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Arboricultural Implications Report

Proposed re-development at

149 & 151 King Henrys Road,

London NW3

August 2020

Ref. SJA air 00572-01

SUMMARY

S1. On the basis of our assessment, we conclude that the arboricultural impact of this scheme is of negligible magnitude, as defined according to the categories set out in ***Table 1*** of this report.

S2. Our assessment of the impacts on trees concludes the proposed removal of three individual trees will not have a significant impact on the arboricultural character and appearance of the local landscape.

S3. The incursions into the Root Protection Areas of tree no. 7 is moderately significant but subject to implementation of the measures recommended on the Tree Protection Plan and set out at **Appendix 1**, no significant or long-term damage to its root systems or rooting environments will occur.

S4. As the proposed development will not result in the removal of trees which are of significant local amenity or landscape value, it complies with Policy A3 Biodiversity of the London Borough of Camden Local Plan (2017)

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APPENDICES

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1. INTRODUCTION AND BACKGROUND INFORMATION

1.1. Instructions

1.1.1. SJAtrees has been instructed by Mr A Keats to visit 149 & 151 King Henrys Road, London NW3 and to survey the trees growing on or immediately adjacent to this site.

1.1.2. We are further asked to identify which trees are worthy of retention within a proposed re-development of the site; to assess the implications of the development proposals on these specimens, and to advise how they should be protected from unacceptable damage during demolition and construction.

1.2. Scope of report

1.2.1. This report and its appendices reflect the scope of our instructions, as set out above. It is intended to accompany a planning application to be submitted to London Borough of Camden (the LPA), and complies with local validation requirements, and with the recommendations of British Standard BS 5837:2012, *Trees in relation to design, demolition and construction – Recommendations* ('BS 5837').

1.2.2. The proposed development is for internal alterations associated with the amalgamation of units to create 1 no. 4 bed unit and 1 no. 1 bed unit, constructed of single storey rear extension at No. 151 and other alterations.

1.2.3. This report summarises and sets out the main conclusions of the baseline data collected during the tree survey and identifies those trees or groups of trees whose removal could result in a significant adverse impact on the character or appearance of the local area (Section 3). It then details and assesses the impacts of the proposed development on individual trees and groups of trees, including those to be removed (Section 4), those to be pruned (Section 5), those which might incur root damage that might threaten their viability (Section 6) A summary and conclusion, with regard to local planning policy, are presented in Section 7.

1.3. Site inspection

1.3.1. A site visit and tree inspection were undertaken by Pamela Holt of SJAtrees on 30th August 2018. Weather conditions at the time were clear, dry and bright. Deciduous trees were in full leaf.

1.3.2. The site is located on the south side of King Henrys Road, 100m east of the Junction with King Henry's Road and Adelaide Road and 200m west of the Junction with Lower Merton Rise. It comprises a pair of 3-storey residential properties with mature landscaped gardens to the front and rear. The east and west boundaries adjoin residential properties on King Henry's Road. The south boundary adjoins the rear gardens of properties on Wadham Gardens and the north boundary fronts King Henry's Road.

