

ARBORICULTURAL IMPACT ASSESSMENT

Mount Vernon, Frognal Rise,
NW3 6QR

MArboriculture

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1 Report Summary

1.1 Summary

This report has been prepared to accompany the planning application ref.: 2018/2508/P for the development of the garage extension and repurposing it to the office for residents at Mount Vernon, Frogal Rise, NW3 6QR.

The survey covered a total of 6 individual trees, from which 2 are of high amenity value (T1 and T2).

The tree T3 pose constraint to the development and such requires removal.

None of Root Protection Areas (RPA) of retained trees is shown as being impacted by the proposed extension footprint. However, according to the latest layout provided by the client the construction works will take place just outside RPA of the tree T2 (buffer between RPA and the wall is approx. 0.2m). The root guard installation is recommended due to the proximity of the proposed extension wall and the tree.

Provided precautions to protect the identified trees are specified and implemented through the measures included in this report; the development proposal will have little impact on the retained trees or their wider contribution to area amenity and character.

1.2 Instruction

I have been instructed to provide the Arboricultural report in support of a planning application 2018/2508/P in relation to the development at Mount Vernon, Frogal Rise, NW3 6QR. The report has been produced following principles of British Standard BS5837:2012 Trees in relation to design, demolition and construction – Recommendations.

1.3 Scope of the report

The survey covered trees within the site boundary and its immediate curtilage to assess the impact of the development on trees and the impact of retained trees on the development. The report allows the Local Planning Authority (LPA) assess information about trees as part of the planning submission.

1.4 Methodology

A site visit was conducted on 5th October 2018 to carry out the survey. Day has been picked up as the weather conditions were dry and clear.

The methodology of Visual Tree Assessment (VTA), described by Mattheck (2007), was followed. The survey covers trees with a trunk diameter of 75mm or above and any significant vegetation on the development site.

The best intentions were made to produce accurate measurements; however, some dimensions were estimated due to the limitation of the access, dense undergrowth e.g.

Data collected for each tree includes the following information:

- Sequential reference number, i.e. T1, T2, T3 etc.
- Species (Botanical Name in Latin)
- Height (in meters).
- Stem diameter recorded in mm
- Branch Spread, recorded in meters at the extents of the 4 Cardinal Points, i.e. North, East, South & West.
- Ground clearance, representing level of first significant branching or canopy
- Life stage: Y – Young, SM – Semi Mature, M – Mature
- Condition comment: structural and/or physiological condition.
- Overall condition: Good, Moderate, Poor, In decline
- Estimated remaining contribution: >10 years, 10 + years, 20 + years, 30+ years, 40 + years.
- BS 5837:2012 Category 'U' or 'A' to 'C' grading with the subcategory 1, 2 or 3
- Tree Work recommendations in the context of the sites current use.

1.5 Limitation

The survey was undertaken from the ground level using basic tools without detailed investigations. Trees were not assessed primarily for health and safety considerations. However, any evident conditions have been identified and remedial works recommended, where applicable. Details can be found in the tree schedule in Appendix 2.

The tree condition can rapidly change due to unpredictable factors, such as climatic and manmade events. The risk assessment is based on the factors apparent at the time of the site visit. The re-inspection of trees for health and safety condition should be made on an annual basis.

The soil assessment has not been conducted and detailed soil analysis should be undertaken, or data about the soil assessment should be provided.

1.6 Legal constraints

The undertaken online investigation with London Borough of Camden confirmed that the site is located within the Conservation Area (CA) Figure 1. However, the search

was unable to confirm the presence of Tree Preservation Order (TPO) and LPA has been contacted to provide the information. The report will be updated when details are known.

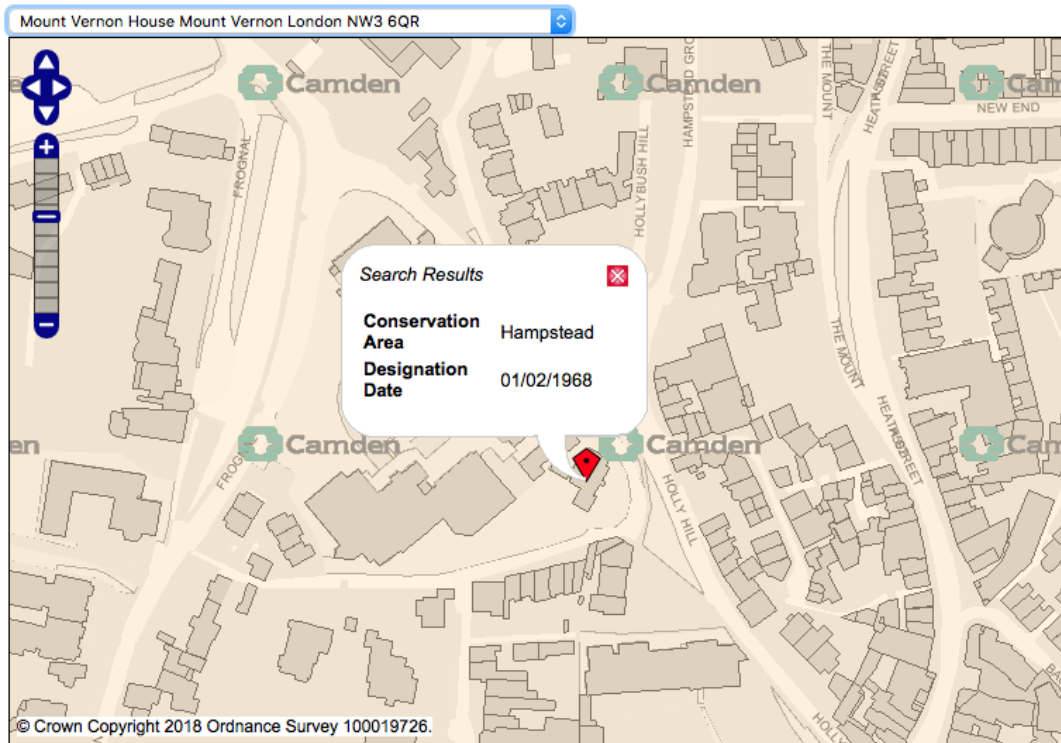


Figure 1 Snapshot of the online mapping system of Camden Council indicating that the site is within conservation area

2 The site visit and Observations

2.1 The site

The site is prestigious residential property created from former hospital. The site consists from residential block buildings, associated infrastructure and well-maintained landscape.

The survey considering only the area of the immediate proximity to the garage near the main gate to the complex.

2.2 The Soil Condition

Search with National Geological Survey online mapping system identified soil texture as Loam with free drainage properties and low pH (between 6.0 – 6.5). The free drainage reduces the risk of the damage to the soil. The loamy soils are suitable for growing a wide range of shrubs and trees. However, if planting will be considered the selection should be narrowed down to trees with higher tolerance to acid soils. If planting is desirable, full comprehensive soil assessment should be made for higher detail.

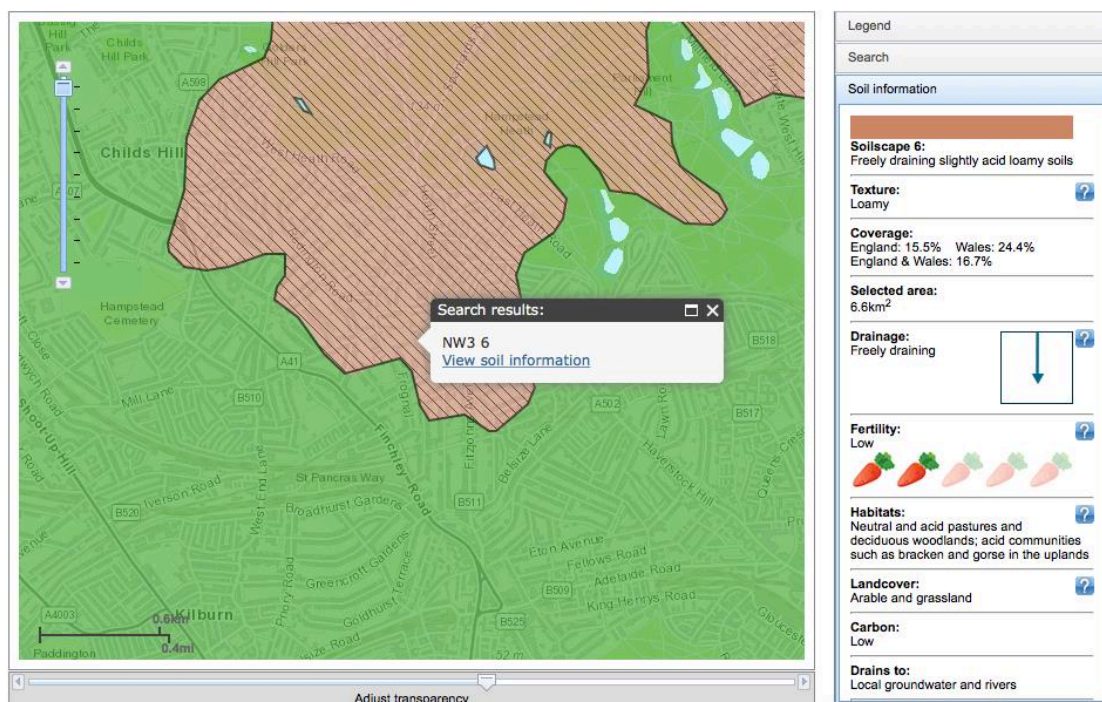


Figure 2 snapshot of online mapping system Landis

2.3 Tree population summary

The tree survey covers 6 individual trees located in the direct proximity of the garage near the main entrance gate.

