

Arboricultural Implications Report

Proposed re-development at

2, 4, 6 Water Road and 158 Dee Road,

Reading



July 2016

Ref. SJA air 16156-01

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SUMMARY

S1. SJA trees has undertaken an assessment of the impacts of the proposed development on 18 individuals and seven groups 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, as discussed above, concludes that no category 'A' trees, no veteran or ancient trees, and no trees of biodiversity value are to be removed. The main off-site arboricultural feature adjacent to the site will not be removed. The proposed felling of the trees and groups identified for removal will, therefore, represent only a minor alteration to the arboricultural features of the site, but would not have a long-term adverse impact on the arboricultural character and appearance of the local landscape.

S3. No trees are to be pruned to facilitate implementation of the proposals.

S4. There will be no incursions into the RPAs of trees to be retained.

S5. None of the proposed dwellings or private gardens are likely to be shaded by retained trees to the extent that this will interfere with their reasonable use or enjoyment by incoming occupiers, and which might otherwise lead to pressure on the LPA to permit felling or severe pruning that it could not reasonably resist.

S6. We conclude therefore that the arboricultural impact of this scheme is of low magnitude, but that the proposed development would not have a long-term adverse arboricultural impact on the character and appearance of the local landscape, or on the amenity or biodiversity; and accordingly that it complies with national planning policy guidance.

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1. INTRODUCTION AND BACKGROUND INFORMATION

1.1. Instructions

1.1.1. SJAtrees has been instructed by FDF Architecture to visit Nos. 2, 4 and 6 Water Road and 158 Dee Road, Reading, Berkshire, RG30 2NN and to survey the trees growing within and adjacent to these properties.

1.1.2. We are further asked to identify which trees are worthy of retention within a proposed re-development of this 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 Reading Borough Council, and complies 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 12 X 4 bedroom family dwellings in two linked blocks and two individual houses, with third floors to increase internal amenity space. The houses facing Water Road are arranged to reflect the general line of the other existing multi-storey dwellings to the south, and the two proposed dwellings adjacent to Dee Road are sited to create a massing that defines the corner of the junction between Dee Road and Water Road.

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 planning policy, and our conclusions are presented. The methodologies used in the compilation of the report are set out in **Appendix 1**.

1.3. Site inspection

1.3.1. A site visit and tree inspection was undertaken by Nigel Kirby of SJAtrees (the trading name of Simon Jones Associates Ltd.), on Tuesday 21st of June 2016. Weather conditions at the time were clear, dry and bright. Deciduous trees were in leaf.

1.4. Site description

1.4.1. The site is located on the west side of Water Road and east side of Dee Road at the junction with Grovelands Road, opposite the apartments of Colliers Way. These form the north, north-west and east boundaries of the site. The south-east boundary runs adjacent to the access drive to Nos. 8 & 10 Water Road. The south-west boundary adjoins the rear gardens of Nos. 8 Water Road and 156 Dee Road.

1.4.2. The site is on level ground and currently comprised of three properties; Nos. 2 and 4 Water Road is a semi-detached property; and all have associated rear gardens and hard standing.

1.5. Statutory controls

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

1.5.2. The site is not within a conservation area.

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, 1997².

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

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 TREES

2.1. Survey findings

2.1.1. We surveyed a total of 18 individual trees and seven groups 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 features of the locality, whose removal we consider could have an adverse impact on the character and appearance of the local landscape, on amenity or on biodiversity, are as follows:

- the off-site sycamore (no. 1) growing opposite No. 6 Water Road adjacent to the eastern boundary of the site; and
- the two silver birches (nos. 2 and 3) located to the east of No. 6 Water Road, and visible in views from pedestrian and vehicle traffic approaching from north to south along Grovelands Road.

2.2.2. Except for the two silver birches, none of the trees within the site boundaries make a positive contribution to the character and appearance of the locality, even though some of them are visible in views from adjacent roads.

2.2.3. Moreover, the trees on site are mostly ornamental species (nos. 11 and 16-18), non-native species (nos. 6, 7, 12 and G7), or short-lived species (nos. 2, 3 and 15).

2.2.4. Using the tree categorisation method at Table 1 of BS 5837, four individual trees (nos. 15-18) have 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 a 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.

2.2.5. There is one category 'A' tree (off-site sycamore no.1) and three category 'B' specimens. The two silver birches (nos. 2 & 3) and the Leyland cypress (no.7). The remaining ten 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.

2.2.6. Of the groups of trees, all have 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 16 individual trees (nos. 2-9 & 11-18) are to be removed, either because they are situated within the footprint of the proposed development, or because they are too close to proposed structures or surfaces to enable them to be retained.

3.1.2. The individual off-site sycamore tree (no. 1) that is one the main arboricultural features of the locality, (as identified at paragraph 2.2.1), will not be removed; but the two silver birches (nos. 2 and 3) will be.

3.1.3. Of the trees to be removed, three are category 'B'. nine are category 'C' and four are category 'U'. No Category 'A' trees are to be removed. The category 'B' trees to be removed are shown and listed on the TPP and in **Table 1** below.

Tree no.	Species	Height	Trunk diameter	Age class	BS category
2	Silver birch	13.5m	396mm	Semi-mature	B (12)
3	Silver birch	13.5m	363mm	Semi-mature	B (12)
7	Leyland cypress	13m	465mm	Semi-mature	B (2)

Table 1: Category "B" Trees to be removed

3.1.4. No individual trees to be removed are covered by a TPO (see 1.5.1 above).

3.1.5. Five groups of trees & shrubs (G2-G5 and G7) are to be removed as part of the proposals. None of these are covered by a TPO. As shown in **Table 2** below.

Group no.	Species	Height	Trunk diameter	Age class	BS category
G2	Box	Up to 1m	Up to 35mm	Young	C (1)
G3	Privet	Up to 3m	Up to 65mm	Young	C (1)
G4	Various	2m to 5m	35mm to 75mm	Young	C (1)
G5	Privet	Up to 3.5m	Est. 50mm to est. 75mm	Young	C (1)
G7	Western red cedar	8m to 10m	185mm to 315mm	Semi-mature	C (12)

Table 2: Groups of trees and shrubs to be removed

3.2. Assessment

3.2.1. The off-site sycamore tree (no. 1) that constitutes one of the main arboricultural features of the site, and which makes the greatest contribution to the character and appearance of the local landscape, to amenity or to biodiversity (see paragraph 2.2.1), will be retained.

3.2.2. The three category 'B' trees to be removed are the silver birches (nos. 2 & 3) and the Leyland cypress (no. 7).

3.2.3. The two silver birches (nos. 2 and 3) both provide screening of the site from the apartments opposite, off Colliers Way and both are visible in views approaching Water Road from Grovelands Road from north to south; however, they are hidden in many other direct public views by adjacent dwellings.

3.2.4. The eye is also drawn by the numerous off-site broadleaf specimens located to the east of Grovelands Road adjacent to the apartments of Colliers Way, maintaining the treescape along Grovelands Road, merging into Water Road. The silver birches also both show some pruning away from a utility cable which will have to be maintained and tree no.3 also shows some shallow surface roots with upper surface damage in the existing gravel driveway, likely to reduce its life expectancy.

3.2.5. Based on the trunk diameters of the two birches we have calculated the age ranges of these trees to be 40-50yrs old, based on the "Helliwell system"³, which states the average life expectancy of birch to be between 50-100 years. However, in our experience birch are poor compartmentalizers, and thus intolerant of unsympathetic pruning, and trunk and root damage, and are seldom likely to exceed 70 years in an urban environment, within a front garden adjacent to a busy road.

³ HELLIWELL, D. R. (2008) 'Visual Amenity Valuation of Trees and Woodlands' *Arboricultural Association Guidance Note 4*.

3.2.6. As such the life expectancy of these two specimens is only likely to be in the range of 20 years and would not outlive the development; as such, they should not be considered a constraint despite their current visibility.

3.2.7. The Leyland cypress (no. 7) is visible in moderate views from north to south and south to north along Dee Road and Grovelands Road; however, it over-dominates the existing front garden of No. 158 Dee Road. It is also currently unmanaged and has numerous tight compression forks above the crown break showing bark to bark contact.

3.2.8. Nine category 'C' trees are to be removed: these are either of low quality, low value, or short-term potential. For these reasons, their removal will have no significant impact on the character or appearance of the area.

3.2.9. The four category 'U' trees to be removed are unsuitable for retention, irrespective of the proposed development, in that they cannot realistically be retained for longer than 10 years.

3.2.10. Nine of the trees to be removed are young specimens, which BS 5837 states *"need not necessarily be a significant constraint on the site's potential"*⁴.

3.2.11. No trees subject to a Tree Preservation Order are to be removed.

3.2.12. Whilst the removal of all of the on-site trees will have an impact on the arboricultural character of the site, none of the specimens are individually of high arboricultural, landscape or amenity value, and as such; their removal may be considered to be of less weight than the benefits of the development.

3.2.13. The proposals incorporate the planting of several trees. This proposed replacement planting will progressively reduce the magnitude of the impact of the proposed removals on the character and appearance of the site.

3.2.14. In the light of these considerations, and taking account of the numbers, sizes and locations of the trees to be retained, including those that are off-site, the

⁴ BS 5837, 4.5.10.

felling of the trees and groups identified for removal will represent only a minor alteration to the arboricultural features of the site, but not that of the local landscape and character.

4. TREES TO BE PRUNED

4.1. Details.

4.1.1. No trees are to be pruned to facilitate implementation of the proposals.

4.2. Assessment

4.2.1. As no trees are to be pruned, and none of the proposed dwellings will lie within 3m 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.

5. ROOT PROTECTION AREA INCURSIONS

5.1. Details

5.1.1. No parts of any proposed buildings or associated hard surfacing are within the root protection areas (RPAs)⁵ of any of the trees to be retained.

5.2. Assessment

5.2.1. As no parts of the proposed dwellings or other structures abut or are within RPAs, subject to the implementation of protective measures specified below and on the TPP, their 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 BS 5837, section 4.6.

6. RELATIONSHIP OF RETAINED TREES TO NEW DWELLINGS

6.1. Details

6.1.1. None of the proposed dwellings are situated within the shadow patterns⁶ of any of the trees to be retained; that is, where proposed dwellings are sited in an arc between the north-west and the east of retained trees they are no closer than the current heights of these specimens.

6.2. Assessment

6.2.1. As none of the proposed dwellings lie within shadow patterns, we consider that they will not be shaded to the extent that this will interfere with their reasonable use or enjoyment by incoming occupiers, which might otherwise lead to pressure to permit felling or severe pruning that the LPA could not reasonably resist.

6.2.2. The sizes and dispositions of the proposed private gardens are such that in our assessment they will not be unduly shaded, and will receive reasonable sunlight and daylight. Their use is thus unlikely to lead to demands for felling or severe pruning of trees that the LPA would find difficult to resist.

⁶ BS 5837, 5.2.2, Note 1: "An indication of potential direct obstruction of sunlight can be illustrated by plotting a segment, with a radius from the centre of the stem equal to the height of the tree, drawn from due north-west to due east, indicating the shadow pattern through the main part of the day."

7. CONCLUSIONS

7.1. Summary

7.1.1. Our assessment of the impacts on trees, as discussed above, concludes that no category 'A' trees, no veteran or ancient trees, and no trees of biodiversity value are to be removed. The main off-site arboricultural feature adjacent to the site will not be removed. The proposed felling of the trees and groups identified for removal will, therefore, represent only a minor alteration to the arboricultural features of the site, but would not have a long-term adverse impact on the arboricultural character and appearance of the local landscape.

7.1.2. No trees are to be pruned to facilitate implementation of the proposals.

7.1.3. There will be no incursions into the RPAs of trees to be retained.

7.1.4. None of the proposed dwellings or private gardens are likely to be shaded by retained trees to the extent that this will interfere with their reasonable use or enjoyment by incoming occupiers, and which might otherwise lead to pressure on the LPA to permit felling or severe pruning that it 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 development will maintain the main off-site arboricultural feature of the site, and thereby will not have an adverse impact on the arboricultural character and appearance of the local landscape, or on trees of significant amenity or biodiversity value, it complies with national planning policy guidance.

7.3. Conclusion

7.3.1. On the basis of our assessment, we conclude that the arboricultural impact of this scheme is of low magnitude, as defined according to the categories set out in **Table A1.1** of this report. However, it may be considered that this negative impact is demonstrably outweighed by the non-arboricultural benefits of the scheme.

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. Tree survey and baseline information

A1.2.1. We surveyed the individual trees and hedges with trunk diameters of 75mm and above⁷ 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 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 locations and protection plans.

A1.2.2. 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.

A1.2.3. 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 culturally⁸. However, where we considered that it might be necessary to differentiate between specific trees within these groups, we also surveyed these individually.

A1.2.4. 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.

⁷ 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..

⁸ BS 5837, 4.4.2.3.

A1.2.5. 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.

A1.3. Tree locations plan

A1.3.1. The information in the tree survey schedule has been used to produce the tree locations plan at **Appendix 4**, which is based on an Ordnance Survey "Superplan" onto which the locations of the trees have been plotted using our own measurements taken on site.

A1.4. Tree constraints

A1.4.1. 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.

A1.4.2. 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.

A1.4.3. 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*"⁹.

A1.4.4. 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

⁹ Ibid. 4.5.10.

excessive pressure on the trees during demolition or construction work, or post-completion demands for their removal”¹⁰.

A1.4.5. The ‘Root Protection Areas’ (RPAs)¹¹ 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 as a result of these considerations, so that they reflect more accurately the likely root distribution of the relevant trees.

A1.4.6. 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 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, 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 day¹².

A1.4.7. 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.

A1.4.8. 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;

¹⁰ Ibid. 5.1.1.

¹¹ 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.

¹² BS 5837, 5.2.2 Note 1.

- 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.

A1.4.9. The TCP was then used to inform the siting of the proposed dwellings 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 location of these proposed structures, rather than the proposals dictating which trees are to be removed.

A1.5. Arboricultural impact assessment and tree protection plan

A1.5.1. 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 in **Appendix 5**. This is based on the proposed site layout plan by FDF Architecture, drawing no. 3037.LD.1 rev A.

A1.5.2. The TPP identifies the trees which will be removed as a result of the scheme proposals, either because they are situated within the footprint of the proposed development, or because in our judgment they are too close to proposed structures or surfaces to enable them to be retained. These are shown by means of **red crosses** on the plan.

A1.5.3. The TPP also shows how trees to be retained 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.

A1.5.4. 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.

A1.5.5. Details of the impacts identified within these categories, and our assessment of their respective significance, are analysed in Sections 4 to 7 of the main report.

A1.5.6. 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 impacts¹³

¹³ 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. Construction exclusion zones (CEZs) will be formed by erecting protective fencing around the RPAs of all trees to be retained, including those that are off-site, 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. Thereby safeguarding them from incursions by plant or machinery, storage and mixing of materials, or other construction-related activities which could have a detrimental effect on their root systems

A2.2.2. 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.

A2.2.3. 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.

APPENDIX 3

Tree Survey Schedule



ARBORICULTURAL PLANNING CONSULTANTS

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Tree Survey Schedule

2,4,6 Water Road & 158 Dee Road, Reading

June 2016

Tree Survey Schedule: Explanatory Notes

2,4,6 Water Road & 158 Dee Road, Reading

This schedule is based on a tree inspection undertaken by Nigel Kirby of SJA trees (the trading name of Simon Jones Associates Ltd.), on Tuesday 21st of June 2016. Weather conditions at the time were clear, dry and bright. Deciduous trees were 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 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".

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 irreparable physiological or pathological defects, such that there may be a risk of early or premature collapse.

Hazardous: Significant and irreparable 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, irreparable, 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

2,4,6 Water Road & 158 Dee Road, Reading

No.	Species	Height	Trunk diameter	Radial crown spread	Crown break	Crown clearance	Age class	Physio -logy	Structure	Comments	Category
1	Sycamore	17.5m	730mm	7.75m N 8.25m E 8.5m S 9m W	3m	5m	Mature	Average	Moderate	Off-site tree; located on the east side of Water Road; largest broadleaf specimen nearest the junction with Dee Road, Grovelands Road & Water Road; footpath located 1m east of trunk; some epicormic growth at base; historic pruning wound indicative of crown lifting; many fully occluded wounds; wide spraying canopy; dominant tree in street scene; highly visible in views from north to south and south to north along Water Road; of moderate quality and high landscape value; of long-term potential.	A (2)
2	Silver birch	13.5m	396mm	3.75m N 3.25m E 5m S 4.75m W	2.5m	2m	Semi-mature	Average	Good	One of four largest specimens within site; readily visible in views from the north along Grovelands Road; moderately visible in views for a short stretch along Water Road; forms significant boundary screening from residential apartment blocks of Colliers Way to the east; prominent ribs of reaction wood from ground level to crown break at 2.5m; historic unoccluded pruning wound on western edge of canopy at 4m indicative of crown lifting; telephone cables within western extent of canopy at 4m; recommend light pruning of specific limbs to cut back away from utilities; asymmetric crown towards the west; of high quality and moderate landscape value; of only medium-term potential as a short lived species.	B (12)
3	Silver birch	13.5m	363mm	4.75m N 3.75m E 4m S 4m W	2.5m	2m	Semi-mature	Average	Good	One of four largest specimens within site; prominent surface root on western edge of trunk emanating for 1.25m; shows upper surface damage, wound of 250mm in length; prominent buttress roots; small historic pruning wound on western side of trunk at 2.5m indicative of crown lifting; asymmetric crown towards the west; snapped-out, hanging dead limb at 7m in western half of canopy; readily visible in views from the north along Grovelands Road and for a short stretch along Water Road; visible in direct views from residential apartments of Colliers Way to the east; provides significant screening of the site; of high quality and moderate landscape value; of only medium-term potential as a short lived species.	B (12)
4	Wych elm	8m	188mm	3m N 3m E 3m S 3.5m W	0.5m	2m	Young	Average	Poor	Located at north tip of G3; self-sown specimen; inspection of base impeded by dense ivy; tight compression fork at crown break with bark to bark contact; of low quality; of moderate landscape value and of short-term potential only.	C (2)
5	Sycamore	9m	169mm	4.5m N 3.5m E 4m S 0m W	3m	3m	Young	Average	Poor	Self-sown specimen; garden maintenance waste piled at base; twin stemmed from ground level; drawn up as overtopped and suppressed by adjacent specimen; asymmetric crown to the east; of low quality; of low landscape value, and of short-term potential only.	C (12)

No.	Species	Height	Trunk diameter	Radial crown spread	Crown break	Crown clearance	Age class	Physio -logy	Structure	Comments	Category
6	Leyland cypress	13m	608mm	3.5m N 4m E 4m S 3.5m W	2m	2m	Mature	Average	Poor	One of four largest specimens on site; located within front garden of 158 Dee Road; tight compression fork at crown break, showing bark to bark contact; numerous tight compression forks with bark to bark contact within upper canopy; provides significant screening of 158 Dee Road in views from the north of Grovelands Road; appears unmanaged; of low quality but high landscape value; of medium-term potential.	C (2)
7	Leyland cypress	13m	465mm (over ivy)	4m N 3.5m E 4.25m S 3.5m W	2m	1.5m	Semi-mature	Average	Indifferent	One of four largest specimens on site; located within front garden of 158 Dee Road; inspection of base impeded by heavy ivy cover from ground level to crown break at 2m; tight compression forks above crown break showing bark to bark contact; wide spreading crown; overdominates front garden of 158 Dee Road; appears unmanaged; highly visible in long views from south to north along Dee Road and in views from the north along Grovelands Road; the only large dominant mature tree along Dee Road at the junction with Grovelands Road and Water Road; of moderate quality and high landscape value; of medium-term potential.	B (2)
8	Goat willow	5m	est. 135mm @500mm	2m N 3.5m NE 4m E 3m SE 2.5m S 0.5m W	1m	1m	Young	Average	Poor	Self sown specimen in front garden of 158 Dee Road; tight compression fork at crown break at 0.5 metres with bark to bark contact; asymmetric crown to east; over-topped and suppressed by adjacent Leyland Cypress t7; hidden in all public views from west, south and east by adjacent trees and partially glimpsed in views from approaching traffic from Grovelands Road to the north; of low quality, of low landscape value, and of short-term potential only.	C (12)
9	Ash	4m	est. 100mm	1.25m	1.5m	0m	Young	Average	Indifferent	Self-sown specimen; located in the north west corner of 158 Dee Road; historically topped at 1m; hidden in all public views from the south, east and north by adjacent trees, visible in views for a short distance along Dee Road; of low quality & landscape value, and of short-term potential only.	C (1)
10	Lawson cypress	7m	188mm @1m	2.75m N 3.25m E 3m S 2.75m W	0.5m	0m	Young	Average	Indifferent	Ornamental specimen in rear garden of No. 2 Water Road; top 4m visible in narrow, glimpsed views along Grovelands Road from north to south only; hidden in all other public viewpoints from adjacent trees and buildings; of moderate quality and of medium-term potential; but of low landscape value.	C (1)
11	Apple	4m	87mm	2m	1.5m	1.5m	Young	Average	Indifferent	Small domestic fruit tree; hidden in all public views by adjacent trees and buildings; of moderate quality but of low landscape value, and of short-term potential only.	C (1)
12	Lawson cypress	11m	225mm	2.25m N 1.75m E 2m S 2m W	2m	2m	Semi-mature	Average	Indifferent	Significant component of group within which its found; drawn up and mutually suppressed, hidden in a public view by adjacent trees and buildings; 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 clearance	Age class	Physio - logy	Structure	Comments	Category
13	Hazel	8m	x6 stems est. 110mm	3.25m	1m	0m	Young	Average	Poor	Located at the rear of brick outhouse within rear garden of No. 2 Water Road; tall drawn up; tight compression forks with bark to bark contact; hidden in all public views by adjacent trees and buildings; of low quality, of low landscape value, but of medium-term potential.	C (1)
14	Myrobalan plum	10m	x3 stems est. 145mm	2.75m N 3.25m E 4.5m S 2.5m W	0m	0m	Young	Average	Poor	Located to south of outhouse extension of No. 6 Water Road; tall drawn up; inspection of base impeded by dense ivy cover; tight compression fork with bark to bark contact; hidden in all public views by adjacent trees and buildings; of low quality, of low landscape value, and of short-term potential only.	C (1)
15	Flowering cherry	4m	x5 stems est. 130mm	4m N 5m E 2m S 2m W	0.5m	2m	Young	Below average	Indifferent	Located along the southern boundary fence of No. 6 Water Road; multi-stemmed from ground level; fungal fruiting body of <i>Ganoderma spp.</i> at base of trunk; asymmetric crown towards the north; hidden in public views by adjacent trees; suppressed and overtopped by group G7; of low quality, of low landscape value, and of little potential.	U
16	Apple	6m	300mm	0.5m N 6m E 5m S 1m W	1.5m	2m	Semi-mature	Average	Poor	Located in rear garden of house No. 6 Water Road; trunk heavily leaning at 45 degrees to east; crown break at 1m; historic snap-out and cavity seen at crown break, penetration of 250mm achieved; on sounding with an acoustic hammer, differences in tone heard suggesting dysfunctional wood within; hidden in public views by adjacent trees and buildings; of low quality, of low landscape value, and of little potential.	U
17	Apple	8m	est. 350mm	3m	2m	6m	Semi-mature	Low	Poor	Located in the rear garden of No. 6 Water Road; significant dieback in crown; historic wound from ground level to 1.5m; exposed internal heart wood on east side of trunk; significant decay; on sounding with an acoustic hammer differences in tone detected; moribund; of low quality, of low landscape value, and of little potential.	U
18	Apple	8m	est. 250mm	2m	2m	6m	Semi-mature	Average	Poor	Located within the rear garden No. 6 Water Road; moribund; suppressed by adjacent group G7; historic trunk wound on south side of trunk at 0.5m upto 0.75m; internal heartwood exposed and decayed; on sounding acoustic hammer, differences in tone detected; hidden in all public views; of low quality, of low landscape value, and of little potential.	U
G1	Yew	2m to 3m	Up to 85mm	2m	0.5m	0m	Young	Average	Indifferent	Off-site yew tree hedge; located on the southern edge of the driveway leading to the residential properties of 8 & 10 Water Road; provides boundary screening with 14 Water Road; appears to be regularly managed and maintained; of moderate quality but of low landscape value, and of short-term potential only.	C (1)
G2	Box	Up to 1m	Up to 35mm	0.5m	0m	0m	Young	Average	Indifferent	Small ornamental hedge running along the eastern extent of the boundary of No. 6 Water Road; of moderate quality but of low landscape value, and of short-term potential only.	C (1)

No.	Species	Height	Trunk diameter	Radial crown spread	Crown break	Crown clearance	Age class	Physio -logy	Structure	Comments	Category
G3	Privet	Up to 3m	Up to 65mm	0.5m	0m	0m	Young	Average	Indifferent	Privet hedge separating No 4 & No 6 Water Road; low landscape value as hidden in direct public views; however glimpsed in views in approaches to the junction of Dee Road, Water Road and Grovelands Road; appears regularly managed on south side; of moderate quality and of medium-term potential; but of low landscape value.	C (1)
G4	Various	2m to 5m	35mm to 75mm	1.5m	0.5m	0m	Young	Average	Indifferent	Species include wych elm, holly, privet and hazel; located on boundary of 2 and 4 Water Road; moderately visible in long views from vehicles approaching north to south along Grovelands Road; visible in views from the residential apartments of Colliers Way; hidden in all other public views by adjacent trees and buildings; inspection of base impeded by dense privet around base; tight compression forks at crown break shows bark to bark contact; partially ivy covered trunks from ground level up to 4 metres; of moderate quality but of low landscape value, and of short-term potential only.	C (1)
G5	Privet	Up to 3.5m	est. 50mm to est. 75mm	2m	0.5m	0m	Young	Average	Indifferent	Small ornamental shruberry; located within the rear garden of 158 Dee Road; hidden in all public views by adjacent trees and buildings; of moderate quality but of low landscape value, and of short-term potential only.	C (1)
G6	Various	6m to 10m	110mm to est. 150mm	3m	1.5m	1.5m	Young	Average	Indifferent	Off-site trees; along south-west boundary with rear garden on No. 8 Water Road; species include elder, sycamore and myrobalan plum; overhang of 3m by the elder and 2.75m by the sycamore; forms significant boundary screening; but of low landscape value as hidden in all public views by adjacent trees and buildings; of moderate quality and of medium-term potential.	C (2)
G7	western red cedar	8m to 10m	est. 185mm to est. 315mm	2.5m	0.5m	0m	Semi-mature	Average	Indifferent	Lining the south and east boundary of the rear garden of No. 6 Water Road; provides significant screening of adjacent properties to the south and east; tall drawn up, aerodynamic group with meshing crowns; hidden in all public views by adjacent trees and building; of moderate quality but of low landscape value, and of medium-term potential.	C (12)

Root Protection Areas (RPAs)

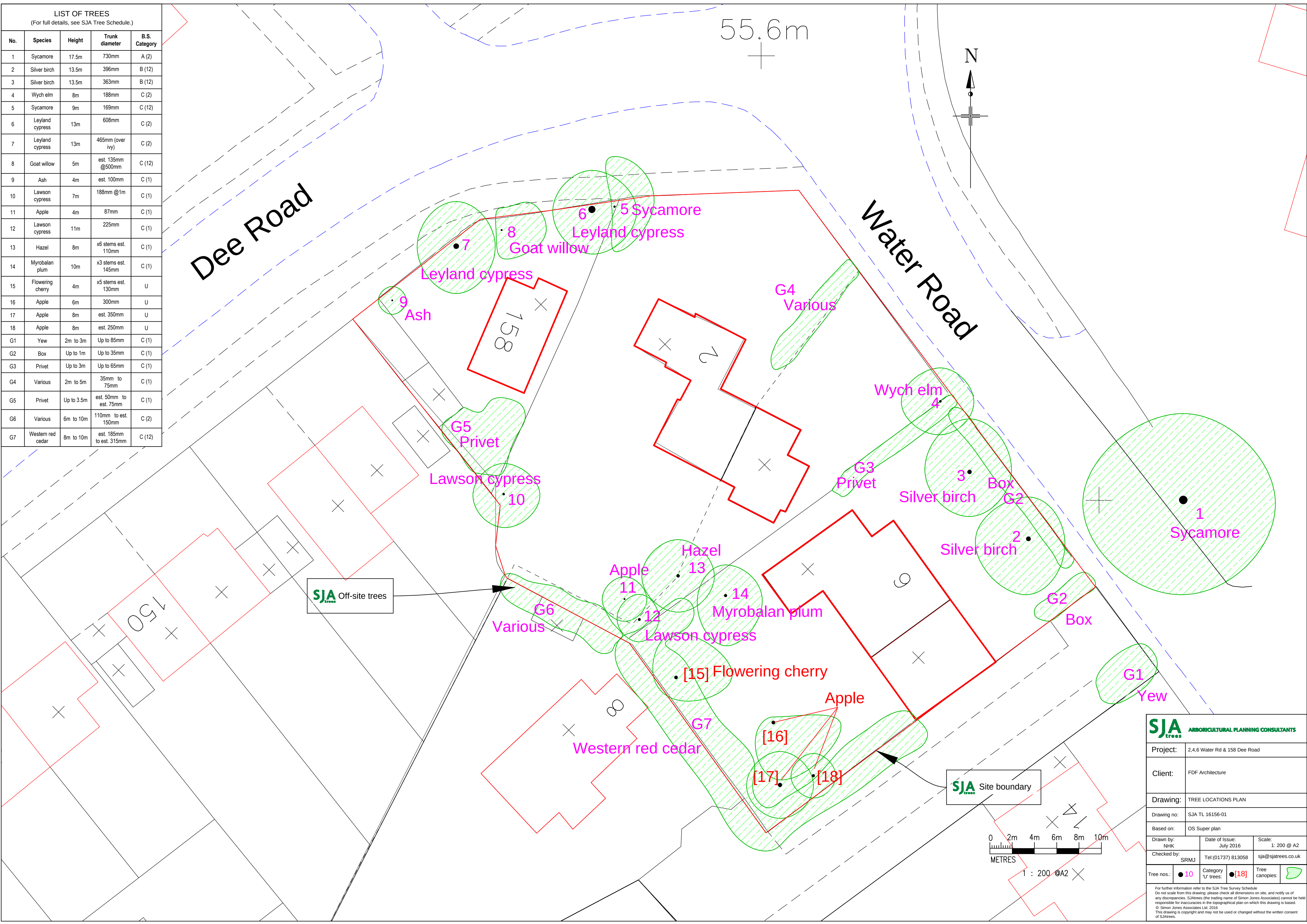
Root Protection Areas have been calculated in accordance with paragraph 4.6.1 of the British Standard 'Trees in relation to design, demolition and construction – Recommendations', BS 5837: 2012. This is the minimum area which should be left undisturbed around each retained tree. RPAs are portrayed initially 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.

<i>Tree No.</i>	<i>Species</i>	<i>RPA</i>	<i>RPA Radius</i>
1	Sycamore	241.1m ²	8.76m
2	Silver birch	70.9m ²	4.75m
3	Silver birch	59.6m ²	4.36m
4	Wych elm	16.0m ²	2.26m
5	Sycamore	12.9m ²	2.03m
6	Leyland cypress	167.2m ²	7.3m
7	Leyland cypress	97.8m ²	5.58m
8	Goat willow	8.2m ²	1.62m
9	Ash	7.1m ²	1.5m
10	Lawson cypress	16.0m ²	2.26m
11	Apple	7.1m ²	1.5m
12	Lawson cypress	22.9m ²	2.7m
13	Hazel	32.8m ²	3.23m
14	Myrobalan plum	28.5m ²	3.01m
15	Flowering cherry	38.2m ²	3.49m
16	Apple	40.7m ²	3.6m
17	Apple	55.4m ²	4.2m
18	Apple	28.3m ²	3.0m
G1	Yew	7.1m ²	1.5m
G2	Box	7.1m ²	1.5m
G3	Privet	7.1m ²	1.5m
G4	Various	7.1m ²	1.5m
G5	Privet	7.1m ²	1.5m
G6	Various	10.2m ²	1.8m
G7	Western red cedar	44.9m ²	3.78m

APPENDIX 4

Tree Location Plan

LIST OF TREES (For full details, see SJA Tree Schedule.)				
No.	Species	Height	Trunk diameter	B.S. Category
1	Sycamore	17.5m	730mm	A (2)
2	Silver birch	13.5m	396mm	B (12)
3	Silver birch	13.5m	363mm	B (12)
4	Wych elm	8m	188mm	C (2)
5	Sycamore	9m	169mm	C (12)
6	Leyland cypress	13m	608mm	C (2)
7	Leyland cypress	13m	465mm (over ivy)	C (2)
8	Goat willow	5m	est. 135mm @500mm	C (12)
9	Ash	4m	est. 100mm	C (1)
10	Lawson cypress	7m	188mm @1m	C (1)
11	Apple	4m	87mm	C (1)
12	Lawson cypress	11m	225mm	C (1)
13	Hazel	8m	x6 stems est. 110mm	C (1)
14	Myrobalan plum	10m	x3 stems est. 145mm	C (1)
15	Flowering cherry	4m	x5 stems est. 130mm	U
16	Apple	6m	300mm	U
17	Apple	8m	est. 350mm	U
18	Apple	8m	est. 250mm	U
G1	Yew	2m to 3m	Up to 85mm	C (1)
G2	Box	Up to 1m	Up to 35mm	C (1)
G3	Privet	Up to 3m	Up to 65mm	C (1)
G4	Various	2m to 5m	35mm to 75mm	C (1)
G5	Privet	Up to 3.5m	est. 50mm to est. 75mm	C (1)
G6	Various	6m to 10m	110mm to est. 150mm	C (2)
G7	Western red cedar	8m to 10m	est. 185mm to est. 315mm	C (12)



SJA trees ARBORICULTURAL PLANNING CONSULTANTS			
Project:	2.4.6 Water Rd & 158 Dee Road		
Client:	FDF Architecture		
Drawing:	TREE LOCATIONS PLAN		
Drawing no:	SJA TL 16156-01		
Based on:	OS Super plan		
Drawn by:	NHK	Date of Issue:	July 2016
Checked by:	SRMJ	Tel: (01737) 813058	sja@sjatrees.co.uk
Tree nos.:	● 10	Category 'U' trees:	● [18]
		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. SJA trees (the trading name of Simon Jones Associates) cannot be held responsible for inaccuracies in the topographical plan on which this drawing is based. © Simon Jones Associates Ltd. 2016. This drawing is copyright and may not be used or changed without the written consent of SJA trees.			

APPENDIX 5

Tree Protection Plan

Arboricultural Impacts: Summary			
(For details, see below)			
Impact			No. of Trees
Trees to be removed			16
Groups of trees to be removed			5
TPO trees to be removed			0
Trees to be pruned			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 Removed			
No	Species	Category	
2	Silver birch	B (12)	
3	Silver birch	B (12)	
4	Wych elm	C (2)	
5	Sycamore	C (12)	
6	Leyland cypress	C (2)	
7	Leyland cypress	B (2)	
8	Goat willow	C (12)	
9	Ash	C (1)	
11	Apple	C (1)	
12	Lawson cypress	C (1)	
13	Hazel	C (1)	
14	Myrobalan plum	C (1)	
15	Flowering cherry	U	
16	Apple	U	
17	Apple	U	
18	Apple	U	
Total numbers of trees to be removed			
Category	No. of trees	Category	No. of trees
A	0	B	3
C	9	U	4