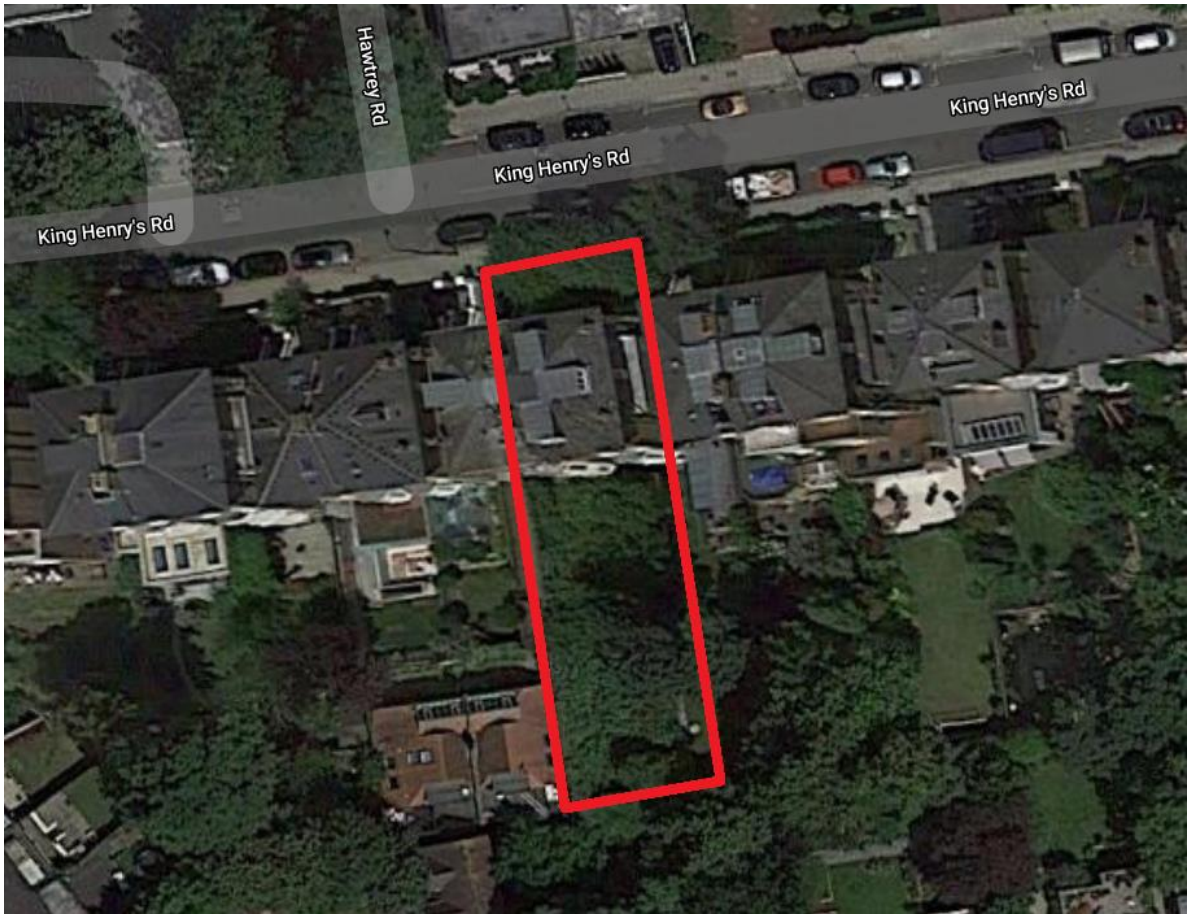

Figure 1: Site location shown on Google Earth image

1.3.3. The site is on level ground and currently comprises a 3-storey residential terraced house.

1.4. Soil type

1.4.1. The British Geological Survey Solid and Drift Geology map of the area indicates the site lies on London Clay Formation comprising a sedimentary bedrock of clay, silt and sand.

1.5. Statutory controls

1.5.1. At the time of writing none of these trees are covered by a tree preservation order (TPO).

1.5.2. The site is within the boundaries of the Elsworthy Conservation Area. The Character Appraisal for this area mentions trees at paragraph 3.27 where it states that 'The Conservation Area has a spacious layout of residential character, with many street trees, and planting in public and private open space, reinforced by the proximity to the green of the Royal Park at Primrose Hill, which is defined in the London Borough of Camden Replacement Unitary Development Plan June 2006 as Metropolitan Open Land and a Site of Nature Conservation Importance'.

1.5.3. There are no trees within or abutting the site that can be classified as 'Ancient' or 'Veteran'. Ancient and veteran trees are also considered to be irreplaceable habitats, and contribute to a site's biodiversity, cultural and heritage value, and the National Planning Policy Framework (see below) states that development resulting in the loss or deterioration of ancient or veteran trees should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists.

2. METHODOLOGY

2.1. National policy context

2.1.1. Under Section 197 of the Town and Country Planning Act 1990, local authorities have a statutory duty to consider the protection and planting of trees when considering planning applications. The effects of proposed development on trees are therefore a material consideration, and this is normally reflected in local planning policies.

2.1.2. The National Planning Policy Framework (NPPF) (June 2019), sets out the Government's planning policies for England and how these should be applied in both plan and decision-making. Paragraph 2 makes it clear that the NPPF is itself a material consideration in the determination of planning application. Paragraph 11 states that "**Plans and decisions should apply a presumption in favour of sustainable development.**"

2.1.3. At paragraph 127, within Section 12 "Achieving well-designed places" the NPPF states: "**Planning policies and decisions should ensure that developments:**

a) will function well and add to the overall quality of the area, not just for the short term but over the lifetime of the development;

b) are visually attractive as a result of good architecture, layout and appropriate and effective landscaping;

c) are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation or change (such as increased densities);

d) establish or maintain a strong sense of place, using the arrangement of streets, spaces, building types and materials to create attractive, welcoming and distinctive places to live, work and visit;

e) optimise the potential of the site to accommodate and sustain an appropriate amount and mix of development (including green and other public space) and support local facilities and transport networks; and

f) create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users; and where crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion and resilience."

2.1.4. At paragraph 170, within Section 15 "Conserving and enhancing the natural environment" the NPPF states: "**Planning policies and decisions should contribute to and enhance the natural and local environment by:**

a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);

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…"

2.1.5. At paragraph 175 the NPPF states: "**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…."

2.2. Regional policy context

2.2.1. The London Plan Policy 7.21 Trees and woodlands states:

"Trees and woodlands should be protected, maintained, and enhanced, following the guidance of the London Tree and Woodland Framework (or any successor strategy). In collaboration with the Forestry Commission the Mayor has produced supplementary guidance on Tree Strategies to guide each borough's production of a Tree Strategy covering the audit, protection, planting and management of trees and woodland. This should be linked to a green infrastructure strategy."

"Existing trees of value should be retained and any loss as the result of development should be replaced following the principle of 'right place, right tree'1. Wherever appropriate, the planting of additional trees should be included in new developments, particularly large-canopied species."

2.2.2. Policy G7 Trees and Woodlands of the draft London Plan – 'Intend to Publish' version – December 2019, states:

"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

C - Development proposals should ensure that, wherever possible, existing trees of value are retained.[144] 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 other 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.

[144] Category A, B and lesser category trees where these are considered by the local planning authority to be of importance to amenity and biodiversity, as defined by BS 5837:2012"

2.3. Local policy context

2.3.1. Local planning policies are contained in the London Borough of Camden Local Plan (2017)

2.3.2. Policy A3 Biodiversity of the Local Plan states:

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.

2.3.3. The Council has prepared a Camden Planning Document (CPG) dealing with the protection of trees on development sites. The guidance presented in this document has been closely followed in the preparation of this report.

2.4. Neighbourhood policy context

2.4.1. At the time of writing there is no Neighbourhood Plan covering the area within which the site is found.

2.5. Tree locations plan

2.5.1. The information in the tree survey schedule has been used to produce the tree locations plan at **Appendix 3,** which is based on the topographical survey plan provided. The locations of some additional trees, not shown on this plan, have been plotted using our own measurements taken on site.

2.6. Tree constraints

2.6.1. In line with the NPPF's presumption in favour of sustainable development, we assessed whether any trees should be retained in the context of a proposed re-development. To do this, we identified the main arboricultural features within or immediately adjacent to the site, whose removal we considered could have an adverse impact on the character and appearance of the local landscape, on amenity or on biodiversity.

2.6.2. Whilst BS 5837 states that trees in categories 'A', 'B' and 'C' are all a material consideration in the development process, the retention of category 'C' trees, being of

low quality or of only limited or short-term potential, will not normally be considered necessary should they impose a significant constraint on development.

2.6.3. Furthermore, BS 5837 makes it clear that young trees, even those of good form and vitality, which have the potential to develop into quality specimens when mature "**need not necessarily be a significant constraint on the site's potential**"[1].

2.6.4. Moreover, BS 5837 states 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 during demolition or construction work, or post-completion demands for their removal**"[2].

2.6.5. The 'Root Protection Areas' (RPAs)[3] of the trees identified for retention were calculated in accordance with Section 4.6 of BS 5837; and were assessed taking account of factors such as the likely tolerance of a tree to root disturbance or damage, the morphology and disposition of roots as influenced by existing site conditions (including the presence of existing roads or structures), as well as soil type, topography and drainage. Where considered appropriate, the shapes of the RPAs (although not their areas) were modified based on these considerations, so that they reflect more accurately the likely root distribution of the relevant trees.

2.6.6. To assess whether the trees identified for retention would be in harmony with the proposed development (without casting excessive shade or otherwise unreasonably interfering with incoming residents' prospects of enjoying their properties, and thereby leading inevitably to requests for consents to fell), we plotted a segment or "shading arc" from each trunk, with a radius equal to the current height of the tree concerned, from due north-west to due east. This gave an indication of potential direct obstruction of sunlight and the shadow pattern cast through the main part of the day[4].

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[1] Ibid. 4.5.10.

[2] Ibid. 5.1.1.

[3] The minimum area around a retained 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 is treated as a priority." BS 5837, paragraph 3.7.

[4] BS 5837, paragraph 5.2.2 Note 1.

2.6.7. Based on these principles and recommendations, the tree survey and our assessment of suitability for retention informed the production of a tree constraints plan (TCP) which showed the most suitable trees for retention, and their associated below-ground and above-ground constraints.

2.6.8. As a design tool, the TCP showed how close to those trees selected for retention the proposed development could be positioned, in terms of three key criteria:

a). avoidance of unacceptable root damage; and

b). avoidance of the necessity for unacceptable pruning works;

2.6.9. The TCP was then used to inform the siting of the proposed and areas of hard surfacing, about both of which we were consulted on several occasions during the design process. In this way, it has been ensured that the existing trees have made a significant contribution to the design of the proposed development, rather than the design having dictated which trees are to be removed.

2.7. Arboricultural impact assessment and tree protection plan

2.7.1. Once finalised, we assessed the arboricultural impacts of the proposed layout, by overlaying it onto our TCP, and produced the tree protection plan (TPP) presented at **Appendix 4.** This is based on the proposed site layout plan by Platform 5 Architects, drawing ref. 20-104 Proposed Site Layout Plan.

2.7.2. The TPP identifies the trees which will be removed to accommodate the proposed development, either because they are situated within the footprints of proposed structures or surfaces, or because in our judgment they are too close to these structures or surfaces to enable them to be retained. These are shown by means of **red crosses** on the TPP.

2.7.3. The TPP also shows how trees to be retained will be protected from damage during demolition and construction, and the measures identified are set out and described at **Appendix 1** to this report. The implementation of, and adherence to, these measures can readily be secured by the imposition of appropriate planning conditions.

2.7.4. For the trees shown to be retained, all measurements for pruning specifications, percentage estimates of RPA incursions and shading issues have been calculated using AutoCAD software.

2.7.5. Details of the impacts identified within these categories, and our assessment of their respective significance, are analysed in Sections 4 to 7 below.

2.7.6. Based on these findings, we have assessed the magnitude of the overall arboricultural impact of the proposals according to the categories defined in Table ***1*** below.

Category	Description
High	Total loss of or major alteration to main elements/ features/ characteristics of the baseline, post-development situation fundamentally different
Medium	Partial loss of or alteration to main elements/ features/ characteristics of the baseline, post-development situation will be partially changed
Low	Minor loss of or alteration to main elements/ features/ characteristics of the baseline, post-development changes will be discernible but the underlying situation will remain similar to the baseline
Negligible	Very minor loss of or alteration to main elements/ features/ characteristics of the baseline, post-development changes will be barely discernible, approximating to the 'no change' situation

Table 1: Magnitude of impacts[5]

[5] Determination of magnitude based on DETR (2000) Guidance on the Methodology for Multi-Modal Studies, as modified and extended.

3. THE TREES

3.1. Survey findings

3.1.1. We surveyed a total of eight individual trees in or adjacent to the site. Their details are found in the tree survey schedule at **Appendix 2**.

3.1.2. The trees comprise a mix of semi-mature and mature broadleaved trees located on the front northern boundary with King Henry's Drive and in the rear garden. The trees on the northern boundary are visible from public viewpoints and contribute to the tree lined character of the King Henrys Road.

3.2. Assessment of suitability for retention

3.2.1. As noted above in Section 2.3, local planning policies require the retention 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. The individual trees within or adjacent to the site, whose attributes we consider meet these criteria, are as follows:

- Common lime no. 3 growing alongside the northern boundary of the site; and
- Sycamore tree no. 7 growing adjacent to the dividing fence in the rear garden.

3.2.2. One individual tree (nos. 10) has been assessed as category 'U'. These are trees that are unsuitable for retention, on the basis of them being 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. On site trees that need removing solely to accommodate the proposed development are not placed in this category. Category 'U' trees are indicated on the accompanying tree locations and protection plans by **bracketed red** numbers.

3.2.3. There are no category 'A' trees, four category 'B' and specimens. The remaining three trees are assessed as category 'C' trees, being either of low quality, very limited merit, only low landscape benefits, no material cultural or conservation value, or only limited or short-term potential; or young trees with trunk diameters below 150mm; or a combination of these.

4. TREES TO BE REMOVED

4.1. Details

4.1.1. To accommodate the proposed development, as shown on the proposed layout plan, three individual trees (nos. 5, 6, 10) are to be removed, either because they are situated within the footprints of proposed structures or surfaces, or because they are too close to these to enable them to be retained.

4.1.2. Of the trees to be removed, one is category ‘B’. and one is category ‘C’. The category ‘B’ trees to be removed are shown and listed on the TPP and at ***Table 2*** below.

Tree no.	Species	Height	Trunk diameter	Age class	BS category
6	Bay	8m	300mm	Semi-mature	B (12)

Table 2: Category “A” and “B” Trees to be removed

4.1.3. An additional tree (no. 10) will be removed as it has been assessed as category ‘U’ and should be felled for arboricultural management reasons, irrespective of the proposed development.

4.2. Assessment

4.2.1. All those trees that constitute the main arboricultural features of the site and which make the greatest contribution to the character and appearance of the local landscape, to amenity or to biodiversity (see paragraph 3.2.1), will be retained.

Photograph 1: View of bay tree (no. 6) and fire thorn no. 9 looking northwest.

4.2.2. Two of the category ‘B’ trees are to be retained, but one category ‘B’ (bay tree no. 6) is to be removed, as shown in ***Table 3*** above.

4.2.3. The bay tree is largely obscured from major public viewpoints and its removal would not have a detrimental effect upon the character and appearance of the Conservation Area.

4.2.4. One of the three category ’C’ trees on site is to be removed: this is of low quality, low value, and short-term potential. For these reasons, its removal will have no significant impact on the character or appearance of the area.

4.2.5. The category ‘U’ tree to be removed is unsuitable for retention, irrespective of the proposed development, in that they cannot realistically be retained for longer than 10 years.

4.2.6. In the light of these considerations, and taking account of the numbers, sizes and locations of the trees to be retained, the felling of the trees identified for removal will represent no alteration to the main arboricultural features of the site.

5. TREES TO BE PRUNED

5.1. Assessment

5.1.1. As no trees are to be pruned, and none of the proposed works will be within 2m of the extents of the canopies of trees to be retained, there will be adequate working space for construction close to trees, and a reasonable margin of clearance for future growth.

6. ROOT PROTECTION AREA INCURSIONS

6.1. Details

Parts of the proposed hard surfacing will encroach within the RPAs of one of the trees to be retained. These are shown in Table 3 below.

Tree no.	Species	Incursion	Extent of incursion	% of RPA
7	Sycamore	Paved hardstanding and terracing	56.9m^2	30.3%

Table 3: Proposed incursions within RPAs

6.2. Assessment

6.2.1. The incursions by parts of the proposed scheme or other structures into the RPAs of the tree listed at ***Table 3*** equate to no more than 30% of the individual's RPA. Any potential adverse impacts can be satisfactorily mitigated as set out below.

6.2.2. The incursions into the RPAs of tree no. 7 is by proposed drainage routes, footpaths and proposed level changes. Accordingly, some degree of excavation will be required but, except where this is for the proposed garden terrace to the rear of the western portion of the site, this excavation will be shallow and is already largely covered in existing hard surfacing. To minimise potential impacts on the sycamore tree, excavation within its RPAs will be undertaken manually, under the direct control and supervision of an appointed arboricultural consultant, so that any over dig into the RPAs is avoided, and any roots encountered can be treated appropriately.

6.2.3. As a species, sycamore, has been identified as moderate at tolerating root pruning and disturbance[6]. As this specimen is of average physiological condition, there is no reason to suggest that it will not be able to tolerate the cutting of roots within these sections of its RPA.

6.2.4. The areas lost to encroachment within the RPAs of the sycamore tree no. 7 can be compensated for in the areas to the west and south of the tree, where there is

[6] MATHENY, N. P. and CLARK, J. R. (1998). Trees and Development. International Society of Arboriculture.

existing soft landscaping suitable for root growth, contiguous to the RPAs. There is likely to already be significant rooting within these areas, and as it is to remain as soft landscape, there is little prospect of them being built on in the future. Therefore, there will be no net loss of suitable rooting area, and no risk of cumulative impacts in the future, so there is no reason to suggest that it will not be able to tolerate the cutting of roots within its RPA or that it will not remain viable.

6.2.5. Where appropriate, new surfaces could incorporate an appropriate cellular confinement system, filled and finished with suitable porous materials, to minimise soil compaction. To ensure no damage occurs to the roots or rooting environments of the relevant trees, installation will be undertaken under the control and supervision of the arboricultural consultant.

6.2.6. Implementation of measures to prevent other incursions into the RPAs of retained trees and to protect them during construction can be assured by the erection of appropriate protective fencing, as shown on the TPP at **Appendix 3**.

6.2.7. Accordingly, subject to implementation of the above measures, and considering the ages, current physiological condition and tolerance of disturbance of these retained trees, no significant or long-term damage to their root systems or environments will occur as a result of the proposed development.

7. CONCLUSIONS

7.1. Summary

7.1.1. On the basis of our assessment, we conclude that the arboricultural impact of this scheme is of ngligible magnitude, as defined according to the categories set out in ***Table 1*** of this report.

7.1.2. The incursions into the Root Protection Areas of tree no. 7 is moderately significant but subject to implementation of the measures recommended on the Tree Protection Plan and set out at **Appendix 1**, no significant or long-term damage to its root systems or rooting environments will occur.

7.2. Compliance with national planning policy

7.2.1. As the proposals will retain the main arboricultural features of the site, its arboricultural attractiveness, history and landscape character and setting will be maintained, thereby complying with Paragraph 127 of the National Planning Policy Framework.

7.3. Compliance with regional planning policy

7.3.1. As the existing trees assessed as being of particular value within the landscape will be retained, and space exists within the proposed layout for replacement planting, the proposed development will protect, maintain and enhance the main arboricultural features of the site. As such, it complies with Policy 7.21 of the London Plan.

7.4. Compliance with local planning policy

7.4.1. As the proposed development will not result in the removal of trees which are of significant local amenity or landscape value, it complies with Policy A3 Biodiversity of the London Borough of Camden Local Plan (2017).

7.5. Conclusion

7.5.1. On the basis of our assessment, we conclude that the arboricultural impact of this scheme is of negligible magnitude, as defined according to the categories set out in ***Table 1*** of this report.

APPENDIX 1

Outline Arboricultural Method Statement

Outline arboricultural method statement

A1.1. Tree Protection Plan

A1.1.1. The TPP at **Appendix 4** shows the general and specific provisions to be taken during construction of the proposed development, to ensure that no unacceptable damage is caused to the root systems, trunks or crowns of the trees identified for retention. These measures are indicated by coloured notations in areas where construction activities are to occur either within, or in proximity to, retained trees, as described in the relevant panels on the drawing.

A1.2. Pre-start meeting

A1.2.1. Prior to the commencement of any site clearance, or construction works the developer will convene a pre-start site meeting. This shall be attended by the developer's contract manager or site manager, the demolition contractor, the fencing/boarding contractor, the groundwork contractor(s) and the arboricultural consultant. The LPA tree officer will be invited to attend. If appropriate, the tree felling/surgery and transplanting contractor should also attend. At that meeting contact numbers will be exchanged, and the methods of tree protection shall be fully discussed, so that all aspects of their implementation and sequencing are made clear to all parties. Any clarifications or modifications to the TPP required as a result of the meeting shall be circulated to all attendees.

A1.3. Protective fencing

A1.3.1. Construction exclusion zones (CEZs) will be formed by erecting protective fencing around the RPAs of all on-site trees to the specification recommended in BS 5837, Section 6.2, prior to the commencement of construction. This will consist of a scaffold framework comprising a vertical and horizontal framework, well braced to resist impacts, with vertical tubes spaced at maximum intervals of 3.5m. Onto this, welded mesh panels should be securely fixed with wire or scaffold clamps, as shown in **Figure 2** of that document. "**TREE PROTECTION ZONE - KEEP OUT**" or similar notices will be attached with cable ties to every third panel.

A1.3.2. The recommended positions of the protective fencing are shown by **bold blue lines** on the TPP. The precise positioning of the fencing around the trees will be considered in conjunction with any other protective hoarding/fencing which may be required around the site boundary.

A1.3.3. Within the CEZs safeguarded by the protective fencing, there will be no changes in ground levels, **no soil stripping**, and no plant, equipment, or materials will be stored. Oil, bitumen, diesel, and cement will not be stored or discharged within 10m of any trees. Areas for the storage or mixing of such materials will be agreed in advance and be clearly marked. No notice boards, or power or telephone cables, will be attached to any of the trees. No fires will be lit within 10m of any part of any tree.

A1.4. Manual excavation within RPAs

A1.4.1. The first 750mm depth of excavations required within the RPAs of the trees to be retained (as shown by **bold orange lines** on the TPP) will be dug by hand, using a compressed air soil pick if appropriate, and under on-site arboricultural supervision, in order to safeguard against the possibility of unacceptable root damage being caused to these specimens. Any roots encountered of over 25mm diameter will be cut back cleanly to the face of the dig nearest to the tree, using a sharp hand saw or secateurs, and their cut ends covered with hessian to prevent desiccation.

A1.5. Proposed hard surfaces within RPAs

A1.5.1. Unacceptable damage to the roots and rooting environments of the trees to be retained during the construction of proposed hard surfaces that encroach within RPAs will be avoided by building them above existing soil level, to avoid digging and thus severing of roots; and an appropriate ground covering will be used beneath the sub-base, to prevent or minimise compaction of the soil. This will be done in accordance with Section 7.4 of BS 5837.

APPENDIX 2
Tree survey schedule

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Tree Survey Schedule

149 & 151 King Henry`s Road, NW3

August 2018

Tree Survey Schedule: Explanatory Notes

149 & 151 King Henry`s Road, NW3

This schedule is based on a tree inspection undertaken by Pamela Holt of SJAtrees (the trading name of Simon Jones Associates Ltd.), on Thursday the 30th August 2018. Weather conditions at the time were clear, dry and bright. Deciduous trees were in full leaf.

The information contained in this schedule covers only those trees that were examined, and reflects the condition of these specimens at the time of inspection. We did not have access to the trees from any adjacent properties; observations are thus confined to what was visible from within the site and from surrounding public areas.

The trees were inspected from the ground only and were not climbed, and no samples of wood, roots or fungi were taken. A full hazard or risk assessment of the trees was not undertaken, and therefore no guarantee, either expressed or implied, of their safety or stability can be given.