Trees were categorized into 'A', 'B', 'C' and 'U' category graded in the guidance of BS5837: 2012. No tree was classified into the 'U' category. The detail about categorization is explained in Appendix 1.

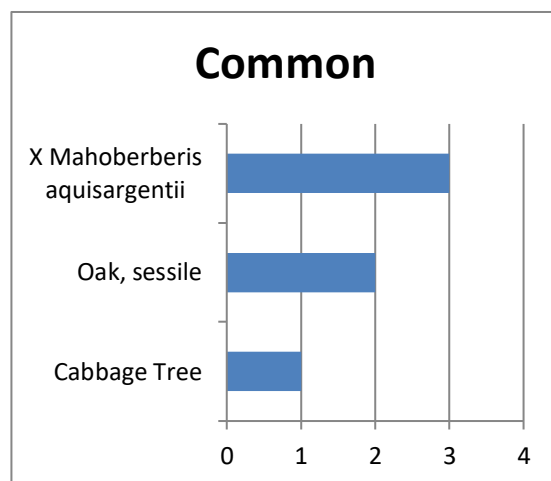
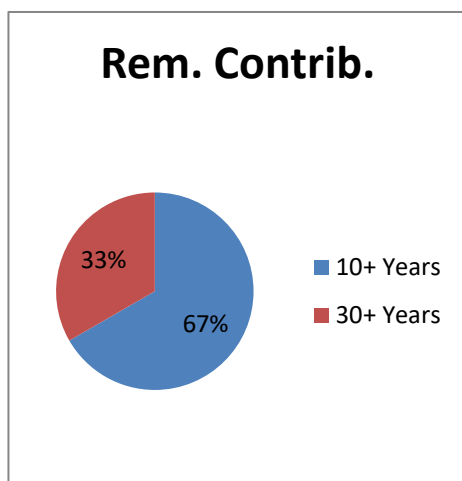
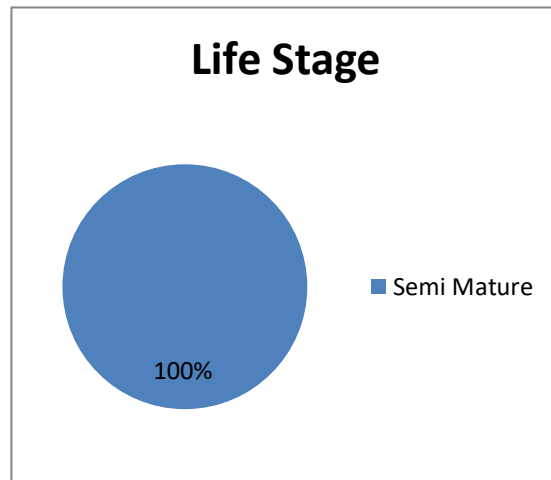
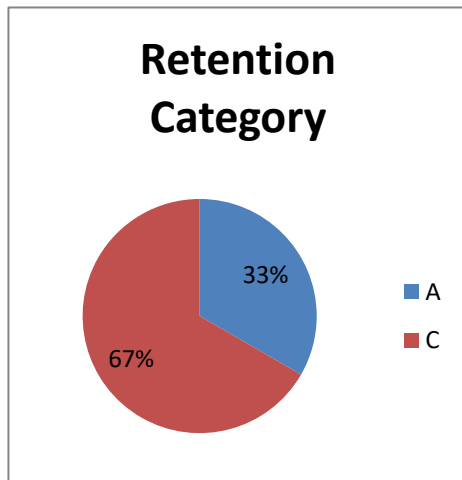


Table 1 Graphs summarizing surveyed tree population

T1 and T2 distinct from the rest due to their vigour and landscape value and such were graded as 'A' category. Both trees crowns contain minor deadwood.



Figure 3 The tree T1

T3-T6 were identified as unremarkable trees due to their previous unsympathetic management, and the trees were graded as 'C' category.

