5 1TL
+44 (0)20 7183 6405
www.vabel.co.uk

Project
1 Templewood Avenue
-

Title
Basement Plan
Existing Rear Garage

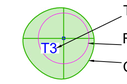
Status
INFORMATION

Project Number	Date	Checked By
1705		NE
Revision	**Scale @ ISO A1**	**Approved By**
IN01	1:50	VABEL

Drawing Number
1705_01_199

Notes:

Key - Individual trees



T1 Category 'A' | T1 Category 'B' | T1 Category 'C' | T1 Category 'U'

Arboricultural Supervision Required

T3 Tree to be Removed

Tree Protection Fencing

NORTH

REV:	DESCRIPTION:	BY:	DATE:
-	Original Issue	PR	08/02/23

STATUS:

Land and Landscape Management
49 Highbridge Road
Aylesbury
Buckinghamshire HP21 7RX

SITE: Templewood Avenue
Hampstead

TITLE: Indicative Tree Protection Plan

SCALE AT A1:	DATE:	DRAWN:	CHECKED:
1:75 @ A3	08/02/2023	PR	

PROJECT NO:	DRAWING NO:	REVISION: