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Arboricultural Implications Report

Proposed re-development at

2 Fitzroy Close

Highgate

N6 6JT

January 2016

Ref. SJA air 15357-01

** SJAtrees is the trading name of Simon Jones Associates Ltd.*

SUMMARY

S1. SJAtrees has undertaken an assessment of the impacts of construction of a proposed extension on 21 individuals and one group of trees growing within and adjacent to this site, in accordance with British Standard BS 5837: 2012, *Trees in relation to design, demolition and construction – Recommendations*.

S2. Our assessment of the impacts on trees concludes that no trees are to be removed. The main arboricultural feature of the site is to be retained.

S3. The proposed pruning is minor in extent, and accordingly will not detract from the character or appearance of the site, the conservation area or the local landscape.

S4. As no parts of the proposed extension abut or are within the RPAs of any of the trees to be retained, subject to the implementation of protective measures recommended on the TPP and set out at **Appendix 5**, its construction will not cause unacceptable damage to roots or rooting environments as a result of root severance or damage, or compaction or pollution and we consider that no significant or long-term damage will result**.**

S5. We consider that the proposed extension and the master ensuite is unlikely to be shaded to the extent that this will interfere with its function or use, thereby leading to pressure to fell or severely prune these trees which the LPA could not reasonably resist.

S6. The size and disposition of the current private garden to the west of the property will remain unchanged and as such will continue to receive reasonable sunlight and daylight. Its use is thus unlikely to lead to demands for felling or severe pruning of trees that the LPA would find difficult to resist

S7. We conclude therefore that the arboricultural impact of this scheme is of negligible magnitude, and that the proposed development would not have an adverse arboricultural impact on the character and appearance of the local landscape or the conservation area, or on the amenity or biodiversity that the existing trees provide; and accordingly that it complies with national planning policy guidance and local planning policies.

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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 James Light to visit No. 2 Fitzroy Close, Highgate, N6 6JT and to survey the trees growing within and adjacent to this site.

1.1.2. We are further asked to identify which trees need to be retained; to assess the implications of the development proposals on these specimens, and to advise how they should be protected from unacceptable damage during 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 the London Borough of Camden, 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 comprises the construction of a two storey extension to the east elevation to accommodate a master suite at first floor and new boot room along with an enlarged laundry to the ground floor.

1.2.3. The 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 would result in a significant adverse impact on the character or appearance of the local environment (Section 2). It then details and assesses the impacts of the proposals on trees, including which are to be removed (Section 3), or pruned (Section 4), which might incur root damage that might threaten their viability (Section 5); and which, if retained, could cause unreasonable apprehension or shading, thereby leading to pressure for their removal in the future (Section 6). These assessments are then summarised in Section 7, considered in relation to national and local planning policy, and our conclusions are presented. The methodologies used in the compilation of the report are set out at **Appendix 1**.

1.3. Site inspection

1.3.1. This schedule is based on a tree inspection undertaken by Nigel Kirby of Simon Jones Associates Ltd., on Wednesday the 23rd December 2015. Weather conditions at the time were clear, dry and bright. Deciduous trees were not in leaf.

1.4. Site description

1.4.1. No. 2 Fitzroy Close is situated to the south eastern corner of Fitzroy Close. Fitzroy Close rises from west to east with the end of the close seeing a further step up in level to the boundary of Heathfield Park, No. 6 Merton Lane which forms the east boundary of the property. This change in level is marked by retaining walls that run along the eastern boundary of No. 2 Fitzroy Close. Mature and semi-mature trees stand above this retaining wall and screen the private tennis court on the grounds of 6 Merton Lane, a substantial newly built residence.

1.4.2. The retaining wall wraps around the south-eastern corner of the site, to form the southern boundary with the garden of 'Sunbury', Fitzroy Park. This means the south eastern wing of No. 2 Fitzroy Close is nestled into the site. Again mature planting and trees wrap around the boundary and the level changes and trees are such that the site is entirely screened from its neighbour to the east and partially from its neighbor to the south.

1.4.3. The site is on gently sloping ground, and currently comprises a detached three storey dwelling on the south side of the close. It was built as a pair, together with No. 1 Fitzroy Close (located downhill of the western boundary) with both houses distinguished by their mono-pitched roofs.

1.5. Statutory controls

1.5.1. The cherry tree (no. 22) within the curtilage of No.2 Fitzroy Close is covered by a tree preservation order (TPO-C728), which is currently in force on this site. There are TPOs located within the curtilage of Heathfield Park, No. 6 Merton Lane, however only one may relate to one of the off-site trees (no. 5 London plane) which may or may not be subject to the TPO C252-T3. There is no other information on any of the other trees lining the east boundary.