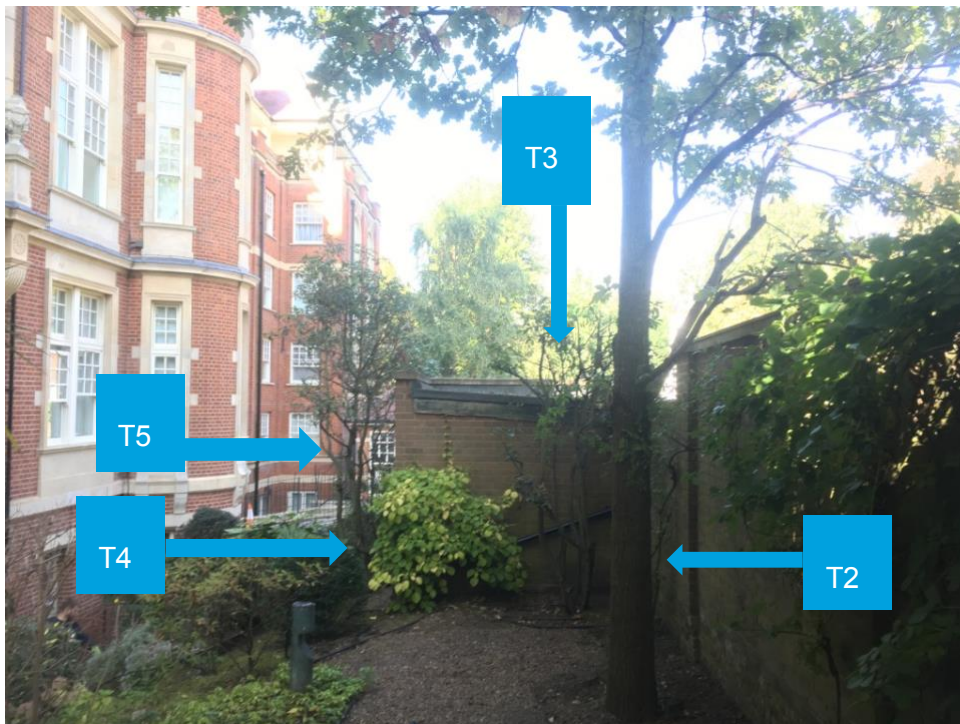


Figure 4 The picture shows trees T2, T3, T4 and T5



Figure 5 Tree T6

All trees were graded in accordance with BS5837:2012 and data are summarized in Appendix 3 and the Tree Protection Plan indicating trees location in Appendix 4.

3 Arboricultural Impact statement

3.1 Trees to be removed

The most recent layout supplied by the client indicates that the tree T3 needs to be removed in order to facilitate the development.

3.2 Facilitation pruning, and another tree works

Trees T1 and T2 have a minor portion of the deadwood in crowns which is recommended to be removed due to the location of trees near the public pathway.

The tree T1 requires removal of lowest branches to avoid obstruction of the construction works and promote crown development above the proposed building.

The full Arboricultural Method Statement detailing any facilitation tree management works may be required prior to the design phase. If at any time during the phase the other facilitation pruning works felt to be necessary, the consultation with project arboriculturist should be made to ensure the feasibility of proposed works.

3.3 Works within Root protection areas and incursions

According to the latest layout provided by the client, **none** of the trees RPA will be impacted by the proposed design. Development works will take place just outside RPA of the tree T2 (1.2m distance from the existing wall to the edge of the RPA of the tree T2).

3.4 Tree protection measures

All retained trees require the installation of protective barrier fencing as per the specification of BS5837:2012, barrier type default specification is detailed in section 4.4.

4 Generic Arboricultural Method Statement

4.1 Introduction

The detailed Arboricultural Method Statement demonstrating the process of tree protection, monitoring and supervision may be required once comprehensive information such as surfaces and utilities, about the proposal are known.

The Arboricultural Method Statement and Tree Protection Plan should be present on site during the demolition, construction and landscaping works and be available to operatives at all times. Additionally, all operatives should be familiarized with the constraints related to trees during the site introduction.

4.2 The site clearance

The protective barriers must be erected before any work take place including site clearance due to the possibility of causing damage to trees.

Identified tree removal should take place during the initial stage of the development

4.3 Material storage, washing points and cement mixing

The material must be stored outside the RPAs, which also applies to cement mixing and washing points. The run off potential of the contaminants must be considered to avoid incursion to the RPA of retained trees. The minimum distance of the discharge cannot take place within 10m from the retained tree stem.

4.4 Tree protection

Tree protection barriers location is indicated in the Tree Protection Plan (TPP). The barriers must be clearly marked by all-weather signs (“KEEP OUT”). Figure 8 shows BS5837: 2012 default specification for barriers type.

Figure 2 Default specification for protective barrier

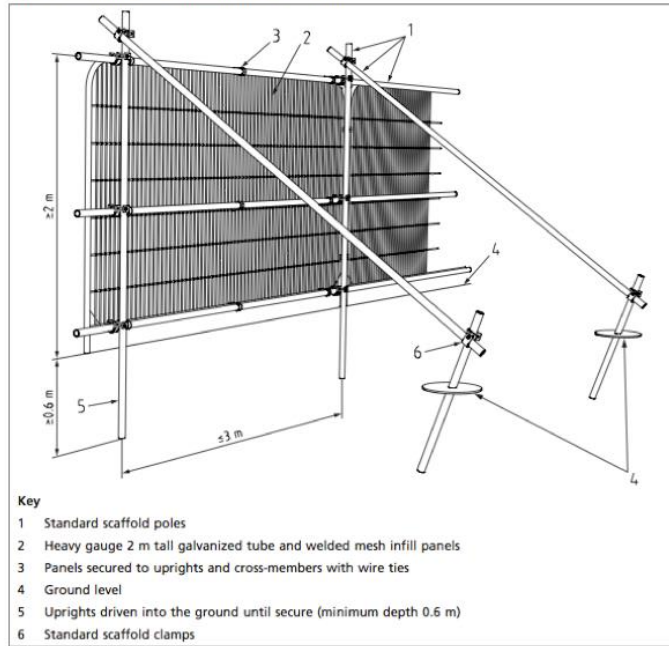


Figure 6 BS5837: 2012 default specification for barriers type

Figure 3 Examples of above-ground stabilizing systems

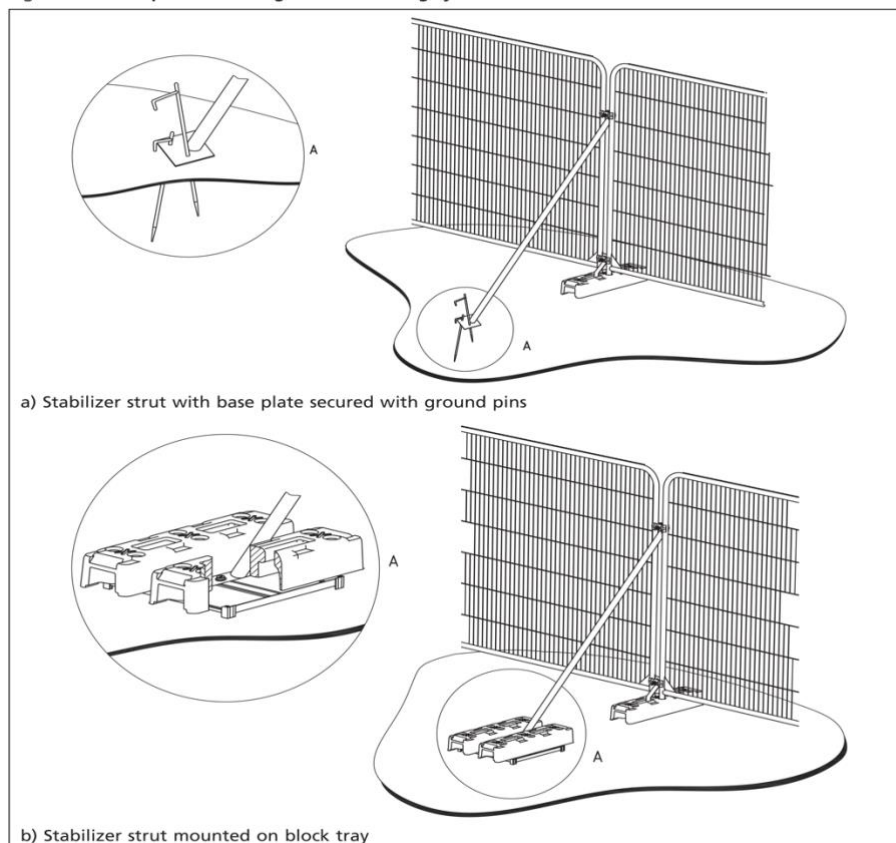


Figure 7 BS5837:2012 specification for barriers type

Ground protection must be used in areas where it is not possible to erect protective barriers to protect RPAs of retained trees. The ground protection must fit the purpose and must be installed prior to any site activity.

If there is a requirement for construction operations and/or access for pedestrians or vehicles within the Construction Exclusion zone, the possible effect of an activity can be addressed by a combination of the ground protection and barriers. The pre-commencement agreement must be made prior such operations between all involved sides and LPA.