Trees are dynamic organisms and are subject to continual growth and change; therefore the dimensions and assessments presented in this schedule should not be relied upon in relation to any development of the site for more than twelve months from the survey date.

1. Tree no.
Given in sequential order, commencing at "1". Numbers correspond with numbering on topographical survey plan.

2. Species.
'Common names' are given, taken from MITCHELL, A. (1978) A Field Guide to the Trees of Britain and Northern Europe.

3. Height.
Estimated with the aid of a hypsometer, given in metres.

4. Trunk diameter.
Trunk diameter measured at approx. 1.5m above ground level; or where the trunk forks into separate stems between ground level and 1.5m, measured at the narrowest point beneath the fork. Given in millimetres.

5. Radial crown spread.
The linear extent of branches from the base of the trunk to the main cardinal points, rounded up to the closest half metre, unless shown otherwise. For small trees with reasonably symmetrical crowns, a single averaged figure is quoted.

6. Crown break.
Height above ground and direction of growth of first significant live branch.

7. Crown clearance.
Distance from adjacent ground level to lowest part of lowest branch, in metres.

8. Age class.
Young: Age less than 1/3 life expectancy
Semi-mature: 1/3 to 2/3 life expectancy
Mature: Over 2/3 life expectancy
Over-mature: Mature, and in a state of decline
Veteran: Mature, with a large trunk diameter for the species; but showing signs of ancientness, irrespective of actual age, with decay or hollowing, and a crown that has undergone some retrenchment and has a structure characteristic of the latter stages of life.
Ancient: Beyond the typical age range and with a very large trunk diameter for species; with extensive decay or hollowing; and a crown that has undergone retrenchment and has a structure characteristic of the latter stages of life.

9. Physiology.
Health, condition and function of the tree, in comparison to a normal specimen of its species and age.

10. Structure.
Structural condition of the tree – based on both the structure of its roots, trunk and major stems and branches, and on the presence of any structural defects or decay.
Very good: No significant physiological or structural defects, an upright and reasonably symmetrical structure; a particularly good example of its species.
Good: No significant physiological or structural defects, and an upright and reasonably symmetrical structure.
Moderate: No significant pathological defects, but a slightly impaired physiological structure; however, not to the extent that the tree is at immediate or early risk of collapse.
Indifferent: Significant physiological or pathological defects; but these are either remediable or do not put the tree at immediate or early risk of collapse.
Poor: Significant and irremediable physiological or pathological defects, such that there may be a risk of failure or collapse.
Hazardous: Significant and irremediable physiological or pathological defects, with a risk of imminent collapse.

11. Comments.
Where appropriate comments have been made relating to:
-Health and condition
-Safety, particularly close to areas of public access
-Structure and form
-Estimated life expectancy or potential
-Visibility and impact in the local landscape

12. Category.
Based on the British Standard "Trees in relation to design, demolition and construction - Recommendations", BS 5837: 2012, Table 1, adjusted to give a greater weighting to trees that contribute to the character and appearance of the local landscape, to amenity, or to biodiversity.

Category U: Trees 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.
• 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.

Category A: Trees of high quality with an estimated remaining life expectancy of at least 40 years.
(1) Trees that are particularly good examples of their species, especially if rare or unusual.
(2) Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features.
(3) Trees, groups or woodlands of significant conservation, historical, commemorative or other value.

Category B: Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.
(1) 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 minor 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.
(2) Trees present in numbers, usually growing as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals; or trees present in numbers but situated so as to make little visual contribution to the wider locality.
(3) Trees with material conservation or other cultural value.

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 150mm.
(1) Unremarkable trees of very limited merit or of such impaired condition that they do not qualify in higher categories.
(2) Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value, and/or trees offering low or only temporary landscape benefits.
(3) Trees with no material limited conservation or other cultural value.

TREE SURVEY SCHEDULE

149 & 151 King Henry`s Road, NW3

No.	Species	Height	Trunk diameter	Radial crown spread	Crown break	Crown clear-ance	Age class	Physio - logy	Structure	Comments	Cate gory
1	Common lime	11m	360mm	0.5m N 0.5m E 0.5m S 0.5m W	2.2m	2m	Semi-mature	Average	Indifferent	Located 220mm to NW of low front garden wall fronting the street. Some basal growth; sounded base with acoustic hammer, no changes in tone noted; black staining from honeydew and sooty mould on pavement on street side; N side where limb removed historically is a cavity at 2.5m from ground level 200mm in length and 150mm in width and 210mm across, can be probed to over 350mm depth with moisture and decay within cavity but some woundwood around opening; on the S side at the same height another limb has been removed and has virtually occluded apart from a tiny hole which can be probed to 380mm in depth connecting to cavity on N; tree has been pollarded approx.1 year ago; narrow crown with two main stems at crown break and deep fissure over 520mm in length with included bark, decay immediately underneath presenting a possible future hazard; of poor structure; category C. of moderate quality and landscape value; but of short-term potential only.	C (12)
2	Common lime	11m	380mm	1m N 3m E 2.8m S 2m W	2m	1.8m	Semi-mature	Average	Indifferent	Tree is located hard against the front low garden wall and the pillar marking the entrance to the property; tree is growing into the edge of the pillar on its SE side at 1.5m from ground level.Some basal growth; five ascending stems from pollard point, pollarding maintained regularly; some included bark on NE side of 280mm length, at this point the tree has divided into two main knuckles, one to the S has three ascending branches, the N has two ascending branches with historical evidence of others being pruned out completely. Narrow crown; plenty of foliage; sycamore seedlings are growing in fissure at pollard point; pocket present but no decay on probing; all branches ascending. Of moderate quality and of medium-term potential; but of low landscape value.	C (1)
3	Common lime	11m	450mm	3.1m N 3m E 2.6m S 2.8m W	3m	2.5m	Mature	Average	Indifferent	Located 70mm NW from the low garden wall; bigger and older than other lime trees; a vertical fissure at 0.5m on W side of trunk possibly a pruning wound measuring 120mm in length, very narrow, no decay present; pollard with five vertically ascending stems, three fairly close together; on N evidence of historical branch removal, small cavity present with epicormic growth at this point. Of moderate quality and landscape value; of long-term potential.	B (12)

No.	Species	Height	Trunk diameter	Radial crown spread	Crown break	Crown clear-ance	Age class	Physio - logy	Structure	Comments	Cate gory
4	Sycamore	0.5m	690mm	n/a	n/a	n/a	Mature	Dead	Dead	Stump. Client was concerned that it may have some effect on the RPA and could cause problems as the tree root decays. We tried to find out what the soil is by looking at some assessments for a basement of a similar property along the road which suggests gravel in the top layer but clay further down.	U
6	Bay	8m	300mm	3m N 3m E 4m S 3.5m W	1.5m	1.6m	Semi-mature	Average	Moderate	Growing 500mm NE from the low boundary wall between the two properties; much basal growth up to 2m in height; grows together with adjacent tree 5 in raised planter. Divides at 1.5m into four ascending trunks; numerous criss-crossing branches; dense in middle. Fine twiggy deadwood scattered through crown; trees on other side of the low garden wall between the two properties have suppressed crown on W side; plenty of foliage with no evidence of having been pruned; small defect to SW at 1m and some decay in crown break. Of moderate quality and landscape value; of long-term potential.	B (12)
7	Sycamore	17m	640mm	6m N 7m E 4m S 6m W	1.6m	2m	Mature	Average	Moderate	Tree located behind dividing fence between the ornamental and vegetable part of the garden: tree is 490mm NW from the fence and 310mm NE from the wall between the two properties. Flare at base; large girdling root on S side; trunk divides at 1.6m from ground level into two main ascending stems one to N, one to S; evidence of old ivy stems which have been cut; wounds calloused well; horizontal limb growing out N at two thirds the height of the tree; one small dead branch to its NW side, to SW dead branch 150mm in diameter; tree appears to have been well maintained with compact crown; Of moderate quality and landscape value; of long-term potential. Owner was concerned whether the RPA could have any impact on extension and basement to the rear.	B (12)
8	Elder	4.4m	160mm S 90mm (NW)	2m N 4m E 3m S 3m W	1.5m	0.5m	Semi-mature	Below average	Poor	Growing in rear garden of no.151 located 460mm from the dividing wall and 1360mm SE from the boundary wall. Self-sown specimen; main trunk to S and NW is a secondary trunk which leans out an angle; cavity at base; S stem has limb coming out short way above ground then small branch that doubles back into the crown; ivy has been removed at base leaving dead stems hanging; at 1m branch comes out to SE, has a split 280mm long, branch then grows horizontally towards the NE. Clematis climbing in crown from no.149 garden. Sparse crown foliage; fine twiggy deadwood giving congested crown, unmanaged; Of low quality, of low landscape value, and of short-term potential only.	C (123)

No.	Species	Height	Trunk diameter	Radial crown spread	Crown break	Crown clear-ance	Age class	Physio - logy	Structure	Comments	Cate gory
9	Fire Thorn	4m	60mm (NW) 30mm W 40mm W 130mm N 290mm S	5m N 1.5m E 4m S 3m W	0.2m	1.4m	Semi-mature	Below average	Moderate	Growing 60mm SE from dividing wall; leans into property no. 151; vertical crack in dividing 1.5m high wall behind this tree. Several trunks, largest to S after 300mm this divides into four main stems, the biggest one continues horizontally and the other stems arise from it; previously a shrub growing up against a wall; has been pruned in the past; typical of species; lots of short spurs, thorns and berries; 200mm length stump died back following cut on W side and proliferation of epiormics around cut; branch growing on SW side has died after 1m from pruned end; crossing and rubbing branches. Extensive fine twiggy deadwood typical of species; suppressed on E side by spreading trees no. 6 and 7. Of poor structure. Of moderate quality but of low landscape value, and of short-term potential only.	C (1)
10	Shrubby Veronica	2m	110mm W 120mm N	2m N 0.2m E 0.2m S 3m W	0.1m NE	0.2m	Semi-mature	Below average	Poor	Located 650mm SE from dividing wall. Pruned in the past, three stems, two on the E side and one on the W side have been cut quite low; stem to N has been torn off rather than pruned, top 300mm are dead, torn back and regrown lower down; decayed; stem comes out to E side which snapped off and re-sprouted. Asymmetrical canopy due to presence of bay treeno. 6 behind; fine twiggy deadwood; congested crown with crossing and rubbing branches creating natural grafts. Hebe species; long narrow leaves. Of low quality, of low landscape value, and of little potential.	U

Root Protection Areas (RPAs)

Root Protection Areas have been calculated in accordance with paragraph 4.6.1 of the British Standard 'Trees in relation to design, demolition and construction – Recommendations', BS 5837:2012. This is the minimum area which should be left undisturbed around each retained tree. RPAs are portrayed initially as a circle of a fixed radius from the centre of the trunk; but where there appear to be restrictions to root growth the circle is modified to reflect more accurately the likely distribution of roots.

Tree No.	***Species***	***RPA***	***RPA Radius***
1	Common lime	58.6m^2	4.32m
2	Common lime	65.3m^2	4.56m
3	Common lime	91.6m^2	5.4m
4	Sycamore	215.4m^2	8.28m
5	Chinese privet	34.9m^2	3.33m
6	Bay	40.7m^2	3.6m
7	Sycamore	185.3m^2	7.68m
8	Elder	15.2m^2	2.2m
9	Fire thorn	48.5m^2	3.93m
10	Shrubby Veronica	12.0m^2	1.95m

APPENDIX 3
TREE PROTECTION PLAN

N

King Henry's Road

SJA Trunk enclosed with protective wrapping

Common lime 2

Common lime 3

Common lime 1

SJA Trial excavation has shown no root activity west of boundary wall

SJA Site boundary

Shrubby Veronica [10]

6 Bay

9

Fire Thorn

Sycamore 7

8

Elder

SJA Protective fencing as per BS5837; see inset panel

SJA Excavation to be undertaken under arboricultural supervision; see inset panel

0 10m 20m 30m 40m 50m

METRES

1 : 1000 @A2

Arboricultural Impacts: Summary

(For details, see below)

Impact	No. of Trees
Trees to be removed	3
Groups of trees to be removed	0
TPO trees to be removed	0
Trees to be pruned	0
Trees where manual excavation needed within RPAs	1
Trees where above soil surfacing needed within RPAs	1
Trees with proposed underground services within RPAs	0

Trees to be Removed

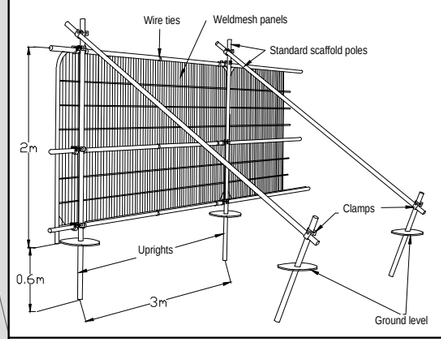
No	Species	Category
6	Bay	B
9	Firethorn	C
10	Shrubby Veronica	U

Trees that require manual excavation within RPAs

No.	Species	Type of structure
7	Sycamore	New paved hardstanding

Protective Fencing

To be erected prior to the commencement of all works on site, and retained in place throughout construction. To comprise either 2.4m wooden site hoarding; or a 2m high scaffolding framework, with uprights at maximum 3m spacings, every other one braced to the ground with 45 degree struts; supporting standard anti-climb 'Heras' welded mesh fence panels secured with anti-lift devices to concrete or plastic bases pinned to the ground by scaffold uprights sunk to a minimum depth of 600mm; individual panels fixed to each other with at least 2 clamps and to scaffolding with heavy-duty cable ties. "TREE PROTECTION ZONE - KEEP OUT" or similar notices to be attached to every fifth panel.



TREE PROTECTION FENCING as shown in BS 5837: 2012, Section 6.2.2 & Figure 2.

Protective trunk wrapping

Protective wrappings shall be fitted to the trunks of trees nos. 1, 2 & 3, to prevent accidental damage by impacts from materials or machinery during demolition/construction. The trunk wrappings (shown by **blue circles**) shall consist of not less than three thicknesses of hessian around each trunk, surmounted by an outer layer of either two rounds of chestnut paling fencing, or 50mm X 25mm sawn battens arranged vertically around the trunk at intervals of no greater than 100mm, and held in place with galvanised staples and tightened 5mm multi-strand fencing wire. The trunk wrappings shall extend from as close as possible to ground level, up to a minimum height of 2m above ground on each tree. They shall be retained in place for the duration of demolition and construction operations, and shall not be removed until all works are completed, and all equipment and materials are removed from site.

Manual Excavation

Within root protection areas the first 750mm depth of any excavation, whether for proposed foundations, hard surfacing, or underground services shall be undertaken by hand under arboricultural supervision. The soil will be loosened with a pick or fork, and then will be cleared from roots with a compressed air soil pick. All roots will be cut cleanly with a hand saw or secateurs. The edge of the excavation closest to the trees will be covered with hessian sacking to prevent drying out, and if necessary be shuttered with an appropriate material to prevent soil collapse. Where appropriate, the soil beneath this depth may be sheet piled; and deeper excavation may be undertaken by a machine provided it works from outside the root protection areas.

Arboricultural Supervision

The arboricultural consultant will directly supervise all construction works that have to be undertaken within root protection areas. These include:

1. Location of protective fencing.
2. All excavations, hard surfacing, or underground services.

SJA ARBORICULTURAL PLANNING CONSULTANTS

Project:	149 & 151 King Henry's Road		
Client:	Mr Adam Keats		
Drawing:	TREE PROTECTION PLAN		
Drawing No:	SJA TPP 00572-041	Revision No:	
Based On:	20-104_Proposed Site Layout Plan		
Drawn By: MAC	Date: Aug 2020	Scale: 1:100 @ A2	
Tel:(01737) 813058	Fax:(01737) 816140	sja@sjatrees.co.uk	
Tree nos.: ● 7	Category 'U' trees: ● [10]	Canopies of trees to be retained:	
Category 'B' RPA:	Category 'C' RPA:	Trees to be removed: 6	
Protective fencing:	Manual excavation:		

For further information refer to the SJAtrees Tree Survey Schedule

Do not scale from this drawing: please check all dimensions on site, and notify us of any discrepancies. SJAtrees (the trading name of Simon Jones Associates Ltd.) cannot be held responsible for inaccuracies in the topographical plan on which this drawing is based.

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