1.5.2. The site is within the boundaries of the Highgate Village Conservation Area. The Character Appraisal for this area mentions trees in 'Part 2: The Highgate Conservation Area Management Strategy'. Under the 'Trees' heading it states that "**The trees within the Highgate Conservation Area are an important part of the local landscape and make an important contribution to the character and appearance."**

1.5.3. There are no hedgerows on site which could meet the criteria to be deemed "Important" in the context of the landscape and wildlife criteria of the Hedgerows Regulations, 1997[2].

1.6. Non-statutory designations

1.6.1. There are no woodlands within or abutting the site that are classified as 'Ancient'. Ancient woodland, which is considered to be an important and irreplaceable habitat, is defined by Natural England as "land that has had continuous woodland cover since at least 1600 AD".

[2] The Hedgerows Regulations 1997; STATUTORY INSTRUMENTS 1997 No. 1160.

2. THE TREES

2.1. Survey findings

2.1.1. We surveyed a total of 21 individual trees and one group of trees growing within or immediately adjacent to the site. Their details are found in the tree survey schedule at **Appendix 3**.

2.2. Assessment of suitability for retention

2.2.1. The main arboricultural feature within or immediately adjacent to the site, whose removal we consider would have an adverse impact on the character and appearance of the local landscape, on amenity or on biodiversity, is as follows:

- The belt of off-site trees (nos. 2-21 & G1), within Heathfields Park, No. 6 Merton Lane. Comprised of London plane, beech, ash and Leyland cypress, growing alongside the eastern boundary of the site.

2.2.2. Using the tree categorisation method at Table 1 of BS 5837, no individual trees have been assessed as category 'U'.

2.2.3. There are no category ‘A’ trees but one category 'B' specimen (London plane no. 5). The remaining 19 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 a combination of these.

2.2.4. The group of trees (no. G1 Leyland cypress), has been assessed as category ‘C’.

3. TREES TO BE REMOVED

3.1. Details

3.1.1. The development proposals, as shown on the proposed layout drawing, indicate that no trees are to be removed.

4. TREES TO BE PRUNED

4.1. Details.

4.1.1. Six trees are to be pruned to facilitate implementation of the proposals. These are shown at ***Table 1*** below. The pruning is specified to provide working space for construction, and to reduce the extent of overhang over of the proposed extension.

Tree no.	Species	Proposed Works
2	Ash	Reduce north extent to 3m from trunk
5	London plane	Reduce west extent to 8m from trunk
7	Common beech	Reduce west extent to 3m from trunk
9	Common beech	Reduce west extent to 3m from trunk
13	Common beech	Reduce west extent to 2.5m from trunk
14	Common beech	Reduce west extent to 3m from trunk

Table 1: **Proposed pruning works**

4.2. Assessment

4.2.1. The extent of pruning proposed to the trees listed in ***Table 1*** is minor. Branches to be removed are mostly small in size, and will result in a maximum wound size no greater than 100mm in diameter, with the exception of the London plane (no.5) with a maximum wound size of 150mm in diameter; this will have an insignificant effect on the health and physiological condition of these trees, and complies with the recommendations of British Standard BS 3998: 2010, *Tree work – Recommendations*.

4.2.2. In terms of impact upon the landscape, the proposed pruning is minor in extent, and will be largely screened in views by either the remainder of the trees' canopies, or by other trees growing within or adjacent to the site. It will have a negligible effect on the appearance of the trees when viewed from outside the site itself, and accordingly will not detract from the character or appearance of the site and conservation area.

4.2.3. Many of the beech trees (nos. 6-7 & 9-14) are tall and drawn up, presumably due to being over topped by the more dominant mature London plane (no.5) and ash (no.8), and being suppressed by the current building. This has led to very little western lateral growth on the lower 4m of these specimens, resulting in small growth less than 25mm in diameter.

4.2.4. Many of these also show historic pruning wounds indicative of having been cut back towards the fence line in the lower 4m of the trunk. Many of the branches and wounds are less than 25mm in diameter.

4.2.5. The pruning will reduce any overhang over the proposal and reduce the dominance of these specimens, especially those of beech trees nos. 13 and 14 adjacent to the proposed balcony; without having any significant impact on their health and appearance.

5. ROOT PROTECTION AREA INCURSIONS

5.1. Details

5.1.1. No parts of the proposed extension and associated hard surfacing are within the root protection areas (RPAs)[3] of any of the trees.

5.1.2. The proposed extension comprises of a cantilevered floor which does not enter, abut or touch the RPAs of any of the trees.

5.2. Assessment

5.2.1. As no parts of the proposed extension abut or are within the RPAs of any of the trees, and subject to the implementation of protective measures specified below and on the TPP, construction will not cause unacceptable damage to roots or rooting environments as a result of root severance or damage, or compaction or pollution of the soil.

5.2.2. It is highly likely that some access will be required on the raised bed behind the retaining wall to the east, to finish the construction of the east facade. This will require the removal of some shrubs and placement of temporary ground boarding to prevent compaction.

5.2.3. As a species Common beech has been identified as poor at tolerating root pruning and disturbance[4], but the temporary ground boarding should be sufficient for pedestrian access to avoid any soil compaction.

5.2.4. The necessary precautions to prevent other incursions into the RPAs of the trees and to protect them during construction will be provided by the existing panel board fence on the east boundary, as shown on the TPP at **Appendix 5**.

5.2.5. Accordingly, subject to implementation of the above measures, and taking into account the ages, current physiological condition and tolerance of disturbance of these

[3] BS 5837, section 4.6.

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

specimens, we consider that no significant or long-term damage to their root systems or environments will occur as a result of these incursions.

6. RELATIONSHIP OF RETAINED TREES TO NEW DWELLINGS

6.1. Details

6.1.1. The proposed master ensuite extension is situated partially beneath the canopies of three trees (nos. 5, 7 & 9).

6.1.2. No direct facing windows have been designed to the south or east of the proposed ensuite; one proposed Velux roof light is located within the roof of the ensuite close to the canopy extents of the trees mentioned.

6.2. Assessment

6.2.1. The property is already close to the canopy extents of the off-site trees to the east and as such only one small window is currently located on the east flank of the property on its lower north east corner, as part of the garage wall.

6.2.2. The proposal incorporates one large aspect window, which exits out onto the proposed balcony which faces northwest, and does not directly face trees along the east boundary. The window has been designed to be as large as possible, which will allow added light to access the interior.

6.2.3. The trees on the east boundary already have high canopies, thereby enabling penetration of daylight and sunlight beneath the lower limits of their canopies. Furthermore they are deciduous, and therefore will not cause significant shading during the winter months when they are out of leaf, allowing more light to penetrate through their canopies.

6.2.4. The roof light will allow some natural light to enter the proposed master ensuite which will be subject to some shading experienced during the morning when the trees are in leaf, but by early afternoon it will have full access to sunlight for the remainder of the day.

6.2.5. The trees, bar the cherry (no.22) are all off site and as such are less likely to receive any increased requests or pressure to fell, as they are not under the control of the owners but that of a third party.

6.2.6. For these reasons, we consider that the proposed extension and master ensuite is unlikely to be shaded to the extent that this will interfere with its function or use, thereby leading to pressure to fell or severely prune these trees which the LPA could not reasonably resist.

6.2.7. The size and disposition of the current private garden to the west of the property remains unchanged and as such will continue to receive reasonable sunlight and daylight. Its use is thus unlikely to lead to demands for felling or severe pruning of trees that the LPA would find difficult to resist.

7. CONCLUSIONS

7.1. Summary

7.1.1. Our assessment of the impacts on trees, as discussed above, concludes that no specimens are to be removed. There will be no alteration to the main arboricultural features of the site, and the proposal will have no adverse impact on the arboricultural character and appearance of the local landscape or the conservation area.

7.1.2. In terms of impact upon the landscape, the proposed pruning is minor in extent, and will be largely screened in views by either the remainder of the trees' canopies, or by other trees growing within or adjacent to the site. It will have a negligible effect on the appearance of the trees when viewed from outside the site itself, and accordingly will not detract from the character or appearance of the site and conservation area.

7.1.3. There may be an incursion into the RPAs of the off-site trees by foot traffic to facilitate finishing of the east façade, but the incursions into the RPAs will be minor; and subject to implementation of the measures recommended on the TPP and set out at **Appendix 2**, we consider that no significant or long-term damage to their root systems or environments will result.

7.1.4. We consider that despite the relative location of the Velux roof light under the existing canopies, the proposed pruning and re-development of the master ensuite is unlikely to be shaded to the extent that this will interfere with its function or use, thereby leading to pressure to fell or severely prune these trees which the LPA could not reasonably resist.

7.2. Compliance with national planning policy

7.2.1. As the proposals will not involve the removal or the potential deterioration of any veteran or "aged" trees, they comply with paragraph 118 of the NPPF.

7.2.2. As the proposed extension will maintain the main arboricultural feature of the site, and thereby will not have a significant adverse impact on the arboricultural character and appearance of the local landscape or the conservation area, or on trees of significant amenity or biodiversity value, it complies with national planning policy guidance.

7.3. Compliance with local planning policies

7.3.1. As the proposals will not result in the removal of trees which are of significant local amenity or landscape value, they comply with Policies DP24 and DP25 of the Camden Development Policies 2010-2025 Local Development Framework.

7.3.2. The trees have been considered fully during design of the proposed extension, and as such this accords with policy DP24.

7.3.3. As the trees will all be retained, pruning is minor, and there are no incursions into their RPAs, the proposal will preserve and maintain the character of the conservation in accordance with policy DP25.

7.4. Conclusion

7.4.1. 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 A1.1*** of this report; and that it complies with national planning policy guidance and local planning policies.