4.5 Operation and movement within RPA and CEZ

In zone 1 m from the trunk, all unavoidable excavation should be discussed with LPA. Use of any mechanical plant store material, plant or equipment or movement of plant or vehicles and lean materials against the trunk cannot occur. NJUG guidelines for RPA are detailed in Appendix 5 diagram.

4.6 Hard Surfacing installation

Full details are not known at the time of writing. However, if resurfacing is required within RPA of any retained trees the specialist methods of construction will be necessary.

4.7 Utilities

Unconventional excavation methods are required if new services must be installed in RPA. Great care must be taken to minimize disturbance. The installation technique should follow NJUG Volume 4: Guidelines for the Planning, installation and Maintenance of Utility Apparatus in Proximity to Trees. Figure 7 indicates Trenchless solutions guidance of BS5837:2012.

Trenchless solutions for differing utility apparatus

Method	Accuracy mm	Bore dia. ^{A)} mm	Max. sub. ^{B)} length m	Applications	Not suitable for
Microtunnelling	<20	100 to 300	40	Gravity-fall pipes, deep apparatus, watercourse/ roadway undercrossings	Low-cost projects due to relative expense
Surface-launched directional drilling	≈100	25 to 1 200	150	Pressure pipes, cables including fibre optic	Gravity-fall pipes, e.g. drains and sewers ^{C)}
Pipe ramming	≈150	150 to 2 000	70	Any large-bore pipes and ducts	Rocky and other heavily obstructed soils
Impact moling ^{D)}	≈50 ^{E)}	30 to 180 ^{F)}	40	Gas, water and cable connections, e.g. from street to property	Any application that requires accuracy over distances in excess of 5 m

^{A)} Dependent on strata encountered.
^{B)} Maximum subterranean length.
^{C)} Pit-launched directional drilling can be used for gravity fall pipes up to 20 m subterranean length.
^{D)} Impact moling (also known as thrust-bore) generally requires soft, cohesive soils.
^{E)} Substantial inverse relationship between accuracy and distance.
^{F)} Figures given relate to single pass: up to 300 mm bore achievable with multiple passes.

Figure 8 BS5837: 2012 Trenchless solution for differing utility apparatus installation requirements

4.8 Tree works

The tree works should be carried out in line with current British Standard BS3998:2010. It is recommended that works are undertaken by Arboricultural Association approved contractor. A contractor must ensure that all necessary consents have been received from LPA and follow current industry standards and best practice.

List of approved contractors is available at: <https://www.trees.org.uk/ARB-Approved-Contractor-Directory>.

5 Conclusion and recommendations

The tree population comprises 2 high amenity value trees (T1 and T2), from which both would benefit from an application of the mulch.

The construction works will take place just outside the RPA of the tree T2 and care must be taken as there is 0.2 buffer zone between the proposed building wall and the edge of the Root protection zone. The underground root guard installation is recommended due to the relative proximity of the tree to the building.

The tree T3 pose a constraint to the development and require removal.

It will be necessary to install protective barrier fencing or ground protection around RPAs of retained trees, which prevent root damage or soil compaction (see TPP in Appendix 4).

The survey was unable identify areas for new tree planting.

The impact on retained trees will be negligible, and scheme should be achievable in arboricultural terms if methods outlined in this report are followed.

6 AUTHOR

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6.1 Awards

LANTRA Professional Tree Inspection

ISA Tree Risk Assessment Qualification

6.2 Memberships

Arboricultural Association

Institute of Certified Foresters

International Society of Arboriculture



Appendix 1 - References

BSI (2012) BS5837: Trees in Relation to Design, Development and Construction: Recommendations. British Standards Institute

BSI (2014) BS8545: Trees from nursery to independence in the landscape: Recommendations. British Standards Institute

BSI (2010) BS3998: Tree work: Recommendations. British Standards Institute

National joint utilities group (2007) NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees

The National Archives (2017) Town and Country planning act, 1990, <http://www.legislation.gov.uk/ukpga/1990/8/contents>; Accessed 20.02.2017

Trees and design action group (2014) Trees in hard landscape: Guide for delivery

Appendix 2: Cascade chart for tree quality assessment (BS5837:2012)

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Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)	Identification on plan
Trees unsuitable for retention (see Note)		
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 10 years	<ul style="list-style-type: none"> Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality <p><i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i></p>	See Table 2
<p>1 Mainly arboricultural qualities 2 Mainly landscape qualities 3 Mainly cultural values, including conservation</p>		
Trees to be considered for retention		
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees with no material conservation or other cultural value

Appendix 3: Tree Schedule

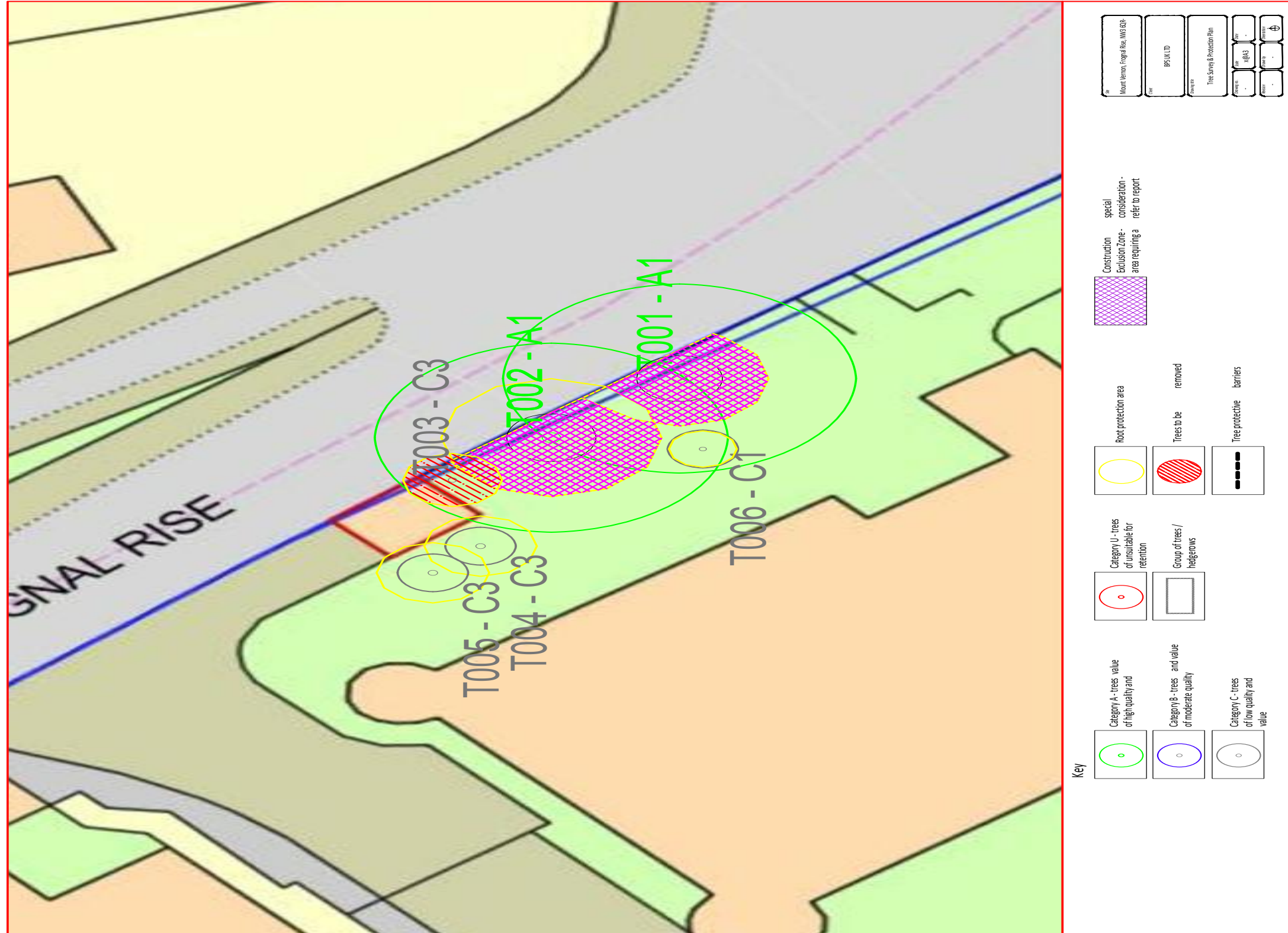
Date: 05/10/2018

Site: Mount Vernon, Froggnal Rise, NW3 6QR

Tree no.:	Species	Num. Stems	Height (m)	Combined Stem Diameter	Physiological Cond	Structural Cond	Life Stage	Rem. Contrib.	Measurements	Comments	Recommendations	Retention Category	RPA
T001	Oak, sessile (Quercus petraea)	1	12	210	Good	Good	Semi Mature	30+ Years	Height (m): 12 Stem Diam (mm): 210 Branch Spread(m): 5(N), 5(S), 5(E), 5(W) Crown Clearance (m): 3 Lowest Branch (m): 3 Life Stage: Semi Mature	Minor deadwood in the crown	Remove minor deadwood	A1	Radius: 2.5m. Area: 20 sq m.
T002	Oak, sessile (Quercus petraea)	1	12	260	Good	Good	Semi Mature	30+ Years	Height (m): 12 Stem Diam (mm): 260 Branch Spread(m): 5(N), 5(S), 5(E), 5(W) Crown Clearance (m): 3 Lowest Branch (m): 2 Life Stage: Semi Mature	Minor deadwood in the crown	Remove minor deadwood	A1	Radius: 3.1m. Area: 30 sq m.
T003	X Mahoberberis aquisargentii	3	2	117	Fair	Fair	Semi Mature	10+ Years	Height (m): 2 3 stems, diam(mm): 80, 50, 70, Branch Spread(m): 1(N), 1(S), 1(E), 1(W) Crown Clearance (m): 1 Lowest Branch (m): 1 Life Stage: Semi Mature	poor previous management	N/A	C3	Radius: 1.4m. Area: 6 sq m.
T004	Not identified	3	2	133	Fair	Fair	Semi Mature	10+ Years	Height (m): 2 3 stems, diam(mm): 80, 80, 70, Branch Spread(m): 1(N), 1(S), 1(E), 1(W) Crown Clearance (m): 1 Lowest Branch (m): 1	poor previous management	N/A	C3	Radius: 1.6m. Area: 8 sq m.

									Life Stage: Semi Mature				
T005	X Mahoberberis aquisargentii	3	2	133	Fair	Fair	Semi Mature	10+ Years	Height (m): 2 3 stems, diam(mm): 80, 80, 70, Branch Spread(m): 1(N), 1(S), 1(E), 1(W) Crown Clearance (m): 1 Lowest Branch (m): 1 Life Stage: Semi Mature	poor previous management	N/A	C3	Radius: 1.6m. Area: 8 sq m.