January 2016

APPENDIX 1
Methodology

A1.1. National policy context

A1.1.1. 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 granting planning permission for proposed development. The effects of proposed development on trees are therefore a material consideration in dealing with planning applications, and this is normally reflected in local development planning policies.

A1.1.2. Paragraph 14 of the National Planning Policy Framework (NPPF), (March 2012), states that there is a presumption in favour of sustainable development: **"At the heart of the National Planning Policy Framework is a presumption in favour of sustainable development, which should be seen as a golden thread running through both plan-making and decision-taking."**

A1.1.3. At paragraph 17 the NPPF provides a set of 12 core planning principles which are to underpin plan-making and decision-taking. Three of these (bullet points 4, 5 and 7) can be applied to trees and their role in the planning system. They state that planning should:

"(4) seek to secure … a good standard of amenity for all existing and future occupants of land and buildings

(5) take account of the different roles and character of different areas, …… recognise the intrinsic character and beauty of the countryside

(7) contribute to conserving and enhancing the natural environment"

A1.1.4. The NPPF makes it clear that planning permission for development should be granted unless the proposal is inconsistent with the above principles or with the policies within the local development plan, unless the benefits of the proposal significantly and demonstrably outweigh its adverse effects, or unless the NPPF itself indicates that the proposal should be restricted.

A1.1.5. Trees are mentioned specifically at paragraph 118 of the NPPF, which states: “planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss.”

A1.2. Local policy context

A1.2.1. Relevant local planning policies are contained within the Camden Development Policies 2010-2025 Local Development Framework.

A1.2.2. Policy **DP24-Securing high quality design** of the Local Development Framework states:

“The Council will require all developments, including alterations and extensions to existing buildings, to be of the highest standard of design and will expect developments to consider:

f) existing natural features, such as topography and trees;”

A1.2.3. Policy **DP25-Conserving Camden’s Heritage** of the Local Developments Frameworks states:

“Conservation areas

In order to maintain the character of Camden’s conservation areas, the council will:

e) preserve trees and garden spaces which contribute to the character of a conservation area and which provide a setting for Camden’s architectural heritage.”

A1.3. Tree survey and baseline information

A1.3.1. We surveyed the 21 individual trees and one hedge with trunk diameters of 75mm and above[5] growing within or immediately adjacent to the site; and recorded their locations, species, dimensions, ages, condition, and visual importance in accordance with BS 5837 recommendations. The baseline information collected

[5] BS 5837, 4.2.4 b), recommends that all trees over 75mm stem diameter should be included in a pre-planning land and tree survey..

during our site survey was recorded on site using a hand-held digital device. This information was then imported into an Excel spreadsheet and used to produce the tree survey schedule at **Appendix 3**. The numbers assigned to the trees in the tree survey schedule correspond with those shown on the appended tree protection plan.

A1.3.2. We inspected the trees from the ground only, aided by binoculars as appropriate, but did not climb them. We took no samples of wood, roots or fungi. We did not undertake a full hazard or risk assessment of the trees, and therefore can give no guarantee, either expressed or implied, of their safety or stability.

A1.3.3. We surveyed trees as groups where we considered that they had grown together to form cohesive arboricultural features, either aerodynamically (trees that provide companion shelter), visually (e.g. avenues or screens) or culturally[6]. However, where we considered that it might be necessary to differentiate between specific trees within these groups, we also surveyed these individually.

A1.3.4. We have categorised the trees in accordance with BS 5837, and details of the criteria used for this process can be found in the notes that accompany the tree survey schedule.

A1.3.5. We have applied this methodology in line with the thrust of the NPPF's presumption in favour of sustainable development, giving greater weighting to the contribution of a tree to the character and appearance of the local landscape, to amenity, or to biodiversity, where its removal might have a significant adverse impact on these factors.

A1.4. Tree locations plan

A1.4.1. The information in the tree survey schedule has been used to produce the tree locations plan at **Appendix 4,** 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.

[6] BS 5837, 4.4.2.3.

A1.5. Tree constraints

A1.5.1. In line with the NPPF's presumption in favour of sustainable development, we assessed which 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 would have an adverse impact on the character and appearance of the local landscape, on amenity or on biodiversity.

A1.5.2. 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, low landscape value and no material conservation or other cultural value, or of only limited or short-term potential, will not normally be considered necessary where they impose a significant constraint on development.

A1.5.3. 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*"[7].

A1.5.4. 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"[8].

A1.5.5. The 'Root Protection Areas' (RPAs)[9] 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

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[7] Ibid. 4.5.10.

[8] Ibid. 5.1.1.

[9] 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, 3.7.

(although not their areas) were modified as a result of these considerations, so that they reflect more accurately the likely root distribution of the relevant trees.

A1.5.6. In order to assess whether the trees identified for retention will be in harmony with the proposed layout (without casting excessive shade or otherwise unreasonably interfering with residents' prospects of enjoying their properties, and thereby leading inevitably to requests for consents to fell), we plotted a segment or "shadow pattern" from each trunk, with a radius equal to the current height of the tree, from due north-west to due east. This gives an indication of potential direct obstruction of sunlight and the shadow pattern cast through the main part of the day[10].

A1.5.7. 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.

A1.5.8. As a design tool, the TCP showed how close to those trees selected for retention the proposed development could be located, in terms of three key criteria:

a). avoidance of unacceptable root damage;

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

c). avoidance of future felling or pruning works to prevent unacceptable shading or apprehension on behalf of the occupants.

A1.5.9. The TCP was then used to inform the siting of the proposed east extension and areas of hard surfacing, about both of which we were consulted on, during the design process. In this way it has been ensured that the existing trees have made a significant contribution to the location of these proposed structures, rather than the proposals dictating which trees are to be removed.

[10] BS 5837, 5.2.2 Note 1.

A1.6. Arboricultural impact assessment and tree protection plan

A1.6.1. Once the scheme had been 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 5.** This is based on the proposed site layout plan by Witcher Crawford architects and designers, drawing no. W1390, proposed first floor plan.

A1.6.2. The TPP identifies that no trees will be removed as a result of the scheme proposals, because they are situated outside the property line to the east and not under the control of the client.

A1.6.3. The TPP also shows how these trees will be protected from damage during construction, and the measures identified are set out and described at **Appendix 2** to this report. The implementation of, and adherence to, these measures can readily be secured by the use of appropriate planning conditions.

A1.6.4. 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.

A1.6.5. Details of the impacts identified within these categories, and our assessment of their respective significance, are analysed in Sections 4 to 6 of the main report.

A1.6.6. On the basis of these findings, we have assessed the magnitude of the overall arboricultural impact of the proposals according to the categories defined in ***Table A1.1*** 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 A1.1: **Magnitude of impacts**[11]

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

APPENDIX 2
Protection of retained trees

A2.1. Tree Protection Plan

A2.1.1. The TPP at **Appendix 5** 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 close proximity to, retained trees, as described in the relevant panels on the drawing.

A2.2. Protective fencing

A2.2.1. Protective fencing will constitute the current panel board fencing running along the east boundary separating Heathfields Park, No.6 Merton Lane.

A2.2.2. The position of the protective fencing is shown by **Red boundary line** on the TPP.

A2.3. Ground protection

A2.3.1. To allow space for construction and protection from soil compaction where the proposed extension is in close proximity to the RPAs of the trees, the ground between the protective fencing and the footprints of the proposed structures will be covered by appropriate ground boarding, in accordance with the guidelines of Section 6.2.3.3 of BS 5837. The locations where these measures will be required are marked by **pink hatching** on the TPP.

A2.3.2. For purely pedestrian traffic, scaffold boards (or similar) will be used. Scaffold boards will comply with British Standard BS 2482: 2009 *Specification for timber scaffold boards* and be at least 225mm in width and 38mm thickness; they will be butted up and attached to each other with wooden battens or metal tie straps, and laid either on an above-ground scaffold framework, or secured to the ground with steel pins above a compressible material (a 75mm deep layer of woodchips may be appropriate) laid on top of a geotextile membrane of an appropriate specification.

APPENDIX 3
Tree Survey Schedule

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Tree Survey Schedule

2 Fitzroy Close, Highgate

December 2015

Tree Survey Schedule: Explanatory Notes

2 Fitzroy Close, Highgate

This schedule is based on a tree inspection undertaken by Nigel Kirby of Simon Jones Associates Ltd., on Wednesday the 23rd December 2015. Weather conditions at the time were clear, dry and bright. Deciduous trees were not in 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 "2".

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 early or premature 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

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

2 Fitzroy Close, Highgate

No.	Species	Height	Trunk diameter	Radial crown spread	Crown break	Crown clear-ance	Age class	Physio - logy	Structure	Comments	Cate gory
2	Ash	10m	est. 130mm	4m N 2m E 2m S 3.5m W	1m	2m N	Young	Average	Indifferent	Off site tree; small self-seeded specimen; crown is asymmetric towards NE; tight compression forks at crown break; split into 2 co-dominant stems; roots seen on N side of fence in earth bank in planting area; of moderate quality and of medium-term potential; but of low landscape value.	C (1)
3	Beech	15.5m	est. 280mm	3m N 0m E 3m S 6m W	4m	3m	Semi-mature	Average	Poor	Off site tree in the adjacent property to E; slightly leaning trunk to W; tall, drawn up specimen; at risk of failure if companion shelter removed; asymmetrical canopy as suppressed by adjacent specimens; inessential component of the group in which it stands; of low quality; of moderate landscape value; of medium-term potential.	C (2)
4	Beech	14.5m	est. 270mm	3m N 3m E 3m S 3.5m W	4m	3m	Semi-mature	Average	Poor	Off site tree in the rear garden of the adjacent property to E; tall, drawn up specimen; suppressed by adjacent specimens; asymmetric crown; at risk of failure if companion shelter removed; of low quality; of moderate landscape value; of medium-term potential.	C (12)
5	London plane	17.5m	est. 980mm	7m N 9m E 9m S 8.5m SW 10.5m W	3m	5m	Mature	Average	Moderate	Off site tree; high fence has impeded good visual inspection of base; significant component in group in which it stands; stout trunk; crown breaking at approximately 2m into 4 co-dominant stems; historically lapsed pollard; stems mutually drawn up and suppressed by adjacent trees; suspected cavity on N side; area lighting lamp located on N side at approximately 6m; of moderate quality and landscape value; of long-term potential.	B (12)
6	Beech	14m	est. 360mm	4m N 4m E 4m S 3.5m W	2.5m	3m	Semi-mature	Average	Indifferent	Off site tree along E boundary of site; base inspection obstructed by high fence; surface roots with upper mechanical damage can be see emanating most likely from the beech on W side of fence; fence appears relatively new; with concrete footings in the area; single upright stout trunk with many historic pruning wounds on W side from 3m up into the entirety of the crown; indicative of crown lifting; many wounds appear fully occluded; vitality of the tree appears good; overtopped and suppressed by adjacent trees, particularly tree no. 5,London Plane; part of a boundary hedging which has now lapsed; of moderate quality and of long-term potential; but of low landscape value.	C (1)
7	Beech	9m	est. 210mm	2.5m N 5m E 4m S 4m W	3m	2.5m	Semi-mature	Average	Indifferent	Off site beech tree running along E boundary; designed to form a scree or hedge which has now lapsed; small specimen overtopped and suppressed by adjacent trees; asymmetric crown growth on W side; lower limbs from ground level up to approximately 5m show pruning wounds indicative of historic cut backs; inspection of base impeded by high fence; inessential component of group in which it stands; of moderate quality and of medium-term potential; but of low landscape value.	C (1)

No.	Species	Height	Trunk diameter	Radial crown spread	Crown break	Crown clear-ance	Age class	Physio - logy	Structure	Comments	Cate gory
8	Ash	17.5m	est. 550mm	5.5m N 6m E 3.5m S 3.5m W	3m	6m	Semi-mature	Average	Indifferent	Off site tree; splits into 3 co-dominant stems at 3.5m; historically topped at 8m; lapsed re-growth; tall and drawn up; dominant off site tree behind the row of beech trees lining the E boundary; historic pruning wounds on N stem at around 6m indicative of crown lifting; some inner stems from topping points have died; of moderate quality and of medium-term potential; but of low landscape value.	C (12)
9	Beech	15m	est. 260mm	3m N 2.5m E 3m S 3.5m SW 4m W	3m	2m	Semi-mature	Average	Indifferent	Off site tree running along E boundary of the site; tall, drawn up, mutually suppressed; asymmetric crown towards W; forms part of the boundary screen along E side; tall fence has impeded base inspection; lower limbs extending into W show signs of historic pruning indicative of crown cut back; at risk of failure if companion shelter removed; of moderate quality and of medium-term potential; but of low landscape value.	C (1)
10	Beech	10m	est. 145mm	2.5m N 0m E 1m S 3m W 2.7m NW	4m	2m	Young	Average	Poor	Off site tree along E boundary; part of the historic boundary screen; inessential component of group in which it stands; tall, drawn up, mutually suppressed; at risk of failure if companion shelter removed; asymmetric crown towards NW; of low quality, of low landscape value, but of medium-term potential.	C (123)
11	Beech	15m	est. 215mm	3m N 3.5m E 2.5m S 2m W	3m	3m	Semi-mature	Average	Poor	Off site tree; along E boundary of the property; tall, drawn up, mutually suppressed by adjacent specimens; at risk of failure if companion shelter removed; of low quality, of low landscape value, but of medium-term potential.	C (123)
12	Beech	13.5m	est. 215mm	3m N 4.5m E 1.5m S 2.5m W	4m	3m	Semi-mature	Average	Poor	Off site tree; part of the tree screen along the E boundary of the site; tall, drawn up, mutually suppressed; asymmetric crown towards NE; historic pruning wound at 8m on SW side; fully occluded; at risk of failure if companion shelter removed; of low quality, of low landscape value, but of medium-term potential.	C (123)
13	Beech	16m	est. 275mm	2.5m N 7m E 3.5m S 3.2m W	4m	3m	Semi-mature	Average	Indifferent	Off site tree; located along E boundary; part of the lapsed E boundary tree screen; tall, drawn up mutually suppressed specimen by adjacent specimens; high fence has impeded inspection of base as well as laurel growth around its base; historically severed ivy from 4m up into crown; lower limbs growing towards W have historic pruning wounds indicative of cut backs; asymmetric crown as suppressed by adjacent specimens; of moderate quality and of medium-term potential; but of low landscape value.	C (1)
14	Beech	16m	est. 355mm	5m N 5.5m E 2.5m S 3.9m W	4m	6m	Semi-mature	Average	Indifferent	Off site tree; located on E boundary forming part of a lapsed tree screen; historic severed ivy from 4m up into crown; asymmetric crown towards NE; tall, drawn up, mutually suppressed by adjacent specimens; at risk of failure if companion shelter removed; small non-fully occluded pruning wound on W side at approximately 3.5m showing cavity hole; penetration unknown; significant reaction wood around this point; of moderate quality and of medium-term potential; but of low landscape value.	C (1)

No.	Species	Height	Trunk diameter	Radial crown spread	Crown break	Crown clear-ance	Age class	Physio - logy	Structure	Comments	Cate gory
15	Leyland cypress	8.5m	est. 100mm	3m N 3m E 2.8m S 2.4m W	1m	1m	Young	Average	Moderate	Off site tree located along E boundary; planted as part of a screen; E boundary fence has impeded inspection of base; of moderate quality and of medium-term potential; but of low landscape value.	C (1)
16-20	Leyland cypress	12m	est. 75mm to est. 260mm	2.7m	1m	1m	Semi-mature	Average	Indifferent	Off site trees in the adjacent property to NE of 2 Fitzroy Close; tall, drawn up mutually suppressed; tight compression forks at crown break and adjacent stems; meshing crowns forming an aerodynamic group; building materials piled around base of tree; many compression forks showing bark to bark contact and early onset of elephant ear reaction wood; meshing canopies with tree no. 21 Leyland cypress; of moderate quality and of medium-term potential; but of low landscape value.	C (1)
21	Leyland cypress	12.5m	est. 400mm @1m	2.8m	1m	3.5m	Semi-mature	Average	Indifferent	Off site tree; located on a raised bedded planting area with a drop of approximately 2m directly to its W; asymmetric crown as suppressed by adjacent specimens; meshing crown with trees nos. 16-20 forming an aerodynamic group; of moderate quality and of medium-term potential; but of low landscape value.	C (1)
22	Flowering cherry	7m	317mm	4.4m N 3.51m E 2.25m S 5.2m W	1.4m E	2.5m	Semi-mature	Average	Indifferent	Located on N flank of 2 Fitzroy Close; ornamental street tree; restricted rooting environment planted with laurel & box; sounding with acoustic hammer dull resonance from 500mm to ground level; adaptive swelling on E side of trunk; rib of adaptive growth on S side of the tree at 430mm from gound; 180mm in length; numerous pruning wounds along the entirety of the trunk indicative of historic lifting and cut backs; crown break shows a tight compression fork with bark to bark contact; E main lateral limb historic tear out wound with exposed heartwood 200mm in length; slightly sparsely foliated; asymmetrical crown; of moderate quality but of low landscape value, and of short-term potential only.	C (1)
G1	Leyland cypress	5m to 7m	est. 60mm to est. 85mm	3.5m from #G1	1m	3m N	Young	Average	Indifferent	Off site group of Leyland cypress; off the S boundary of no.2 Fitzroy close; planted to form a low screen; mutually suppressing each other; of moderate quality and of medium-term potential; but of low landscape value.	C (1)

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***
2	Ash	7.6m^2	1.56m
3	Beech	35.5m^2	3.36m
4	Beech	33.0m^2	3.24m
5	London plane	434.5m^2	11.76m
6	Beech	58.6m^2	4.32m
7	Beech	20.0m^2	2.52m
8	Ash	136.m^2	6.6m
9	Beech	30.6m^2	3.12m
10	Beech	9.5m^2	1.74m
11	Beech	20.9m^2	2.58m
12	Beech	20.9m^2	2.58m
13	Beech	34.2m^2	3.3m
14	Beech	57.0m^2	4.26m
15	Leyland cypress	7.1m^2	1.5m
16-20	Leyland cypress	30.6m^2	3.12m
21	Leyland cypress	72.4m^2	4.8m
22	Flowering cherry	46.33m^2	3.84m
G1	Leyland cypress	7.1m^2	1.5m

APPENDIX 4
Tree Location Plan

Fitzroy Close

N

Leyland cypress

21

16-20

Leyland cypress

15

14

Beech

13

SJA trees Off-site trees

Beech

12

11

10

8 Ash

9

7

London plane

5

6

Beech

4

G1

3

2

Ash

Leyland cypress

22

Flowering cherry

SJA trees Site boundary

N

0 1m 2m 3m 4m 5m

METRES

1 : 100 @A2

LIST OF TREES

(For full details, see SJA Tree Schedule.)