T006	Cabbage Tree (Cordyline australis)	1	3	80	Good	Good	Semi Mature	10+ Years	Height (m): 3 Stem Diam (mm): 80 Branch Spread(m): 1(N), 1(S), 1(E), 1(W) Crown Clearance (m): 2 Life Stage: Semi Mature	N/A	N/A	C1	Radius: 1.0m. Area: 3 sq m.

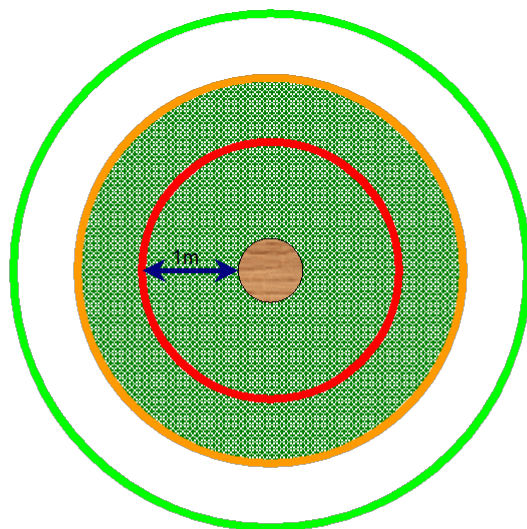
Appendix 4: Tree protection plan



Appendix 5: NJUG 2007: Guidance for planning, installation and maintenance of utility apparatus in proximity to trees issue 2 – Tree protection zone diagram



NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees – Issue 2



TREE PROTECTION ZONE

Key to Diagram



Trunk of Tree



Spread of canopy or branches



PROHIBITED ZONE – 1m from trunk. Excavations of any kind must not be undertaken within this zone unless full consultation with Local Authority Tree Officer is undertaken. Materials, plant and spoil must not be stored within this zone.



PRECAUTIONARY ZONE – 4 x tree circumference. Where excavations must be undertaken within this zone the use of mechanical excavation plant should be prohibited. Precautions should be undertaken to protect any exposed roots. Materials, plant and spoil should not be stored within this zone. Consult with Local Authority Tree Officer if in any doubt.



PERMITTED ZONE – outside of precautionary zone. Excavation works may be undertaken within this zone however caution must be applied and the use of mechanical plant limited. Any exposed roots should be protected.

Appendix 6 Tree Work Schedule

All work must comply with current industry best practice under the guidance of British Standard BS3998:2010 Tree work – Recommendations

Tree no.:	Species	Recommendations	Reason	Retention Category
T001	Oak, sessile (<i>Quercus petraea</i>)	Remove minor deadwood	Minor deadwood in the crown	A1
T002	Oak, sessile (<i>Quercus petraea</i>)	Remove minor deadwood	Minor deadwood in the crown	A1
T003	X <i>Mahoberberis aquisargentii</i>	remove tree and grind the stump	To accommodate the proposed development	C3