No.	Species	Height	Trunk diameter	B.S. Category
2	Ash	10m	est. 130mm	C (1)
3	Beech	15.5m	est. 280mm	C (2)
4	Beech	14.5m	est. 270mm	C (12)
5	London plane	17.5m	est. 980mm	B (12)
6	Beech	14m	est. 360mm	C (1)
7	Beech	9m	est. 210mm	C (1)
8	Ash	17.5m	est. 550mm	C (12)
9	Beech	15m	est. 260mm	C (1)
10	Beech	10m	est. 145mm	C (123)
11	Beech	15m	est. 215mm	C (123)
12	Beech	13.5m	est. 215mm	C (123)
13	Beech	16m	est. 275mm	C (1)
14	Beech	16m	est. 355mm	C (1)
15	Leyland cypress	8.5m	est. 100mm	C (1)
16-20	Leyland cypress	12m	est. 75mm to est. 260mm	C (1)
21	Leyland cypress	12.5m	est. 400mm @1m	C (1)
22	Flowering cherry	7m	317mm	C (1)
G1	Leyland cypress	5m to 7m	est. 60mm to est. 85mm	C (1)

SJA trees ARBORICULTURAL PLANNING CONSULTANTS

Project:	2 Fitzroy Close, Highgate, Camden
Client:	Mr James Light
Drawing:	TREE LOCATIONS PLAN
Drawing no:	SJA TL 15357-01
Based on:	SJA TCP 15357-01 Fitzroy Close

Drawn by: N.Kirby	Date of Issue: Jan 2016	Scale: 1:100 @ A1
Checked by:	Tel:(01737) 813058	sja@sjatrees.co.uk
Tree nos.: ● 5	Tree canopies:	

For further information refer to the SJA 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) cannot be held responsible for inaccuracies in the topographical plan on which this drawing is based.
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APPENDIX 5
Tree Protection Plan

N

0 1m 2m 3m 4m 5m

METRES

1 : 100 @A2

N

SJA Current panel board fence to act as protective fencing for off-site trees.

N

Fitzroy Close

SJA Shrubs to be removed and ground boarding installed if access and exterior work required on east facade.

SJA Edge of canopy following pruning.

SJA Site boundary

SJA Existing retaining wall highlighted to distinguish between proposed master bedroom overhang.

SJA Root Protection Areas

Leyland cypress
21
16-20
Leyland cypress
15
14
Beech
13
22
Flowering cherry
Beech
12
11
10
8 Ash
9
7
London plane
5
6
Beech
4
G1
3
2
Ash
Leyland cypress

Arboricultural Impacts: Summary

(For details, see below)

Impact	No. of Trees
Trees to be removed	0
Groups of trees/hedges/hedgerows to be removed	0
TPO trees to be removed	0
Trees to be pruned	6
Trees where supervised demolition needed within RPAs	0
Trees where manual excavation needed within RPAs	0
Trees where above soil surfacing needed within RPAs	0
Trees with proposed underground services within RPAs	0

Trees to be pruned

No.	Species	Works (Outline only*)
2	Ash	Reduce north extent to 3m from trunk
5	London plane	Reduce west extent to 8m from trunk
7	Beech	Reduce west extent to 3m from trunk
9	Beech	Reduce west extent to 3m from trunk
13	Beech	Reduce west extent to 2.5m from trunk
14	Beech	Reduce west extent to 3m from trunk

Pruning is to be undertaken in accordance with the British Standard Recommendations for Tree work, BS3998: 2010.
Climbing irons or spikes are not to be used whilst pruning trees.

Ground Protection

To be installed prior to commencement of demolition or construction works, at same time as erection of protective fencing. For purely pedestrian traffic: scaffold boards or similar, of at least 35mm thickness, butted together and attached to each other with wooden battens or steel tie straps, laid either on an above ground scaffold framework, or on a compressible material (a 75mm deep layer of woodchips may be appropriate) above a biaxial geotextile grid ('geogrid' - "Tensar" or similar) and pinned to the ground with steel pins to prevent movement.

SJA trees ARBORICULTURAL PLANNING CONSULTANTS

Project:	2 Fitzroy Close, Highgate		
Client:	Mr James Light		
Drawing:	TREE PROTECTION PLAN		
Drawing No:	SJA TPP 15357-01	Revision No:	
Based On:	W1390 proposed first floor plan		
Drawn By: N.Kirby	Date: Jan 2016	Scale: 1:100 @ A2	
Tel:(01737) 813058	Fax:(01737) 816140	sja@sjatrees.co.uk	

Tree nos.:	● 5	Canopies of trees to be retained:		Indicative pruning line:	
Category 'B' RPA:		Category 'C' RPA:		Ground protection:	

For further information refer to the SJAtrees Tree Survey Schedule

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